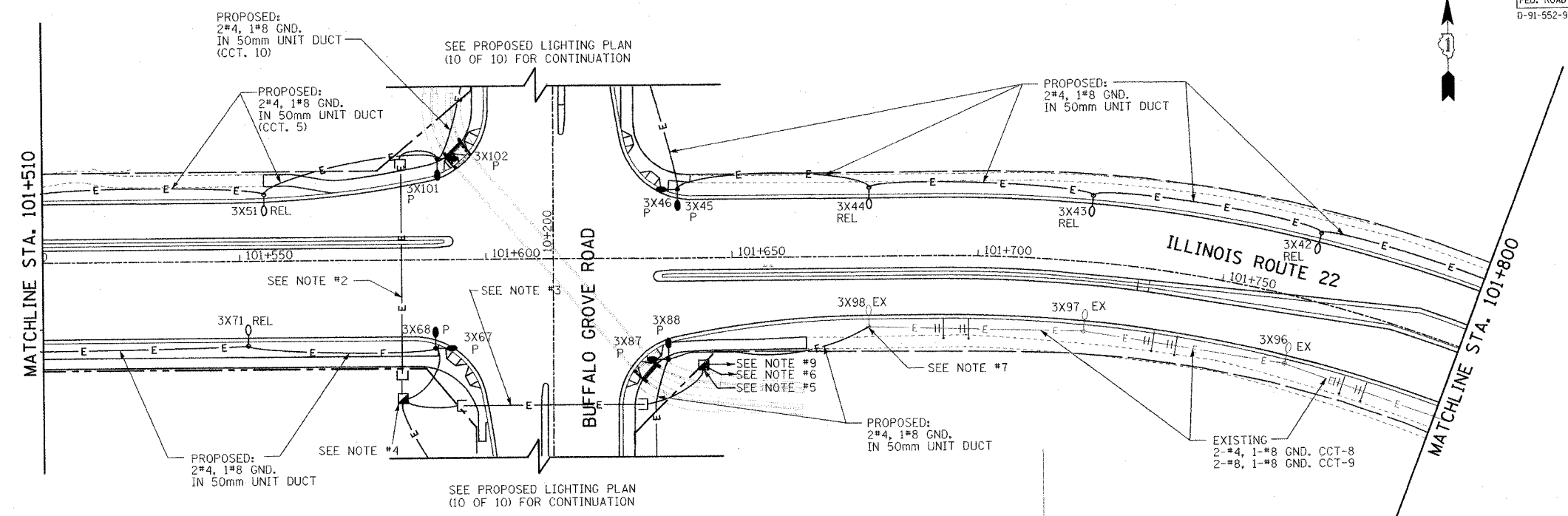


F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	DE-5	LAKE	222	401
STA. 101+510		TO STA. 101+800		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
0-91-552-99		CONTRACT #60881		

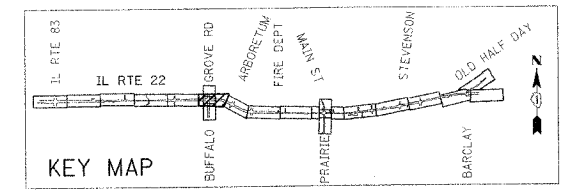
BY	DATE
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NOTE BOOK TEMPLATE	
AREAS CHECKED	
NO.	

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



NOTES:

- EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
- PROPOSED 100mm PUSHED GRS CONDUIT (46m) WITH: 2*4, 1*8 GND. (CCT 5)
2*4, 1*8 GND. (CCT 10)
IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (37m) WITH: 2*4, 1*8 GND. (CCT 5)
2*4, 1*8 GND. (CCT 6)
2*4, 1*8 GND. (CCT 7)
2*4, 1*8 GND. (CCT 10)
IN 50mm UNIT DUCT
- PROPOSED CONCRETE HANDHOLE. (NO SPLICES REQUIRED)
- PROPOSED CONCRETE HANDHOLE. SPLICE PROPOSED CCT. 5 AND 6 WIRING TO EXISTING WIRING IN HANDHOLE. EXACT LOCATION OF HANDHOLE TO BE FIELD COORDINATED.
- EXISTING CIRCUITS 5 AND 6 HOMERUN WIRING TO LIGHTING CONTROLLER #3 EXISTING WIRING CONSISTS OF:
2*4, 1*8 GND. (CCT 5)
2*4, 1*8 GND. (CCT 6)
IN 50mm CONDUIT.
CONTRACTOR SHALL REPLACE 2*8, CCT. 7 WITH PROPOSED 2*4 WIRING IN UNIT DUCT. LOCATE AND PROTECT EXISTING CONDUIT AND WIRING TO REMAIN AS REQUIRED.
- CONTRACTOR SHALL SPLICE PROPOSED 2*4, 1*8 GND. TO EXISTING 2*4, 1*8 GND. IN EXISTING LIGHT POLE HANDHOLE FOR CCT. 8.
- LOCATE AND PROTECT EXISTING CONDUIT AND WIRING TO REMAIN AS REQUIRED.
- PROPOSED 2*4, 1*8 GND. (CCT. 7) AND 2*4, 1*8 GND. (CCT. 10), (CONTROLLER #3) IN 50mm UNIT DUCT. CONNECT PROPOSED WIRING TO EXISTING CONTROLLER #3 AS REQUIRED.



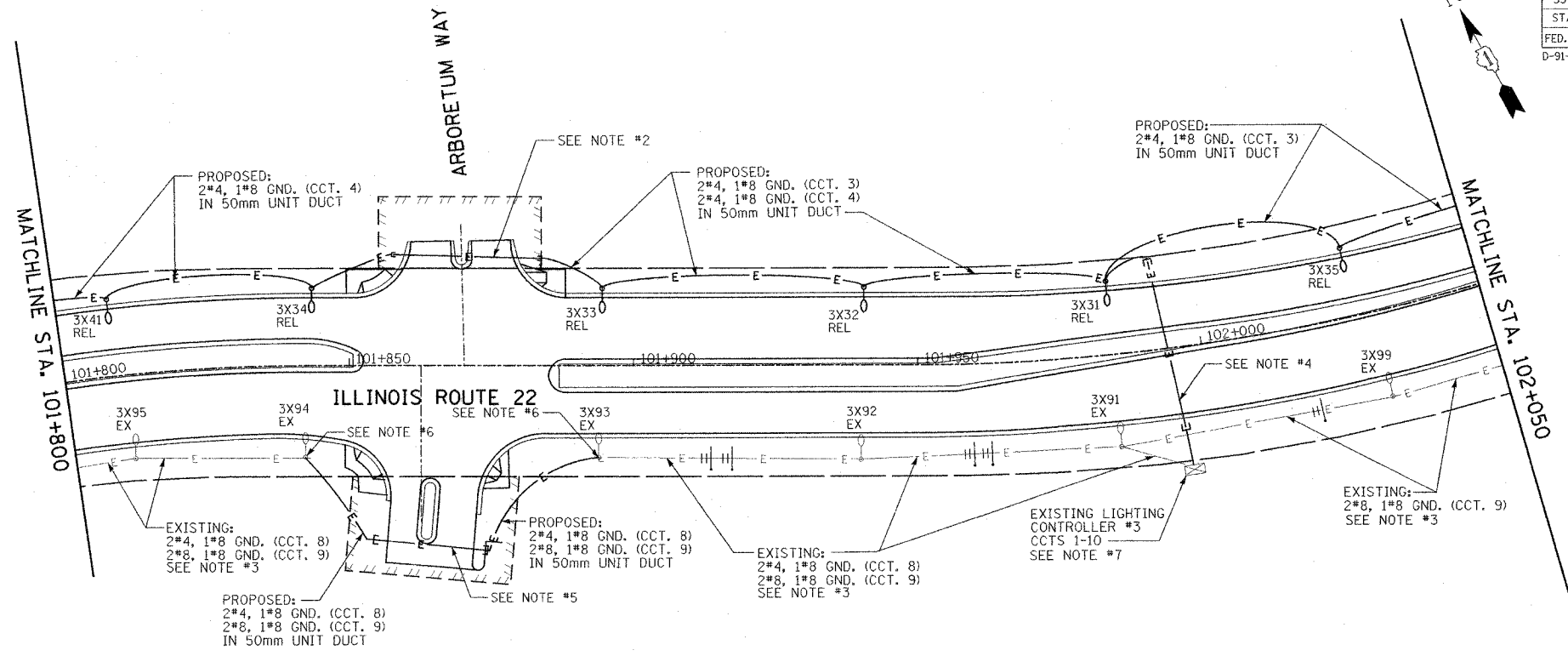
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
 PROPOSED LIGHTING PLAN (2 OF 10)
 STA. 101+510 TO STA. 101+800
 SCALE: 1:500
 DATE: 03-22-2004
 DRAWN BY: CMW
 CHECKED BY: MAR

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	402
STA. 101+800		TO STA. 102+050		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		CONTRACT #60881		

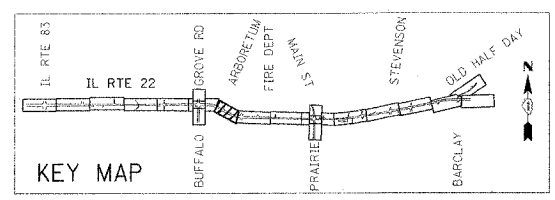
FINAL SURVEY	BY	DATE
SURVEY PLOTTED		
NOTE BOOK		
NO.		
AREAS CHECKED		

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



NOTES:

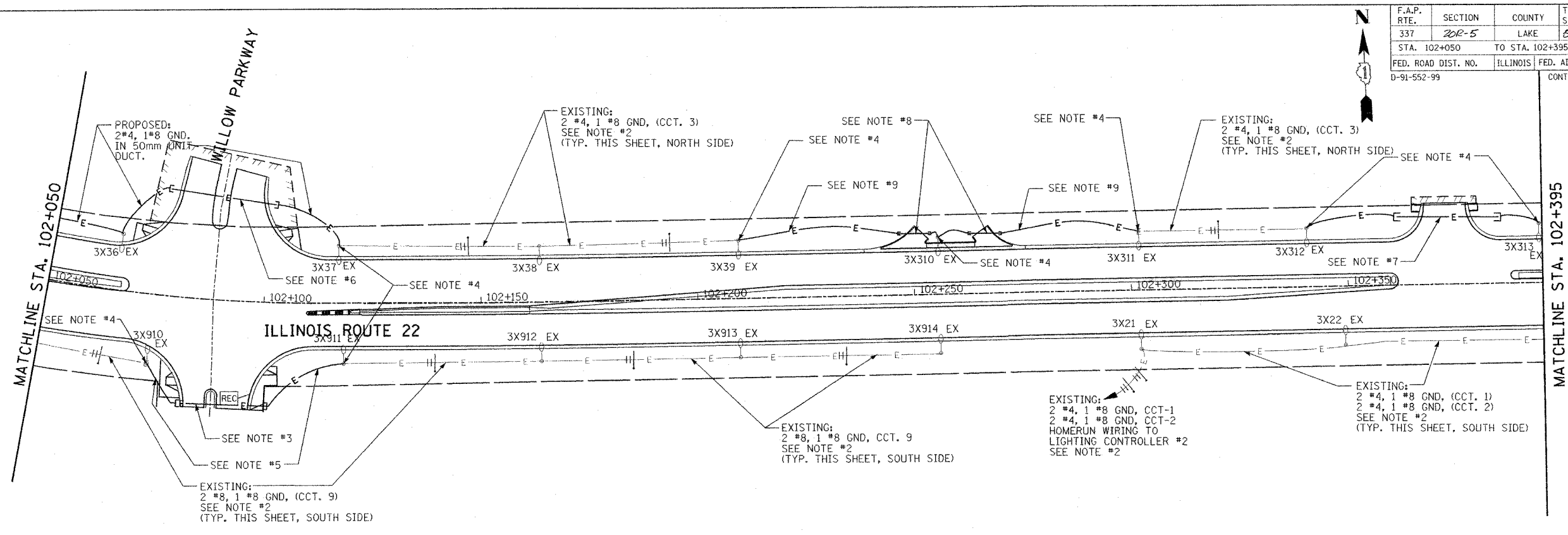
1. EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
2. PROPOSED 100mm PUSHED GRS CONDUIT (28m) WITH: 2*4, 1*8 GND. (CCT 3) AND 2*4, 1*8 GND. (CCT 4) IN 50mm UNIT DUCT
3. LOCATE AND PROTECT EXISTING CONDUIT AND WIRING TO REMAIN AS REQUIRED.
4. PROPOSED 100mm PUSHED GRS CONDUIT (32m) WITH: 2*4, 1*8 GND. (CCT 3) AND 2*4, 1*8 GND. (CCT 4) IN 50mm UNIT DUCT
5. PROPOSED 100mm PUSHED GRS CONDUIT (21m) WITH: 2*4, 1*8 GND. (CCT 8) AND 2*8, 1*8 GND. (CCT 9) IN 50mm UNIT DUCT
6. CONTRACTOR SHALL REMOVE EXISTING WIRING IN POLES 3X93 AND 3X94 AND SPLICE PROPOSED WIRING IN EXISTING LIGHT POLE HANDHOLE AS REQUIRED.
7. PROVIDE ONE (1) 2-POLE, 40A, 240V, 10 KAIC BRANCH BREAKER IN EXISTING CONTROLLER FOR PROPOSED CIRCUIT (CCT. 10).



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
PROPOSED LIGHTING PLAN (3 OF 10)
 STA. 101+800 TO STA. 102+050
 SCALE: 1:500
 DATE: 03-22-2004
 DRAWN BY: CMW
 CHECKED BY: MAR

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20E-5	LAKE	502	403
STA. 102+050		TO STA. 102+395		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		CONTRACT #60881		

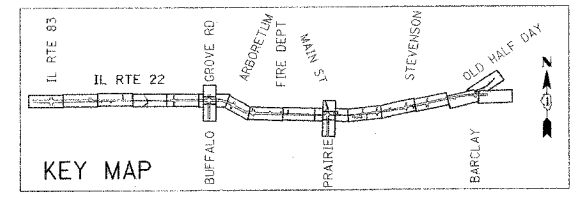


FINAL SURVEY PLOTTED	BY	DATE
NOTE BOOK TEMPLATE		
AREAS CHECKED		
NO.		

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

NOTES:

1. EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
2. LOCATE AND PROTECT EXISTING CONDUIT AND WIRING TO REMAIN AS REQUIRED.
3. PROPOSED 100mm PUSHED GRS CONDUIT (21m) WITH: 2*8, 1*8 GND. (CCT. 9) IN 50mm UNIT DUCT
4. CONTRACTOR SHALL REMOVE EXISTING WIRING IN EXISTING POLES AND SPLICE PROPOSED WIRING IN EXISTING LIGHT POLE HANDHOLE AS REQUIRED.
5. PROPOSED 2*8, 1*8 GND. (CCT. 9) IN 50mm UNIT DUCT.
6. PROPOSED 100mm PUSHED GRS CONDUIT (25m) WITH: 2*4, 1*8 GND. (CCT. 3) IN 50mm UNIT DUCT
7. PROPOSED 100mm TRENCHED GRS CONDUIT (20m) WITH: 2*4, 1*8 GND. (CCT. 3) IN 50mm UNIT DUCT
8. PROPOSED 100mm TRENCHED GRS CONDUIT (10m) WITH: 2*4, 1*8 GND. (CCT. 3) IN 50mm UNIT DUCT
9. PROPOSED 2*4, 1*8 GND. (CCT. 3) IN 50mm UNIT DUCT



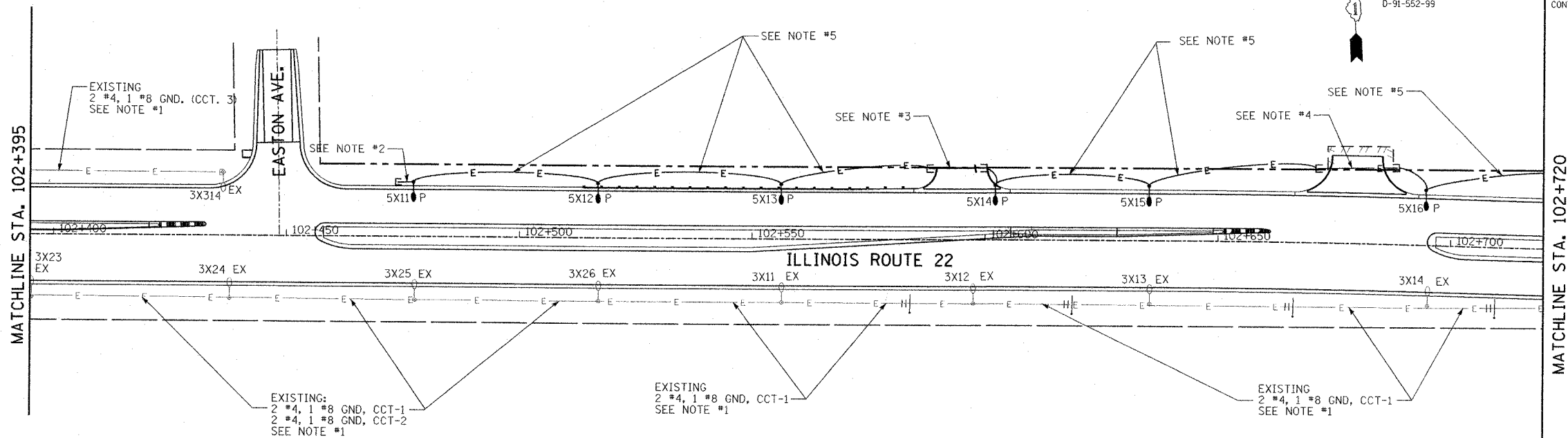
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION IL RTE 22 (FAP 337) IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE) PROPOSED LIGHTING PLAN (4 OF 10) STA. 102+050 TO STA. 102+395
NAME	DATE	
		SCALE: 1:500
		DATE: 03-22-2004
		DRAWN BY: CMW
		CHECKED BY: MAR

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	202-5	LAKE	562	404
STA. 102+395		TO STA. 102+720		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
D-91-552-99			CONTRACT #60881	

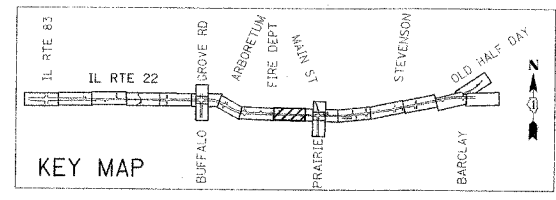
BY	DATE
ORIGINAL SURVEYED	
SURVEY PLOTTED	
NOTE BOOK TEMPLATE	
AREAS CHECKED	
NO.	

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



NOTES:

1. EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
2. PROVIDE 1-50mm CONDUIT STUBBED OUT 1.0m BEYOND LIGHT POLE FOUNDATION FOR FUTURE USE. CAP AT END.
3. PROPOSED 100mm TRENCHED GRS CONDUIT (11m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT
4. PROPOSED 100mm TRENCHED GRS CONDUIT (15m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT
5. PROPOSED 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT.

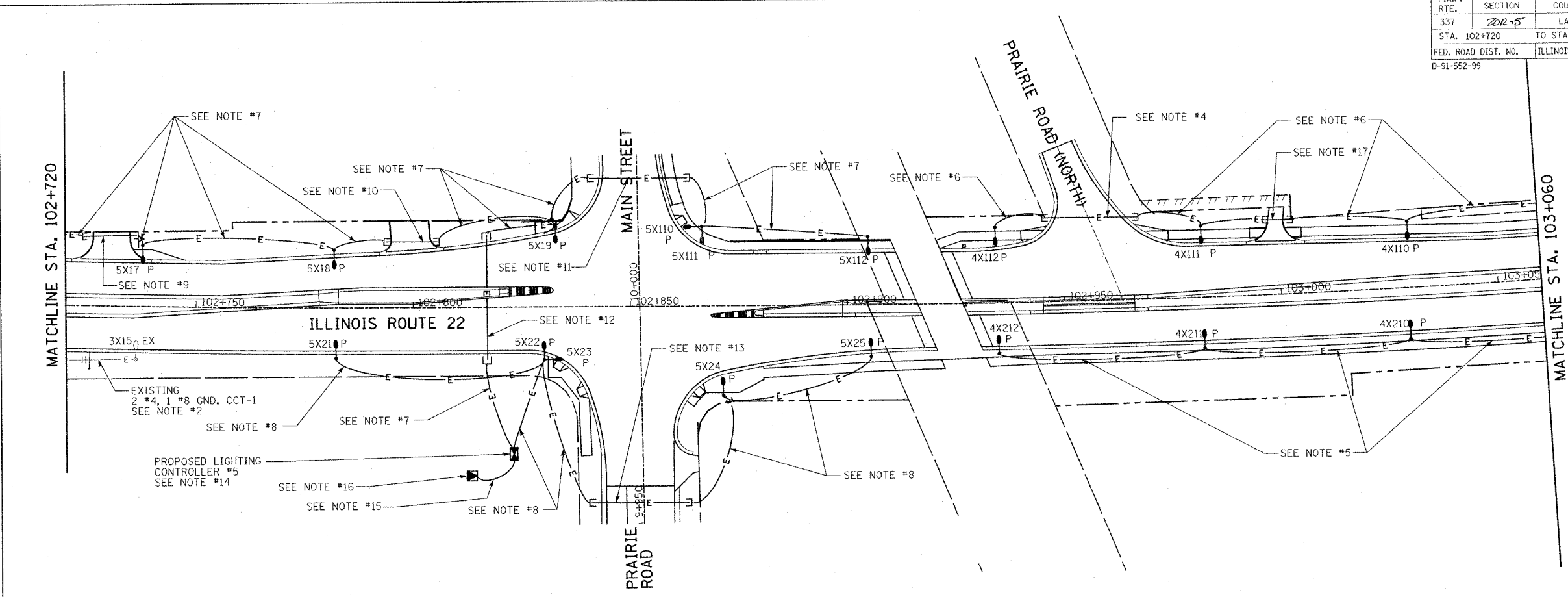


REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION IL RTE 22 (FAP 337) IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE) PROPOSED LIGHTING PLAN (5 OF 10) STA. 102+395 TO STA. 102+720
NAME	DATE	
		SCALE: 1:500
		DATE: 03-22-2004
		DRAWN BY: CMW
		CHECKED BY: MAR

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	202-5	LAKE	502	405
STA. 102+720		TO STA. 103+060		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		CONTRACT #60881		

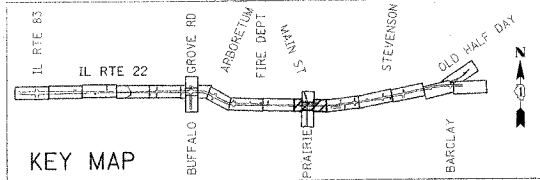
FINAL SURVEYED	BY	DATE
SURVEY PLOTTED		
NOTE BOOK TEMPLATE		
AREAS CHECKED		
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ORIGINAL SURVEYED	BY	DATE
SURVEY PLOTTED		
NOTE BOOK TEMPLATE		
AREAS CHECKED		
NO.		



NOTES:

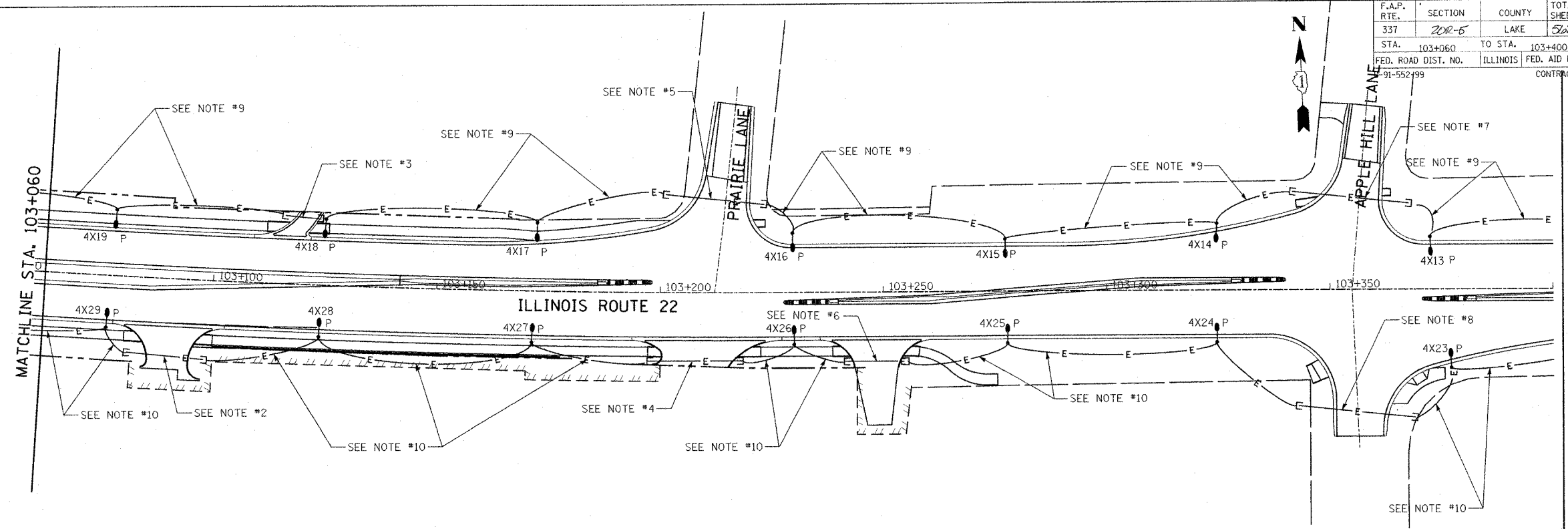
- EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
- LOCATE AND PROTECT EXISTING CONDUIT AND WIRING TO REMAIN AS REQUIRED.
- PROVIDE 1-50mm CONDUIT STUBBED OUT 1.0m BEYOND LIGHT POLE FOUNDATION FOR FUTURE USE. CAP CONDUIT AT END.
- PROPOSED 100mm PUSHED GRS CONDUIT (22m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #4) IN 50mm UNIT DUCT
- PROPOSED 2*4, 1*8 GND. (CCT. 2, CONTROLLER #4) IN 50mm UNIT DUCT
- PROPOSED 2*4, 1*8 GND. (CCT. 1, CONTROLLER #4) IN 50mm UNIT DUCT
- PROPOSED 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT
- PROPOSED 2*4, 1*8 GND. (CCT. 2, CONTROLLER #5) IN 50mm UNIT DUCT
- PROPOSED 100mm TRENCHED GRS CONDUIT (12m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT
- PROPOSED 100mm TRENCHED GRS CONDUIT (13m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (22m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (30m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #5) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (21m) WITH: 2*4, 1*8 GND. (CCT. 2, CONTROLLER #5) IN 50mm UNIT DUCT
- PROPOSED LIGHTING CONTROLLER #5, EXACT LOCATION SHALL BE FIELD COORDINATED WITH OWNER, ENGINEER AND UTILITY COMPANY. PROVIDE CONTROLLER, CONCRETE PAD, GROUND FIELD AND ACCESSORIES AS SHOWN ON ELECTRICAL DETAIL SHEETS.
- PROPOSED 3*2 XLP-USE IN 100mm GRS CONDUIT. PROVIDE 3.0m OF SLACK IN ALL WIRING AT UTILITY TRANSFORMER FOR USE BY THE UTILITY.
- PROPOSED UTILITY TRANSFORMER WITH 100A, 120/240V, 1-PHASE SECONDARY SERVICE. CONTRACTOR SHALL COORDINATE ALL LOCATIONS AND SERVICE INSTALLATION REQUIREMENTS WITH THE UTILITY.
- PROPOSED 100mm TRENCHED GRS CONDUIT (7m) WITH: 2*4, 1*8 GND. (CCT. 1, CONTROLLER #4) IN 50mm UNIT DUCT



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
PROPOSED LIGHTING PLAN (6 OF 10)
 STA. 102+720 TO STA. 103+060
 SCALE: 1:500
 DATE: 03-22-2004
 DRAWN BY: CMW
 CHECKED BY: MAR

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	202-5	LAKE	562	406
STA. 103+060	TO STA. 103+400			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
91-552-99		CONTRACT #60881		

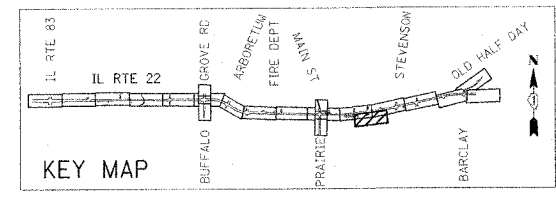


FINAL SURVEYED	BY	DATE
SURVEY PLOTTED		
NOTE BOOK		
AREAS CHECKED		
NO.		

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

NOTES:

- EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
- PROPOSED 100mm TRENCHED GRS CONDUIT (19m) WITH: 2*4, 1*8 GND. (CCT 2) IN 50mm UNIT DUCT
- PROPOSED 100mm TRENCHED GRS CONDUIT (9m) WITH: 2*4, 1*8 GND. (CCT 1) IN 50mm UNIT DUCT
- PROPOSED 100mm TRENCHED GRS CONDUIT (21m) WITH: 2*4, 1*8 GND. (CCT 2) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (23m) WITH: 2*4, 1*8 GND. (CCT 1) IN 50mm UNIT DUCT
- PROPOSED 100mm TRENCHED GRS CONDUIT (15m) WITH: 2*4, 1*8 GND. (CCT 2) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (27m) WITH: 2*4, 1*8 GND. (CCT 3) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (27m) WITH: 2*4, 1*8 GND. (CCT 4) IN 50mm UNIT DUCT
- PROPOSED 2*4, 1*8 GND. (CCT 1) IN 50mm UNIT DUCT.
- PROPOSED 2*4, 1*8 GND. (CCT 2) IN 50mm UNIT DUCT.



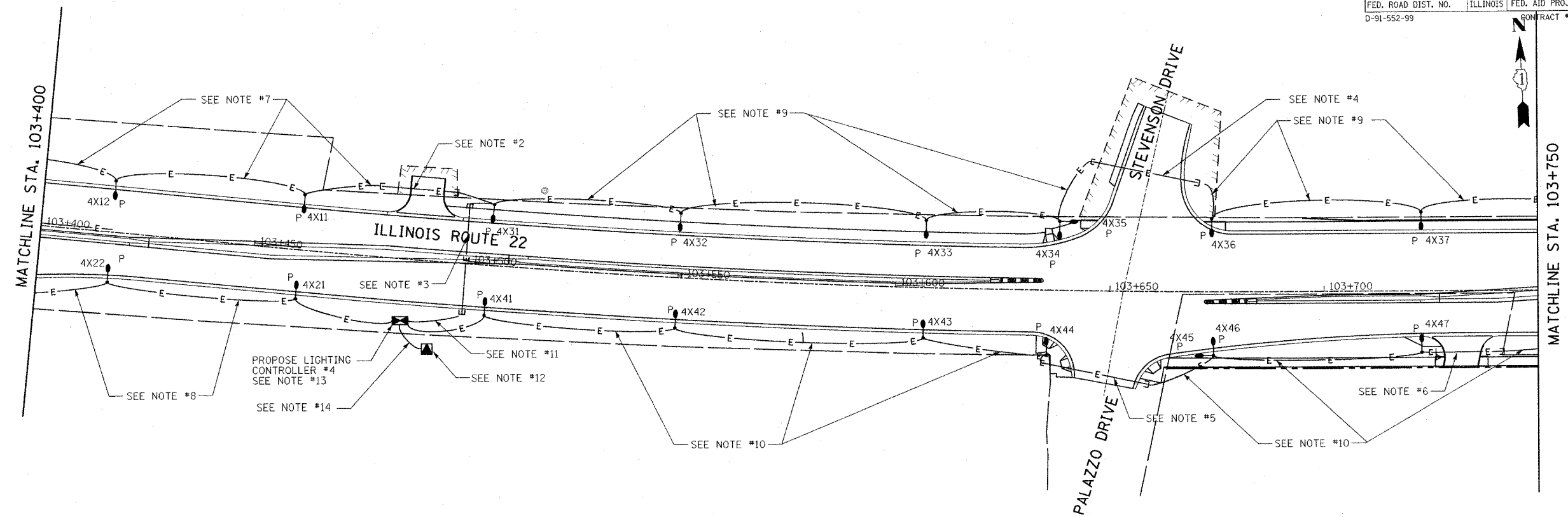
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION IL RTE 22 (FAP 337) IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE) PROPOSED LIGHTING PLAN (7 OF 10) STA. 103+060 TO STA. 103+400
NAME	DATE	
		SCALE: 1:500
		DATE: 03-22-2004
		DRAWN BY: CMW
		CHECKED BY: MAR

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	202-5	LAKE	862	407
STA. 103+400		TO STA. 103+750		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
D-91-552-99		CONTRACT #60881		

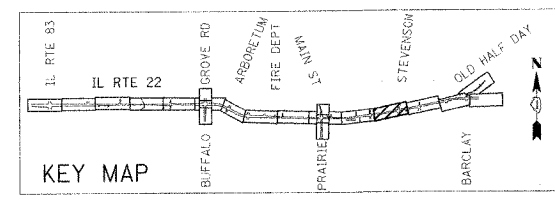
BY	DATE
FINAL SURVEYED	
SURVEY PLOTTED	
NOTE BOOK	
TEMPLATE	
AREAS	
CHECKED	
NO.	

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



NOTES:

- EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
- PROPOSED 100mm TRENCHED GRS CONDUIT (18m) WITH: 2*4, 1*8 GND. (CCT 1) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (26m) WITH: 2*4, 1*8 GND. (CCT 1) 2*4, 1*8 GND. (CCT 3) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (25m) WITH: 2*4, 1*8 GND. (CCT 3) IN 50mm UNIT DUCT
- PROPOSED 100mm TRENCHED GRS CONDUIT (26m) WITH: 2*4, 1*8 GND. (CCT 4) IN 50mm UNIT DUCT
- PROPOSED 100mm PUSHED GRS CONDUIT (18m) WITH: 2*4, 1*8 GND. (CCT 4) IN 50mm UNIT DUCT
- PROPOSED 2*4, 1*8 GND. (CCT. 1) IN 50mm UNIT DUCT.
- PROPOSED 2*4, 1*8 GND. (CCT. 2) IN 50mm UNIT DUCT.
- PROPOSED 2*4, 1*8 GND. (CCT. 3) IN 50mm UNIT DUCT.
- PROPOSED 2*4, 1*8 GND. (CCT. 4) IN 50mm UNIT DUCT.
- PROPOSED 2*4, 1*8 GND. (CCT. 1) AND 2*4, 1*8 GND. (CCT. 3) IN 50mm UNIT DUCT.
- PROPOSED UTILITY TRANSFORMER WITH 100A, 120/240V, 1-PHASE SECONDARY SERVICE. CONTRACTOR SHALL COORDINATE ALL LOCATIONS AND SERVICE INSTALLATION REQUIREMENTS WITH THE UTILITY.
- PROPOSED LIGHTING CONTROLLER #4. EXACT LOCATION SHALL BE FIELD COORDINATED WITH OWNER, ENGINEER AND UTILITY COMPANY. PROVIDE CONTROLLER, CONCRETE PAD, GROUND FIELD AND ACCESSORIES AS SHOWN ON ELECTRICAL DETAIL SHEETS.
- PROPOSED 3*2 XLP-USE IN 100mm GRS CONDUIT. PROVIDE MINIMUM 3.0m OF SLACK IN ALL WIRING AT UTILITY TRANSFORMER FOR USE BY UTILITY.



REVISIONS	
NAME	DATE

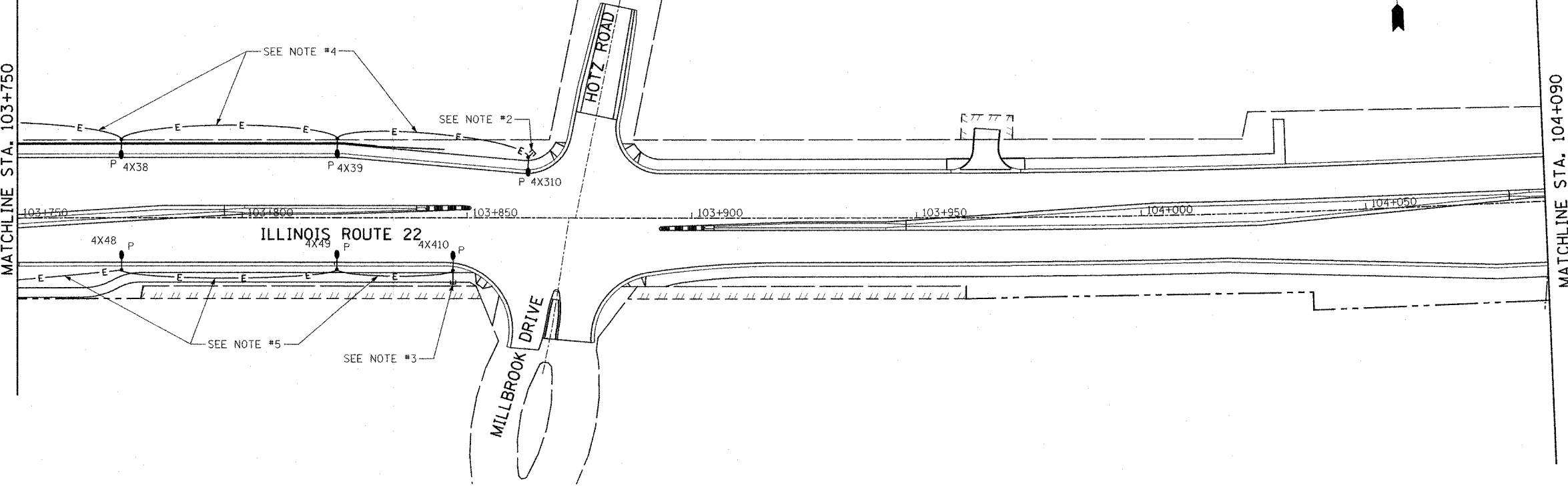
ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
PROPOSED LIGHTING PLAN (8 OF 10)
 STA. 103+400 TO STA. 103+750
 SCALE: 1:500
 DATE: 03-22-2004
 DRAWN BY: CMW
 CHECKED BY: MAR

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	202-5	LAKE	362	408
STA. 103+750		TO STA. 104+090		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		CONTRACT #60881		



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

MATCHLINE STA. 103+750

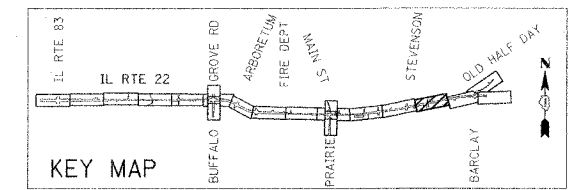


MATCHLINE STA. 104+090

NOTES:

1. EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
2. PROVIDE 1-50mm CONDUIT STUBBED OUT 1.0m BEYOND LIGHT POLE FOUNDATION FOR FUTURE USE. CAP CONDUIT AT END.
3. PROVIDE 1-50mm CONDUIT STUBBED OUT 1.0m BEYOND SOUTH EDGE OF SIDEWALK FOR FUTURE USE. CAP CONDUIT AT END.
4. PROPOSED 2*4, 1*8 GND. (CCT. 3) IN 50mm UNIT DUCT
5. PROPOSED 2*4, 1*8 GND. (CCT. 4) IN 50mm UNIT DUCT

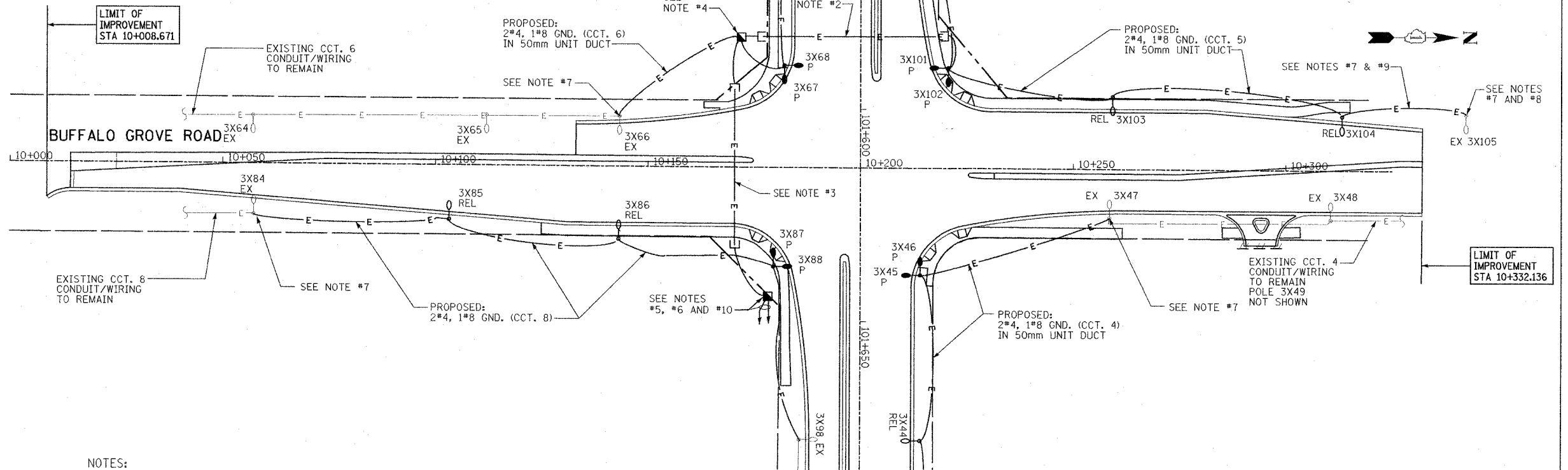
ORIGINAL SURVEYED	BY	DATE
SURVEY PLOTTED		
NOTE BOOK TEMPLATE		
AREAS CHECKED		
NO.		



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
 PROPOSED LIGHTING PLAN (9 OF 10)
 STA. 103+750 TO MILLBROOK DRIVE
 SCALE: 1:500
 DATE: 03-22-2004
 DRAWN BY: CMW
 CHECKED BY: MAR

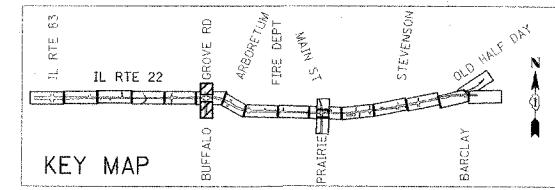
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	2012-5	LAKE	562	409
STA. 10+000		TO STA. 10+350		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
D-91-552-99		CONTRACT #60881		



- NOTES:**
1. EXACT LOCATIONS OF RELOCATED AND PROPOSED POLES AND CONDUIT/CABLE ROUTINGS SHALL BE COORDINATED WITH UNDERGROUND UTILITIES, OWNER AND ENGINEER. LOCATIONS AND ROUTING SHOWN ON PLANS ARE APPROXIMATE.
 2. PROPOSED 100mm PUSHED GRS CONDUIT (46m) WITH: 2*4, 1*8 GND. (CCT 5)
2*4, 1*8 GND. (CCT 10)
IN 50mm UNIT DUCT
 3. PROPOSED 100mm PUSHED GRS CONDUIT (37m) WITH: 2*4, 1*8 GND. (CCT 5)
2*4, 1*8 GND. (CCT 6)
2*4, 1*8 GND. (CCT 7)
2*4, 1*8 GND. (CCT 10)
IN 50mm UNIT DUCT
 4. PROPOSED CONCRETE HANDHOLE. (NO SPLICES REQUIRED)
 5. PROPOSED CONCRETE HANDHOLE. SPLICE PROPOSED CCT. 5 AND 6 WIRING TO EXISTING WIRING IN HANDHOLE. EXACT LOCATION OF HANDHOLE TO BE FIELD COORDINATED.
 6. EXISTING CIRCUITS 5 AND 6 HOMERUN WIRING TO LIGHTING CONTROLLER #3 EXISTING WIRING CONSISTS OF:
2*4, 1*8 GND. (CCT 5)
2*4, 1*8 GND. (CCT 6)
IN 50mm CONDUIT.
CONTRACTOR SHALL REPLACE 2*8, CCT. 7 WITH PROPOSED 2*4 WIRING. LOCATE AND PROTECT EXISTING CONDUIT AND WIRING TO REMAIN AS REQUIRED. (SEE SHEET 3 OF 10 FOR CONTROLLER # 3 LOCATION.)
 7. CONTRACTOR SHALL SPLICE PROPOSED 2*4, 1*8 GND. TO EXISTING 2*4, 1*8 GND. IN EXISTING LIGHT POLE HANDHOLE.
 8. LOCATE AND PROTECT EXISTING CONDUIT AND WIRING TO REMAIN AS REQUIRED.
 9. EXACT LOCATION OF EXISTING LIGHT POLE TO BE FIELD VERIFIED.
 10. PROPOSED 2*4, 1*8 GND. (CCT. 7) AND 2*4, 1*8 GND. (CCT. 10) (CONTROLLER #3) (CONTROLLER #3) IN 50mm UNIT DUCT. CONNECT PROPOSED WIRING TO EXISTING CONTROLLER #3 AS REQUIRED. (SEE SHEET 3 OF 10 FOR CONTROLLER #3 LOCATION.)

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

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



REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION IL RTE 22 (FAP 337) IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE) PROPOSED LIGHTING PLAN (10 OF 10) BUFFALO GROVE ROAD
NAME	DATE	

SCALE: 1:500
DATE: 03-22-2004
DRAWN BY: CMW
CHECKED BY: MAR

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	4/3
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		CONTRACT #60881		

TABLE 1

EXISTING LUMINAIRE NUMBER	MOUNTING HEIGHT (m)	WATTAGE (HPS)	TILT (DEGREES)	EXISTING STATION	EXISTING OFFSET	PROPOSED LUMINAIRE NUMBER	PROPOSED STATION	PROPOSED OFFSET	FINAL BOC LOCATION
3X11	10.5	250	0	102+556	13.6 RT	3X11	-	-	-
3X12	10.5	250	0	102+597.5	13.7 RT	3X12	-	-	-
3X13	10.5	250	0	102+635	13.6 RT	3X13	-	-	-
3X14	10.5	250	0	102+695	13.0 RT	3X14	-	-	-
3X15	10.5	250	0	102+736	12.2 RT	3X15	-	-	-
3X21	10.5	250	0	102+349	13.5 RT	3X21	-	-	-
3X22	10.5	250	0	102+395	13.3 RT	3X22	-	-	-
3X23	10.5	250	0	102+438	13.4 RT	3X23	-	-	-
3X24	10.5	250	0	102+478	13.5 RT	3X24	-	-	-
3X25	10.5	250	0	102+517	13.5 RT	3X25	-	-	-
3X26	10.5	250	0	102+477.5	13.5 RT	3X26	-	-	-
3X31	10.5	250	0	101+986	10.7 LT	3X31	101+986	13.0 LT	0.921
3X32	10.5	250	0	101+945	10.3 LT	3X32	101+945	12.6 LT	0.934
3X33	10.5	250	0	101+896	10.6 LT	3X33	101+896	13.7 LT	0.9144
3X34	10.5	250	0	101+852	12.5 LT	3X34	101+852	12.7 LT	0.9
3X35	10.5	250	0	102+030	11.3 LT	3X35	102+027	12.2 LT	0.9144
3X36	10.5	250	0	102+066	13.0 LT	3X36	-	-	-
3X37	10.5	250	0	102+117.3	13.2 LT	3X37	-	-	-
3X38	10.5	250	0	102+164	12.8 LT	3X38	-	-	-
3X39	10.5	250	0	102+209.5	13.4 LT	3X39	-	-	-
3X310	10.5	250	0	102+256	13.1 LT	3X310	-	-	-
3X311	10.5	250	0	102+302	13.5 LT	3X311	-	-	-
3X312	10.5	250	0	102+341	13.5 LT	3X312	-	-	-
3X313	10.5	250	0	102+394	13.6 LT	3X313	-	-	-
3X314	10.5	250	0	102+436	13.5 LT	3X314	-	-	-
3X41	10.5	250	0	101+811	12.2 LT	3X41	101+808	13.6 LT	0.9
3X42	10.5	250	0	101+767	13.2 LT	3X42	101+767	13.7 LT	0.944
3X43	10.5	250	0	101+723	13.0 LT	3X43	101+723	13.6 LT	0.9144
3X44	10.5	250	0	101+680	12.8 LT	3X44	101+680	13.7 LT	0.9144
3X45	10.5	400	7	101+630.6	15.9 LT	-	REMOVE	REMOVE	-
3X46	10.5	250	0	10+259	11.5 RT	3X47	-	-	-
3X47	10.5	250	0	10+310.6	11.7 RT	3X48	-	-	-
3X51	10.5	250	0	101+460.4	12.6 LT	3X53	101+460.4	13.5 LT	0.9144
3X52	10.5	250	0	101+505	12.6 LT	3X52	101+508	13.5 LT	0.9144
3X53	10.5	250	0	101+552	12.1 LT	3X51	101+555	15.3 LT	0.9144
3X54	10.5	400	7	101+596.6	14.6 LT	-	REMOVE	REMOVE	-
3X55	10.5	250	0	10+259	11.8 LT	3X103	10+259	15.1 LT	2.944
3X56	10.5	250	0	10+310.3	11.7 LT	3X104	10+310.3	12.8 LT	0.958
3X57	10.5	250	0	FV*	FV*	3X105	-	-	-
3X64	10.5	250	0	10+057.1	11.3 LT	3X64	-	-	-
3X65	10.5	250	0	10+112	11.8 LT	3X65	-	-	-
3X66	10.5	250	0	10+143	11.7 LT	3X66	-	-	-
3X67	10.5	400	7	101+590.2	15.5 RT	-	REMOVE	REMOVE	-
3X71	10.5	250	0	101+552	12.7 RT	3X71	101+552	13.9 RT	0.9144
3X72	10.5	250	0	101+505	13.8 RT	3X72	101+505	17.2 RT	0.9144
3X84	10.5	250	0	10+057.1	12.0 RT	3X84	-	-	-
3X85	10.5	250	0	10+100.3	11.9 RT	3X85	10+103.3	15.0 RT	0.914
3X86	10.5	250	0	10+143	11.8 RT	3X86	10+143	12.5 RT	3.044
3X87	10.5	400	7	101+637.5	15.3 RT	-	REMOVE	REMOVE	-
3X91	10.5	250	0	101+986	16.1 RT	3X91	-	-	-
3X92	10.5	250	0	101+945	16.6 RT	3X92	-	-	-
3X93	10.5	250	0	101+896	16.1 RT	3X93	-	-	-
3X94	10.5	250	0	101+842.5	16.0 RT	3X94	-	-	-
3X95	10.5	250	0	101+811	14.7 RT	3X95	-	-	-
3X96	10.5	250	0	101+767	13.2 RT	3X96	-	-	-
3X97	10.5	250	0	101+723	14.0 RT	3X97	-	-	-
3X98	10.5	250	0	101+680	14.3 RT	3X98	-	-	-
3X99	10.5	250	0	102+030	15.3 RT	3X99	-	-	-
3X910	10.5	250	0	102+075	16.0 RT	3X910	-	-	-
3X911	10.5	250	0	102+118.3	13.9 RT	3X911	-	-	-
3X912	10.5	250	0	102+164	13.6 RT	3X912	-	-	-
3X913	10.5	250	0	102+209.5	13.5 RT	3X913	-	-	-
3X914	10.5	250	0	102+256	13.5 RT	3X914	-	-	-
3X915	10.5	250	0	102+302	13.5 RT	3X915	-	-	-

FV* = FIELD VERIFY

TABLE 2 - LIGHT POLE FOUNDATION DESIGN TABLE

TYPE OF SOIL	DESIGN DEPTH		REINFORCEMENT IN FOUNDATION			
	SINGLE ARM D	TWIN ARM D	SINGLE ARM VERT. BARS	SPIRAL	TWIN ARM VERT. BARS	SPIRAL
SOFT CLAY	13'-0"	15'-0"	4-#6X12'-6"	#3X122'	4-#6X14'-6"	#3X141'
MEDIUM CLAY	9'-6"	10'-9"	4-#6X9'-0"	#3X90'	4-#6X10'-3"	#3X100'
STIFF CLAY	8'-0"	8'-0"	4-#6X7'-6"	#3X76'	4-#6X7'-6"	#3X76'
LOOSE SAND	9'-0"	10'-0"	4-#6X8'-6"	#3X85'	4-#6X9'-6"	#3X94'
MEDIUM SAND	8'-3"	9'-0"	4-#6X7'-9"	#3X78'	4-#6X8'-6"	#3X85'
DENSE SAND	8'-0"	9'-0"	4-#6X7'-6"	#3X76'	4-#6X8'-6"	#3X85'

NOTES: 1. CONTRACTOR AT HIS OPTION MAY SUBSTITUTE #3 HOOPS AT 12" ON CENTERS FOR SPIRAL CAGE
 2. CONTRACTOR SHALL USE THE VALUES FOR TWIN ARM INSTALLATION FOR THIS PROJECT

TABLE 1 CONTINUED

PROPOSED LUMINAIRE NUMBER	MOUNTING HEIGHT (m)	WATTAGE (HPS)	TILT (DEGREES)	PROPOSED STATION	PROPOSED OFFSET	FINAL BOC LOCATION
3X45	12.2	400	7	101+630.6	18.5 LT	0.9144
3X46	12.2	400	7	101+630.6	18.5 LT	0.9144
3X54	12.2	400	7	101+596.6	19.6 LT	0.9144
3X55	12.2	400	7	101+596.6	19.6 LT	0.9144
3X54	10.5	250	0	101+412.8	14.9LT	2.3
3X55	10.5	250	0	101+365.3	15.1LT	3.5
3X56	10.5	250	0	101+317.8	11.7LT	0.9144
3X57	10.5	250	0	101+270	11.7LT	0.9144
3X67	12.2	400	7	102+589.7	18.0 RT	0.955
3X68	12.2	400	7	102+589.7	18.0 RT	0.955
3X73	10.5	250	0	101+460.4	14.6RT	0.9144
3X74	10.5	250	0	101+412.8	11.7RT	0.9144
3X75	10.5	250	0	101+365.3	11.7RT	0.9144
3X76	10.5	250	0	101+317.8	11.7RT	0.9144
3X87	12.2	400	7	102+636.9	20.5 RT	3.29
3X88	12.2	400	7	102+636.9	20.5 RT	3.29
4X11	10.5	250	0	103+460.8	13.0LT	2.22
4X12	10.5	250	0	103+416.6	11.9LT	1.17
4X13	10.5	250	0	103+372.4	11.7LT	0.983
4X14	10.5	250	0	103+324.7	14.9LT	1.05
4X15	10.5	250	0	103+277.3	11.7LT	0.927
4X16	10.5	250	0	103+229.6	13.3LT	2.55
4X17	10.5	250	0	103+172.5	15.3LT	4.02
4X18	10.5	250	0	103+124.5	14.8LT	4.12
4X19	10.5	250	0	103+077.5	14.8LT	4.05
4X110	10.5	250	0	103+027.5	15.2LT	3.85
4X111	10.5	250	0	102+981.6	16.4LT	3.97
4X112	10.5	250	0	102+934.2	17.4LT	4.12
4X21	10.5	250	0	103+460.8	11.6RT	0.848
4X22	10.5	250	0	103+416.6	11.8RT	0.903
4X23	10.5	250	0	103+377.2	17.6RT	0.893
4X24	10.5	250	0	103+324.7	11.6RT	0.914
4X25	10.5	250	0	103+277.8	11.7RT	0.955
4X26	10.5	250	0	103+230.0	11.6RT	0.923
4X27	10.5	250	0	103+121.3	11.5RT	0.761
4X28	10.5	250	0	103+124.1	11.6RT	0.84
4X29	10.5	250	0	103+076.4	11.6RT	0.893
4X210	10.5	250	0	103+029.4	11.7RT	0.929
4X211	10.5	250	0	102+982.2	11.7RT	0.933
4X212	10.5	250	0	102+934.9	11.6RT	0.879
4X31	10.5	250	0	103+504.9	14.6LT	3.56
4X32	10.5	250	0	103+549.1	14.6LT	4.45
4X33	10.5	250	0	103+593.2	15.9LT	5.13
4X34	10.5	400	5	103+638.3	16.3LT	3.96
4X35	10.5	400	5	103+638.3	16.3LT	3.96
4X36	10.5	400	5	103+673.9	17.2LT	1.36
4X37	10.5	250	0	103+722.7	18.6LT	4.23
4X38	10.5	250	0	103+773.1	17.5LT	3.15
4X39	10.5	250	0	103+821.1	17.6LT	3.3
4X310	10.5	250	0	103+863.6	13.6LT	2.38
4X41	10.5	250	0	103+504.9	11.6RT	1.15
4X42	10.5	250	0	103+549.1	12.5RT	1.19
4X43	10.5	250	0	103+593.2	11.8RT	1.12
4X44	10.5	400	5	103+640.0	15.3RT	3.77
4X45	10.5	400	5	103+673.9	15.0RT	0.542
4X46	10.5	400	5	103+673.9	15.0RT	0.542
4X47	10.5	250	0	103+722.7	14.4RT	3.65
4X48	10.5	250	0	103+773.1	11.6RT	0.872
4X49	10.5	250	0	103+821.1	11.5RT	0.756
4X410	10.5	250	0	103+866.9	11.7RT	0.497
5X11	10.5	250	0	102+477.2	11.6LT	0.914
5X12	10.5	250	0	102+516.8	11.6LT	0.914
5X13	10.5	250	0	102+556.2	11.6LT	0.914
5X14	10.5	250	0	102+602.1	11.6LT	0.914
5X15	10.5	250	0	102+635.2	11.6LT	0.914
5X16	10.5	250	0	102+694.6	11.7LT	0.97
5X17	10.5	250	0	102+737.7	14.0LT	2.48
5X18	10.5	250	0	102+781.7	13.2LT	0.914
5X19	10.5	400	5	102+832.8	18.8LT	1.06
5X110	10.5	400	5	102+866.6	18.3LT	3.77
5X111	10.5	400	5	102+866.6	18.3LT	3.77
5X112	10.5	250	0	102+904.8	15.6LT	2.94
5X21	10.5	250	0	102+782.3	11.6RT	0.914
5X22	10.5	400	5	102+830.1		

Bench Mark: BM #213 - Set railroad spike in south side of power pole with light at northeast corner of Route 22 and Hampton Road. Station: 100+752.20 10.56m LT. El. 213.760m
 Existing Structure: None

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL NOTES:

1. Reinforcement bars shall conform to the requirements of AASHTO M31M, or M322M Grade 420.
2. Exposed edges shall be beveled 19mm.
3. All construction joints shall be bonded.
4. All dimensions are in millimeters (mm) except as noted.
5. Design Fill Height = 0.600m
6. Precast culvert alternate is not allowed.

FAP	SECTION	COUNTY	SHEETS	SHEET NO. 1
337	20R-5	LAKE	562	414
D-91-552-99 Contract No. 60881				
13 SHEETS				

TOTAL BILL OF MATERIAL

Item	Unit	TOTAL
Parous Granular Embankment	CU M	639
Structure Excavation	CU M	790
Concrete Structures	CU M	100
Protective Coat	SQ M	123
Reinforcement Bars	KG	12,250
Reinforcement Bars, Epoxy Coated	KG	6,200
Aluminum Railing, Type L	METER	32
Temporary Sheet Piling	SQ M	96
Concrete Box Culverts	CU M	117
Geocomposite Wall Drain	SQ M	423
Pipe Underdrains 250 mm (Special)	METER	14
Pipe Underdrains For Structures, 150 mm	METER	118
Pipe Underdrains For Structures, 200 mm	METER	12
Steel Plate Beam Guard Rail, Attached to Structures	METER	3.5
Bar Splicers	EACH	64

INDEX OF SHEETS

1. GENERAL PLAN
2. STAGE CONSTRUCTION
3. PIPE UNDERDRAIN SYSTEM
4. TUNNEL PLAN AND ELEVATION
5. TUNNEL SECTION AND DETAILS
6. TUNNEL DETAILS
7. RETAINING WALL PLAN AND ELEVATION
8. RETAINING WALL SECTIONS
9. RETAINING WALL DETAILS
10. TYPE L ALUMINUM RAILING
11. BAR SPLICER (COUPLER) DETAILS
12. BORING LOGS
13. BORING LOGS

DESIGN SPECIFICATION

AASHTO 2002 Standard Specifications for Highway Bridges.

LOADING MS18

Allow 2.4 KN/m² for future wearing surface.

DESIGN STRESSES

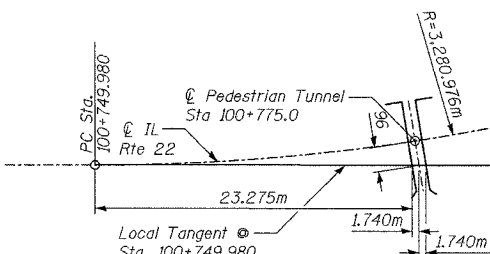
FIELD UNITS

f_c = 24 MPa
 f_y = 420 MPa (Reinforcement)

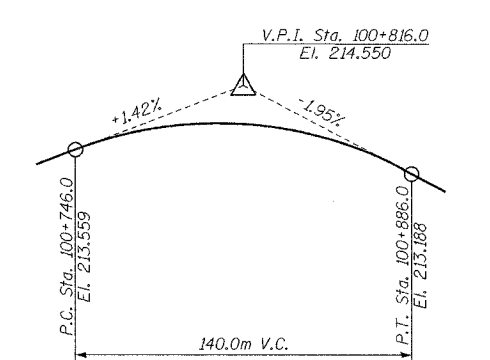
Max. soil pressure under footing = 135 kPa

CURVE DATA

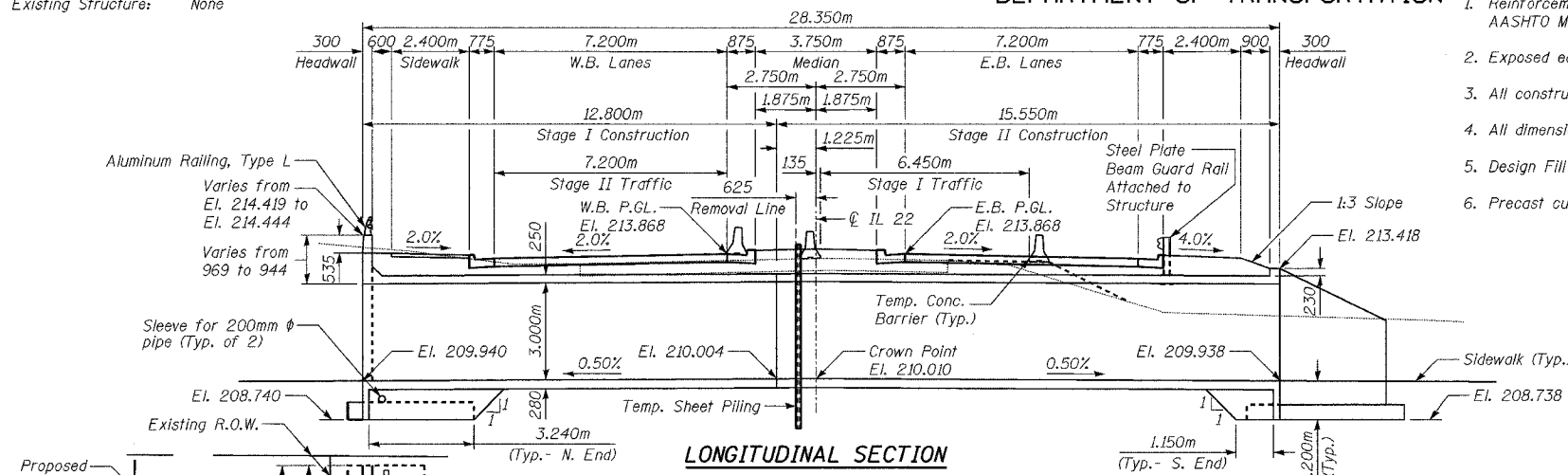
Prop. Curve IL-22-3
 P.I. Sta. 100+800.006
 Δ = 1° 44' 49" (LT)
 T = 50.026 m
 R = 3,280.976 m
 L = 100.044 m
 E = 0.381 m
 P.C. Sta. 100+749.980
 P.T. Sta. 100+850.024



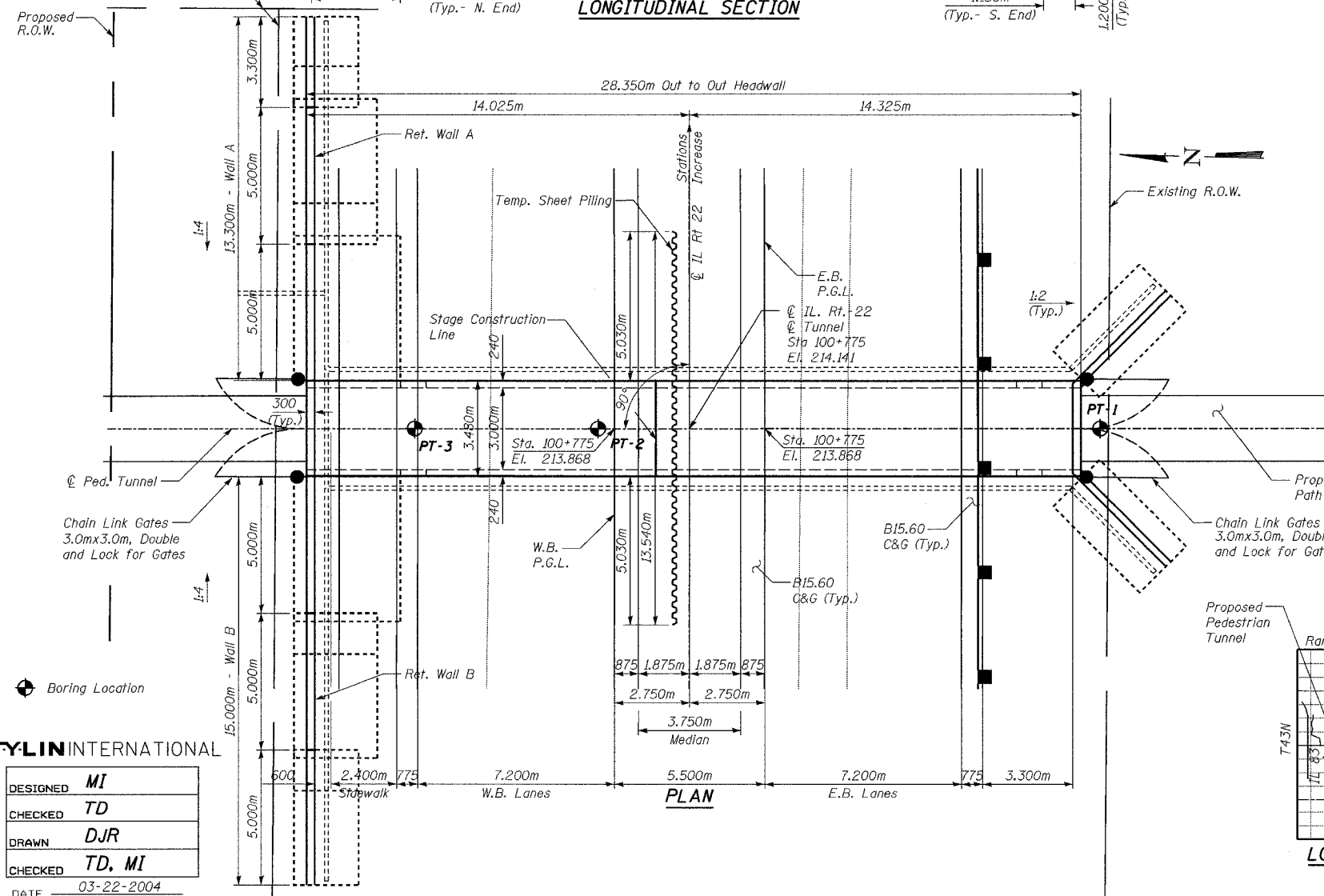
OFFSET SKETCH



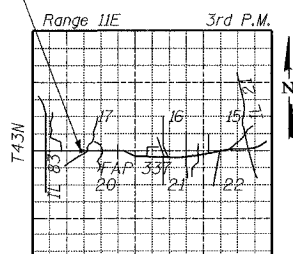
PROFILE GRADE IL RTE 22



LONGITUDINAL SECTION



PLAN



LOCATION SKETCH

TYLIN INTERNATIONAL

DESIGNED	MI
CHECKED	TD
DRAWN	DJR
CHECKED	TD, MI
DATE	03-22-2004

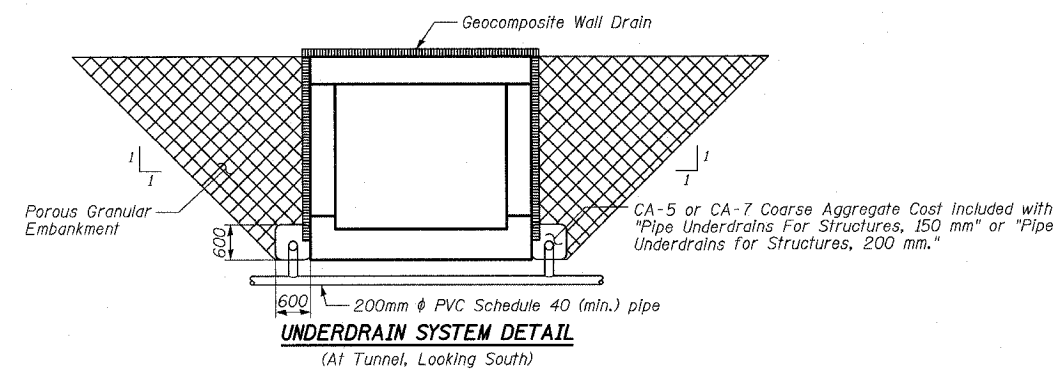


Signed Heather J. Gaffney, S.E., IL Lic. No. 081-004961 For drawings 1 thru 13 of 13.
 Expires 11-30-2004.
 Date

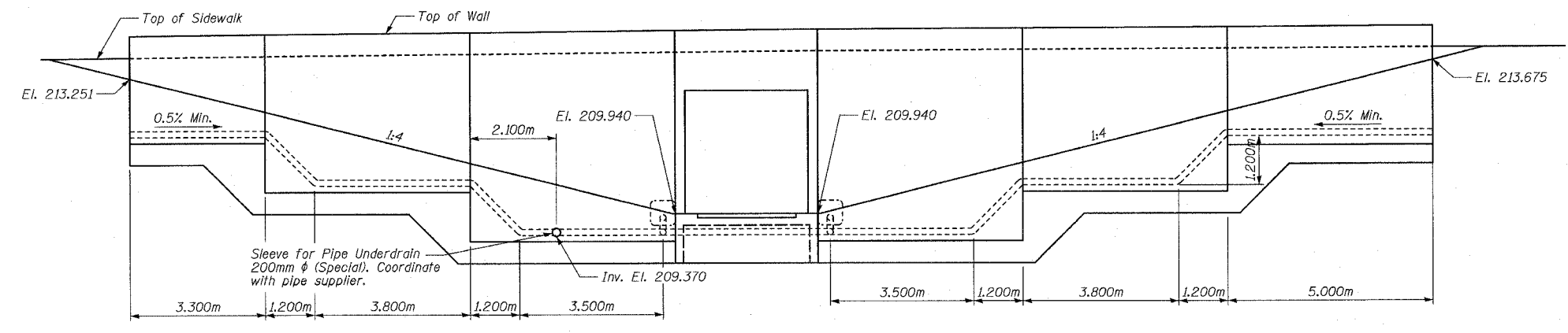
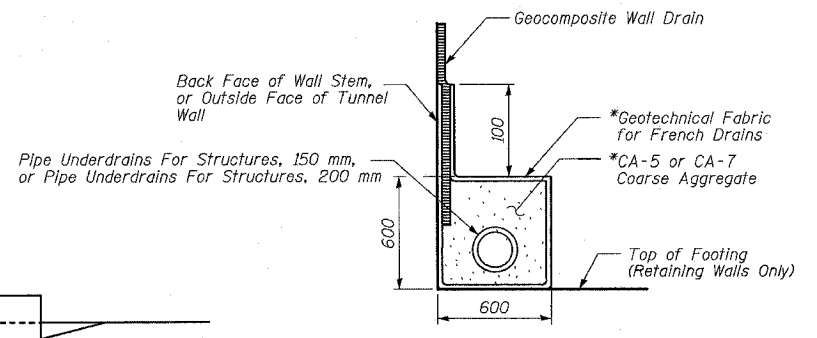
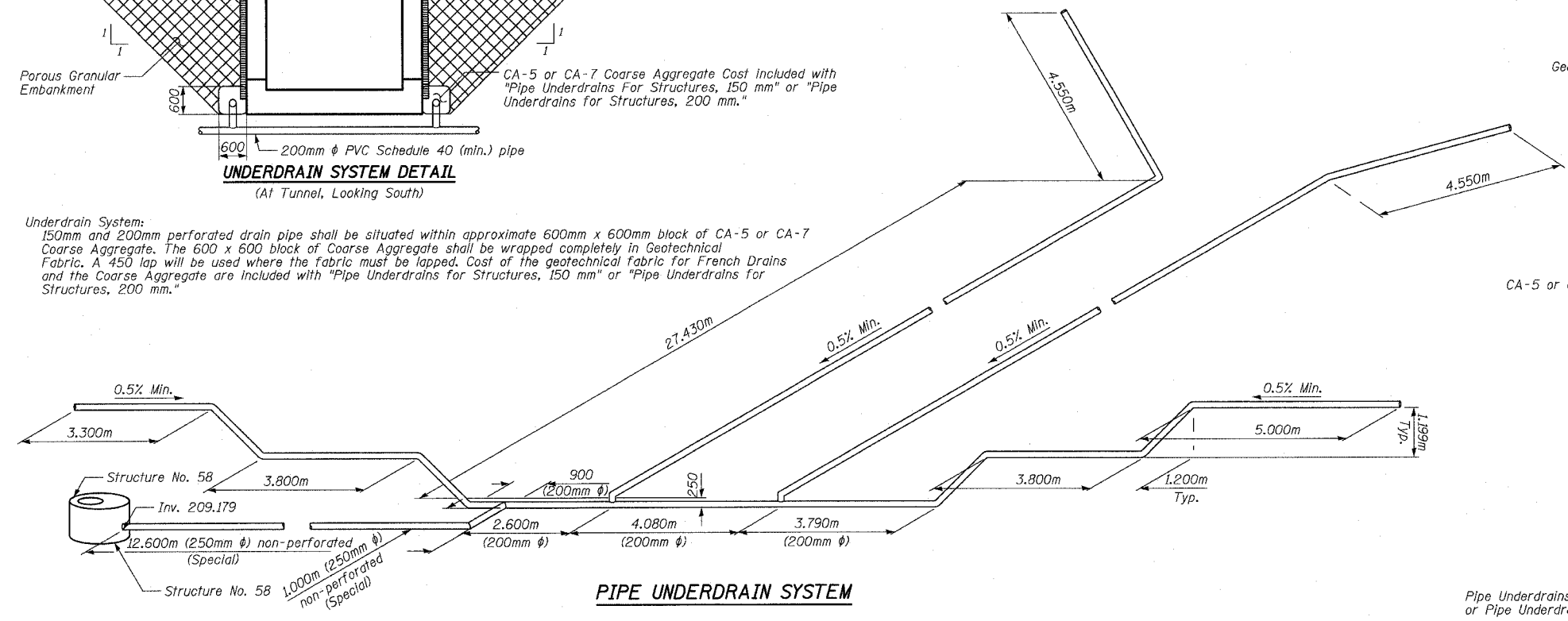
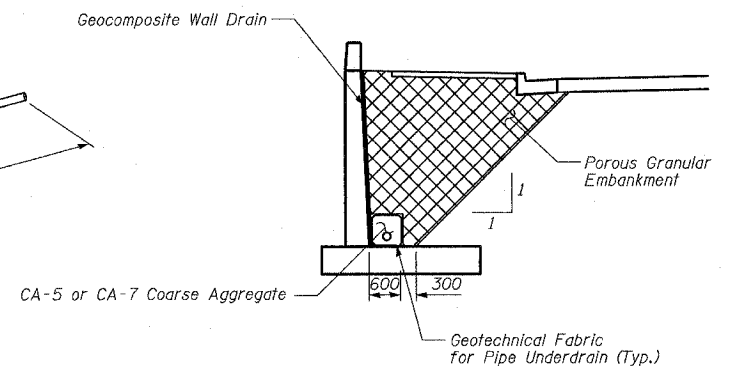
GENERAL PLAN
IL ROUTE 22 OVER PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEET	SHEET NO. 3
337	20R-5	LAKE	562	13 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
D-91-552-99			Contract No. 60881	



Underdrain System:
150mm and 200mm perforated drain pipe shall be situated within approximate 600mm x 600mm block of CA-5 or CA-7 Coarse Aggregate. The 600 x 600 block of Coarse Aggregate shall be wrapped completely in Geotechnical Fabric. A 450 lap will be used where the fabric must be lapped. Cost of the geotechnical fabric for French Drains and the Coarse Aggregate are included with "Pipe Underdrains For Structures, 150 mm" or "Pipe Underdrains For Structures, 200 mm."



BILL OF MATERIAL

Item	Unit	TOTAL
Pipe Underdrains For Structures, 150 mm	METER	118
Pipe Underdrains For Structures, 200 mm	METER	12
Pipe Underdrains 250mm (Special)	METER	14
Porous Granular Embankment	CU M	639
Geocomposite Wall Drain	50 M	423

TYLIN INTERNATIONAL

DESIGNED	MAF, DJR
CHECKED	MI
DRAWN	MAF, DJR
CHECKED	MI
DATE	03-22-2004

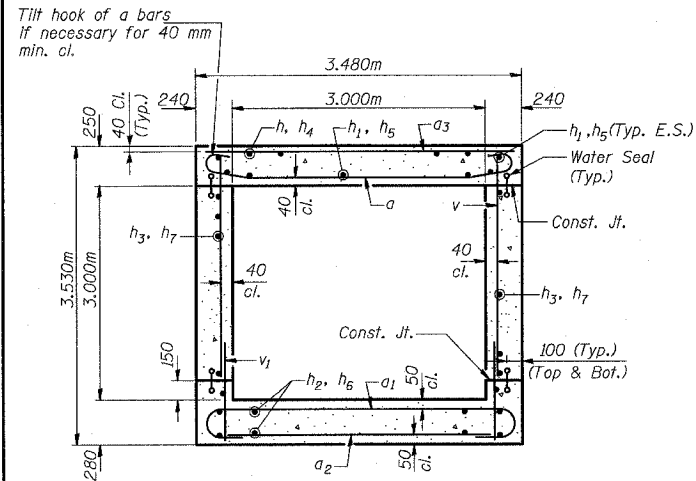
NOTES:
All pipes to have 150mm ϕ unless otherwise noted.

PIPE UNDERDRAIN SYSTEM

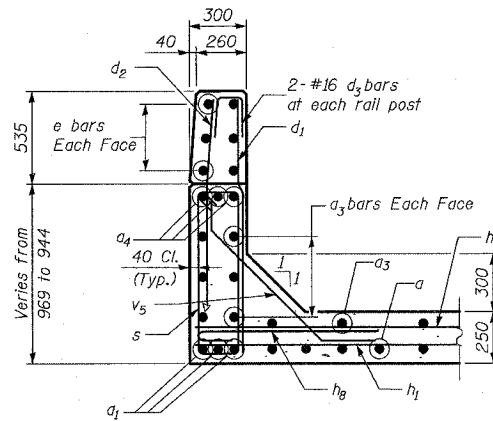
IL ROUTE 22 OVER PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

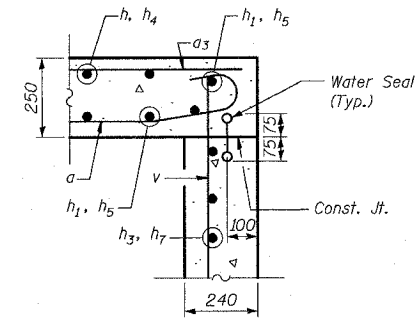
FAP	SECTION	COUNTY	SHEET	SHEET	SHEET NO. 5
337	20R-5	LAKE	562	418	13 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
0-91-552-99		Contract No. 60881			



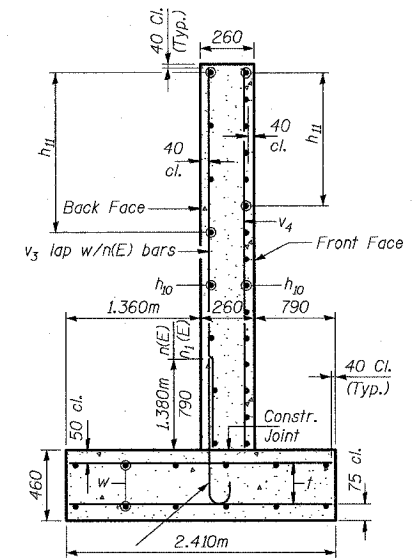
SECTION THRU TUNNEL



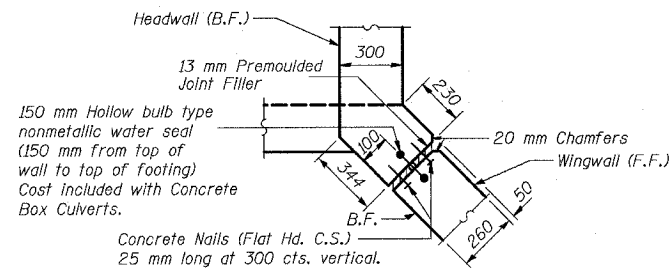
PARAPET DETAIL



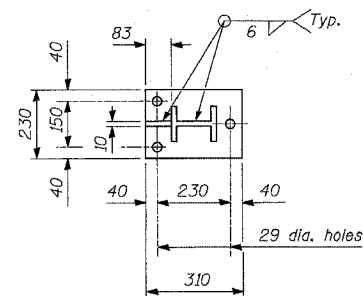
WATER SEAL DETAIL



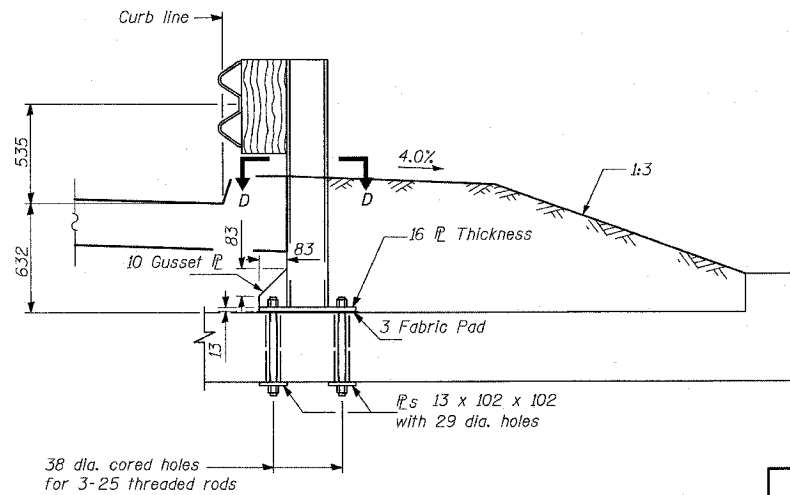
SECTION B-B
n(E) & n1(E)
(Alternate)



CORNER DETAIL



SECTION D-D



CROSS SECTION

STEEL PLATE BEAM GUARD RAIL ATTACHED TO STRUCTURES

BILL OF MATERIAL

Item	Unit	TOTAL
Steel Plate Beam Guard Rail, Attached to Structures	METER	3.5

TYLIN INTERNATIONAL

DESIGNED	TD, MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI
DATE	03-22-2004

TUNNEL SECTION AND DETAILS

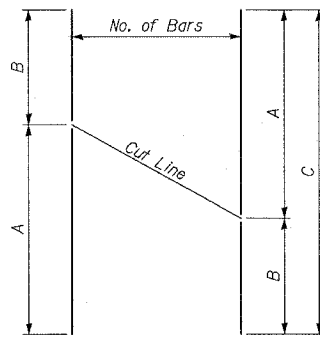
IL ROUTE 22 OVER
PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

SSB-T1-0 (M) 6-1-2000

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEET	SHEET
337	20R-5	LAKE	562	419
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
D-91-552-99		Contract No. 60881		

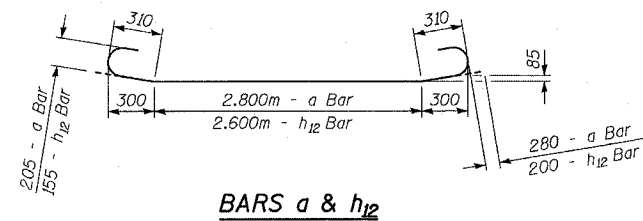
SHEET NO. 6
13 SHEETS



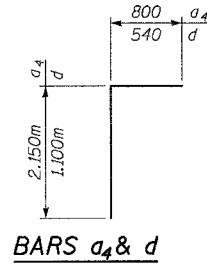
SERIES OF BAR CUTTING DIAGRAM
See table for dimensions. Make all cuts normal to bar axis

BAR TABLE SCHEDULE

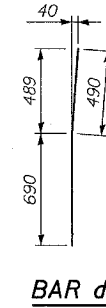
Bar	No. of Sets Req'd	No. of Bars Per Set	A	B	C
v ₃	1	19	4.160m	2.600m	6.760m
v ₄	1	5	4.160m	2.600m	6.760m



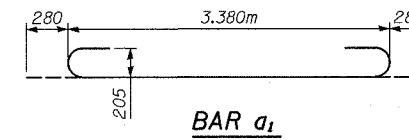
BARS a & h₁₂



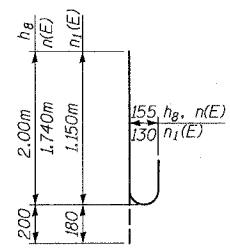
BARS a₄ & d



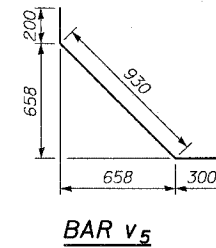
BAR d₂



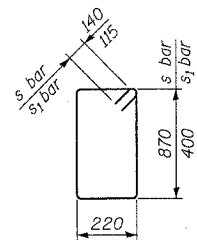
BAR a₁



BARS h₈, n(E) & n₁(E)



BAR v₅



BAR s & s₁



BAR d₃

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
a	160	#25	3.98	U
a ₁	157	#25	3.94	U
a ₂	52	#13	3.08	—
a ₃	70	#16	3.38	—
a ₄	6	#19	2.95	—
d	64	#13	1.64	—
d ₁	16	#19	1.35	—
d ₂	12	#16	1.18	—
d ₃	4	#16	0.61	—
e	6	#16	3.38	—
h	10	#13	12.70	—
h ₁	12	#25	12.70	—
h ₂	20	#16	12.70	—
h ₃	22	#19	12.70	—
h ₄	10	#13	15.45	—
h ₅	12	#25	15.45	—
h ₆	20	#16	15.45	—
h ₇	22	#19	15.45	—
h ₈	16	#19	2.20	U
h ₉	6	#19	3.27	—
h ₁₀	28	#13	4.39	—
h ₁₁	20	#13	4.66	—
h ₁₂	2	#19	3.62	U
s	24	#16	2.46	—
s ₁	12	#13	1.47	—
n(E)	38	#19	1.94	U
n ₁ (E)	36	#16	1.33	U
t	66	#16	2.33	—
v	380	#13	3.05	—
v ₁	380	#13	0.72	—
v ₂	6	#13	3.28	—
v ₃	19	#16	6.76	—
v ₄	5	#13	6.76	—
v ₅	16	#19	1.42	—
v ₆	6	#13	1.65	—
w	24	#16	4.39	—
Concrete Box Culverts	CU M		117	
Reinforcement Bars	KG		12,250	
Reinforcement Bars, Epoxy Coated	KG		240	
Bar Splicers	EACH		64	

Reinforcement designated (E) shall be epoxy coated for n & n₁ dowels only.

TYLIN INTERNATIONAL

DESIGNED	TD, MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI
DATE	03-22-2004

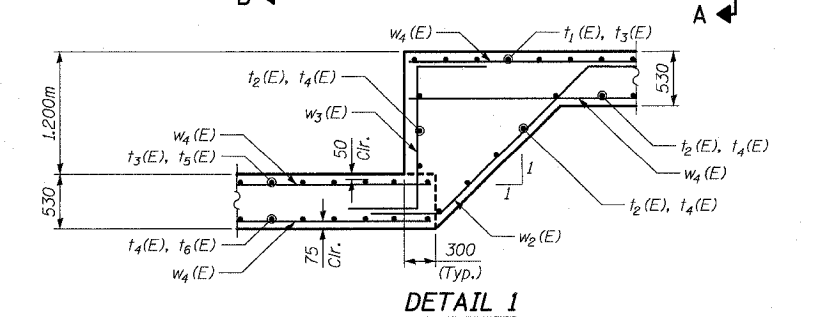
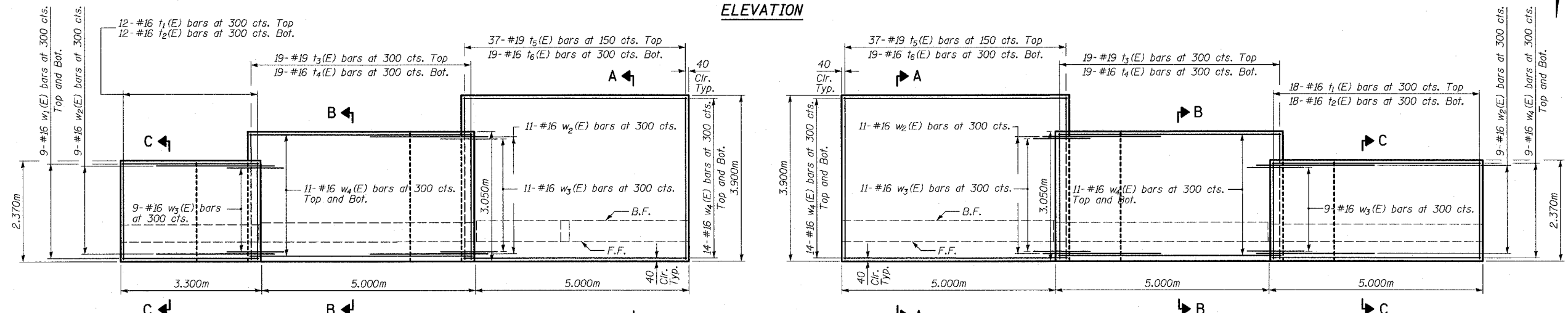
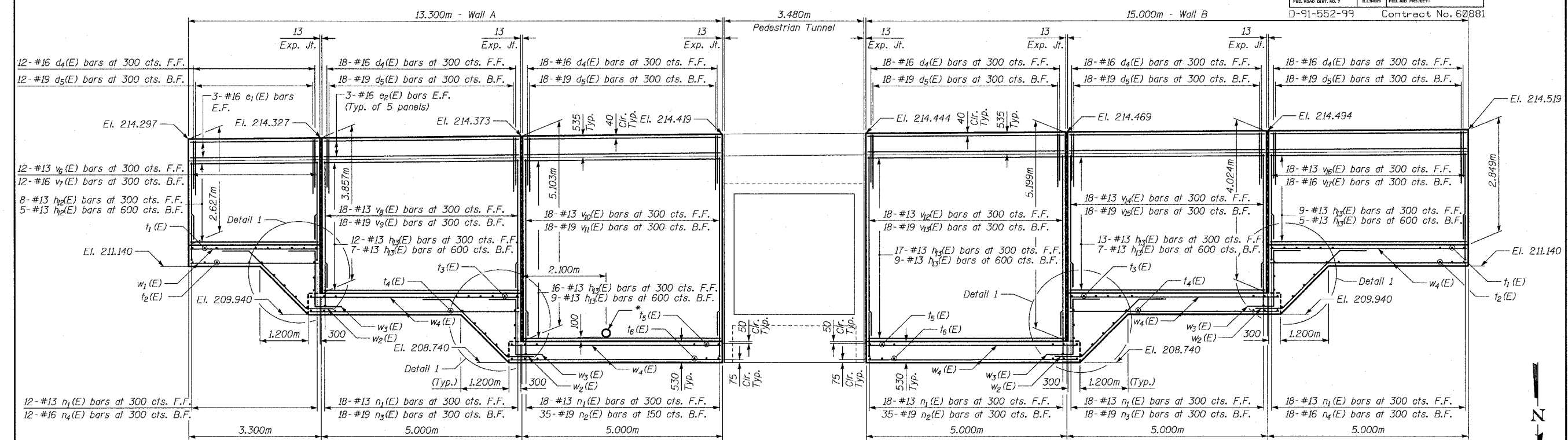
SSB-TI-0 (M) 6-1-2000

TUNNEL DETAILS

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEET	SHEET NO.
337	20R-5	LAKE	562	420
FED. ROAD DIST. NO. 7				ILLINOIS FED. AID PROJECT-
D-91-552-99				Contract No. 60881



ELEVATION

PLAN

TYLIN INTERNATIONAL

DESIGNED	DJR
CHECKED	TD
DRAWN	DJR, TB
CHECKED	TD, MI

DATE 03-22-2004

- NOTES**
- For tunnel reinforcement, see sheet 4 of 13.
 - For parapet reinforcement and details, see sheet 8 & 9 of 13.
 - For expansion joint details, see sheet 9 of 13.
 - Reinforcement bars designated (E) shall be epoxy coated.
 - All construction joints shall be bonded.
- * Sleeve for Pipe Underdrains 250mmφ (Special).

LEGEND

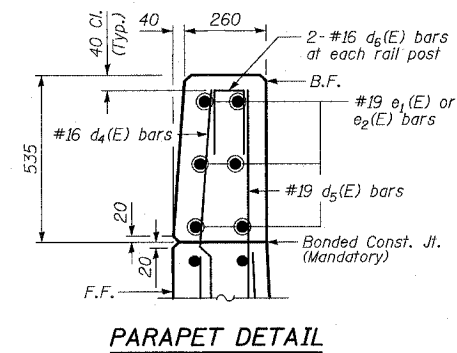
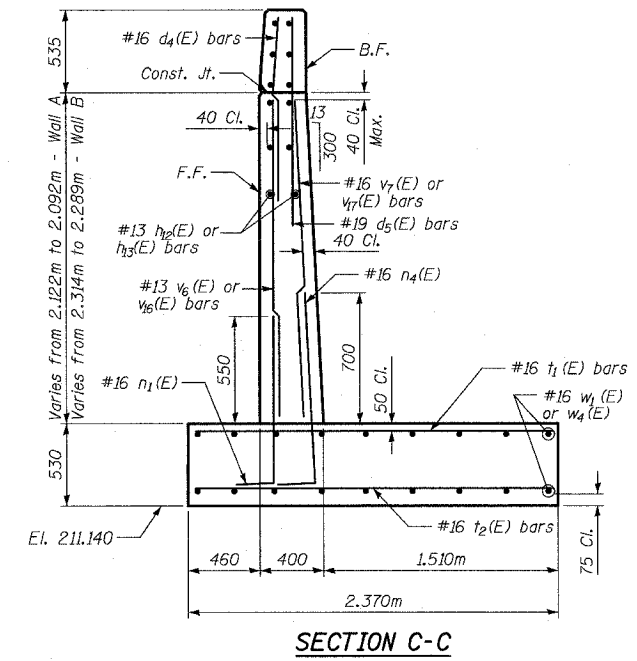
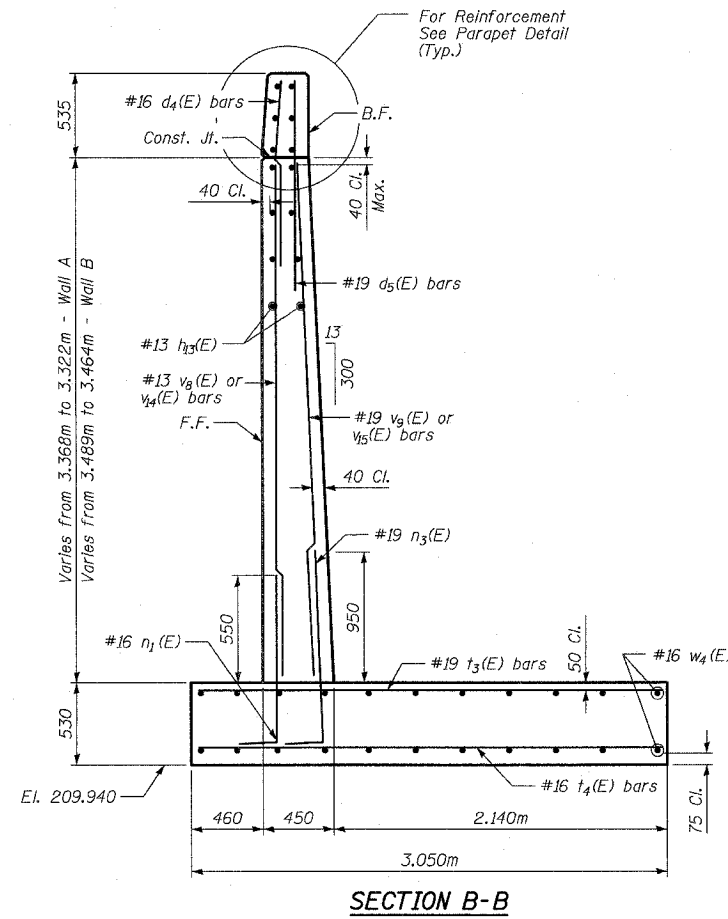
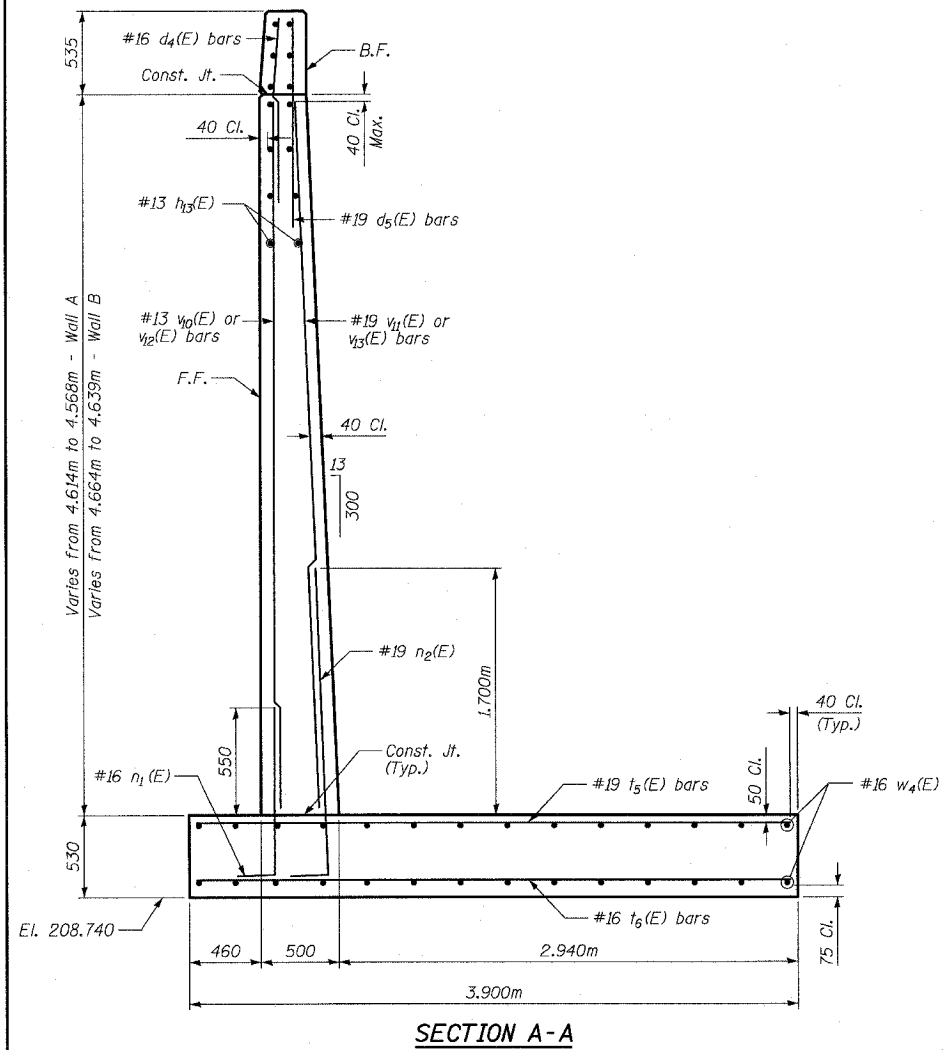
F.F. Denotes Front Face.
B.F. Denotes Back Face.
E.F. Denotes Each Face

RETAINING WALL PLAN AND ELEVATION

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 8
337	20R-5	LAKE	562	421	13 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
D-91-552-99		Contract No. 60881			



NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.

LEGEND

F.F. Denotes Front Face.
B.F. Denotes Back Face.
E.F. Denotes Each Face

TYLIN INTERNATIONAL

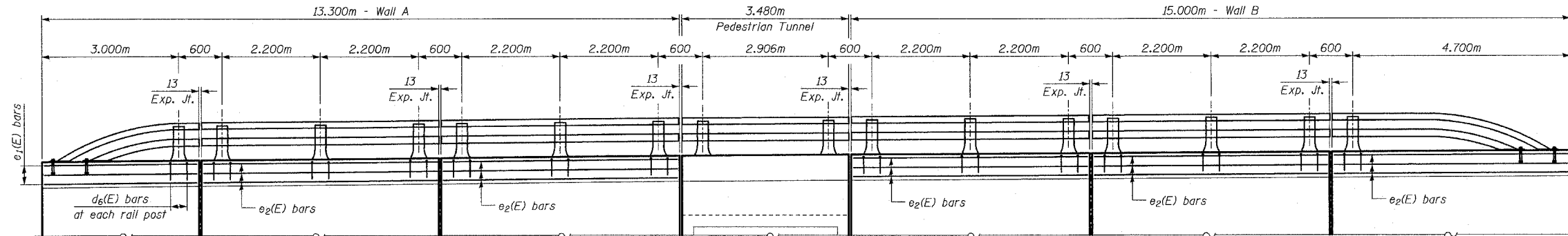
DESIGNED	DJR
CHECKED	TD
DRAWN	DJR, TB
CHECKED	TD, MI
DATE	03-22-2004

RETAINING WALL SECTIONS

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

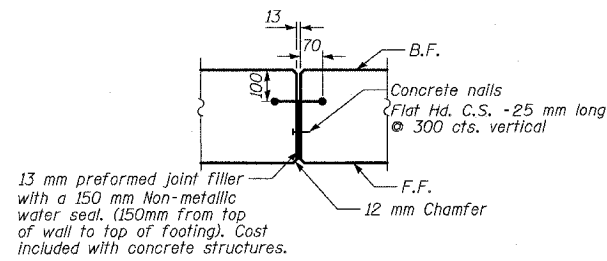
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FWP	DISTRICT	COUNTY	SECTION	SHEET	SHEET NO. 9 13 SHEETS
337	20R-5	LAKE	562	422	
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
D-91-552-99		Contract No. 60881			

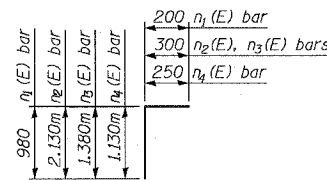


PARAPET ELEVATION

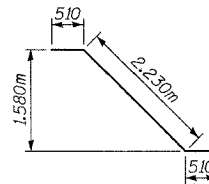
BILL OF MATERIAL



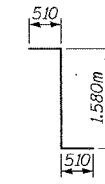
EXPANSION JOINT DETAIL



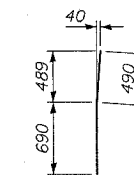
BARS $n_1(E), n_2(E), n_3(E)$ and $n_4(E)$



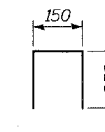
BAR $w_2(E)$



BAR $w_3(E)$



BAR $d_4(E)$



BAR $d_6(E)$

Bar	No.	Size	Length (m)	Shape
d_4	102	#16	1.18	—
d_5	102	#19	1.41	—
d_6	28	#16	0.61	—
e_1	6	#16	3.22	—
e_2	30	#16	4.92	—
h_{12}	13	#13	3.22	—
h_{13}	104	#13	4.92	—
n_1	102	#13	1.18	—
n_2	70	#19	2.43	—
n_3	36	#19	1.68	—
n_4	30	#16	1.38	—
f_1	30	#16	2.27	—
f_2	36	#16	2.27	—
f_3	38	#19	2.95	—
f_4	44	#16	2.95	—
f_5	74	#19	3.80	—
f_6	44	#16	3.80	—
v_6	12	#13	2.05	—
v_7	12	#16	2.05	—
v_8	18	#13	3.28	—
v_9	18	#16	3.28	—
v_{10}	18	#13	4.53	—
v_{11}	18	#16	4.53	—
v_{12}	18	#13	4.60	—
v_{13}	18	#16	4.60	—
v_{14}	18	#13	3.42	—
v_{15}	18	#16	3.42	—
v_{16}	18	#13	2.25	—
v_{17}	18	#16	2.25	—
w_1	18	#16	3.22	—
w_2	40	#16	3.25	—
w_3	40	#16	2.60	—
w_4	118	#16	5.20	—
Protective Coat		SQ M	123	
Concrete Structures		CU M	100	
Reinforcement Bars, Epoxy Coated		KG	5,960	

NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.

LEGEND

F.F. Denotes Front Face.
B.F. Denotes Back Face.
E.F. Denotes Each Face

TYLIN INTERNATIONAL

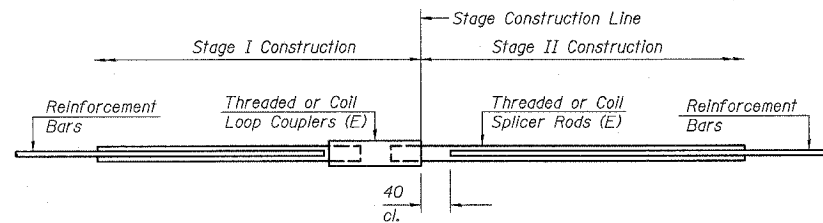
DESIGNED	DJR
CHECKED	TD
DRAWN	DJR, TB
CHECKED	TD, MI
DATE	03-22-2004

RETAINING WALL DETAILS

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 11
337	20R-5	LAKE	562	424	13 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		
0-91-552-99		Contract No. 60881			

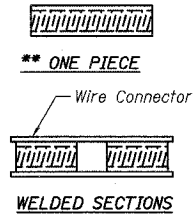


BAR SPLICER ASSEMBLY DETAIL

Bar Size	No. Assemblies Required	Location
#13	10	Top Slab
#25	12	Top Slab
#19	22	Walls
#16	20	Bottom Slab

The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.

NOTES

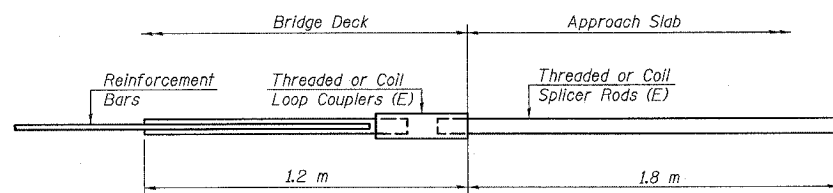
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars. Splicer rods shall be of minimum 420 MPa yield strength, threaded or coiled full length. All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars. Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- Minimum Capacity = $1.25 \times 10^3 \times f_y \times A_t$
(Tension in kN)
- Minimum *Pull-out Strength = $1.25 \times 10^3 \times f_{sallow} \times A_t$
(Tension in kN)

Where f_y = Yield strength of lapped reinforcement bars in MPa.
 f_{sallow} = Allowable tensile stress in lapped reinforcement bars in MPa (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars (mm^2).
* = 28 day concrete

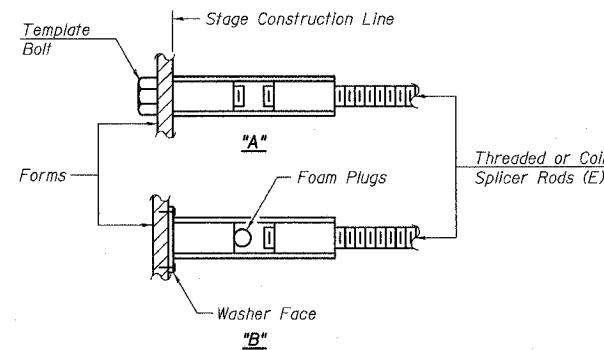
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kN - tension	Min. Pull-Out Strength kN - tension
#13	510 mm	68	27
#16	610 mm	102	41
#19	790 mm	147	59
#22	1.04 m	201	80
#25	1.37 m	262	105

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."
All dimensions are in millimeters (mm) except as noted.



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #15 BAR**

Min. Capacity = 100 kN - tension
Min. Pull-out Strength = 40 kN - tension
No. Required =



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

TYLIN INTERNATIONAL

DESIGNED	TD, MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI
DATE	03-22-2004

BSD-1 (M) 10-31-02

**BAR SPLICER (COUPLER)
DETAILS**

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEET	SHEET
337	20R-5	LAKE	552	425
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT
D-91-552-99		Contract No. 60881		

SHEET NO. 12
13 SHEETS

STRUCTURE FOUNDATION BORING LOG

Sh 1 of 1

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
(847)398-1441 • FAX(847) 398-2376

Project: Subsurface Investigation for the Proposed II. Route 22 Reconstruction
Route: F.A.P. Route 337, County Lake
Location: Il. Route 83 to U.S. Route 41, Lake County Il.
IDOT Job No. P-91-552-99

Date: 4-22-2002
Bored By: Patrick
Checked By: DOB

BORING NO. PT-1
Station: 100+775
Offset: 15.03m Right

DEPTH (m)	SOIL DESCRIPTION	QU (kPa)	W (%)	REMARKS	BLOW COUNTS	R	QU (kPa)	W (%)
0.0	Ground Surface Elevation 212.0							
0.0 - 0.3	CLAYEY TOPSOIL-black-very stiff (A-7)				3			
0.3 - 0.7		240P	37		3			
0.7 - 1.0					3			
1.0 - 1.5	SAND & GRAVEL-gray-medium dense (A-1)				3			
1.5 - 2.0		144P	30		5			
2.0 - 2.5	CLAY-brown & gray-medium stiff to stiff (A-7)				2			
2.5 - 3.0		72P	32		3			
3.0 - 3.5					5			
3.5 - 4.0					8			
4.0 - 4.5		192B	19		5			
4.5 - 5.0					8			
5.0 - 5.5	Coarse SAND-gray-loose to very dense (A-1-b)				5			
5.5 - 6.0					7			
6.0 - 6.5	CLAY-gray-very stiff to stiff (A-6)	268B	18		7			
6.5 - 7.0					9			
7.0 - 7.5		192B	17		10			
7.5 - 8.0					8			
8.0 - 8.5					13			
8.5 - 9.0		220B	15		17			
9.0 - 9.5					8			
9.5 - 10.0					8			
10.0 - 10.5		230B	19		11			
10.5 - 11.0					8			
11.0 - 11.5					8			
11.5 - 12.0					11			
12.0 - 12.5					11			
12.5 - 13.0					11			
13.0 - 13.5					11			
13.5 - 14.0					11			
14.0 - 14.5					14			
14.5 - 15.0		115B	19		19			
15.0 - 15.5					4			
15.5 - 16.0					6			
16.0 - 16.5		153B	19		8			

STRUCTURE FOUNDATION BORING LOG

Sh 1 of 1

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
(847)398-1441 • FAX(847) 398-2376

Project: Subsurface Investigation for the Proposed II. Route 22 Reconstruction
Route: F.A.P. Route 337, County Lake
Location: Il. Route 83 to U.S. Route 41, Lake County Il.
IDOT Job No. P-91-552-99

Date: 4-26-2002
Bored By: TK
Checked By: DOB

BORING NO. PT-2
Station: 100+775
Offset: 3.35m Left

DEPTH (m)	SOIL DESCRIPTION	QU (kPa)	W (%)	REMARKS	BLOW COUNTS	R	QU (kPa)	W (%)
0.0	Ground Surface Elevation 213.66							
0.0 - 0.3	203mm ASPHALT, 102mm CRUSHED STONE				3			
0.3 - 0.4					4			
0.4 - 0.7	SILTY CLAY-dark brown-very stiff (A-6) Fill, Wet	240P	21		4			
0.7 - 1.0					4			
1.0 - 1.5	SAND & GRAVEL-gray-medium dense to dense (A-1)				6			
1.5 - 2.0		216P	28		7			
2.0 - 2.5					4			
2.5 - 3.0	CLAY-brown & gray-very stiff to hard (A-6)				6			
3.0 - 3.5		230B	15		6			
3.5 - 4.0					4			
4.0 - 4.5					4			
4.5 - 5.0		287B	20		5			
5.0 - 5.5					3			
5.5 - 6.0					5			
6.0 - 6.5		469B	10		11			
6.5 - 7.0					4			
7.0 - 7.5					7			
7.5 - 8.0					4			
8.0 - 8.5					7			
8.5 - 9.0		230B	18		11			
9.0 - 9.5					4			
9.5 - 10.0					7			
10.0 - 10.5					11			
10.5 - 11.0					11			
11.0 - 11.5					11			
11.5 - 12.0					11			
12.0 - 12.5					11			
12.5 - 13.0					11			
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62.0 - 62.5					11			
62.5 - 63.0					11			
63.0 - 63.5					11			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SECTION	SHEET	SHEET NO. 13
337	20R-5	LAKE	562	426	13 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
D-91-552-99		Contract No. 60881			



O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST./ARLINGTON HTS., IL 60005
(847)398-1441 • FAX (847) 398-2376

STRUCTURE FOUNDATION
BORING LOG

Sh 1 of 1

Project Subsurface Investigation for the Proposed IL Route 22 Reconstruction
Route F.A.P. Route 337 County Lake
Location IL Route 83 to U.S. Route 41, Lake County IL
IDOT Job No. P-91-552-99
Job No. 00458
Date 4-22-2002
Bored By Patrick
Checked By DOB

BORING NO. PT-3

Station 100+775
Offset 10.06m Left

Ground Surface Elevation (FIII)	Soil Description	Depth (m)	Penetration (mm)	Qu (kPa)	W (%)	Soil Description	Depth (m)	Penetration (mm)	Qu (kPa)	W (%)
214.5	CLAY-dark brown & black (FIII)	23.8	5			CLAY-gray-stiff to hard (A-6)	206.2	4		
	CLAY-brown spotted black-stiff to hard (A-6) FIII		6	144P	22			10	NP	9
			7					10		
			8					17		
212.5			13	43P	22	Coarse SAND with GRAVEL-gray-medium dense to dense (A-1-b)		11	NP	14
			12					4		
	CLAY-brown & gray-very stiff to hard (A-6)		9	527P	18			8	NP	14
			12					14		
			4		16.8			3		
			7					10		
-3.0			9	305B	19			14	NP	20
			4		16.7			4		
			8					4		
			12	364B	20			16	NP	25
210.0			3		16.3			3		
			9					9		
-4.5			11	230B	18			11	NP	19
	CLAY-gray-stiff to hard (A-6)		5		17.2			10		
			9					6		
			12	287B	19			5	NP	24
			5		15.8			6		
			10					8		
-6.0			13	211B	20			15	NP	22
			4		15.4	END OF BORING @ -13.7m Hollow Stem Augers Automatic Hammer				
			7							
			12	144B	18					
			6		15.9					
			14							
-7.5			17	105B	18					

N-Standard Penetration Test (ASTM D-1586) Type Failure
R-Recovery In Inches
NR-No Recovery
E-Estimated Value
P-Penetrometer
S-Shear Failure
B-Bulge Failure
W-Water Content, percent dry weight
F-Fails above w_L
Q_u-Unconfined Compressive Strength (kPa) at w_L (kN/m²) noted in
NP-Non-Plastic

TYLINT INTERNATIONAL O'BRIEN & ASSOCIATES, INC.

DESIGNED	DJR
CHECKED	MI
DRAWN	DJR
CHECKED	MI
DATE	03-22-2004

BORING LOGS

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+775.000
S.N. 049-T016

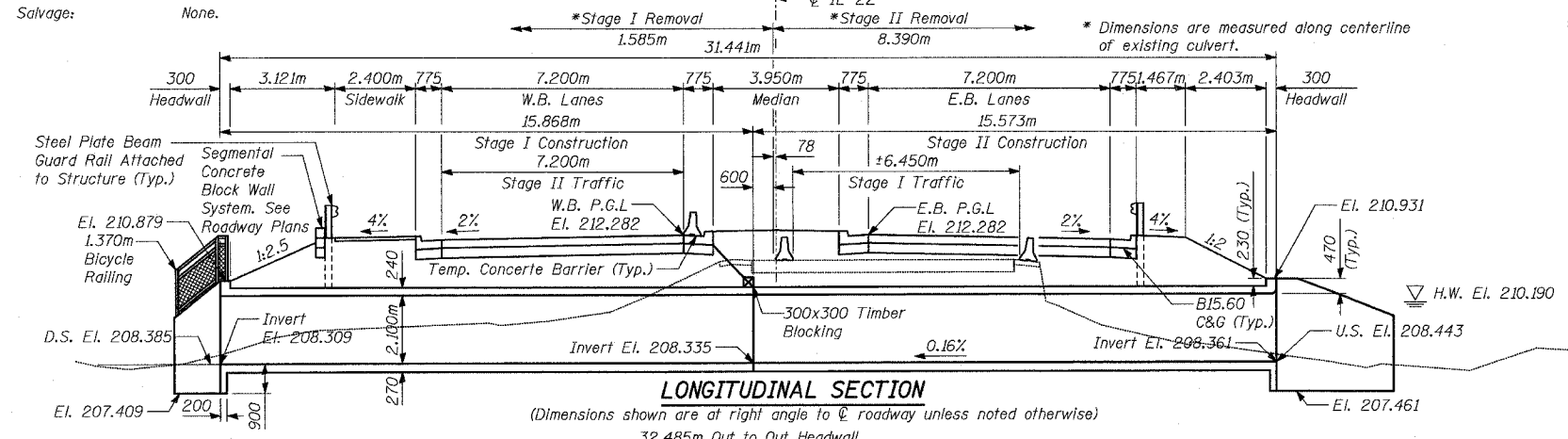
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	DATE	SHEET	SHEET NO. 1
337	20R-5	LAKE	562	427	9 SHEETS
FED. ROAD DIST. NO. 7					ILLINOIS
D-91-552-99					Contract No. 60881

Bench Mark: BM #213 - Set railroad spike in south side of power pole with light at northeast corner of Route 22 and Hampton Road. Station: 100+752.20 10.56m LT. El. 213.760m

Existing Structure: Twin 2.1m x 1.8m concrete box culverts. The Contractor shall remove the existing structure and replace it with a new concrete Single-Barrel Box Culvert.

Salvage: None.



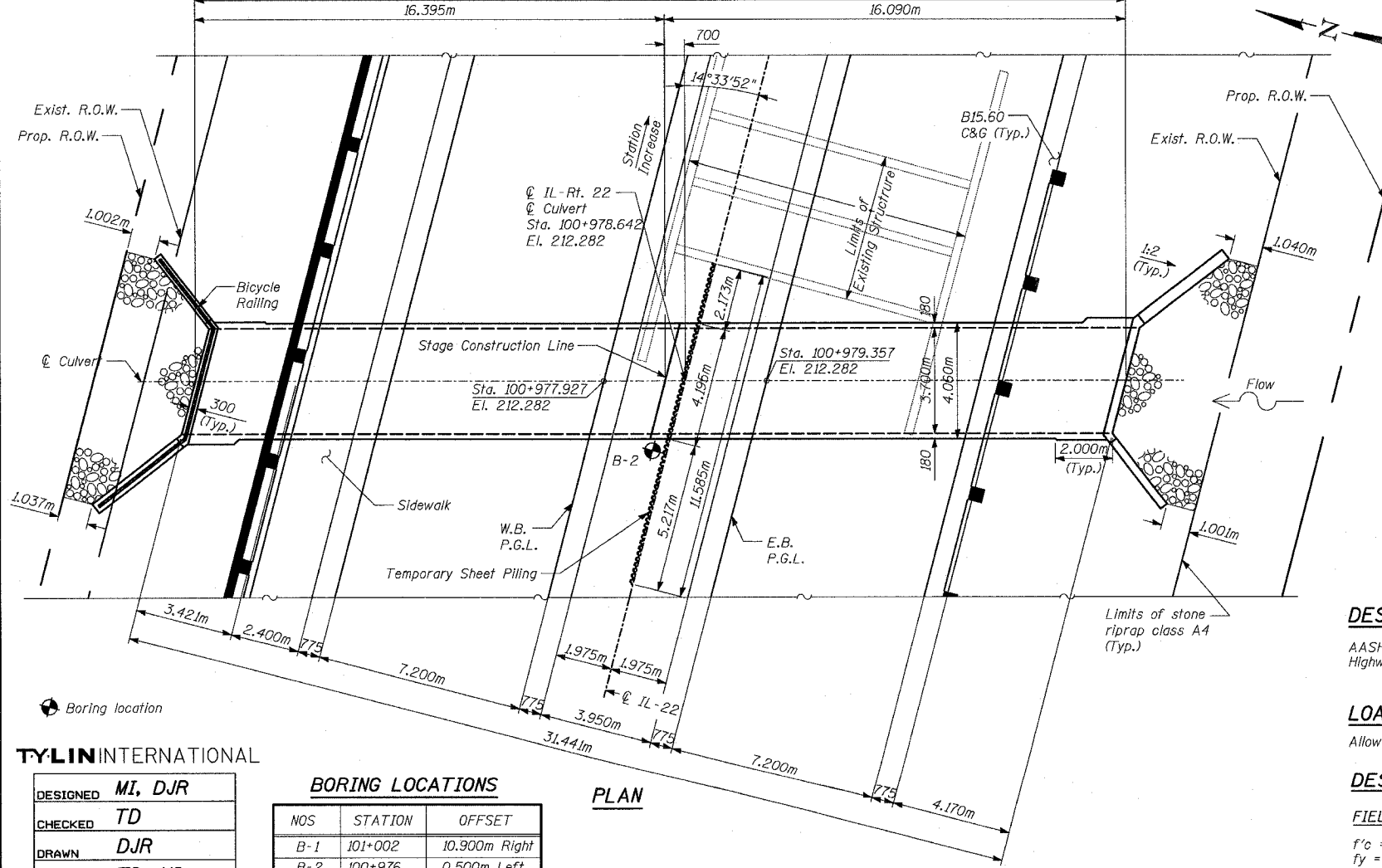
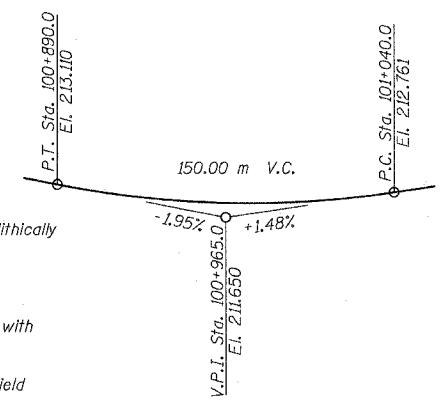
INDEX OF SHEETS

- GENERAL PLAN
- STAGE CONSTRUCTION
- CULVERT PLAN AND ELEVATION - NORTH
- CULVERT PLAN AND ELEVATION - SOUTH
- CULVERT SECTIONS AND DETAILS
- BICYCLE RAILING
- BAR SPLICER (COUPLER) DETAILS
- BORING LOGS
- BORING LOGS

TOTAL BILL OF MATERIAL

Item	Unit	TOTAL
Removal of Existing Structures No. 2	EACH	1
Reinforcement Bars	KG	13,960
Temporary Sheet Piling	SQ M	82
Steel Plate Beam Guard Rail, Attached to Structures	METER	8.4
Concrete Box Culverts	CU M	107
Bicycle Railing	METER	10.80
Bar Splicers	EACH	55

- GENERAL NOTES:**
- Reinforcement bars shall conform to the requirements of AASHTO M31M, or M322M Grade 420.
 - Exposed edges shall be beveled 19mm.
 - All construction joints shall be bonded.
 - A distance of half the length of the wingwall, but not less than two meters of the barrel shall be poured monolithically with the wingwalls.
 - All dimensions are in millimeters (mm) except as noted.
 - For "Stone Riprap, Class A4" and "Filter Fabric for use with Riprap" bill of material, see Roadway plans.
 - Layout of slope protection system may be varied in the field to suit ground conditions as directed by the engineer.
 - Design Fill Height = 1.750m



WATERWAY INFORMATION

DRAINAGE AREA = 18.13 SQ.KM AT STATION 100+975 MAX. RECORDED H.W.E. = 210.32m

Flood	Frequency Yr.	Discharge Cms	Waterway Opening m ²		Natural H.W.E. m	Created Head m		Headwater Elevation m	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
Design	10	7.2	5.9	5.5	209.91	0.07	0.02	209.98	209.93
Base	50	11.0	7.1	6.5	210.19	0.11	0.08	210.30	210.27
Overlapping	100	12.7	7.5	6.8	210.28	0.17	0.15	210.45	210.43
Max. Calc.	500	16.8	7.8	7.7	210.50	0.34	0.24	210.84	210.74



Signed: Heather J. Gaffney, S.E., Ill. Lic. No. 081-004961 For drawings 1 thru 9 of 9.
Date: 3/22/04

DESIGN SPECIFICATION

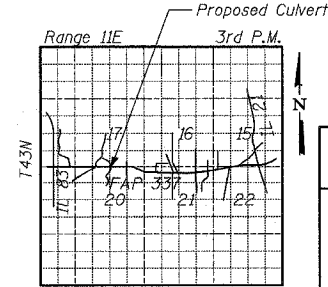
AASHTO 2002 Standard Specifications for Highway Bridges.

LOADING MS18

Allow 2.4 KN/m² for future wearing surface.

DESIGN STRESSES

FIELD UNITS
f'_c = 24 MPa
f_y = 420 MPa (Reinforcement)



GENERAL PLAN

IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003

TYLIN INTERNATIONAL

DESIGNED	MI, DJR
CHECKED	TD
DRAWN	DJR
CHECKED	TD, MI
DATE	03-22-2004

BORING LOCATIONS

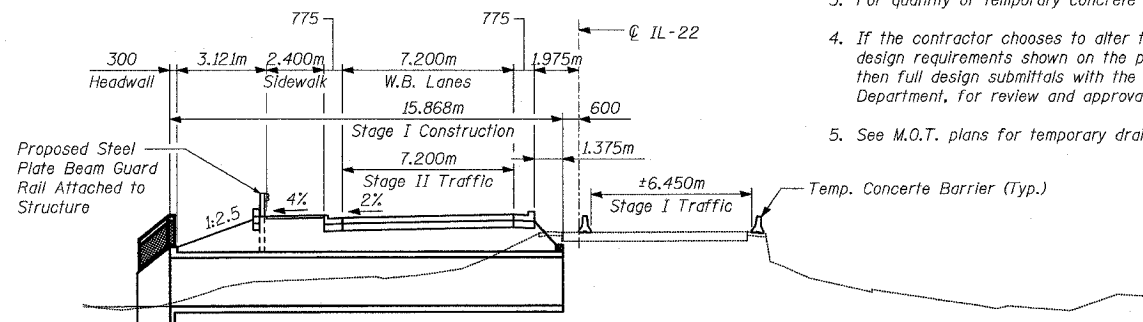
NOS	STATION	OFFSET
B-1	101+002	10.900m Right
B-2	100+976	0.500m Left
B-3	100+964	14.100m Left

PLAN

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

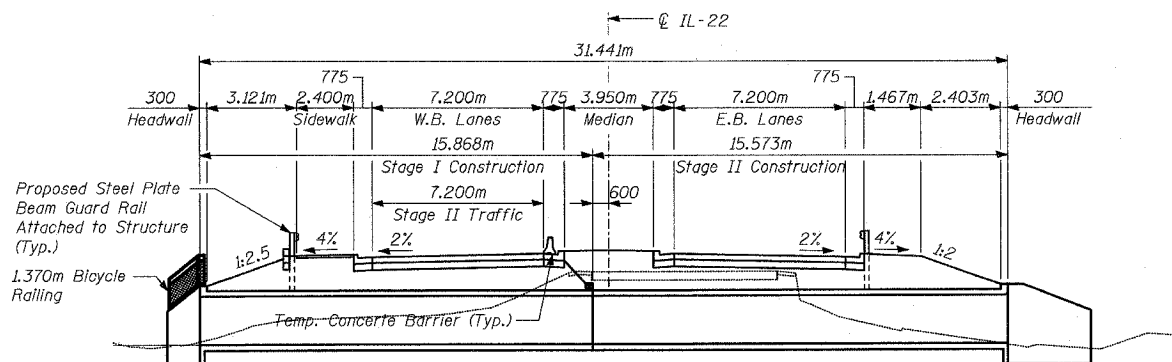
NOTES:

1. Hatched area indicates Removal of Existing Structures No. 2.
2. For details of temporary concrete barrier, see Standard 704001.
3. For quantity of temporary concrete barrier, see roadway plans.
4. If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans for lesser design requirements, then full design submittals with the required seals will be expected by the Department, for review and approval.
5. See M.O.T. plans for temporary drainage.



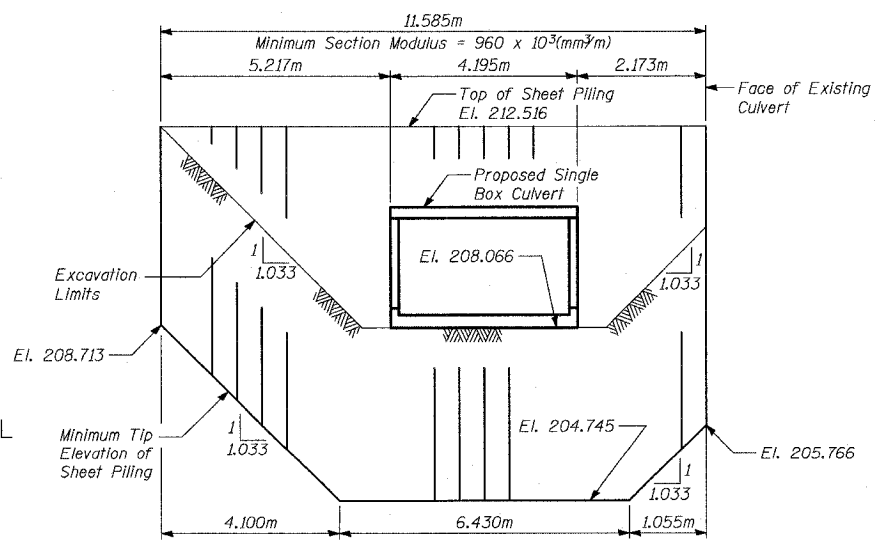
STAGE I CONSTRUCTION

(Dimensions shown are at right angle to CL roadway)



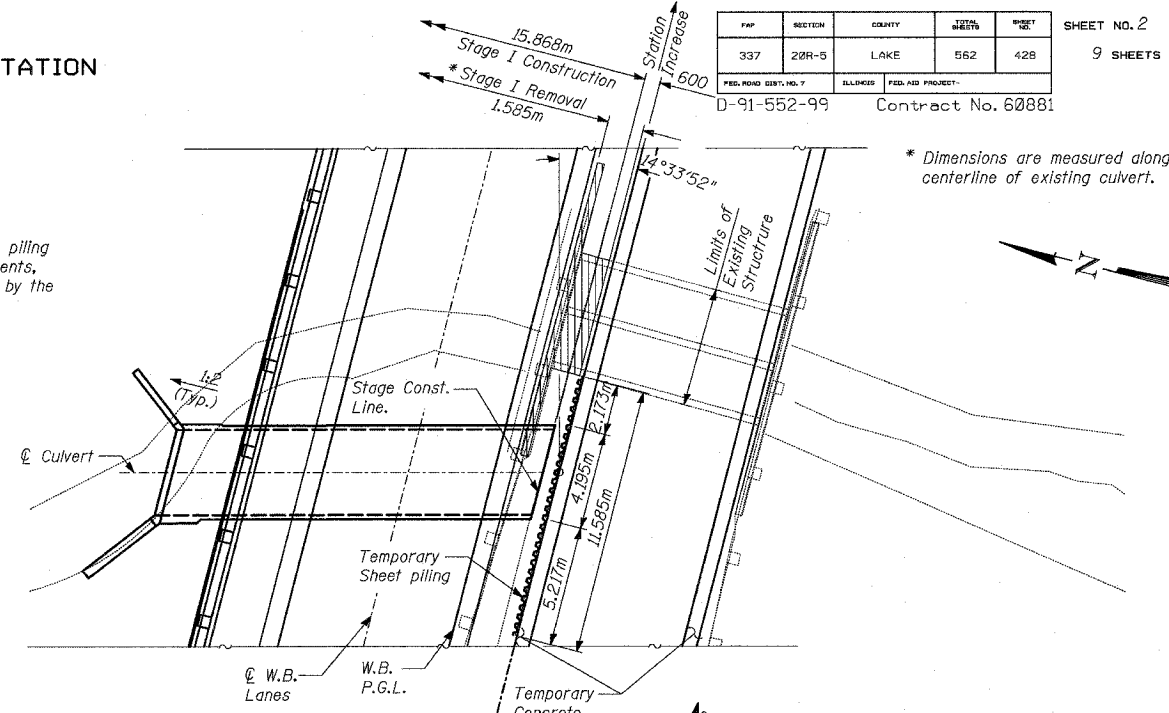
STAGE II CONSTRUCTION

(Dimensions shown are at right angle to CL roadway)

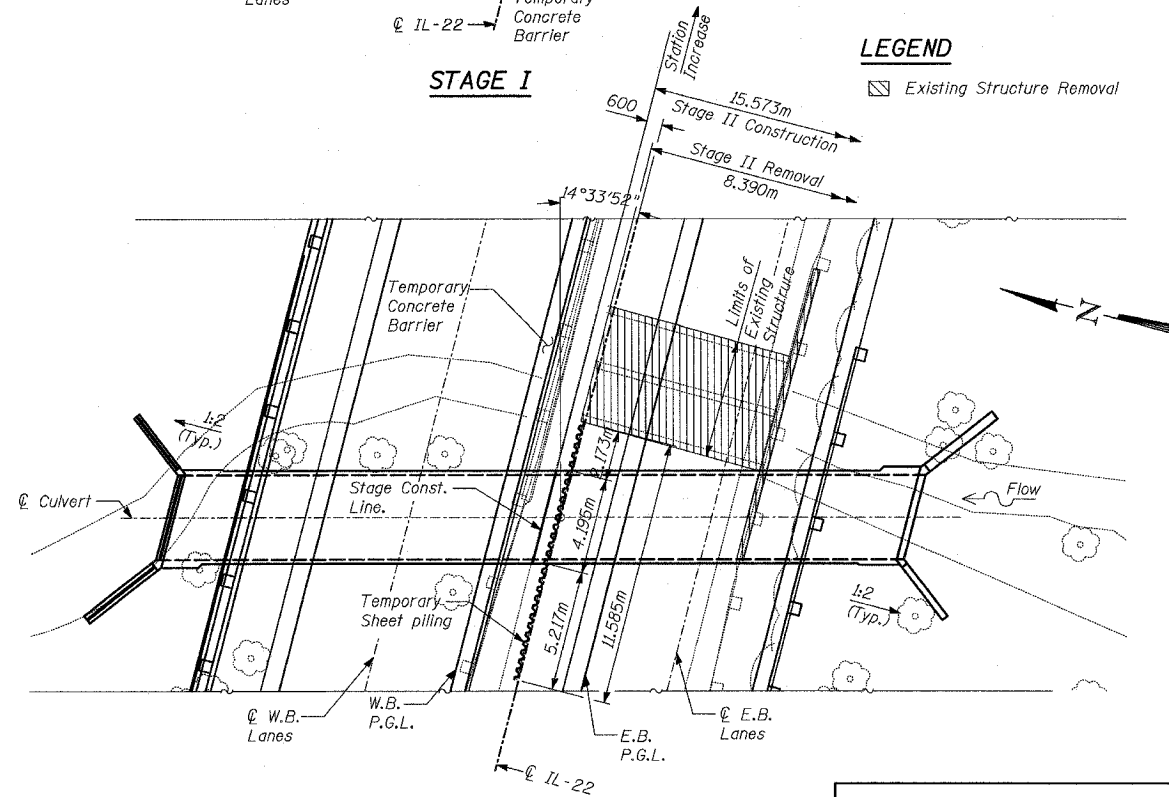


TEMPORARY SHEET PILING DESIGN

(Slopes and Distances shown along alignment of sheeting for structure with 14°33'52" skew)



STAGE I



STAGE II

FAP	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 2
337	20R-5	LAKE	552	428	9 SHEETS
FED. ROAD DIST. NO. 7		BLANKS		FED. AID PROJECT	
D-91-552-99		Contract No. 60881			

* Dimensions are measured along centerline of existing culvert.

LEGEND

Existing Structure Removal

BILL OF MATERIAL

Item	Unit	TOTAL
Temporary Sheet Piling	SQ M	82
Removal of Existing Structures No. 2	EACH	1

STAGE CONSTRUCTION

IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003

TYLINTERNATIONAL

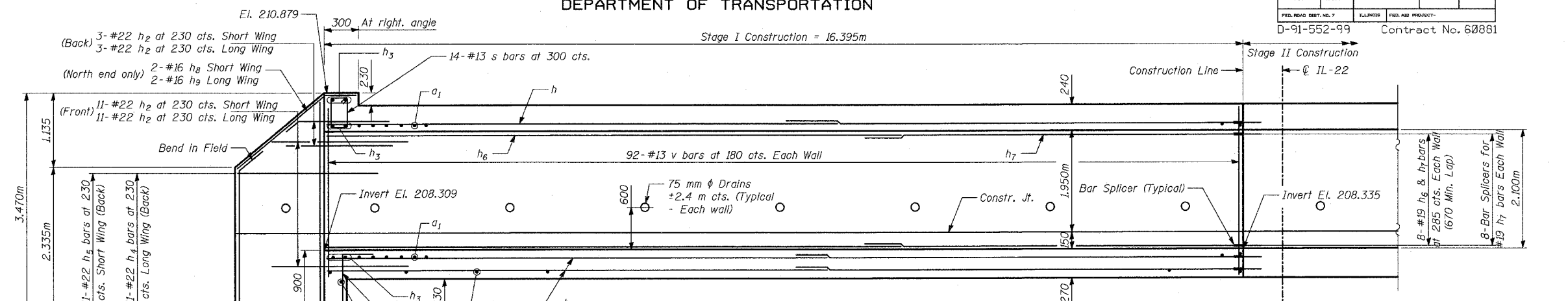
DESIGNED	MI, MAF
CHECKED	TD
DRAWN	MAF
CHECKED	TD, MI

DATE 03-22-2004

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	POST MILE	SHEET
337	20R-5	LAKE	562	429
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
D-91-552-99		Contract No. 60881		

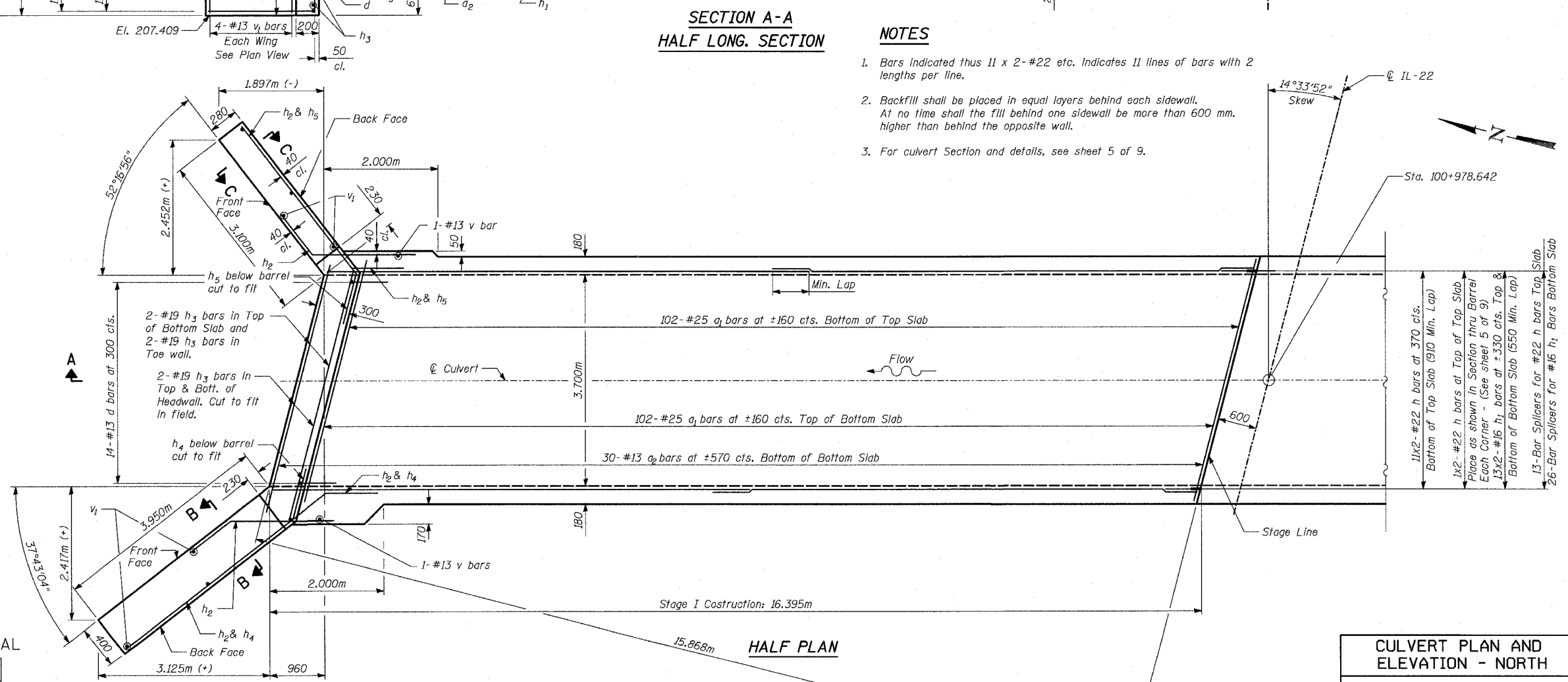
SHEET NO. 3
9 SHEETS



SECTION A-A
HALF LONG. SECTION

NOTES

1. Bars indicated thus 11 x 2-#22 etc. Indicates 11 lines of bars with 2 lengths per line.
2. Backfill shall be placed in equal layers behind each sidewall. At no time shall the fill behind one sidewall be more than 600 mm. higher than behind the opposite wall.
3. For culvert Section and details, see sheet 5 of 9.



HALF PLAN

TYLINT INTERNATIONAL

DESIGNED	MI, MAF
CHECKED	TD
DRAWN	MAF
CHECKED	TD, MI
DATE	03-22-2004

CULVERT PLAN AND
ELEVATION - NORTH

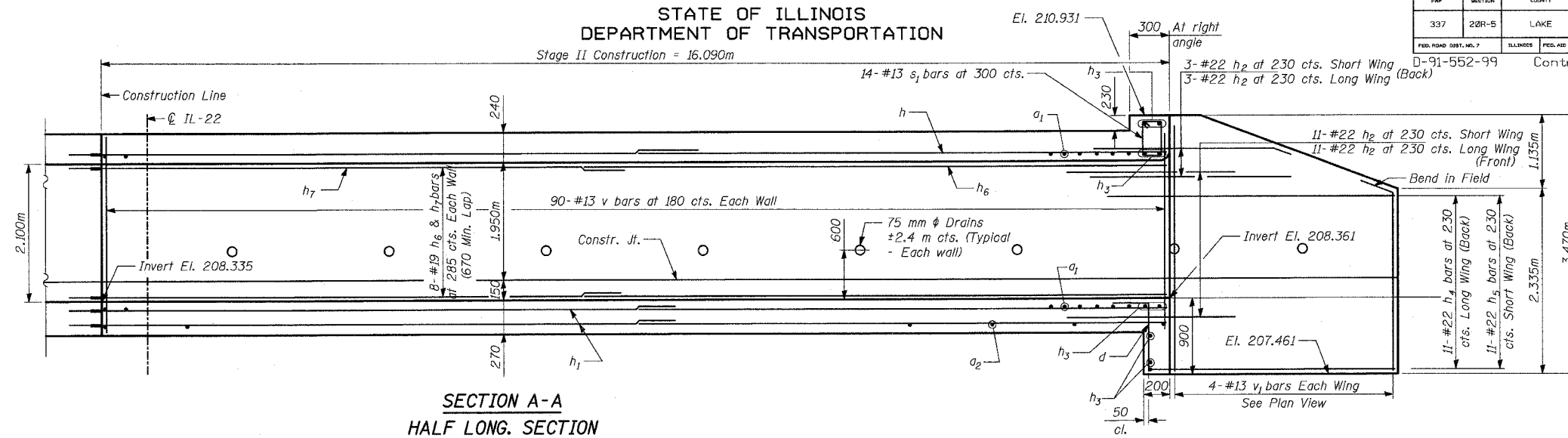
IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Stage II Construction = 16.090m

FAP	SECTION	COUNTY	STATION	SHEET
337	20R-5	LAKE	562	430
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
D-91-552-99		Contract No. 60881		

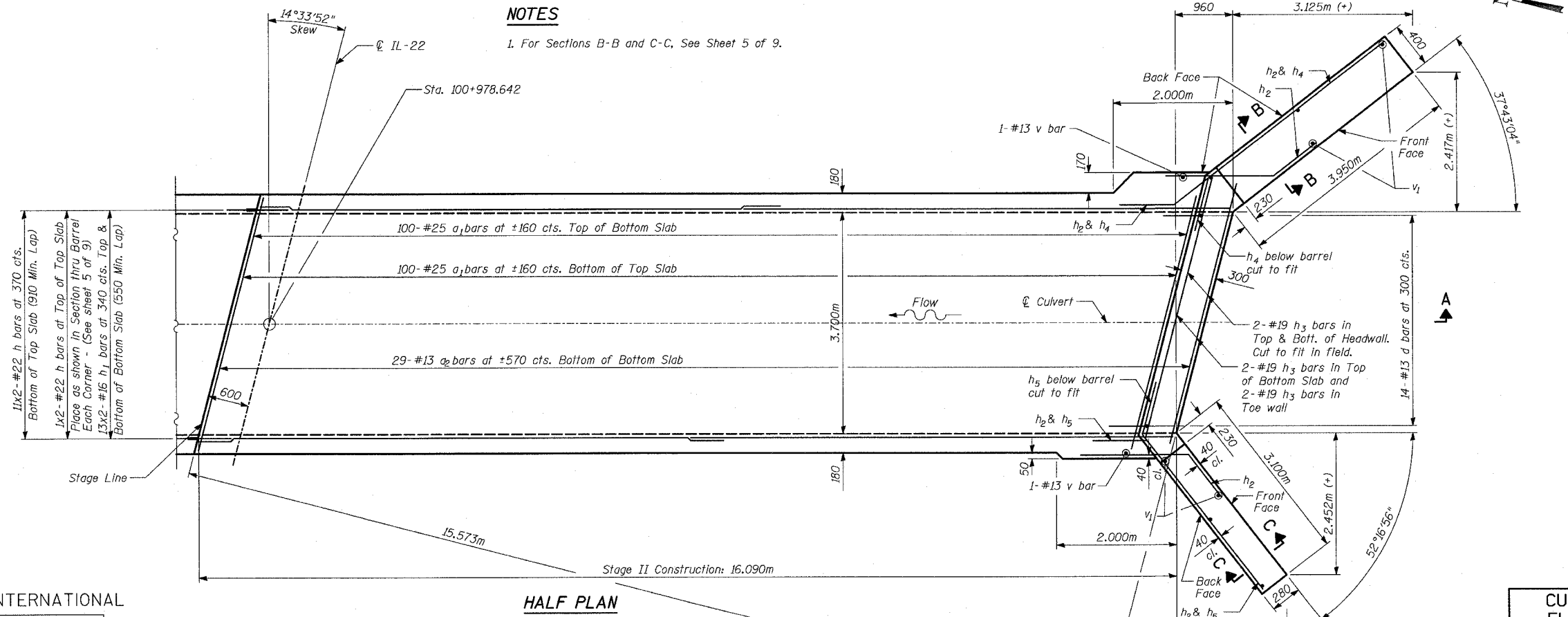
SHEET NO. 4
9 SHEETS



SECTION A-A
HALF LONG. SECTION

NOTES

1. For Sections B-B and C-C, See Sheet 5 of 9.



HALF PLAN

TYLIN INTERNATIONAL

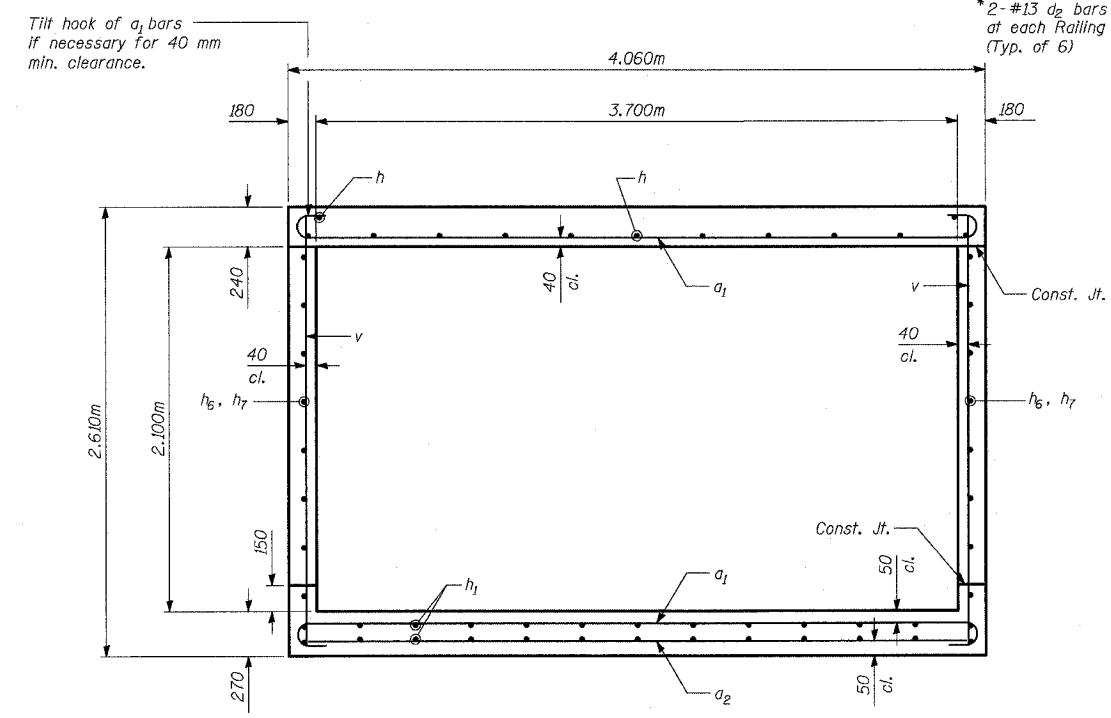
DESIGNED	MI, MAF
CHECKED	TD
DRAWN	MAF
CHECKED	TD, MI
DATE	03-22-2004

CULVERT PLAN AND
ELEVATION - SOUTH

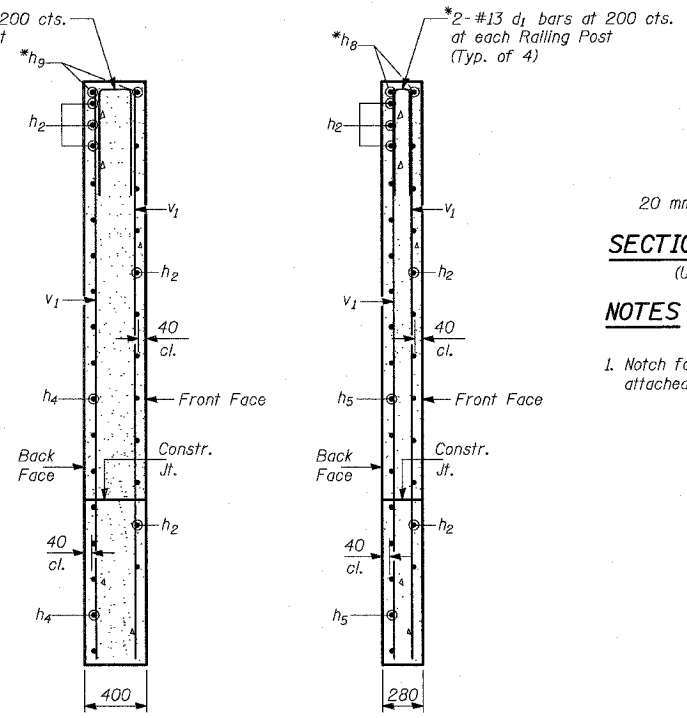
IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEET	SHEET
337	28R-5	LAKE	562	431
SHEET NO. 5				
9 SHEETS				
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
0-91-552-99		Contract No. 60881		

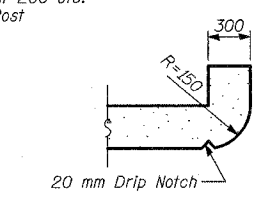


SECTION THRU BARREL



SECTION B-B SECTION C-C

* North end Wing Walls only.



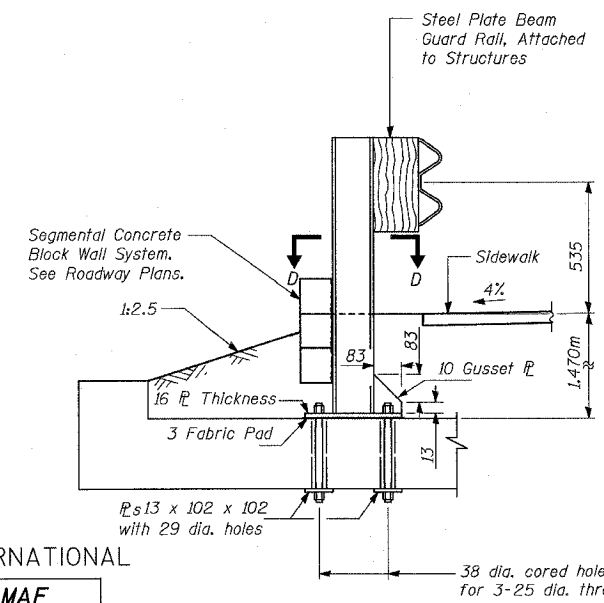
SECTION THRU HEADWALL
(Up Stream End Only)

NOTES

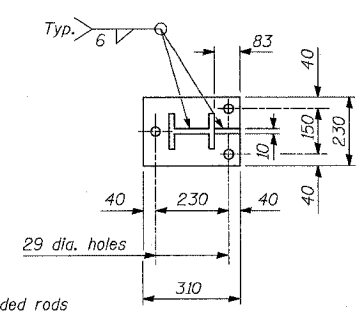
1. Notch formed by rough finished board attached to and removed with formwork.

LEGEND

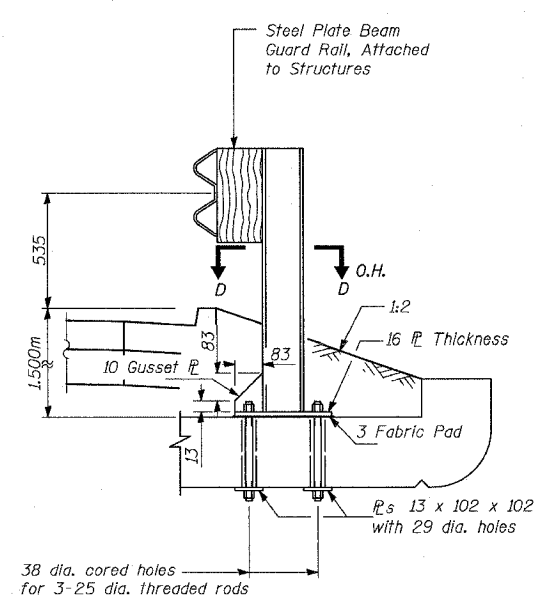
O.H. denotes opposite hand.



CROSS SECTION AT NORTH END

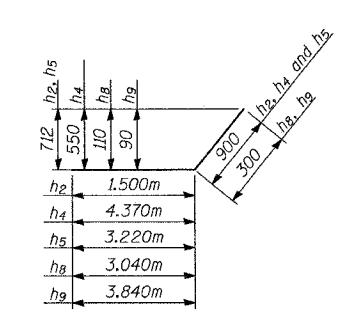


SECTION D-D

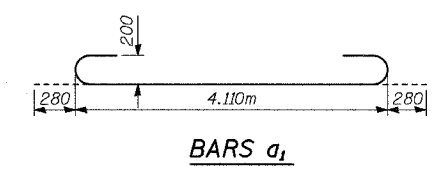


CROSS SECTION AT SOUTH END

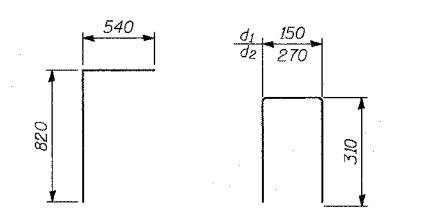
STEEL PLATE BEAM GUARD RAIL ATTACHED TO STRUCTURES



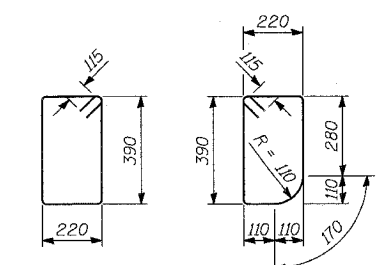
BARS h₂, h₄, h₅, h₆ and h₇



BARS a₁



BAR d BARS d₁ and d₂



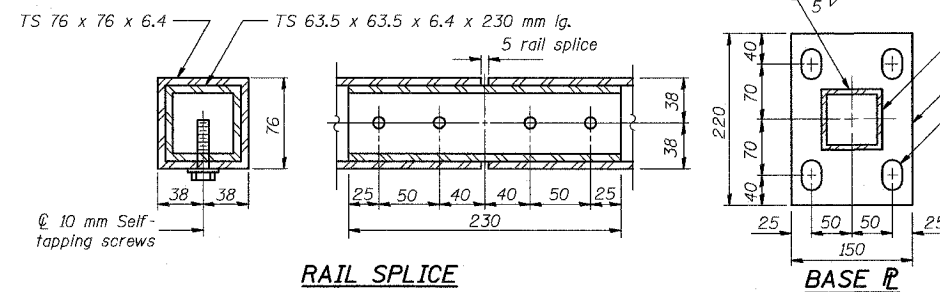
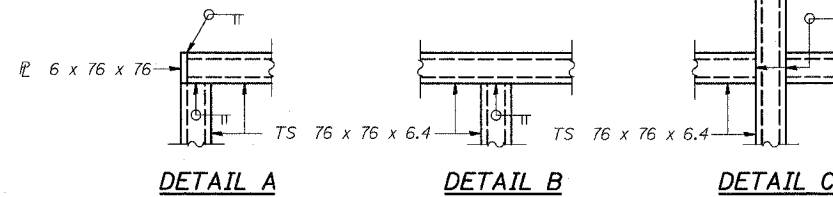
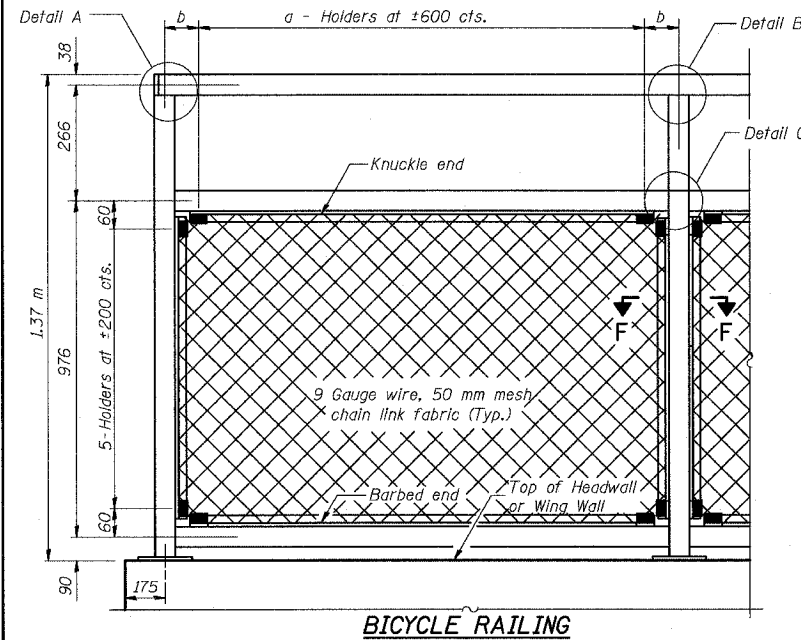
BAR S BAR S₁

CULVERT SECTIONS AND DETAILS		
IL ROUTE 22 OVER KILDEER CREEK FAP 337 SECTION 28R-5 LAKE COUNTY STA. 100+978.642 S.N. 049-C003		

DESIGNED	MI, MAF
CHECKED	TD
DRAWN	MAF
CHECKED	TD, MI
DATE	03-22-2004

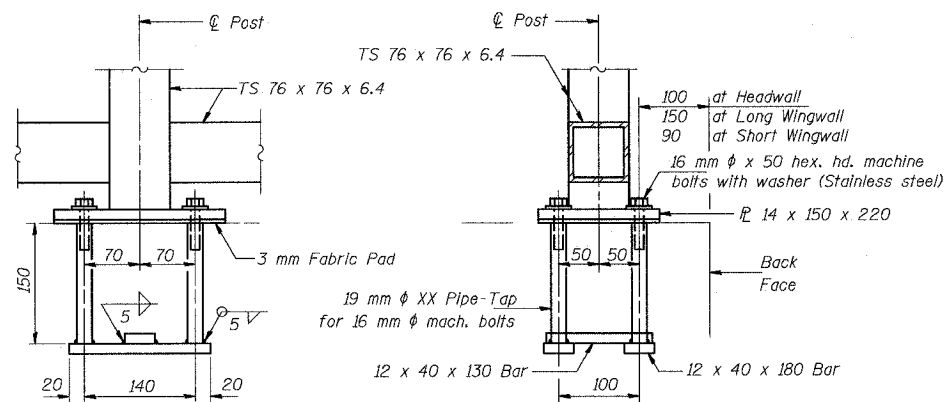
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	STATION	POST	SHEET NO. 6
337	20R-5	LAKE	562	432	9 SHEETS
FED. ROAD DIST. NO. 7					ILLINOIS
D-91-552-99					Contract No. 60881

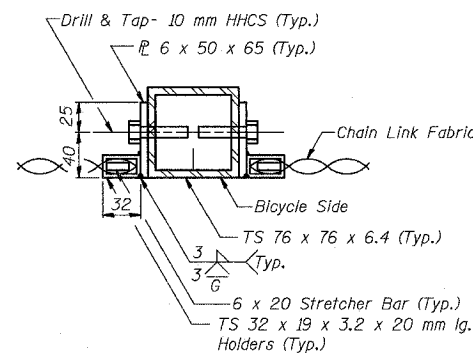


NOTES

- Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the Contract Unit Price per meter for Bicycle Railing.
- The 9 gauge fabric ties shall be according to Article 1006.27 (d) of the Standard Specifications.
- Installation of the chain link fabric shall be according to Section 664 of the Standard Specifications.
- Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500, Grade B, structural steel tubing.
- All other steel shapes and plates shall conform to the requirements of AASHTO M 270M Grade 250.
- The chain link fabric shall be placed along Bicycle Side as shown on Section F-F.
- Stretcher bars shall be used at all four sides of each panel.
- If the option of drilling and epoxy grouting the anchor rods is chosen, the Contractor shall use the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures. The capsule or the adhesive cartridge shall be sealed with premeasured amounts of the adhesive chemical.
- Space reinforcement to miss anchor rods.
- All dimensions are in millimeters (mm) except as noted.
- All posts, railing, splices, anchor devices, and bent plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. All bolts, nuts, washers and anchor rods shall be galvanized according to AASHTO M 232 except stainless steel bolts as noted.
- Vent holes for galvanizing shall be placed in the posts and rails at locations that will not allow the accumulation of moisture in the members.
- The chain link fabric shall conform to the requirements of Article 1006.27(a)(1)a, b or c of the Standard Specifications.



(In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting M16 anchor rods for the connections on top of the parapets. Embedment shall be according to the manufacturer's specifications.)



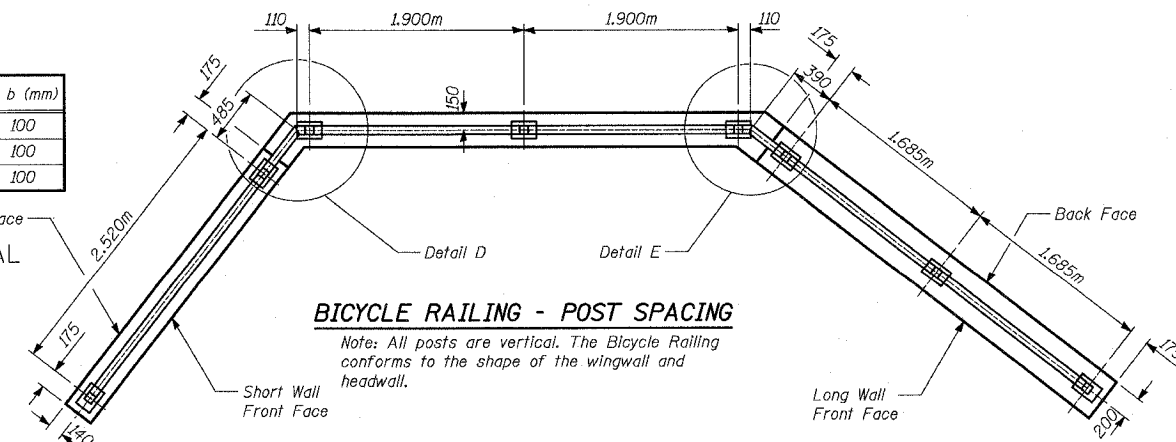
HOLDER TABLE

Post Spacing (m)	a (No.)	b (mm)
2.520	5	100
1.900	4	100
1.685	4	100

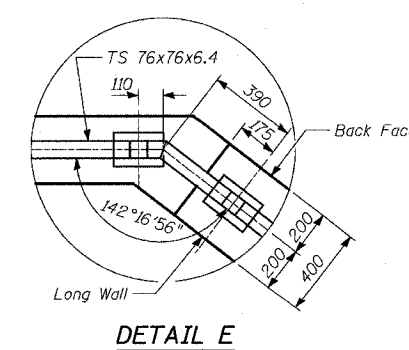
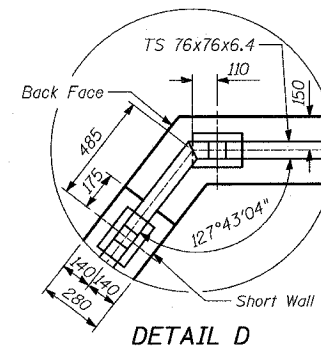
TY-LIN INTERNATIONAL

DESIGNED	DJR
CHECKED	MI
DRAWN	DJR
CHECKED	MI

DATE 03-22-2004



Note: All posts are vertical. The Bicycle Railing conforms to the shape of the wingwall and headwall.



BILL OF MATERIAL

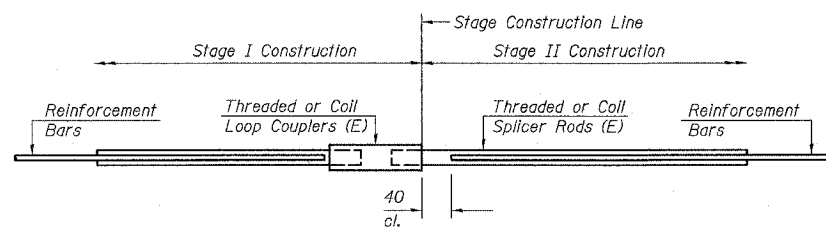
Item	Unit	Quantity
Bicycle Railing	METER	10.80

BICYCLE RAILING

IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	POST MILE	SHEET	SHEET NO. 7
337	20R-5	LAKE	562	433	9 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-			
D-91-552-99		Contract No. 60881			



BAR SPLICER ASSEMBLY DETAIL

Bar Size	No. Assemblies Required	Location
#22	13	Top Slab
#19	16	Walls
#16	26	Bottom Slab

The diameter of this part is the same as the diameter of the bar spliced.

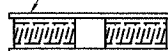
The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



**** ONE PIECE**

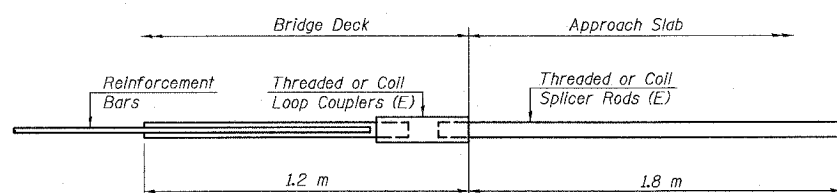
Wire Connector



WELDED SECTIONS

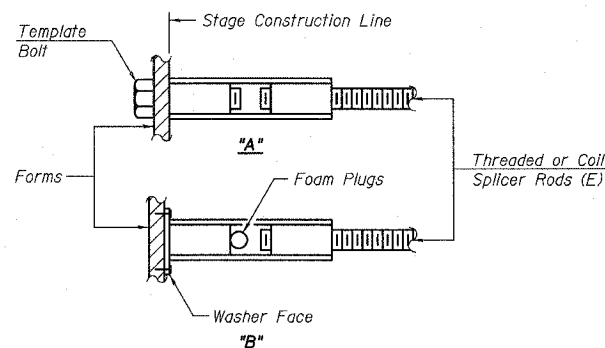
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #15 BAR**

Min. Capacity = 100 kN - tension
Min. Pull-out Strength = 40 kN - tension
No. Required =



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars. Splicer rods shall be of minimum 420 MPa yield strength, threaded or coiled full length. All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars. Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- Minimum Capacity = $1.25 \times 10^{-3} \times f_y \times A_t$
(Tension in kN)
- Minimum *Pull-out Strength = $1.25 \times 10^{-3} \times f_{s_{allow}} \times A_t$
(Tension in kN)

Where f_y = Yield strength of lapped reinforcement bars in MPa.
 $f_{s_{allow}}$ = Allowable tensile stress in lapped reinforcement bars in MPa (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars (mm^2).
* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kN - tension	Min. Pull-Out Strength kN - tension
#13	510 mm	68	27
#16	610 mm	102	41
#19	790 mm	147	59
#22	1.04 m	201	80
#25	1.37 m	262	105

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."
All dimensions are in millimeters (mm) except as noted.

TYLIN INTERNATIONAL

DESIGNED	TD, MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI
DATE	03-22-2004

BAR SPLICER (COUPLER) DETAILS

IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	QUANTITY	DATE	PRICE
337	20R-5	LAKE	562	434
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
D-91-552-99		Contract No. 60881		

SHEET NO. 8
9 SHEETS

OBA
O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
(647)398-1441 • FAX(647) 398-2376

STRUCTURE FOUNDATION
BORING LOG

Sh 1 of 1

Project: Subsurface Investigation for the Proposed IL Route 22 Reconstruction
Route: F.A.P. Route 337 County: Lake Date: 3-7-01
Location: IL Route 83 to U.S. Route 41, Lake County IL Bored By: Patrick
IDOT Job No. P-91-552-99 Checked By: DOB

BORING NO. B-1
Station 100+002
Offset 10.9m Right

SOIL TYPE	DEPTH (m)	QU (kPa)	W (%)	REMARKS	RECOVERY (in)	QU (kPa)	W (%)
Ground Surface Elevation	210.8						
SILTY CLAY to CLAY- trace organics-dark brown- stiff (A-6) Fill	210.0	120P	40	CLAY-gray-very stiff to hard (A-6)		402B	18
CLAY-brown-stiff (A-6)	209.3 -1.5	170B	23			297B	22
CLAY-brown-hard (A-6)	207.9 -3.0	488B	21	CLAY-gray-stiff to very stiff (A-6)		172B	24
CLAY-gray-stiff to very stiff (A-6)	199.5	194B	18			301B	20
CLAY-gray-hard (A-6)	-4.5	220B	18			427B	19
CLAY-gray-stiff to very stiff (A-6)	204.8	143B	21			431B	20
CLAY-gray-very stiff to hard (A-6)	-7.5	451B	16			479B	21

Surface Water Elev. N/A
Groundwater Depth -6.4m WD
Groundwater Depth Dry AB
After Hours

END OF BORING @ -14.5m
Hollow Stem Augers
CME Automatic Hammer

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O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
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STRUCTURE FOUNDATION
BORING LOG

Sh 1 of 2

Project: Subsurface Investigation for the Proposed IL Route 22 Reconstruction
Route: F.A.P. Route 337 County: Lake Date: 3-7-01
Location: IL Route 83 to U.S. Route 41, Lake County IL Bored By: Patrick
IDOT Job No. P-91-552-99 Checked By: DOB

BORING NO. B-2
Station 100+976
Offset 0.5m Left

SOIL TYPE	DEPTH (m)	QU (kPa)	W (%)	REMARKS	RECOVERY (in)	QU (kPa)	W (%)
Ground Surface Elevation	211.2						
203mm ASPHALT, 203mm CONCRETE	211.2						
CLAY to CLAY LOAM- dark brown-stiff (A-6) Fill	210.8	120P	12			483B	20
TOPSOIL-black (Fill)	-1.5	120P	32	CLAY-gray-very stiff to hard (A-6)		402B	23
CLAY-dark brown & gray- stiff (A-6) Wet	-3.0	120P	27			287B	24
Note: Sand Seam @ -3.4m							
CLAY-gray- stiff to very stiff (A-6)	-4.5	135B	19			192B	17
Note: Sand Seam @ -5.7m							
Poorly Graded SAND with GRAVEL- gray-loose (A-1-b)	204J	NP	17			475B	18
CLAY-gray-very stiff to hard	-15.0	285B	17			316B	20

Surface Water Elev. N/A
Groundwater Depth 4.4m WD
Groundwater Depth Dry AB
After Hours

N-Standard Penetration Test (ASTM D-1586) Type Failure
R-Recovery in Inches
NR-No Recovery
B-Bulge Failure
E-Estimated Value
S-Shear Failure
P-Penetrometer
QU-Unconfined Compressive Strength (kPa) (+ wt. (kN/m³)) noted in
W-Water Content, percent dry weight
NP-Non-Plastic
Italics above w%

N-Standard Penetration Test (ASTM D-1586) Type Failure
R-Recovery in Inches
NR-No Recovery
B-Bulge Failure
E-Estimated Value
S-Shear Failure
P-Penetrometer
QU-Unconfined Compressive Strength (kPa) (+ wt. (kN/m³)) noted in
W-Water Content, percent dry weight
NP-Non-Plastic
Italics above w%

TYLINT INTERNATIONAL

DESIGNED	MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI
DATE	03-22-2004

BORING LOGS	
IL ROUTE 22 OVER KILDEER CREEK FAP 337 SECTION 20R-5 LAKE COUNTY STA. 100+976.642 S.N. 049-C003	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	AREA	POST	SHEET NO. 9 9 SHEETS
337	20R-5	LAKE	562	435	
FED. ROAD DIST. NO. 7		CLINDER	FED. AID PROJECT-		Contract No. 60881
D-91-552-99					

OBA
O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
(847) 398-1441 • FAX (847) 398-2376

STRUCTURE FOUNDATION
BORING LOG

Sh 2 of 2

Project: Subsurface Investigation for the Proposed IL Route 22 Reconstruction
 Route: F.A.P. Route 337 County: Lake Date: 3-7-01
 Location: IL Route 83 to U.S. Route 41, Lake County IL Bored By: Patrick
 IDOT Job No. P-91-552-99 Checked By: DOB

BORING NO. B-2
Station: 100+976
Offset: 0.5m Left

Soil Description	BLOW COUNTS 30mm	R	Qu (kPa)	W (%)	Surface Water Elev. N/A Groundwater Depth 4.4m WD Groundwater Depth Dry AB After Hours	CORRECTIONS BLOW COUNTS 30mm	R	Qu (kPa)	W (%)
CLAY-gray-very stiff to hard (A-6)									
	4		15.8						
	8								
	12		325B	21	-24.0				
END OF BORING @ -16.5m Hollow Stem Augers CME Automatic Hammer									
					-18.0				
					-25.5				
					-27.0				
					-21.0				
					-28.5				
					-30.0				

N-Standard Penetration Test (ASTM D-1586) Type Failure
 R-Recovery in inches B-Bulge Failure S-Shear Failure Qu-Unconfined Compressive Strength (kPa) (wt. (kN/m³)) noted in
 NR-No Recovery E-Estimated Value P-Penetrometer W-Water Content, percent dry weight Italics above w%
 NP-Non-Plastic

OBA
O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
(847) 398-1441 • FAX (847) 398-2376

STRUCTURE FOUNDATION
BORING LOG

Sh 1 of 1

Project: Subsurface Investigation for the Proposed IL Route 22 Reconstruction
 Route: F.A.P. Route 337 County: Lake Date: 3-7-01
 Location: IL Route 83 to U.S. Route 41, Lake County IL Bored By: Patrick
 IDOT Job No. P-91-552-99 Checked By: DOB

BORING NO. B-3
Station: 100+964
Offset: 14.1m Left

Soil Description	BLOW COUNTS 30mm	R	Qu (kPa)	W (%)	Surface Water Elev. N/A Groundwater Depth Dry WD Groundwater Depth Dry AB After Hours	CORRECTIONS BLOW COUNTS 30mm	R	Qu (kPa)	W (%)
Ground Surface Elevation: 09.9									
TOPSOIL-dark brown to black Wet	2								
	3								
	5		168P	60					16.6
CLAY-gray-very stiff to hard (A-6)									
	4								
	6								
	8								
	10		356B	19					
CLAY-dark brown & gray-stiff (A-6) Wet									
	2								
	7								
	5		132P	26					
CLAY-brown & gray-very stiff (A-6)									
	3								
	7								
	5		311P	20					
	4								
	5								
	6		192B	20					
CLAY-gray-stiff to very stiff (A-6)									
	2								
	2								
	3		96P	20					
CLAY-gray-medium stiff to stiff (A-6) Wet									
	2								
	2								
	3		228P	23					
	3								
	3								
	5		205B	21					
CLAY-gray-very stiff to hard (A-6)									
	3								
	3								
	4		158B	25					
	2								
	2								
	3		86B	27					
CLAY-gray-very stiff to hard (A-6)									
	3								
	5								
	7		422B	19					

N-Standard Penetration Test (ASTM D-1586) Type Failure
 R-Recovery in inches B-Bulge Failure S-Shear Failure Qu-Unconfined Compressive Strength (kPa) (wt. (kN/m³)) noted in
 NR-No Recovery E-Estimated Value P-Penetrometer W-Water Content, percent dry weight Italics above w%
 NP-Non-Plastic

TYLINT INTERNATIONAL

DESIGNED	
CHECKED	
DRAWN	MAF
CHECKED	

DATE 03-22-2004

BORING LOGS

IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003

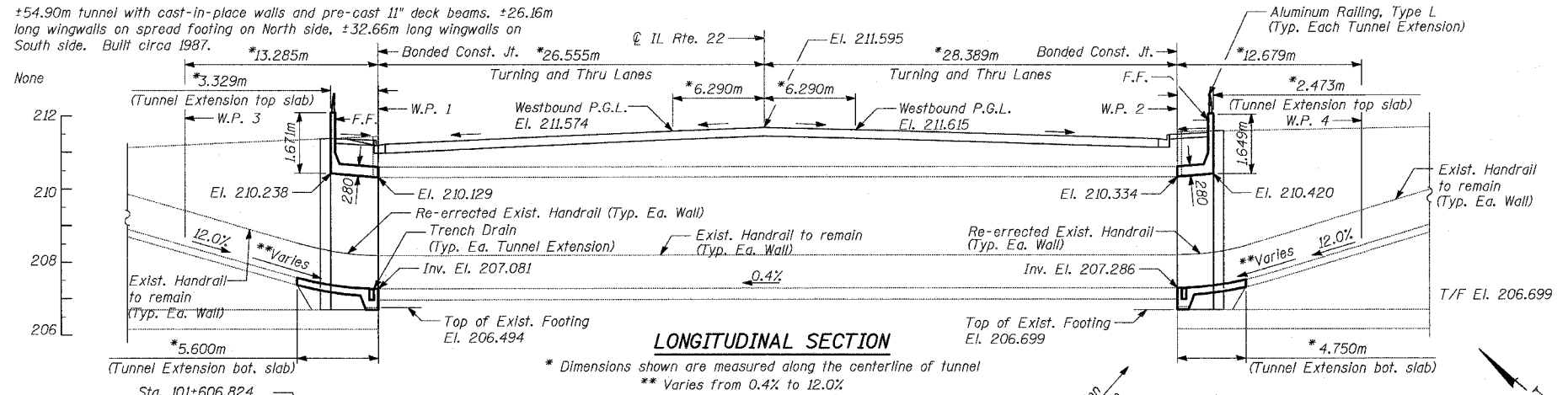
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	AREA	DATE	SHEET NO. /
337	20R-5	LAKE	562	436	7 SHEETS
D-91-552-99 Contract No. 60881					

Bench Mark: BM #208 - Set cross on the northerly bolt of a fire hydrant on the north side of Route 22. Approximately 106m west of entrance to Woodland Commons. Station: 101+767.35 19.20m Lt. El. 212.143m

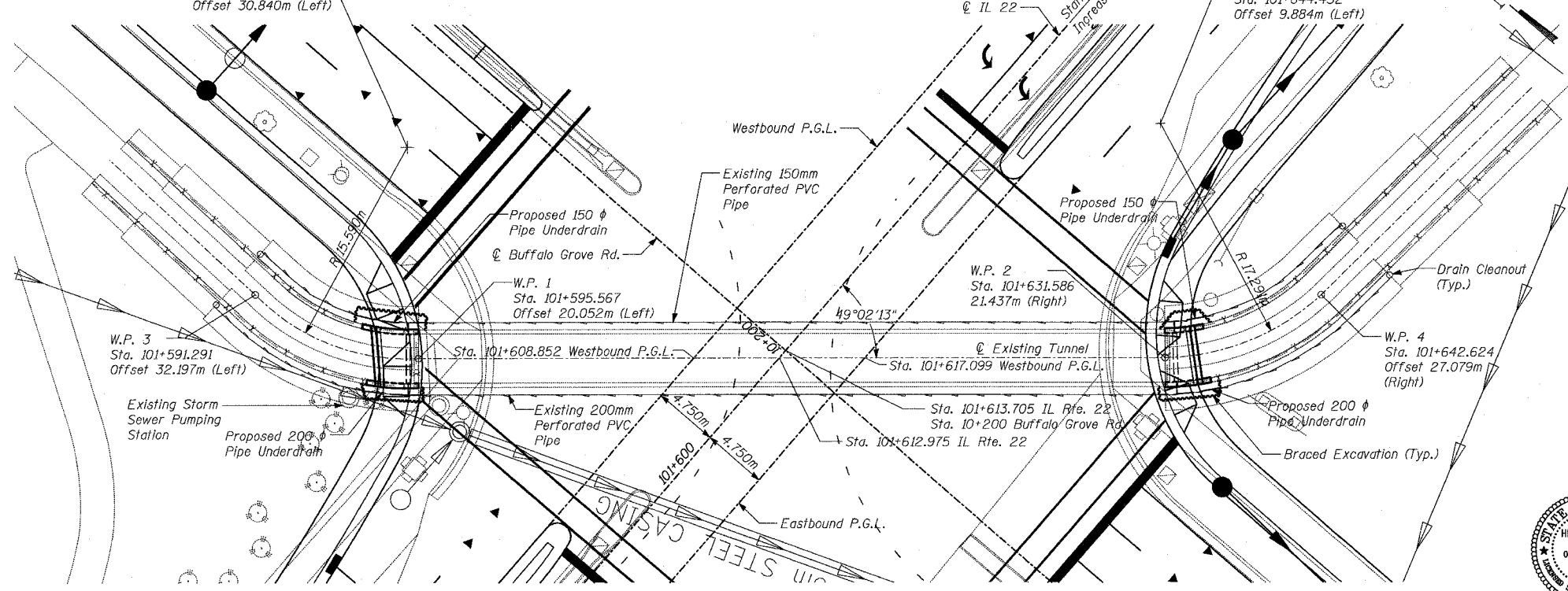
Existing Structure: +54.90m tunnel with cast-in-place walls and pre-cast 11" deck beams. ±26.16m long wingwalls on spread footing on North side, ±32.66m long wingwalls on South side. Built circa 1987.

Salvage: None



LONGITUDINAL SECTION

* Dimensions shown are measured along the centerline of tunnel
** Varies from 0.4% to 12.0%



PLAN

TOTAL BILL OF MATERIAL

Item	Unit	TOTAL
Protective Coat	SQ M	20
Concrete Removal	CU M	43
Structure Excavation	CU M	14
Reinforcement Bars	KG	4,450
Aluminum Railing, Type L	METER	9
Removing and Re-erecting Existing Railing	METER	7
Concrete Box Culvert	CU M	32
Pipe Underdrains for Structures 150mm	METER	8
Pipe Underdrains for Structures 200mm	METER	9
Trench Drain	METER	8
Braced Excavation	CU M	80
Remove and Re-erect Existing Handrail	METER	25

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M31M, or M322M Grade 400

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Exposed edges shall be beveled 19mm

All construction joints shall be bonded

All dimensions are in millimeters (mm) except as noted.

Tunnel extensions at both ends to be constructed from December 1 to March 1 only.

Connect the Trench Drain to the existing drainage system.

Design Fill Height = 0.600m

INDEX OF SHEETS

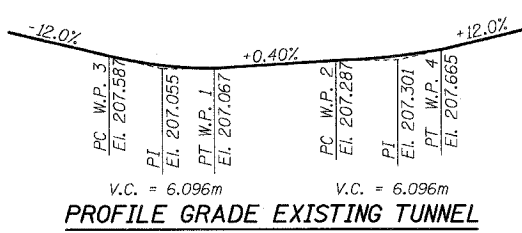
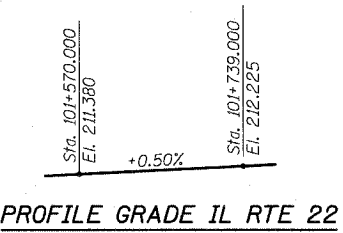
1. GENERAL PLAN
2. REMOVAL PLAN AND FENCE DETAIL
3. TUNNEL EXTENSION - NORTH
4. TUNNEL EXTENSION - SOUTH
5. TUNNEL EXTENSION - DETAILS 1
6. TUNNEL EXTENSION - DETAILS 2
7. TYPE L ALUMINUM RAILING



Signed: Heather J. Gaffney, S.E. I.L. Lic. No. 081-004961 Expires 11-30-2004
Date: 3/12/04

TYLIN INTERNATIONAL

DESIGNED	MI, DJR
CHECKED	TD
DRAWN	DJR
CHECKED	TD, MI
DATE	03-22-2004



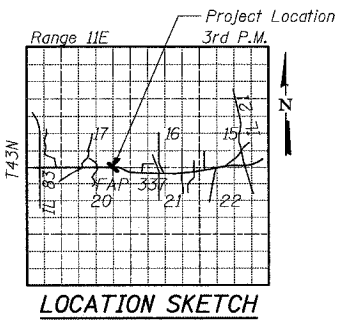
DESIGN SPECIFICATION
AASHTO 2002 Standard Specifications for Highway Bridges.

LOADING MS18 & ALT.
Allow 2.4 KN/m for future wearing surface.

DESIGN STRESSES

FIELD UNITS
f'c = 24 MPa
fy = 420 MPa (Reinforcement)

Max. soil pressure under footing = 124 kPa

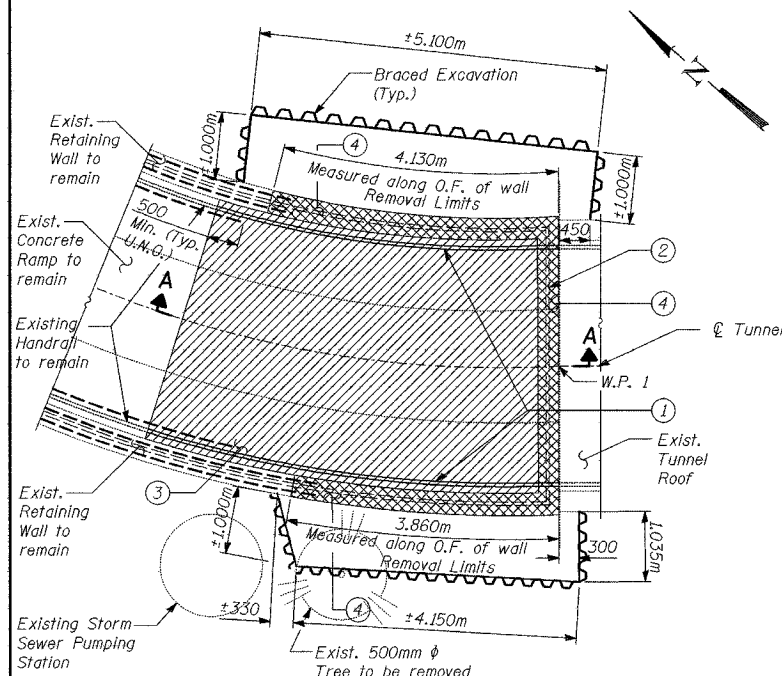


GENERAL PLAN

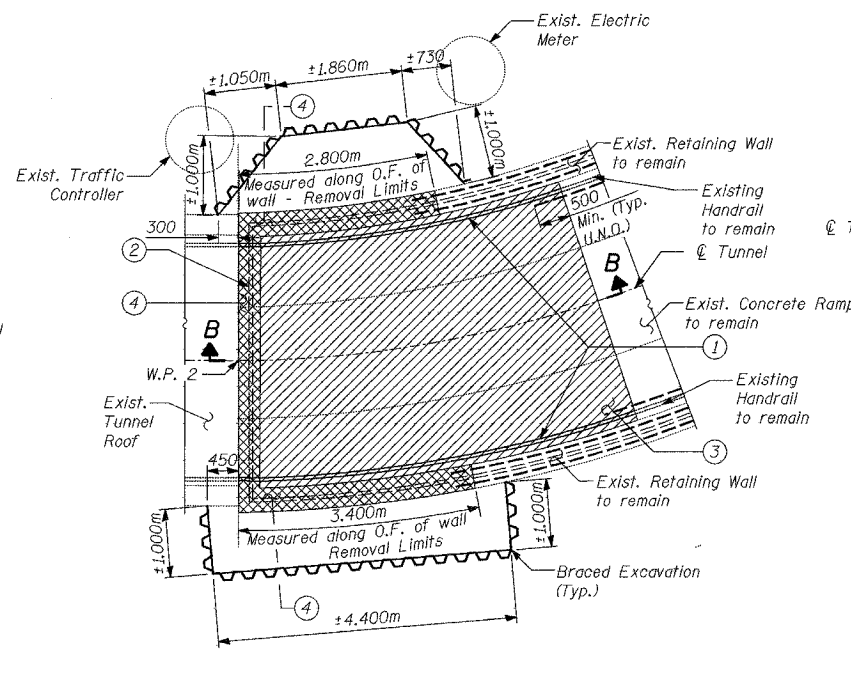
IL ROUTE 22 OVER PEDESTRIAN TUNNEL EXTENSION
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 101+613.705
S.N. 049-T017

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

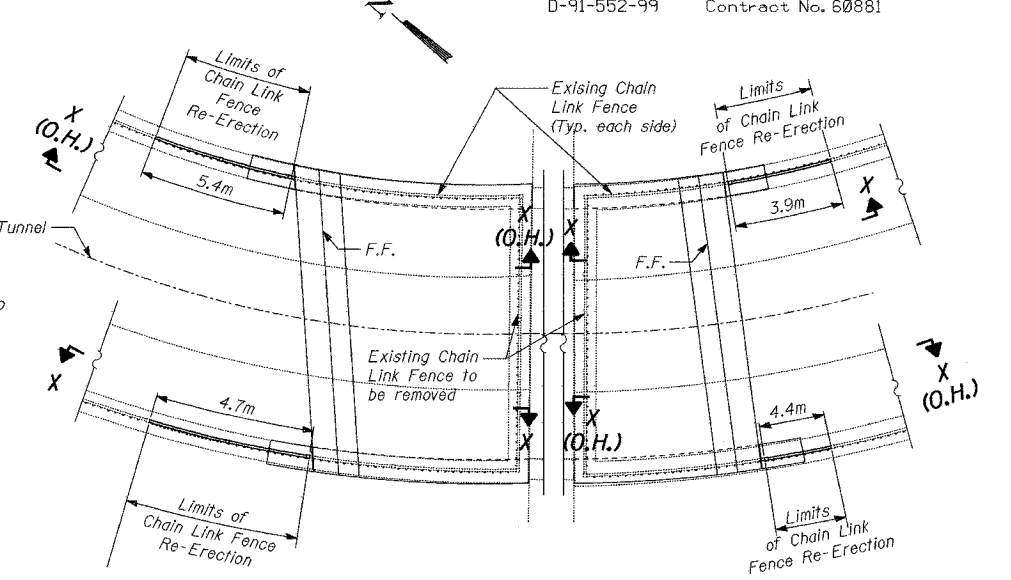
FAP	SECTION	COUNTY	SHEET	SHEET NO.
337	20R-5	LAKE	562	437
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
D-91-552-99		Contract No. 60881		



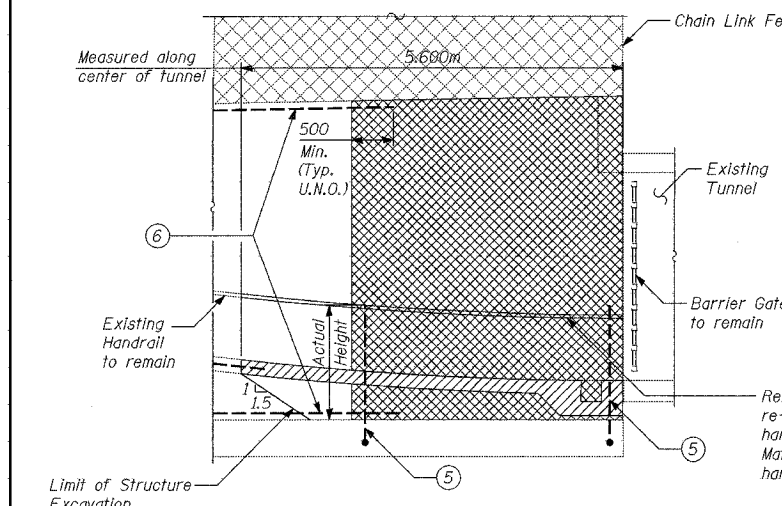
PLAN
North Extension



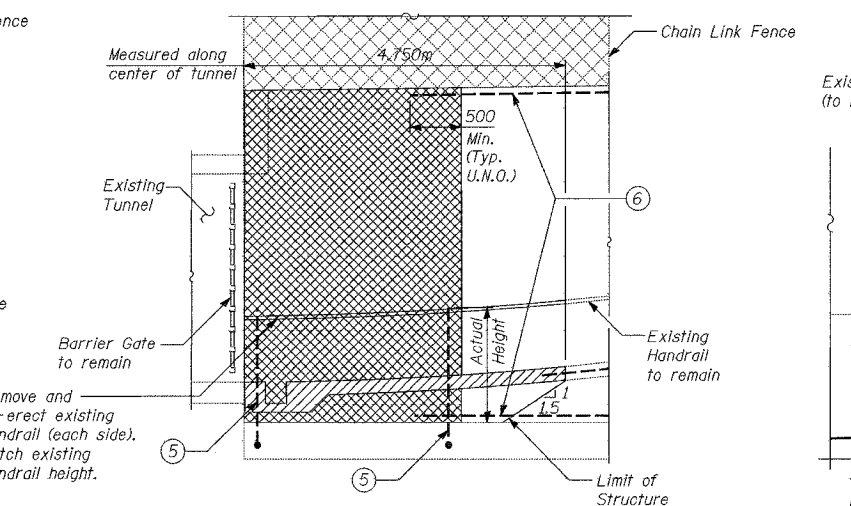
PLAN
South Extension



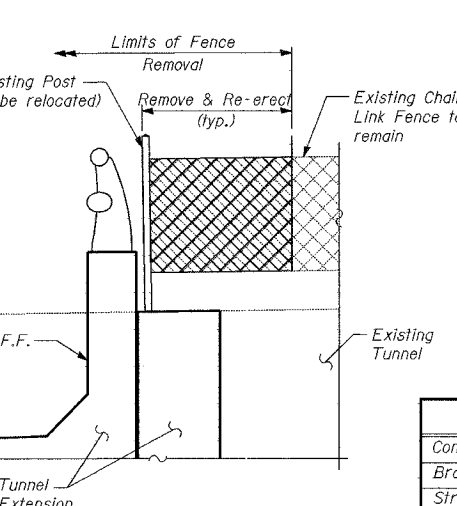
EXISTING CHAIN LINK FENCE REMOVAL AND REPLACEMENT



SECTION A-A



SECTION B-B



SECTION X-X
(Existing Chain Link Fence Removal Detail)

LEGEND

- ① Existing Handrail to be removed & re-erected for the new wall construction.
 - ② Existing Chain Link Fence to be removed and re-erected for the new wall construction.
 - ③ Removal of existing Concrete Ramp Slab.
 - ④ Removal of existing Retaining Walls & Headwall.
 - ⑤ Existing Footing Dowels to be preserved after concrete removal, (typ. each face).
 - ⑥ Existing wall reinforcement to be preserved after concrete removal (typ. each face - each wall).
- O.F. Denotes - Outside Face.
I.F. Denotes - Inside Face.
F.F. Denotes - Front Face.
O.H. Denotes - Opposite Hand.
U.N.O. Denotes - Unless Noted Otherwise.

BILL OF MATERIAL

Item	Unit	TOTAL
Concrete Removal	CU M	43
Braced Excavation	CU M	80
Structure Excavation	CU M	14
Chain Link Fence to be Removed and Re-erected	METER	18.4
Remove and Re-erect Existing Handrail	METER	25

NOTES

- The design of the braced excavation is the responsibility of the Contractor. The Contractor shall submit drawings and design for the braced excavation to the Engineer for approval. The braced excavation design and drawings shall be signed and sealed by an Illinois Licensed Structural Engineer, submitted and approved prior to commencing of any work. The Engineer's approval shall not relieve the Contractor from the sole responsibility of the structural integrity of the braced excavation system.
- Sand blast, clean and cut existing waterstop.
- Any reinforcement bars that are damaged during concrete removal operations at the edge of the slabs and wing walls shall be repaired or replaced using approved bar splicer or anchorage system. Cost included with "Concrete Removal".
- Sand blast clean existing reinforcing bars to be incorporated into new construction. After cleaning, bars shall be evaluated to determine if additional reinforcing bars are required. Damaged or cut bars, or bars that have lost 25% or more of their original cross sectional area shall be supplemented by new in-kind reinforcement bars, to the approval of the engineer. Cost included with concrete removal.

- The Contractor shall verify locations of all underground utilities before installing any of the braced excavation system components or commencing excavation. Any disturbance or damage to the existing structure, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department.

TYLIN INTERNATIONAL

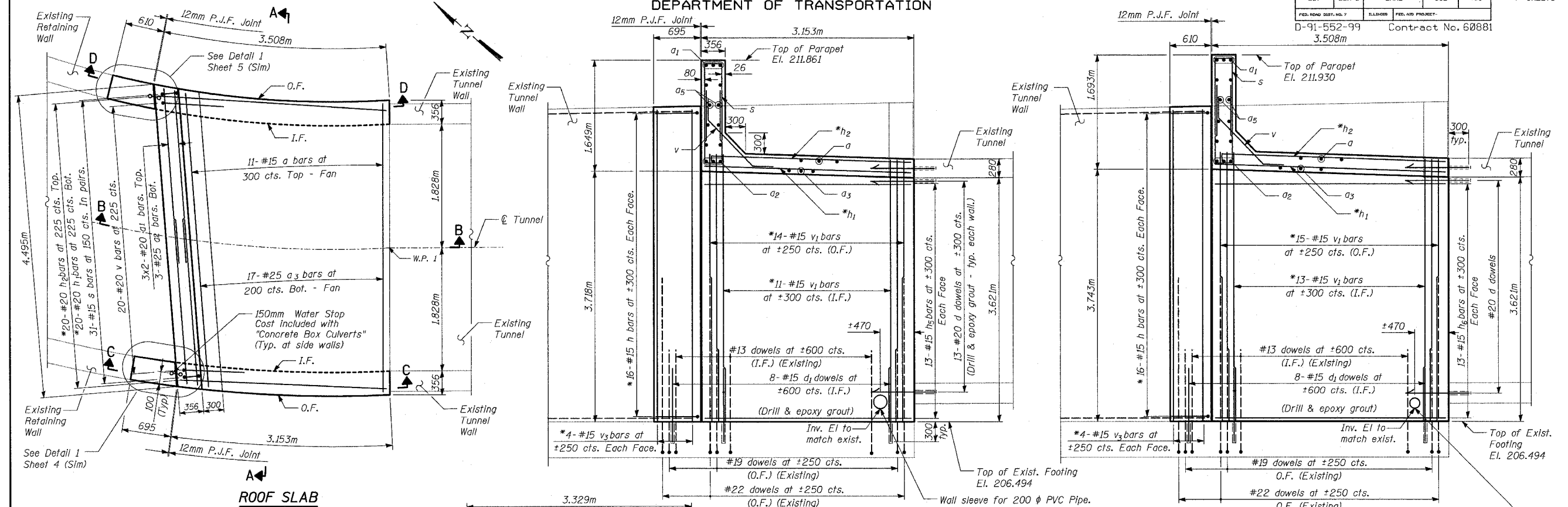
DESIGNED	TD. DJR
CHECKED	MI
DRAWN	DJR
CHECKED	MI
DATE	03-22-2004

REMOVAL PLAN AND FENCE DETAIL

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL EXTENSION
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 101+613.705
S.N. 049-T017

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEET	DATE	SHEET NO. 3
337	20R-5	LAKE	562	438	7 SHEETS
D-91-552-99 Contract No. 60881					



NOTES

1. Bars indicated thus: 3x2-#20 etc., indicate three lines of bars with two lengths per line.
2. For Section A-A, see Sheet 5.
3. Concrete cover - 40mm min. (Typ. U.N.O.).
4. Backfill shall be placed in equal layers behind each sidewall. At no time shall the fill behind one sidewall be more than 600mm higher than behind the opposite wall.
5. For details 1 and 2 see sheet 4.
6. For bar bending diagrams and Bill of Material see sheet 6.

LEGEND

- I.F. Denotes - Inside Face
- O.F. Denotes - Outside Face
- U.N.O. Denotes - Unless Noted Otherwise
- F.F. Denotes - Front Face

TYLINT INTERNATIONAL

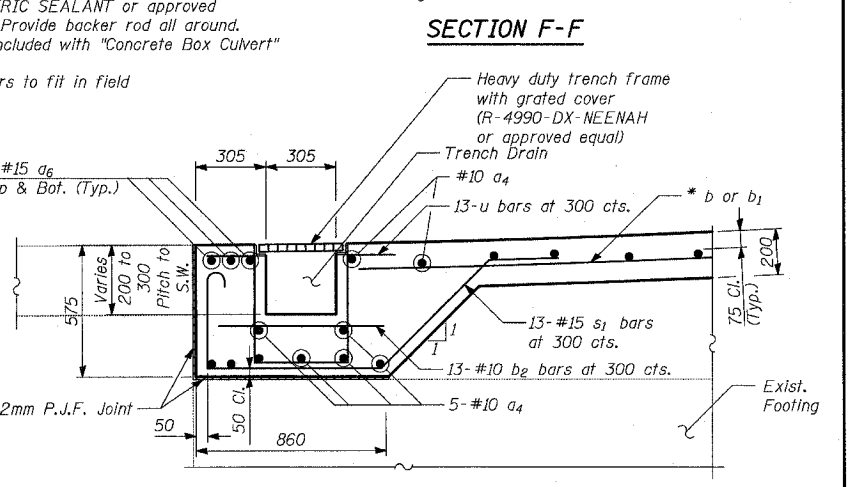
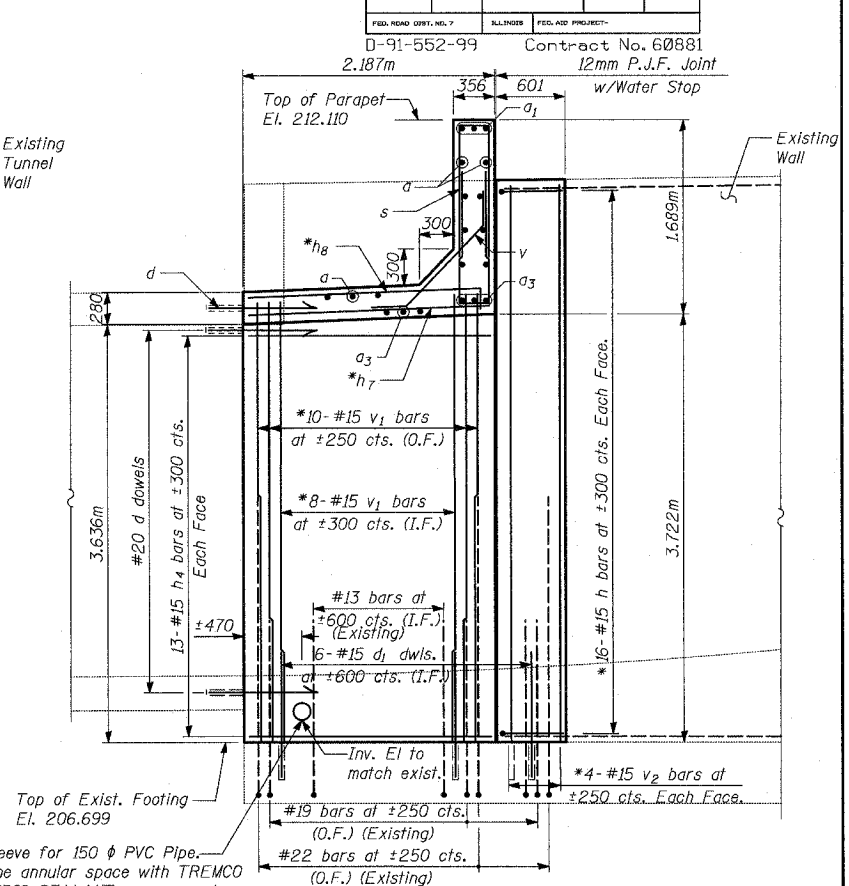
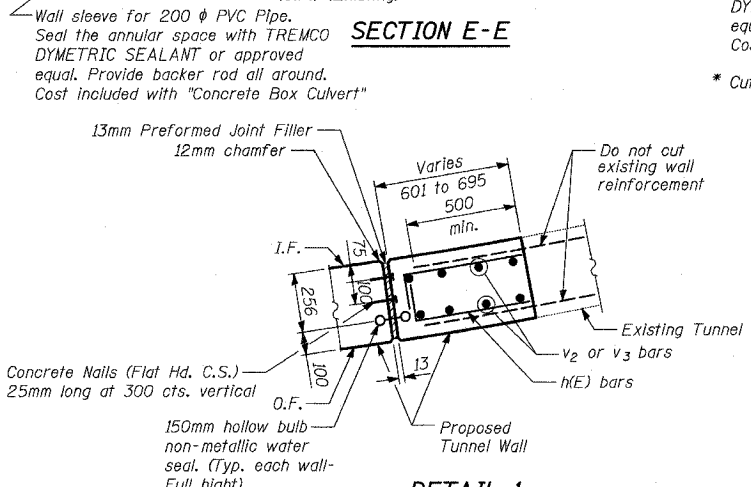
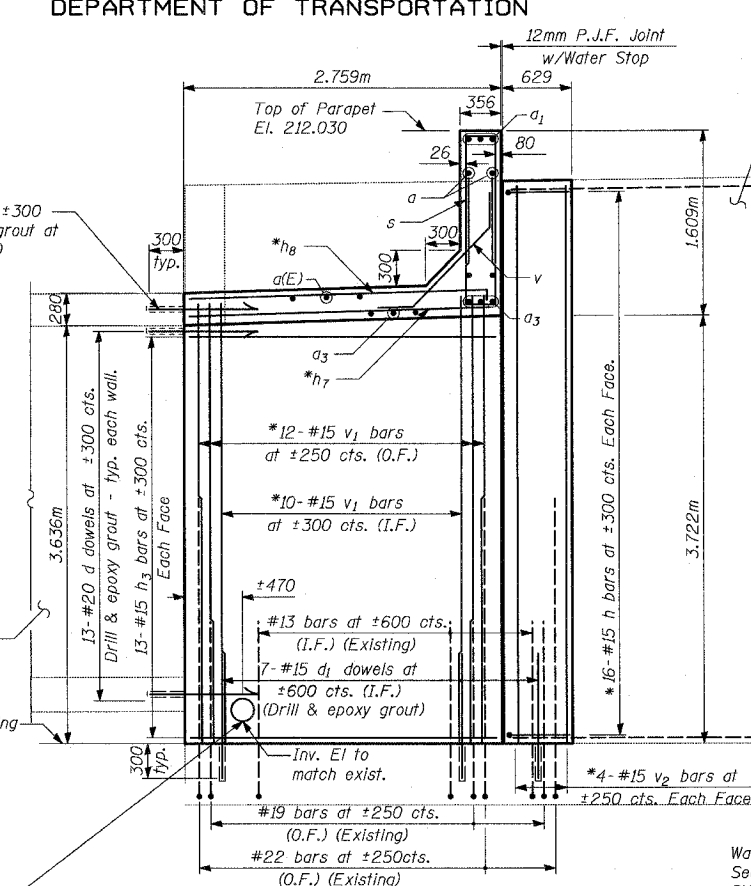
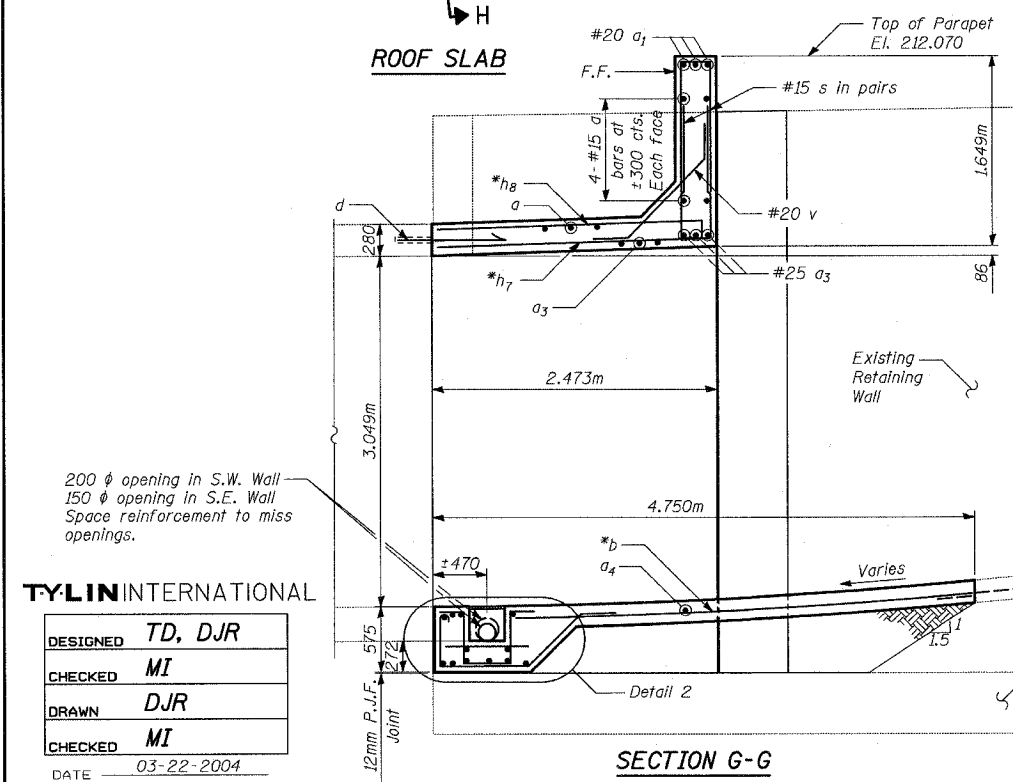
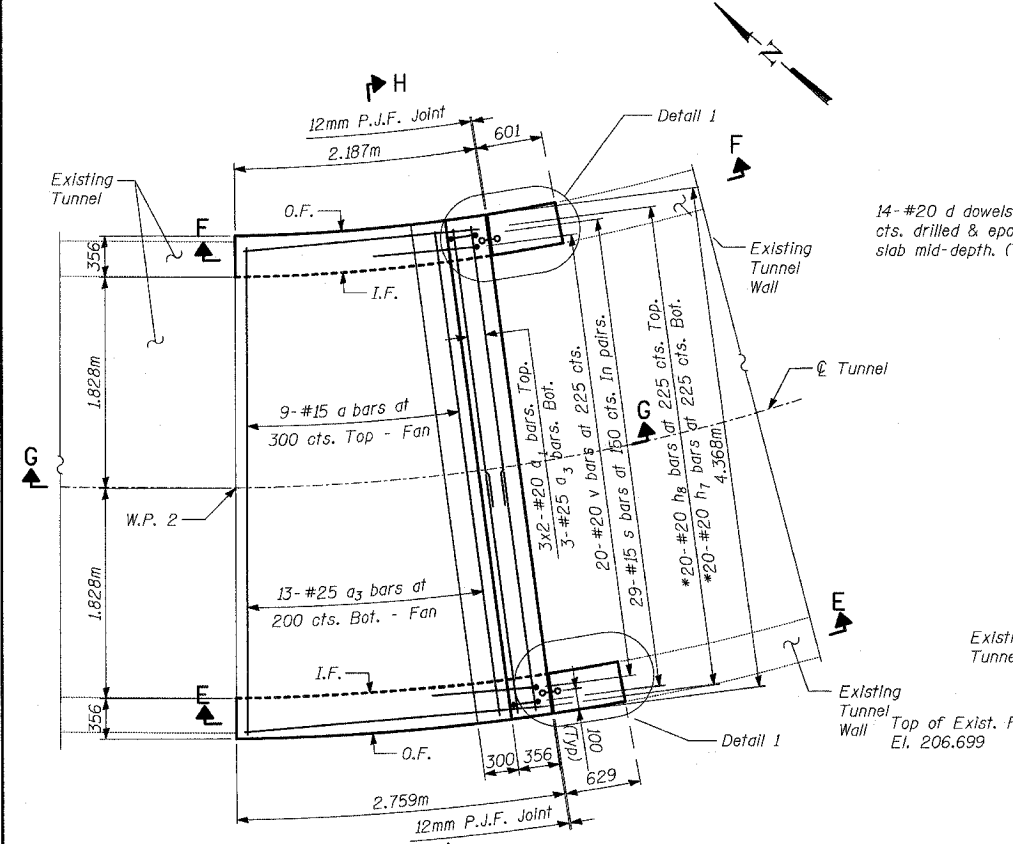
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CHECKED	MI
DRAWN	DJR
CHECKED	MI
DATE	03-22-2004

TUNNEL EXTENSION NORTH

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL EXTENSION
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 101+613.705
S.N. 049-T017

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	ROUTE	POST MILE	SHEET NO.
337	20R-5	LAKE	562	439	7 SHEETS
D-91-552-99 Contract No. 60881					
12mm P.J.F. Joint w/Water Stop					



TY-LIN INTERNATIONAL

DESIGNED	TD, DJR
CHECKED	MI
DRAWN	DJR
CHECKED	MI
DATE	03-22-2004

- NOTES**
- For Notes and Legend, See Sheet 3.
 - Notch formed by rough finished board attached to and removed with form work.
 - For Section H-H, See Sheet 5.

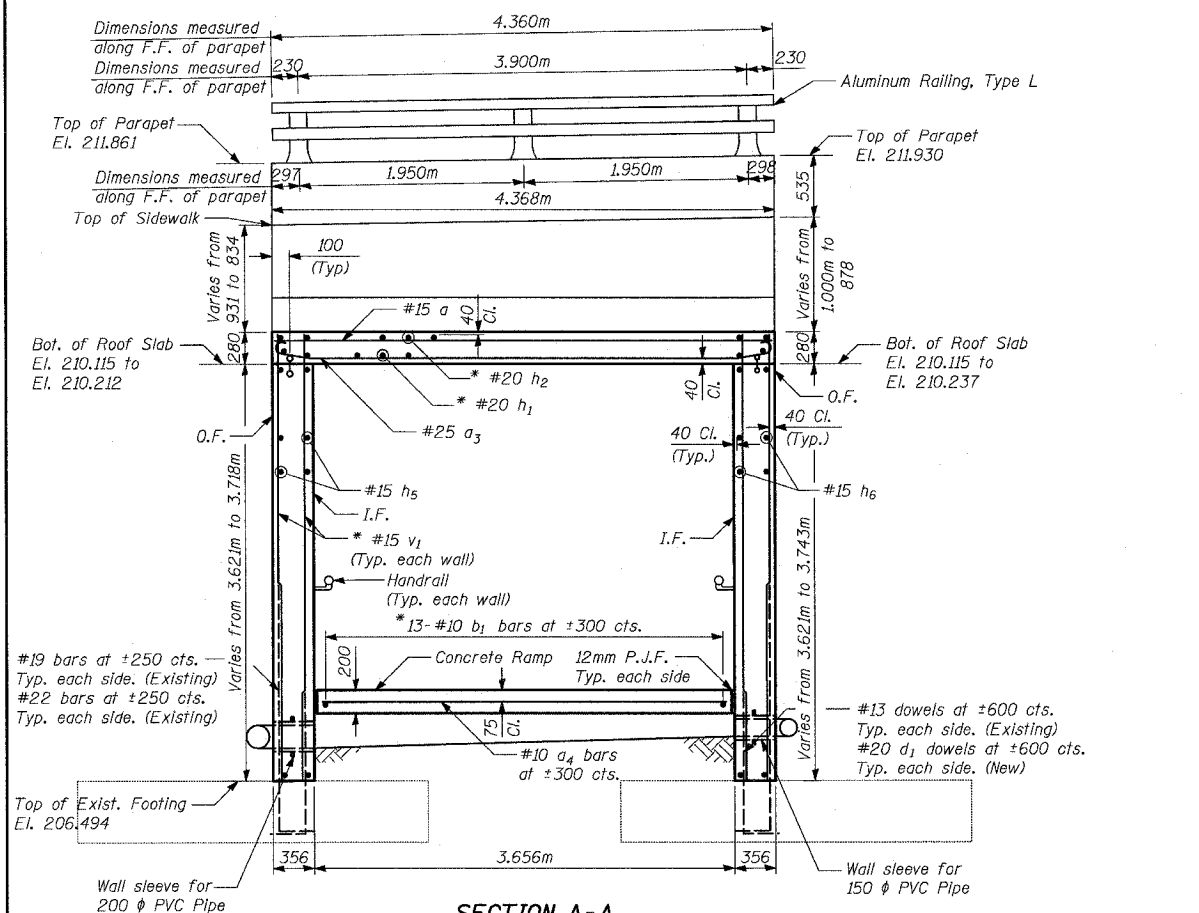
TUNNEL EXTENSION SOUTH

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL EXTENSION
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 101+613.705
S.N. 049-T017

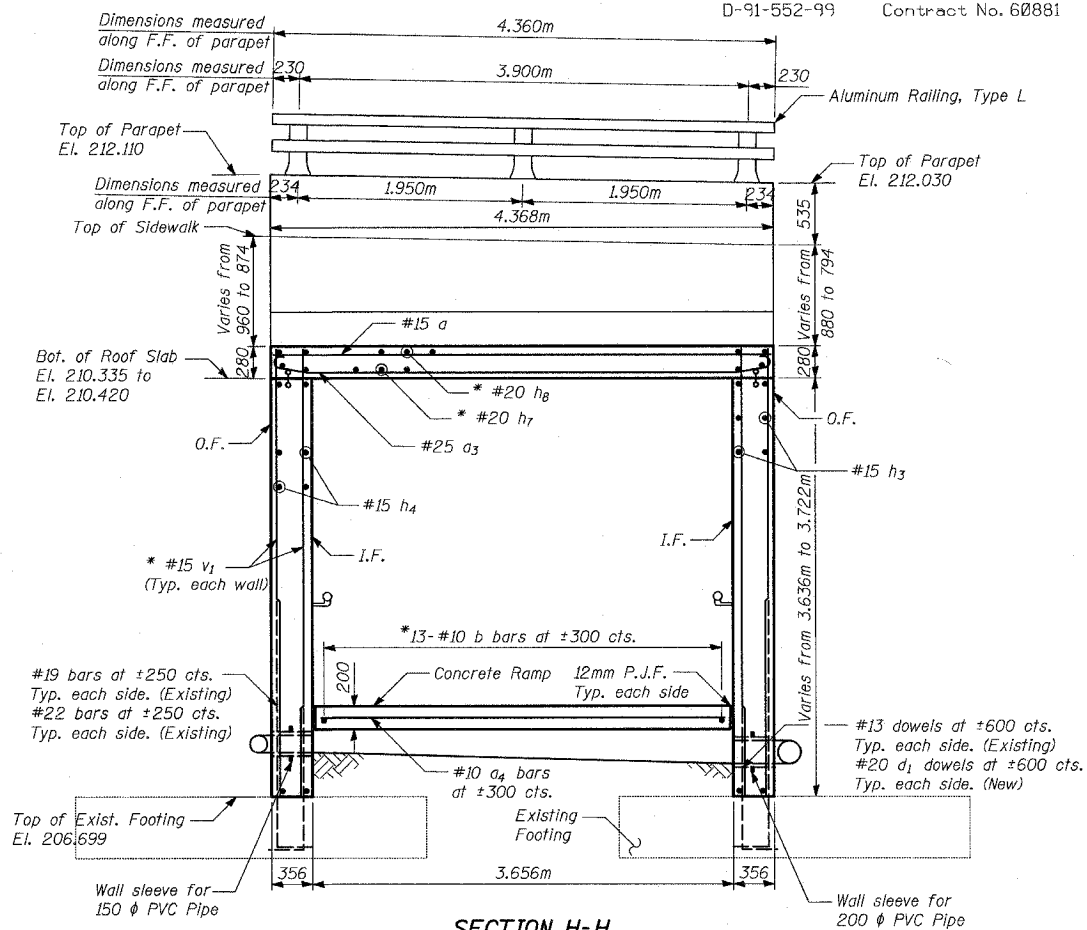
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	DATE	SHEET
337	20R-5	LAKE	562	448
FED. ROAD DIST. NO. 7		DRAWN	FED. ROAD PROJECT	
D-91-552-99		Contract No. 60881		

SHEET NO. 5
7 SHEETS

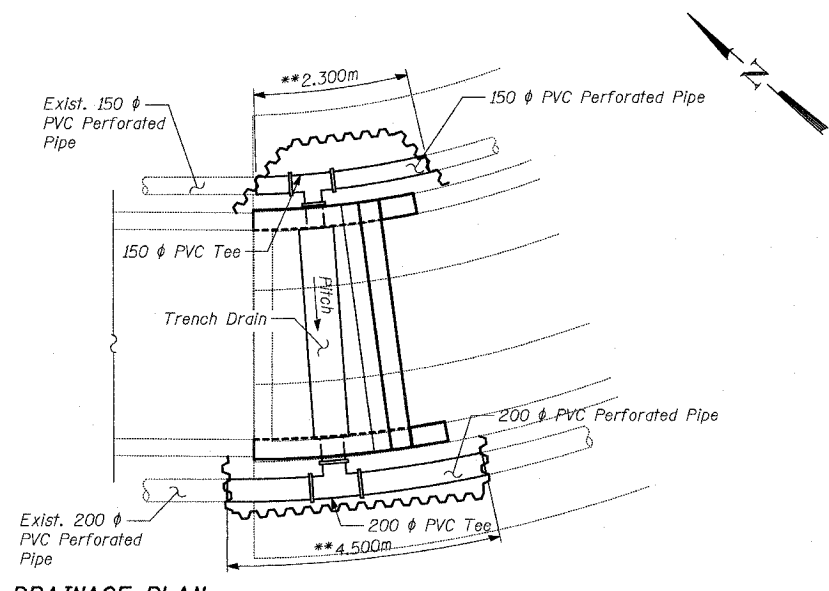
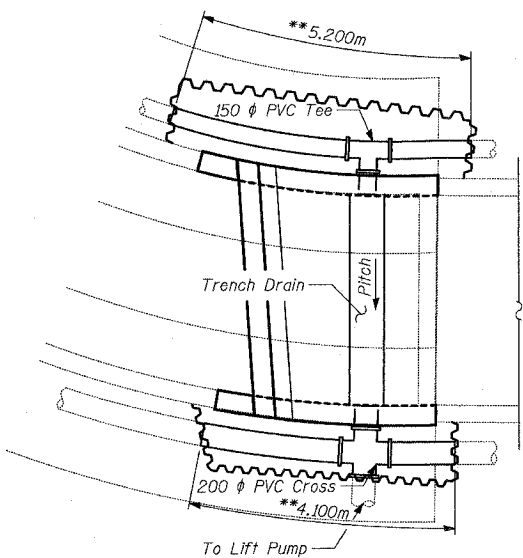


SECTION A-A
(North Tunnel Extension)



SECTION H-H
(South Tunnel Extension)

* Cut bars to fit in field.
 ** Limits of pipe removal and replacement.



DRAINAGE PLAN

NOTES:

All dimensions are measured normal to the tunnel centerline, unless noted otherwise.

LEGEND

- F.F. Denotes - Front Face.
- I.F. Denotes - Inside Face.
- O.F. Denotes - Outside Face.

TUNNEL EXTENSION
DETAILS 1

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL EXTENSION
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 101+613.705
S.N. 049-T017

TY-LIN INTERNATIONAL

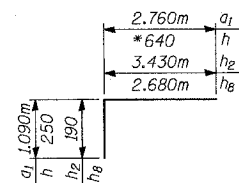
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CHECKED	MI
DRAWN	DJR
CHECKED	MI
DATE	03-22-2004

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

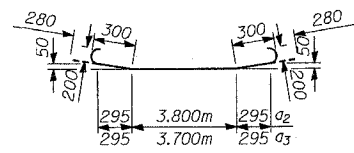
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337	20R-5	LAKE	562	441	7 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
D-91-552-99		Contract No. 60881			

BILL OF MATERIAL

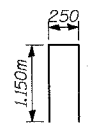
Bar	No.	Size	Length (m)	Shape
a	28	#15	4.30	—
a ₁	12	#20	3.85	┌
a ₂	3	#25	4.96	┌
a ₃	33	#25	4.86	┌
a ₄	41	#10	3.56	—
a ₅	8	#15	4.42	—
a ₆	12	#15	3.56	—
b	13	#10	5.50	—
b ₁	13	#10	5.70	—
b ₂	26	#10	0.84	—
d	80	#20	1.00	┌
d ₁	29	#15	0.80	┌
h	128	#15	0.89	┌
h ₁	20	#20	3.43	┌
h ₂	20	#20	3.62	┌
h ₃	26	#15	2.70	┌
h ₄	26	#15	2.13	┌
h ₅	26	#15	3.10	┌
h ₆	26	#15	3.45	┌
h ₇	20	#20	2.68	┌
h ₈	20	#20	2.87	┌
s	120	#15	2.55	┌
s ₁	26	#15	2.40	┌
u	26	#15	1.74	┌
v	40	#20	1.72	┌
v ₁	93	#15	3.95	┌
v ₂	16	#15	4.95	┌
v ₃	16	#15	4.62	┌
Protective Coat		SO M	20	
Concrete Box Culverts		CU M	32	
Reinforcement Bars		KG	4,450	
Trench Drain		METER	8	
Pipe Underdrains for Structures 150mm		METER	8	
Pipe Underdrains for Structures 200mm		METER	9	



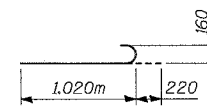
**BARS a₁, h,
h₂ & h₈**



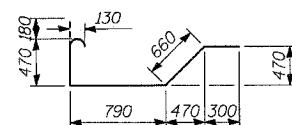
BARS a₂ & a₃



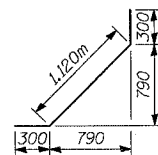
BAR s



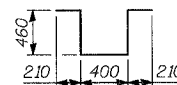
BAR d



BAR s₁



BAR v



BAR u

TYLIN INTERNATIONAL

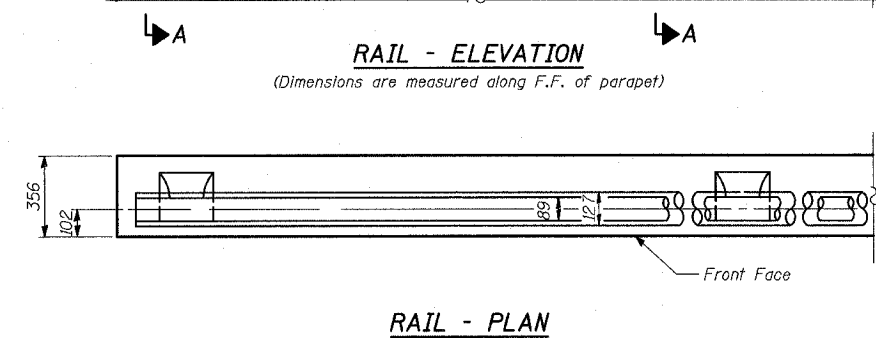
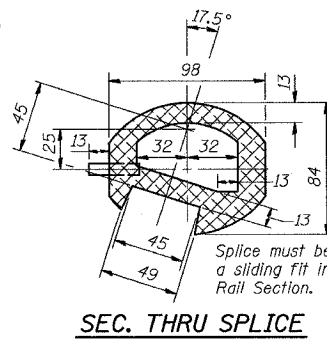
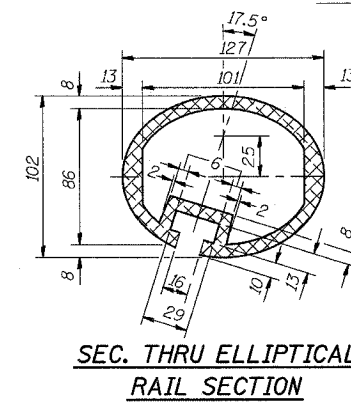
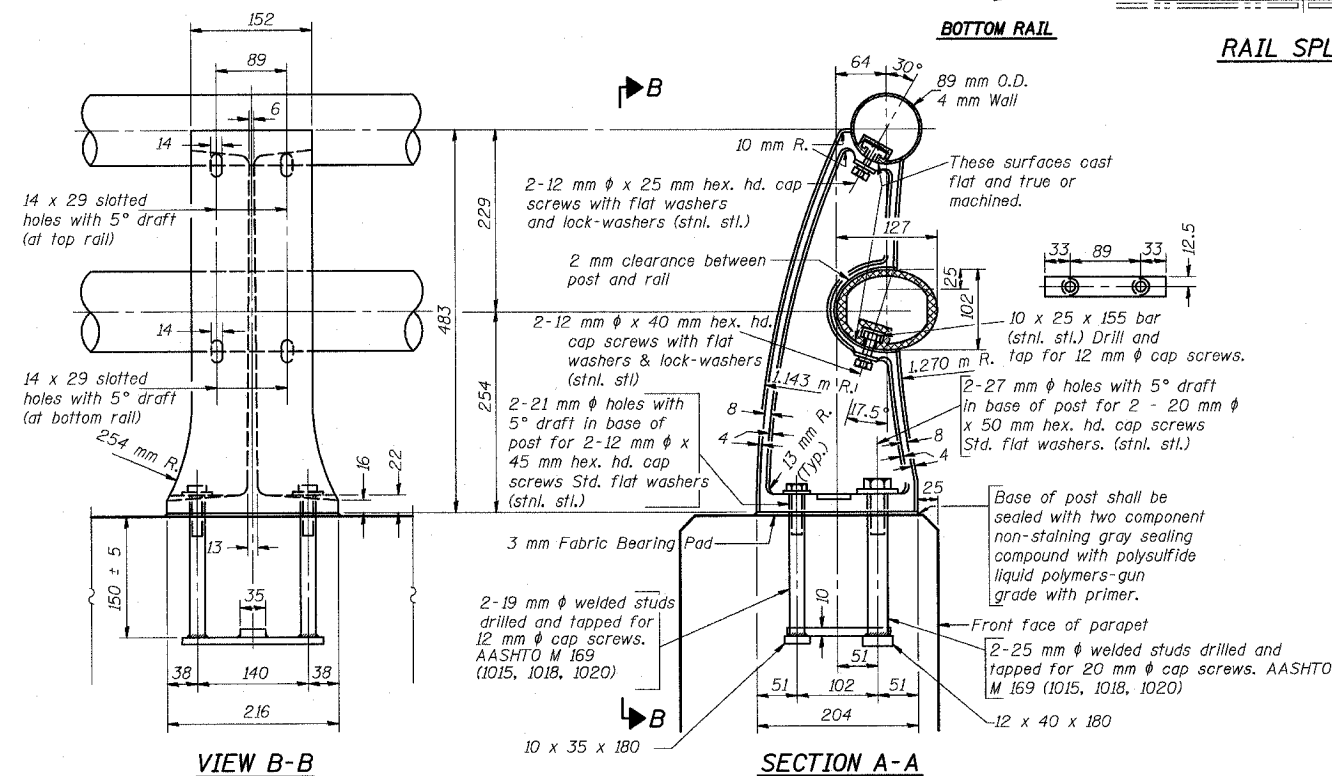
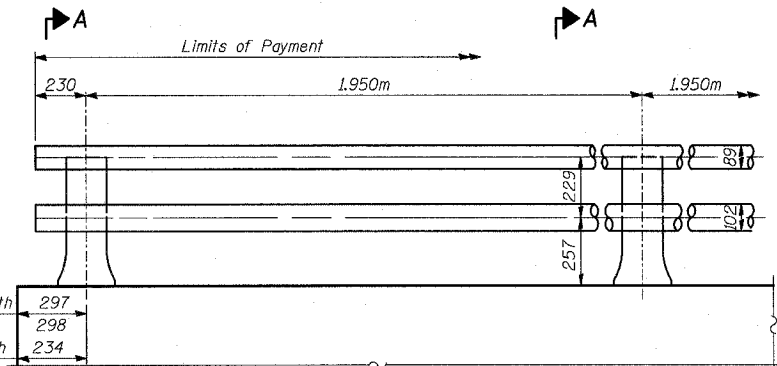
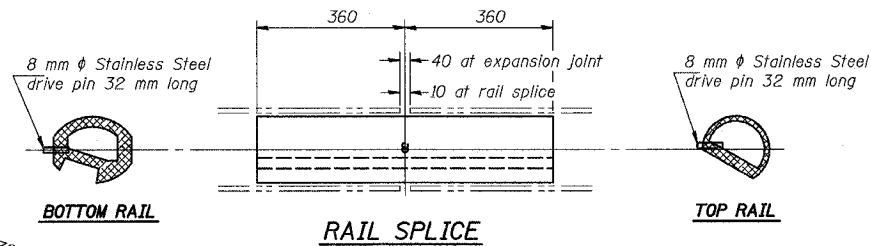
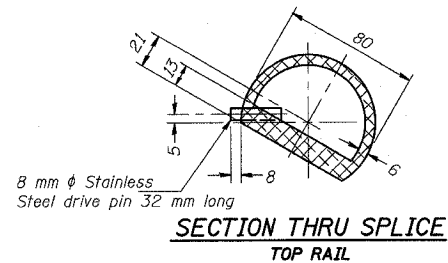
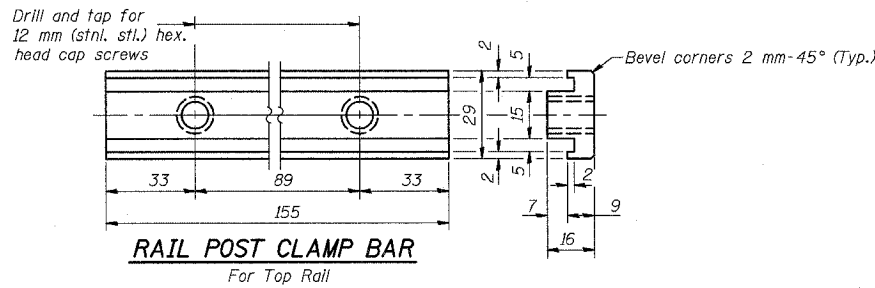
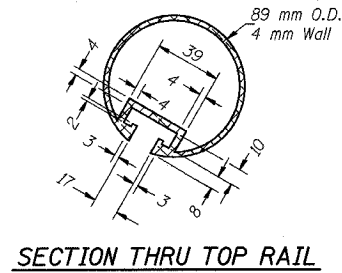
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CHECKED	MI
DRAWN	DJR
CHECKED	MI
DATE	03-22-2004

**TUNNEL EXTENSION
DETAILS 2**

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL EXTENSION
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 101+613.705
S.N. 049-T017

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FWP	SECTION	COUNTY	LINE	SHEET	SHEET NO. 7
337	20R-5	LAKE	562	442	7 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			
D-91-552-99			Contract No. 60881		



BILL OF MATERIAL

ITEM	UNIT	QTY
Aluminum Railing, Type L	METER	9

TYPE L ALUMINUM RAILING

IL ROUTE 22 OVER
PEDESTRIAN TUNNEL EXTENSION
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 101+613.705
S.N. 049-T017

TYLIN INTERNATIONAL

DESIGNED	DJR
CHECKED	MI
DRAWN	DJR
CHECKED	MI
DATE	03-22-2004

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES:

1. Reinforcement bars shall conform to the requirements of AASHTO M31M, or M322M Grade 400.
2. Exposed edges shall be beveled 19mm.
3. All construction joints shall be bonded.
4. A distance of half the length of the wingwall, but not less than two meters of the barrel shall be poured monolithically with the wingwalls.
5. All dimensions are in millimeters (mm) except as noted.
6. For "Stone Riprap, Class A4" and "Filter Fabric for use with Riprap" bill of material, see Roadway plans.
7. Layout of slope protection system may be varied in the field to suit ground conditions as directed by the engineer.
8. Design Fill Height = 0.600m

FAP	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO. 1
337	20R-5	LAKE	562	443	9 SHEETS

ILLINOIS PROJECT: D-91-552-99 Contract No. 60881

TOTAL BILL OF MATERIAL

Item	Unit	TOTAL
Removal of Existing Structures No. 1	EACH	1
Reinforcement Bars	KG	11,130
Temporary Sheet Piling	SQ M	38
Steel Plate Beam Guard Rail, Attached to Structures	METER	9.2
Concrete Box Culverts	CU M	87
Bicycle Railing	METER	8.50
Bar Splicers	EACH	76

INDEX OF SHEETS

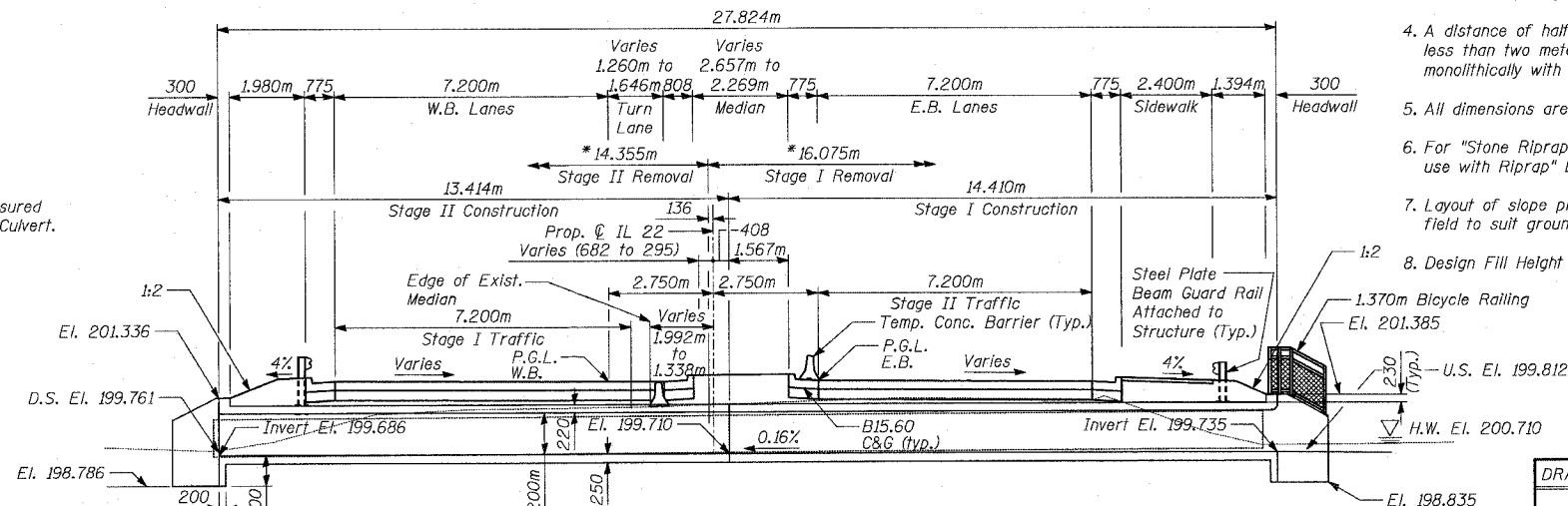
1. GENERAL PLAN
2. STAGE CONSTRUCTION
3. CULVERT PLAN AND ELEVATION - NORTH
4. CULVERT PLAN AND ELEVATION - SOUTH
5. CULVERT SECTIONS AND DETAILS
6. BICYCLE RAILING
7. BAR SPLICER (COUPLER) DETAILS
8. BORING LOGS
9. BORING LOGS

Bench Mark: BM #61 - Set cross on southwest bolt of fire hydrant in front of church on the south side of Old Half Day Road, Approximately 180m northeast of Route 22. Station: 104+511.89 102.83m L.T. El. 202.411m

Existing Structure: Twin 1.07m diameter concrete culverts. The Contractor shall remove the existing structure and replace it with a new concrete Double-Barrel Box Culvert.

Salvage: None.

*Dimensions are measured along Centerline of Culvert.



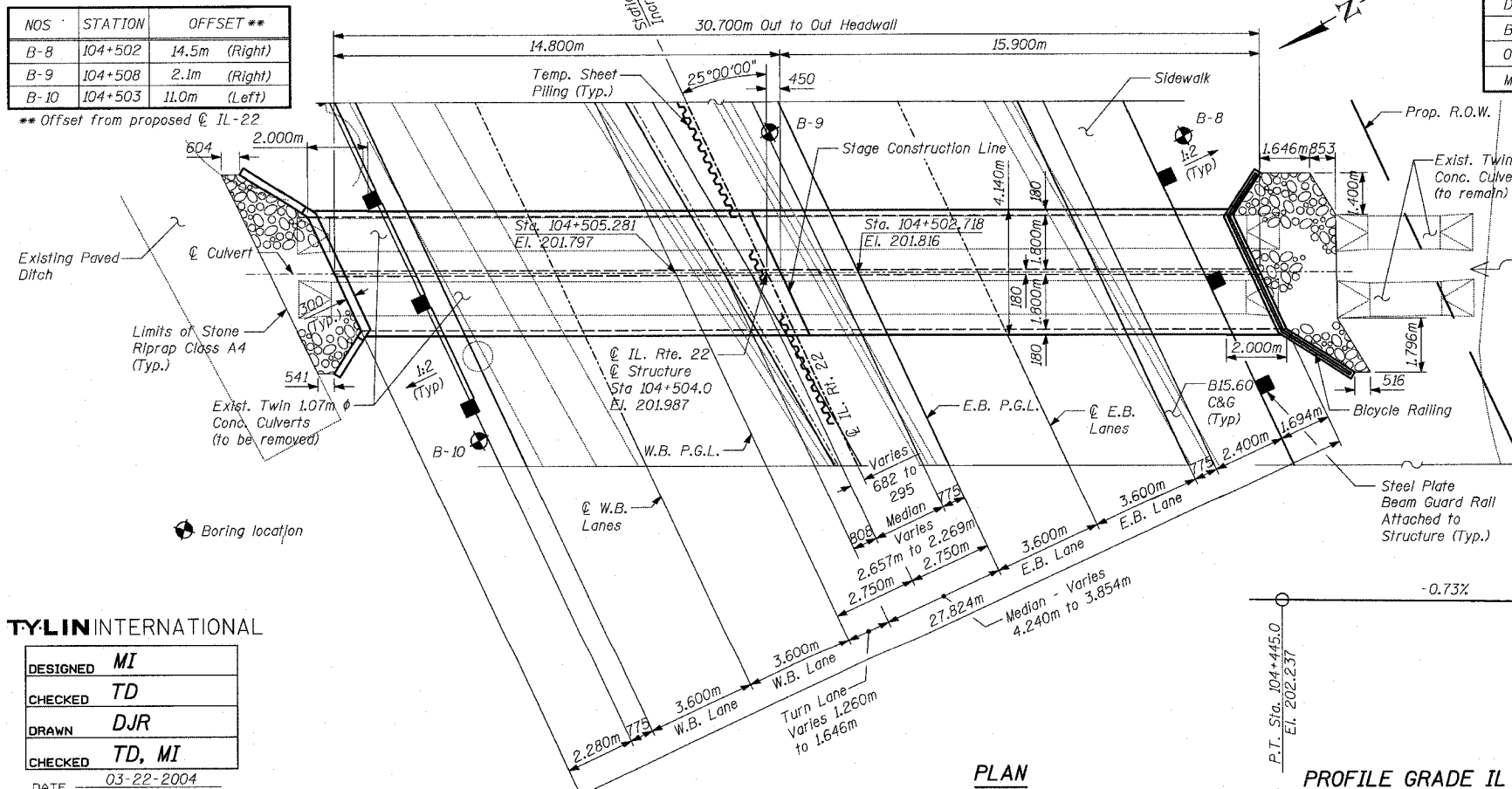
LONGITUDINAL SECTION

(Dimensions shown are at right angle to centerline of roadway)

BORING LOCATION

NOS	STATION	OFFSET **
B-8	104+502	14.5m (Right)
B-9	104+508	2.1m (Right)
B-10	104+503	11.0m (Left)

** Offset from proposed centerline of IL-22



PLAN

PROFILE GRADE IL RTE 22

WATERWAY INFORMATION

DRAINAGE AREA = 2.0 SQ.KM		AT STATION 104+500		MAX. RECORDED H.W.E. = N/A m					
Flood	Frequency Yr.	Discharge Cms	Waterway Opening m ²		Created Head m		Headwater Elevation m		
			Existing	Proposed	Existing	Proposed	Existing	Proposed	
	10	2.4	1.5	3.0	200.67	0.09	0.00**	200.76	200.36
Design	50	4.9	1.6	3.2	200.71	0.36	0.00**	201.07	200.70
Base	100	6.6	1.6	3.3	200.74	0.39	0.18	201.13	200.92
Overtopping									
Max. Calc.	500	9.9	1.8	4.5	201.90	0.00	0.00	201.90	201.90

**The actual proposed created head is negative, zero value was provided for 10 and 50 years flood.

DESIGN SPECIFICATION

AASHTO 2002 Standard Specifications for Highway Bridges.

LOADING MS18

Allow 2.4 KN/m² for future wearing surface.

DESIGN STRESSES

FIELD UNITS

f_c = 24 MPa
f_y = 400 MPa (Reinforcement)



Signed: Heather J. Gaffney, S.E. No. 081-004961
Date: 3/22/04
For drawings 1 thru 9 of 9

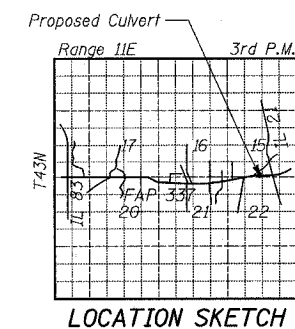
APPROVED

FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

GENERAL PLAN

IL ROUTE 22 OVER
INDIAN CREEK TRIBUTARY
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 104+504.000
S.N. 049-C002



LOCATION SKETCH

TYLIN INTERNATIONAL

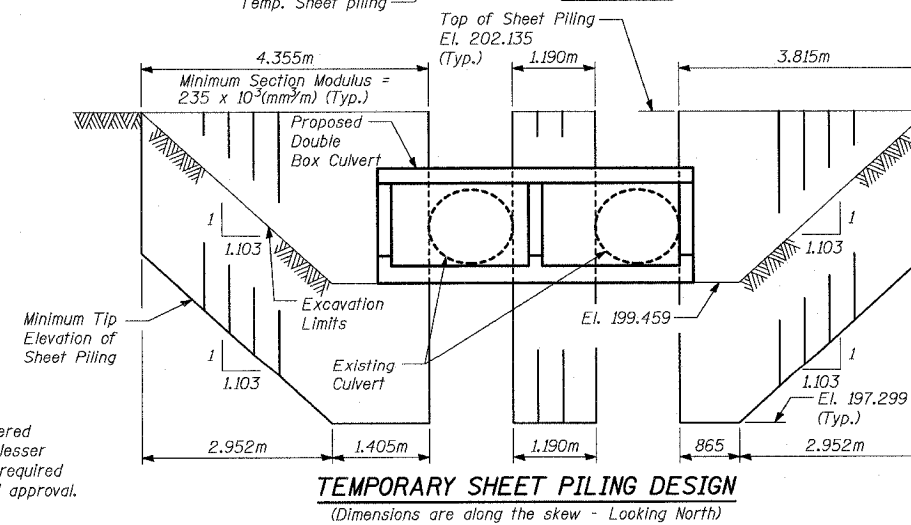
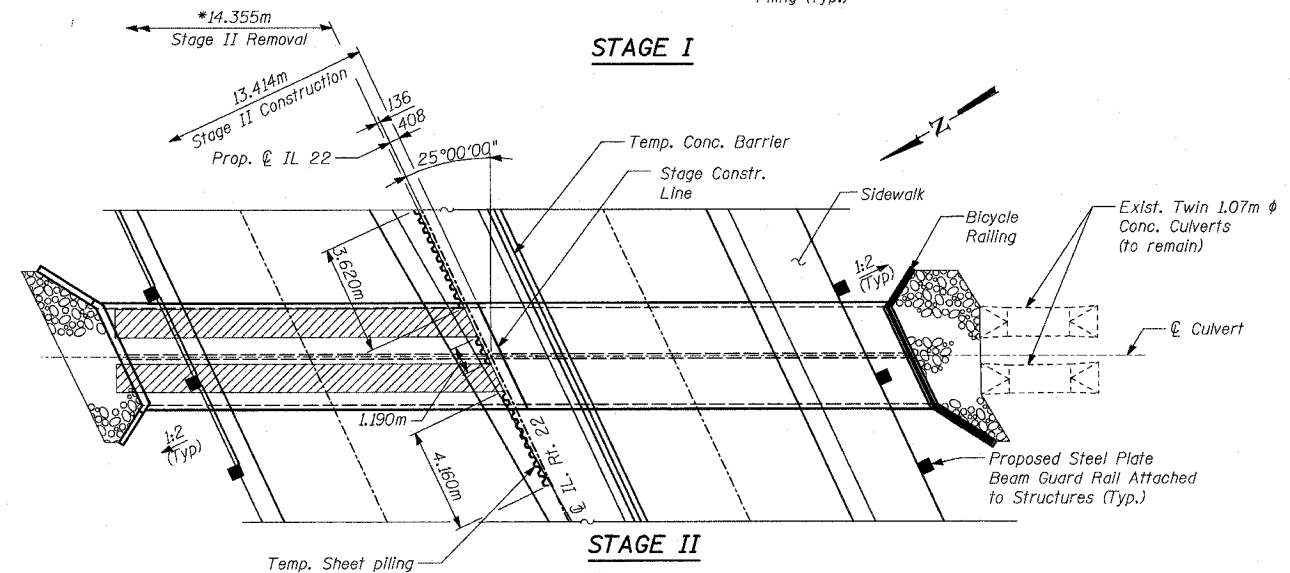
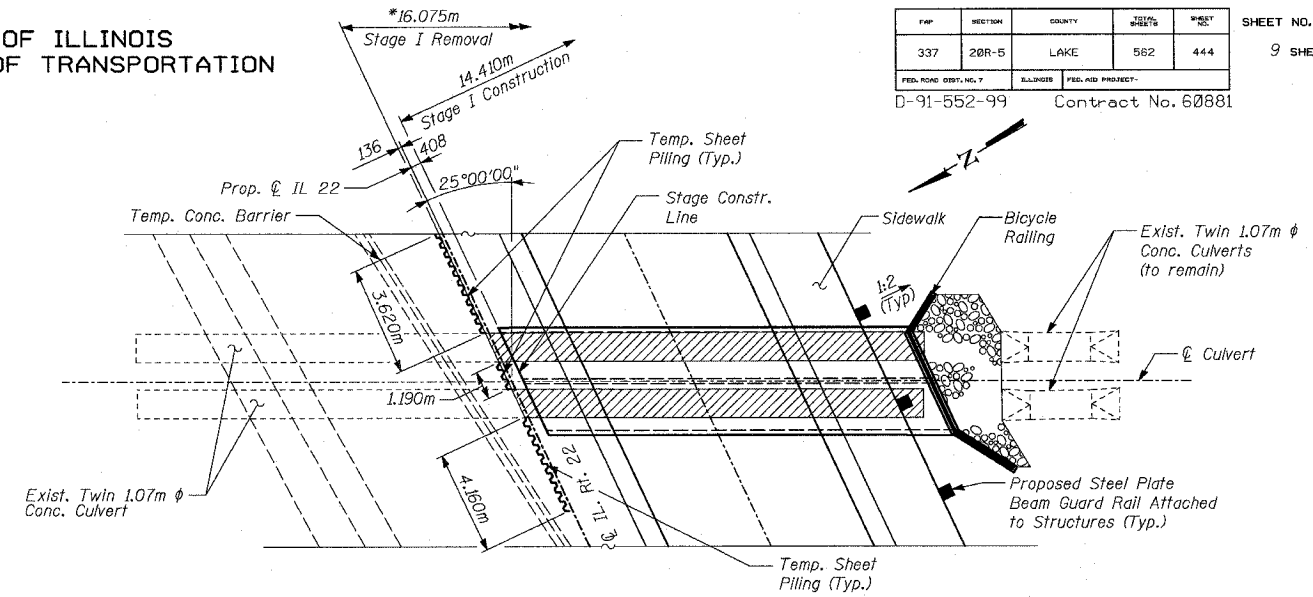
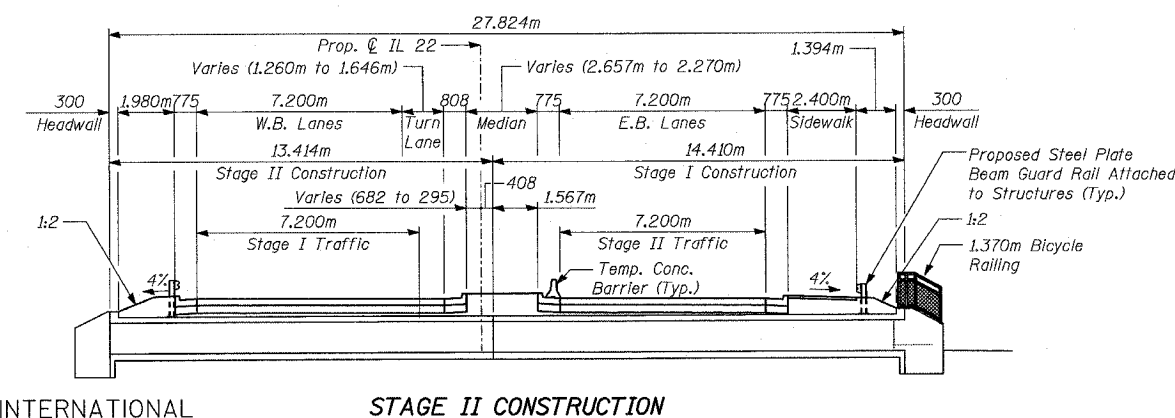
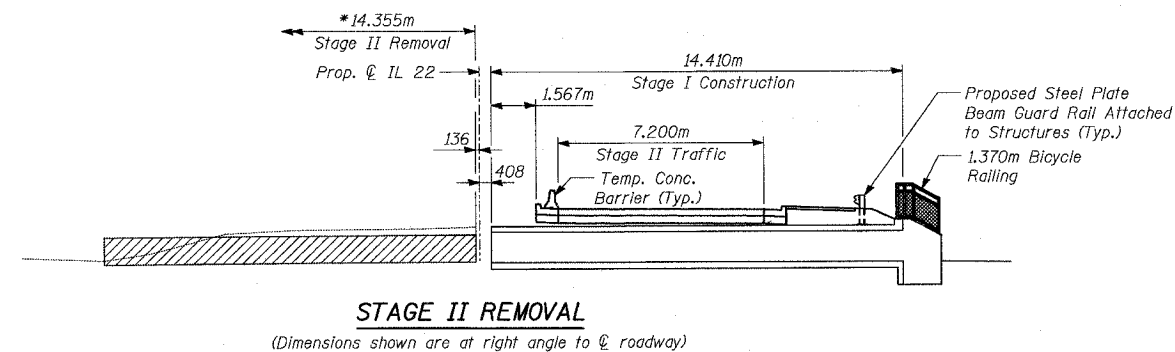
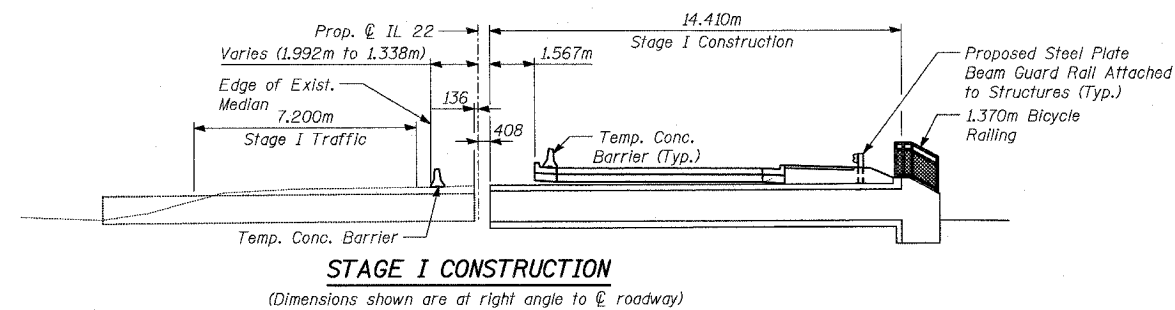
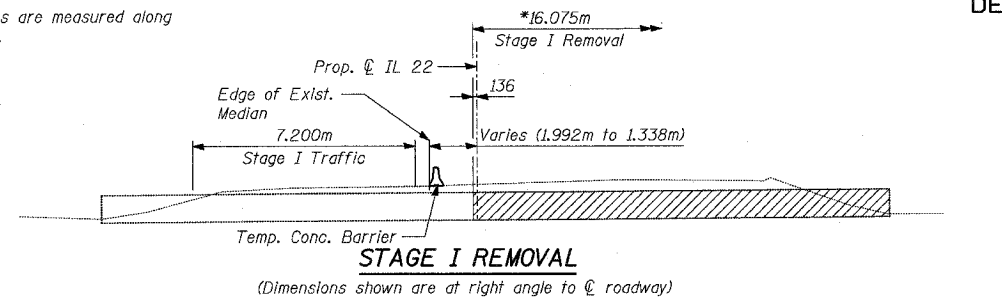
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CHECKED	TD
DRAWN	DJR
CHECKED	TD, MI

DATE 03-22-2004

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FWP	SECTION	COUNTY	SHEETS	*SHEET	SHEET NO. 2
337	20R-5	LAKE	562	444	9 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT:		Contract No. 60881
D-91-552-99					

* Dimensions are measured along
⊙ Culvert.



BILL OF MATERIAL

Item	Unit	TOTAL
Removal of Existing Structure No. 1	EACH	1
Temporary Sheet Piling	SQ M	38

STAGE CONSTRUCTION

IL ROUTE 22 OVER
INDIAN CREEK TRIBUTARY
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 104+504.000
S.N. 049-C002

TYLIN INTERNATIONAL

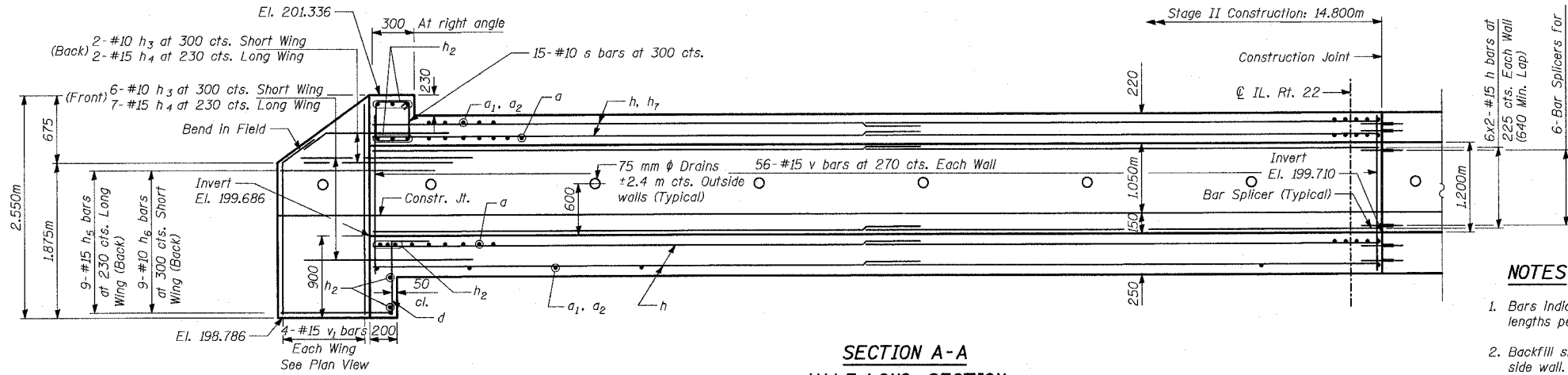
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CHECKED	TD
DRAWN	MAF
CHECKED	TD, MI
DATE	03-22-2004

NOTES:

- Hatched area indicates Removal of Existing Structures No. 1.
- For details of temporary concrete barrier, see Standard 704001.
- For quantity of temporary concrete barrier, see roadway plans.
- If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans for lesser design requirements, then full design submittals with the required seals will be expected by the Department, for review and approval.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

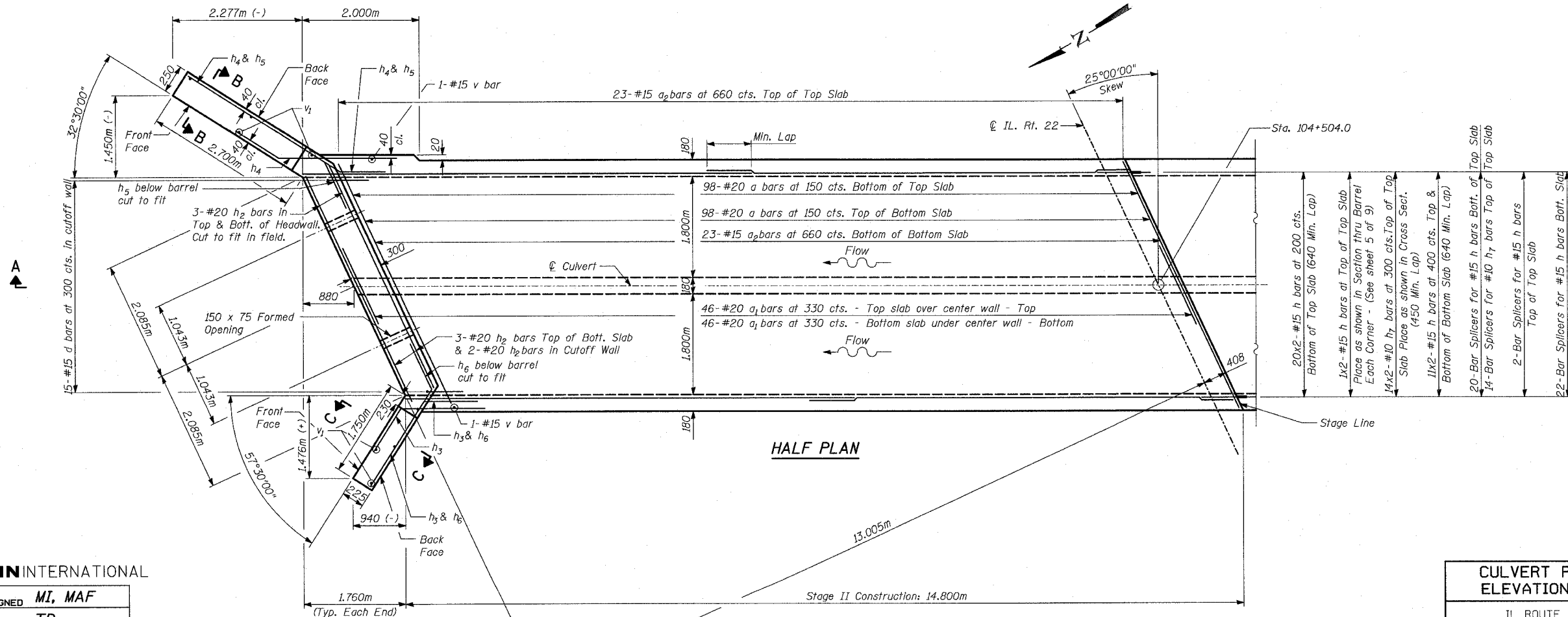
FAP	SECTION	COUNTY	SHEETS	SHEET	SHEET NO.
337	20R-5	LAKE	562	445	9 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT -	
D-91-552-99		Contract No. 60881			



SECTION A-A
HALF LONG. SECTION

NOTES

1. Bars Indicated thus 20 x 2-#15 etc. Indicates 20 lines of bars with 2 lengths per line.
2. Backfill shall be placed in equal layers behind each side wall. At no time shall the fill behind one sidewall be more than 600 mm higher than behind the opposite wall.
3. For Section and Details, see sheet 5 of 9.



HALF PLAN

TYLIN INTERNATIONAL

DESIGNED	MI, MAF
CHECKED	TD
DRAWN	MAF
CHECKED	TD, MAF
DATE	03-22-2004

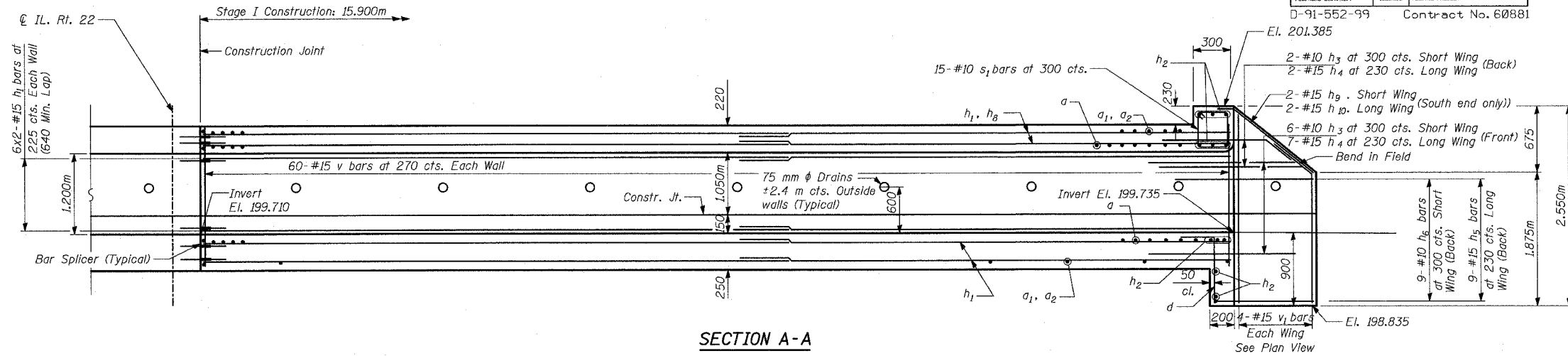
CULVERT PLAN AND
ELEVATION - NORTH

IL ROUTE 22 OVER
INDIAN CREEK TRIBUTARY
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 104+504.000
S.N. 049-C002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

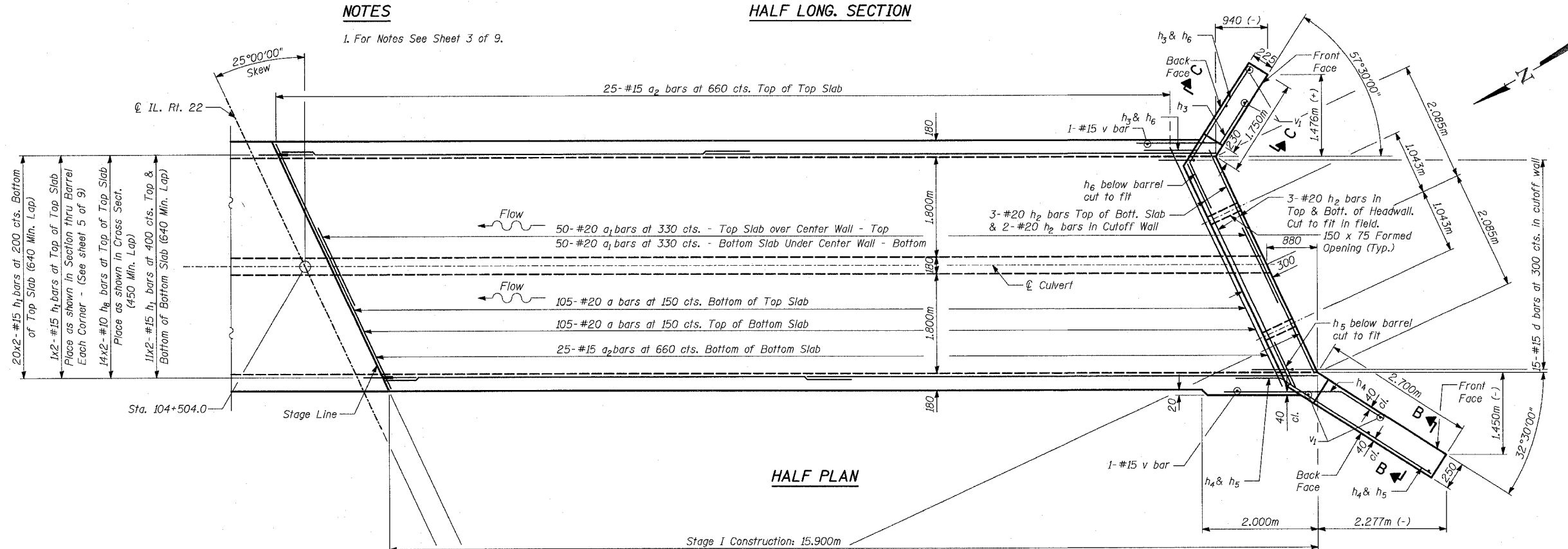
FAP	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	448
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-				
D-91-552-99 Contract No. 60881				

SHEET NO. 4
9 SHEETS



NOTES

1. For Notes See Sheet 3 of 9.



TYLIN INTERNATIONAL

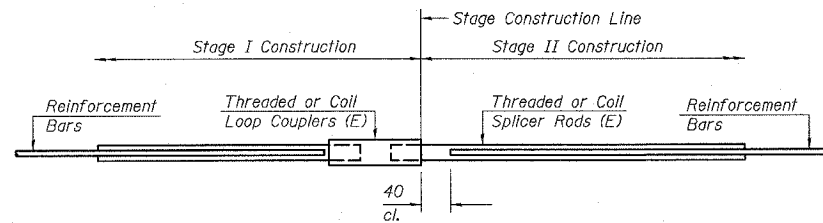
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CHECKED	TD
DRAWN	MAF
CHECKED	TD, MI
DATE	03-22-2004

CULVERT PLAN AND ELEVATION - SOUTH

IL ROUTE 22 OVER
INDIAN CREEK TRIBUTARY
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 104+504.000
S.N. 049-C002

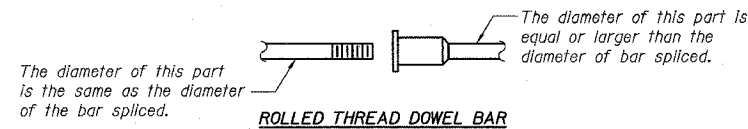
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 7
337	20R-5	LAKE	562	449	9 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
D-91-552-99		Contract No. 60881			

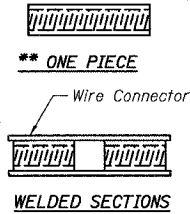


BAR SPLICER ASSEMBLY DETAIL

Bar Size	No. Assemblies Required	Location
#10	14	Top Slab
#15	22	Top Slab
#15	18	Walls
#15	22	Bottom Slab

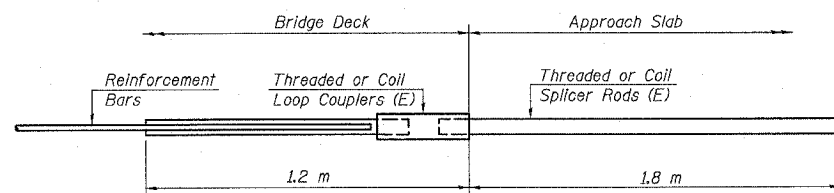


ROLLED THREAD DOWEL BAR



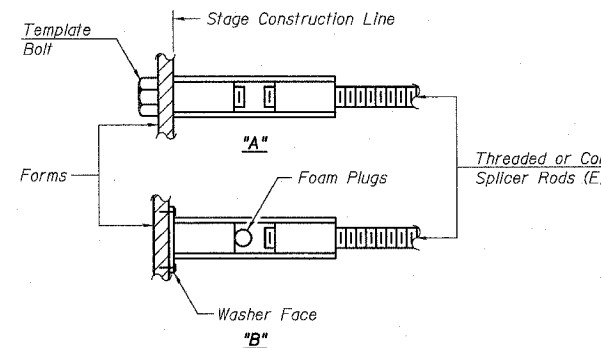
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #15 BAR**

Min. Capacity = 100 kN - tension
Min. Pull-out Strength = 40 kN - tension
No. Required =



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars. Splicer rods shall be of minimum 420 MPa yield strength, threaded or coil full length. All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars. Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times 10^{-3} \times f_y \times A_t$
(Tension in kN)
- ② Minimum *Pull-out Strength = $1.25 \times 10^{-3} \times f_{sallow} \times A_t$
(Tension in kN)

Where f_y = Yield strength of lapped reinforcement bars in MPa.
 f_{sallow} = Allowable tensile stress in lapped reinforcement bars in MPa (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars (mm^2).
* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kN - tension	Min. Pull-Out Strength kN - tension
#10	450 mm	40	16
#15	640 mm	100	40
#20	790 mm	150	60
#25	1.32 m	250	100

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."
All dimensions are in millimeters (mm) except as noted.

TYLIN INTERNATIONAL

DESIGNED	TD, MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI
DATE	03-22-2004

**BAR SPLICER (COUPLER)
DETAILS**

IL ROUTE 22 OVER
INDIAN CREEK TRIBUTARY
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 104+504.000
S.N. 049-C002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
337	20R-5	LAKE	562	458
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
0-91-552-99		Contract No. 60881		

SHEET NO. 8
9 SHEETS

OBA
O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
(847) 398-1441 • FAX (847) 398-2376

STRUCTURE FOUNDATION BORING LOG

Sh 1 of 1

Project: Subsurface Investigation for the Proposed IL Route 22 Reconstruction
Route: F.A.P. Route 337 County: Lake Date: 3-7-01
Location: IL Route 83 to U.S. Route 41, Lake County IL Bored By: Patrick
IDOT Job No. P-91-552-99 Checked By: DOB

BORING NO. B-8
Station: 104+502
Offset: 14.5m Right

SOIL DESCRIPTION	DEPTH (m)	QU (kPa)	W (%)	REMARKS	SOIL CLASS	REMARKS	DEPTH (m)	QU (kPa)	W (%)	REMARKS
Ground Surface Elevation	200.8									
SILTY CLAY to CLAY-dark brown (A-6) Fill	200.5									
CLAY-brown mottled gray-very stiff (A-6)	199.8	263P	16							
Appx Invert elevation	199.69									
SANDY CLAY to CLAY-brown & gray-very stiff (A-6) Apparent Fill	199.2	287P	15							
CLAY-gray-hard (A-6)	197.4	427B	16							
Possible cobbles and/or boulders from -1.67m to -3.2m		570B	16							
CLAY-gray-stiff (A-6)	196.2	96P	18							
Fine SAND-gray-medium dense (A-3)	194.7	NP	23							
SILTY LOAM-gray-medium dense (A-4)		NP	19							

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STRUCTURE FOUNDATION BORING LOG

Sh 1 of 1

Project: Subsurface Investigation for the Proposed IL Route 22 Reconstruction
Route: F.A.P. Route 337 County: Lake Date: 3-7-01
Location: IL Route 83 to U.S. Route 41, Lake County IL Bored By: Patrick
IDOT Job No. P-91-552-99 Checked By: DOB

BORING NO. B-9
Station: 104+508
Offset: 21m Right

SOIL DESCRIPTION	DEPTH (m)	QU (kPa)	W (%)	REMARKS	SOIL CLASS	REMARKS	DEPTH (m)	QU (kPa)	W (%)	REMARKS
Ground Surface Elevation	201.6									
7.0' ASPHALT, 5.0' CRUSHED STONE & GRAVEL	201.3									
CLAY to CLAY LOAM-dark brown-very stiff (A-6) Fill	201.0	240P	10							
CLAY-dark brown to black-very stiff (A-6) Apparent Fill	199.9	299P	23							
Appx Invert elevation	199.71									
CLAY-brown-very stiff (A-6)	198.5	301B	16							
CLAY-gray-stiff to very stiff (A-6)	197.6	396B	16							
SANDY LOAM-gray-medium dense (A-1-b)	197.1	NP	8							
CLAY-gray-hard (A-6)	196.5	784B	13							
Fine SAND-gray-medium dense to dense (A-3)	194.7	NP	22							

N-Standard Penetration Test (ASTM D-1586) Type Failure
R-Recovery in inches B-Bulge Failure S-Shear Failure W-Water Content, percent dry weight
NR-No Recovery E-Estimated Value P-Penetrometer NP-Non-Plastic

N-Standard Penetration Test (ASTM D-1586) Type Failure
R-Recovery in inches B-Bulge Failure S-Shear Failure W-Water Content, percent dry weight
NR-No Recovery E-Estimated Value P-Penetrometer NP-Non-Plastic

TYLINT INTERNATIONAL
O'BRIEN & ASSOCIATES, INC.

DESIGNED	MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI
DATE	03-22-2004

BORING LOGS

IL ROUTE 22 OVER
INDIAN CREEK TRIBUTARY
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 104+504.000
S.N. 049-C002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP	SECTION	COUNTY	JOB NO.	SHEET NO.	SHEET NO. 9
337	20R-5	LAKE	562	451	9 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
D-91-552-99		Contract No. 60881			

OBA
O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST., ARLINGTON HTS., IL 60005
(847) 398-1441 • FAX (847) 398-2376

STRUCTURE FOUNDATION
BORING LOG

Sh 1 of 1

Project: Subsurface Investigation for the Proposed IL Route 22 Reconstruction
Route: F.A.P. Route 337, County Lake
Location: IL Route 83 to U.S. Route 41, Lake County IL
IDOT Job No. P-91-552-99

Station: 104+503
Offset: 11.0m Left

Job No. 00458
Date: 3-7-01
Bored By: Patrick
Checked By: DOB

BORING NO. B-10	Station	Offset	ROW	C	R	Qu	W	Surface Water Elev. After	Groundwater Depth	Groundwater Depth After	N/A	4.9m WD	Dry AB	Blow Counts	R	Qu	W
Ground Surface Elevation 200.0																	
Poorly Graded SAND & GRAVEL-brown (Fill) 200.7																	
			5											6			
			7			347P	23							13	NP	18	
		199.9	4											3			
Appx Invert elevation 199.74																	
			6			216P	29							5			
			8											6	63B	20	
CLAY-trace organics-brown & black-stiff to very stiff (A-6) Fill Wet																	
		198.9	5			108P	28							4	118B	21	
			7											4			
CLAY-brown-hard (A-6)																	
		198.0	5											2			
			6											3			
			9			384B	15							4	205B	22	
CLAY-gray-very stiff (A-6)																	
			2				17.2										
		197.2	6														
			8			364B	16										
SILTY CLAY LOAM-gray-hard (A-4/A-6)																	
		196.4	31														
			20			689B	12										
			19														
CLAY-gray-hard (A-6)																	
			6														
		196.1	8			514B	13										
			14														
Possible cobbles and/or boulders at -6.0m																	
			9														
			10			50/4"	NP	23									
			6.0														
Fine SAND-gray-medium dense to very dense (A-3)																	
			3														
			16				NP	20									
			5														
			7.5				NP	22									
			10														
			-7.5														
			-15.0														

N-Standard Penetration Test (ASTM D-1586) Type Failure
R-Recovery in inches
NR-No Recovery
B-Bulge Failure
E-Estimated Value
P-Penetrometer
S-Shear Failure
W-Water Content, percent dry weight
NP-Non-Plastic
Qu-Unconfined Compressive Strength (kPa) (lb/ft²) noted in Italics above w_z

TYLINT INTERNATIONAL

DESIGNED	MAF
CHECKED	MI
DRAWN	MAF
CHECKED	MI

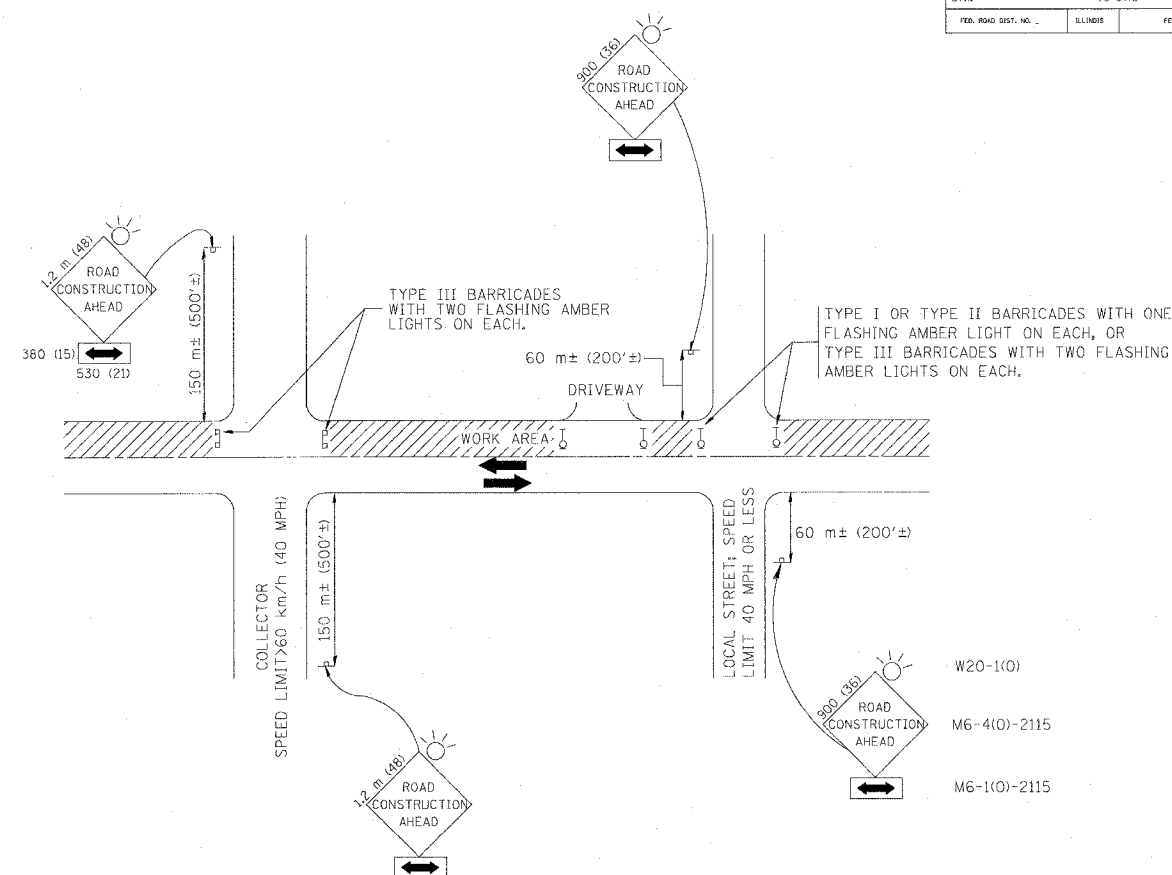
DATE 03-22-2004

BORING LOGS

IL ROUTE 22 OVER
INDIAN CREEK TRIBUTARY
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 104+504.000
S.N. 049-C002

F. A. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	452
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

60881



- W20-1(0)
- M6-4(0)-2115
- M6-1(0)-2115

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

NOTES:

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS
1. SIDE ROAD WITH A SPEED LIMIT OF 60 km/h (40 MPH) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE **ROAD CONSTRUCTION AHEAD** SIGN 900x900 (36x36) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 60 m (200') IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
 2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 60 km/h (40 MPH) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE **ROAD CONSTRUCTION AHEAD** SIGN 1.2 m x 1.2 m (48x48) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 150 m (500') IN ADVANCE OF THE MAIN ROUTE.
 - b) 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.
 3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:
- USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF 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.
- C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.
- D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

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

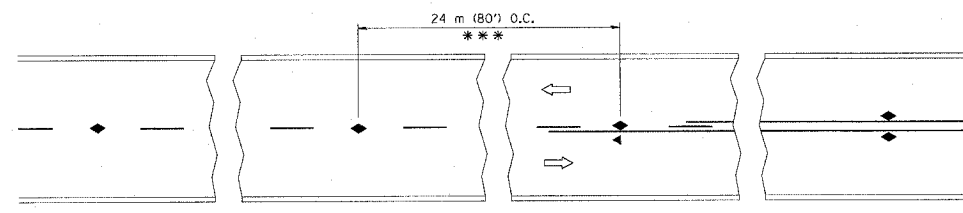
ILLINOIS DEPARTMENT OF TRANSPORTATION
 TRAFFIC CONTROL AND PROTECTION
 FOR
 SIDE ROADS, INTERSECTIONS, AND
 DRIVEWAYS

REVISIONS	
NAME	DATE
LHA	6/89
T. RAMMACHER	09/08/94
J. OBERLE	10/18/95
A. HOUSEH	03/06/96
A. HOUSEH	10/15/96
T. RAMMACHER	01/06/00

SCALE: NONE
 DATE: **DATE**
 DRAWN BY
 CHECKED BY

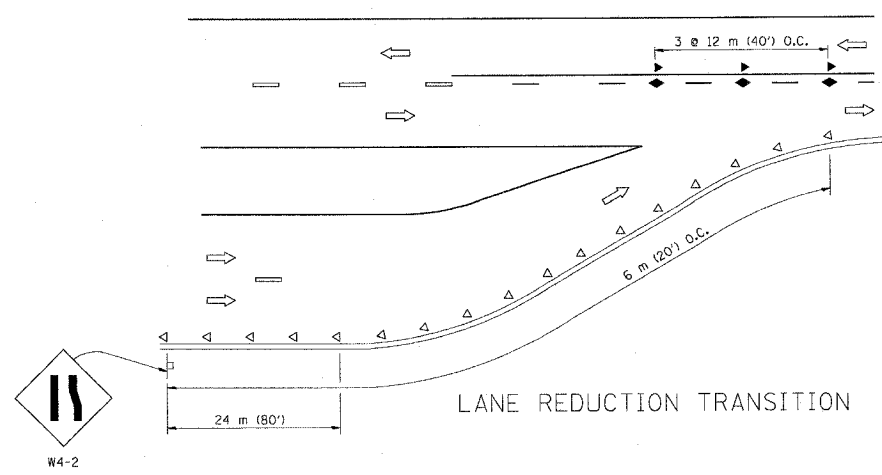
P.L. #	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	453
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

60881

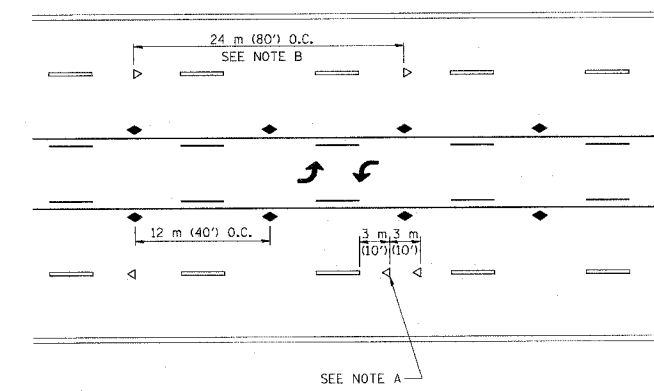


*** REDUCE TO 12 m (40') O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 70 km/h (45 M.P.H.) OR LESS.

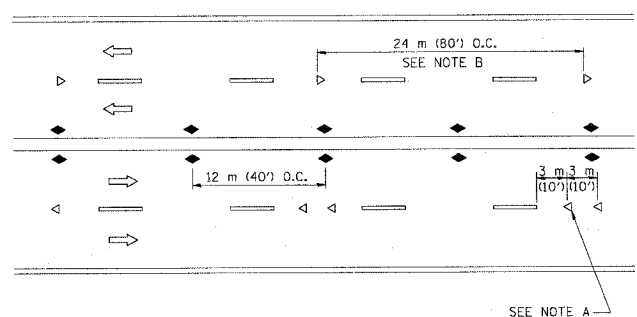
TWO-LANE/TWO-WAY



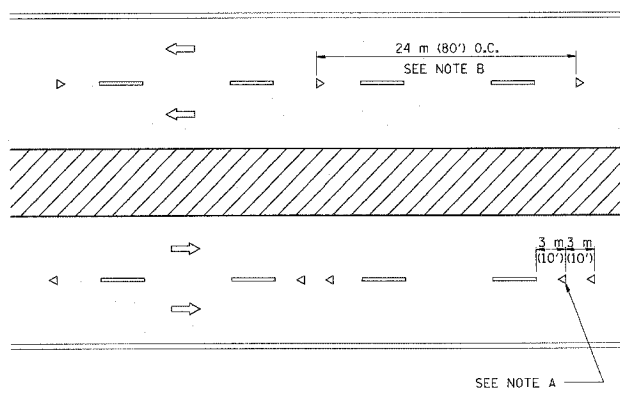
LANE REDUCTION TRANSITION



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.

SYMBOLS

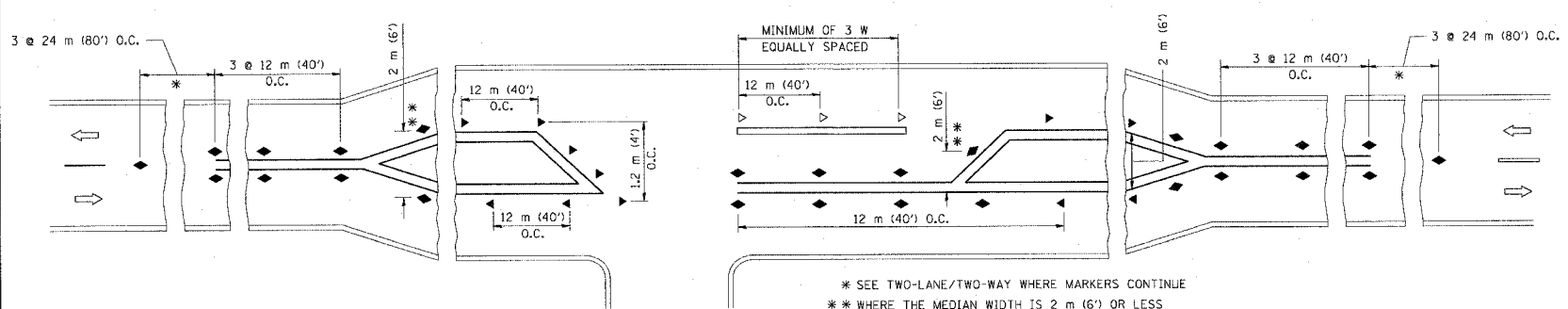
- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◁ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- B. 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 SHOWN.

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.



* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE
 ** WHERE THE MEDIAN WIDTH IS 2 m (6') OR LESS USE TWO-WAY MARKERS.

LEFT TURN

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

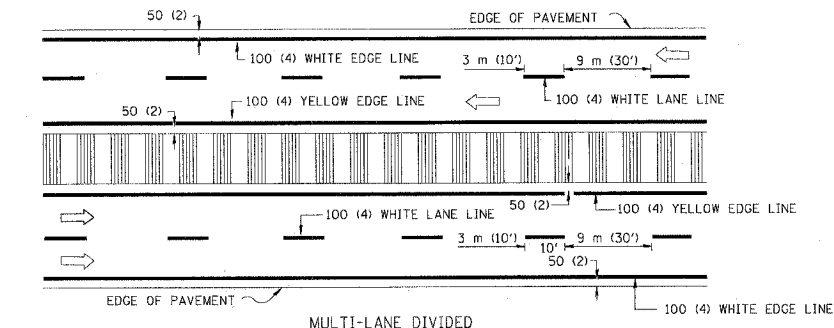
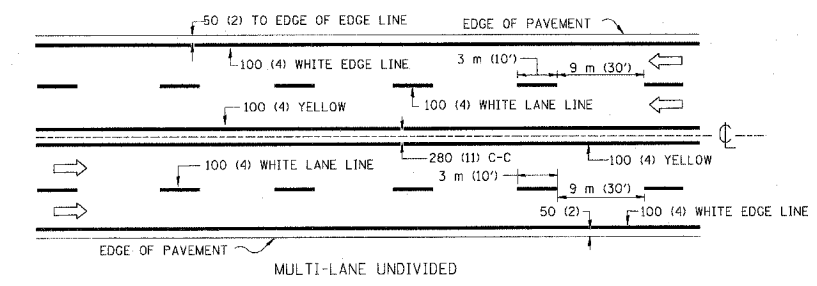
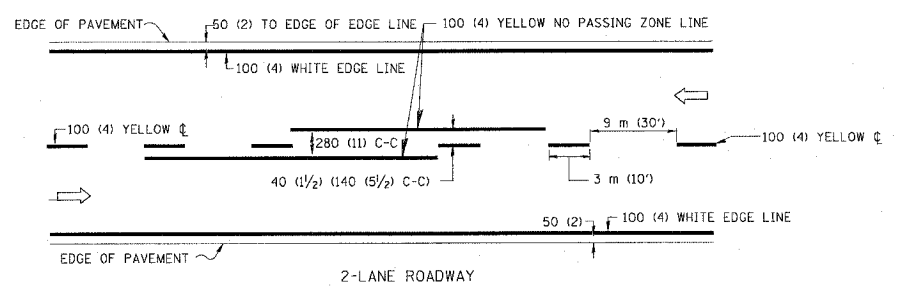
ILLINOIS DEPARTMENT OF TRANSPORTATION

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

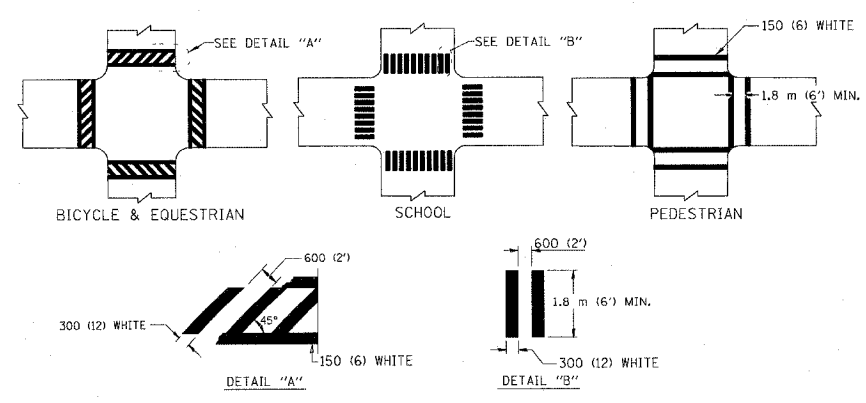
SCALE: NONE
 DATE: 02/01/2002
 DRAWN BY CADD
 CHECKED BY

60881

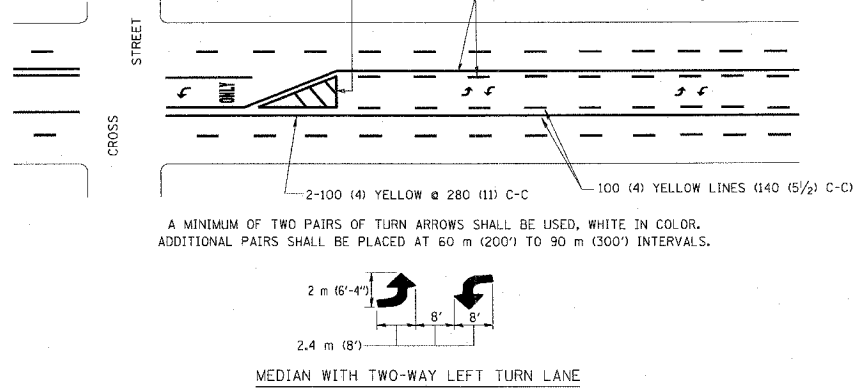
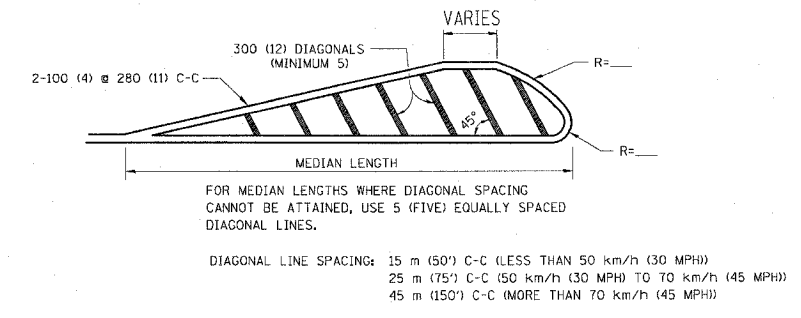
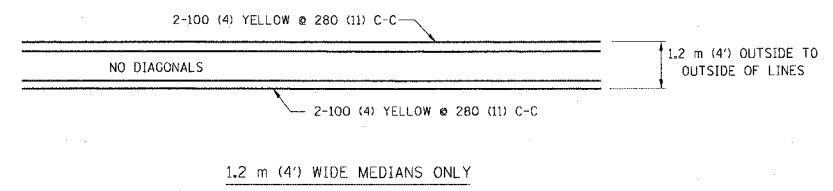


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

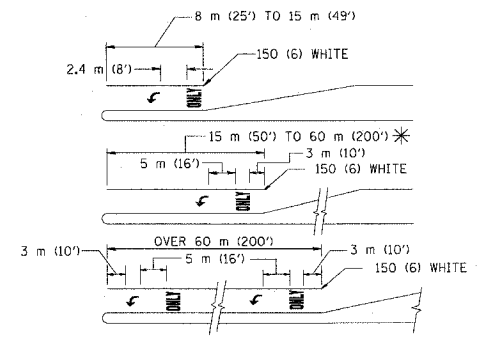
TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING

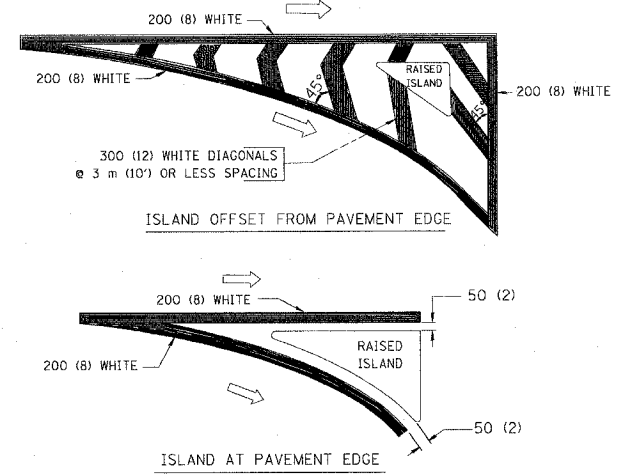


TYPICAL PAINTED MEDIAN MARKING



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 OMIT 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 NOT USED 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"=0.33m² (3.6 SO. FT.) EACH "X"=5.0 m² (54.0 SO. 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.

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE

TYPICAL PAVEMENT MARKINGS

SCALE: NONE

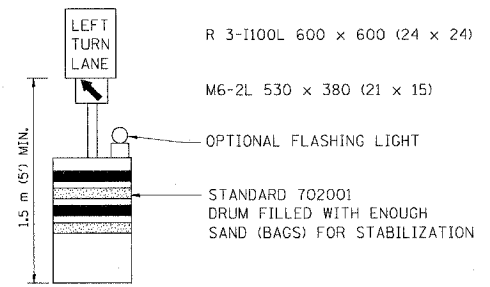
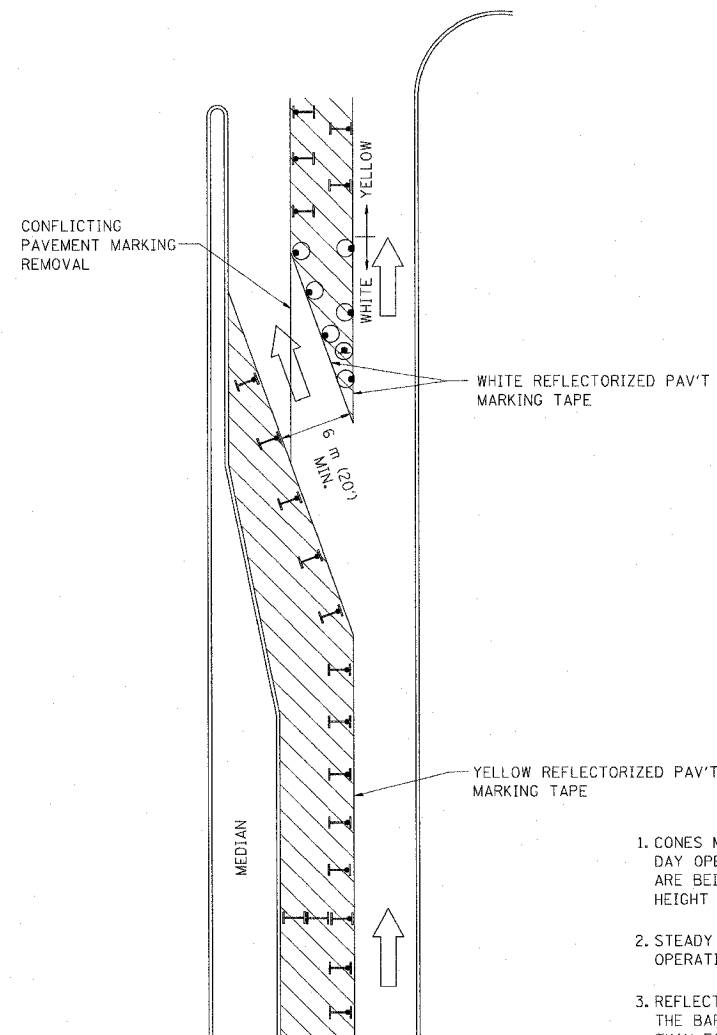
DATE: **DATE**

DRAWN BY: CADD

CHECKED BY:

F. A. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	455
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

60881



GENERAL NOTES

1. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 710 (28) IN HEIGHT. WHEN CONES ARE BEING USED, THE "LEFT TURN LANE" SIGN MAY BE SKID MOUNTED AT A MINIMUM HEIGHT OF 1.5 m (5').
2. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRICADES OR DRUMS FOR DAY OPERATIONS. ALL LIGHTS SHALL BE MONODIRECTIONAL.
3. REFLECTORIZED TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE BARRICADED AREA OF EACH TURN BAY WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS.
4. THIS APPLICATION ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE RIGHT LANE(S) AND THE RIGHT TURN BAY IS TO REMAIN OPEN. UNDER THIS CONDITION, "RIGHT TURN LANE" R3-100 600 x 600 (24 x 24) AND M6-2R 530 x 380 (21 x 15) SHALL BE USED.
5. THESE CONTROLS SHALL SUPPLEMENT MAINLINE TRAFFIC CONTROL FOR LANE CLOSURES.
6. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
7. FORM BT 725 IS REQUIRED.
8. TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) SHALL BE INCLUDED IN THE COST SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

LEGEND

- WORK AREA
- LANE OPEN TO TRAFFIC
- TYPE I OR II BARRICADE WITH STEADY BURN LIGHT
- DRUM WITH STEADY BURN LIGHT
- DRUM WITH SIGN (WITH OPTIONAL FLASHING LIGHT) SEE DETAIL
- TYPE I OR II CHECK BARRICADE WITH FLASHING LIGHT

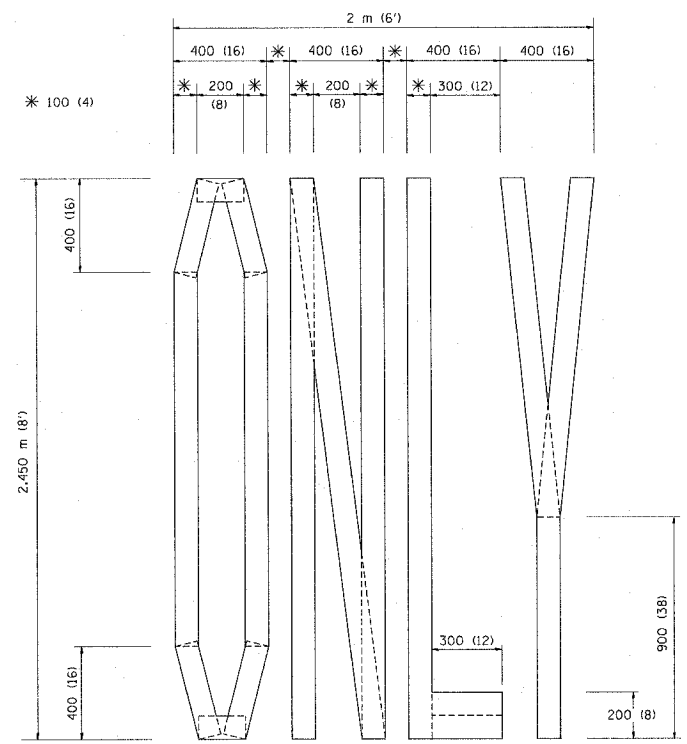
All dimensions are in millimeters (inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL AND PROTECTION
 AT TURN BAYS
 (TO REMAIN OPEN TO TRAFFIC)**

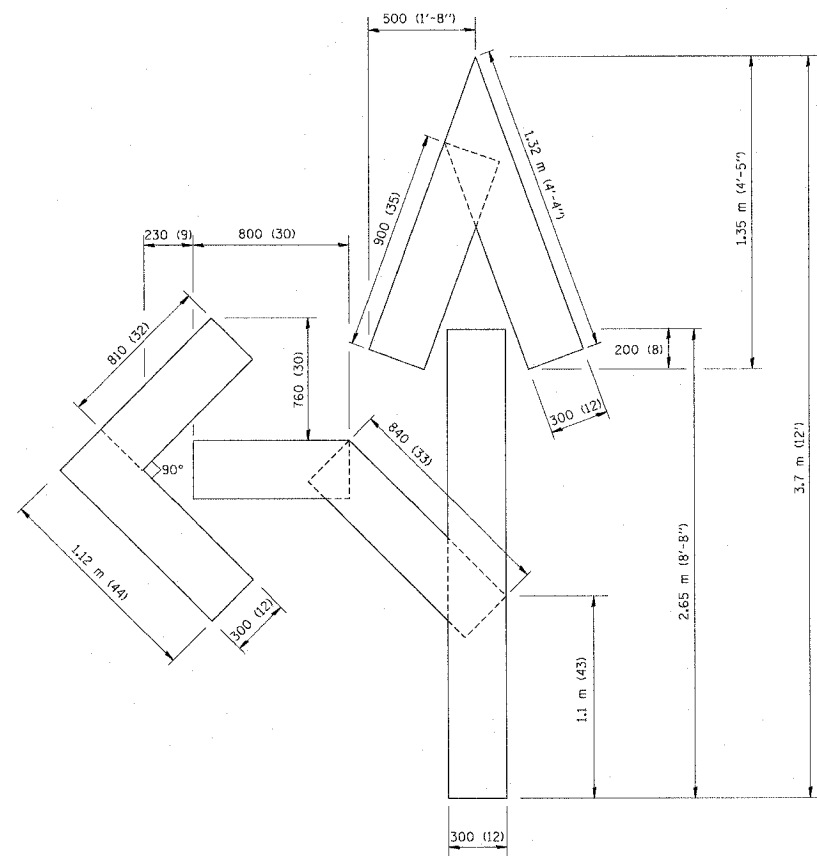
REVISIONS	
NAME	DATE
T. RAMMACHER	09/08/94
A. HOUSEH	11/07/95
A. HOUSEH	10/12/96
T. RAMMACHER	01/06/00

SCALE: NONE
 DATE: **DATE**
 DRAWN BY
 CHECKED BY LHA

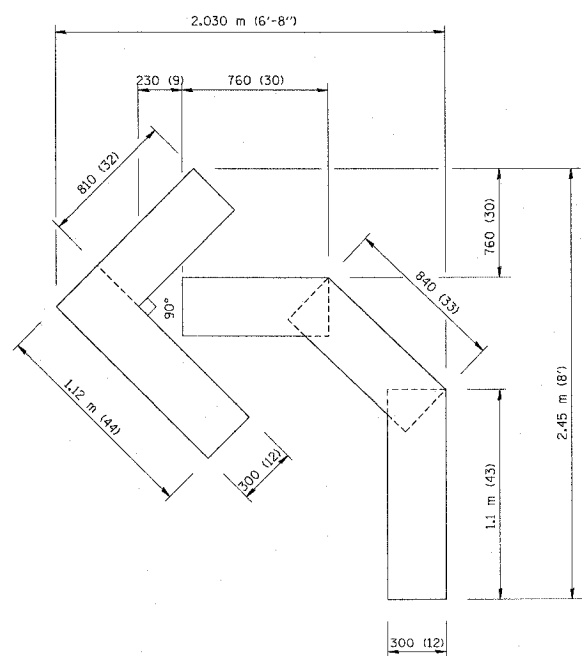
60881



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

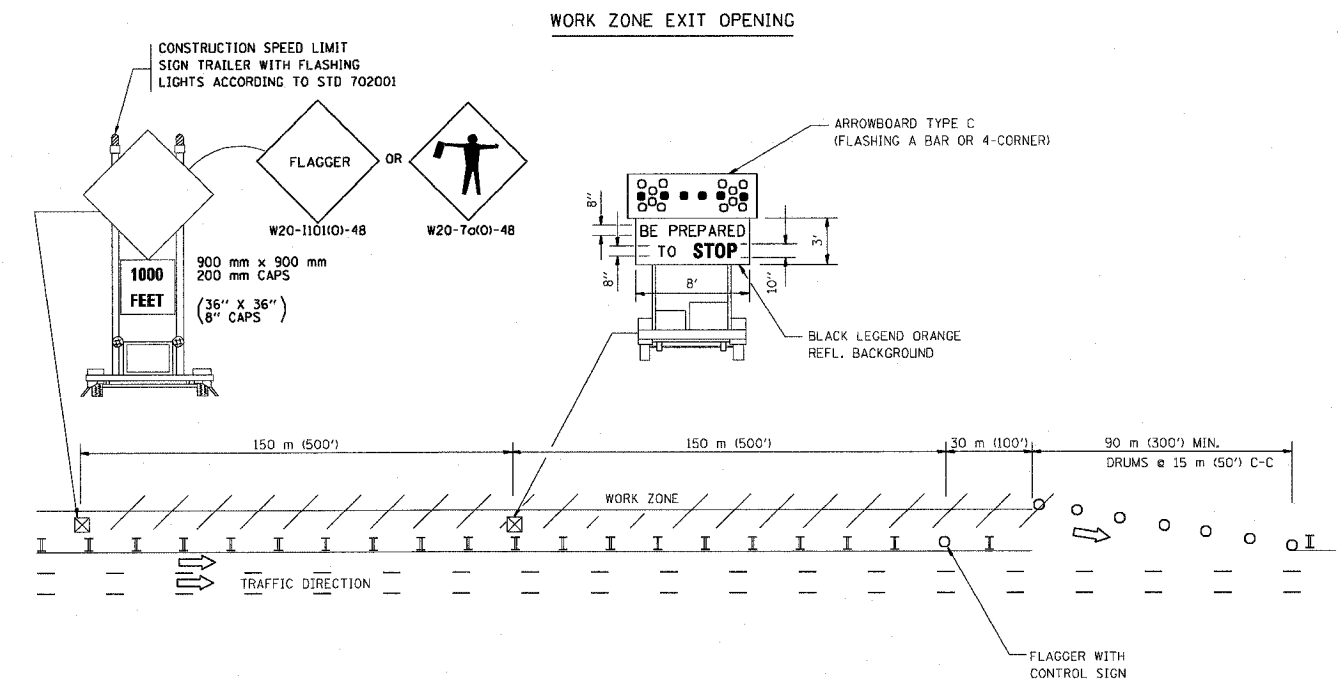
REVISIONS	
NAME	DATE
T. RAMMACHER	09/18/94
J. OBERLE	06/01/96
T. RAMMACHER	06/05/96
T. RAMMACHER	11/04/97
T. RAMMACHER	03/02/98
E. GOMEZ	08/28/00

SCALE: NONE
 DATE **DATE**
 DRAWN BY CADD
 CHECKED BY

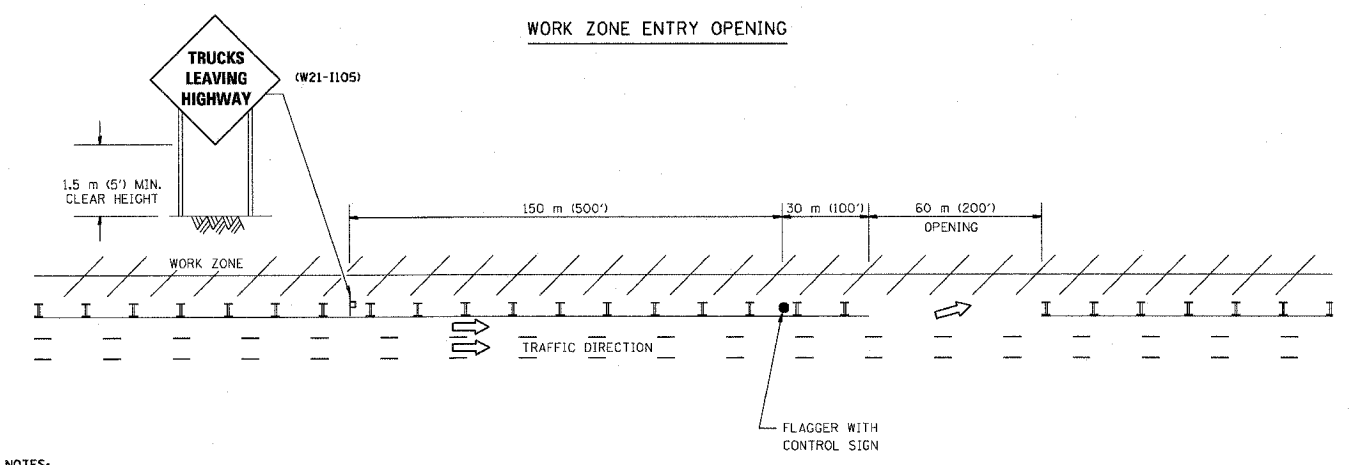
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			502	457
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

60881

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS



WORK ZONE ENTRY OPENING



NOTES:

1. The Arrowboard, the Flagger Ahead trailer mounted sign, and the Trucks Leaving Highway sign shall be removed or turned away from traffic and the exit and entry openings shall be closed when the flagging operation ceases.
2. Work Zone Exit Openings should be a minimum of one half mile apart.
3. Exiting the work zone at any place other than at a Work Zone Exit Opening will be prohibited.
4. All vehicles shall enter the work zone at entry openings, using their turn signals to warn motorists

ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN

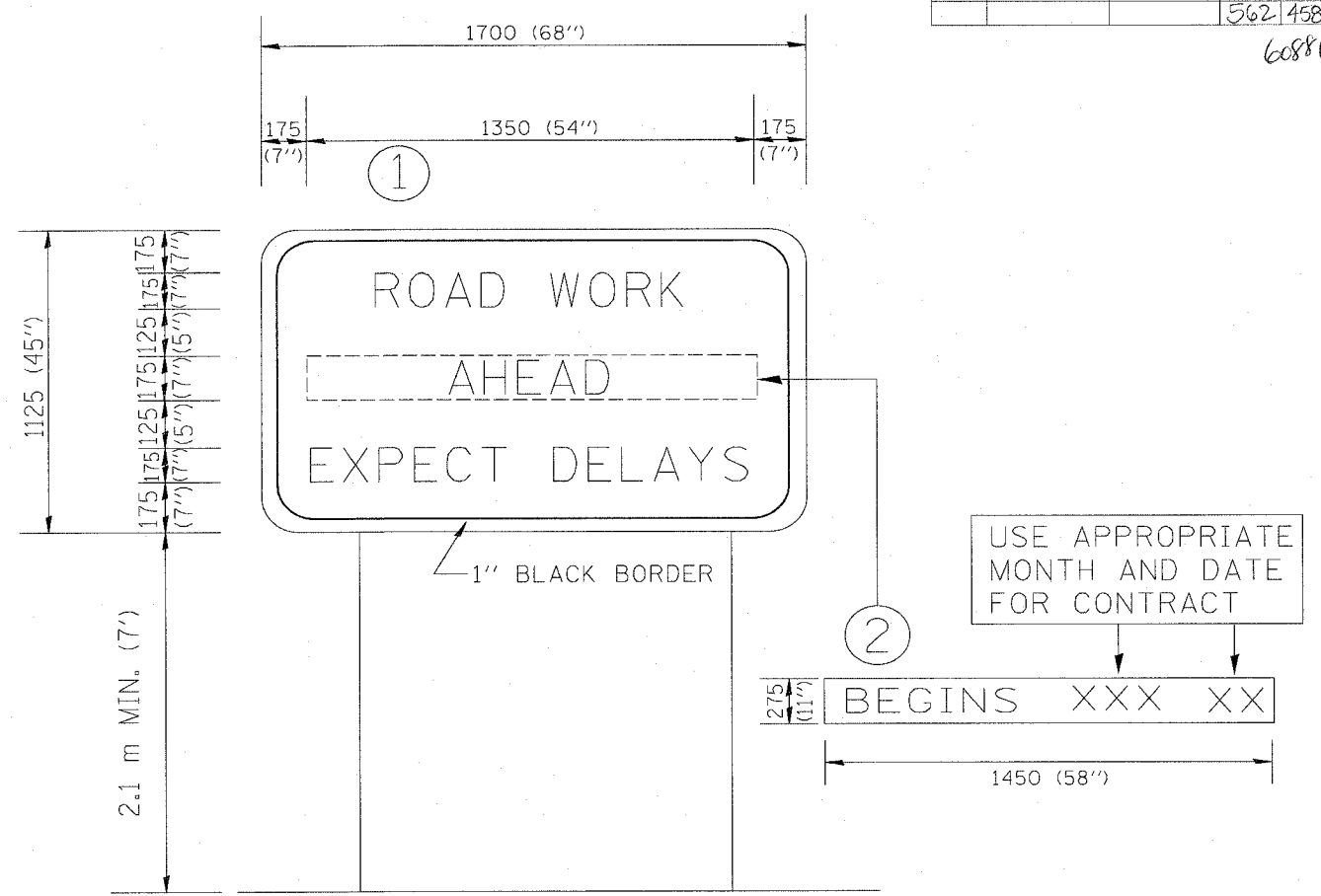
ILLINOIS DEPARTMENT OF TRANSPORTATION

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

REVISIONS	
NAME	DATE
DWS	8/98
JAF	4/03

SCALE: NONE
 DATE 05/06/2003
 DRAWN BY CADD
 CHECKED BY TC-18

60881



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.

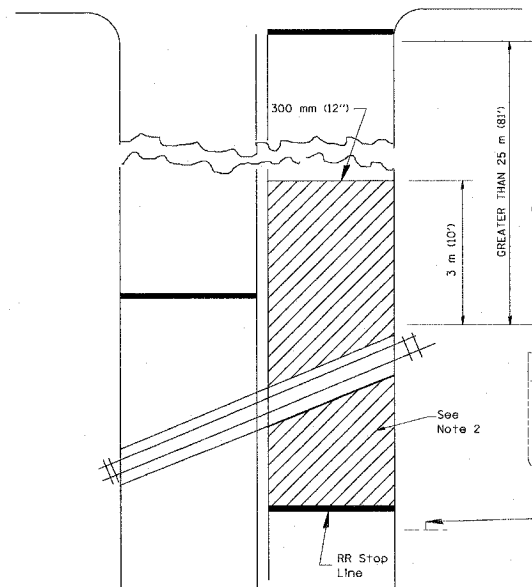
REVISIONS	
NAME	DATE
R. MIRS	9-15-97
R. MIRS	12-11-97
T. RAMMACHER	2-2-99

ILLINOIS DEPARTMENT OF TRANSPORTATION
TEMPORARY INFORMATION SIGNING

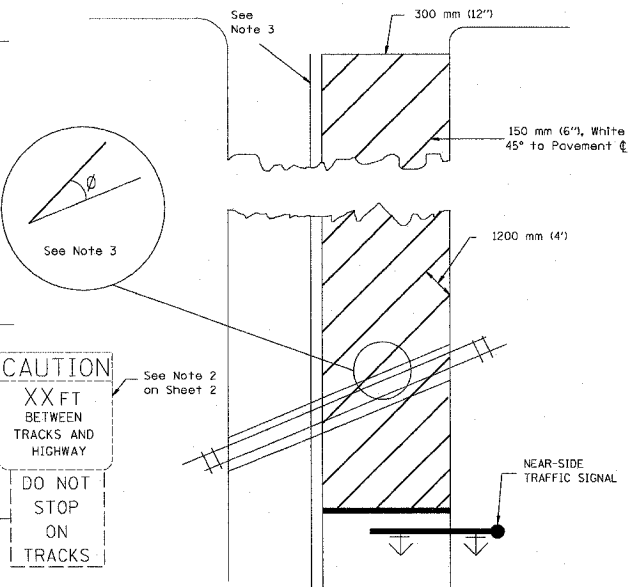
DRAWN BY: BUR. OF DESIGN
CHECKED BY

##DATE##

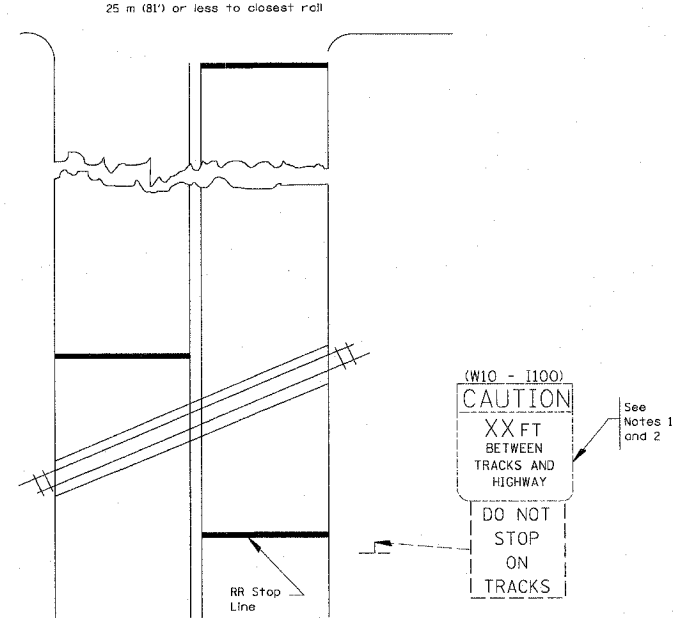
WITH INTERSECTION TRAFFIC SIGNALS



WITH NEAR-SIDE TRAFFIC SIGNALS



WITH NONSIGNALIZED INTERSECTION



- NOTES:
1. PAVEMENT MARKINGS TO BE INSTALLED ONLY ON APPROACHES TO INTERSECTIONS CONTROLLED BY TRAFFIC SIGNALS WHICH ARE INTERCONNECTED WITH THE RAILROAD WARNING SIGNALS.
 2. WHERE NEAR-SIDE TRAFFIC SIGNALS ARE USED, THE PAVEMENT MARKINGS EXTENDS TO THE INTERSECTION.
 3. WHERE THE ANGLE BETWEEN THE DIAGONAL STRIPES AND THE TRACK (θ) WOULD BE LESS THAN APPROXIMATELY 20°, THE STRIPES SHOULD BE SLOPED IN THE OPPOSITE DIRECTION FROM THAT SHOWN.

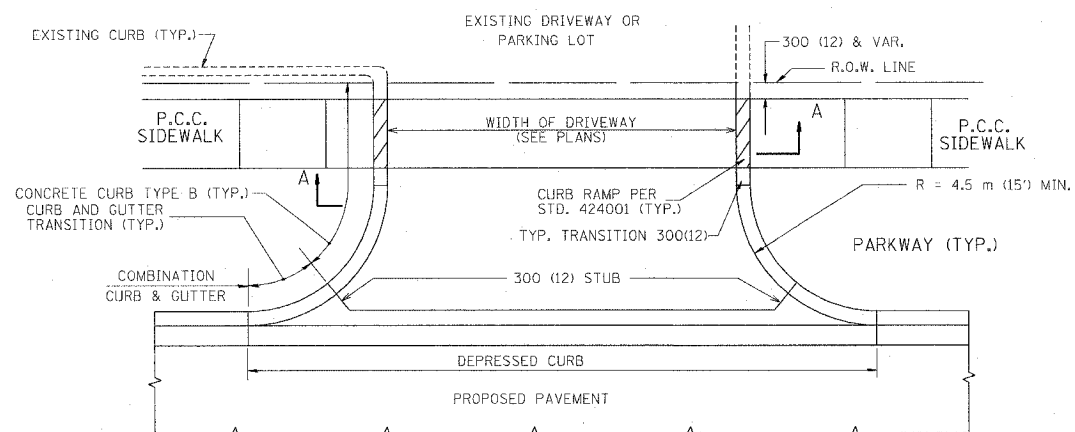
- NOTE:
1. DISTANCE TO BE SHOWN ON SIGN MEASURED FROM A POINT 1.8 m (6 FEET) FROM THE RAIL CLOSEST TO THE INTERSECTION TO THE STOP LINE OR CROSSWALK, WHICHEVER IS CLOSEST, ROUNDED DOWN TO THE NEAREST 1.5 m (5 FEET). WHERE THERE IS NO STOP LINE, MEASURE TO POINT WHERE THE DRIVER HAS A VIEW OF APPROACHING TRAFFIC.
 2. THE CLEARANCE SIGN IS ALSO TO BE USED AS AN INTERIM MEASURE AT LOCATIONS WITH INTERCONNECTED INTERSECTION TRAFFIC SIGNALS WHERE IT IS PLANNED TO CHANGE THEM TO NEAR-SIDE SIGNALS AT A FUTURE TIME. IN THIS CASE, THE DISTANCE TO BE SHOWN ON THE SIGN IS MEASURED FROM THE EDGE OF THE STRIPED-OUT AREA INSTEAD OF 6-FEET FROM THE RAIL. THE SIGN IS TO BE REMOVED WHEN THE NEAR-SIDE SIGNALS ARE INSTALLED AND THE PAVEMENT MARKINGS EXTEND TO THE INTERSECTION.

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

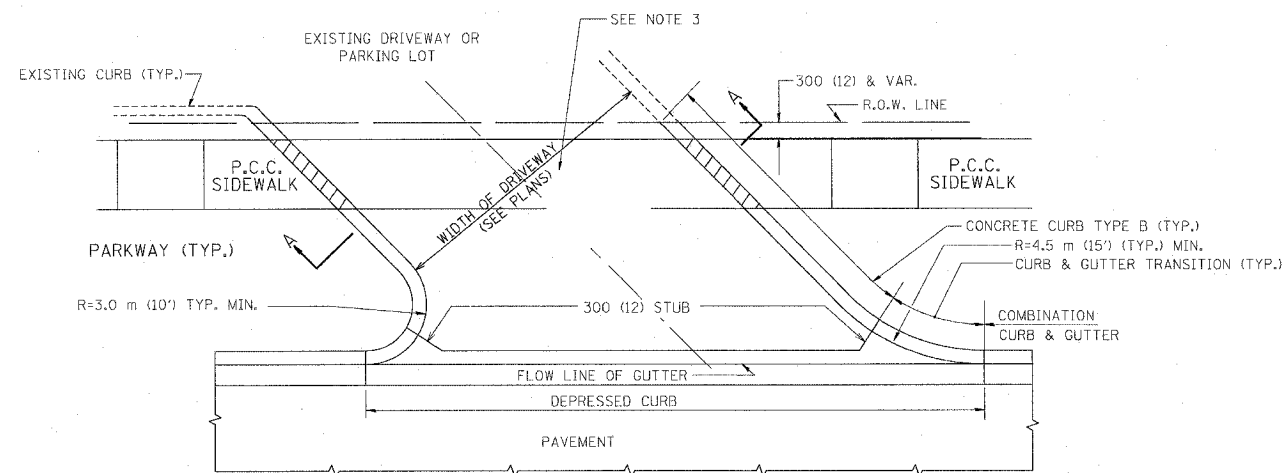
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		TYPICAL SUPPLEMENTAL SIGNING AND PAVEMENT MARKING TREATMENT FOR RAILROAD CROSSINGS
		DRAWN BY:
		CHECKED BY:
		\$\$DATE\$\$

F.A. SHEET	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	160
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	

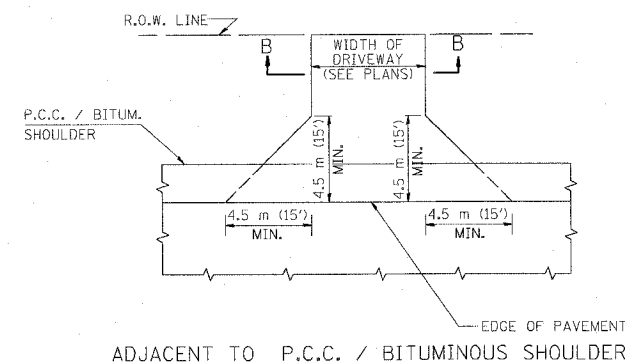
60881



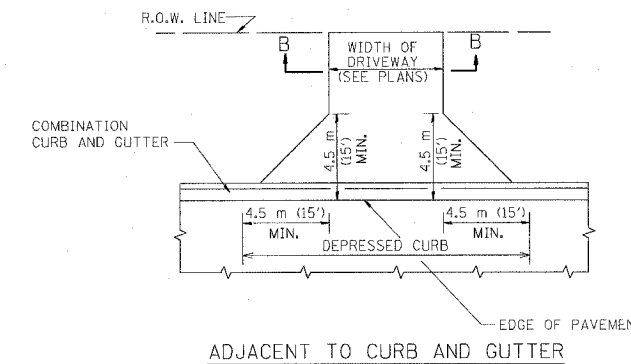
WITH CONCRETE CURB, TYPE B



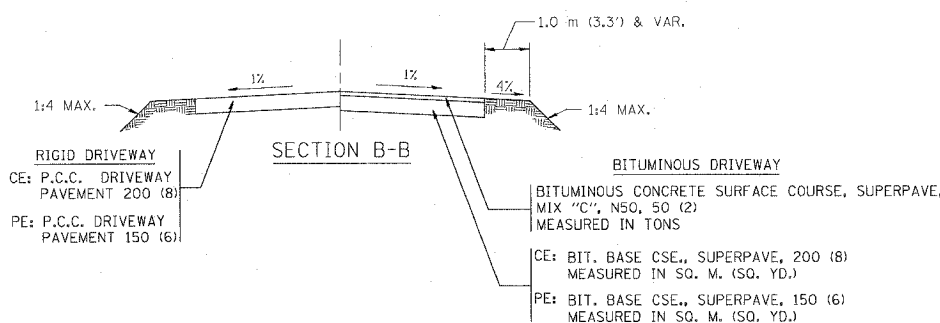
WITH CONCRETE CURB, TYPE B



ADJACENT TO P.C.C. / BITUMINOUS SHOULDER



ADJACENT TO CURB AND GUTTER



SECTION B-B

RURAL FIELD ENTRANCE (FE)
 BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE MIX "C", N50, 50 (2) MEASURED IN TONS
 CE: BIT. BASE CSE., SUPERPAVE, 200 (8) MEASURED IN SQ. M. (SQ. YD.)
 PE: BIT. BASE CSE., SUPERPAVE, 150 (6) MEASURED IN SQ. M. (SQ. YD.)

GENERAL NOTES:

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS IN THE PERMIT HANDBOOK. DRIVEWAYS SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

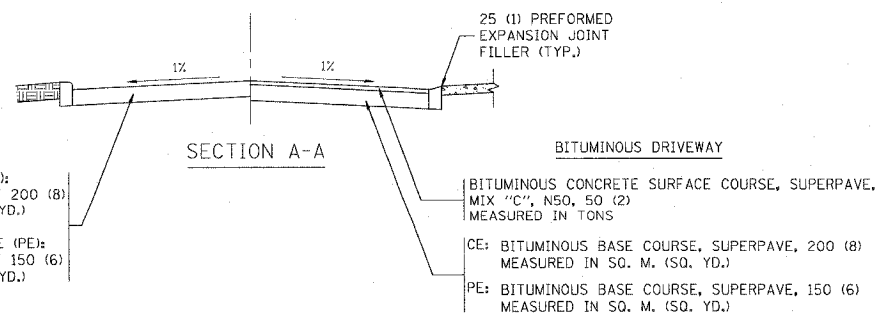
COMMERCIAL DRIVEWAYS SHALL BE CONSTRUCTED WITH CONCRETE CURB, TYPE B RETURNS EXCEPT WHEN THE SIDEWALK EDGE IS 1.2 METERS (4 FEET) OR LESS FROM THE BACK OF CURB, CONSTRUCT A FLARE DRIVEWAY WITHOUT CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

25 (1) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

WHEN THE P.C.C. SIDEWALK EXTENDS THROUGH THE DRIVEWAY, THE THICKNESS OF THE SIDEWALK IN THE DRIVEWAY AREA SHALL BE THE SAME AS THE DRIVEWAY THICKNESS. SIDEWALK WILL BE PAID FOR AS P.C.C. SIDEWALK OF THE THICKNESS SPECIFIED. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.



SECTION A-A

RIGID DRIVEWAY
 COMMERCIAL ENTRANCE (CE): P.C.C. DRIVEWAY PAVEMENT 200 (8) MEASURED IN SQ. M. (SQ. YD.)
 NON-COMMERCIAL ENTRANCE (PE): P.C.C. DRIVEWAY PAVEMENT 150 (6) MEASURED IN SQ. M. (SQ. YD.)

BITUMINOUS DRIVEWAY
 BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50, 50 (2) MEASURED IN TONS
 CE: BITUMINOUS BASE COURSE, SUPERPAVE, 200 (8) MEASURED IN SQ. M. (SQ. YD.)
 PE: BITUMINOUS BASE COURSE, SUPERPAVE, 150 (6) MEASURED IN SQ. M. (SQ. YD.)

ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED

ILLINOIS DEPARTMENT OF TRANSPORTATION

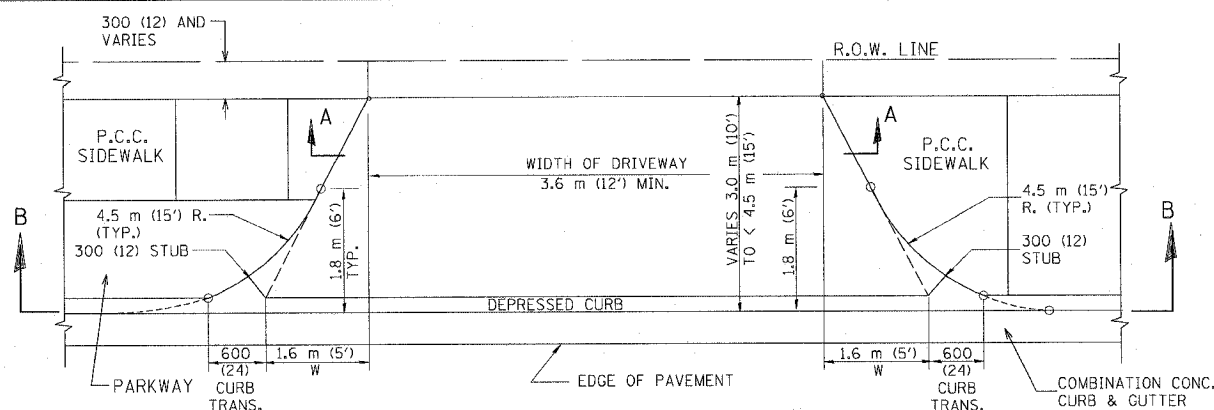
DRIVEWAY DETAILS
 DISTANCE BETWEEN R.O.W. AND FACE OF CURB / EDGE OF SHOULDER \geq 4.5 m (15')

REVISIONS	
NAME	DATE
P. LaFLEUR	04-15-03
R. SHAH	11-04-95
J. POLLASTRINI	08-12-96
J. POLLASTRINI	12-14-96
A. ABBAS	03-21-97
T. HOLTZ	04-08-97
M. GOMEZ	04-06-01

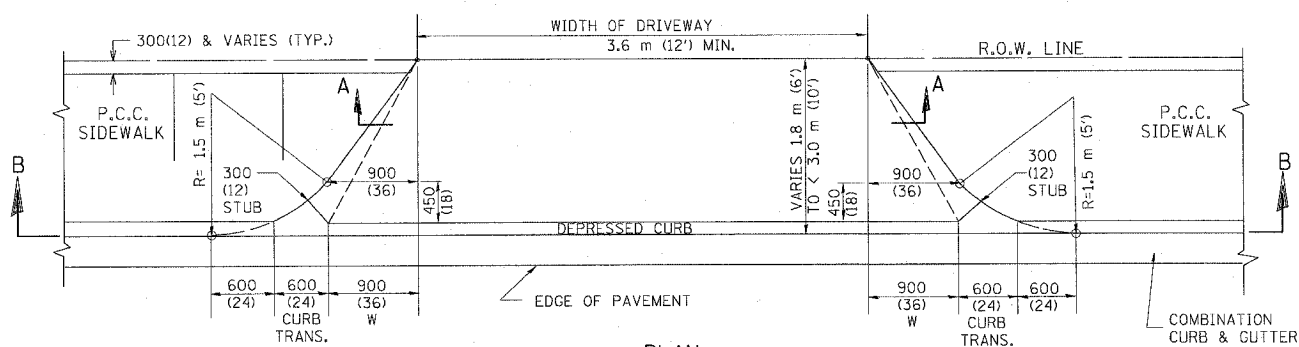
SCALE: NONE
 DATE PLOTTED: 04/17/2003
 DRAWN BY: SC
 CHECKED BY: JFP

P.A. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	461
STA.	TO STA.			
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

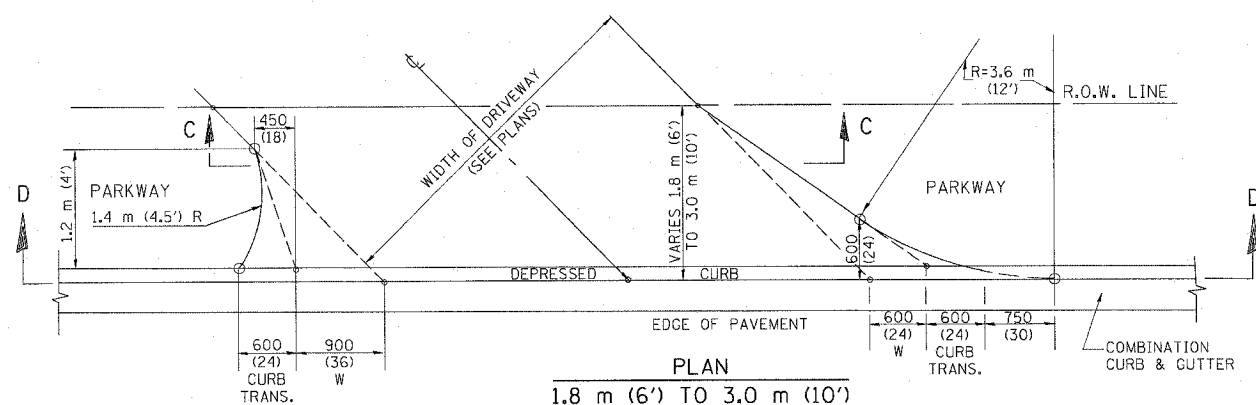
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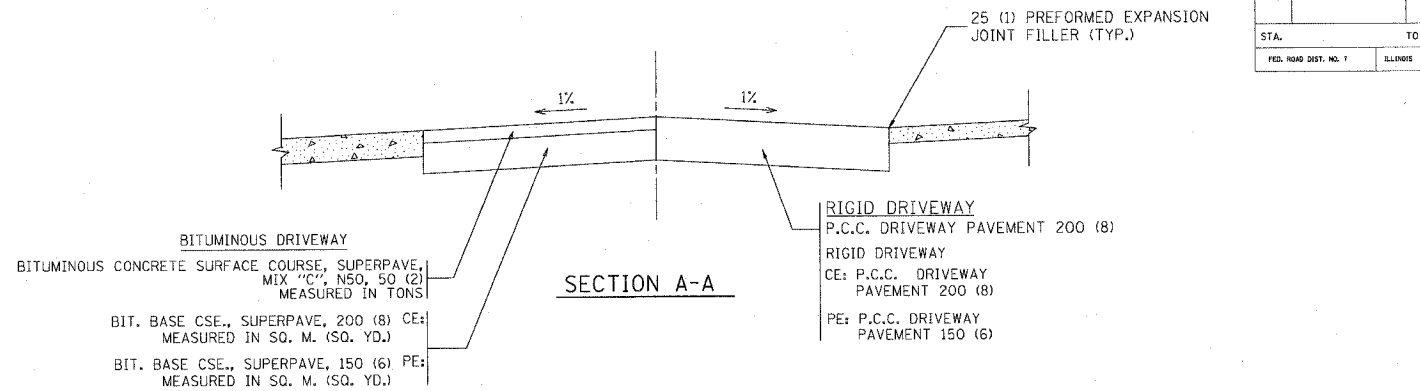
PLAN
3.0 m (10') TO < 4.5 m (15')



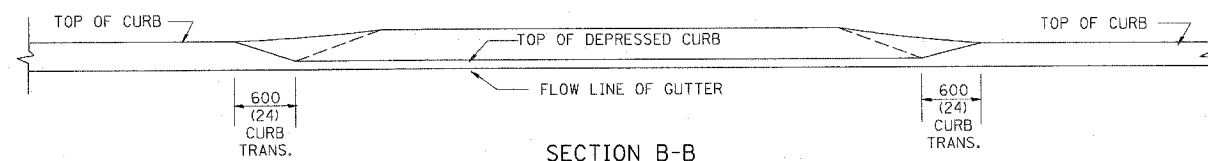
PLAN
1.8 m (6') < 3.0 m (10')



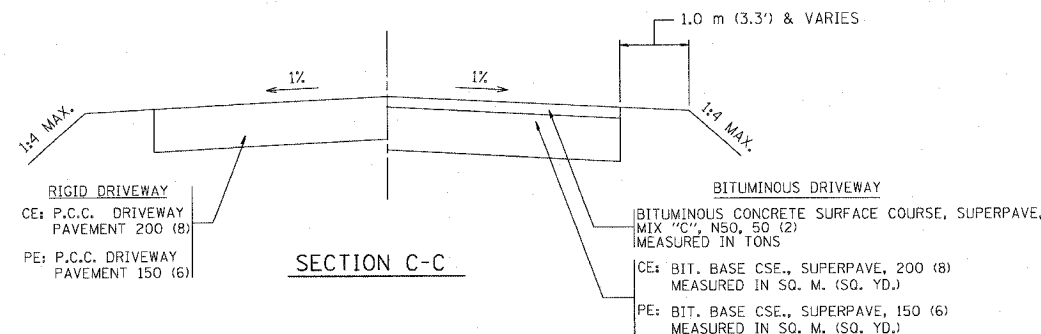
PLAN
1.8 m (6') TO 3.0 m (10')



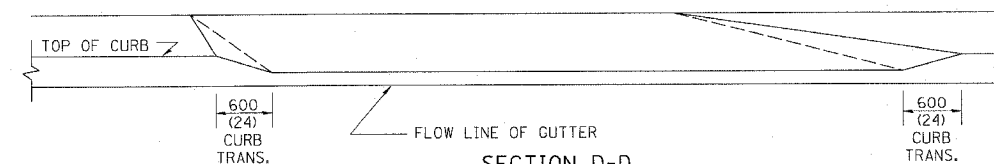
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

GENERAL NOTES

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE 'HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS'. FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS 10 IN THE PERMIT HANDBOOK. WHERE SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED WITH RIGID PAVEMENT. WHERE NO SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED IN KIND. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

WHEN THE DISTANCE BETWEEN R.O.W. AND THE BACK OF CURB IS EQUAL TO OR LESS THAN 2.4 M (8'), THE P.C.C. SIDEWALK SHALL EXTEND TO THE BACK OF CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

25 (1) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

"W" VARIES FROM 900 (36) TO 1.5 m (5 FT.) PROPORTIONAL TO THE LENGTH (L), FROM 1.8 m (6 FT.) TO 3 m (10 FT.).

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS

DISTANCE BETWEEN ROW AND FACE OF CURB < 4.5 m (15')

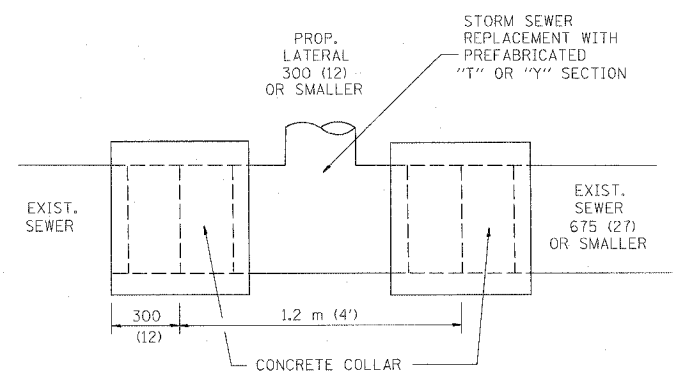
REVISIONS	
NAME	DATE
P. LAFLEUR	04/15/03
M. GOMEZ	04/06/01
R. SHAH	11/06/95
J. POLLASTRINI	08/12/96
J. POLLASTRINI	12/14/96
A. ABBAS	03/21/97
T. HOLTZ	04/08/97

SCALE: NONE
DATE PLOTTED: 04/17/2003

DRAWN BY: SG
CHECKED BY: JFP
BD400-02 (80-02)

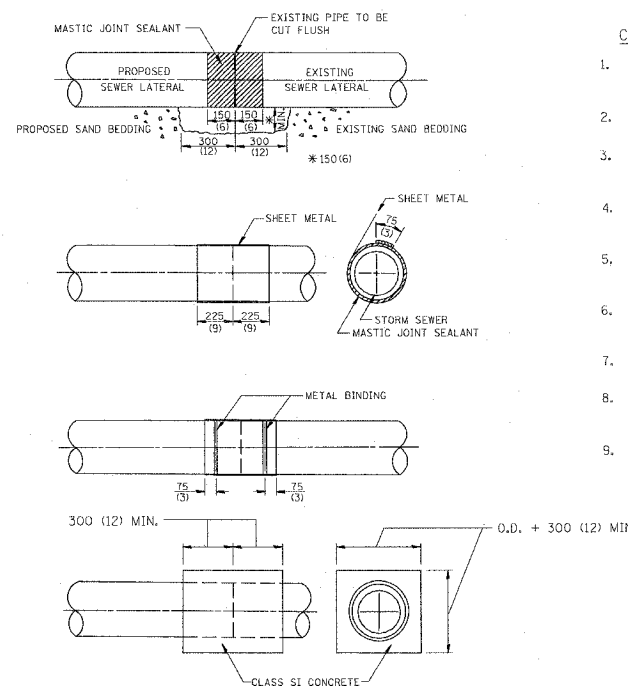
REVISION DATE: 04/15/03

60881



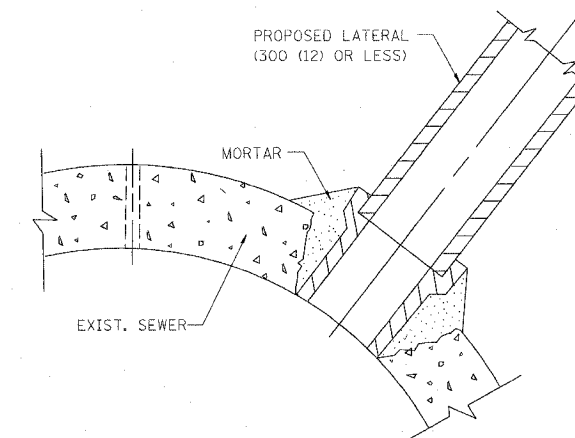
DETAIL "A"

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



DETAIL "B"

CLASS SI CONCRETE COLLAR



DETAIL "C"

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

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 1.1 (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 OZZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
- PLACE CLASS SI CONCRETE AROUND THE JOINT.

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 UNSUITABLE 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

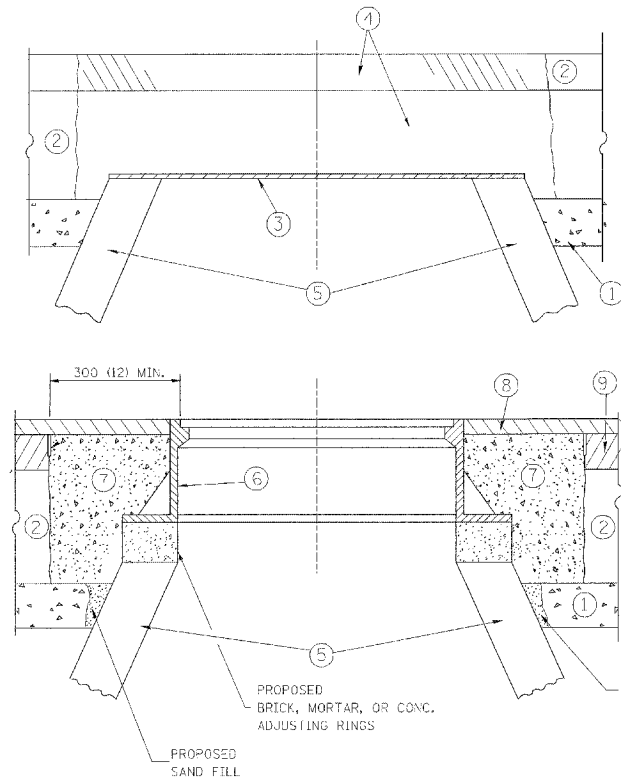
DETAIL OF STORM SEWER CONNECTION TO EXISTING SEWER

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	10/25/94
R. SHAH	06/12/96

SCALE: NONE
DATE: **DATE**

DRAWN BY CADD
CHECKED BY

F. A. SHEET	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	463
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



CONSTRUCTION PROCEDURES

STAGE 1 (BEFORE PAVEMENT MILLING)

- A) REMOVE A MINIMUM OF 300 (12) OF THE PAVEMENT FROM AROUND THE STRUCTURE.
- B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.
- C) COVER THE STRUCTURE OPENING WITH A 900 (36) DIAMETER METAL PLATE.
- D) BACKFILL WITH CRUSHED STONE AND A MINIMUM 40 (1 1/2) THICK BITUMINOUS MATERIAL APPROVED BY THE ENGINEER.

STAGE 2 (AFTER PAVEMENT MILLING)

- A) REMOVE THE BITUMINOUS MATERIAL AND CRUSHED STONE.
- B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.
- C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS S1 CONCRETE, OR BITUMINOUS CONCRETE SURFACE OR BINDER COURSE MATERIAL TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

THE PROCEDURE EXPLAINED ABOVE SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTIONS 353, 406, 602, AND 603 OF THE STANDARD SPECIFICATIONS.

LEGEND

- ① SUB-BASE GRANULAR MATERIAL
- ② EXISTING PAVEMENT
- ③ 900 (36) DIAMETER METAL PLATE
- ④ PROPOSED CRUSHED STONE AND BITUMINOUS MATERIAL
- ⑤ EXISTING STRUCTURE
- ⑥ FRAME AND LID (SEE NOTES)
- ⑦ CLASS S1 CONCRETE, BITUMINOUS CONCRETE SURFACE OR BINDER COURSE MATERIAL
- ⑧ PROPOSED BITUMINOUS CONCRETE SURFACE COURSE
- ⑨ PROPOSED BITUMINOUS CONCRETE BINDER COURSE

NOTES:

EXISTING BROKEN FRAMES AND LIDS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. REPLACEMENT FRAMES AND LIDS WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 309.04 OF THE STANDARD SPECIFICATIONS UNLESS A SEPARATE PAY ITEM HAS BEEN PROVIDED.

IF THE EXISTING LIDS ARE OPEN, THE FRAME WILL BE ADJUSTED TO THE ELEVATION OF THE MILLED PAVEMENT SURFACE PRIOR TO THE MILLING OPERATION. THE FRAME WILL NOT BE REMOVED AND COVERED BY THE METAL PLATE.

CITY OF CHICAGO CASTINGS ARE THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL NOTIFY THE CITY FOR REMOVAL AND DISPOSITION OF THE CASTINGS.

THE METAL PLATE USED TO COVER THE STRUCTURE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

WHEN STRUCTURES ARE TO BE ADJUSTED OR RECONSTRUCTED, THE LOWERING AND RAISING OF THE FRAMES AND LIDS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE CORRESPONDING PAY ITEM.

LOCATION OF STRUCTURES:

THE CONTRACTOR WILL BE REQUIRED TO KEEP A RECORD OF THE LOCATIONS OF THE BURIED STRUCTURES ACCORDING TO THE STATION AND DISTANCE LEFT OR RIGHT OF THE CENTERLINE OF PAVEMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR WILL DELIVER THE RECORD TO THE ENGINEER.

BASIS OF PAYMENT: FRAMES AND LIDS TO BE ADJUSTED, SPECIAL, EACH

NEW FRAMES AND LIDS, WHEN SPECIFIED, WILL BE PAID FOR SEPARATELY.

DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN

REVISIONS	
NAME	DATE
R. SHAH	10/25/94
R. SHAH	01/30/95
R. SHAH	03/10/95
A. ABBAS	03/21/97
R. WIEDEMAN	05/14/04

ILLINOIS DEPARTMENT OF TRANSPORTATION

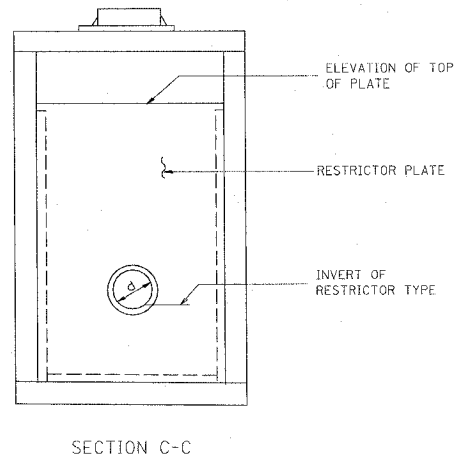
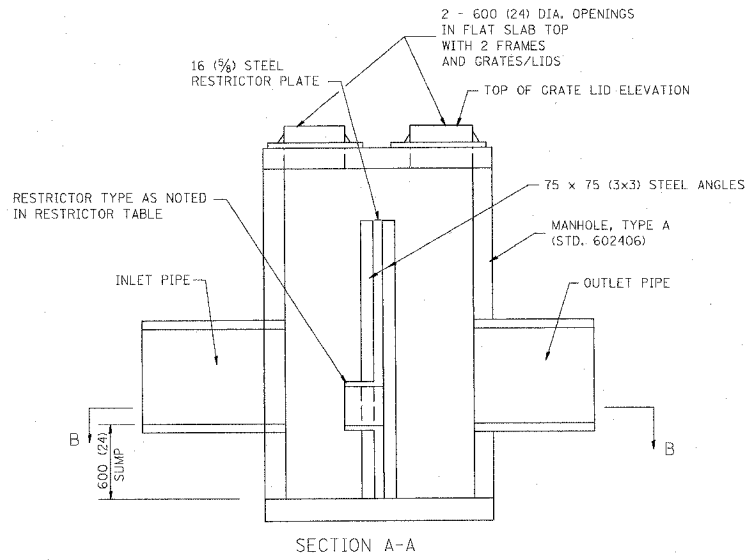
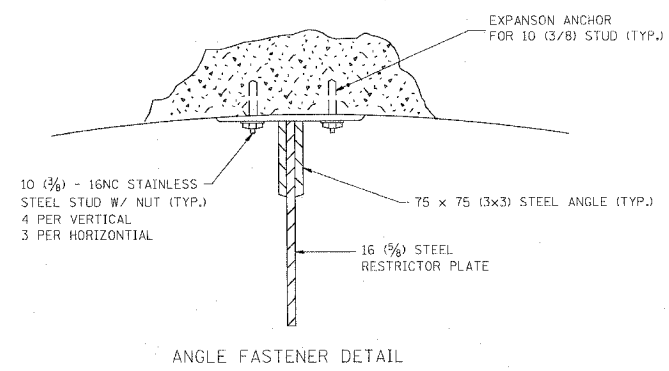
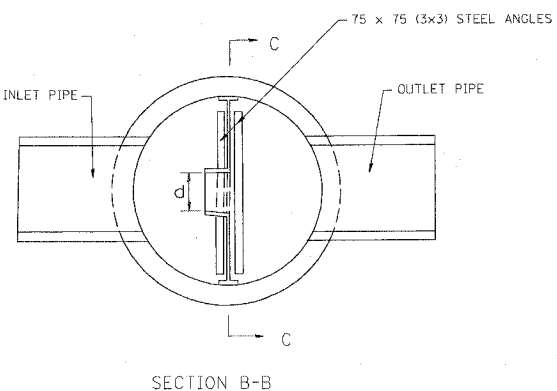
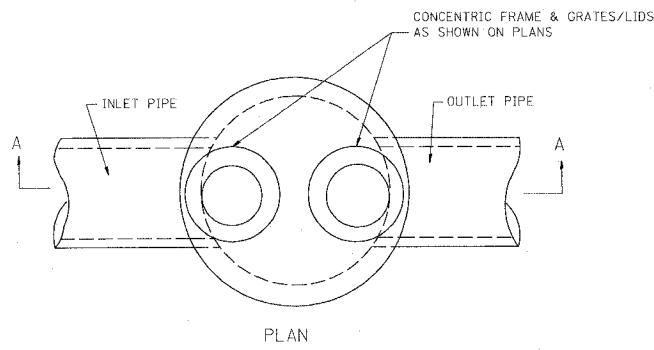
DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

SCALE: NONE
DATE: 05/17/2004

DRAWN BY
CHECKED BY

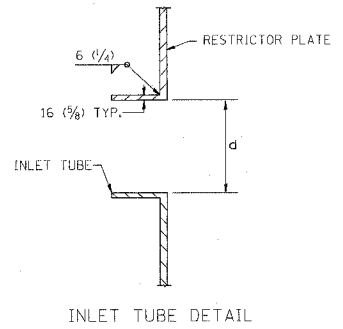
BD600-03 (BD-8)
REVISION DATE: 05/17/04

60881

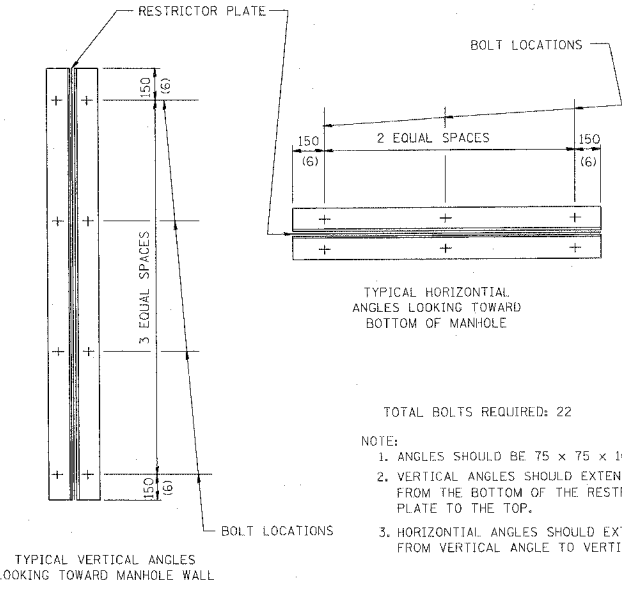


NOTES:

1. ALL STEEL ANGLES AND PLATES TO BE GALVANIZED AFTER FABRICATION.
2. ALL RESTRICTOR PLATES, ANGLES AND HARDWARE TO BE INCLUDED IN THE COST OF THE MANHOLE.
3. BASIS OF PAYMENT: "MANHOLES, TYPE A, 1.8m (6FT.) DIAMETER, TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE" EACH



STATION	MANHOLE DIAMETER	FRAME AND GRATE	RESTRICTOR TYPE	INSIDE RESTRICTOR TYPE DIAMETER mm (In.) (d)	INVERT OF RESTRICTOR TYPE	ELEVATION OF TOP OF PLATE OVERFLOW



- TOTAL BOLTS REQUIRED: 22
- NOTE:
1. ANGLES SHOULD BE 75 x 75 x 10 (3x3x3/8)
 2. VERTICAL ANGLES SHOULD EXTEND FROM THE BOTTOM OF THE RESTRICTOR PLATE TO THE TOP.
 3. HORIZONTAL ANGLES SHOULD EXTEND FROM VERTICAL ANGLE TO VERTICAL ANGLE.

RESTRICTOR TYPE					
1	2	3	4	5	6
RE-ENTRANT TUBE	SHARP EDGED	SQUARE EDGED	RE-ENTRANT TUBE	SQUARE EDGED	ROUNDED
LENGTH: 1/2 TO 1 DIA.		STREAM CLEARS SIDES	LENGTH: 2-1/2 DIA.	LENGTH: 2-1/2 DIA.	
C=.52	C=.61	C=.61	C=.73	C=.82	C=.98

VALUES OF "C" FOR CIRCULAR AND SQUARE ORIFICES

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

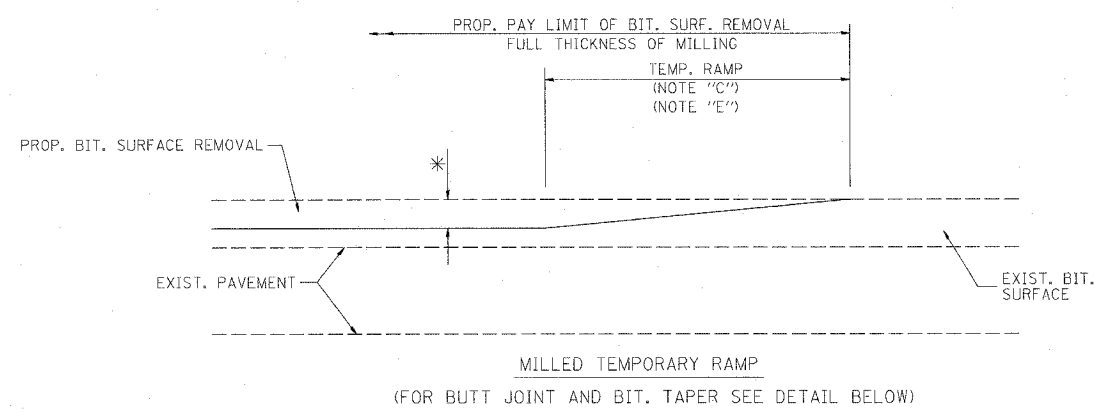
MANHOLE WITH RESTRICTOR PLATE

REVISIONS	
NAME	DATE
R. SHAH	09/09/94
R. SHAH	10/25/94
E. GOMEZ	08/28/00
M. GOMEZ	01/08/01

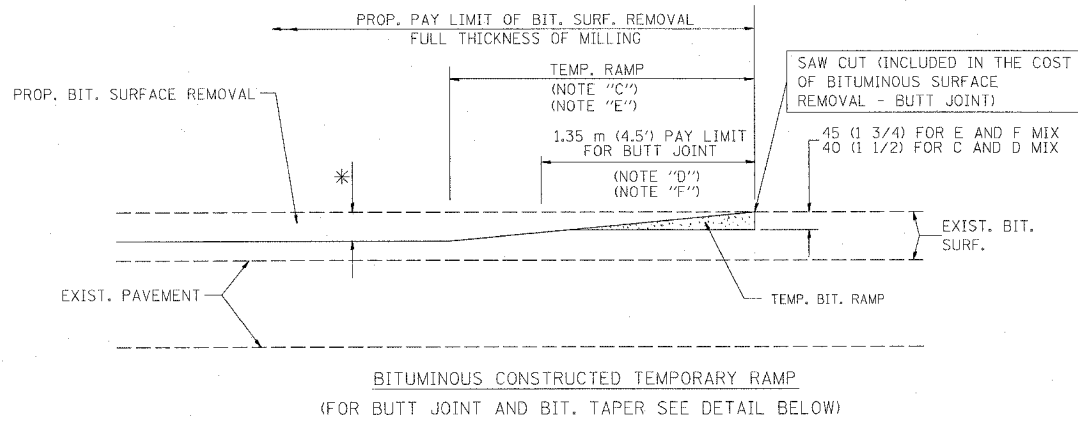
SCALE: NONE
DATE **DATE**
DRAWN BY
CHECKED BY

F. A. REC.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			502	465
STA.	TO STA.			
FED. ROAD DIST. NO.	ALIGNMENT	FED. AID PROJECT		

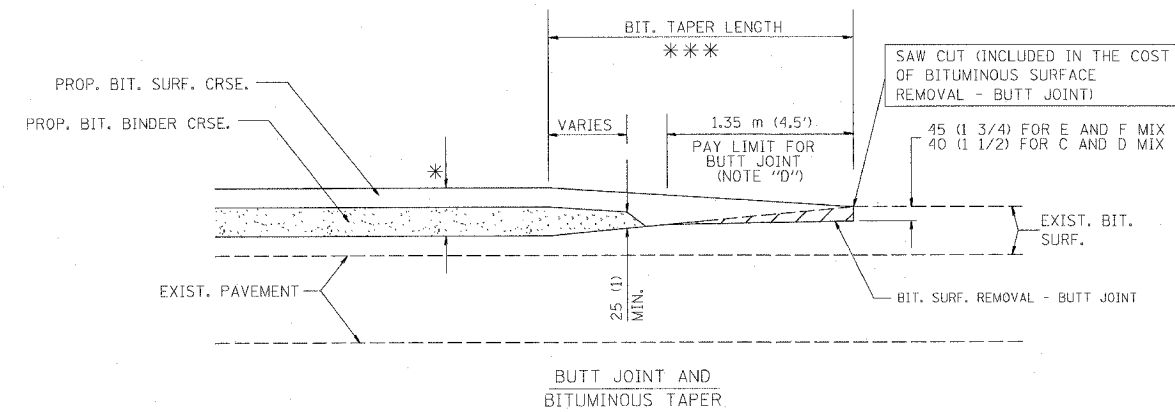
60881



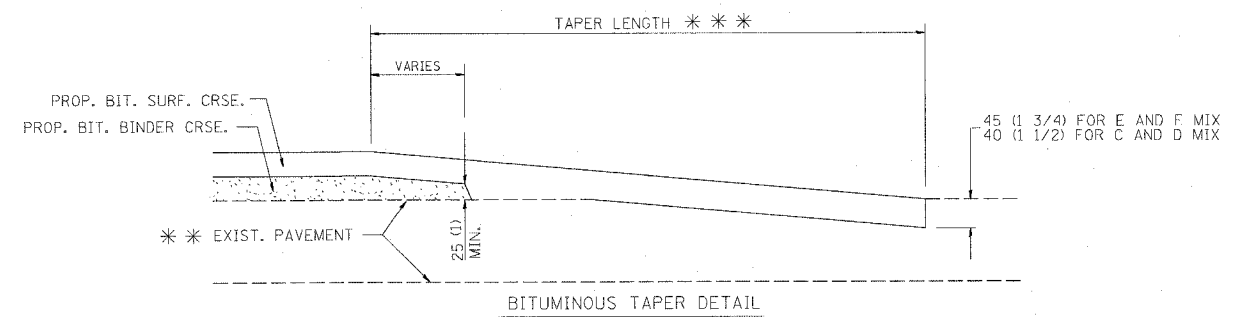
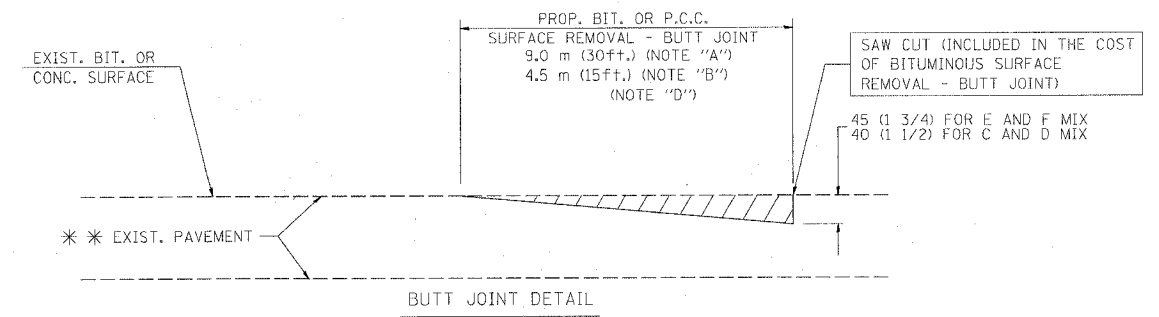
OPTION 1



OPTION 2
TYPICAL TEMPORARY RAMP



TYPICAL BUTT JOINT AND BITUMINOUS TAPER FOR MILLING AND RESURFACING



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".

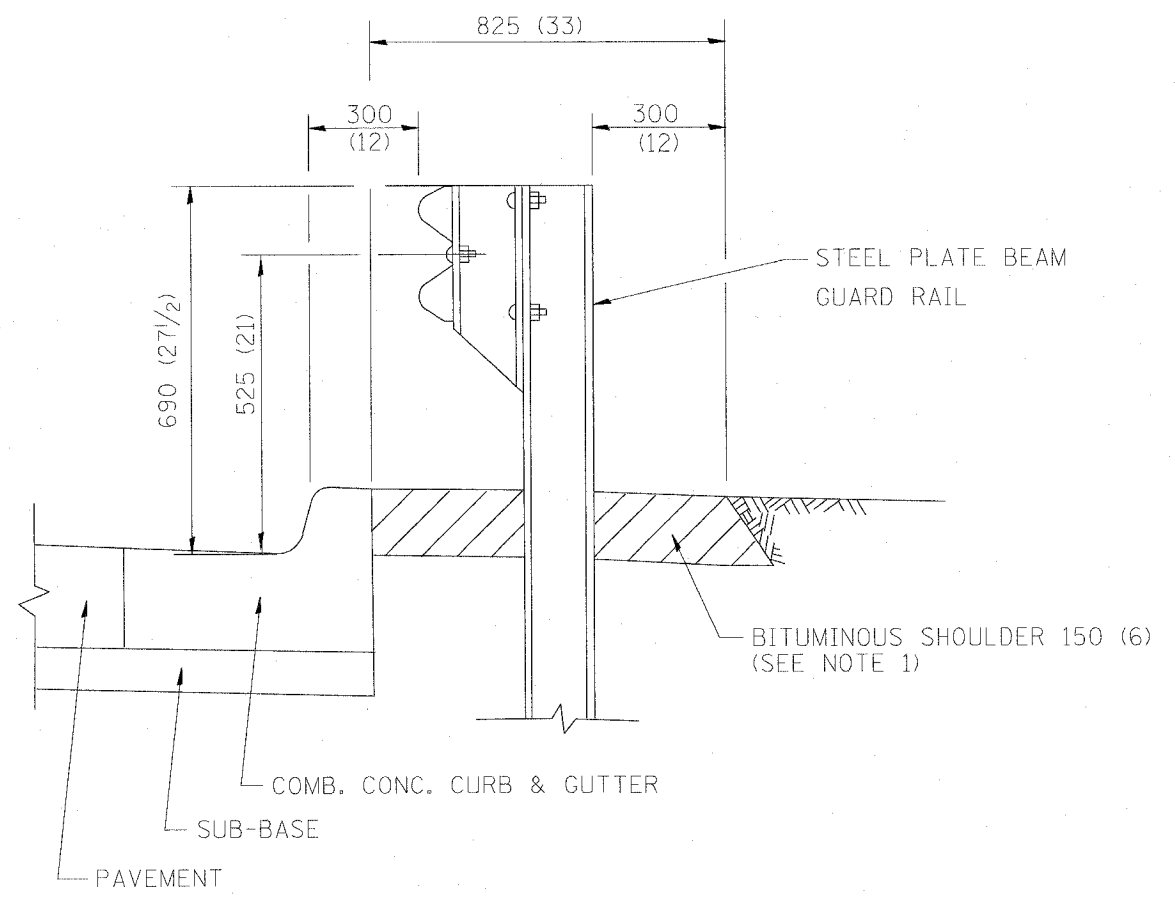
REVISIONS	
NAME	DATE
M. DE YONG	6-13-90
M. DE YONG	7-3-90
M. DE YONG	3-27-92
R. SHAH	09/09/94
R. SHAH	10/25/94
A. ABBAS	03/21/97
M. GOMEZ	04/06/01

SCALE: NONE
DATE PLOTTED: **DATE**

DRAWN BY
CHECKED BY

F. A. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	166
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

60881

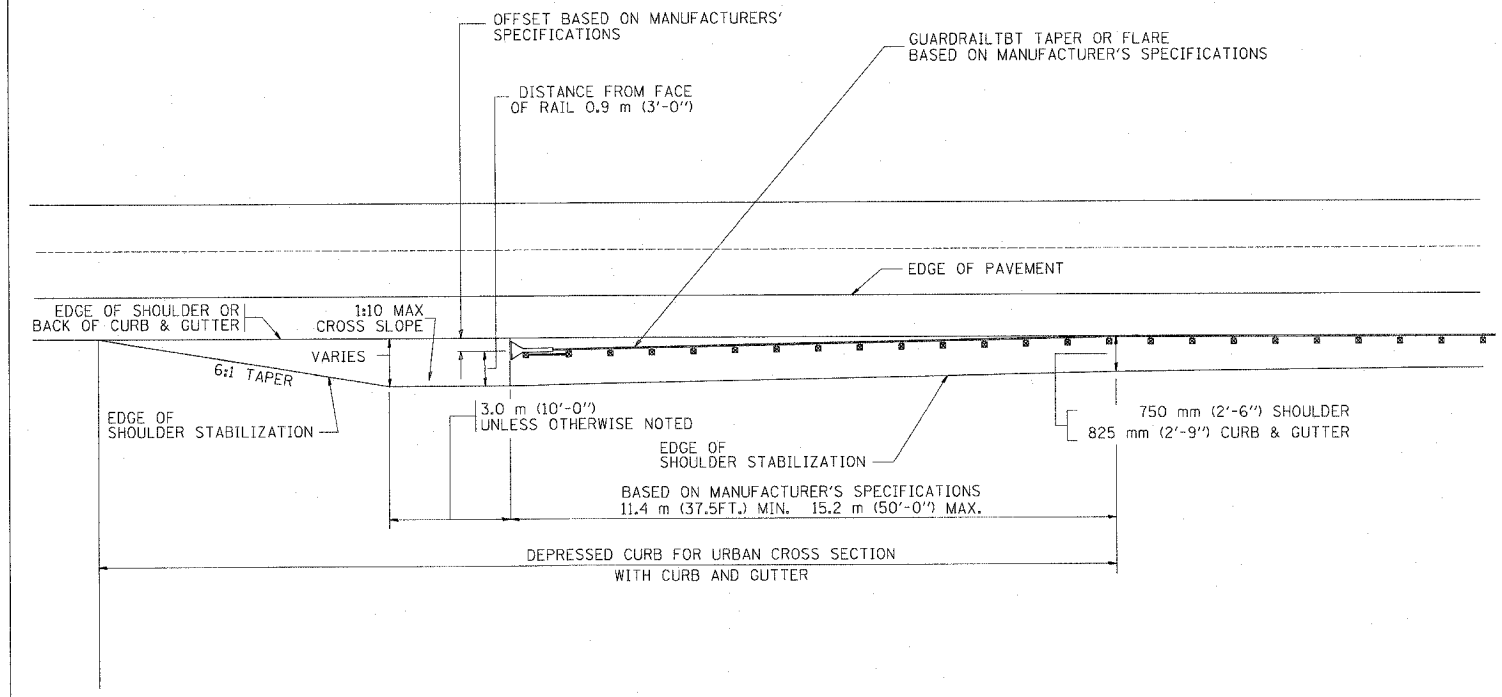


- NOTES: 1. THE BITUMINOUS SHOULDER SHALL EXTEND UNDER THE TRAFFIC BARRIER TERMINAL
2. GUARD RAIL MAY BE PLACED AT THE BACK OF CURB WHEN DIRECTED BY THE ENGINEER.

BASIS OF PAYMENT: BITUMINOUS SHOULDER 150 (6) WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER m² (sq. yd.) AS "BITUMINOUS SHOULDER 150 (6)."

STEEL PLATE BEAM GUARD RAIL AND TRAFFIC BARRIER TERMINAL, OF THE TYPE SPECIFIED WILL BE PAID FOR SEPARATELY.

DETAILS FOR STEEL PLATE BEAM GUARD RAIL ADJACENT TO CURB AND GUTTER
 [FOR ROADWAY SPEED 60 kmh (35 MPH) TO 70 kmh (45 MPH)]



STABILIZATION AT TBT TY. 1 SPL.

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
 DETAILS FOR
 STEEL PLATE BEAM GUARD RAIL
 ADJACENT TO CURB AND GUTTER
 STABILIZATION AT TBT TY 1 SPL.

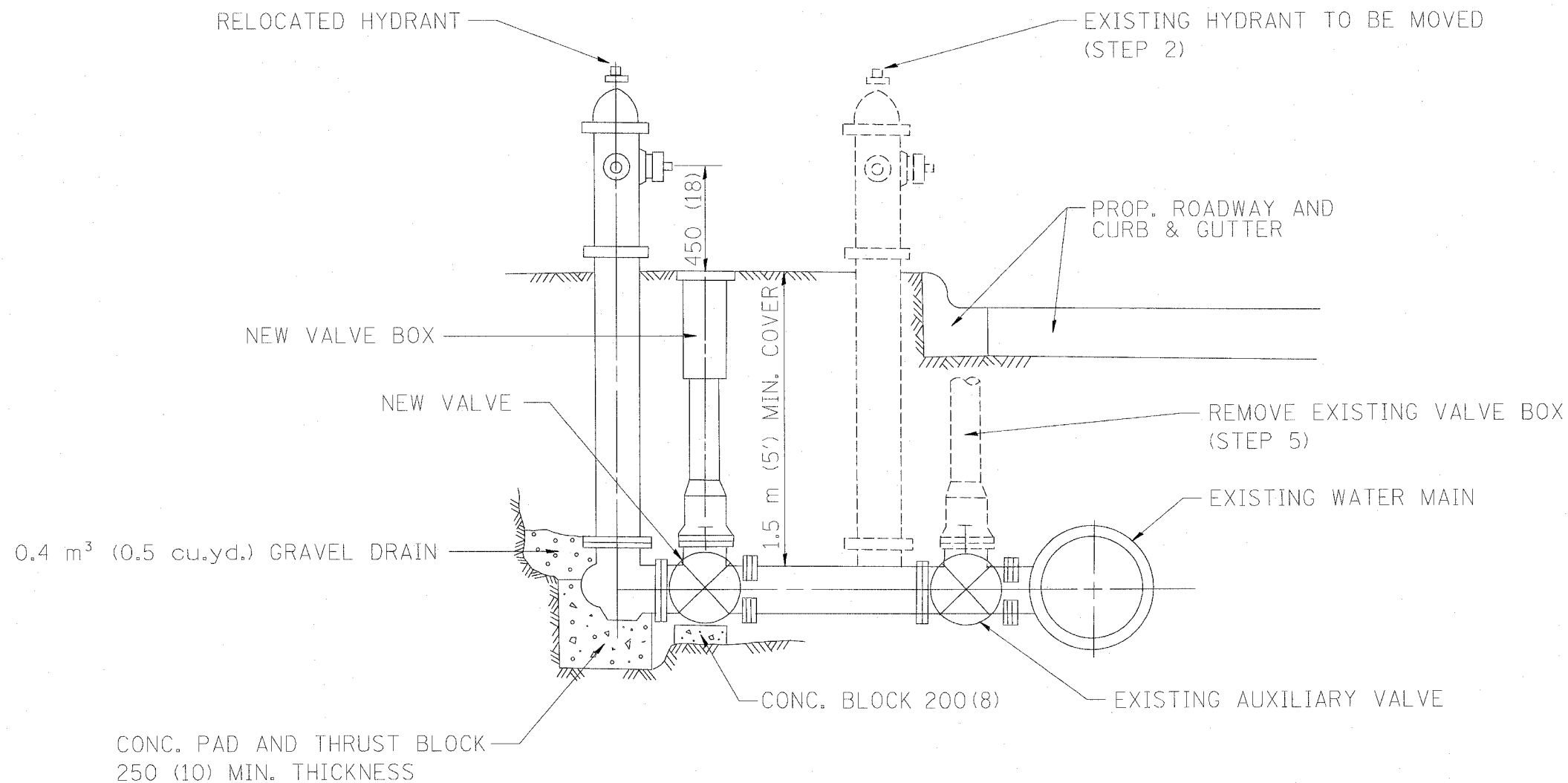
REVISIONS	
NAME	DATE
M. DE YONG	09-22-90
M. DE YONG	07-14-92
R. SHAH	09/09/94
R. SHAH	10/25/94
R. SHAH	02/23/95
A. ABBAS	03/21/97
E. GOMEZ	08/28/00

SCALE: NONE DRAWN BY jjs
 DATE: **DATE** CHECKED BY

DATE-TIME
 DGN-SPEC

F. A. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	467
STA.	TO STA.			
FED. ROAD DIST. NO.	DISTRICT	FED. AID PROJECT		

60881



SEQUENCE OF CONSTRUCTION:

1. CLOSE EXISTING VALVE.
2. REMOVE EXISTING HYDRANT.
3. INSTALL HYDRANT EXTENSION AND NEW VALVE.
4. RELOCATE EXISTING HYDRANT.
5. OPEN EXISTING VALVE, REMOVE BOX.
6. BACKFILL.
7. FLUSH AND TEST FOR CHLORIDE RESIDUAL AND PROVIDE TEST.

ALL WORK TO BE DONE IN ACCORDANCE WITH ARTICLE 564 OF THE STANDARD SPECIFICATIONS. NEW VALVE AND BOX SHALL BE SAME MAKE AND MODEL AS EXISTING.

FIRE HYDRANT TO BE MOVED

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

FIRE HYDRANT
TO BE MOVED

REVISIONS	
NAME	DATE
R. SHAH	09/09/94
R. SHAH	10/25/94

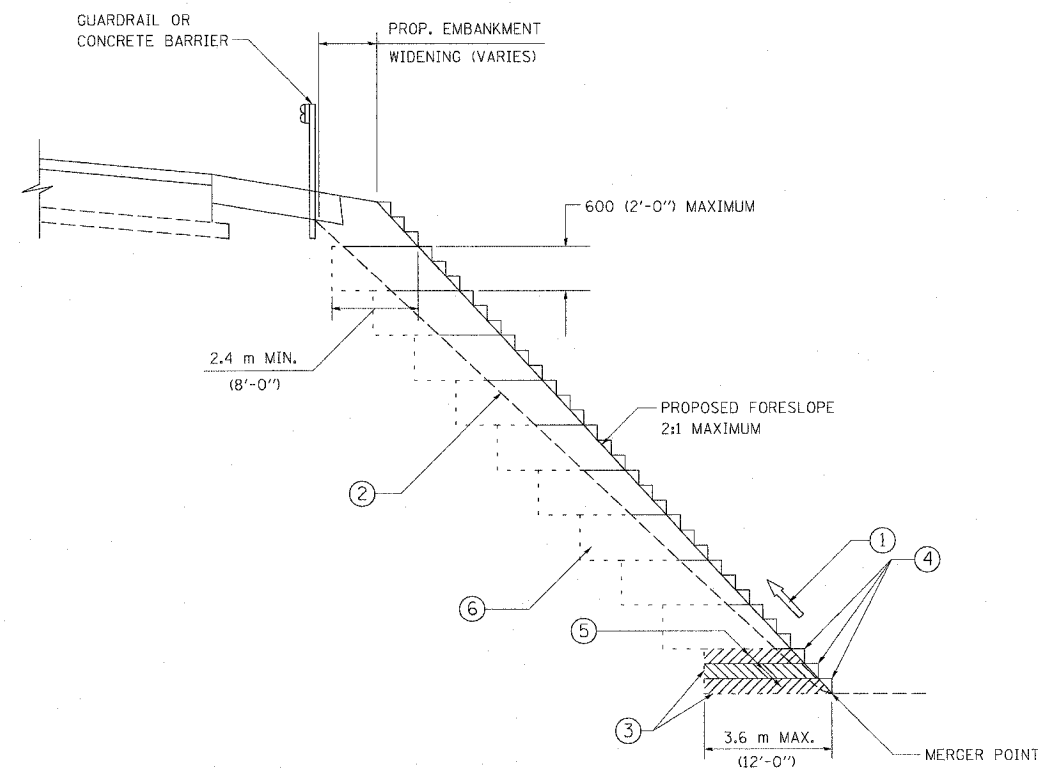
SCALE: NONE
DATE **DATE**

DRAWN BY
CHECKED BY

BD500-03 (BD-36)

F. A. RITE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	469
STA.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

60881



TYPICAL BENCHING DETAIL
FOR EMBANKMENT

NOTES:

- ① CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
- ② EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.04 OF THE STANDARD SPECIFICATIONS.
- ③ BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
- ④ TRIM TO FINAL SLOPE.
- ⑤ EQUAL 200 (8-INCH) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.06 OF THE STANDARD SPECIFICATIONS.
- ⑥ EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION (SPECIAL)". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

BENCHING DETAIL
FOR EMBANKMENT
WIDENING

REVISIONS	
NAME	DATE

SCALE: NONE
DATE **DATE**

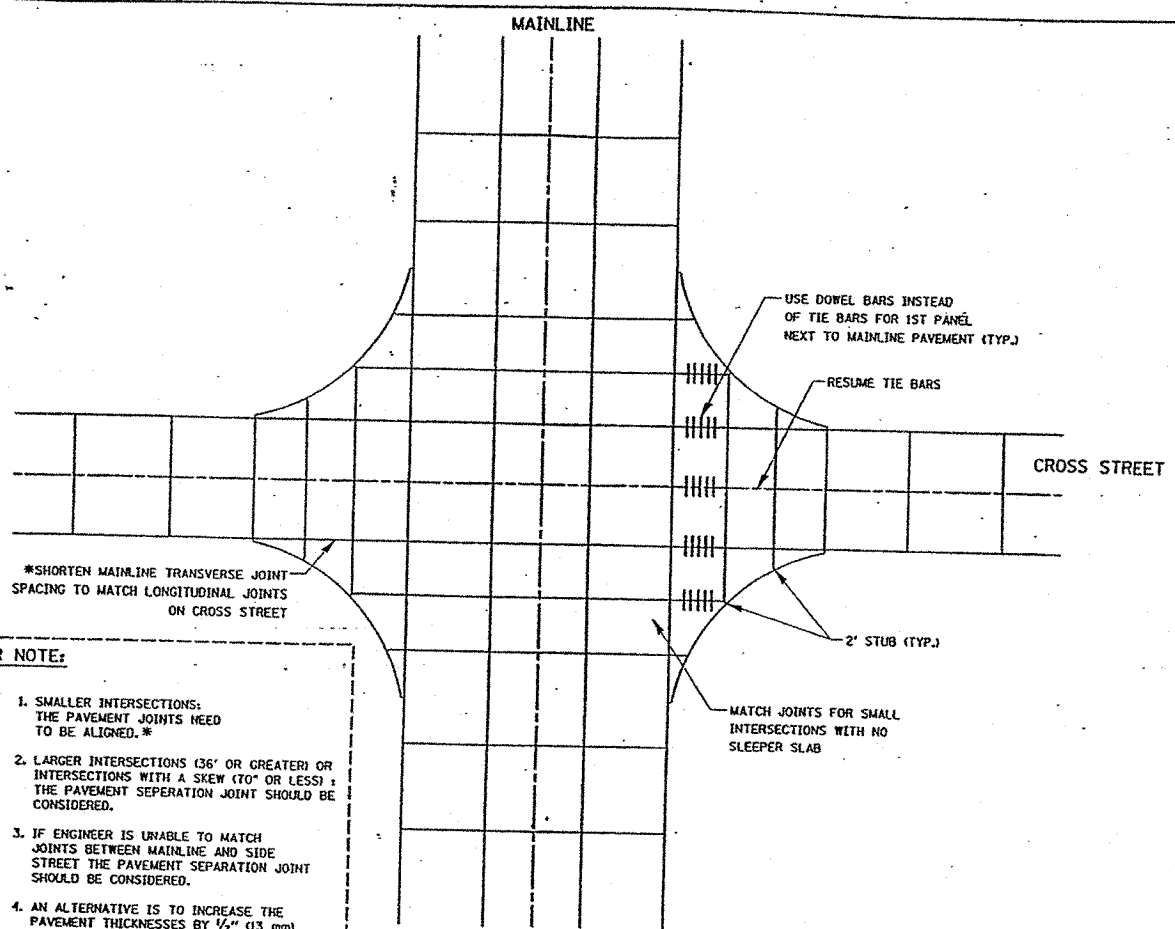
DRAWN BY: CADD
CHECKED BY: S.E.B.

(BD-51)

P.A. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO. 1	LEADING	FED. AID PROJECT		

6881

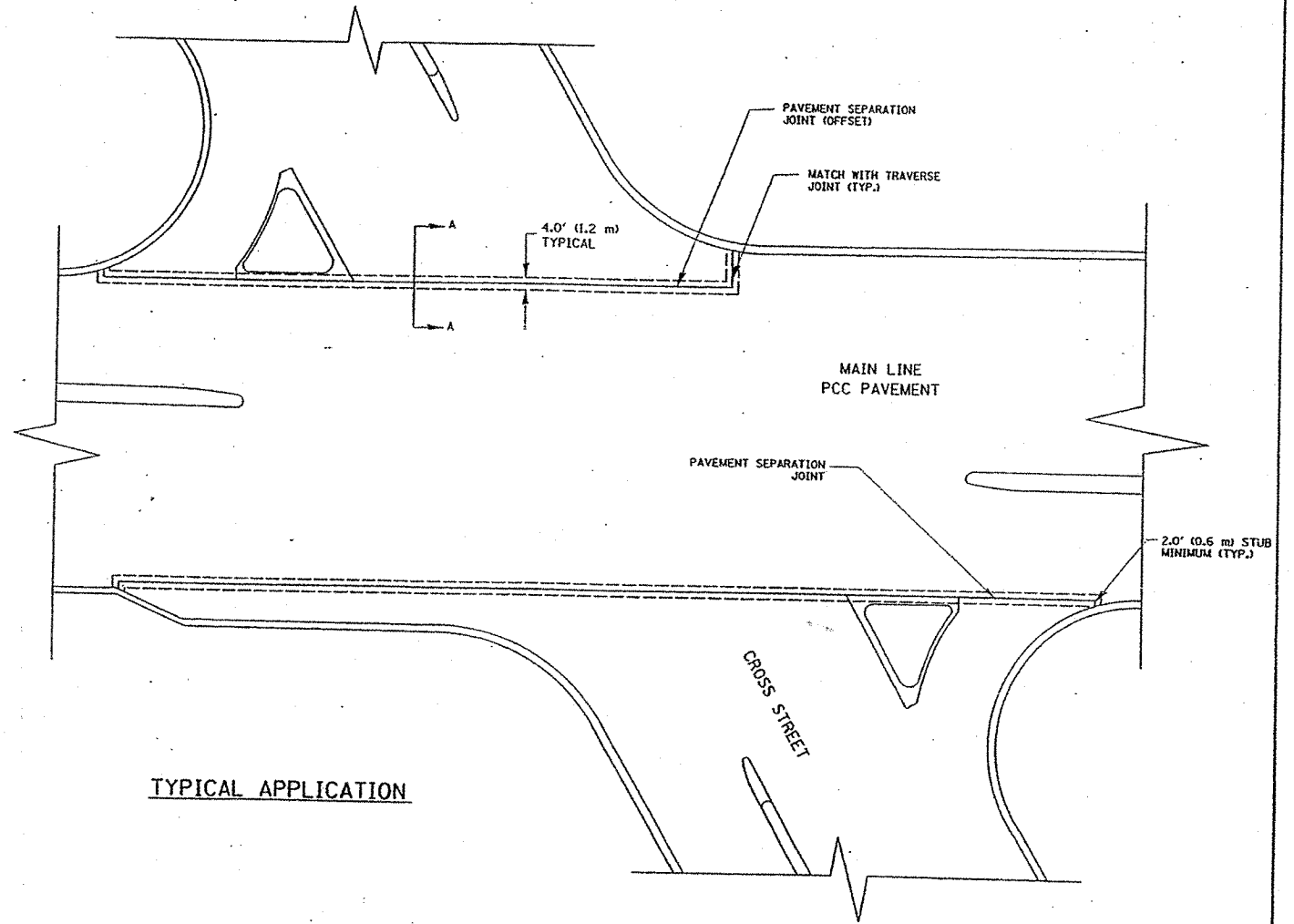
THE USE OF CROSS STREET PAVEMENT SEPARATION JOINTS FOR SKEWED OR LARGE INTERSECTIONS WHERE JOINTS MAY NOT MATCH



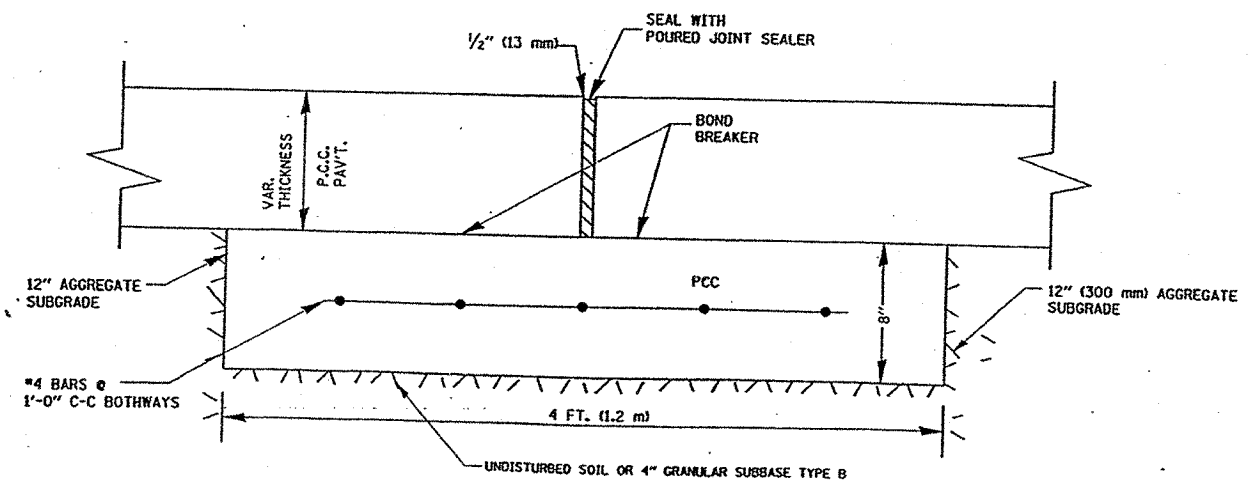
DESIGNER NOTE:

1. SMALLER INTERSECTIONS: THE PAVEMENT JOINTS NEED TO BE ALIGNED.*
2. LARGER INTERSECTIONS (36' OR GREATER) OR INTERSECTIONS WITH A SKEW (70° OR LESS): THE PAVEMENT SEPERATION JOINT SHOULD BE CONSIDERED.
3. IF ENGINEER IS UNABLE TO MATCH JOINTS BETWEEN MAINLINE AND SIDE STREET THE PAVEMENT SEPERATION JOINT SHOULD BE CONSIDERED.
4. AN ALTERNATIVE IS TO INCREASE THE PAVEMENT THICKNESSES BY 1/2" (13 mm) FOR THE LENGTH OF THE AFFECTED PANELS AT THE INTERSECTION.
5. FOR LARGE INTERSECTIONS (6 LANES OR MORE) WHERE JOINTS CAN BE MATCHED, USE #8 (25) DOWEL BARS INSTEAD OF #8 (25) TIE BARS AT EDGE OF MAINLINE PAVEMENT WHEN NO PAVEMENT SEPERATION JOINTS USED.

PLAN



TYPICAL APPLICATION



PROPOSED SECTION A-A

NOTE:

1. JOINT FILLER SHALL CONSIST OF A SHEET OF 1/2" (13 mm) BITUMINOUS PREFORMED FIBER JOINT FILLER CONFORMING TO ARTICLE 1051.03 OF THE STANDARD SPECIFICATIONS.
2. THE JOINT SHALL BE SEALED WITH A HOT POUR JOINT SEALER CONFORMING TO ARTICLE 1050.02 OF THE STANDARD SPECIFICATIONS.
3. A SINGLE LAYER OF FELT ROOFING PAPER SHALL SERVE AS A BOND BREAKER.
4. JOINT SHALL CONTINUE THROUGH COMBINATION CURB & GUTTER OR PCC SHOULDER.
5. PAVEMENT SEPERATION JOINT IS TO BE PAID FOR AS "SLEEPER SLAB" AND IS TO BE MEASURED IN PLACE BY THE LINEAL FOOT.
6. BOND BREAKER AND 1/2" (13 mm) JOINT AND FILLER SHALL BE INCIDENTAL TO THE PAY ITEM "SLEEPER SLAB".

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

DETAIL OF PAVEMENT SEPARATION JOINT FOR JOINTED PCC PAVEMENTS AT INTERSECTIONS

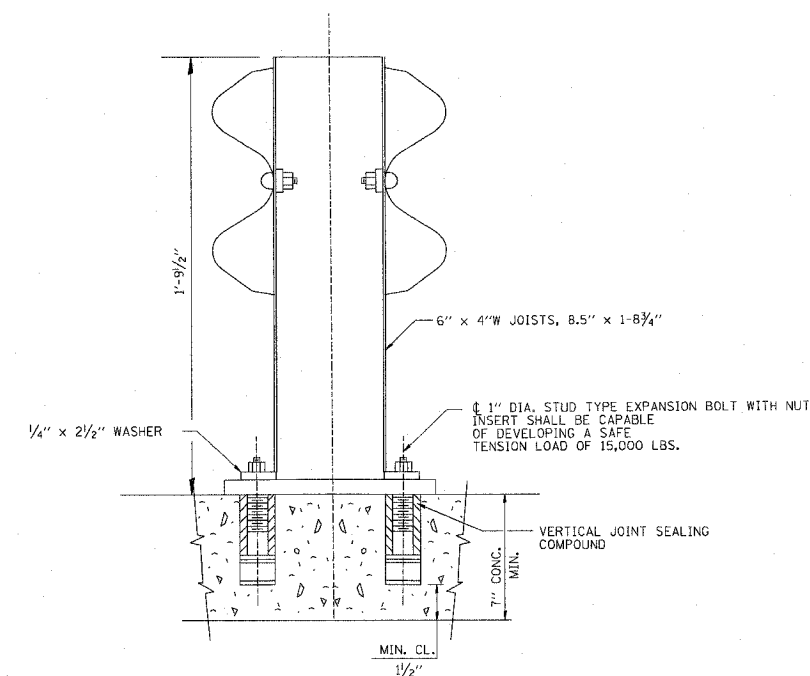
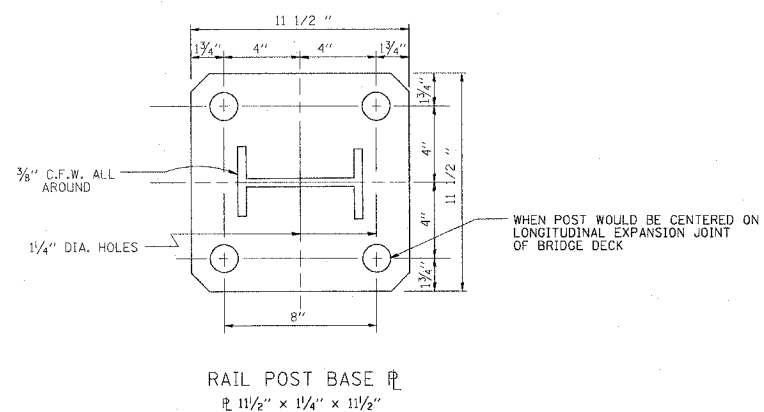
SCALE: NONE
DATE: 08/21/2002

DRAWN BY: _____
CHECKED BY: _____

F. A. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			562	471
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

60881

NOTE:
 FOR DETAILS OF RAIL ELEMENTS, RAIL SPLICING, NUT, BOLT AND SIDE VIEW OF RAIL, SEE STANDARD 2230-2.
 ALL WELDS SHALL BE GROUND SMOOTH
 POSTS SHALL BE CUT AND WELDED TO THE BASE PLATE SO THAT THE POST WILL BE PLUMB WHEN ERECTED.
 TWO PERCENT (2%) OF ALL ANCHOR BOLTS SHALL BE TEST LOADED IN PLACE, MINIMUM TEST LOAD=8 KIPS. IF ONE ANCHOR BOLT FAILS DURING THE TEST, TWO OTHER ANCHOR BOLTS SHALL BE TESTED. TESTING EQUIPMENT SHALL BE BOLT COMPANIES.
 PROVIDE 1/8" AND 2/16" GALVANIZED SHIMS FOR 25% OF THE POSTS.



REVISIONS	
NAME	DATE
CREATED	10-31-88
RAY RITCHIE	05-02-00

ILLINOIS DEPARTMENT OF TRANSPORTATION

ANCHOR DETAIL FOR
 STEEL PLATE BEAM GUARD RAIL
 ON CONCRETE

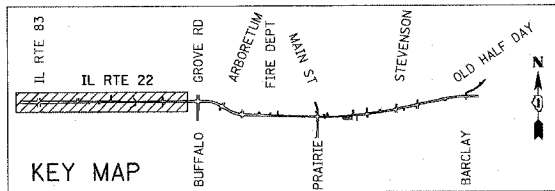
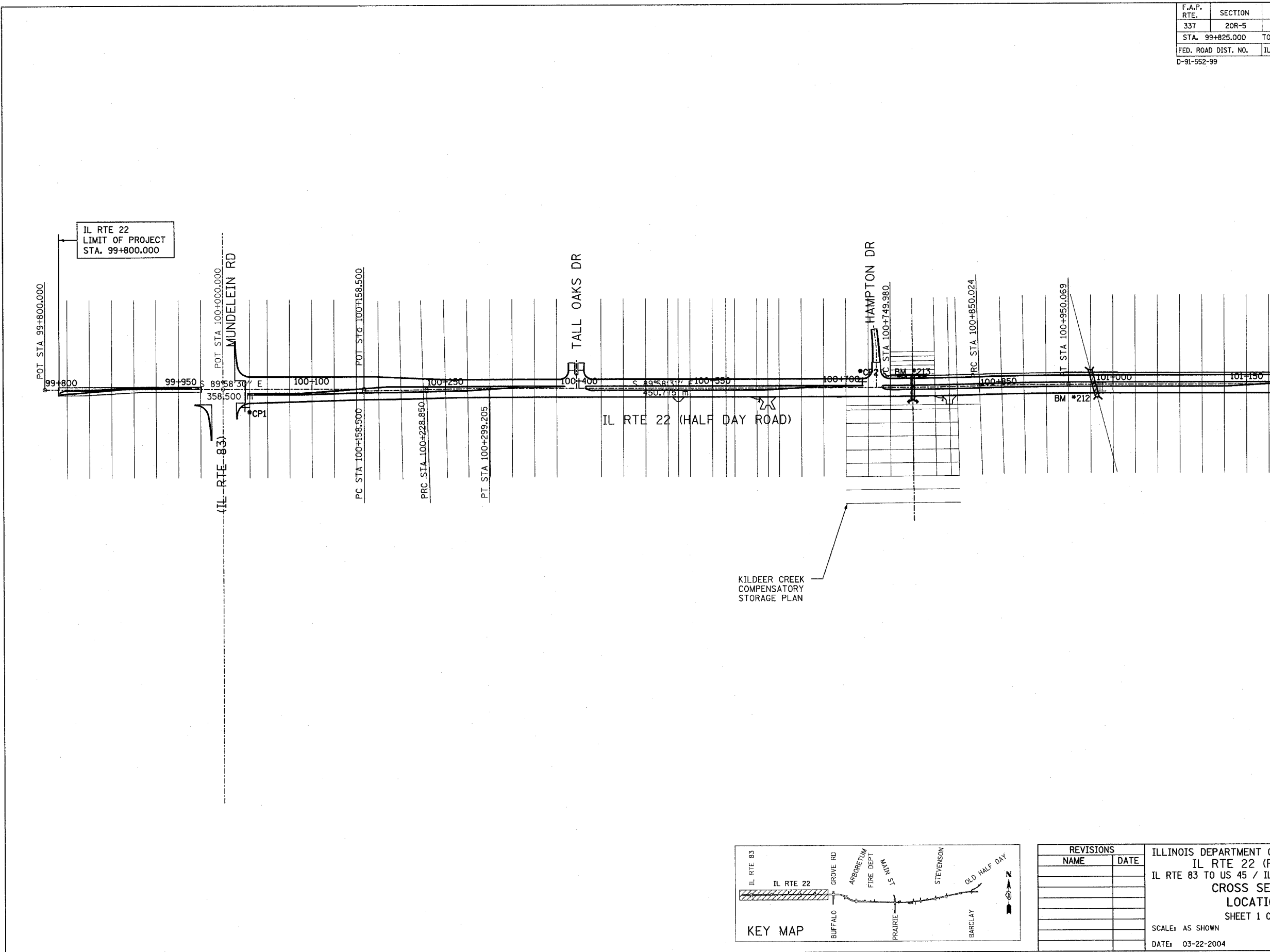
SCALE: NONE
 DATE: **DATE**

DRAWN BY R.F.L.
 CHECKED BY

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337	20R-5	LAKE	562	472
STA. 99+825.000		TO STA. 104+600.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		60881		

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

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



REVISIONS	
NAME	DATE

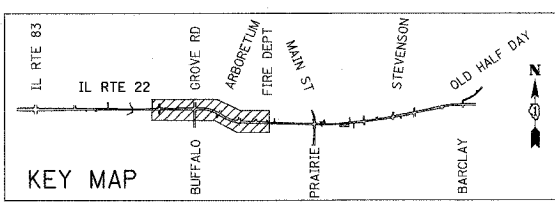
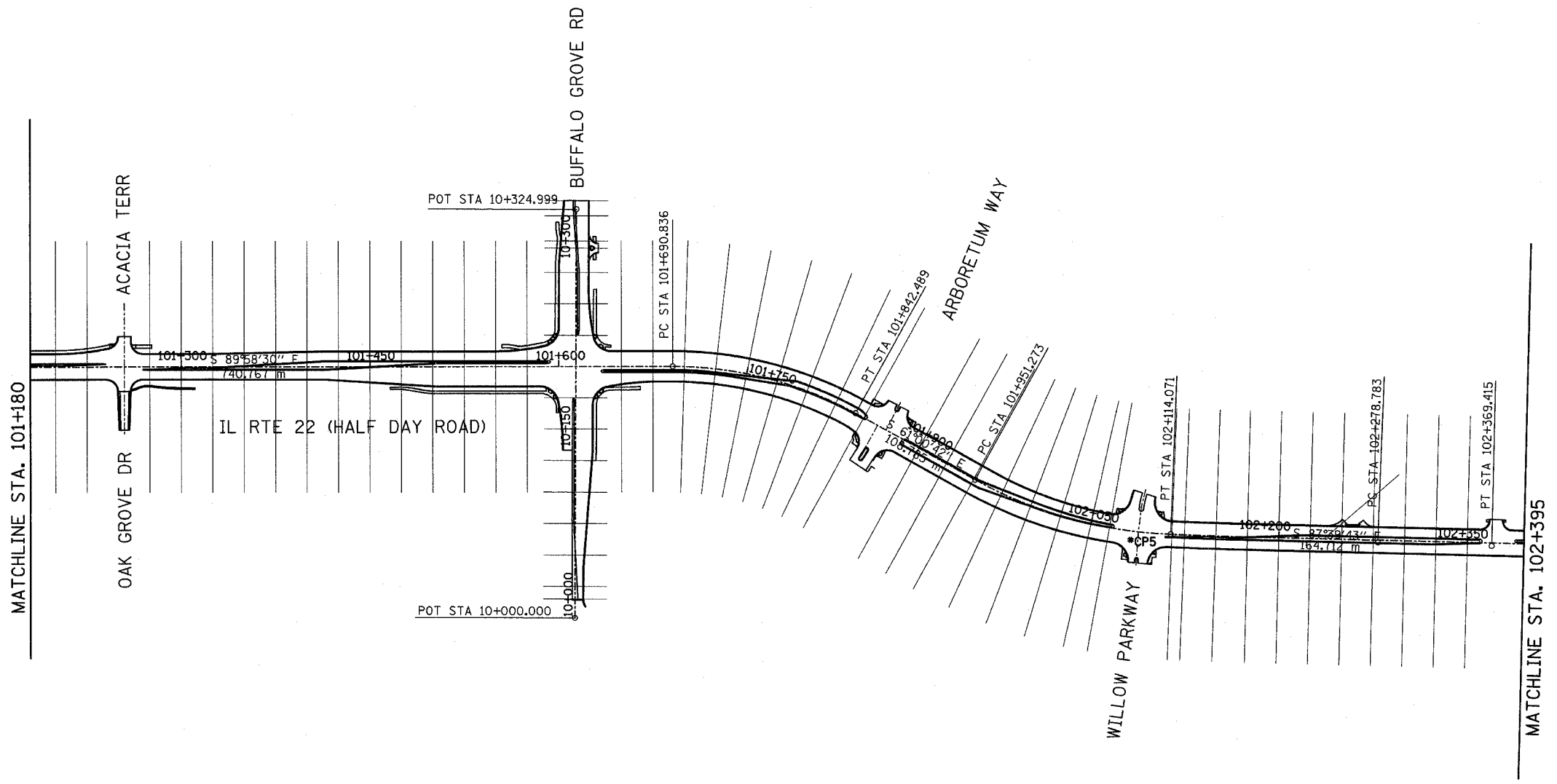
ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
CROSS SECTION LOCATIONS
 SHEET 1 OF 4

SCALE: AS SHOWN DRAWN BY: JNR
 DATE: 03-22-2004 CHECKED BY: JSM

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	473
STA. 99+825.000		TO STA. 104+600.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		60881		

FINAL SURVEY	SURVEYED	BY	DATE
NO.	PLOTTED		
	AREAS		
	CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NO.	PLOTTED		
	AREAS		
	CHECKED		



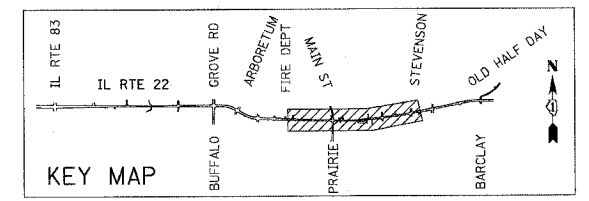
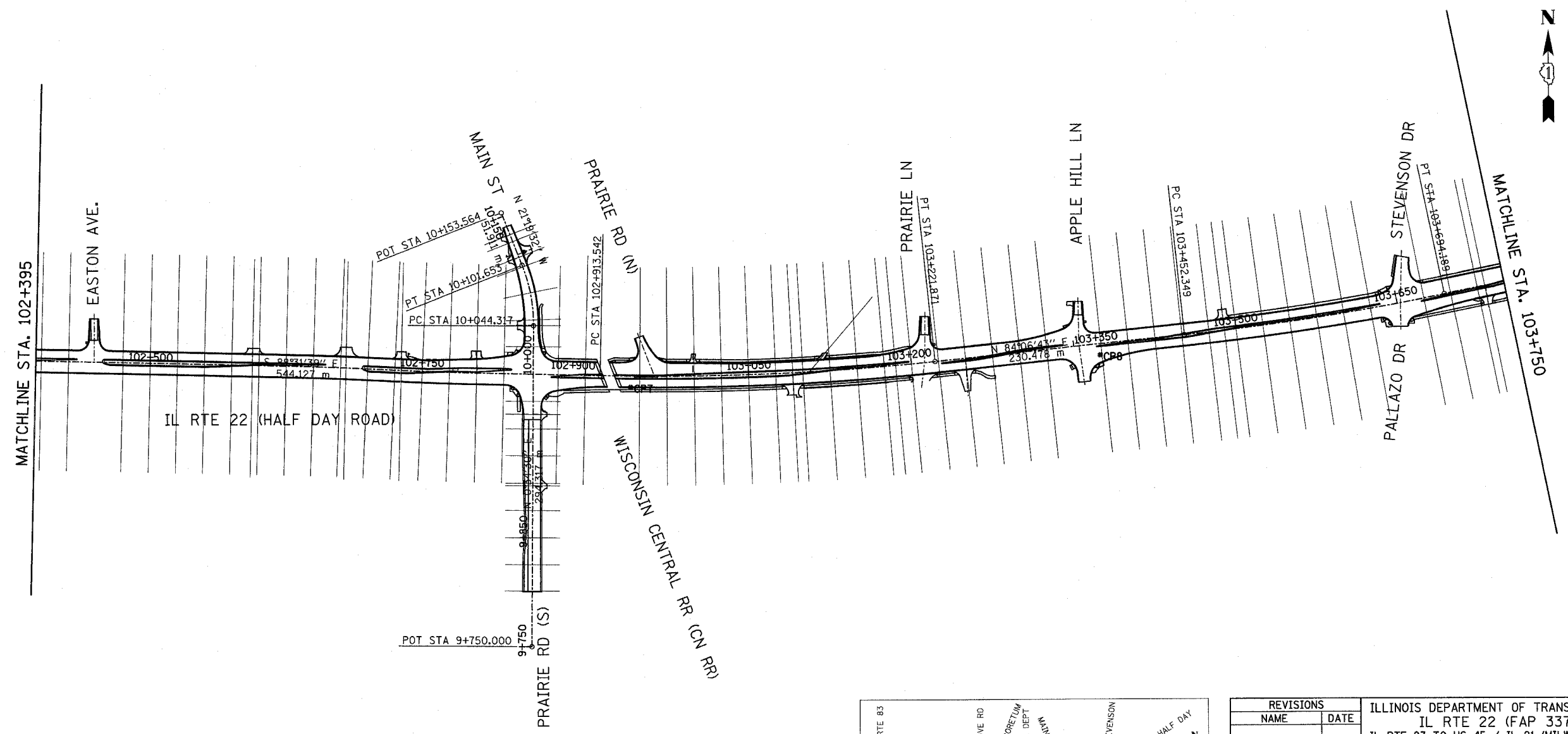
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
CROSS SECTION LOCATIONS
 SHEET 2 OF 4
 SCALE: AS SHOWN DRAWN BY: JNR
 DATE: 03-22-2004 CHECKED BY: JSM

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	474
STA. 99+825.000		TO STA. 104+600.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		60881		

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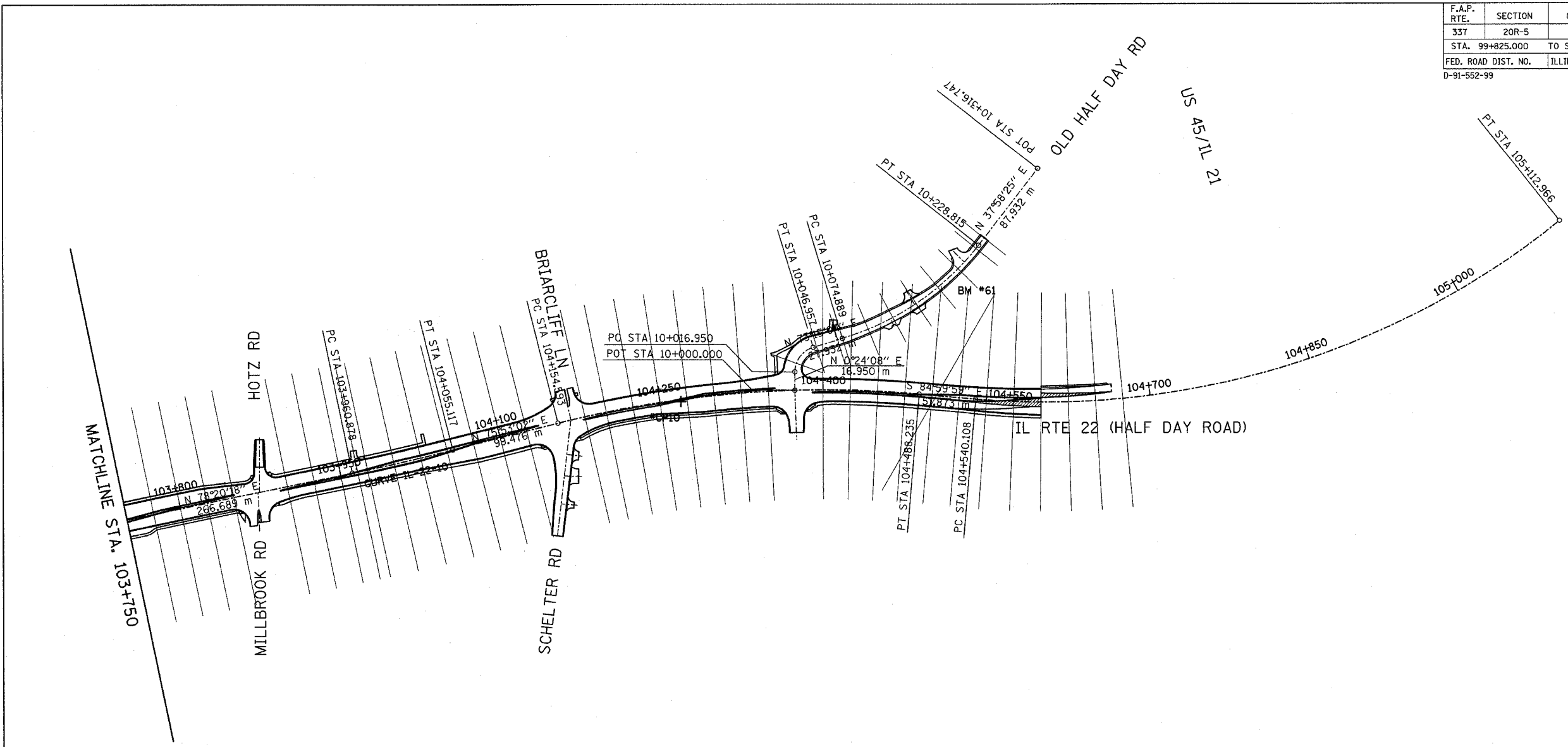


REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
CROSS SECTION LOCATIONS
 SHEET 3 OF 4

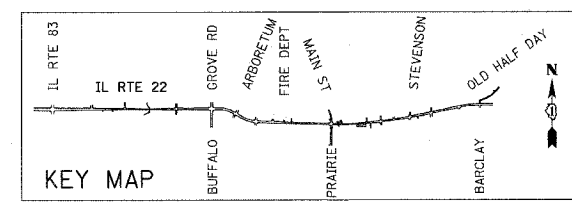
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 DATE: 03-22-2004 CHECKED BY: JSM

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	475
STA. 99+825.000		TO STA. 104+600.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
D-91-552-99		60881		



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



REVISIONS	
NAME	DATE

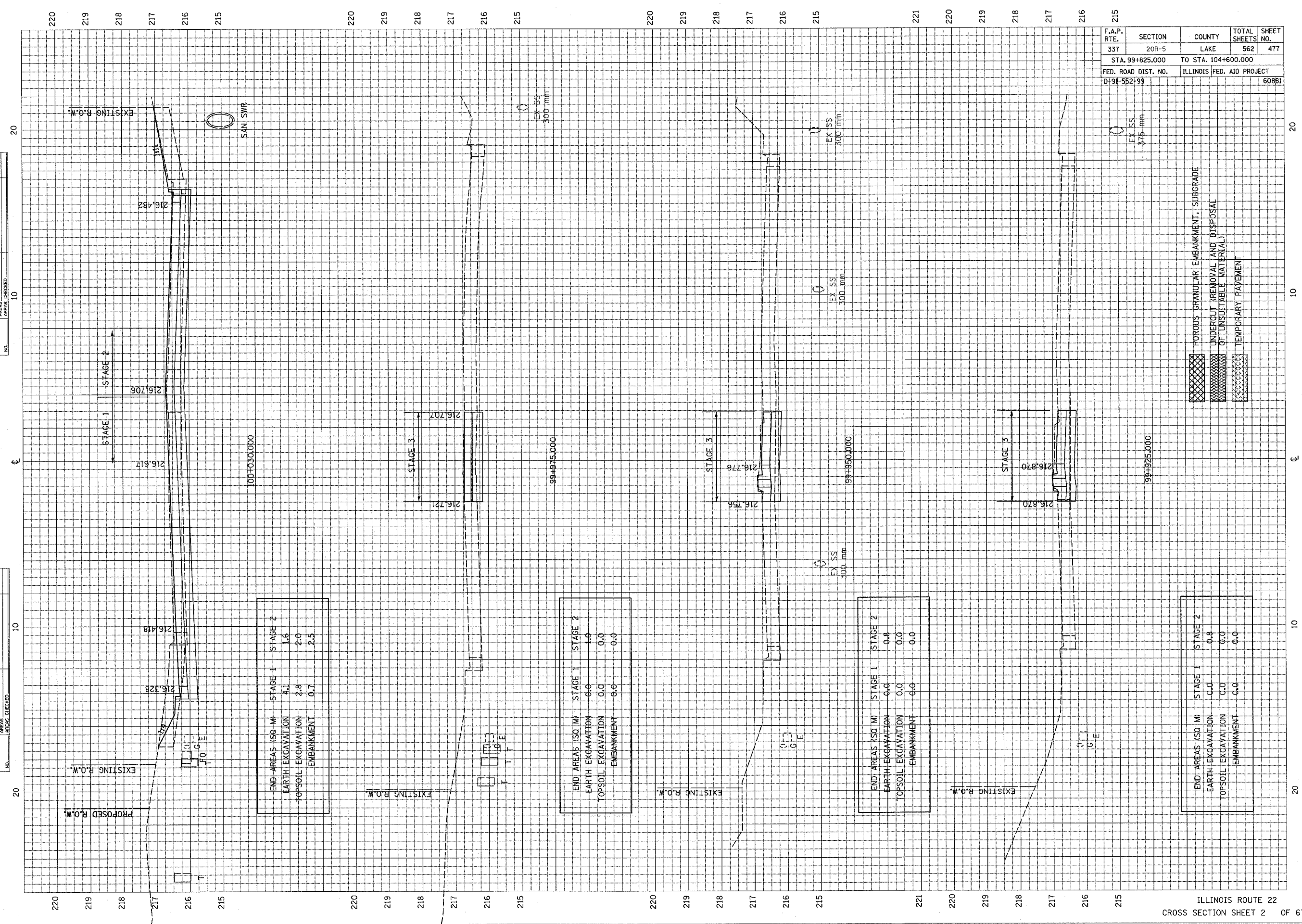
ILLINOIS DEPARTMENT OF TRANSPORTATION
 IL RTE 22 (FAP 337)
 IL RTE 83 TO US 45 / IL 21 (MILWAUKEE AVE)
 CROSS SECTION
 LOCATIONS
 SHEET 4 OF 4

SCALE: AS SHOWN DRAWN BY: JNR
 DATE: 03-22-2004 CHECKED BY: JSM

FINAL SURVEY	DATE
BLANKETED	
NOTED	
NO. AREAS CHECKED	

ORIGINAL SURVEY	DATE
PLOTTED	
NOTED	
NO. AREAS CHECKED	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	477
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
D-91-552-99		608B1		



END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	4.1	1.6
TOPSOIL EXCAVATION	2.8	2.0
EMBANKMENT	0.7	2.5

END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	6.0	1.0
TOPSOIL EXCAVATION	0.0	0.0
EMBANKMENT	6.0	0.0

END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.0	0.8
TOPSOIL EXCAVATION	0.0	0.0
EMBANKMENT	6.0	0.0

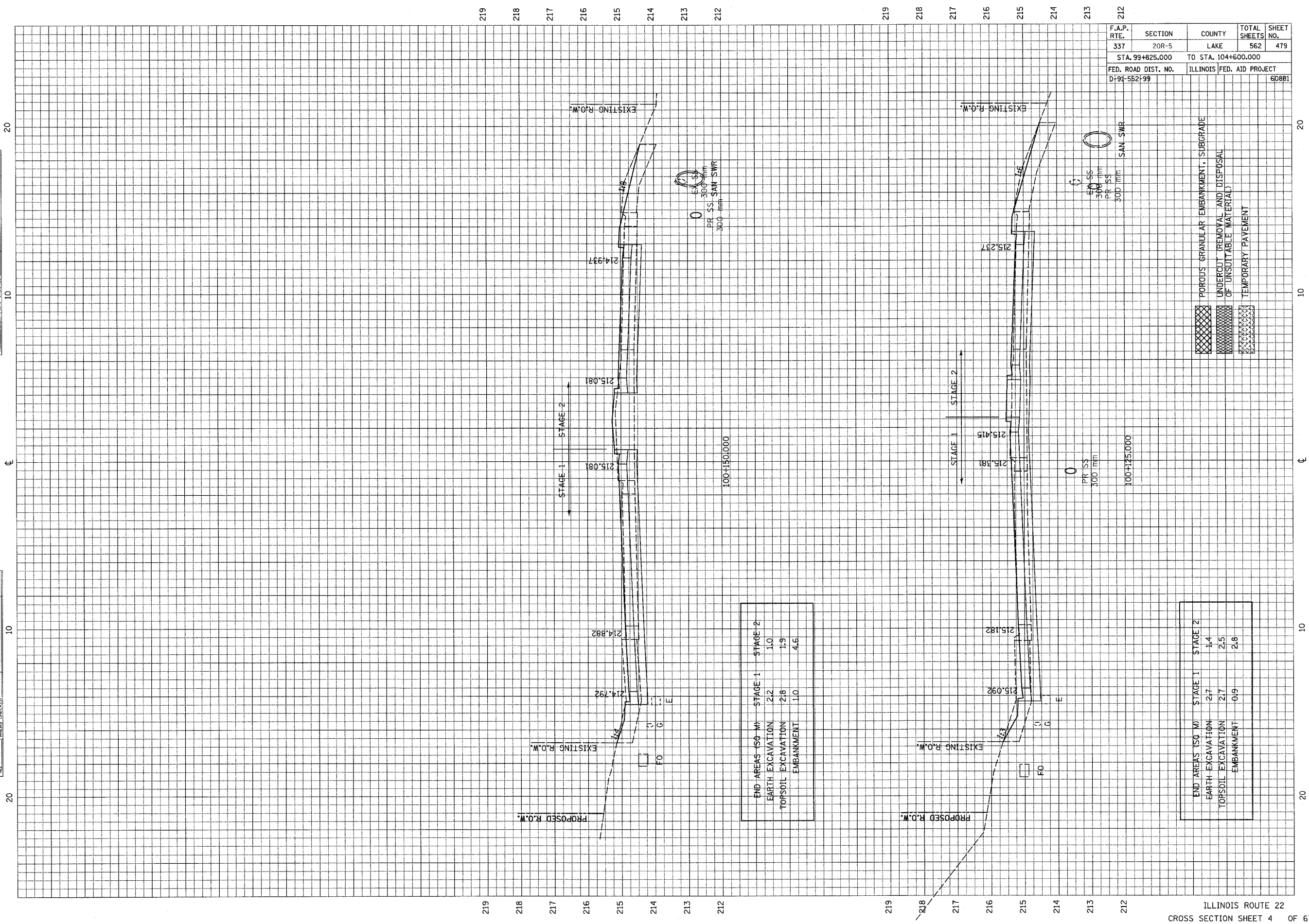
END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.0	0.8
TOPSOIL EXCAVATION	0.0	0.0
EMBANKMENT	6.0	0.0

- POROUS GRANULAR EMBANKMENT, SUBGRADE
- UNDERCUT REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL
- TEMPORARY PAVEMENT

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	479
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		60881	
D-91-552-99				

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

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



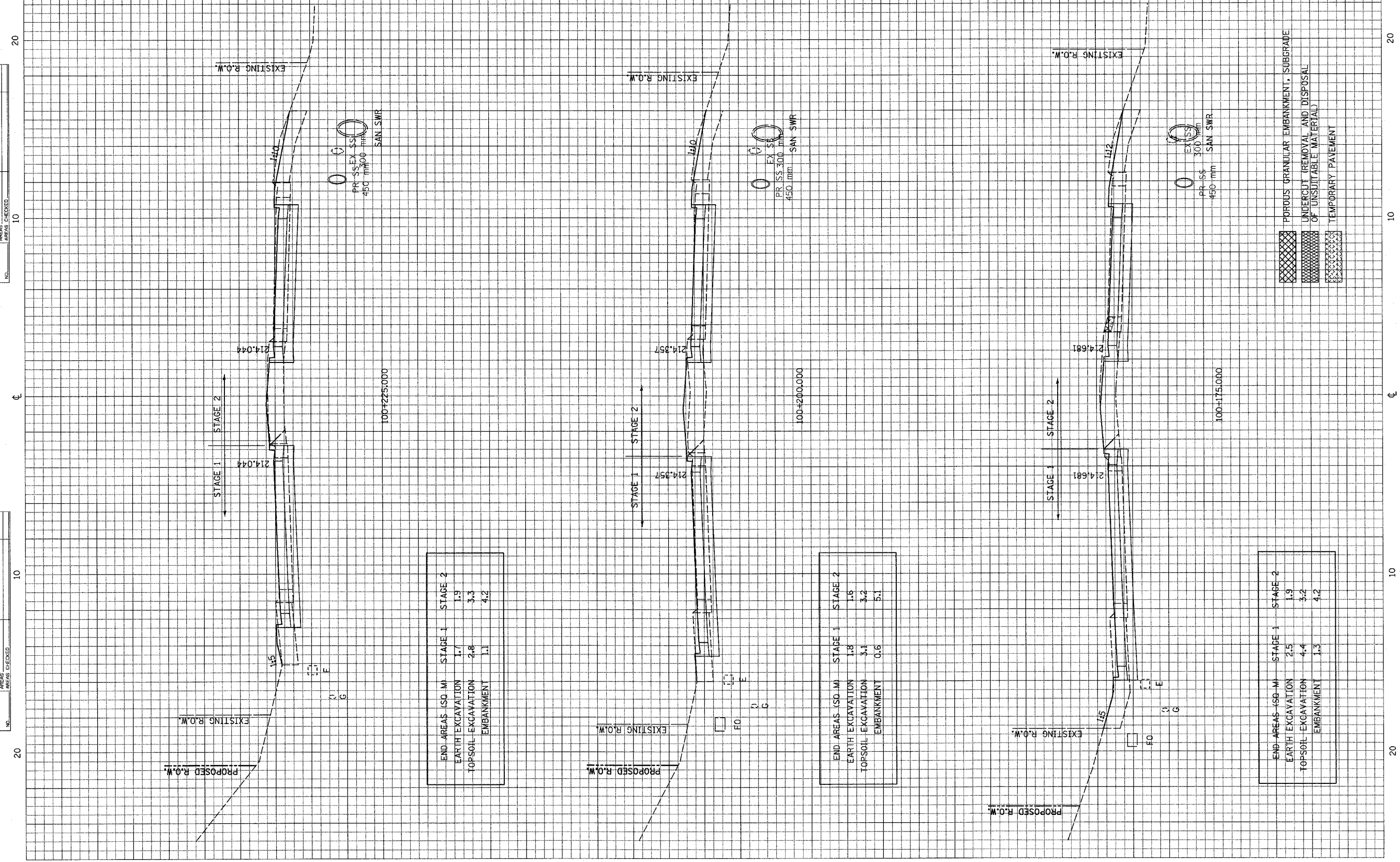
END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.2	1.0
TOPSOIL EXCAVATION	2.8	1.9
EMBANKMENT	1.0	4.6

END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.7	1.4
TOPSOIL EXCAVATION	2.7	2.5
EMBANKMENT	0.9	2.8

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

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	480
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
D191-552+99	608B1			



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.7	1.9
TOPSOIL EXCAVATION	2.8	3.3
EMBANKMENT	1.1	4.2

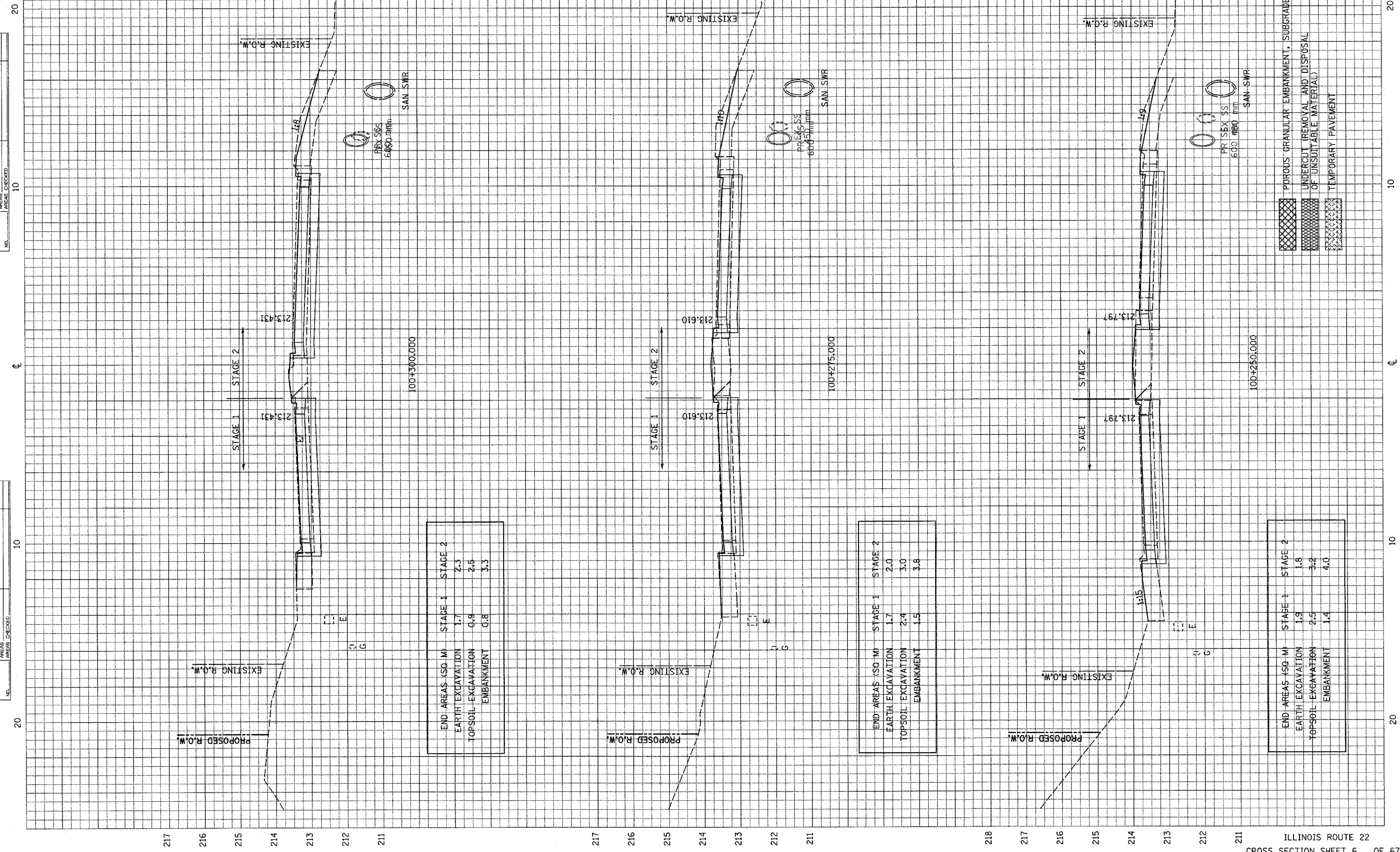
END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.8	1.6
TOPSOIL EXCAVATION	3.1	3.2
EMBANKMENT	0.6	5.1

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.5	1.9
TOPSOIL EXCAVATION	4.4	3.2
EMBANKMENT	1.3	4.2

FINAL SURVEY	DATE
BY	
BLANKETED	
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
BY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	481
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
D-91-552-99	60881			



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.7	2.3
TOPSOIL EXCAVATION	0.9	2.5
EMBANKMENT	0.8	3.3

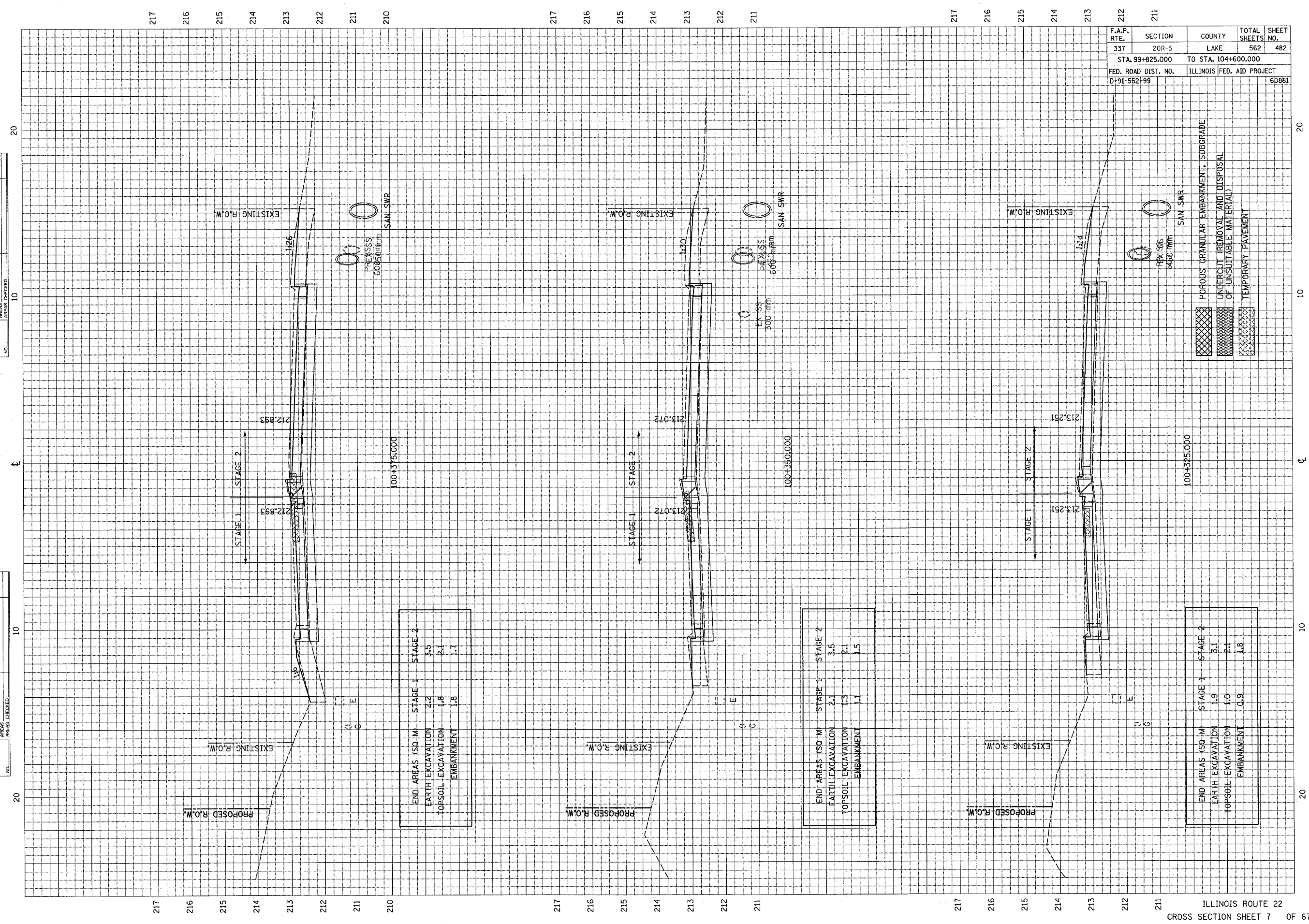
END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.7	2.0
TOPSOIL EXCAVATION	2.4	3.0
EMBANKMENT	1.5	3.8

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.9	1.8
TOPSOIL EXCAVATION	2.5	3.2
EMBANKMENT	1.4	4.0

FINAL SURVEY	DATE
BY	
REVISIONS	
NO.	

ORIGINAL SURVEY	DATE
BY	
REVISIONS	
NO.	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	482
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		60881	
D-91-552-99				



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.2	3.5
TOPSOIL EXCAVATION	1.8	2.1
EMBANKMENT	1.8	1.7

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.1	3.5
TOPSOIL EXCAVATION	1.3	2.1
EMBANKMENT	1.1	1.5

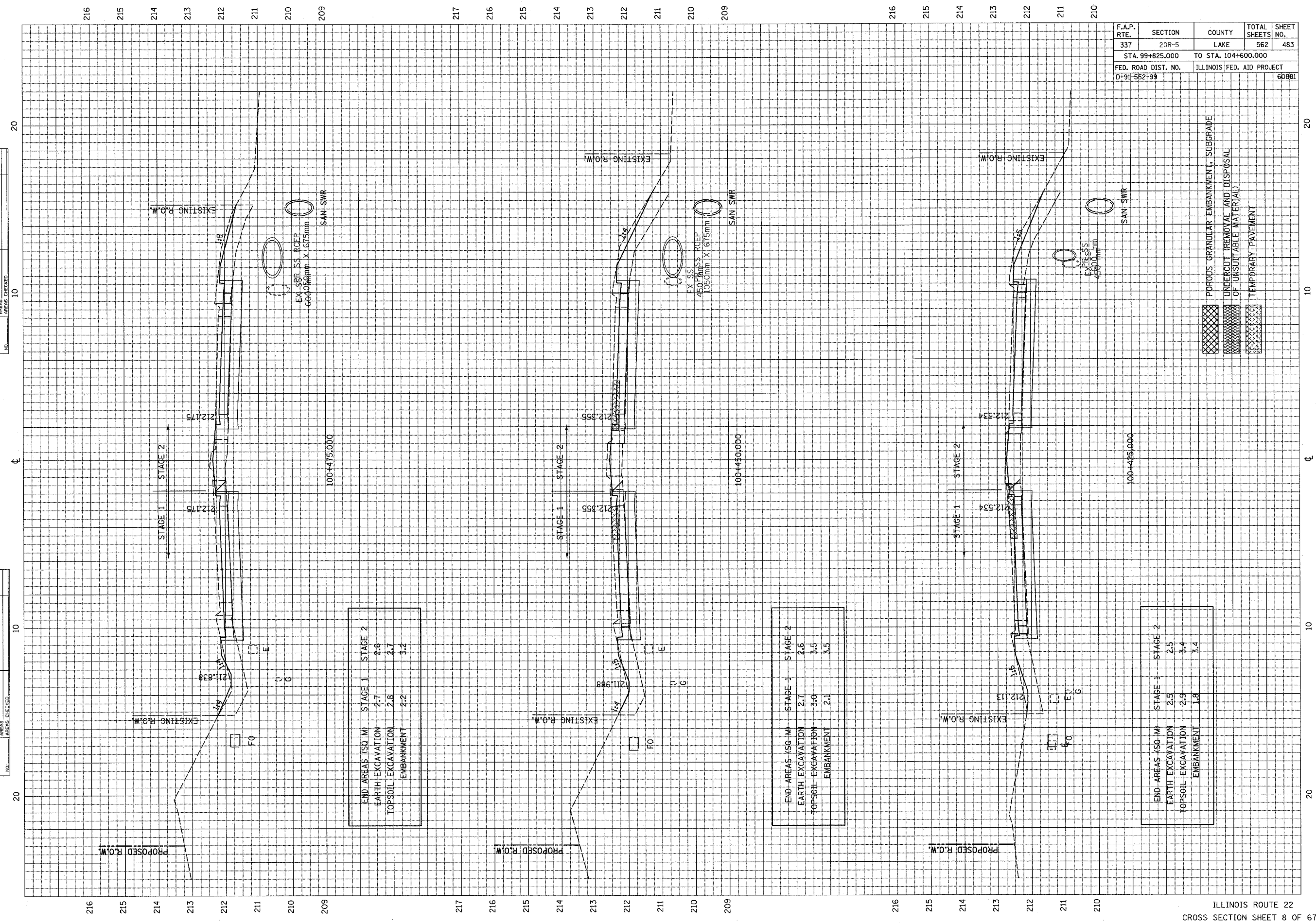
END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.9	3.1
TOPSOIL EXCAVATION	1.0	2.1
EMBANKMENT	0.9	1.8

- POROUS GRANULAR EMBANKMENT, SUBGRADE
- UNDERCUT (REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL)
- TEMPORARY PAVEMENT

FINAL SURVEY	DATE
BY	
NO. _____	
AREAS CHECKED	
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ORIGINAL SURVEY	DATE
BY	
NO. _____	
AREAS CHECKED	
AREAS CHECKED	
AREAS CHECKED	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	483
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
D-91-552-99	60881			



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.7	2.6
TOPSOIL EXCAVATION	2.8	2.7
EMBANKMENT	2.2	3.2

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.7	2.6
TOPSOIL EXCAVATION	3.0	3.5
EMBANKMENT	2.1	3.5

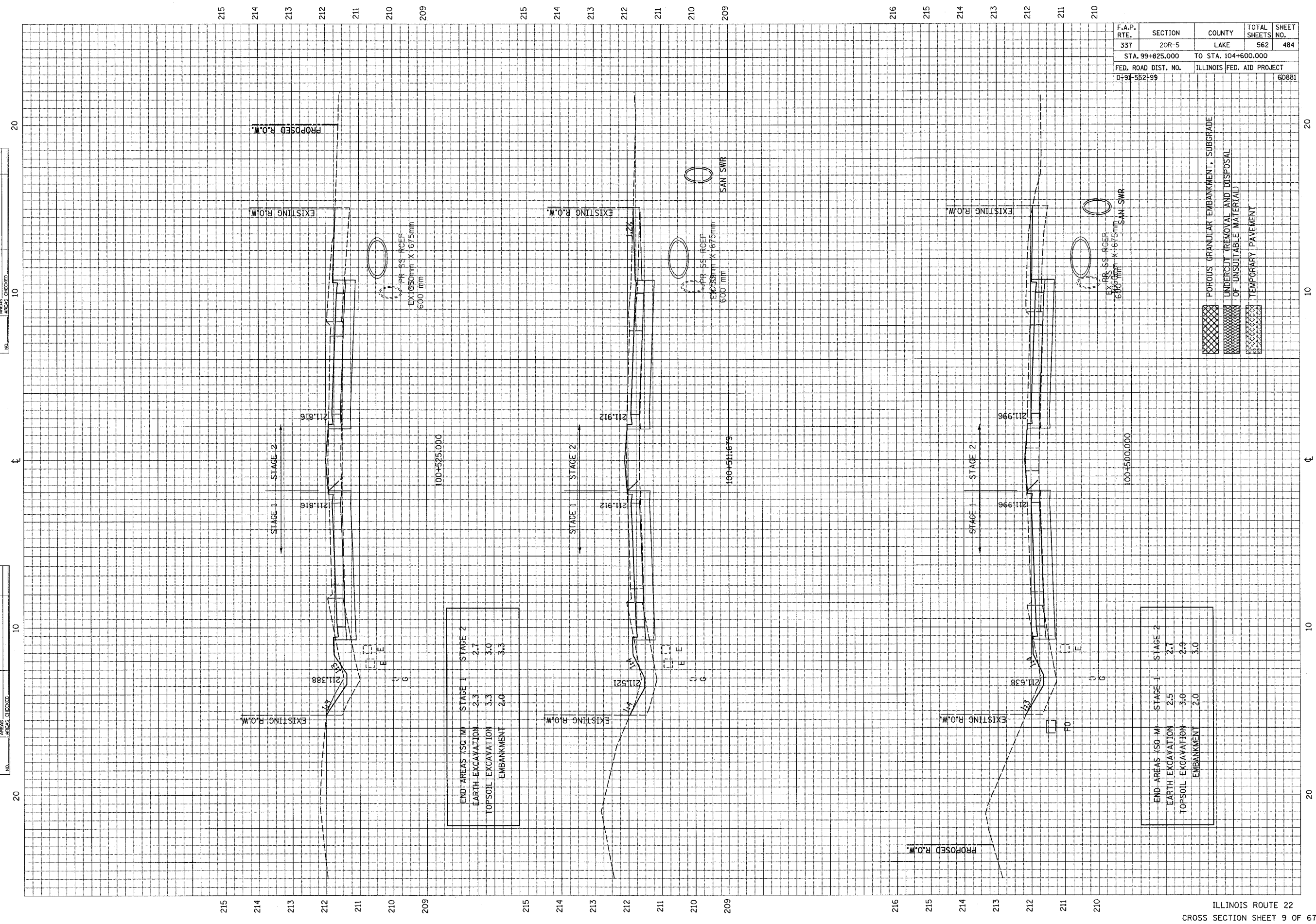
END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.5	2.5
TOPSOIL EXCAVATION	2.9	3.4
EMBANKMENT	1.8	3.4

PDDIUS GRANULAR EMBANKMENT, SUBGRADE
 UNDERCUT (REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL)
 TEMPORARY PAVEMENT

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

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS CHECKED	AREAS CHECKED		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	484
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
D-91-552-99	60881			



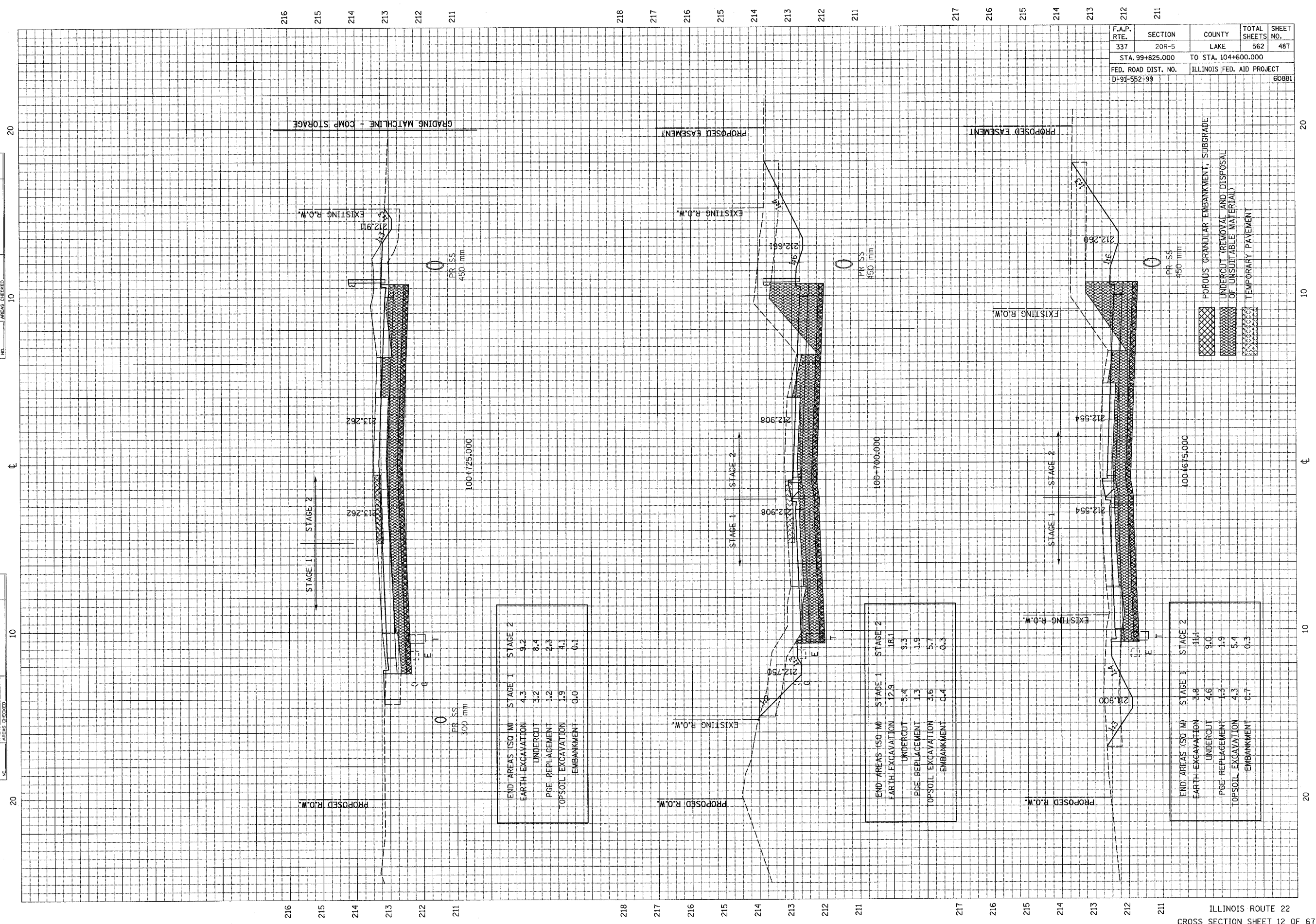
END AREA (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.3	2.7
TOPSOIL EXCAVATION	3.3	3.0
EMBANKMENT	2.0	3.3

END AREA (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.5	2.7
TOPSOIL EXCAVATION	3.0	2.9
EMBANKMENT	2.0	3.0

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	487
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
D-91-552-99		60881		

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

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



END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	4.3	9.2
UNDERCUT	3.2	8.4
PGE REPLACEMENT	1.2	2.3
TOPSOIL EXCAVATION	1.9	4.1
EMBANKMENT	0.0	0.1

END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	12.9	16.1
UNDERCUT	5.4	9.3
PGE REPLACEMENT	1.3	1.9
TOPSOIL EXCAVATION	3.6	5.7
EMBANKMENT	0.4	0.3

END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	3.8	11.4
UNDERCUT	4.6	9.0
PGE REPLACEMENT	1.3	1.9
TOPSOIL EXCAVATION	4.3	5.4
EMBANKMENT	0.7	0.3

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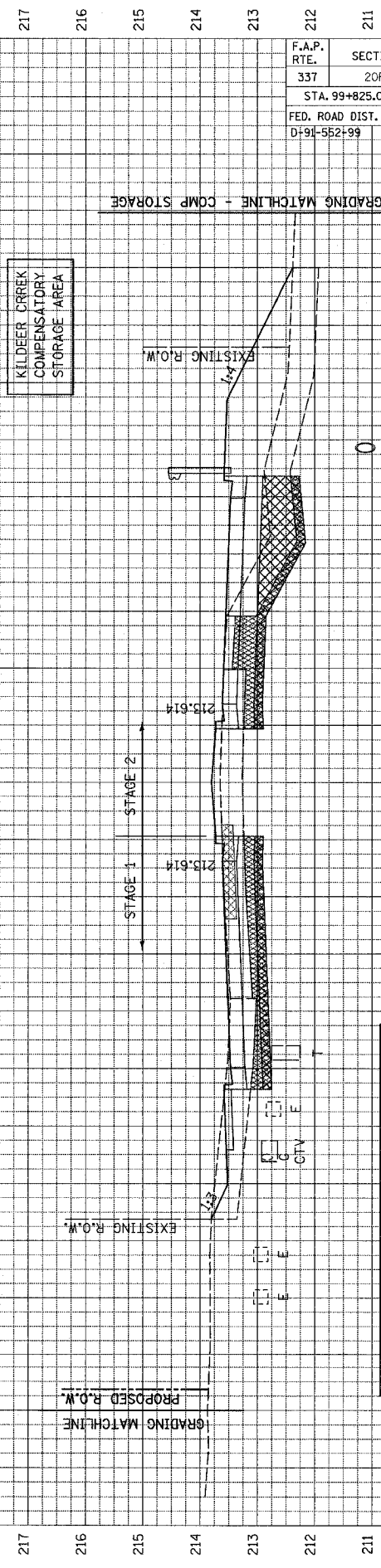
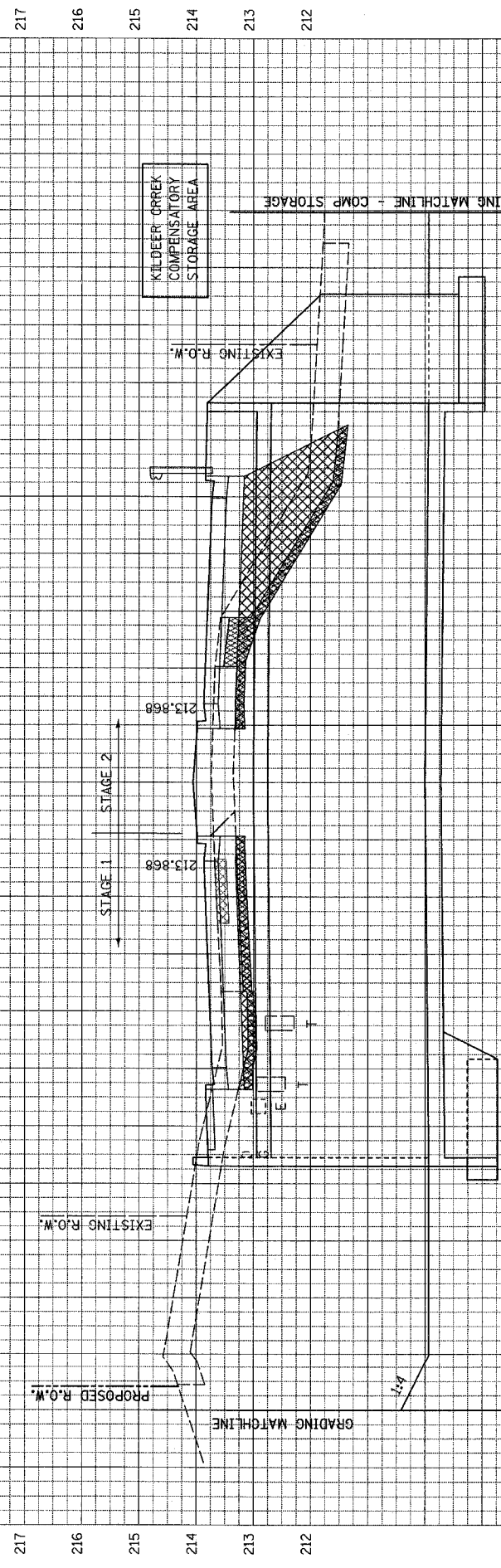
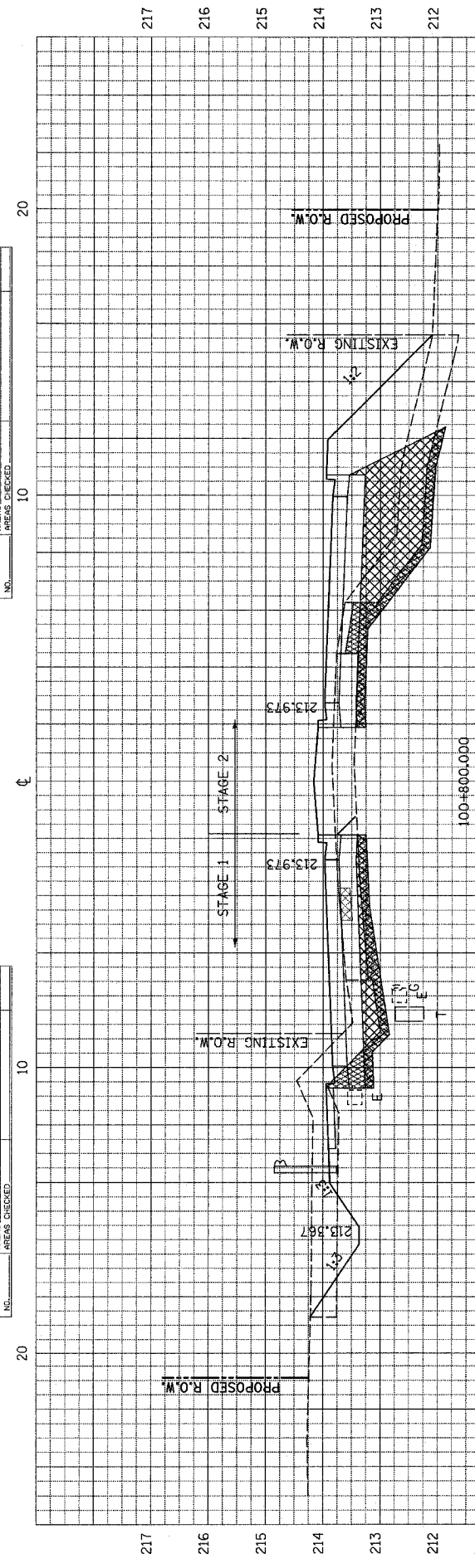
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	488
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		60881	
D+91-552+99				

FINAL SURVEY	BY	DATE
NO. 1		
REVISIONS	BY	DATE
NO. 1		

ORIGINAL SURVEY	BY	DATE
NO. 1		
REVISIONS	BY	DATE
NO. 1		

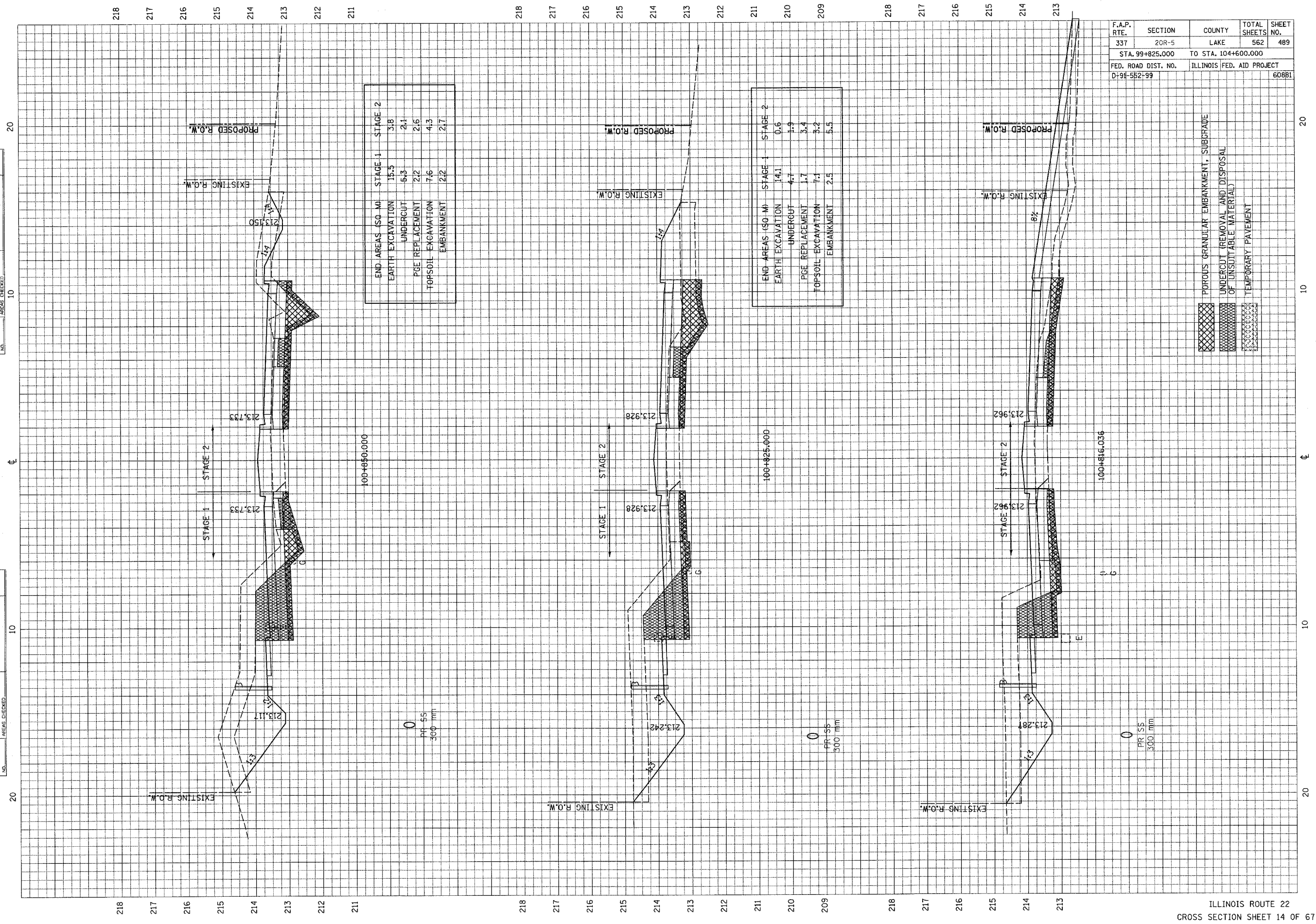


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- POROUS GRANULAR EMBANKMENT, SUBGRADE
- UNDERCUT (REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL)
- TEMPORARY PAVEMENT

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

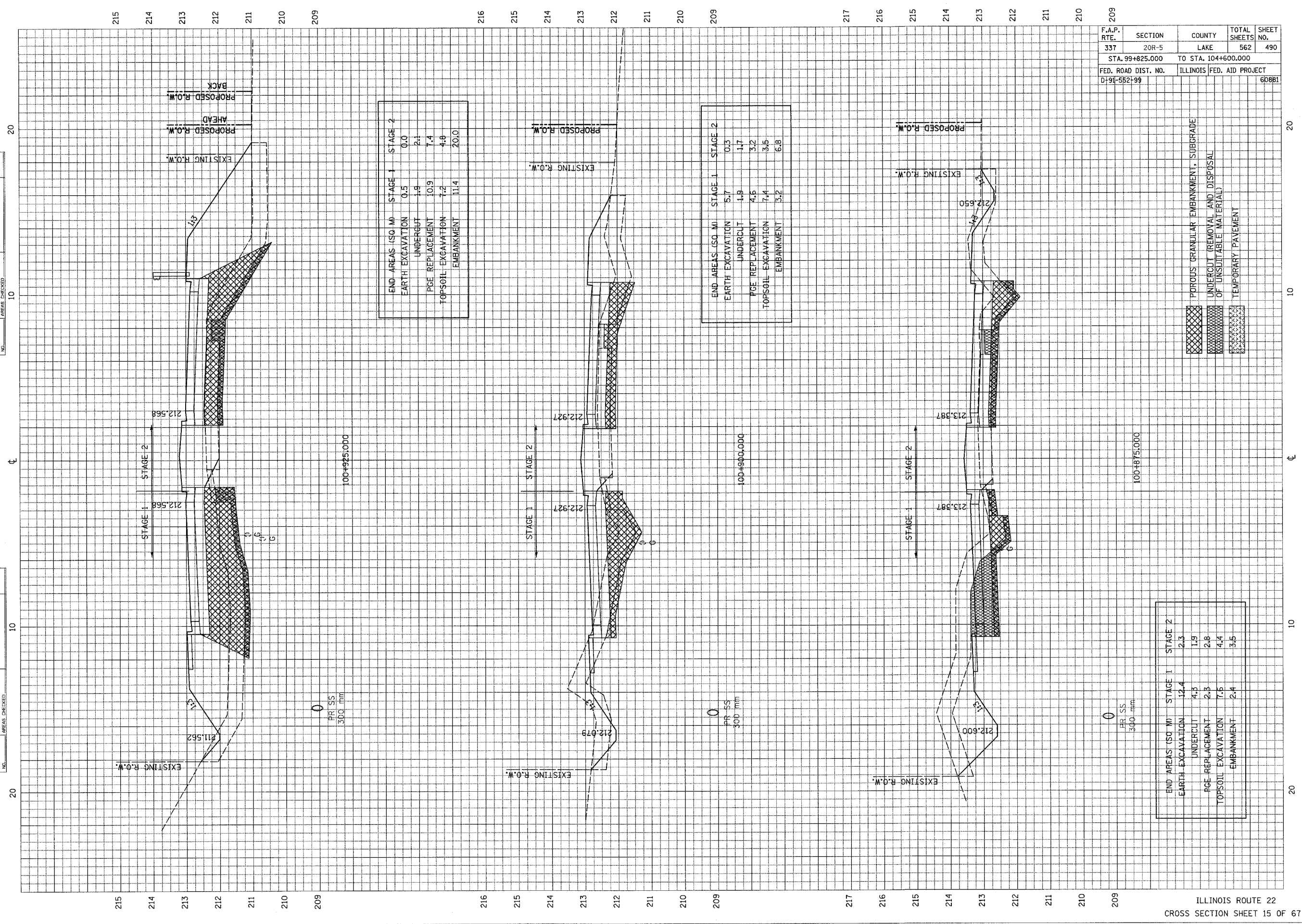
ORIGINAL SURVEY	DATE
NO. _____	BY _____
REVISIONS	
PLOTTED	
NOTE BOOK	
TEMPLATE	
AREAS CHECKED	



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

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	490
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
D-91-552-99		60881		



END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.5	0.0
UNDERCUT	1.8	2.1
PGE REPLACEMENT	10.9	7.4
TOPSOIL EXCAVATION	7.2	4.8
EMBANKMENT	11.4	20.0

END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	5.7	0.3
UNDERCUT	1.8	1.7
PGE REPLACEMENT	4.6	3.2
TOPSOIL EXCAVATION	7.4	3.5
EMBANKMENT	3.2	6.8

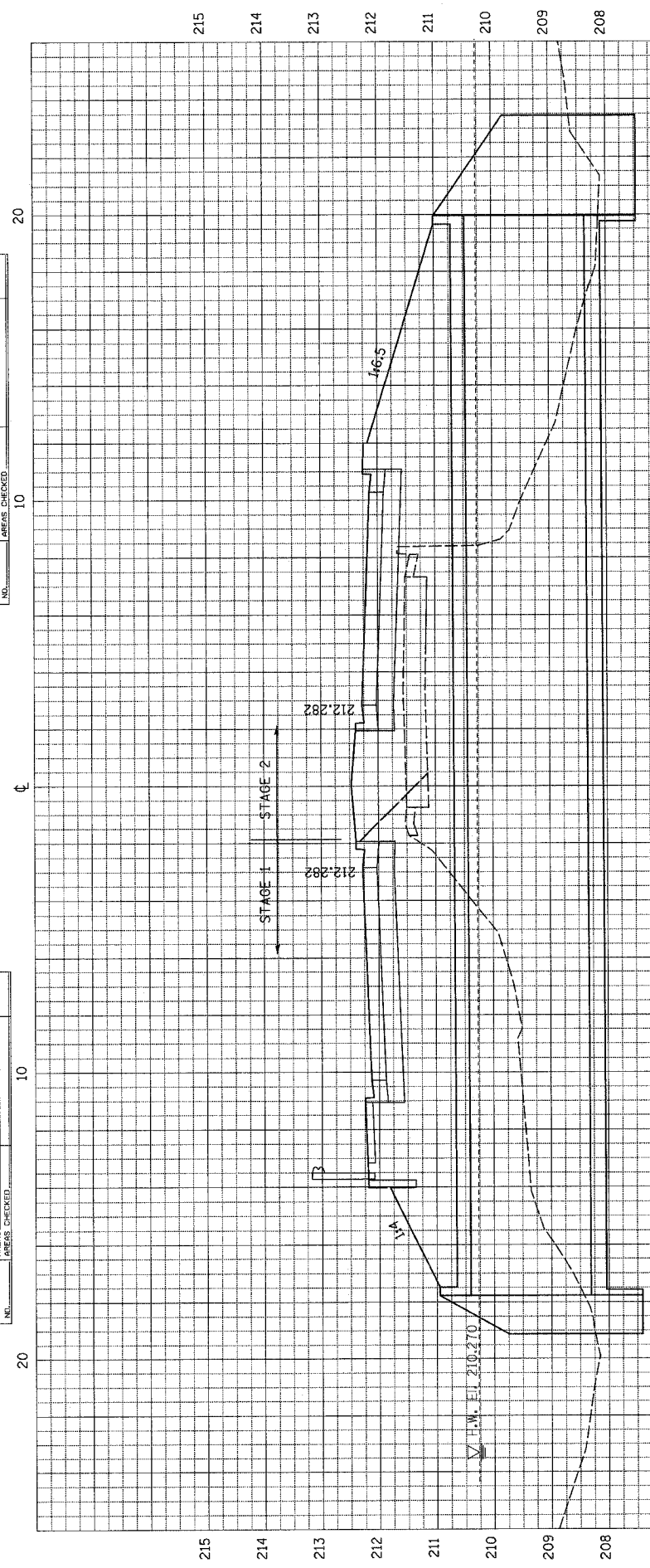
END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	12.4	2.3
UNDERCUT	4.5	1.9
PGE REPLACEMENT	2.8	2.8
TOPSOIL EXCAVATION	7.5	4.4
EMBANKMENT	2.4	3.5

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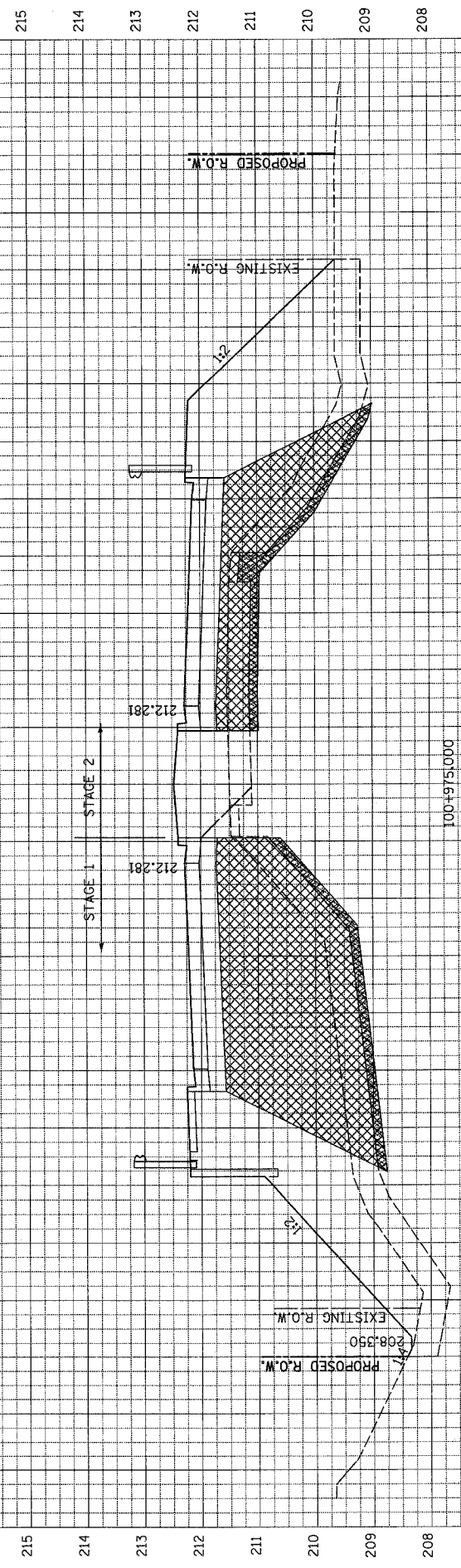
FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	AREAS CHECKED		

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	491
STA. 99+825,000		TO STA. 104+600,000		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
D:91-552:99		60881		

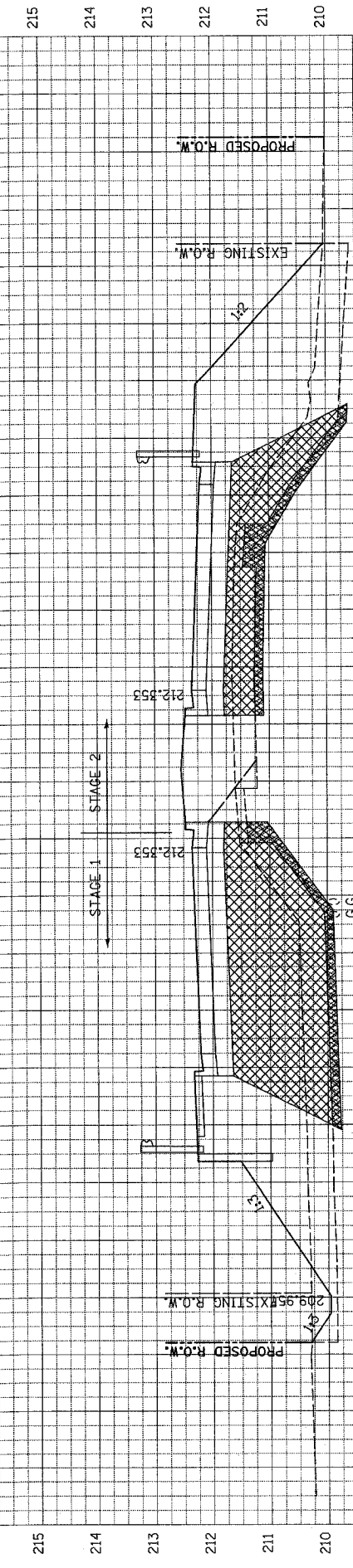


100+478.64



100+975.000

END AREA (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.0	0.0
UNDERCUT	1.9	2.2
PGE REPLACEMENT	23.8	11.0
TOPSOIL EXCAVATION	9.1	5.1
EMBANKMENT	55.1	25.2



100+950.000

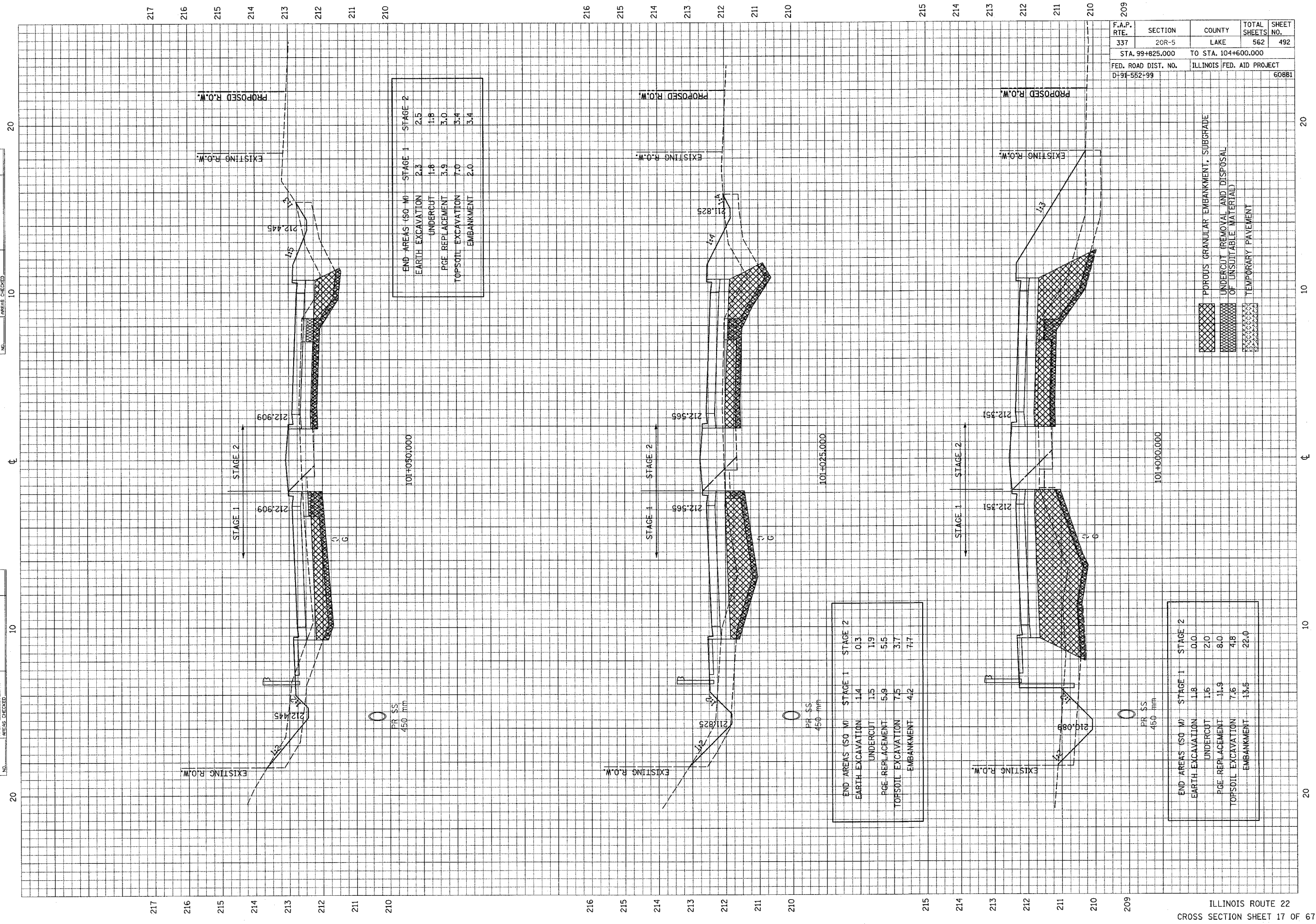
END AREA (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.0	0.0
UNDERCUT	1.9	2.1
PGE REPLACEMENT	16.5	8.6
TOPSOIL EXCAVATION	7.9	4.9
EMBANKMENT	23.0	23.4

- POROUS GRANULAR EMBANKMENT, SUBGRADE
- UNDERCUT (REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL)
- TEMPORARY PAVEMENT

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

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	492
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
D-91-552-99		60881		



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.3	2.5
UNDERCUT	1.8	1.8
PGE REPLACEMENT	3.9	3.0
TOPSOIL EXCAVATION	7.0	5.4
EMBANKMENT	2.0	3.4

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.4	0.3
UNDERCUT	1.5	1.9
PGE REPLACEMENT	5.9	5.5
TOPSOIL EXCAVATION	7.5	3.7
EMBANKMENT	4.2	7.7

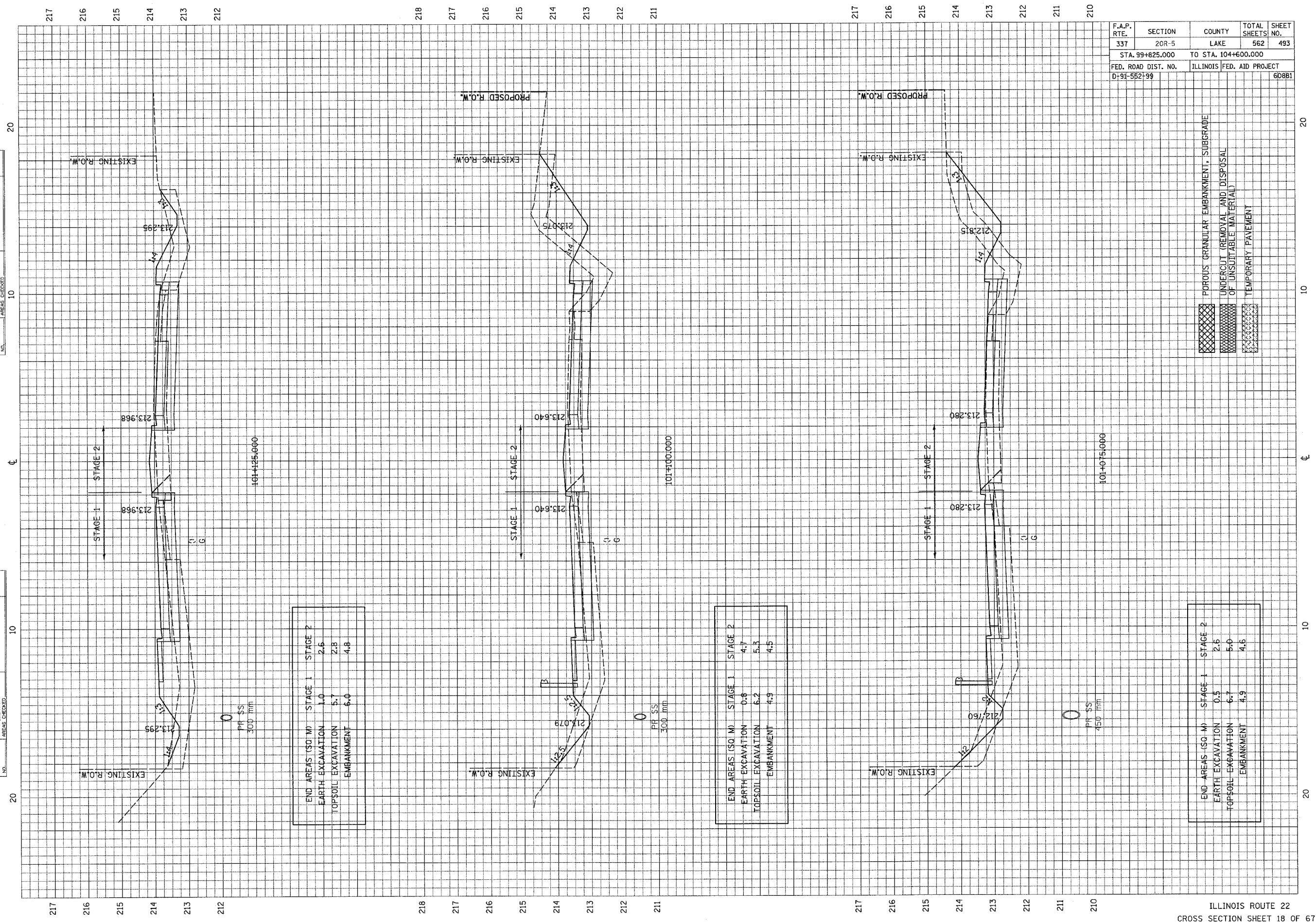
END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.8	0.0
UNDERCUT	1.6	2.0
PGE REPLACEMENT	11.9	8.0
TOPSOIL EXCAVATION	7.6	4.8
EMBANKMENT	13.5	22.0

- POROUS GRANULAR EMBANKMENT, SUBGRADE
- UNDERCUT (REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL)
- TEMPORARY PAVEMENT

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

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	493
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
D-91-552-99		60881		



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.0	2.5
TOPSOIL EXCAVATION	5.7	2.8
EMBANKMENT	6.0	4.8

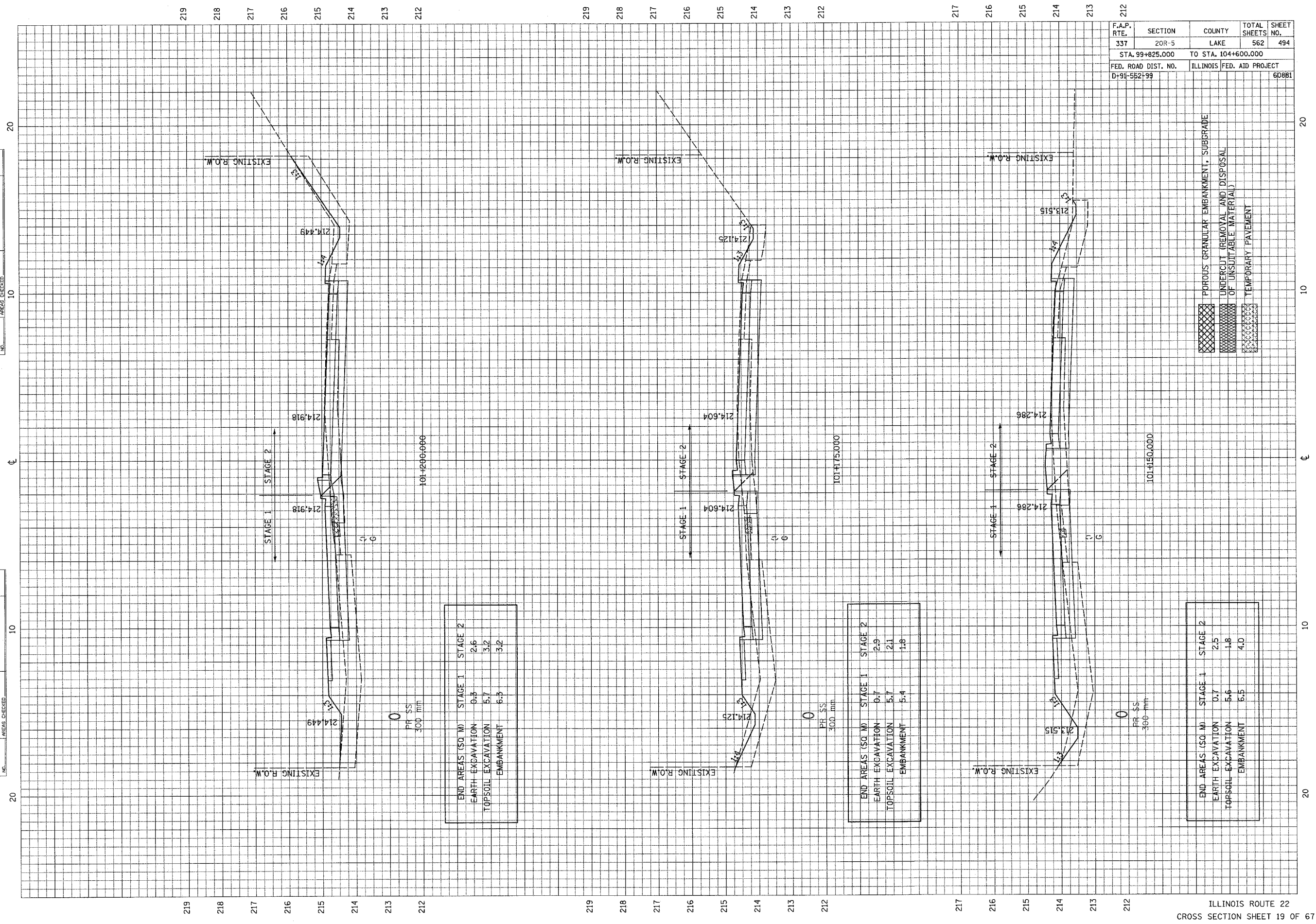
END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.8	4.7
TOPSOIL EXCAVATION	6.2	5.3
EMBANKMENT	4.9	4.5

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.5	2.5
TOPSOIL EXCAVATION	6.7	5.0
EMBANKMENT	4.9	4.6

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

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	494
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
D-91-552-99		60881		



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.5	2.6
TOPSOIL EXCAVATION	5.7	3.2
EMBANKMENT	6.5	3.2

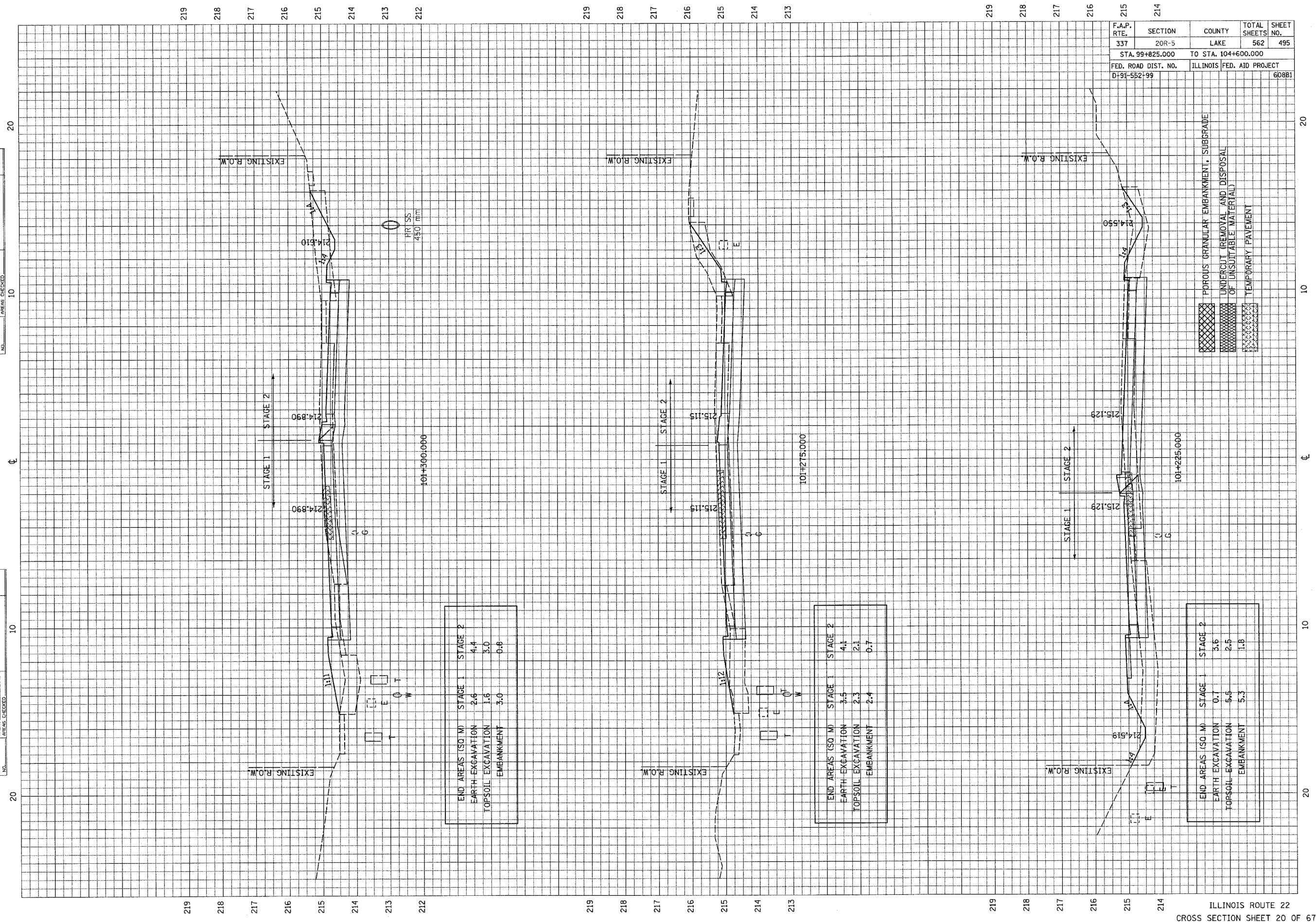
END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.7	2.9
TOPSOIL EXCAVATION	5.7	2.1
EMBANKMENT	5.4	1.8

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.7	2.5
TOPSOIL EXCAVATION	5.6	1.8
EMBANKMENT	6.5	4.0

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

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	495
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
D-91-552-99		60881		



END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.6	4.4
TOPSOIL EXCAVATION	1.6	3.0
EMBANKMENT	3.0	0.8

END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	3.5	4.1
TOPSOIL EXCAVATION	2.3	2.1
EMBANKMENT	2.4	0.7

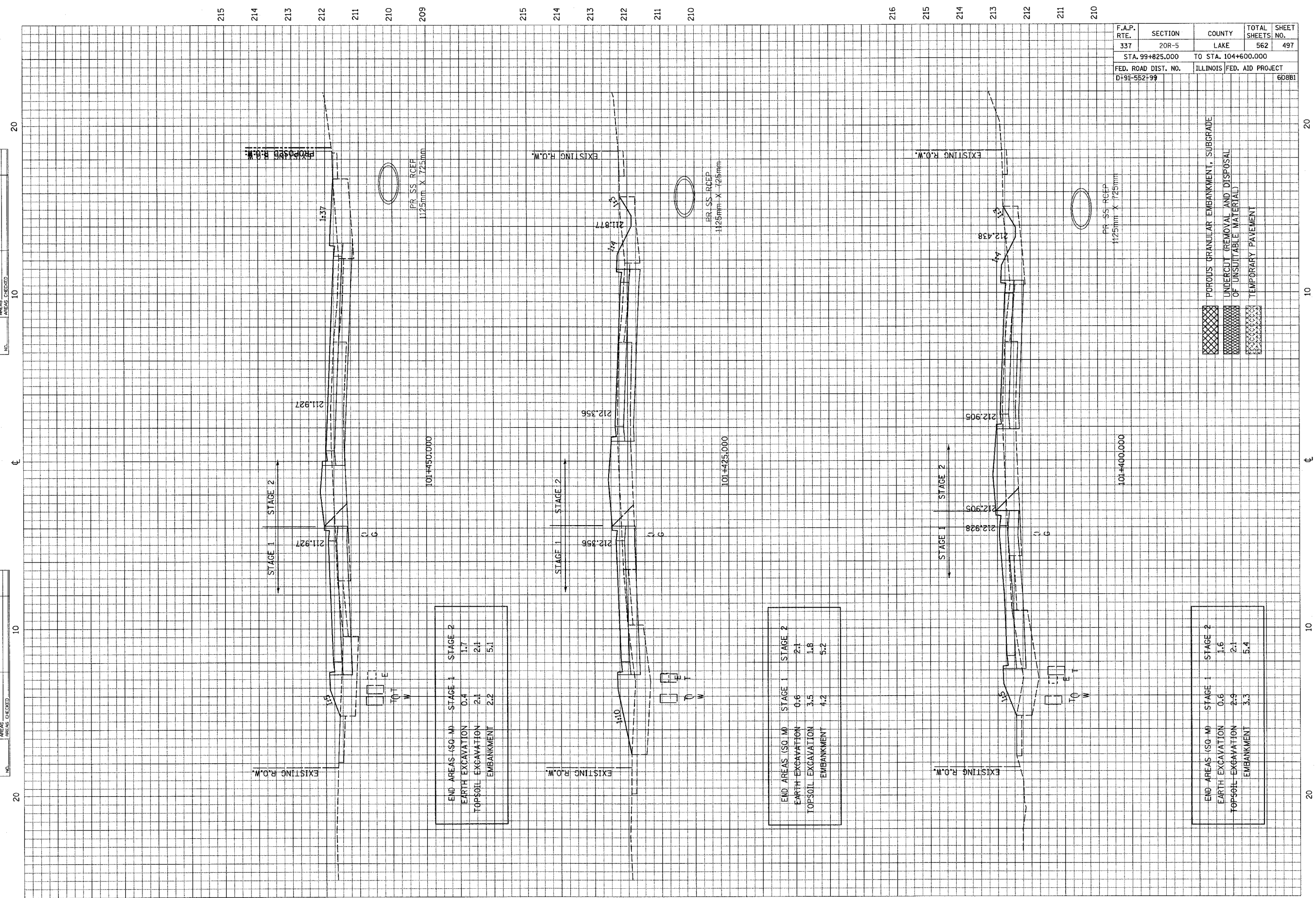
END AREAS (SQ M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.7	5.6
TOPSOIL EXCAVATION	5.5	2.5
EMBANKMENT	5.3	1.8

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FINAL SURVEY	DATE
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ORIGINAL SURVEY	DATE
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AREAS CHECKED	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	497
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
D-91-552-99	608B1			



END AREAS (SQ. M)		STAGE 1	STAGE 2
EARTH EXCAVATION	0.4	1.7	
TOPSOIL EXCAVATION	2.1	2.1	
EMBANKMENT	2.2	5.1	

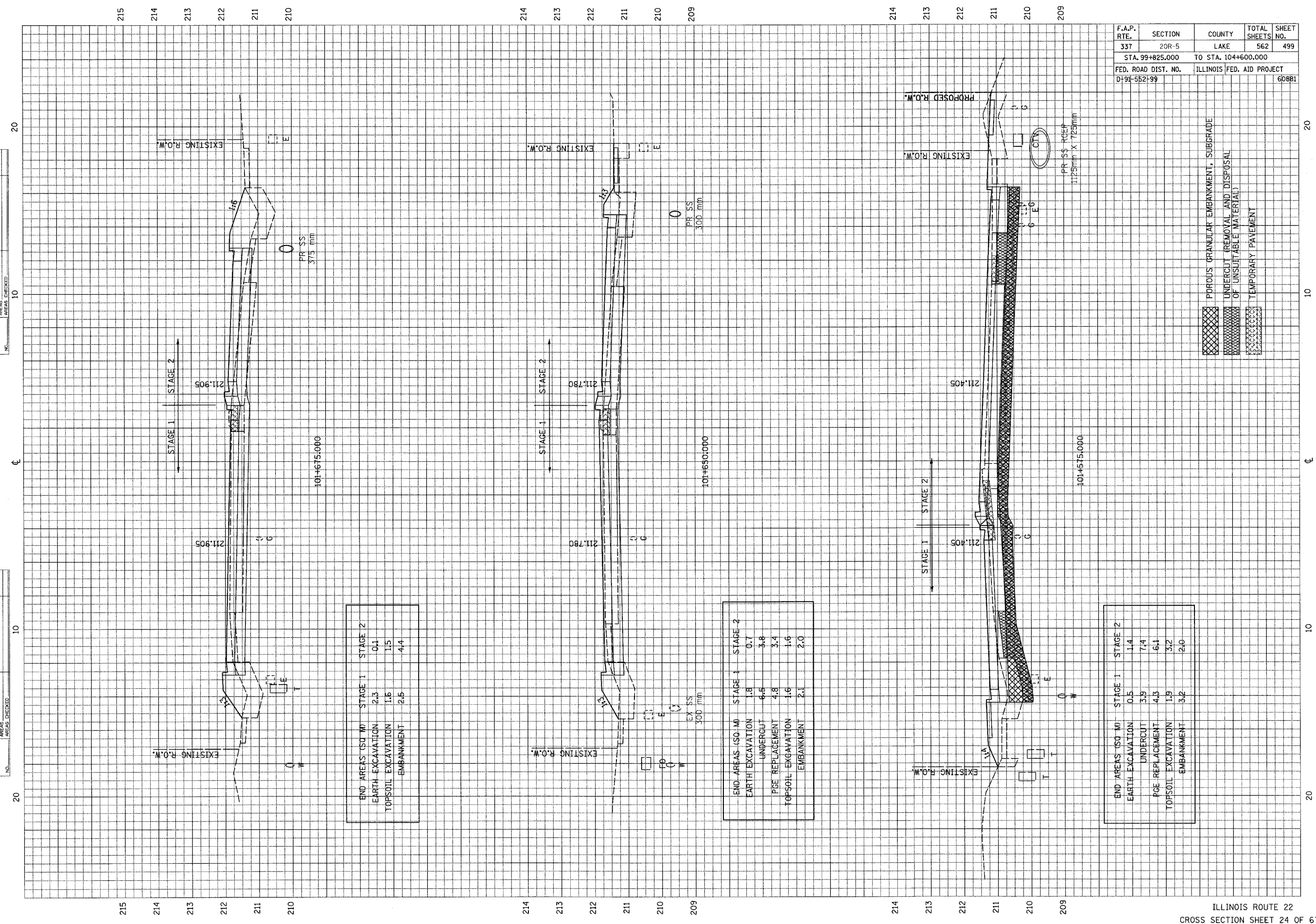
END AREAS (SQ. M)		STAGE 1	STAGE 2
EARTH EXCAVATION	0.6	2.1	
TOPSOIL EXCAVATION	3.5	1.8	
EMBANKMENT	4.2	5.2	

END AREAS (SQ. M)		STAGE 1	STAGE 2
EARTH EXCAVATION	0.6	1.6	
TOPSOIL EXCAVATION	2.9	2.1	
EMBANKMENT	3.3	5.4	

DATE _____ BY _____
 ORIGINAL SURVEY PLOTTED _____
 NOTE BOOK _____
 AREAS CHECKED _____

DATE _____ BY _____
 ORIGINAL SURVEY PLOTTED _____
 NOTE BOOK _____
 AREAS CHECKED _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
337	20R-5	LAKE	562	499
STA. 99+825.000		TO STA. 104+600.000		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		60881	
D-91-552-99				



END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	2.3	0.1
TOPSOIL EXCAVATION	1.6	1.5
EMBANKMENT	2.6	4.4

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	1.8	0.7
UNDERCUT	6.5	3.8
PGE REPLACEMENT	4.8	3.4
TOPSOIL EXCAVATION	1.6	1.6
EMBANKMENT	2.1	2.0

END AREAS (SQ. M)	STAGE 1	STAGE 2
EARTH EXCAVATION	0.5	1.4
UNDERCUT	3.9	7.4
PGE REPLACEMENT	4.3	6.1
TOPSOIL EXCAVATION	1.9	3.2
EMBANKMENT	3.2	2.0

- POROUS GRANULAR EMBANKMENT, SUBGRADE
- UNDERCUT REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL
- TEMPORARY PAVEMENT

