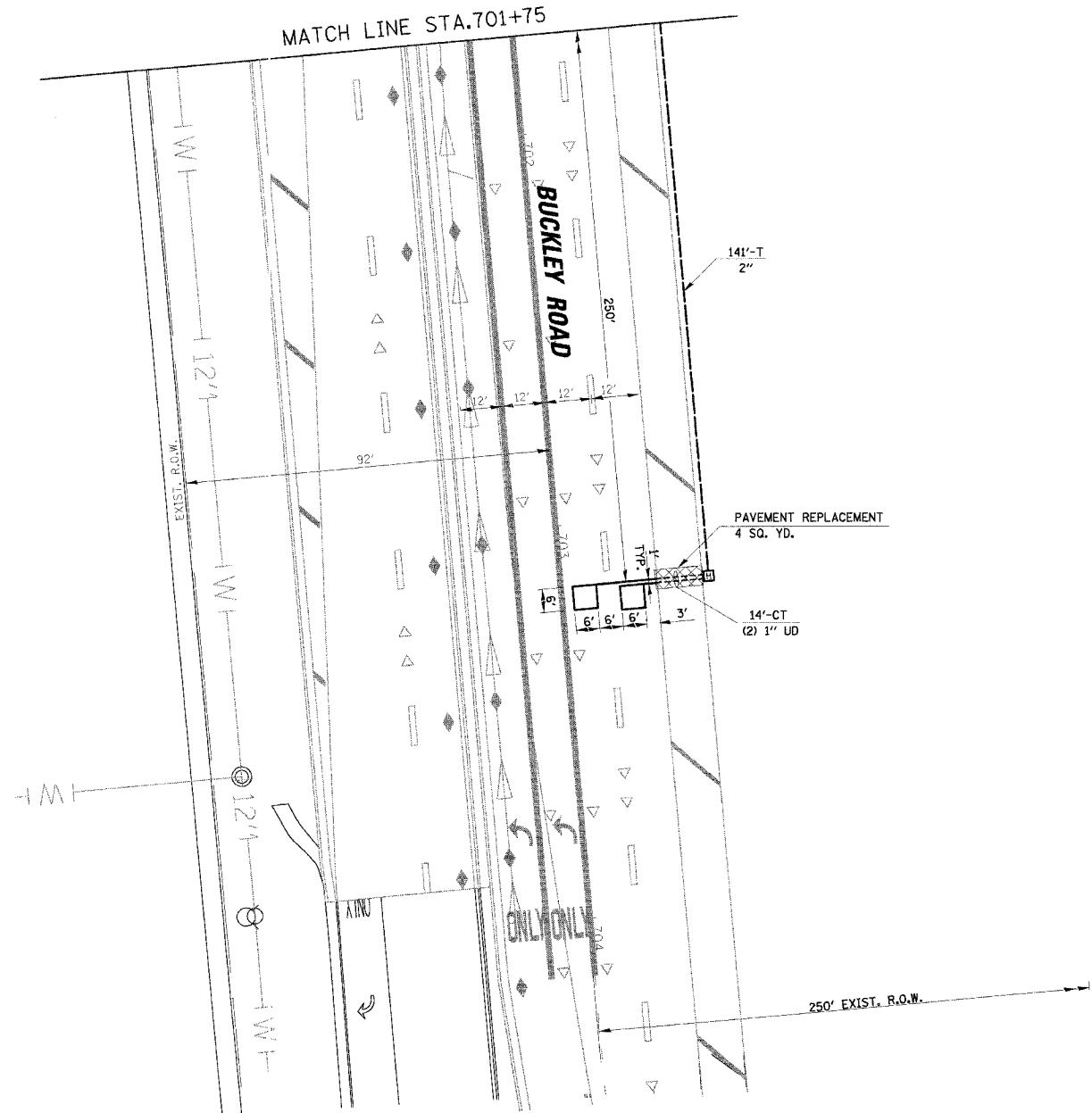
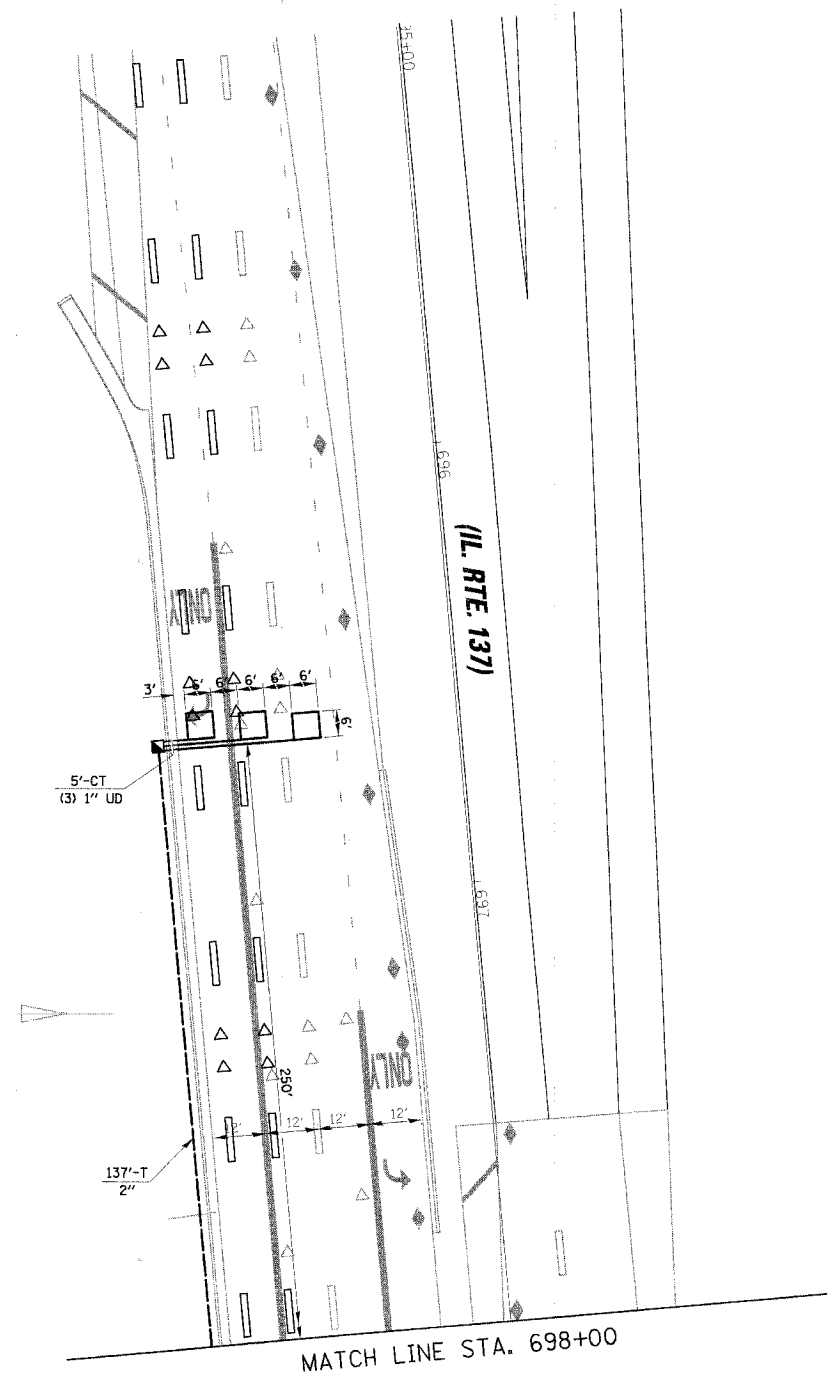
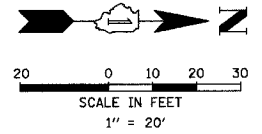


F.A.L.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	101
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



12/2/2005
N:\LIBERTYVILLE\99-389 Yr\office\TSD2-buckley.dgn

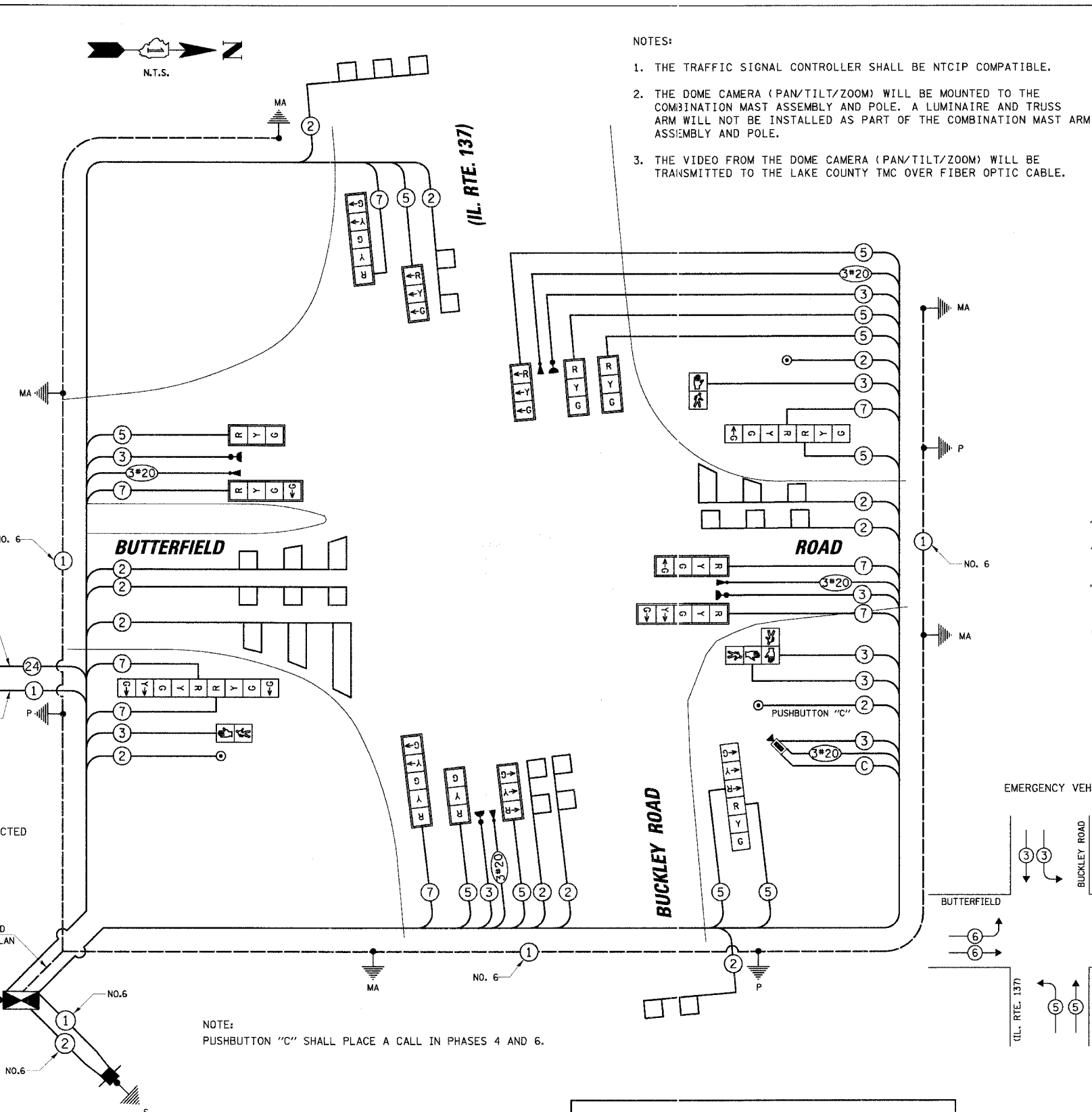
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION PLAN

BUTTERFIELD ROAD AND BUCKLEY ROAD
VILLAGE OF LIBERTYVILLE
SCALE: 1" = 20'
DATE: 12/2/2005
DRAWN BY: FPB/FCP
DESIGNED BY: ABR
CHECKED BY: GMZ

SCHEDULE OF QUANTITIES		
ITEM	UNIT	TOTAL
PAVEMENT REPLACEMENT (SPECIAL)	SQ YD	4
SIGN PANEL TYPE 1	SQ FT	38
SIGN PANEL TYPE 2	SQ FT	27.5
CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	545
CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	75
CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL	FOOT	86
CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	16
CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	156
CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	497
HANDHOLE	EACH	3
HEAVY-DUTY HANDHOLE	EACH	4
DOUBLE HANDHOLE	EACH	2
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	850
FULL-ACTUATED CONTROLLER AND TYPE IV CABINET (SPECIAL)	EACH	1
TRANSCEIVER - FIBER OPTIC	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	546
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	2057
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	2569
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	1494
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1-PAIR	FOOT	2342
ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	35
ELECTRIC CABLE IN CONDUIT, GROUNDING NO. 6 1C	FOOT	724
ELECTRIC CABLE IN CONDUIT NO. 20 3C, TWISTED, SHIELDED	FOOT	1276
TRAFFIC SIGNAL POST, GALVANIZED STEEL 14 FT.	EACH	1
TRAFFIC SIGNAL POST, GALVANIZED STEEL 15 FT.	EACH	1
TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE 32 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE 48 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE 52 FT.	EACH	2
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 42 FT.	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	12
CONCRETE FOUNDATION, TYPE D	FOOT	4
CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	15
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	60
TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	12
INDUCTIVE LOOP DETECTOR	EACH	10
DETECTOR LOOP, TYPE I	FOOT	965
LIGHT DETECTOR	EACH	4
LIGHT DETECTOR AMPLIFIER	EACH	1
PEDESTRIAN PUSH-BUTTON	EACH	3
TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
REMOVE EXISTING HANDHOLE	EACH	11
REMOVE EXISTING CONCRETE FOUNDATION	EACH	8
ELECTRIC CABLE IN CONDUIT, COAXIAL	FOOT	241
REMOTE-CONTROLLED VIDEO SYSTEM	EACH	1
SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	7
SIGNAL HEAD, L.E.D., 1-FACE, 4-SECTION, MAST ARM MOUNTED	EACH	2
SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	3
SIGNAL HEAD, L.E.D., 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
SIGNAL HEAD, L.E.D., 2-FACE, 1-3-SECTION, 1-4 SECTION, BRACKET MOUNTED	EACH	1
SIGNAL HEAD, L.E.D., 2-FACE, 1-4 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	1
PEDESTRIAN SIGNAL HEAD, L.E.D., 1-FACE, BRACKET MOUNTED	EACH	2
PEDESTRIAN SIGNAL HEAD, L.E.D., 2-FACE, BRACKET MOUNTED	EACH	1
SERVICE INSTALLATION, POLE MOUNT	EACH	1
LAYER II (DATALINK) SWITCH	EACH	1

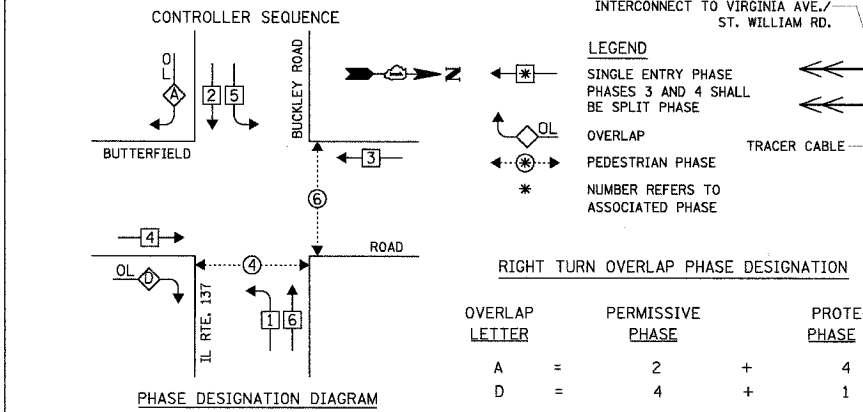
F.A.U.	SECTION	COUNTY	TOTAL SHEET NO.
2647	99-00142-07-WR	LAKE	256 102
CONTRACT NO. 83815			
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			



- NOTES:
- THE TRAFFIC SIGNAL CONTROLLER SHALL BE NTCIP COMPATIBLE.
 - THE DOME CAMERA (PAN/TILT/ZOOM) WILL BE MOUNTED TO THE COMBINATION MAST ASSEMBLY AND POLE. A LUMINAIRE AND TRUSS ARM WILL NOT BE INSTALLED AS PART OF THE COMBINATION MAST ARM ASSEMBLY AND POLE.
 - THE VIDEO FROM THE DOME CAMERA (PAN/TILT/ZOOM) WILL BE TRANSMITTED TO THE LAKE COUNTY TMC OVER FIBER OPTIC CABLE.

CABLE PLAN LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	8" (200mm) TRAFFIC SIGNAL SECTION
[Symbol]	[Symbol]	12" (300mm) TRAFFIC SIGNAL SECTION
[Symbol]	[Symbol]	12" (300mm) PEDESTRIAN SIGNAL SECTION
[Symbol]	[Symbol]	12" (300mm) PEDESTRIAN SIGNAL SECTION
[Symbol]	[Symbol]	CONTROLLER CABINET
[Symbol]	[Symbol]	SERVICE INSTALLATION
[Symbol]	[Symbol]	TELEPHONE INSTALLATION
[Symbol]	[Symbol]	VEHICLE DETECTOR, INDUCTION LOOP
[Symbol]	[Symbol]	MAGNETIC DETECTOR
[Symbol]	[Symbol]	EMERGENCY VEHICLE LIGHT DETECTOR
[Symbol]	[Symbol]	CONFIRMATION BEACON
[Symbol]	[Symbol]	PUSHBUTTON DETECTOR
[Symbol]	[Symbol]	DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
[Symbol]	[Symbol]	GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)
[Symbol]	[Symbol]	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 2-MM12F SM12F
[Symbol]	[Symbol]	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 2-MM24F SM12F
[Symbol]	[Symbol]	SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD.
[Symbol]	[Symbol]	RAILROAD CONTROL CABINET
[Symbol]	[Symbol]	ILLUMINATED SIGN "NO LEFT TURN"
[Symbol]	[Symbol]	ILLUMINATED SIGN "NO RIGHT TURN"
[Symbol]	[Symbol]	GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (HH), OR CONTROLLER (C)
[Symbol]	[Symbol]	GROUND ROD AT POST (P) OR MAST ARM POLE (MA)
[Symbol]	[Symbol]	GROUND ROD AT ELECTRIC SERVICE INSTALLATION
[Symbol]	[Symbol]	DOME CAMERA



I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	WATTAGE X INCAND.	LED X % OPERATION	TOTAL WATTAGE
SIGNAL (RED)	18	17	0.50	153.00
(YELLOW)	18	25	0.25	112.50
(GREEN)	22	15	0.25	82.50
ARROW	16	12	0.10	19.20
PED. SIGNAL	4	25	1.00	100.00
CONTROLLER	1	100	1.00	100.00
ILLUM. SIGN	-	25	0.05	-
FLASHER	-	-	0.50	-

ENERGY COSTS TO: TOTAL = 567.20

FOUNDATION (DEPTH)	FT.	(m)	CABLE SLACK	FT.	(m)	VERTICAL	FT.	(m)
TYPE A - POST	4	(1.2)	HANDHOLE	6.5	(2.0)	ALL FOUNDATIONS	3.5	(1.0)
D - CONTROLLER	4	(1.2)	DOUBLE HANDHOLE	13	(4.0)	MAST ARM (L) POLE	20'-L-2=	
E - M. ARM POLE	10	(3.0)	SIGNAL POST	2	(1.0)	(6m+L-0.6m)=		
24" (600mm)	10	(3.0)	CONTROLLER CAB.	1	(0.3)	BRACKET MOUNTED	13	(4.0)
30" (750mm)	15	(4.6)	FIBER OPTIC	13	(4.0)	PED. PUSHBUTTON	4	(1.2)
36" (900mm)	15	(4.6)	ELECTRIC SERVICE	1	(0.3)	ELECTRIC SERVICE	13.5	(4.1)
			GROUND CABLE	1	(0.3)	SERVICE TO GROUND	13.5	(4.1)
						POST MOUNTED	6	(1.8)

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOB, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDING IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES, CABLE PLAN AND PHASE DESIGNATION DIAGRAM

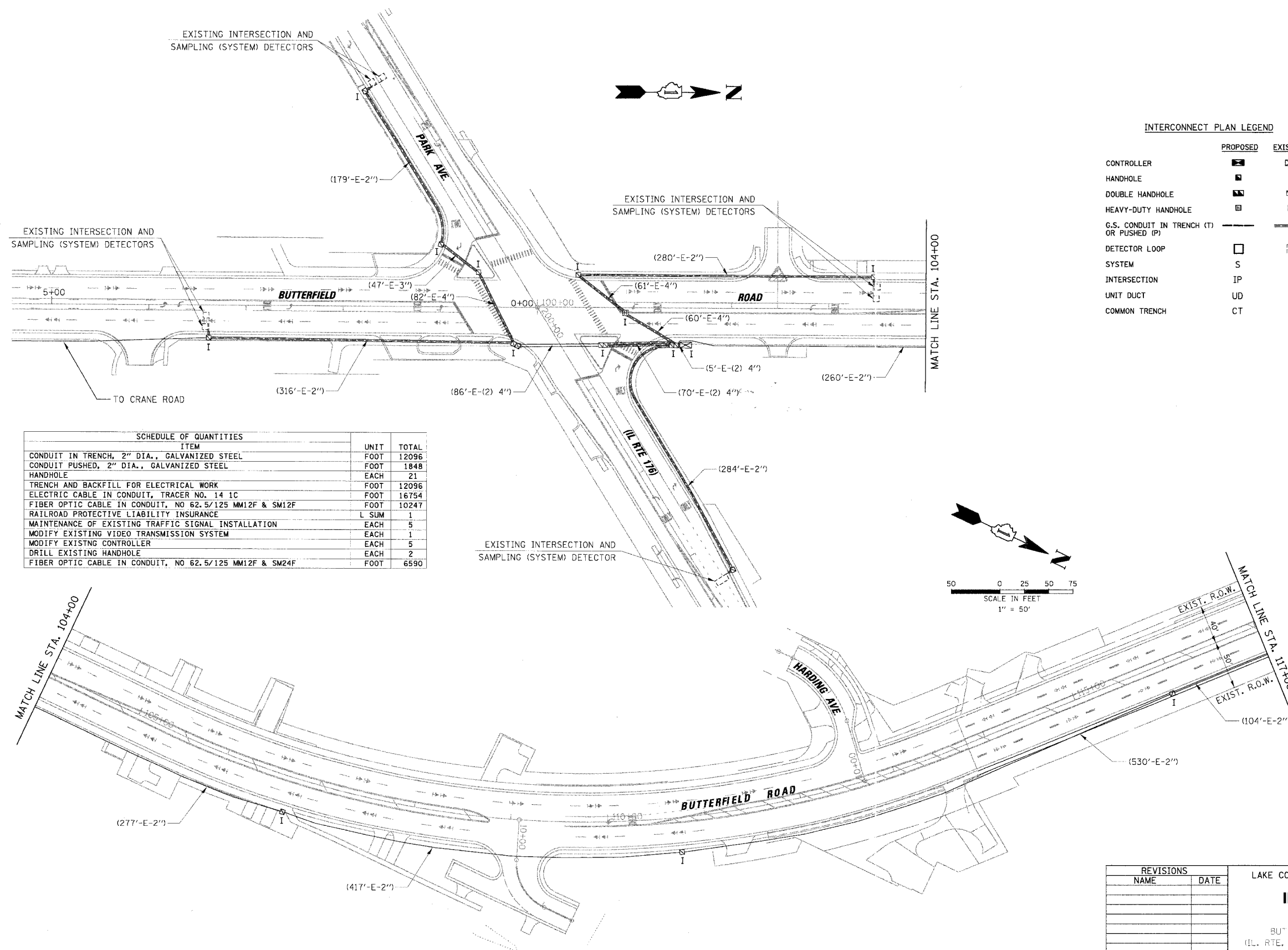
BUTTERFIELD ROAD AND (IL RTE. 137) BUCKLEY ROAD VILLAGE OF LIBERTYVILLE

SCALE: N.T.S. DATE: 12/2/2005

DRAWN BY: FBP/FCP
DESIGNED BY: ABR
CHECKED BY: GMZ

12/2/2005 N:\LIBERTYVILLE\99-389\T-Office\CAB_buckley.dgn

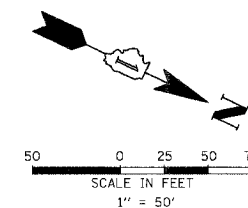
F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	103
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER	☒	☒
HANDHOLE	■	■
DOUBLE HANDHOLE	▣	▣
HEAVY-DUTY HANDHOLE	▣	▣
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	—	—
DETECTOR LOOP	□	□
SYSTEM	S	S
INTERSECTION	IP	I
UNIT DUCT	UD	UD
COMMON TRENCH	CT	CT

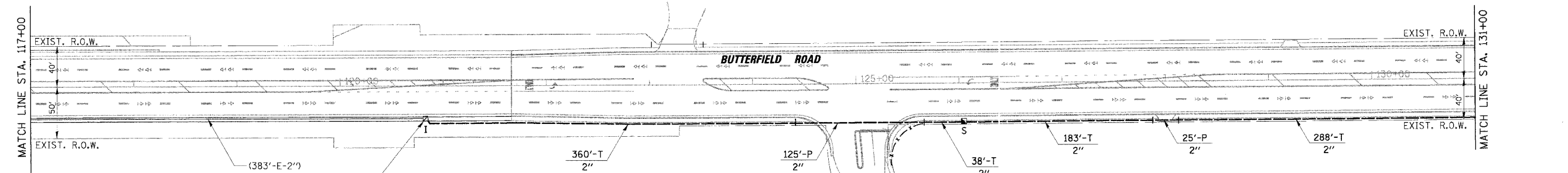
SCHEDULE OF QUANTITIES		
ITEM	UNIT	TOTAL
CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	12096
CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	1848
HANDHOLE	EACH	21
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	12096
ELECTRIC CABLE IN CONDUIT, TRACER NO. 14 1C	FOOT	16754
FIBER OPTIC CABLE IN CONDUIT, NO 62.5/125 MM12F & SM12F	FOOT	10247
RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	5
MODIFY EXISTING VIDEO TRANSMISSION SYSTEM	EACH	1
MODIFY EXISTING CONTROLLER	EACH	5
DRILL EXISTING HANDHOLE	EACH	2
FIBER OPTIC CABLE IN CONDUIT, NO 62.5/125 MM12F & SM24F	FOOT	6590



REVISIONS	
NAME	DATE

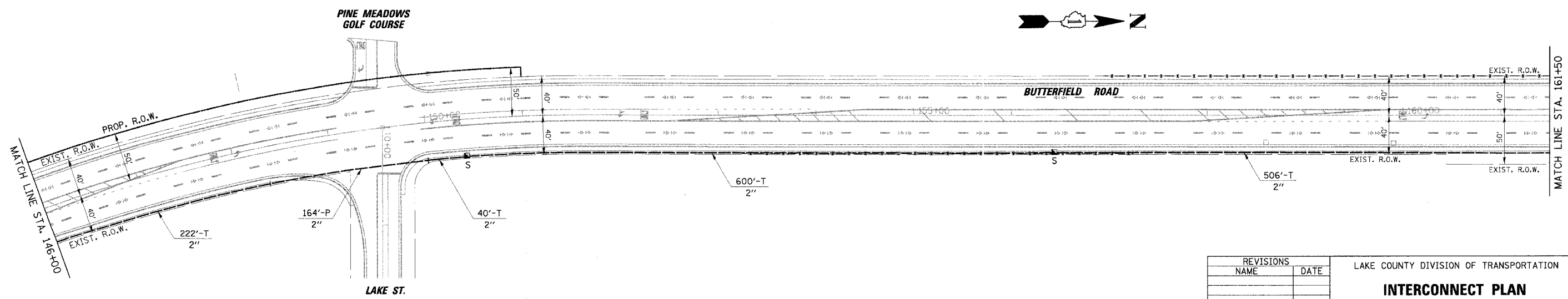
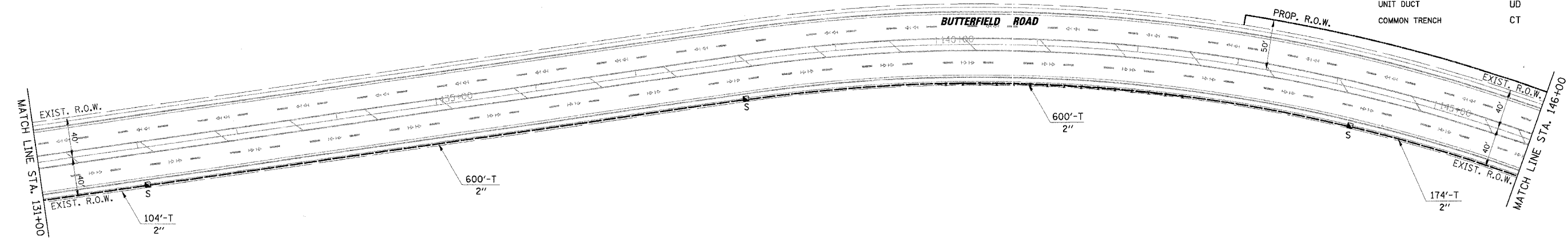
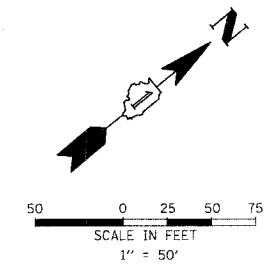
LAKE COUNTY DIVISION OF TRANSPORTATION
INTERCONNECT PLAN
 SHEET 1 OF 5
 BUTTERFIELD ROAD FROM PARK AVE.
 (IL. RTE. 176) TO BUCKLEY ROAD (IL. RTE. 137)
 SCALE: 1" = 50'
 DATE: 12/22/2005
 DRAWN BY: FFB
 DESIGNED BY: ABR
 CHECKED BY: GWZ

F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	104
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	
INTERSECTION	IP	I
UNIT DUCT	UD	
COMMON TRENCH	CT	



REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION

INTERCONNECT PLAN

SHEET 2 OF 5

BUTTERFIELD ROAD FROM PARK AVE.
(IL. RTE. 176) TO BUCKLEY ROAD (IL. RTE. 137)

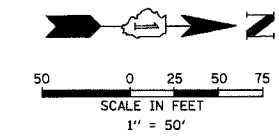
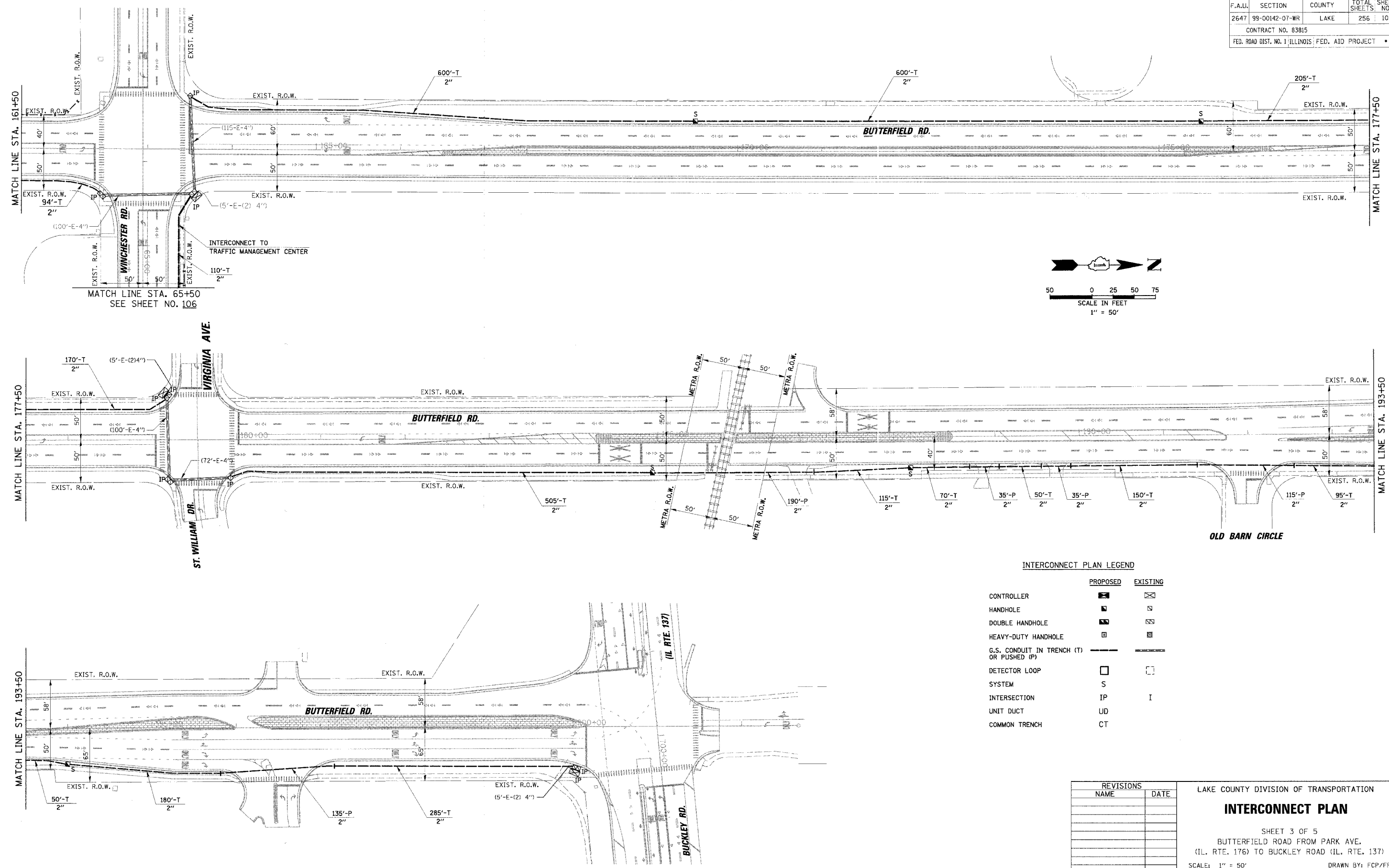
SCALE: 1" = 50'

DATE: 12/2/2005

DRAWN BY: FPB
DESIGNED BY: ABR
CHECKED BY: GMZ

12/2/2005 N:\LIBERTYVILLE\99-389\Traffic\INT2_99389.dgn

F.A.U.	SECTION	COUNTY	TOTAL SHEET NO.
2647	99-00142-07-WR	LAKE	256 105
CONTRACT NO. 83815			
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			



INTERCONNECT PLAN LEGEND

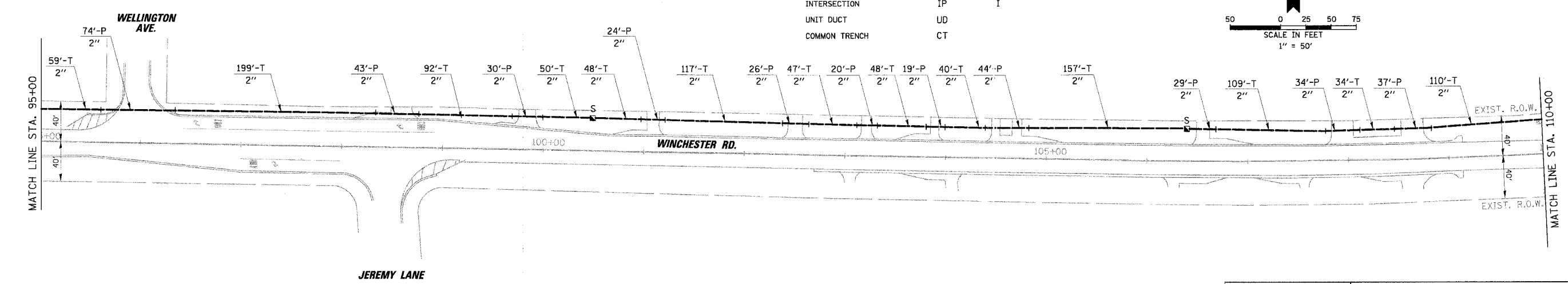
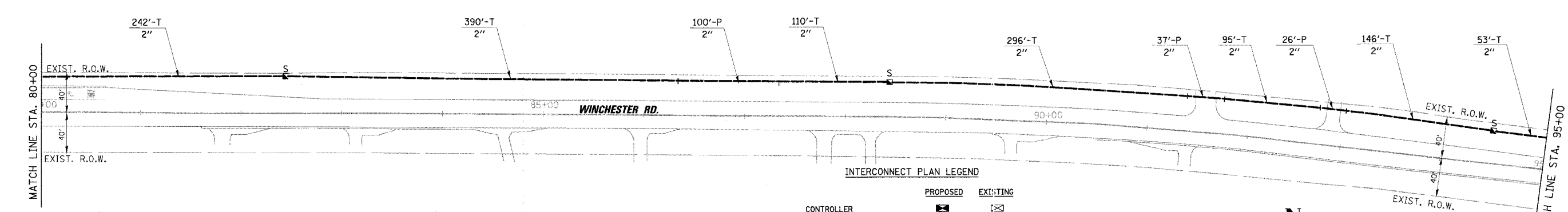
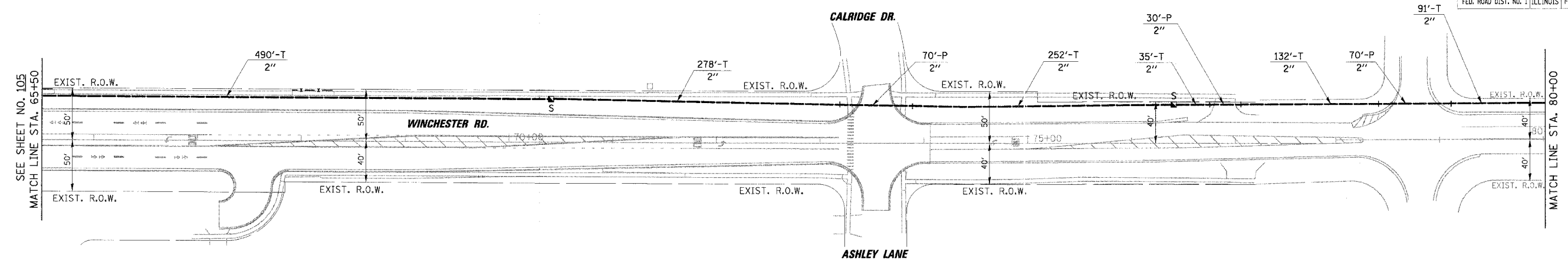
	PROPOSED	EXISTING
CONTROLLER	[Symbol]	[Symbol]
HANDHOLE	[Symbol]	[Symbol]
DOUBLE HANDHOLE	[Symbol]	[Symbol]
HEAVY-DUTY HANDHOLE	[Symbol]	[Symbol]
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	[Symbol]	[Symbol]
DETECTOR LOOP SYSTEM	[Symbol]	[Symbol]
INTERSECTION	IP	I
UNIT DUCT	UD	
COMMON TRENCH	CT	

REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION
INTERCONNECT PLAN
 SHEET 3 OF 5
 BUTTERFIELD ROAD FROM PARK AVE.
 (IL. RTE. 176) TO BUCKLEY ROAD (IL. RTE. 137)
 SCALE: 1" = 50'
 DATE: 12/2/2005
 DRAWN BY: FCP/FPB
 DESIGNED BY: ABR
 CHECKED BY: GMZ

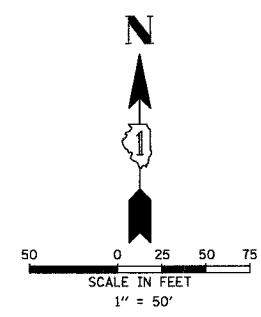
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F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	106
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	
INTERSECTION	IP	I
UNIT DUCT	UD	
COMMON TRENCH	CT	



REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION

INTERCONNECT PLAN

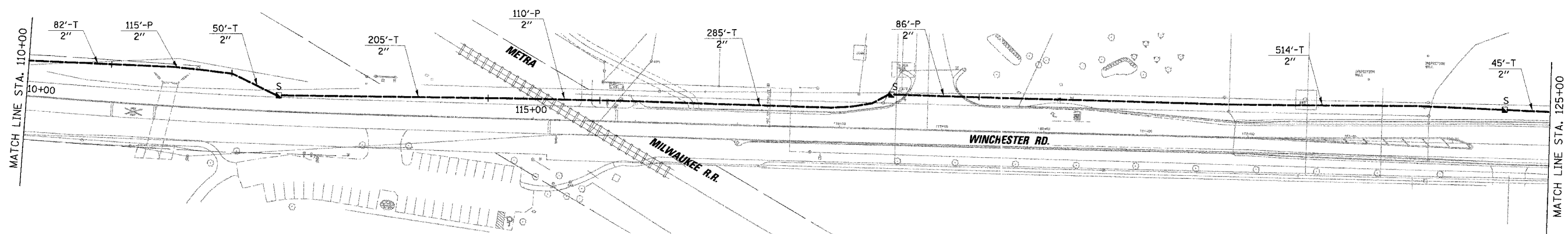
SHEET 4 OF 5
 BUTTERFIELD ROAD FROM PARK AVE.
 (IL. RTE. 176) TO BUCKLEY ROAD (IL. RTE. 137)

SCALE: 1" = 50'
 DATE: 12/2/2005

DRAWN BY: FPB
 DESIGNED BY: ABR
 CHECKED BY: GMZ

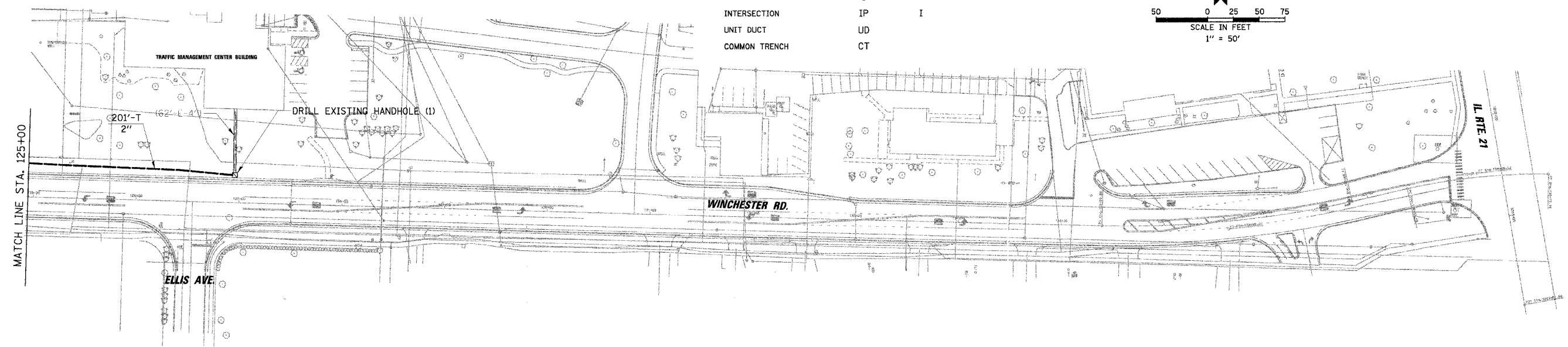
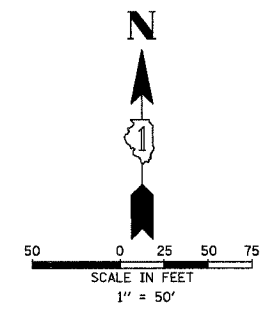
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F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	107
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER	☒	☒
HANDHOLE	⊠	⊠
DOUBLE HANDHOLE	⊠	⊠
HEAVY-DUTY HANDHOLE	⊠	⊠
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	—	—
DETECTOR LOOP	□	□
SYSTEM	S	S
INTERSECTION	IP	I
UNIT DUCT	UD	UD
COMMON TRENCH	CT	CT



12/2/2005 N:\LIBERTYVILLE\99-389\Traffic\N15_99389.dgn

REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION

INTERCONNECT PLAN

SHEET 5 OF 5

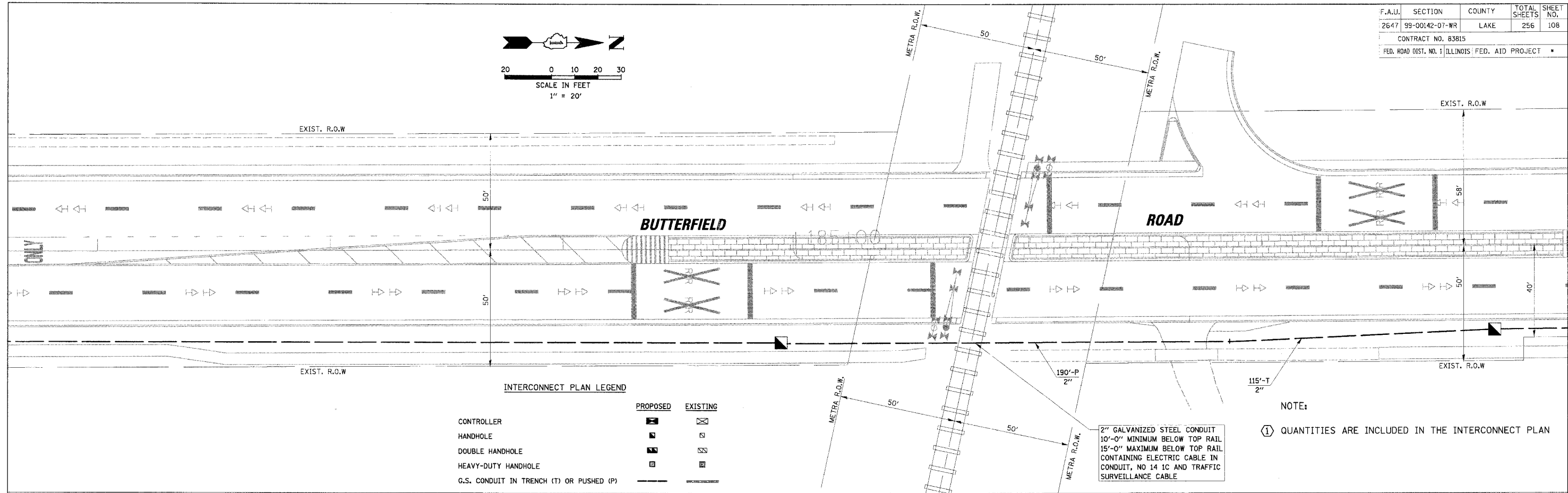
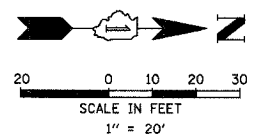
BUTTERFIELD ROAD FROM PARK AVE.
(IL. RTE. 176) TO BUCKLEY ROAD (IL. RTE. 137)

SCALE: 1" = 50'

DATE: 12/2/2005

DRAWN BY: FPB
DESIGNED BY: ABR
CHECKED BY: GMZ

F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	108
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER	[Symbol]	[Symbol]
HANDHOLE	[Symbol]	[Symbol]
DOUBLE HANDHOLE	[Symbol]	[Symbol]
HEAVY-DUTY HANDHOLE	[Symbol]	[Symbol]
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	[Symbol]	[Symbol]

NOTE:
 ① QUANTITIES ARE INCLUDED IN THE INTERCONNECT PLAN

12/2/2005 N:\LIBERTYVILLE\99-385\Trffc\Int_RRI-59385.dgn

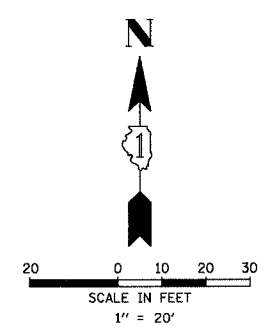
REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION
LAKE COUNTY ATMS
FINAL DESIGN AND INTEGRATION
 COMMUNICATION INTERCONNECT
 BUTTERFIELD ROAD
 VILLAGE OF LIBERTYVILLE
 SCALE: 1" = 20'
 DATE: 12/2/2005
 DRAWN BY: FCP
 DESIGNED BY: ABR
 CHECKED BY: GMZ

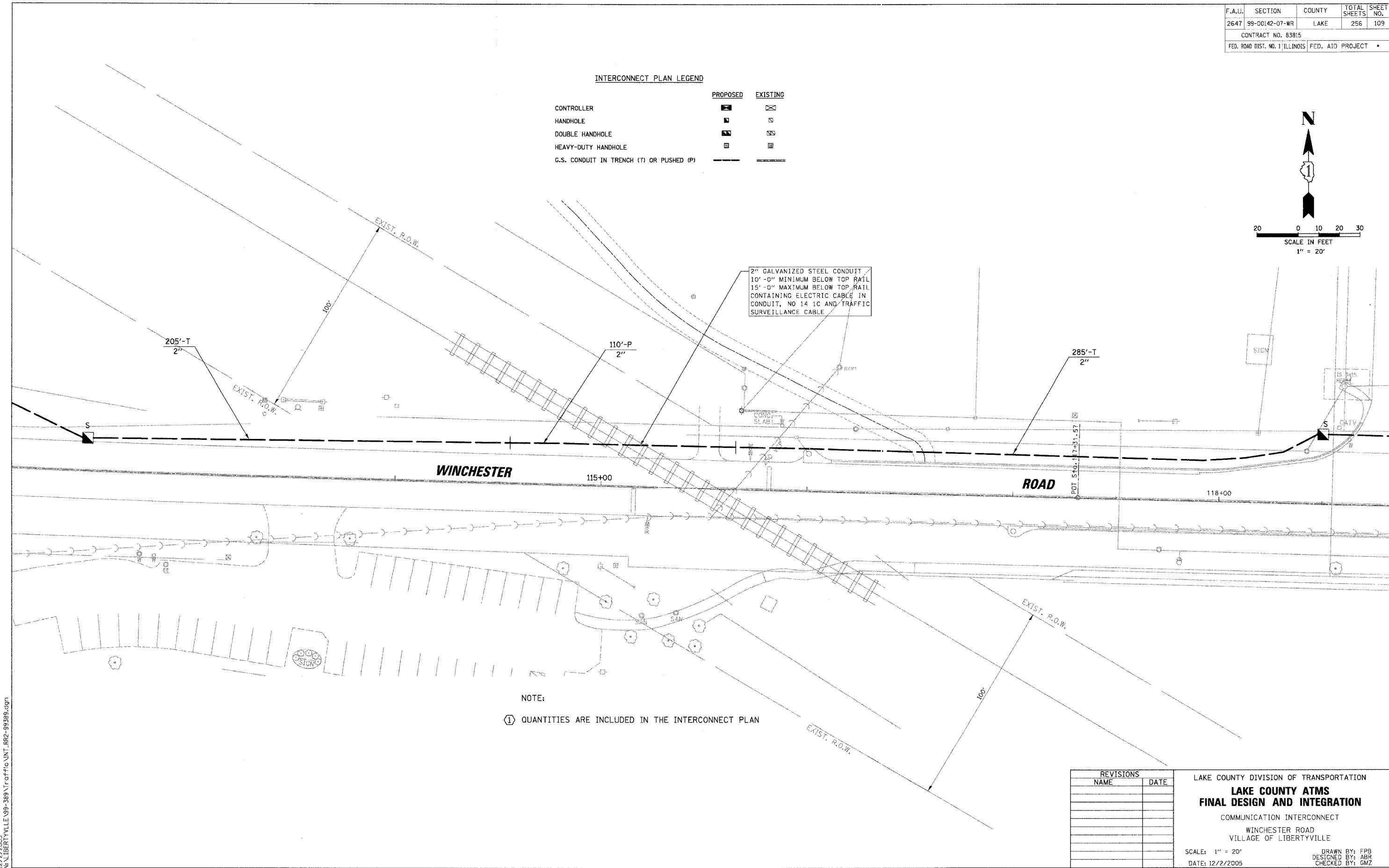
F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	109
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		



2" GALVANIZED STEEL CONDUIT
 10'-0" MINIMUM BELOW TOP RAIL
 15'-0" MAXIMUM BELOW TOP RAIL
 CONTAINING ELECTRIC CABLE IN
 CONDUIT, NO 14 IC AND TRAFFIC
 SURVEILLANCE CABLE



NOTE:
 ① QUANTITIES ARE INCLUDED IN THE INTERCONNECT PLAN

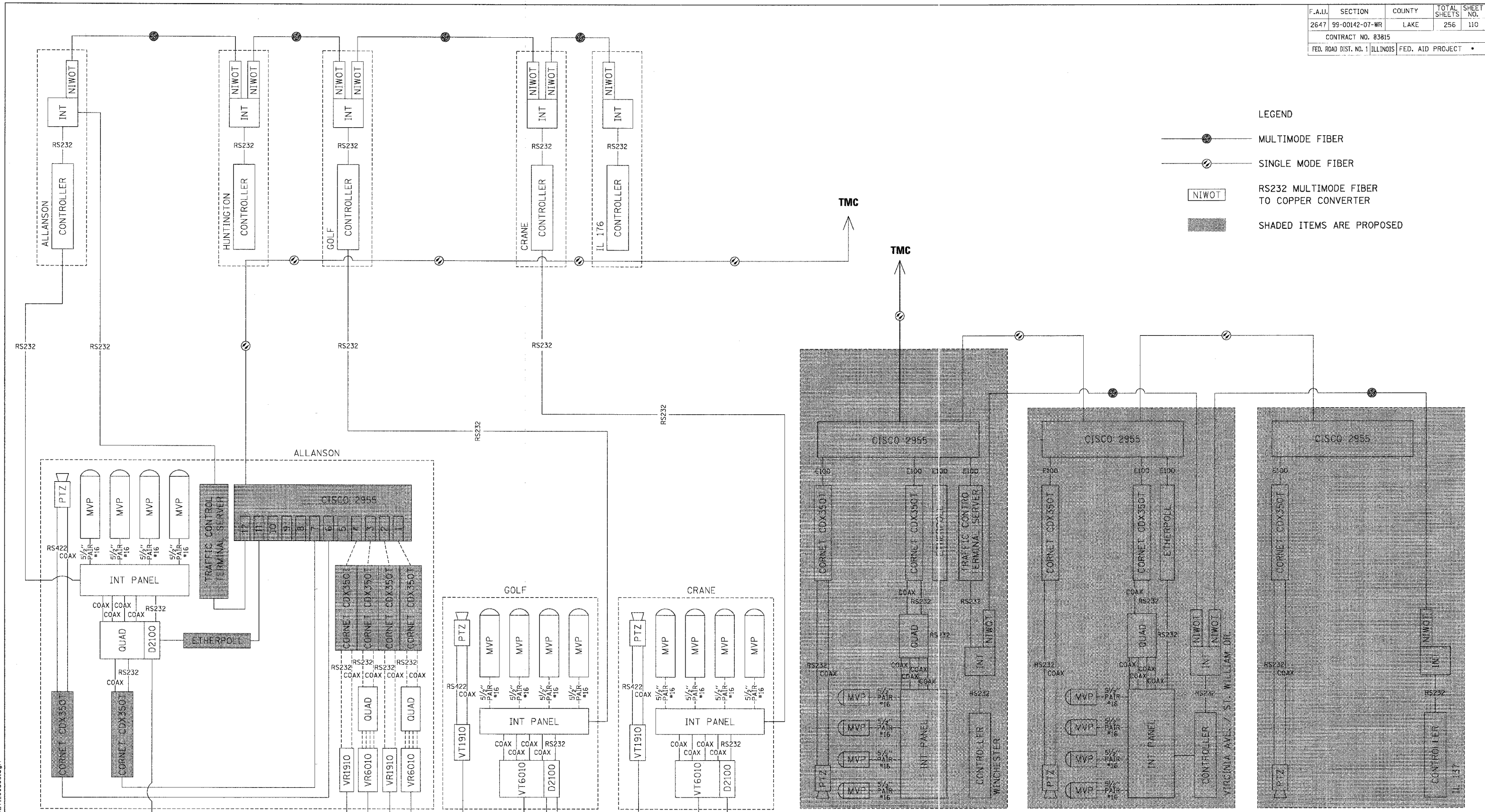
REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION
LAKE COUNTY ATMS
FINAL DESIGN AND INTEGRATION
 COMMUNICATION INTERCONNECT
 WINCHESTER ROAD
 VILLAGE OF LIBERTYVILLE
 SCALE: 1" = 20'
 DATE: 12/2/2005
 DRAWN BY: FPB
 DESIGNED BY: ABR
 CHECKED BY: GMZ

12/2/2005 N:\LIBERTYVILLE\99-389\T:\offio\INT_RR2-95389.dgn

F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	110
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

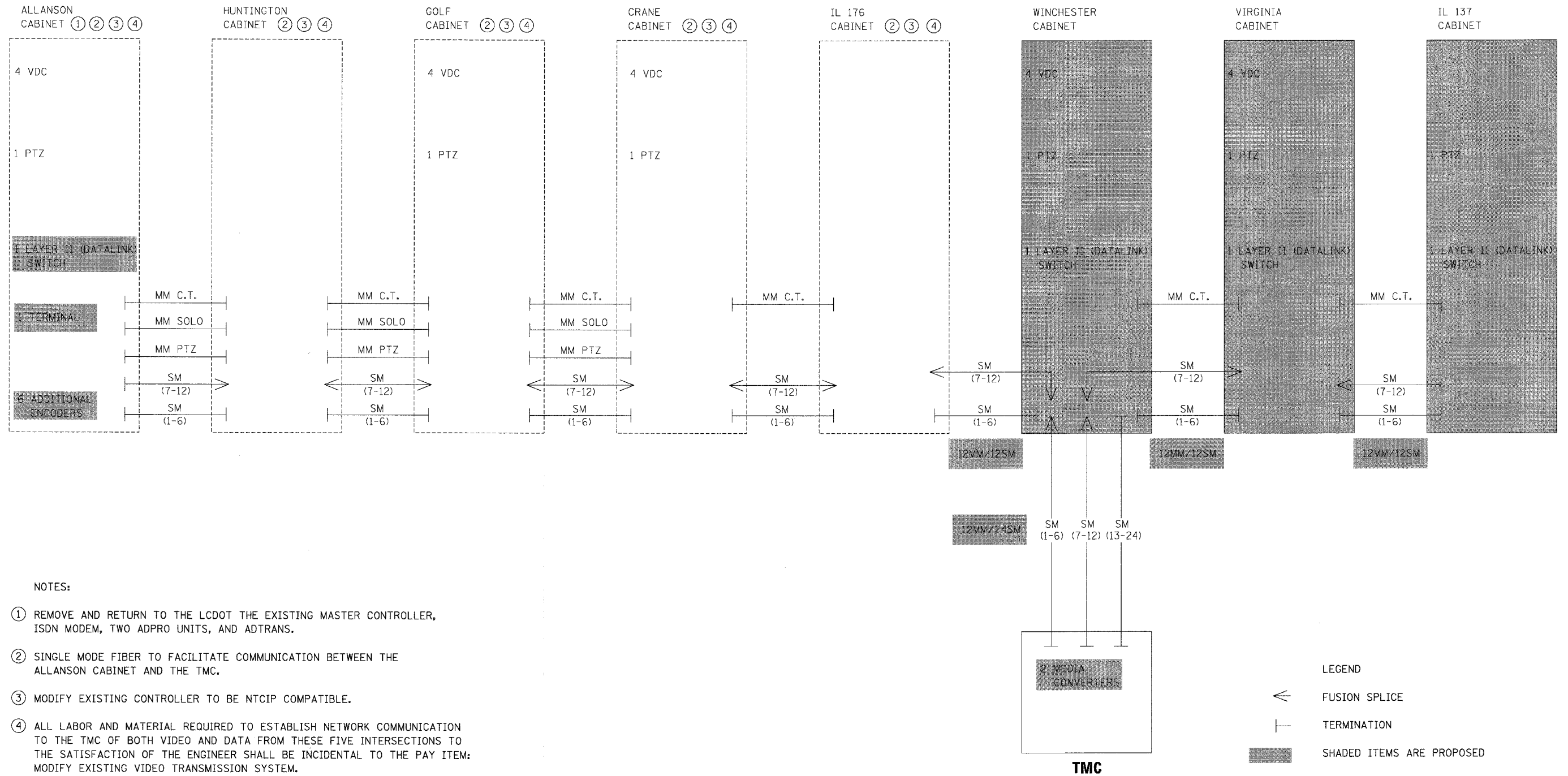
- LEGEND
- MULTIMODE FIBER
 - SINGLE MODE FIBER
 - RS232 MULTIMODE FIBER TO COPPER CONVERTER
 - SHADED ITEMS ARE PROPOSED



REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION
INTERCONNECT SCHEMATIC AND CABINET DETAILS
 BUTTERFIELD ROAD
 FROM ALLANSON ROAD TO IL 137
 LIBERTYVILLE, ILLINOIS
 SCALE: N.T.S.
 DATE: 12/2/2005
 DRAWN BY: FPB
 DESIGNED BY: ABR
 CHECKED BY: GMZ

12/2/2005
 N:\LIBERTYVILLE\99-389\Traffic\DET1_99389.dgn

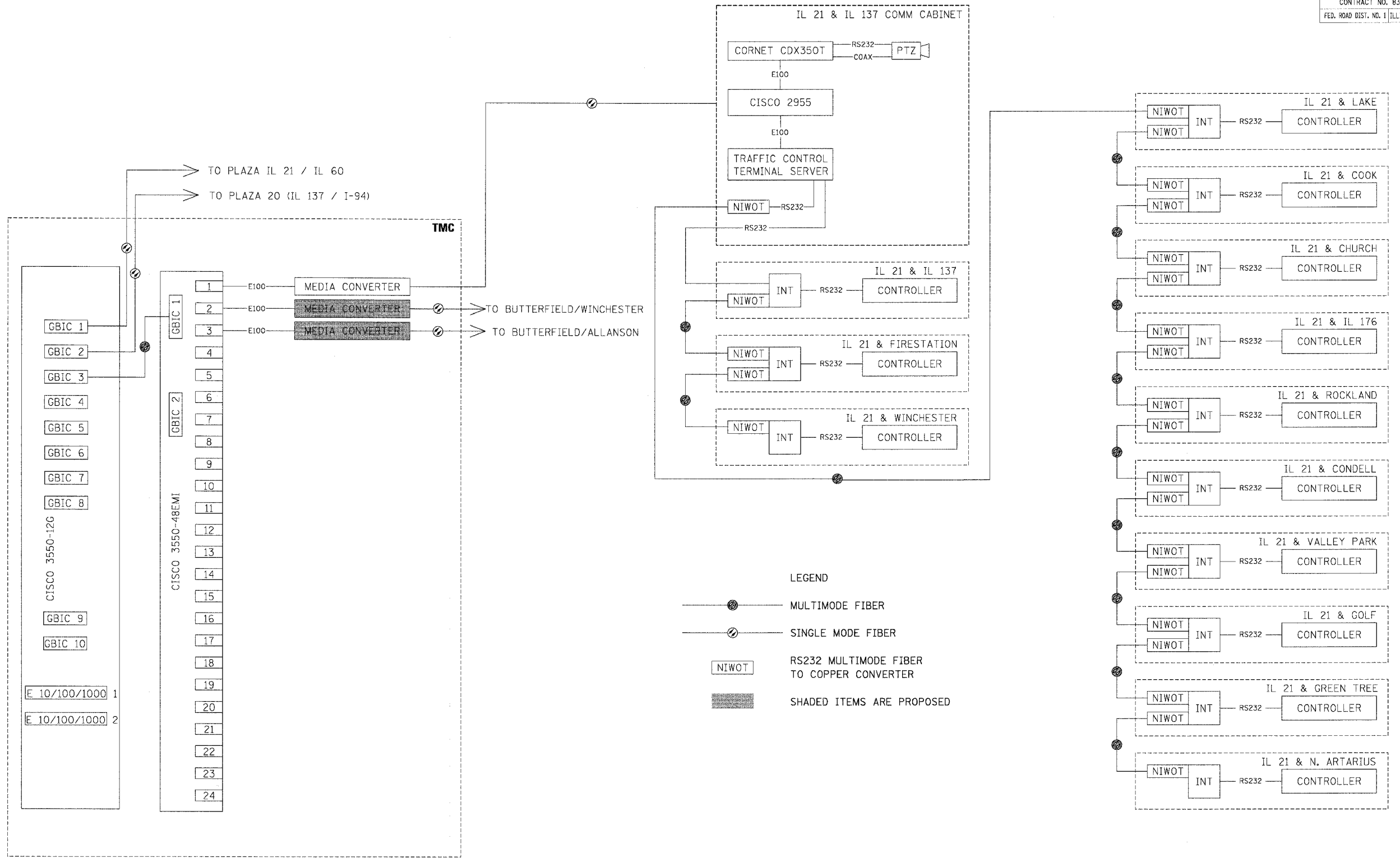


NOTES:

- ① REMOVE AND RETURN TO THE LCDOT THE EXISTING MASTER CONTROLLER, ISDN MODEM, TWO ADPRO UNITS, AND ADTRANS.
- ② SINGLE MODE FIBER TO FACILITATE COMMUNICATION BETWEEN THE ALLANSON CABINET AND THE TMC.
- ③ MODIFY EXISTING CONTROLLER TO BE NTCIP COMPATIBLE.
- ④ ALL LABOR AND MATERIAL REQUIRED TO ESTABLISH NETWORK COMMUNICATION TO THE TMC OF BOTH VIDEO AND DATA FROM THESE FIVE INTERSECTIONS TO THE SATISFACTION OF THE ENGINEER SHALL BE INCIDENTAL TO THE PAY ITEM: MODIFY EXISTING VIDEO TRANSMISSION SYSTEM.

REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION
VIDEO SYSTEM SCHEMATIC
 BUTTERFIELD ROAD AND WINCHESTER ROAD
 LIBERTYVILLE, ILLINOIS
 SCALE: N.T.S.
 DATE: 12/2/2005
 DRAWN BY: FPB
 DESIGNED BY: ABR
 CHECKED BY: GMZ



12/2/2005
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REVISIONS	
NAME	DATE

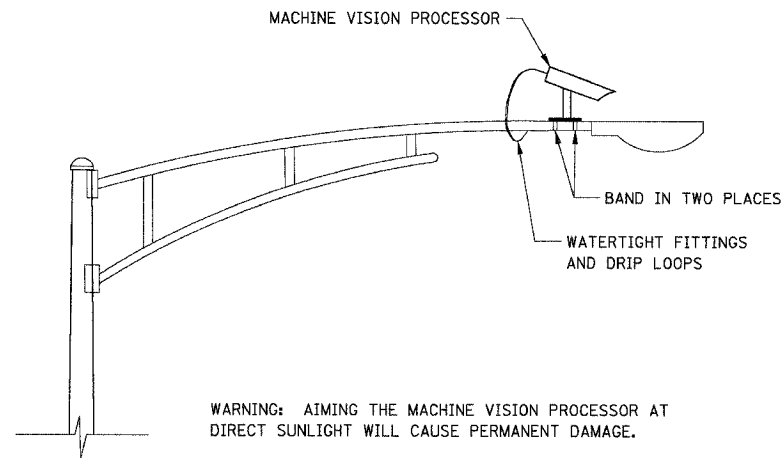
LAKE COUNTY DIVISION OF TRANSPORTATION

CABINET DETAIL – TMC

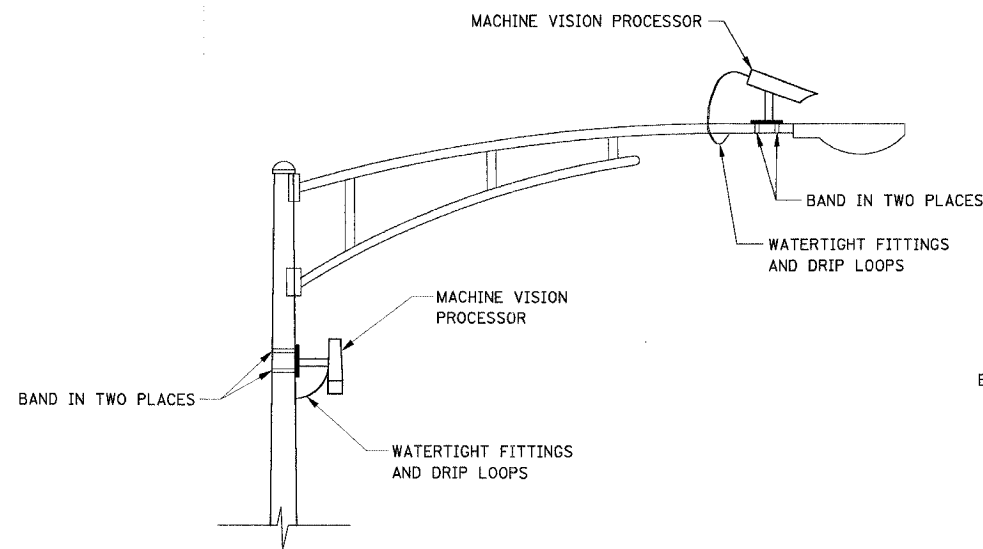
BUTTERFIELD ROAD
LIBERTYVILLE, ILLINOIS

SCALE: N.T.S.
DATE: 12/2/2005

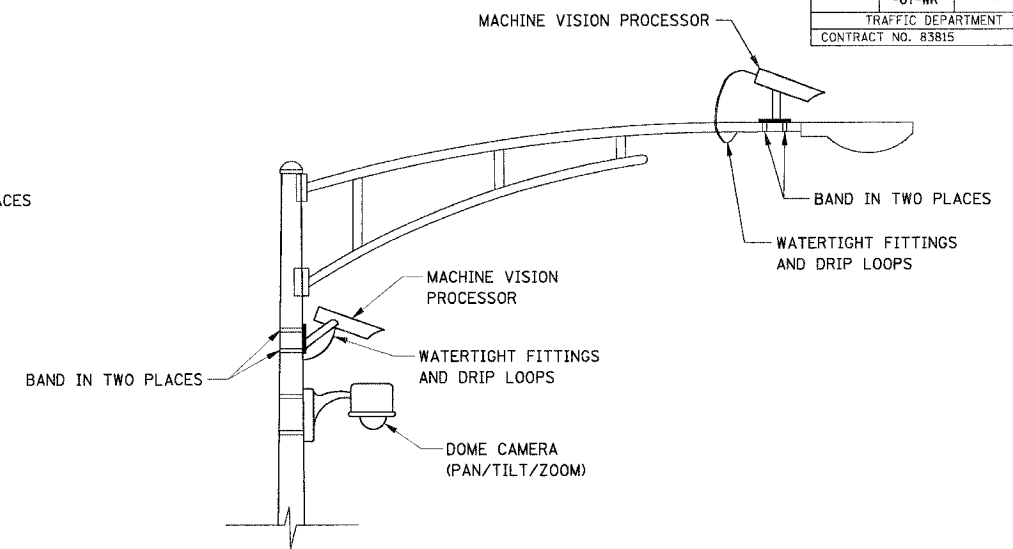
DRAWN BY: FPB
DESIGNED BY: ABR
CHECKED BY: GMZ



**MACHINE VISION PROCESSOR
MOUNTING DETAIL**
(NOT TO SCALE)

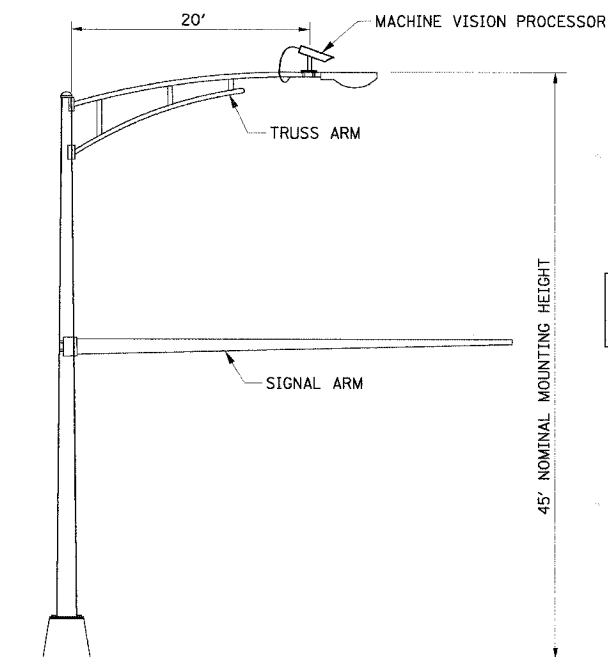


**DUAL MACHINE VISION PROCESSORS
MOUNTING DETAIL**
(NOT TO SCALE)

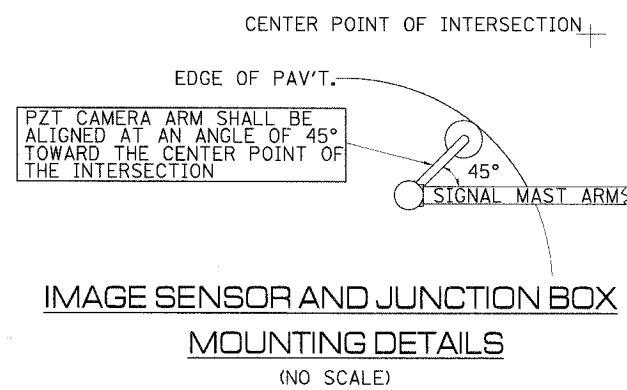


**DUAL MACHINE VISION PROCESSORS AND
DOME (PTZ) CAMERA MOUNTING DETAIL**
(NOT TO SCALE)

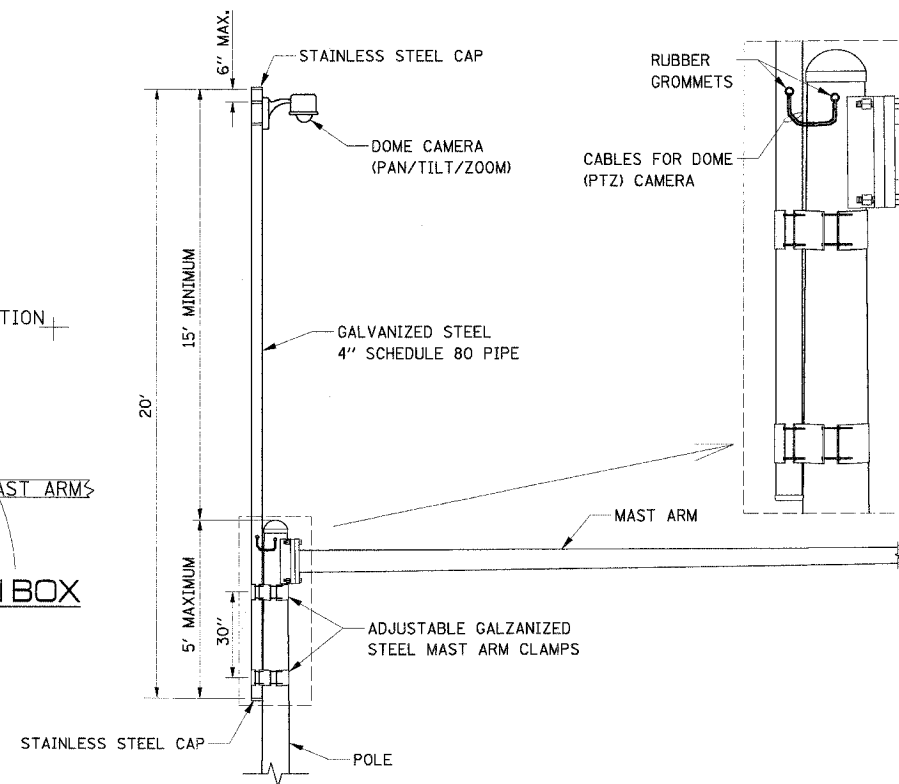
- NOTES FOR SINGLE, DUAL AND MULTIPLE MVP MOUNTING:
- MOUNT LUMINAIRE MOUNTING BRACKET AS HIGH AS POSSIBLE.
 - AIM BRACKET TOWARD DIRECTION OF TRAFFIC TO BE DETECTED.
 - MOUNT MACHINE VISION PROCESSOR AIMING DOWN AT 30 DEGREE ANGLE.



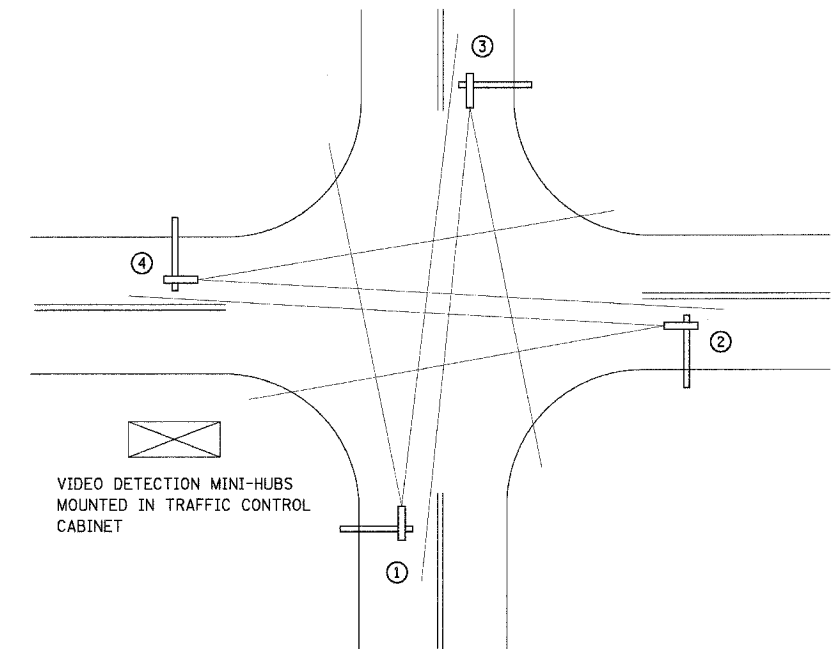
**COMBINATION MAST ARM ASSEMBLY
AND POLE DIMENSIONS**
(NOT TO SCALE)



**IMAGE SENSOR AND JUNCTION BOX
MOUNTING DETAILS**
(NO SCALE)



CAMERA MOUNTING ASSEMBLY DETAIL
(NOT TO SCALE)



**TYPICAL VIDEO VEHICLE
DETECTION SYSTEM**
(NOT TO SCALE)

- (4) MACHINE VISION PROCESSOR ASSEMBLIES AND BRACKETS ① ② ③ ④
POWER CABLE TO EACH MACHINE VISION PROCESSOR (24 VAC)

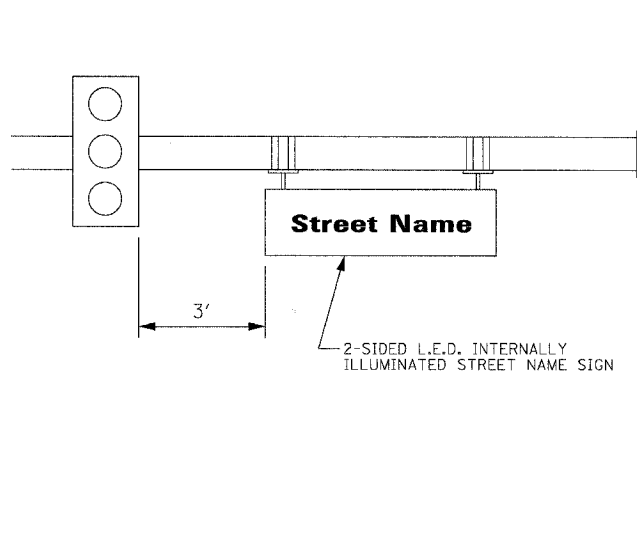
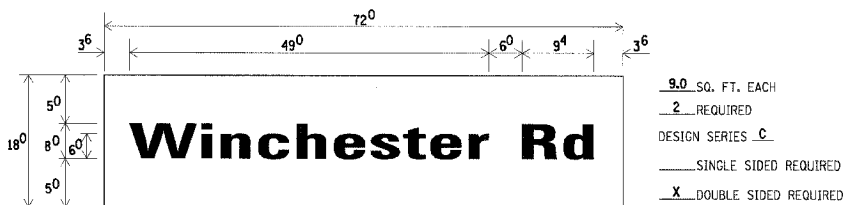
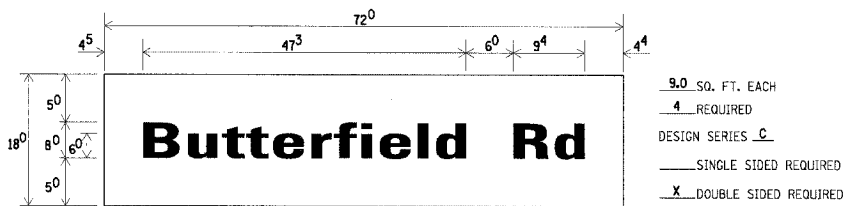
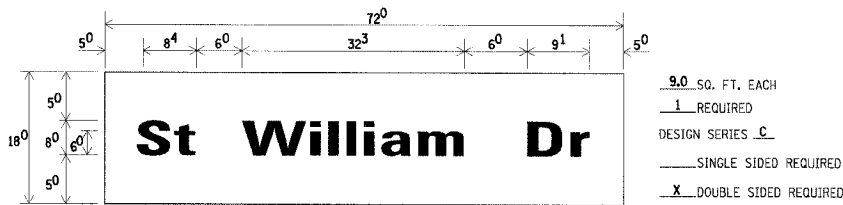
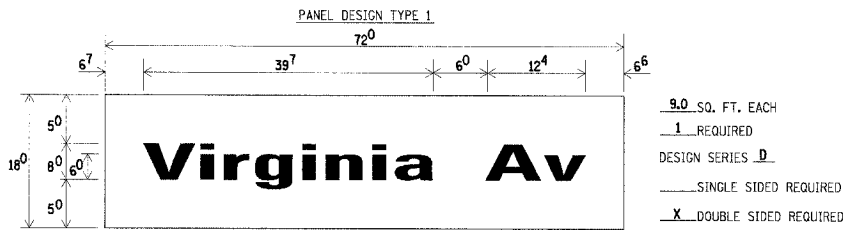
REVISIONS	
NAME	DATE



VIDEO DETECTION DETAILS

SCALE: NONE
DATE: 03/03/04

DESIGNED BY: JPS
CHECKED BY: ANK



NOTE: L.E.D. ILLUMINATED STREET NAME SIGNS AVAILABLE ONLY IN 2 FOOT INCREMENTS

UPPER TO LOWER CASE SPACING CHART 8-6 INCH SERIES "C & D"

SERIES	SECOND LETTER															
	a c d e		b h i k		f w		j		s t		v y		x		z	
	g o q	l m n p	r u													
A W X	1 2	1 4	1 4	1 5	1 2	1 4	0 6	1 0	1 1	1 4	0 6	1 0	1 1	1 2	1 2	1 4
B	1 4	1 5	2 0	2 1	1 4	1 5	1 1	1 2	1 4	1 5	1 2	1 4	1 4	1 5	1 4	1 5
C E G	1 4	1 5	2 0	2 1	1 2	1 4	0 6	1 0	1 2	1 4	1 2	1 4	1 4	1 5	1 4	1 5
D O Q R	1 4	1 5	2 0	2 1	1 4	1 5	0 6	1 0	1 2	1 4	1 2	1 4	1 4	1 5	1 4	1 5
F	0 5	0 6	1 4	1 5	0 6	1 0	0 5	0 6	0 6	1 0	0 6	1 0	0 6	1 0	1 1	1 2
H I M N	2 0	2 1	2 2	2 4	2 0	2 1	1 4	1 5	1 6	1 7	1 6	1 7	2 0	2 1	2 0	2 1
J U	2 0	2 1	2 0	2 1	1 6	1 7	1 4	1 5	1 6	1 7	1 6	1 7	1 6	1 7	2 0	2 1
K L	1 1	1 2	1 6	1 7	1 1	1 2	0 5	0 6	1 1	1 2	1 1	1 2	1 1	1 2	1 2	1 4
P	1 2	1 4	1 4	1 5	1 2	1 4	0 5	0 6	1 1	1 2	1 1	1 2	1 2	1 4	1 2	1 4
S	1 2	1 4	1 6	1 7	1 2	1 4	0 6	1 0	1 2	1 4	1 2	1 4	1 2	1 4	1 2	1 4
T	1 1	1 2	1 6	1 7	0 6	1 0	0 6	1 0	1 1	1 2	1 1	1 2	1 1	1 2	1 2	1 4
V	0 6	1 0	1 4	1 5	1 1	1 2	0 6	1 0	1 2	1 4	1 2	1 4	1 2	1 4	1 2	1 4
Y	0 5	0 6	1 4	1 5	0 6	1 0	0 5	0 6	0 5	0 7	0 5	0 6	0 6	1 0	1 1	1 2
Z	1 6	1 7	2 2	2 4	1 6	1 7	1 2	1 4	1 6	1 7	1 6	1 7	1 6	1 7	2 0	2 1

EXAMPLE, 2 3/8" DENOTES 3/8"

UPPER AND LOWER CASE LETTER WIDTHS

LETTERS	6 INCH UPPER CASE LETTERS		8 INCH UPPER CASE LETTERS		LETTERS	6 INCH LOWER CASE LETTERS	
	SERIES		SERIES			SERIES	
	C	D	C	D		C	D
A	3 6	5 0	5 0	6 5	a	3 5	4 2
B	3 2	4 0	4 3	5 3	b	3 5	4 2
C	3 2	4 0	4 3	5 3	c	3 5	4 1
D	3 2	4 0	4 3	5 3	d	3 5	4 2
E	3 0	3 5	4 0	4 7	e	3 5	4 2
F	3 0	3 5	4 0	4 7	f	2 3	2 6
G	3 2	4 0	4 3	5 3	g	3 5	4 2
H	3 2	4 0	4 3	5 3	h	3 5	4 2
I	0 7	0 7	1 1	1 2	i	1 1	1 1
J	3 0	3 6	4 0	5 0	j	2 0	2 2
K	3 2	4 1	4 3	5 4	k	3 5	4 2
L	3 0	3 5	4 0	4 7	l	1 1	1 1
M	3 7	4 5	5 1	6 1	m	6 0	7 0
N	3 2	4 0	4 3	5 3	n	3 5	4 2
O	3 4	4 2	4 5	5 5	o	3 6	4 3
P	3 2	4 0	4 3	5 3	p	3 5	4 2
Q	3 4	4 2	4 5	5 5	q	3 5	4 2
R	3 2	4 0	4 3	5 3	r	2 6	3 2
S	3 2	4 0	4 3	5 3	s	3 6	4 2
T	3 0	3 5	4 0	4 7	t	2 7	3 2
U	3 2	4 0	4 3	5 3	u	3 5	4 2
V	3 5	4 4	4 7	6 0	v	4 2	4 7
W	4 4	5 2	6 0	7 0	w	5 5	6 4
X	3 4	4 0	4 5	5 3	x	4 4	5 1
Y	3 6	5 0	5 0	6 6	y	4 6	5 3
Z	3 2	4 0	4 3	5 3	z	3 6	4 3

LOWER CASE TO LOWER CASE SPACING CHART 6 INCH SERIES "C" & "D"

SERIES	SECOND LETTER															
	a c d e		b h i k		f w		j		s t		v y		x		z	
	g o q	l m n p	r u													
I	1 6	1 7	2 2	2 4	1 6	1 7	1 2	1 4	1 4	1 5	1 4	1 5	1 6	1 7	1 6	1 7
R	1 2	1 4	1 6	1 7	1 1	1 2	0 5	0 6	1 1	1 2	1 1	1 2	1 2	1 4	1 2	1 4
S	1 2	1 4	1 6	1 7	1 2	1 4	0 6	1 0	1 2	1 4	1 2	1 4	1 2	1 4	1 2	1 4
T	1 2	1 4	1 6	1 7	1 2	1 4	0 6	1 0	1 2	1 4	1 2	1 4	1 2	1 4	1 2	1 4
L	0 6	1 0	1 2	1 4	0 6	1 0	0 3	0 3	0 5	0 6	0 5	0 6	0 6	1 0	0 6	1 0
E	1 2	1 4	1 6	1 7	1 2	1 4	0 6	1 0	1 1	1 2	1 1	1 2	1 2	1 4	1 2	1 4
T	1 1	1 2	1 4	1 5	1 1	1 2	0 5	0 6	0 6	1 0	0 6	1 0	1 1	1 2	1 1	1 2
E	1 1	1 2	1 4	1 5	1 1	1 2	0 5	0 6	1 1	1 2	1 1	1 2	1 1	1 2	1 2	1 4
R	1 2	1 4	1 6	1 7	1 1	1 2	0 5	0 6	1 1	1 2	1 1	1 2	1 1	1 2	1 2	1 4

NUMBER TO NUMBER SPACING CHART 8 INCH SERIES "C" & "D"

SERIES	SECOND NUMBER																			
	0		1		2		3		4		5		6		7		8		9	
O 9	1 6	1 7	1 6	1 7	1 4	1 5	1 2	1 4	1 4	1 5	1 4	1 5	1 6	1 7	1 2	1 4	1 4	1 5	1 6	1 7
1	2 0	2 1	2 0	2 1	2 0	2 1	1 6	1 7	1 4	1 5	2 0	2 1	2 0	2 1	1 4	1 5	2 0	2 1	2 0	2 1
2 3 4	1 4	1 5	1 4	1 5	1 4	1 5	1 2	1 4	1 2	1 4	1 4	1 5	1 4	1 5	1 1	1 2	1 6	1 7	1 4	1 5
5	1 4	1 5	1 4	1 5	1 4	1 5	1 1	1 2	1 1	1 2	1 4	1 5	1 4	1 5	1 1	1 2	1 4	1 5	1 4	1 5
6	1 6	1 7	1 4	1 5	1 4	1 5	1 2	1 5	1 2	1 4	1 4	1 5	1 4	1 5	1 1	1 2	1 4	1 5	1 4	1 5
7	1 2	1 4	1 2	1 4	1 4	1 5	1 2	1 5	0 5	0 6	1 2	1 4	1 4	1 5	1 1	1 2	1 4	1 5	1 2	1 4
8	1 6	1 7	1 6	1 7	1 4	1 5	1 2	1 5	1 2	1 4	1 4	1 5	1 6	1 7	1 2	1 4	1 6	1 7	1 4	1 5

NUMBER	6 INCH SERIES		8 INCH SERIES	
	C	D	C	D
1	1 2	1 4	1 5	2 0
2	3 2	4 0	4 3	5 3
3	3 2	4 0	4 3	5 3
4	3 5	4 0	4 7	5 7
5	3 2	4 0	4 3	5 3
6	3 2	4 0	4 3	5 3
7	3 2	4 0	4 3	5 3
8	3 2	4 0	4 3	5 3
9	3 2	4 0	4 3	5 3
0	3 4	4 2	4 5	5 5

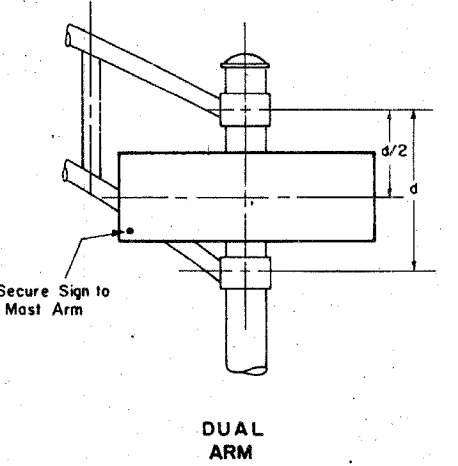
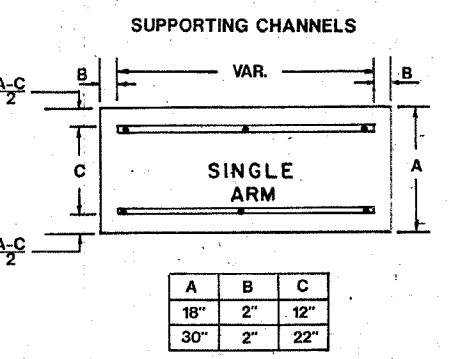
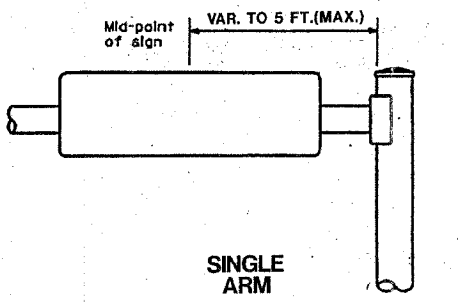
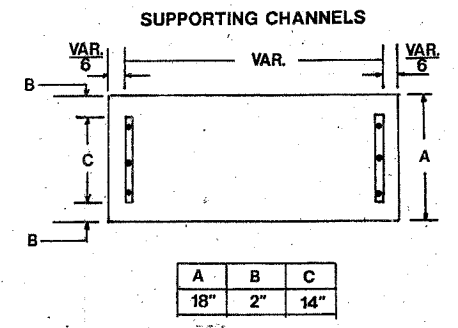
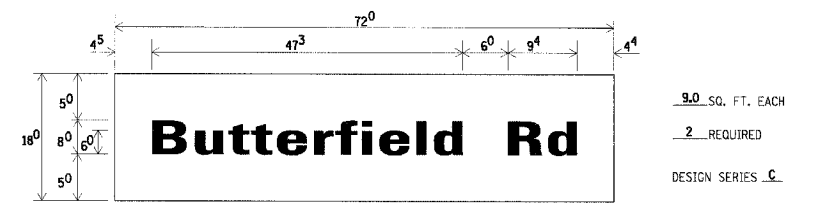
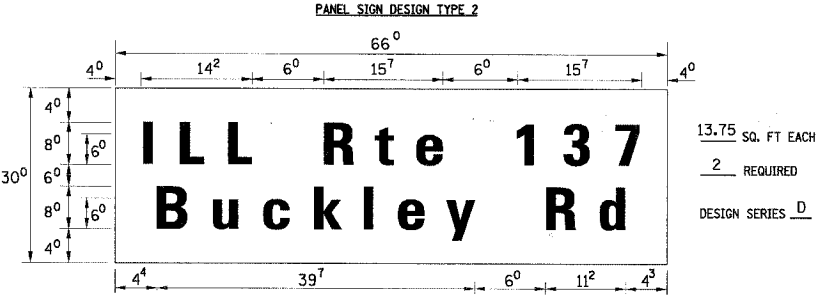
Lake County
Division of Transportation

MAST ARM MOUNTED STREET NAME SIGNS

REVISION

NAME	DATE

SCALE: NONE
DATE: 08/11/00
DESIGNED BY JPS
CHECKED BY ANK



SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM shall be used. See Note #5.

Upper Case To Lower Case
Spacing Chart 8-6 Inch Series "C & D"

FIRST LETTER	SECOND LETTER															
	acde goq		bhikl mnp ru		fw		j		st		vy		x		z	
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
A W X	12	14	14	15	12	14	06	10	11	14	06	10	11	12	12	14
B	14	15	20	21	14	15	11	12	14	15	12	14	12	14	16	17
C E G	14	15	20	21	12	14	06	10	12	14	12	14	14	15	14	15
D O Q R	14	15	20	21	14	15	06	10	12	14	12	14	14	15	14	15
F	05	06	14	15	06	10	05	06	06	10	06	10	06	10	11	12
H I M N	20	21	22	24	20	21	14	15	16	17	16	17	20	21	20	21
J U	20	21	20	21	16	17	14	15	16	17	16	17	16	17	20	21
K L	11	12	16	17	11	12	05	06	11	12	11	12	11	12	12	14
P	12	14	14	15	12	14	05	06	11	12	11	12	12	14	12	14
S	12	14	16	17	12	14	06	10	12	14	12	14	12	14	12	14
T	11	12	16	17	06	10	06	10	11	12	11	12	11	12	12	14
V	06	10	14	15	11	12	06	10	12	14	12	14	12	14	12	14
Y	05	06	14	15	06	10	05	06	05	07	05	06	06	10	11	12
Z	16	17	22	24	16	17	12	14	16	17	16	17	16	17	20	21

Lower Case To Lower Case
Spacing Chart 6 Inch Series "C & D"

FIRST LETTER	SECOND LETTER															
	acde goq		bhikl mnp ru		fw		j		st		vy		x		z	
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
adhgij	16	17	22	24	16	17	12	14	14	15	14	15	16	17	16	17
lmnqu	12	14	16	17	11	12	05	06	11	12	11	12	12	14	12	14
bfkops	12	14	16	17	12	14	06	10	12	14	12	14	12	14	12	14
ce	12	14	16	17	12	14	06	10	12	14	12	14	12	14	12	14
r	06	10	12	14	06	10	03	03	05	06	05	06	06	10	06	10
tz	12	14	16	17	12	14	06	10	11	12	11	12	12	14	12	14
vy	11	12	14	15	11	12	05	06	06	10	06	10	11	12	11	12
w	11	12	14	15	11	12	05	06	11	12	11	12	11	12	12	14
x	12	14	16	17	11	12	05	06	11	12	11	12	11	12	12	14

Number To Number
Spacing Chart 8 Inch Series "C & D"

FIRST NUMBER	SECOND NUMBER															
	0	1	2	3	4	5	6	7	8	9						
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
0 9	16	17	16	17	14	15	12	14	14	15	14	15	16	17	12	14
1	20	21	20	21	16	17	14	15	20	21	20	21	14	15	20	21
2 3 4	14	15	14	15	14	15	12	14	14	15	14	15	11	12	16	17
5	14	15	14	15	14	15	11	12	11	12	14	15	14	15	14	15
6	16	17	14	15	14	15	12	14	14	15	14	15	11	12	14	15
7	12	14	12	14	14	15	12	14	15	12	14	14	15	12	14	15
8	16	17	16	17	14	15	12	14	14	15	16	17	12	14	16	17

UPPER AND LOWER CASE LETTER WIDTHS

LETTERS	6 INCH UPPER CASE LETTERS		8 INCH UPPER CASE LETTERS		LETTERS	6 INCH LOWER CASE LETTERS	
	C	D	C	D		C	D
A	36	50	50	65	a	35	42
B	32	40	43	53	b	35	42
C	32	40	43	53	c	35	41
D	32	40	43	53	d	35	42
E	30	35	40	47	e	35	42
F	30	35	40	47	f	23	26
G	32	40	43	53	g	35	42
H	32	40	43	53	h	35	42
I	07	07	11	12	i	11	11
J	30	36	40	50	j	20	22
K	32	41	43	54	k	35	42
L	30	35	40	47	l	11	11
M	37	45	51	61	m	60	70
N	32	40	43	53	n	35	42
O	34	42	45	55	o	36	43
P	32	40	43	53	p	35	42
Q	34	42	45	55	q	35	42
R	32	40	43	53	r	26	32
S	32	40	43	53	s	36	42
T	30	35	40	47	t	27	32
U	32	40	43	53	u	35	42
V	35	44	47	60	v	42	47
W	44	52	60	70	w	55	64
X	34	40	45	53	x	44	51
Y	36	50	50	66	y	46	53
Z	32	40	43	53	z	36	43

NUMBER TO NUMBER

NUMBER	6 INCH SERIES		8 INCH SERIES	
	C	D	C	D
1	12	14	15	20
2	32	40	43	53
3	32	40	43	53
4	35	43	47	57
5	32	40	43	53
6	32	40	43	53
7	32	40	43	53
8	32	40	43	53
9	32	40	43	53
0	34	42	45	55

- GENERAL NOTES**
- WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS B34001, B34006 AND B34011, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" X 6'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE, HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
 - ALL SIGNS SHALL HAVE A WHITE REFLECTORIZED LEGEND AND BORDER ON A GREEN REFLECTORIZED BACKGROUND, TYPE A SHEETING.
 - THE SIGN LENGTH SHOULD BE INCREASED IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHOULD NOT EXCEED 6'-0".
 - ALL BORDERS SHALL BE 3/4" WIDE AND CORNER RADIUS SHALL BE 2-1/4".
 - SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS. LOCAL SUPPLIERS OF THE SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM ARE:
 - A.K.T. CORPORATION, CHICAGO HEIGHTS, IL
 - AMERICAN FABRICATION CO., CHICAGO HEIGHTS, IL
 - TUCKER COMPANY, INC., WESTERN TRAFFIC CONTROL INC., CICERO, IL
 - MAUMATOSA, WI
- PARTS LISTING:**
- | | |
|--------------|---|
| SIGN CHANNEL | PART #HPN053 (MED. CHANNEL) |
| SIGN SCREWS | 1/4" X 14 X 1" H.W.H. #3 |
| BRACKETS | PART #HPN034 (UNIVERSAL) |
| | CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING |
- OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BACKET OF THE ABOVE PRODUCT.

Illinois Department of Transportation
DISTRICT I

MAST ARM MOUNTED STREET NAME SIGNS

SCALE: VERT. NONE HORIZ. 2-26-79

DRAWN BY: TJR
CHECKED BY: RKF

REVISIONS

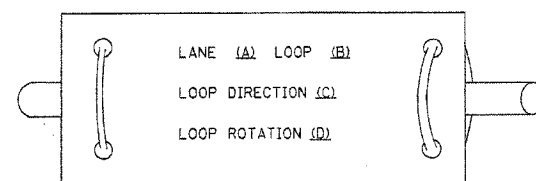
NAME	DATE
D.A.Z./D.A.G.	11/90
	6-98

F.A. DISTRICT	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	116
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

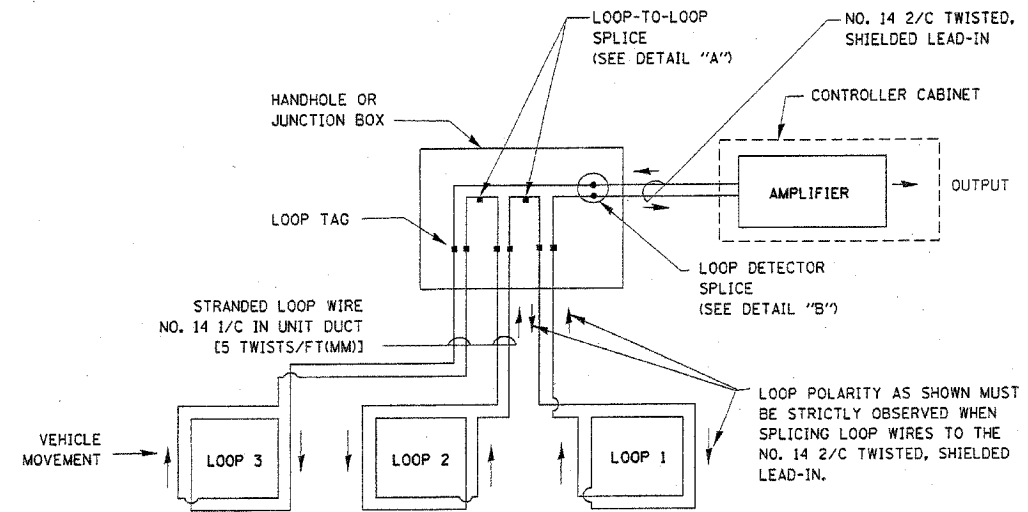
LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE UNIT DUCT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). UNIT DUCT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.
6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.
7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

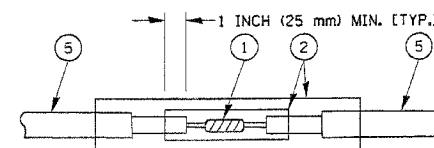


- A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

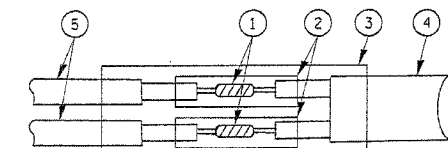


DETECTOR LOOP WIRING SCHEMATIC

- LOOPS SHALL BE SPLICED IN SERIES.
- SAW-CUTS SHALL BE A MINIMUM WIDTH OF 5/16" (8 mm).
- SAW-CUT DEPTHS SHALL BE 3" (75 mm), IF IN CONCRETE, THE SAW-CUT DEPTH SHALL BE TO THE TOP OF THE REINFORCEMENT.
- LOOP CORNERS SHALL BE DRILLED WITH A 2" (50 mm) DIAMETER CORE.



DETAIL "A"
LOOP-TO-LOOP SPLICE



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

- 1 WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.
- 2 WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- 3 WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER GRADE.
- 4 NO. 14 2/C TWISTED, SHIELDED CABLE.
- 5 LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

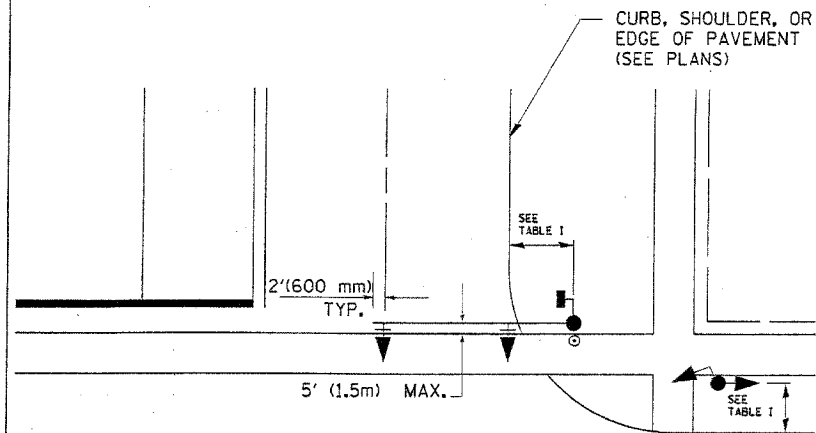
SCALE: VERT. NONE
HORIZ. NONE
DATE 1-01-02

DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 1 OF 4

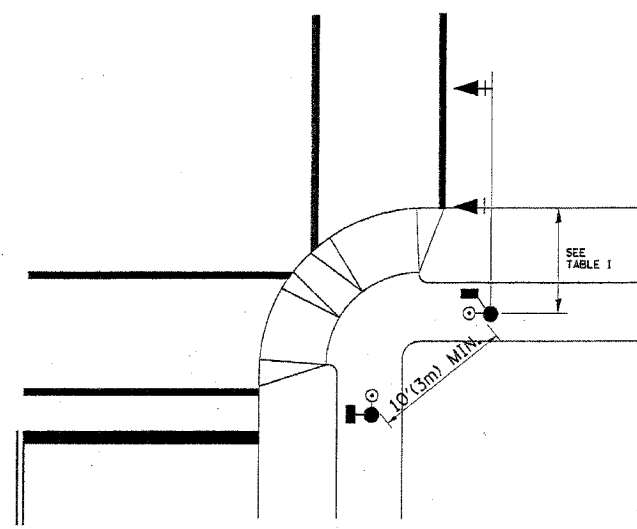
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	117
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

TRAFFIC SIGNAL MAST ARM AND POST

MAST ARM MOUNTED SIGNAL IN PROPOSED & FUTURE SIDEWALK AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNAL AND PUSHBUTTON DETECTOR



PEDESTRIAN SIGNAL PUSHBUTTON



RECOMMENDED PUSHBUTTON LOCATIONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD (SEE NOTE 1). TO MEET MUTCD REQUIREMENTS, PEDESTRIAN SIGNAL PUSHBUTTONS MAY HAVE TO BE MOUNTED ON A SEPARATE POST.

NOTES:

- AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS WITH PEDESTRIAN ACTUATION, EACH PUSHBUTTON SHALL ACTIVATE BOTH THE WALK INTERVAL AND THE ACCESSIBLE PEDESTRIAN SIGNALS.
 AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS, PUSHBUTTONS SHOULD CLEARLY INDICATE WHICH CROSSWALK SIGNAL IS ACTUATED BY EACH PUSHBUTTON. PUSHBUTTONS AND TACTILE ARROWS SHOULD HAVE HIGH VISUAL CONTRAST (SEE THE DEPARTMENT OF JUSTICE'S AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN, 1991). TACTILE ARROWS SHOULD POINT IN THE SAME DIRECTION AS THE ASSOCIATED CROSSWALK. AT CORNERS OF SIGNALIZED LOCATIONS WITH ACCESSIBLE PEDESTRIAN SIGNALS WHERE PEDESTRIAN PUSHBUTTONS ARE PROVIDED, THE PUSHBUTTONS SHOULD BE SEPARATED BY THE DISTANCE OF AT LEAST 10 FT (3m). THIS ENABLES PEDESTRIANS WHO HAVE VISUAL DISABILITIES TO DISTINGUISH AND LOCATE THE APPROPRIATE PUSHBUTTON.
 PUSHBUTTONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHOULD BE LOCATED AS FOLLOWS:
 A: ADJACENT TO A LEVEL ALL-WEATHER SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS AN ALL WEATHER SURFACE, WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP.
 B: WITHIN 5 FT (1.5m) OF THE CROSSWALK EXTENDED.
 C: WITHIN 10 FT (3m) OF THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
 D: PARALLEL TO THE CROSSWALK TO BE USED (SEE MUTCD FIGURE 4E-2).
 E: NORMAL PEDESTRIAN PUSHBUTTON MOUNTING HEIGHT SHOULD BE 3.5 FT (1.05m) ABOVE ADJACENT SIDEWALK.
- PEDESTRIAN SIGNAL FACES SHALL BE MOUNTED WITH THE BOTTOM OF THE HOUSING NOT LESS THAN 8 FT (2.4m) NOR MORE THAN 10 FT (3.0m) ABOVE THE SIDEWALK LEVEL AND SO THERE IS A PEDESTRIAN INDICATION IN THE LINE OF PEDESTRIANS' VISION WHICH PERTAINS TO THE CROSSWALK BEING USED.
- THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, NOT MOUNTED OVER A ROADWAY, SHALL BE AT LEAST 10 FT (3.0m) BUT NOT MORE THAN 15 FT (4.5m) ABOVE THE SIDEWALK OR, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE HIGHWAY IF NO SIDEWALKS EXIST.
- THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, MOUNTED OVER A ROADWAY, SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001 AND 877006. (16 FT (5m) MIN., 18 FT (5.5m) MAX., FROM HIGHEST POINT OF PAVEMENT)

PEDESTRIAN SIGNAL POST

PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON DETECTOR LOCATION

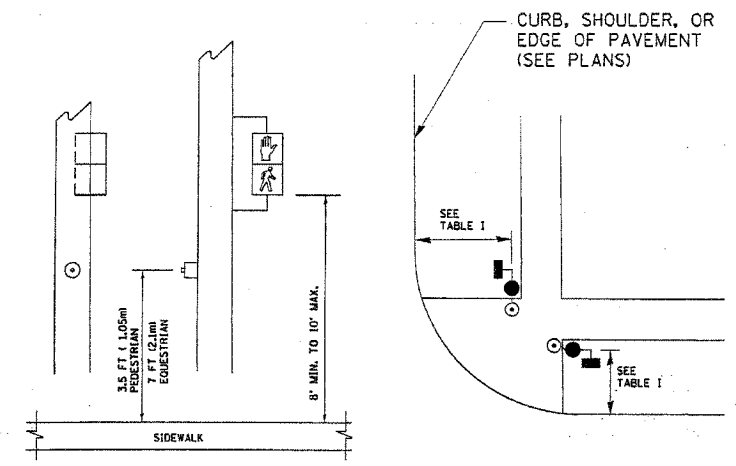


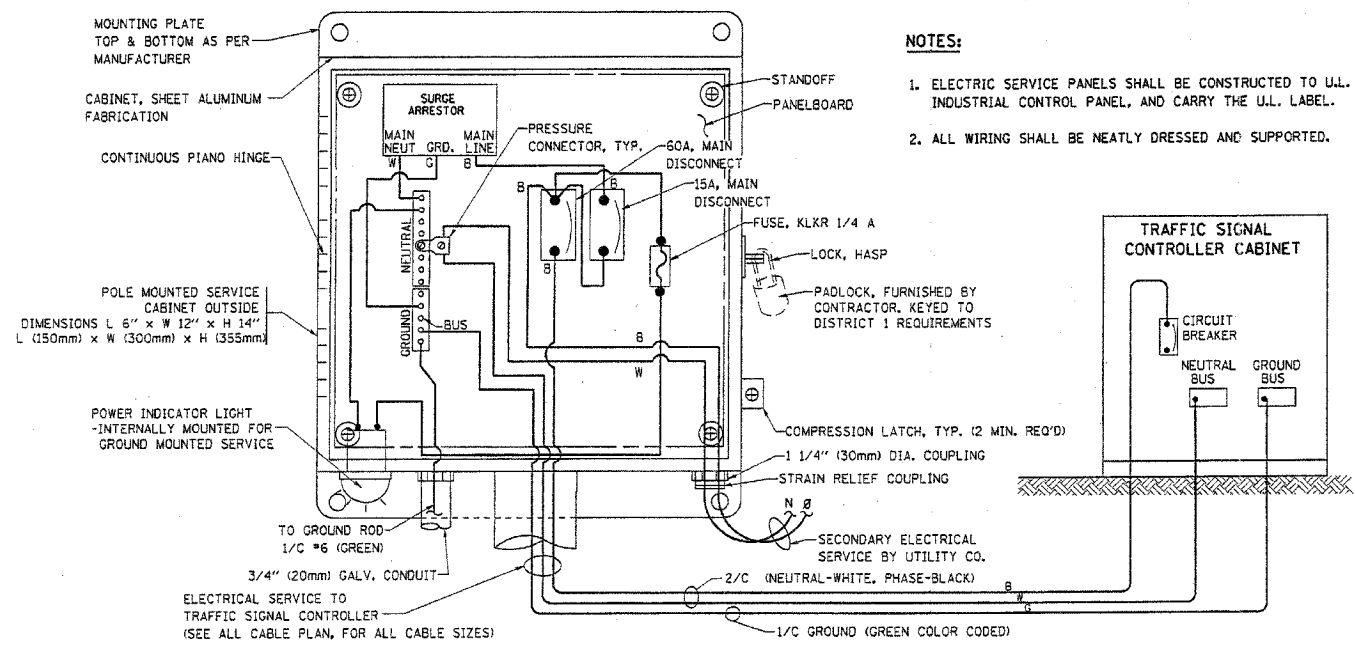
TABLE I

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MIN. DIST. FROM BACK OF CURB)	SHOULDER/NON-CURBED AREA (MIN. DIST. FROM EDGE OF PAVEMENT)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN PUSHBUTTON	SEE NOTE 1	SEE NOTE 1

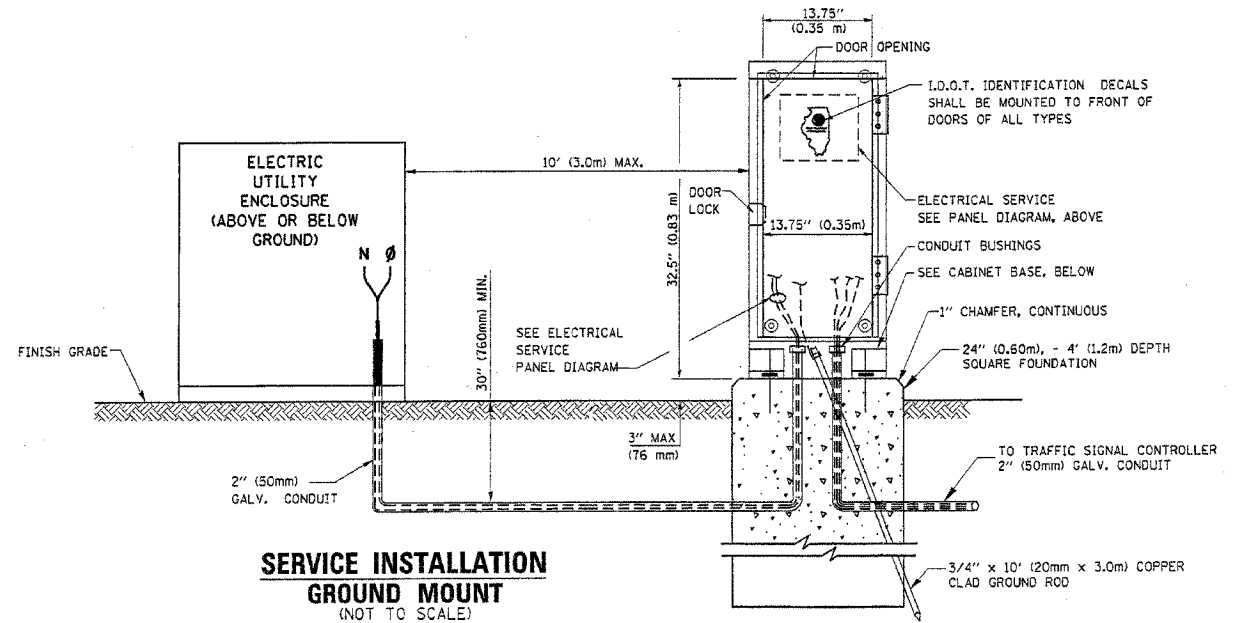
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT 1
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS
 SCALE: VERT. NONE
 HORIZ. NONE
 DATE 1-01-02
 DRAWN BY: RWP
 DESIGNED BY: DAD
 CHECKED BY: DAZ
 SHEET 2 OF 4

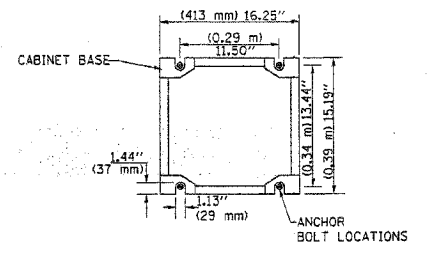
F.A.U. DIST. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 83815				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



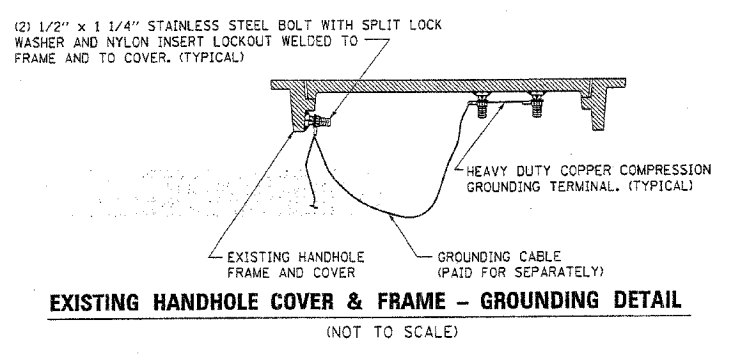
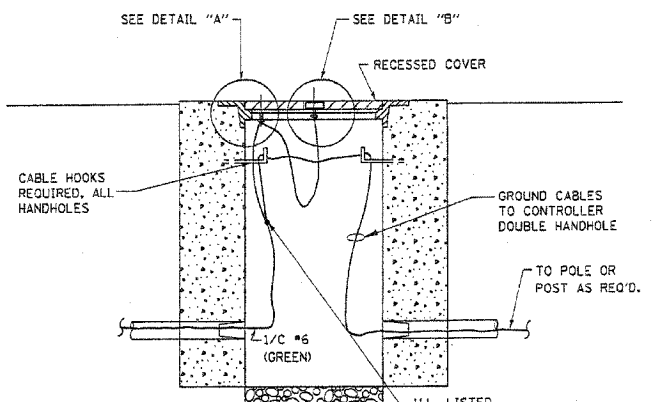
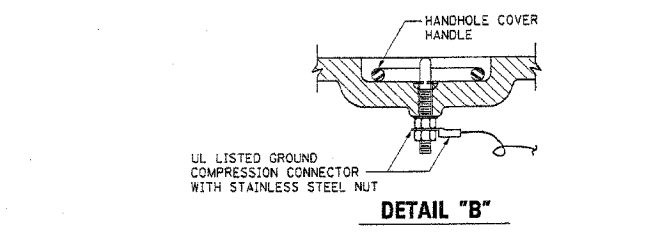
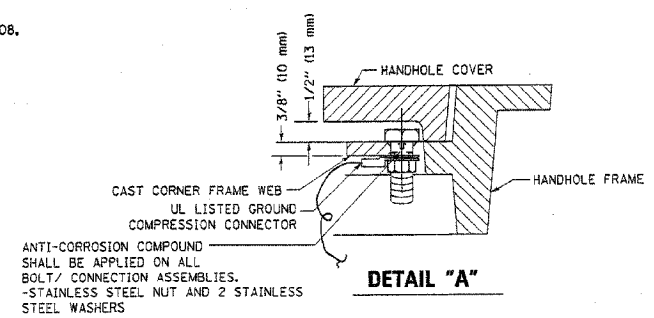
ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)
 (NOT TO SCALE)



SERVICE INSTALLATION GROUND MOUNT
 (NOT TO SCALE)

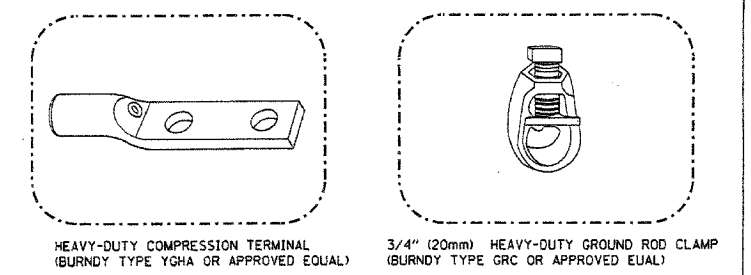


CABINET - BASE BOLT PATTERN
 (NOT TO SCALE)

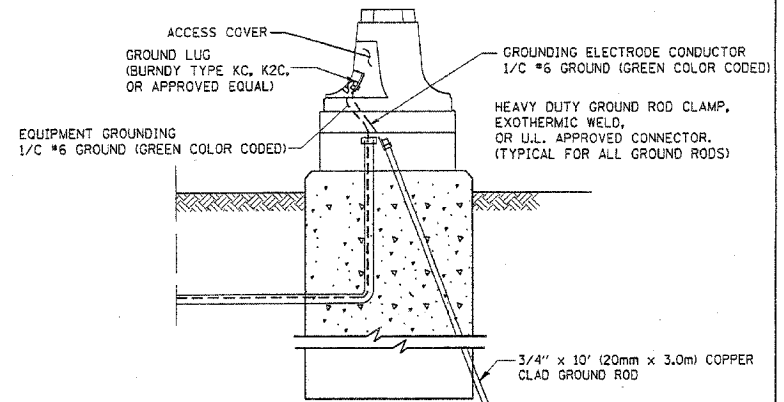


NOTES:
GROUNDING SYSTEM

- THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO METAL ENCLOSURE (HANDHOLE, POST, MAST ARM, CONTROLLER, ETC.). GROUND ROD SHALL BE 3/4" DIA. x 10'-0" (20mm x 3.0m) LONG, COPPER CLAD. ONE GROUND ROD SHALL BE INSTALLED AT ALL POST FOUNDATIONS, POLE FOUNDATIONS, CONTROLLER CABINET FOUNDATION AND ELECTRICAL SERVICE INSTALLATION AS INDICATED ON THE CABLE PLAN. IF THERE ARE ANY SPECIAL CONDITIONS SUCH AS SUB-SURFACE CONDITIONS OR INSTALLATION PROBLEMS, THE RESIDENT ENGINEER SHALL BE NOTIFIED OR CONTACT THE BUREAU OF TRAFFIC, ILLINOIS DEPARTMENT OF TRANSPORTATION DISTRICT ONE AT (847) 705-4139.
- THE NEUTRAL CONDUCTOR AND THE GROUND CONDUCTOR SHALL BE CONNECTED IN THE SERVICE INSTALLATION. AT NO OTHER POINT IN THE TRAFFIC SIGNAL SYSTEM SHALL THE NEUTRAL AND GROUND CONDUCTORS BE CONNECTED.
- ALL EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE AT THE GROUND BUS IN THE CONTROLLER CABINET.
- THE CONTRACTOR SHALL PROVIDE A GROUND CABLE WITH CONNECTORS BETWEEN THE HANDHOLE COVER AND HANDHOLE FRAME.



- NOTES:**
- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
 - GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES. 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES. 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



MAST ARM POLE / POST-GROUNDING DETAIL
 (NOT TO SCALE)

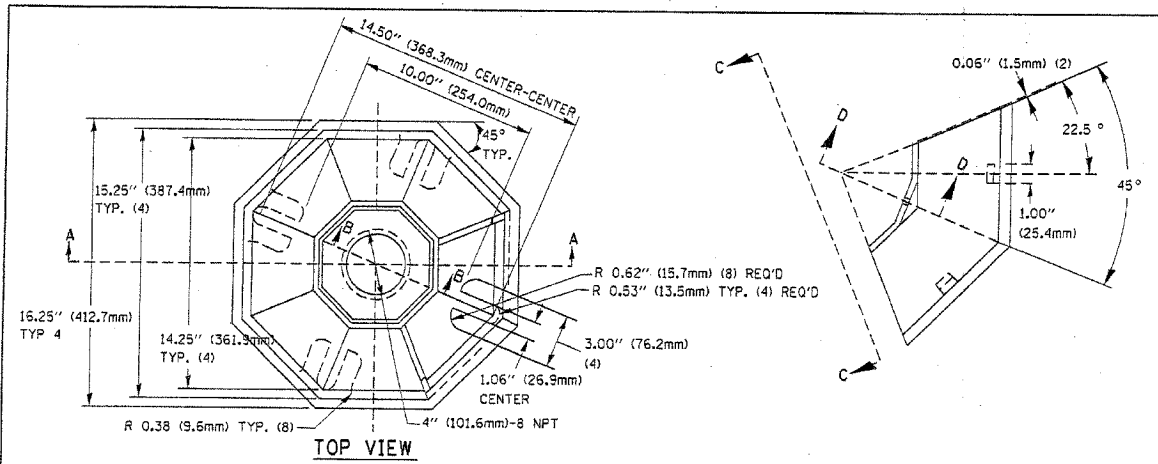
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 DISTRICT 1
 STANDARD TRAFFIC SIGNAL
 DESIGN DETAILS

SCALE: VERT. NONE
 HORIZ. NONE
 DATE: 1-01-02

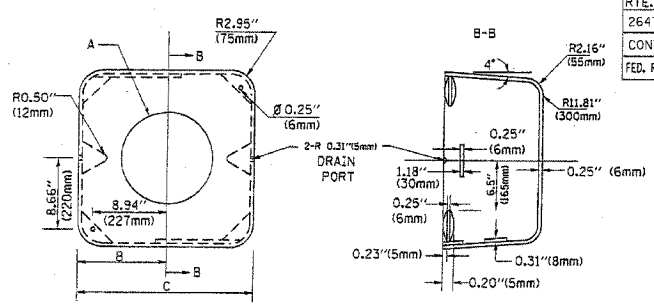
DRAWN BY: RWP
 DESIGNED BY: DAD
 CHECKED BY: DAZ
 SHEET 3 OF 4

F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647 99-00142-07-WR	LAKE	256	119	
CONTRACT NO. 83815				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



SECTION B-B

SECTION D-D

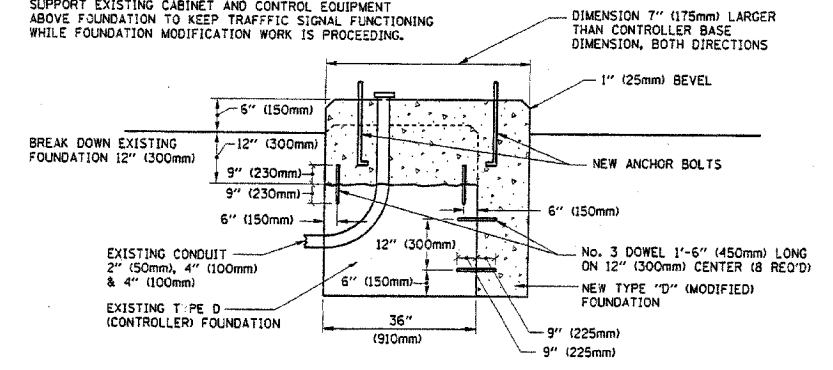


TYPE	A	B	C	HEIGHT	WEIGHT
I	Ø 10.125\" (257mm)	9.5\" (241mm)	19\" (483mm)	12\" (300mm)	24kg
II	Ø 11.125\" (283mm)	10.75\" (273mm)	21.5\" (546mm)	12\" (300mm)	26kg

SHROUD DETAIL

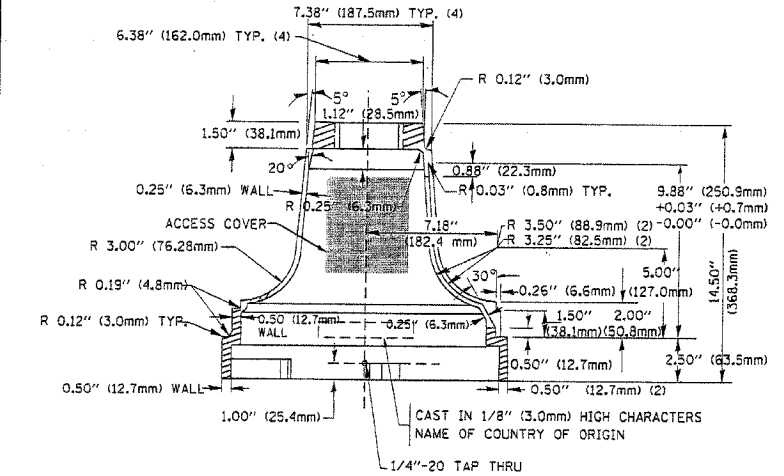
MATERIAL:
 - ASTM A48 CLASS 30 GREY IRON
 - ASTM A123 HOT DIPPED GALVANIZED

NOTE:
 SUPPORT EXISTING CABINET AND CONTROL EQUIPMENT ABOVE FOUNDATION TO KEEP TRAFFIC SIGNAL FUNCTIONING WHILE FOUNDATION MODIFICATION WORK IS PROCEEDING.

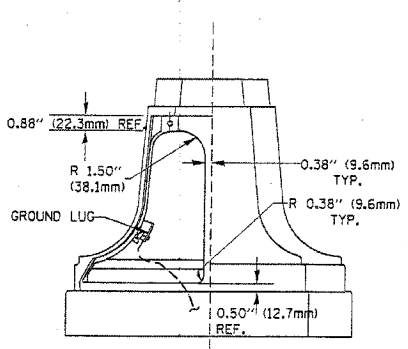


MODIFY EXISTING TYPE "D" FOUNDATION

(NOT TO SCALE)

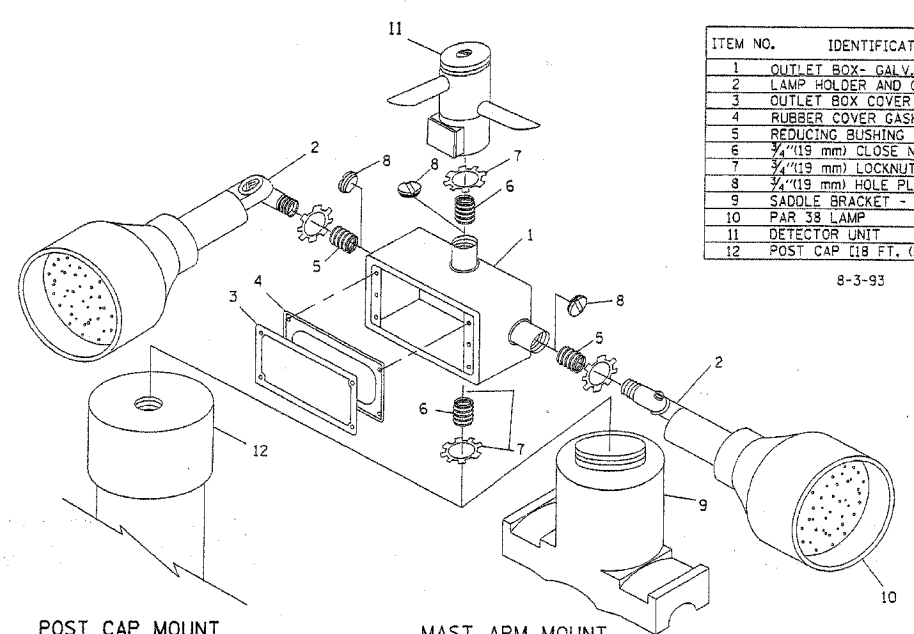


SECTION A-A



VIEW C-C

TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A

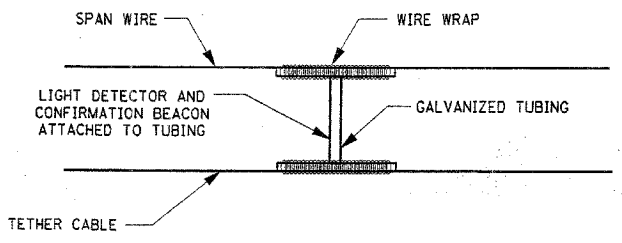


POST CAP MOUNT
 MAST ARM MOUNT
 EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

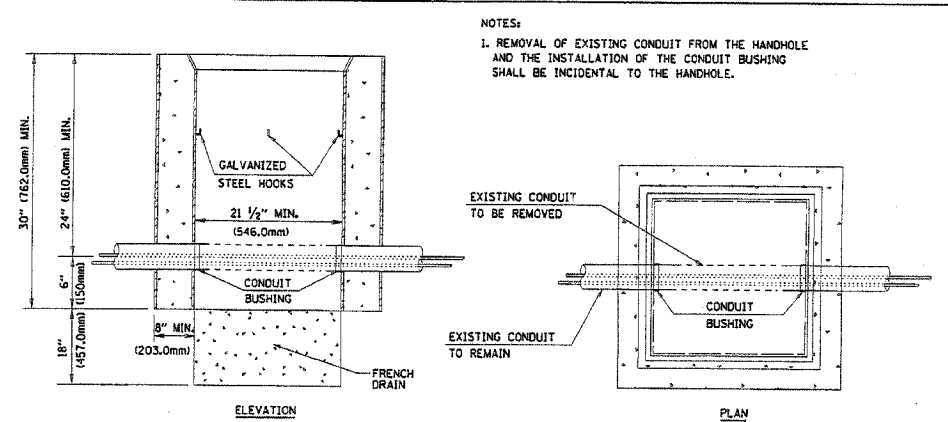
ITEM NO.	IDENTIFICATION
1	OUTLET BOX - GALV. 21 CU.IN. (0.000344 CU.M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4\" (19 mm) CLOSE NIPPLE
7	3/4\" (19 mm) LOCKNUT
8	3/4\" (19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	PAR 38 LAMP
11	DETECTOR UNIT
12	POST CAP (18 FT. (5.4 m) POST MIN.)

NOTES:

- ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
- ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
 ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
 ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
- WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4\" (19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



LIGHT DETECTOR AND CONFIRMATION BEACON MOUNTING FOR TEMPORARY TRAFFIC SIGNALS
 (NOT TO SCALE)



DETAIL
 HANDHOLE TO INTERCEPT EXISTING CONDUIT
 N.T.S.

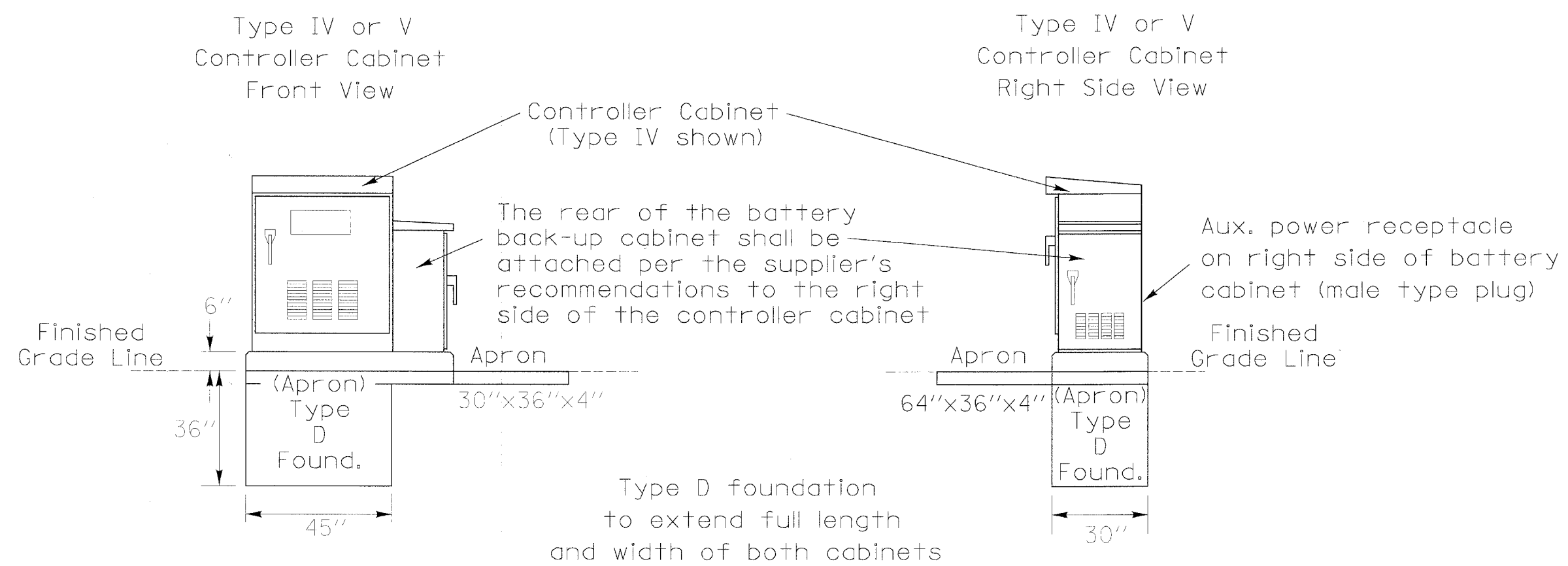
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 DISTRICT 1
 STANDARD TRAFFIC SIGNAL
 DESIGN DETAILS

SCALE: VERT. NONE
 HORIZ. DATE 1-01-02
 DRAWN BY: RWP
 DESIGNED BY: DAD
 CHECKED BY: DAZ
 SHEET 4 OF 4

F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	120
CONTRACT NO. 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

BATTERY BACK-UP CABINET INSTALLATION



12/2/2005 N:\LIBERTYVILLE\99-388\Traffic\DET5.Battery_Box.dgn

REVISIONS	
NAME	DATE
DELETED FOUND. UNDER BOT. BOX	4/8/05

LAKE COUNTY DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL CONTROLLER CABINET WITH ATTACHED BATTERY BACK-UP CABINET

BUTTERFIELD ROAD
LIBERTYVILLE, ILLINOIS

SCALE: N.T.S. DRAWN BY: FPB
DESIGNED BY: ABR CHECKED BY: GMZ
DATE: *DATE*

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	121
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	

I GENERAL NOTES

- Standard Specifications, Construction Plans And Subsequent Details Referenced And Presented On The Plans Are All To Be Considered As Part Of The Contract. Incidental Items Or Accessories Necessary To Complete This Work May Not Be Specifically Noted But Are Considered A Part Of This Contract.
- All Work Shall Be In Accordance With The Illinois Department Of Transportation (IDOT) "Standard Specifications For Road And Bridge Construction" Adopted January 1, 2002 And Supplemental Specifications And Recurring Special Provisions, Unless Noted Otherwise.
- The Design Specifications Are The 2002 AASHTO Standard Specifications For Highway Bridges, 17th Edition.
- No Construction Plans Shall Be Used For Construction Unless Specifically Marked For Construction. Prior To Commencement Of Construction, The Contractor Shall Verify All Dimensions And Conditions Affecting The Work With The Actual Conditions. If There Are Discrepancies Between The Job Site And What Is Shown On The Construction Plans, He Must Immediately Report To Engineer Before Doing Any Work, Otherwise The Contractor Shall Assume Full Responsibility. In The Event Of Disagreement And/or Special Details, The Contractor Shall Secure Written Instruction From The Engineer Prior To Proceeding With Any Part Of The Work Affected By Omissions Or Discrepancies. In Failing To Secure Such Instruction, The Contractor Will Be Considered To Have Proceeded At His Own Risk And Expense. In The Event Of Any Doubt Or Questions Arising With Respect To The True Meaning Of The Construction Plans Or Specifications, The Decision Of The Engineer Shall Be Final And Conclusive.
- The Contractor Is Responsible For Design, Installation And Removal Of All Excavation Support System.
- The Excavation And Work Area Shall Be Properly Drained At All Times During Construction. All Wet, Loose, Frozen Or Other Unsuitable Material Shall Be Removed Prior To Placement Of Concrete Or Compacted Backfill.
- Contractor Shall Verify All Topographic Information And Grade Elevations Adjacent To The Proposed Wall Prior To Proceeding And Inform Engineer Of Any Variation.
- All Compacted Fill And Backfill Material Shall Be A Clean Granular Material Placed In Lifts Of Twelve (12) Inches Or Less In Loose Thickness And Compacted To A Minimum Of 95 Percent Of The Material's Maximum Modified Proctor Dry Density (ASTM D-1557).
- Wall Design Was Based On The Soil Report Prepared By GESTRA Engineering, Inc. Project No. 04050-10 Dated July 30, 2004 And Supplemental Correspondence Dated August 24, 2004.

II CAST-IN-PLACE CONCRETE

- All Cast-In-Place Concrete Work Shall Be In Accordance With Section 503 Of The IDOT Standard Specifications For Road And Bridge Construction, Adopted January 1, 2002, And Supplemental Specifications And Recurring Special Provisions And As Noted Below.
- An Approved Testing Laboratory Shall Prepare Concrete Mix Designs. The Concrete Mix Design Shall Be Submitted To The Engineer For Approval A Minimum Of Seven Days Prior To Ordering Of The Concrete.
- Concrete Testing Shall Be The Responsibility Of The Contractor According To Article 1020.09 Of The IDOT Standard Specifications. Four Concrete Test Cylinders Shall Be Taken For Every Concrete Pour. Test Results Shall Be Determined By A Testing Laboratory And Provided To The Owner, Engineer And Contractor At The 7-day, 14-day And 28-day Breaks.
- All C.I.P. Concrete Shall Be Class SI Concrete And Shall Have A Minimum Compressive Strength Of 4,000 Psi @ 28 Days.
- Cover From The Face Of Concrete To Face Of Reinforcement Bars Shall Be 3" For Surfaces Formed Against Earth And 2" For All Other Surfaces Unless Otherwise Shown.
- All Reinforcing Steel Work Shall Be In Accordance With Section 508 Of The Illinois Department Of Transportation (IDOT) Standard Specifications For Road And Bridge Construction, Adopted January 1, 2002, And Latest Supplemental Specifications And Recurring Special Provisions.
- Reinforcement Bars Shall Conform To The Requirements Of AASTHO M-31, M-42 Or M-53 Grade 60. Field Bending Or Cutting Shall Not Be Permitted. All Reinforcement Bars Shall Be Epoxy Coated And Shall Conform To The Requirements Of AASHTO M284.
- Reinforcing Bar Bending Dimensions Are Out To Out.
- Reinforcing Bar Bending Details Shall Be In Accordance With The ACI "Manual Of Concrete Practice For Details And Detailing Of Concrete Reinforcement", ACI 315, latest Edition. Shop Bending And Placement Drawings Shall Be Submitted To The Engineer For Review And Approval Prior To Fabrication.
- All Field Lapped Bars Must Have Splice Lengths As Shown In The Lap Splice Schedule.
- All Exposed Concrete Edges Shall Be Beveled 3/4".

III CONSTRUCTION

- All Work And Materials Shall Be In Accordance With Illinois Department Of Transportation (IDOT) Standard Specifications For Road And Bridge Construction, Adopted January 1, 2002, And Latest Supplemental Specifications And Recurring Special Provisions.
- Do Not Scale Dimensions For Construction. Scale, If Shown, Applies Only To Full Size Drawings.
- No Construction Joints, Except Those Shown On The Plans, Will Be Allowed Unless Directed By The Engineer.
- Any Information Concerning Type Or Location Of Underground And Other Utilities Is Not Guaranteed To Be Accurate Or All Inclusive. The Contractor Is Responsible For Making His Own Determinations As To The Type And Location Of The Utilities As May Be Necessary To Avoid Damage Thereto. Contractor Shall Call J.U.L.I.E. And The Village Of Libertyville Public Works Prior To Excavation.
- Shop, Working Or Layout Drawings (Including Reinforcement Bending And Placing Drawings) Pertaining To The Construction Of The Work, As May Be Required, Shall Be Submitted To The Engineer For Approval Prior To The Start Of Construction.
- Upon Completion, The Contractor Shall Collect And Remove All Construction Debris And Excess Material From The Site. Damaged Trees, Shrubs, And Other Landscape Features Resulting From Construction Activities Shall Be Replaced Or Repaired.

IV STRUCTURAL STEEL

- Structural Steel Shall Be In Accordance With Section 505 Of The IDOT Standard Specifications For Road And Bridge Construction, Adopted January 1, 2002, And Latest Supplemental Specifications And Recurring Special Provisions With The Exception That The Shapes Shall Be Hot-Rolled, AASHTO M270 (Grade 50) Steel Or Approved Equal.
- Any Substitutions Shall Be Submitted To The Engineer For Approval Prior To The Commencement Of Construction.
- Two Sets Of Shop Drawings Shall Be Submitted To The Engineer For Approval Prior To Fabrication.

LAP SPLICE SCHEDULE		
BAR SIZE	CLASS "B" SPLICE	
	TOP BAR*	OTHER BAR
#3	2'-2"	1'-7"
#4	2'-9"	1'-11"
#5	3'-6"	3'-1"
#6	4'-5"	3'-11"
#7	5'-9"	5'-1"
#8	7'-4"	6'-5"

* HORIZONTAL BAR WITH MORE THAN 12" OF CONCRETE CAST IN THE MEMBER BELOW THE BAR (INCLUDE HORIZ. BARS IN WALLS)

BILL OF MATERIAL

STRUCTURE EXCAVATION	CY	200
CONCRETE STRUCTURES	CY	85
STUD SHEAR CONNECTORS	EA	143
REINFORCEMENT BARS, EPOXY COATED	LB	9400
FRENCH DRAINS	CY	25
GEOTECHNICAL FABRIC FOR FRENCH DRAINS	SY	200
FURNISHING SOLDIER PILES, W16X45	FT	445
DRILLING AND SETTING SOLDIER PILES	CF	1575
RUSTIFICATION FINISH	SF	2100
POROUS GRANULAR EMBANKMENT, SPECIAL	TON	300
PROTECTIVE COAT	SF	2100

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

DEC. 21, 2005

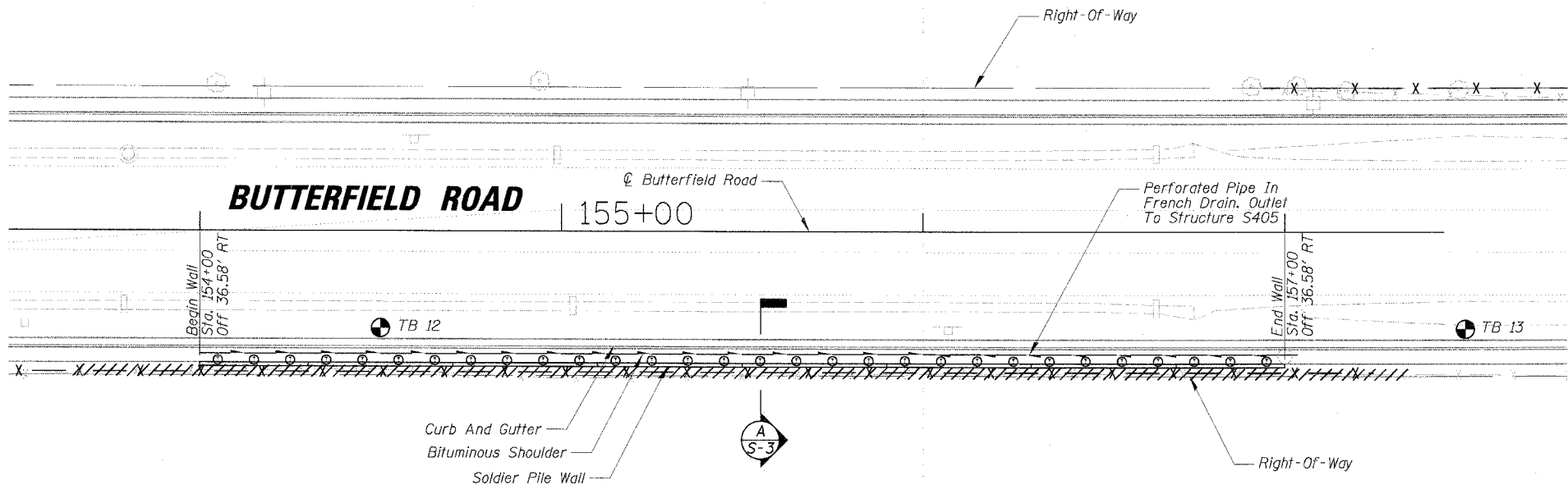
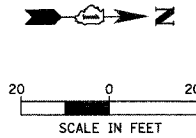
John P. Riley
JOHN P. RILEY

ILLINOIS REGISTRATION No. 081-004427 STRUCTURAL ENGINEER
EXPIRATION DATE: 11/30/06

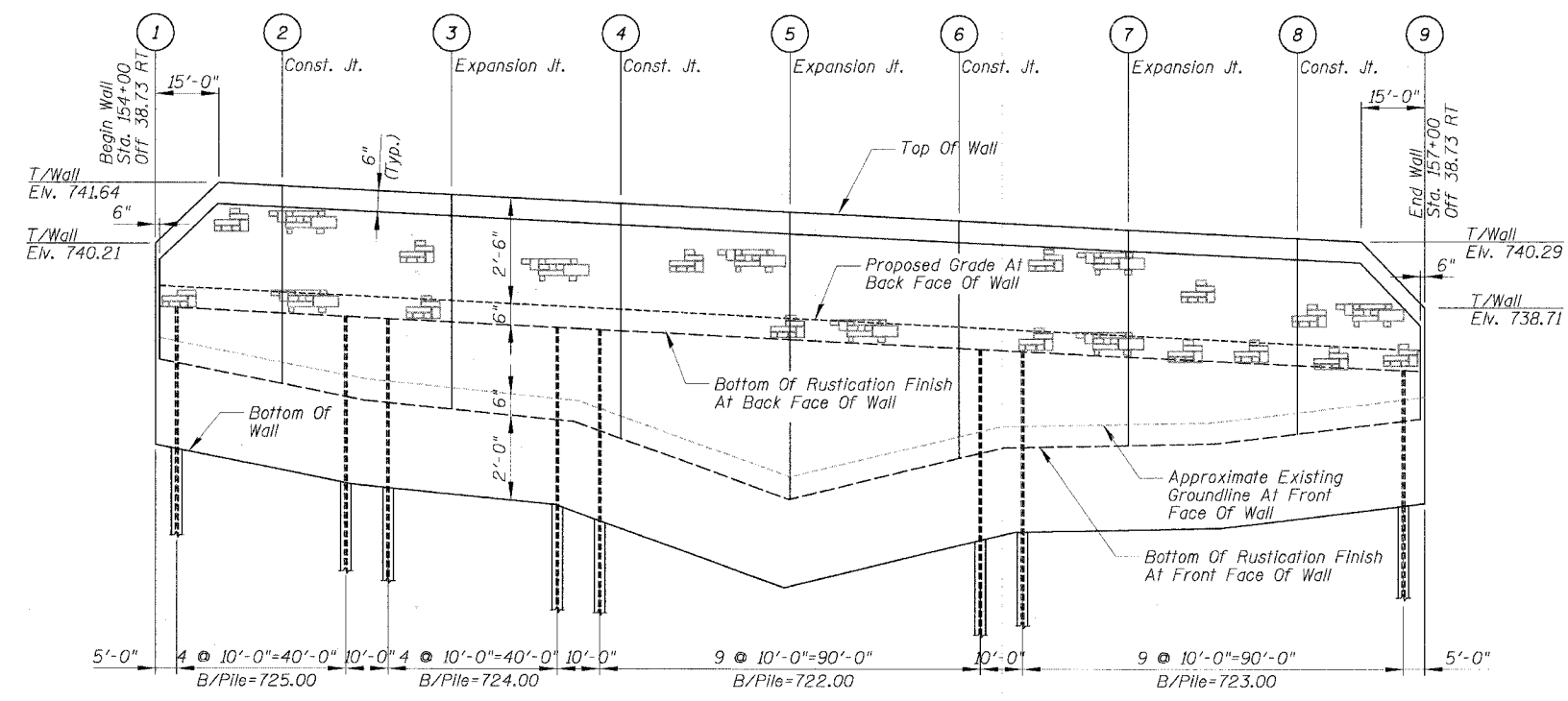


REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION FAU 2647 - BUTTERFIELD ROAD STRUCTURAL GENERAL NOTES AND BILL OF MATERIAL
NAME	DATE	
		SCALE: NONE DATE: 12/21/2005 DRAWN BY: PDR CHECKED BY: MMS

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	122
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



PLAN
SCALE: 1"=20'



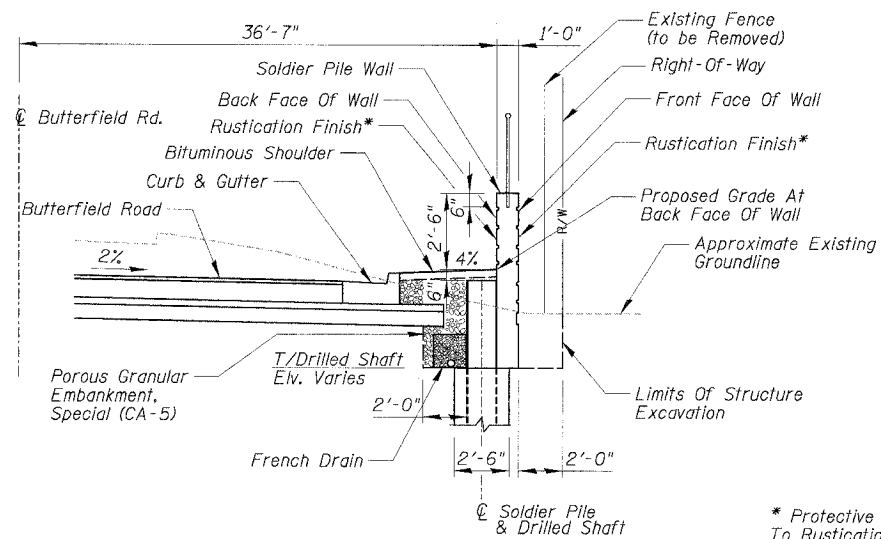
ELEVATION
(FACING WEST)
SCALE: V: 1"=2'
H: 1"=20'

MARK	STATION	T/WALL	PG AT B.F. WALL	EX. GRADE AT F.F. WALL	B/WALL
1	154+00	740.21	739.21	738.00	735.50
2	154+30	741.56	739.06	737.40	734.90
3	154+70	741.36	738.86	736.80	734.30
4	155+10	741.16	738.66	736.60	734.10
5	155+50	740.96	738.46	734.70	732.20
6	155+90	740.76	738.26	735.66	733.16
7	156+30	740.56	738.06	735.96	733.46
8	156+70	740.36	737.86	736.24	733.74
9	157+00	738.71	737.71	736.60	734.10

REVISIONS	
NAME	DATE

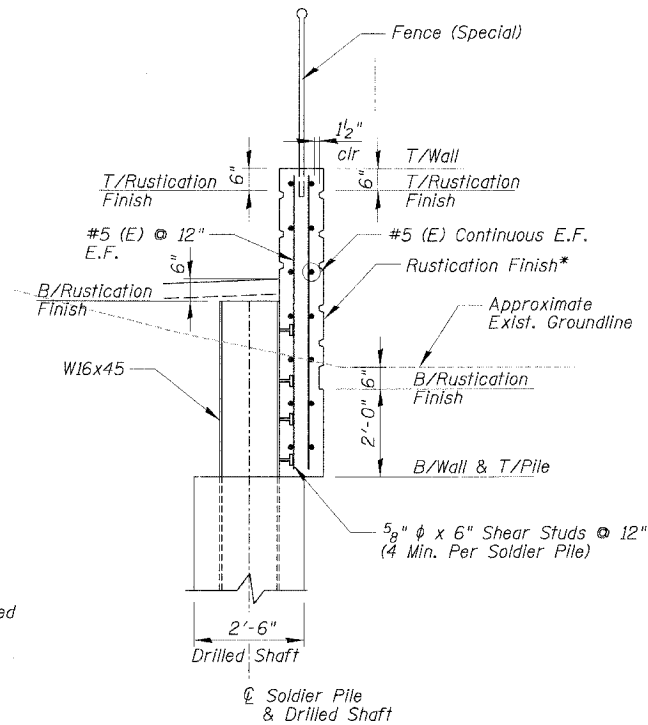
ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 – BUTTERFIELD ROAD
RETAINING WALL
GENERAL PLAN AND ELEVATION
STA. 154+00 TO STA. 157+00
 SCALE: AS SHOWN
 DATE: 12/2/2005
 DRAWN BY: PDR
 CHECKED BY: SSM

12/2/2005 N:\LIBERTYVILLE\99-389\Struc\199389-S2.dwg

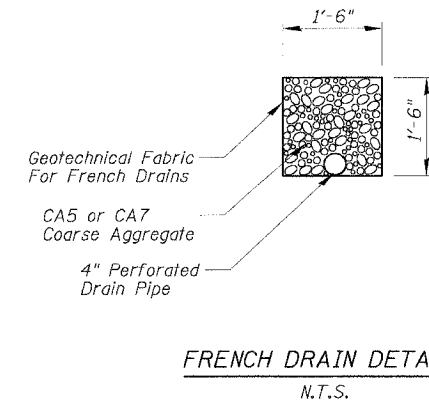


A WALL TYPICAL SECTION
SCALE: 1/4" = 1'-0"

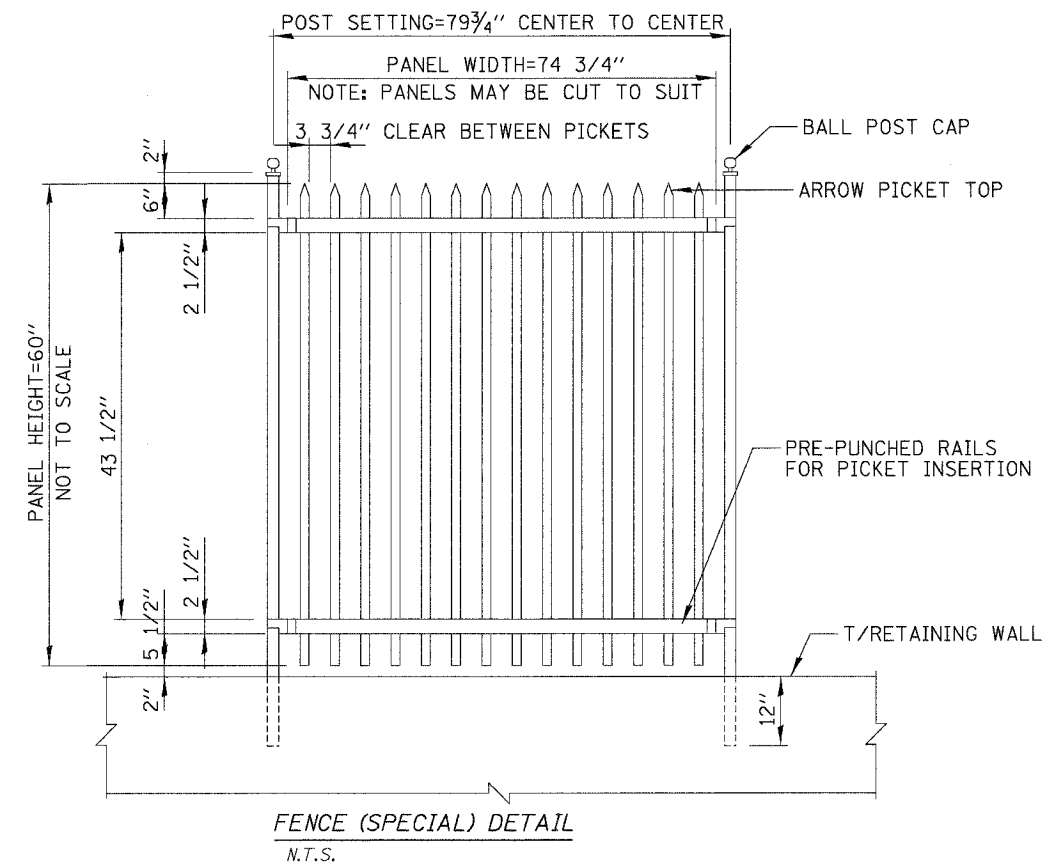
* Protective Coat Shall Be Applied To Rustication Finish



B WALL SECTION SHOWING REINFORCEMENT
SCALE: 1/2" = 1'-0"



FRENCH DRAIN DETAIL
N.T.S.



FENCE (SPECIAL) DETAIL
N.T.S.

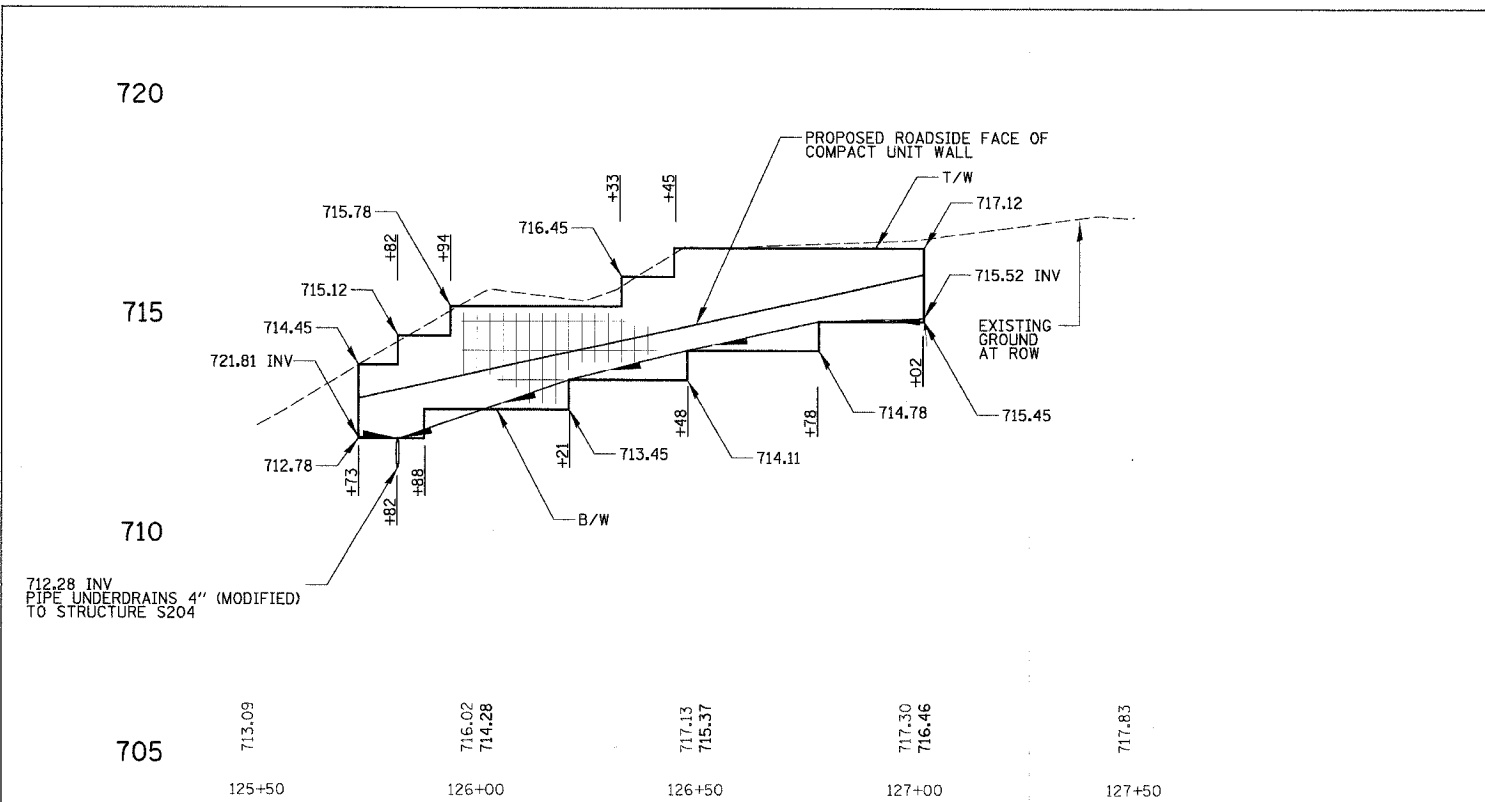
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**FAU 2647 - BUTTERFIELD ROAD
RETAINING WALL SECTION AND
FRENCH DRAIN DETAIL**

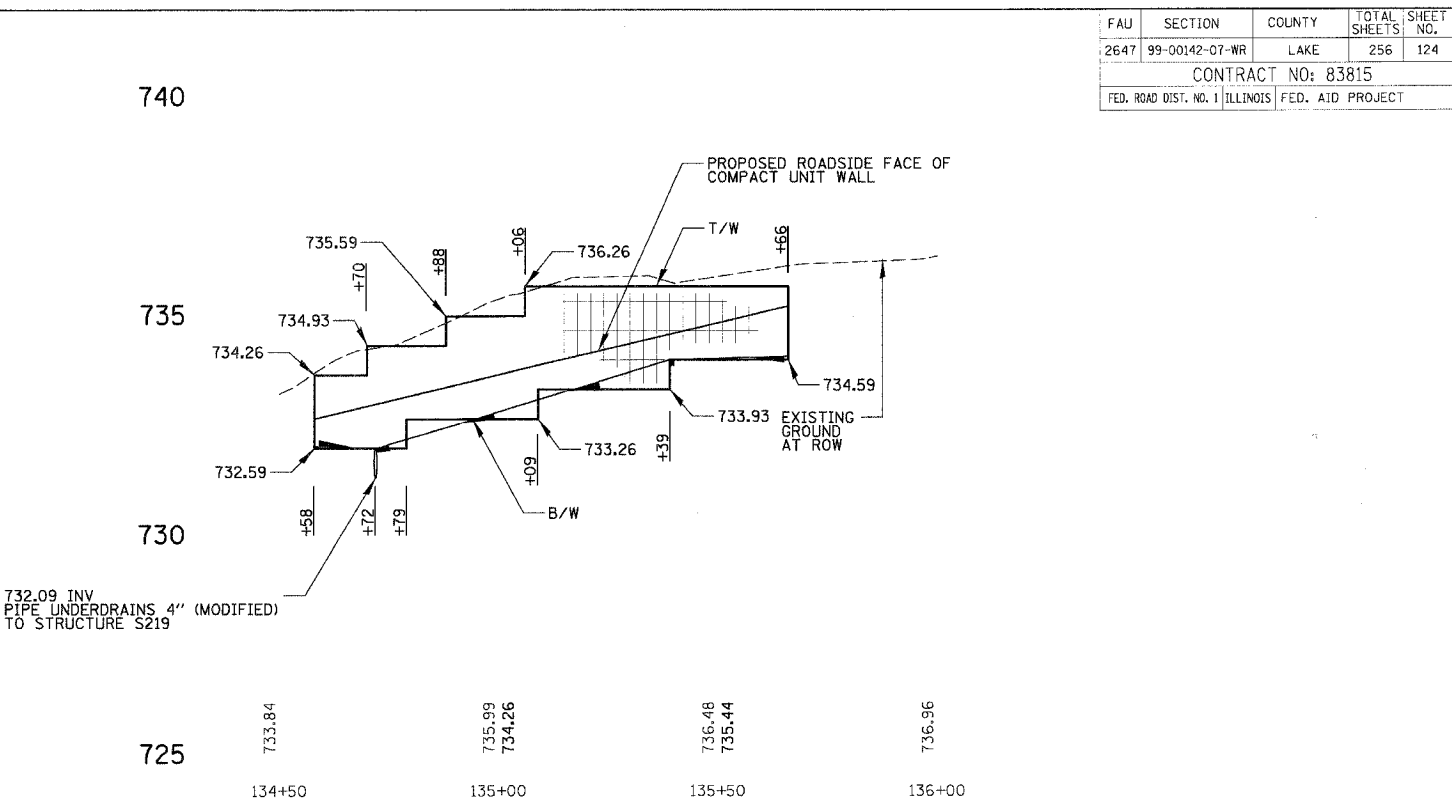
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DATE: 12/2/2005

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CHECKED BY: MMS

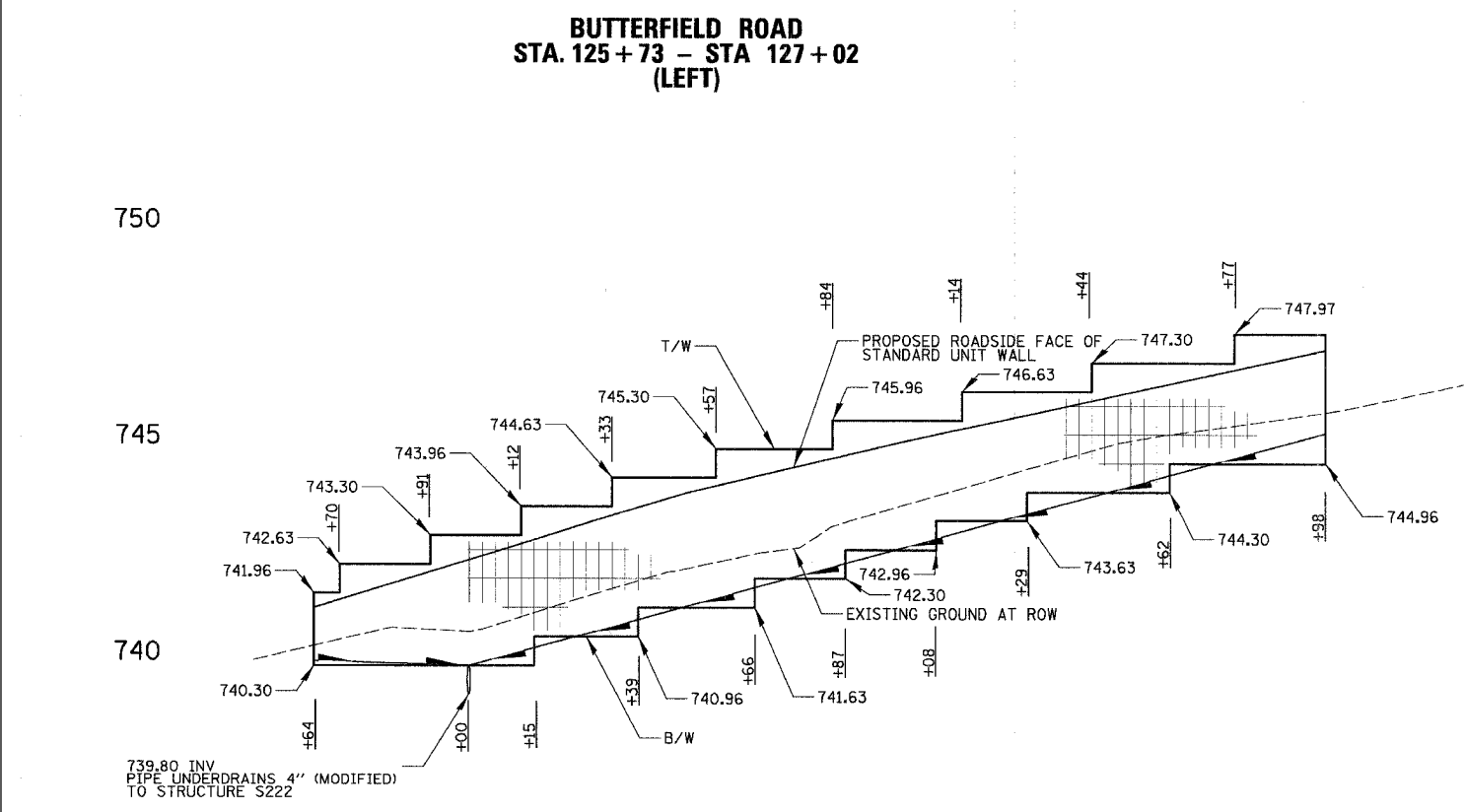
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	124
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



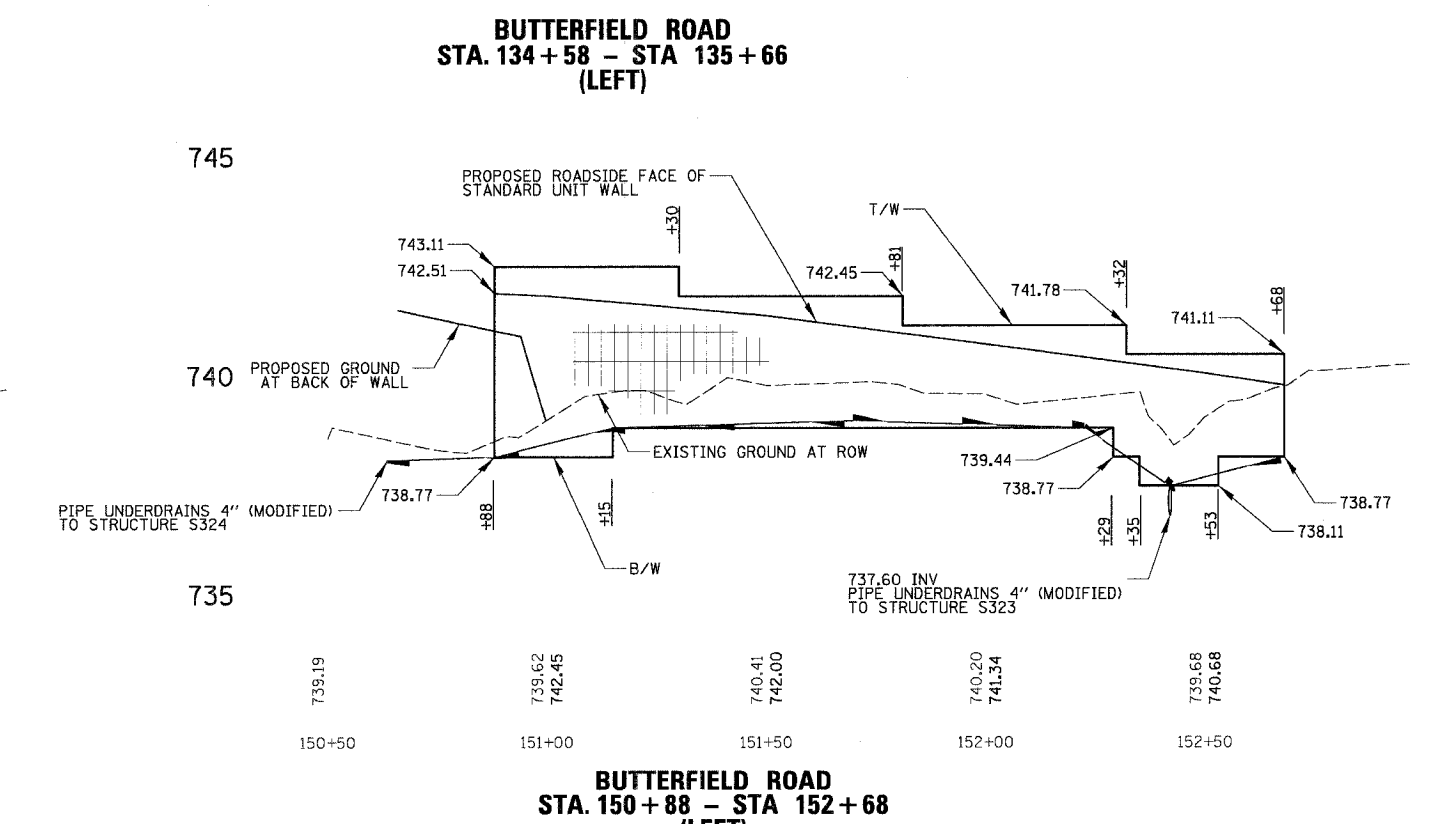
**BUTTERFIELD ROAD
STA. 125 + 73 - STA 127 + 02
(LEFT)**



**BUTTERFIELD ROAD
STA. 134 + 58 - STA 135 + 66
(LEFT)**



**BUTTERFIELD ROAD
STA. 137 + 64 - STA 139 + 98
(LEFT)**



**BUTTERFIELD ROAD
STA. 150 + 88 - STA 152 + 68
(LEFT)**

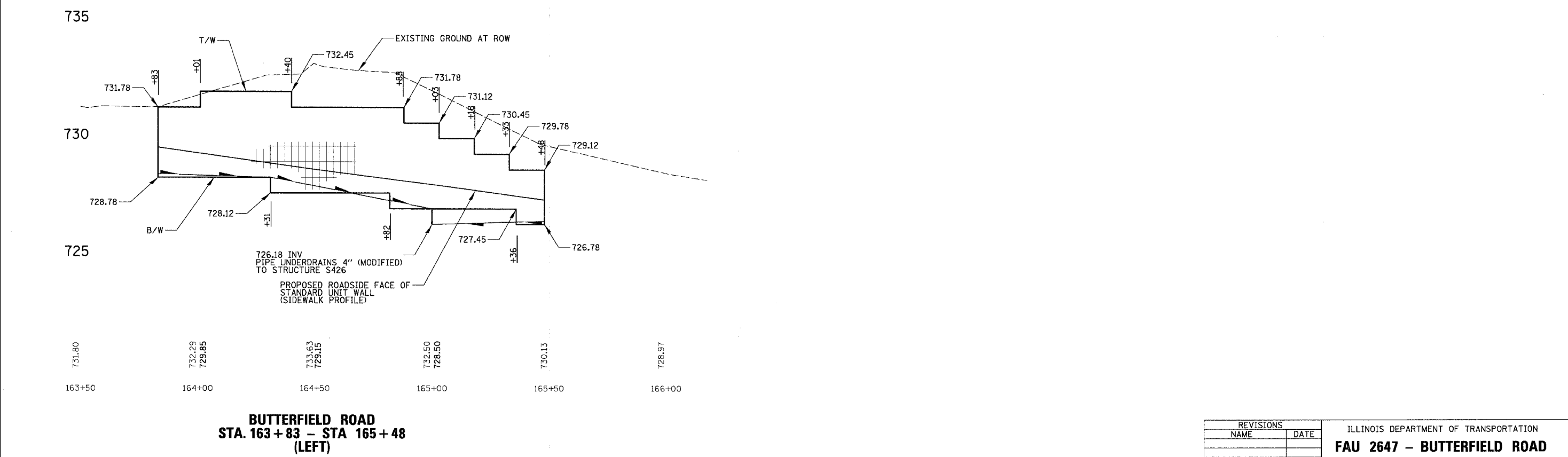
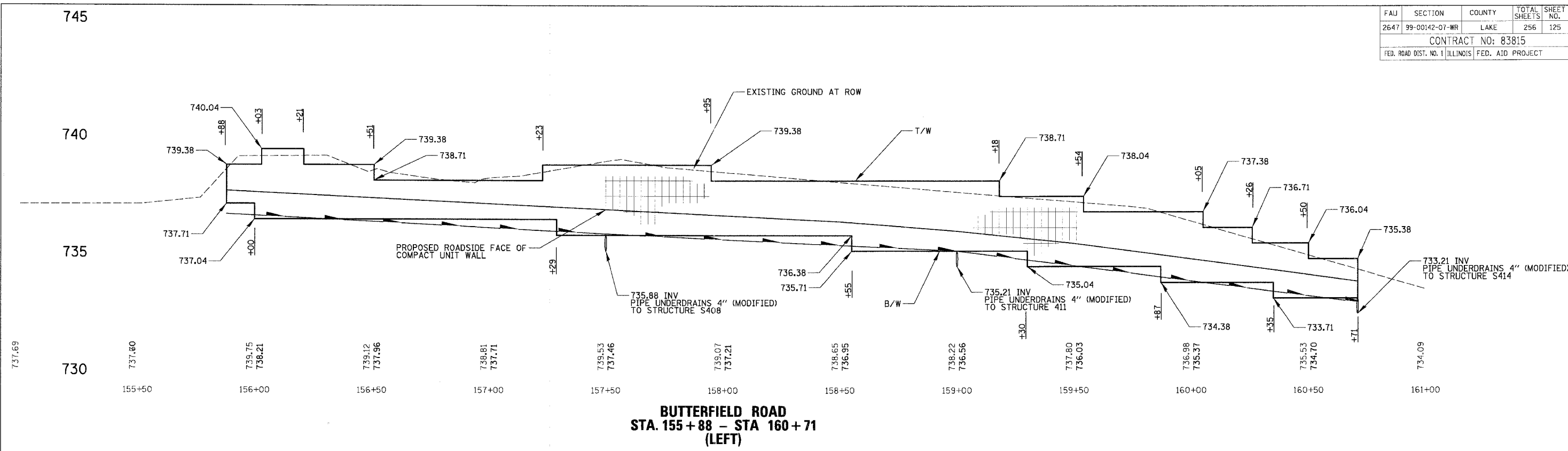
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**FAU 2647 - BUTTERFIELD ROAD
RETAINING WALL PROFILES
STA. 125 + 73 LEFT TO 152 + 68 LEFT**

SCALE: 20H : 5V
DATE: 12/2/2005
DRAWN BY: PMM
CHECKED BY: BLL

12/2/2005
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FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	125
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



REVISIONS	
NAME	DATE

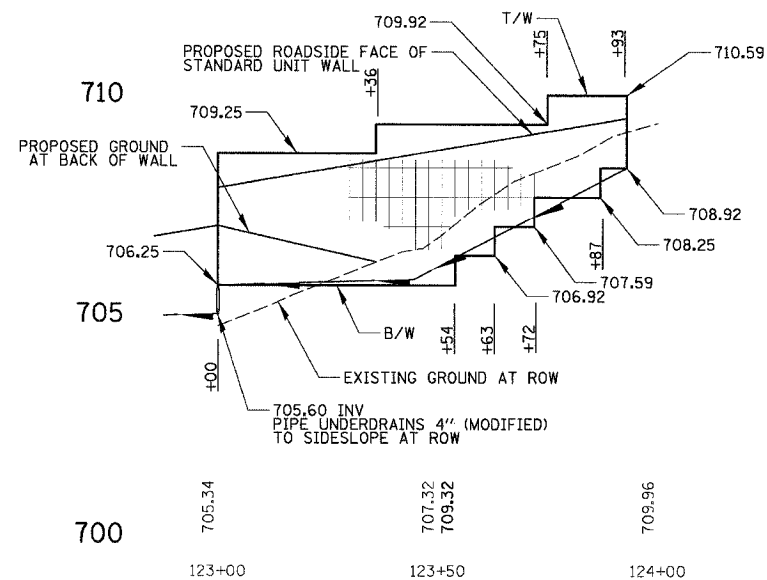
ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
RETAINING WALL PROFILES
STA. 155 + 88 LEFT TO 166 + 48 LEFT

SCALE: 20H : 5V
DATE: 12/2/2005

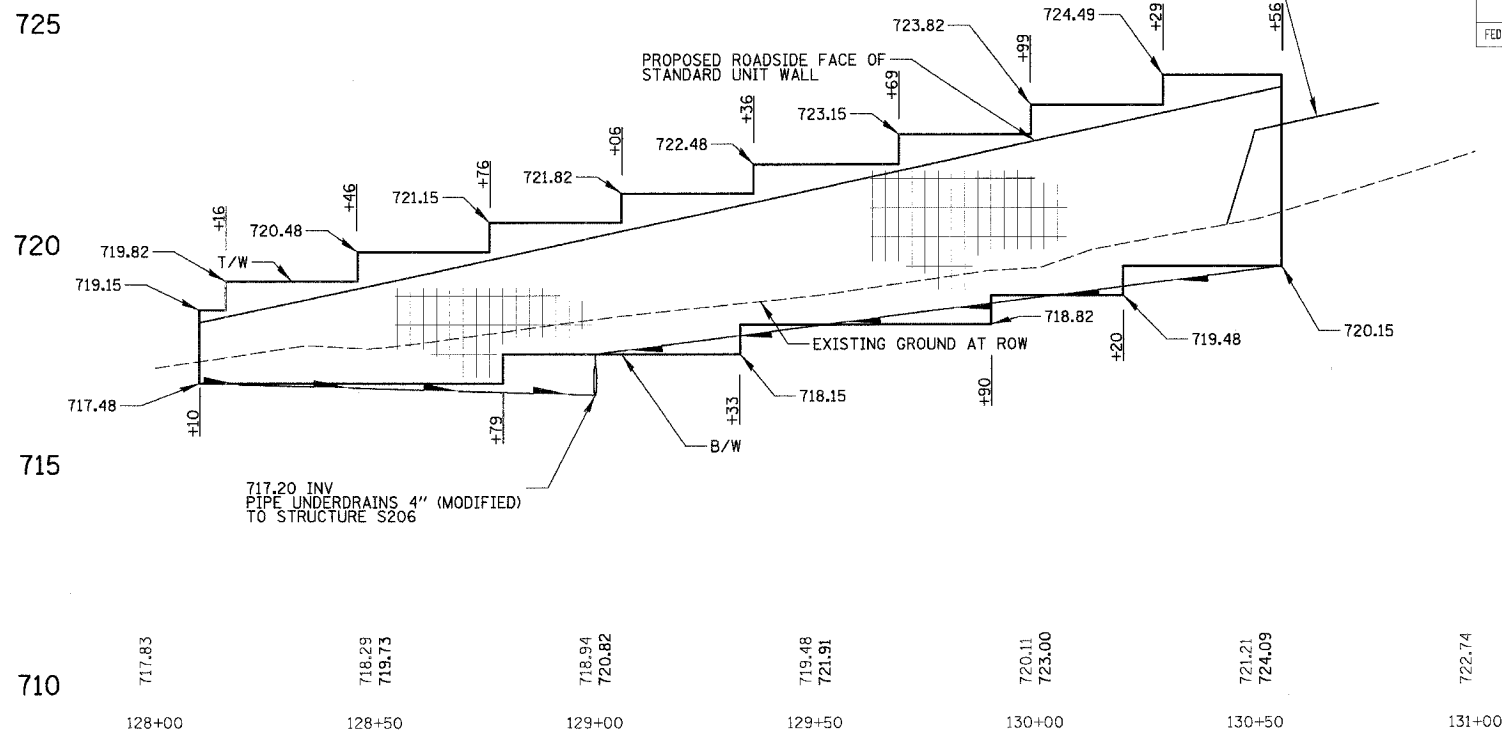
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120
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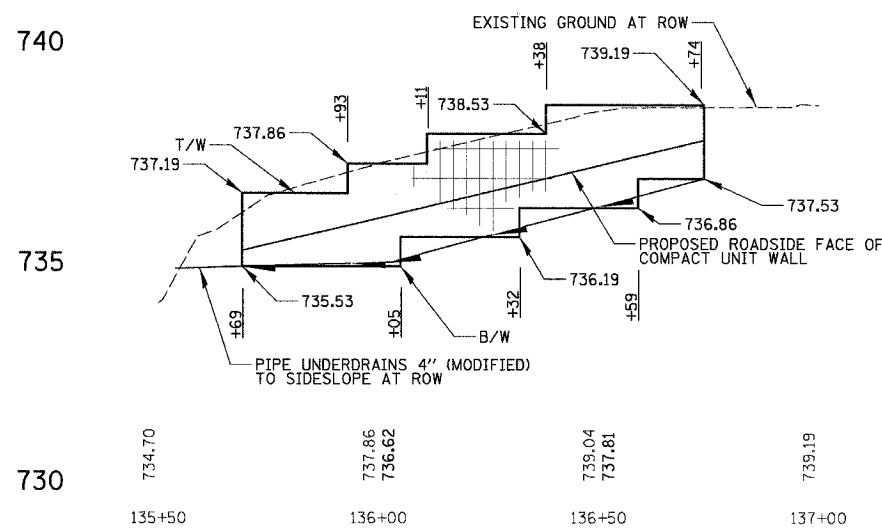
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CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



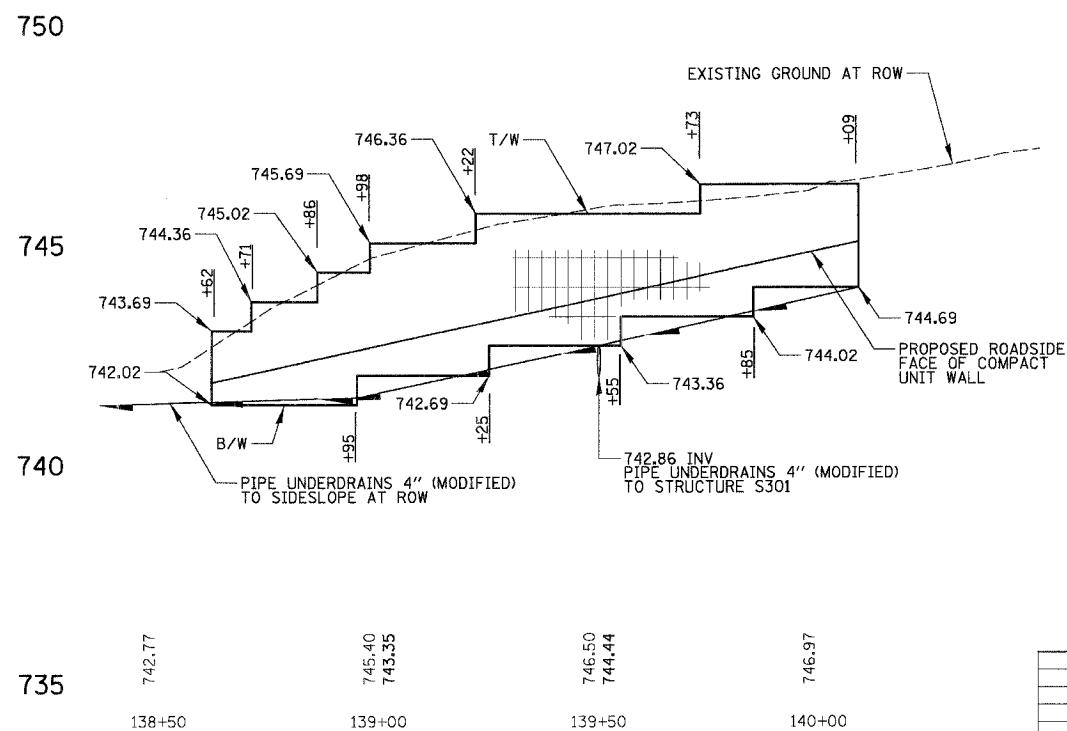
**BUTTERFIELD ROAD
STA. 123+00 - STA 123+93
(RIGHT)**



**BUTTERFIELD ROAD
STA. 128+10 - STA 130+56
(RIGHT)**



**BUTTERFIELD ROAD
STA. 135+69 - STA 136+74
(RIGHT)**



**BUTTERFIELD ROAD
STA. 138+62 - STA 140+09
(RIGHT)**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**FAU 2647 - BUTTERFIELD ROAD
 RETAINING WALL PROFILES
 STA. 123+00 RIGHT TO 140+09 RIGHT**
 SCALE: 20H : 5V
 DATE: 12/2/2005
 DRAWN BY: PMM
 CHECKED BY: BLL

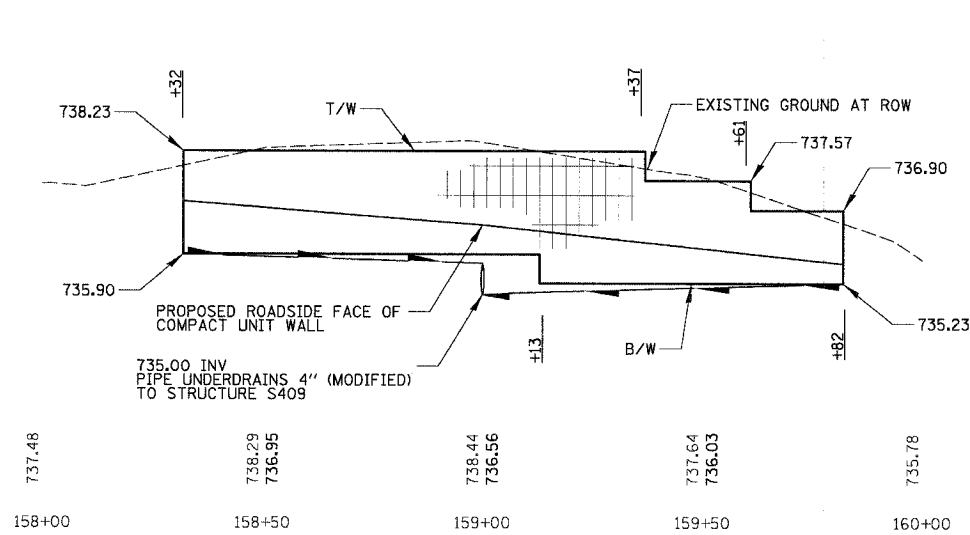
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FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	127
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

740

735

730

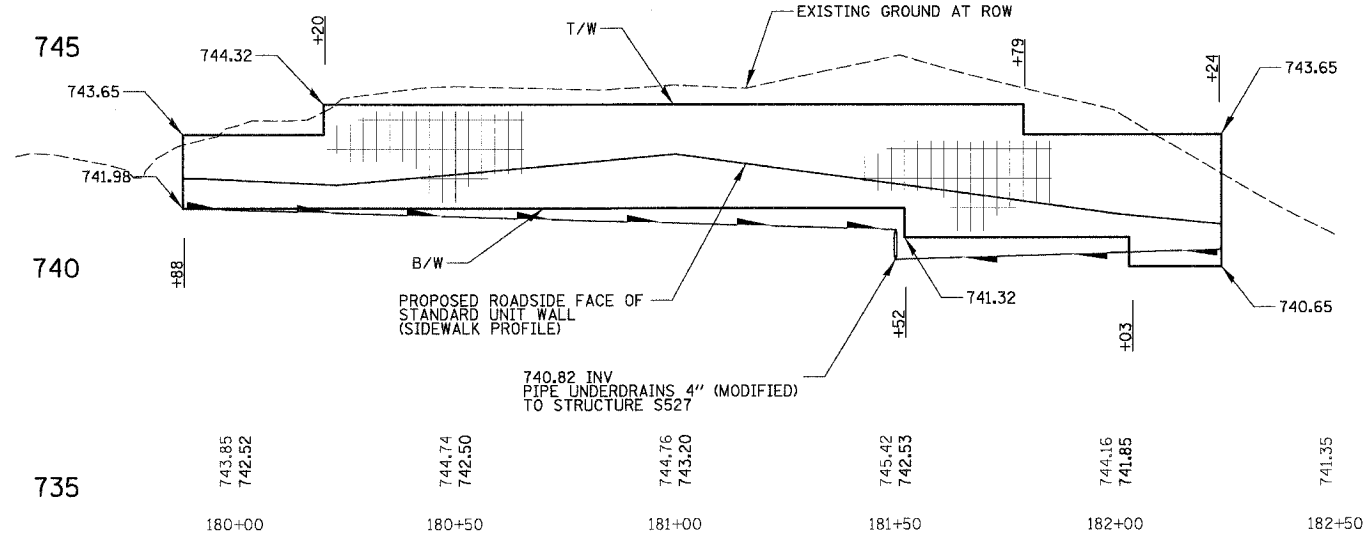


**BUTTERFIELD ROAD
STA. 158 + 32 - STA 159 + 82
(RIGHT)**

745

740

735

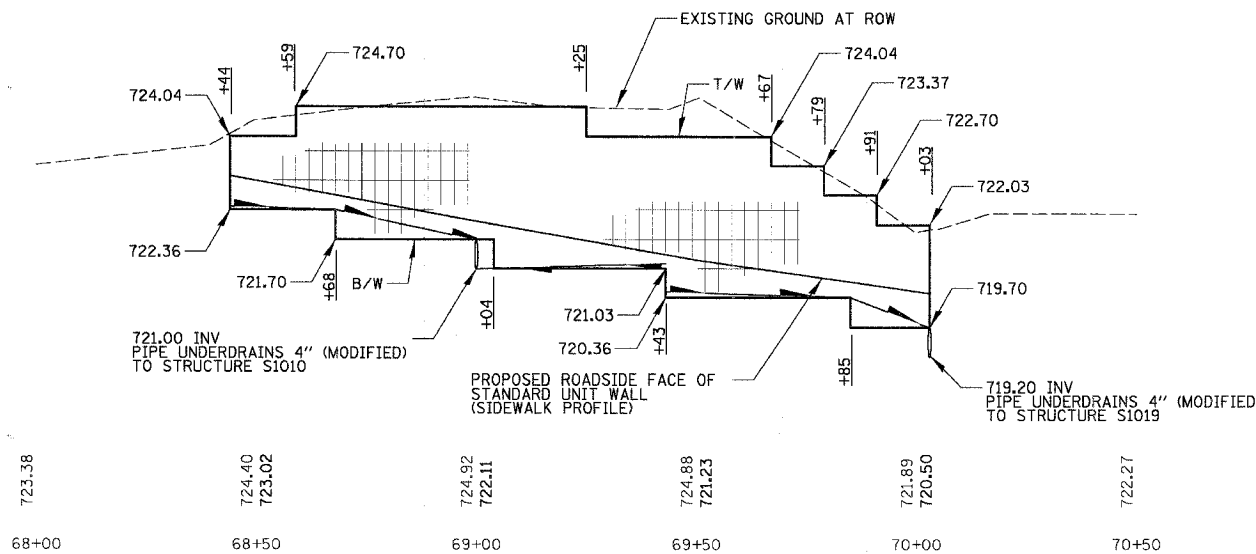


**BUTTERFIELD ROAD
STA. 179 + 88 - STA 182 + 24
(RIGHT)**

725

720

715



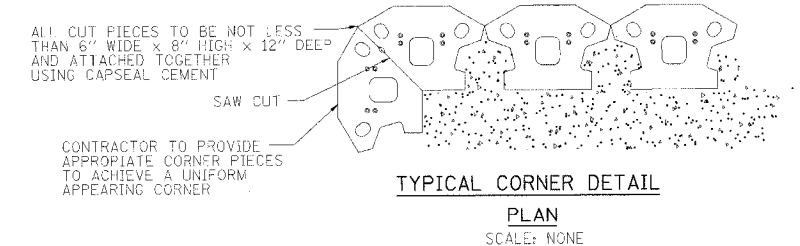
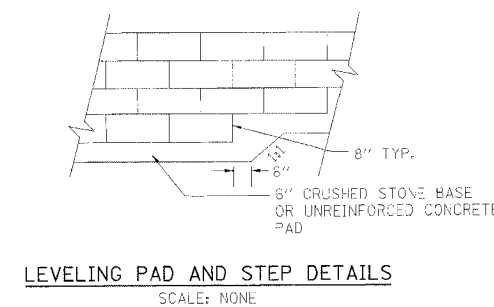
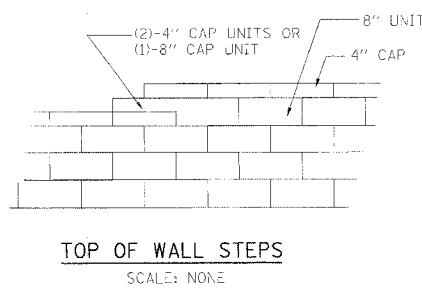
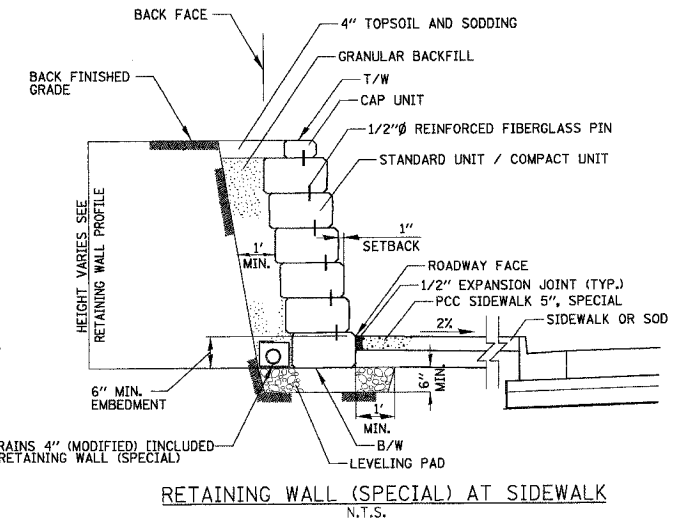
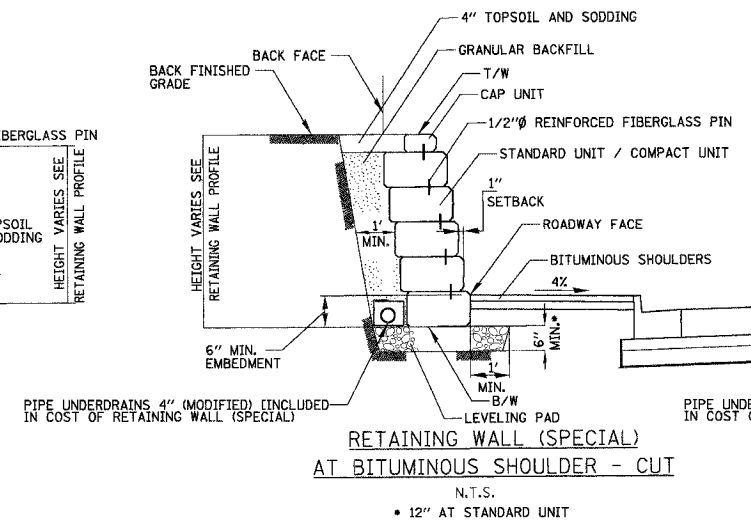
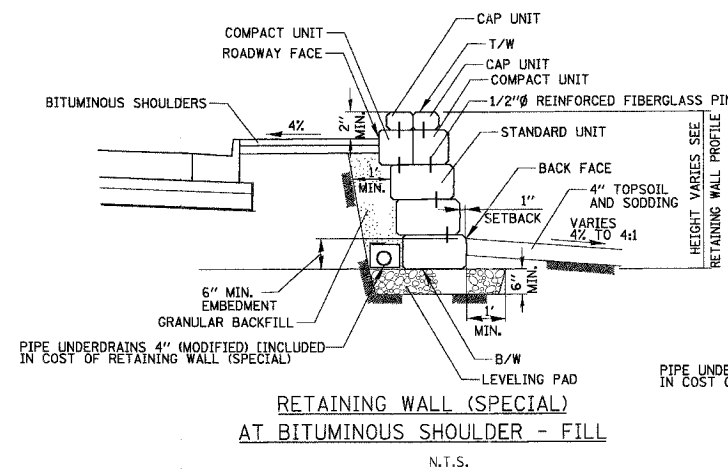
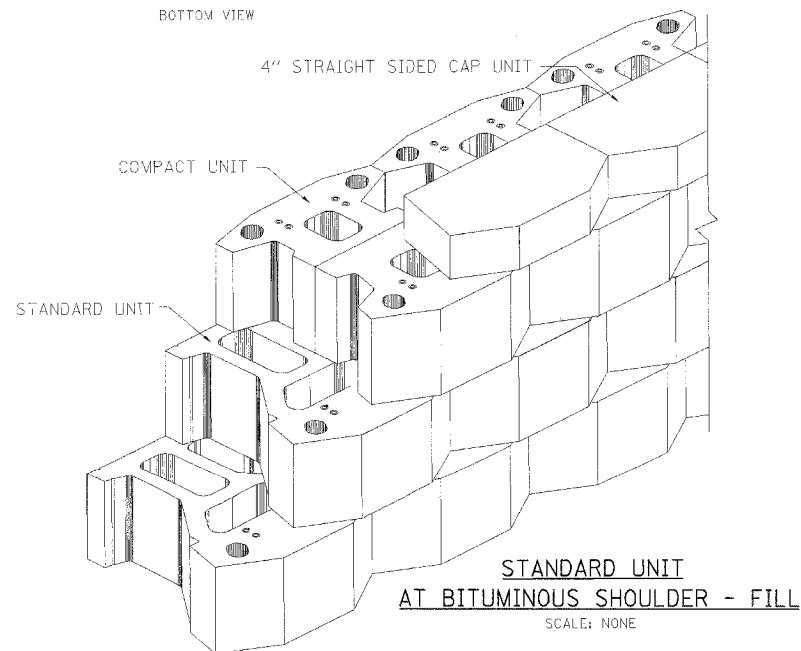
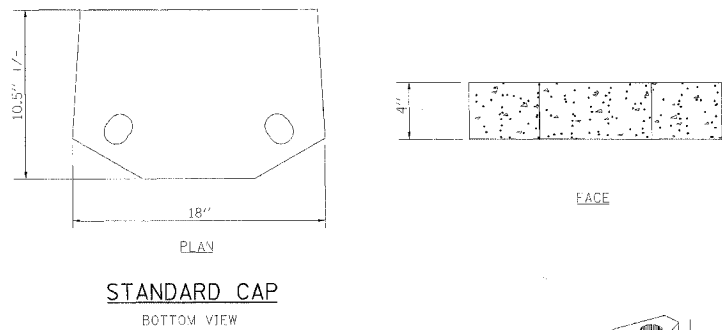
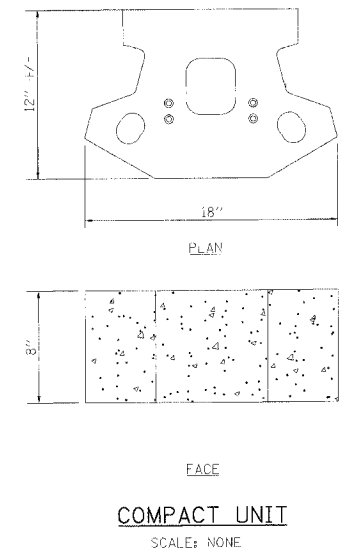
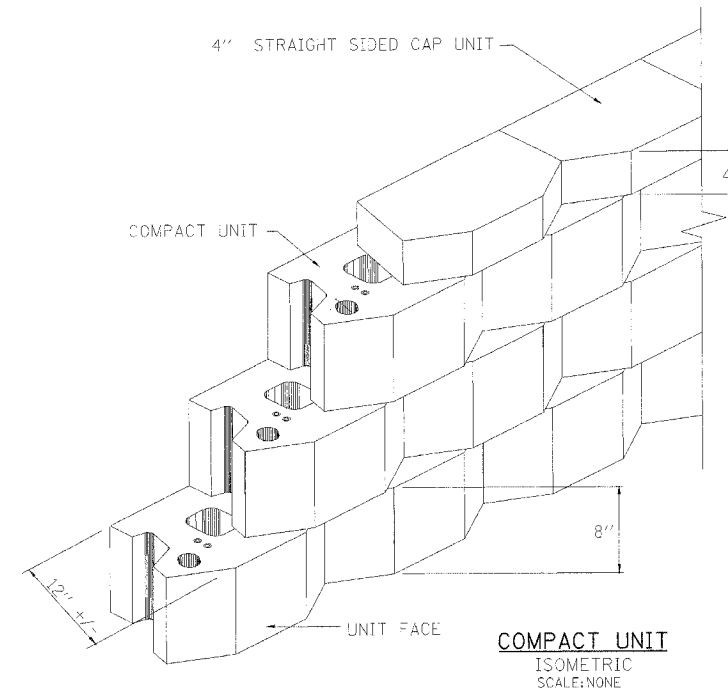
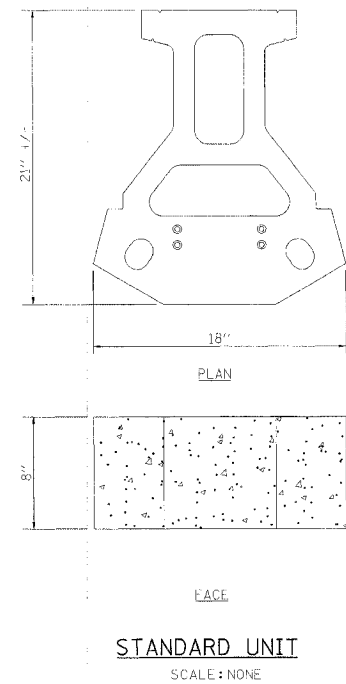
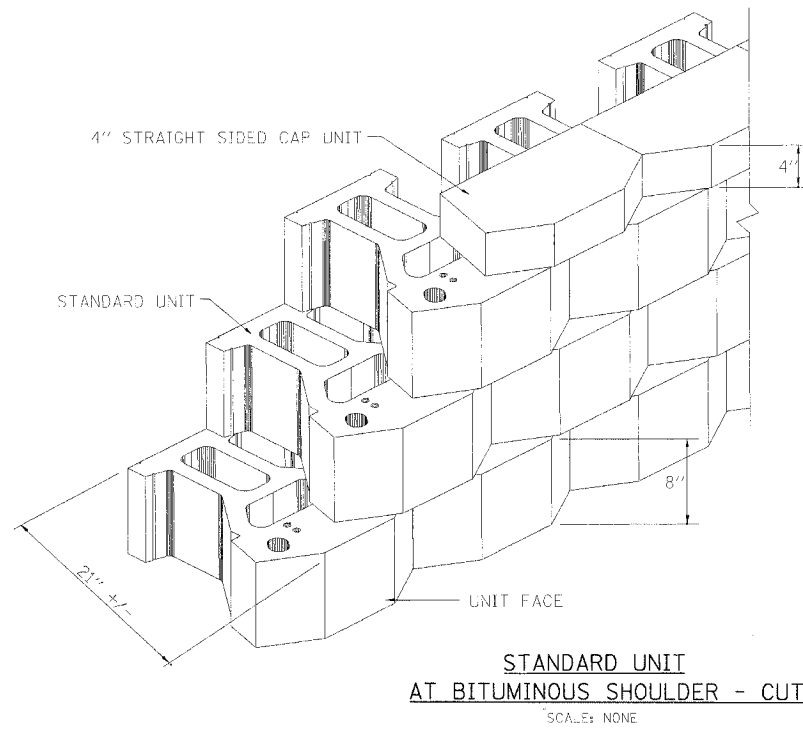
**WINCHESTER ROAD
STA. 68 + 44 - STA 70 + 03
(RIGHT)**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**FAU 2647 - BUTTERFIELD ROAD
 RETAINING WALL PROFILES**
STA. 158 + 32 RIGHT TO 182 + 24 RIGHT
STA. 68 + 44 RIGHT TO 70 + 03 RIGHT
 SCALE: 20H : 5V
 DATE: 12/2/2005
 DRAWN BY: PMM
 CHECKED BY: BLL

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 12/2/2005

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	128
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



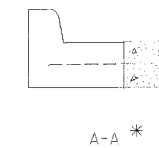
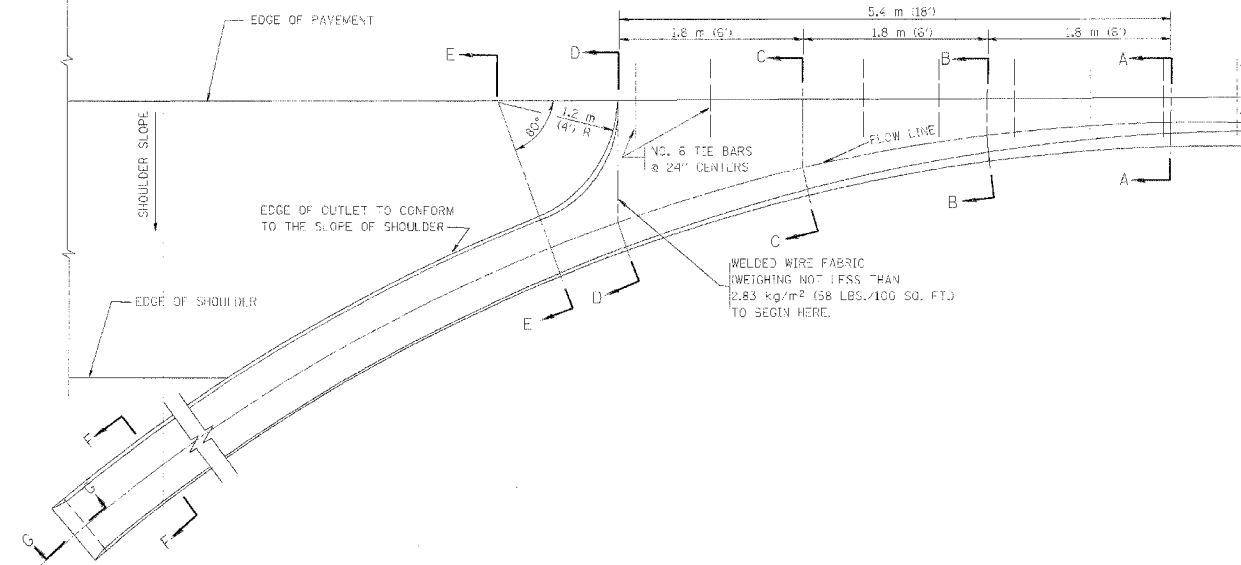
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
RETAINING WALL (SPECIAL) DETAILS

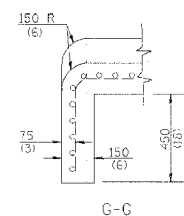
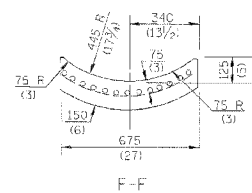
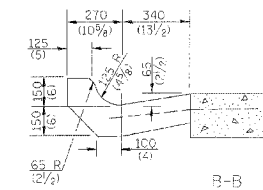
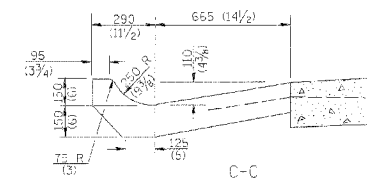
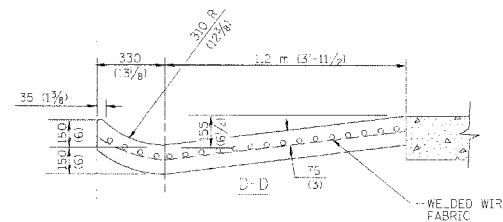
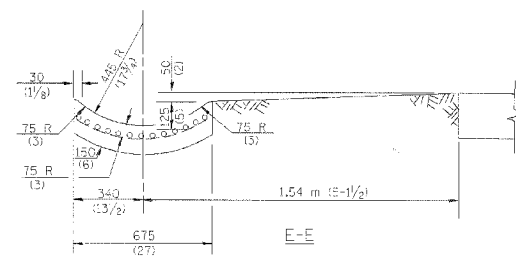
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DATE: 12/2/2005
DRAWN BY: ELA/PMM
CHECKED BY: BLL

APPLICABLE TO IL RTE 137 ONLY

P.A. ETC.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2647 99-00142-07-WR	LAKE	256	129
CONTRACT NO: 83815				
FED. ROAD DIST. NO. *	DISTRICTS	FED. AID PROJECT		



* DIMENSIONS OF THE CURB & GUTTER AT SECTION A-A ARE SHOWN ON STATE STANDARD 60600. FOR DETAILS OF OUTLET FOR CONCRETE CURB & CUTTER, TYPE B 15.60 (B-6.24) SEE STATE STANDARD 606006.



GENERAL NOTES

GUTTER OUTLET SHALL BE TIED TO THE PAVEMENT IN ACCORDANCE WITH DETAILS FOR LONGITUDINAL CONSTRUCTION JOINT SHOWN ON STANDARD 420001.

TIE BARS SHALL BE NO. 20 (NO. 6) AT 600 (24) CENTERS UNLESS OTHERWISE SHOWN.

IF THE AVERAGE GRADE OF PAVEMENT FOR THE DISTANCE FROM SECTION A-A TO D-D EXCEEDS 2%, THIS DISTANCE SHALL BE INCREASED 1.8 m (6') FOR EACH 1% INCREASE IN GRADE.

QUANTITIES

FOR SECTION A-A TO E-E AND CURBAIN WALL:
 0.36 m³ (1.25 CU. YDS.) CLASS S1 CONCRETE (OUTLET) FOR 225 (9) PAVT.
 0.97 m³ (1.27 CU. YDS.) CLASS S1 CONCRETE (OUTLET) FOR 250 (10) PAVT.
 FOR SECTION F-F:
 0.03 m³ (0.3-5 CU. YDS.) CLASS S1 CONCRETE PER m (fft.).

A.L. DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.

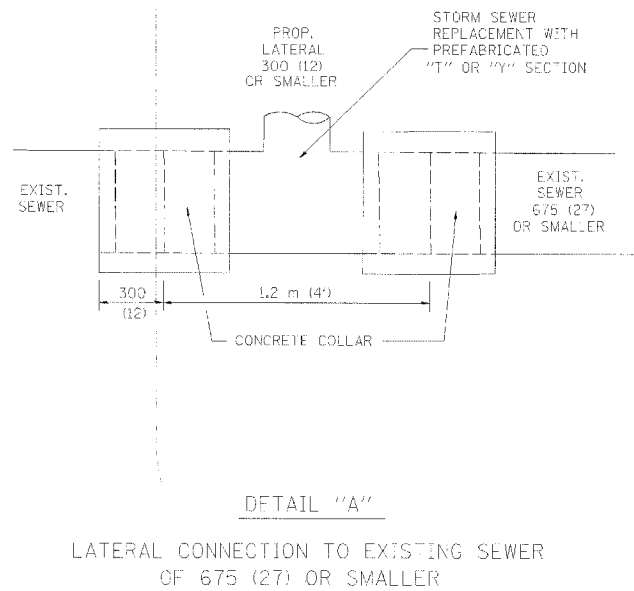
ILLINOIS DEPARTMENT OF TRANSPORTATION

OUTLET FOR CONCRETE CURB AND GUTTER

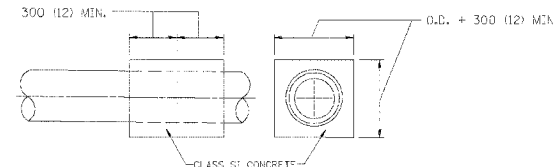
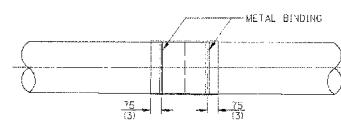
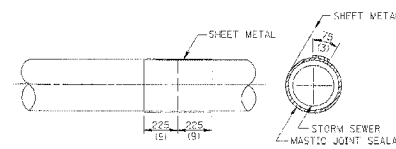
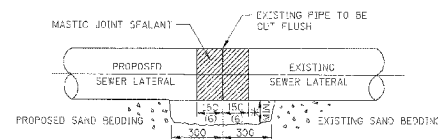
REVISIONS	
NAME	DATE
M. DE YONG	8/4/86
R. SHAH	09/03/94
R. SHAH	10/25/94
E. GOMEZ	12/21/00

SCALE: NONE
 DATE 10/18/2002

DRAWN BY
 CHECKED BY
 ED600-01 (B0-03)
 REVISION DATE: 12/21/00



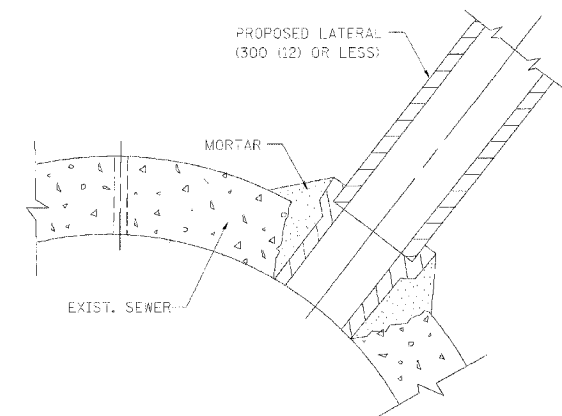
DETAIL "A"
LATERAL CONNECTION TO EXISTING SEWER
OF 675 (27) OR SMALLER



DETAIL "B"
CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

- CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
- APPLY THE MASTIC JOINT SEALANT TO THE FIRST 150 (6) OF EACH PIPE.
- BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 300 X 150 (12 X 6) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
- CUT A PIECE OF SHEET METAL GAGE NO. 19 1/2 (0.0418) 450 (18) WIDE BY THE OUTSIDE CIRCUMFERENCE OF THE PIPE PLUS 75 (3) LONG.
- WRAP THE SHEET METAL AROUND THE PIPES, 225 (9) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
- LAP THE SHEET METAL AT LEAST 75 (3) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
- PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
- Wipe OFF ANY EXCESS MASTIC JOINT SEALANT THAT COZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
- PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"
PROPOSED LATERAL
CONNECTION TO EXISTING SEWER
OF 750 (30) OR LARGER

NOTES

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

- THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.
- CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 675 (27) OR SMALLER SEE DETAIL "A" AND "B".
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 750 (30) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS. THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSLITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.

ILLINOIS DEPARTMENT OF TRANSPORTATION

**DETAIL OF STORM SEWER
CONNECTION TO EXISTING SEWER**

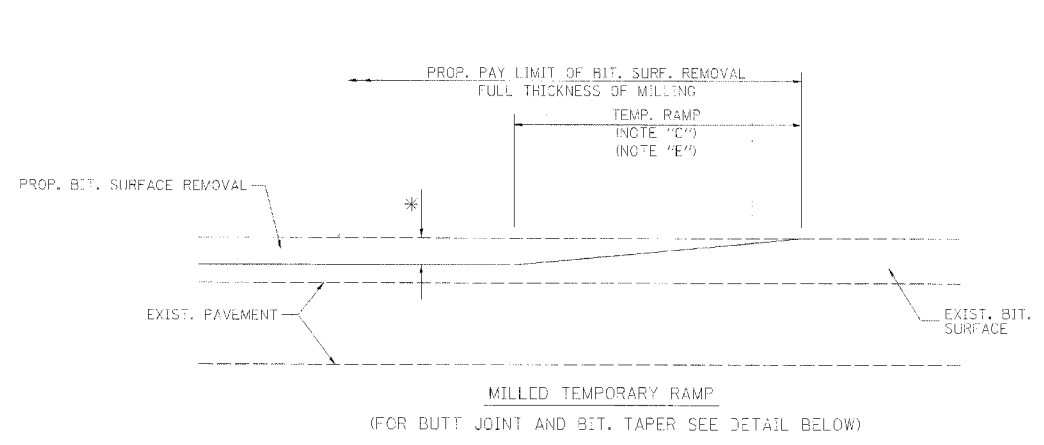
REVISIONS	
NAME	DATE
M. DE YONG	07/25/90
M. DE YONG	02/05/92
M. DE YONG	05/08/92
R. SHAH	09/09/94
R. SHAH	10/23/94
R. SHAH	06/12/96

SCALE: NONE
DATE: 10/18/2002

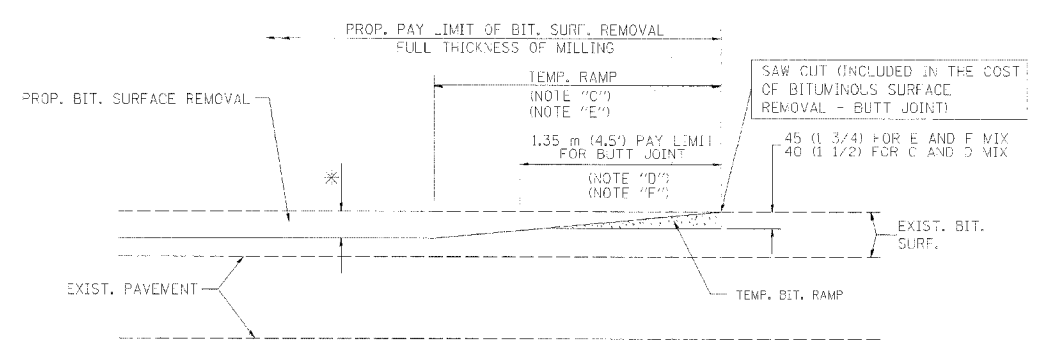
DRAWN BY: CADDO
CHECKED BY:

BD500-01 (BD-7)
REVISION DATE: 05/12/96

P.L. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	131
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	F.I. NUMBER	FED. AID PROJECT		

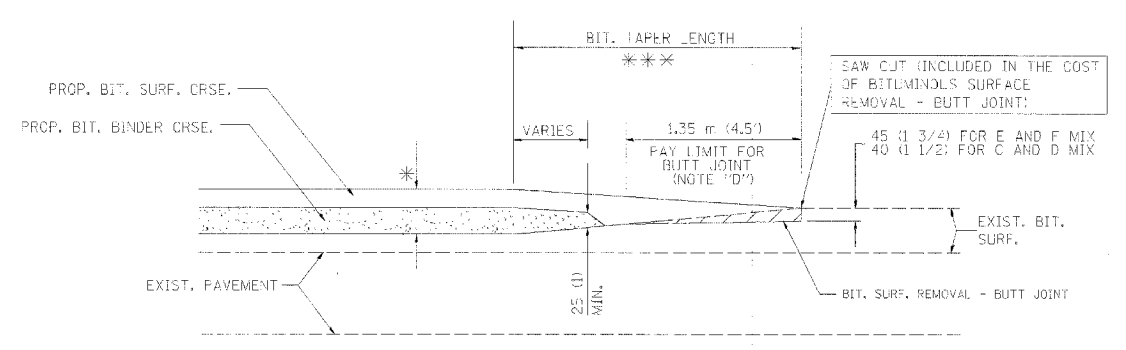


OPTION 1

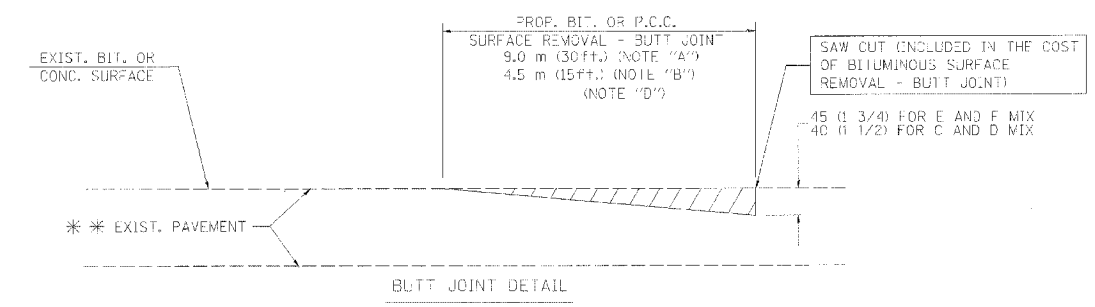


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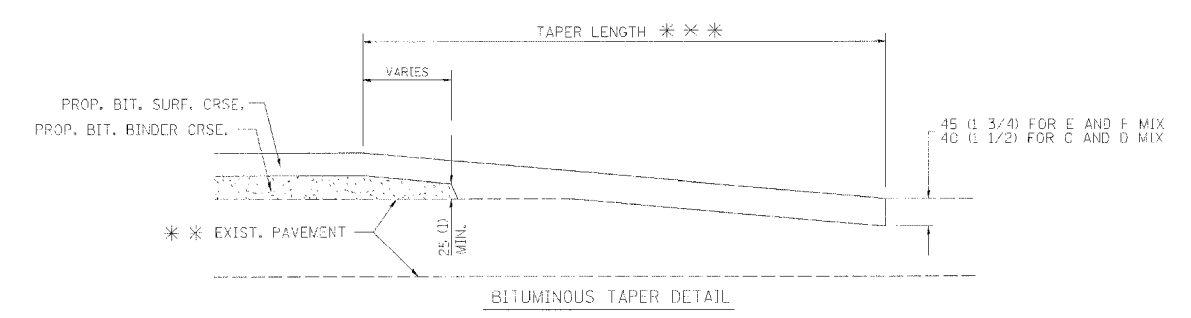
TYPICAL TEMPORARY RAMP



TYPICAL BUTT JOINT AND BITUMINOUS TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



TYPICAL BUTT JOINT AND BITUMINOUS TAPER FOR RESURFACING ONLY

* * * PC CONCRETE, BITUMINOUS OR BITUMINOUS RESURFACED PAVEMENT.

NOTES

- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
- B: MINOR SIDE ROADS.
- C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING BITUMINOUS SURFACE.
- D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED BITUMINOUS COURSES.
- E: TAPER THE TEMP. RAMP AT A RATE OF 900 (3 FT.) PER INCH OF MILLING THICKNESS.
- F: INSTALLATION AND REMOVAL OF THE 1.35 m (4.5') TEMP. BIT. RAMP WILL BE PAID AS "BITUMINOUS SURFACE REMOVAL - BUTT JOINT".
- G: SEE ARTICLE 406.18 AND 406.24 OF THE STANDARD SPECIFICATIONS FOR "BITUMINOUS AND PCC SURFACE REMOVAL, BUTT JOINT".
- * SEE TYPICAL SECTIONS FOR MILLING THICKNESS.
- * * * 6.1 m (20') PER 25 (1) RESURFACING (NOTE "A")
3.0 m (10') PER 25 (1) RESURFACING (NOTE "B")

ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.

ILLINOIS DEPARTMENT OF TRANSPORTATION

BUTT JOINT AND BITUMINOUS TAPER DETAILS

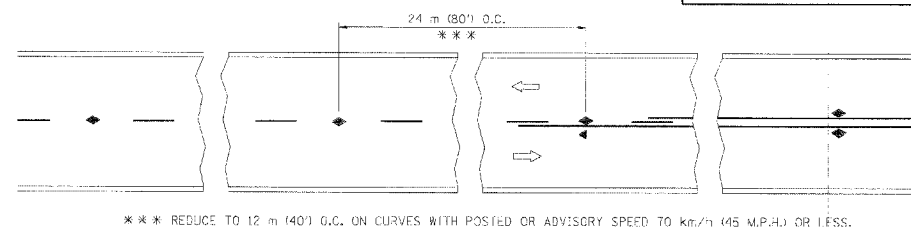
BASIS OF PAYMENT:
THE BUTT JOINT WILL BE PAID FOR PER SQUARE METER (SQUARE YARD) AS "BITUMINOUS SURFACE REMOVAL - BUTT JOINT" OR AS "PORTLAND CEMENT CONCRETE SURFACE REMOVAL - BUTT JOINT".

REVISIONS	
NAME	DATE
M. DE YONG	6-13-90
M. DE YONG	7-3-90
M. DE YONG	3-27-92
R. SHAH	09/09/94
R. SHAH	10/25/94
A. ADBAS	03/21/97
M. GOMEZ	04/06/01

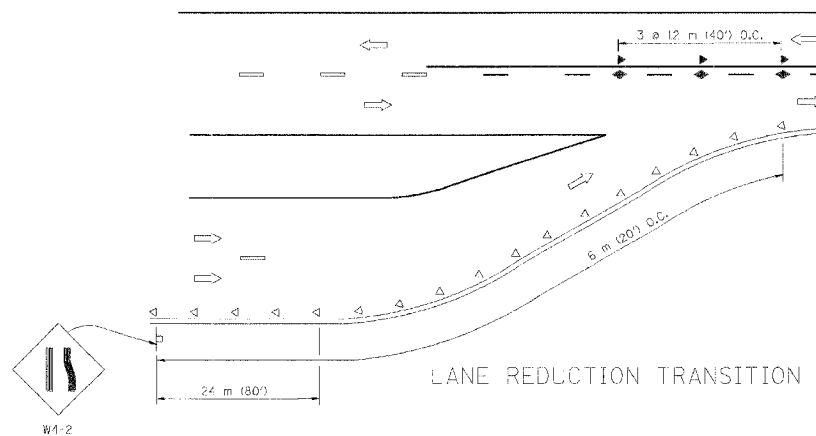
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CHECKED BY: [blank]
DATE PLOTTED: 10/18/2002
REVISION DATE: 04/06/01

F.L. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	132
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	COLUMBIA	FED. AID PROJECT		

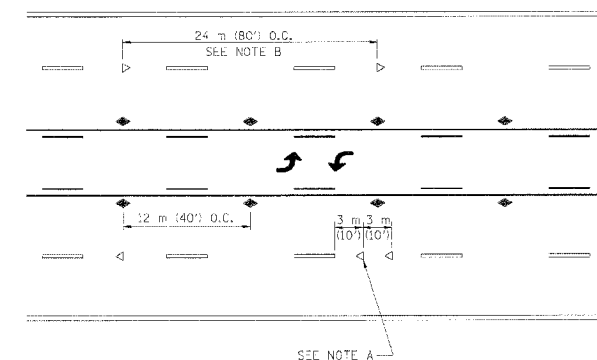
APPLICABLE TO IL RTE 137 ONLY



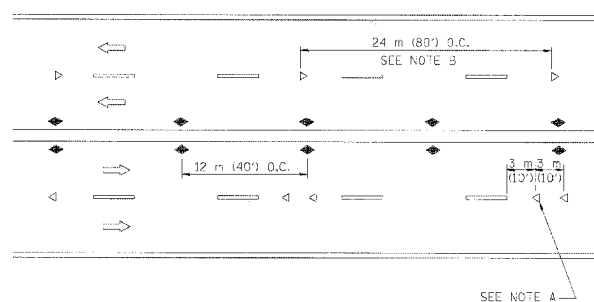
TWO-LANE/TWO-WAY



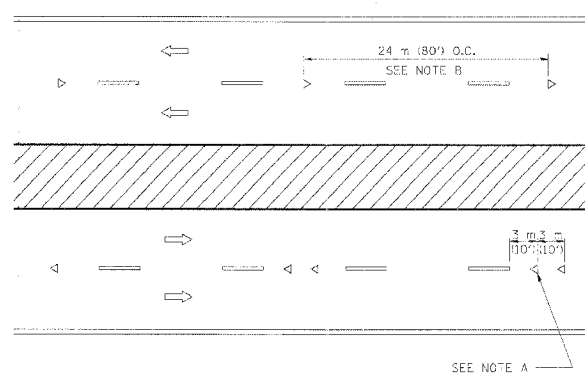
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 50 TO 75 (2 TO 3) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 150 m (500') IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

LANE MARKER NOTES

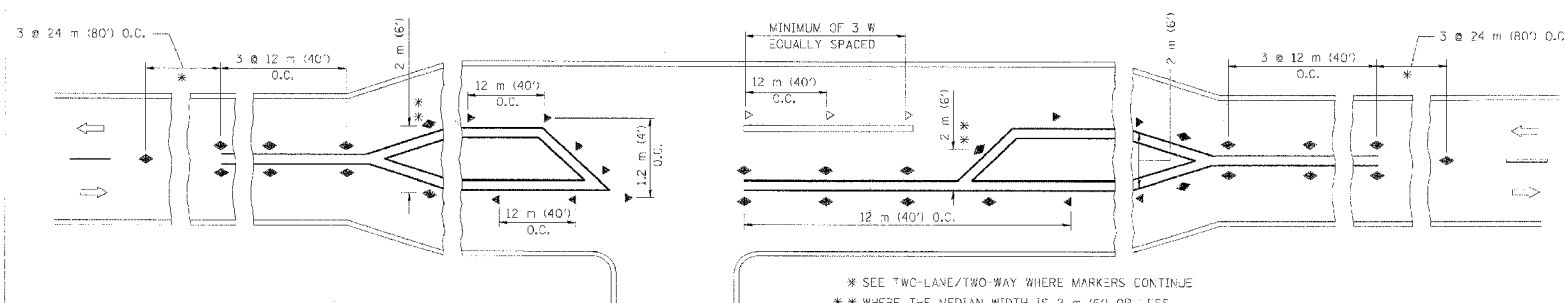
3. REDUCE TO 12 m (40') O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 20 km/h (10 M.P.H.) LOWER THAN POSTED SPEEDS.
- A. USE DOUBLE LANE LINE MARKERS SPACED AS 5-10W.

SYMBOLS

- YELLOW STRIPE
- WHITE STRIPE
- ◄ ONE-WAY AMBER MARKER
- ◄ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHOULD BE INCLUDED IN THE PLANS.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.



LEFT TURN

All dimensions are in millimeters (inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION

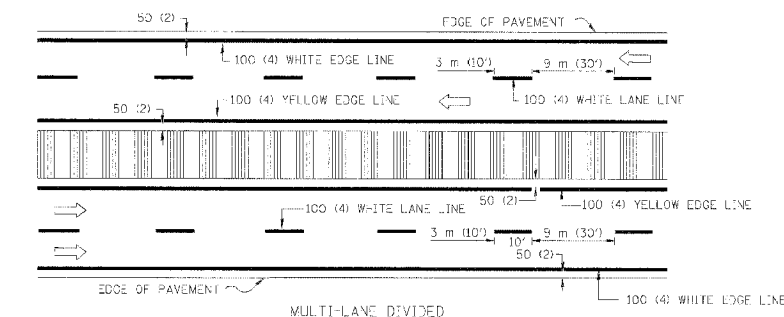
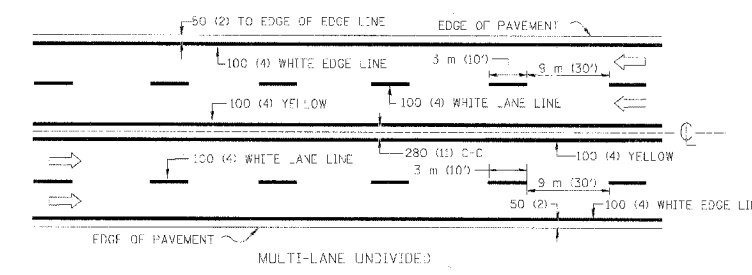
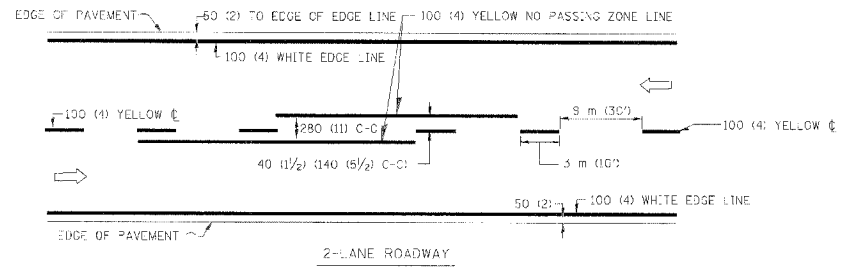
TYPICAL APPLICATIONS
RAISED REFLECTIVE PAVEMENT MARKERS
(SNOW-PLOW RESISTANT)

REVISIONS	
NAME	DATE
T. RAMMACHER	09-19-94
T. RAMMACHER	03-12-99
T. RAMMACHER	01-06-00

SCALE: NONE
DATE: 10/18/2002

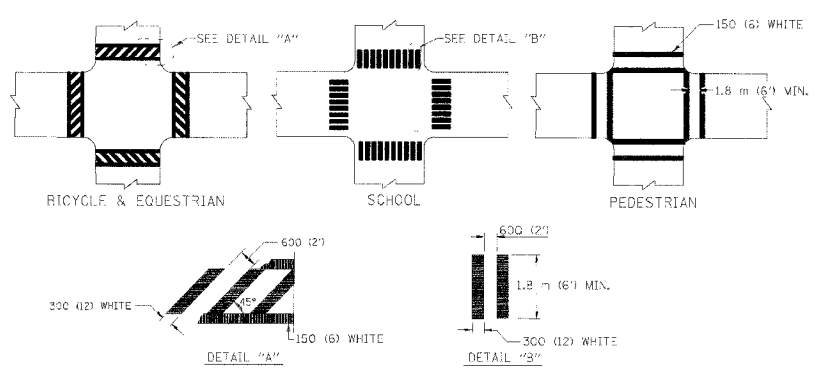
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CHECKED BY TC-11

REVISION DATE: 01/06/00

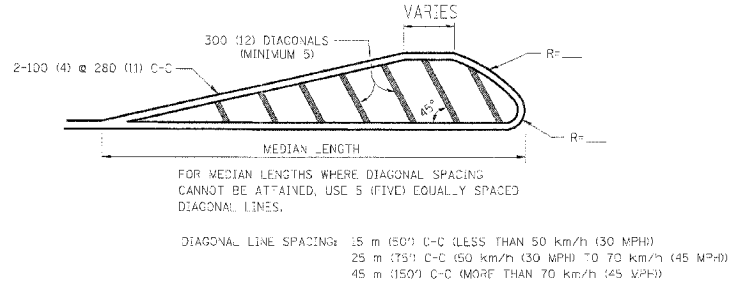
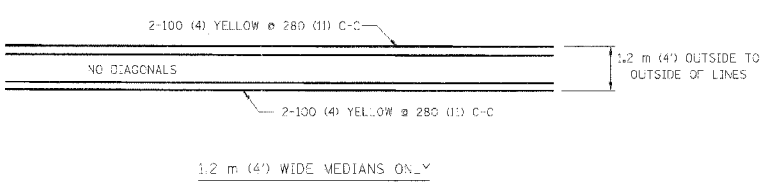


NOTE: MEDIANS WITH BARRIER CURBS DO NOT REQUIRE AN EDGE LINE

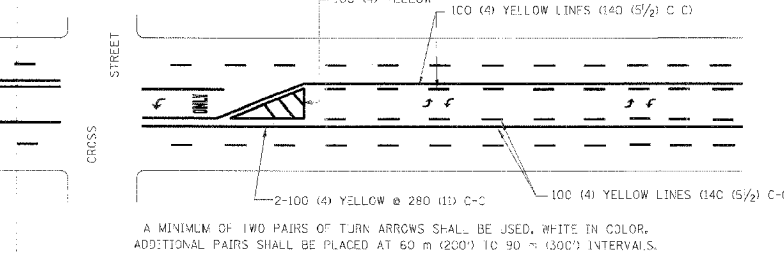
TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING



MEDIANS OVER 1.2 m (4') WIDE

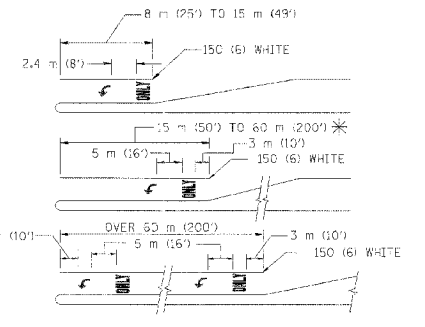


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 60 m (200') TO 90 m (300') INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

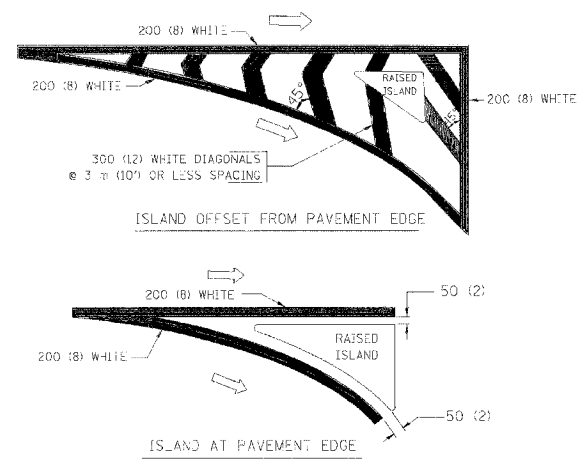


FULL SIZE LETTERS 2.4 m (8') AND ARROWS SHALL BE USED.
AREA = 1.5 m² (15.6 SQ. FT.) ONLY AREA = 1.9 m² (20.6 SQ. FT.)

* TURN LANES IN EXCESS OF 120 m (400') IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	100 (4)	SKIP-DASH	YELLOW	3 m (10') LINE WITH 9 m (30') SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 100 (4)	SOLID	YELLOW	280 (11) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	100 (4) 2 @ 100 (4)	SOLID SOLID	YELLOW YELLOW	140 (5 1/2) C-C FROM SKIP-DASH CENTERLINE 280 (11) C-C ONIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	100 (4) 125 (5) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	3 m (10') LINE WITH 9 m (30') SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	600 (2') LINE WITH 1.8 m (6') SPACE
EDGE LINES	100 (4)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NO LSHD NEXT TO BARRIER CURB
TURN LANE MARKINGS	150 (6) LINE; FULL SIZE LETTERS & SYMBOLS (2.4 m (8'))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 100 (4) EACH DIRECTION 2.4 m (8') LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	3 m (10') LINE WITH 9 m (30') SPACE FOR SKIP-DASH; 140 (5 1/2) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN; A. DIAGONALS (BIKE & EQUESTRIAN); B. LONGITUDINAL BARS (SCHOOL))	2 @ 150 (6) 300 (12) @ 45° 300 (12) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 1.8 m (6') APART 600 (2') APART 600 (2') APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	600 (24)	SOLID	WHITE	PLACE 1.2 m (4') IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 100 (4) WITH 300 (12) DIAGONALS @ 45° NO DIAGONALS USED FOR 1.2 m (4') WIDE MEDIANS	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	280 (11) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	200 (8) WITH 300 (12) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 4.5 m (15') C-C (LESS THAN 50 km/h (30 MPH)) 6 m (20') C-C (50 km/h (30 MPH) TO 70 km/h (45 MPH)) 9 m (30') C-C (OVER 70 km/h (45 MPH))
RAILROAD CROSSING	600 (24) TRANSVERSE LINES; "RR" IS 1.8 m (6') LETTERS; 400 (16) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=0.33m ² (3.5 SQ. FT.) EACH "X"=5.0 m ² (54.0 SQ. FT.)
SHOULDER DIAGONALS	300 (12) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	15 m (50') C-C (LESS THAN 50 km/h (30 MPH)) 25 m (75') C-C (50 km/h (30 MPH) TO 70 km/h (45 MPH)) 45 m (150') C-C (OVER 70 km/h (45 MPH))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in millimeters (inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION

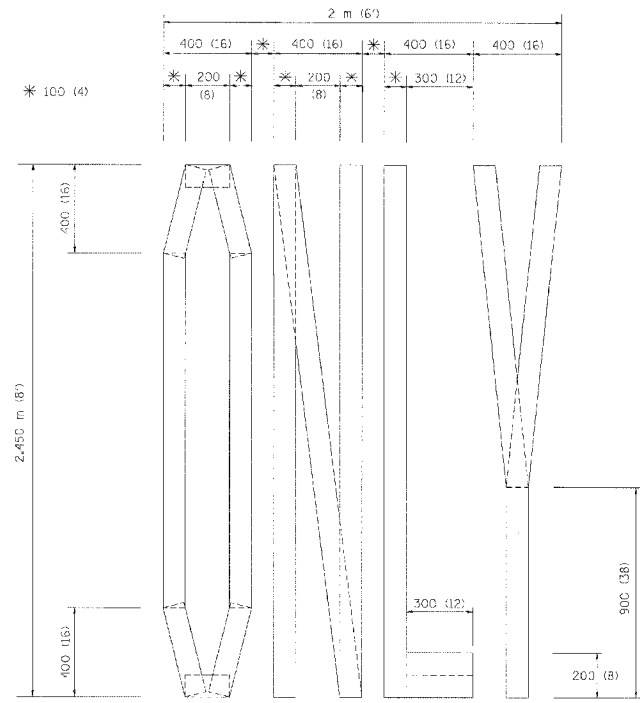
DISTRICT ONE TYPICAL PAVEMENT MARKINGS

REVISIONS	
NAME	DATE
EVRS	03-19-90
T. RAMMACHER	10-27-94
ALEX HOUSCH	10-09-96
ALEX HOUSCH	10-17-96
T. RAMMACHER	01-06-00

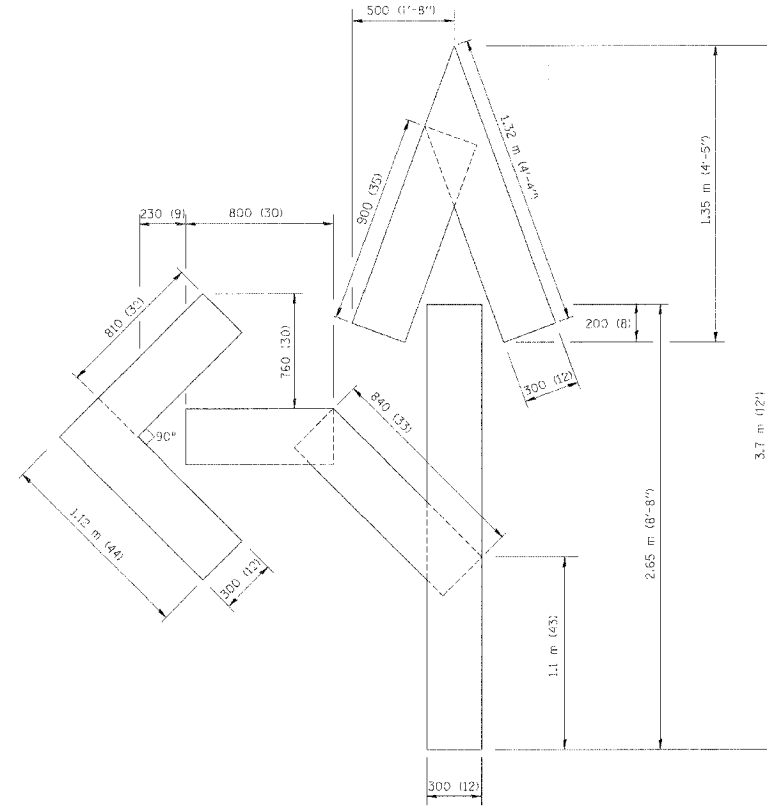
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DRAWN BY: CADD
CHECKED BY: TC-13
REVISION DATE: 01/06/00

APPLICABLE TO IL RTE 137 ONLY

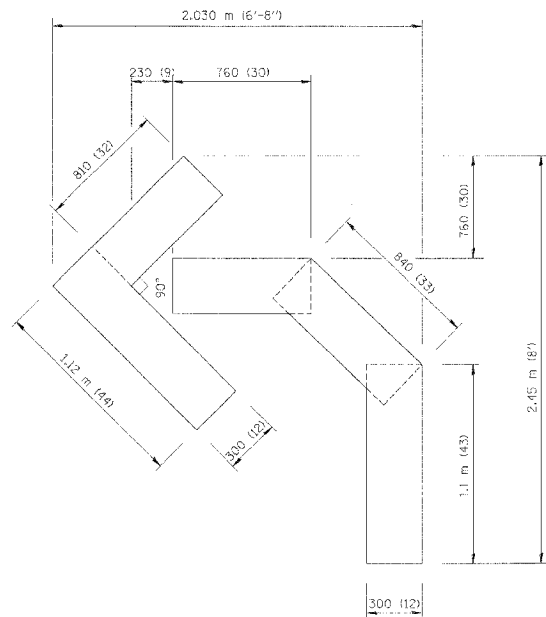
P.A. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647 99-00142-07-WR	LAKE	256	134	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ELEMENTS	FED. AID PROJECT		



QUANTITY
 100 (4) LINE = 19.7 m (64.1 ft.)
 1.97 sq. m (21.1 sq. ft.)



QUANTITY
 100 (4) LINE = 25.3 m (82.5 ft.)
 2.53 sq. m (27.5 sq. ft.)



QUANTITY
 100 (4) LINE = 13.9 m (45.5 ft.)
 1.39 sq. m (15.2 sq. ft.)

All dimensions are in millimeters (Inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING

REVISIONS	
NAME	DATE
T. RAMMACHER	09/18/94
J. OBERLE	06/01/96
T. RAMMACHER	06/05/96
T. RAMMACHER	11/04/97
T. RAMMACHER	03/02/98
E. GOMEZ	08/28/00

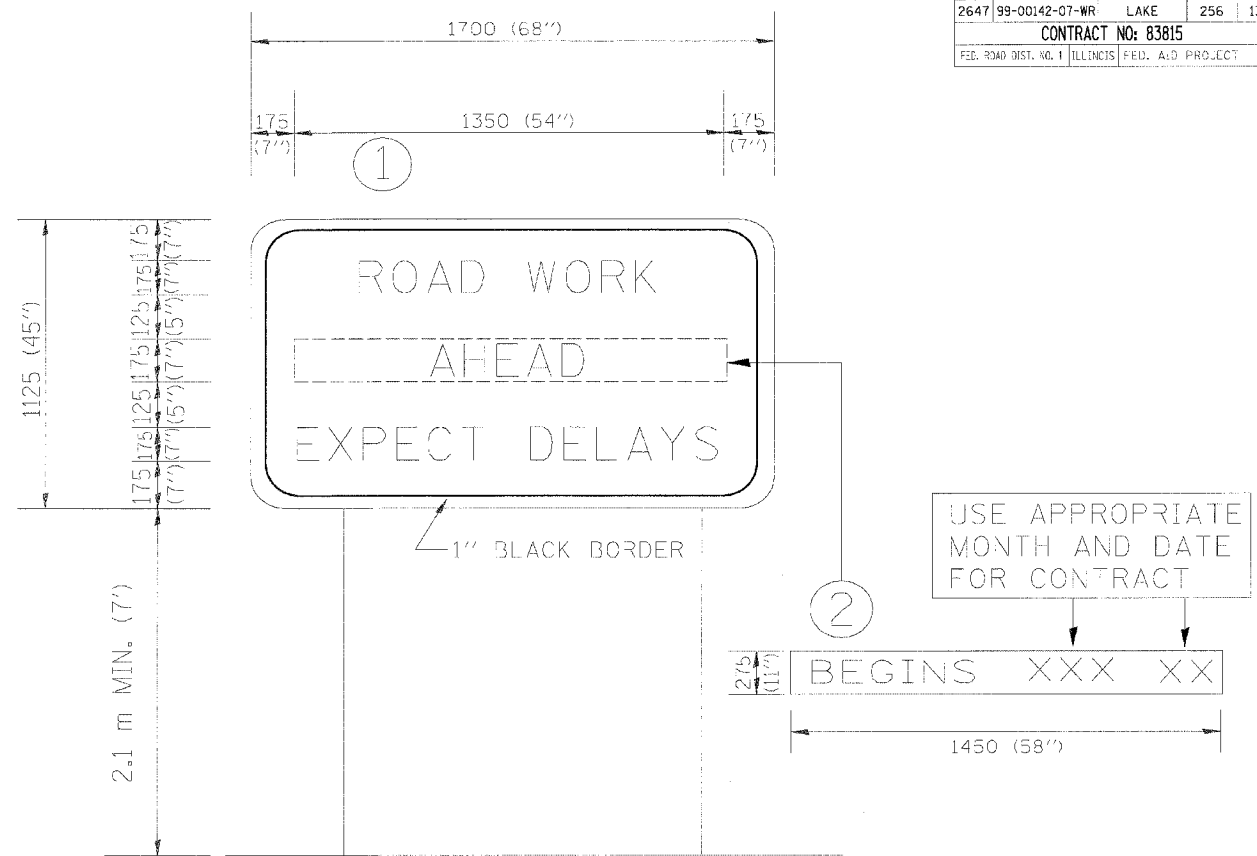
SCALE: NONE
 DATE 10/18/2002

DRAWN BY CAD0
 CHECKED BY TC-16

REVISION DATE: 08/28/00

Friday, October 18, 2002 @ 10:23:21 AM
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 9/17/02

F.A. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	135
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 2.3 SQ. M. (25.70 SQ. FT.)

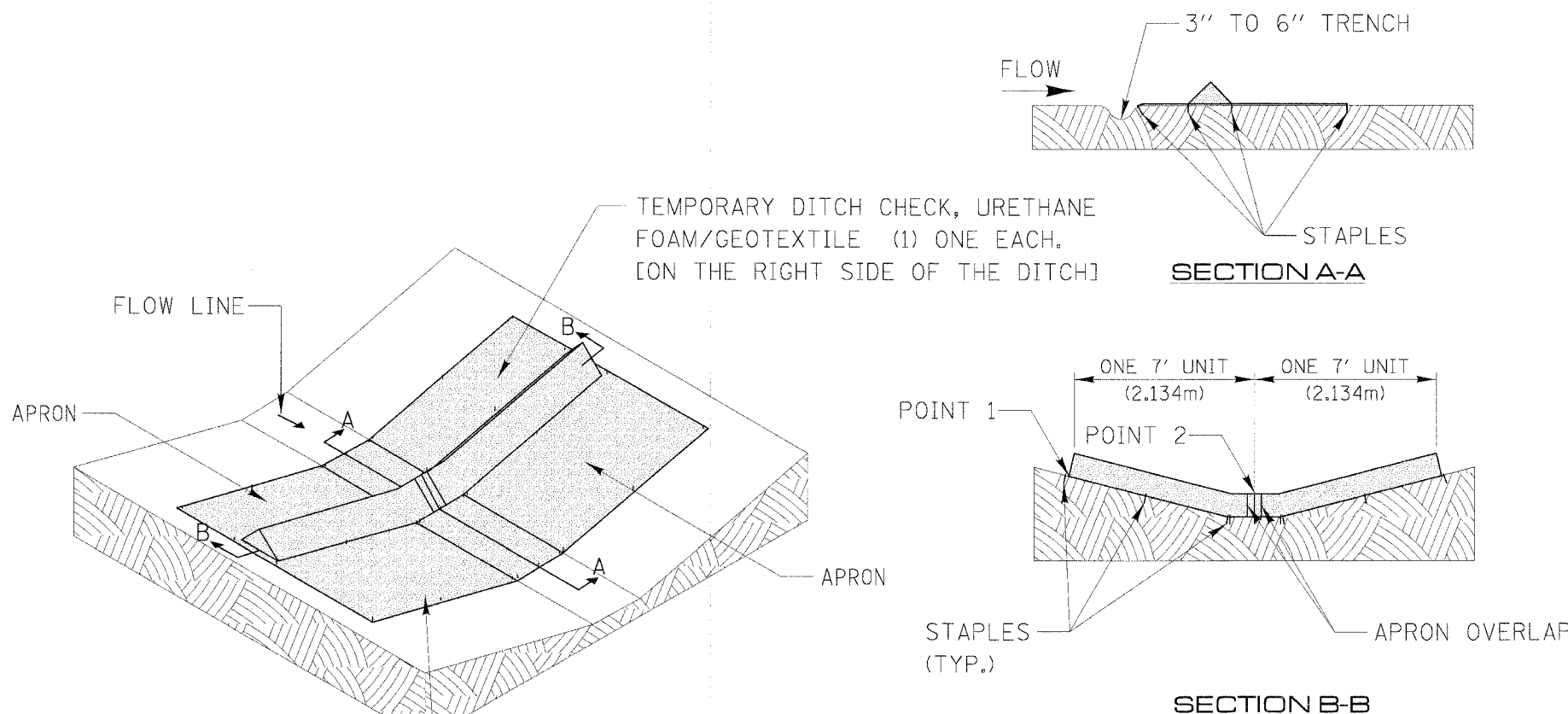
ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
R. MIRS	9-15-97	TEMPORARY INFORMATION SIGNING
R. MIRS	12-1-97	
T. RAMMACHER	2-2-99	

SCALE: DATE 10/18/2002 DRAWN BY: BUR. OF DESIGN CHECKED BY:

TC22 REVISION DATE: 02/02/99

12/2/2005 N:\LIBERTYVILLE\99-389\CIVIL\99389-TC22.DWG



STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE 7' UNIT AS SHOWN ON THE DIAGRAM.

POINT 1 MUST BE HIGHER THAN POINT 2 TO INSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

NOTE:
THE INSTALLATION SHOWN ABOVE WOULD BE PAID FOR AS TWO (2) EACH TEMPORARY DITCH CHECK, URETHANE FOAM/GEOTEXTILE.

SCALE: 1" = 5'

REVISIONS	DATE
DUAL DIMENSIONS	10/23/01
MODIFIED PAY ITEM NAME	3/8/05

Lake County
Division of Transportation

APPROVED BY: G. N. WIESNER
DATE: JULY 23, 1999

**TRIANGULAR SILT DIKE
INSTALLATION FOR
ROADWAY DITCH OR
DRAINAGE DITCH**

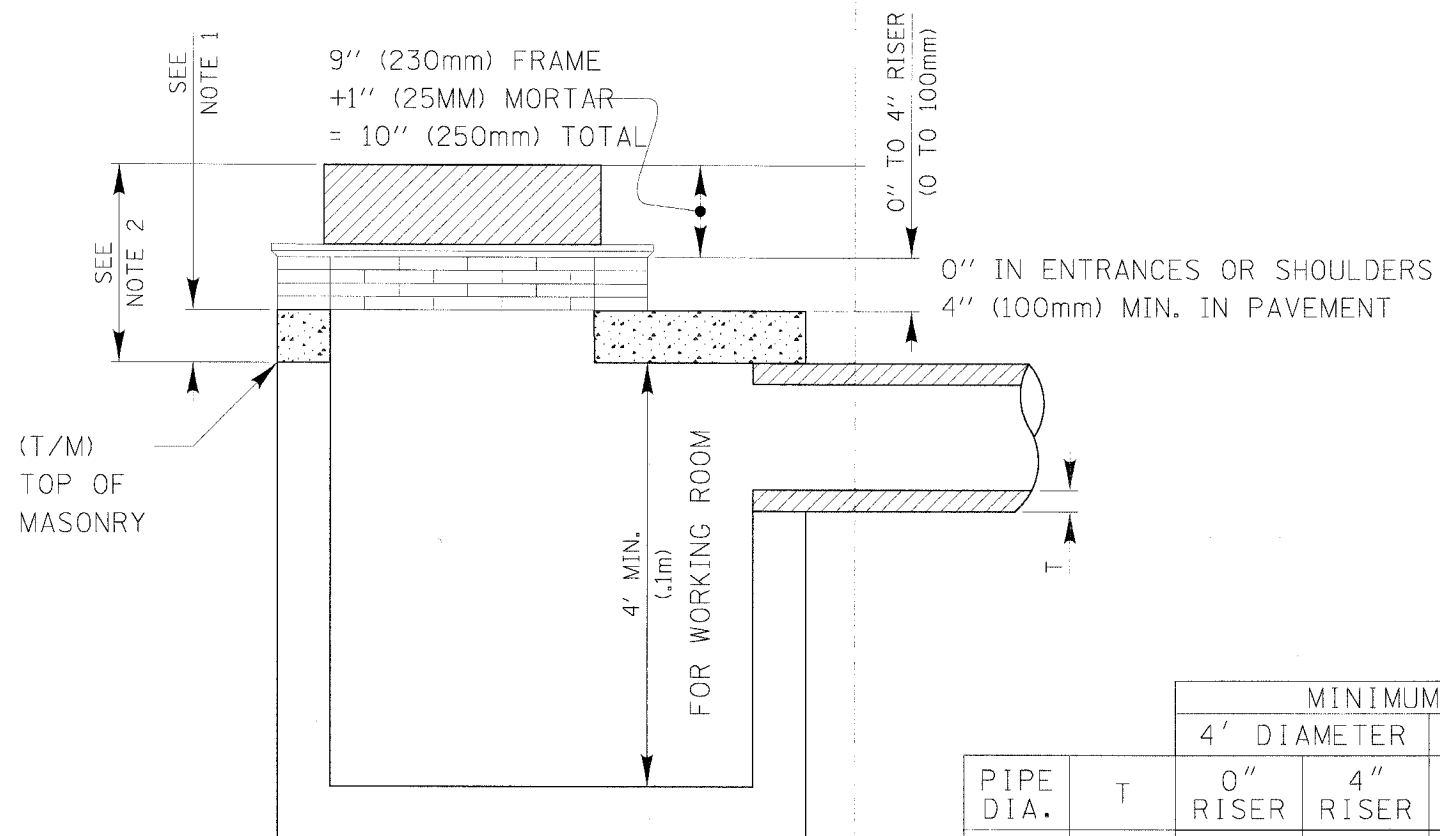
LC1005

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**FAU 2647 - BUTTERFIELD ROAD
TRIANGULAR SILT DIKE
INSTALLATION FOR
ROADWAY DITCH OR
DRAINAGE DITCH**

SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A



NOTE 1:
 6" (150mm) - 4' (1.2m) DIA. M.H.
 8" (200mm) - 5' (1.5m) DIA. M.H.

NOTE 2:
 4' (1.2m) M.H.
 1'-8" (500mm) DESIRABLE
 1'-4" (400mm) MIN.
 5' (1.5m) M.H.
 1'-10" (560mm) DESIRABLE
 1'-6" (460mm) MIN.

PIPE DIA.	T	MINIMUM DEPTH			
		4' DIAMETER		5' DIAMETER	
		0" RISER	4" RISER	0" RISER	4" RISER
10"	2"	2.33'	2.67'	2.50'	2.83'
12"	2"	2.50'	2.83'	2.67'	3.00'
15"	2 1/4"	2.77'	3.10'	2.94'	3.27'
18"	2 1/2"	3.04'	3.38'	3.21'	3.54'
21"	2 3/4"	—	—	3.48'	3.81'
24"	3"	—	—	3.75'	4.08'
30"	3 1/2"	—	—	4.29'	4.63'
36"	4"	—	—	4.83'	5.17'
42"	4 1/2"	—	—	5.38'	5.71'

STRUCTURES REQUIRE SUMP FOR HEADROOM

PIPE DIA.	T	MINIMUM DEPTH			
		1.2m DIAMETER		1.5m DIAMETER	
		0mm RISER	100mm RISER	0mm RISER	100mm RISER
250mm	50mm	0.71m	0.81m	0.76m	0.86m
300mm	50mm	0.76m	0.86m	0.81m	0.91m
375mm	57mm	0.84m	0.94m	0.90m	1.00m
450mm	63mm	0.93m	1.03m	0.98m	1.08m
525mm	70mm	—	—	1.06m	1.16m
600mm	76mm	—	—	1.14m	1.24m
750mm	82mm	—	—	1.31m	1.41m
900mm	100mm	—	—	1.47m	1.58m
1050mm	108mm	—	—	1.64m	1.74m

STRUCTURES REQUIRE SUMP FOR HEADROOM

SCALE: 1"=2'



APPROVED BY: G. N. WIESNER
 DATE: AUG. 20, 1999

RESTRICTED DEPTH MANHOLE

LC1007

REVISIONS	DATE
DUAL DIMENSIONS	10/24/01

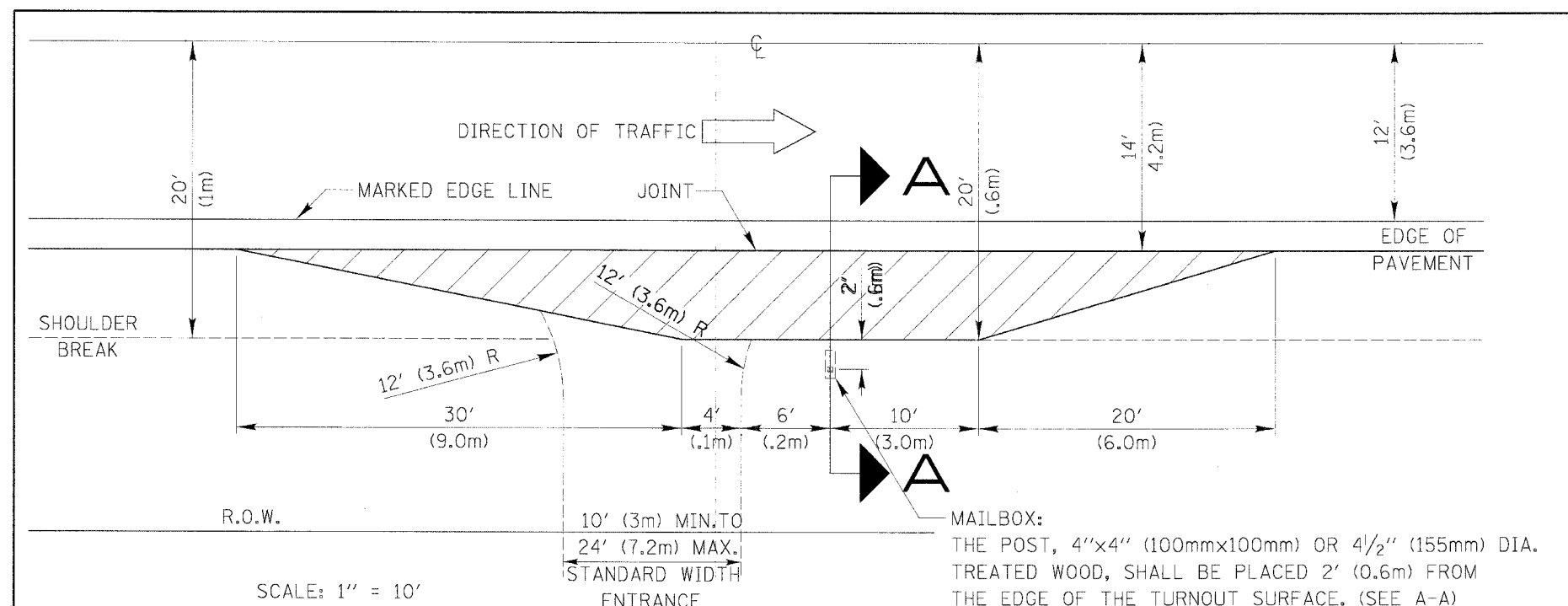
REVISIONS	DATE
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
RESTRICTED DEPTH MANHOLE

SCALE: NONE
 DATE: 12/2/2005

DRAWN BY: N/A
 CHECKED BY: N/A

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	138
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

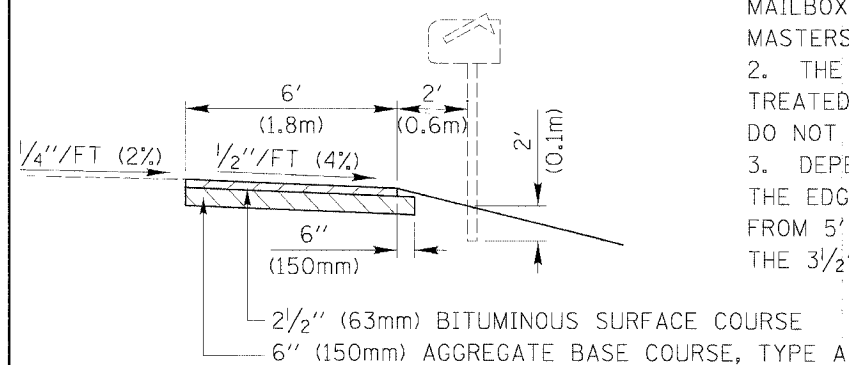


SCALE: 1" = 10'

MAILBOX:
THE POST, 4"x4" (100mmx100mm) OR 4 1/2" (155mm) DIA. TREATED WOOD, SHALL BE PLACED 2' (0.6m) FROM THE EDGE OF THE TURNOUT SURFACE. (SEE A-A)

DESIGN NOTES:

1. THE RESIDENT ENGINEER SHALL CONTACT THE LOCAL POSTMASTER PRIOR TO INSTALLING THE NEW MAILBOX POSTS FOR THE LOCAL MOUNTING HEIGHT OF THE MAILBOX. THE STANDARD MOUNTING HEIGHT IS 3 1/2' (1.05m); HOWEVER, LOCAL POSTMASTERS MAY VARY THIS HEIGHT.
2. THE STANDARD MAILBOX POST IS A 4"x4" (100mmX100mm) OR A 4 1/2" (155mm) DIA. TREATED WOOD POST. THE STANDARD BURY LENGTH OF THE POST IS 2' (600mm). DO NOT SHORTEN OR EXCEED THIS BURY LENGTH.
3. DEPENDING ON THE LOCATION OF THE SHOULDER BREAK WITH RESPECT TO THE EDGE OF THE MAILBOX TURNOUT THE OVERALL POST LENGTH MAY VARY FROM 5' 8" (1.7m) TO 6' 4" (1.9m) TO MAINTAIN THE 2' (600mm) BURY LENGTH AND THE 3 1/2' (1.05m) MOUNTING HEIGHT.



SECTION A-A

SCALE: 1" = 5'

Lake County
Division of Transportation
APPROVED BY: G. N. WIESNER
DATE: SEPT. 8, 1999

MAILBOX TURNOUT
ALONG UNCURBED ROADS

LC4011

REVISIONS	DATE
DUAL DIMENSIONS	03/11/02
DEL. TY. A (SPEC)	04/25/02

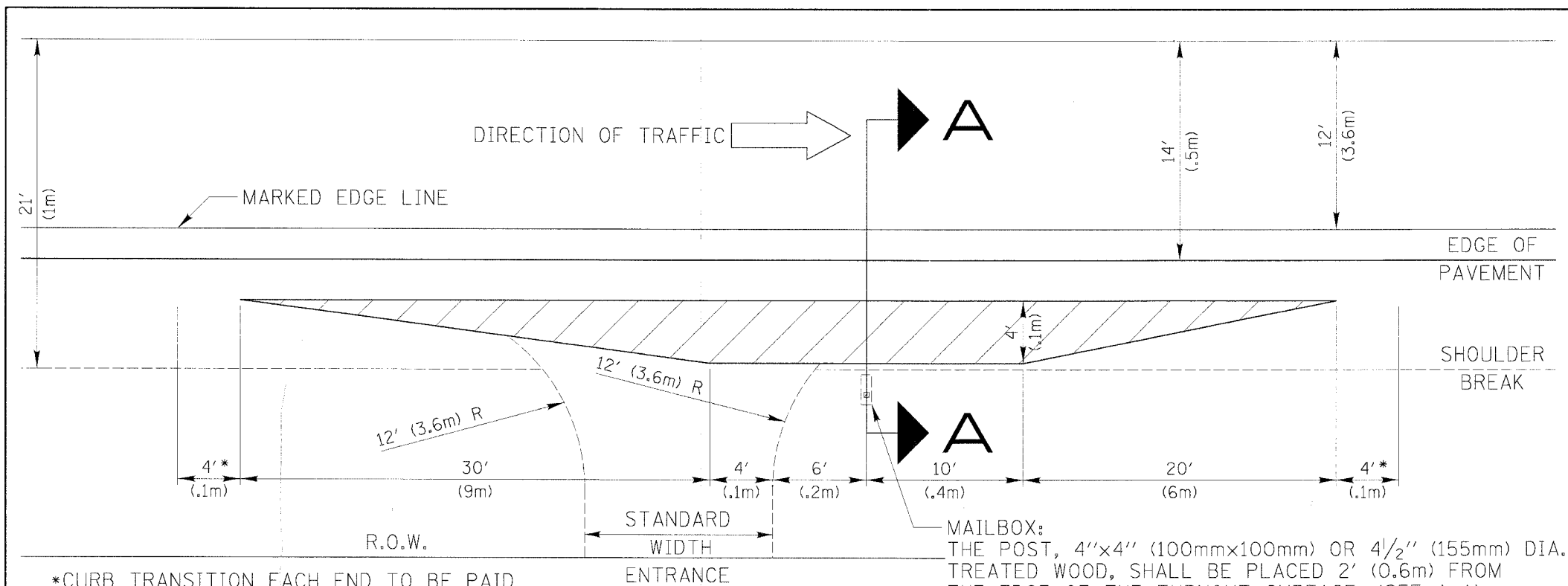
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
MAILBOX TURNOUT
ALONG UNCURBED ROADS

SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	139
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

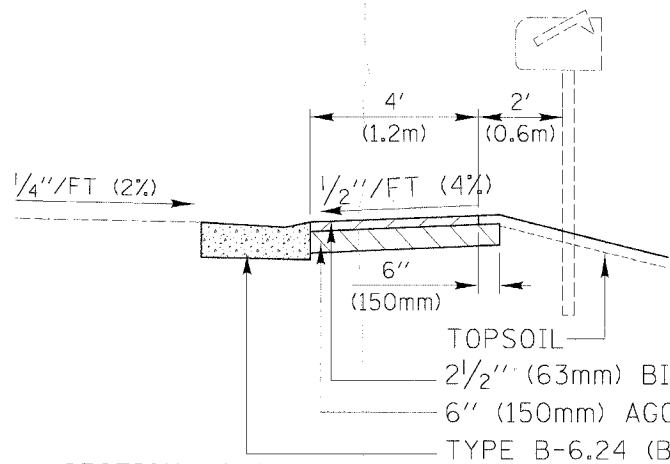


*CURB TRANSITION EACH END TO BE PAID FOR AT THE CONTRACT UNIT PRICE FOR COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (B15.60).

MAILBOX:
THE POST, 4"x4" (100mmx100mm) OR 4 1/2" (155mm) DIA. TREATED WOOD, SHALL BE PLACED 2' (0.6m) FROM THE EDGE OF THE TURNOUT SURFACE. (SEE A-A)

DESIGN NOTES:

1. THE RESIDENT ENGINEER SHALL CONTACT THE LOCAL POSTMASTER PRIOR TO INSTALLING THE NEW MAILBOX POSTS FOR THE LOCAL MOUNTING HEIGHT OF THE MAILBOX. THE STANDARD MOUNTING HEIGHT IS 3 1/2' (1.05m); HOWEVER, LOCAL POSTMASTERS MAY VARY THIS HEIGHT.
2. THE STANDARD MAILBOX POST IS A 4"x4" (100mmx100mm) OR A 4 1/2" (155mm) DIA. TREATED WOOD POST. THE STANDARD BURY LENGTH OF THE POST IS 2' (600mm). DO NOT SHORTEN OR EXCEED THIS BURY LENGTH.
3. DEPENDING ON THE LOCATION OF THE SHOULDER BREAK WITH RESPECT TO THE EDGE OF THE MAILBOX TURNOUT THE OVERALL POST LENGTH MAY VARY FROM 5' 8" (1.7m) TO 6' 4" (1.9m) TO MAINTAIN THE 2' (600mm) BURY LENGTH AND THE 3 1/2' (1.05m) MOUNTING HEIGHT.



SECTION A-A
SCALE: 1" = 5'



APPROVED BY: G. N. WIESNER
DATE: SEPT. 8, 1999

MAILBOX TURNOUT
ALONG CURBED ROADS

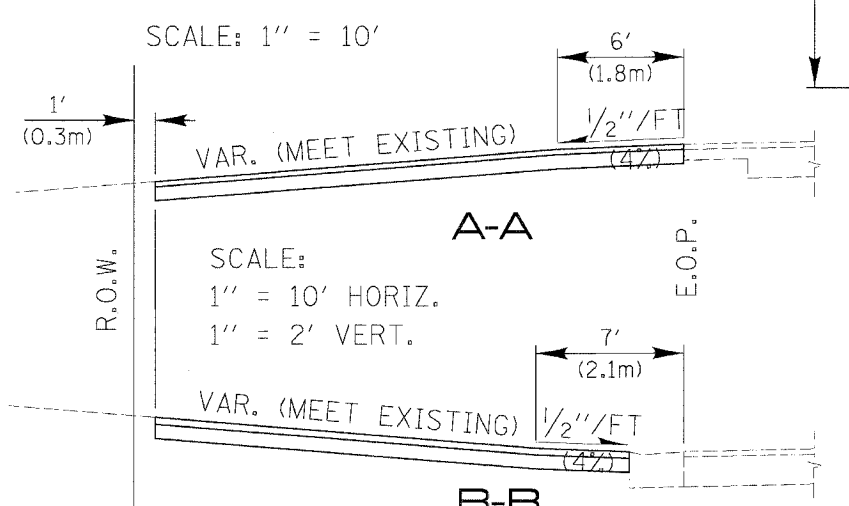
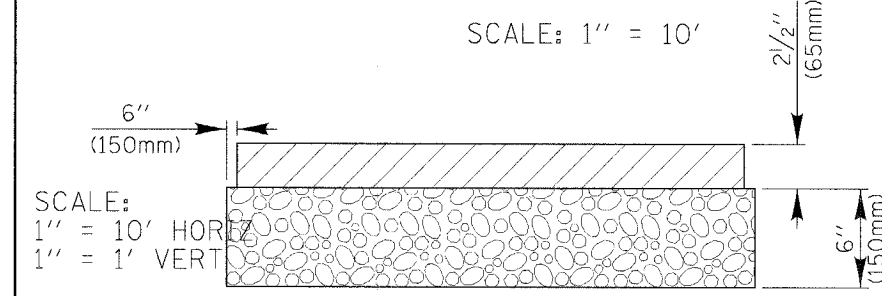
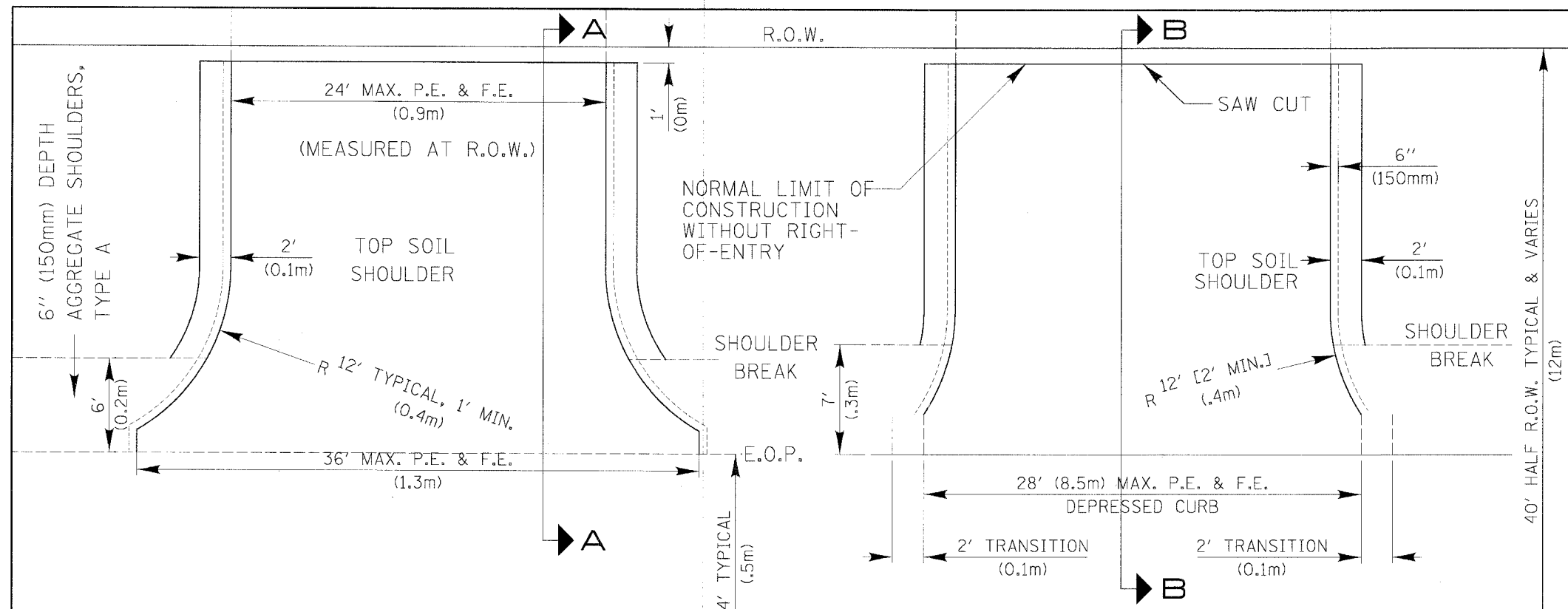
LC4012

REVISIONS	DATE
DUAL DIMENSIONS	03/11/02
DEL TY A (SPEC)	04/25/02

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
MAILBOX TURNOUT
ALONG CURBED ROADS

SCALE: NONE
DATE: 12/2/2005
DRAWN BY: N/A
CHECKED BY: N/A



SCALE: 1" = 10'

SCALE: 1" = 10' HORIZ.
1" = 1' VERT.

PEs: 2 1/2" BITUMINOUS CONCRETE SURFACE COURSE
ON 6" AGGREGATE BASE COURSE, TYPE A

FEs: 6" AGGREGATE BASE COURSE, TYPE A

CALCULATED QUANTITIES FOR PRIVATE ENTRANCE W/O CURB AND GUTTER ABOVE:

- BIT SURF CSE WEIGHT USED = 115 LBS/SQ YD/INCH THICKNESS
AREA = 72.6 SQ YD
72.6 SQ YD X 115 LB/SQ YD/INCH X 2.5 INCHES = 20,872.5 LB
CONVERTING TO TONS = 20,872.5 LB/2000 LB/TON = 10.44 TON
ROUNDING TO CRITERIA IN CONSTRUCTION MANUAL = 11 TON
- AGGREGATE BASE COURSE WEIGHT USED = 2 TON/CU YD
75.63 SQ YD X 2 TON/CU YD X 0.1667 YD THICKNESS = 25.22 TON
ROUNDING TO CRITERIA IN CONSTRUCTION MANUAL = 26 TON
- BITUMINOUS MATERIALS (PRIME COAT), MC-30 APPLIED @ 0.3
GAL/SQ YD 75.63 SQ YD X 0.3 GAL/SQ YD = 22.69 GAL
ROUNDING TO CRITERIA IN CONSTRUCTION MANUAL = 23 GAL

REVISIONS	DATE
DUAL DIMENSIONS	10/04/01
DEL TY A (SPEC)	12/16/04

Lake County
Division of Transportation

APPROVED BY: G. N. WIESNER
DATE: DEC. 29, 1999

**TYPICAL MINOR ACCESS
(PRIVATE ENTRANCE)**

LC4024

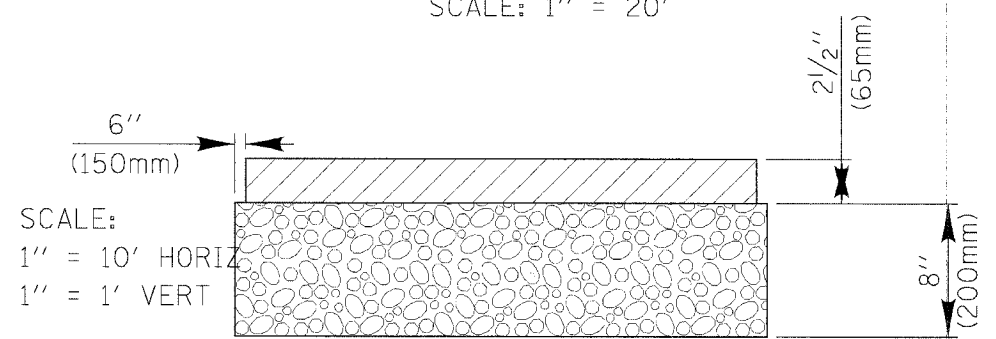
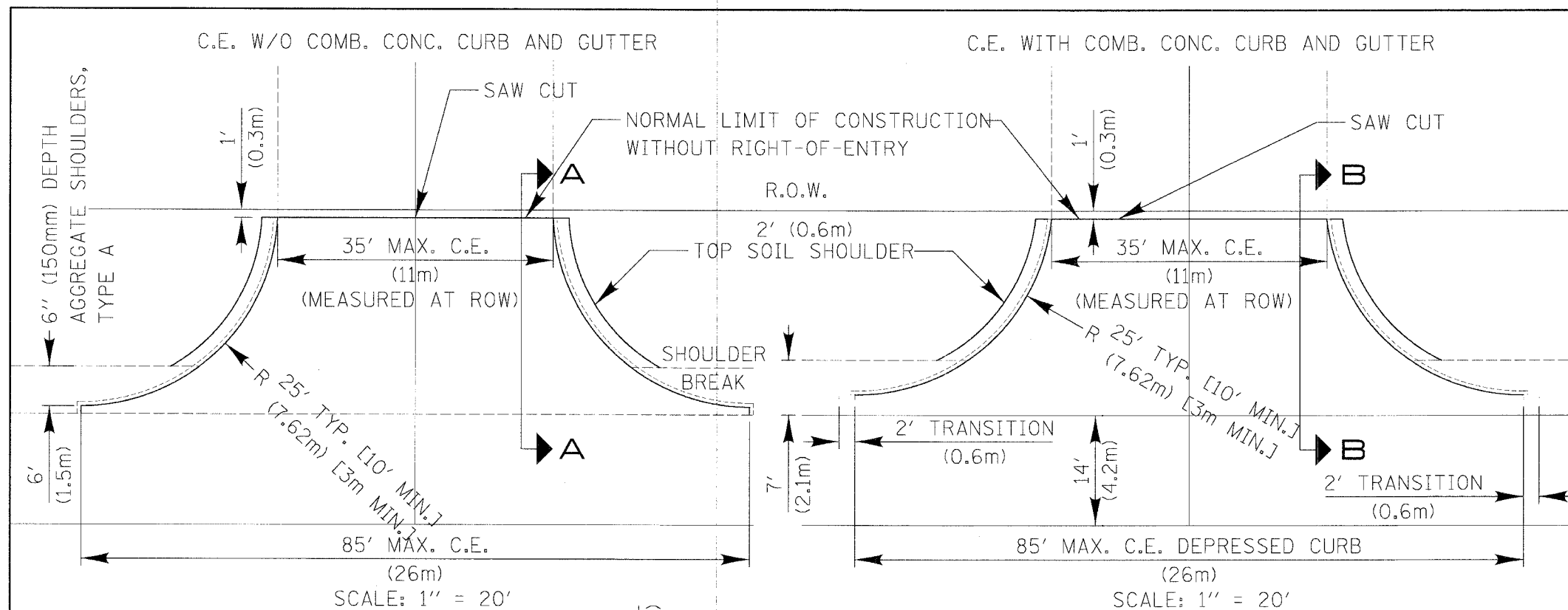
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
**TYPICAL MINOR ACCESS
(PRIVATE ENTRANCE)**

SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	141
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



CEs: 2 1/2" (65mm) BITUMINOUS CONCRETE SURFACE COURSE ON 8" (200mm) AGGREGATE BASE COURSE, TYPE A

- CALCULATED QUANTITIES FOR COMMERCIAL ENTRANCE W/O C & G ABOVE:
- BIT SURF CSE WEIGHT USED = 115 LBS/SQ YD/INCH THICKNESS
 AREA = 132.58 SQ YD
 132.58 SQ YD X 115 LB/SQ YD/INCH X 2.5 INCHES = 38116.75 LB
 CONVERTING TO TONS = 38116.75 LB/2000 LB/TON = 19.05 TON
 ROUNDING TO CRITERIA IN CONSTRUCTION MANUAL = 20 TON (18M TON)
 - AGGREGATE BASE COURSE WEIGHT USED = 2 TON/CU YD
 136.94 SQ YD X 2 TON/CU YD X 0.22 YD THICKNESS = 60.25 TON (55 M TON)
 ROUNDING TO CRITERIA IN CONSTRUCTION MANUAL = 61 TON
 - BITUMINOUS MATERIALS (PRIME COAT), MC-30 APPLIED @ 0.3 GAL/SQ YD
 136.94 SQ YD X 0.3 GAL/SQ YD = 41.08 GAL
 ROUNDING TO CRITERIA IN CONSTRUCTION MANUAL = 42 GAL (156 L)

REVISIONS	DATE
DUAL DIMENSIONS	08/28/01
DEL TY A (SPEC)	12/10/04

Lake County
Division of Transportation

APPROVED BY: N. WIESNER
DATE: JAN. 5, 1999

TYPICAL MAJOR ACCESS SHEET 1 OF 2 COMMERCIAL ENTRANCE

LC4025A

SEE (2-2) NOT APPLICABLE

REVISIONS	NAME	DATE

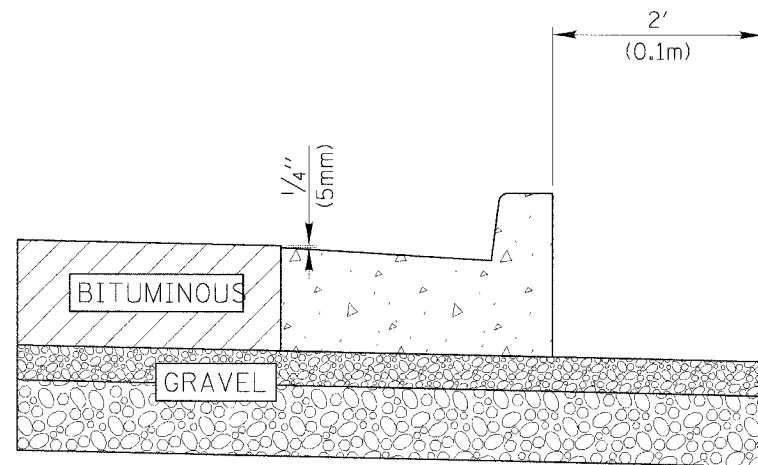
ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
TYPICAL MAJOR ACCESS (COMMERCIAL ENTRANCE)

SCALE: NONE
DATE: 12/2/2005

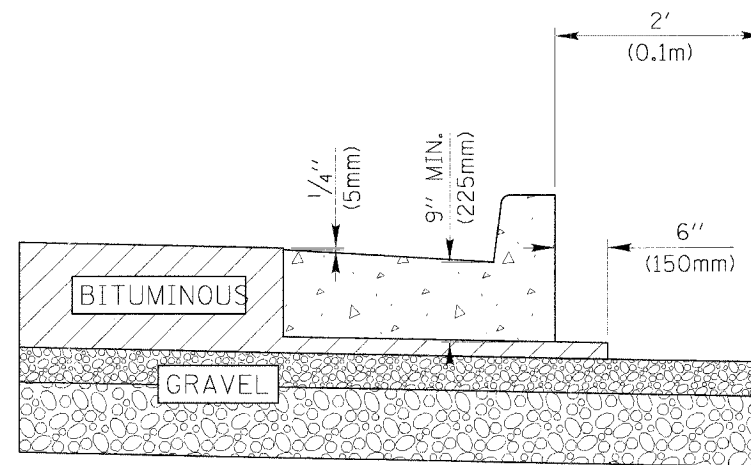
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FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	142
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		




TYPICAL METHOD



OPTIONAL METHOD

NOTE:
 COST OF BITUMINOUS MATERIAL UNDER CURB AND
 6" (150mm) OUTSIDE OF CURB TO BE INCIDENTAL TO
 COST OF COMBINATION CONCRETE CURB AND GUTTER.

SCALE: 1" = 2'

 APPROVED BY: G. N. WIESNER
 DATE: A.G. 20, 1999

**CURB & GUTTER
 SUBGRADE OPTIONS**

LC6004

REVISIONS	DATE
DUAL DIMENSIONS	03/20/02

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
CURB & GUTTER
SUBGRADE OPTIONS

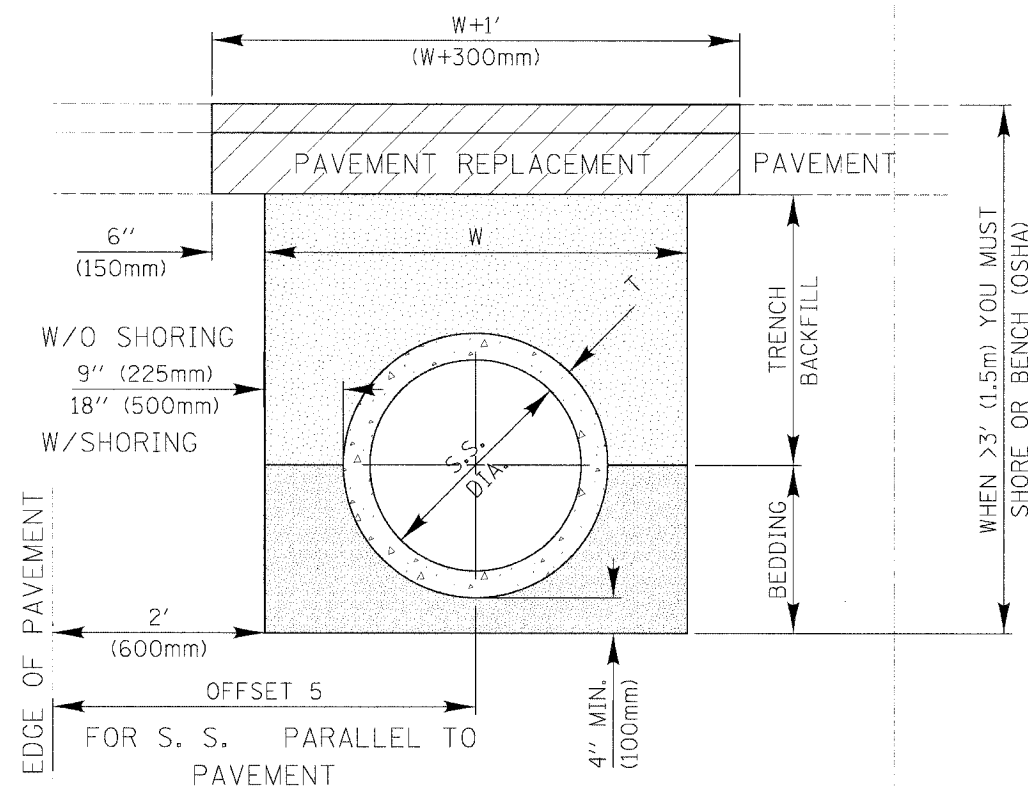
SCALE: NONE
 DATE: 12/2/2005
 DRAWN BY: N/A
 CHECKED BY: N/A

ENGLISH

S.S. DIA.	T	WIDTH (W)		OFFSET FROM E.O.P.*		1/2 AREA PIPE [O.D.] (SQ FT)
		WITHOUT SHORING	WITH SHORING	WITHOUT SHORING	WITH SHORING	
10"	2"	2' 8"	4' 2"	4' 8"	6' 2"	0.53
12"	2"	2' 10"	4' 4"	4' 10"	6' 4"	0.70
15"	2 1/4"	3' 2"	4' 8"	5' 2"	6' 8"	1.04
18"	2 1/2"	3' 5"	4' 11"	7' 1"	6' 11"	1.44
21"	2 3/4"	3' 9"	5' 3"	5' 9"	7' 3"	1.92
24"	3"	4' 0"	5' 6"	6' 0"	7' 6"	2.45
27"	3 1/4"	4' 4"	5' 10"	6' 4"	7' 10"	3.06
30"	3 1/2"	4' 7"	6' 1"	6' 7"	8' 1"	3.73
36"	4"	5' 2"	6' 8"	7' 2"	8' 8"	5.28
42"	4 1/2"	5' 9"	7' 3"	7' 9"	9' 3"	7.09
48"	5"	6' 4"	7' 10"	8' 4"	9' 10"	9.17

METRIC

S.S. DIA. (NOMINAL)	S.S. DIA. (ACTUAL)	T	WIDTH (W)		OFFSET FROM E.O.P.*		1/2 AREA PIPE [O.D.] (SQ M)
			WITHOUT SHORING	WITH SHORING	WITHOUT SHORING	WITH SHORING	
250	254	51	0.806m	1.356m	1.406m	1.956m	.049
300	305	51	0.856m	1.406m	1.456m	2.006m	.063
375	381	57	0.945m	1.495m	1.545m	2.095m	.094
450	457	64	1.034m	1.584m	1.634m	2.184m	.131
525	533	70	1.123m	1.673m	1.723m	2.273m	.174
600	610	76	1.212m	1.762m	1.812m	2.362m	.222
675	686	83	1.301m	1.851m	1.901m	2.451m	.277
750	762	89	1.390m	1.940m	1.990m	2.540m	.338
900	914	102	1.568m	2.118m	2.168m	2.718m	.478
1050	1067	114	1.745m	2.295m	2.345m	2.895m	.642
1200	1219	127	1.923m	2.473m	2.523m	3.073m	.830



NOTES:

1. TRENCH BACKFILL IS REQUIRED IF THE STORM SEWER OR CULVERT OFFSET FROM THE EDGE OF THE PAVEMENT IS LESS THAN THE TABULATED VALUES (THE INNER TRENCH WALL IS CLOSER THAN 2' (.6m) TO THE EDGE OF PAVEMENT).
2. PAYMENT FOR THE TRENCH BACKFILL SHALL NOT EXCEED THE QUANTITY COMPUTED USING THE MAXIMUM TRENCH WIDTH DIMENSIONS. IF THE TRENCH IS EXCAVATED BEYOND THESE LIMITS, THE CONTRACTOR SHALL FURNISH AND PLACE ANY ADDITIONAL TRENCH BACKFILL AT HIS/HER EXPENCE.
3. IF THE TRENCH WIDTH IS LESS THAN THE ABOVE MAXIMUM VALUES, PAYMENT WILL BE BASED ON THE ACTUAL DIMENSIONS OF THE DUG TRENCH.
4. BEDDING SHALL BE PLACED FROM 4" UNDER THE PIPE TO THE SPRING LINE OF THE PIPE AND IS INCIDENTAL TO THE CORRESPONDING STORM SEWER OR CULVERT PAY ITEM.
5. IF ANY PART OF THE EXCAVATION FOR A DRAINAGE STRUCTURE FALLS WITHIN 2' (.6m) OF THE EDGE OF PAYMENT, THE SPACE BETWEEN THE SIDE OF THE EXCAVATION AND THE OUTER SURFACE OF THE DRAINAGE STRUCTURE SHALL BE FILLED WITH TRENCH BACKFILL. THE COST OF THIS ITEM IS INCLUDED IN THE PAY ITEM FOR THE DRAINAGE STRUCTURE.

SCALE: 1" = 2'

LakeCounty Division of Transportation
 APPROVED BY: G. N. WIESNER
 DATE: SEPT. 3, 1999

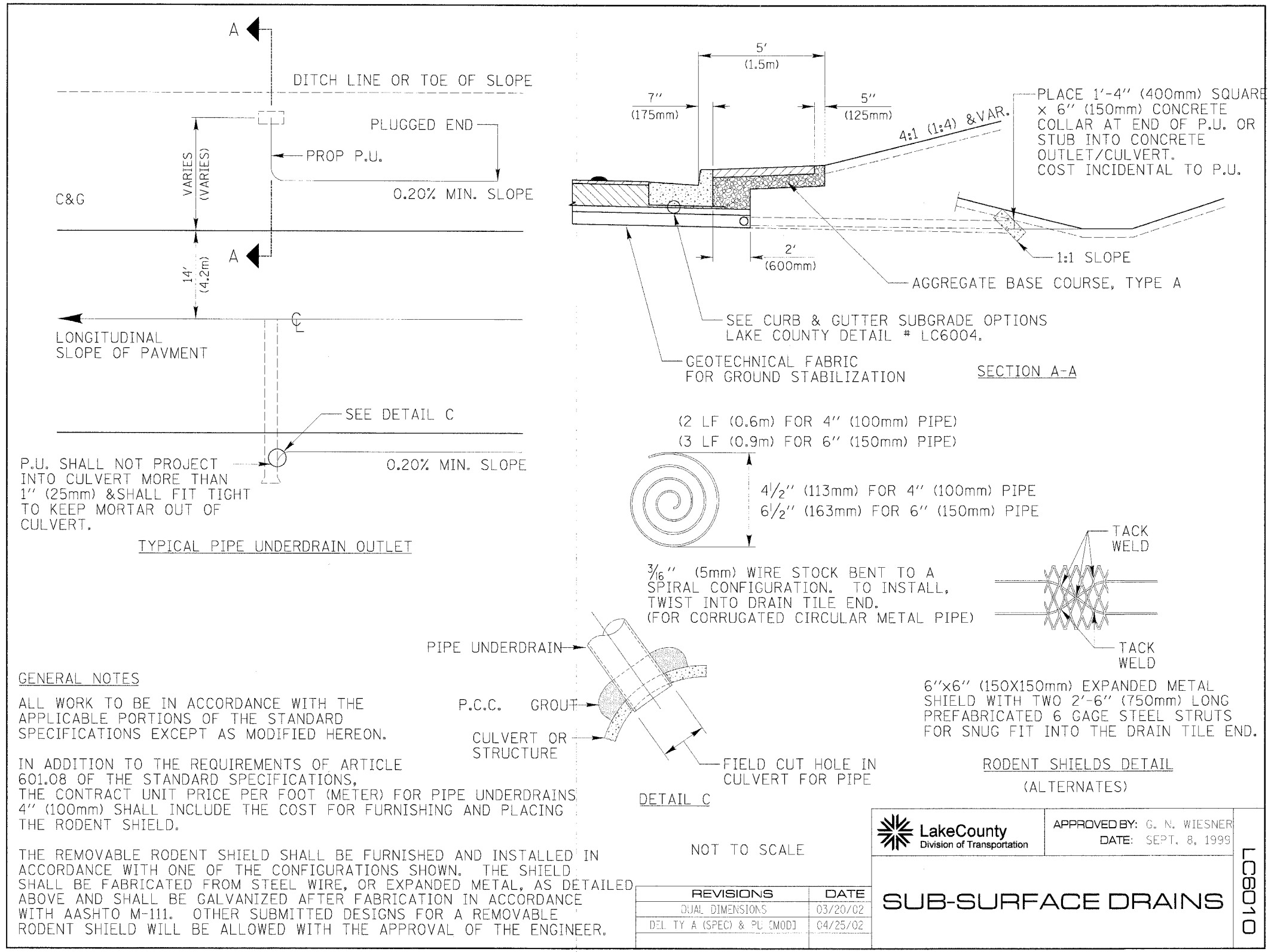
TRENCH WIDTHS FOR TRENCH BACKFILL & PAVEMENT REPLACEMENT

REVISIONS	DATE
Maurice Schoten	06/21/01
DUAL DIMENSIONS	08/28/01
CHART UPDATE	12/12/02

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
TRENCH WIDTHS FOR
TRENCH BACKFILL &
PAVEMENT REPLACEMENT

SCALE: NONE
 DATE: 12/2/2005
 DRAWN BY: N/A
 CHECKED BY: N/A



REVISIONS	
NAME	DATE

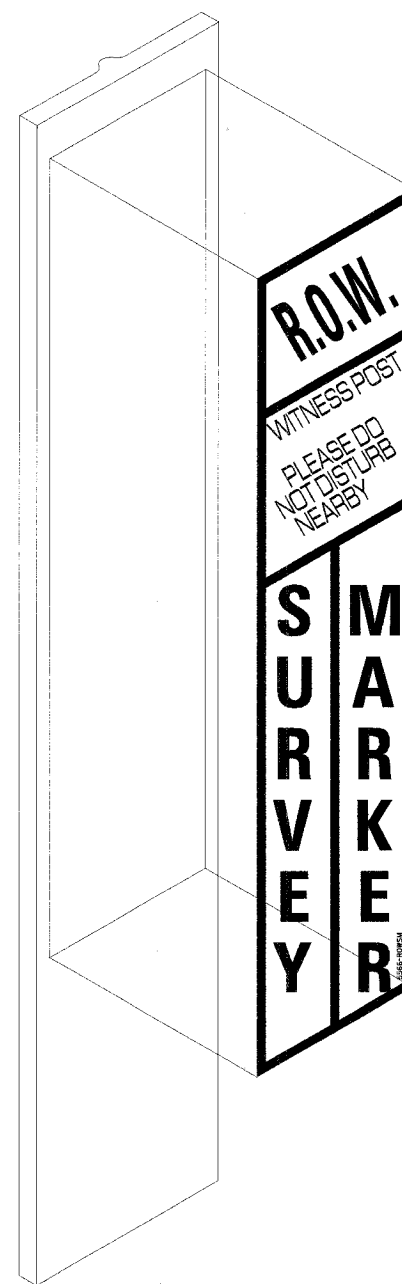
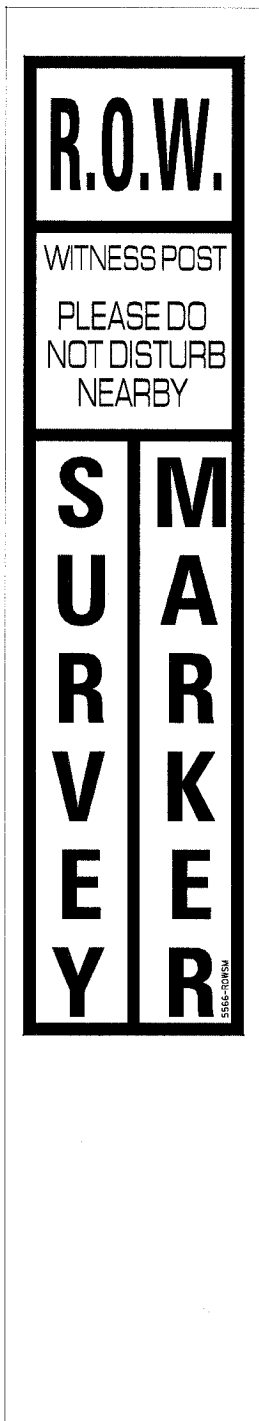
ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
SUB-SURFACE DRAINS

SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A

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 105
 12/2/2005

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	145
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



 **LakeCounty**
Division of Transportation

APPROVED BY: N. W'esner
DATE: 03/13/02

LC6661

REVISIONS	DATE

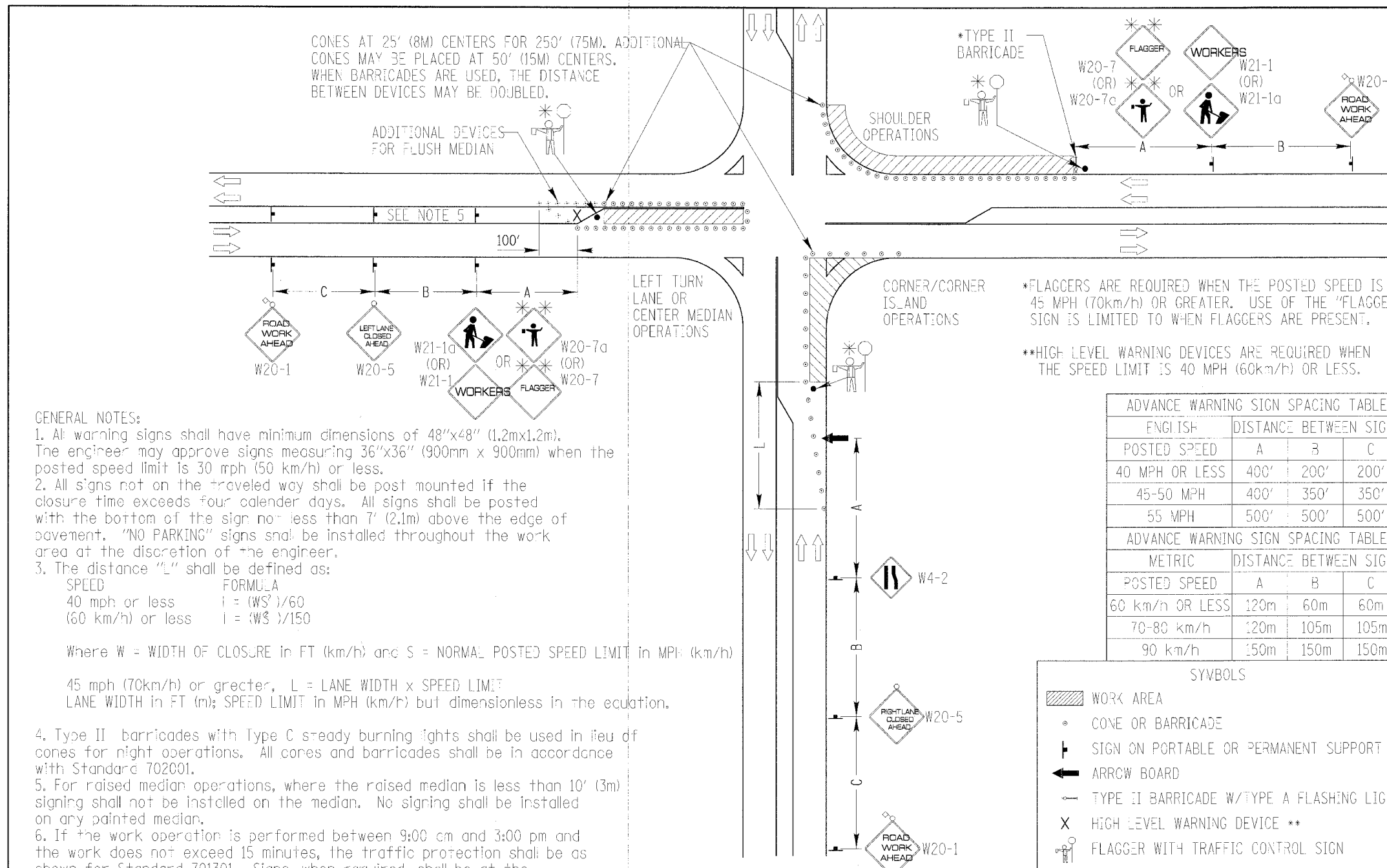
WITNESS POST

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
WITNESS POST

SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A



GENERAL NOTES:

- All warning signs shall have minimum dimensions of 48"x48" (1.2m x 1.2m). The engineer may approve signs measuring 36"x36" (900mm x 900mm) when the posted speed limit is 30 mph (50 km/h) or less.
- All signs not on the traveled way shall be post mounted if the closure time exceeds four calendar days. All signs shall be posted with the bottom of the sign not less than 7' (2.1m) above the edge of pavement. "NO PARKING" signs shall be installed throughout the work area at the discretion of the engineer.
- The distance "L" shall be defined as:

SPEED	FORMULA
40 mph or less	$L = (WS^2)/60$
(60 km/h) or less	$L = (WS^2)/150$

Where W = WIDTH OF CLOSURE in FT (km/h) and S = NORMAL POSTED SPEED LIMIT in MPH (km/h)

45 mph (70km/h) or greater, L = LANE WIDTH x SPEED LIMIT
 LANE WIDTH in FT (m); SPEED LIMIT in MPH (km/h) but dimensionless in the equation.
- Type II barricades with Type C steady burning lights shall be used in lieu of cones for night operations. All cones and barricades shall be in accordance with Standard 702001.
- For raised median operations, where the raised median is less than 10' (3m) signing shall not be installed on the median. No signing shall be installed on any painted median.
- If the work operation is performed between 9:00 am and 3:00 pm and the work does not exceed 15 minutes, the traffic protection shall be as shown for Standard 701301. Signs, when required, shall be at the spacing specified in the advance warning sign spacing table.
- If the work area is in the parking lane and the parking exists during work hours, a "ROAD WORK AHEAD" sign shall be installed in advance of work area at the spacing specified in the Advance Warning Sign Spacing Table and the area protected with cones or barricades.
- Type A flashing lights shall be used on each approach in advance of the work area during hours of darkness and installed above the first two sign in each series and the high level warning devices.
- Longitudinal dimensions may be adjusted to fit field conditions.
- Form BT 725 is required.

*TYPE II BARRICADE

*FLAGGERS ARE REQUIRED WHEN THE POSTED SPEED IS 45 MPH (70km/h) OR GREATER. USE OF THE "FLAGGER" SIGN IS LIMITED TO WHEN FLAGGERS ARE PRESENT.

**HIGH LEVEL WARNING DEVICES ARE REQUIRED WHEN THE SPEED LIMIT IS 40 MPH (60km/h) OR LESS.

ADVANCE WARNING SIGN SPACING TABLE			
ENGLISH	DISTANCE BETWEEN SIGNS		
POSTED SPEED	A	B	C
40 MPH OR LESS	400'	200'	200'
45-50 MPH	400'	350'	350'
55 MPH	500'	500'	500'

ADVANCE WARNING SIGN SPACING TABLE			
METRIC	DISTANCE BETWEEN SIGNS		
POSTED SPEED	A	B	C
60 km/h OR LESS	120m	60m	60m
70-80 km/h	120m	105m	105m
90 km/h	150m	150m	150m

SYMBOLS

- WORK AREA
- CONE OR BARRICADE
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- ARROW BOARD
- TYPE II BARRICADE W/TYPE A FLASHING LIGHT
- HIGH LEVEL WARNING DEVICE **
- FLAGGER WITH TRAFFIC CONTROL SIGN

NOT TO SCALE **MODIFIED STANDARD 701701**

REVISIONS	DATE
REMOVED FLAGS-JPS	3/14/97
SPACING REV.-JPS	1/29/98
TYPE II BARRICADES-JPS	12/7/98
REVISED DIST. CHART ADDED STAND. NO.-JPS	3/10/99
SCALE, FONT, SIZE--GNW	12/13/99
DUAL DIMENSIONS	03/22/02

Lake County
 Division of Transportation

APPROVED BY: ANTHONY KIWALAJA
 DATE: DEC 14, 1995

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
 HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE
 MULTILANE INTERSECTION WITH LEFT TURN LANES, CORNER ISLANDS AND 3m (10 ft.) NON-TRAVERSABLE MEDIAN OR PAINTED CENTER TURN LANE, DAY OR NIGHT OPERATIONS

WHERE, AT ANY TIME, ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENDOACH ON THE PAVEMENT DURING SHOULDER OPERATIONS, OR WHERE CONSTRUCTION REQUIRES LANE CLOSURES.

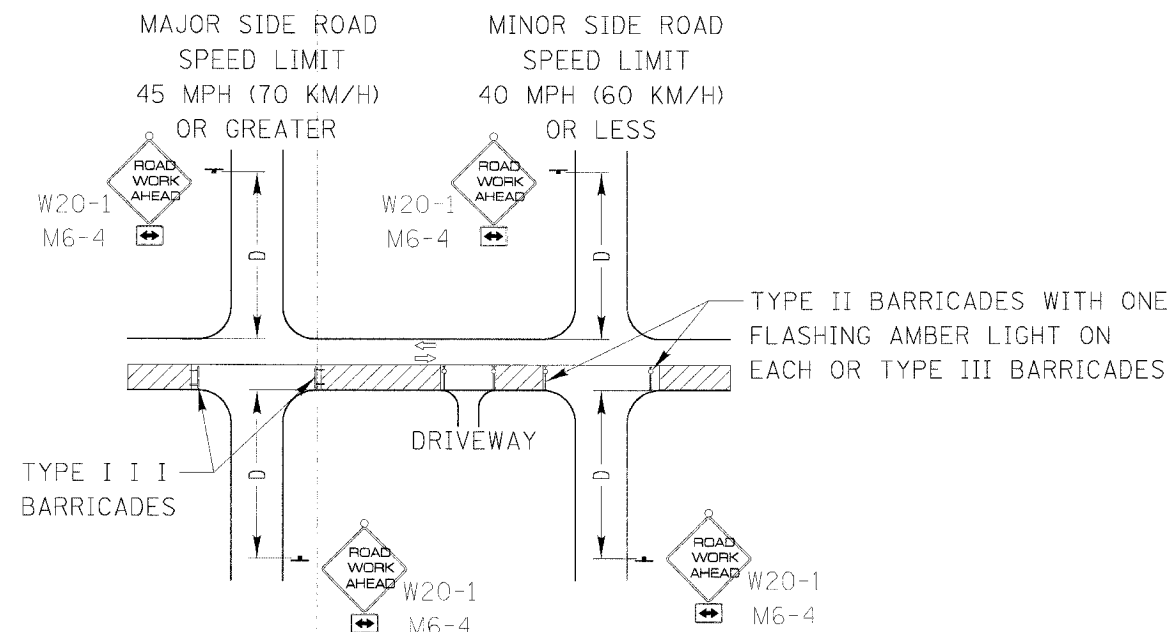
LC7001

REVISIONS	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
MODIFIED STANDARD 701701

SCALE: NONE
 DATE: 12/2/2005

DRAWN BY: N/A
 CHECKED BY: N/A



- For a side road with a speed limit of 40 mph (60 km/h) or less, the closed portion of the main route shall be protected by blocking with Type II or Type III barricades, 1/3 of the cross section of the closed portion of the roadway.
- For a side road with a speed limit of 45 mph (70 km/h) or greater, the closed portion of the main route shall be protected by blocking with Type III barricades, 1/2 of the cross section of the closed portion of the roadway.
- All W20-1 "ROADWORK AHEAD" signs shall be 48" x 48" (1.2m x 1.2m) with fluorescent orange reflective sheeting with an amber Type A flashing light mounted on the sign.
- When the side road lies between the beginning of the mainline signing and the work zone, a M6-1 Single Headed Arrow shall be used in lieu of the M6-4 Double Headed Arrow.
- For a lane closure on a side road or driveway, use the applicable portions of the appropriate Highway Standard or Traffic Control Detail. The spacing of the signs and barricades shall be adjusted for field conditions as directed by the engineer. The directional arrow shall be covered or removed when no longer consistent with the side road lane closure.
- Advance warning signs shall be omitted on driveways unless otherwise noted.
- The traffic control and protection for side roads and intersections shall be included in the contract unit lump sum price for "TRAFFIC CONTROL AND PROTECTION."

ADVANCE WARNING SIGN SPACING TABLE	DISTANCE BETWEEN SIGNS (D)
POSTED SPEED	(D)
40 MPH OR LESS	200'
45 MPH OR GREATER	350'
55 MPH	500'

ADVANCE WARNING SIGN SPACING TABLE - METRIC	DISTANCE BETWEEN SIGNS (D)
POSTED SPEED	(D)
60 km/h OR LESS	60m
70-80 km/h	105m
90 km/h	150m

NOT TO SCALE

MODIFIED DISTRICT ONE SIDE ROAD DETAIL

REVISIONS	DATE	REVISIONS	DATE
DUAL DIMENSIONS	03/27/02	REMOVED FLAGS-JPS	3/14/97
		SPACING REV.-JPS	1/29/98
		REVISED BARRICADES, DIST CHART AND ADDED DETAIL NO.-JPS	3/10/99
		SCALE, FONT, SIZE -- GNW	12/14/99



APPROVED BY: ANTHONY KHAWAJA
DATE: DEC 14, 1995

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES, HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE AND UTILITY OPERATIONS
TRAFFIC CONTROL AND PROTECTION FOR SIDEROADS, INTERSECTIONS AND DRIVEWAYS
WHERE, AT ANY TIME, ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENDOURCH ON THE PAVEMENT DURING SHOULDER OPERATIONS, OR WHERE CONSTRUCTION REQUIRES LANE CLOSURES.

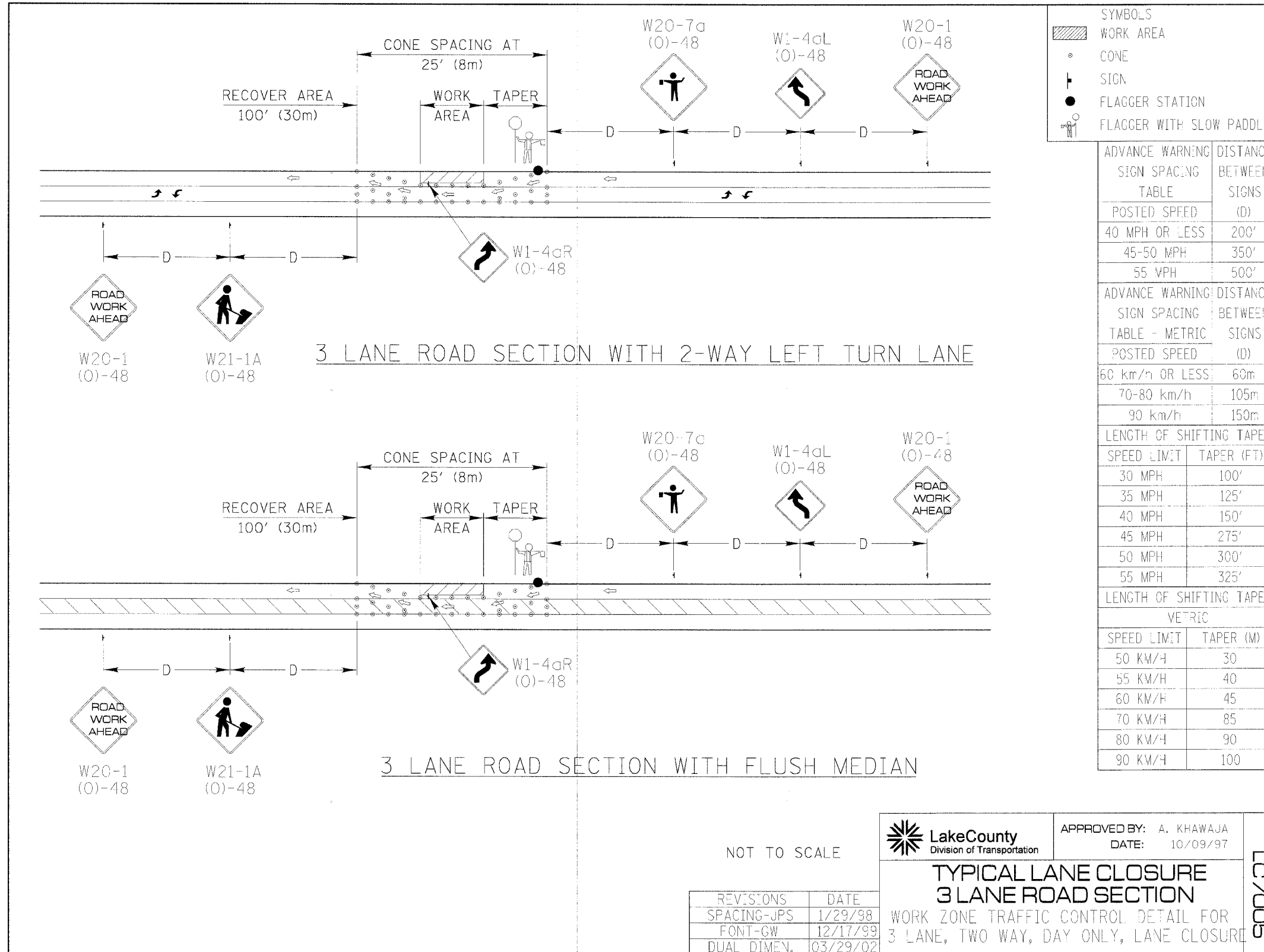
LC7003

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
MODIFIED DISTRICT ONE
SIDE ROAD DETAIL

SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A



- SYMBOLS
- WORK AREA
 - CONE
 - SIGN
 - FLAGGER STATION
 - FLAGGER WITH SLOW PADDLE

ADVANCE WARNING SIGN SPACING TABLE	DISTANCE BETWEEN SIGNS (D)
POSTED SPEED	(D)
40 MPH OR LESS	200'
45-50 MPH	350'
55 MPH	500'

ADVANCE WARNING SIGN SPACING TABLE - METRIC	DISTANCE BETWEEN SIGNS (D)
POSTED SPEED	(D)
60 km/h OR LESS	60m
70-80 km/h	105m
90 km/h	150m

LENGTH OF SHIFTING TAPER	SPEED LIMIT	TAPER (FT)
	30 MPH	100'
	35 MPH	125'
	40 MPH	150'
	45 MPH	275'
	50 MPH	300'
	55 MPH	325'

LENGTH OF SHIFTING TAPER METRIC	SPEED LIMIT	TAPER (M)
	50 KM/H	30
	55 KM/H	40
	60 KM/H	45
	70 KM/H	85
	80 KM/H	90
	90 KM/H	100

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 12/2/2005

NOT TO SCALE

Lake County
 Division of Transportation
 APPROVED BY: A. KHAWAJA
 DATE: 10/09/97

TYPICAL LANE CLOSURE
3 LANE ROAD SECTION
 WORK ZONE TRAFFIC CONTROL DETAIL FOR
 3 LANE, TWO WAY, DAY ONLY, LANE CLOSURE

LC7005

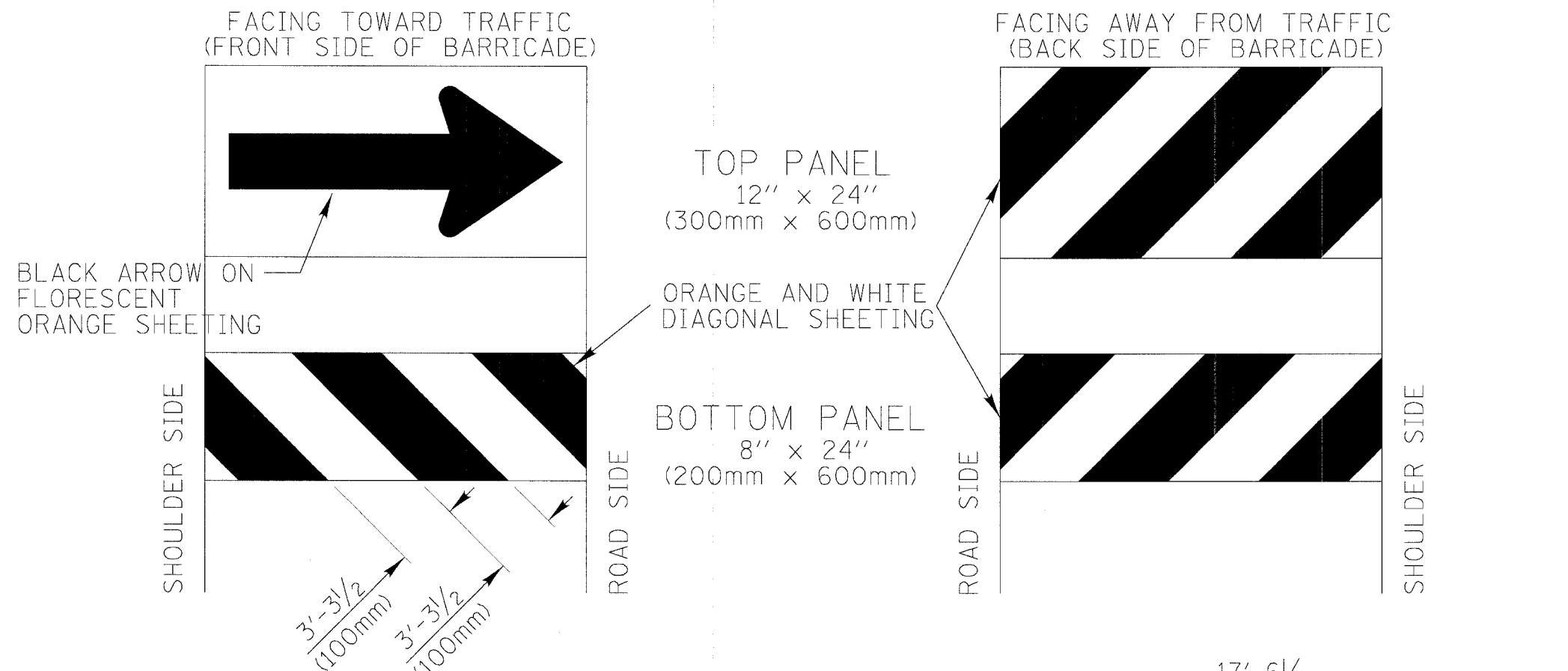
REVISIONS	DATE
SPACING-JPS	1/29/98
FONT-GW	12/17/99
DUAL DIMEN.	03/29/02

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
TYPICAL LANE CLOSURE
3 LANE ROAD SECTION
 SCALE: NONE
 DATE: 12/2/2005
 DRAWN BY: N/A
 CHECKED BY: N/A

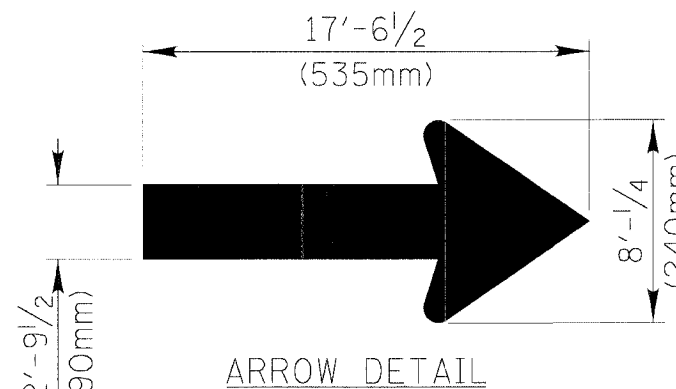
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	149
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DIRECTION INDICATOR BARRICADES



GENERAL NOTES

- 1) Direction Indicator Barricades shall be constructed from non-metallic Type II barricades meeting the requirements of Article 702.03 (e) of the Standard Specifications.
- 2) The Direction Indicator Barricades shall be equipped with Type C steady burning lights if used to channelize traffic during the hours of darkness.
- 3) The reflective sheeting for the top panel shall be Type AZ fluorescent orange. The diagonal panels shall have orange and white Type A or better reflective sheeting.



REVISIONS	DATE
DUAL DIMENSIONS	4/15/02

Lake County
 Division of Transportation

APPROVED BY: ANTHONY KHAWAJA
 DATE: JAN. 27, 2000

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
 HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE

DIRECTION INDICATOR BARRICADES

LC7006

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 – BUTTERFIELD ROAD
DIRECTION INDICATOR BARRICADES

SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A



48" x 36"
 WHITE ON GREEN
 REFLECTIVE BACKGROUND
 1" BORDER WITH 5/8" INSET
 LETTER SIZE 6C




48" X 36"
 BLACK ON FLUORESCENT ORANGE
 REFLECTIVE BACKGROUND
 1" BORDER WITH 5/8" INSET
 LETTER SIZE 6D
 *LETTER SIZE 6E BOLD

NOTE: ALL ENTRANCE SIGNS TO BE PLACED BY COUNTY FORCES.

TEMPORARY CONSTRUCTION INFORMATION SIGNING NOTES:

1. The entrance signs shall be mounted back to back on the near right side of the roadway where the entrance is located and the arrow on the entrance sign shall indicate the side of the roadway where the entrance is located.
2. Temporary construction information signs shall be post mounted 7' (2.1 m) above the near edge of pavement and shall be a minimum of 6' (1.8 m) beyond the edge of the nearest traveled lane, or as directed by the engineer.
3. The retroreflective sign face shall be a minimum of type "A" material.
4. The temporary construction information signs shall be removed or relocated when the engineer determines the signs to be no longer necessary.
5. Existing traffic control signs and messages that are in conflict with the proposed maintenance of traffic shall be covered or modified with temporary overlay as shown in the plans and/or as directed by the engineer.
6. Install additional temporary sign panel assemblies as shown in the plans and/or directed by the engineer.

REVISIONS	DATE
NEW SIGNS, NEW TEXT	01/09/03

 **LakeCounty**
 Division of Transportation

APPROVED BY: ANK
 DATE: 01/09/03

TEMPORARY CONSTRUCTION
 INFORMATION SIGNS

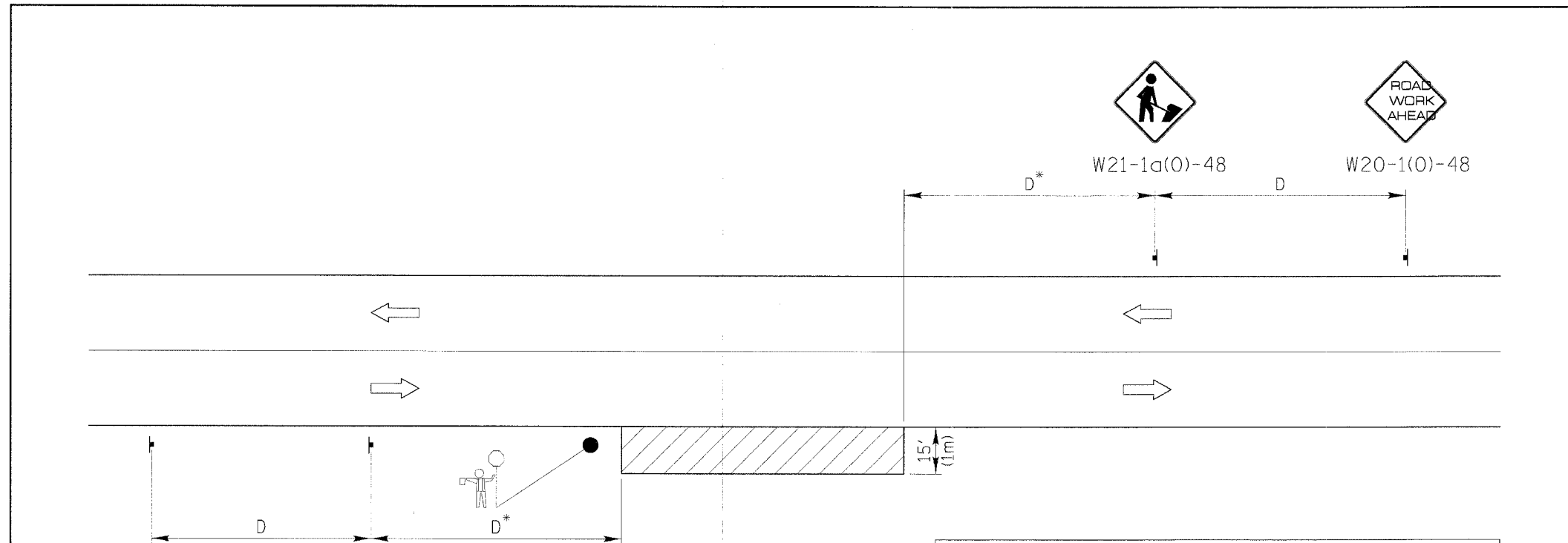
LC7007

REVISIONS	DATE
NAME	

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
TEMPORARY CONSTRUCTION
INFORMATION SIGNS

SCALE: NONE
 DATE: 12/2/2005

DRAWN BY: N/A
 CHECKED BY: N/A



POSTED SPEED LIMIT	DISTANCE BETWEEN SIGNS "D"
40 MPH or less	200 FT. (60 m)
45-50 MPH	350 FT. (105 m)
55 MPH	500 FT. (150 m)

GENERAL NOTES

This special detail is used at any time, any vehicle, equipment, workers or their activities require a stationary, intermittent or continuous moving operation within 15 feet (5 m) of the traffic lane, where the average speed is 1 mph (2 km) or less.

* Minimum distance "D" is shown in the Advance Warning Sign Spacing Table. If the work is a moving operation, the maximum distance "D" may be extended to 1/2 the length required for one normal working day's operation or 4 miles (6.4 km), whichever is less.

If the work operation does not exceed 60 minutes, traffic control may be in accordance with I.D.O.T. Highway Standard 701301.

SYMBOLS

- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH TRAFFIC CONTROL SIGN WHEN REQUIRED

MODIFIED STANDARD 701011

LakeCounty
Division of Transportation

APPROVED BY: A. KHAWAJA
DATE: 01/20/2003

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE
AND UTILITY OPERATIONS

TWO LANE, TWO WAY, OFF-ROAD OPERATIONS
DAY ONLY OPERATIONS

LC7008

REVISIONS	DATE

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
MODIFIED STANDARD 701011

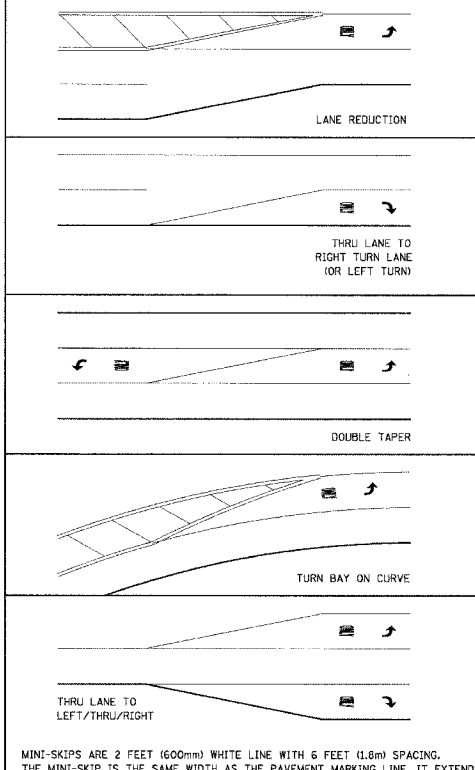
SCALE: NONE
DATE: 12/2/2005

DRAWN BY: N/A
CHECKED BY: N/A

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	152
CONTRACT NO: 83815				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

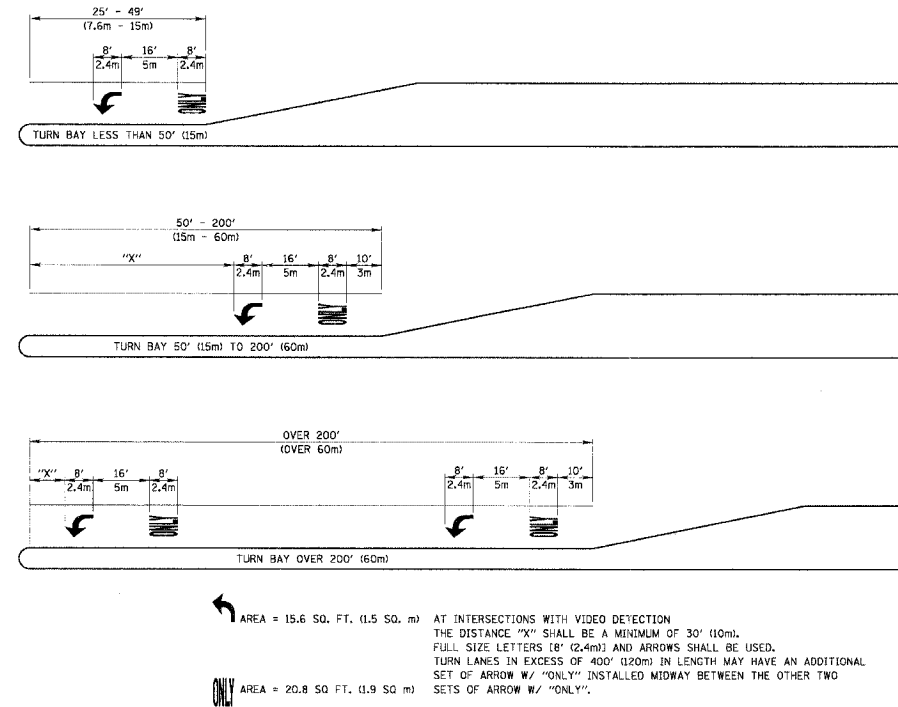
ROUTE	SECTION	COUNTY	SHEET	SHEETS
CH		LAKE		
TYPICAL PAVEMENT MARKINGS				
(LINES)				

TYPICAL MINI-SKIP PAVEMENT MARKINGS

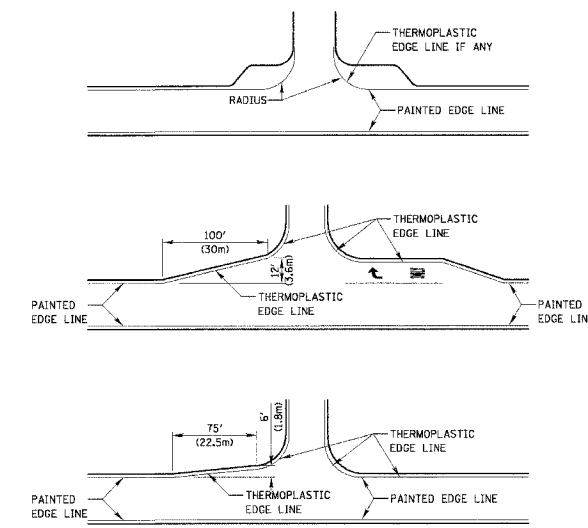


TYPICAL PAVEMENT MARKINGS

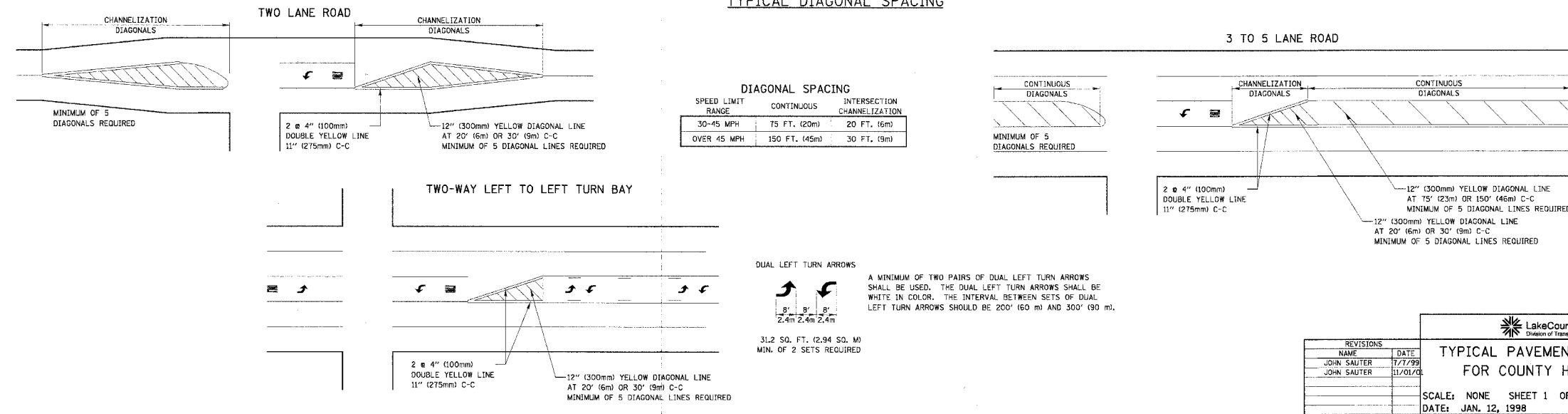
TYPICAL TURN BAY PAVEMENT MARKINGS



EDGE LINE RADII AT SIDE STREETS



TYPICAL DIAGONAL SPACING



Lake County
Division of Transportation

TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS

SCALE: NONE SHEET 1 OF 2 DRAWN BY: JPS
DATE: JAN. 12, 1998 CHECKED BY: ANK

REVISIONS	
NAME	DATE
JOHN SAUTER	7/7/99
JOHN SAUTER	11/01/00

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

FAU 2647 - BUTTERFIELD ROAD

TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS (1-2)

SCALE: NONE DRAWN BY: N/A
DATE: 12/2/2005 CHECKED BY: N/A

N:\LIBERTYVILLE\99-389\CIVIL\99389.TBL
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 10.25
 12/2/2005

TYPICAL PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS

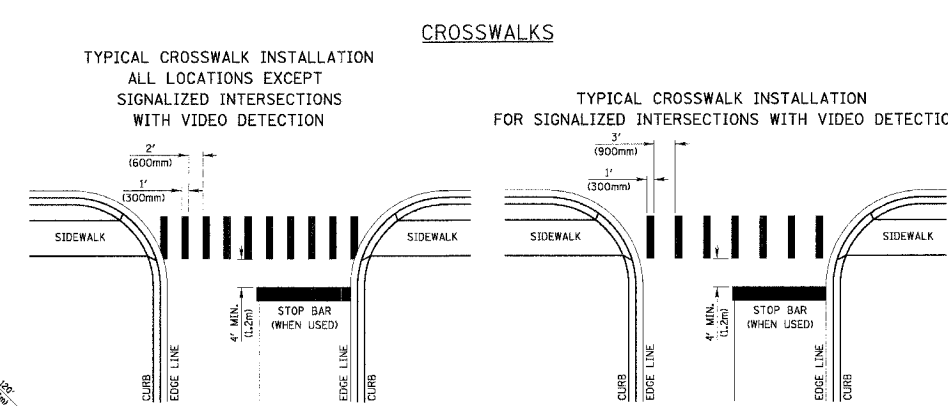
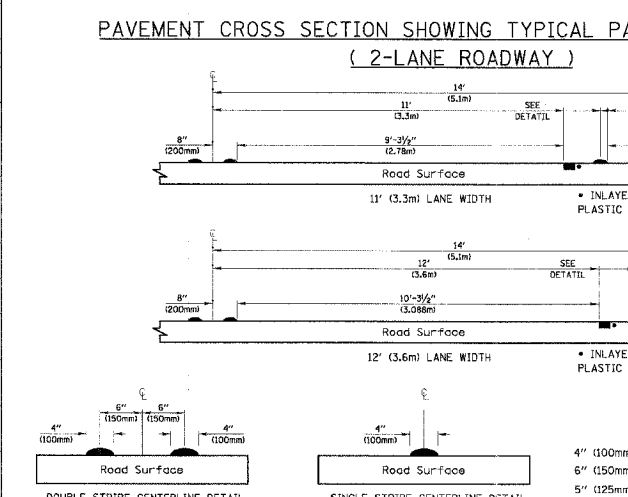
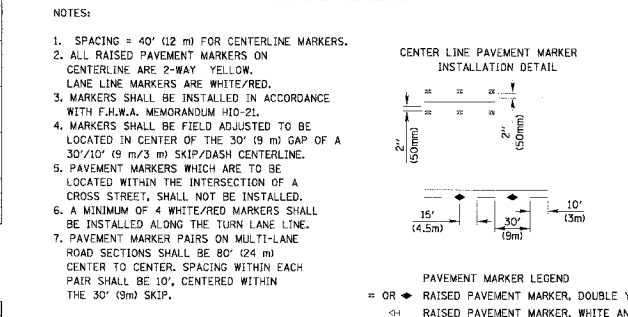
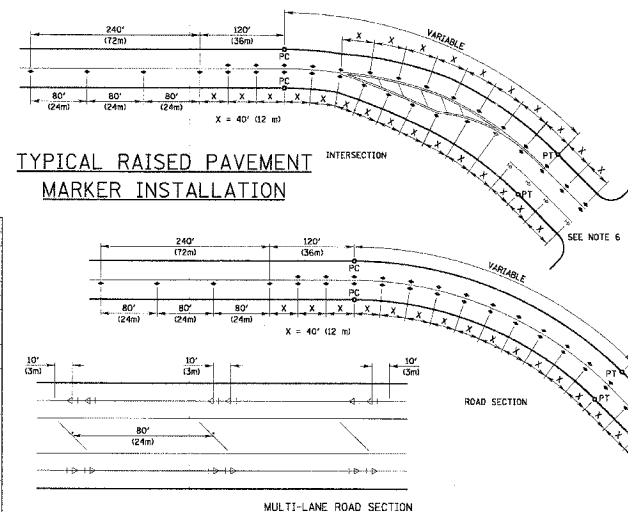
ROUTE	SECTION	COUNTY	SHEET	SHEETS
CH	LAKE			
TYPICAL PAVEMENT MARKINGS AND MARKERS				
ILLINOIS				

PAVEMENT MARKING GUIDELINES - ENGLISH MEASUREMENTS				
TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE OF 2 LANE PAVEMENT	4 IN.	SKIP-DASH	YELLOW	10 FT. LINE WITH 30 FT. SPACE
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 IN.	SOLID	YELLOW	6 IN. C.C. FROM SKIP-DASH CENTERLINE
CENTERLINE ON MULTI-LANE UNDIVIDED LANE LINES	4 IN.	SOLID	YELLOW	12 IN. C.C.
LANE LINES	4 IN.	SKIP-DASH	WHITE	10 FT. LINE WITH 30 FT. SPACE
DOTTED LINES (EXTENSIONS OF CENTERLINE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2 FT. LINE WITH 6 FT. SPACE
EDGE LINES	5 IN. WHITE 4 IN. YELLOW	SOLID	WHITE - RIGHT YELLOW - LEFT	OUTLINE RAISED MEDIANS IN YELLOW
TURN LANE MARKINGS	6 IN. LINE FULL SIZE LETTERS AND SYMBOLS 18 FT.	SOLID	WHITE	TURN ARROW 15.6 SQ. FT. STRAIGHT ARROW 11.5 SQ. FT. COMB. ARROW 26.0 SQ. FT.
TWO WAY LEFT TURN MARKING	2 @ 4 IN. EACH DIRECTION	SKIP-DASH AND SOLID	YELLOW	10 FT. LINE WITH 30 FT. SPACE FOR SKIP-DASH & IN. C.C. BETWEEN SKIP-DASH LINE AND SOLID LINE
CROSSWALK	8 FT. LEFT ARROW	IN PAIRS	WHITE	SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
STOP BARS	24 IN.	SOLID	WHITE	12 IN. LONGITUDINAL BAR WITH 24/36 IN. SPACE SEE TYPICAL CROSSWALK MARKING DETAIL PLACE 4 FT. IN ADVANCE OF AND PARALLEL TO CROSSWALK IF PRESENT OTHERWISE PLACE AT DESIRED STOPPING POINT.
PAINTED MEDIANS	2 @ 4 IN. WITH 12 IN. DIAGONALS @ 45° NO DIAGONALS USED FOR 4 FT. WIDE MEDIAN	SOLID	YELLOW - 2-WAY TRAFFIC WHITE - 1-WAY TRAFFIC	12 IN. C.C. FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING DETAIL MINIMUM OF 5 DIAGONALS
GORE MARKINGS AND CHANNELIZING LINES	8 IN. WITH 12 IN. DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS 15 FT. C.C. (LESS THAN 30 MPH) 20 FT. C.C. (OVER 45 MPH) 30 FT. C.C. (OVER 45 MPH) MINIMUM OF 5 DIAGONALS
R.R. CROSSING	24 IN. TRANSVERSE LINES RR IS 6 FT. LETTER 16 IN. LINE FOR "X"	SOLID	WHITE	SEE I.D.O.T. STD. 780000 SQUARE METER AREA OF: "X" - 36 SQ. FT. / "R" - 54 SQ. FT.
SHOULDER DIAGONALS	12 IN. @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50 FT. C.C. (LESS THAN 30 MPH) 75 FT. C.C. (30 TO 45 MPH) 90 FT. C.C. (OVER 45 MPH) MINIMUM OF 5 DIAGONALS

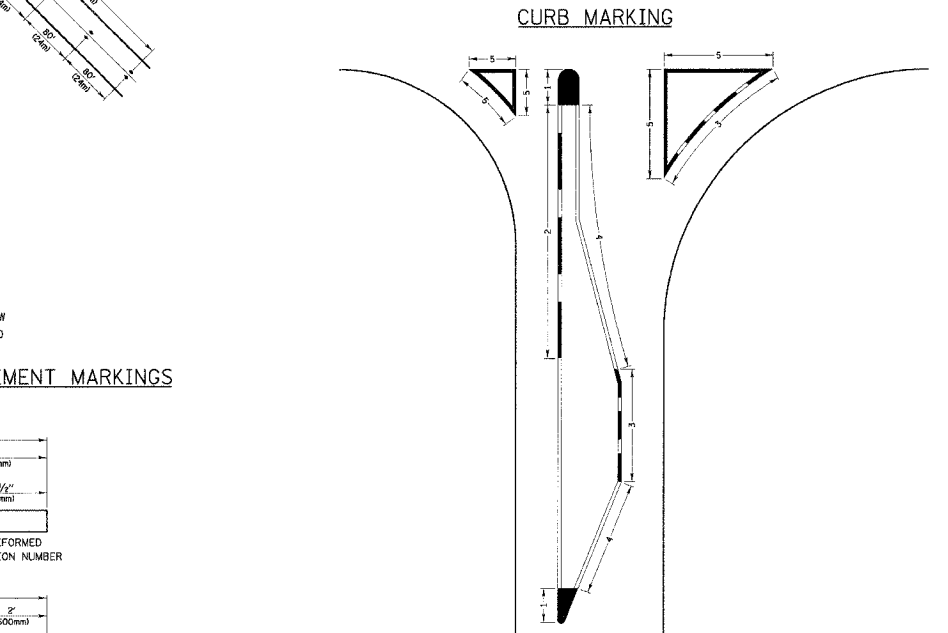
FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO PART III "MARKINGS" IN THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND I.D.O.T. HIGHWAY STANDARD 780000 EFFECTIVE JAN. 9, 1998.

PAVEMENT MARKING GUIDELINES - METRIC MEASUREMENTS				
TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE OF 2 LANE PAVEMENT	100 mm	SKIP-DASH	YELLOW	3 m LINE WITH 9 m SPACE
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	100 mm	SOLID	YELLOW	150 mm C.C. FROM SKIP-DASH CENTERLINE
CENTERLINE ON MULTI-LANE UNDIVIDED LANE LINES	100 mm	SOLID	YELLOW	300 mm C.C.
LANE LINES	100 mm	SKIP-DASH	WHITE	3 m LINE WITH 9 m SPACE
DOTTED LINES (EXTENSIONS OF CENTERLINE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	600 mm LINE WITH 1.8 m SPACE
EDGE LINES	125 mm WHITE 100 mm YELLOW	SOLID	WHITE - RIGHT YELLOW - LEFT	OUTLINE RAISED MEDIANS IN YELLOW
TURN LANE MARKINGS	150 mm LINE FULL SIZE LETTERS AND SYMBOLS (24 m)	SOLID	WHITE	TURN ARROW 1.5 SQ. m COMB. ARROW 2.4 SQ. m STRAIGHT ARROW 1.5 SQ. m
TWO WAY LEFT TURN MARKING	2 @ 100 mm EACH DIRECTION	SKIP-DASH AND SOLID	YELLOW	3 m LINE WITH 9 m SPACE FOR SKIP-DASH AND SOLID LINE
CROSSWALK	2.4 m LEFT ARROW	IN PAIRS	WHITE	SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
STOP BARS	600 mm	SOLID	WHITE	300 mm LONGITUDINAL BAR WITH 600/900 mm SPACE. 1.8 m TO 3.6 m WIDE SEE TYPICAL CROSSWALK MARKING DETAIL PLACE 1.2 m IN ADVANCE OF AND PARALLEL TO CROSSWALK IF PRESENT OTHERWISE PLACE AT DESIRED STOPPING POINT.
PAINTED MEDIANS	2 @ 100 mm WITH 300 mm DIAGONALS @ 45° NO DIAGONALS USED FOR 1.2 m WIDE MEDIAN	SOLID	YELLOW - 2-WAY TRAFFIC WHITE - 1-WAY TRAFFIC	300 mm C.C. FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING DETAIL MINIMUM OF 5 DIAGONALS
GORE MARKINGS AND CHANNELIZING LINES	200 mm WITH 300 mm DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS 4.6 m C.C. (LESS THAN 30 MPH) 6 m C.C. (30 TO 45 MPH) 9 m C.C. (OVER 45 MPH) MINIMUM OF 5 DIAGONALS
R.R. CROSSING	400 mm TRANSVERSE LINES RR IS 1.8 m LETTER 400 mm LINE FOR "X"	SOLID	WHITE	SEE I.D.O.T. STD. 780000 SQUARE METER AREA OF: "X" - 3.6 SQ. m / "R" - 5.4 SQ. m
SHOULDER DIAGONALS	300 mm @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	15.2 m C.C. (LESS THAN 30 MPH) 23.0 m C.C. (30 TO 45 MPH) 27.0 m C.C. (OVER 45 MPH) MINIMUM OF 5 DIAGONALS

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO PART III "MARKINGS" IN THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND I.D.O.T. HIGHWAY STANDARD 780000 EFFECTIVE JAN. 9, 1998.



1. WIDTH OF THE CROSSWALK IS GENERALLY 6' (1.8 m) EXCEPT AT SCHOOL CROSSINGS AND BICYCLE CROSSINGS, WHICH CAN BE 8' (2.4 m).
2. THE STOP BAR SHOULD BE INSTALLED A MINIMUM OF 4' (1.2 m) IN ADVANCE OF THE CROSSWALK.



1. PAINT CURB AND NOSE SOLID FOR 10' (3m) OR RADIUS OF NOSE, WHICHEVER IS GREATER.
2. PAINT MINIMUM OF 3 STRIPES IN DIRECTION OF TRAFFIC.
3. REDUCED SPACING USED TO OBTAIN 3 STRIPE MINIMUM.
4. STRIPING RECOMMENDED ONLY WHERE OPERATIONAL PROBLEMS DICTATE.
5. PAINT SOLID WHERE A MINIMUM OF 3 STRIPES CANNOT BE PLACED.

PAVEMENT MARKER LEGEND
 = OR = RAISED PAVEMENT MARKER, DOUBLE YELLOW
 = RAISED PAVEMENT MARKER, WHITE AND RED

STATIONING DETAIL
 ENGLISH 1+00 1+000
 METRIC 4' (100mm) 6' (150mm) 9' (225mm)
 VARIABLE EDGE OF PAVEMENT

REVISIONS
 NAME DATE
 JOHN SAUTER 7/7/99
 JOHN SAUTER 11/01/00

Lake County
 Division of Transportation

TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS

SCALE: NONE SHEET 2 OF 2 DRAWN BY: JPS
 DATE: JAN. 12, 1998 CHECKED BY: ANK

REVISIONS	NAME	DATE

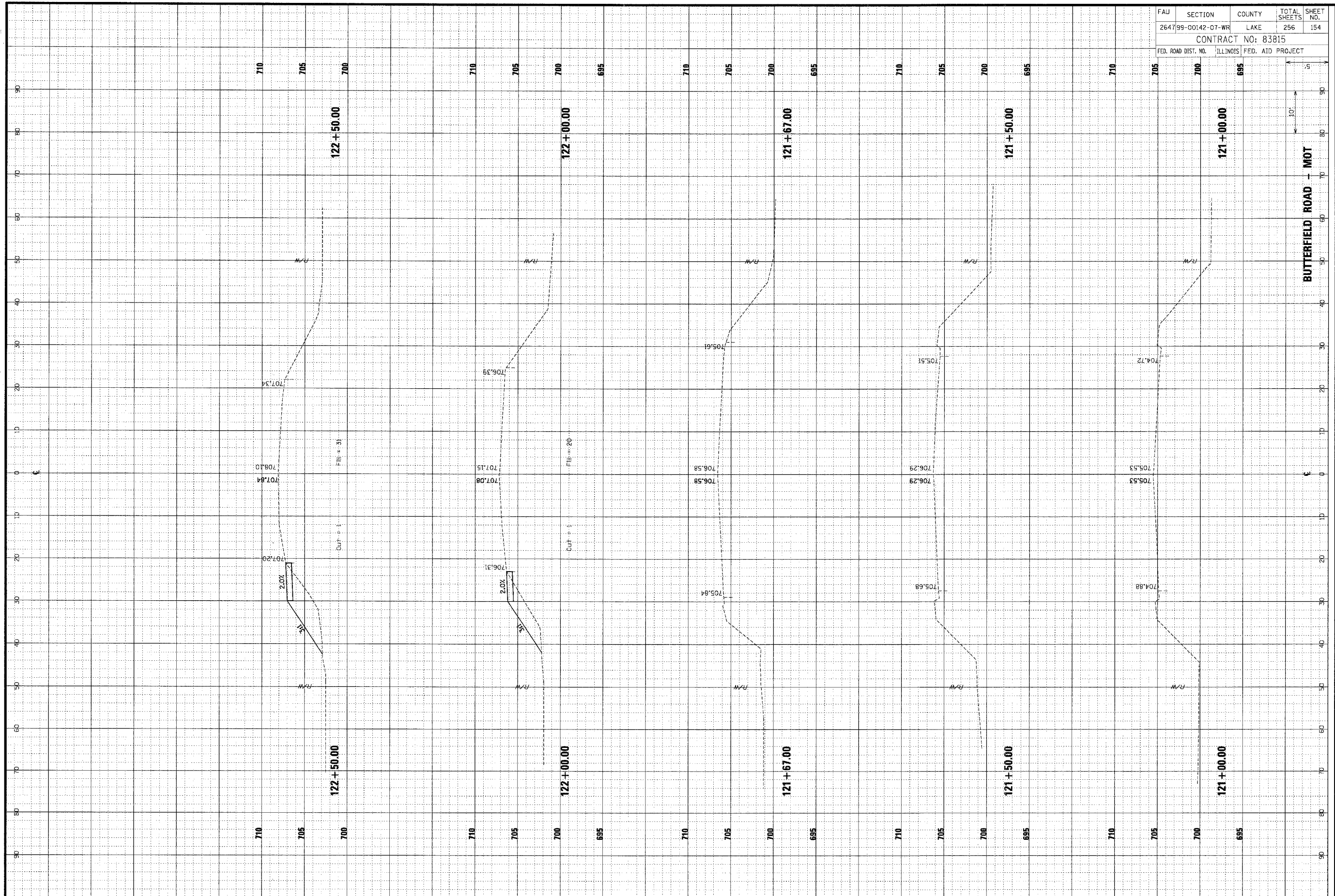
ILLINOIS DEPARTMENT OF TRANSPORTATION
FAU 2647 - BUTTERFIELD ROAD
TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS (2-2)
 SCALE: NONE DATE: 12/2/2005
 DRAWN BY: N/A CHECKED BY: N/A

ORIGINAL	SURVEY	DATE
SURVEY	PLOTTED	BY
NOTE BOOK	TEMPLATE	
	AREAS CHECKED	

CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500



ORIGINAL	SURVEY	DATE
SURVEY	PLOTTED	BY
NOTE BOOK	TEMPLATE	
	AREAS CHECKED	

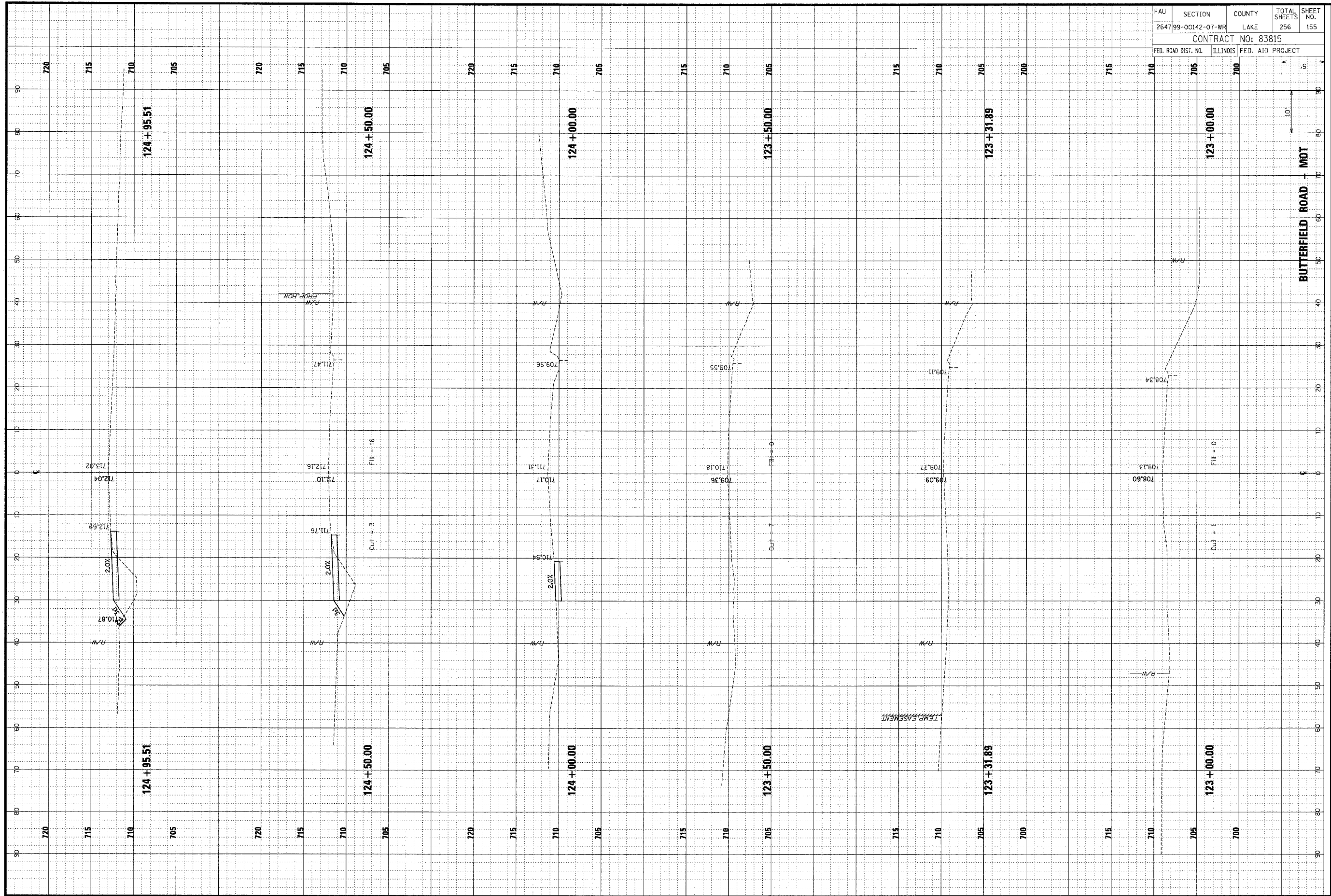


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	154	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL	SUBMITTED	BY	DATE
SURVEY	NOTED		
NOTE BOOK	AREAS		
NO.	CHECKED		

CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500

ORIGINAL	SURVEY	BY	DATE
NOTE BOOK	NOTED		
NO.	AREAS		
	CHECKED		

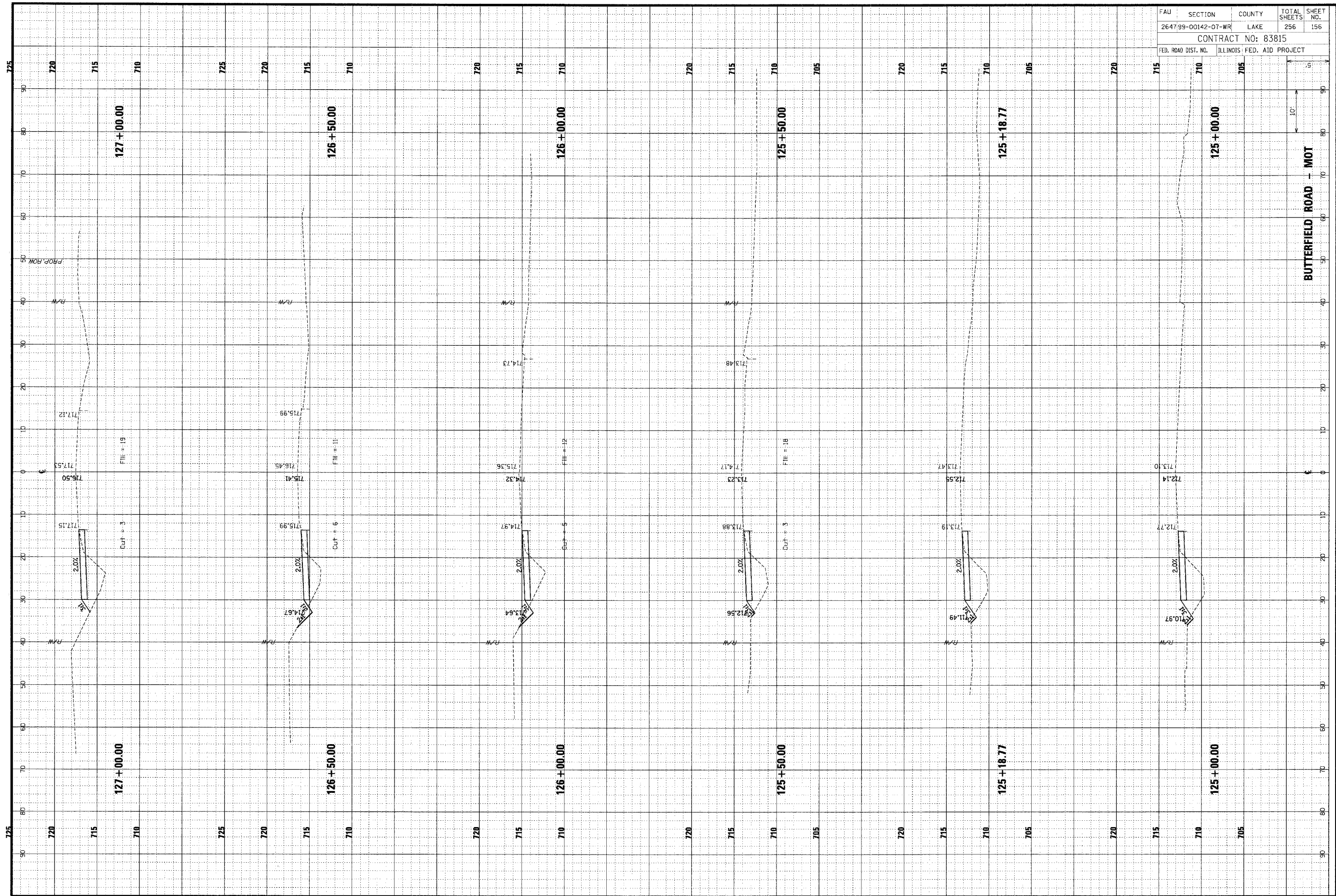


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	155
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL SUBMIT	SUBMITTED PLOTTED	DATE
NOTE BOOK	TEMP. AT	
NO.	AREAS OUTLINED	

CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500

ORIGINAL SUBMIT	SUBMITTED PLOTTED	DATE
NOTE BOOK	TEMP. AT	
NO.	AREAS OUTLINED	



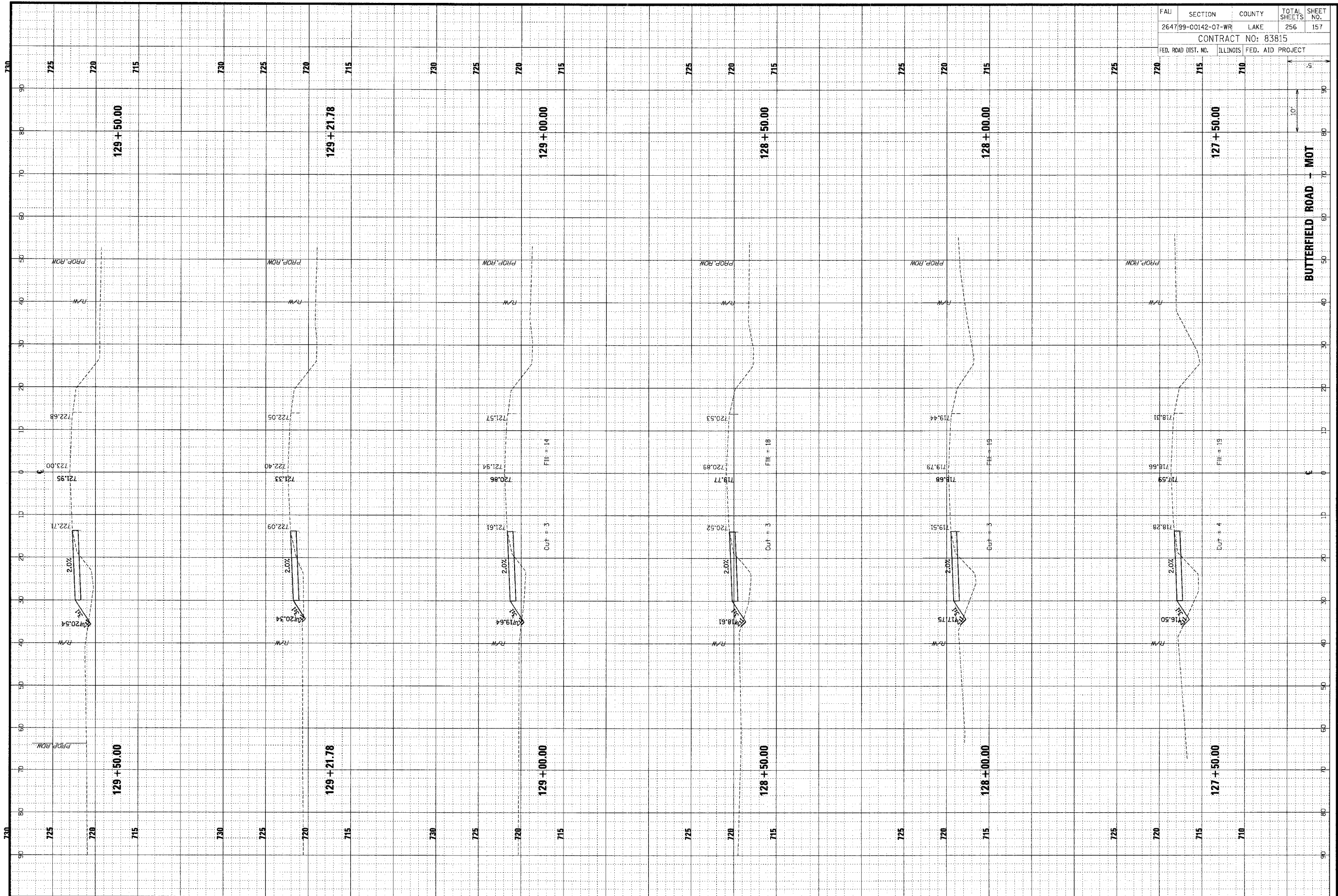
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	156
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

BUTTERFIELD ROAD - MOT

FINAL	SUBMITTED	DATE
SURVEY	NOTED	
NOTE BOOK	REPLATE	
AREAS	AREAS	
DESIGNED	CHECKED	
NO.		

CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500

ORIGINAL	SUBMITTED	DATE
SURVEY	NOTED	
NOTE BOOK	REPLATE	
AREAS	AREAS	
DESIGNED	CHECKED	
NO.		

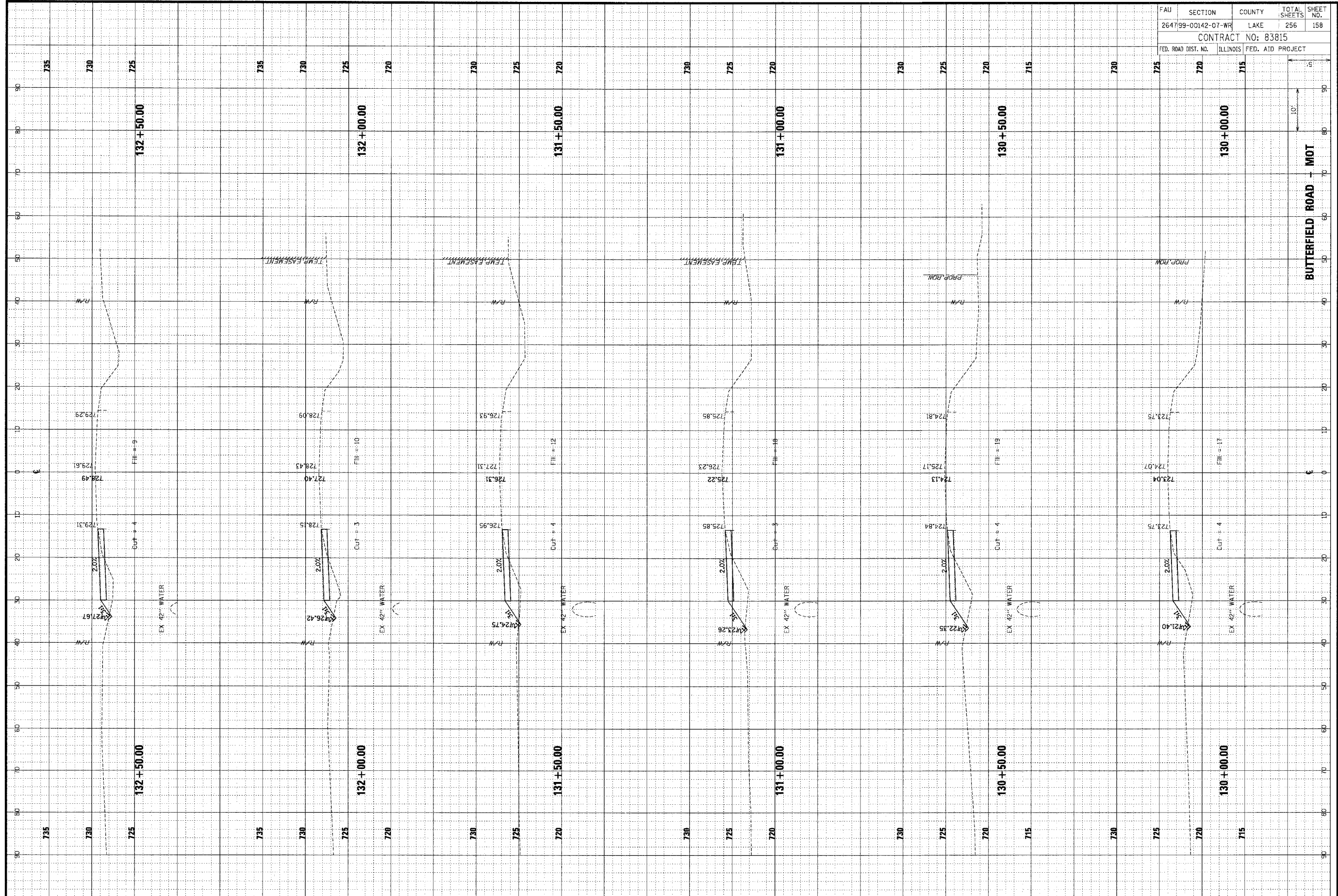


FAL	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	157
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	CHECKED	DATE
NOTE BOOK	PLotted	BY
NO.	TEMPERATURE	
	AREAS	
	CHECKED	

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ORIGINAL SURVEY	CHECKED	DATE
NOTE BOOK	PLotted	BY
NO.	TEMPERATURE	
	AREAS	
	CHECKED	



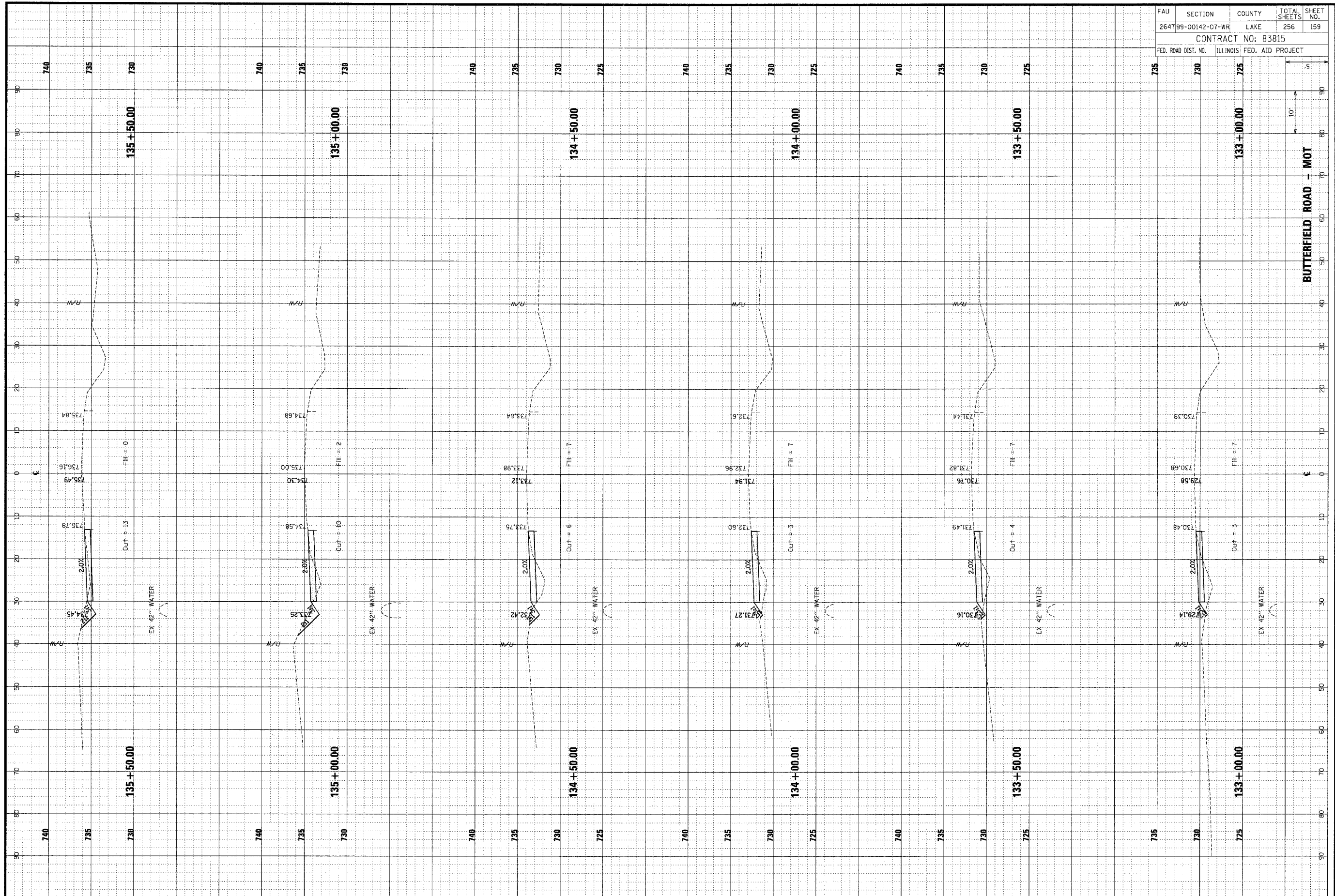
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	158	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL	SUBMITTED	BY	DATE
SKETCH	PLOTTED		
NOTE BOOK	TEMP. AT		
	AREAS CHECKED		
NO.			

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ORIGINAL	SUBMITTED	BY	DATE
SKETCH	PLOTTED		
NOTE BOOK	TEMP. AT		
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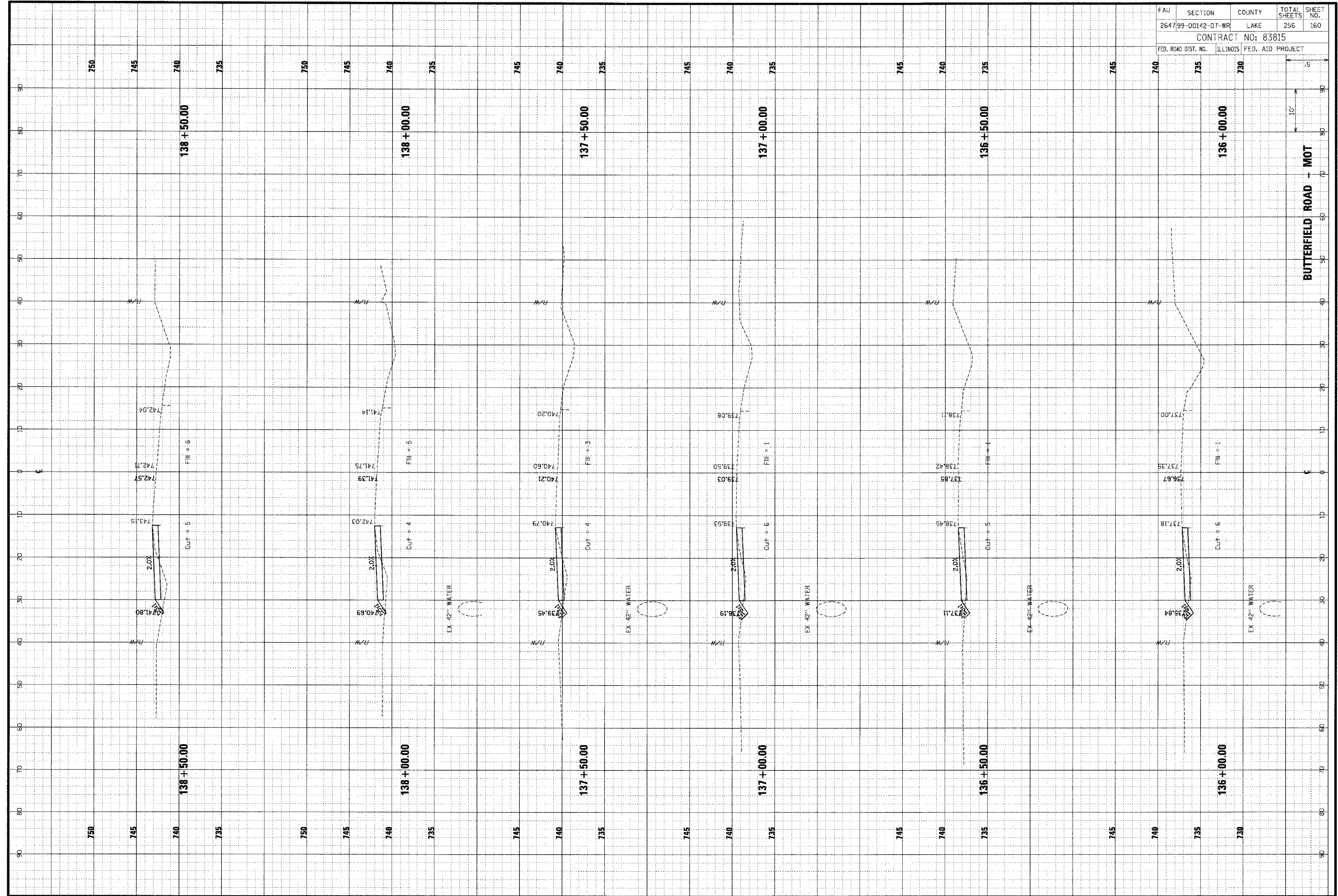


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	159
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

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

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

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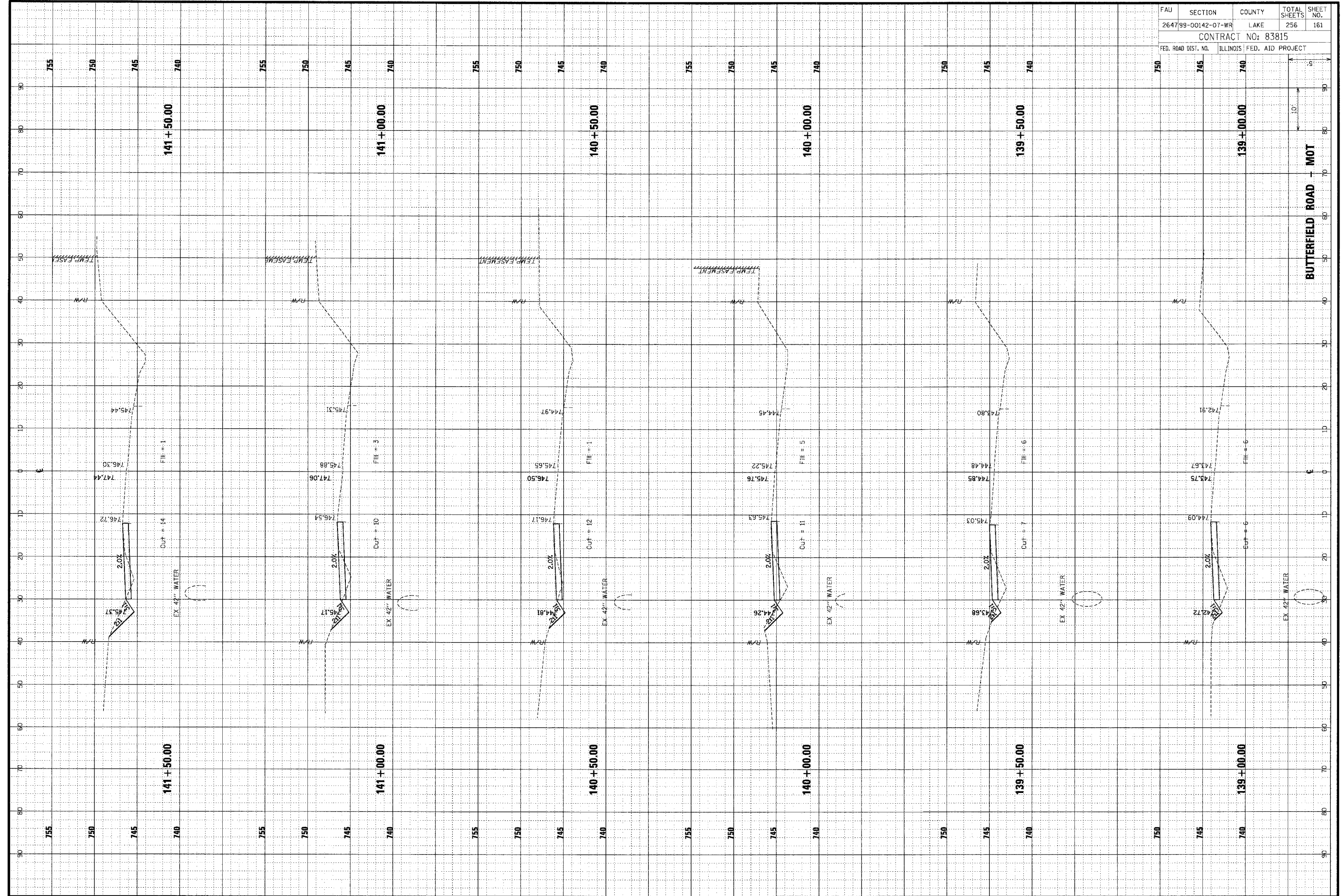


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	160
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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FINAL SURVEYED BY DATE
 SURVEY TEMPLATE AREAS CHECKED
 NOTE BOOK AREAS CHECKED
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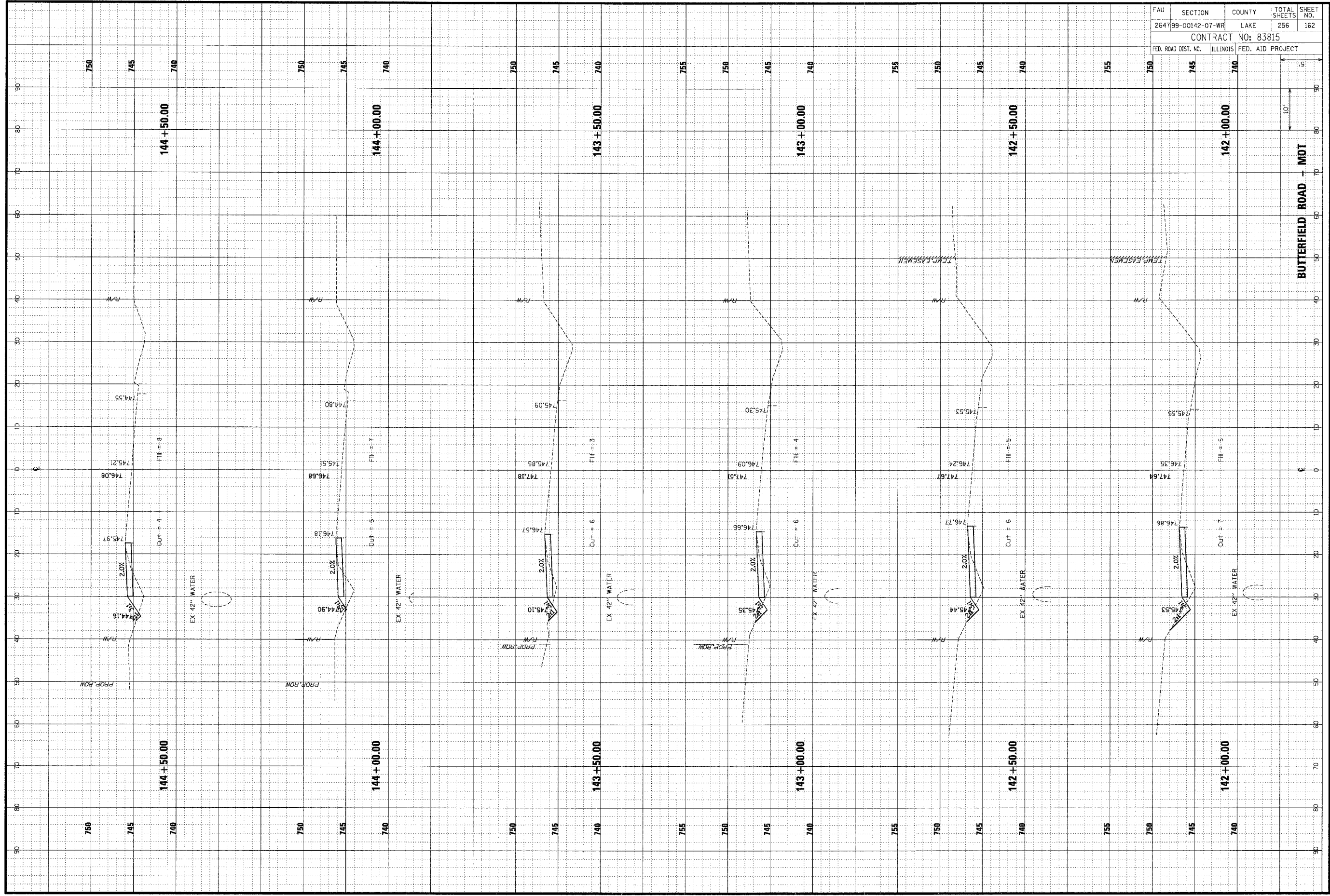


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	161	
CONTRACT NO: 83815				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

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

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FINAL SURVEY	DATE
NOTE BOOK	BY
AREAS CHECKED	
AREAS RECHECKED	



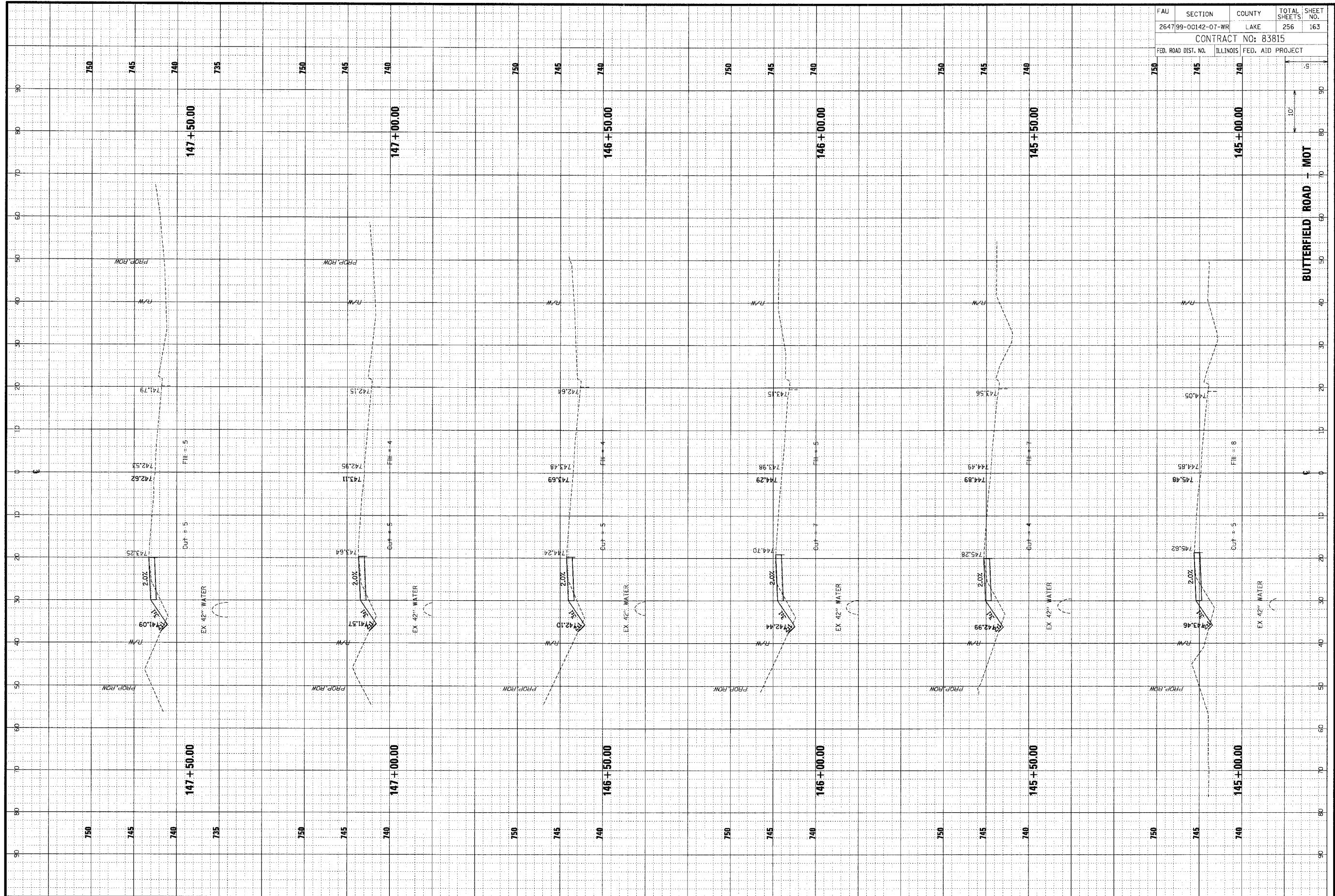
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	162	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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



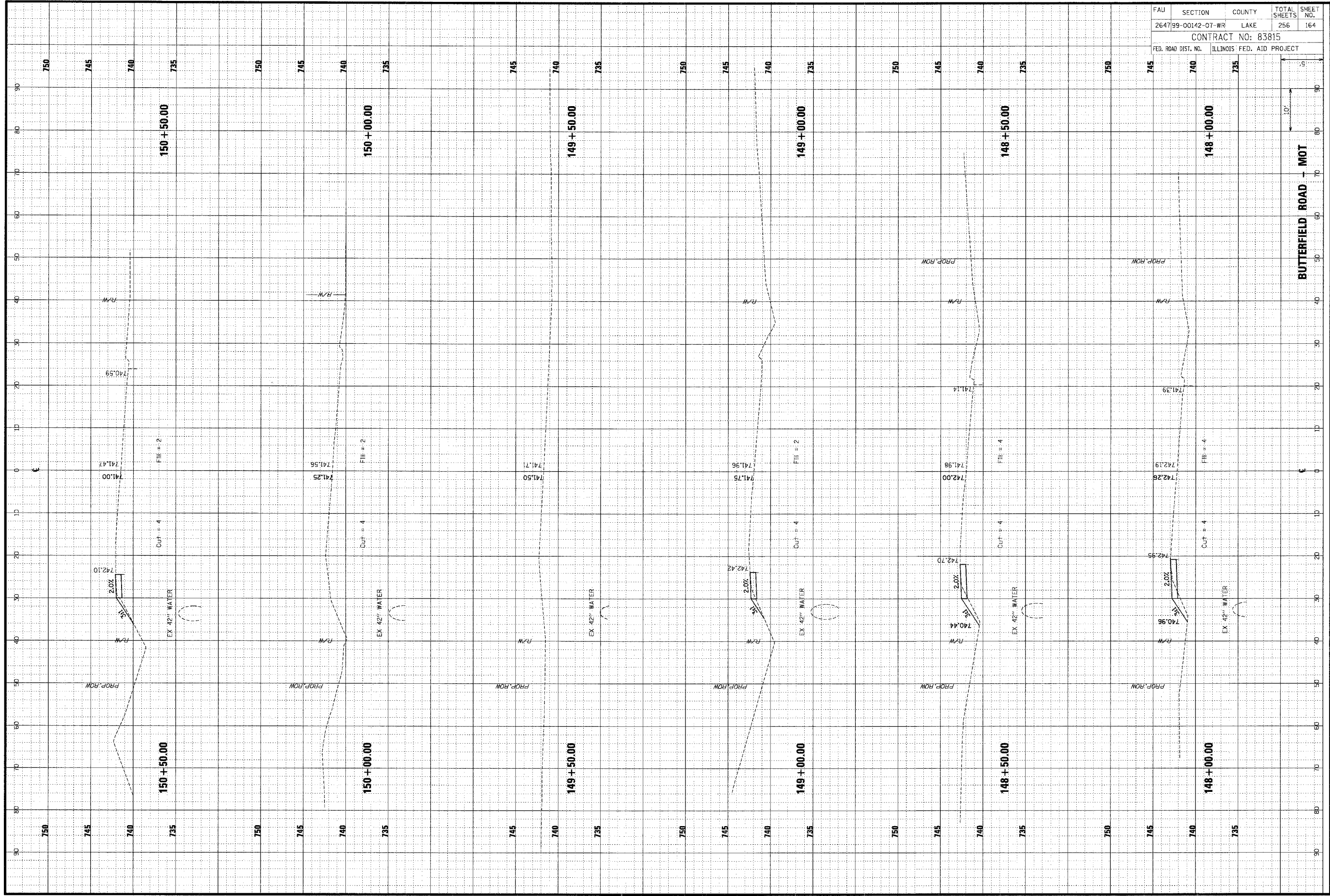
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	ILLINOIS	256	163
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL	SUBMITTED	BY	DATE
SHEET	PLOTTED		
NOTE BOOK	REPLATE		
NO.	AREA CHECKED		

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ORIGINAL	REVISED	BY	DATE
SURVEY	PLOTTED		
NOTE BOOK	REPLATE		
NO.	AREA CHECKED		



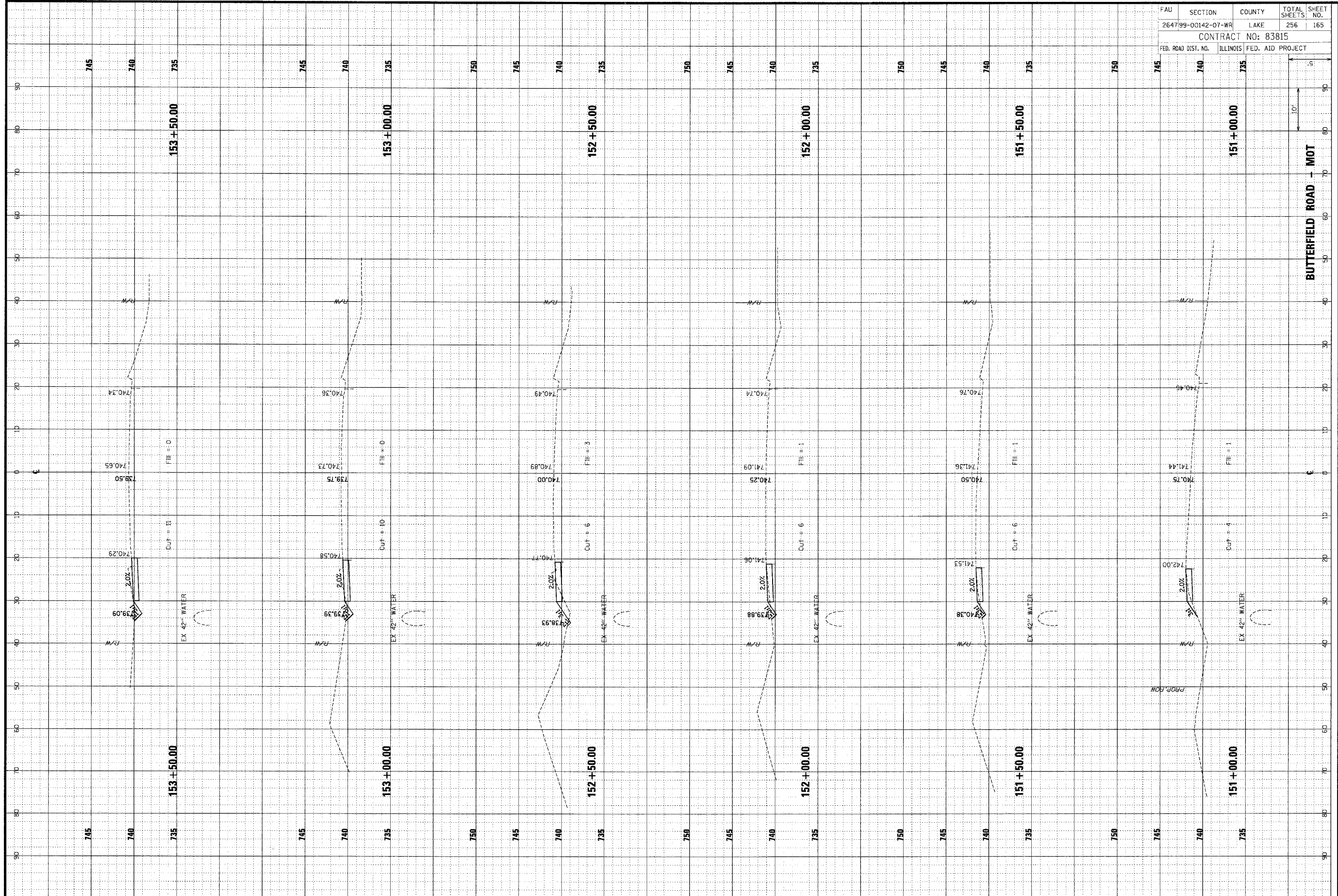
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	164
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

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

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



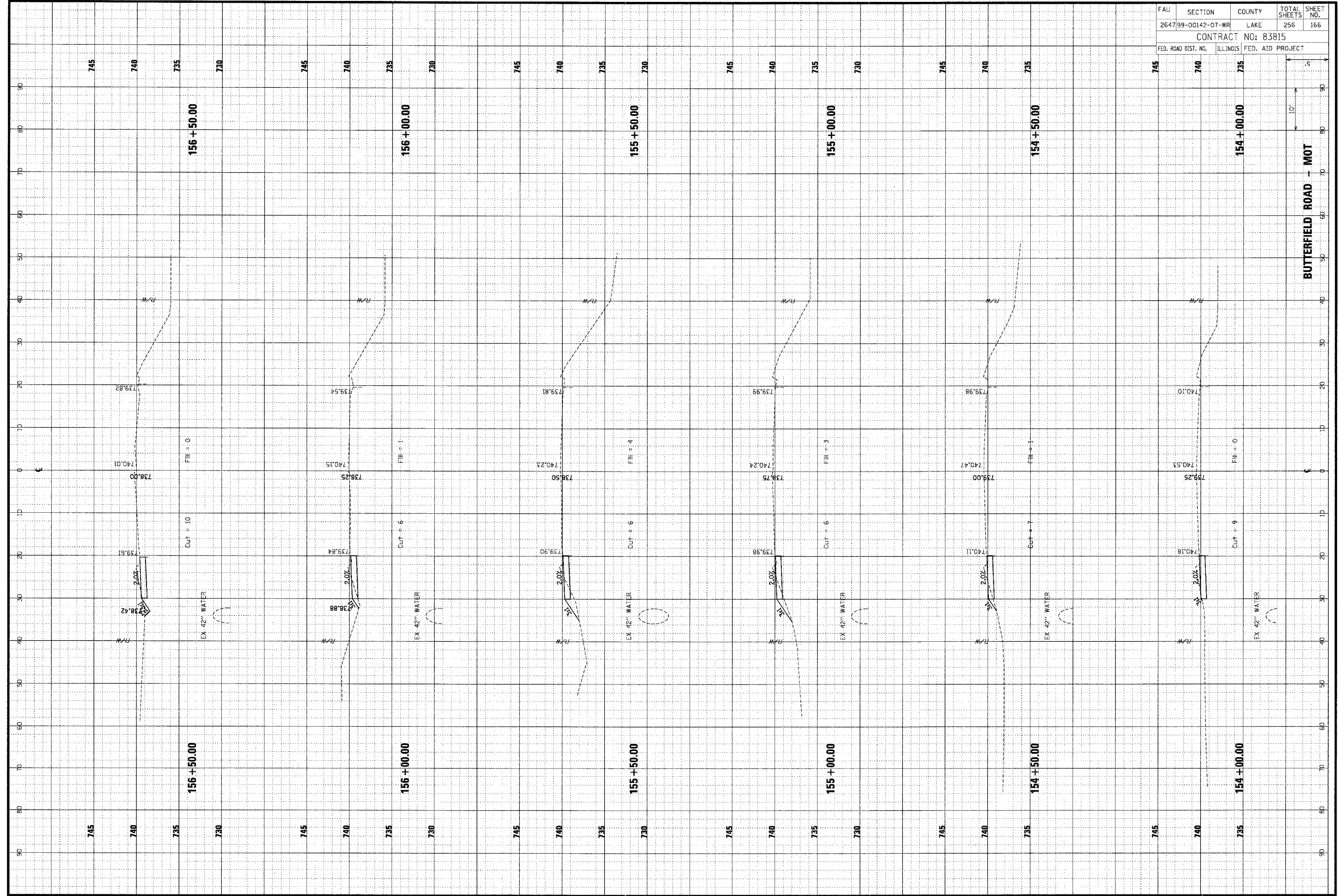
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	165
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL SURVEY
NOTE BOOK
NO. _____
DATE _____
BY _____

FINAL SURVEY
NOTE BOOK
NO. _____
DATE _____
BY _____



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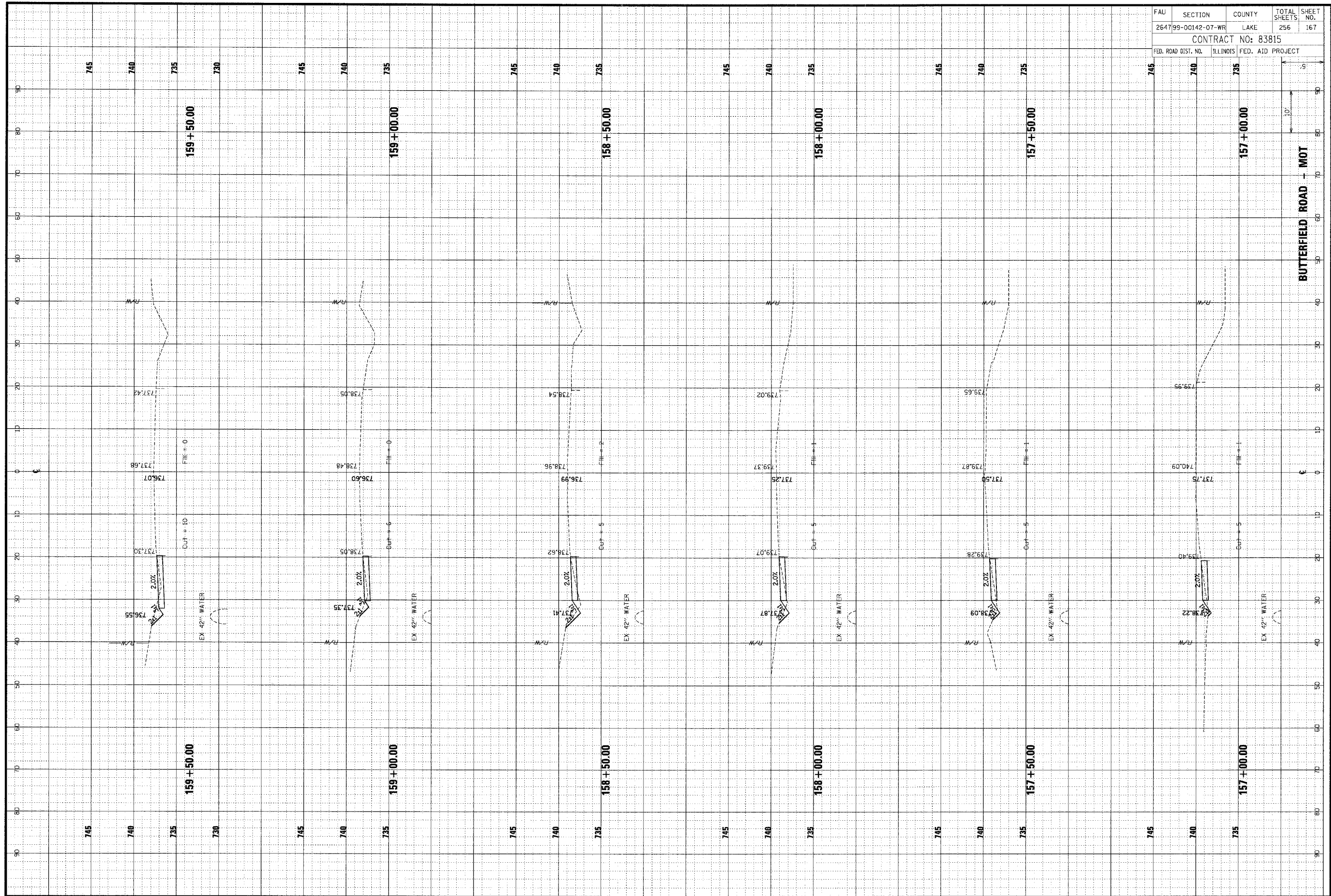
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	166	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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ORIGINAL SURVEY	DATE
NOTE BOOK	
NO.	

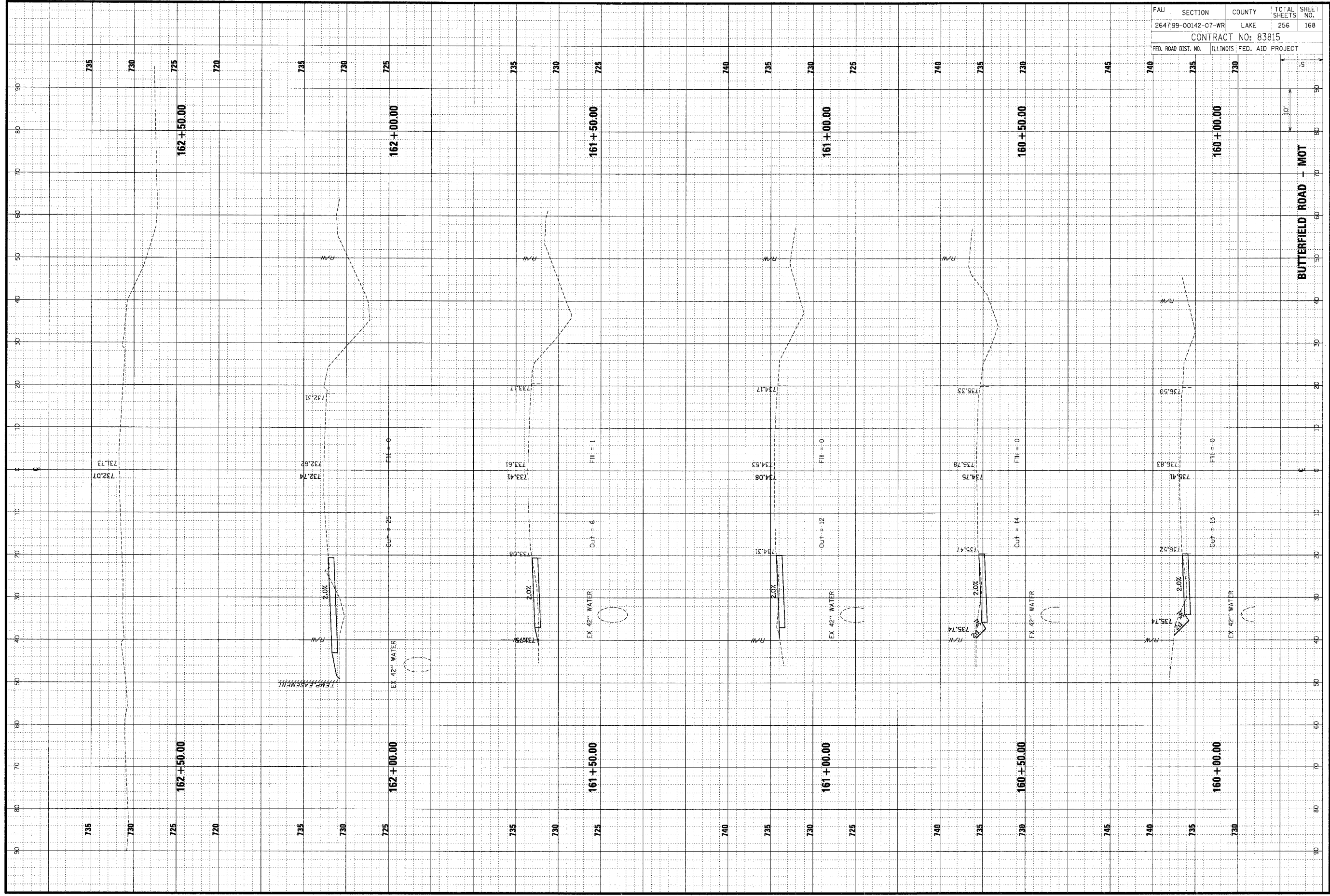


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	167
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
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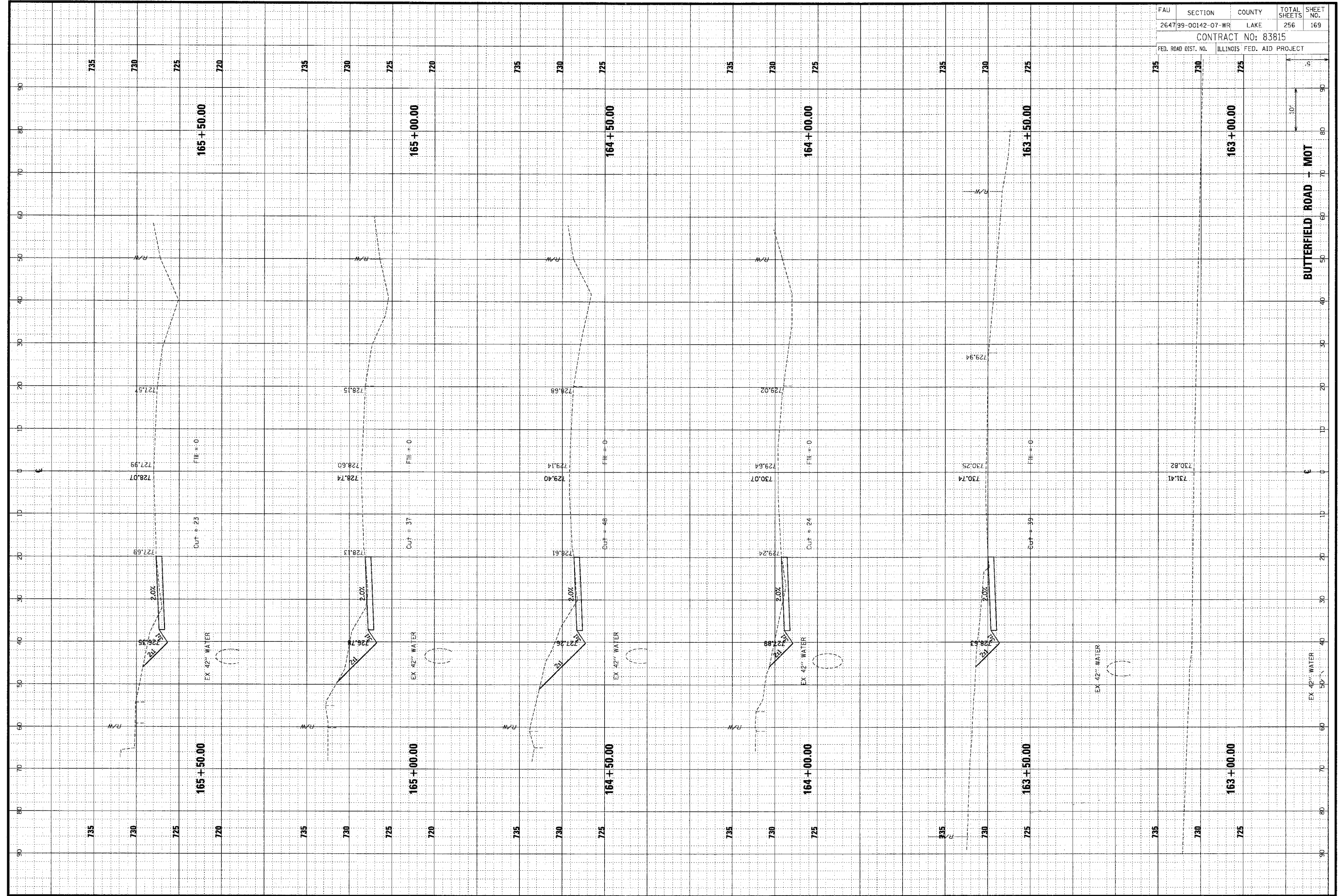


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	168
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

ORIGINAL SURVEYED BY DATE
 SURVEY TEMPLATE
 NOTE BOOK AREAS CHECKED

FINAL SURVEYED BY DATE
 SURVEY TEMPLATE
 NOTE BOOK AREAS CHECKED

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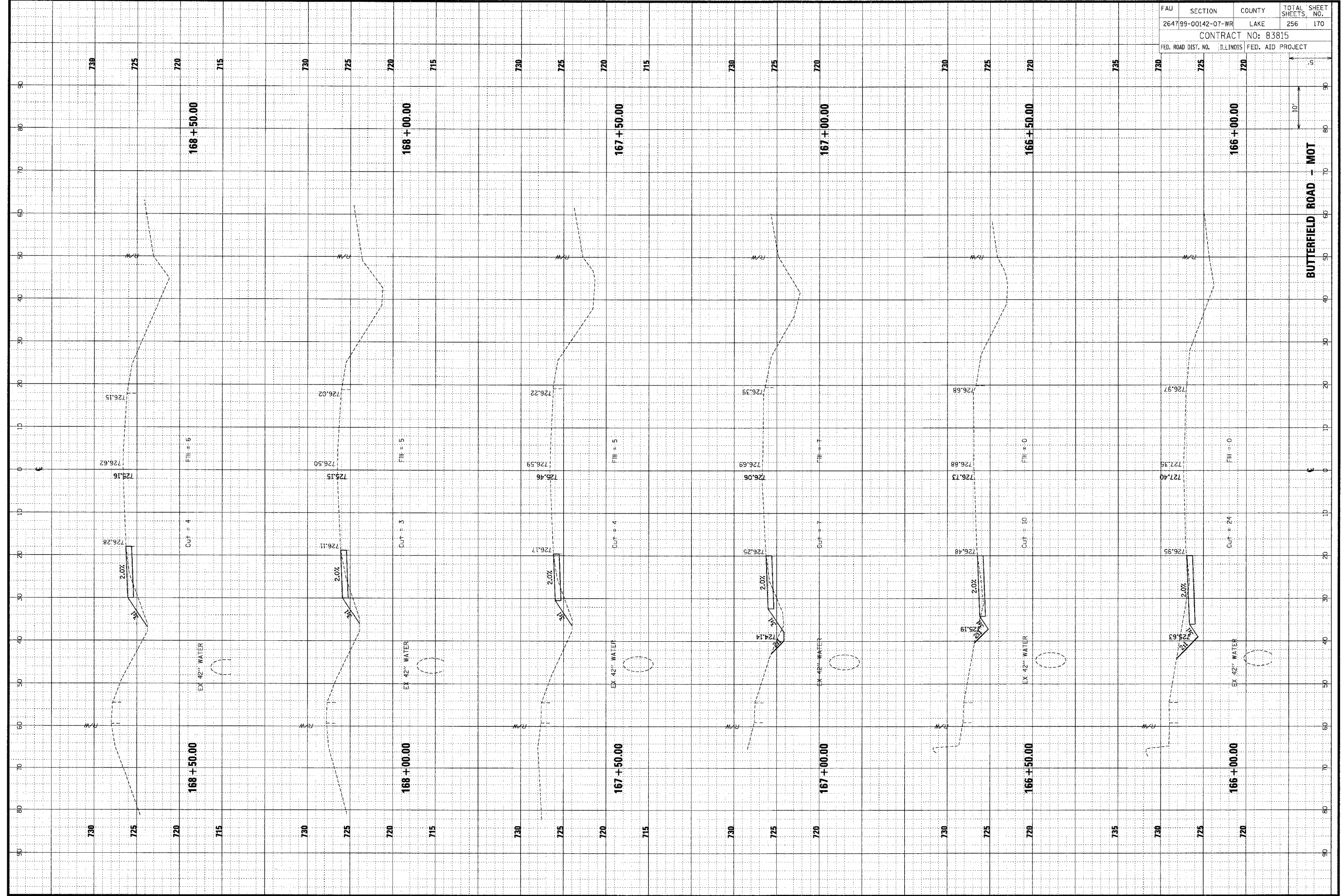


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	LAKE	256	169
CONTRACT NO: 83815				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

ORIGINAL SURVEY DATE
 SURVEY TRIP # DATE
 NOTE BOOK NO. AREAS CHECKED

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FINAL SURVEY DATE
 SURVEY TRIP # DATE
 NOTE BOOK NO. AREAS CHECKED

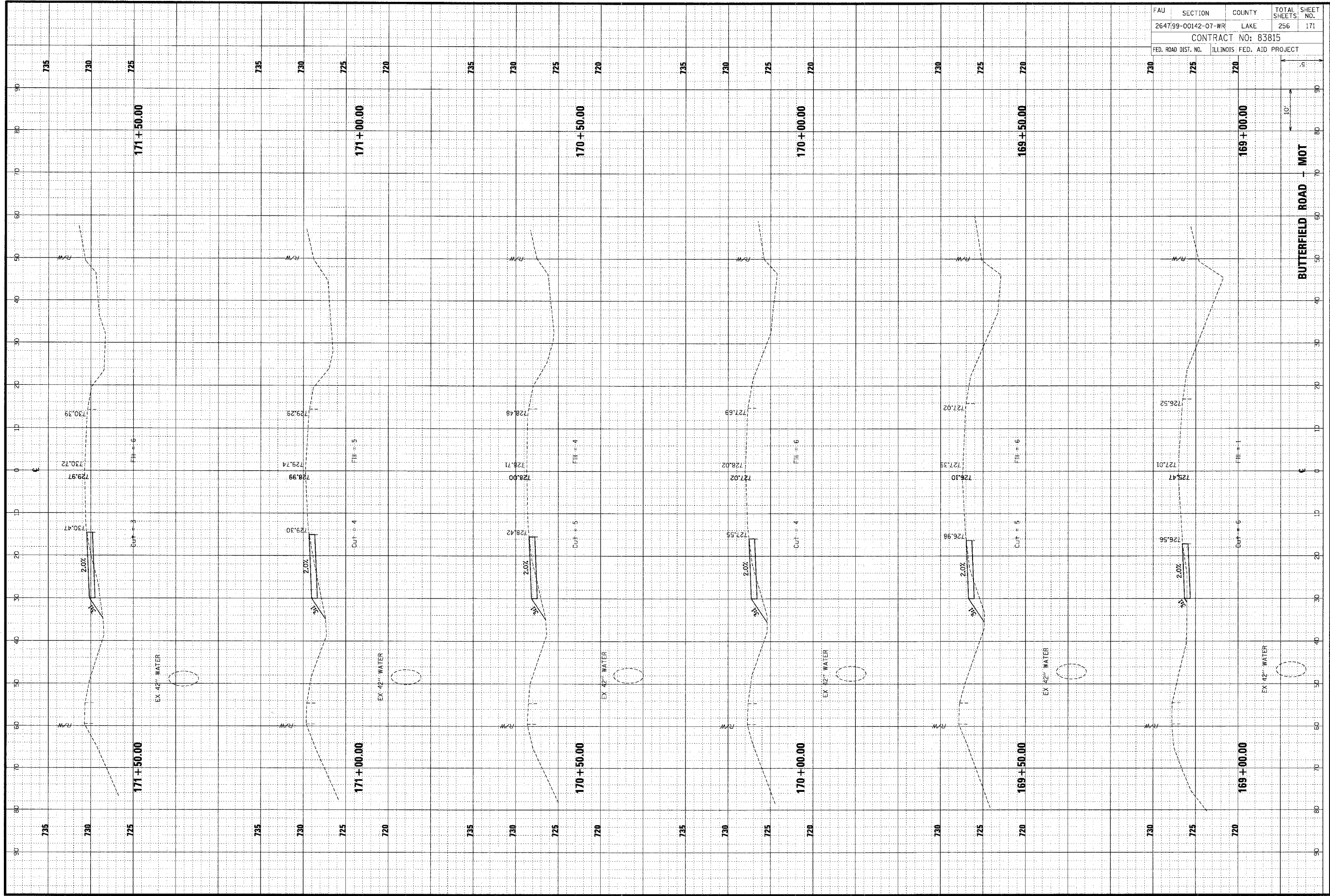


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR		LAKE	256	170
CONTRACT NO: 83815				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

FINAL SURVEY	SUBJECT	BY	DATE
NO. _____	PLANNED	_____	_____
_____	REVISIONS	_____	_____
_____	APPROVED	_____	_____

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ORIGINAL SURVEY	DATE
NO. _____	_____
_____	_____
_____	_____



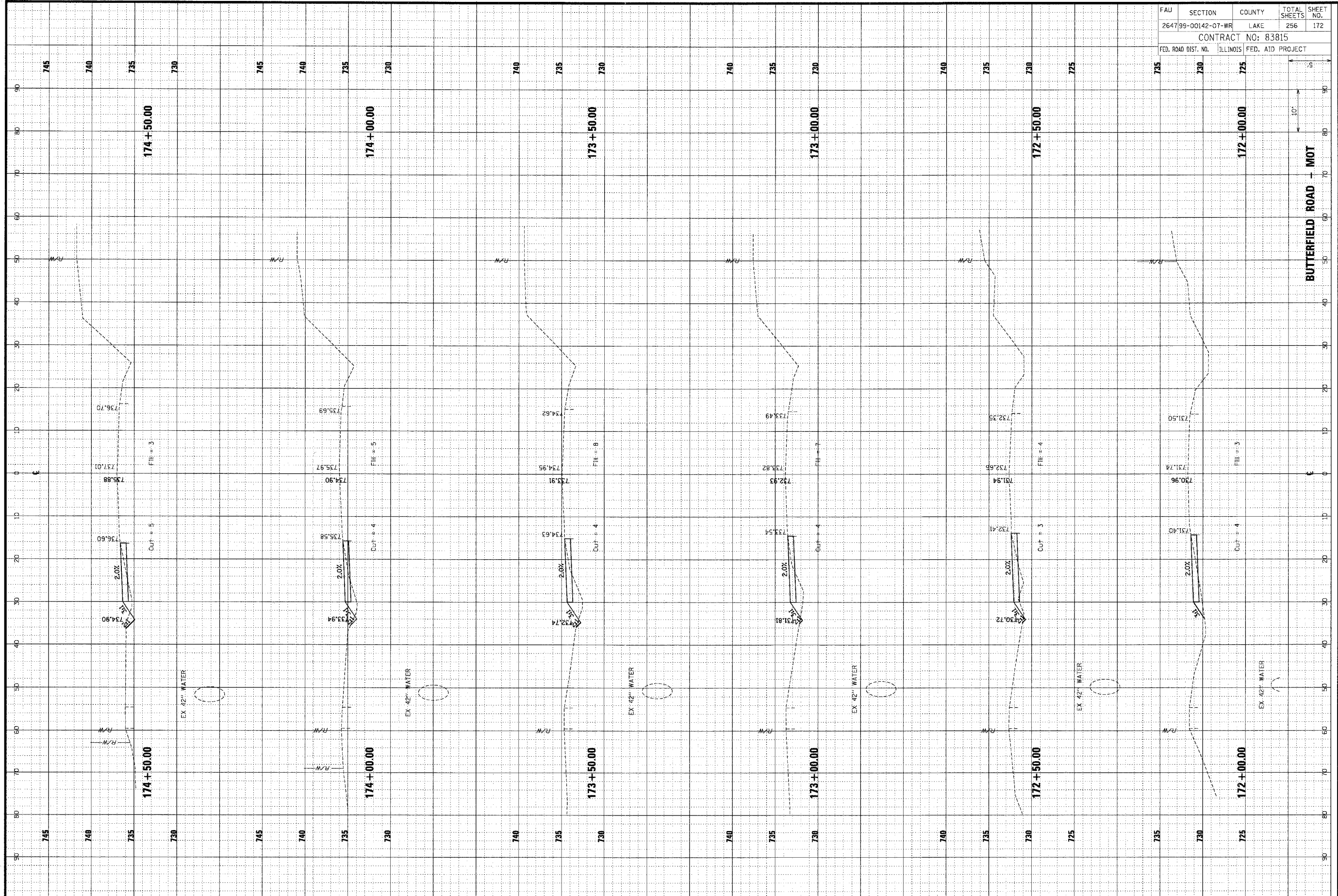
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	ILLINOIS	256	171
CONTRACT NO: 83815				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

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ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
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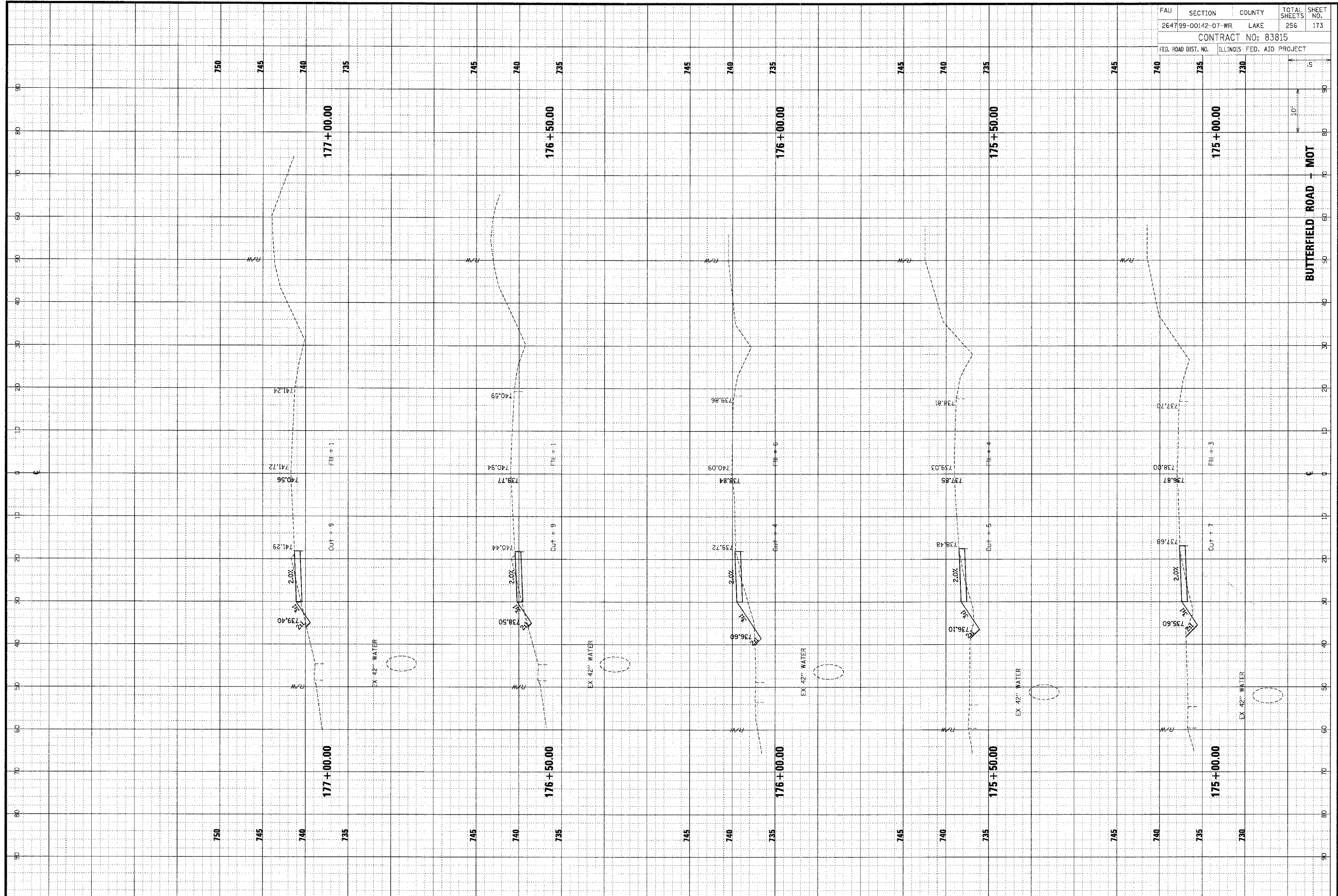
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	172	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL SURVEY	SUBMITTED	DATE
NOTED	PLOTTED	BY
NO. L. BOOK	TEMPORARY	
NO.	AREAS	
	CHECKED	
	AREAS CHECKED	

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ORIGINAL SURVEY	SUBMITTED	DATE
NOTED	PLOTTED	BY
NO. L. BOOK	TEMPORARY	
NO.	AREAS	
	CHECKED	
	AREAS CHECKED	

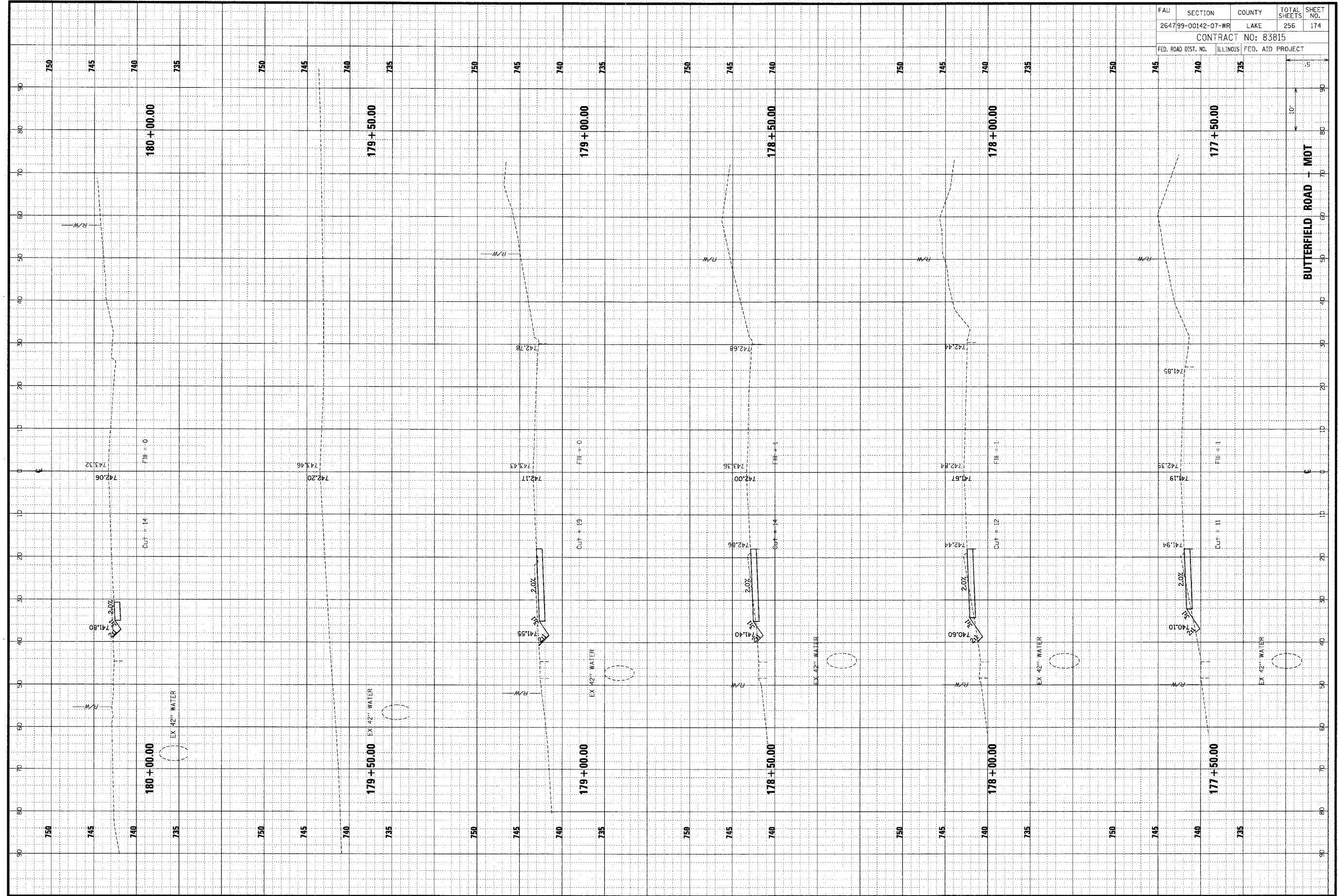


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	173
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

ORIGINAL	SURVEYED	BY	DATE
SURVEY	TEMPLATE		
NOTE BOOK	AREAS		
	CHECKED		

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FINAL	SURVEYED	BY	DATE
NOTE BOOK	AREAS		
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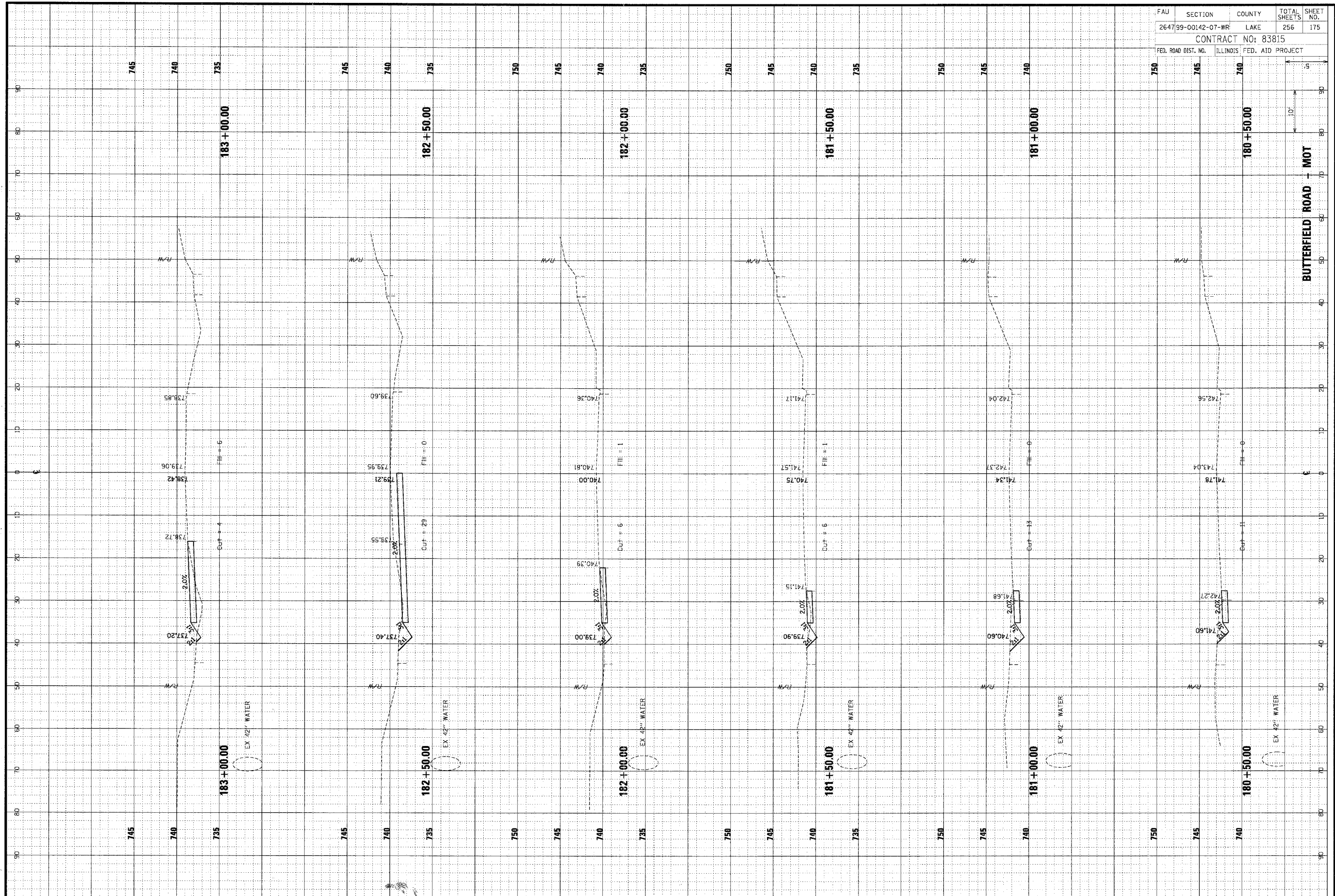
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	174	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL SUBMITTED BY DATE
 SURVEY PLOTTED BY DATE
 NO. L. BOOK PLANT LATE BY DATE
 AREAS AREAS CHECKED BY DATE
 NO. AREAS CHECKED BY DATE

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ORIGINAL SUBMITTED BY DATE
 SURVEY PLOTTED BY DATE
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 AREAS AREAS CHECKED BY DATE
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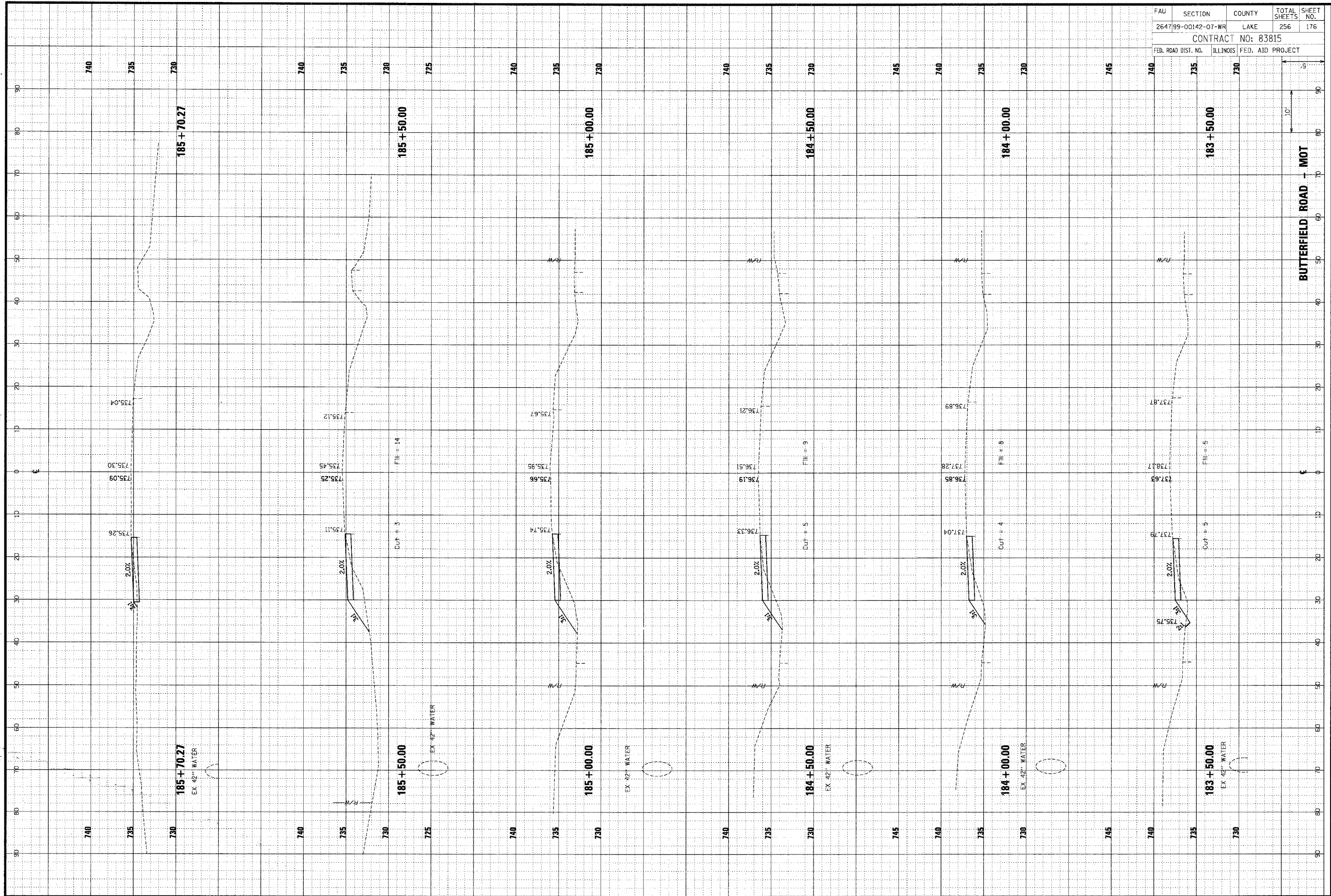


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	175
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

ORIGINAL SURVEY	DATE
BY	
NO.	
FINN SURVEY	DATE
BY	
NO.	
SUBMITTED	DATE
REPLATED	
REWORKED	
AREAS CHECKED	

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ORIGINAL SURVEY	DATE
BY	
NO.	
FINN SURVEY	DATE
BY	
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SUBMITTED	DATE
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REWORKED	
AREAS CHECKED	

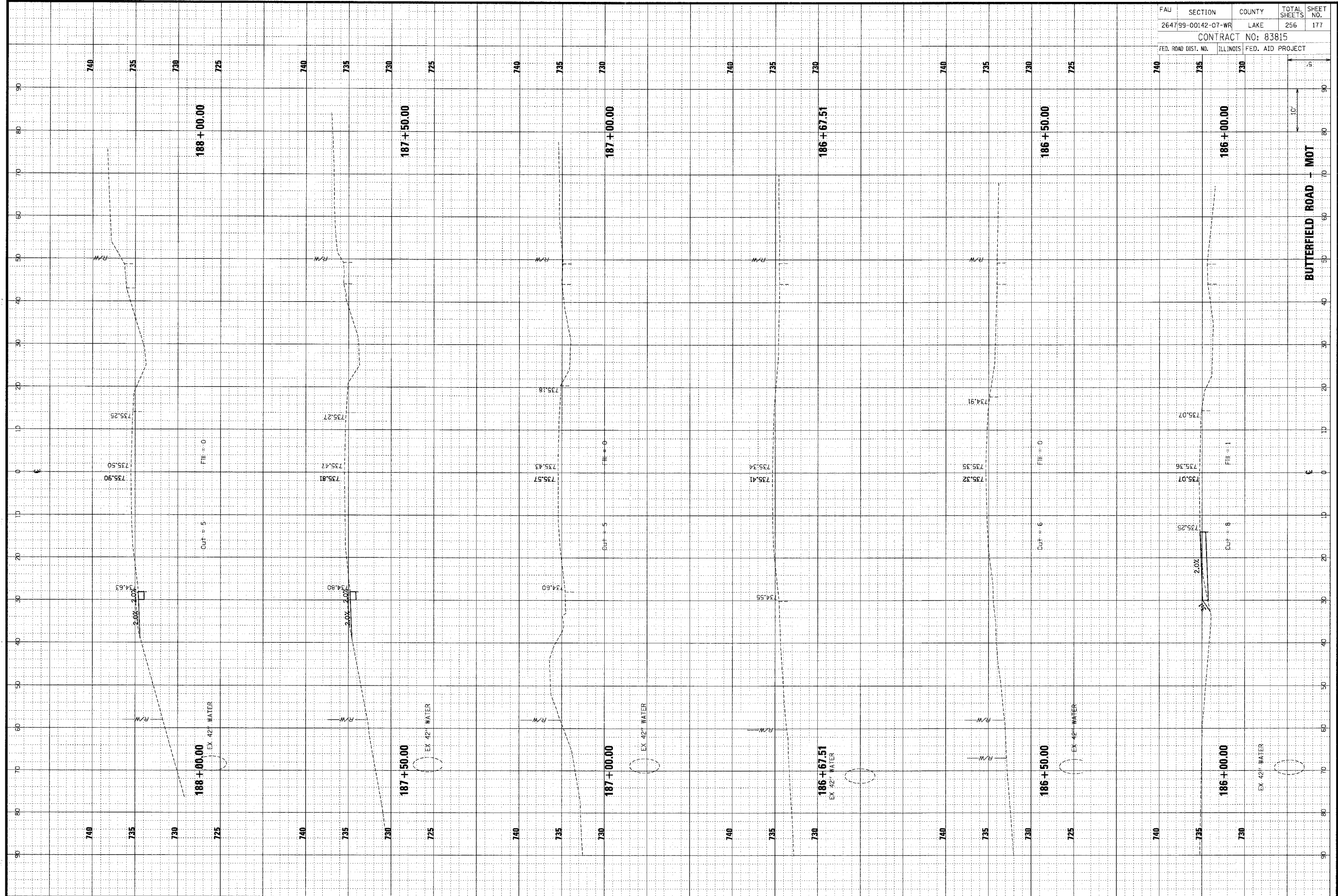


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	176	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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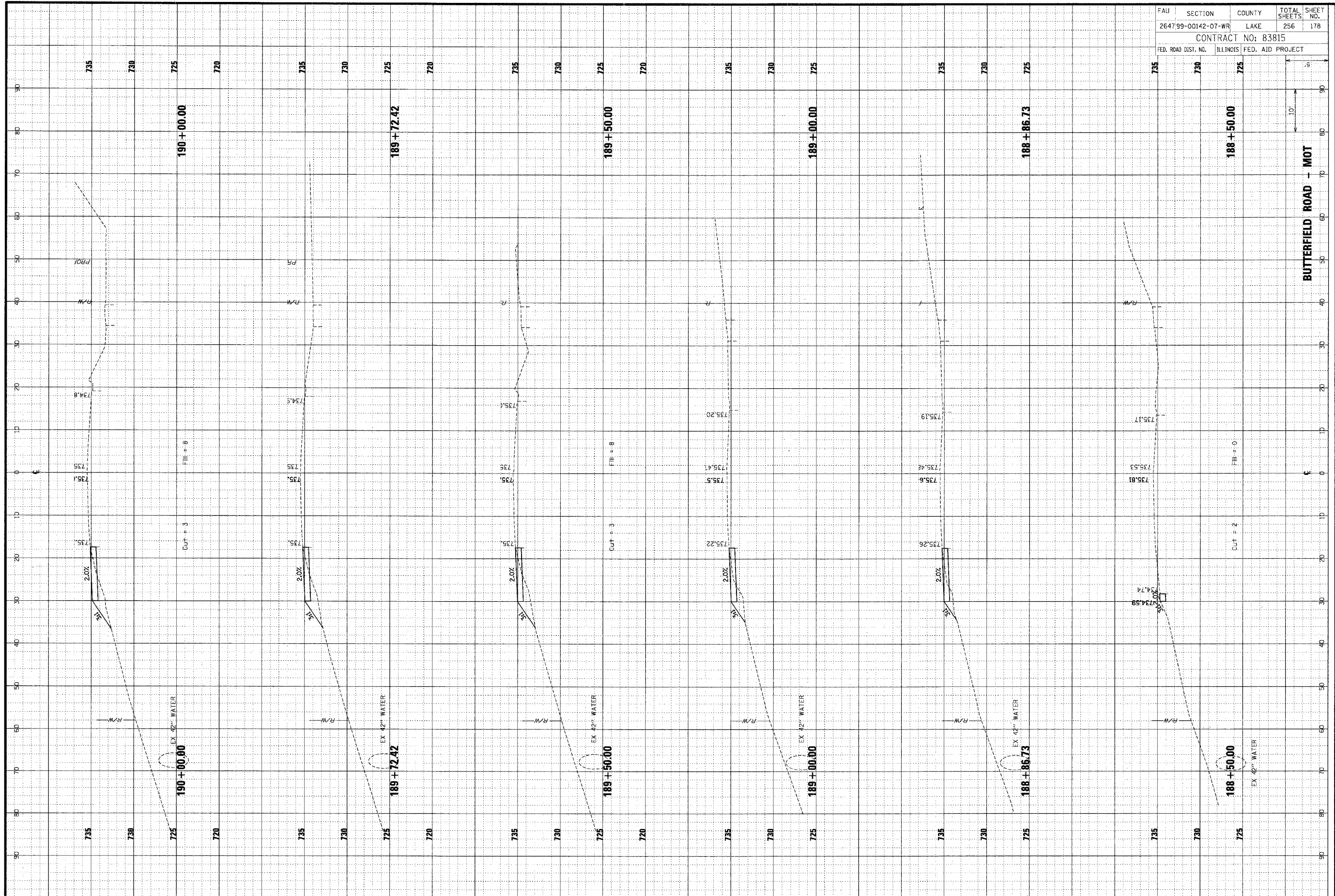
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	177	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY NOTE BOOK NO.	REVISIONS	DATE

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ORIGINAL SURVEY NOTE BOOK NO.	BY	DATE

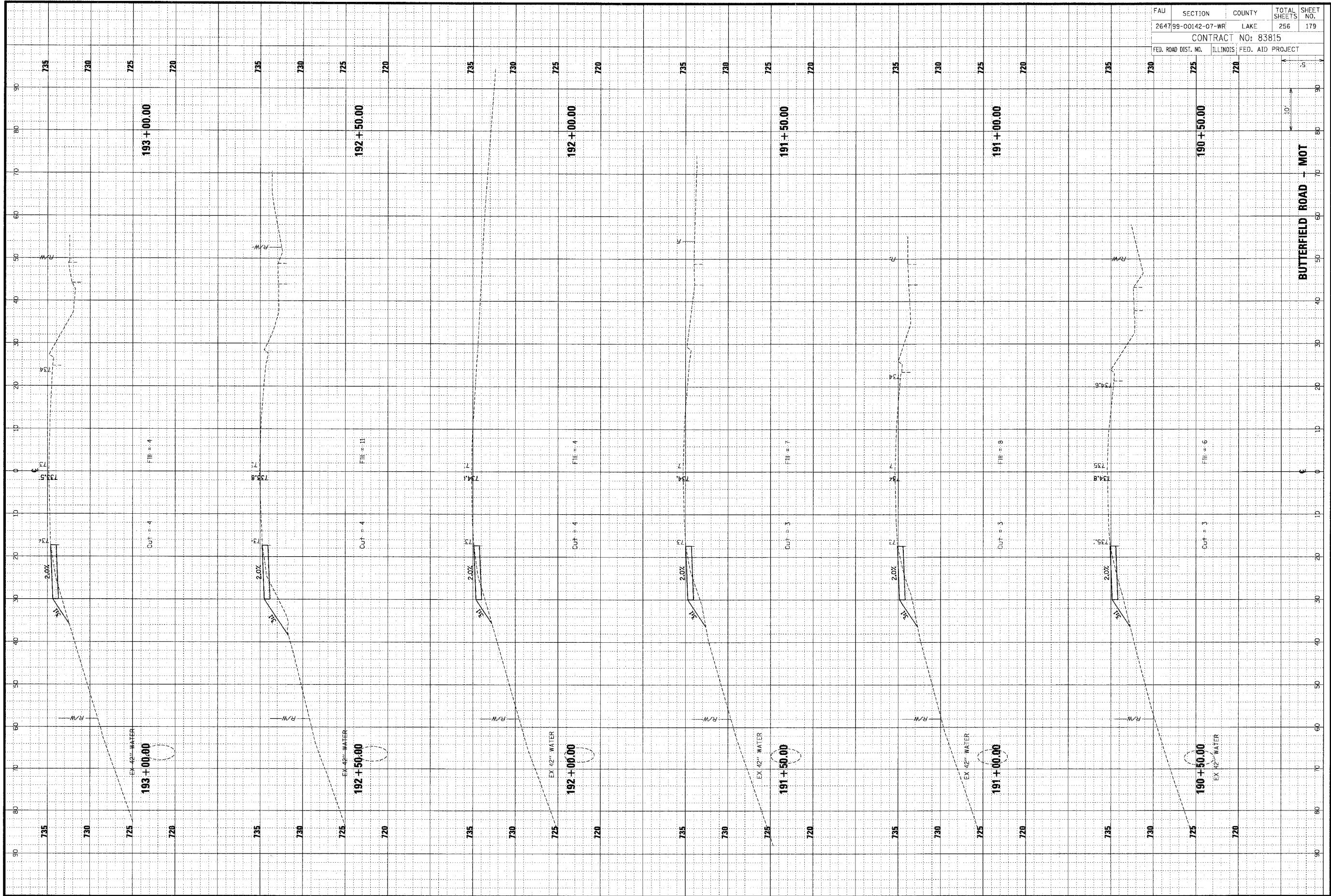


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	178	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

ORIGINAL SURVEY PLOTTED
 SURVEY PLOTTED
 NOT BOOK AREAS CHECKED
 NO. BY DATE

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 NOT BOOK AREAS CHECKED
 NO. BY DATE



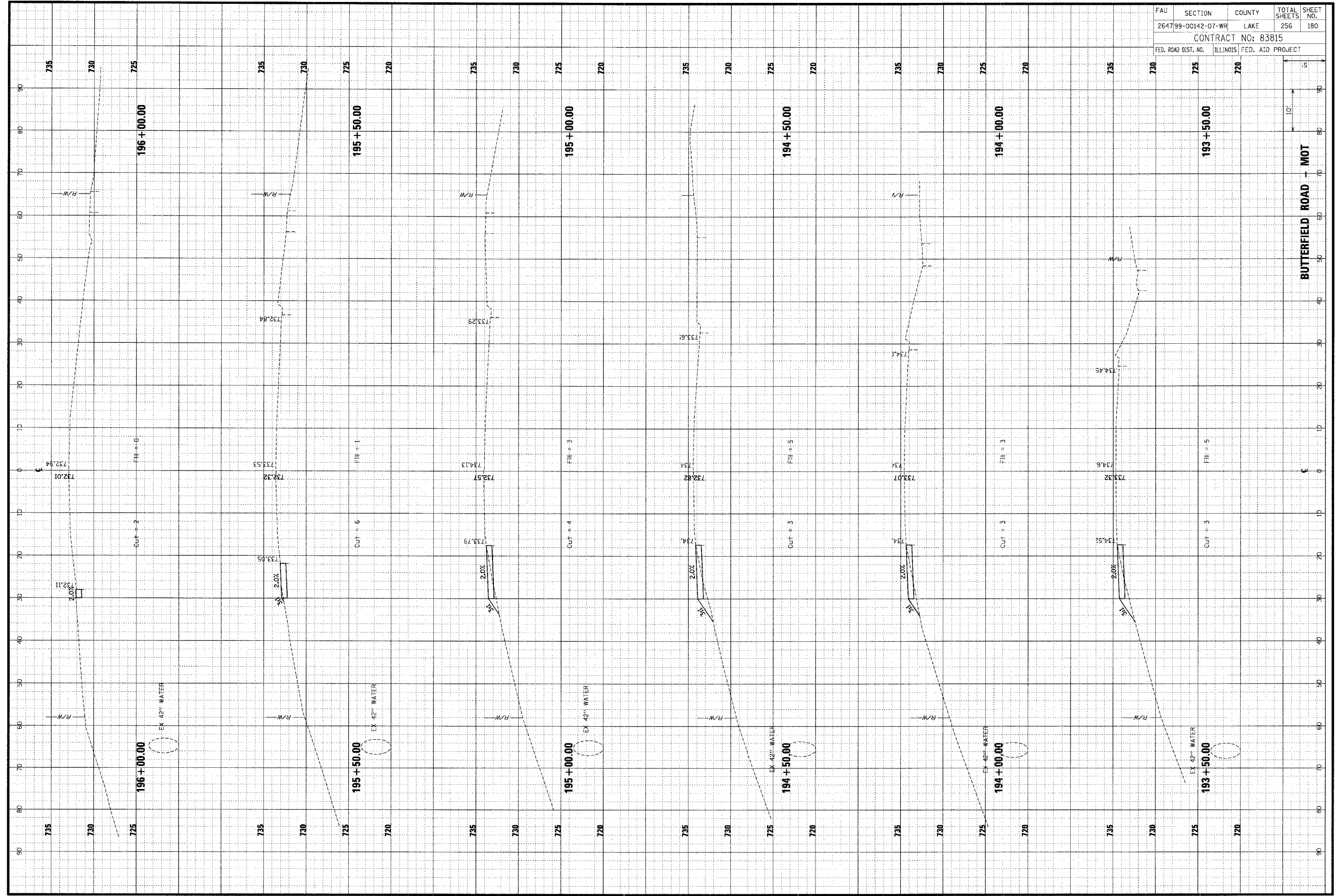
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	179
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	DATE
NOTE BOOK	BY
AREA CHECKED	

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ORIGINAL SURVEY	DATE
NOTE BOOK	BY
AREA CHECKED	



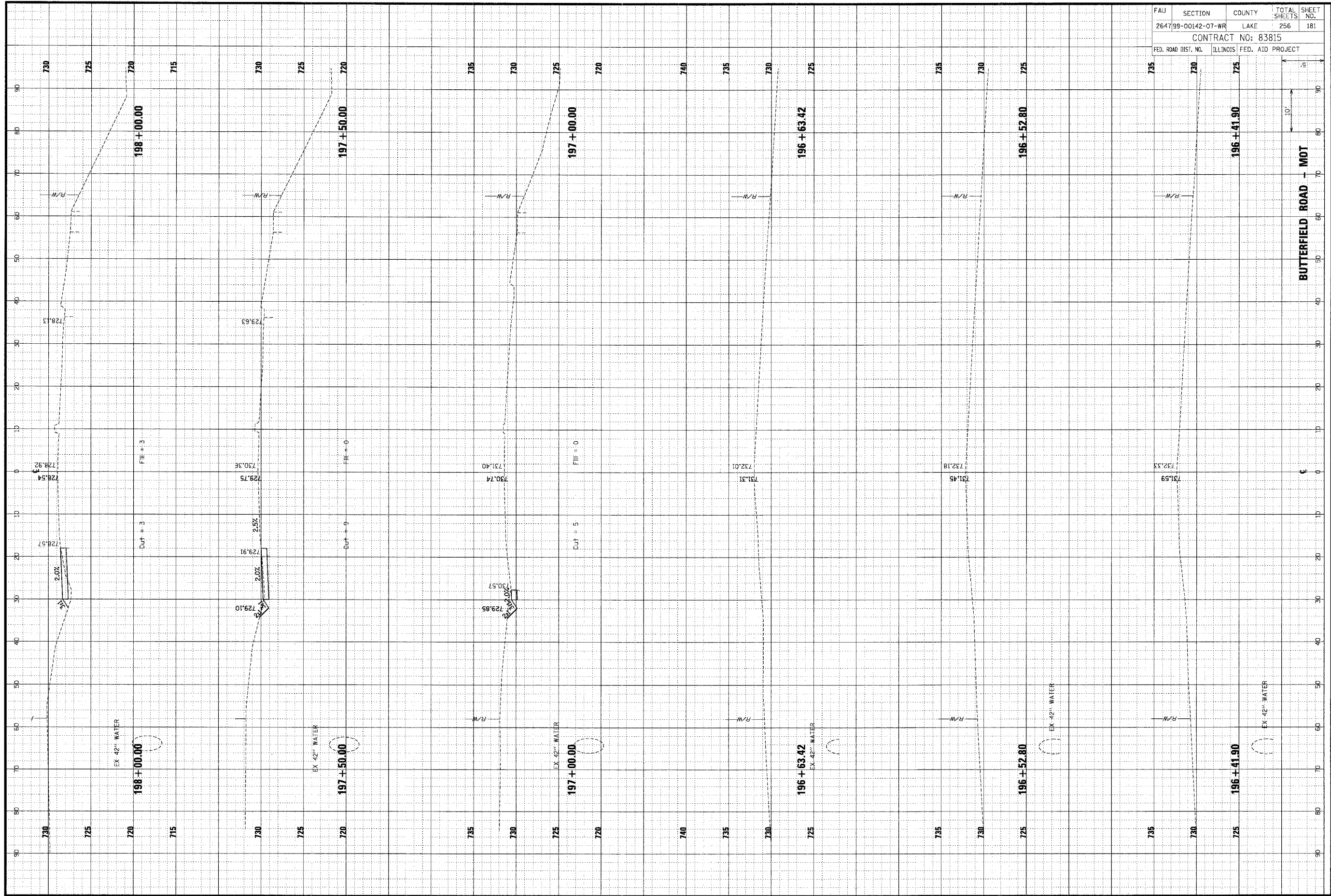
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	ILLINOIS	256	180
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

ORIGINAL SHIRTY NOTE BOOK NO.	SUBMITTED PLOTTER TEMPLATE AREAS CHECKED	BY	DATE

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FINAL SHIRTY NOTE BOOK NO.	SUBMITTED PLOTTER TEMPLATE AREAS CHECKED	BY	DATE

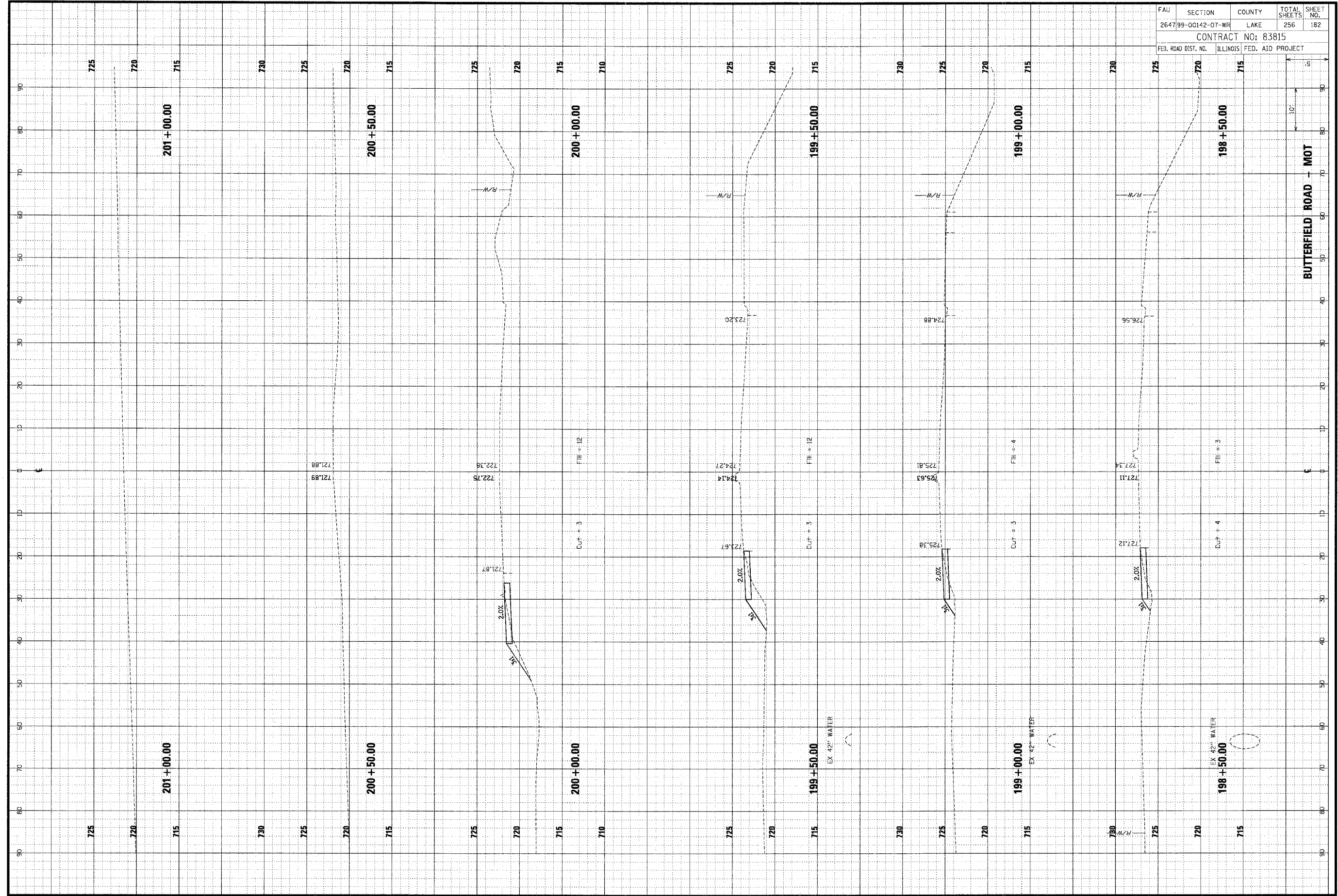


FAJ	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	181	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	DATE	
AREAS CHECKED		
NO.		

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FINAL SURVEY	BY	DATE
NOTE BOOK	DATE	
AREAS CHECKED		
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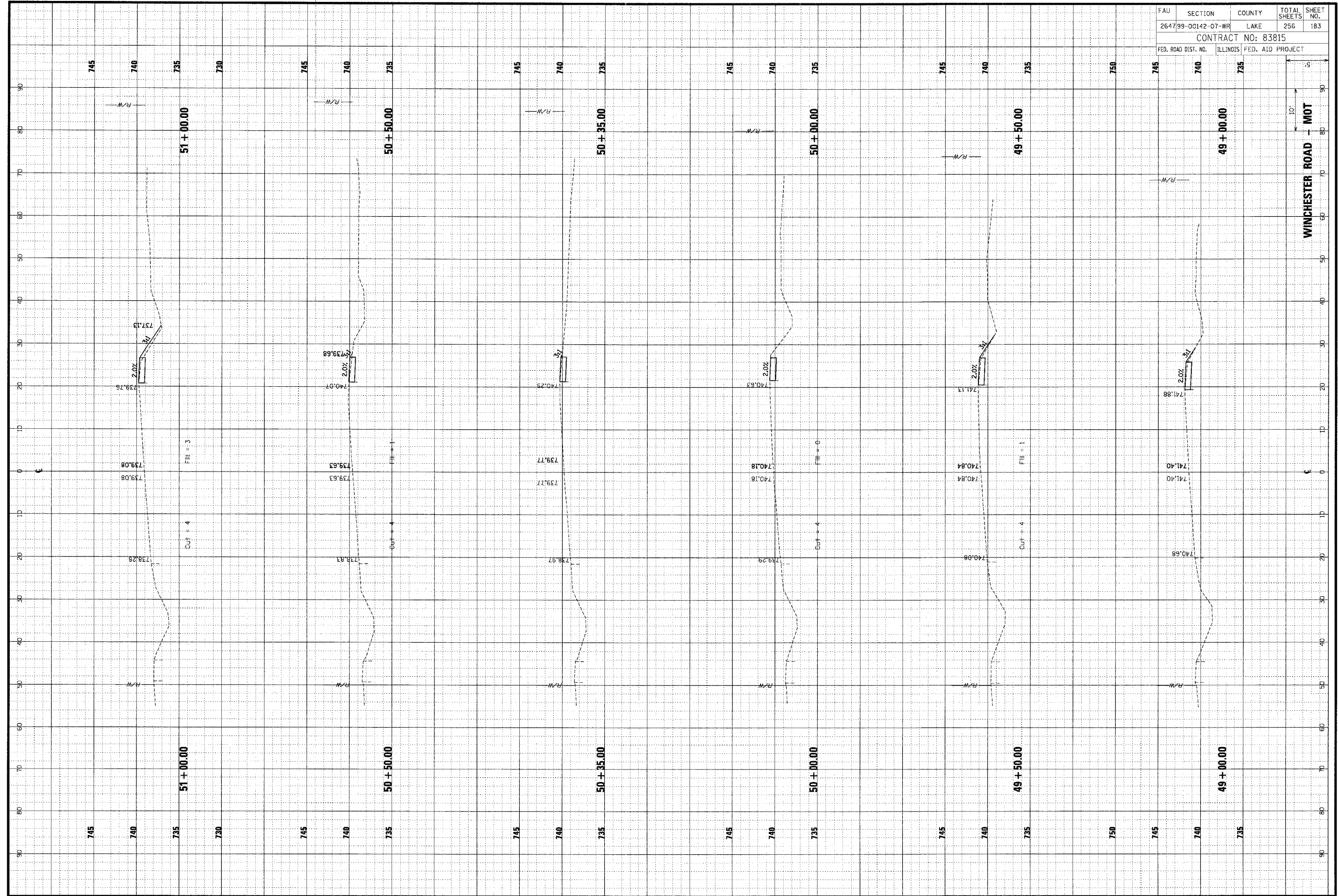


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	182
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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



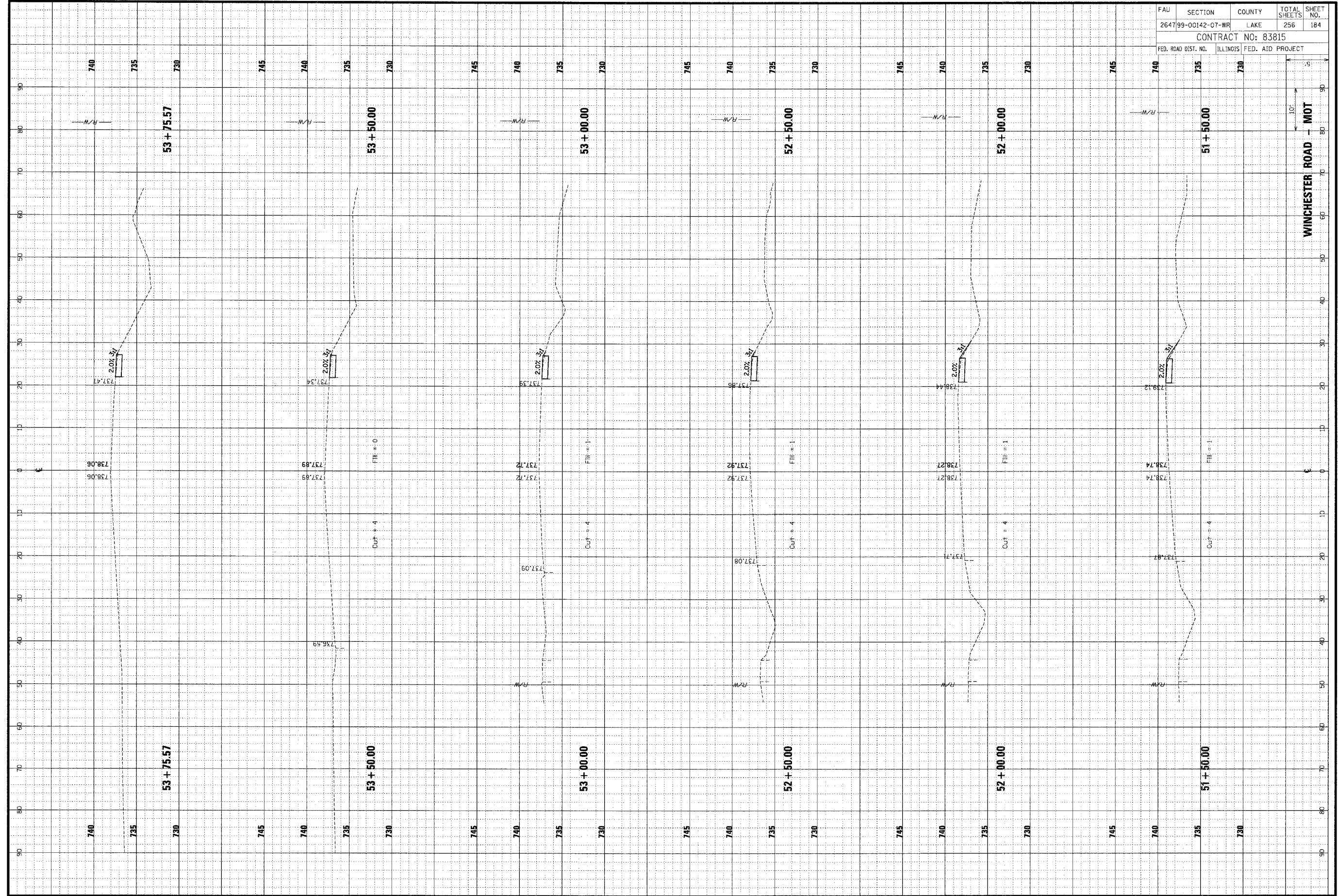
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR		LAKE	256	183
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL SURVEY NOTE BOOK NO. _____
 SURVEYED DATE _____
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 AREAS CHECKED _____

FINAL SURVEY NOTE BOOK NO. _____
 SURVEYED DATE _____
 TEMP. AT _____
 AREAS CHECKED _____

BY _____
 DATE _____

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FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	184
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

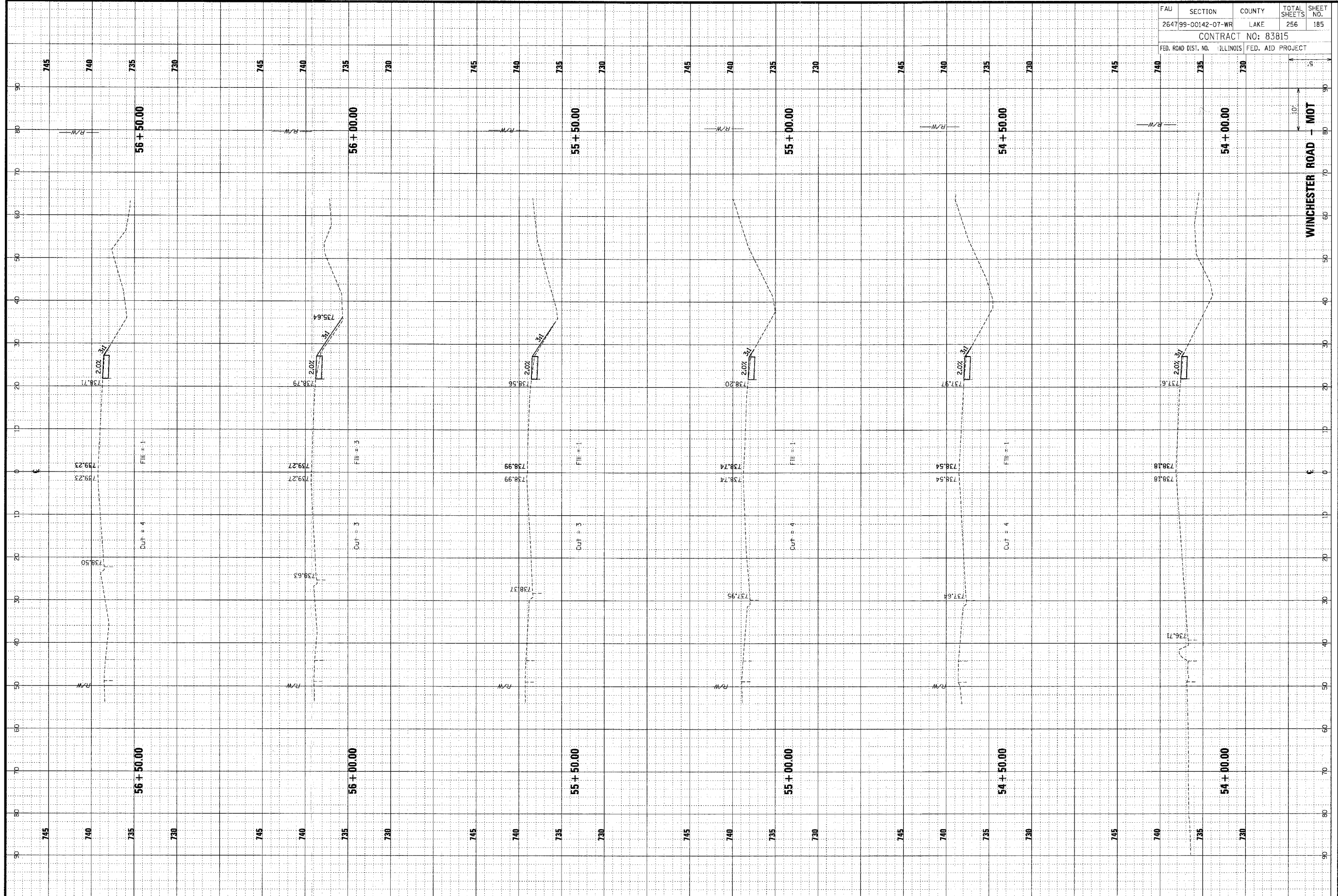
DATE	BY	DATE	BY

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DATE	BY	DATE	BY

ORIGINAL SURVEY PLOTTED
 NOTE BOOK TEMPLATE
 NO. _____ REAS. CHECKED

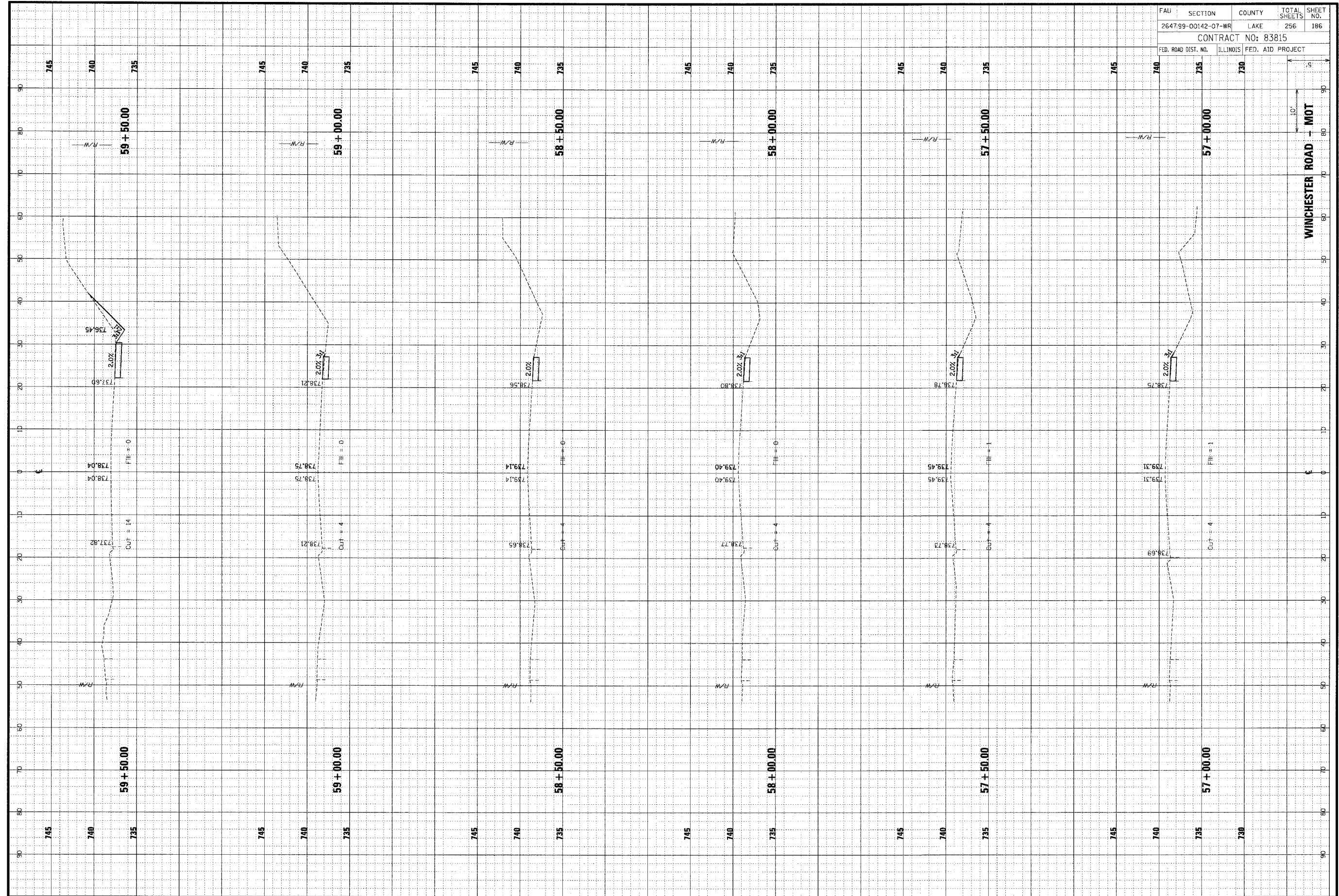


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	ILLINOIS	256	185
CONTRACT NO: 83815				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

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 SURVEY TEMPLATE
 NOTE BOOK AREAS CHECKED

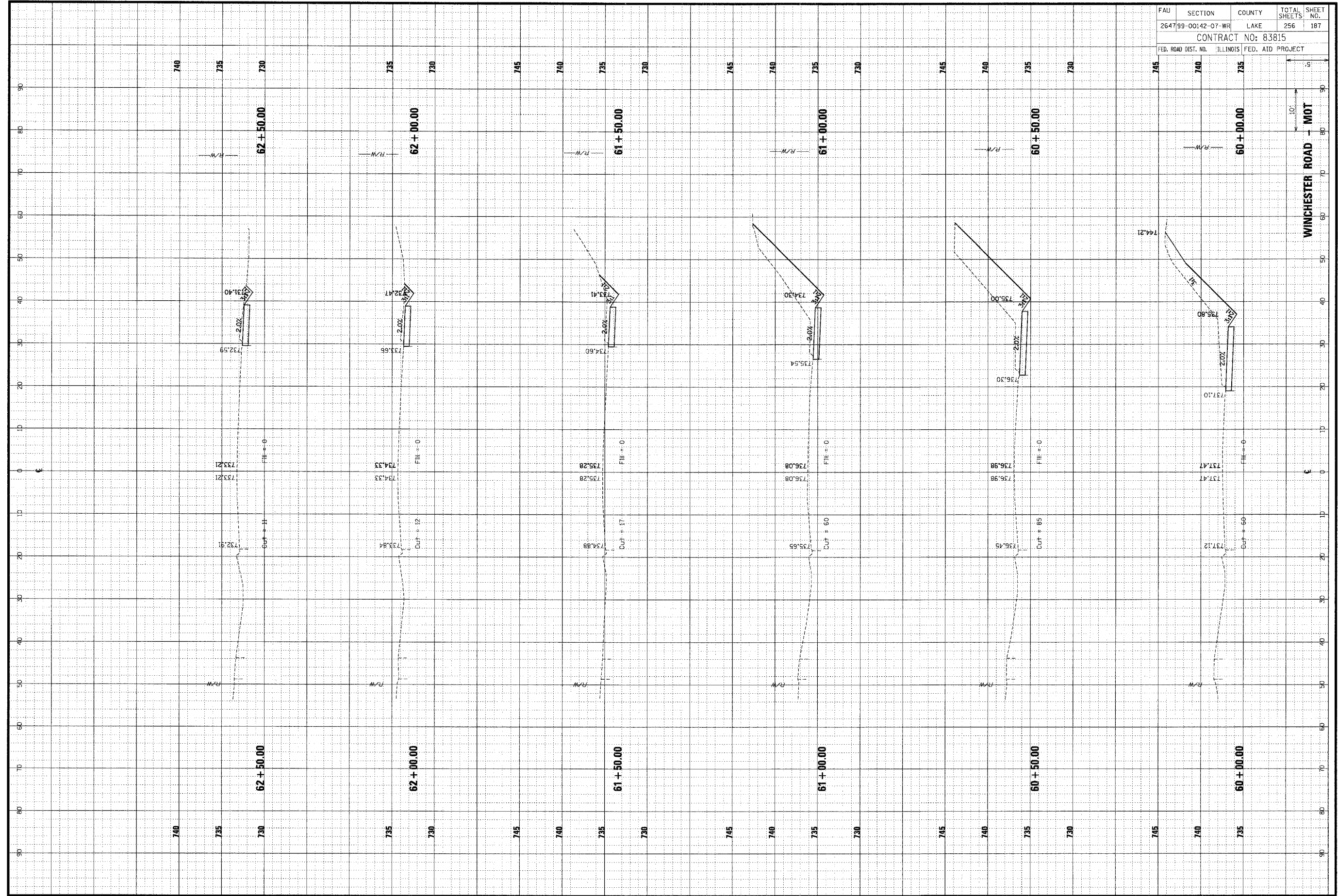


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	186	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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



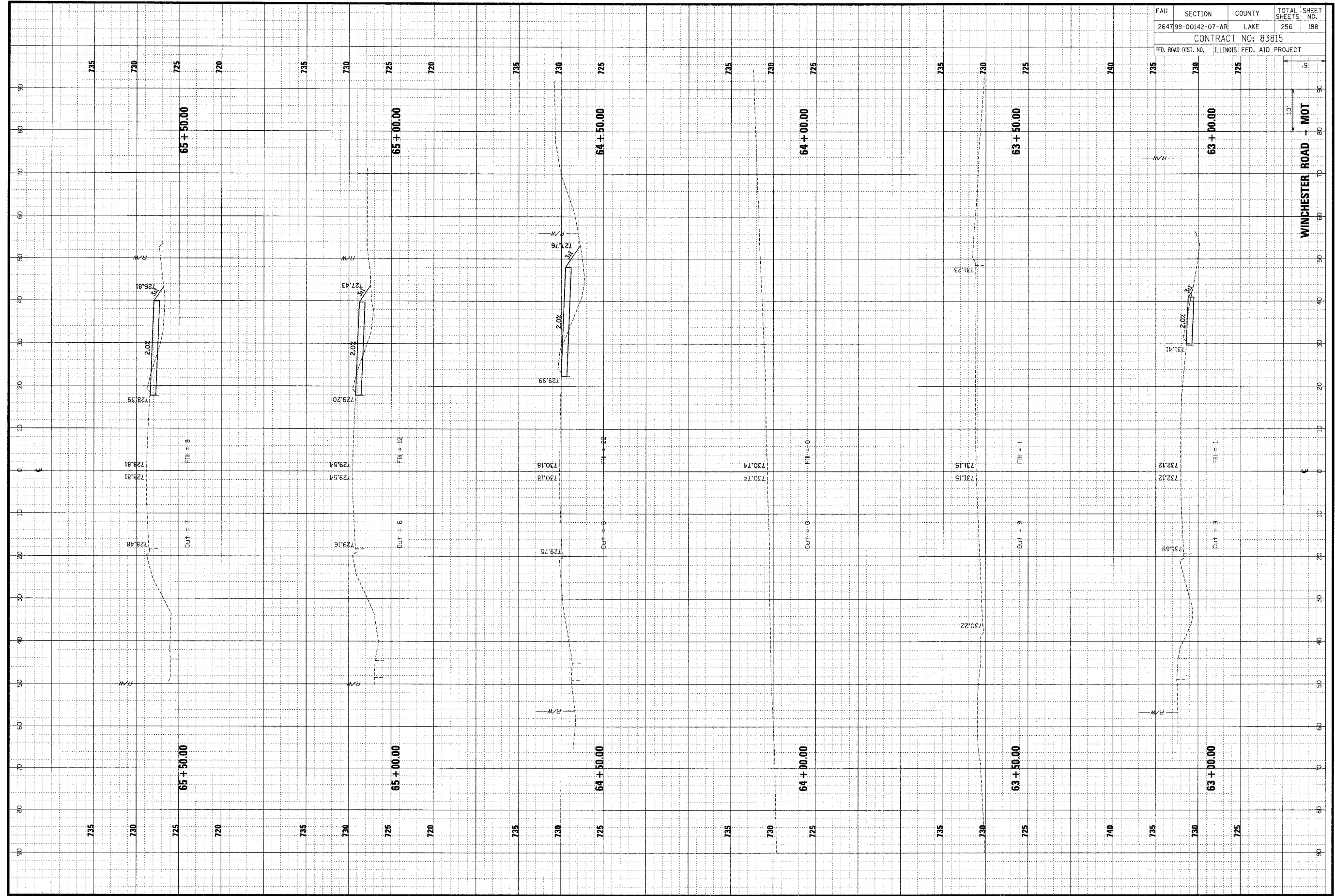
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	187
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL SUBMITTAL DATE
 SUBMITTAL NO. DATE
 NOTE BOOK NO. DATE
 AREAS CHECKED

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FINAL SURVEY DATE
 NOTE BOOK NO. DATE
 AREAS CHECKED

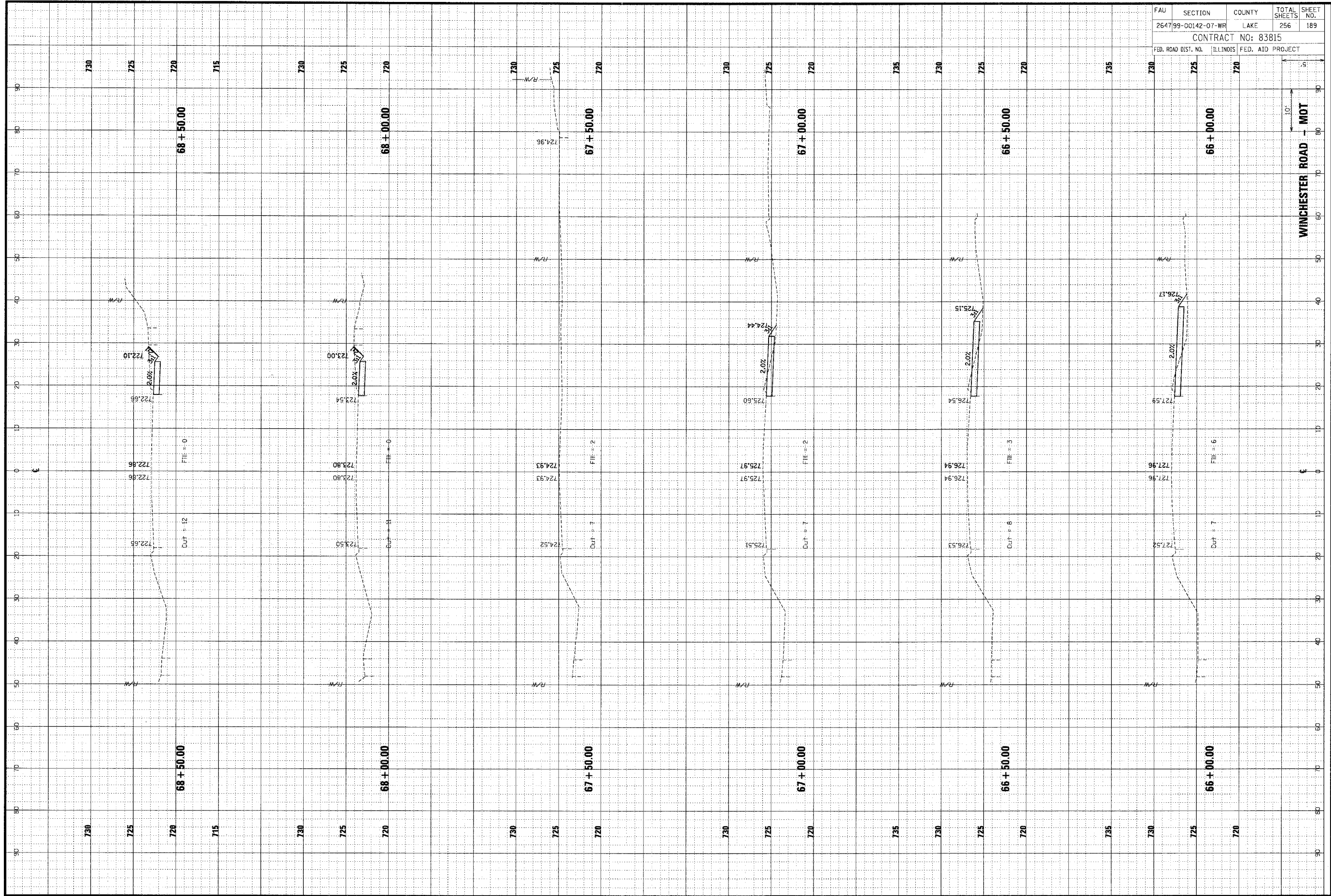


FALL	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	ILLINOIS	256	188
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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

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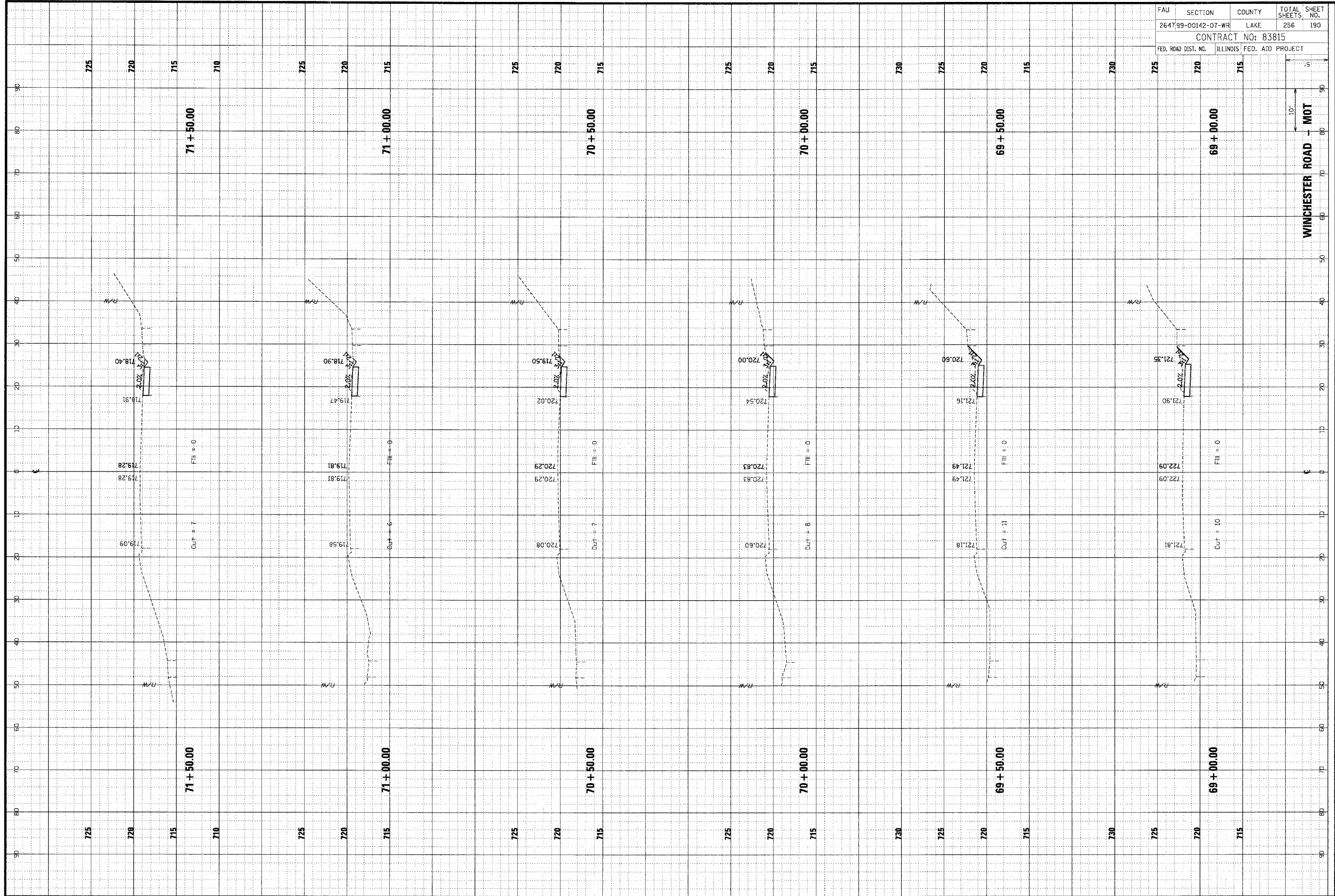
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	189
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

DATE	BY
DATE	BY
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DATE	BY
DATE	BY
DATE	BY

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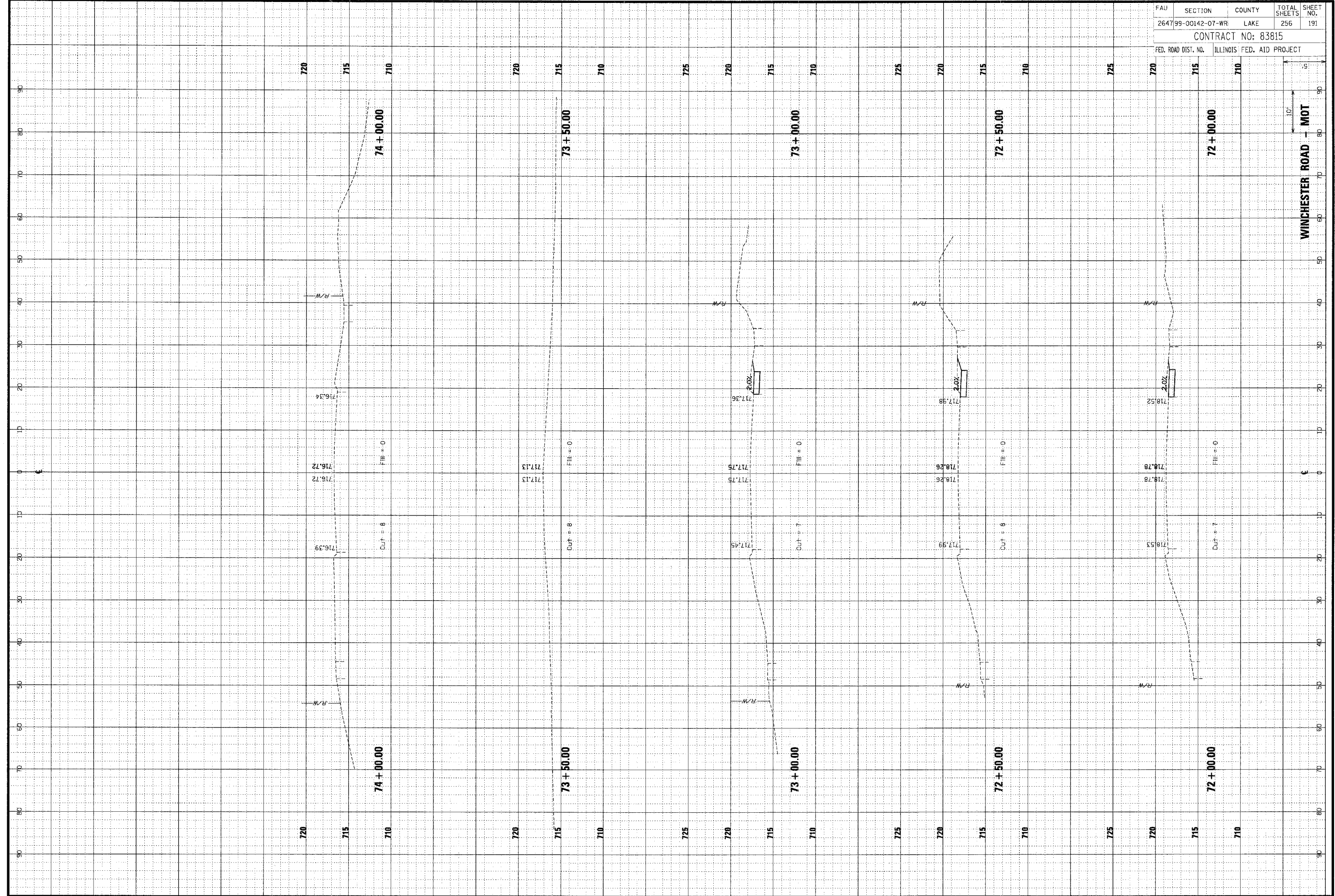
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	LAKE	256	190
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

WINCHESTER ROAD - MOT

ORIGINAL SURVEY NOTE BOOK NO.	BY	DATE

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FINAL SURVEY NOTE BOOK NO.	BY	DATE



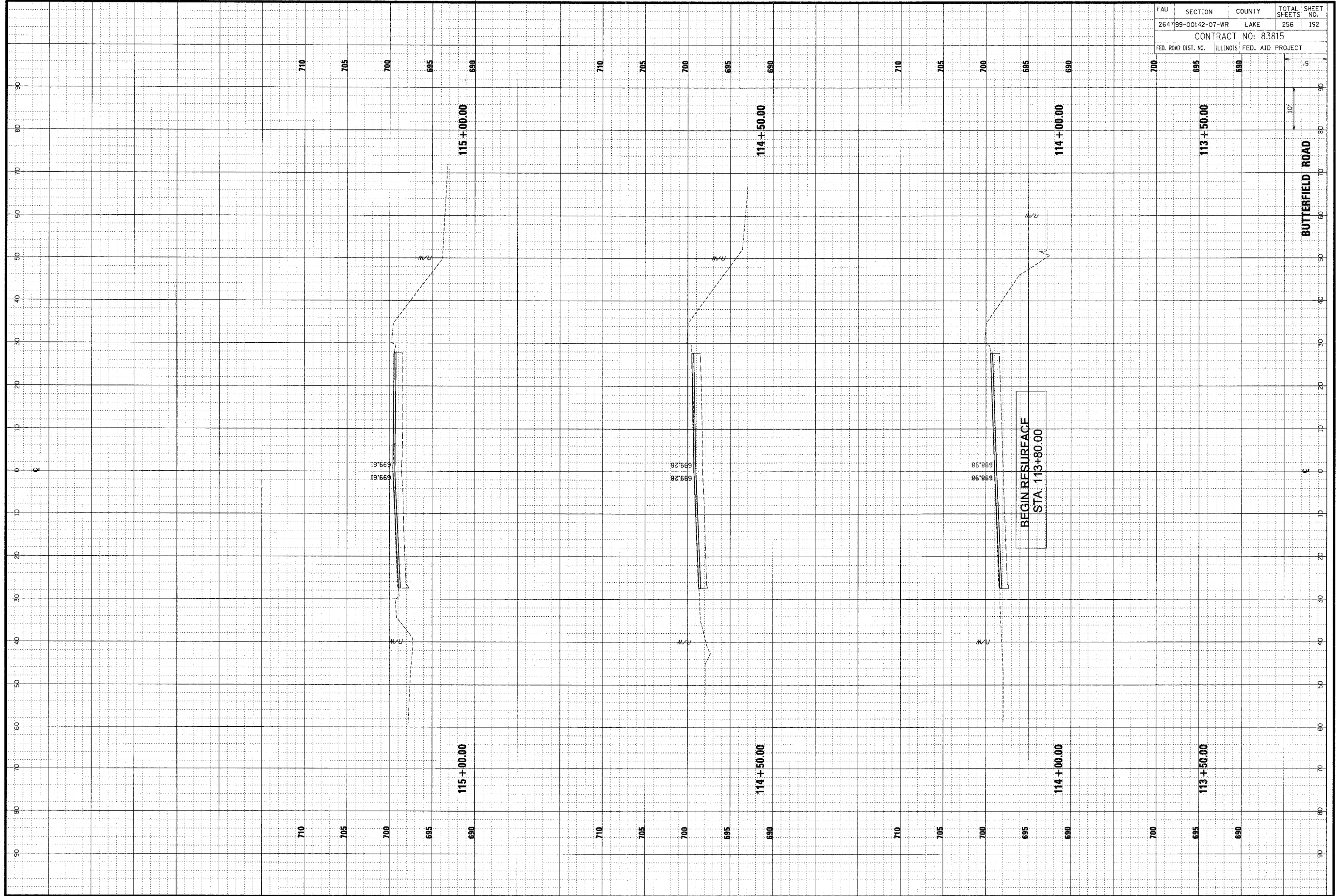
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	191
CONTRACT NO: 83815				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

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

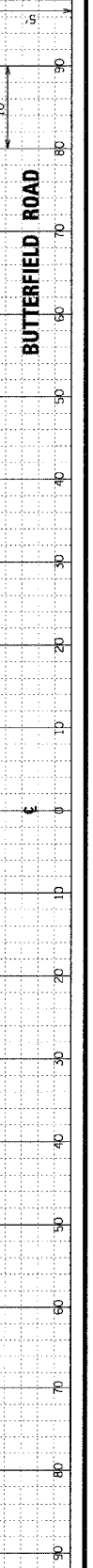
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ORIGINAL	SURVEYED	BY	DATE
SUBMIT	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		



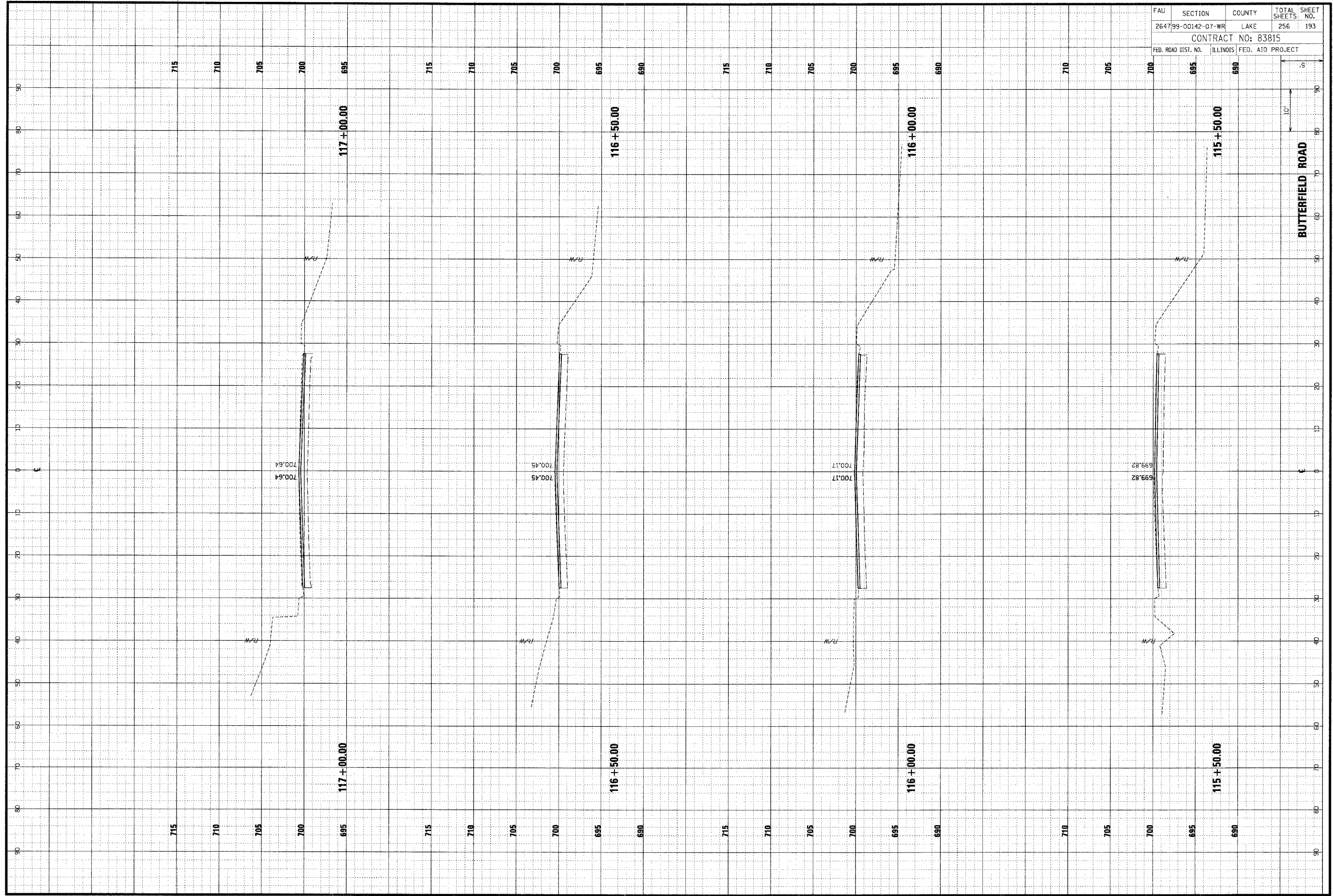
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE		256	192
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



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ORIGINAL SURVEY	SURVEYED	BY	DATE
COPY BOOK	PLOTTED		
AREA CHECKED	AREA CHECKED		

FINAL SURVEY	SURVEYED	BY	DATE
COPY BOOK	PLOTTED		
AREA CHECKED	AREA CHECKED		



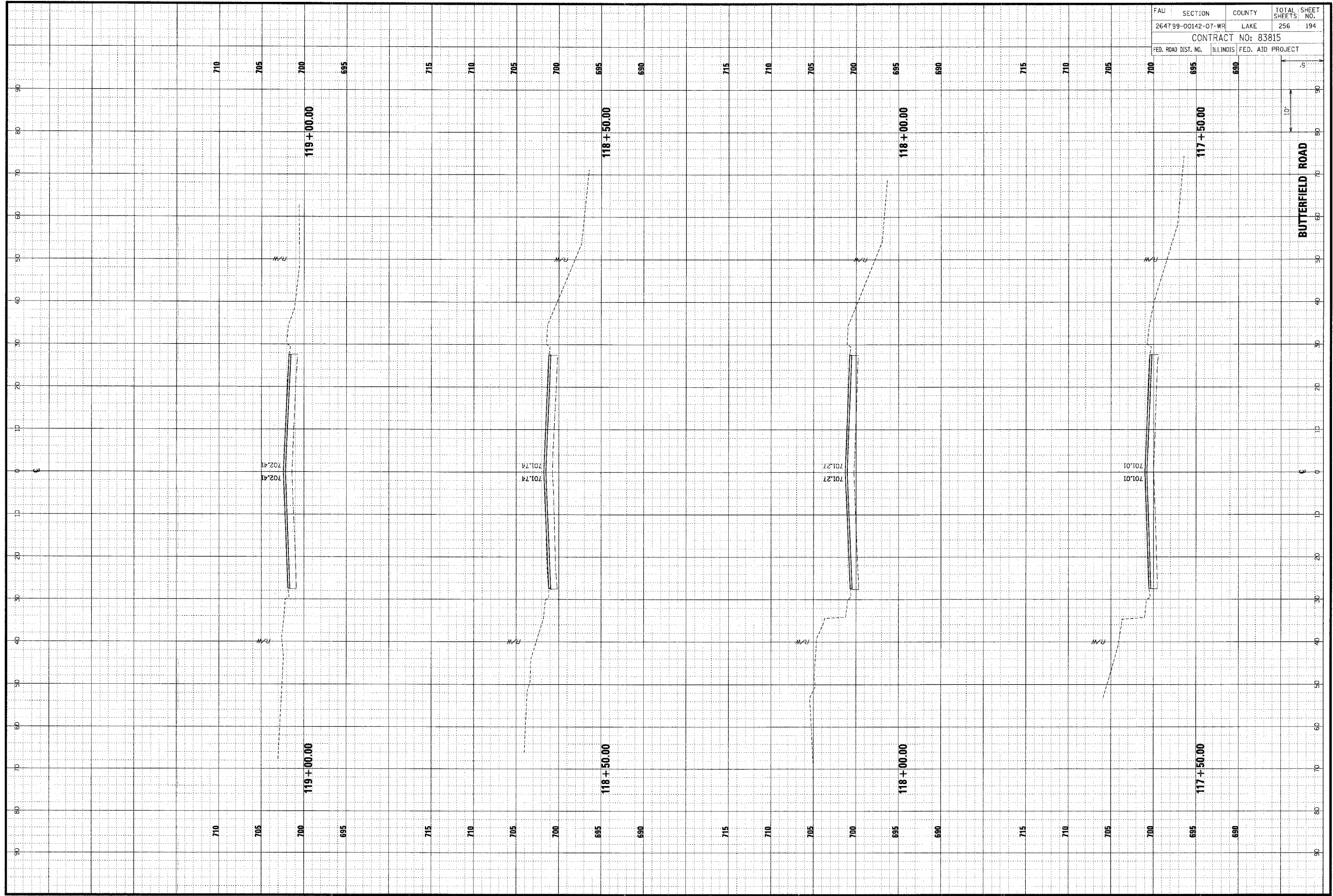
FAL	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	193	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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ORIGINAL SURVEY	DATE
SURVEYED	BY
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NO.	DATE
AREAS CHECKED	BY
NOTED	BY
AREAS CHECKED	DATE

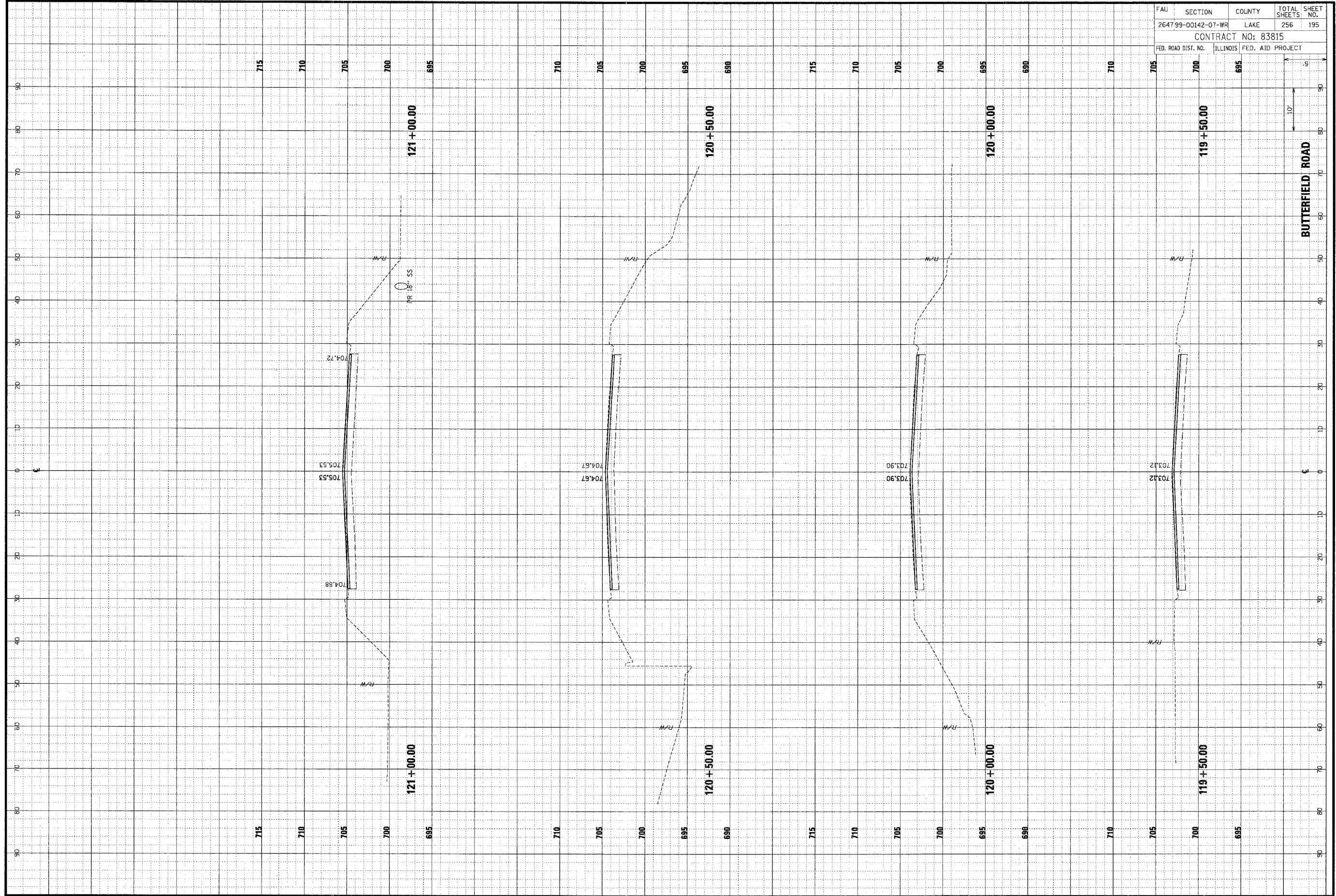


FAD	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR		LAKE	256	194
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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



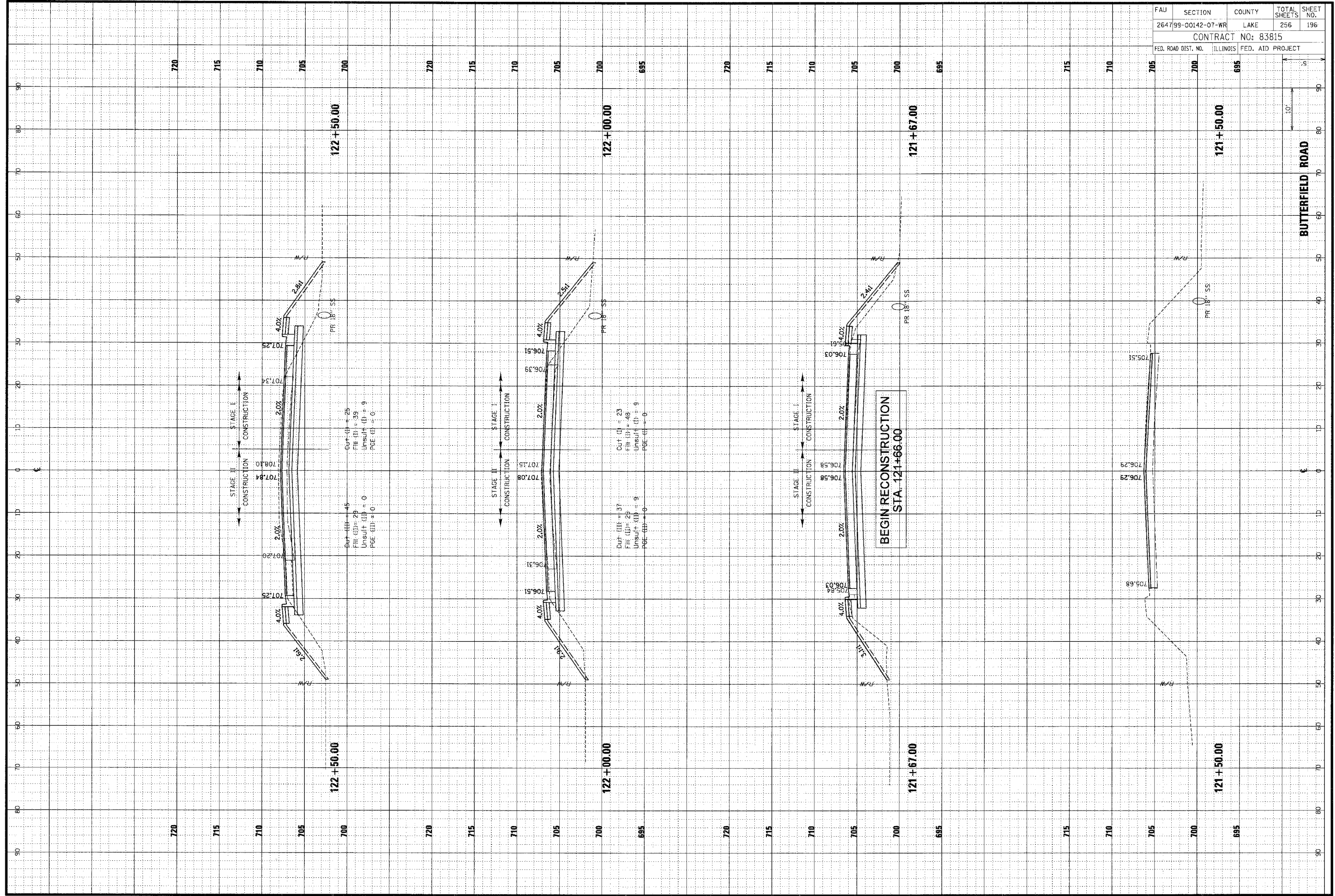
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	195	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BUTTERFIELD ROAD

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ORIGINAL SURVEY	BY	DATE
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NOTE BOOK		
AREAS CHECKED		
NO.		

FINAL SURVEY	BY	DATE
NOTE BOOK		
AREAS CHECKED		
NO.		

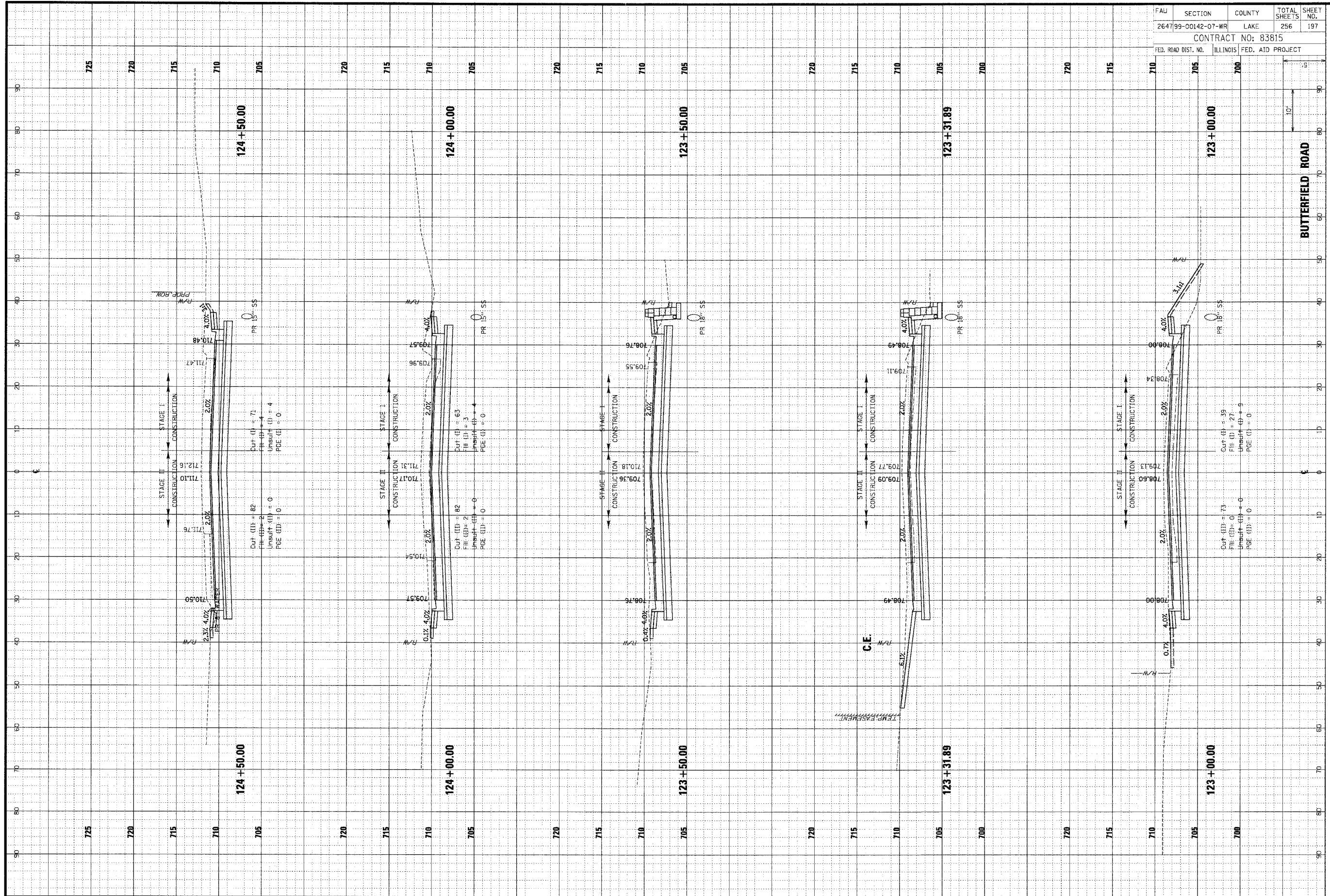


FAJ	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	196	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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

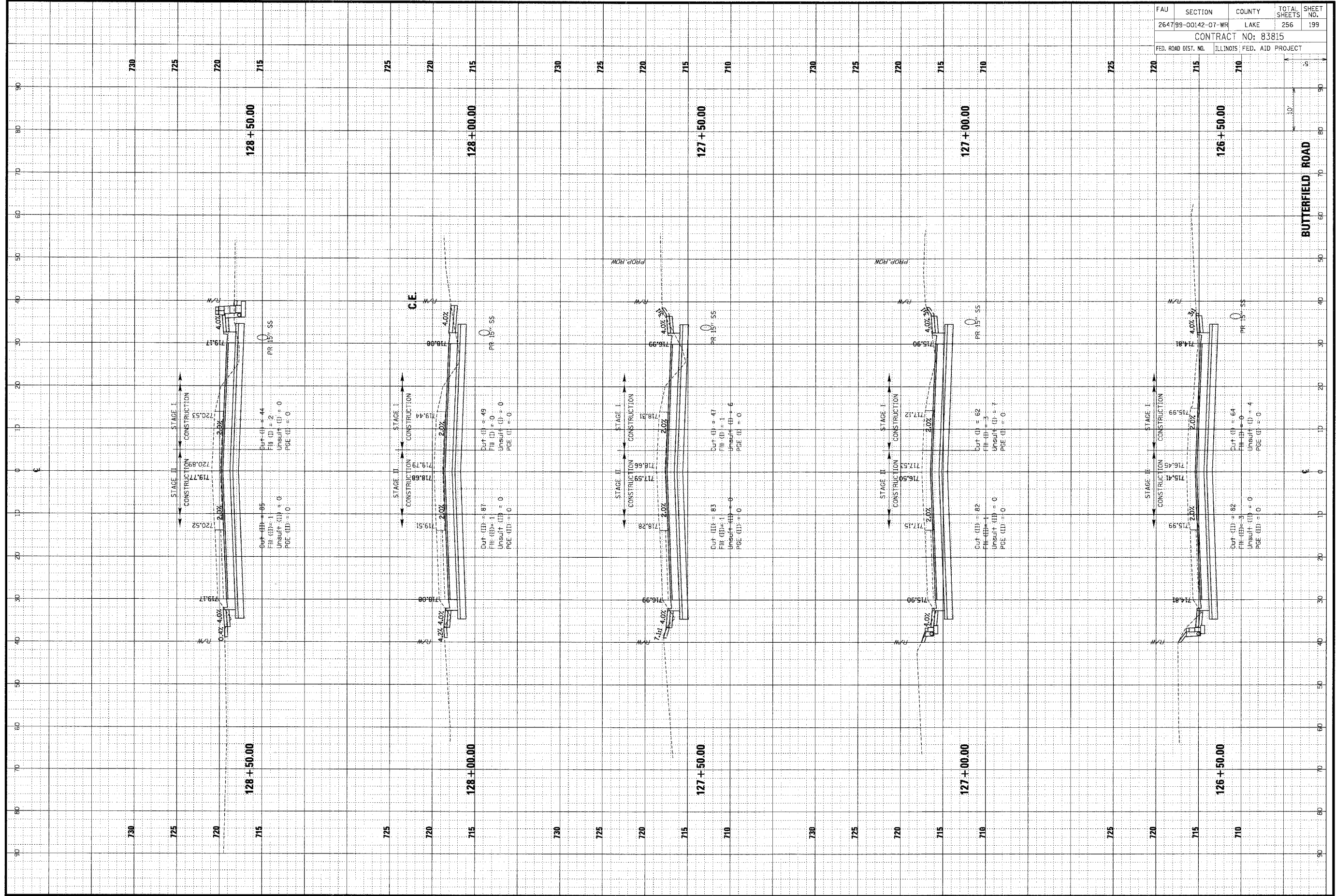


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2647	99-00142-07-WR	LAKE	256	197
CONTRACT NO: 83815				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

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ORIGINAL SURVEY
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 NOTE BOOK NO.
 BY DATE
 AREAS CHECKED

FINAL SURVEY
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 BY DATE
 AREAS CHECKED

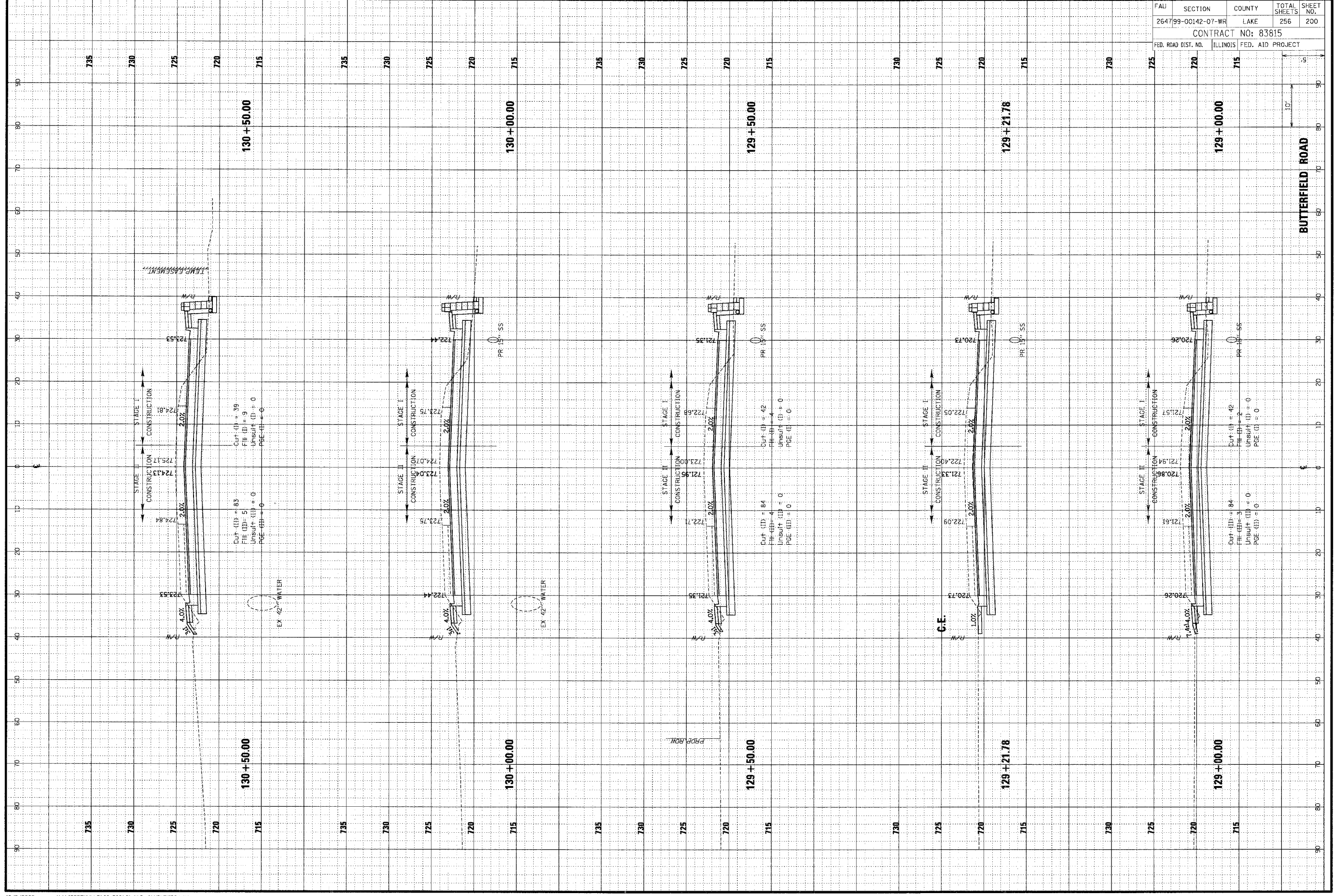


FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	ILLINOIS	256	199
CONTRACT NO: 83815				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

ORIGINAL SURVEY	DATE
SURVEY	BY
NOTE BOOK	PLOTTED
AREAS CHECKED	DATE

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FWB SURVEY	DATE
NOTE BOOK	BY
AREAS CHECKED	PLOTTED
	DATE



FBI	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
264799-00142-07-WR	LAKE	256	200	
CONTRACT NO: 83815				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		