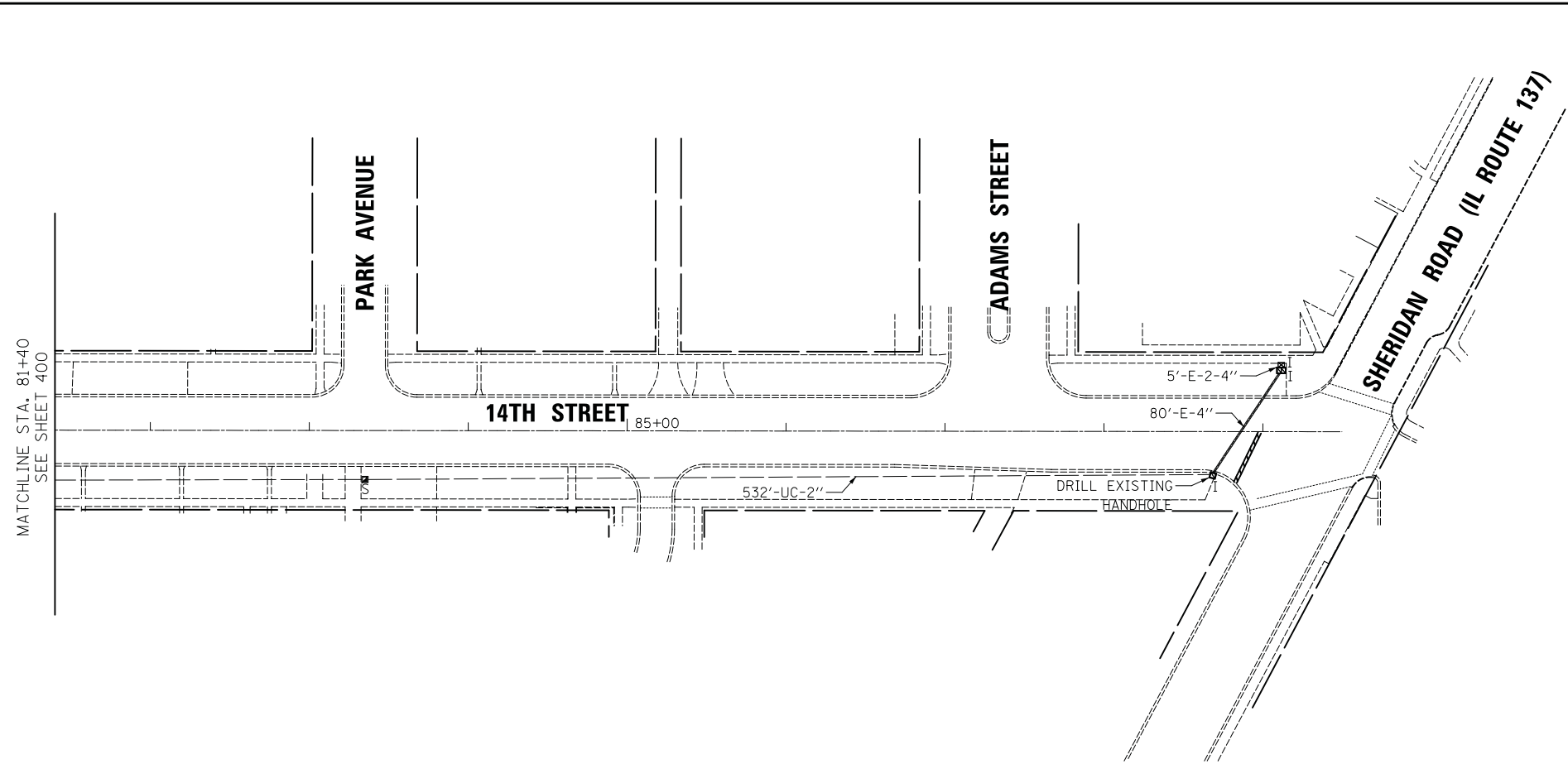


FINIAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

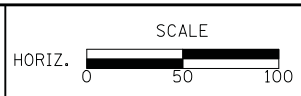
ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



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DESIGNED - LEP	REVISED -
DRAWN - OJT	REVISED -
CHECKED - JJE	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**



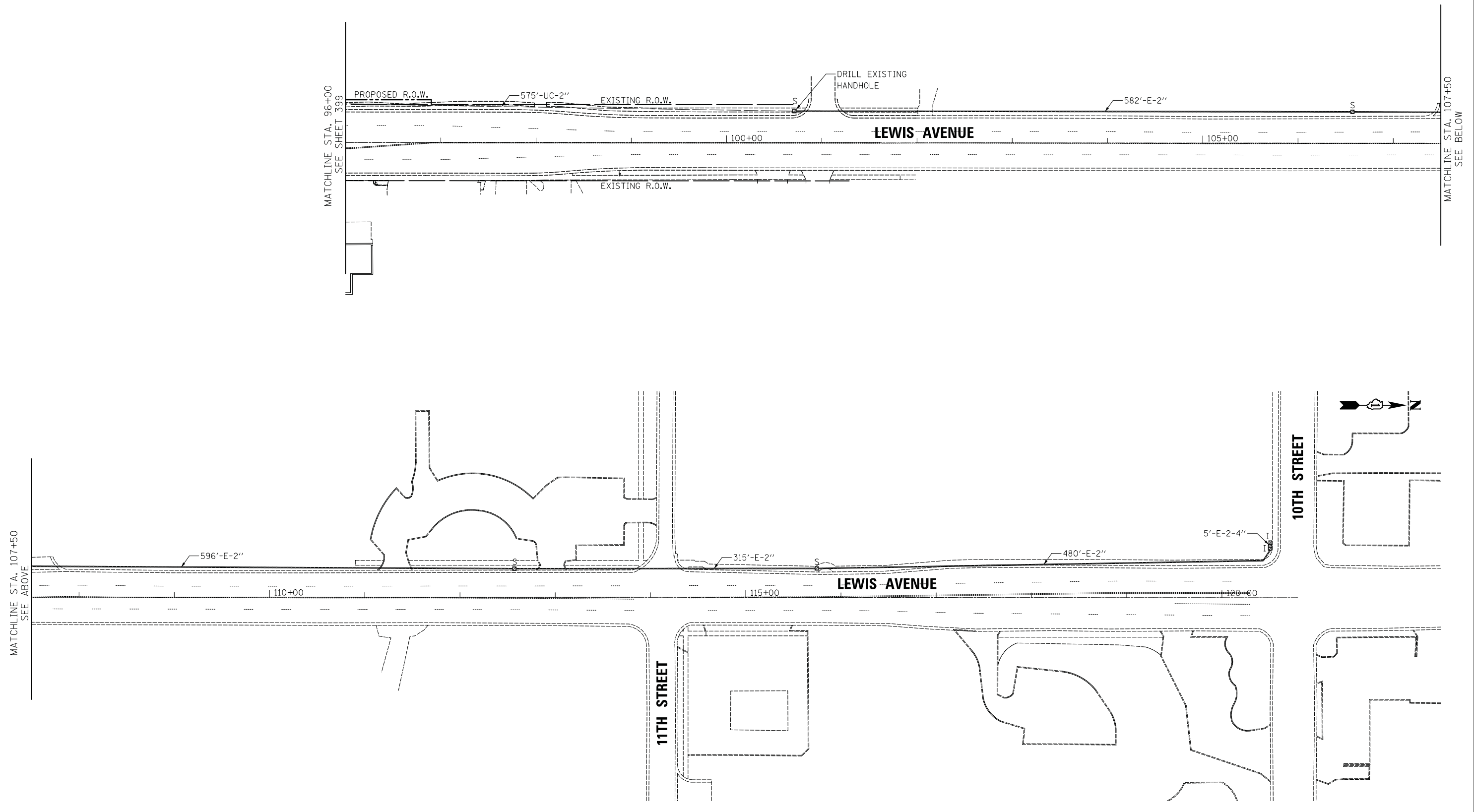
**14TH STREET INTERCONNECT PLAN  
 IL ROUTE 131 (GREEN BAY ROAD) TO IL ROUTE 137 (SHERIDAN ROAD)**

SCALE: 1" = 50' SHEET NO. 4 OF 5 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	401
<b>CONTRACT NO. 61F33</b>				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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

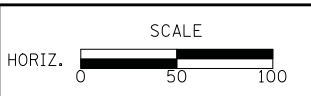
ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		



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DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**



**INTERCONNECT PLAN - LEWIS AVENUE  
 14TH STREET TO 10TH STREET**

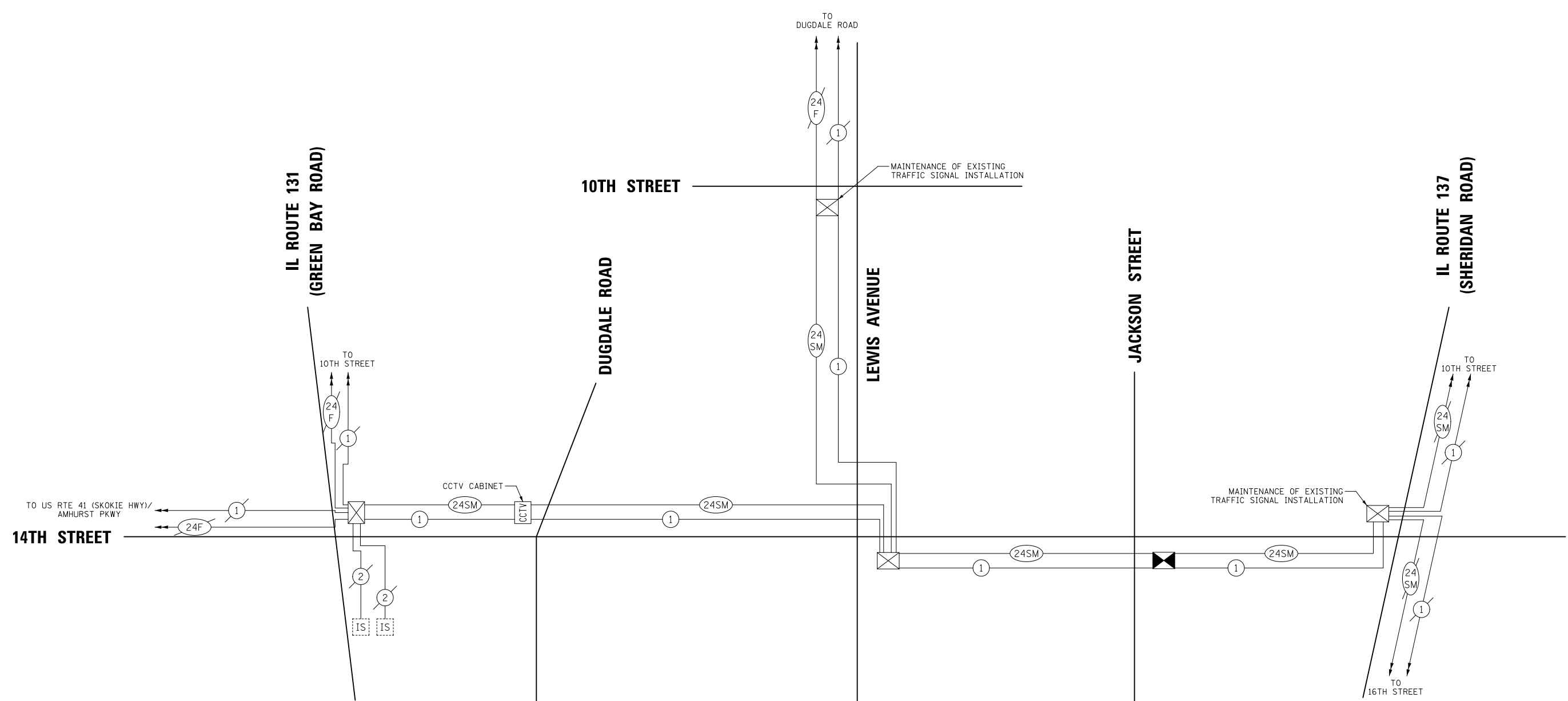
SCALE: 1" = 50' SHEET NO. 5 OF 5 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	402
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



**SCHEDULE OF QUANTITIES**

PAY ITEM	UNIT	QNTY.
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	9180
UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	43
HANDHOLE	EACH	14
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	2
ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C	FOOT	12084
DRILL EXISTING HANDHOLE	EACH	5
FIBER OPTIC CABLE IN CONDUIT, 24 FIBERS, SINGLE MODE	FOOT	12199
TERMINATE FIBER IN CABINET	EACH	12
SPLICE FIBER IN CABINET	EACH	4
OPTIMIZE TRAFFIC SIGNAL SYSTEM	EACH	1

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 CHECKED - JJE  
 DATE - 11/7/2018

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

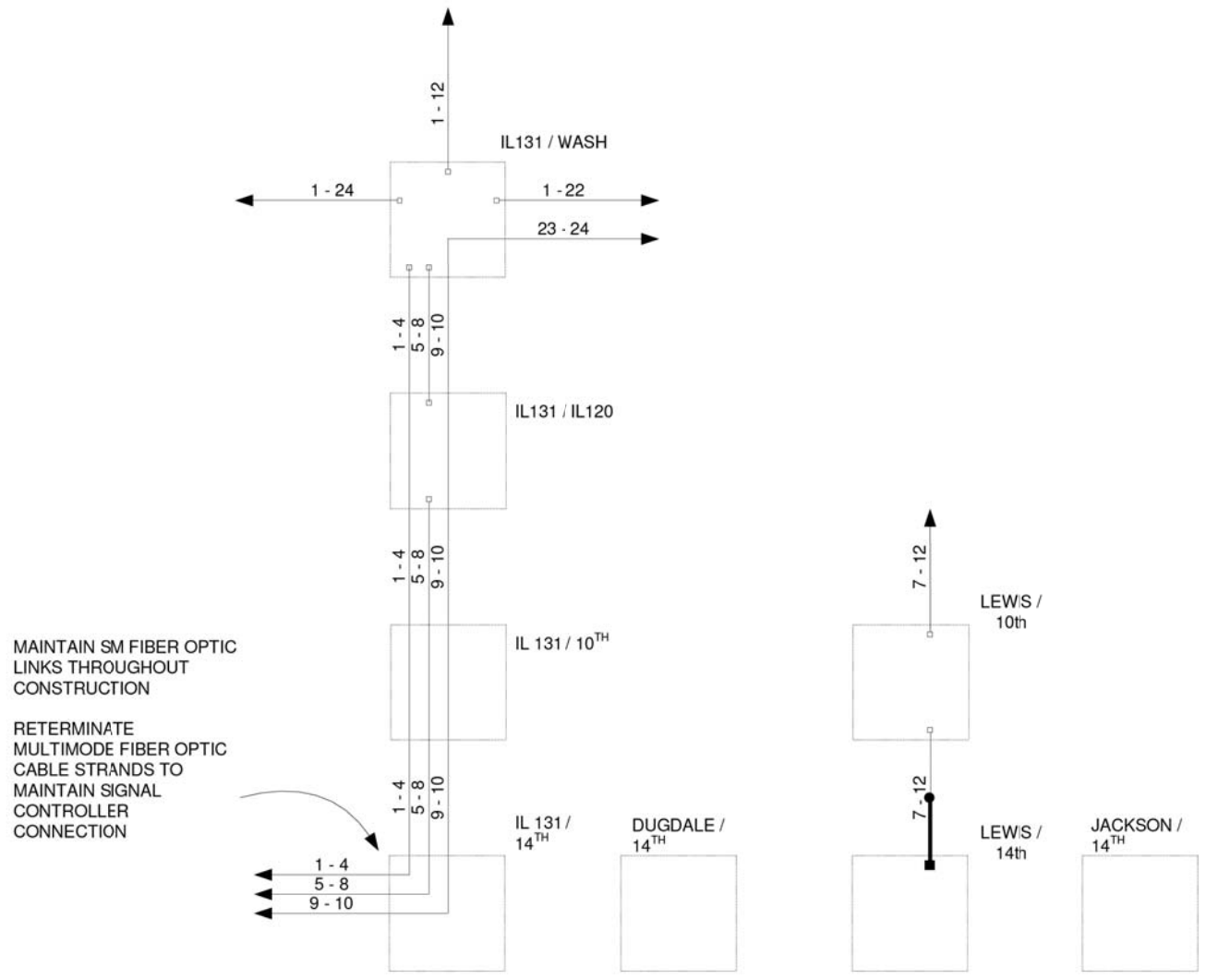
**14TH STREET INTERCONNECT SCHEMATIC  
 IL ROUTE 131 (GREEN BAY ROAD) TO IL ROUTE 137 (SHERIDAN ROAD)**

SCALE: NO SCALE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	403
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	DATE
SURVEYED	BY
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	

ORIGINAL SURVEY NO.	DATE
SURVEYED	BY
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	



TEMP

- EXISTING CONNECTOR / EXISTING FIBER
- NEW CONNECTOR / EXISTING FIBER
- EXISTING FUSION SPLICE / EXISTING FIBER
- NEW FUSION SPLICE / EXISTING FIBER
- NEW CONNECTOR / NEW FIBER
- NEW FUSION SPLICE / NEW FIBER

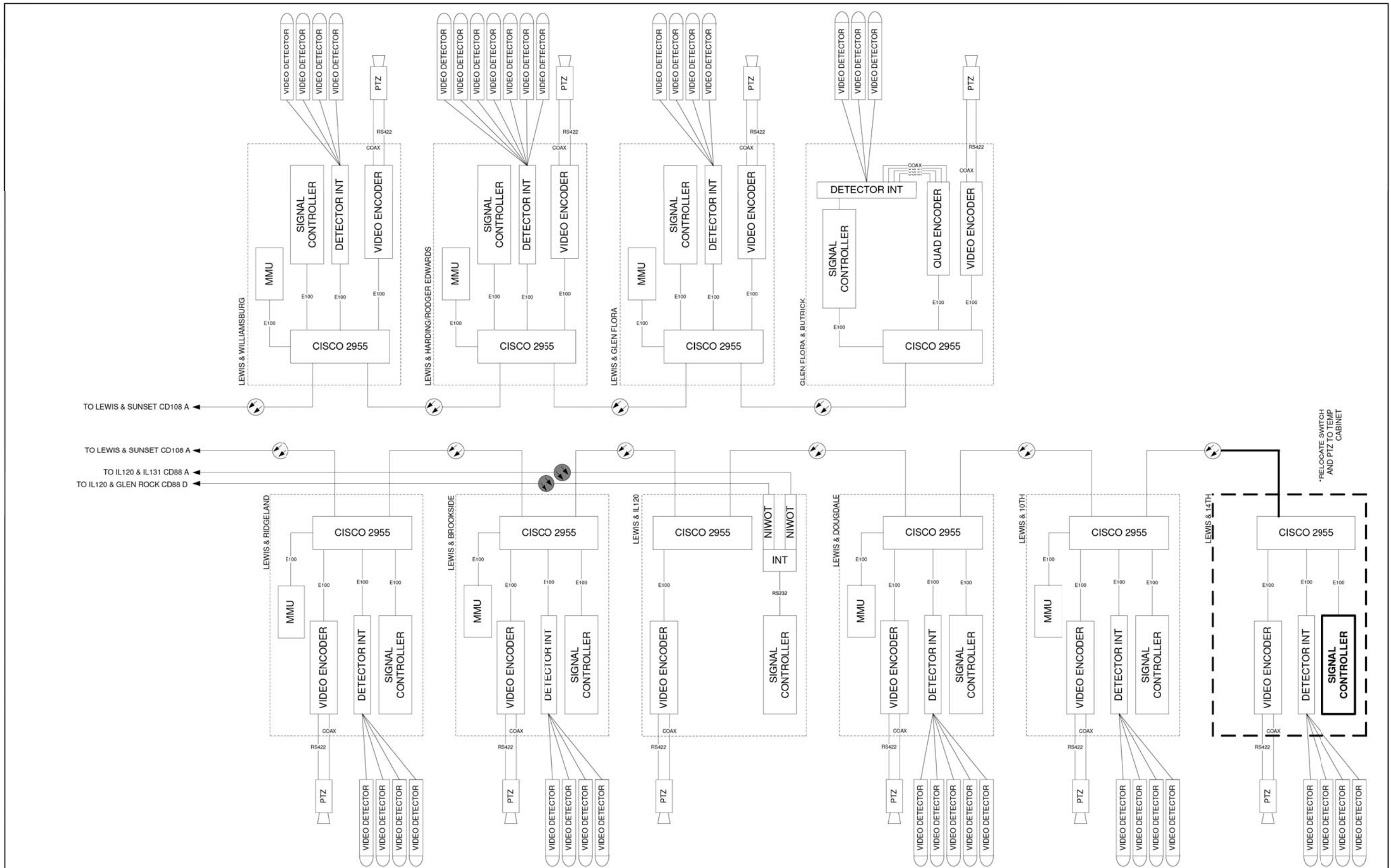
DESIGNED - DG	REVISED -	LAKE COUNTY DIVISION OF TRANSPORTATION	14 <sup>th</sup> from IL131 to LEWIS FIBER SPLICING DIAGRAM - TEMP	ROUTE	SECTION	ROUTE	SECTION	SHEET	SHEETS
DRAWN - DG	REVISED -								
CHECKED - DG	REVISED -								
DATE 2018/10/22	REVISED -								



FINAL SURVEY NO.	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS CHECKED		

ORIGINAL SURVEY NO.	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS CHECKED		

# PARSONS



TO LEWIS & SUNSET CD108 A  
 TO LEWIS & SUNSET CD108 A  
 TO IL120 & IL131 CD88 A  
 TO IL120 & GLEN ROCK CD88 D

\*RELOCATE SWITCH AND PTZ TO TEMP CABINET

DESIGNED - DG	REVISED -
DRAWN - DG	REVISED -
CHECKED - DG	REVISED -
DATE 2018/10/22	REVISED -

LAKE COUNTY  
DIVISION OF TRANSPORTATION

108B  
LEWIS / SUNSET TEMPORARY CABINET DETAIL

ROUTE	SECTION	ROUTE	SECTION	SHEET	SHEETS
				108B	

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DRAWN - OJT	REVISED -
CHECKED - JJE	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

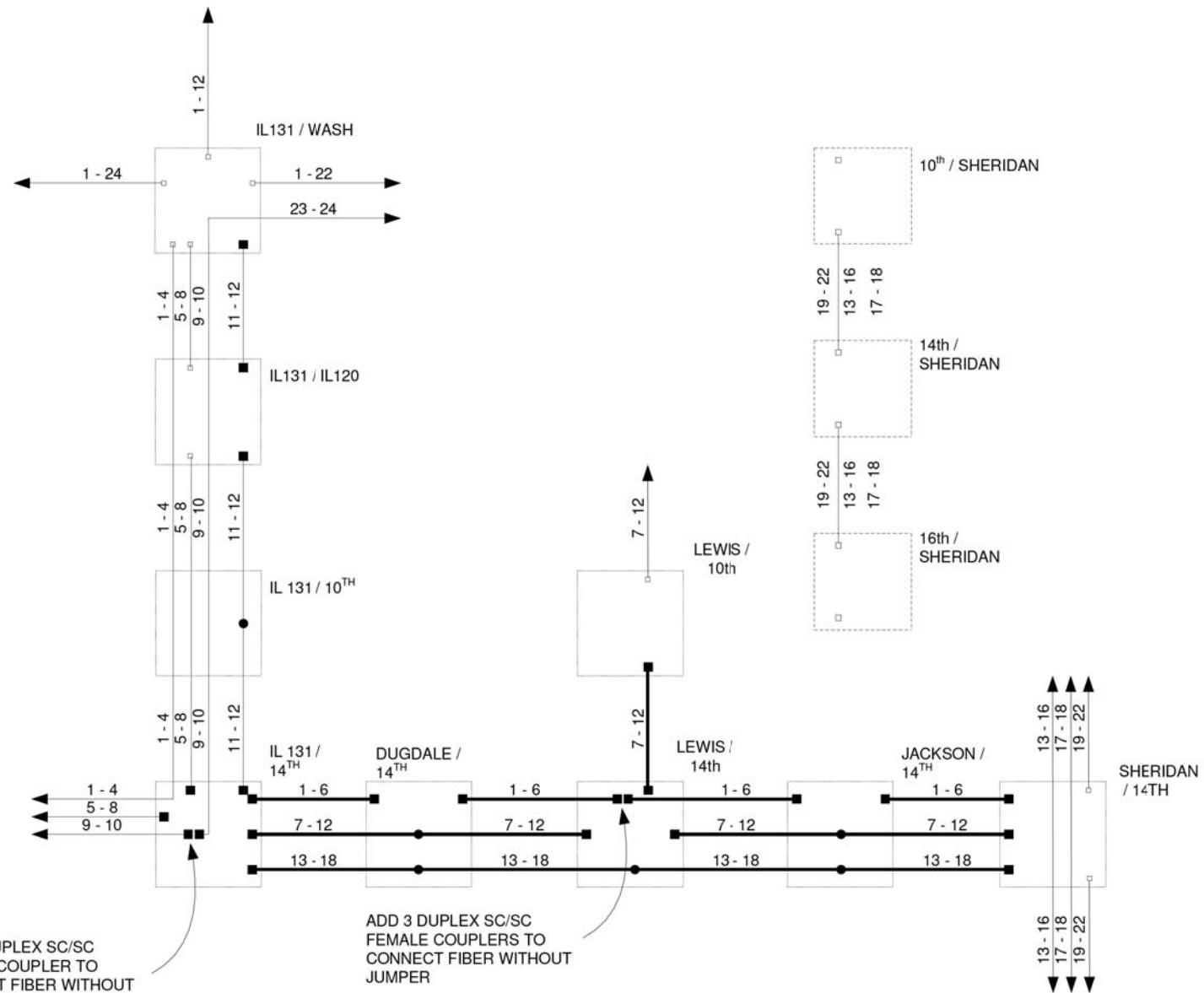
**TEMPORARY CABINET DETAIL  
LEWIS AVENUE**

SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	405
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				CONTRACT NO. 61F33

FINAL SURVEY NO.	SURVEYED BY	DATE

ORIGINAL SURVEY NO.	SURVEYED BY	DATE

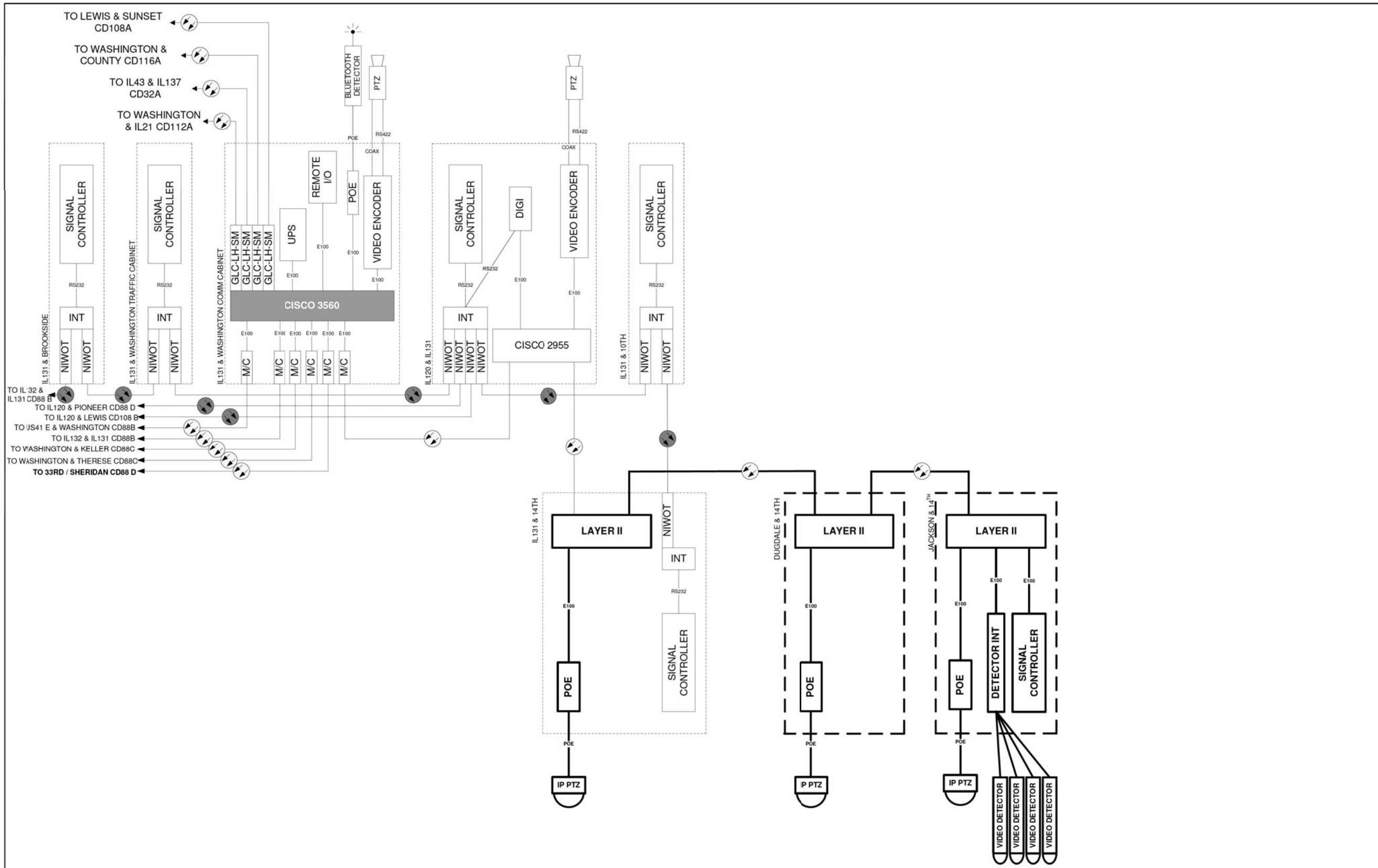


FINAL

- EXISTING CONNECTOR / EXISTING FIBER
- NEW CONNECTOR / EXISTING FIBER
- EXISTING FUSION SPLICE / EXISTING FIBER
- NEW FUSION SPLICE / EXISTING FIBER
- NEW CONNECTOR / NEW FIBER
- NEW FUSION SPLICE / NEW FIBER

DESIGNED - DG	REVISED -	LAKE COUNTY DIVISION OF TRANSPORTATION	14 <sup>th</sup> from IL131 to LEWIS FIBER SPLICING DIAGRAM - FINAL	ROUTE	SECTION	ROUTE	SECTION	SHEET	SHEETS
DRAWN - DG	REVISED -								
CHECKED - DG	REVISED -								
DATE 2018/10/22	REVISED -								

# PARSONS



DESIGNED - DG	REVISED -	LAKE COUNTY DIVISION OF TRANSPORTATION	88A IL131 / WASHINGTON		ROUTE	SECTION	ROUTE	SECTION	SHEET	SHEETS
DRAWN - DG	REVISED -		SCALE N/A						88A	
CHECKED - DG	REVISED -									
DATE 2018/10/22	REVISED -									

FINAL SURVEY NO.	SURVEYED	BY	DATE
	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED	BY	DATE
	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

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DESIGNED - LEP	REVISED -
DRAWN - OJT	REVISED -
CHECKED - JJE	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CABINET DETAIL  
 IL ROUTE 131 AND 14TH STREET**

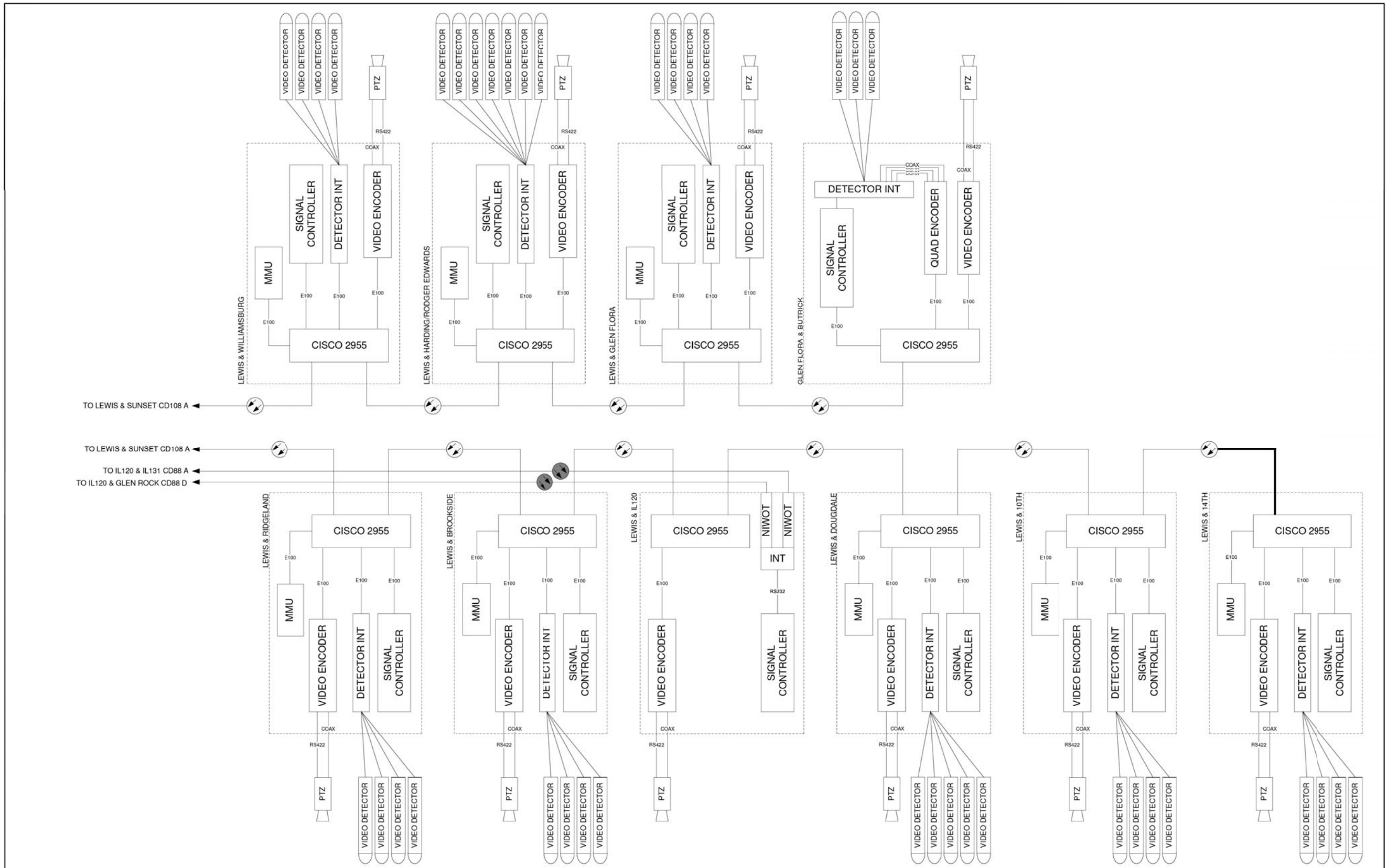
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	407
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

SHEET NO. 1 OF 1 SHEETS STA. TO STA.



FINAL SURVEY NO.	SURVEYED BY	DATE

ORIGINAL SURVEY NO.	SURVEYED BY	DATE



TO LEWIS & SUNSET CD108 A  
 TO LEWIS & SUNSET CD108 A  
 TO IL120 & IL131 CD88 A  
 TO IL120 & GLEN ROCK CD88 D

DESIGNED - DG	REVISED -
DRAWN - DG	REVISED -
CHECKED - DG	REVISED -
DATE 2018/10/22	REVISED -

LAKE COUNTY  
DIVISION OF TRANSPORTATION

SCALE N/A	108B LEWIS / SUNSET	ROUTE SECTION	ROUTE SECTION	SHEET SHEETS
				108B

DESIGNED - LEP	REVISED -
DRAWN - OJT	REVISED -
CHECKED - JJE	REVISED -
DATE - 11/7/2018	REVISED -

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	407A
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

# TRAFFIC SIGNAL LEGEND

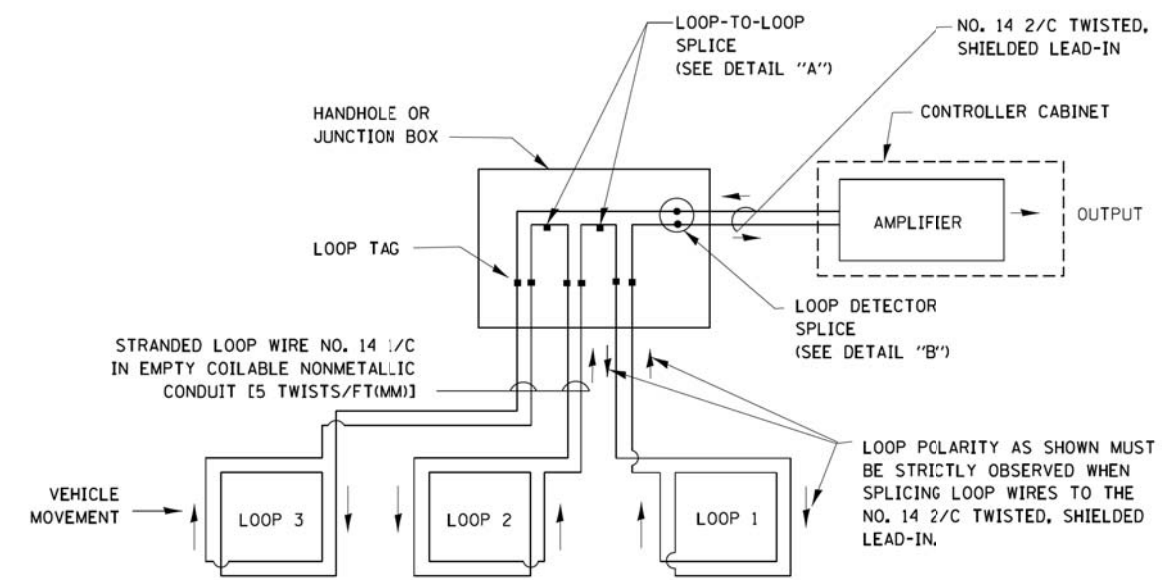
(NOT TO SCALE)

ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
CONTROLLER CABINET			HANDHOLE -SQUARE -ROUND	 	 	SIGNAL HEAD -(P) PROGRAMMABLE SIGNAL HEAD		
COMMUNICATION CABINET			HEAVY DUTY HANDHOLE -SQUARE -ROUND	 	 	SIGNAL HEAD WITH BACKPLATE -(P) PROGRAMMABLE SIGNAL HEAD -(RB) RETROREFLECTIVE BACKPLATE		
MASTER CONTROLLER			DOUBLE HANDHOLE			PEDESTRIAN SIGNAL HEAD AT RAILROAD INTERSECTIONS		
MASTER MASTER CONTROLLER			JUNCTION BOX			PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER		
UNINTERRUPTABLE POWER SUPPLY			RAILROAD CANTILEVER MAST ARM			ILLUMINATED SIGN "NO LEFT TURN"/"NO RIGHT TURN"		
SERVICE INSTALLATION -(P) POLE MOUNTED			RAILROAD FLASHING SIGNAL			NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE. ALL DETECTOR LOOP CABLE TO BE SHIELDED		
SERVICE INSTALLATION -(G) GROUND MOUNTED -(GM) GROUND MOUNTED METERED	 	 	RAILROAD CROSSING GATE			GROUND CABLE IN CONDUIT, NO. 6 SOLID COPPER (GREEN)		
TELEPHONE CONNECTION			RAILROAD CROSSBUCK			ELECTRIC CABLE IN CONDUIT, TRACER NO. 14 1/C		
STEEL MAST ARM ASSEMBLY AND POLE			RAILROAD CONTROLLER CABINET			COAXIAL CABLE		
ALUMINUM MAST ARM ASSEMBLY AND POLE			UNDERGROUND CONDUIT (UC), GALVANIZED STEEL			VENDOR CABLE		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE			TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE			COPPER INTERCONNECT CABLE, NO. 18, 3 PAIR TWISTED, SHIELDED		
SIGNAL POST -(BM) BARREL MOUNTED - TEMPORARY			SYSTEM ITEM			FIBER OPTIC CABLE -NO. 62.5/125, MM12F -NO. 62.5/125, MM12F SM12F -NO. 62.5/125, MM12F SM24F		
WOOD POLE			INTERSECTION ITEM			GROUND ROD -(C) CONTROLLER -(M) MAST ARM -(P) POST -(S) SERVICE		
GUY WIRE			REMOVE ITEM					
SIGNAL HEAD			RELOCATE ITEM					
SIGNAL HEAD WITH BACKPLATE			ABANDON ITEM					
SIGNAL HEAD OPTICALLY PROGRAMMED			CONTROLLER CABINET AND FOUNDATION TO BE REMOVED					
FLASHER INSTALLATION -(FS) SOLAR POWERED			MAST ARM POLE AND FOUNDATION TO BE REMOVED					
PEDESTRIAN SIGNAL HEAD			SIGNAL POST AND FOUNDATION TO BE REMOVED					
PEDESTRIAN PUSH BUTTON -(APS) ACCESSIBLE PEDESTRIAN PUSH BUTTON			DETECTOR LOOP, TYPE I					
RADAR DETECTION SENSOR			PREFORMED DETECTOR LOOP					
VIDEO DETECTION CAMERA			SAMPLING (SYSTEM) DETECTOR					
RADAR/VIDEO DETECTION ZONE			INTERSECTION AND SAMPLING (SYSTEM) DETECTOR					
PAN, TILT, ZOOM (PTZ) CAMERA			QUEUE AND SAMPLING (SYSTEM) DETECTOR					
EMERGENCY VEHICLE LIGHT DETECTOR			WIRELESS DETECTOR SENSOR					
CONFIRMATION BEACON			WIRELESS ACCESS POINT					
WIRELESS INTERCONNECT								
WIRELESS INTERCONNECT RADIO REPEATER								



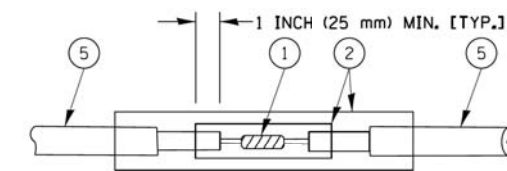
**LOOP DETECTOR NOTES**

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

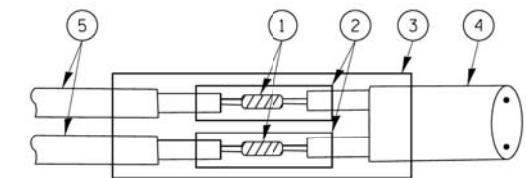


**DETECTOR LOOP WIRING SCHEMATIC**

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



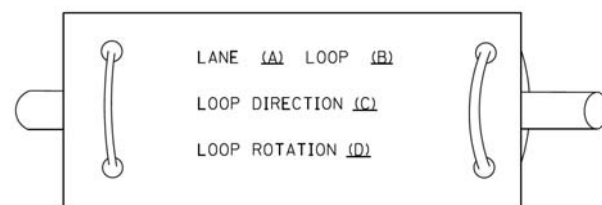
DETAIL "A"  
LOOP-TO-LOOP SPLICE



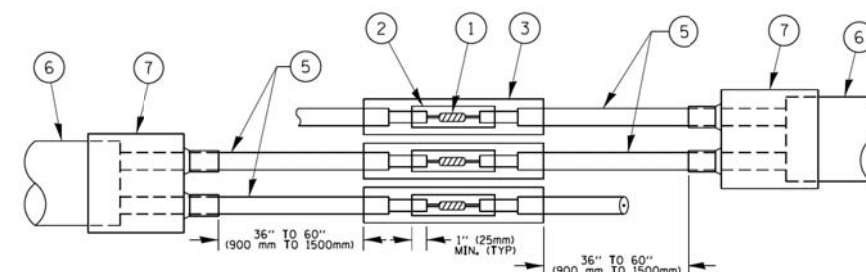
DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE

**TYPE I LOOP**

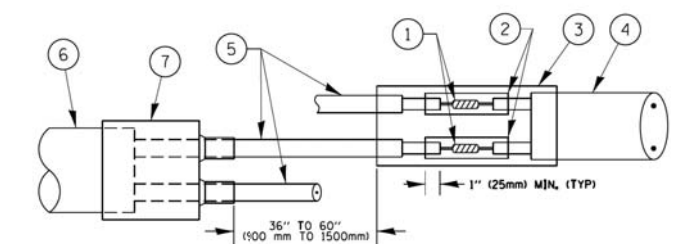
**LOOP LEAD-IN CABLE TAG**



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



DETAIL "A"  
LOOP-TO-LOOP SPLICE



DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE

**PREFORMED LOOP**

**LOOP DETECTOR SPLICE**

- ① WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH. THE WESTERN UNION SPLICES SHALL BE STAGGERED.
- ② WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- ③ WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER GRADE.
- ④ NO. 14 2/C TWISTED, SHIELDED CABLE.
- ⑤ LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.
- ⑥ PREFORMED LOOP
- ⑦ XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS, TYCO CBR-2 OR APPROVED EQUAL

FILE NAME =	USER NAME = footemj	DESIGNED - DAD	REVISED - DAG 1-1-14
ct:\pw\work\p1dot\footemj\d0108315\ts05.dgn		DRAWN - BCK	REVISED -
	PLOT SCALE = 50.0000 1 / in.	CHECKED - DAD	REVISED -
	PLOT DATE = 1/13/2014	DATE - 10-28-09	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

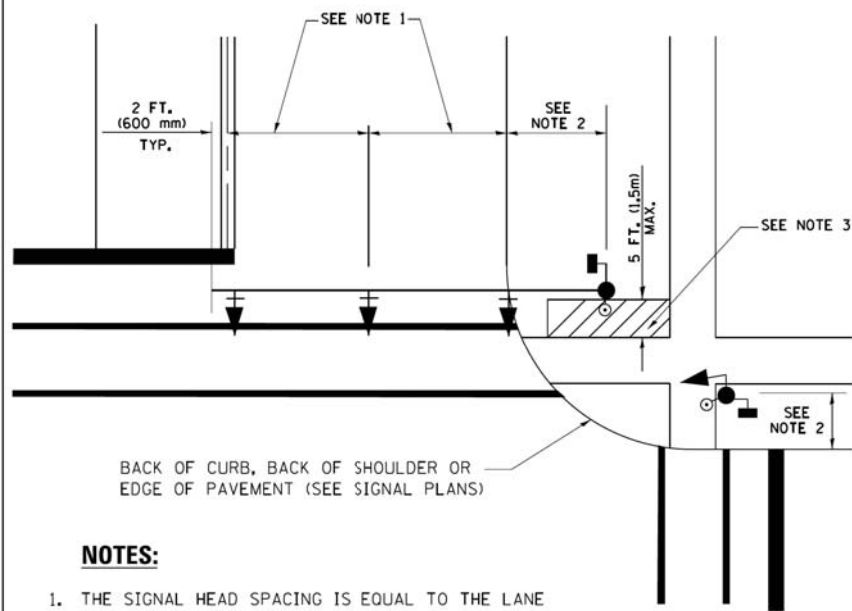
**DISTRICT ONE  
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

SCALE: NONE SHEET NO. 2 OF 7 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	409
TS-05		CONTRACT NO. 61F33		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



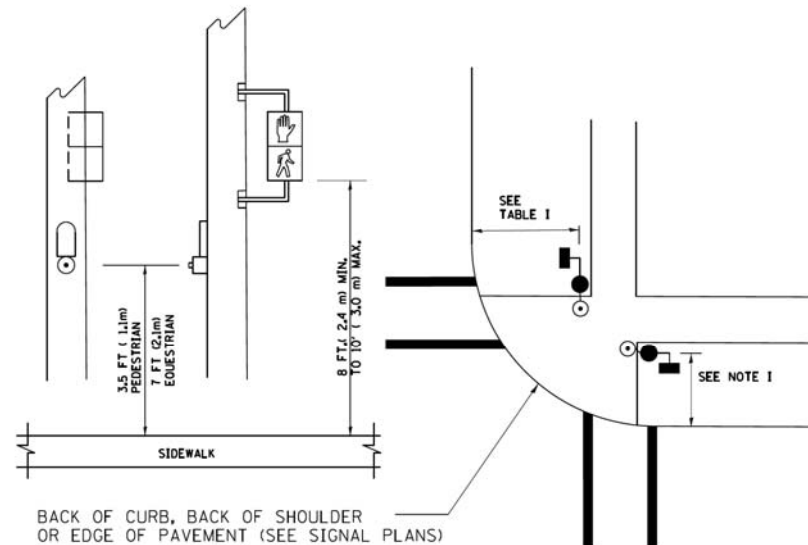
**TRAFFIC SIGNAL MAST ARM AND SIGNAL POST  
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR  
FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN  
WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.**



**NOTES:**

1. THE SIGNAL HEAD SPACING IS EQUAL TO THE LANE WIDTH OR AS SHOWN ON THE TRAFFIC SIGNAL PLAN.
2. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
3. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE MAST ARM SHAFT OR THE SIGNAL POST.
4. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
5. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

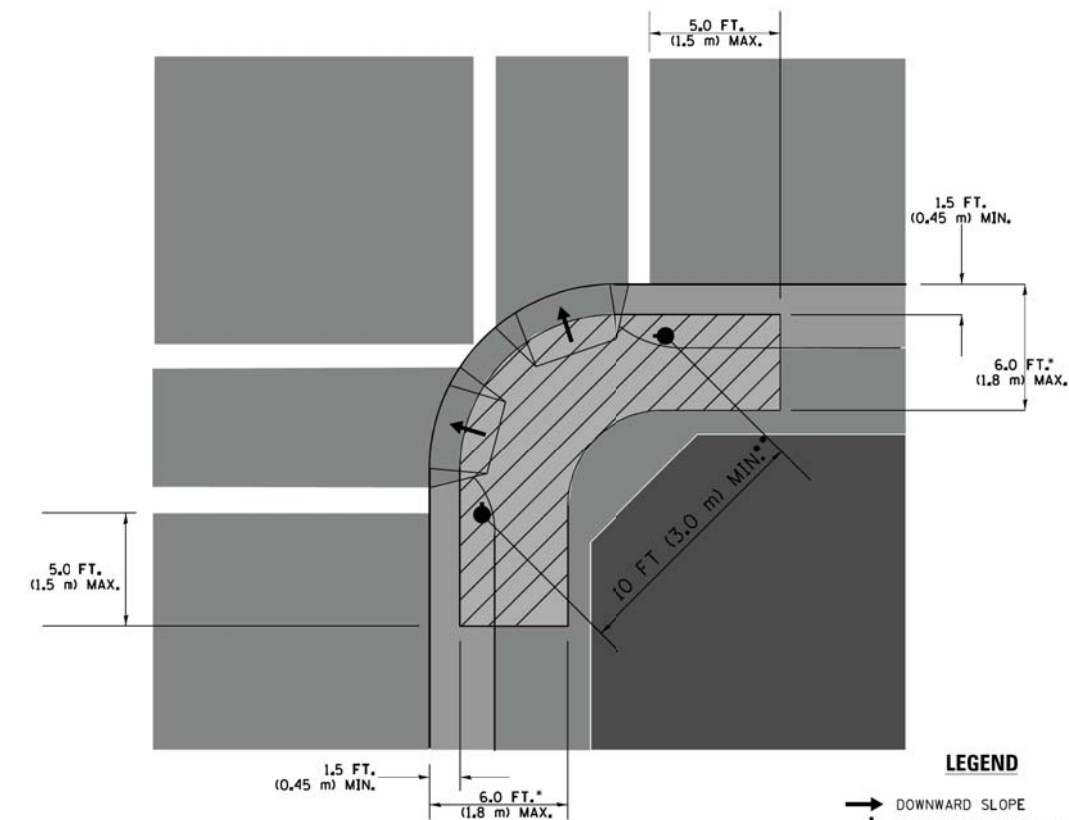
**PEDESTRIAN SIGNAL POST  
AND  
PEDESTRIAN PUSH BUTTON POST**



**NOTES:**

1. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
2. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE PEDESTRIAN SIGNAL POST OR THE PEDESTRIAN PUSH BUTTON POST.
3. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
4. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

**RECOMMENDED PUSHBUTTON LOCATIONS**



**LEGEND**

- DOWNWARD SLOPE
- PEDESTRIAN PUSHBUTTON
- ▨ RECOMMENDED PUSHBUTTON LOCATIONS

- WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5 FT (0.45 m) AND 6 FT (1.8 m) FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10 FT (3 m) FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
- WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE THE 10 FT (3 m) SEPARATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.

**NOTES:**

1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE THAT IS NOT LOCATED OVER A HIGHWAY SHALL BE AT LEAST 8 FT (2.4 m) BUT NOT MORE THAN 19 FT (5.8 m) ABOVE THE SIDEWALK OR, IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.
3. THE BOTTOM OF THE SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001, 877002, 877006, 877011 AND 877012 WITH A MINIMUM OF 16 FT (5.0 m) AND A MAXIMUM OF 18 FT (5.5 m) FROM THE HIGHEST POINT OF PAVEMENT.
4. THE BOTTOM OF THE TEMPORARY SPAN WIRE MOUNTED SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARD 880001 WITH A MINIMUM OF 17 FT (5.18 m) FROM THE HIGHEST POINT OF PAVEMENT.
5. THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

**TRAFFIC SIGNAL EQUIPMENT OFFSET**

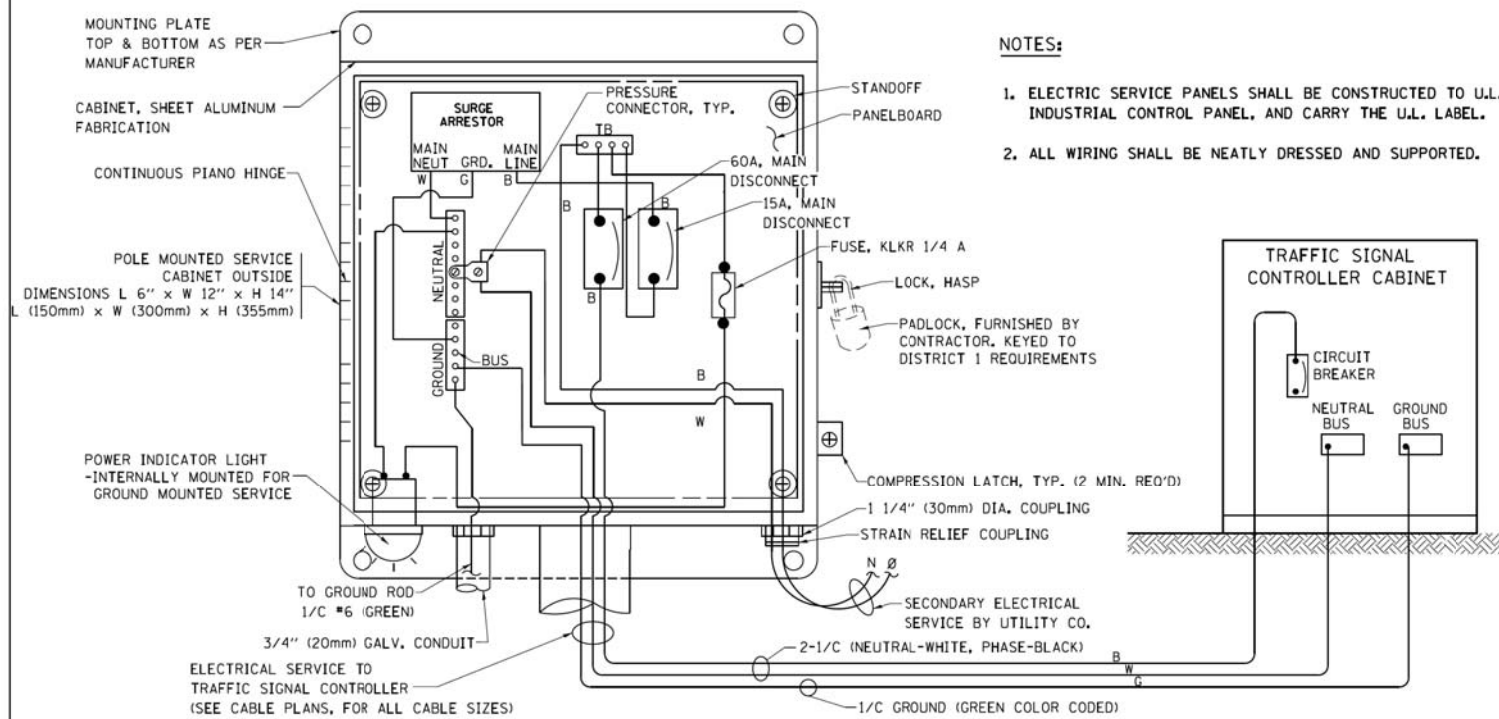
TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN PUSHBUTTON POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TEMPORARY WOOD POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
CONTROLLER CABINET	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.
SERVICE INSTALLATION, GROUND MOUNT	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.

**NOTES:**

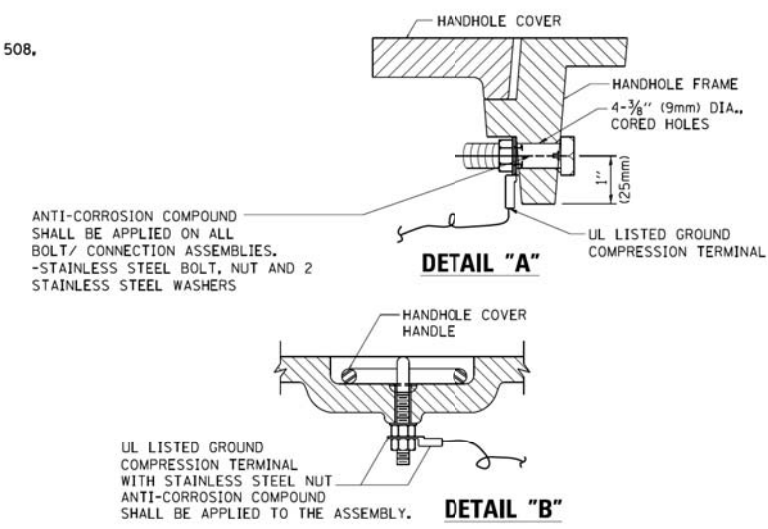
1. CONTACT THE "AREA TRAFFIC SIGNAL MAINTENANCE AND OPERATIONS ENGINEER" FOR ASSISTANCE IN LOCATING THE TRAFFIC SIGNAL EQUIPMENT WHEN THERE ARE CONFLICTS WITH DITCHES OR THE MINIMUM OFFSET DISTANCES CANNOT BE MET.
2. MINIMUM DISTANCE FROM THE BACK OF CURB TO THE ROADWAY SIDE OF THE FOUNDATION.
3. MINIMUM DISTANCE FROM THE EDGE OF PAVEMENT TO THE ROADWAY SIDE OF THE FOUNDATION.
4. ANY CHANGES TO THE OFFSETS OF THE FOUNDATIONS, FROM THE MINIMUM DISTANCES LISTED IN THE "TRAFFIC SIGNAL EQUIPMENT OFFSET" CHART AND THE TRAFFIC SIGNAL INSTALLATION PLAN, COULD AFFECT THE PLACEMENT OF THE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND THE PEDESTRIAN PUSHBUTTONS. THE SIGNAL HEAD PLACEMENT ON THE MAST ARMS SHALL REMAIN AS PER THE TRAFFIC SIGNAL INSTALLATION PLAN AND THE "TRAFFIC SIGNAL MAST ARM AND SIGNAL POST" DETAIL ABOVE. THE PROPOSED MAST ARM LENGTHS MAY NEED TO BE REVISED TO MEET THE ABOVE REQUIREMENTS. THE PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS MUST MEET THE REQUIREMENTS UNDER THE DETAILS ON THIS SHEET.

FILE NAME =	USER NAME = footemj	DESIGNED - DAD	REVISED - DAG 1-1-14	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS</b>	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT SCALE = 5/8"=1'-0"		CHECKED - DAD	REVISED -			<b>TS-05</b>		<b>CONTRACT NO. 61F33</b>		
PLOT DATE = 1/13/2014		DATE - 10-28-09	REVISED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



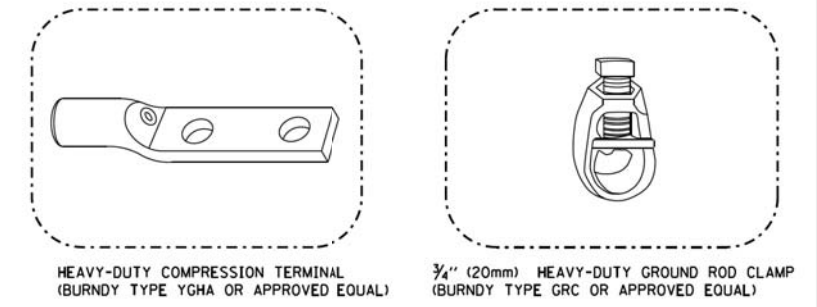
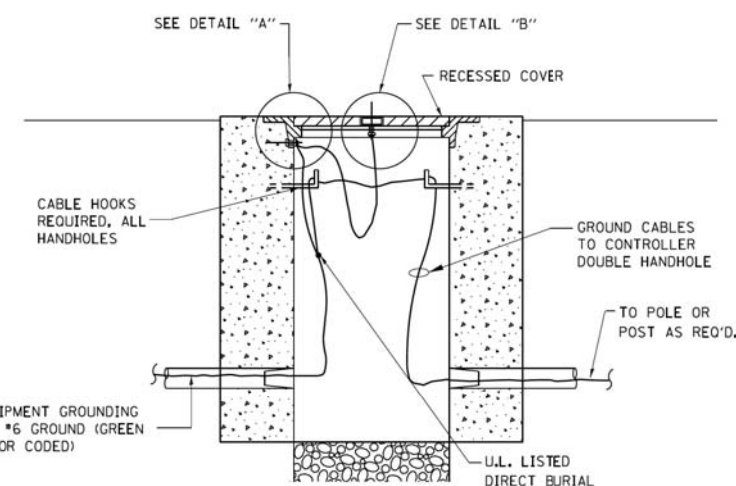


**ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)  
SERVICE INSTALLATION POLE MOUNT (SHOWN)  
(NOT TO SCALE)**

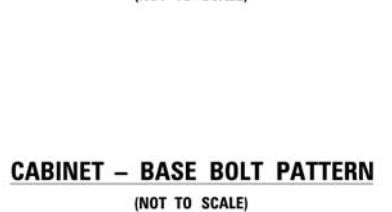
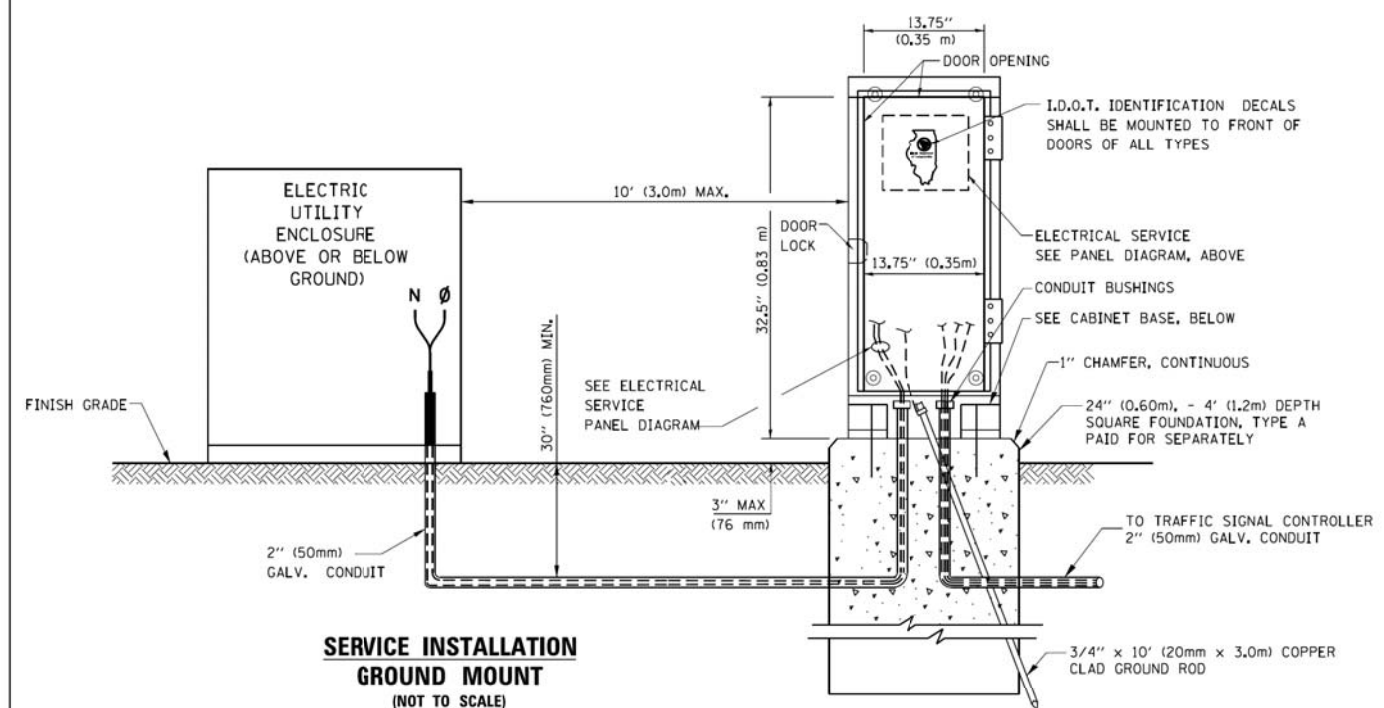
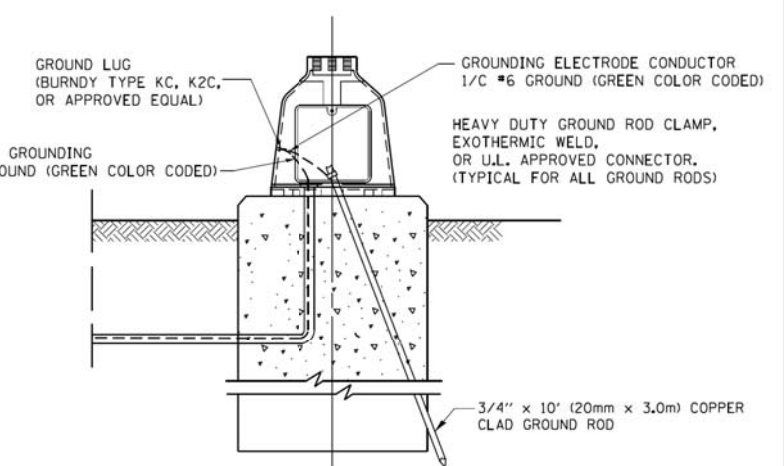
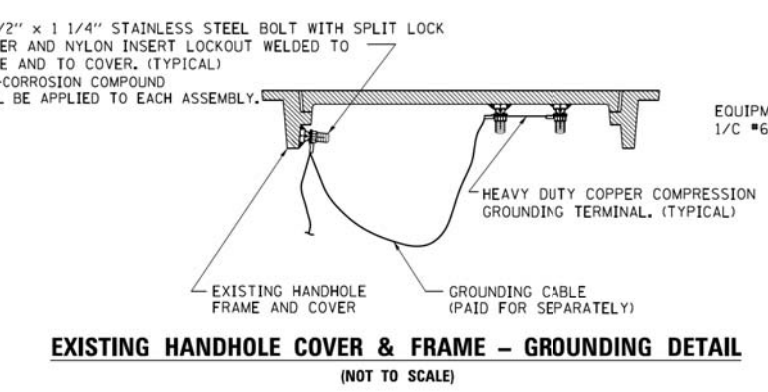


**NOTES:  
GROUNDING SYSTEM**

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

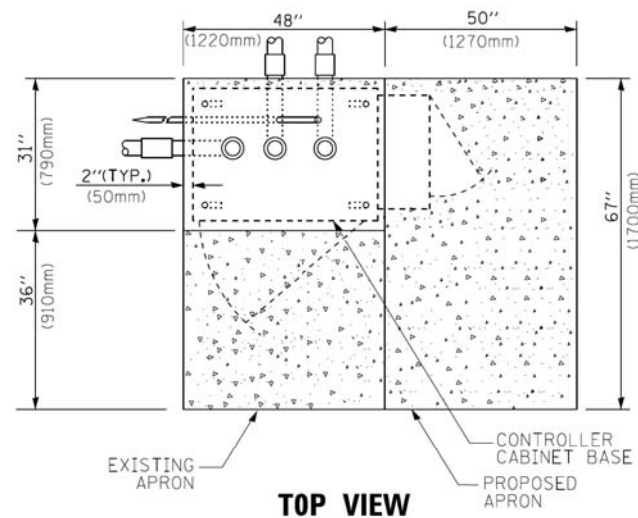


- NOTES:**
- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
  - GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.

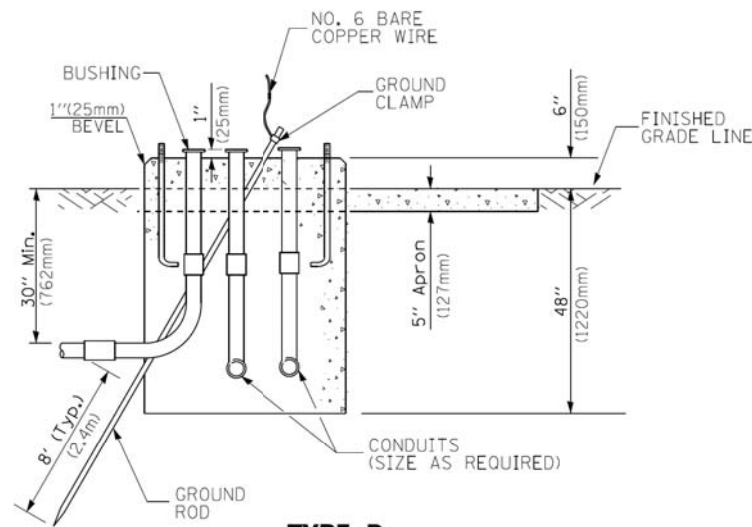


FILE NAME =	USER NAME = footemj	DESIGNED - DAD	REVISED - DAG 1-1-14	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS</b>			F.A.U. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
ct:\pw\work\p\dot\footemj\d0108315\ts05.dgn		DRAWN - BCK	REVISED -		SCALE: NONE	SHEET NO. 4	OF 7 SHEETS	STA.	TO STA.	1228	99-00260-01-WR	LAKE	566	411
		CHECKED - DAD	REVISED -							<b>TS-05</b>			CONTRACT NO.	61F33
		DATE - 10-28-09	REVISED -							FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

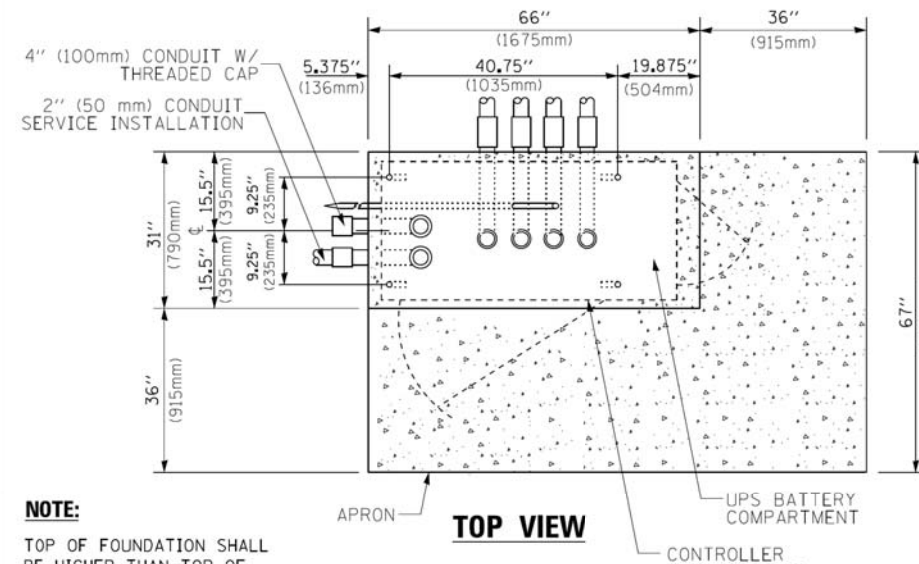




**TOP VIEW**

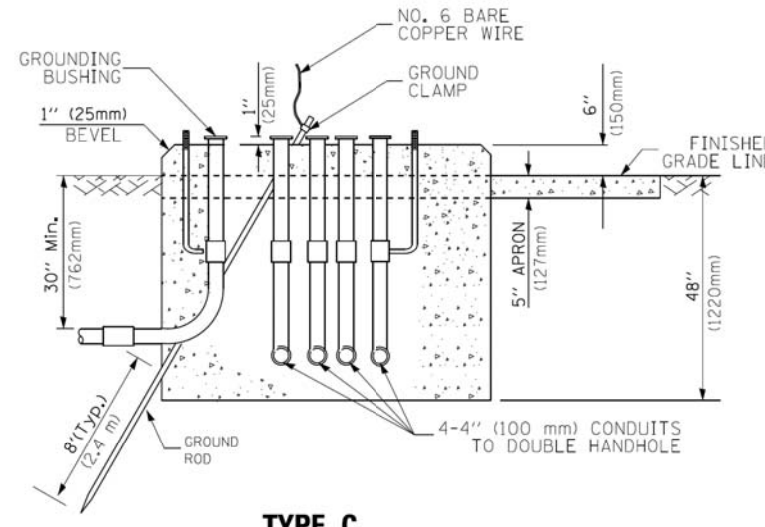


**TYPE D  
FOR GROUND MOUNTED  
CONTROLLER CABINET  
AND UPS BATTERY CABINET**

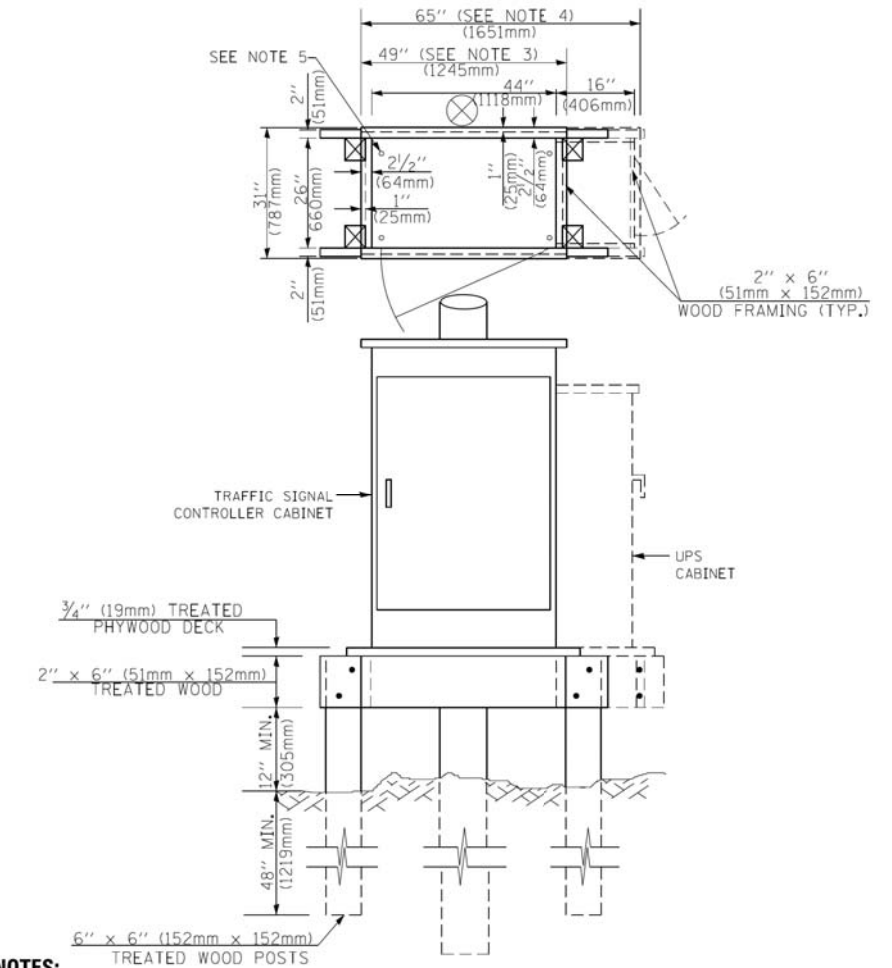


**TOP VIEW**

**NOTE:**  
TOP OF FOUNDATION SHALL BE HIGHER THAN TOP OF DOUBLE HANDHOLE



**TYPE C  
FOR GROUND MOUNTED  
SUPER P (TYPE IV) AND SUPER R (TYPE V)  
CONTROLLER CABINETS**



**NOTES:**

- BASED ON CONTROLLER CABINET TYPE IV WITH BASE DIMENSIONS OF 26" x 44" (660mm x 1118mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
- BASED ON UNINTERRUPTIBLE POWER SUPPLY CABINET WITH BASE DIMENSIONS OF 16" x 25" (406mm x 635mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
- PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV.
- PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV AND UNINTERRUPTIBLE POWER SUPPLY CABINET.
- DRILLED HOLES THROUGH THE PLATFORM BASE TO MATCH THE CONTROLLER CABINET BOLT TEMPLATE. FASTEN THE CONTROLLER CABINET TO THE PLATFORM WITH CARRIAGE BOLTS, WASHERS AND NUTS.
- FASTEN ALL SUPPORT WOOD FRAMING TO THE WOOD POSTS WITH 2 LAG SCREWS FOR EACH CONNECTION.

**TEMPORARY SIGNAL CONTROLLER  
WOOD SUPPORT PLATFORM**

CABLE SLACK LENGTH	FEET	METER
HANDHOLE	6.5	2.0
DOUBLE HANDHOLE	13.0	4.0
SIGNAL POST	2.0	0.6
MAST ARM	2.0	0.6
CONTROLLER CABINET	1.5	0.5
FIBER OPTIC AT CABINET	13.0	4.0
ELECTRIC SERVICE AT (CABINET OR SERVICE LOCATION)	1.5	0.5
GROUND CABLE (SIGNAL POST, MAST ARM, CABINET)	1.5	0.5
GROUND CABLE (BETWEEN FRAME AND COVER)	5.0	1.6

**CABLE SLACK**

VERTICAL CABLE LENGTH	FEET	METER
MAST ARM POLE (MAST ARM MOUNTED SIGNAL HEAD) (L = MAST ARM LENGTH - DISTANCE TO SIGNAL HEAD FROM END OF ARM)	20.0+L	6.0+L
BRACKET MOUNTED (MAST ARM POLE OR SIGNAL POLE)	13.0	4.0
PEDESTRIAN PUSH BUTTON	6.0	2.0
SERVICE INSTALLATION POLE MOUNT TO SERVICE DROP	13.5	4.1
SERVICE INSTALLATION POLE MOUNT TO GROUND	13.5	4.1
SERVICE INSTALLATION GROUND MOUNT	6.0	2.0
FOUNDATION (SIGNAL POST, MAST ARM POLE, CONTROLLER CABINET, SERVICE-GROUND MOUNT)	3.0	1.0

**VERTICAL CABLE LENGTH**

FOUNDATION	DEPTH
TYPE A - Signal Post	4'-0" (1.2m)
TYPE C - CONTROLLER W/ UPS	4'-0" (1.2m)
TYPE D - CONTROLLER	4'-0" (1.2m)
SERVICE INSTALLATION, GROUND MOUNT, TYPE A - SQUARE	4'-0" (1.2m)

**DEPTH OF FOUNDATION**

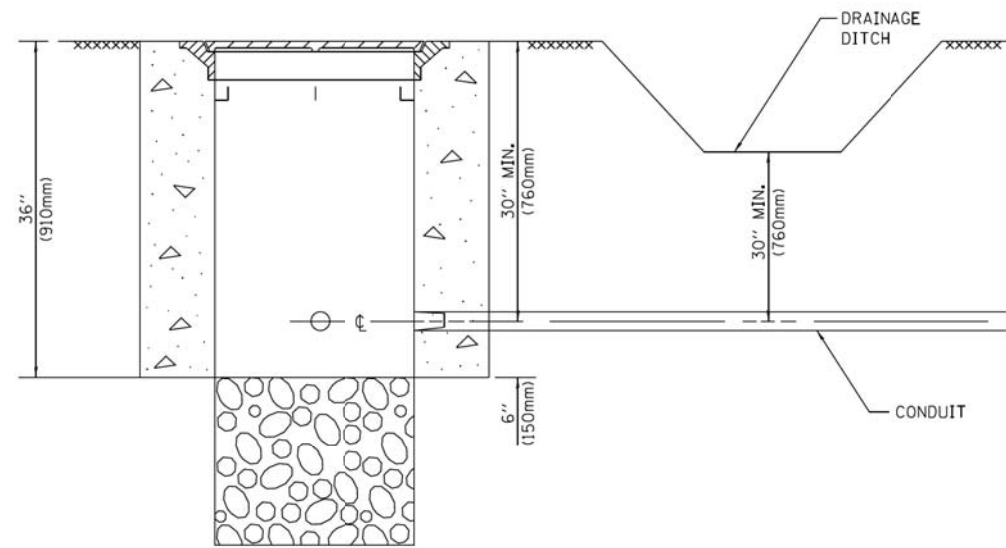
MAST ARM LENGTH	① FOUNDATION DEPTH	FOUNDATION DIAMETER	SPIRAL DIAMETER	QUANTITY OF REBARS	SIZE OF REBARS
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 56' (16.8 m) and less than 65' (19.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

**NOTES:**

- These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average Unconfined Compressive Strength (Qu) > 1.0 tsf (100 kpa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.
- Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
- Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
- For mast arm assemblies with dual arms refer to state standard 878001..

**DEPTH OF MAST ARM FOUNDATIONS, TYPE E**

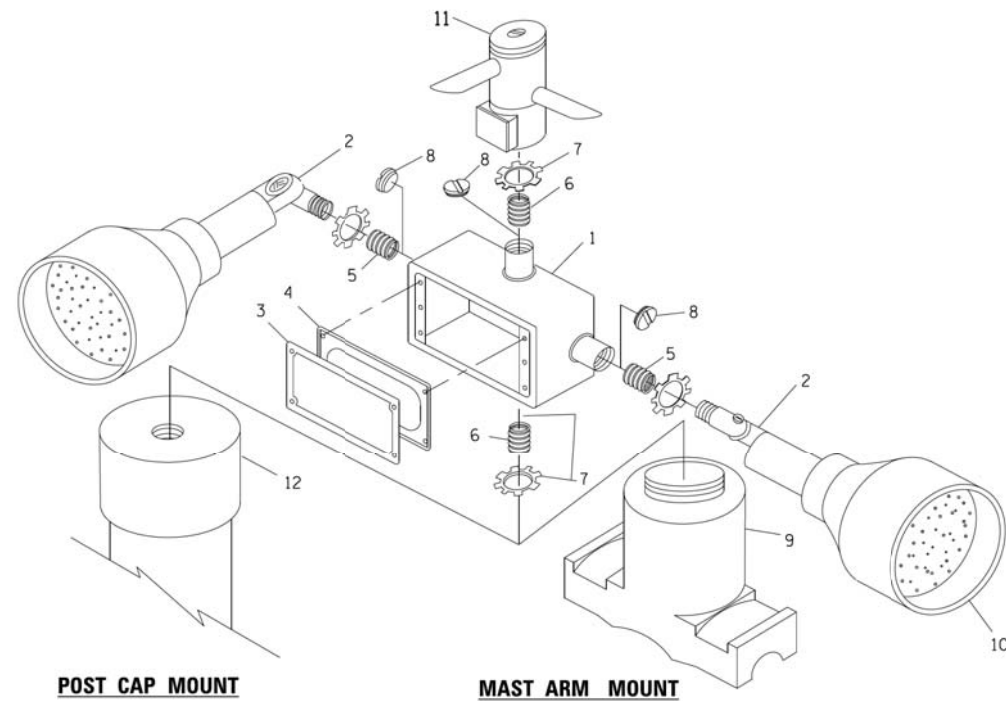




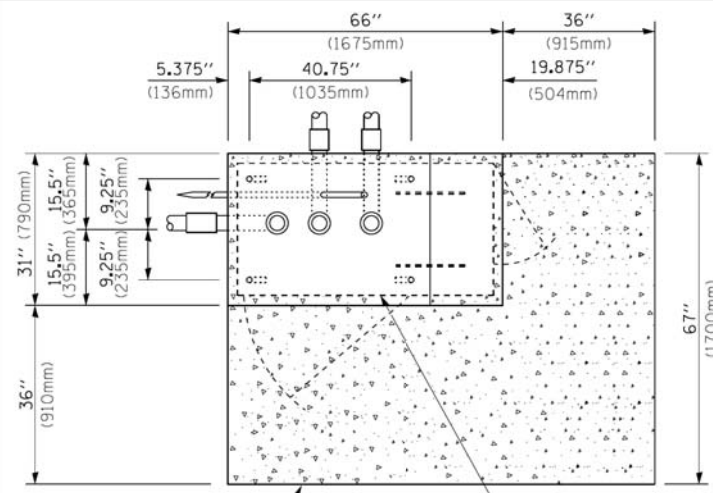
**NOTES:**

1. CONDUIT DEPTH SHALL BE A MINIMUM OF 30" (760mm) BELOW THE BOTTOM OF THE DRAINAGE DITCH OR ANY SLOPING GROUND
2. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL CONDUIT PLACED UNDER ROADWAY PAVEMENT, MULTI-USE PATHS, SIDEWALKS AND SOIL SURFACES.
3. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL HANDHOLES, HEAVY DUTY HANDHOLES AND DOUBLE HANDHOLES.

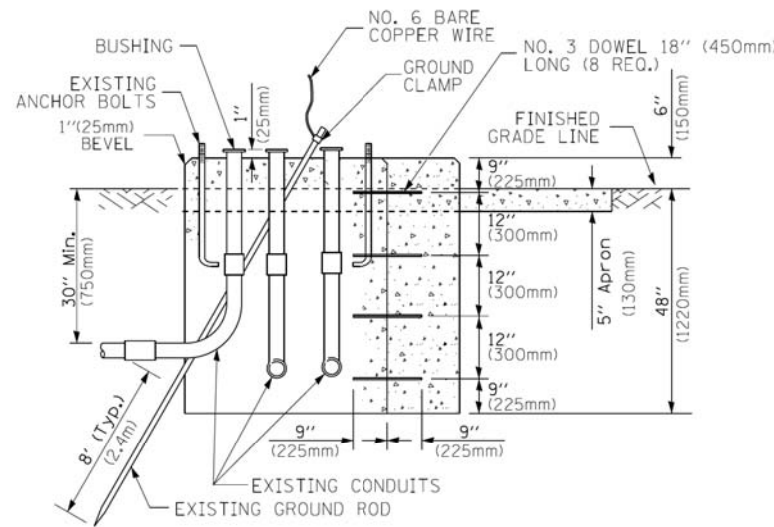
**HANDHOLE WITH MINIMUM CONDUIT DEPTH**  
(NOT TO SCALE)



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



**TOP VIEW**  
(NOT TO SCALE)

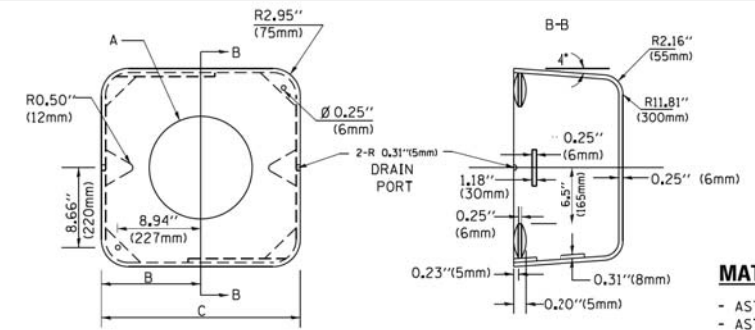


**MODIFY EXISTING TYPE "D" FOUNDATION TO TYPE "C" FOUNDATION**  
(NOT TO SCALE)

ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0,000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4" (19 mm) CLOSE NIPPLE
7	3/4" (19 mm) LOCKNUT
8	3/4" (19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

**NOTES:**

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



**MATERIAL:**  
- ASTM A36 STEEL  
- ASTM A-123 HOT DIPPED GALVANIZED

A	B	C	HEIGHT	WEIGHT
VARIABLES	9.5" (241mm)	19" (483mm)	7" (178mm) - 12" (300mm)	53 lbs (24kg)
VARIABLES	10.75" (273mm)	21.5" (546mm)	7" (178mm) - 12" (300mm)	68 lbs (31 kg)
VARIABLES	13.0" (330mm)	26" (660mm)	7" (178mm) - 12" (300mm)	81 lbs (37 kg)
VARIABLES	18.5" (470mm)	37" (940mm)	7" (178mm) - 12" (300mm)	126 lbs (57 kg)

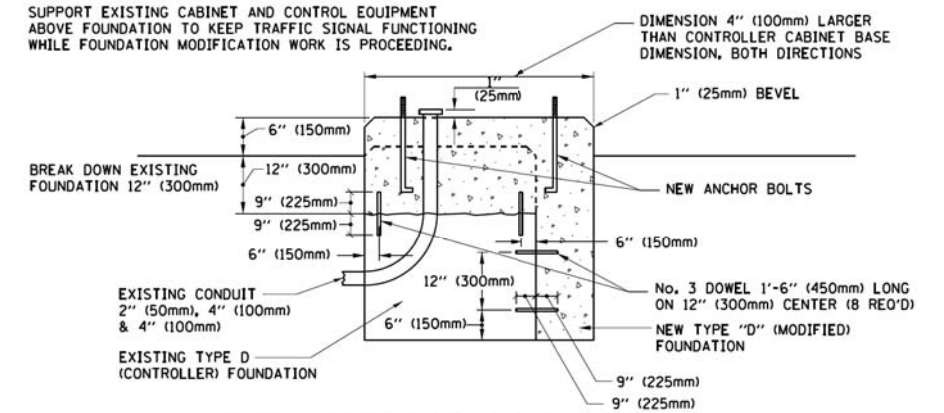
**SHROUD**

**NOTES:**

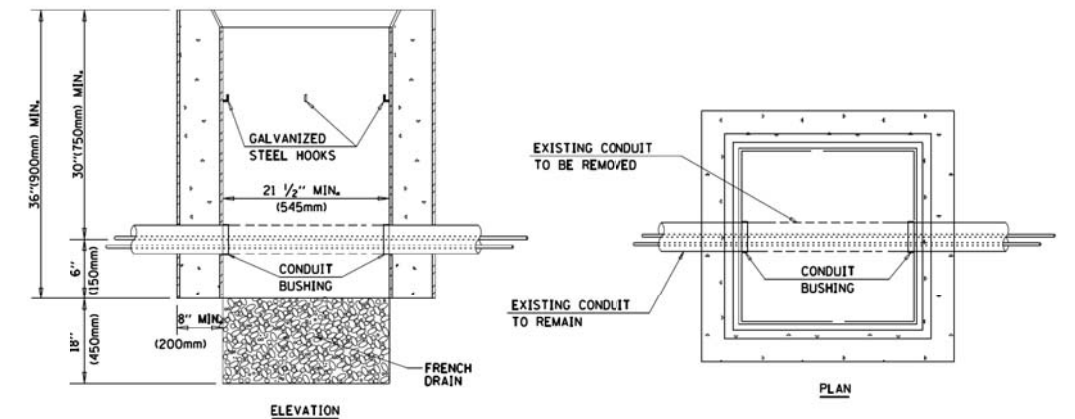
1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFY THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.

**NOTE:**

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



**MODIFY EXISTING TYPE "D" FOUNDATION**



**NOTES:**

1. HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
2. REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCLUDED WITH THE COST OF THE HANDHOLE.

**HANDHOLE TO INTERCEPT EXISTING CONDUIT**

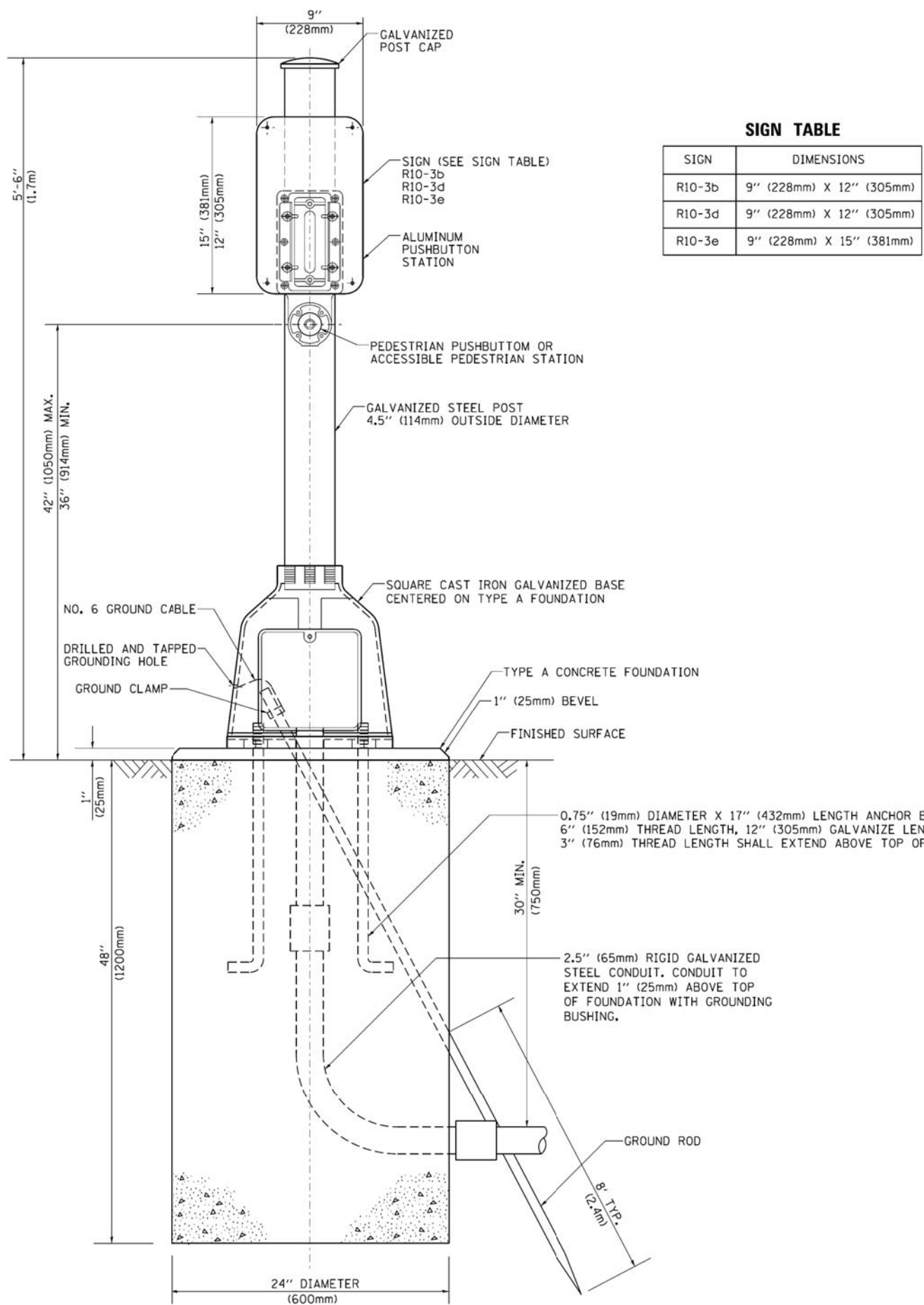
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	PLOT DATE = 1/13/2014	DATE - 10-28-09	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE**  
**STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

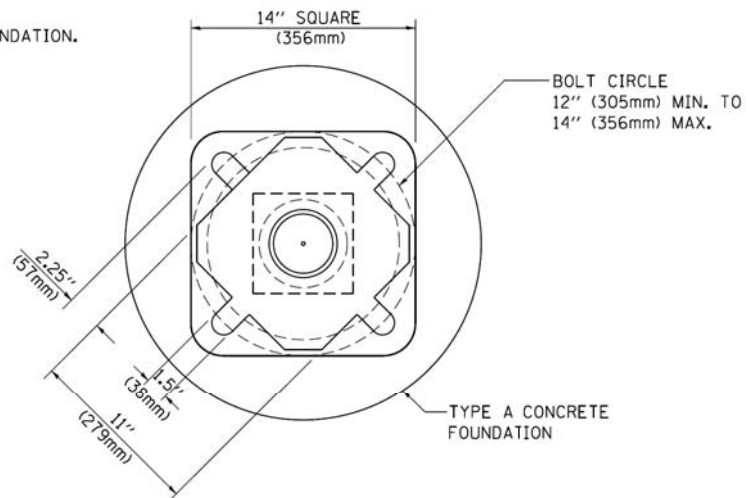
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	413
<b>TS-05</b>		<b>CONTRACT NO.</b>	<b>61F33</b>	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



**SIGN TABLE**

SIGN	DIMENSIONS
R10-3b	9" (228mm) X 12" (305mm)
R10-3d	9" (228mm) X 12" (305mm)
R10-3e	9" (228mm) X 15" (381mm)



**BOLT PATTERN**

**PEDESTRIAN PUSH BUTTON POST, TYPE A**

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PLOT SCALE = 50.0000 / in.		CHECKED - DAD	REVISED -
PLOT DATE = 1/13/2014		DATE - 10/1/2012	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>DISTRICT ONE</b>			
<b>STANDARD TRAFFIC SIGNAL DESIGN DETAILS</b>			
SCALE: NONE	SHEET NO. 7 OF 7 SHEETS	STA.	TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	414
<b>TS-05</b>			<b>CONTRACT NO. 61F33</b>	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

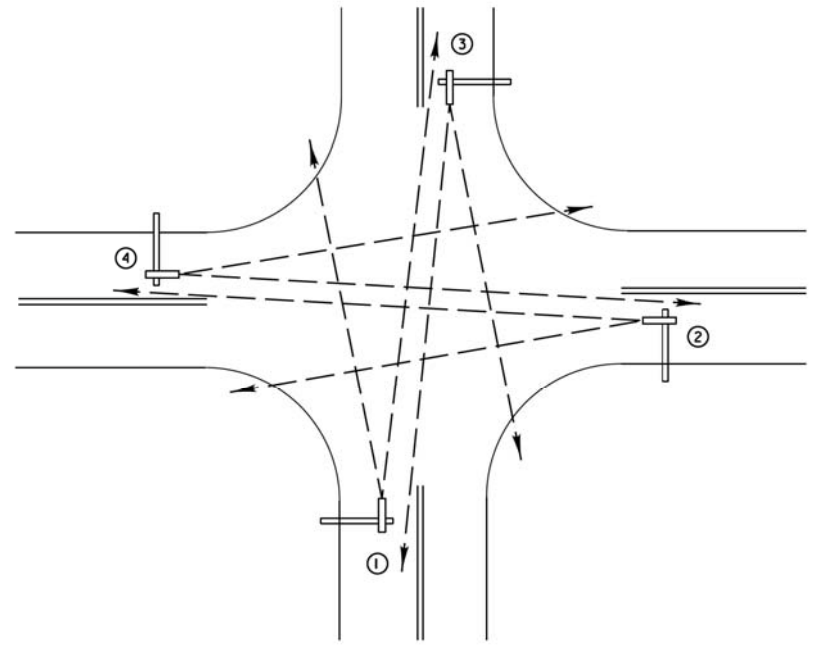






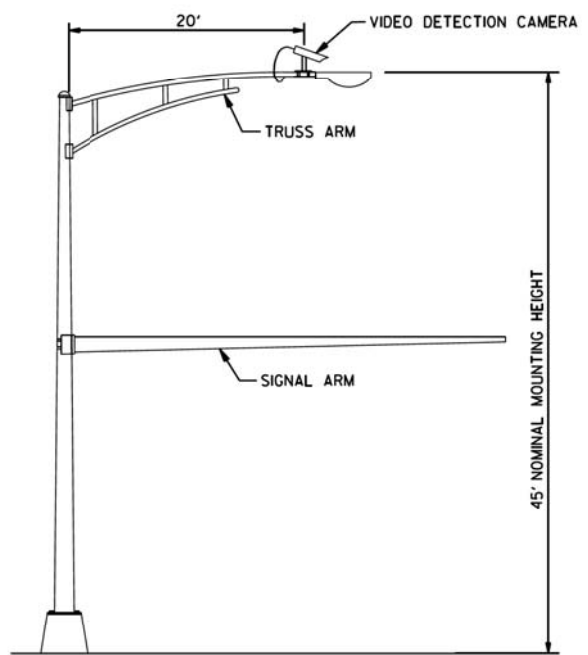
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BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
NO.	

DATE	
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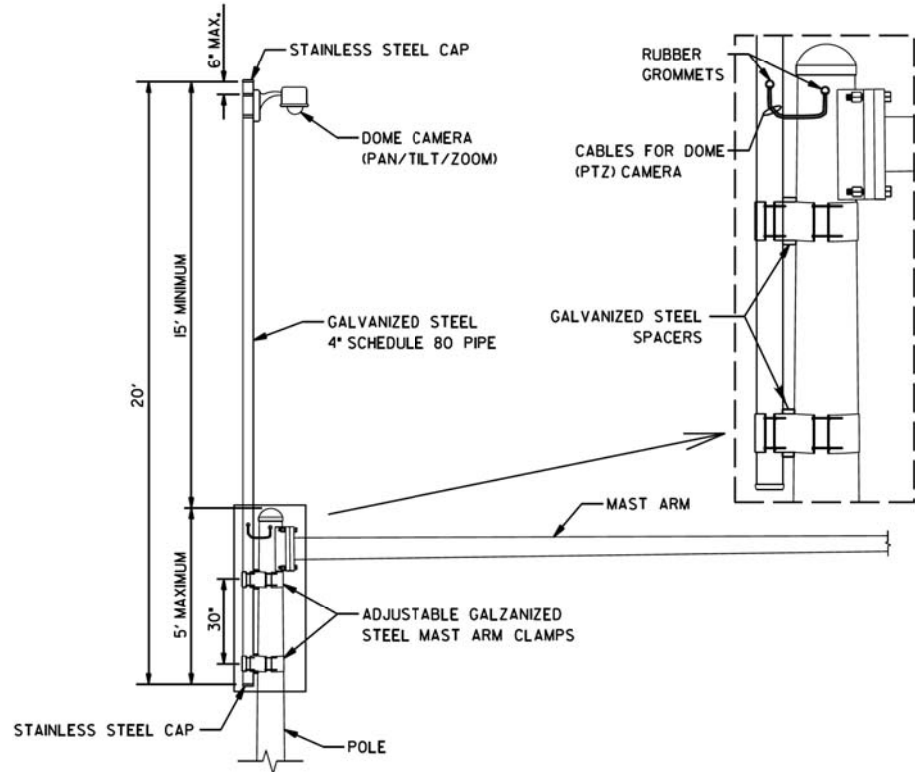


**TYPICAL VIDEO VEHICLE DETECTION SYSTEM**  
(NOT TO SCALE)

(4) VIDEO DETECTION CAMERA ASSEMBLIES AND BRACKETS ① ② ③ ④

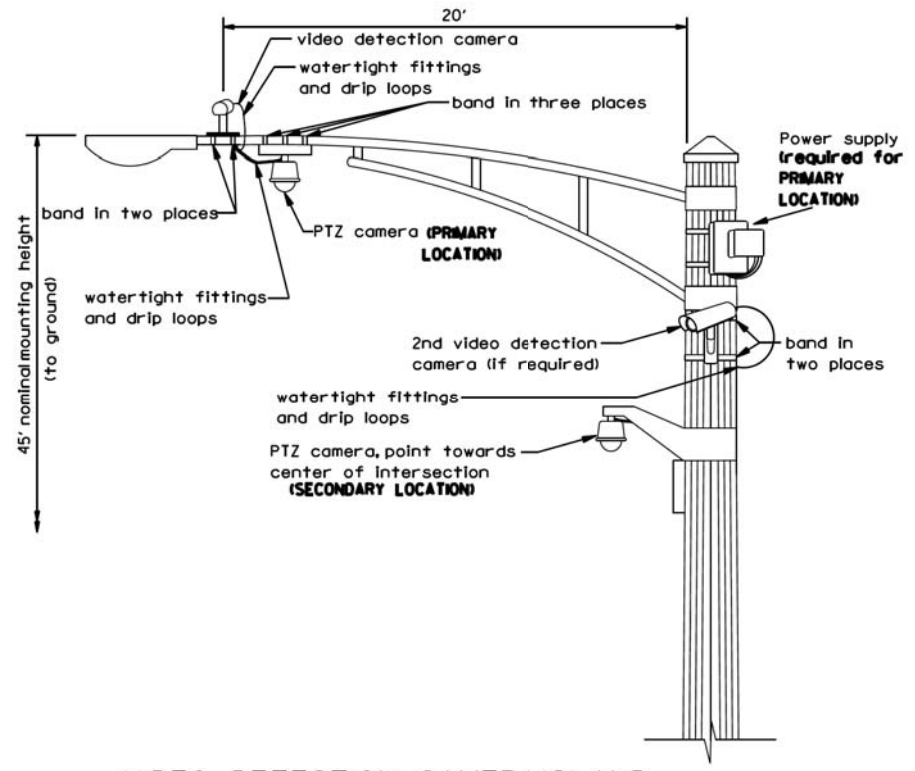


**COMBINATION MAST ARM ASSEMBLY AND POLE DIMENSIONS**  
(NOT TO SCALE)



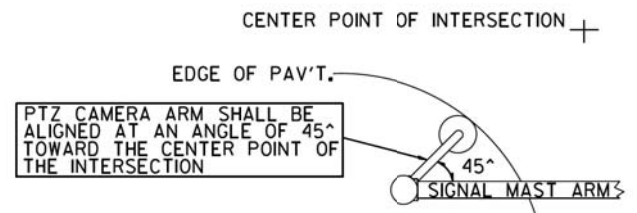
**CAMERA MOUNTING ASSEMBLY DETAIL**  
(NOT TO SCALE)

**NOTES:**  
 - THE MAST ARM IS TAPERED.  
 - INSTALL EXTENSION POLE VERTICAL AND PLUMB BY MODIFYING/INSTALLING BRACKETS AS NECESSARY. ADDITIONAL SPACERS REQUIRED ARE INCLUDED IN THE COST OF THE CAMERA MOUNTING ASSEMBLY OF THE TYPE SPECIFIED.  
 - SPACERS ARE TO BE INTEGRATED OR MANUFACTURED WITH THE MAST ARM BRACKETS



**VIDEO DETECTION CAMERA(S) AND DOME (PTZ) CAMERA MOUNTING DETAIL**  
(NOT TO SCALE)

**NOTES FOR SINGLE, DUAL AND MULTIPLE CAMERA MOUNTING:**  
 - MOUNT LUMINAIRE MOUNTING BRACKET AS HIGH AS POSSIBLE.  
 - MOUNT VIDEO DETECTION CAMERA AIMING DOWN TOWARD THE DIRECTION OF TRAFFIC TO BE DETECTED.



**PTZ CAMERA MOUNTING DETAILS (SECONDARY LOCATION)**  
(NO SCALE)

REVISIONS	DATE
Mounting Details Revised	05/01/08
2nd Camera Locat. added	01/14/09
Mast Arm Taper Detail	06/01/12
Mounting Details Revised	06/13/14

**Lake County**  
Division of Transportation

APPROVED BY: J. P. NELSON  
DATE: JUNE 13, 2014

**CAMERA MOUNTING DETAILS**

**LC8900**

NO.	REVISIONS / REMARKS	DATE	BY	SURVEYOR
	DESCRIPTION			DSGMR/LIAISON
				PLOTTED BY: jrdemo 8/1/2014

FILE NAME: C:\Users\hdmr\c\Desktop\LC8900 VIDEO DETECTION DETAILS REVISION-JUNE 2014.DGN

<b>Lake County</b> Division of Transportation		<b>PROJECT NAME</b>		ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
		<b>LAKE COUNTY STANDARDS &amp; DETAILS</b>		CHXX	XXX	XX-XXXX-XX-XX	XXX	XXX

TS SHT NO. XX

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DESIGNED - LEP	REVISED -
DRAWN - OJT	REVISED -
CHECKED - JJE	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

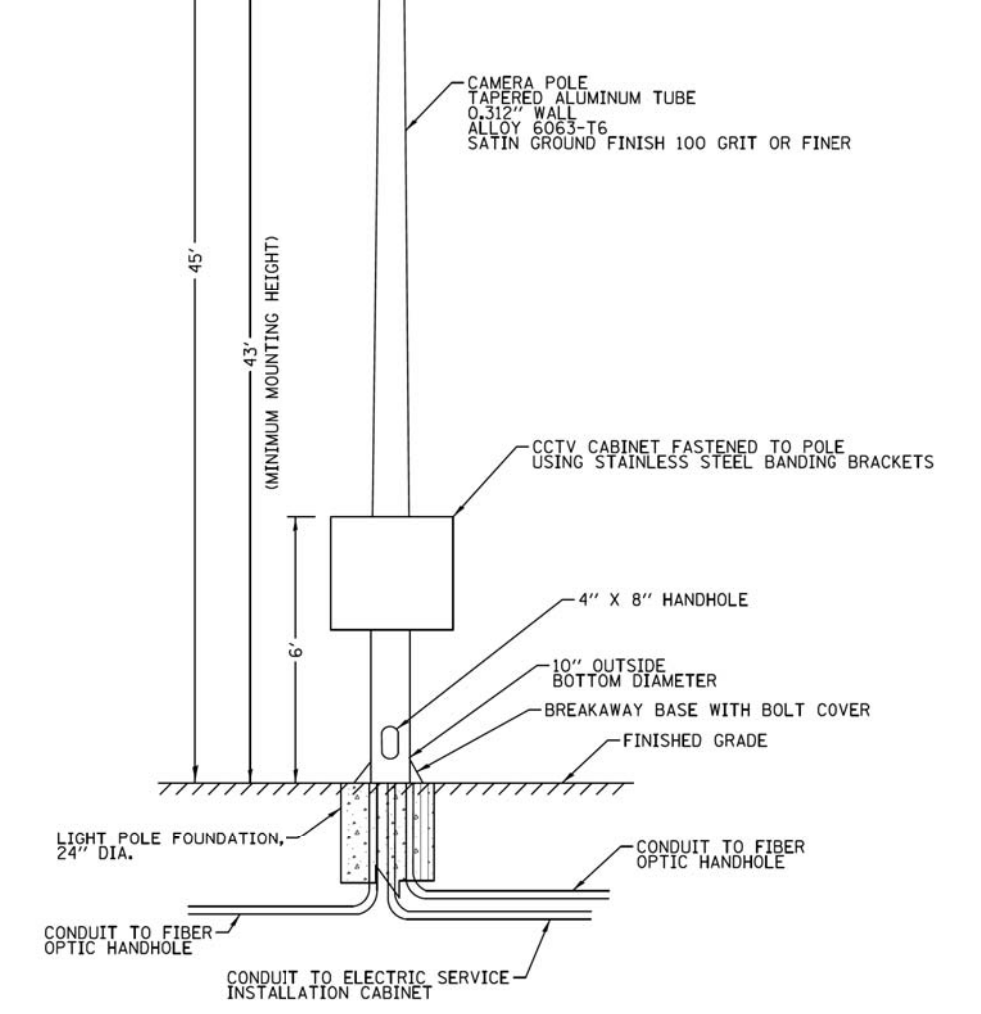
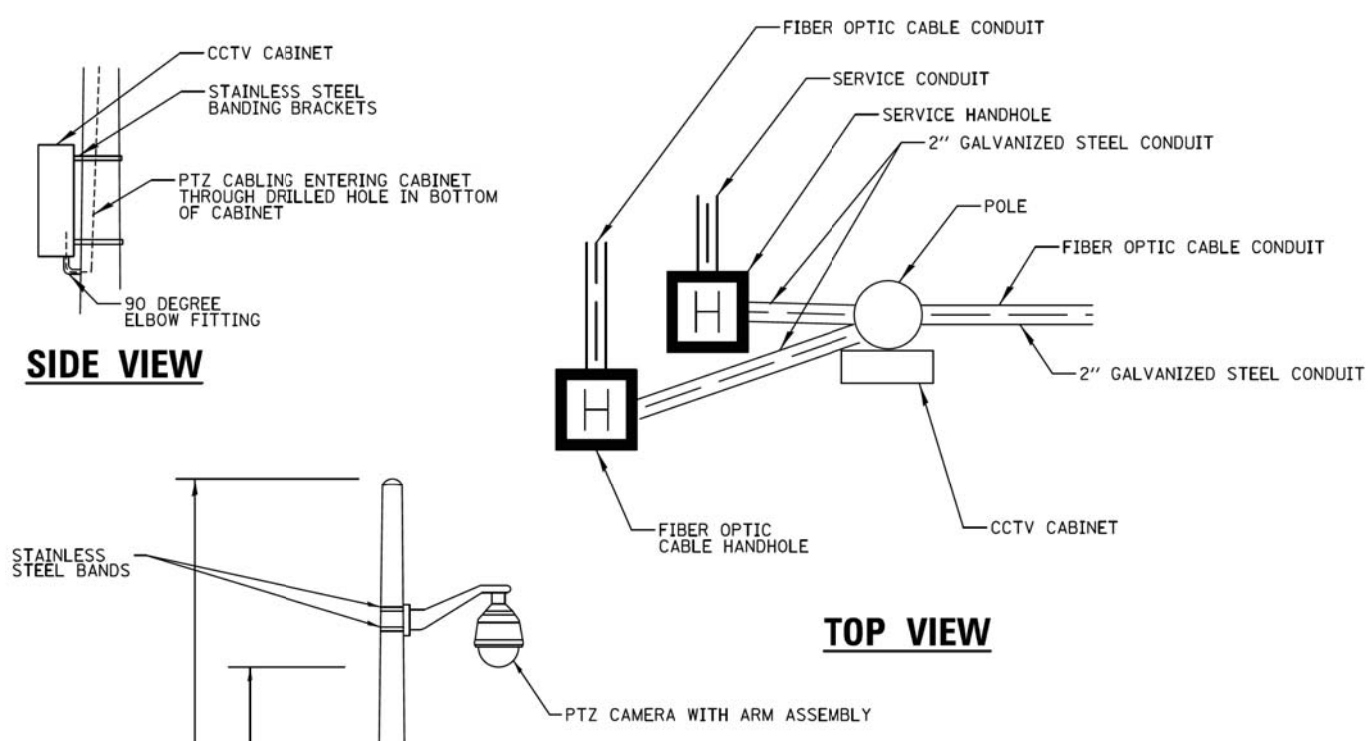
**LCDOT DETAIL SHEET LC8900**

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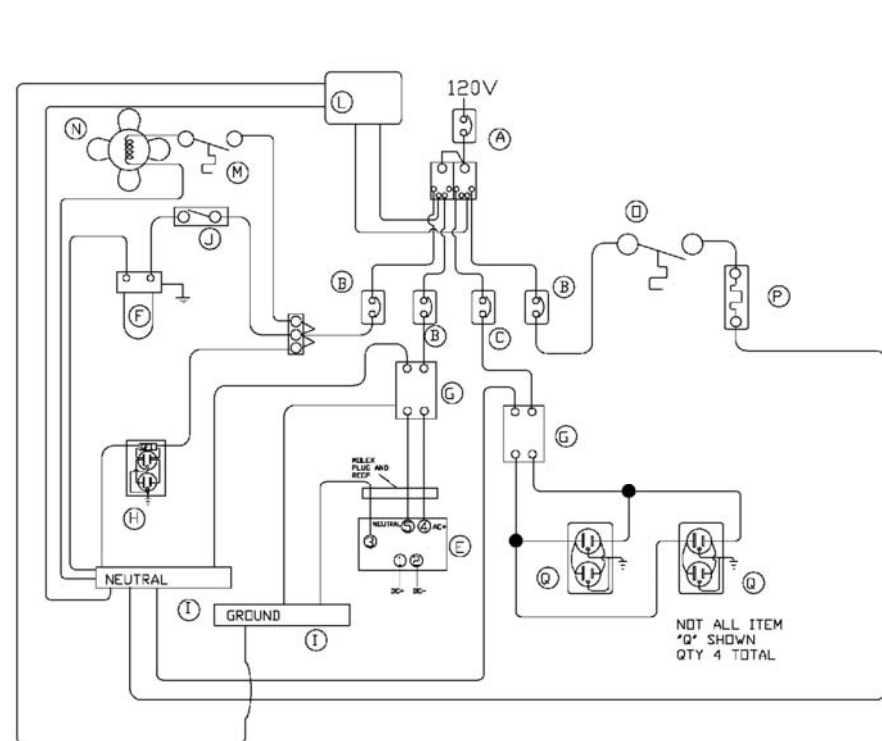
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	416
				CONTRACT NO. 61F33
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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AREAS CHECKED	
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**CAMERA POLE, 45 FT**  
N.T.S.



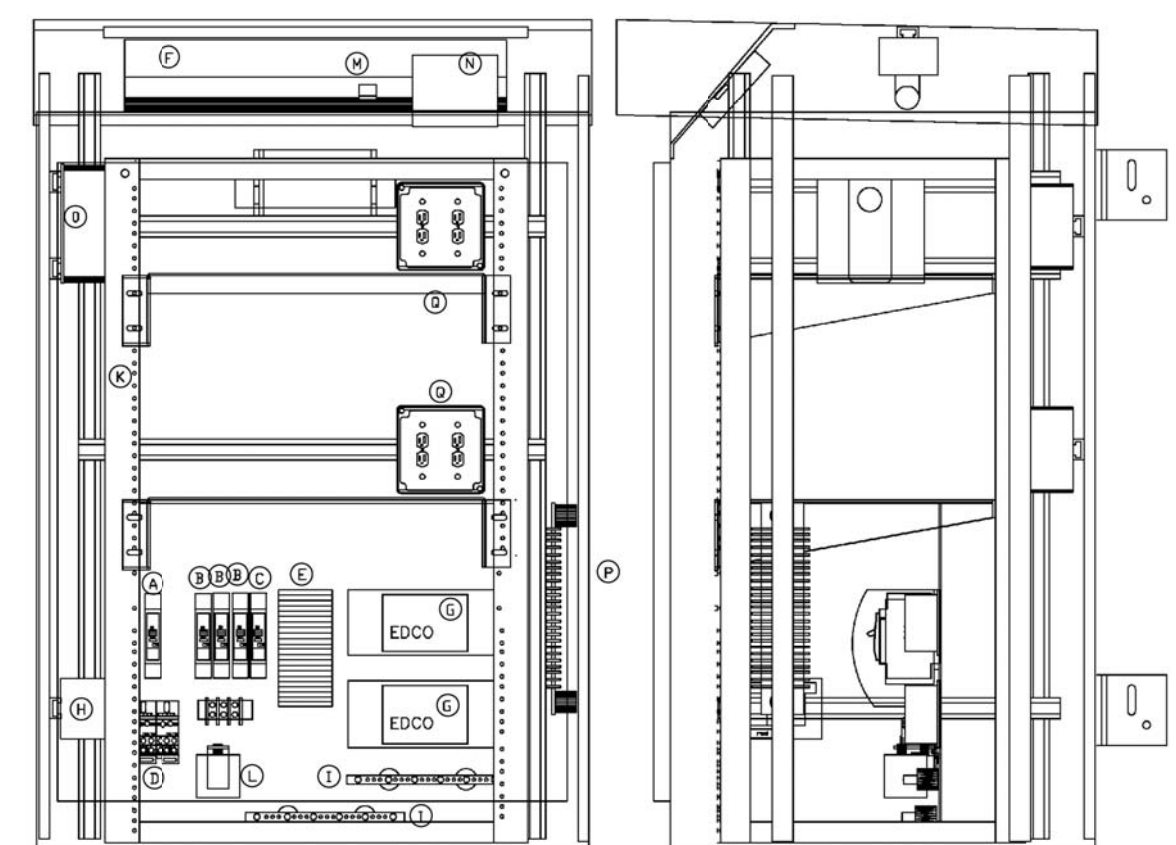
**CCTV CABINET WIRING DIAGRAM**

**WIRING DIAGRAM LEGEND:**

ITEM	QTY	DESCRIPTION
A	1	CIRCUIT BREAKER, 1P 60A, 10 KAIC
B	3	CIRCUIT BREAKER, 1P 15A, 10 KAIC
C	1	CIRCUIT BREAKER, 1P 20A, 10 KAIC
D	2	POWER DISTRIBUTION BLOCK
E	1	CISCO 2955 SWITCH AC/DC POWER CONVERTER
F	1	LED LIGHT FIXTURE
G	2	SURGE PROTECTION DEVICE
H	1	20A GFCI RECEPTACLE
I	2	NEUTRAL BUS NB-120
J	1	MICRO DOOR SWITCH
K	1	19\"/>

**CABINET NOTES:**

1. THE CABINET SHALL BE FABRICATED FROM 0.188 INCH ALUMINUM ALLOY 5052. ALL EXTERNAL HARDWARE SHALL BE STAINLESS STEEL. THE CABINET SHALL BE RATED NEMA 3R AND U.L. LISTED. THERE SHALL BE CONTINUOUS STEEL HINGE THAT BOLTS TO THE CABINET BODY AND 1/4-20 STUD ON THE CABINET BODY AND CABINET DOORS FOR GROUNDING.
2. THE DOORS SHALL BE GASKETED PER SPECIFICATIONS. THE DOOR HANDLE SHALL BE 3/4\"/>








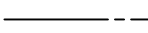




**CCTV CABINET DETAIL**



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FINAL SURVEY	
NOTE BOOK	
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DATE	
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ORIGINAL SURVEY	
NOTE BOOK	
NO.	

**LEGEND**

-  PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 1 - MEMPHIS TEARDROP LED 118 WATT  
30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT  
12 FOOT MOUNTING HEIGHT  
LIGHT POLE, SPECIAL - 30 FT POLE HEIGHT, 6 FT ROADWAY MAST ARM,  
PEDESTRIAN LUMINAIRE ARM, WITH BANNER ARMS, AND GFCI WEATHER  
RESISTANT RECEPTACLE
-  PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 1 - MEMPHIS TEARDROP LED 118 WATT  
30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT  
12 FOOT MOUNTING HEIGHT  
LIGHT POLE, SPECIAL, TYPE 2 - 30 FT POLE HEIGHT, 6 FT ROADWAY MAST ARM,  
AND PEDESTRIAN LUMINAIRE ARM
-  PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 2 - MEMPHIS TEARDROP LED 144 WATT  
30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT  
12 FOOT MOUNTING HEIGHT  
LIGHT POLE, SPECIAL, TYPE 2 - 30 FT POLE HEIGHT, 6 FT ROADWAY MAST ARM,  
AND PEDESTRIAN LUMINAIRE ARM
-  PROPOSE TRAFFIC SIGNAL AND LIGHTING COMBINATION
-  PROPOSED LIGHTING CONTROLLER  
120/240 VOLT, 100 AMP
-  PROPOSED UNIT DUCT  
(AS SPECIFIED IN THE PLANS)
-  EXISTING LIGHTING UNIT DUCT
-  EXISTING SINGLE PEDESTRIAN LIGHTING UNIT
-  EXISTING TRIPLE PEDESTRIAN LIGHTING UNIT
-  EXISTING COMED LIGHT ON UTILITY POLE

**LIGHTING GENERAL NOTES**

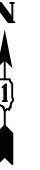
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
- PAY ITEMS IN THE SUMMARY OF QUANTITIES HAVE BEEN ESTIMATED. IF, IN THE ENGINEER'S OPINION, ANY WORK IS NOT REQUIRED, THAT ITEM WILL BE DEDUCTED FROM THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MARK THE PROPOSED LOCATIONS OF ALL LIGHT POLES AND LIGHTING CONTROLLERS FOR EXAMINATION AND CONFIRMATION WITH THE RESIDENT ENGINEER AT THE CONSTRUCTION INSPECTION.
- THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO AUGURING FOR LIGHT POLE FOUNDATIONS. THE EXACT LOCATIONS FOR ALL ITEMS SHALL BE CONFIRMED WITH THE RESIDENT ENGINEER PRIOR TO STARTING WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF FINISHED GRADE. THE RESIDENT ENGINEER MAY ASSIST THE CONTRACTOR, AS APPLICABLE, BUT THE RESPONSIBILITY FOR COORDINATING THE FINISHED GRADE ELEVATION WITH THE TOP OF FOUNDATIONS HEIGHTS AND THE LIGHT SHALL REMAIN WITH THE CONTRACTOR.
- LIGHT POLE FOUNDATION TYPE IS SPECIFIED IN THE PLANS BASE ON UTILITY INFORMATION. IF IT IS DETERMINED THAT THE CONDITIONS IN THE FIELD REQUIRES AN ALTERNATE FOUNDATION TYPE, AN ALTERNATE FOUNDATION TYPE WILL BE USED WITH THE APPROVAL OF THE ENGINEER. THE PAY ITEM LIGHT POLE FOUNDATION, 24" DIAMETER WILL BE THE PREFERRED FOUNDATION TO USE ON THE PROJECT. NO COMPENSATION WILL BE GIVEN TO THE CONTRACTOR IF THE PAY ITEM IS NOT USED.
- NO POLES SHALL BE ERECTED UNTIL THE RESPECTIVE FOUNDATIONS HAVE CURED, AS APPROVED BY THE ENGINEER.
- TO MAINTAIN THE STRUCTURAL INTEGRITY OF ALUMINUM POLES WITH MAST ARMS, THEY SHALL NOT BE ERECTED AND LEFT TO STAND WITHOUT LUMINAIRES. NOTE THAT THE CONTRACTOR SHALL NOT BE PAID FOR POLES UNTIL LUMINAIRES ARE INSTALLED.
- CONDUIT AND UNIT DUCT MUST BE POSITIONED IN THE FIELD TO AVOID CONFLICT WITH TREES, BUSHES, DRAINS, OTHER UTILITIES AND LANDSCAPING.
- WHEN SPLICING TO EXISTING POLE, ANY AND ALL WORK REQUIRED TO RUN THE PROPOSED UNIT DUCT INTO EXISTING FOUNDATION SLEEVE AND SPLICING IN EXISTING POLE SHALL BE COVERED AND INCLUDED IN THE PAY ITEM FOR THE UNIT DUCT.
- THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE ANY LIGHT STANDARD IS ERECTED.
- ANY DAMAGE TO PAVEMENT, SIDEWALK, CURB, OR ANY OTHER PORTION OF THE ROADWAY NOT SPECIFICALLY TO BE REMOVED AND REPLACED SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST AND REPLACEMENT SHALL MEET THE APPROVAL OF THE ENGINEER.
- COORDINATE WITH TRAFFIC SIGNAL PLANS FOR EXACT LOCATIONS OF COMBINATION POLES. COMBINATION POLES, MAST ARM, LUMINAIRE, AND WIRING FOR THE COMBINATION LIGHTING WILL BE PAID FOR UNDER TRAFFIC SIGNAL PAY ITEMS.
- OFFSETS CALL-OFFS FOR PROPOSED LIGHT POLES ARE FROM THE CENTER OF POLES TO PROPOSED FACE OF CURB (F.O.C.).

**SCHEDULE OF QUANTITIES**

CODED PAY ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	WAUKEGAN	NORTH CHICAGO	LAKE COUNTY
80400100	ELECTRIC SERVICE INSTALLATION	EACH	6	2	3	1
80400200	ELECTRIC UTILITY SERVICE CONNECTION	LSUM	1	0.33	0.50	0.17
81028210	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA.	FOOT	2045	425	1285	335
81028220	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	1510	1400	110	0
81028240	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	3304	0	3304	0
81603100	UNIT DUCT, 600V, 4-1C NO. 6, 1/C NO. 6 GROUND, (XLP-TYPE USE), 1 1/4" DIA. POLYETHYLENE	FOOT	1865	0	0	1865
81603138	UNIT DUCT, 600V, 5-1C NO. 6, 1/C NO. 6 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE	FOOT	1239	0	1239	0
81702400	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 3-1/C NO. 2	FOOT	1015	270	635	110
82500350	LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100 AMP	EACH	6	2	3	1
83600200	LIGHT POLE FOUNDATION, 24" DIAMETER	FOOT	750	90	500	160
X8300001	LIGHT POLE, SPECIAL	EACH	89	31	58	0
X8360215	LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET	FOOT	372	264	96	12
Z0033028	MAINTENANCE OF LIGHTING SYSTEM	CAL MO	24	6	12	6
XX008068	LUMINAIRE INSTALLATION, TYPE 1	EACH	96	31	58	7
XX008069	LUMINAIRE INSTALLATION, TYPE 2	EACH	10	0	0	10
XX009135	LIGHT POLE, SPECIAL, TYPE 2	EACH	17	0	0	17
XX009148	LUMINAIRE INSTALLATION, TYPE 3	EACH	106	31	58	17
	UNIT DUCT, 600V, 2-1C NO. 6, 3-1C NO. 2, 1/C NO. 2 GROUND, (XLP-TYPE USE), 2" DIA. POLYETHYLENE	FOOT	9273	0	9273	0
	UNIT DUCT, 600V, 2-1C NO. 6, 3-1C NO. 4, 1/C NO. 4 GROUND, (XLP-TYPE USE), 1 1/2" DIA. POLYETHYLENE	FOOT	5234	5234	0	0

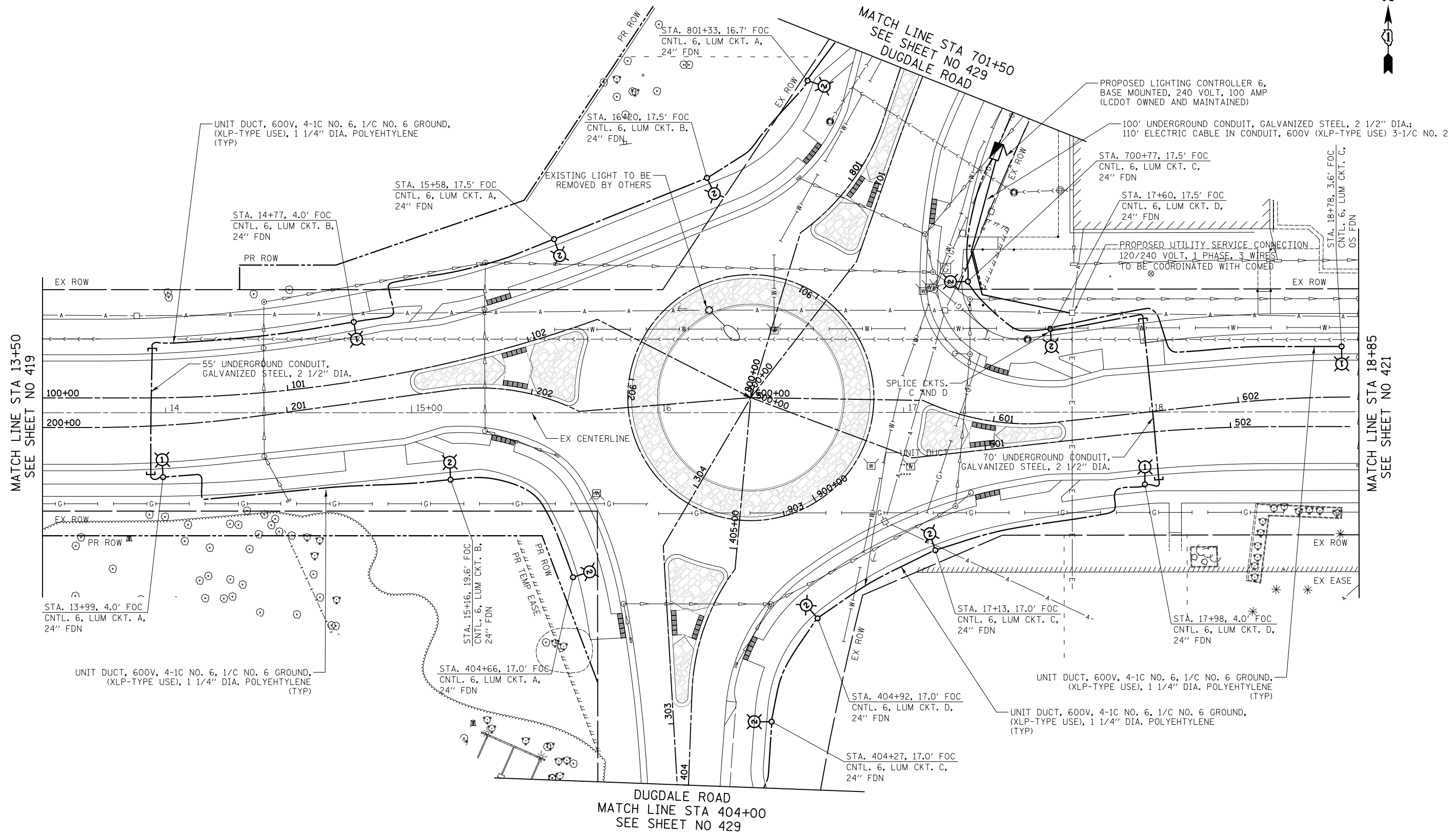






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MATCH LINE STA 13+50  
SEE SHEET NO 419

MATCH LINE STA 18+85  
SEE SHEET NO 421

DUGDALE ROAD  
MATCH LINE STA 404+00  
SEE SHEET NO 429

14TH STREET

**CIVILTECH**  
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DESIGNED - SJC	REVISED -
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CHECKED - DNM	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**



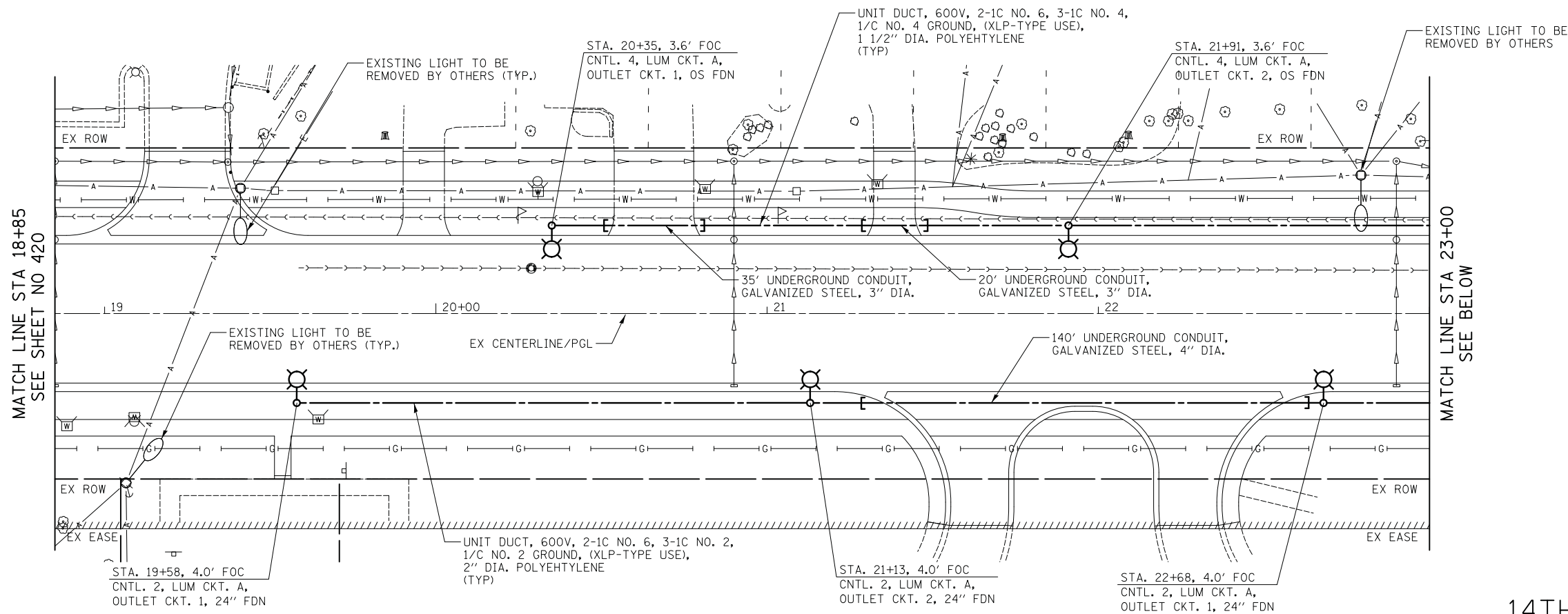
**LIGHTING PLAN**

SHEET NO. 2 OF 12 SHEETS STA. 13+50.0 TO STA. 18+85.0

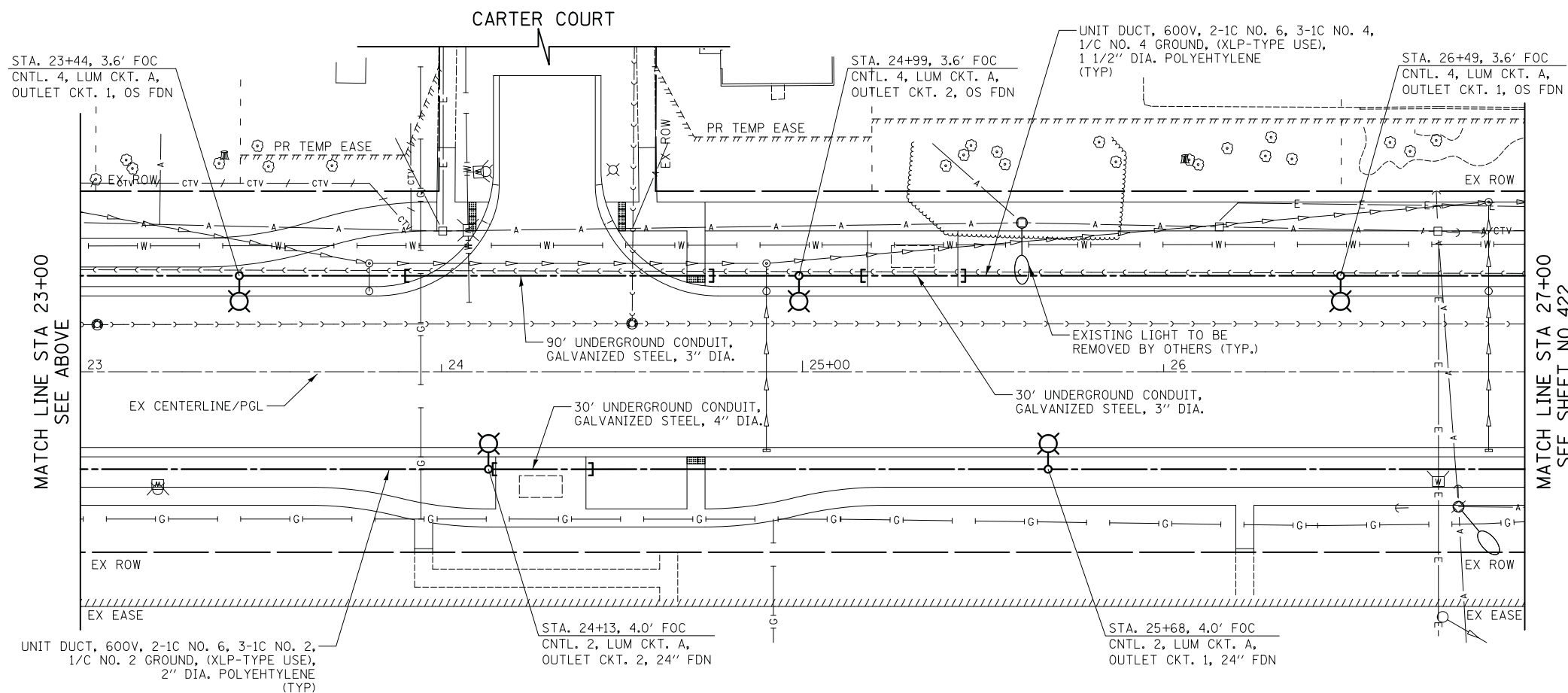
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	420
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
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14TH STREET



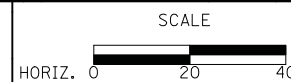
14TH STREET



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DESIGNED - SJC	REVISED -
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DATE - 11/7/2018	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



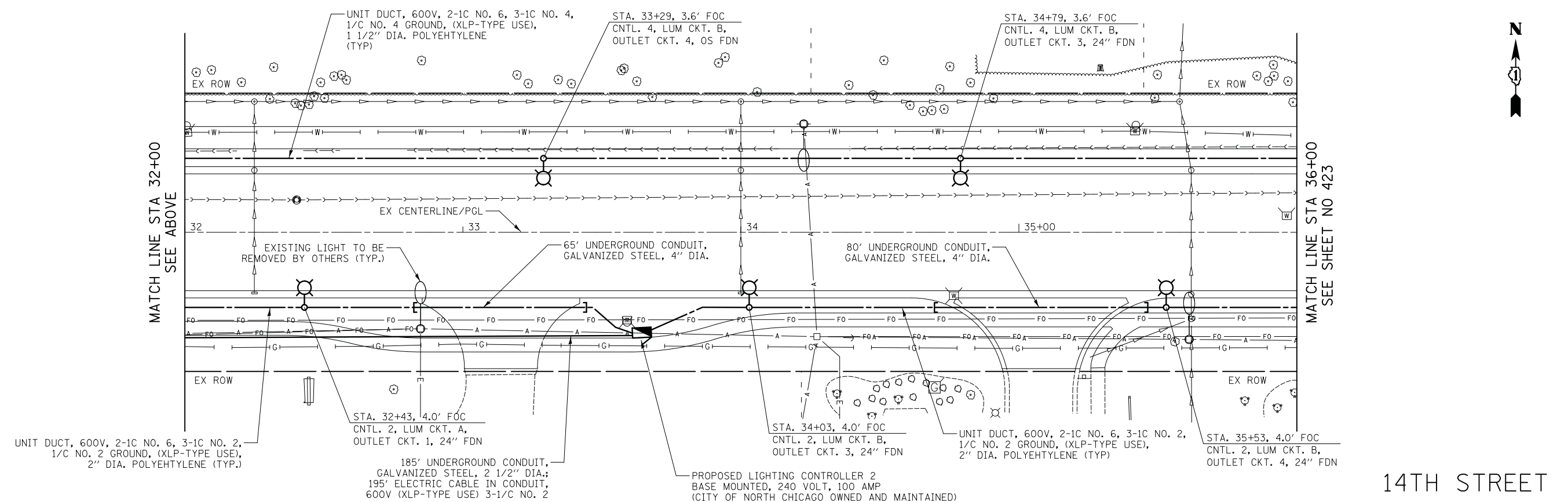
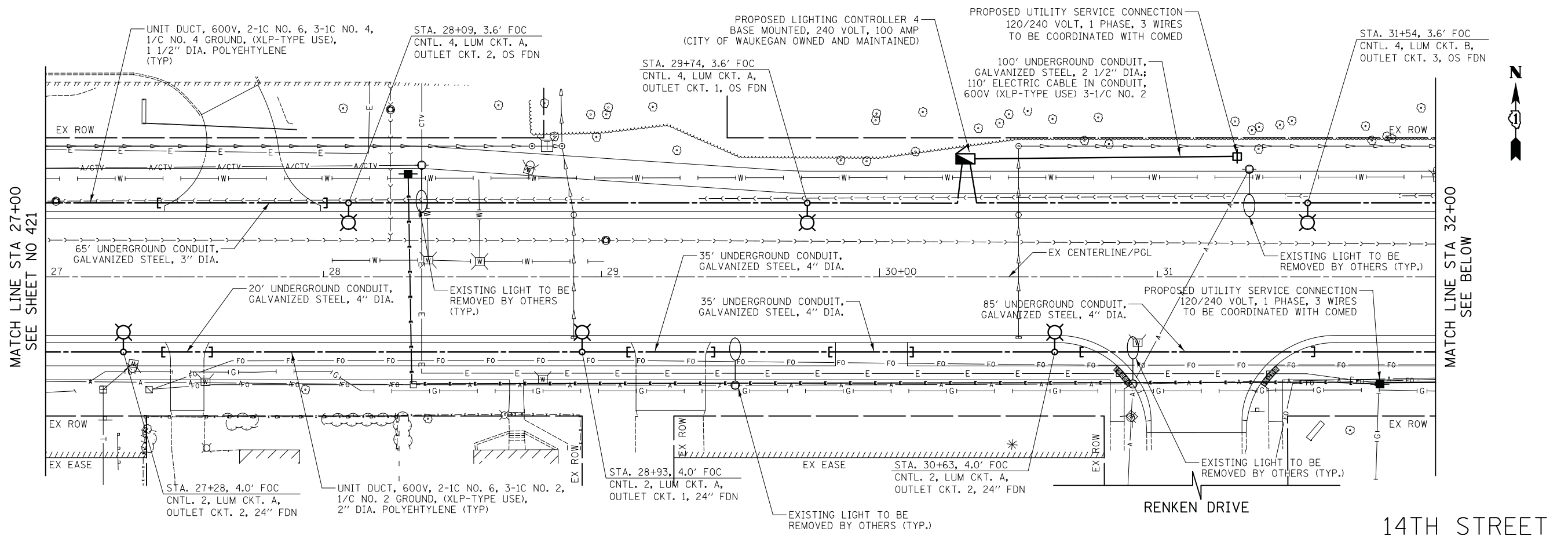
LIGHTING PLAN

SHEET NO. 3 OF 12 SHEETS STA. 18+85.0 TO STA. 27+00.0

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	421
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
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DRAWN - SJC	REVISED -
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DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**



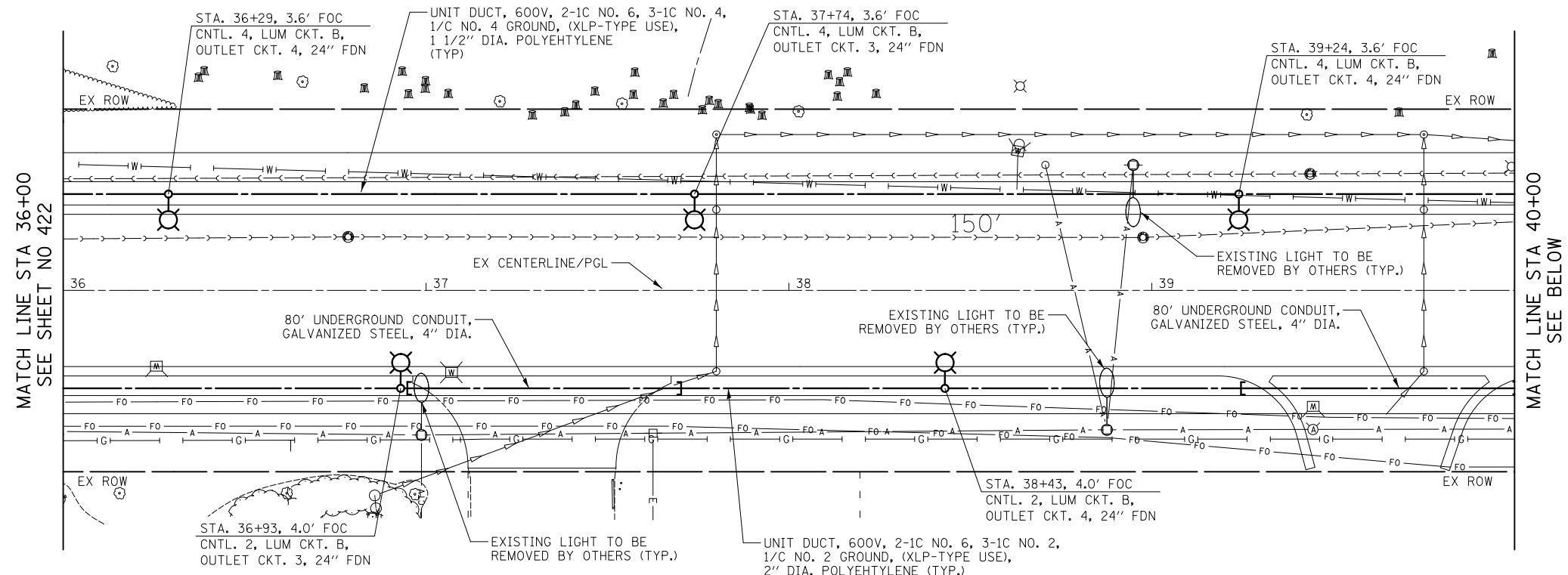
**LIGHTING PLAN**  
 SHEET NO. 4 OF 12 SHEETS STA. 27+00.0 TO STA. 36+00.0

F.A.U. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

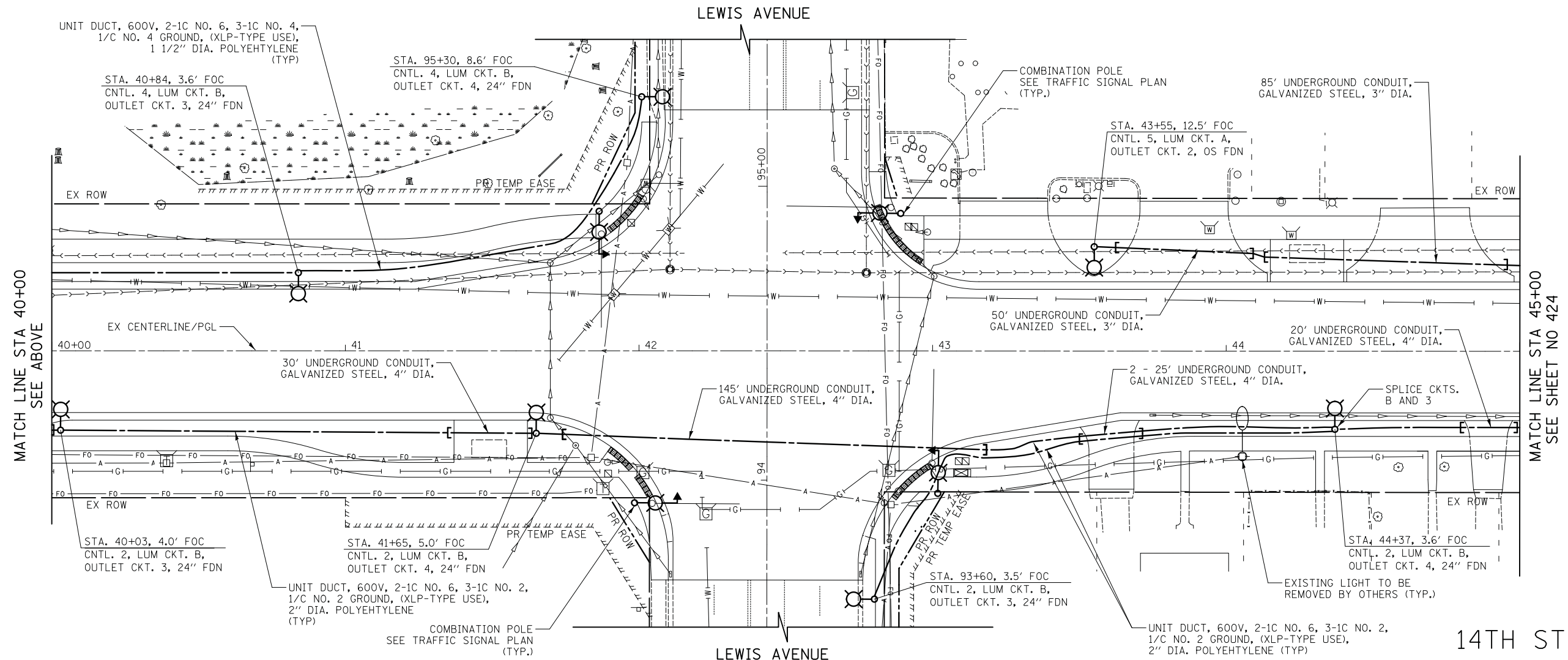


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14TH STREET



14TH STREET

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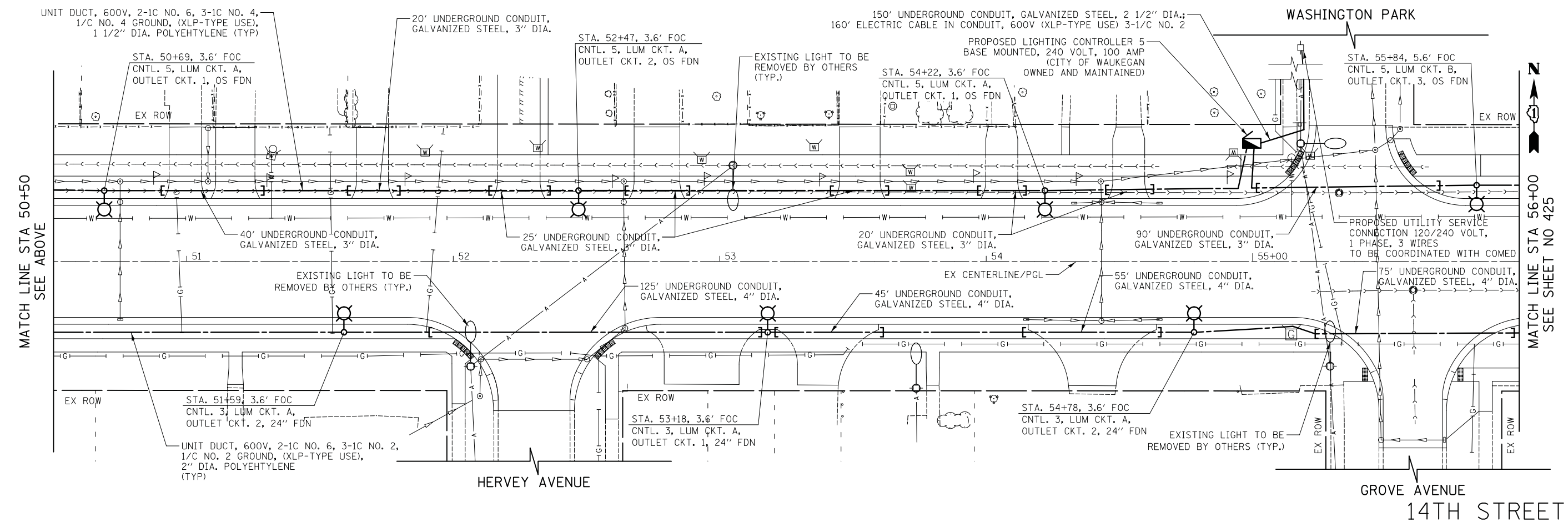
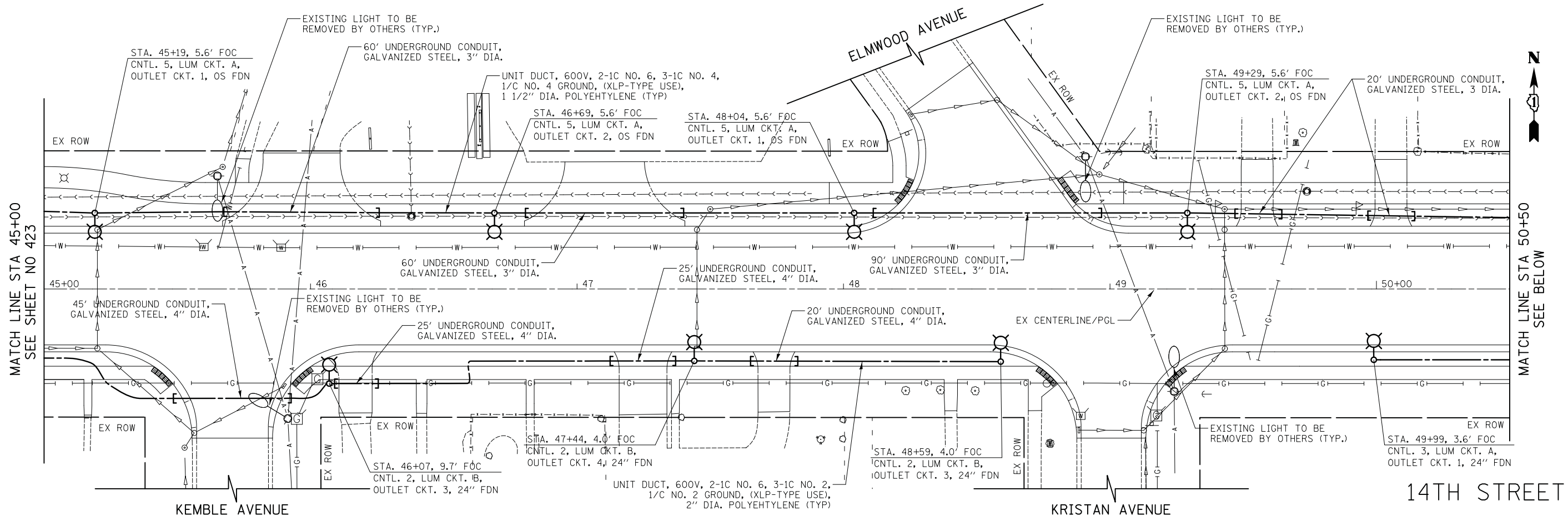


**LIGHTING PLAN**  
 SHEET NO. 5 OF 12 SHEETS STA. 36+00.0 TO STA. 45+00.0

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	423
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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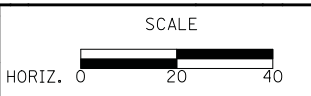
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**LIGHTING PLAN**

SHEET NO. 6 OF 12 SHEETS STA. 45+00.0 TO STA. 56+00.0

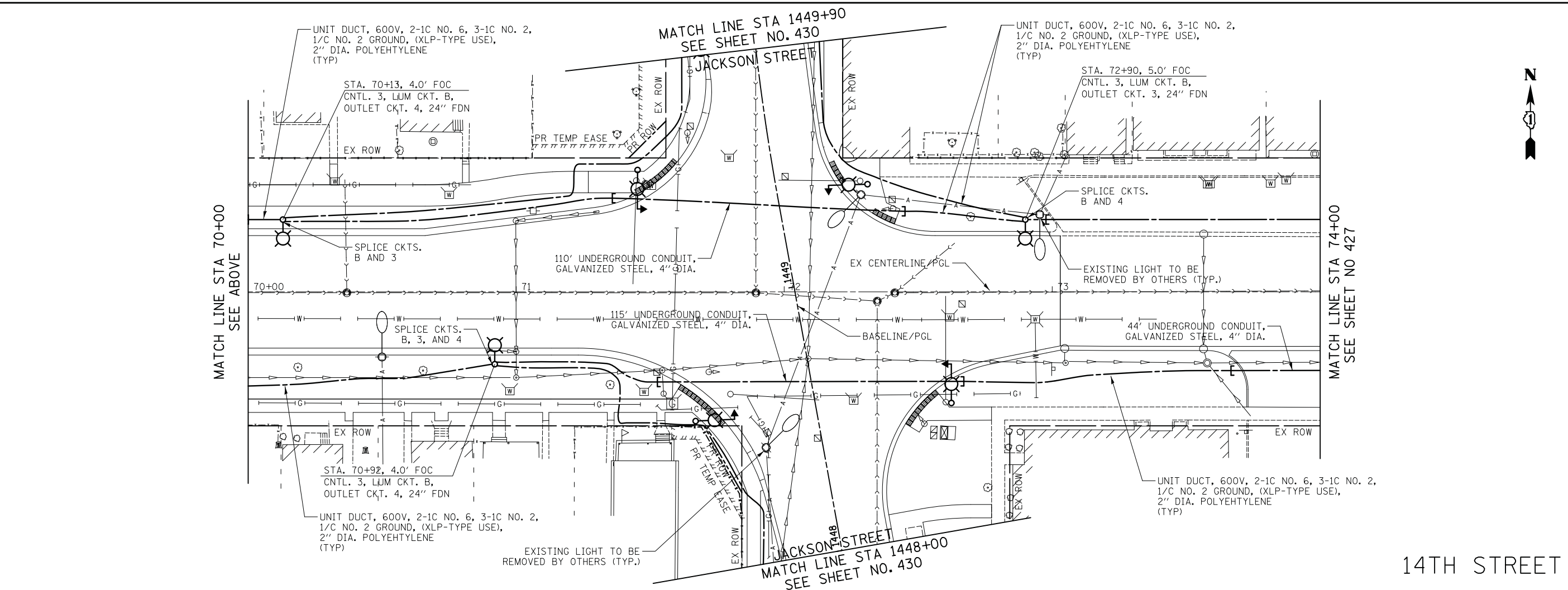
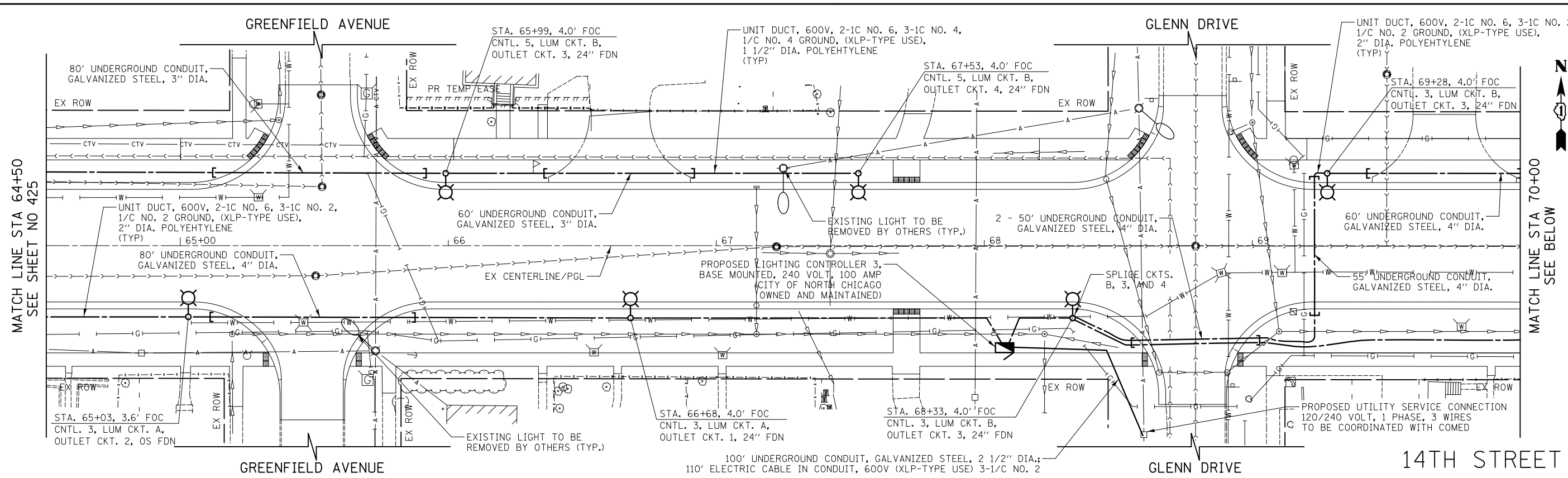
F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	424
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				





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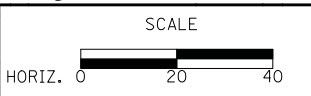
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DESIGNED - SJC	REVISED -
DRAWN - SJC	REVISED -
CHECKED - DNM	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

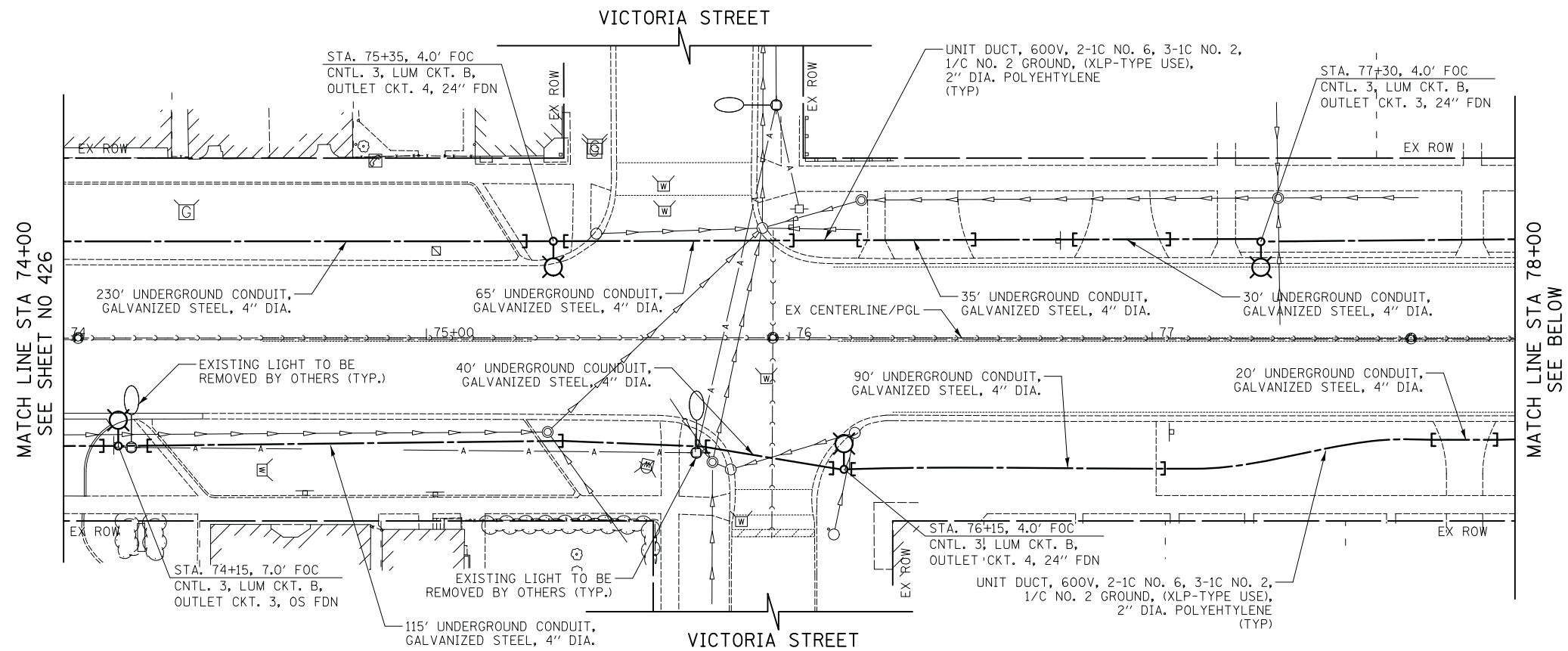


**LIGHTING PLAN**  
 SHEET NO. 8 OF 12 SHEETS STA. 64+50.0 TO STA. 74+00.0

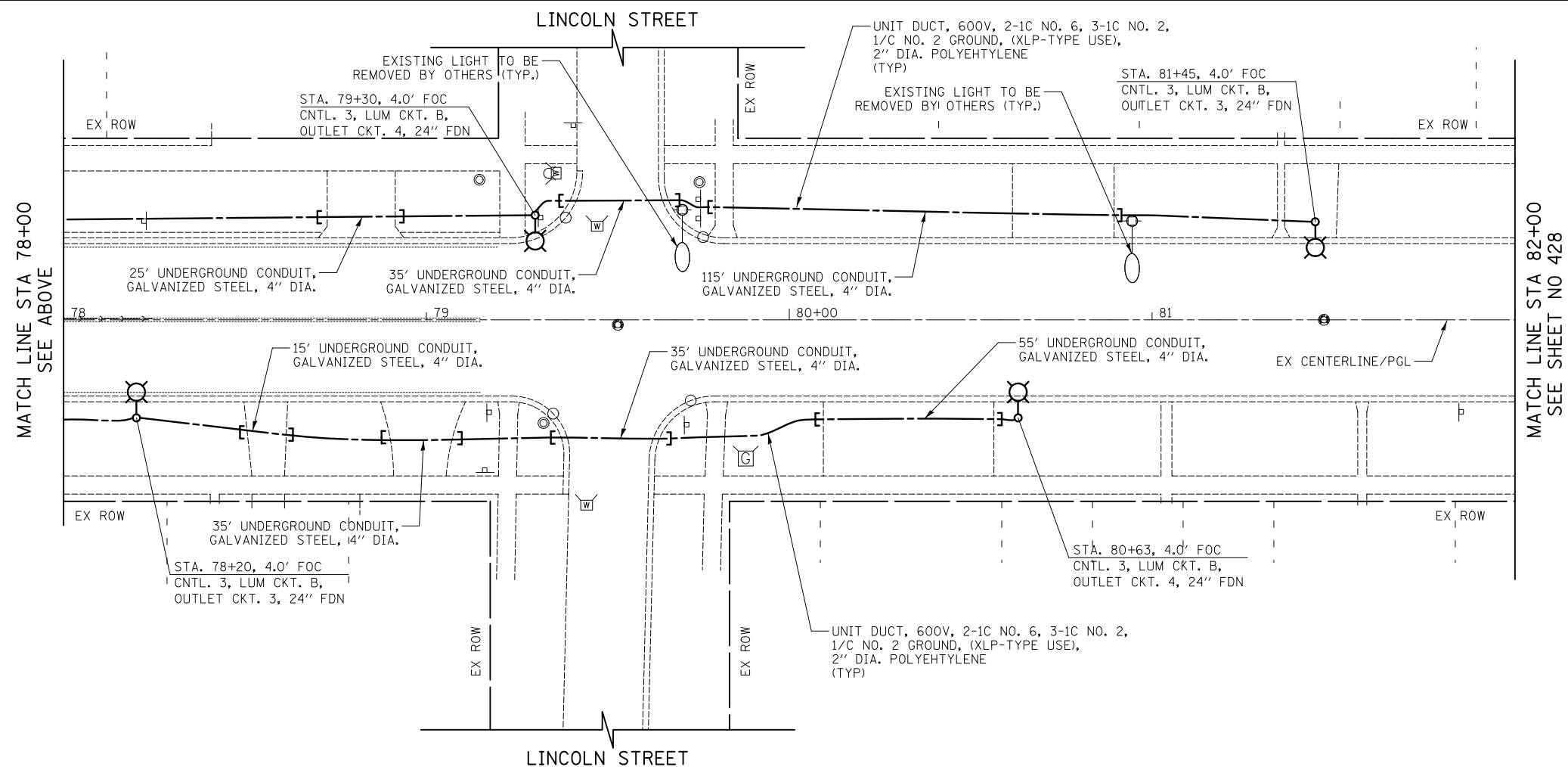
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	426
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



14TH STREET

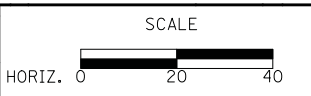


14TH STREET

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DRAWN - SJC	REVISED -
CHECKED - DNM	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**



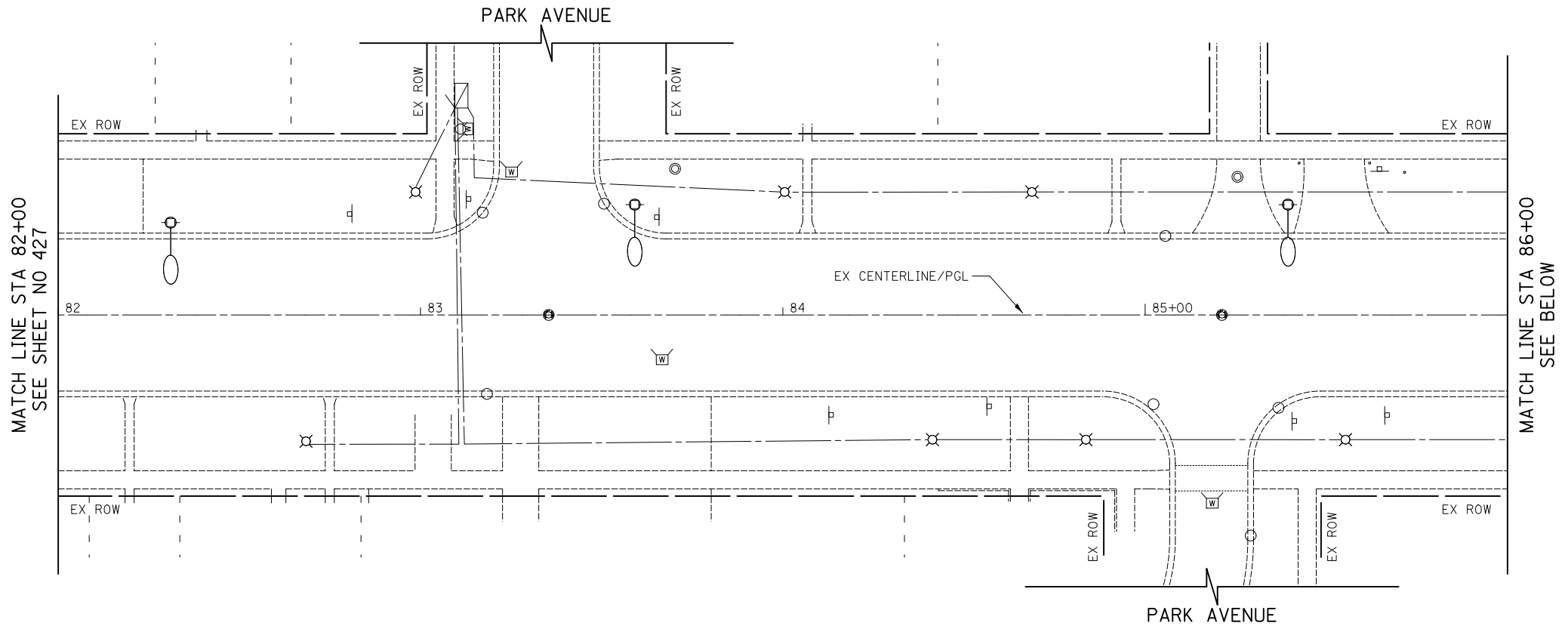
**LIGHTING PLAN**

SHEET NO. 9 OF 12 SHEETS STA. 74+00.0 TO STA. 82+00.0

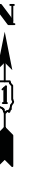
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1228	99-00260-01-WR	LAKE	566	427
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



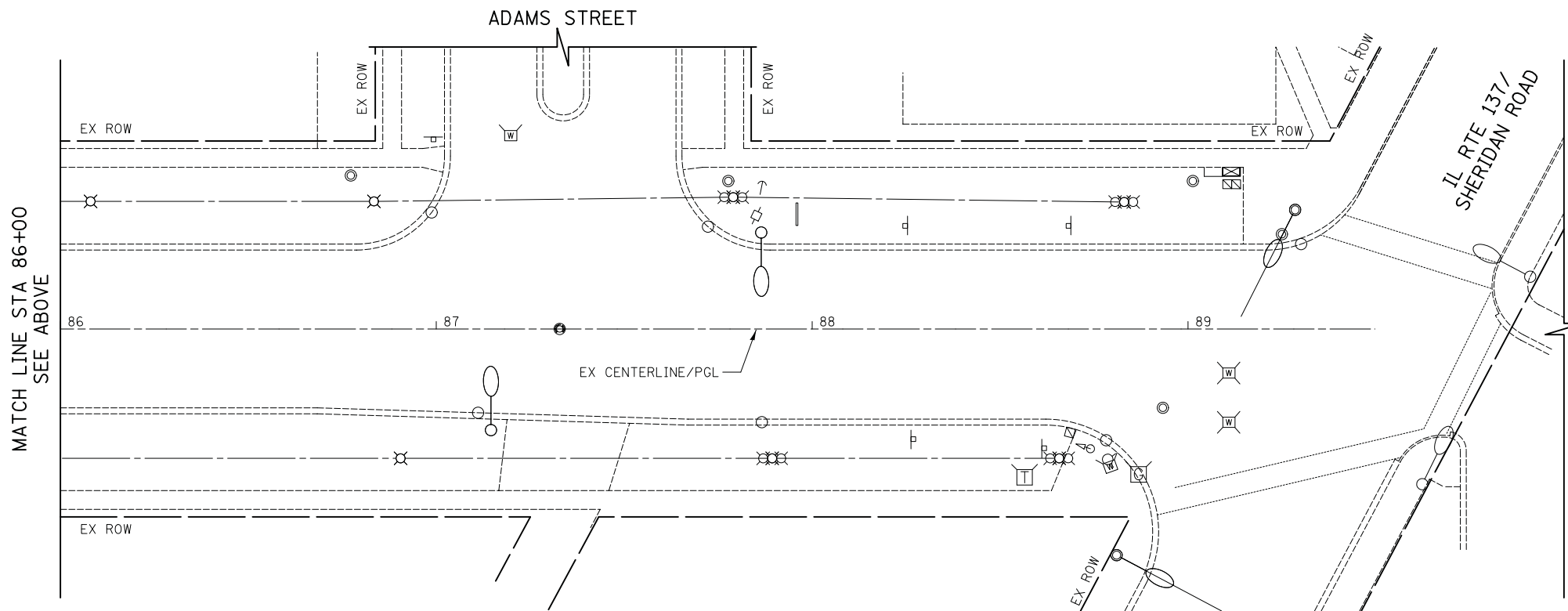
FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		
	AREAS CHECKED		



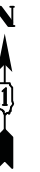
14TH STREET



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



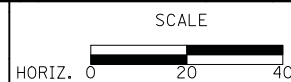
14TH STREET



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DRAWN - SJC	REVISED -
CHECKED - DNM	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**



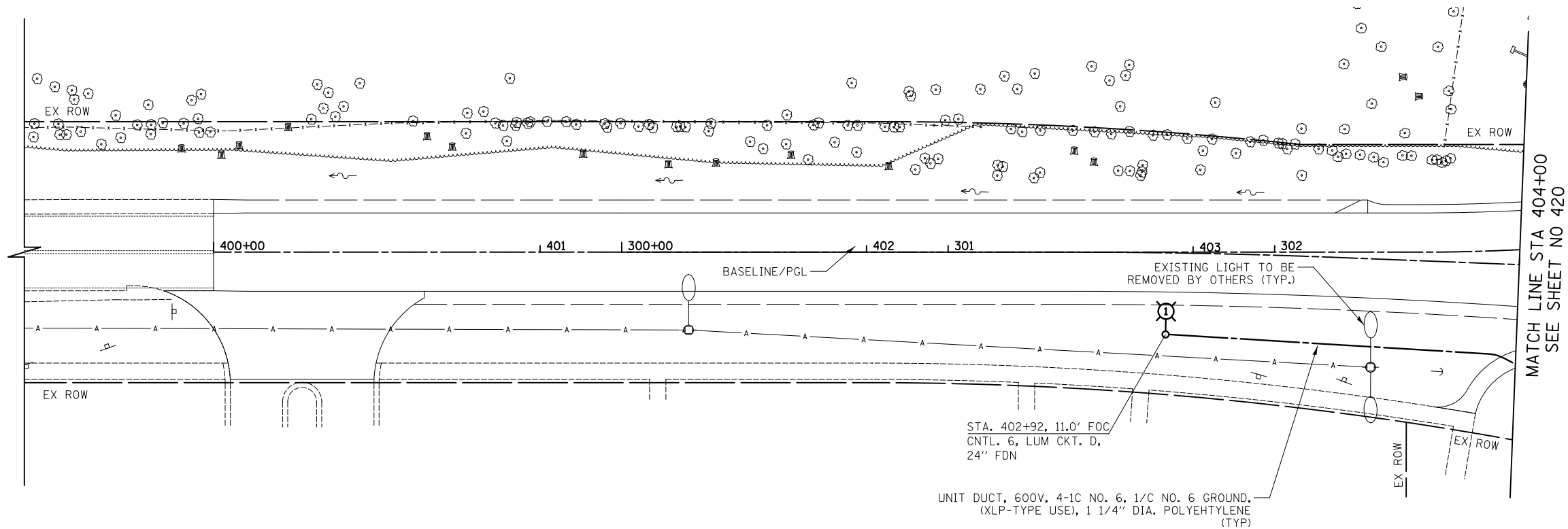
**LIGHTING PLAN**

SHEET NO. 10 OF 12 SHEETS STA. 82+00.0 TO STA. 89+49.7

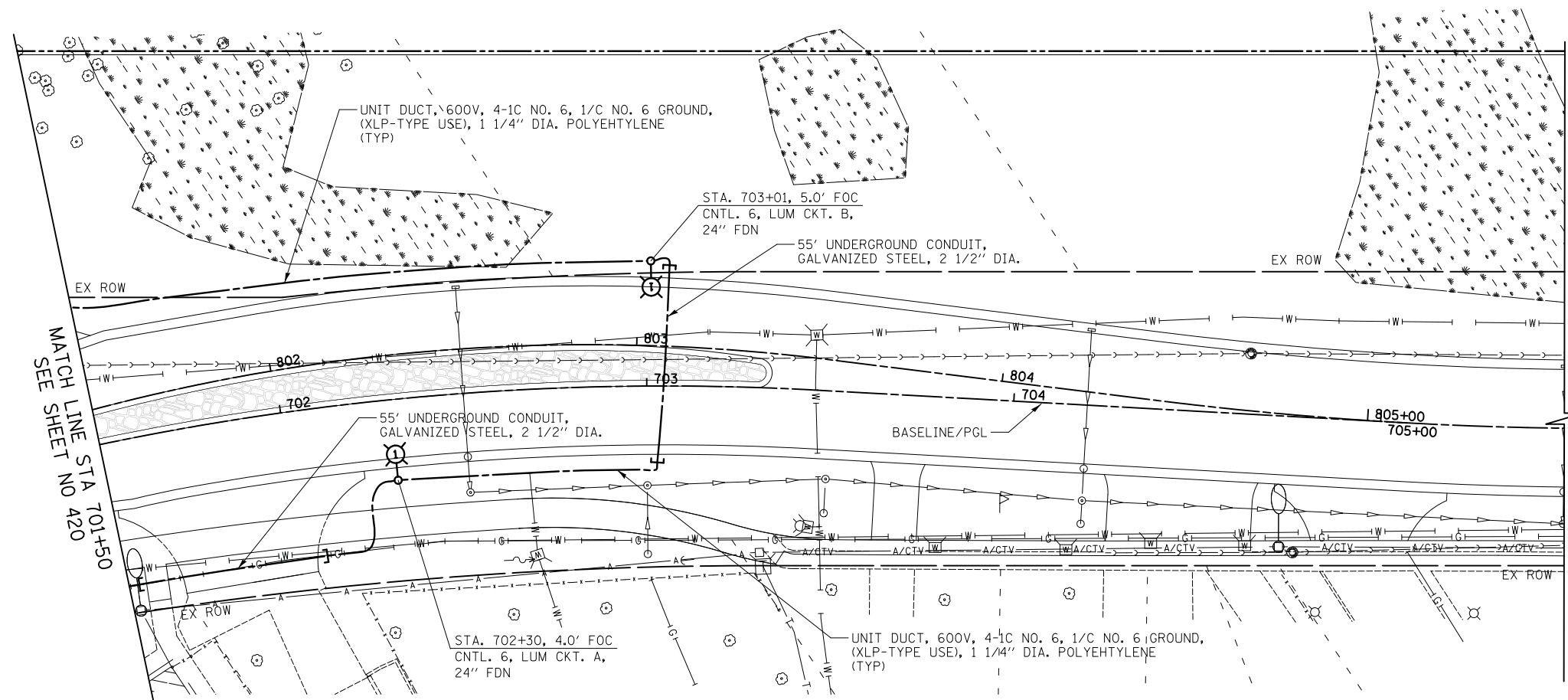
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	428
				CONTRACT NO. 61F33
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
NO.	



DUGDALE ROAD



DUGDALE ROAD



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DRAWN - SJC	REVISED -
CHECKED - DNM	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

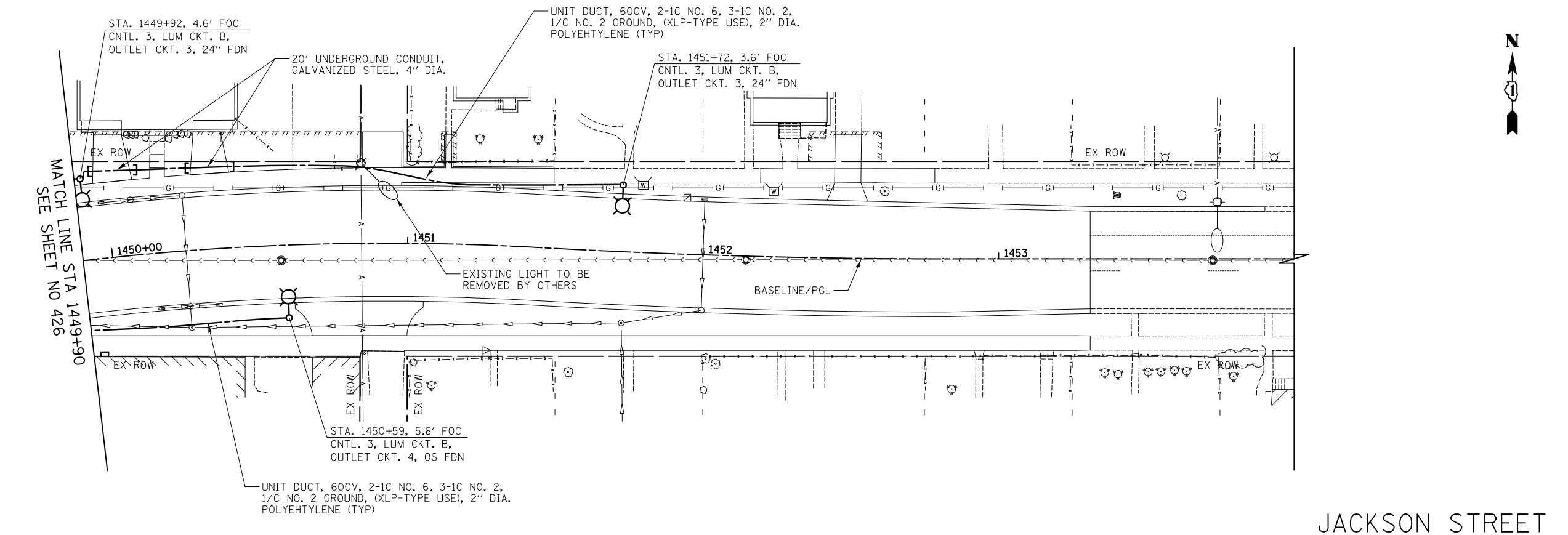
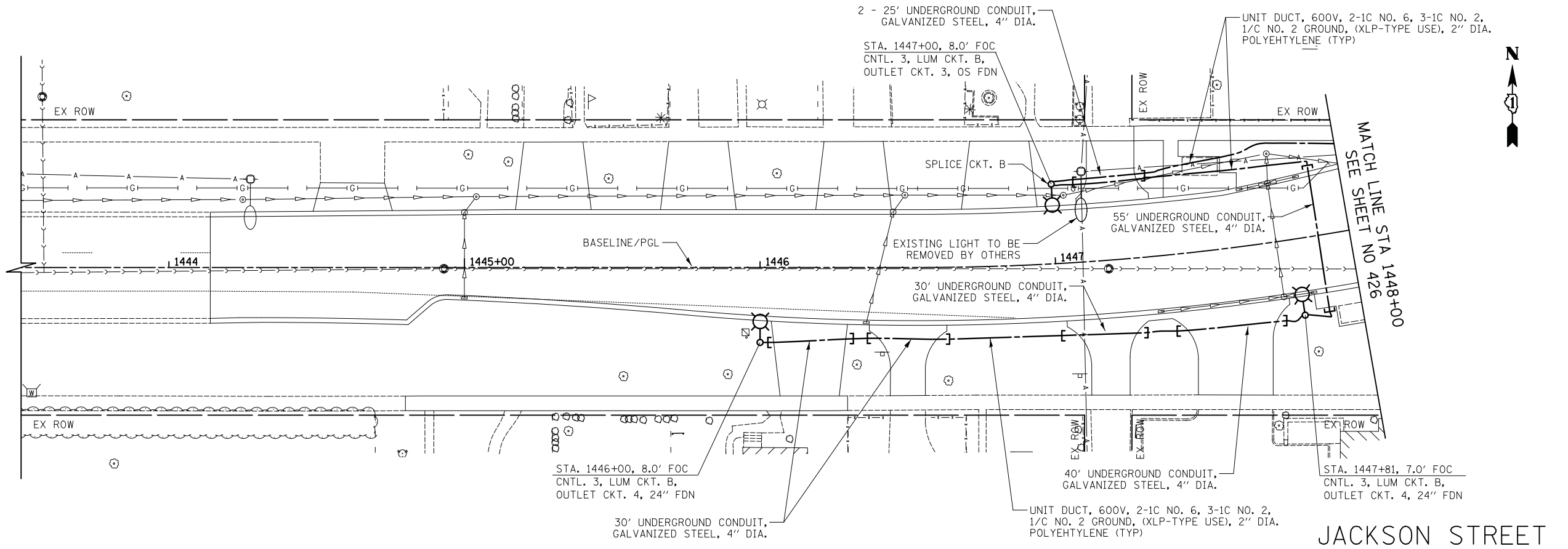


**LIGHTING PLAN**  
 SHEET NO. 11 OF 12 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	429
				CONTRACT NO. 61F33
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

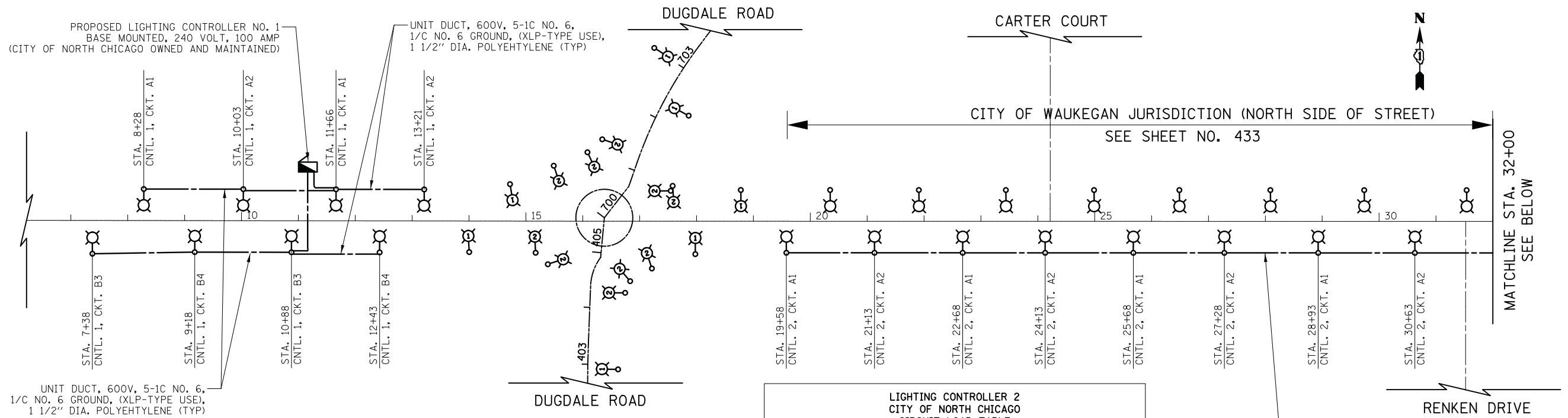
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINISH	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL	
NO.	



BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



**LIGHTING CONTROLLER 1  
CITY OF NORTH CHICAGO  
CIRCUIT LOAD TABLE**

BLACK CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V	RED CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V
A	4	2.4	0.29	A	4	2.4	0.29
B	4	2.4	0.29	B	4	2.4	0.29
1	2	4.0	0.48	2	2	4.0	0.48
3	2	4.0	0.48	4	2	4.0	0.48
<b>TOTAL</b>	<b>12.8</b>	<b>1.54</b>		<b>TOTAL</b>	<b>12.8</b>	<b>1.54</b>	

ROADWAY LED LUMINAIRE (CIRCUITS A - B) 118 WATT AT 240V = 0.50 AMP  
 PEDESTRIAN LED LUMINAIRE (CIRCUITS A - B) 26 WATT AT 240V = 0.11 AMP  
 OUTLETS (CIRCUITS 1 - 4) AT 120V = 2 AMPS

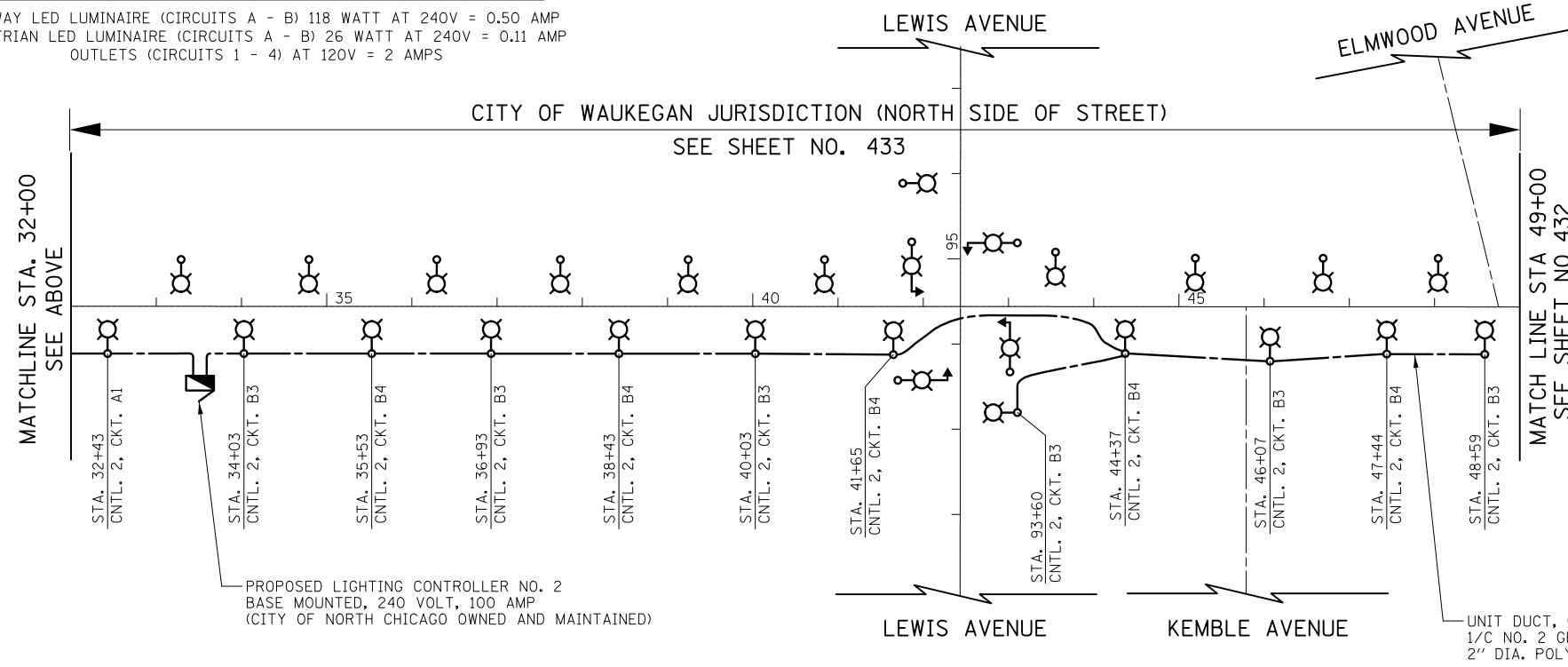
**LIGHTING CONTROLLER 2  
CITY OF NORTH CHICAGO  
CIRCUIT LOAD TABLE**

BLACK CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V	RED CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V
A	9	5.5	0.66	A	9	5.5	0.66
B	11	6.7	0.81	B	11	6.7	0.81
1	5	10.0	1.20	2	4	8.0	0.96
3	6	12.0	1.44	4	5	10.0	1.20
<b>TOTAL</b>	<b>34.2</b>	<b>4.11</b>		<b>TOTAL</b>	<b>30.2</b>	<b>3.63</b>	

ROADWAY LED LUMINAIRE (CIRCUITS A - B) 118 WATT AT 240V = 0.50 AMP  
 PEDESTRIAN LED LUMINAIRE (CIRCUITS A - B) 26 WATT AT 240V = 0.11 AMP  
 OUTLETS (CIRCUITS 1 - 4) AT 120V = 2 AMPS

**LEGEND**

- PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 1 - MEMPHIS TEARDROP LED 118 WATT  
30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT  
12 FOOT MOUNTING HEIGHT  
LIGHT POLE, SPECIAL - 30 FT POLE HEIGHT, 6 FT ROADWAY MAST ARM,  
PEDESTRIAN LUMINAIRE ARM, WITH BANNER ARMS, AND GFCI WEATHER  
RESISTANT RECEPTACLE
- PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 1 - MEMPHIS TEARDROP LED 118 WATT  
30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT  
12 FOOT MOUNTING HEIGHT  
LIGHT POLE, SPECIAL, TYPE 2 - 30 FT POLE HEIGHT, 6 FT ROADWAY  
MAST ARM, AND PEDESTRIAN LUMINAIRE ARM
- PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 2 - MEMPHIS TEARDROP LED 144 WATT  
30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT  
12 FOOT MOUNTING HEIGHT  
LIGHT POLE, SPECIAL, TYPE 2 - 30 FT POLE HEIGHT, 6 FT ROADWAY  
MAST ARM, AND PEDESTRIAN LUMINAIRE ARM
- PROPOSED TRAFFIC SIGNAL AND LIGHTING COMBINATION  
LIGHTING TO BE WIRED AND POWERED BY TRAFFIC SIGNAL CONTROLLER
- PROPOSED LIGHTING CONTROLLER  
120/240 VOLT, 100 AMP
- PROPOSED UNIT DUCT  
(AS SPECIFIED IN THE PLANS)
- CONTROLLER NUMBER ——— OUTLET CIRCUIT  
CNTL. 3, CKT. B3 ——— LUMINAIRE CIRCUIT



PROPOSED LIGHTING CONTROLLER NO. 2  
 BASE MOUNTED, 240 VOLT, 100 AMP  
 (CITY OF NORTH CHICAGO OWNED AND MAINTAINED)

UNIT DUCT, 600V, 2-1C NO. 6, 3-1C NO. 2,  
 1/C NO. 2 GROUND, (XLP-TYPE USE),  
 2" DIA. POLYETHYLENE (TYP)



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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

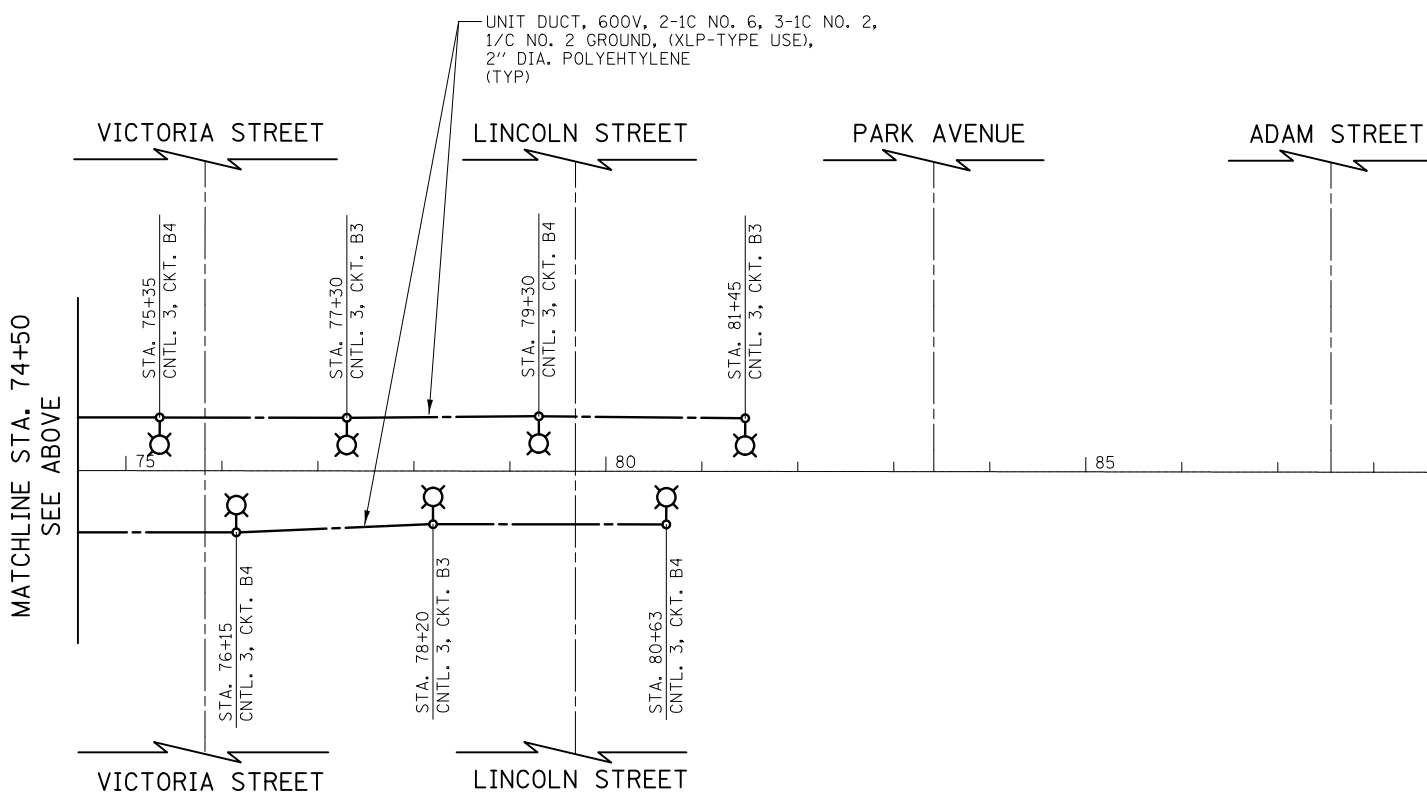
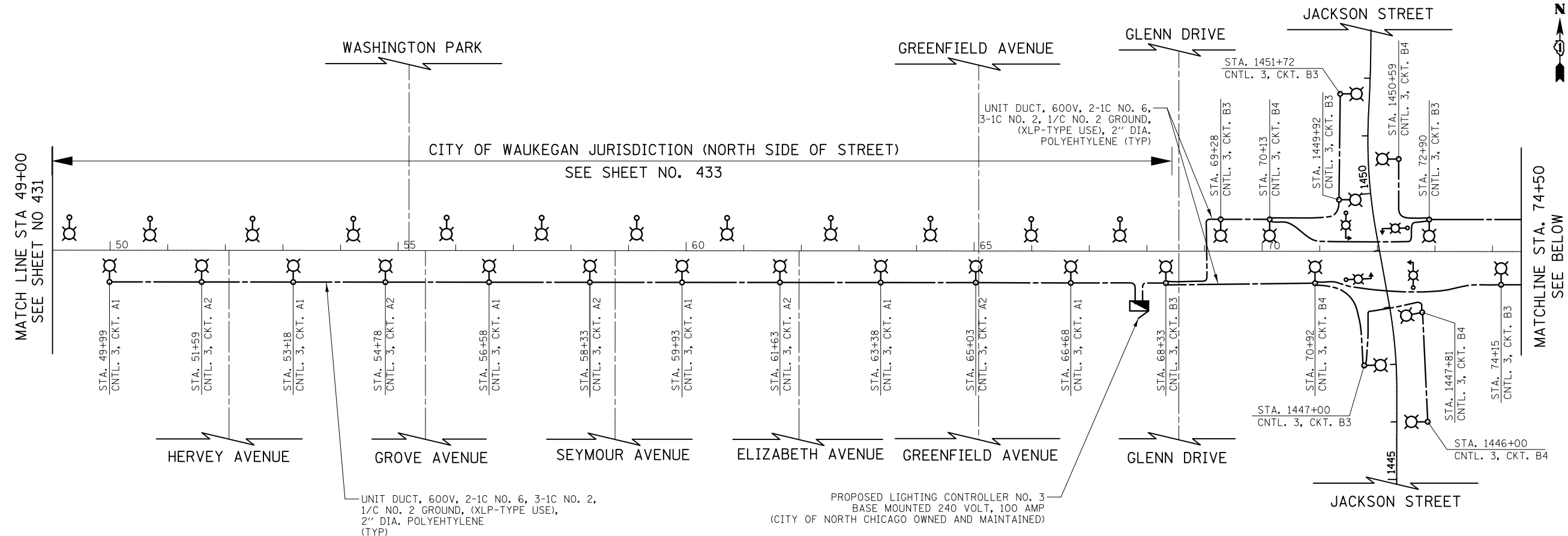
**LIGHTING WIRING DIAGRAM  
CITY OF NORTH CHICAGO**

SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	431
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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

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



**LIGHTING CONTROLLER 3  
CITY OF NORTH CHICAGO  
CIRCUIT LOAD TABLE**

BLACK CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V	RED CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V
A	11	6.7	0.80	A	11	6.7	0.80
B	19	11.6	1.39	B	19	11.6	1.39
1	6	12.0	1.44	2	5	10.0	1.20
3	10	20.0	2.40	4	9	18.0	2.16
TOTAL		50.3	6.03	TOTAL		46.3	5.55

ROADWAY LED LUMINAIRE (CIRCUITS A - B) 118 WATT AT 240V = 0.50 AMP  
 PEDESTRIAN LED LUMINAIRE (CIRCUITS A - B) 26 WATT AT 240V = 0.11 AMP  
 OUTLETS (CIRCUITS 1 - 4) AT 120V = 2 AMPS

**LEGEND**

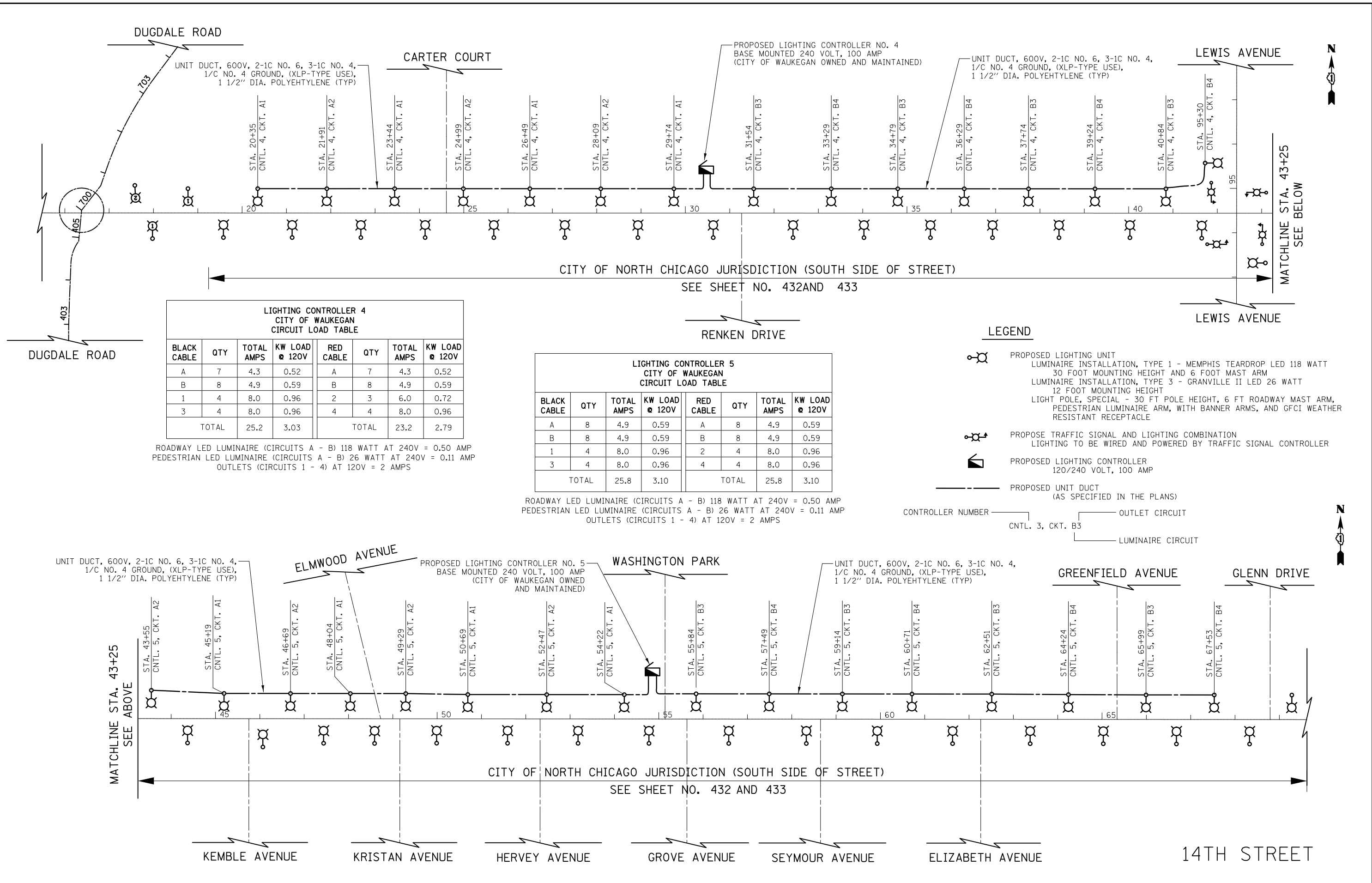
- PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 1 - MEMPHIS TEARDROP LED 118 WATT  
30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT  
12 FOOT MOUNTING HEIGHT  
LIGHT POLE, SPECIAL - 30 FT POLE HEIGHT, 6 FT ROADWAY MAST ARM,  
PEDESTRIAN LUMINAIRE ARM, WITH BANNER ARMS, AND GFCI WEATHER  
RESISTANT RECEPTACLE
- PROPOSED TRAFFIC SIGNAL AND LIGHTING COMBINATION  
LIGHTING TO BE WIRED AND POWERED BY TRAFFIC SIGNAL CONTROLLER
- PROPOSED LIGHTING CONTROLLER  
120/240 VOLT, 100 AMP
- PROPOSED UNIT DUCT  
(AS SPECIFIED IN THE PLANS)
- CONTROLLER NUMBER: CNTL. 3, CKT. B3
- OUTLET CIRCUIT
- LUMINAIRE CIRCUIT

14TH STREET



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



**LIGHTING CONTROLLER 4  
CITY OF WAUKEGAN  
CIRCUIT LOAD TABLE**

BLACK CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V	RED CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V
A	7	4.3	0.52	A	7	4.3	0.52
B	8	4.9	0.59	B	8	4.9	0.59
1	4	8.0	0.96	2	3	6.0	0.72
3	4	8.0	0.96	4	4	8.0	0.96
TOTAL		25.2	3.03	TOTAL		23.2	2.79

ROADWAY LED LUMINAIRE (CIRCUITS A - B) 118 WATT AT 240V = 0.50 AMP  
 PEDESTRIAN LED LUMINAIRE (CIRCUITS A - B) 26 WATT AT 240V = 0.11 AMP  
 OUTLETS (CIRCUITS 1 - 4) AT 120V = 2 AMPS

**LIGHTING CONTROLLER 5  
CITY OF WAUKEGAN  
CIRCUIT LOAD TABLE**

BLACK CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V	RED CABLE	QTY	TOTAL AMPS	KW LOAD @ 120V
A	8	4.9	0.59	A	8	4.9	0.59
B	8	4.9	0.59	B	8	4.9	0.59
1	4	8.0	0.96	2	4	8.0	0.96
3	4	8.0	0.96	4	4	8.0	0.96
TOTAL		25.8	3.10	TOTAL		25.8	3.10

ROADWAY LED LUMINAIRE (CIRCUITS A - B) 118 WATT AT 240V = 0.50 AMP  
 PEDESTRIAN LED LUMINAIRE (CIRCUITS A - B) 26 WATT AT 240V = 0.11 AMP  
 OUTLETS (CIRCUITS 1 - 4) AT 120V = 2 AMPS

- LEGEND**
- PROPOSED LIGHTING UNIT  
LUMINAIRE INSTALLATION, TYPE 1 - MEMPHIS TEARDROP LED 118 WATT 30 FOOT MOUNTING HEIGHT AND 6 FOOT MAST ARM  
LUMINAIRE INSTALLATION, TYPE 3 - GRANVILLE II LED 26 WATT 12 FOOT MOUNTING HEIGHT
  - PROPOSE TRAFFIC SIGNAL AND LIGHTING COMBINATION  
LIGHTING TO BE WIRED AND POWERED BY TRAFFIC SIGNAL CONTROLLER
  - PROPOSED LIGHTING CONTROLLER  
120/240 VOLT, 100 AMP
  - PROPOSED UNIT DUCT  
(AS SPECIFIED IN THE PLANS)
- CONTROLLER NUMBER \_\_\_\_\_ OUTLET CIRCUIT \_\_\_\_\_  
 CNTL. 3, CKT. B3 \_\_\_\_\_ LUMINAIRE CIRCUIT \_\_\_\_\_

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 DRAWN - SJC  
 CHECKED - DNM  
 DATE - 11/7/2018

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LIGHTING WIRING DIAGRAM  
CITY OF WAUKEGAN**

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

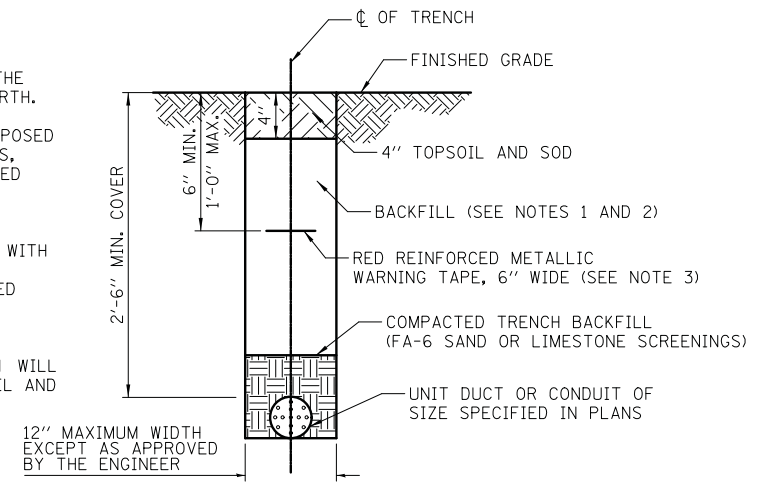
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	433
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



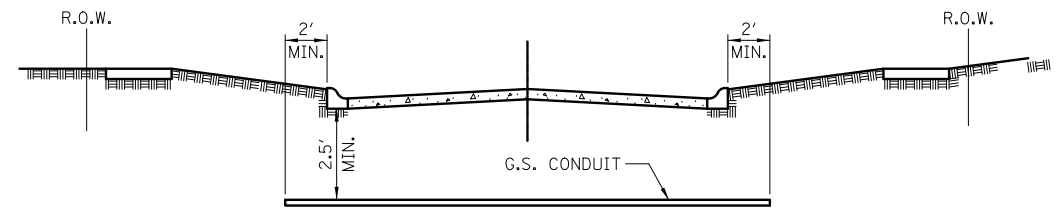
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINISH	
NO.	

**NOTES:**

1. IN GRASS COVERED AREAS, THE BACKFILL MAY BE COMPACTED EARTH.
2. TRENCHES WITHIN 2' OF PROPOSED OR EXISTING STREETS, DRIVEWAYS, OR SIDEWALKS WILL BE BACKFILLED WITH COMPACTED FA-6 SAND OR LIMESTONE SCREENINGS.
3. WARNING TAPE WILL BE RED WITH BLACK LETTERING TO READ "CAUTION - ELECTRIC LINE BURIED BELOW".
4. ALL GRASS COVERED AREAS DISTURBED DURING CONSTRUCTION WILL BE RESTORED WITH 4" OF TOPSOIL AND SOD.



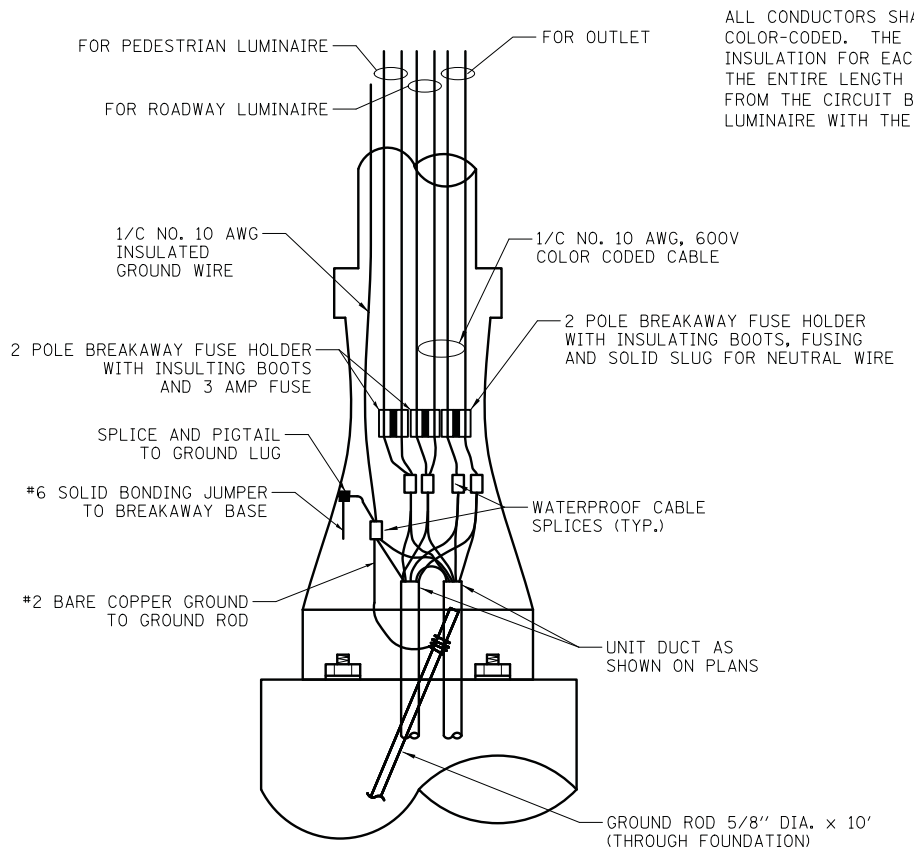
**TYPICAL TRENCH CROSS SECTION**



- ① CONDUIT SHALL BE HEAVY WALL RIGID G.S. CONDUIT.
- ② CONDUIT SHALL EXTEND A MINIMUM OF 2 FT. BEYOND BACK OF CURB.
- ③ CONDUIT SHALL BE A MINIMUM OF 2.5 FT. BELOW BOTTOM OF CURB.

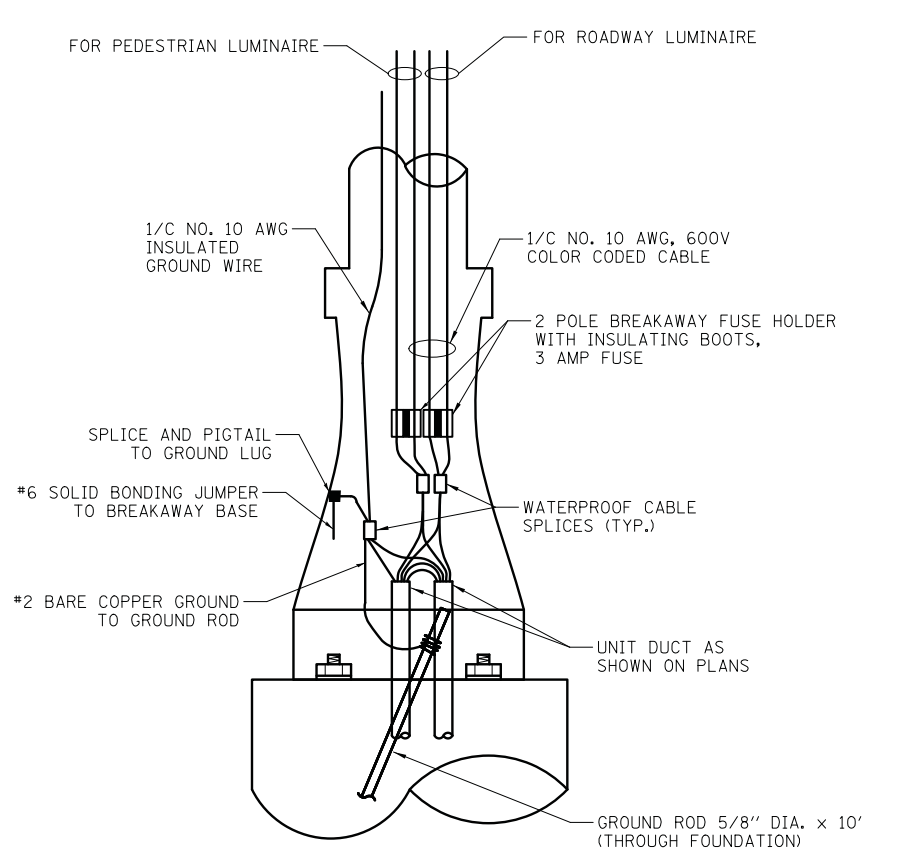
**ELECTRICAL CONDUIT UNDER PAVEMENT**

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL	
NO.	

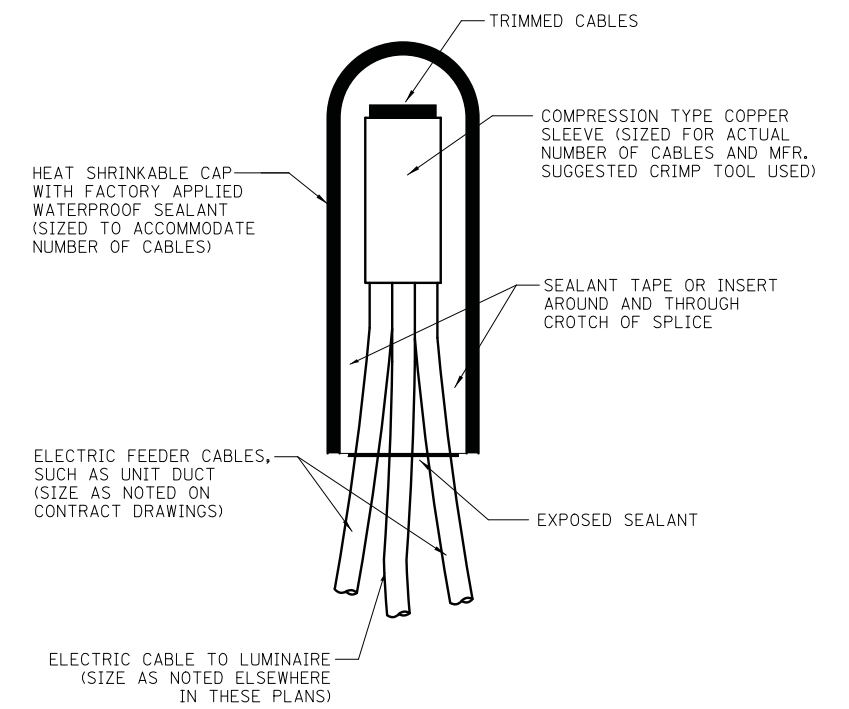


**ROADWAY POLE HANDHOLE WIRING DIAGRAM WITH OUTLETS**

ALL CONDUCTORS SHALL BE INDIVIDUALLY COLOR-CODED. THE COLOR-CODED INSULATION FOR EACH WIRE SHALL RUN THE ENTIRE LENGTH OF THE CONDUCTOR FROM THE CIRCUIT BREAKER TO THE LUMINAIRE WITH THE SAME COLOR.



**ROADWAY POLE HANDHOLE WIRING DIAGRAM**



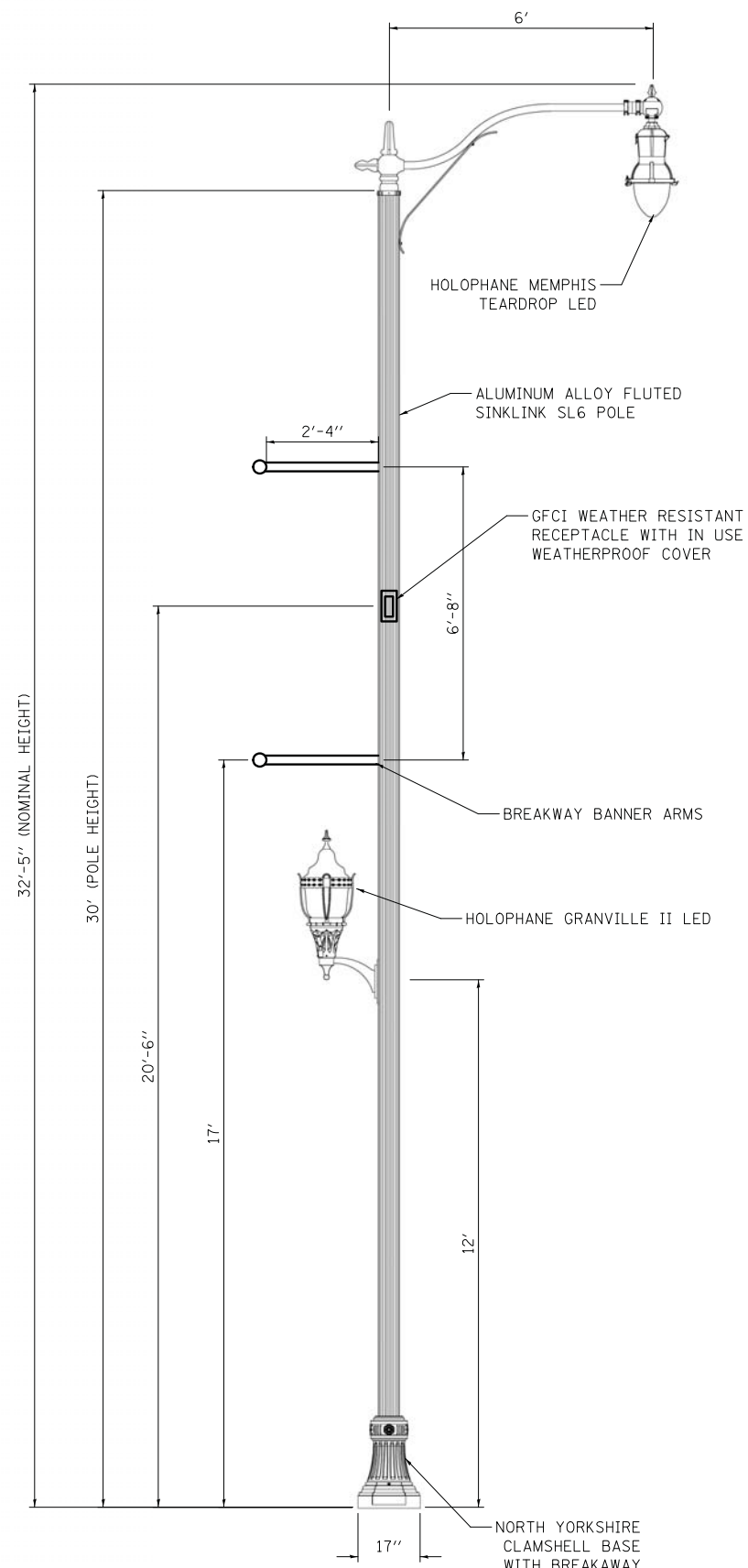
NOTE: NUMBER OF CABLES IN SPLICE MAY VARY

**SPlicing ELECTRIC CABLES BASIC MATERIALS AND METHODS**

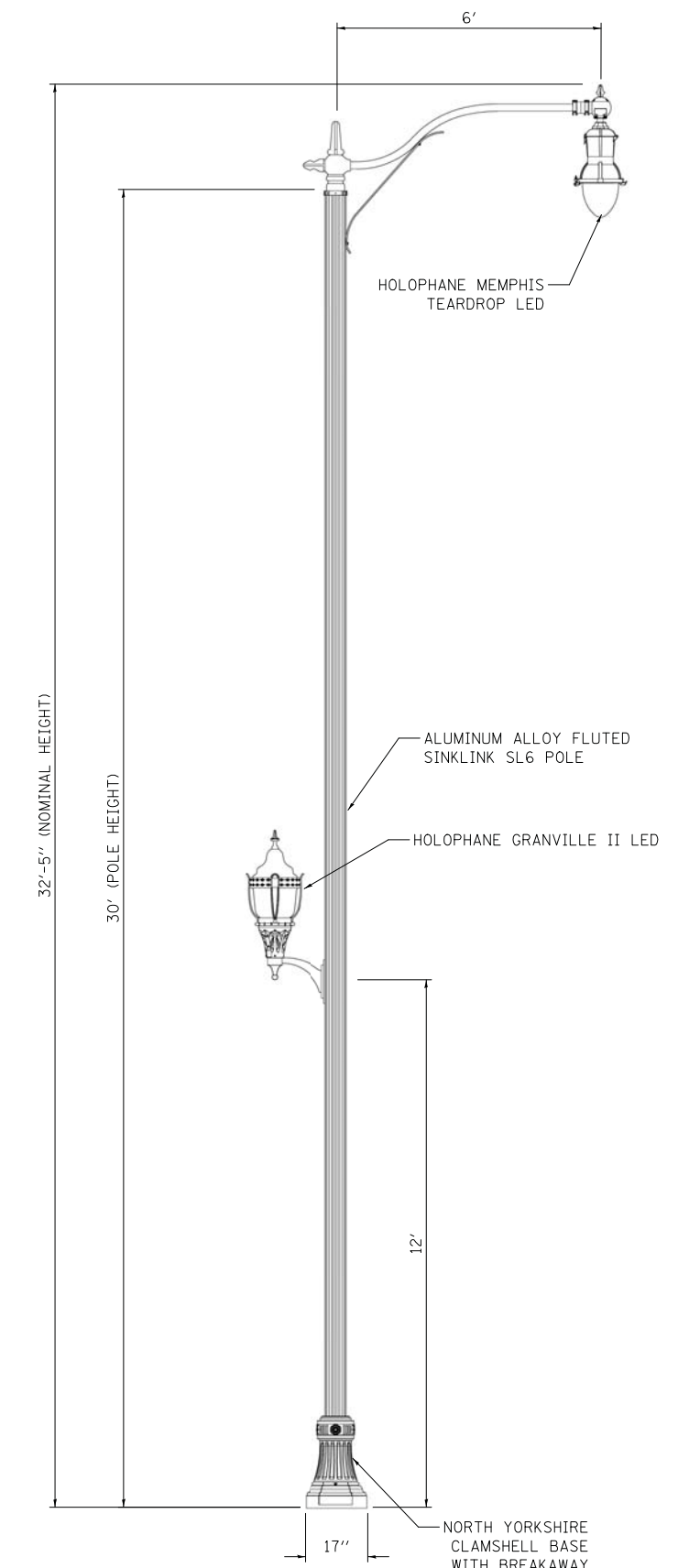
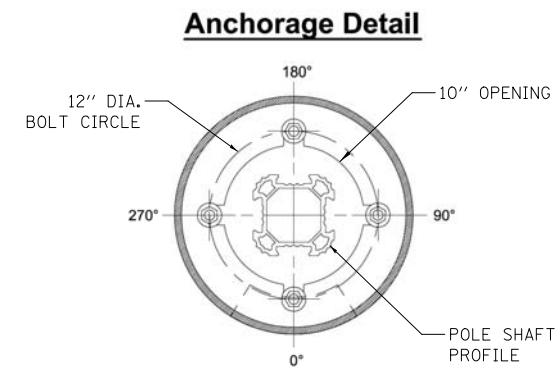


DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL	
SURVEY	
NOTE BOOK	
NO.	

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



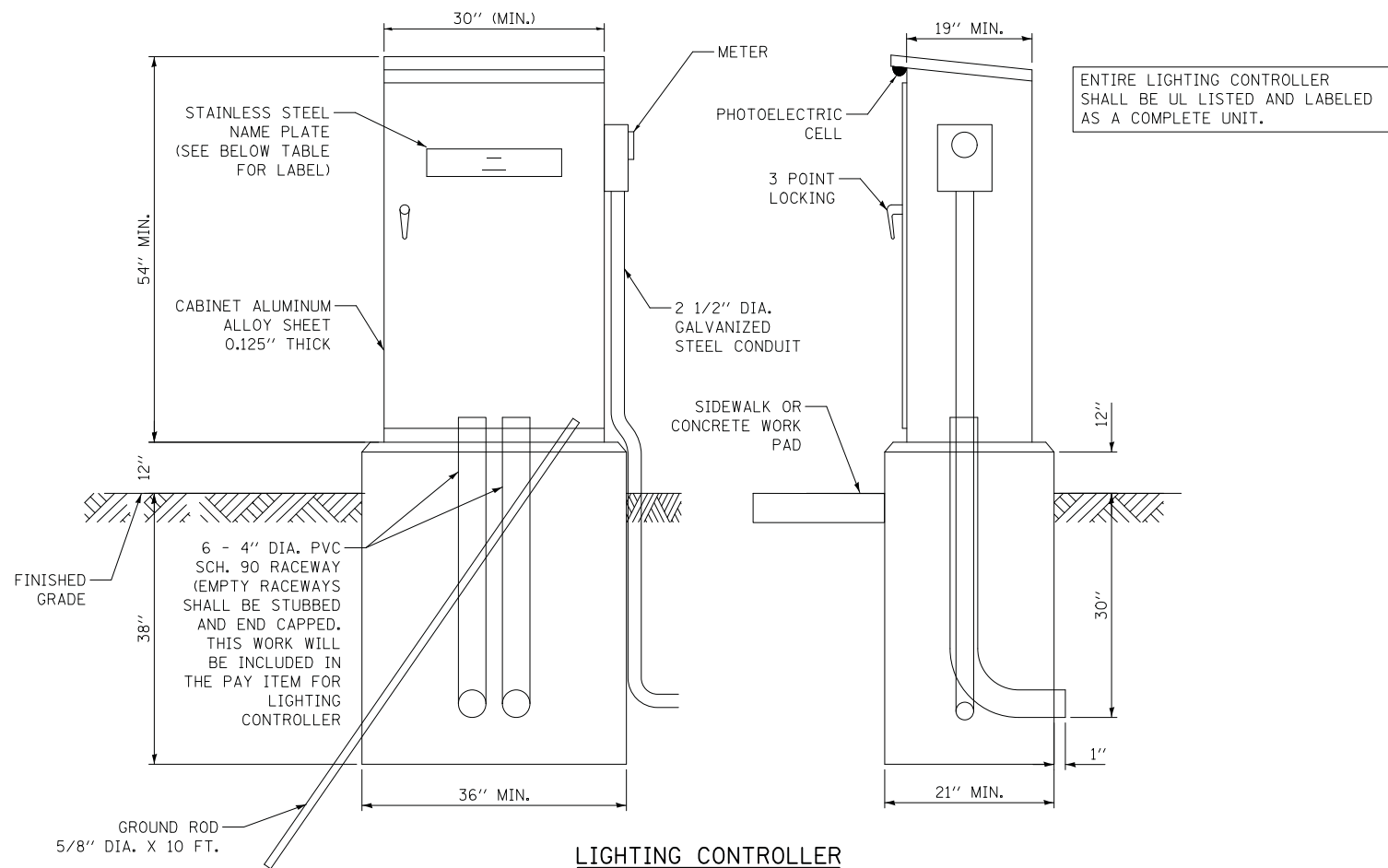
**LIGHT POLE, SPECIAL**  
CITY OF NORTH CHICAGO AND CITY OF WAUKEGAN



**LIGHT POLE, SPECIAL, TYPE 2**  
LCDOT

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINISH	
NO. 1	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINISH	
NO. 1	

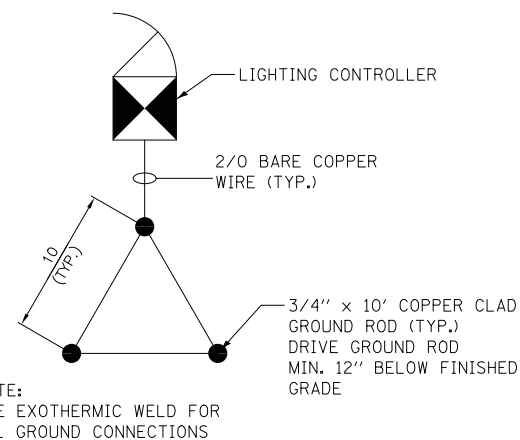


**LIGHTING CONTROLLER**

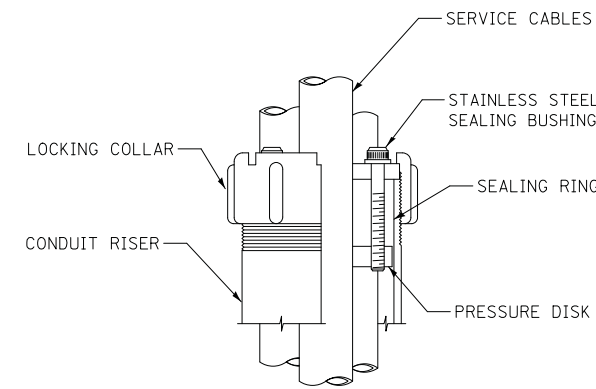
LIGHTING CONTROLLER NUMBER	CONTROLLER NAME PLATE LABEL
1 - 3	CITY OF NORTH CHICAGO LIGHTING CONTROLLER
4 - 5	CITY OF WAUKEGAN LIGHTING CONTROLLER
6	LCDOT LIGHTING CONTROLLER

**NOTES FOR CONTROL CABINET:**

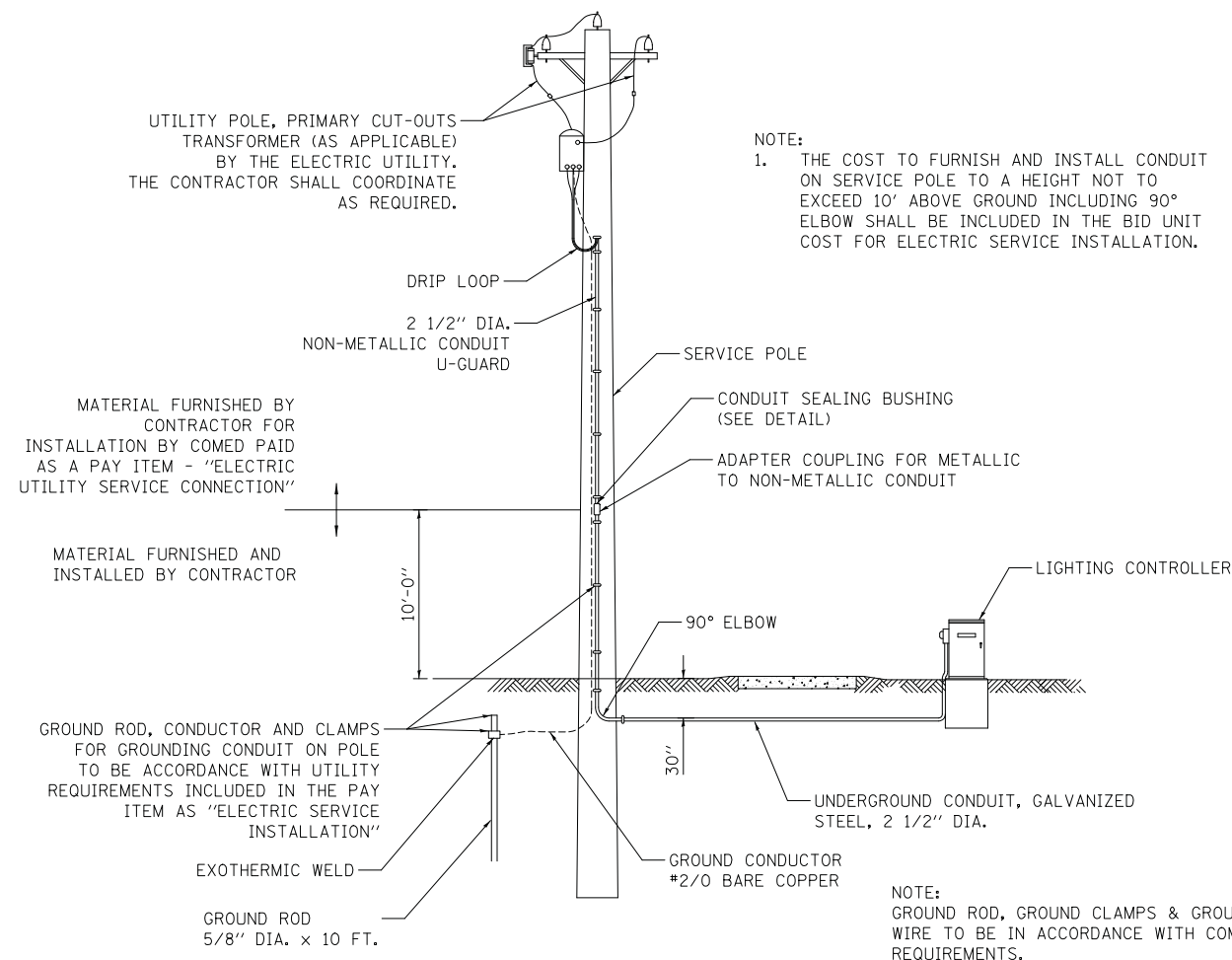
- FOUNDATION SIZE SHALL BE COORDINATED WITH CABINET SIZE AND MFR.
- DOOR SHALL BE CONSTRUCTED FROM SAME TYPE OF MATERIAL AND THICKNESS AS CABINET.
- DOOR HINGE SHALL BE A HEAVY GAUGE CONTINUOUS HINGE WITH A 1/4" DIA. STAINLESS STEEL HINGE PIN.
- ALL EXTERNAL HARDWARE SHALL BE STAINLESS STEEL.
- CONTROL WIRING SHALL BE NO. 12 AWG., 600V, TYPE 'SIS' GRAY SWITCHBOARD WIRE, STRANDED COPPER.
- THE HEADS OF CONNECTOR SCREWS SHALL BE PAINTED WHITE FOR NEUTRAL BUS CONNECTION AND GREEN FOR GROUND BUS CONNECTORS.
- PROVIDE SEALING GROMMETS FOR ALL WIRING EXTENDING FROM DEVICE ENCLOSURES.
- ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.
- THE CONTROLLER SHALL BE CONSTRUCTED TO U.L. STD. 508 AND BEAR THE U.L. LABEL 'ENCLOSED INDUSTRIAL CONTROL PANEL'.
- PROVIDE A HOLDER AND WATERPROOF POUCH ON THE INNER SIDE OF THE CONTROLLER DOOR. FURNISH THE APPROVED COPY OF 'CONTROL CABINET WIRING DIAGRAM'.
- IN FRONT OF CONTROL CABINET DOOR, REMOVE VEGETATION AND 2" TOP SOIL, LEVEL THE AREA AND ON TOP, PLACE LENGTH WISE PARALLEL TO CONTROL CABINET, A CONCRETE PAD 36" X 60" X 4" MINIMUM SIZE SHALL BE PLACED WHEN THERE IS NO SIDEWALK. THE COST OF LABOR AND MATERIALS ARE INCLUDED IN THE COST OF THE CONTROLLER.
- CABINETS SHALL BE PRIMED AND PAINTED AS SPECIFIED.
- PROVIDE A RED WARNING NAMEPLATE IN THE CONTROLLER NEAR THE MAIN BREAKER INDICATING "LIVE CIRCUITS EVEN WHEN MAIN CIRCUIT BREAKER IS IN OFF POSITION".
- CONTROLLER CABINET DOOR SHALL BE ON THE PARKWAY SIDE OF THE CABINET, OPPOSITE THE ROADWAY.



**GROUND FIELD DETAIL**

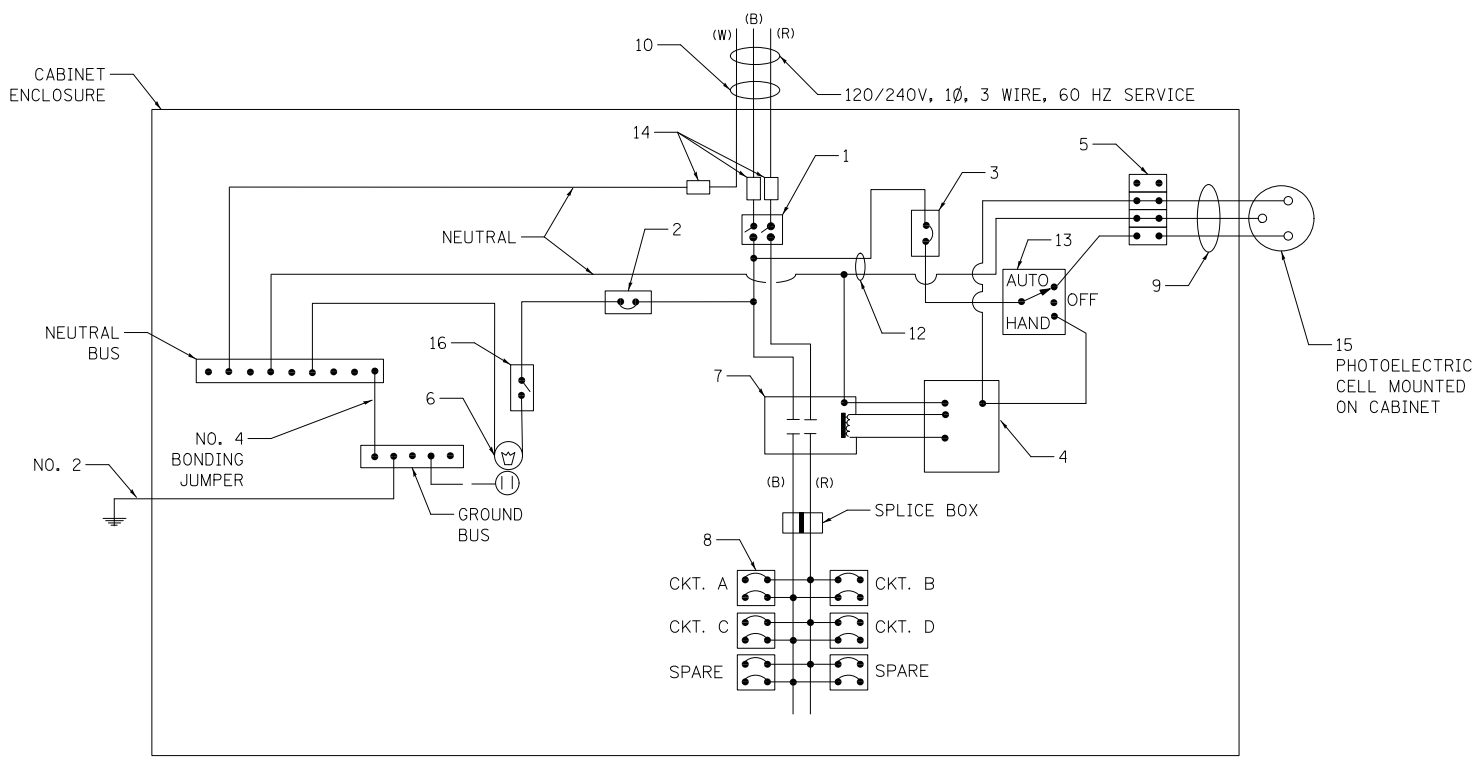


**SEALING BUSHING DETAIL**

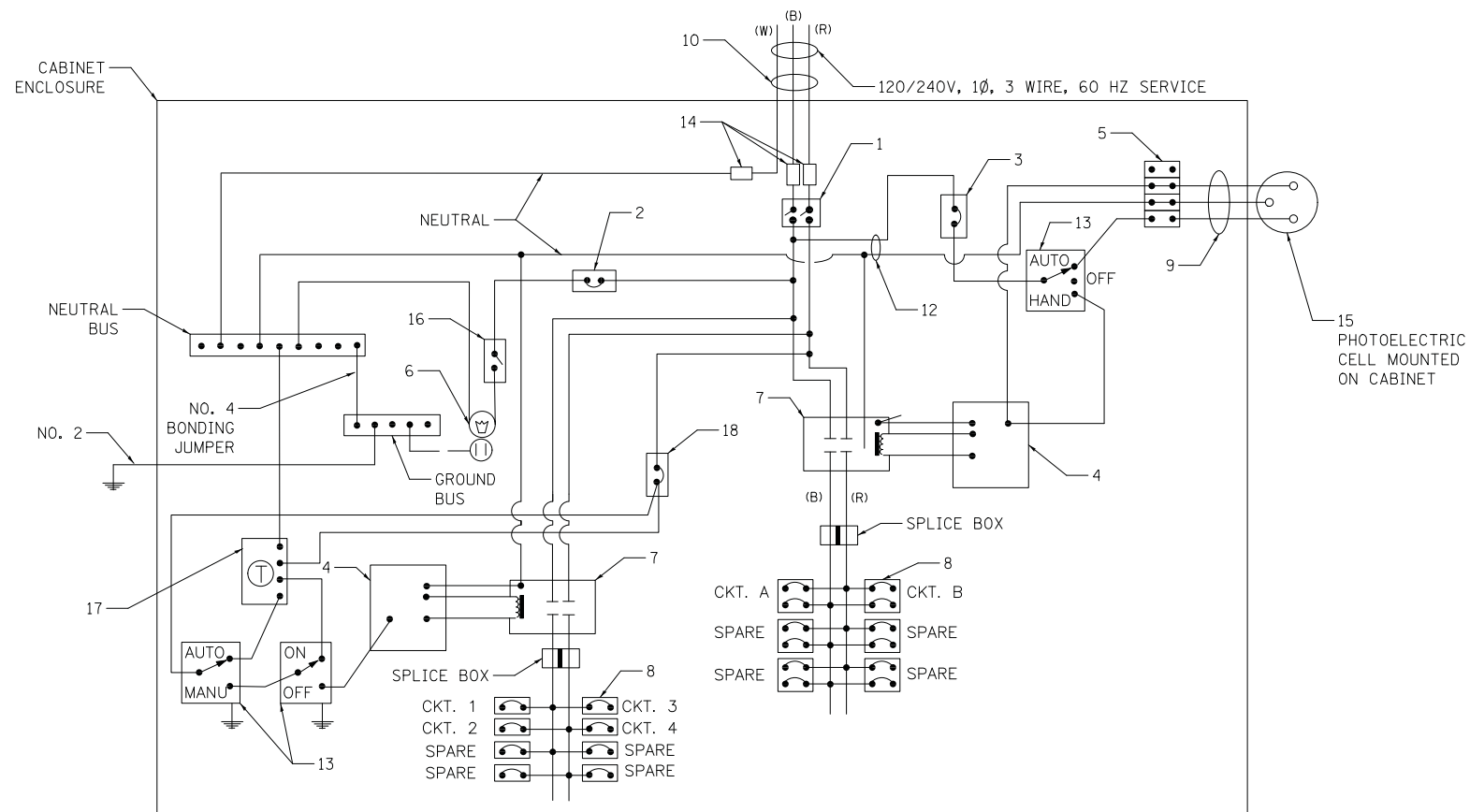


**ELECTRIC SERVICE INSTALLATION**

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



**PANEL WIRING DIAGRAM  
LIGHTING CONTROLLER #6 LCDOT**



**PANEL WIRING DIAGRAM  
LIGHTING CONTROLLER #1 - #5  
CITY OF NORTH CHICAGO AND CITY OF WAUKEGAN**

**LIGHTING CONTROLLER COMPONENT SCHEDULE**

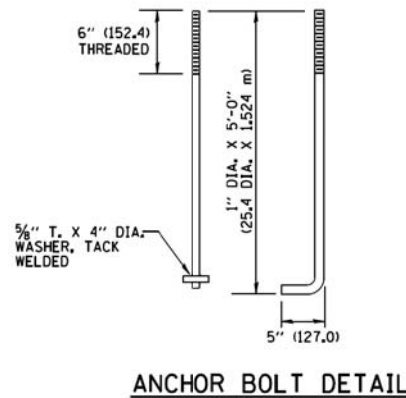
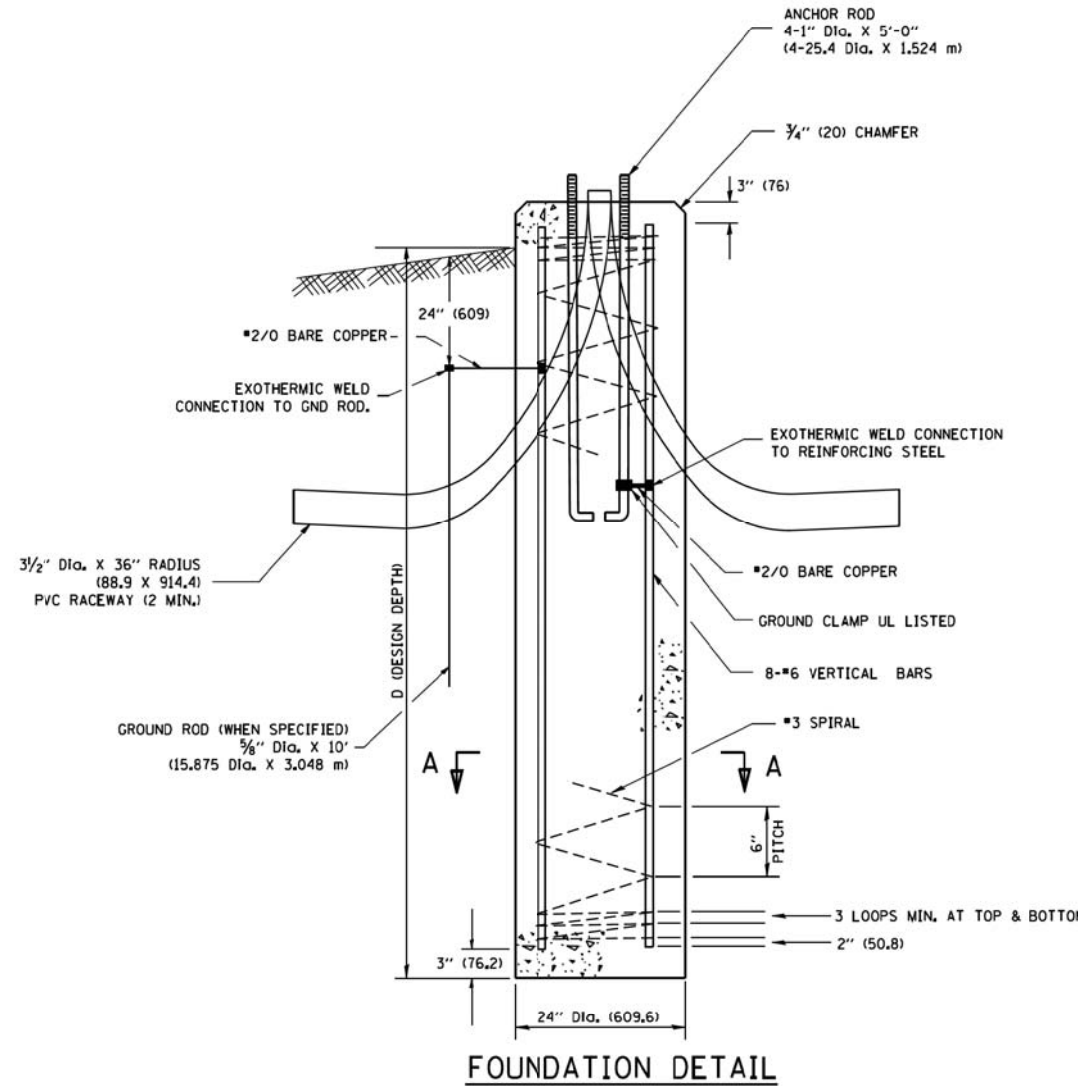
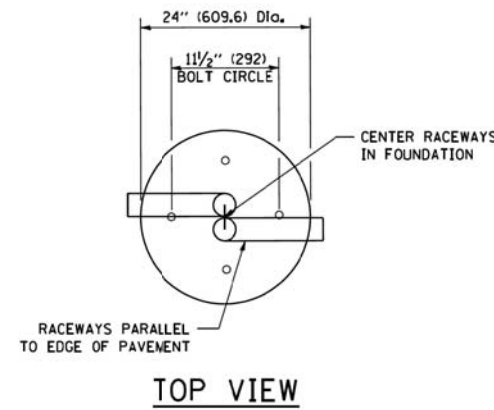
ITEM	SPECIFICATION OR EQUAL
① MAIN CIRCUIT BREAKER	200 AMPERE, 2 POLE, 240 VOLT RATING INTERRUPTING CAPACITY NOT LESS THAN 25,000 RMS SYMMETRICAL AMPS AT 600V
② LAMPHOLDER CIRCUIT BREAKER	15 AMPERE, 1 POLE, 120 VOLT RATING INTERRUPTING CAPACITY NOT LESS THAN 14,000 RMS SYMMETRICAL AMPS AT 277V
③ PHOTOELECTRIC CELL CONTROL CIRCUIT BREAKER	15 AMPERE, 1 POLE, 120 VOLT RATING INTERRUPTING CAPACITY NOT LESS THAN 14,000 RMS SYMMETRICAL AMPS AT 277V
④ AUXILIARY RELAY	120 VOLT SPST 60 HZ COIL
⑤ FOUR POINT TERMINAL BLOCK	600 VOLT
⑥ LAMPHOLDER AND OUTLET	120 VOLT SWITCHED LAMPHOLDER AND 20 AMP GFI DUPLEX RECEPTACLE. WEATHERPROOF SINGLE GANG CAST ALUMINUM BOX AND WEATHERPROOF COVER.
⑦ REMOTE CONTROL SWITCH - CONTACTOR	100 AMPERE, 2 POLE, 240 VOLT RATING, 120V COIL. ELECTRICALLY OPERATED, MECHANICALLY HELD.
⑧ BRANCH LINE CIRCUIT BREAKERS	CKTS. A - B = 20 AMP, 2 POLE, 240 VOLT RATING CKTS. 1 - 4 = 20 AMP, 1 POLE, 120 VOLT ALL CIRCUITS SHALL BE INTERRUPTING CAPACITY NOT LESS THAN 10,000 RMS SYMMETRICAL AMPS AT 277V
⑨ PHOTOELECTRIC CELL CONTROL WIRE	3-600V XLP NO. 10
⑩ SERVICE CABLES	3-600V (XLP-TYPE USE) NO. 2
⑪ BRANCH LINE CABLES	SEE PLANS FOR SIZE
⑫ CONTROL WIRE	2-600V XLP NO. 10
⑬ HAND-AUTO-OFF CONTROL SWITCH	10 AMPERE, 3 POLE, 120 VOLT.
⑭ LIGHTING ARRESTOR	BRACKET MOUNTED SURGE ARRESTOR FOR 120/240V 3W SERVICE
⑮ PHOTOELECTRIC CELL	120 SECONDS OFF TIME DELAY, 120V
⑯ MICRO SWITCH	MOUNT WITH ACTUATOR TO SWITCH WHEN DOOR IS OPEN
⑰ TIME CLOCK	ASTRONOMICAL TIME CLOCK
⑱ TIME CLOCK CONTROL CIRCUIT BREAKER	15 AMPERE, 1 POLE, 120 VOLT RATING INTERRUPTING CAPACITY NOT LESS THAN 14,000 RMS SYMMETRICAL AMPS AT 277V

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

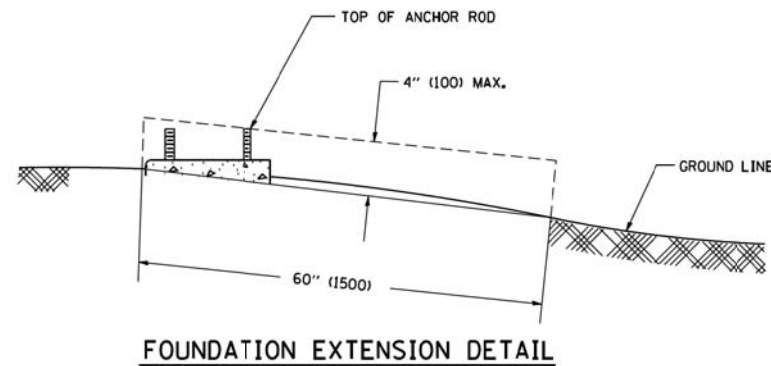


**LIGHT POLE FOUNDATION DEPTH TABLE**  
**30 FT. (9.144 m) TO 35 FT. (10.668 m) MOUNTING HEIGHT**

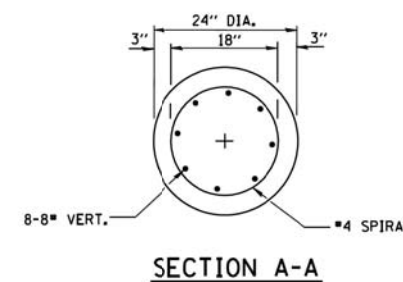
SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION	
	SINGLE ARM POLE	TWIN ARM POLE
SOFT CLAY O <sub>u</sub> = 0.375 TON/SO. FT.	11'-0" (3.35 m)	12'-8" (3.85 m)
MEDIUM CLAY O <sub>u</sub> = 0.75 TON/SO. FT.	9'-0" (2.74 m)	14'-10" (4.52 m)
STIFF CLAY O <sub>u</sub> = 1.50 TON/SO. FT.	7'-6" (2.29 m)	8'-7" (2.61 m)
LOOSE SAND φ = 34°	9'-6" (2.90 m)	10'-7" (3.22 m)
MEDIUM SAND φ = 37.5°	9'-0" (2.74 m)	9'-10" (2.99 m)
DENSE SAND φ = 40°	8'-3" (2.51 m)	9'-7" (2.91 m)



**ANCHOR BOLT DETAIL**



**FOUNDATION EXTENSION DETAIL**



**SECTION A-A**

**NOTES**

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
- THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED.
- THE FOUNDATION SHALL NOT PROTRUDE MORE THAN 4 IN. (100 mm) ABOVE THE FINISHED GRADE WITHIN A 60 IN. (1.5 m) CHORD ACROSS THE FOUNDATION, WITH ANCHOR RODS INCLUDED. IN ACCORDANCE WITH AASHTO GUIDELINES, IF THE FOUNDATION HEIGHT, INCLUDING ANCHOR RODS, EXTENDS BEYOND THESE SPECIFIED LIMITS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SEE FOUNDATION EXTENSION DETAIL.
- THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
- THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION. FOUNDATION TOP SHALL BE CHAMFERED 3/4-IN. (20 mm).
- THE CONCRETE SHALL BE CLASS SL. CONCRETE SHALL CURE ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
- THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
- THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
- ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UM(6 MILS) OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1136.
- THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES (150 mm) WITH A MINIMUM OF 3 INCHES (75 mm) OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
- ANCHOR RODS SHALL PROJECT 2 3/4" (69.9 mm) ABOVE THE TOP OF THE FOUNDATION. IF BREAKAWAY COUPLINGS ARE SPECIFIED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR ROD PROJECTION WITH THE INSTALLATION REQUIREMENTS OF THE BREAKAWAY COUPLINGS.
- THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6" (152.4 mm) PITCH OR MAY SUBSTITUTE #3 TIES AT 12" (304.8 mm) O.C. WITH THE APPROVAL OF THE ENGINEER.
- THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED AS SPECIFIED BEFORE THE LIGHT POLE IS ERECTED.
- THE RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.

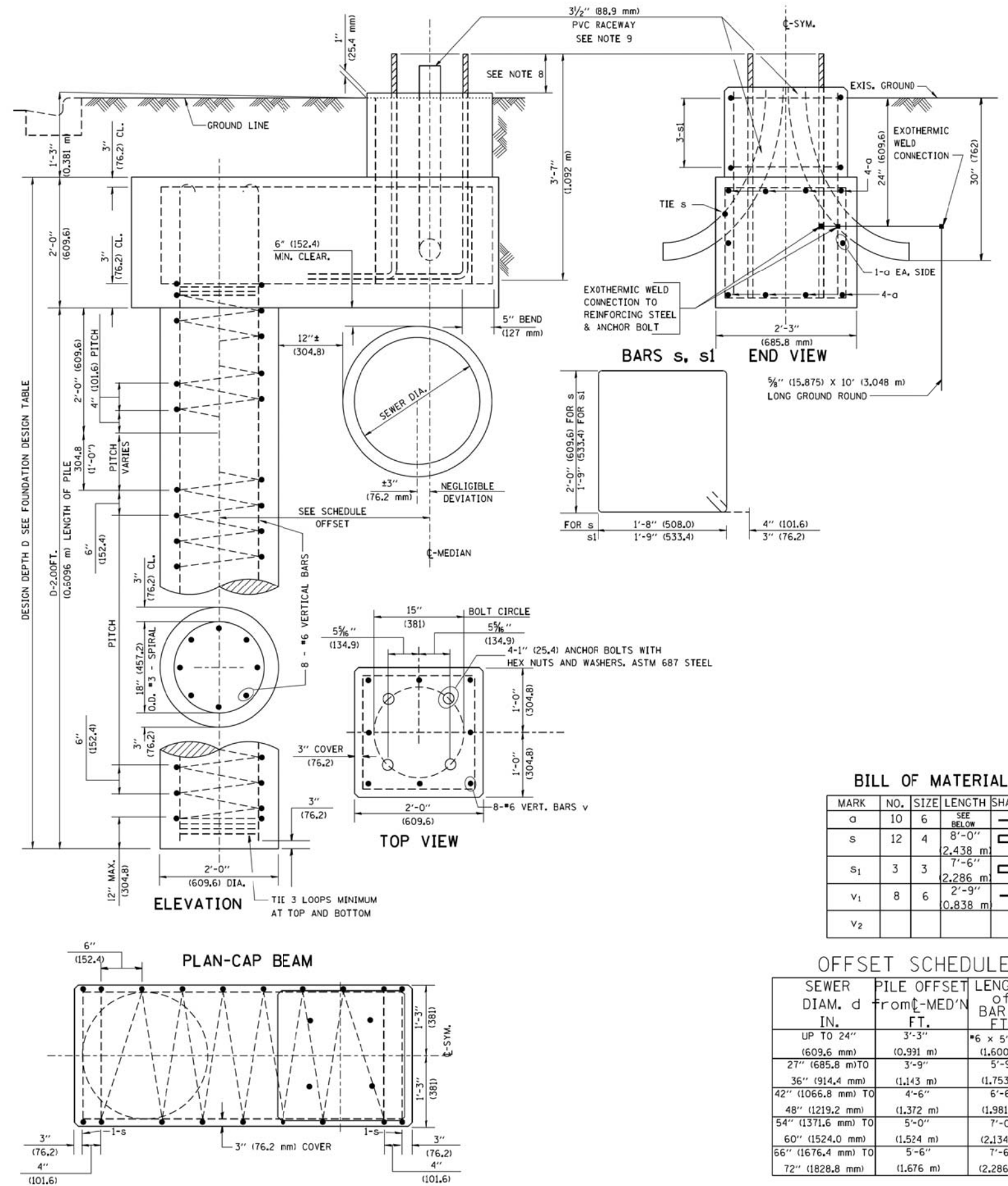


FOUNDATION DESIGN TABLE

TYPE OF SOIL	DESIGN DEPTH OF FOUNDATION		REINFORCEMENT IN FOUNDATION			
	SINGLE ARM D	TWIN ARM D	SINGLE ARM		TWIN ARM	
			VERT BARS	SPIRAL	VERT BARS	SPIRAL
SOFT CLAY	13'-0" (3,962 m)	15'-0" (4,572 m)	8-#6X12'-6" (3,810 m)	#3X122' (37,186 m)	8-#6X14'-3" (4,343 m)	#3X141' (42,977 m)
MEDIUM CLAY	9'-6" (2,896 m)	10'-9" (3,277 m)	8-#6X9'-0" (2,743 m)	#3X90' (27,432 m)	8-#6X10'-0" (3,048 m)	#3X100' (30,480 m)
STIFF CLAY	7'-0" (2,134 m)	8'-0" (2,438 m)	8-#6X6'-6" (1,981 m)	#3X66' (20,112 m)	8-#6X7'-6" (2,286 m)	#3X76' (23,165 m)
LOOSE SAND	9'-0" (2,743 m)	10'-0" (3,048 m)	8-#6X8'-6" (2,591 m)	#3X85' (25,908 m)	8-#6X9'-6" (2,896 m)	#3X94' (28,651 m)
MEDIUM SAND	8'-3" (2,515 m)	9'-0" (2,743 m)	8-#6X8'-0" (2,438 m)	#3X78' (23,774 m)	8-#6X8'-6" (2,591 m)	#3X85' (25,908 m)
DENSE SAND	7'-9" (2,362 m)	9'-0" (2,743 m)	8-#6X7'-6" (2,286 m)	#3X73' (22,250 m)	8-#6X8'-6" (2,591 m)	#3X85' (25,908 m)
ROCK OR SOLIDIFIED SLAG	5'-0" (1,524 m)	5'-0" (1,524 m)	NONE	NONE	NONE	NONE

NOTES

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
- THE ENGINEER SHALL DETERMINE THE CLASS OF SOIL DURING EXCAVATION AND SELECT THE DESIGN DEPTH OF FOUNDATION FROM THE DESIGN TABLE.
- EXCAVATION OF THE POLE FOUNDATION SHALL BE MADE WITH AN AUGER, 24" (609.6 mm) OR 30" (762.0 mm) IN DIAMETER.
- THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
- THE ANCHOR BOLTS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED IN THE FORM.
- THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
- THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF FOUNDATION WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS. IF LIGHT POLE IS MOUNTED WITHOUT BREAKAWAY DEVICE, ANCHOR BOLTS SHALL PROJECT 2 3/4" (69.9 mm) ABOVE TOP OF THE FOUNDATION. THE CONTRACTOR SHALL CONFIRM ANCHOR BOLT EXTENTION WITH ENGINEER.
- RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.
- THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE LIGHT IS ERCTED.



**BILL OF MATERIAL**

MARK	NO.	SIZE	LENGTH	SHAPE
a	10	6	SEE BELOW	—
s	12	4	8'-0" (2,438 m)	□
s1	3	3	7'-6" (2,286 m)	□
v1	8	6	2'-9" (0,838 m)	—
v2				

**OFFSET SCHEDULE**

SEWER DIAM. d IN.	PILE OFFSET from C-MED'N FT.	LENGTH of BAR a FT.
UP TO 24" (609,6 mm)	3'-3" (0,991 m)	#6 x 5'-3" (1,600 m)
27" (685,8 mm) TO 36" (914,4 mm)	3'-9" (1,143 m)	5'-9" (1,753 m)
42" (1066,8 mm) TO 48" (1219,2 mm)	4'-6" (1,372 m)	6'-6" (1,981 m)
54" (1371,6 mm) TO 60" (1524,0 mm)	5'-0" (1,524 m)	7'-0" (2,134 m)
66" (1676,4 mm) TO 72" (1828,8 mm)	5'-6" (1,676 m)	7'-6" (2,286 m)

FILE NAME = K:\diststd\22x34\be310.dgn	USER NAME = bouerd1	DESIGNED -	REVISED - 06-16-08 R. TOMSONS
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LIGHT POLE FOUNDATION OFFSET  
40' (12,192 m) TO 47 1/2' (14,478 m) M.H.  
15" (381 mm) BOLT CIRCLE

SCALE: N.T.S. SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	440
BE-310		CONTRACT NO.	61F33	
ILLINOIS FED. AID PROJECT				

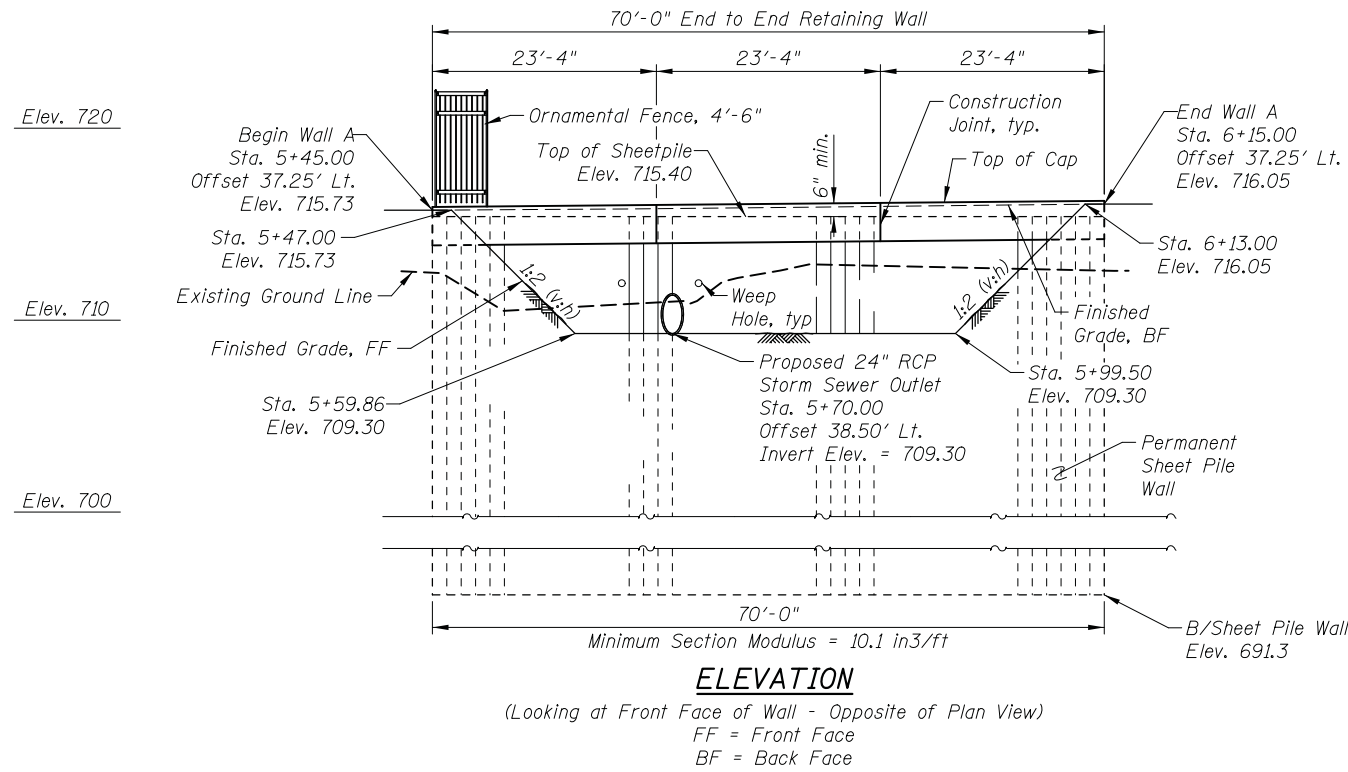
6/16/2008  
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bouerd1

**Benchmark:** T.B.M. #1 Railroad spike (set) in power pole in the Northeast quadrant of the intersection of Illinois Route 131 and Fourteenth Street. Sta. 0+36.3, Offset 47.5' Lt., Elevation 716.65.

**Existing Structure:** None.

**Maintenance of Traffic:** Traffic will be maintained utilizing staged construction.

**Salvage:** None.



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Porous Granular Backfill	Cu. Yd.	15
Concrete Structures	Cu. Yd.	10.4
Reinforcement Bars, Epoxy Coated	Pound	880
Permanent Sheet Piling	Sq. Ft.	1,743
Geocomposite Wall Drain	Sq. Yd.	12
Ornamental Fence	Foot	70

**GENERAL NOTES:**

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

**CURVE DATA**

$\Delta = 6^\circ 25' 48.36''$  (Lt.)  
 $D = 0^\circ 52' 03.39''$   
 $R = 6,603.88'$   
 $T = 370.95'$   
 $L = 741.13'$   
 $E = 10.41'$   
 P.C. Sta. = 62+38.75  
 P.T. Sta. = 69+79.88  
 P.I. Sta. = 66+09.71

**DESIGN STRESSES**

**FIELD UNITS**

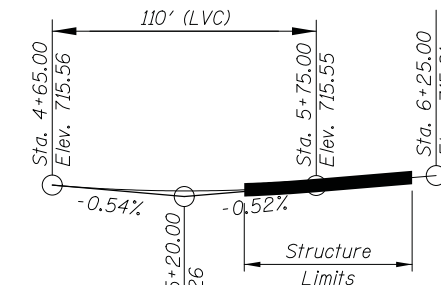
$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (ASTM A572 GR 50)

**LOADING HL-93**

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

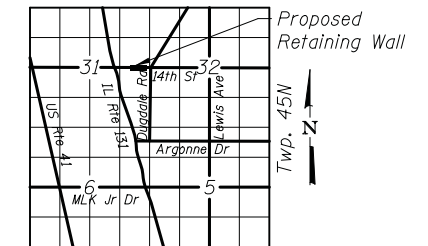
**DESIGN SPECIFICATIONS**

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

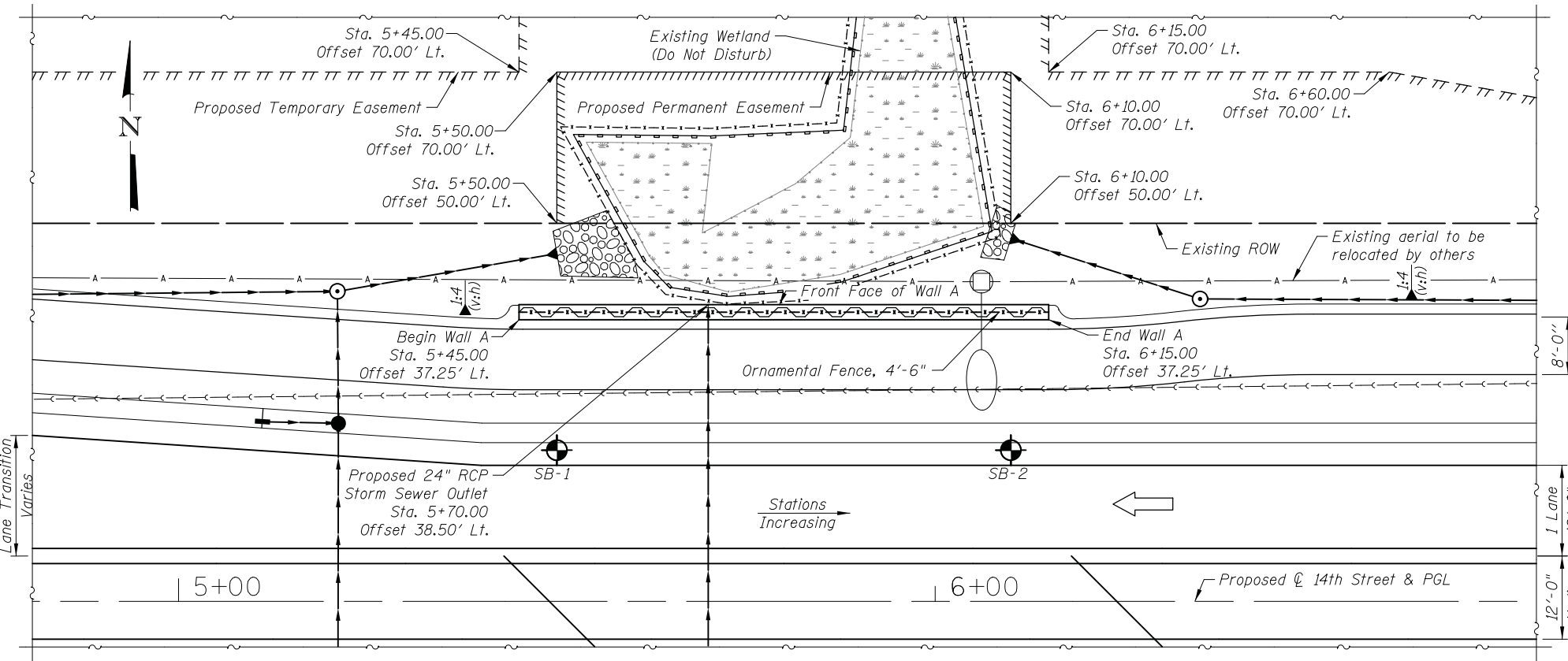


**EXISTING PROFILE**  
(along @ 14th Street)

**Range 12E - 3rd PM**



**LOCATION SKETCH**



**LEGEND**

- Existing Sanitary Sewer
- Existing Aerial Lines
- Proposed Storm Sewer
- Ornamental Fence
- Existing Wetland
- Temporary Landscaping Fence
- Erosion Control Barrier

**GENERAL PLAN & ELEVATION**

**WALL A**

**14TH STREET, F.A.U. RTE 1228**

**SECTION 99-00260-01-WR**

**LAKE COUNTY**

**STA. 5+45.00 TO STA. 6+15.00**

**GENERAL PLAN AND ELEVATION**  
**WALL A**  
**14TH STREET; F.A.U. 1228**  
 SHEET NO. S1 OF S3 SHEET

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	441
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

DRAWN - M. RENDINO	REVISED -
DESIGNED - M. RENDINO	REVISED -
CHECKED - G. HATLESTAD	REVISED -
DATE - 11/7/2018	REVISED -

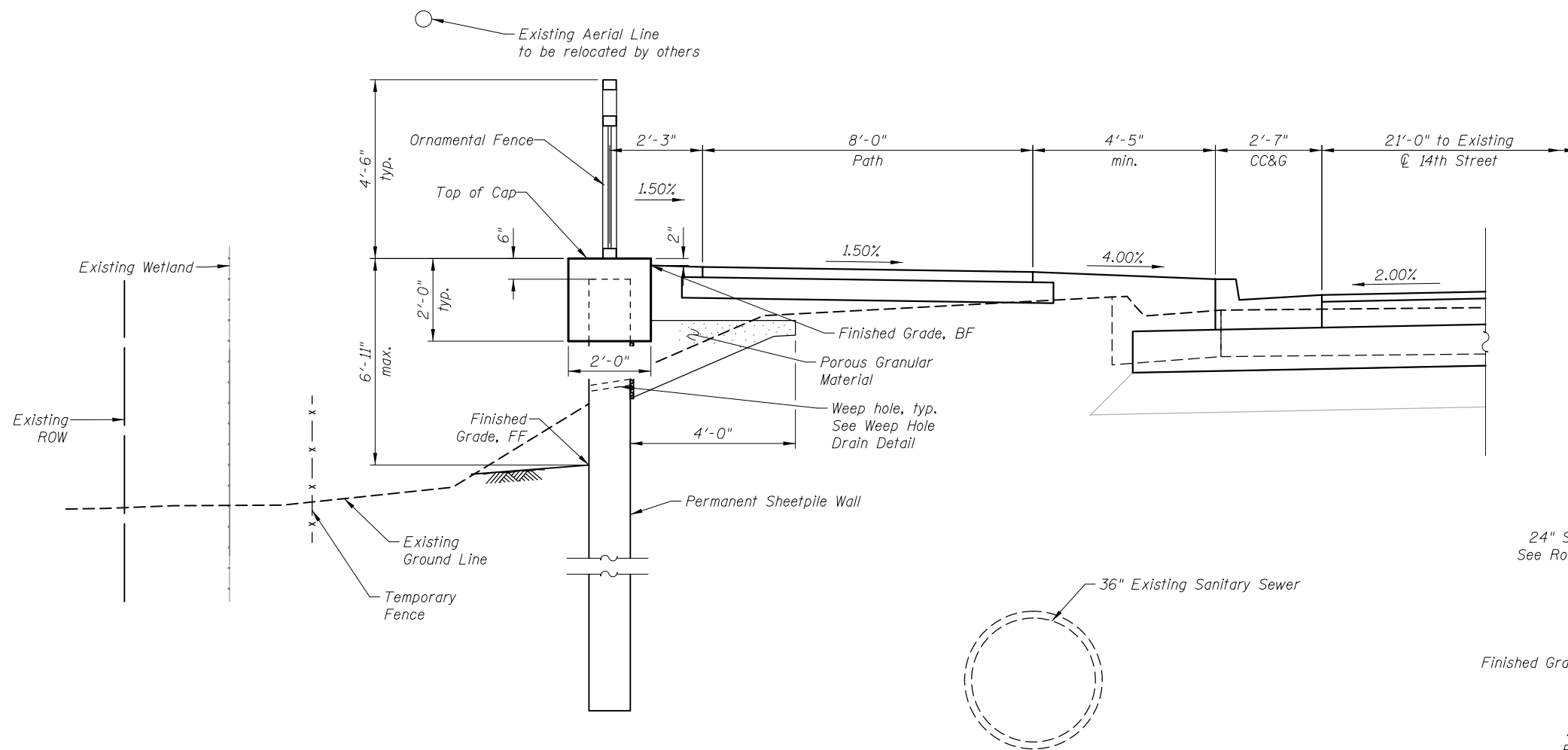
**CIVILTECH**  
 Two Pierce Place, Suite 1400  
 Itasca, Illinois 60143  
 Tel: 630.773.3900 Fax: 630.773.3975  
 www.civiltechinc.com

11/12/2018 T:\07152.PM cs:\p.wor\king\civiltech\production\jrr\dms20716.01.GPE\_Wall A.dgn

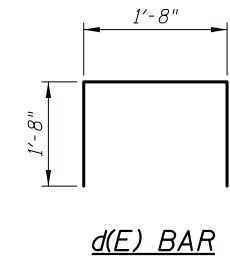


**REINFORCEMENT BAR LIST**

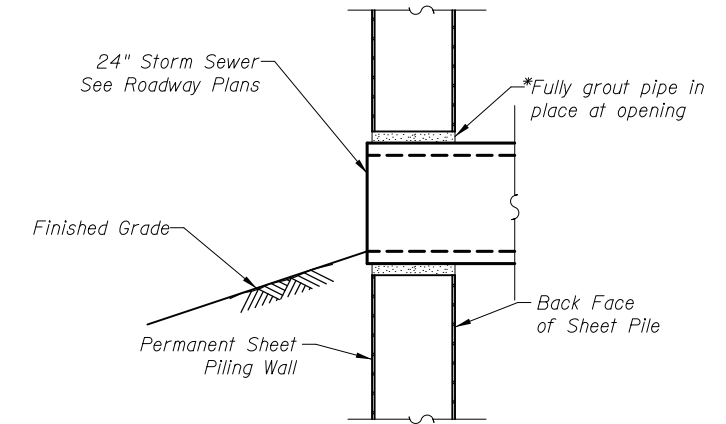
Bar	No.	Size	Length	Shape
d(E)	71	#4	5'-0"	□
h(E)	24	#5	25'-8"	—
Item		Unit	Quantity	
Concrete Structures		Cu. Yd.	10.4	
Reinforcement Bars, Epoxy Coated		Pound	880	



**MINIMUM LAP**  
#5 = 3'-7"

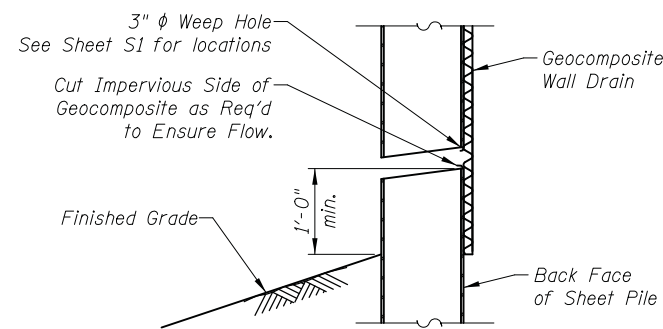


**TYPICAL CROSS SECTION**

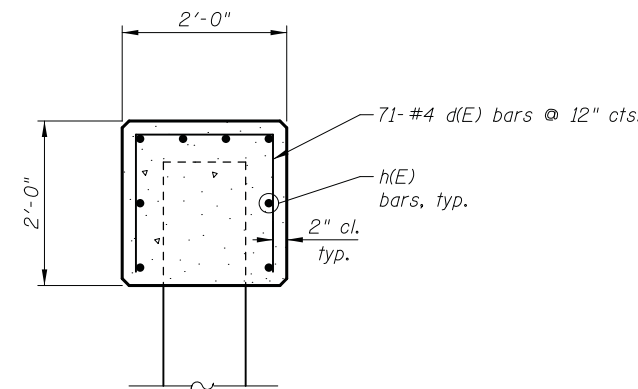


**WALL PENETRATION DETAIL**

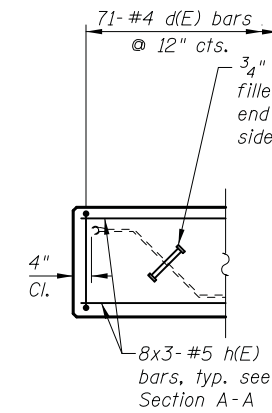
\*Note: Cut in Permanent Sheet Pile Wall for Storm Sewer Pipe. Cost of cutting hole in sheet piling and grouting pipe in place included in cost of Storm Sewer Pipe. See Roadway Plans.



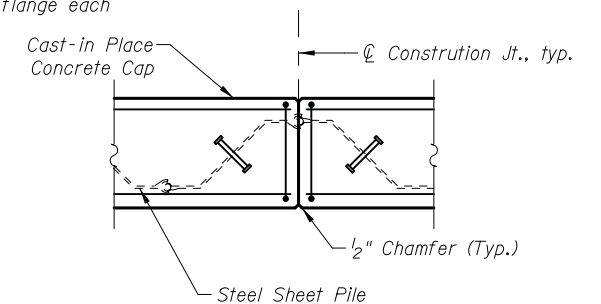
**WEEP HOLE DRAIN DETAIL**



**SECTION A-A CONCRETE CAP DETAIL**



**PILE CAP PLAN AT WALL END**

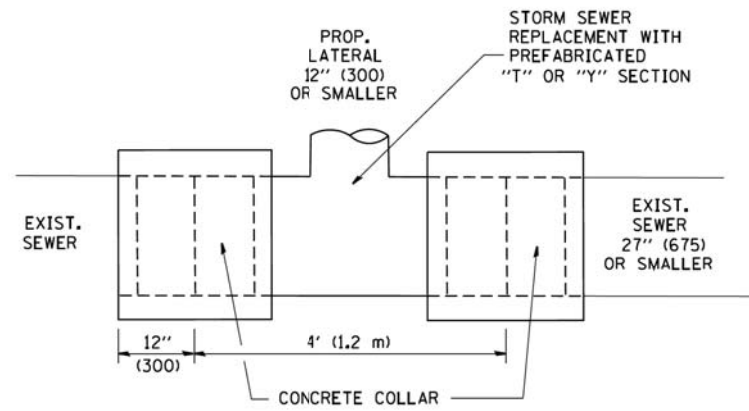


**PILE CAP PLAN AT CONSTRUCTION JOINT**

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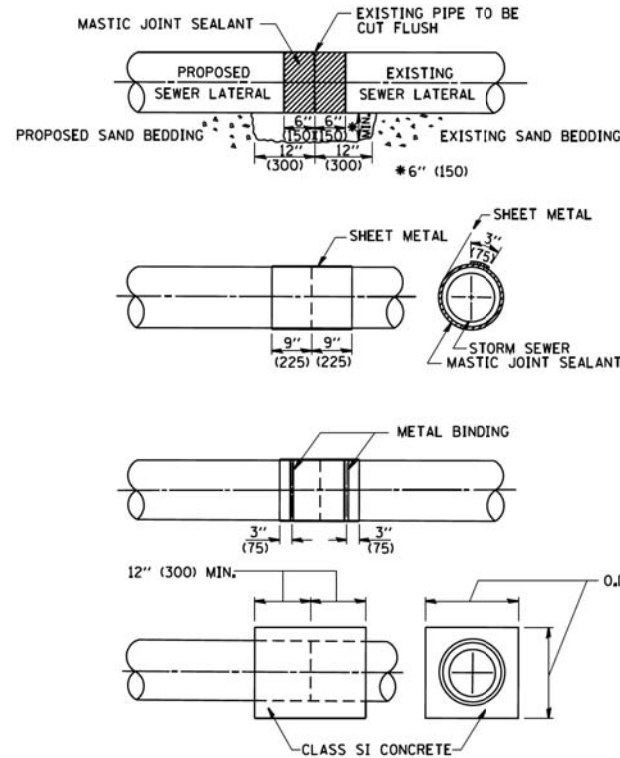






**DETAIL "A"**

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

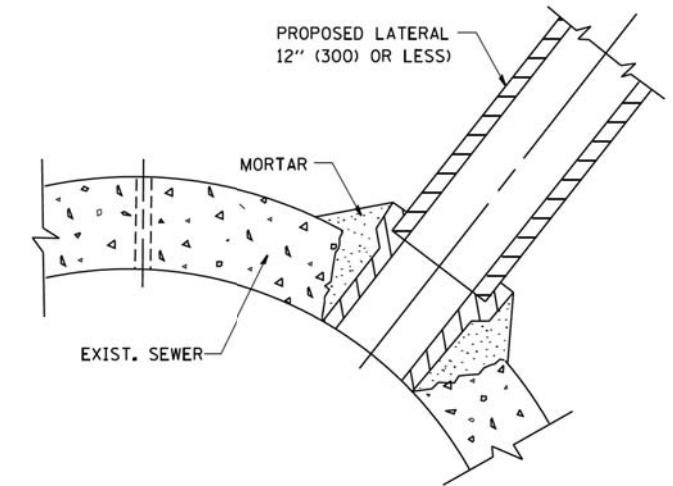


**DETAIL "B"**

CLASS SI CONCRETE COLLAR

**CONSTRUCTION SEQUENCE**

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12" x 6" (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERENCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OOOZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



**DETAIL "C"**

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

**NOTES**

**MATERIAL**

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

**CONSTRUCTION METHODS**

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

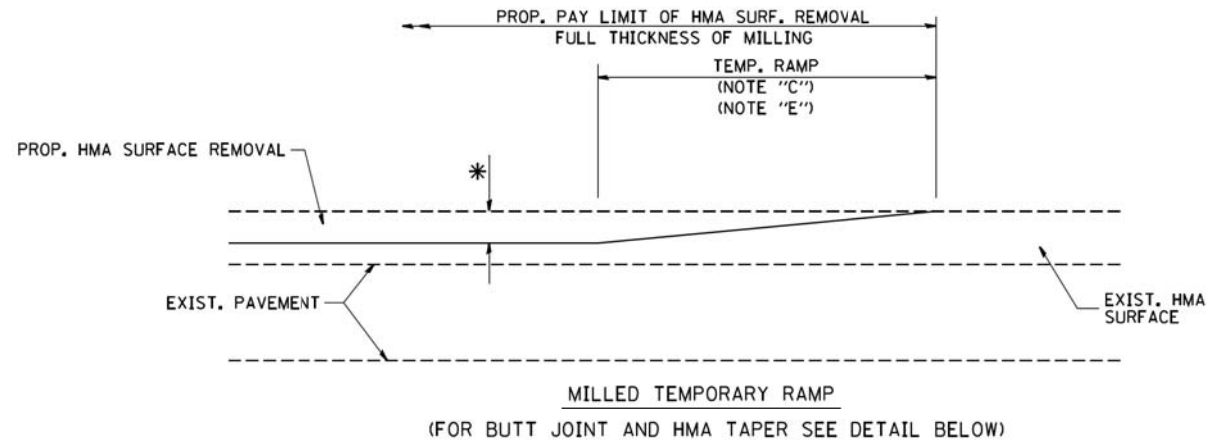
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		DRAWN -	REVISED - R. SHAH 09-09-94
	PLOT SCALE = 50,000' / IN.	CHECKED -	REVISED - R. SHAH 10-25-94
	PLOT DATE = 1/4/2008	DATE - 07-25-90	REVISED - R. SHAH 06-12-96

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

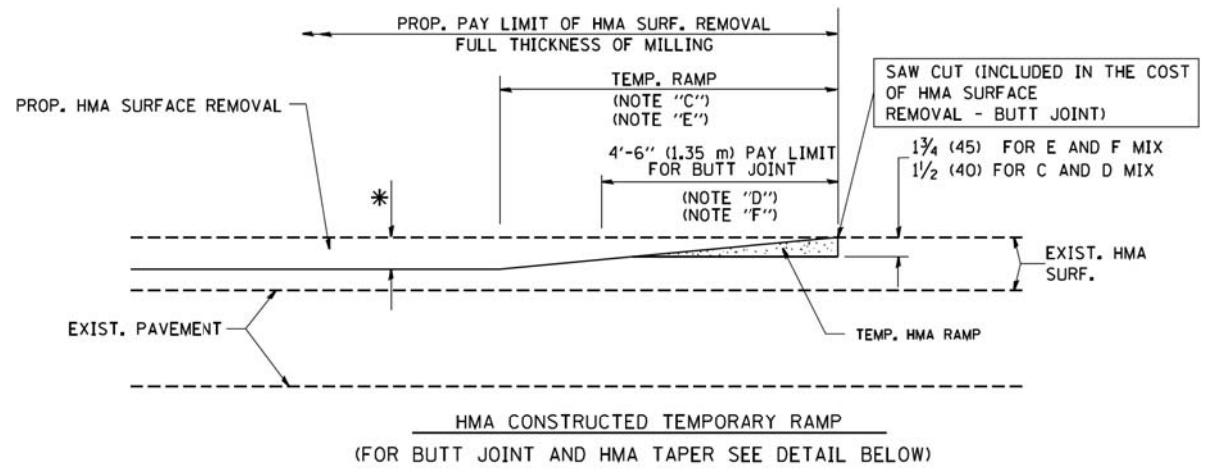
<b>DETAIL OF STORM SEWER CONNECTION TO EXISTING SEWER</b>	
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS
STA.	TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	444
<b>BD500-01 (BD-7)</b>		CONTRACT NO. 61F33		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

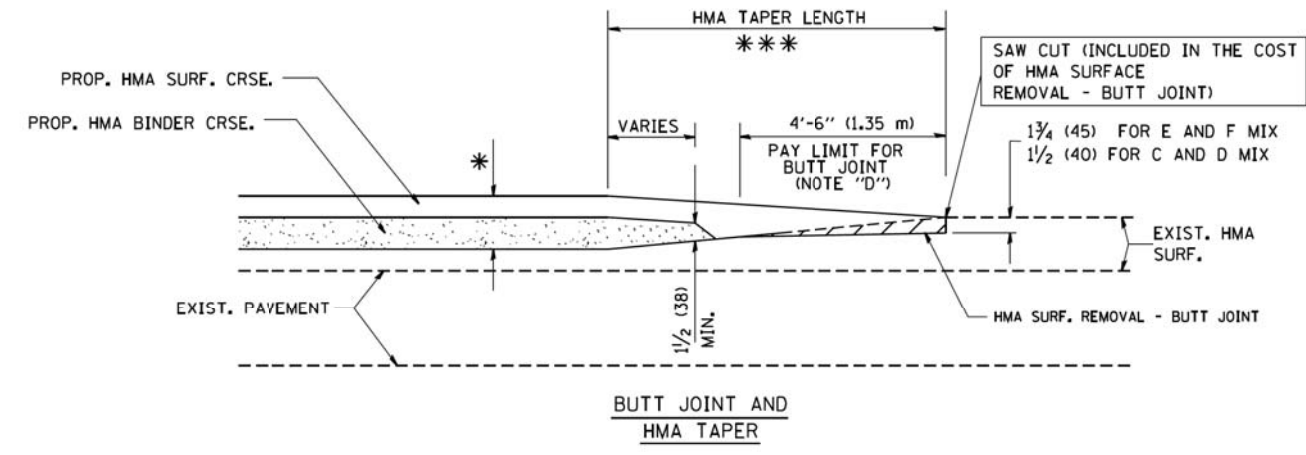




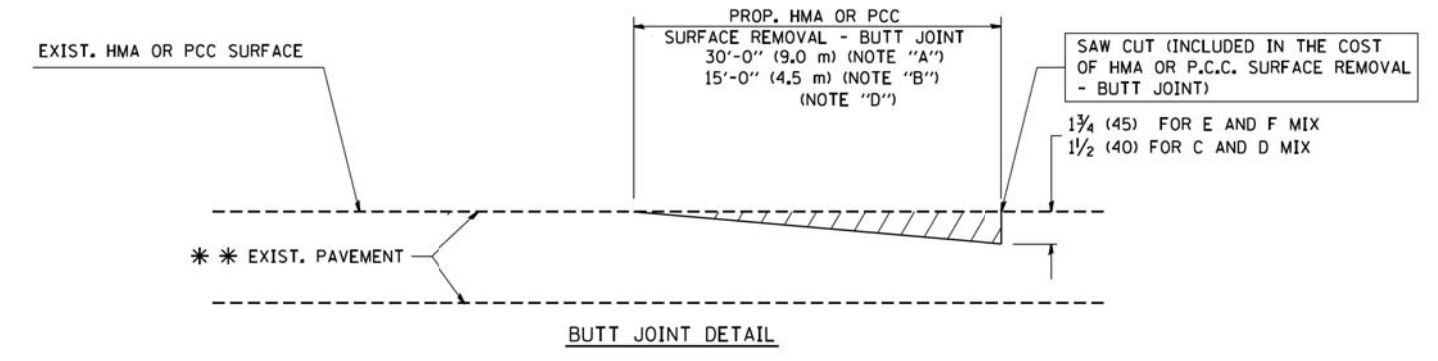
**OPTION 1**



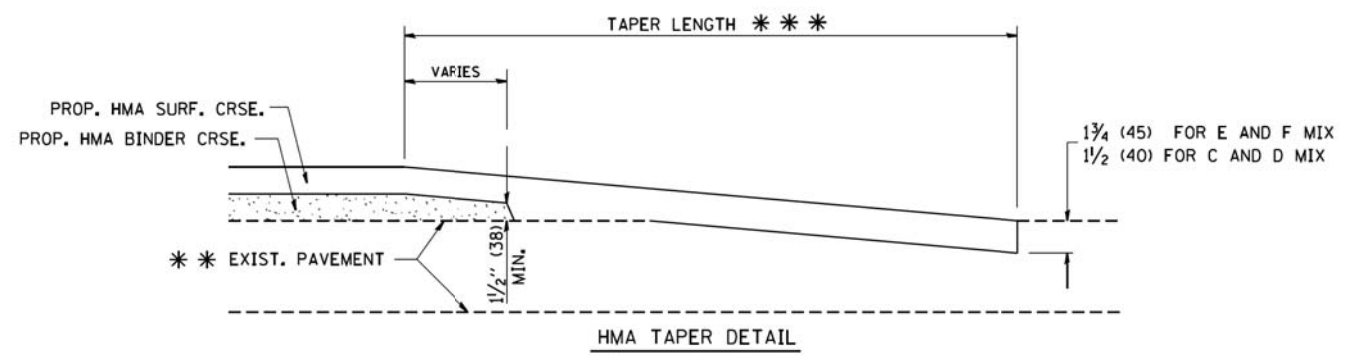
**OPTION 2**  
**TYPICAL TEMPORARY RAMP**



**TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING**



**BUTT JOINT DETAIL**



**HMA TAPER DETAIL**

**TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY**

\*\*\* PC CONCRETE, HMA OR HMA 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 HMA SURFACE.
  - D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
  - E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.
  - F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT
  - G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".
- \* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.
- \*\*\* 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")  
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

**BASIS OF PAYMENT:**

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL - BUTT JOINT".

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

FILE NAME = W:\diststd\22x34\bd32.dgn	USER NAME = gaglianobt	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94
		DRAWN -	REVISED - A. ABBAS 03-21-97
	PLOT SCALE = 50.0000' / IN.	CHECKED -	REVISED - M. GOMEZ 04-06-01
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07

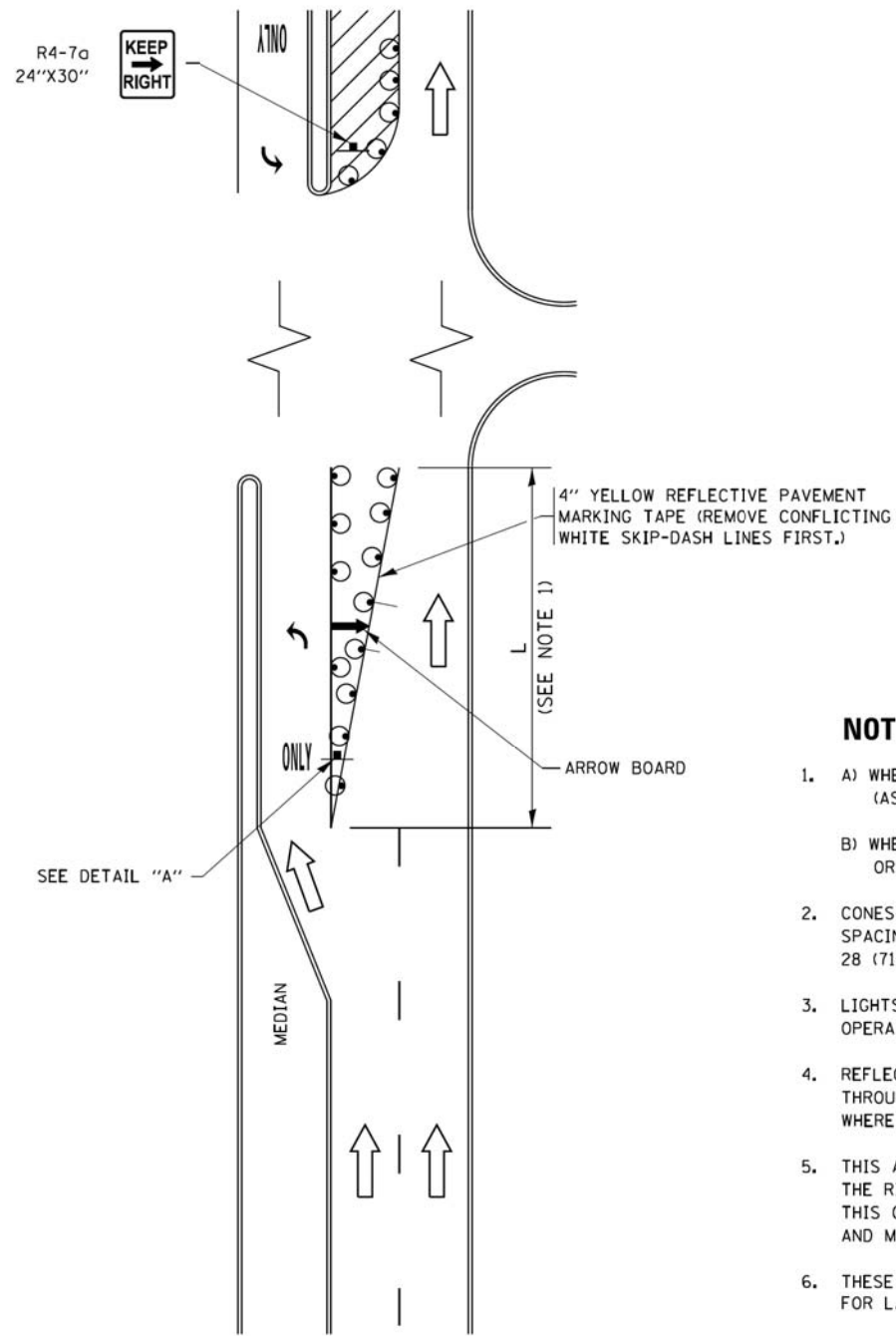
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BUTT JOINT AND**  
**HMA TAPER DETAILS**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

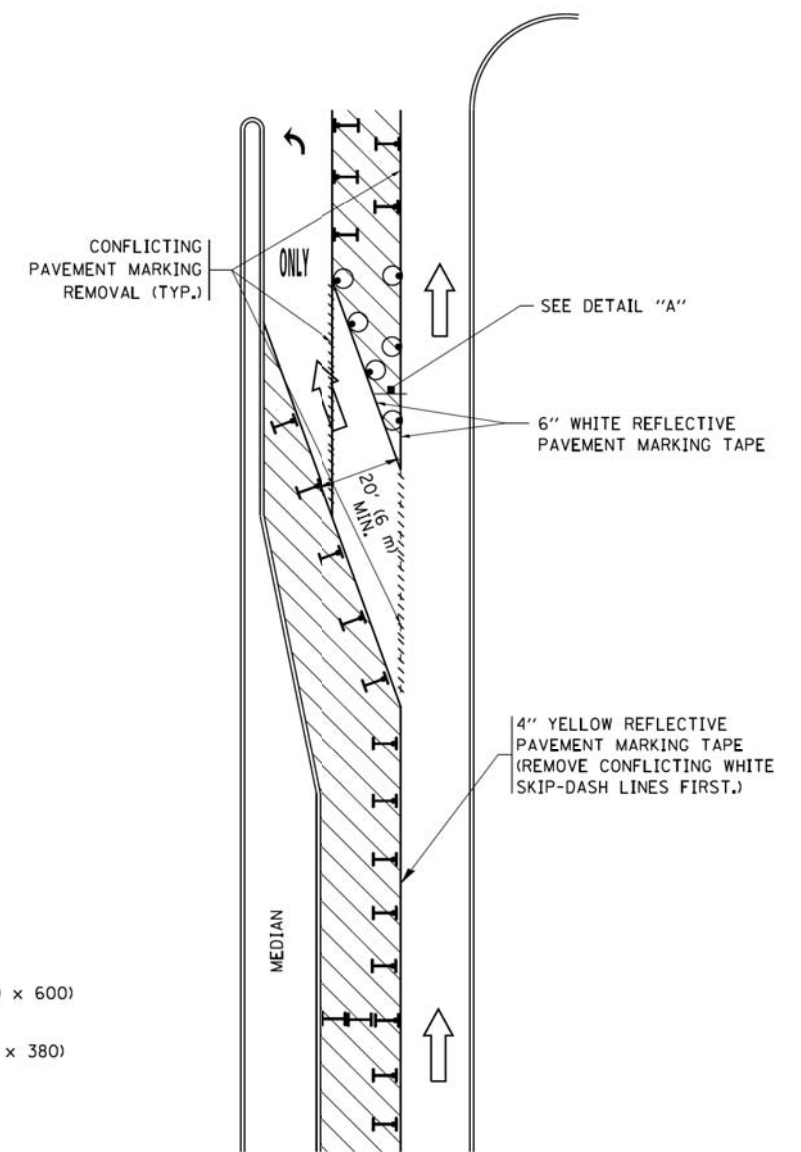
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	445
BD400-05 BD32		CONTRACT NO. 61F33		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

# TURN BAY ENTRANCE AT START OF LANE CLOSURE TAPER



**FIGURE 1**

# TURN BAY ENTRANCE WITHIN A LANE CLOSURE



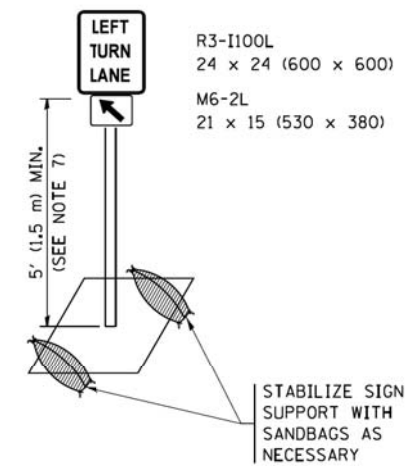
**FIGURE 2**

## LEGEND

- WORK AREA
- LANE OPEN TO TRAFFIC
- ARROW BOARD
- TYPE I OR II BARRICADE OR DRUM WITH STEADY BURN LIGHT
- DRUM WITH STEADY BURN LIGHT
- SIGN ASSEMBLY
- TYPE I OR II CHECK BARRICADE WITH FLASHING LIGHT

## NOTES:

1. A) WHEN "L" IS  $\leq$  THE STORAGE LENGTH OF THE TURN LANE (AS SHOWN IN FIG. 1), USE FIGURE 1.  
B) WHEN "L" IS  $>$  THE STORAGE LENGTH OF THE TURN LANE OR THE TURN LANE IS WITHIN THE LANE CLOSURE, USE FIGURE 2.
2. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT.
3. LIGHTS WILL NOT BE REQUIRED ON BARRICADES OR DRUMS FOR DAY OPERATIONS. ALL LIGHTS SHALL BE MONODIRECTIONAL.
4. REFLECTIVE TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED THROUGHOUT THE BARRICADED AREAS OF EACH TURN BAY AS SHOWN WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN (14) DAYS.
5. 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-I100R 24 x 24 (600 x 600) AND M6-2R 21 x 15 (530 x 380) SHALL BE USED.
6. THESE CONTROLS SHALL SUPPLEMENT MAINLINE TRAFFIC CONTROL FOR LANE CLOSURES.
7. THE SIGNS SHALL BE MOUNTED ABOVE THE BARRICADES/DRUMS ON SEPARATE SIGN SUPPORTS THAT MEET NCHRP 350 OR MASH PREQUIREMENTS.
8. TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

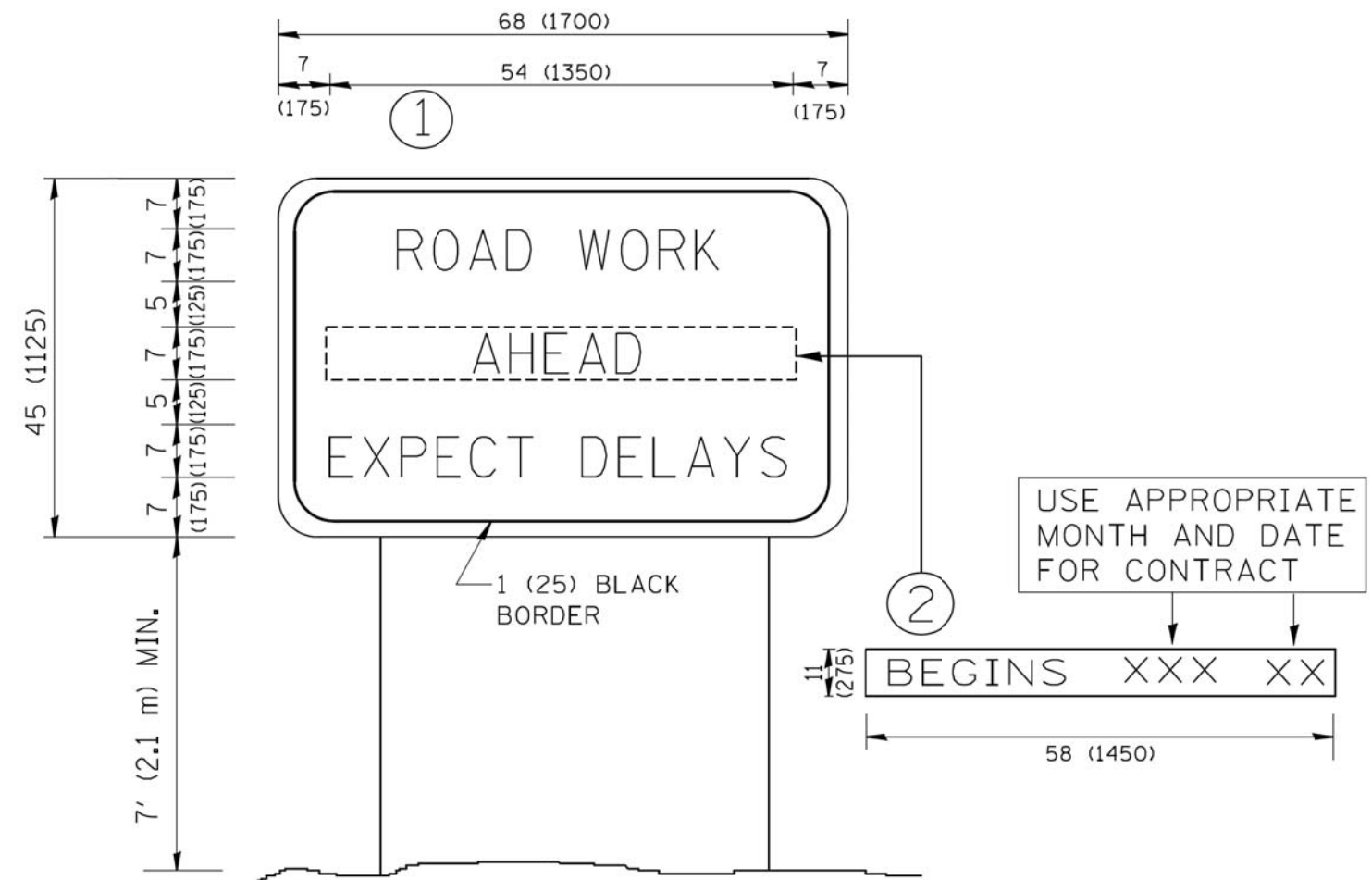


**DETAIL A**

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

FILE NAME =	USER NAME = footenj	REVISED - T. RAMMACHER 09-08-94	REVISED - R. BORO 09-14-09	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)</b>			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Default		REVISED - A. HOUSEH 10-07-95	REVISED - A. SCHUETZE 07-01-13					1228	99-00260-01-WR	LAKE	566	446
	PLOT SCALE = 50,0000' / in.	REVISED - A. HOUSEH 10-12-96	REVISED - A. SCHUETZE 09-15-16		<b>TC-14</b>			<b>CONTRACT NO. 61F33</b>				
	PLOT DATE = 9/15/2016	REVISED - T. RAMMACHER 01-06-00	REVISED -		ILLINOIS FED. AID PROJECT							





**NOTES:**

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

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

FILE NAME = W:\diststd\22x34\tc22.dgn	USER NAME = goglianobt	DESIGNED -	REVISED - R. MIRS 09-15-97
		DRAWN -	REVISED - R. MIRS 12-11-97
	PLOT SCALE = 50.000' / IN.	CHECKED -	REVISED - T. RAMMACHER 02-02-99
	PLOT DATE = 1/4/2008	DATE -	REVISED - C. JUCIUS 01-31-07

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ARTERIAL ROAD  
INFORMATION SIGN**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	447
<b>TC-22</b>			<b>CONTRACT NO. 61F33</b>	
<small>FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT</small>				



FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

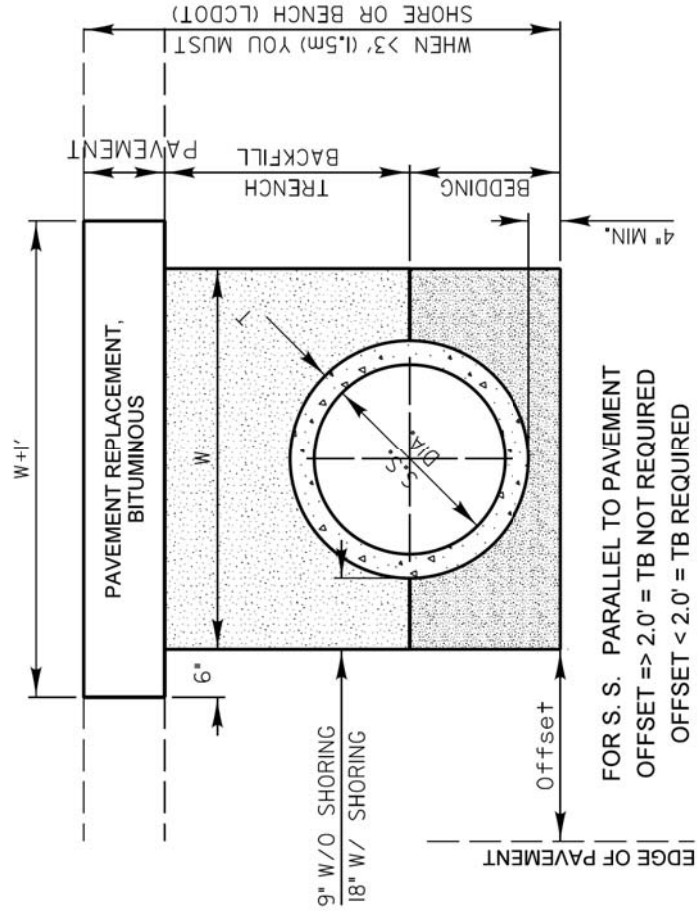
ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

**DESIGN NOTES:**

1. Trench backfill is required if the storm sewer or culvert offset from the edge of the pavement is less than the tabulated values (the inner trench wall is closer than 2' to the edge of pavement)
2. Payment for the trench backfill shall not exceed the quantity computed using the maximum trench width dimensions. If the trench is excavated beyond these limits, the contractor shall furnish and place any additional trench backfill at his/her expense.
3. If the trench width is less than the above maximum values, payment will be based on the actual dimensions of the dug trench.
4. Bedding shall be placed from 4" under the pipe to the spring line of the pipe and is incidental to the corresponding storm sewer or culvert pay item.
5. If any part of the excavation for a drainage structure falls within 2' of the edge of pavement, the space between the side of the excavation and the outer surface of the drainage structure shall be filled with trench backfill. The cost of this item is included in the pay item for the drainage structure.

ENGLISH	TRENCH WIDTH (W)		MIN OFFSET FROM E.O.P.* FOR NO TB		1/2 PIPE AREA [O.D.] (SQ.FT)
	WITHOUT SHORING (FT)	WITH SHORING (FT)	WITHOUT SHORING (FT)	WITH SHORING (FT)	
10	2.67	4.17	3.33	4.08	0.53
12	2.83	4.33	3.42	4.17	0.70
15	3.13	4.63	3.56	4.31	1.04
18	3.42	4.92	3.71	4.46	1.44
21	3.71	5.21	3.85	4.60	1.92
24	4.00	5.50	4.00	4.75	2.45
27	4.29	5.79	4.15	4.90	3.06
30	4.58	6.08	4.29	5.04	3.73
36	5.17	6.67	4.58	5.33	5.28
42	5.75	7.25	4.88	5.63	7.09
48	6.33	7.83	5.17	5.92	9.17

\* TO CENTER LINE OF PIPE



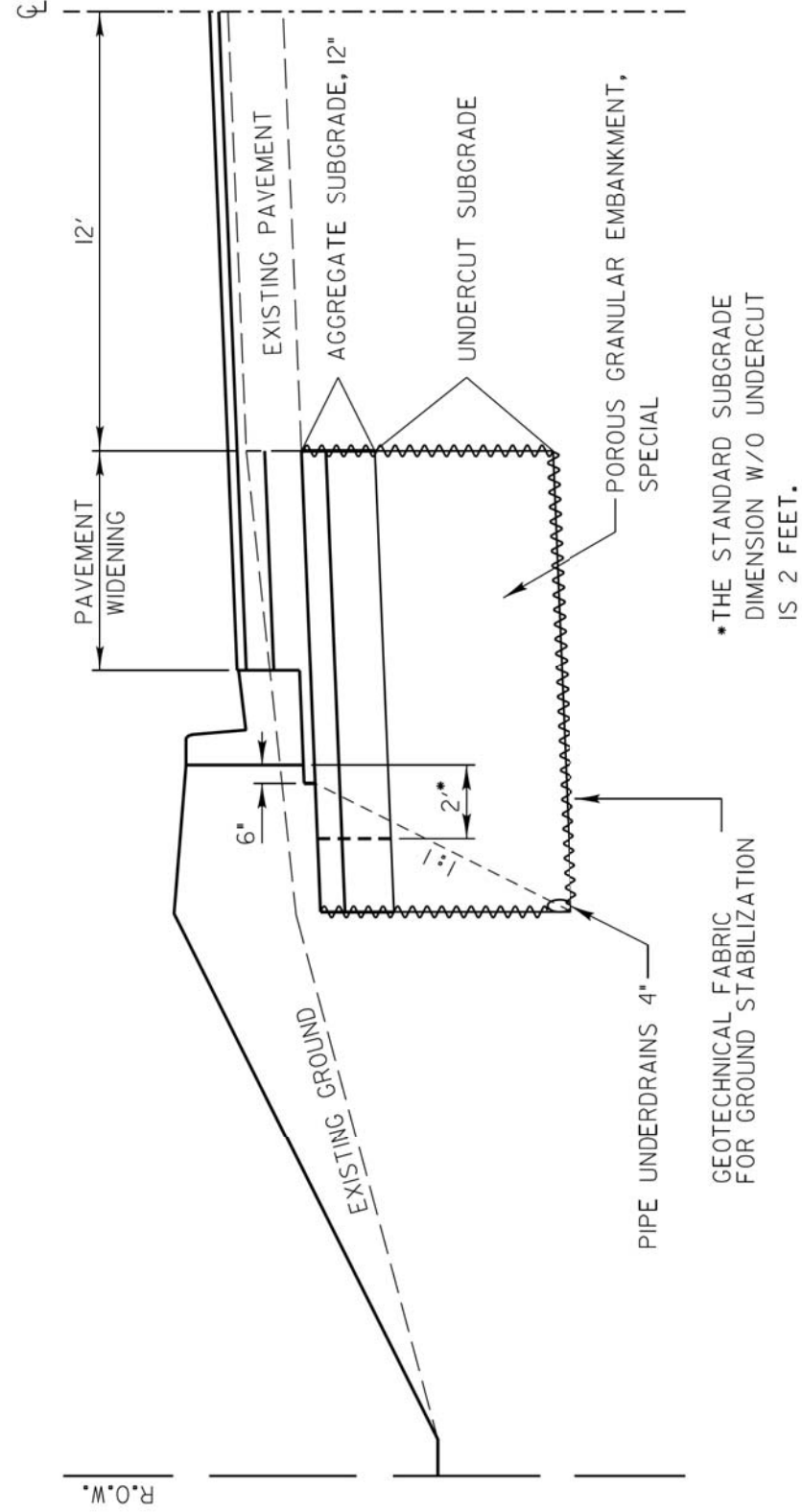
FOR S. S. PARALLEL TO PAVEMENT  
 OFFSET => 2.0' = TB NOT REQUIRED  
 OFFSET < 2.0' = TB REQUIRED

SCALE: 1" = 2'

REVISIONS		DATE	LakeCounty Division of Transportation	APPROVED BY: M. G. ZEMAITIS DATE: APRIL 1, 2007
Text Revision		11/06/07		
Text Update		7/14/11		

**TRENCH WIDTHS FOR  
 TRENCH BACKFILL &  
 PAVEMENT REPLACEMENT,  
 BITUMINOUS**

LC0020



\* THE STANDARD SUBGRADE DIMENSION W/O UNDERCUT IS 2 FEET.

IN UNSTABLE AREAS, THE SUBGRADE SHALL BE:  
 UNDERCUT (PAID FOR AS EARTH EXCAVATION PER CU YD);  
 REINFORCED WITH GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (PAID FOR PER SQ YD);  
 DRAINED BY INSTALLATION OF PIPE UNDERDRAINS, 4" (PAID FOR PER FOOT);  
 BACKFILLED WITH POROUS GRANULAR EMBANKMENT, SPECIAL (PAID FOR PER TON) AND;  
 TOPPED WITH AGGREGATE SUBGRADE, 12" (300mm) (PAID FOR PER SQ YD).

SCALE:  
 HORIZONTAL 1" = 5'  
 VERTICAL 1" = 2.5'

REVISIONS		DATE	LakeCounty Division of Transportation	APPROVED BY: M. G. ZEMAITIS DATE: APRIL 1, 2007

**UNDERCUT DETAIL**

LC2000

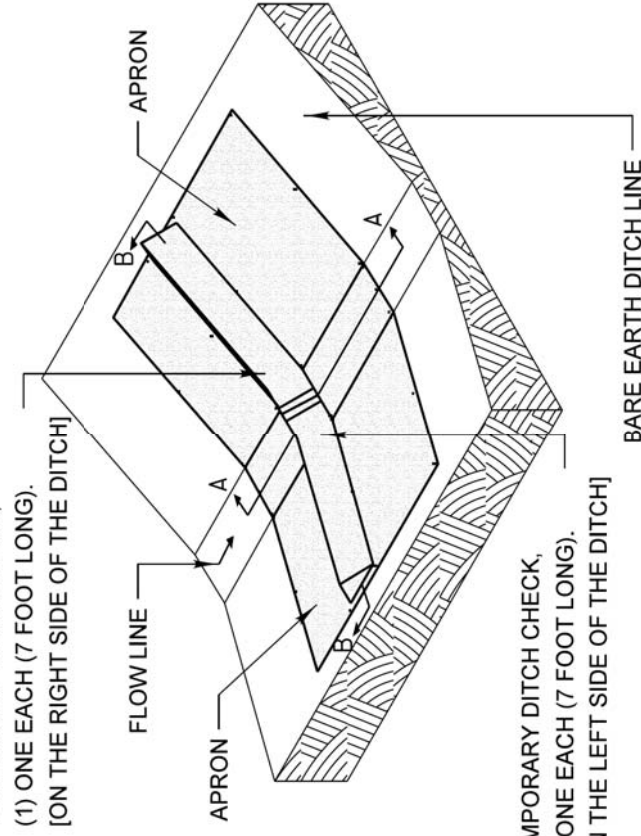


ORIGINAL SURVEY PLOTTED TEMPLATE AREAS CHECKED	BY	DATE
NO.		

FINAL SURVEY PLOTTED TEMPLATE AREAS CHECKED	BY	DATE
NO.		

# FOR BARE EARTH APPLICATION ONLY

TEMPORARY DITCH CHECK,  
(1) ONE EACH (7 FOOT LONG),  
[ON THE RIGHT SIDE OF THE DITCH]



TEMPORARY DITCH CHECK,  
(1) ONE EACH (7 FOOT LONG),  
[ON THE LEFT SIDE OF THE DITCH]

## SILT DIKE UNIT ISOMETRIC

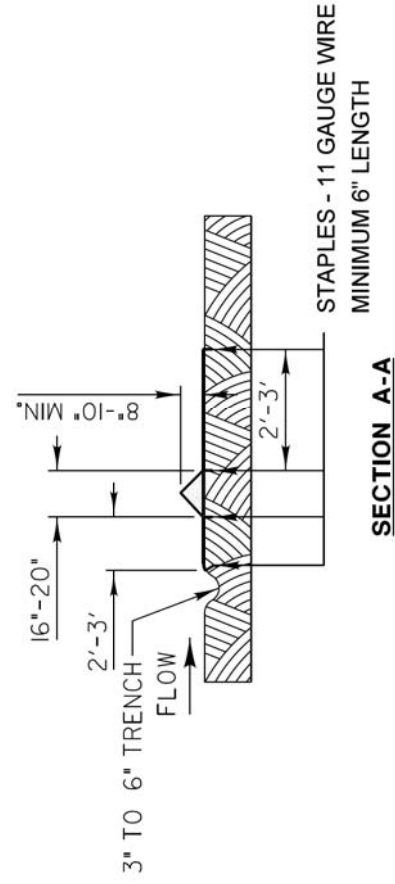
### NOTES:

THE TEMPORARY DITCH CHECK SHALL BE USED IN BARE EARTH DITCH LINES AND SHALL BE REMOVED JUST PRIOR TO THE INSTALLATION OF EROSION CONTROL BLANKET AND SEEDING.

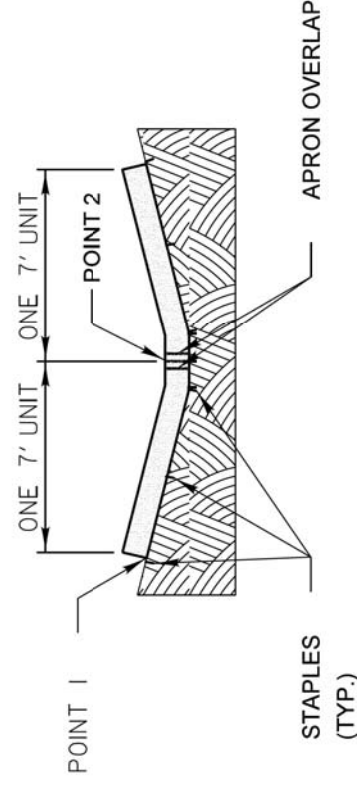
THE INSTALLATION SHOWN WILL BE MEASURED AND PAID FOR AS A TEMPORARY DITCH CHECK 14 FEET IN LENGTH.

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

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



### SECTION A-A



### SECTION B-B

REVISIONS	DATE
ADDED DIMENSIONS	04/11/08
REVISED PAY ITEM	04/15/10
ADDED PLASTIC BERM (pg2)	10/10/12

APPROVED BY: M. G. ZEMAITS  
DATE: APRIL 1, 2007

Lake County  
Division of Transportation

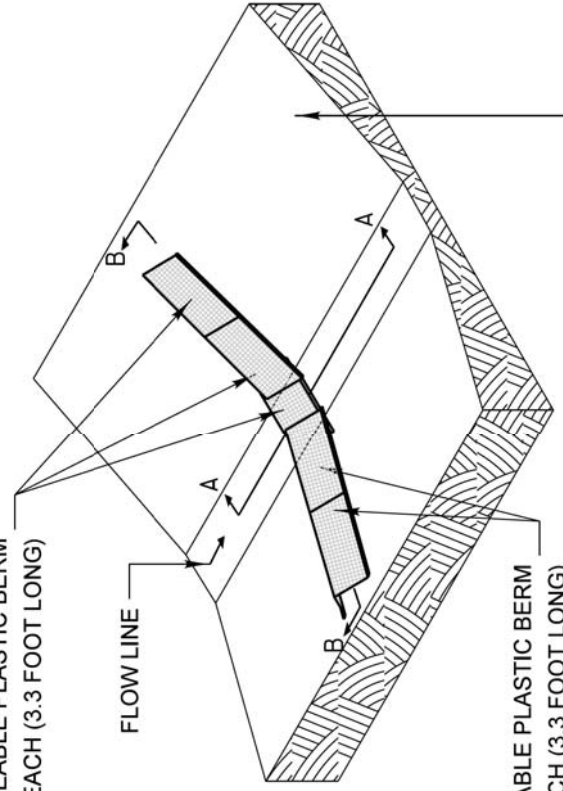
LC2050

TEMPORARY DITCH CHECK  
INSTALLATION FOR  
ROADWAY OR  
DRAINAGE DITCH

(SHEET 1 OF 2)

# FOR USE WHILE ESTABLISHING FINAL LANDSCAPING

PERMEABLE PLASTIC BERM  
ONE EACH (3.3 FOOT LONG)



PERMEABLE PLASTIC BERM  
ONE EACH (3.3 FOOT LONG)

DITCHLINE WITH EROSION  
CONTROL BLANKET &  
SEEDING APPLIED

## PERMEABLE PLASTIC BERM ISOMETRIC

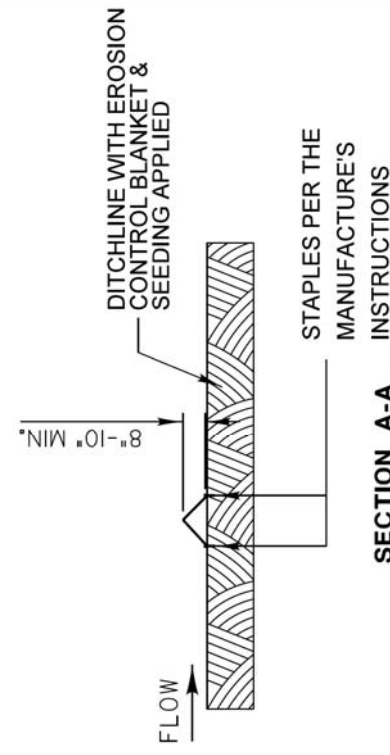
### NOTES:

THE PERMEABLE PLASTIC BERM SHALL REPLACE THE TEMPORARY DITCH CHECK AFTER THE INSTALLATION OF EROSION CONTROL BLANKET AND SEEDING.

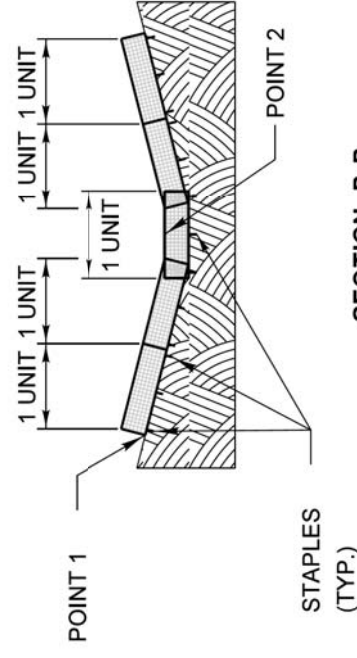
EACH PERMEABLE PLASTIC BERM IS 3.3 FEET IN LENGTH. THE MINIMUM INSTALLATION IN A DITCH SHALL BE THREE UNITS. THE INSTALLATION SHOWN WILL BE MEASURED AND PAID FOR AS A PERMEABLE PLASTIC BERM 16.5 FEET IN LENGTH (5 UNITS).

STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

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



### SECTION A-A



### SECTION B-B

REVISIONS	DATE
ADDED DIMENSIONS	04/11/08
REVISED PAY ITEM	04/15/10
ADDED PLASTIC BERM (pg2)	10/10/12

APPROVED BY: M. G. ZEMAITS  
DATE: APRIL 1, 2007

Lake County  
Division of Transportation

LC2050

TEMPORARY DITCH CHECK  
INSTALLATION FOR  
ROADWAY OR  
DRAINAGE DITCH

(SHEET 2 OF 2)



Two Pierce Place, Suite 1400  
Itasca, Illinois 60143  
Tel: 630.773.3900 Fax: 630.773.3975  
www.civiltechinc.com

DESIGNED - PK	REVISED -
DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LCDOT HIGHWAY STANDARDS

SHEET NO. 2 OF 22 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	449
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

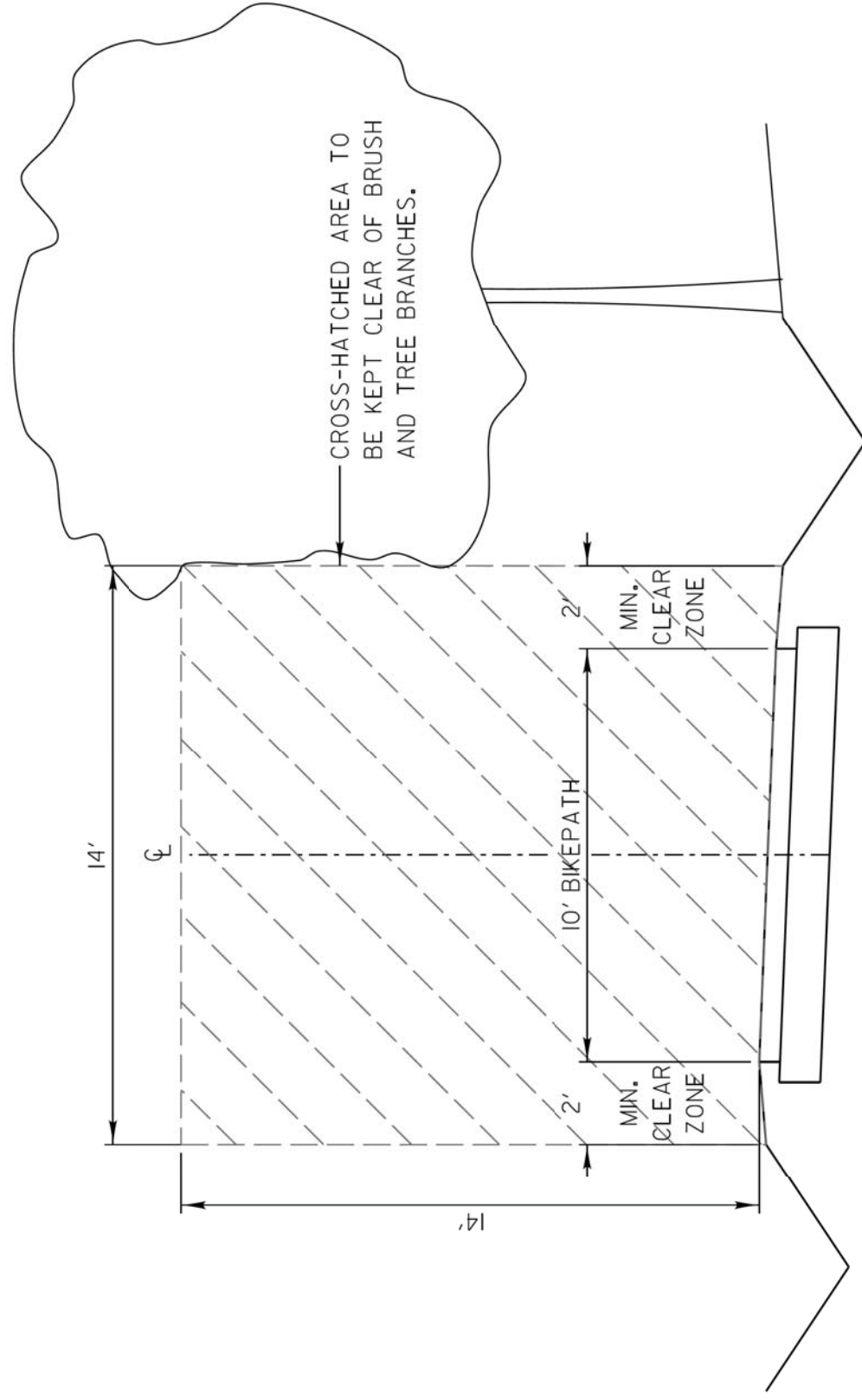






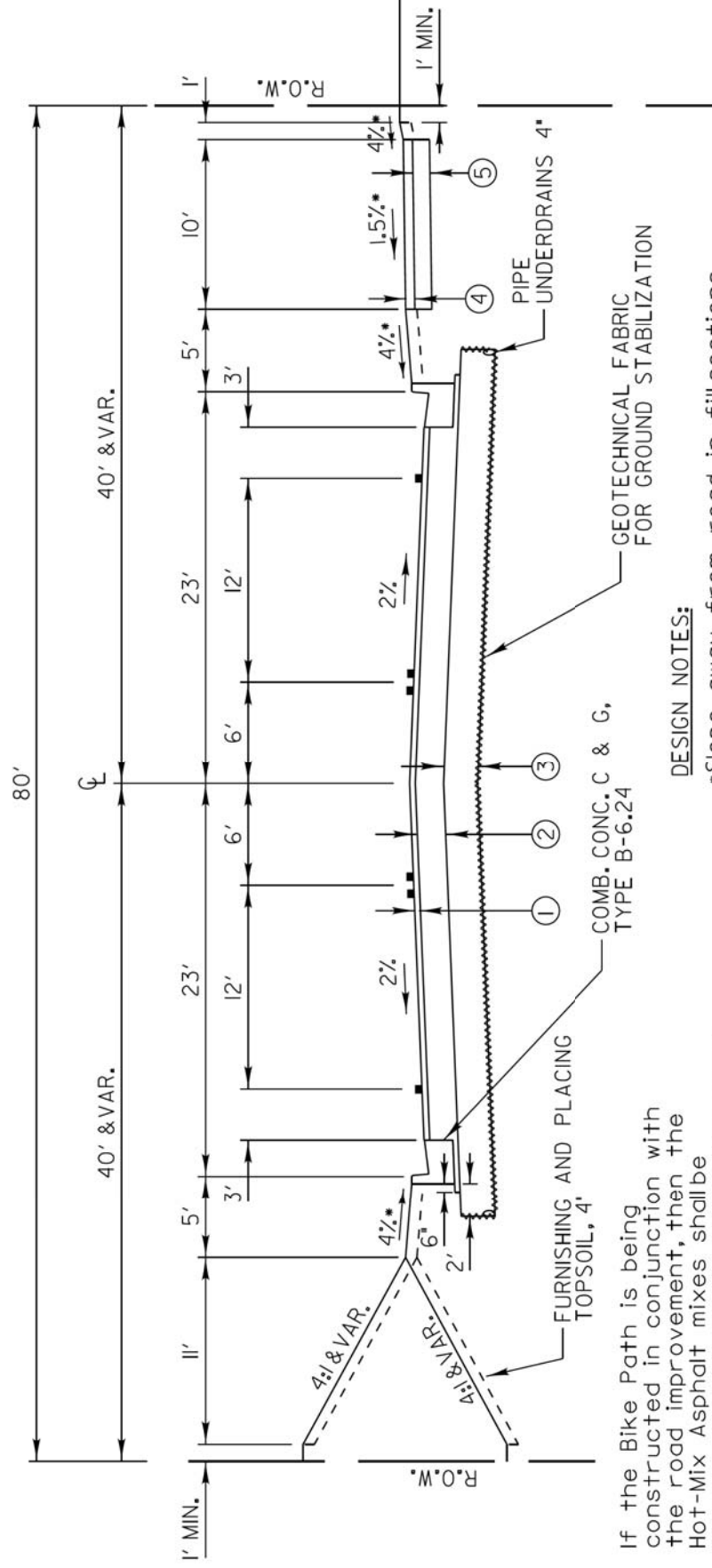
FINAL SURVEY PLOTTED	BY	DATE
NOTE BOOK AREAS CHECKED		

ORIGINAL SURVEY PLOTTED	BY	DATE
NOTE BOOK AREAS CHECKED		



LC2200	
APPROVED BY: M. G. ZEMAITS	DATE: 04/10/13
Lake County Division of Transportation	
VEGETATION MAINTENANCE REQUIRED CLEARANCE FOR 10' BIKEPATH	

SCALE:  
VERTICAL 1" = 2'  
HORIZONTAL 1" = 4'



**DESIGN NOTES:**

- \*Slope away from road in fill sections
- Slope toward road in cut sections
- \*\*\* Pavement materials & thicknesses are for an average county road and will vary with each project's pavement design.
- Due to proximity of C&G to through lane, the curbed half of this typical section is intended for posted speeds of 45 mph or less.

- ① 2" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 \*\*\*
- ② 10" HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70 \*\*\*
- ③ AGGREGATE SUBGRADE, 12"
- ④ 3" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50
- ⑤ AGGREGATE BASE COURSE, TYPE B 6"

If the Bike Path is being constructed in conjunction with the road improvement, then the Hot-Mix Asphalt mixes shall be the same as those used on the road in order to avoid multiple mix requirements.

LC4011	
APPROVED BY: M. G. ZEMAITS	DATE: APRIL 1, 2007
Lake County Division of Transportation	
TYPICAL 3 LANE SECTION with ADJACENT MULTI-USE PATH	

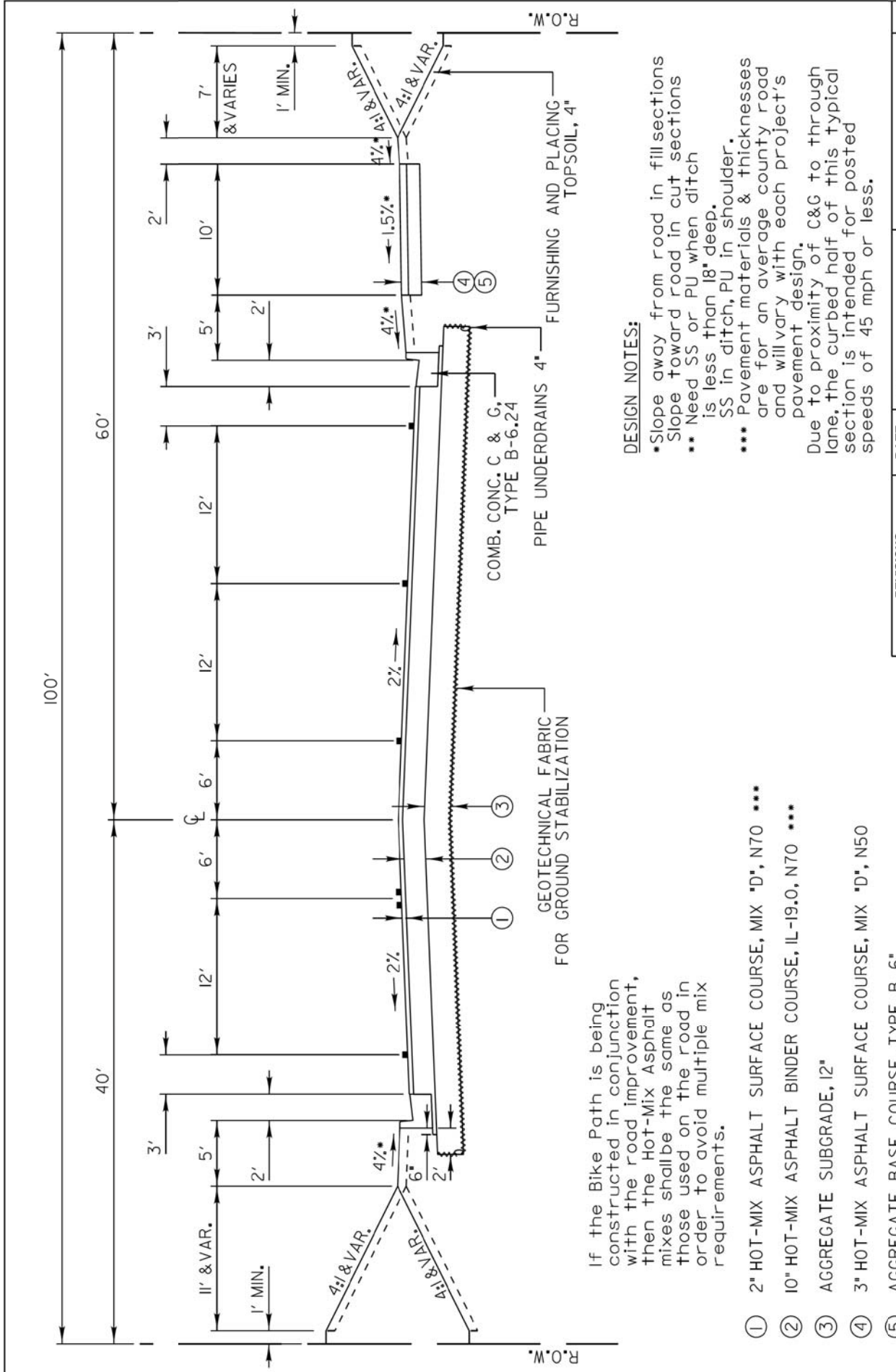
SCALE:  
HORIZONTAL 1" = 10'  
VERTICAL 1" = 5'

DESIGNED - PK	REVISED -
DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	451
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

FINAL SURVEY PLOTTED TEMPLATE	BY	DATE
NO.		

ORIGINAL SURVEY PLOTTED TEMPLATE	BY	DATE
NO.		



**DESIGN NOTES:**

- \*Slope away from road in fill sections
- Slope toward road in cut sections
- \*\* Need SS or PU when ditch is less than 18" deep.
- \*\*\* Pavement materials & thicknesses are for an average county road and will vary with each project's pavement design.

Due to proximity of C&G to through lane, the curbed half of this typical section is intended for posted speeds of 45 mph or less.

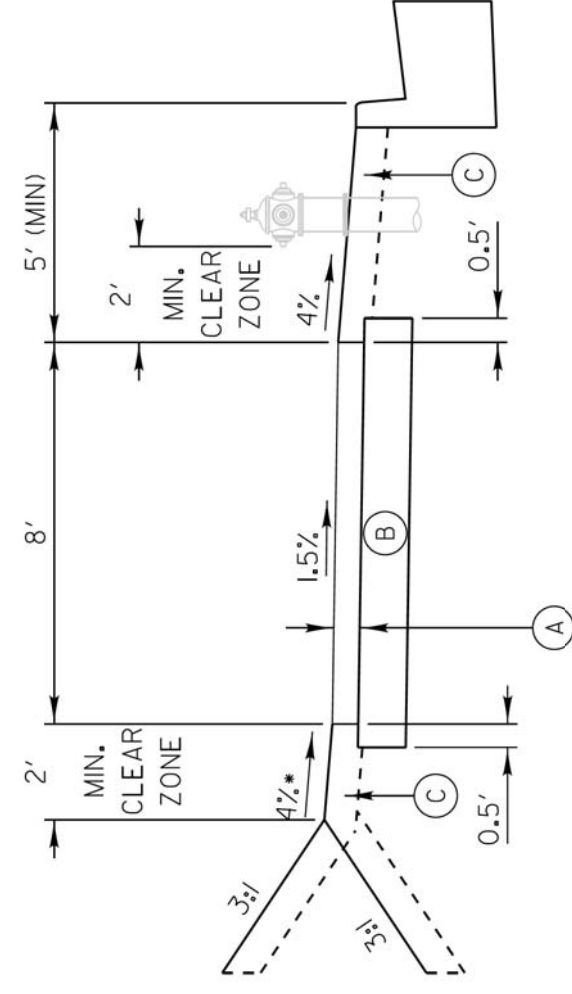
If the Bike Path is being constructed in conjunction with the road improvement, then the Hot-Mix Asphalt mixes shall be the same as those used on the road in order to avoid multiple mix requirements.

- ① 2" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 \*\*\*
- ② 10" HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70 \*\*\*
- ③ AGGREGATE SUBGRADE, 12"
- ④ 3" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50
- ⑤ AGGREGATE BASE COURSE, TYPE B 6"

REVISIONS		DATE	APPROVED BY: M. G. ZEMAITIS
Changed BP to 3" Surface Rev. HMA Shldr. Materials	5/15/08	5/15/08	DATE: APRIL 1, 2007
Remove HMA Shldr. B/C	6/7/11	6/7/11	
Revised Type A to Type B Aggregate	12/20/12	12/20/12	
Curbed Section Shldr. Increased to 3'	8/3/2015	8/3/2015	
1.5% Path Slope	9/11/15	9/11/15	

SCALE:  
HORIZONTAL 1" = 10'  
VERTICAL 1" = 5'

LC4031  
Lake County Division of Transportation  
**TYPICAL INTERSECTION APPROACH with LT & RT TURN LANES & ADJACENT MULTI-USE PATH**



- Ⓐ 3" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50
- Ⓑ AGGREGATE BASE COURSE, TYPE B 6"
- Ⓒ FURNISHING AND PLACING TOPSOIL, 4" and SEEDING, CLASS 2A or SODDING

**DESIGN NOTE:**

- \*Slope away from road in fill sections
- Slope toward road in cut sections

If the Bike Path is being constructed in conjunction with the road improvement, then the Hot-Mix Asphalt mixes shall be the same as those used on the road in order to avoid multiple mix requirements.

SCALE:  
VERTICAL 1" = 2'  
HORIZONTAL 1" = 4'

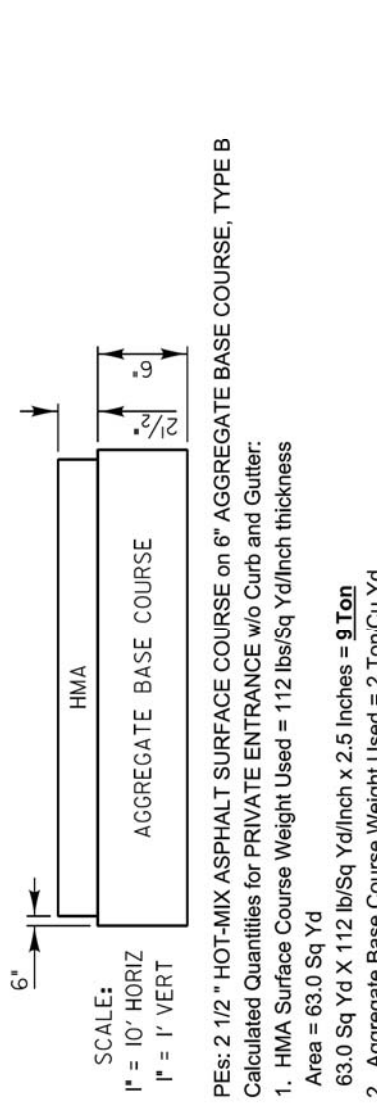
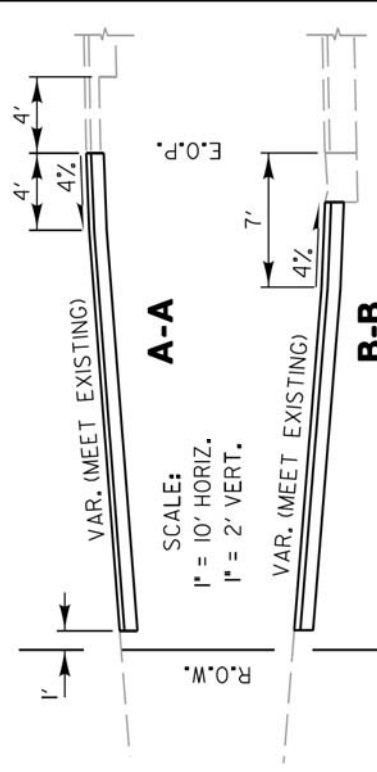
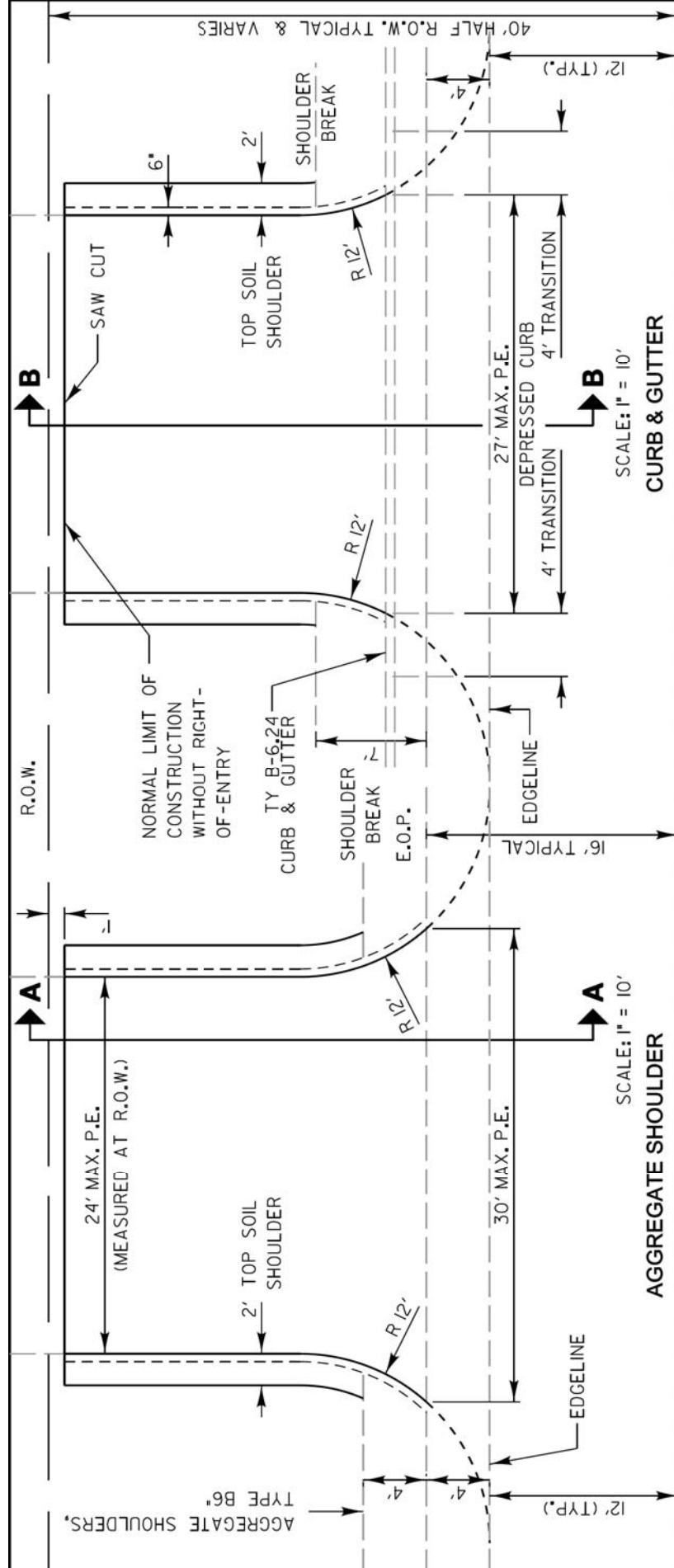
REVISIONS		DATE	APPROVED BY: M. G. ZEMAITIS
Changed BP to 3" Surface Modified Agg. Base Course	5/11/2008	5/11/2008	DATE: APRIL 1, 2007
Change To Mix "D"	3/1/2011	3/1/2011	
Revised Type A to Type B Aggregate	2/20/2012	2/20/2012	
1.5% Path Slope	12/20/12	12/20/12	
1.5% Path Slope	9/11/2015	9/11/2015	

LC4052  
Lake County Division of Transportation  
**TYPICAL SECTION 8" HOT-MIX ASPHALT BIKEPATH IN VICINITY OF CURB & GUTTER**



FINAL SURVEY PLOTTED	BY	DATE
NOTE BOOK		
AREAS CHECKED		
NO.		

ORIGINAL SURVEY PLOTTED	BY	DATE
NOTE BOOK		
AREAS CHECKED		
NO.		

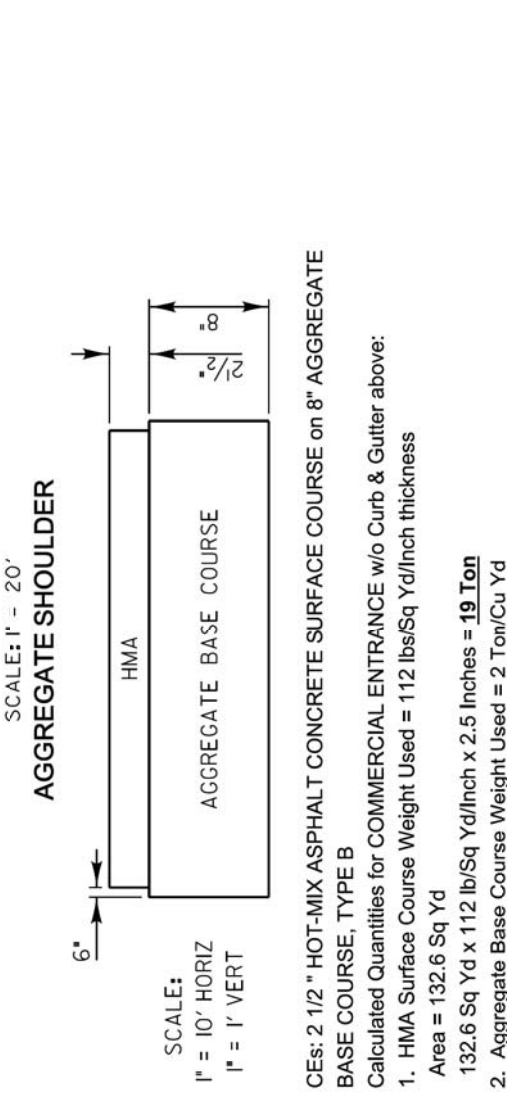
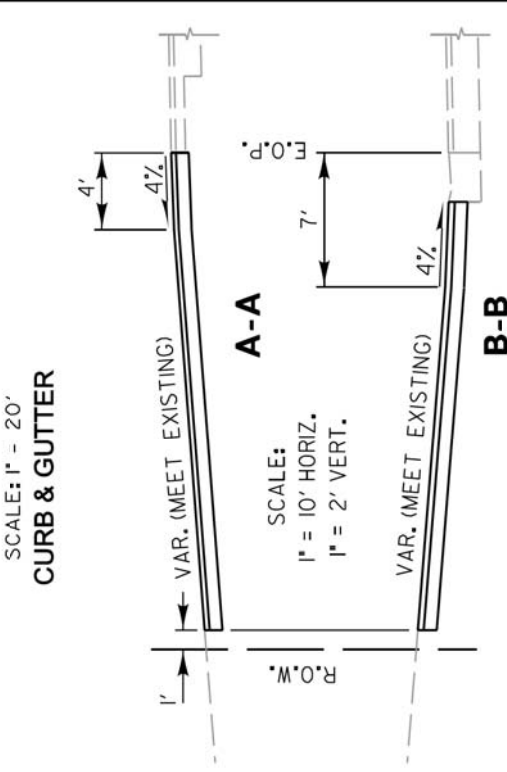
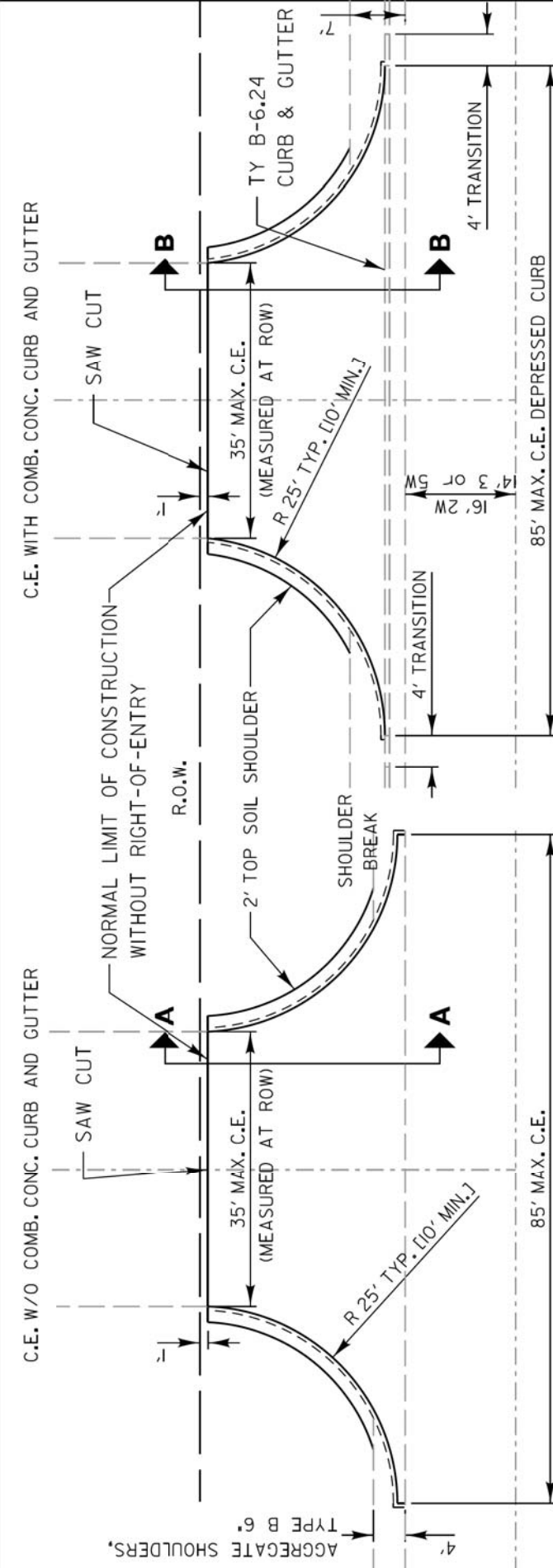


REVISIONS		DATE	APPROVED BY: M. G. ZEMAITIS
Removed Prime Coat	0ty	5/20/08	DATE: APRIL 1, 2007
Revised Ent. EOP Radius	6/4/10		
Revised Type A to Type B Aggregate	12/20/12		
Revised Curb Transition	1/7/15		

**TYPICAL MINOR ACCESS (PRIVATE ENTRANCE)**

PEs: 2 1/2" HOT-MIX ASPHALT SURFACE COURSE on 6" AGGREGATE BASE COURSE, TYPE B  
 Calculated Quantities for PRIVATE ENTRANCE w/o Curb and Gutter:

- HMA Surface Course Weight Used = 112 lbs/Sq Yd/inch thickness  
Area = 63.0 Sq Yd
  - Aggregate Base Course Weight Used = 2 Ton/Cu Yd  
65.7 Sq Yd x 2 Ton/Cu Yd x 6 Inch thickness = **22 Ton**
- Calculated Quantities for PRIVATE ENTRANCE with Curb and Gutter:
- HMA Surface Course Weight Used = 112 lbs/Sq Yd/inch thickness  
Area = 55.0 Sq Yd
  - Aggregate Base Course Weight Used = 2 Ton/Cu Yd  
57.2 Sq Yd x 2 Ton/Cu Yd x 6 Inch thickness = **19 Ton**



REVISIONS		DATE	APPROVED BY: M. G. ZEMAITIS
Removed Prime Coat	0ty	5/20/08	DATE: APRIL 1, 2007
Revised Type A to Type B Aggregate	12/20/12		
Revised Curb Transition	1/7/15		

**TYPICAL MAJOR ACCESS (COMMERCIAL ENTRANCE)**

CEs: 2 1/2" HOT-MIX ASPHALT SURFACE COURSE on 8" AGGREGATE BASE COURSE, TYPE B  
 Calculated Quantities for COMMERCIAL ENTRANCE w/o Curb & Gutter above:

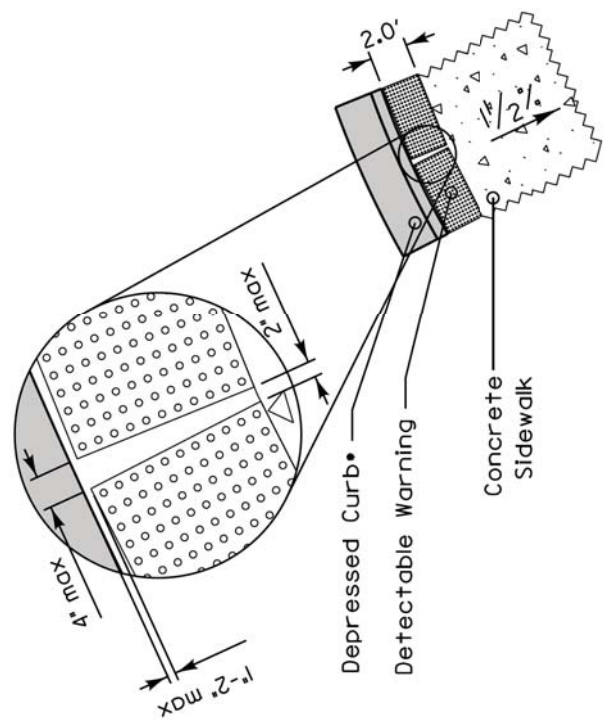
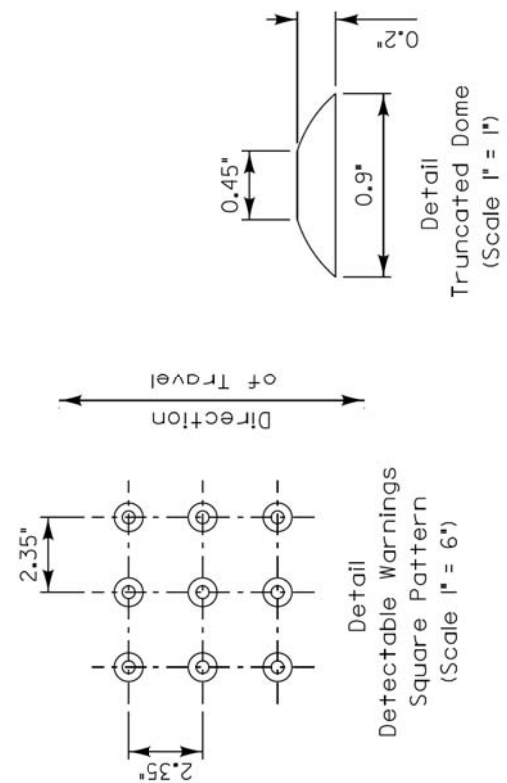
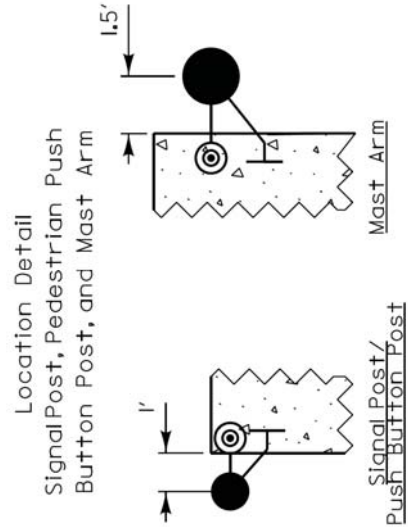
- HMA Surface Course Weight Used = 112 lbs/Sq Yd/inch thickness  
Area = 132.6 Sq Yd
  - Aggregate Base Course Weight Used = 2 Ton/Cu Yd  
137.0 Sq Yd x 2 Ton/Cu Yd x 8 Inch thickness = **61 Ton**
- Calculated Quantities for COMMERCIAL ENTRANCE with Curb & Gutter above:
- HMA Surface Course Weight Used = 112 lbs/Sq Yd/inch thickness  
Area = 116.3 Sq Yd
  - Aggregate Base Course Weight Used = 2 Ton/Cu Yd  
120.4 Sq Yd x 2 Ton/Cu Yd x 8 Inch thickness = **54 Ton**





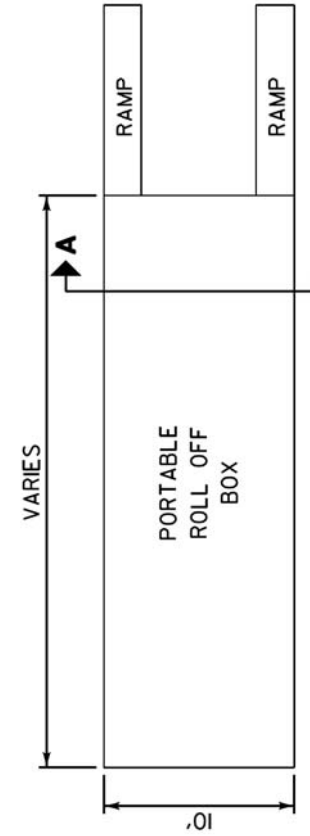
FINAL SURVEY PLOTTED TEMPLATE AREAS CHECKED	BY	DATE
NO.		

ORIGINAL SURVEY PLOTTED TEMPLATE AREAS CHECKED	BY	DATE
NO.		

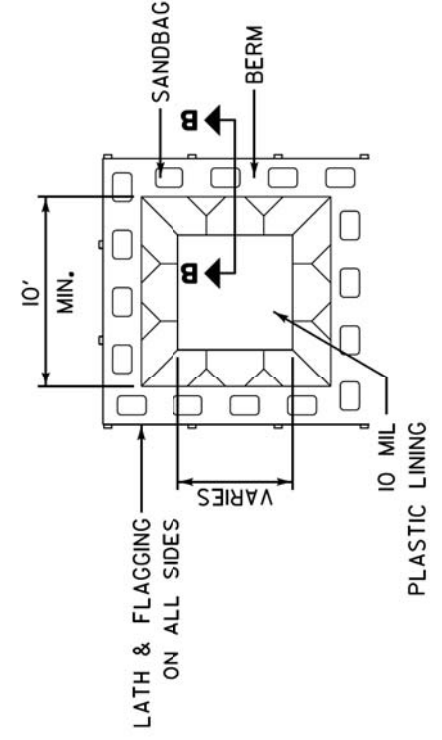


- GENERAL NOTES:
1. Cross slopes on sidewalks and paths shall not exceed 1.5% except at locations detailed on the plans.
  2. Only whole cast iron panels from the manufacturer shall be used for the detectable warnings. Cut panels shall not be allowed.
  3. The gutter slope for the DEPRESSED CURB adjacent to the curb ramp shall be a maximum of 5% (standard curb and gutter is 6%). The back of curb rise shall be a maximum of 1/2" (standard depressed curb is 1/2"). See IDOT standard 606001 for the different curb dimensions.
  4. The Depressed Curb and the Transition Curb will be paid for as COMBINATION CONCRETE CURB AND GUTTER of the type adjacent to the curb ramp.
  5. The DETECTABLE WARNINGS shall be installed according to Article 424.09 of the IDOT Standard Specifications and the LCDOT specification 42400800 DETECTABLE WARNINGS. Detectable warnings shall be measured and paid for per square foot.

LC4201	
REVISIONS	DATE
Added Warning Details	8/1/2009
Updates & Remove Duplicates	7/14/2015
APPROVED BY: M. G. ZEMAITIS	
DATE: APRIL 1, 2007	
Lake County Division of Transportation	
<b>DETECTABLE WARNINGS and PEDESTRIAN PUSHBUTTON LOCATIONS</b>	



PLAN VIEW PREFAB PORTABLE WASHOUT SECTION A-A



BELOW GRADE SECTION B-B

- NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
  2. OTHER WASHOUT DESIGNS MAY BE USED IF APPROVED BY THE ENGINEER.
  3. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

NOT TO SCALE

DESIGNED - PK	REVISED -
DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	455
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

LC4202	
REVISIONS	DATE
APPROVED BY: MGZ	
DATE: March 17, 2008	
Lake County Division of Transportation	
<b>CONCRETE WASHOUT FACILITIES</b>	
SHEET 1 OF 2	





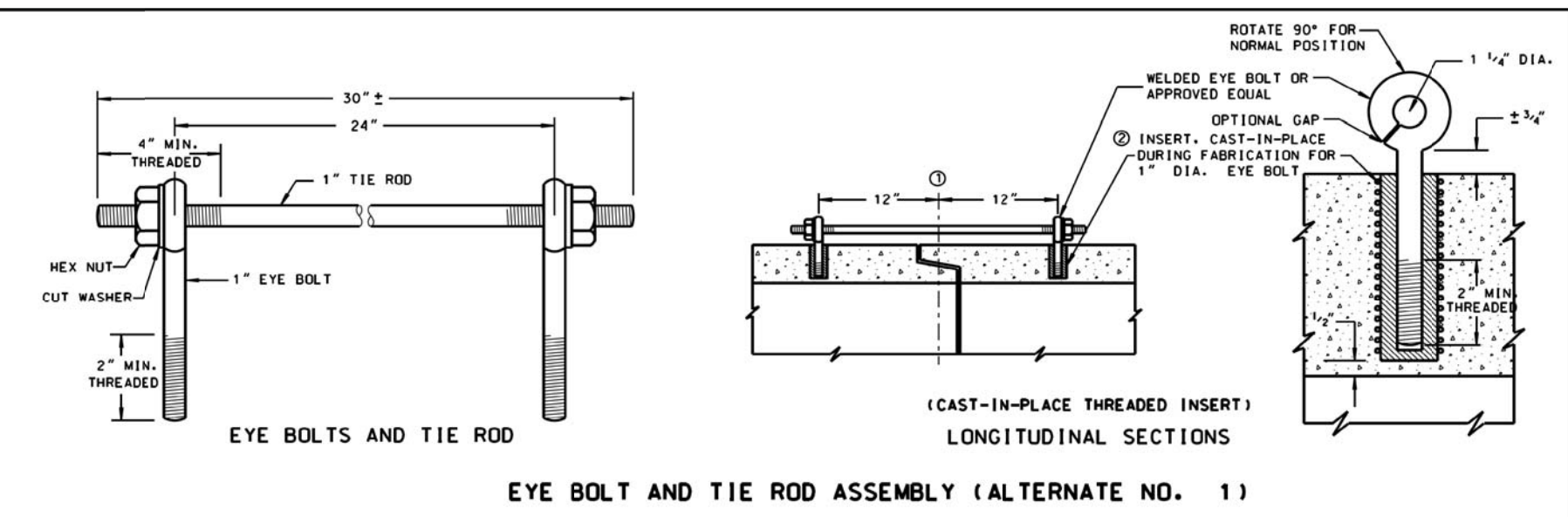




DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

NO.	REVISIONS / REMARKS	DATE	BY	SURVEYOR	DSGNER/LIAISON	PLOTTED BY



**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS. JOINT TIES AND HARDWARE SHALL BE GALVANIZED STEEL.

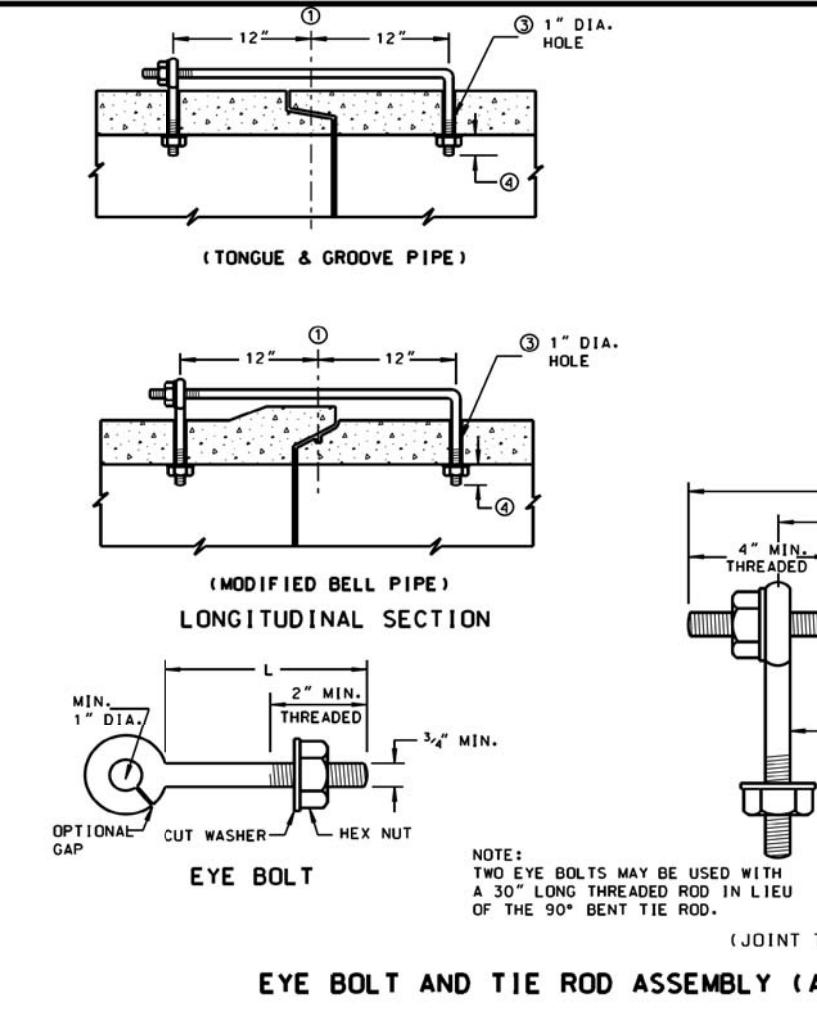
CONCRETE CULVERT PIPE AND SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT THE LAST THREE JOINTS BEFORE A FLARED END SECTION

THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR CONCRETE PIPE.

UNLESS OTHERWISE STATED IN THE CONTRACT THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE CULVERT PIPE AS INDICATED ON THE PLANS AND BY THIS DETAIL WILL BE CONSIDERED INCLUDED IN THE COST OF PIPE CULVERTS OR STORM SEWERS.

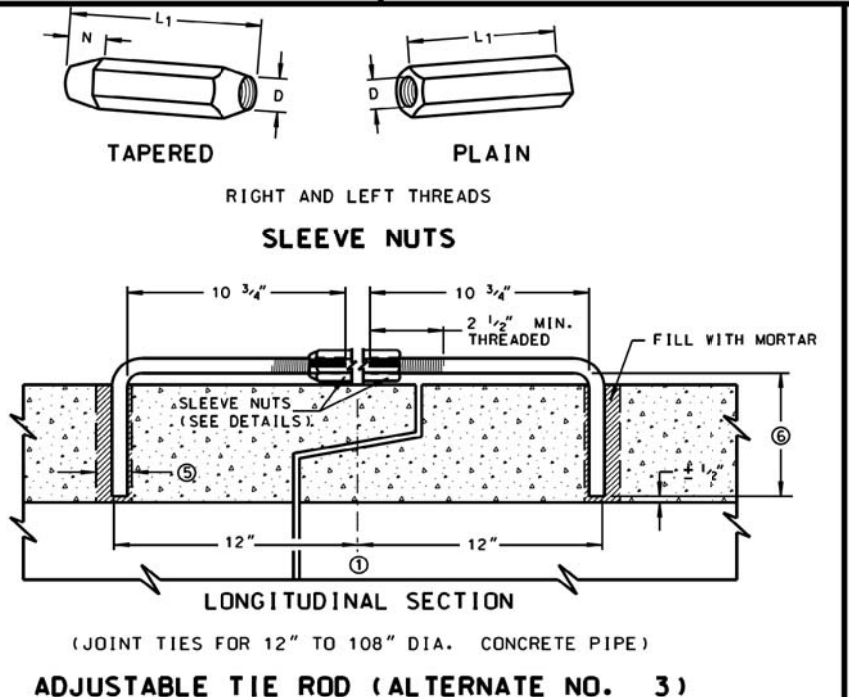
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR GALVANIZED STEEL JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

① 1/2" OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.  
 ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.  
 ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12" FROM 1/2" OF TONGUE AND GROOVE.  
 ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2".  
 ⑤ OPENING TO BE ROD DIAMETER + 1 INCH.  
 ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



**EYE BOLT DIMENSION TABLE**

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



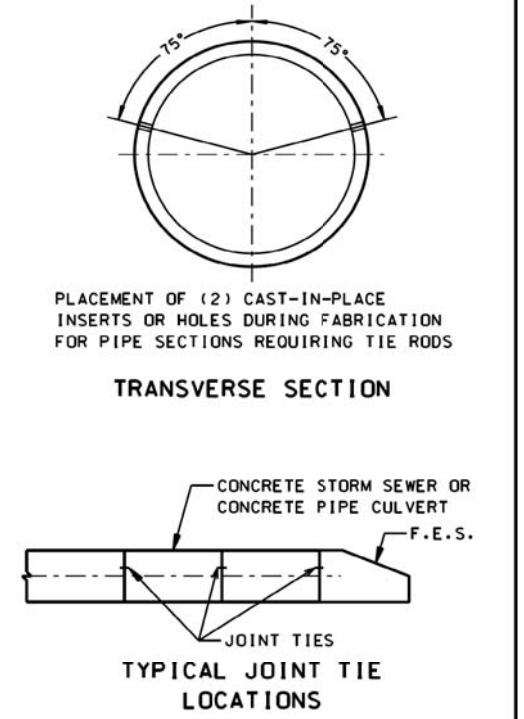
**ADJUSTABLE TIE ROD TABLE**

PIPE DIAMETER	TIE ROD DIAMETER	D	L1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

NOT TO SCALE

REVISIONS	DATE
ADDED JOINT TIE MAT'L	7/8/11



**LakeCounty**  
 Division of Transportation

APPROVED BY: M. ZEMAITIS  
 DATE: 04/01/11

**JOINT TIES FOR CONCRETE PIPE**

LC5402

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE



Two Pierce Place, Suite 1400  
Itasca, Illinois 60143  
Tel: 630.773.3900 Fax: 630.773.3975  
www.civiltechinc.com

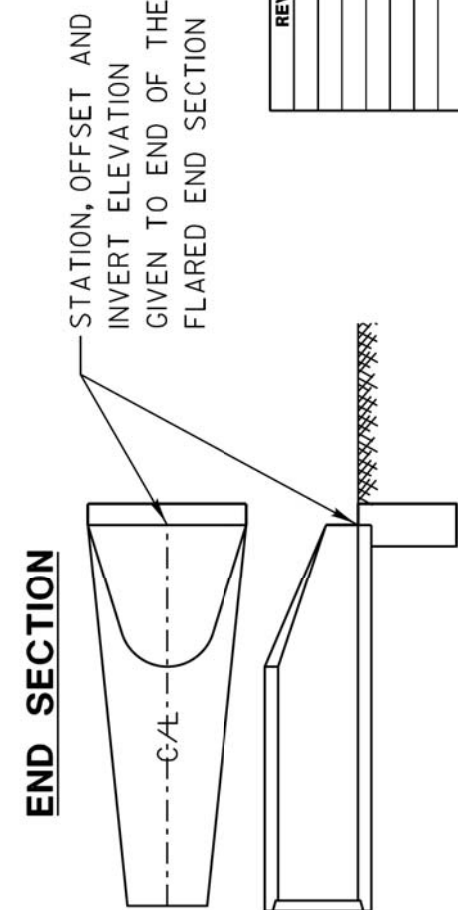
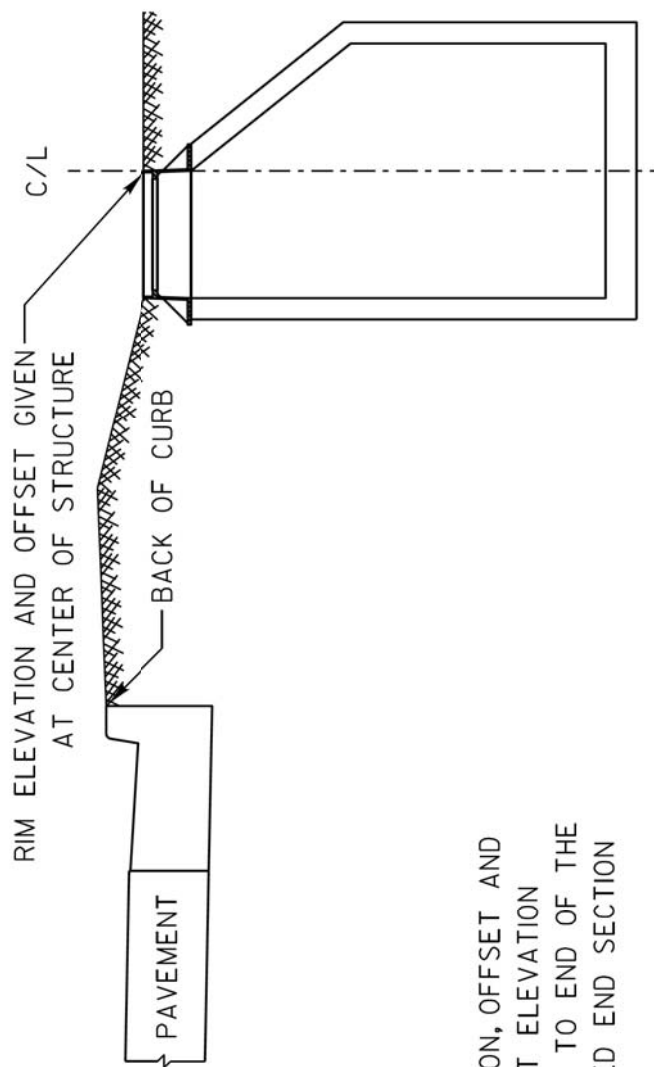
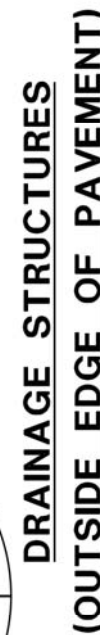
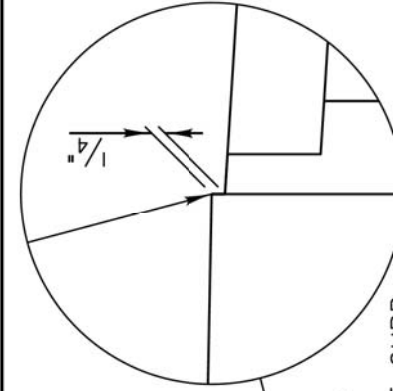
DESIGNED - PK	REVISED -
DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LCDOT HIGHWAY STANDARDS

SHEET NO. 12 OF 22 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	459
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



APPROVED BY: MGZ DATE: 03/09/2012	
	<b>DRAINAGE STRUCTURE RIM ELEVATIONS AND OFFSETS</b>
REVISIONS	DATE

LC6003

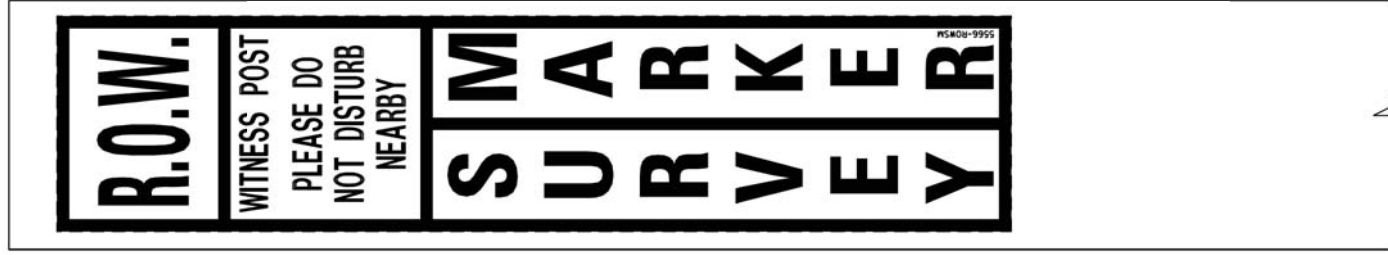
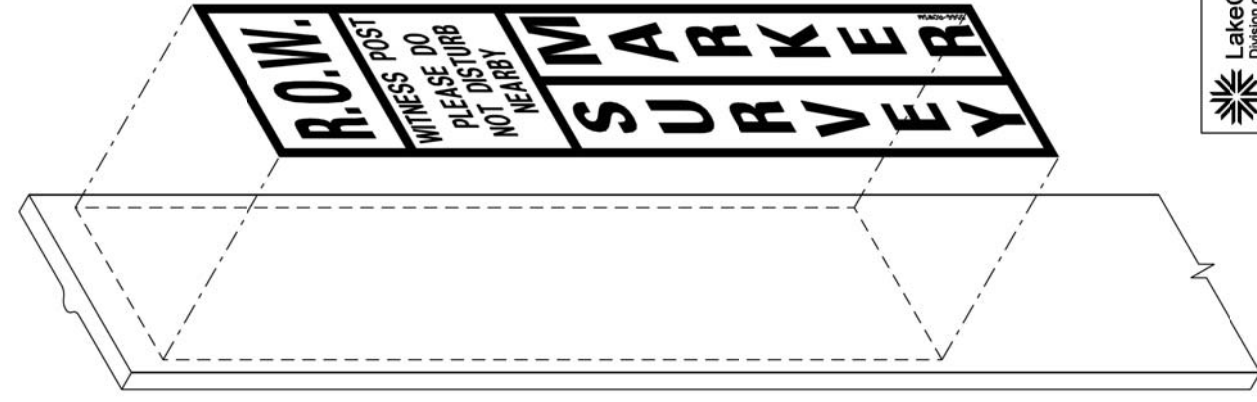






FINAL SURVEY	BY	DATE
NO.		
SURVEY PLOTTED		
NOTE BOOK		
AREAS CHECKED		

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



APPROVED BY: M. G. ZEMAITIS  
DATE: APRIL 1, 2007

LakeCounty  
Division of Transportation

WITNESS POST

REVISIONS	DATE

LC6650

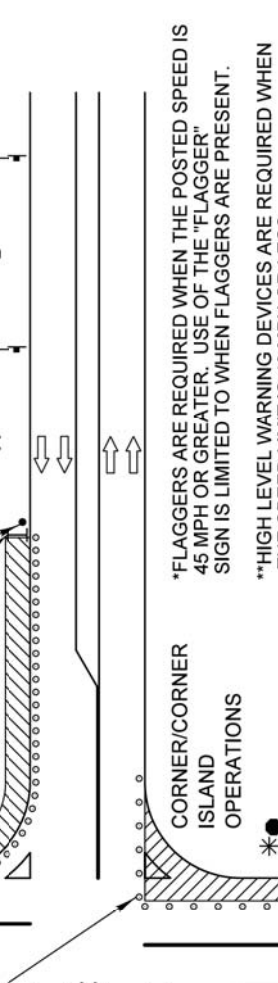
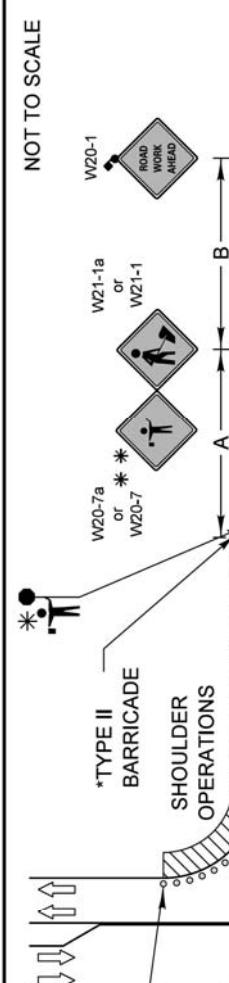
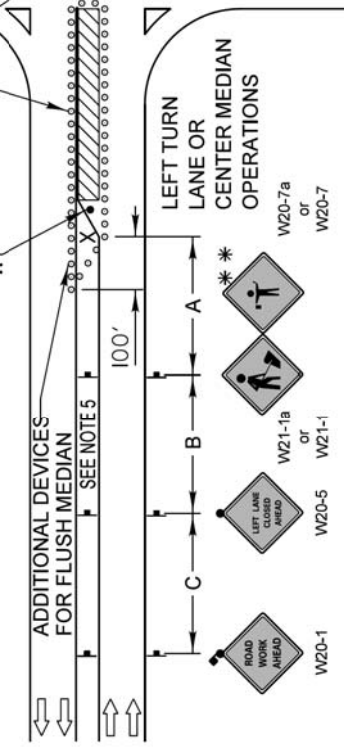
**CIVILTECH**  
Two Pierce Place, Suite 1400  
Itasca, Illinois 60143  
Tel: 630.773.3900 Fax: 630.773.3975  
www.civiltechinc.com

DESIGNED - PK	REVISED -
DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES  
for HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE  
and UTILITY OPERATIONS**

CONES AT 25' CENTERS FOR 250'. ADDITIONAL CONES MAY BE PLACED AT 50' CENTERS. WHEN BARRICADES ARE USED, THE DISTANCE BETWEEN DEVICES MAY BE DOUBLED.

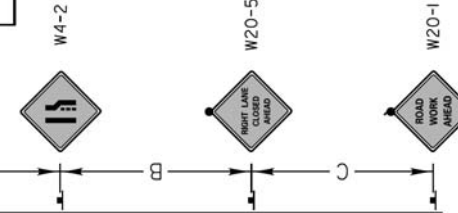


\*FLAGGERS ARE REQUIRED WHEN THE POSTED SPEED IS 45 MPH OR GREATER. USE OF THE "FLAGGER" SIGN IS LIMITED TO WHEN FLAGGERS ARE PRESENT.  
\*\*HIGH LEVEL WARNING DEVICES ARE REQUIRED WHEN THE SPEED LIMIT IS 40 MPH OR LESS.

ADVANCE WARNING SIGN SPACING TABLE			
POSTED SPEED LIMIT	"A"	"B"	"C"
40 MPH or less	400 FEET	200 FEET	200 FEET
45-50 MPH	400 FEET	350 FEET	350 FEET
55 MPH	500 FEET	500 FEET	500 FEET

**SYMBOLS**

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



**GENERAL NOTE:**

This Standard is used where at anytime, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in an urban area.

**DESIGN NOTES:**

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

SPEED	FORMULA
≤ 40 MPH	L = (WS <sup>2</sup> )/60
≥ 45 MPH	L = LW x S

W = Width of Closure in FEET  
S = Normal Posted Speed Limit in MPH  
LW = Lane Width in FEET
- Type II barricades with Type C steady burning lights shall be used in lieu of cones for night operations. All cones and barricades shall be according to IDOT Standard 701901.
- For raised median operations, where the raised median is less than 10' signing shall not be installed on the median. No signing shall be installed on any painted median.
- If the work operation is performed between 9:00 am and 3:00 pm and the work does not exceed 15 minutes, the traffic protection shall be as shown for IDOT Standard 701301. Signs, when required, shall be at the spacing specified in the advance warning sign spacing table.
- If the work area is in the parking lane and the parking exists during work hours, a "ROAD WORK AHEAD" sign shall be installed in advance of work area at the spacing specified in the Advance Warning Sign Spacing Table and the area protected with cones or barricades.
- Type A flashing lights shall be used on each approach in advance of the work area during hours of darkness and installed above the first two sign in each series and the high level warning devices.
- Longitudinal dimensions may be adjusted to fit field conditions.
- Form BT 725 is required.

**LCDOT HIGHWAY STANDARDS**

SHEET NO. 14 OF 22 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-002260-01-WR	LAKE	566	461
CONTRACT NO. 61F33				

FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT

APPROVED BY: ANTHONY KHAWAJA  
DATE: APRIL 1, 2007

LakeCounty  
Division of Transportation

MODIFIED IDOT  
STANDARD 701701-10

URBAN LANE CLOSURE  
MULTILANE INTERSECTION

REVISIONS	DATE
Revised IDOT Reference	2/1/08
Title Block Revision	8/1/09
Reformat LCDOT Standard	7/15/10
Removed "Worker" & "Flagger" signs	6/26/12
Updated IDOT Standard Version #	3/29/16

LC7003



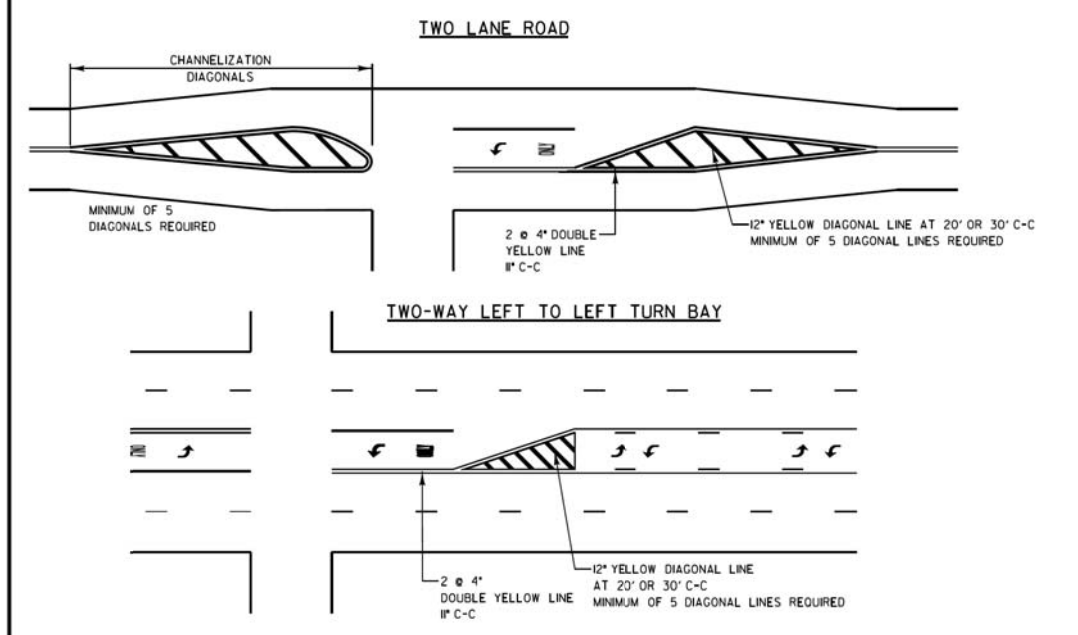
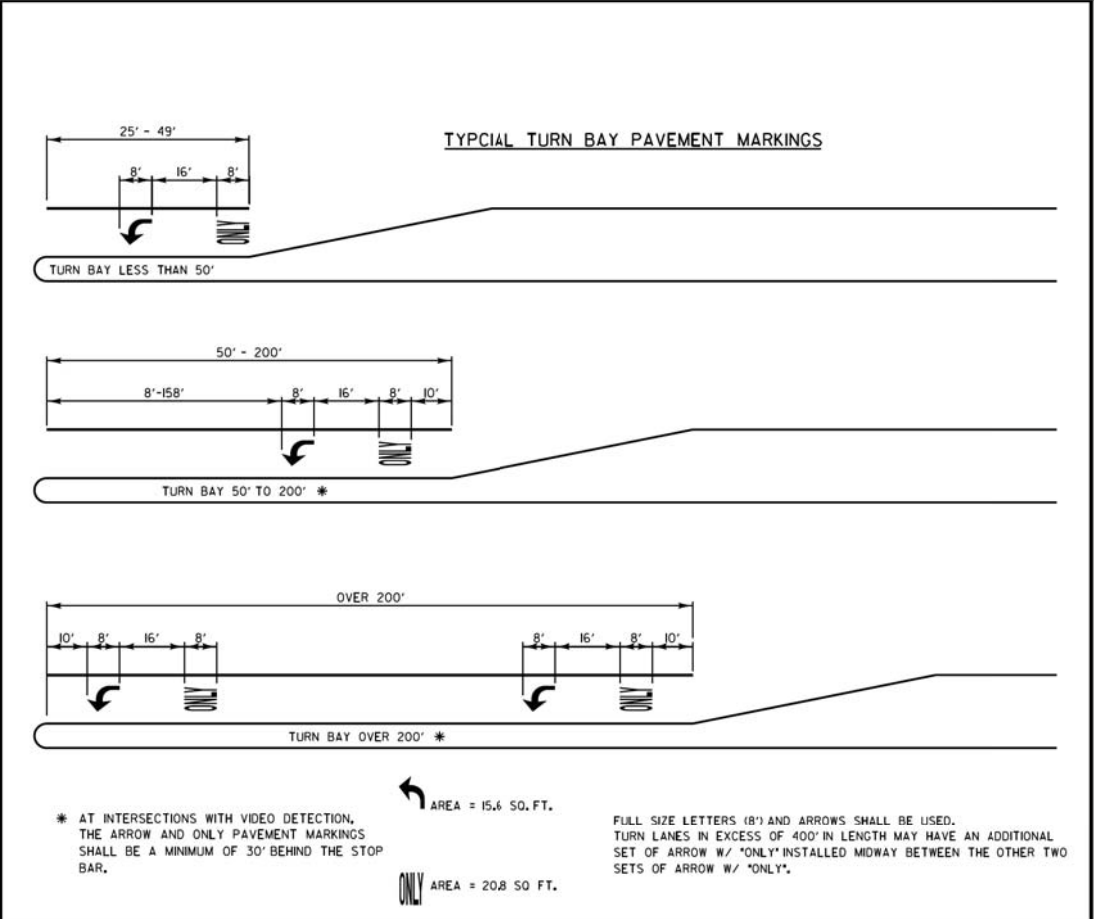
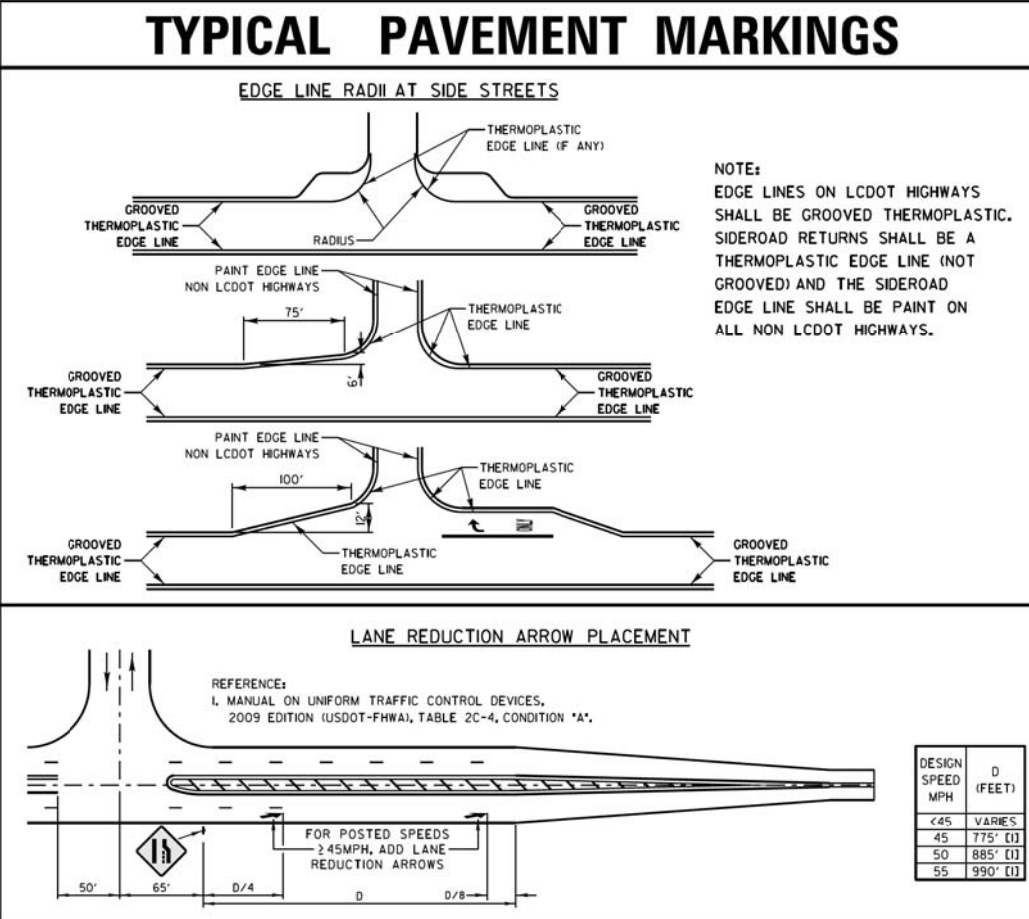
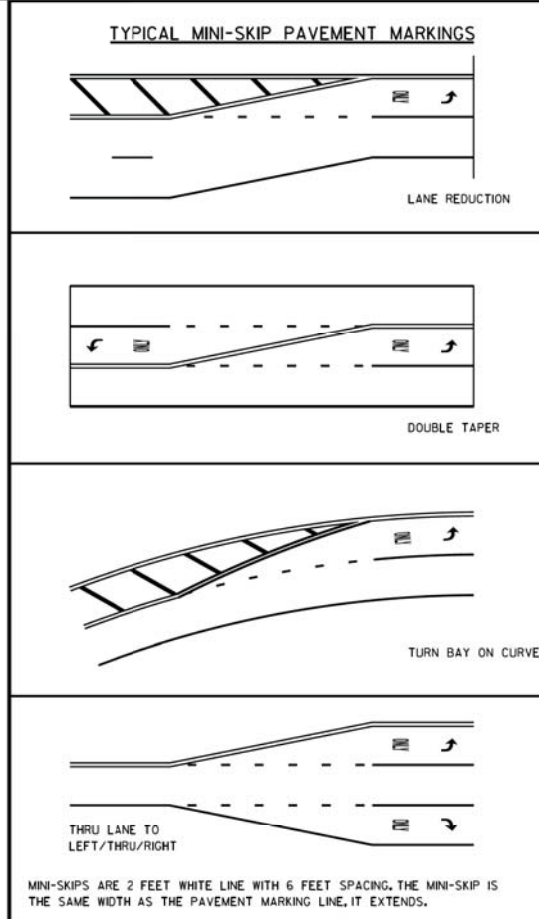






DATE	BY	SURVEYED	PLOTTED	TEMPLATE	AREAS CHECKED
FINAL SURVEY NOTE BOOK NO.					

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



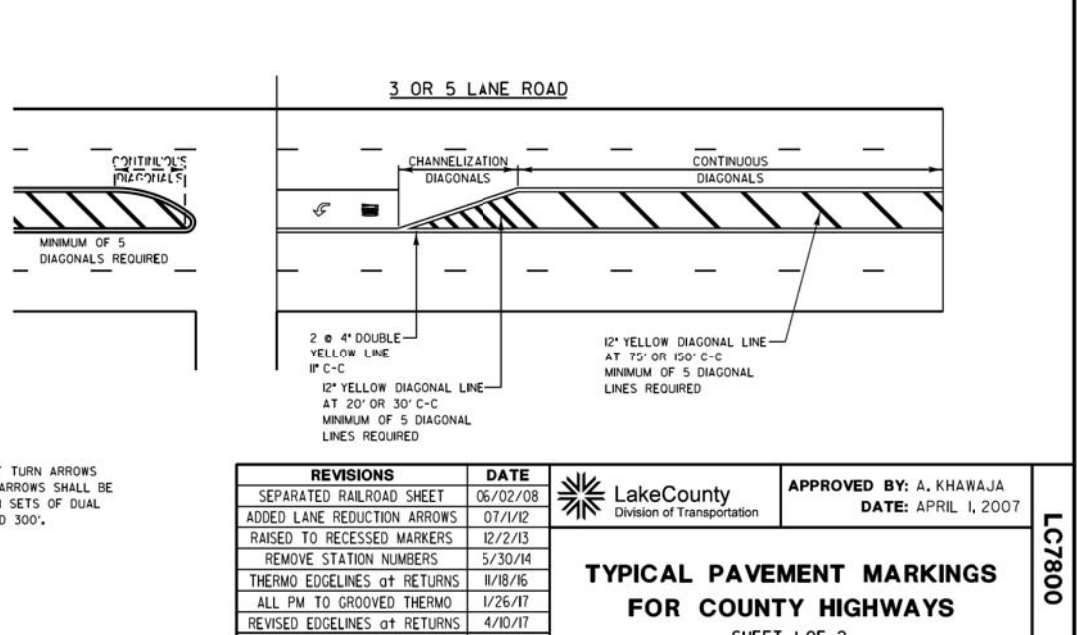
### TYPICAL DIAGONAL SPACING

SPEED LIMIT RANGE	CONTINUOUS	INTERSECTION CHANNELIZATION
30-45 MPH	75 FT.	20 FT.
OVER 45 MPH	150 FT.	30 FT.

### DUAL LEFT TURN ARROWS

31.2 SQ. FT. MINIMUM OF 2 SETS REQUIRED

A MINIMUM OF TWO PAIRS OF DUAL LEFT TURN ARROWS SHALL BE USED. THE DUAL LEFT TURN ARROWS SHALL BE WHITE IN COLOR. THE INTERVAL BETWEEN SETS OF DUAL LEFT TURN ARROWS SHOULD BE 200' AND 300'.



REVISIONS / REMARKS		DATE	BY	SURVEYOR	DESIGNER/LIAISON	PLOTTED BY
NO.	DESCRIPTION					

FILE NAME: C:\Users\hdm\c\Desktop\LC7800 TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS.dgn

LakeCounty  
Division of Transportation

PROJECT NAME: LAKE COUNTY STANDARDS & DETAILS

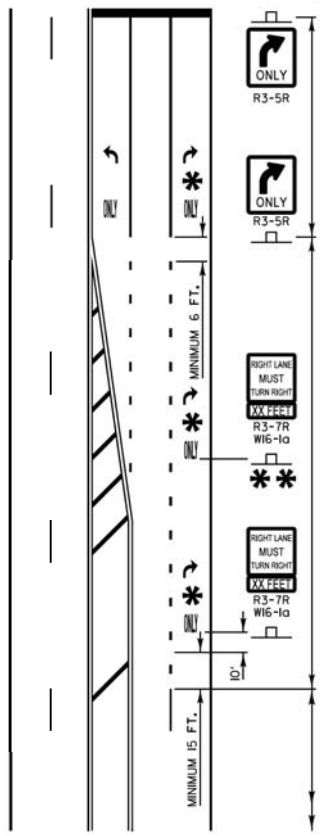
ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
CHXX	XXX	XX-XXXXX-XX-XX	XXX	XXX



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

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

**THRU LANE TO TURN LANE CONVERSION**

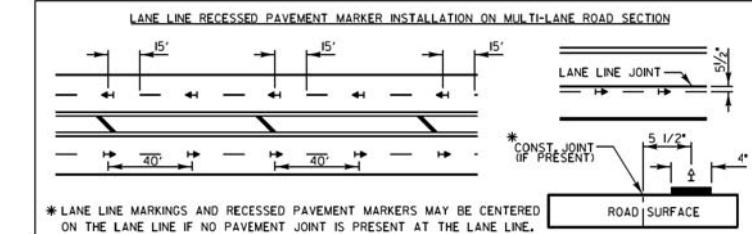
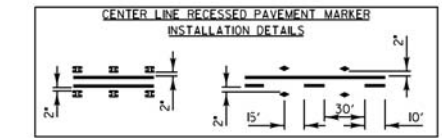
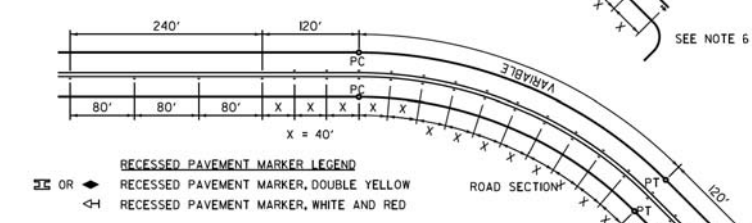
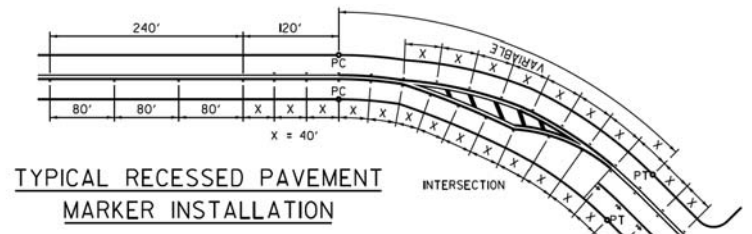


TURN LANE  
6' WHITE LINE  
(ADDITIONAL PAVEMENT MARKINGS AS SHOWN ON SHEET ONE OF THE L.C.D.O.T. TYPICAL PAVEMENT MARKINGS DETAIL SHEETS)

TRANSITION ZONE  
6' WHITE 3/12' SKIP DASH LANE LINE

THRU LANE  
4' WHITE 10/30' SKIP DASH LANE LINE

**TYPICAL PAVEMENT MARKINGS AND RECESSED PAVEMENT MARKERS**



- RECESSED PAVEMENT MARKER NOTES:**
- CENTERLINE RECESSED PAVEMENT MARKERS (RPM'S) SHALL BE PLACED ON ALL TWO AND THREE LANE HIGHWAYS WITH CURVES OVER 3 1/2 DEGREES, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
  - SPACING = 40' FOR CENTERLINE MARKERS.
  - ALL RPM'S ON CENTERLINE ARE 2-WAY YELLOW, LANE LINE MARKERS ARE WHITE/RED.
  - MARKERS SHALL BE INSTALLED ACCORDING TO F.H.W.A. MEMORANDUM HO-21.
  - MARKERS SHALL BE FIELD ADJUSTED TO BE LOCATED IN CENTER OF THE 30' GAP OF A 30'/10' SKIP/DASH CENTERLINE.
  - RPM'S WHICH ARE TO BE LOCATED WITHIN THE INTERSECTION OF A CROSS STREET, SHALL NOT BE INSTALLED.
  - A MINIMUM OF 4 WHITE/RED MARKERS SHALL BE INSTALLED ALONG THE TURN LANE LINE.
  - RPM'S INSTALLED ON MULTI-LANE ROAD SECTIONS SHALL BE INSTALLED ON THE WHITE SKIP-DASH LANE LINE ONLY. THESE RPM'S SHALL BE LOCATED IN CENTER OF THE 30' GAP OF A 30'/10' SKIP/DASH LANE LINE.

**MINIMUM TRANSITION ZONE LENGTH**

POSTED SPEED	LENGTH
25 M.P.H.	255 FT
30 M.P.H.	330 FT
35 M.P.H.	405 FT
40 M.P.H.	480 FT
45 M.P.H.	555 FT
50 M.P.H.	630 FT
55 M.P.H.	705 FT

**\* LOCATION OF PAV'T MARKINGS**  
(MEASURED FROM BEGINNING OF TRANSITION ZONE)

POSTED SPEED	LOCATION OF PAV'T MARKINGS
25 M.P.H.	10 FT, 260 FT
30 M.P.H.	10 FT, 170 FT, 340 FT
35 M.P.H.	10 FT, 210 FT, 410 FT
40 M.P.H.	10 FT, 170 FT, 330 FT, 490 FT
45 M.P.H.	10 FT, 190 FT, 370 FT, 560 FT
50 M.P.H.	10 FT, 170 FT, 330 FT, 490 FT, 640 FT
55 M.P.H.	10 FT, 180 FT, 350 FT, 520 FT, 710 FT

\*\* FOR POSTED SPEEDS 40 M.P.H. OR GREATER A SECOND R3-7/W16-1a SIGN INSTALLATION SHALL BE LOCATED HALFWAY BETWEEN THE BEGINNING OF THE TRANSITION ZONE AND THE BEGINNING OF THE TURN LANE

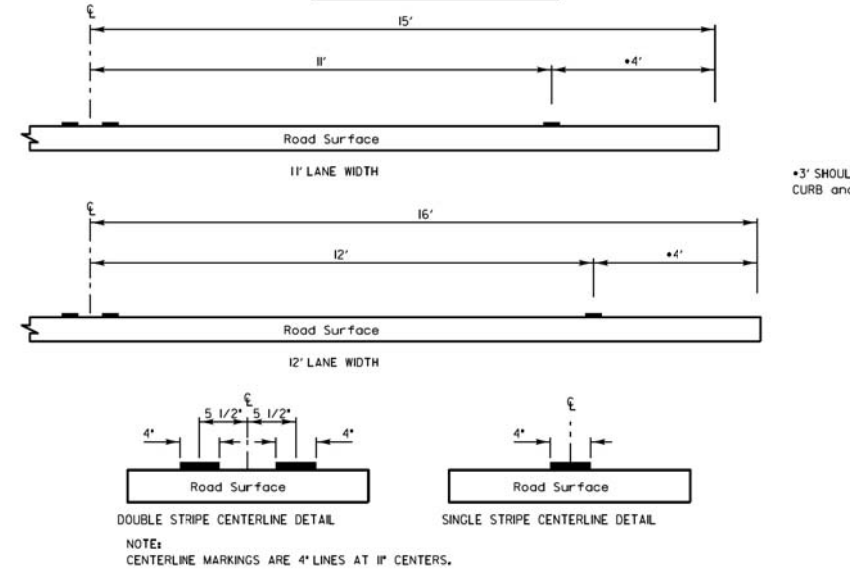
TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE OF 2 LANE PAVEMENT	4 IN.	SKIP-DASH	YELLOW	10 FT. LINE WITH 30 FT. SPACE
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 IN.	SOLID	YELLOW	5 1/2 IN. C-C FROM SKIP-DASH CENTERLINE
CENTERLINE ON MULTI-LANE UNDIVIDED LANE LINES	2 @ 4 IN.	SOLID	YELLOW	11 IN. C-C
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2 FT. LINE WITH 6 FT. SPACE
EDGE LINES	5 IN. WHITE 4 IN. YELLOW	SOLID	WHITE - RIGHT YELLOW - LEFT	OUTLINE RAISED MEDIANS IN YELLOW
TURN LANE MARKINGS	6 IN. LINE FULL SIZE LETTERS AND SYMBOLS (8 FT.)	SOLID	WHITE	TURN ARROW 15.6 SO. FT. STRAIGHT ARROW 11.5 SO. FT. ONLY 20.8 SO. FT. COMB. ARROW 26.0 SO. FT.
TWO WAY LEFT TURN MARKING	2 @ 4 IN. EACH DIRECTION	SKIP-DASH AND SOLID	YELLOW	10 FT. LINE WITH 30 FT. SPACE FOR SKIP-DASH 5 1/2 IN. C-C BETWEEN SKIP-DASH LINE AND SOLID LINE
CROSSWALK	12 IN. @ 90°	SOLID	WHITE	12 IN. LONGITUDINAL BAR WITH 24 IN. SPACE 6 FT. TO 12 FT. WIDE SEE TYPICAL CROSSWALK MARKING DETAIL
STOP BARS	24 IN.	SOLID	WHITE	PLACE 4 FT. IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT, OTHERWISE PLACE AT DESIRED STOPPING POINT.
PAINTED MEDIANS	2 @ 4 IN. & 8 IN. C-C 12 IN. DIAGONALS @ 45° NO DIAGONALS USED FOR 4 FT. WIDE MEDIAN	SOLID	YELLOW 2-WAY TRAFFIC WHITE 1-WAY TRAFFIC	11 IN. C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING DETAIL MINIMUM OF 5 DIAGONALS
GORE MARKING AND CHANNELIZING LINES	8 IN. WITH 12 IN. DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS 15 FT. C-C (LESS THAN 30 M.P.H.) 20 FT. C-C (30 TO 45 M.P.H.) 30 FT. C-C (OVER 45 M.P.H.) MINIMUM OF 5 DIAGONALS
R.R. CROSSING	24 IN. TRANSVERSE LINES RR IS 6 FT. LETTER 16 IN. LINE FOR "X"	SOLID	WHITE	SEE I.D.O.T. STD. 780001 50 FT. AREA OF "X" "X" = 3.6 SO. FT. / "R" "X" = 54.0 SO. FT.
SHOULDER DIAGONALS (FOR PAVED SHOULDER 2 @ 6 FT.)	12 IN. @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50 FT. C-C (LESS THAN 30 M.P.H.) 75 FT. C-C (30 TO 45 M.P.H.) 150 FT. C-C (OVER 45 M.P.H.) MINIMUM OF 5 DIAGONALS

**ALL PAVEMENT MARKINGS TO BE GROOVED THERMOPLASTIC, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER**

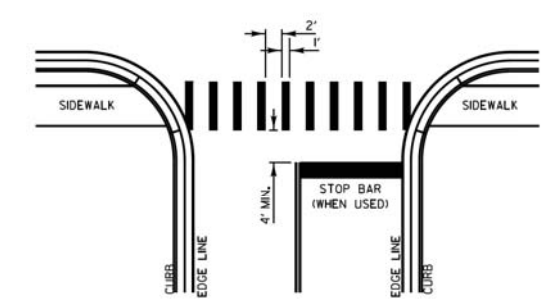
FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO PART II "MARKINGS" IN THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AND THE LATEST I.D.O.T. HIGHWAY STANDARD 78000.

NO.	DESCRIPTION	DATE	BY	SURVEYOR	/
				DSGMR/LIAMSON	
				PLOTTED BY: hdmrc	9/5/2017

**PAVEMENT CROSS SECTION SHOWING TYPICAL PAVEMENT MARKINGS (2-LANE ROADWAY)**

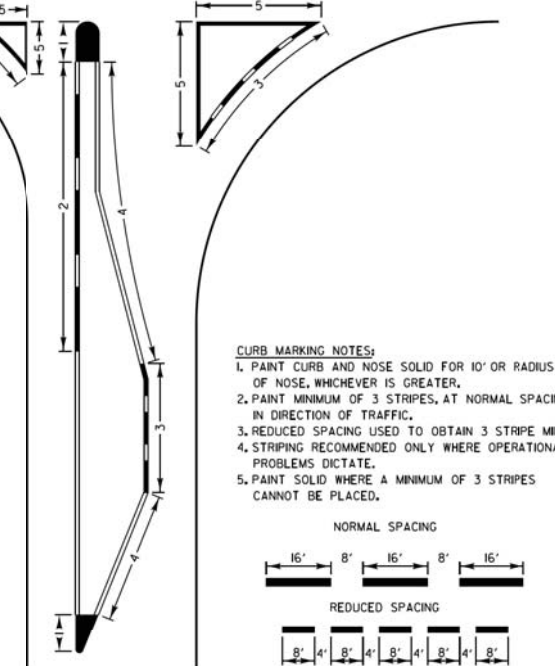


**CROSSWALKS**



- CROSSWALK NOTES:**
- THE WIDTH OF THE CROSSWALK IS GENERALLY 6' EXCEPT AT SCHOOL CROSSINGS AND MULTUSE PATH CROSSINGS, WHICH CAN BE 8' OR 10' WIDE.
  - THE STOP BAR SHALL BE INSTALLED A MINIMUM OF 4' IN ADVANCE OF THE CROSSWALK.

**CURB MARKING**



- CURB MARKING NOTES:**
- PAIN CURB AND NOSE SOLID FOR 10' OR RADIUS OF NOSE, WHICHEVER IS GREATER.
  - PAIN MINIMUM OF 3 STRIPES, AT NORMAL SPACING, IN DIRECTION OF TRAFFIC.
  - REDUCED SPACING USED TO OBTAIN 3 STRIPE MINIMUM.
  - STRIPING RECOMMENDED ONLY WHERE OPERATIONAL PROBLEMS DICTATE.
  - PAIN SOLID WHERE A MINIMUM OF 3 STRIPES CANNOT BE PLACED.

REVISIONS	DATE
SEPARATED RAILROAD SHEET	06/02/08
REVISED RPM DETAILS	07/1/12
RAISED TO RECESSED MARKERS	8/2/13
REMOVE STATION NUMBERS	5/30/14
THERMO EDGELINES @ RETURNS	1/18/16
ALL PM TO GROOVED THERMO	1/26/17
REVISED EDGELINES @ RETURNS	4/10/17
REVISED STOP BAR/DBL YELLOW	8/31/17

**LakeCounty**  
Division of Transportation

APPROVED BY: A. KHAWAJA  
DATE: APRIL 1, 2007

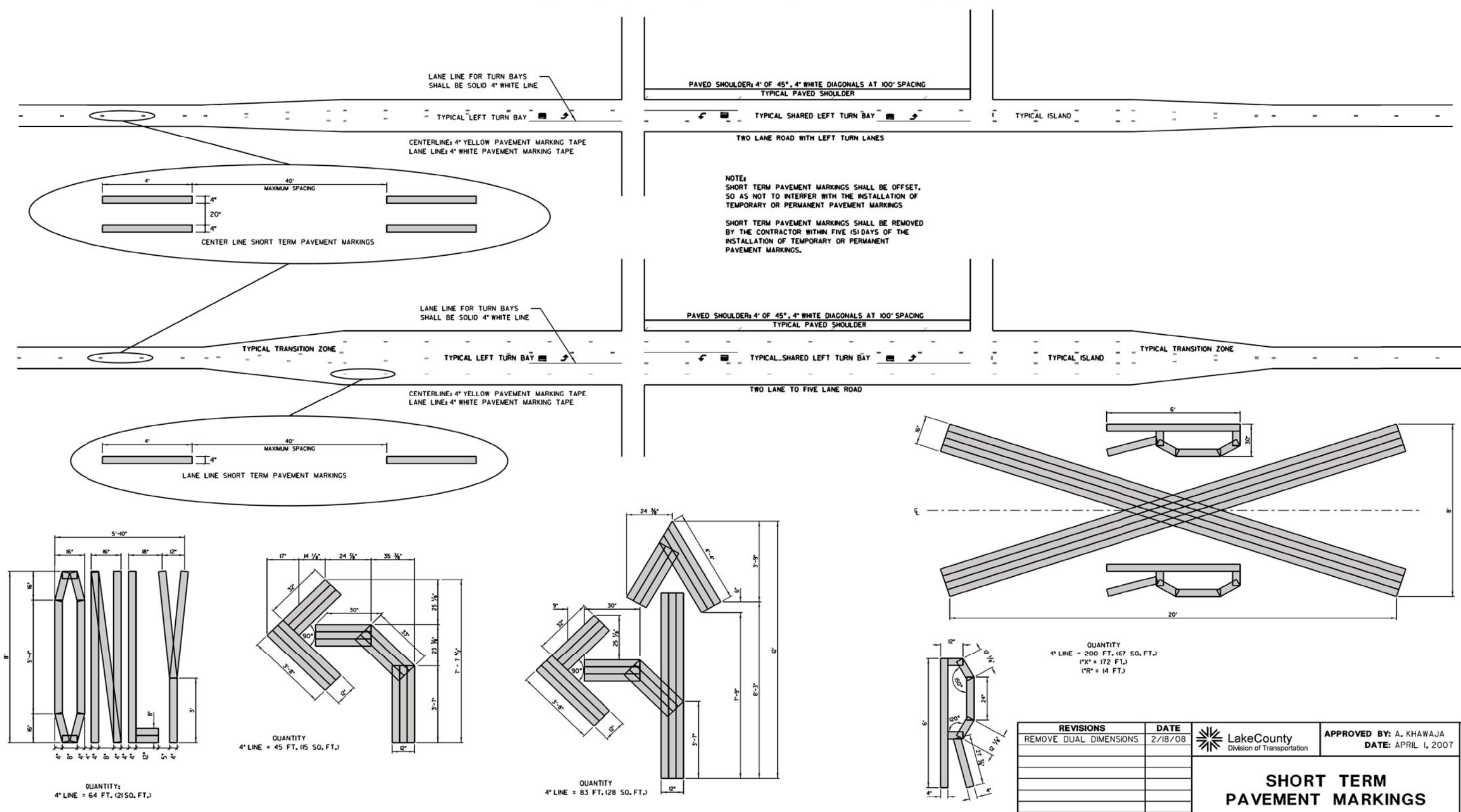
**TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS**  
SHEET 2 OF 2

PROJECT NAME	ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
LAKE COUNTY STANDARDS & DETAILS	CHXX	XXX	XX-XXXX-XX-XX	XXX	XXX

# TYPICAL SHORT TERM PAVEMENT MARKINGS

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



NO.	REVISIONS / REMARKS	DATE	BY	SURVEYOR:	DESIGNER/LIAISON:	PLOTTED BY:



REVISIONS	DATE
REMOVE DUAL DIMENSIONS	2/18/08

**Lake County**  
Division of Transportation

**APPROVED BY: A. KHAWAJA**  
**DATE: APRIL 1, 2007**

**SHORT TERM PAVEMENT MARKINGS**

**LC7802**

PROJECT NAME		ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
<b>LAKE COUNTY STANDARDS &amp; DETAILS</b>		CHXX	XXX	XX-XXXXX-XX-XX	XX	XX

**CIVILTECH**  
Two Pierce Place, Suite 1400  
Itasca, Illinois 60143  
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DESIGNED - PK	REVISED -
DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**LCDOT HIGHWAY STANDARDS**

SHEET NO. 19 OF 22 SHEETS STA. TO STA.

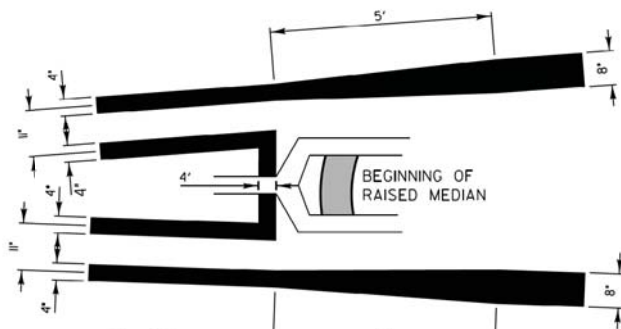
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	466
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



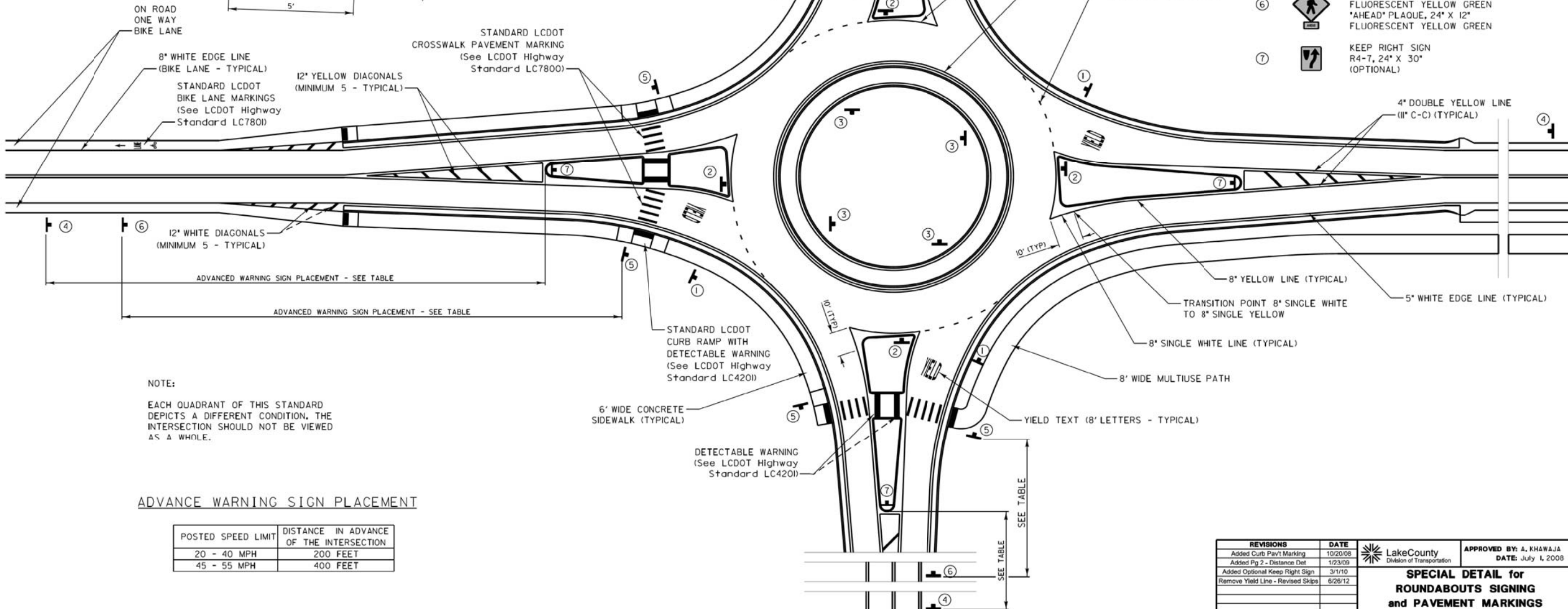
# SPECIAL DETAIL FOR ROUNDABOUTS SIGNING and PAVEMENT MARKINGS

DATE	BY	SURVEYED	PLOTTED	TEMPLATE	AREAS CHECKED
NO.					

DATE	BY	SURVEYED	PLOTTED	TEMPLATE	AREAS CHECKED
NO.					



**DETAILS OF 4' LINE TO 8' LINE TRANSITION**  
THE TRANSITION FROM THE 4' YELLOW LINE TO THE 8' YELLOW LINE SHALL START AT THE BEGINNING OF THE RAISED MEDIAN. THE WIDENING OF THE LINE SHALL BE ACCOMPLISHED WITH A SMOOTH TRANSITION AS SHOWN IN THE ABOVE DRAWING.



**NOTE:**  
EACH QUADRANT OF THIS STANDARD DEPICTS A DIFFERENT CONDITION. THE INTERSECTION SHOULD NOT BE VIEWED AS A WHOLE.

**ADVANCE WARNING SIGN PLACEMENT**

POSTED SPEED LIMIT	DISTANCE IN ADVANCE OF THE INTERSECTION
20 - 40 MPH	200 FEET
45 - 55 MPH	400 FEET

SIGN KEY	
①	YIELD SIGN RI-2, 36" X 36" X 36" ROUNDBOULT CIRCULATION PLAQUE R6-5P, 30" X 30"
②	YIELD SIGN RI-2, 36" X 36" X 36"
③	ROUNDBOULT DIRECTIONAL SIGN R6-4, 30" X 24"
④	CIRCULAR INTERSECTION SIGN W2-6, 36" X 36" ROUNDBOULT PLAQUE W6-7P, 24" X 12"
⑤	NONVEHICULAR (PEDESTRIAN CROSSING) WARNING SIGN, 36" X 36" FLUORESCENT YELLOW GREEN DOWNWARD DIAGONAL ARROW PLAQUE, 24" X 12" FLUORESCENT YELLOW GREEN
⑥	NONVEHICULAR (PEDESTRIAN CROSSING) WARNING SIGN, 36" X 36" FLUORESCENT YELLOW GREEN "AHEAD" PLAQUE, 24" X 12" FLUORESCENT YELLOW GREEN
⑦	KEEP RIGHT SIGN R4-7, 24" X 30" (OPTIONAL)

REVISIONS	DATE	APPROVED BY: A. KHAWAJA
Added Curb Pav't Marking	10/20/08	DATE: July 1, 2008
Added Pg 2 - Distance Det	1/23/09	
Added Optional Keep Right Sign	3/1/10	
Remove Yield Line - Revised Skips	6/28/12	

LakeCounty  
Division of Transportation

**SPECIAL DETAIL for  
ROUNDBOULTS SIGNING  
and PAVEMENT MARKINGS**

SHEET 1 OF 2

NO.	REVISIONS / REMARKS	DATE	BY	SURVEYOR	DSGNER/LIAISON	PLOTTED BY



**TYPICAL SECTIONS**

ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
CH				

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DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LCDOT HIGHWAY STANDARDS**

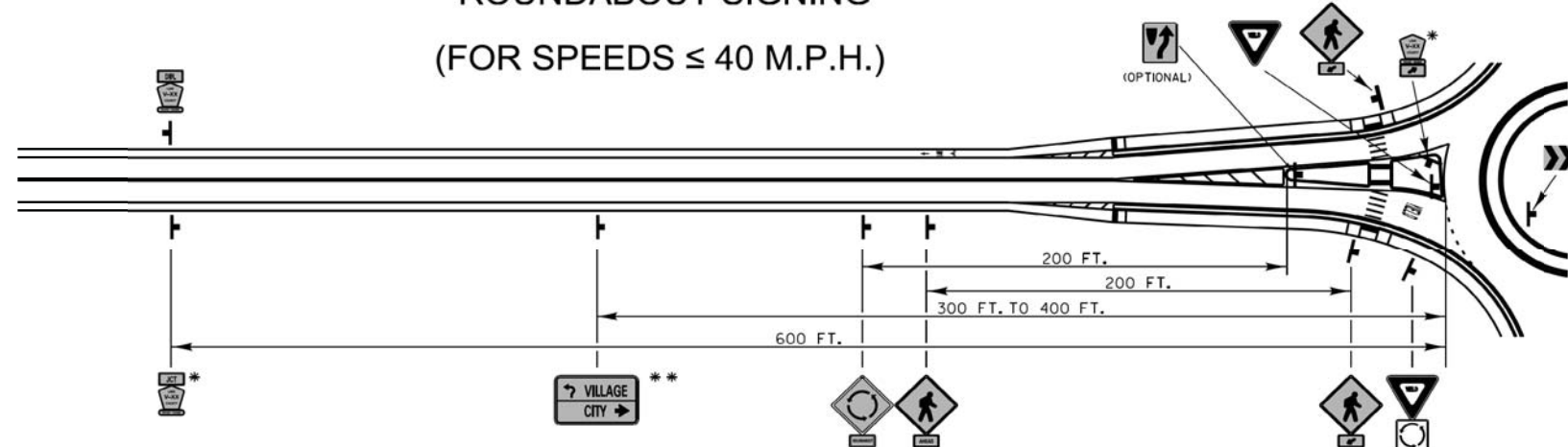
SHEET NO. 20 OF 22 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	467
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
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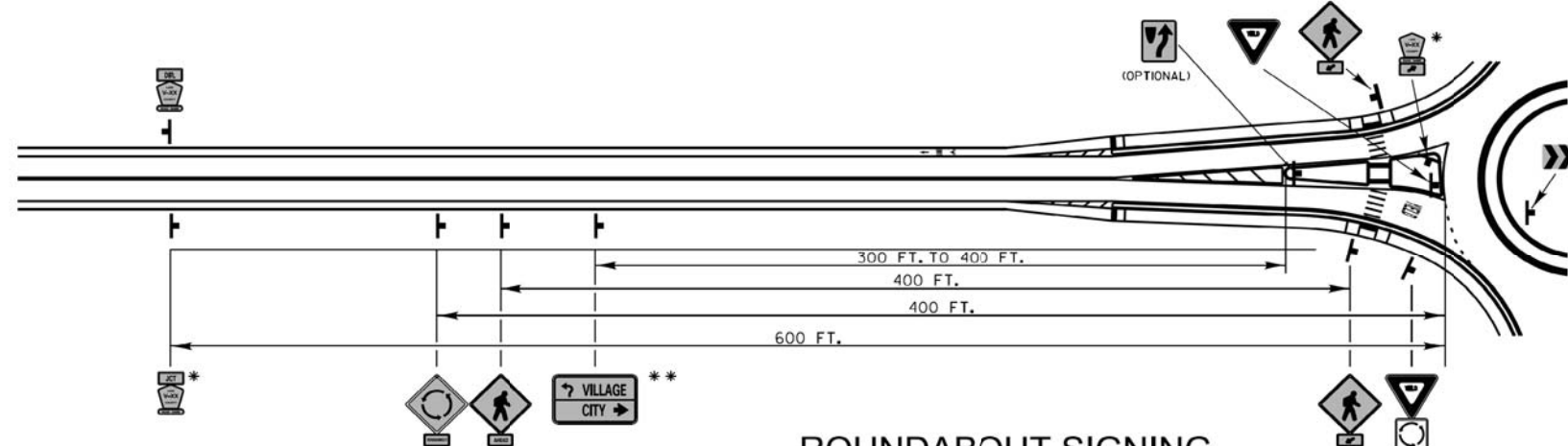
**ROUNDBABOUT SIGNING  
(FOR SPEEDS ≤ 40 M.P.H.)**



• FOR NON-MARKED ROUTES, USE ADVANCE INTERSECTION NAME SIGN WITH ROUNDBABOUT SYMBOL

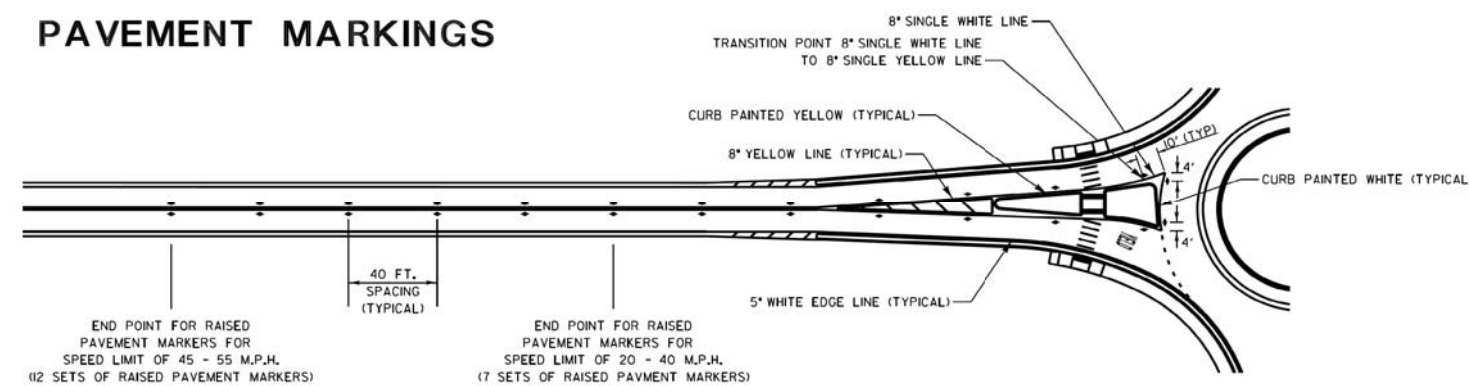
•• OPTIONAL

**SPECIAL DETAIL FOR ROUNDBABOUTS  
SIGNING and PAVEMENT MARKINGS**



**ROUNDBABOUT SIGNING  
(FOR SPEEDS ≥ 45 M.P.H.)**

**ROUNDBABOUT  
PAVEMENT MARKINGS**



END POINT FOR RAISED PAVEMENT MARKERS FOR SPEED LIMIT OF 45 - 55 M.P.H. (12 SETS OF RAISED PAVEMENT MARKERS)

40 FT. SPACING (TYPICAL)

END POINT FOR RAISED PAVEMENT MARKERS FOR SPEED LIMIT OF 20 - 40 M.P.H. (7 SETS OF RAISED PAVEMENT MARKERS)

**RAISED PAVEMENT MARKERS**  
45 - 55 mph = 12 Sets at 40' C-C  
20 - 40 mph = 7 Sets at 40' C-C

REVISIONS	DATE	APPROVED BY: A. KHAWAJA
Added Curb Pav't Marking	10/20/08	DATE: July 1, 2008
Added Fig 2 - Distance Det	1/23/09	
Added Optional Keep Right Sign	3/1/10	
Remove Yield Line - Revised Skips	6/28/12	

Lake County  
Division of Transportation

**SPECIAL DETAIL for  
ROUNDBABOUTS SIGNING  
and PAVEMENT MARKINGS**

SHEET 2 OF 2

LC7804

NO.	REVISIONS / REMARKS	DATE	BY	SURVEYOR	DSGNER/LIAISON	PLOTTED BY



TYPICAL SECTIONS

ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
CH				

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DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LC DOT HIGHWAY STANDARDS**

SHEET NO. 21 OF 22 SHEETS STA. TO STA.

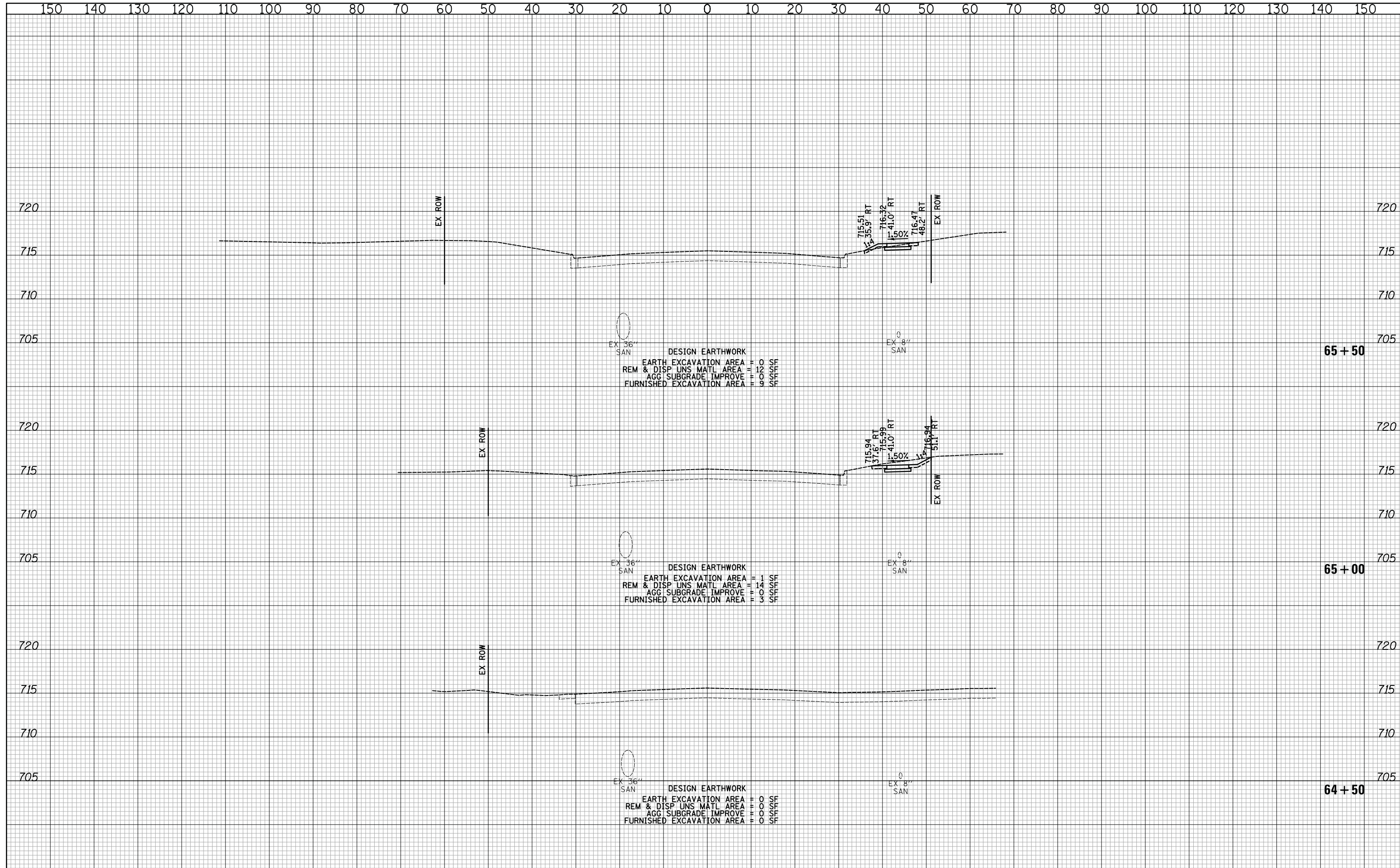
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	468
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1   ILLINOIS   FED. AID PROJECT				





DATE	
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SURVEYED	
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TEMPLATE	
AREAS	
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DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 0 SF  
 REM & DISP UNS MATL AREA = 12 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 9 SF

DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 1 SF  
 REM & DISP UNS MATL AREA = 14 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 3 SF

DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 0 SF  
 REM & DISP UNS MATL AREA = 0 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 0 SF

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CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**



**CROSS SECTIONS - 14TH STREET**

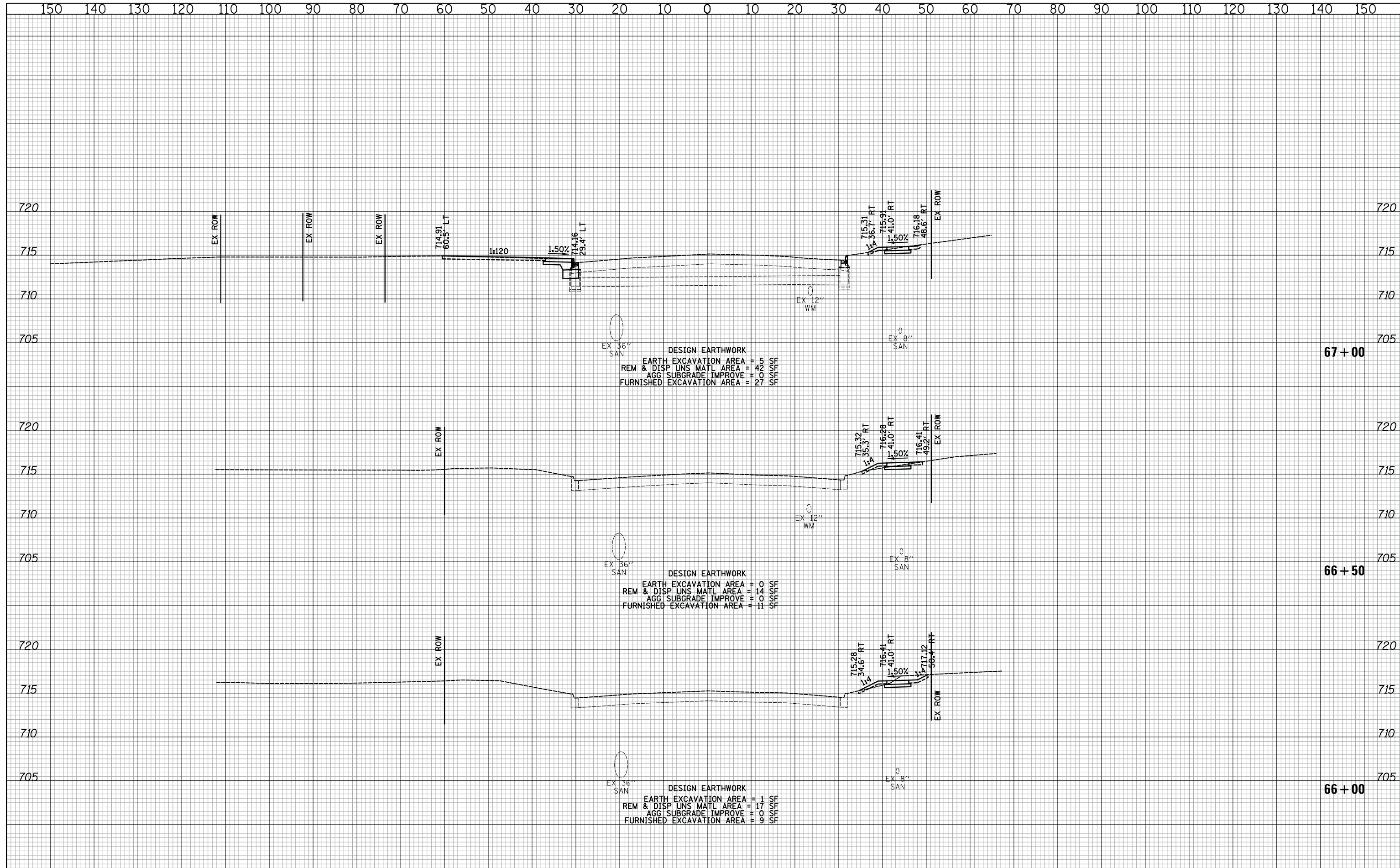
SHEET NO. 1 OF 71 SHEETS STA. 64+50 TO STA. 65+50

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	470
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 5 SF  
 REM & DISP UNS MATL AREA = 42 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 27 SF

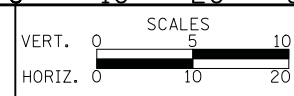
DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 0 SF  
 REM & DISP UNS MATL AREA = 14 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 11 SF

DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 1 SF  
 REM & DISP UNS MATL AREA = 17 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 9 SF

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CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**



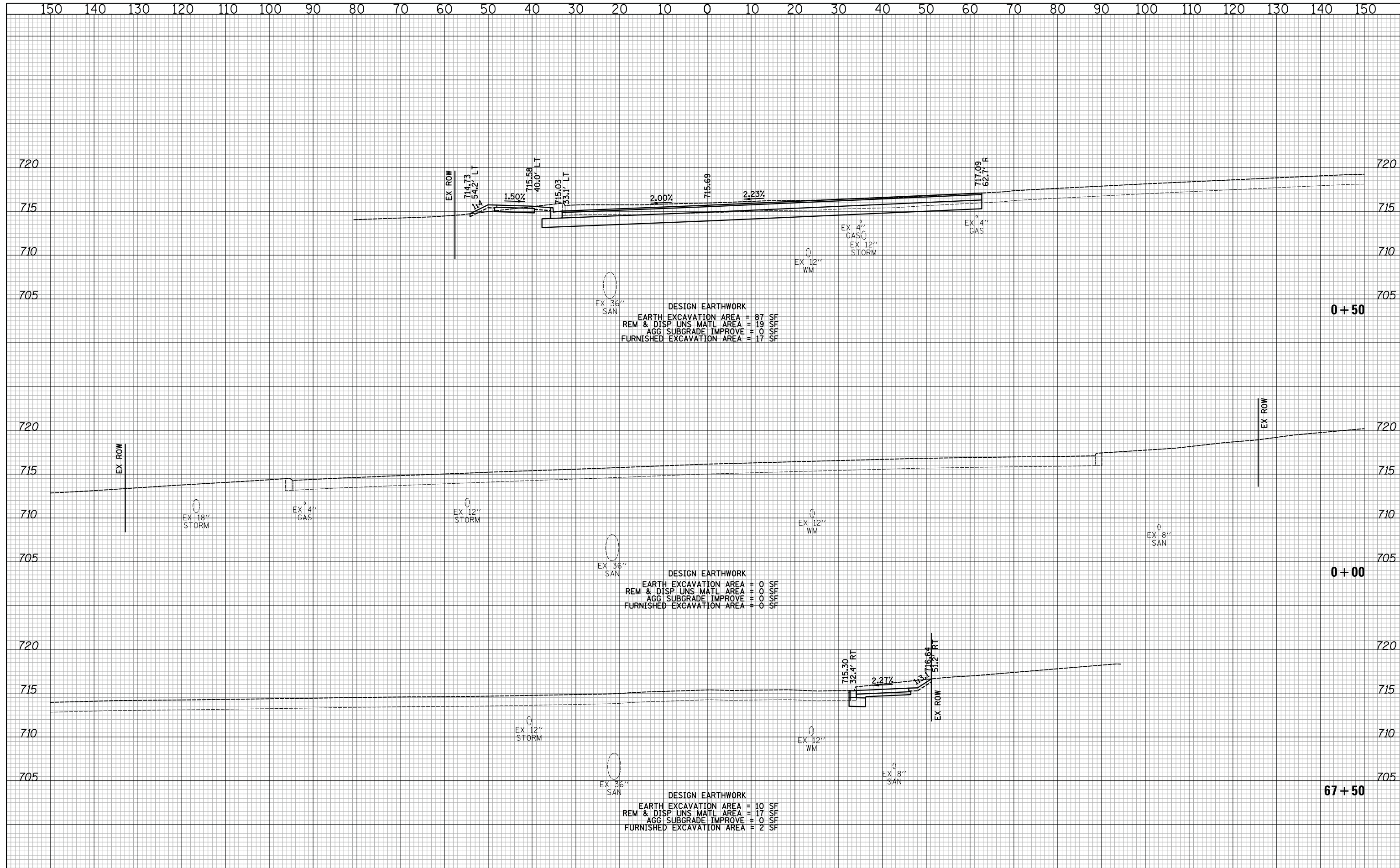
**CROSS SECTIONS - 14TH STREET**

SHEET NO. 2 OF 71 SHEETS STA. 66+00 TO STA. 67+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	471
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 87 SF  
 REM & DISP UNS MATL AREA = 19 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 17 SF

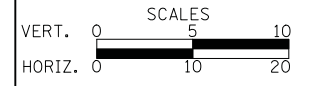
DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 0 SF  
 REM & DISP UNS MATL AREA = 0 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 0 SF

DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 10 SF  
 REM & DISP UNS MATL AREA = 17 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 2 SF

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DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**



**CROSS SECTIONS - 14TH STREET**

SHEET NO. 3 OF 71 SHEETS STA. 67+50 TO STA. +50

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	472
				CONTRACT NO. 61F33
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				




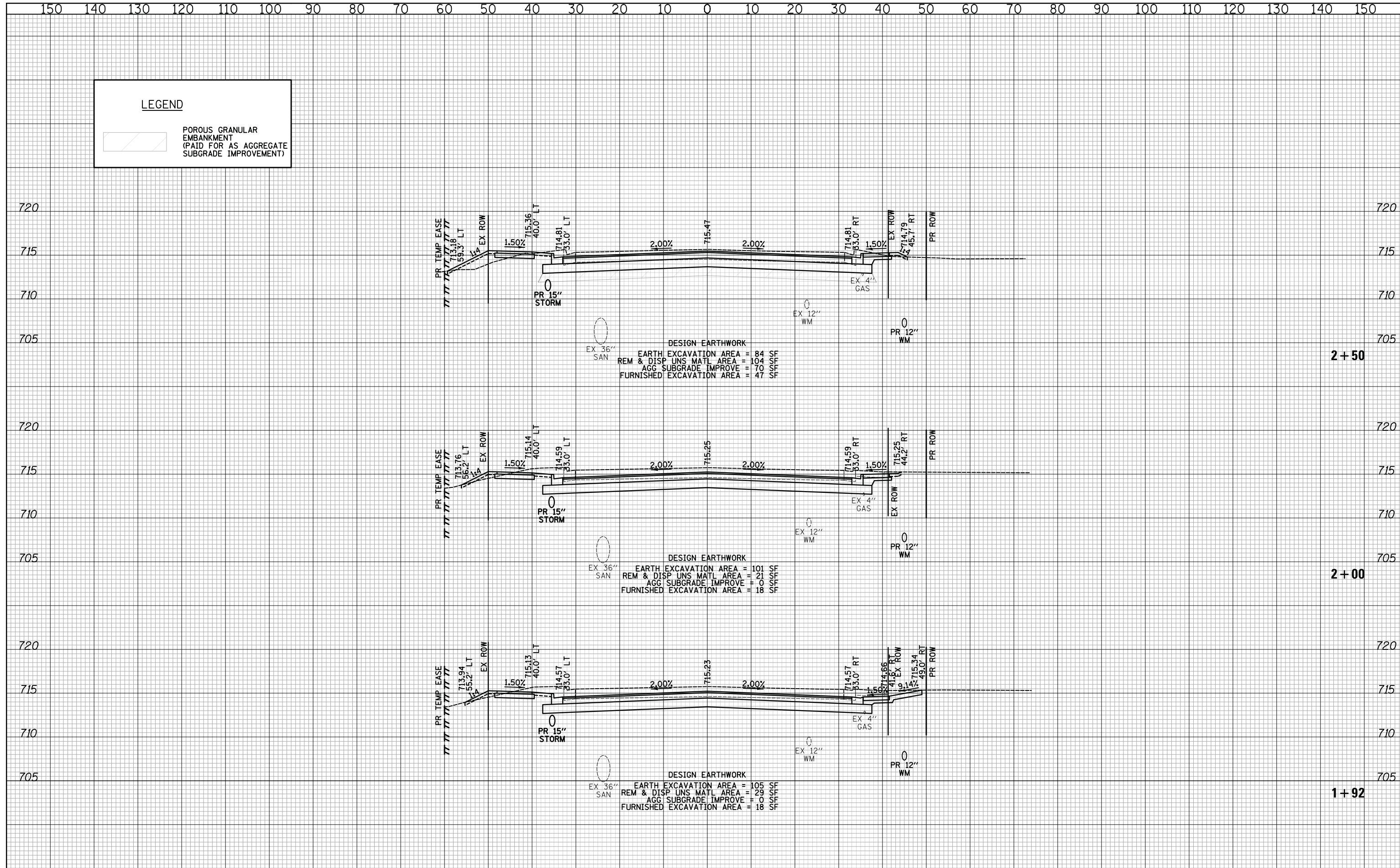


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**LEGEND**

 POROUS GRANULAR EMBANKMENT (PAID FOR AS AGGREGATE SUBGRADE IMPROVEMENT)



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CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
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**CROSS SECTIONS - 14TH STREET**

SHEET NO. 5 OF 71 SHEETS STA. 1+92 TO STA. 2+50

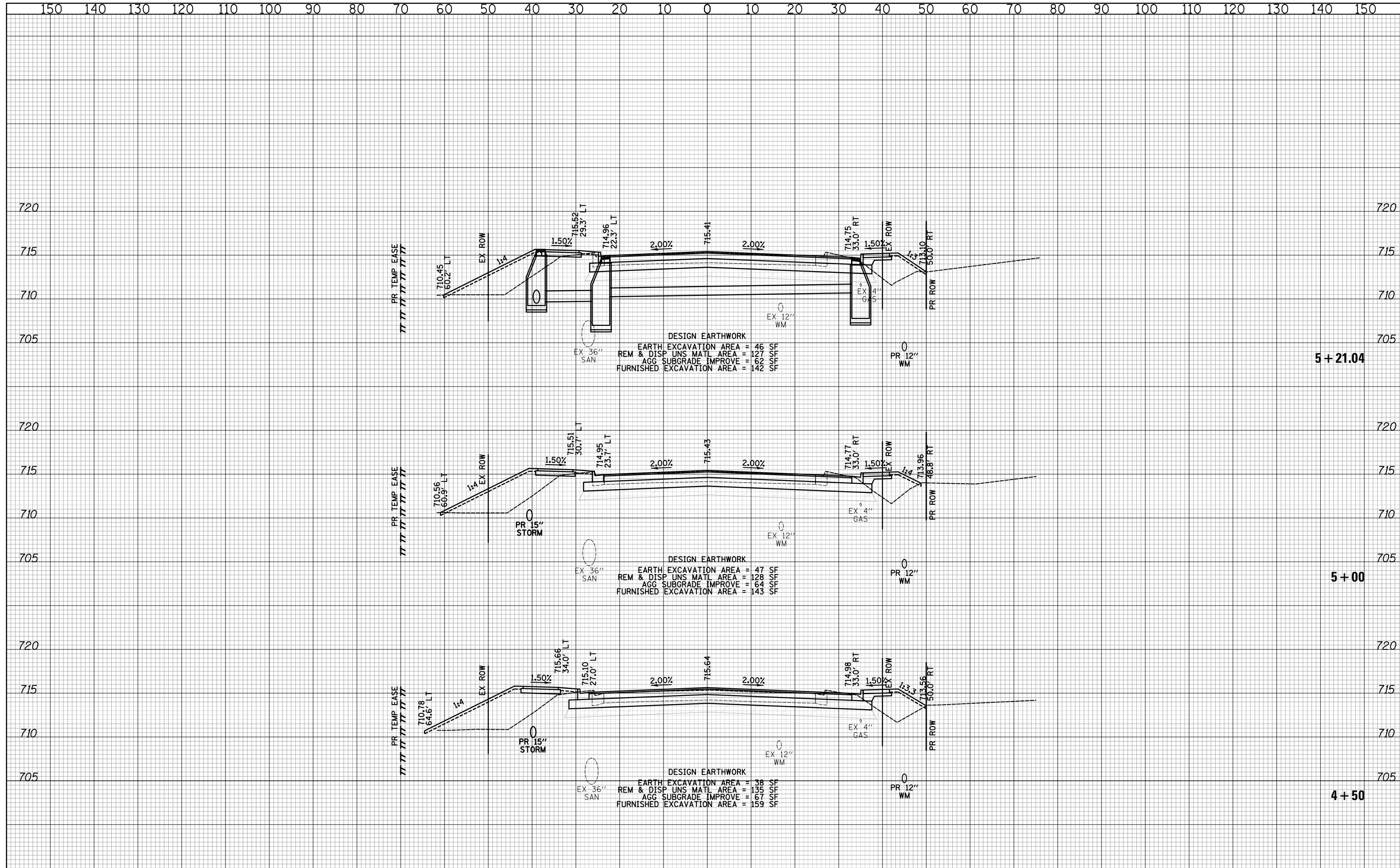
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	474
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				





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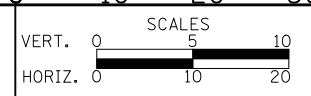
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**CROSS SECTIONS - 14TH STREET**

SHEET NO. 7 OF 71 SHEETS STA. 4+50 TO STA. 5+21.04

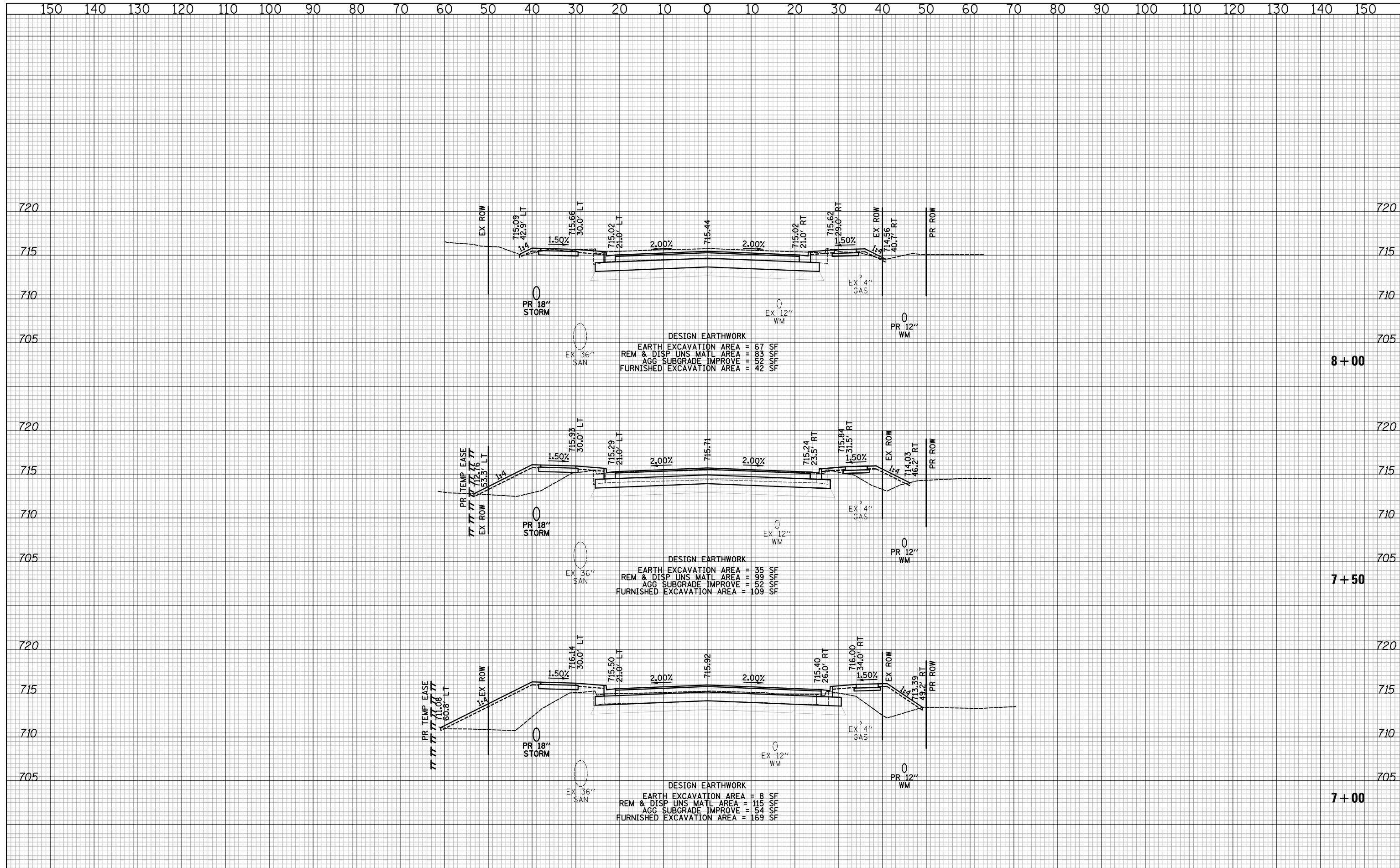
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	476
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				





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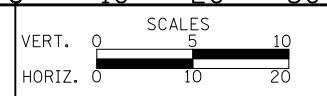
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DATE - 11/7/2018	REVISED -

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**DEPARTMENT OF TRANSPORTATION**



**CROSS SECTIONS - 14TH STREET**

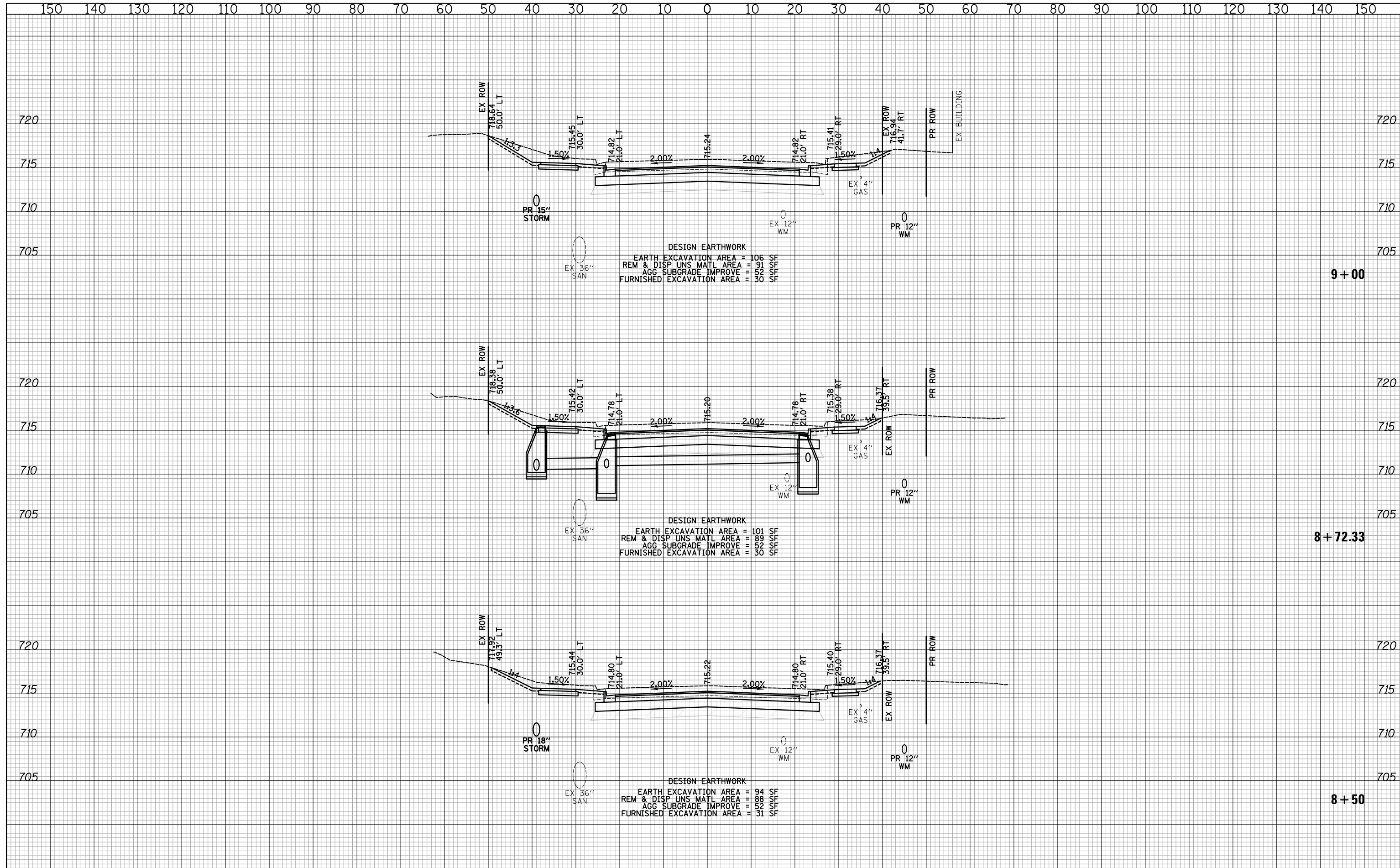
SHEET NO. 9 OF 71 SHEETS STA. 7+00 TO STA. 8+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	478
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



DATE	
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DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
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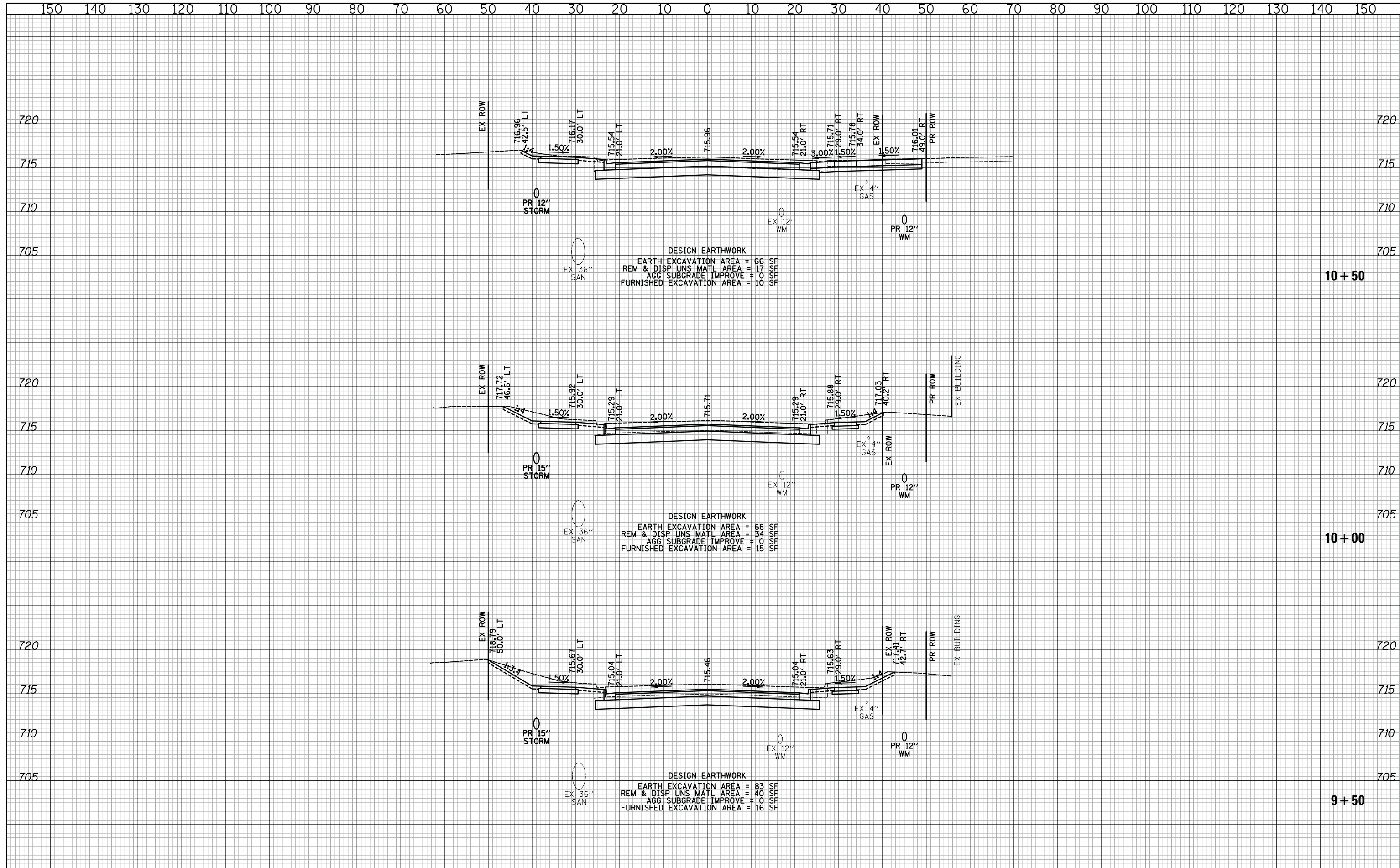
**CROSS SECTIONS - 14TH STREET**

SHEET NO. 10 OF 71 SHEETS STA. 8+50 TO STA. 9+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	479
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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10+50

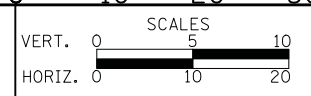
10+00

9+50

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CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

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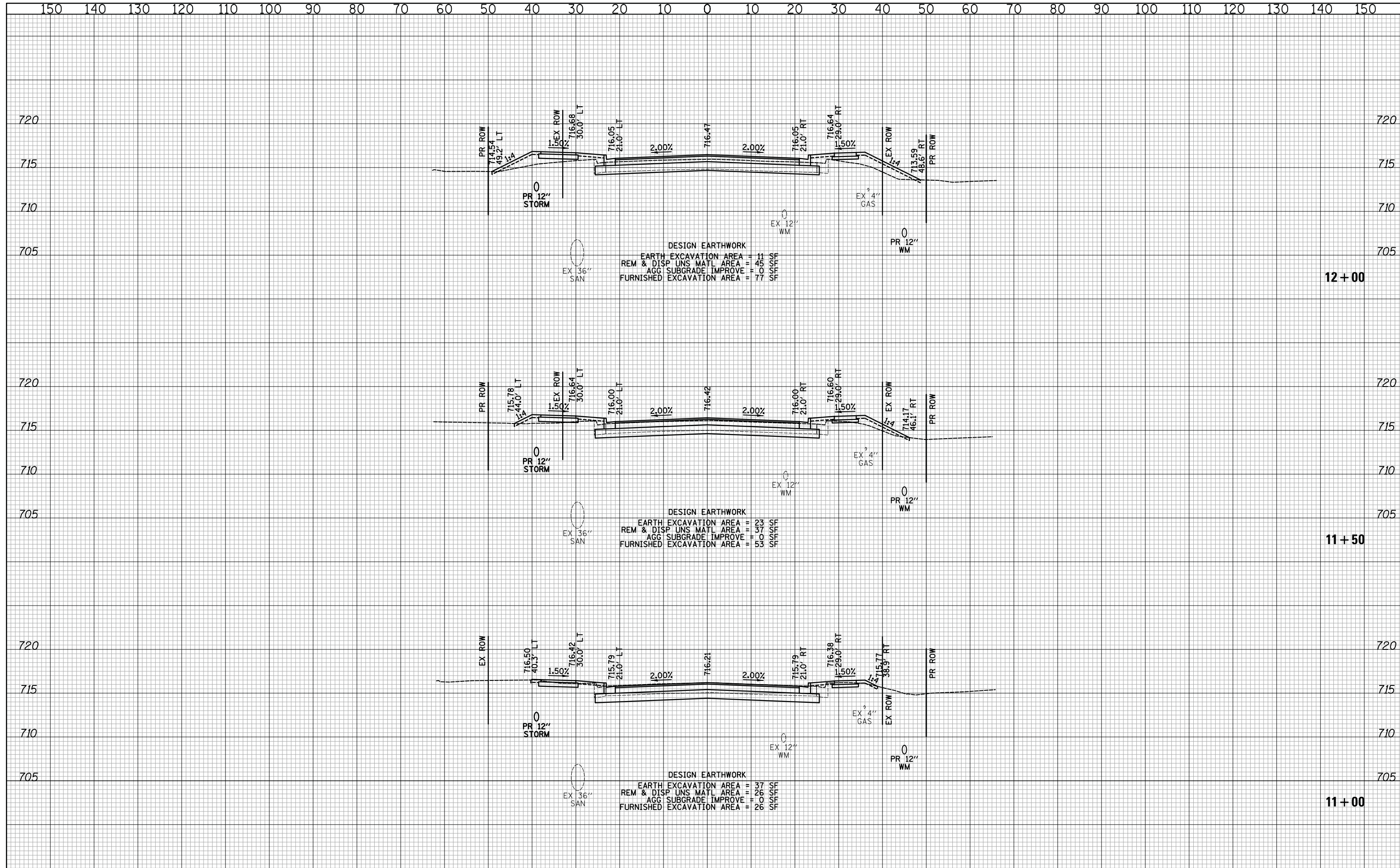


**CROSS SECTIONS - 14TH STREET**  
 SHEET NO. 11 OF 71 SHEETS STA. 9+50 TO STA. 10+50

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	480
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
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**CROSS SECTIONS - 14TH STREET**

SHEET NO. 12 OF 71 SHEETS STA. 11+00 TO STA. 12+00

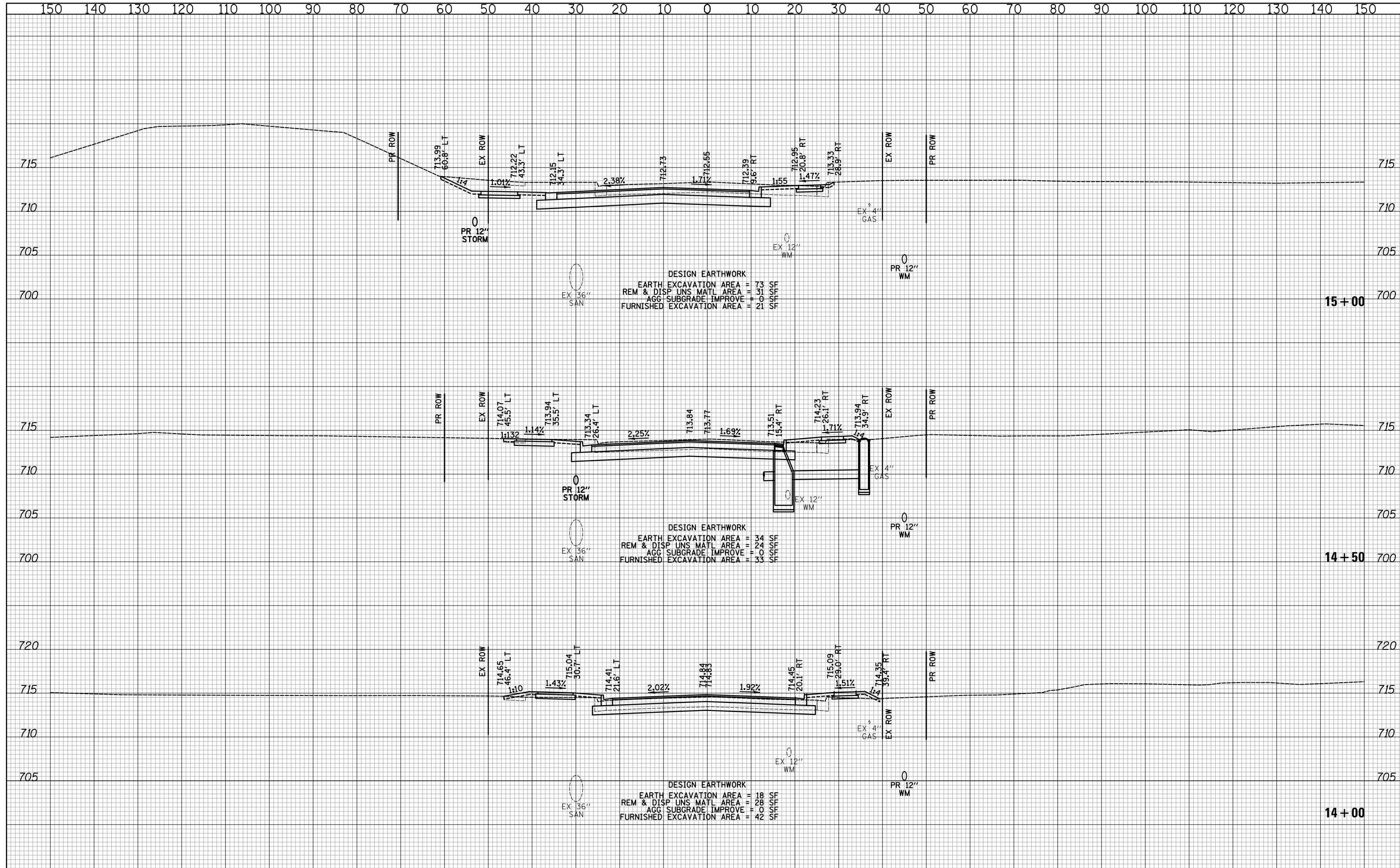
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	481
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				





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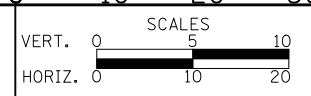
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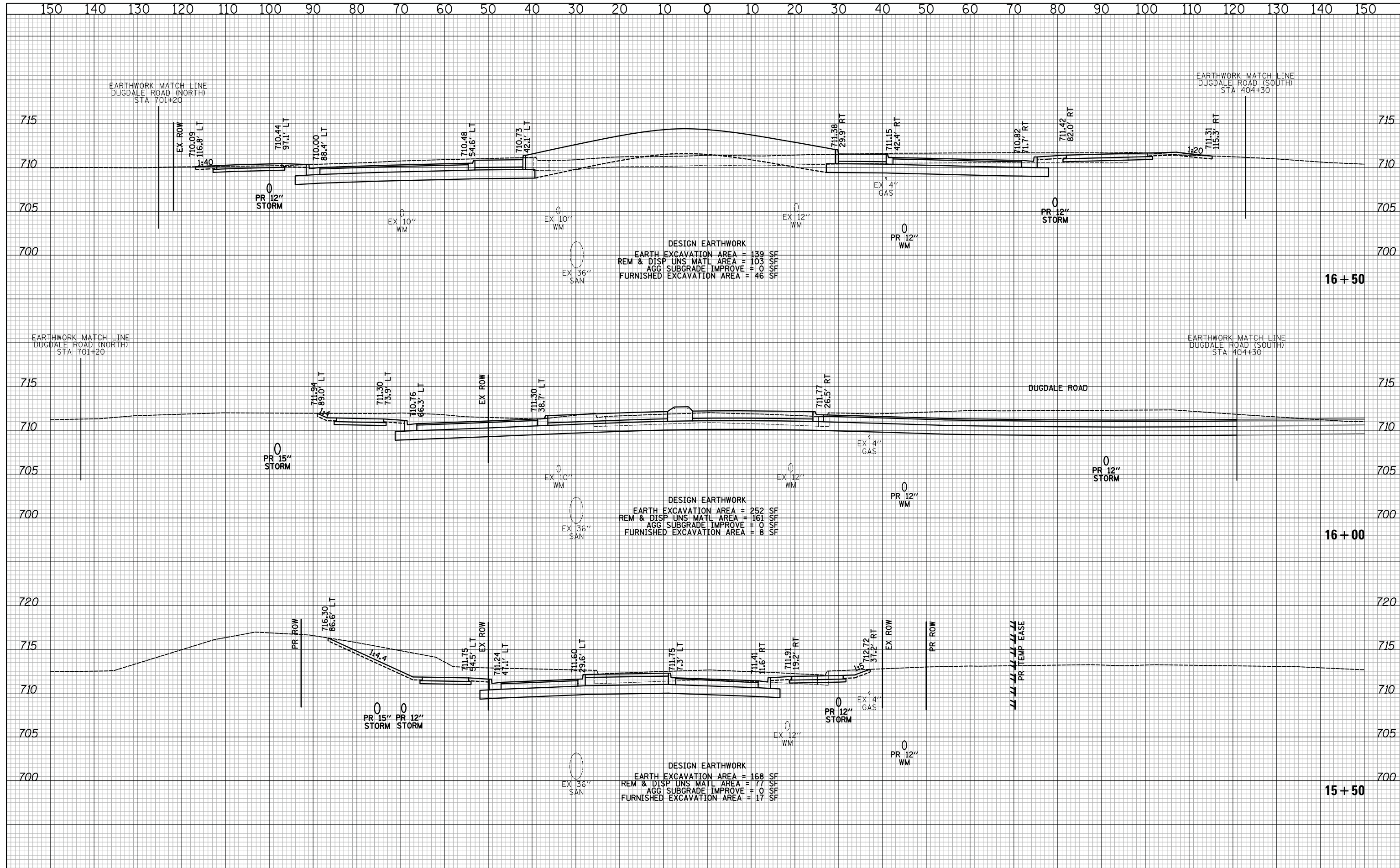
**CROSS SECTIONS - 14TH STREET**

SHEET NO. 14 OF 71 SHEETS STA. 14+00 TO STA. 15+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	483
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
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**CROSS SECTIONS - 14TH STREET**

SHEET NO. 15 OF 71 SHEETS STA. 15+50 TO STA. 16+50

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	484
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

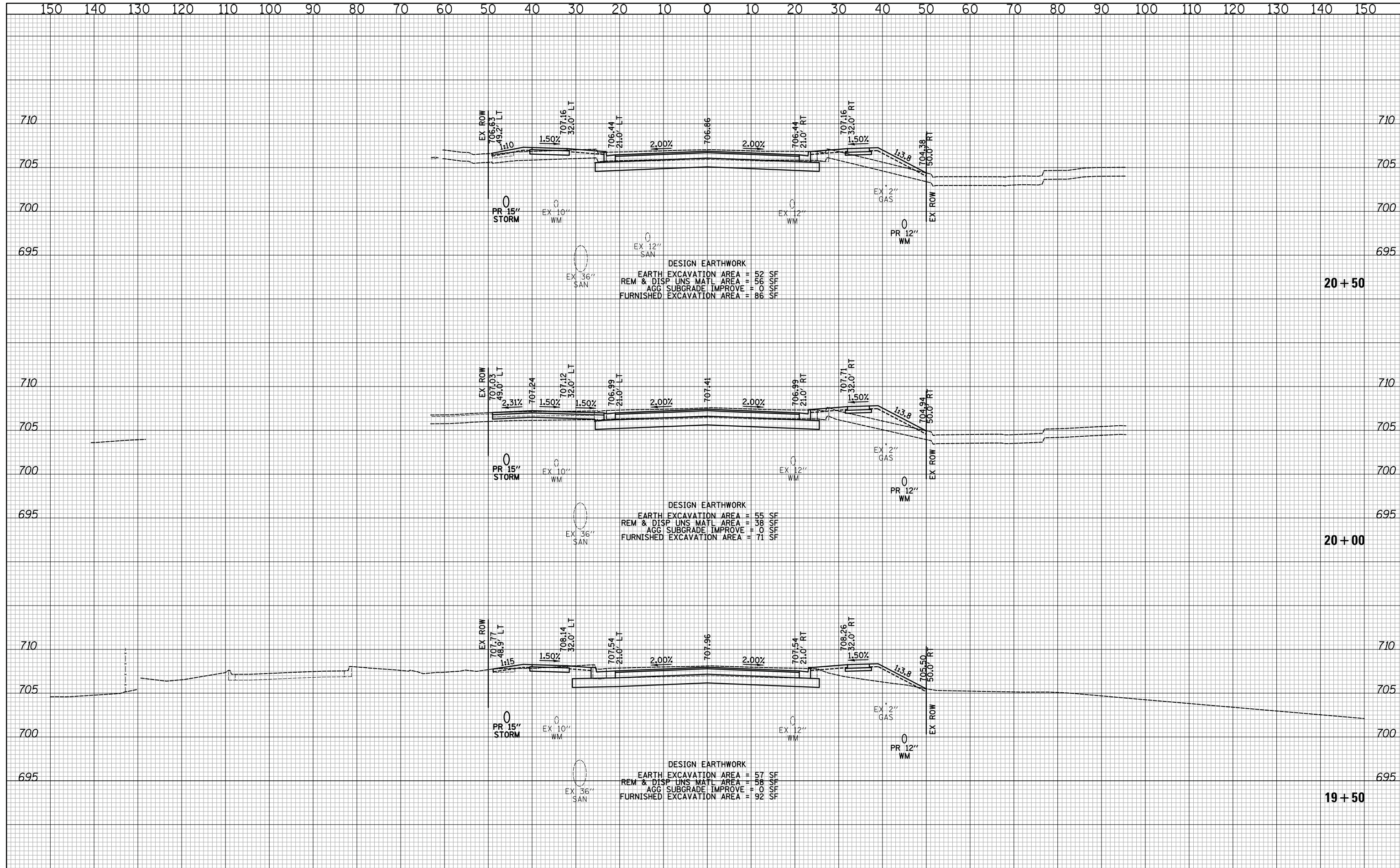






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DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 52 SF  
 REM & DISP UNS MATL AREA = 56 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 86 SF

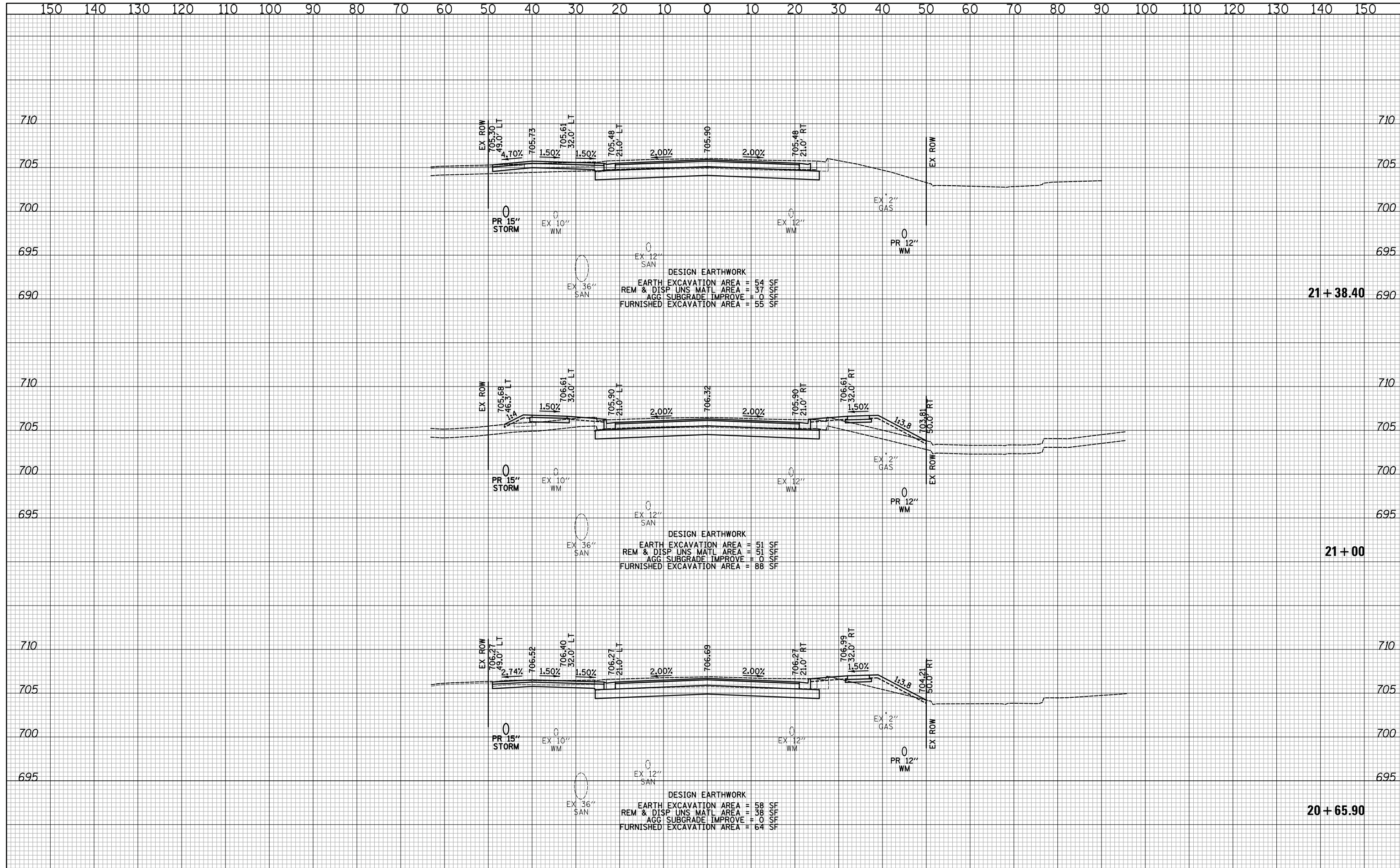
DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 55 SF  
 REM & DISP UNS MATL AREA = 38 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 71 SF

DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 57 SF  
 REM & DISP UNS MATL AREA = 58 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 92 SF



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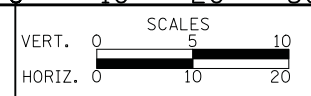
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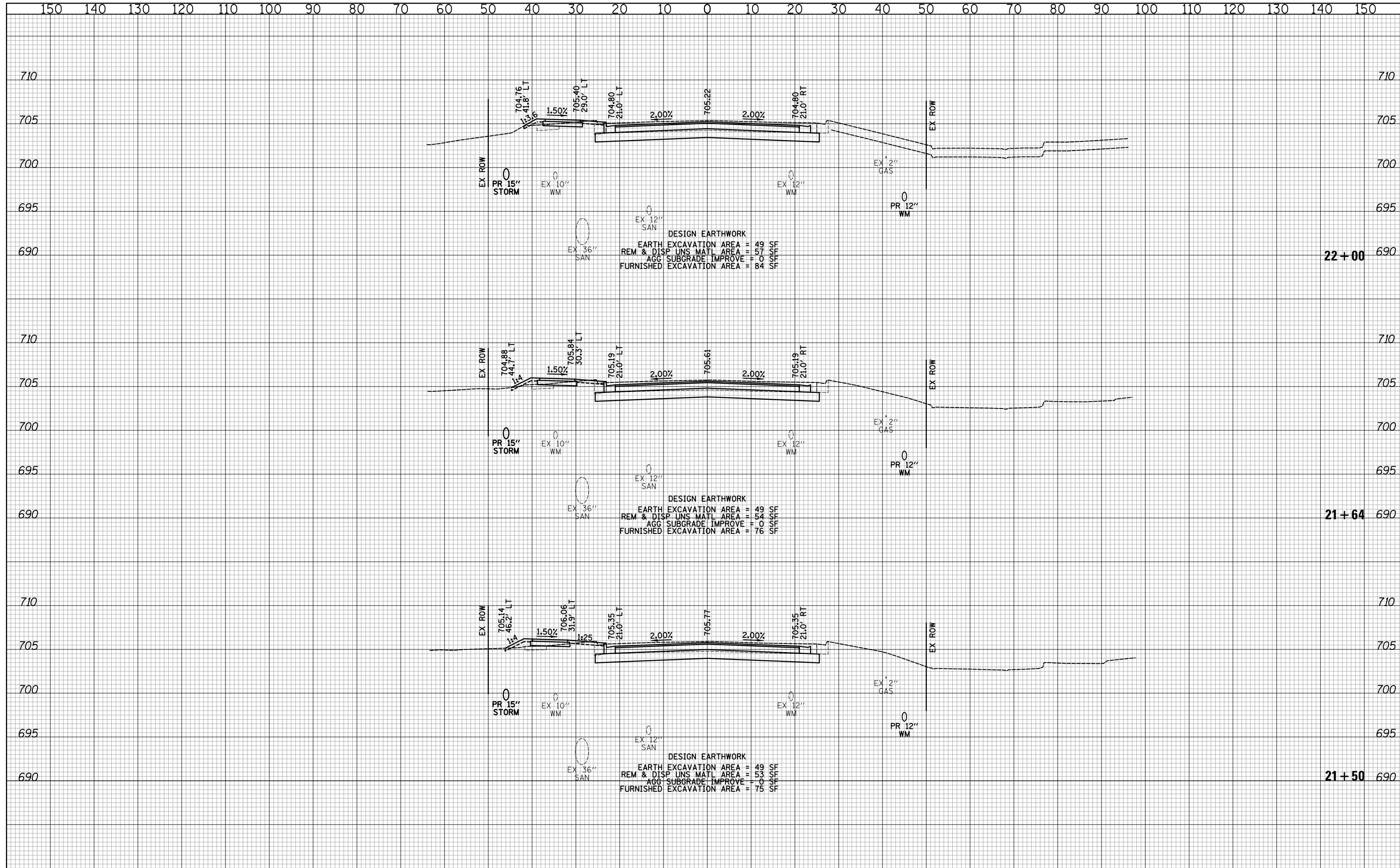


**CROSS SECTIONS - 14TH STREET**  
 SHEET NO. 19 OF 71 SHEETS STA. 20+65.90 TO STA. 21+38.40

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	488
				CONTRACT NO. 61F33
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
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DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 49 SF  
 REM & DISP UNS MATL AREA = 57 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 84 SF

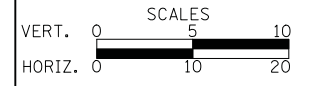
DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 49 SF  
 REM & DISP UNS MATL AREA = 54 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 76 SF

DESIGN EARTHWORK  
 EARTH EXCAVATION AREA = 49 SF  
 REM & DISP UNS MATL AREA = 53 SF  
 AGG SUBGRADE IMPROVE = 0 SF  
 FURNISHED EXCAVATION AREA = 75 SF

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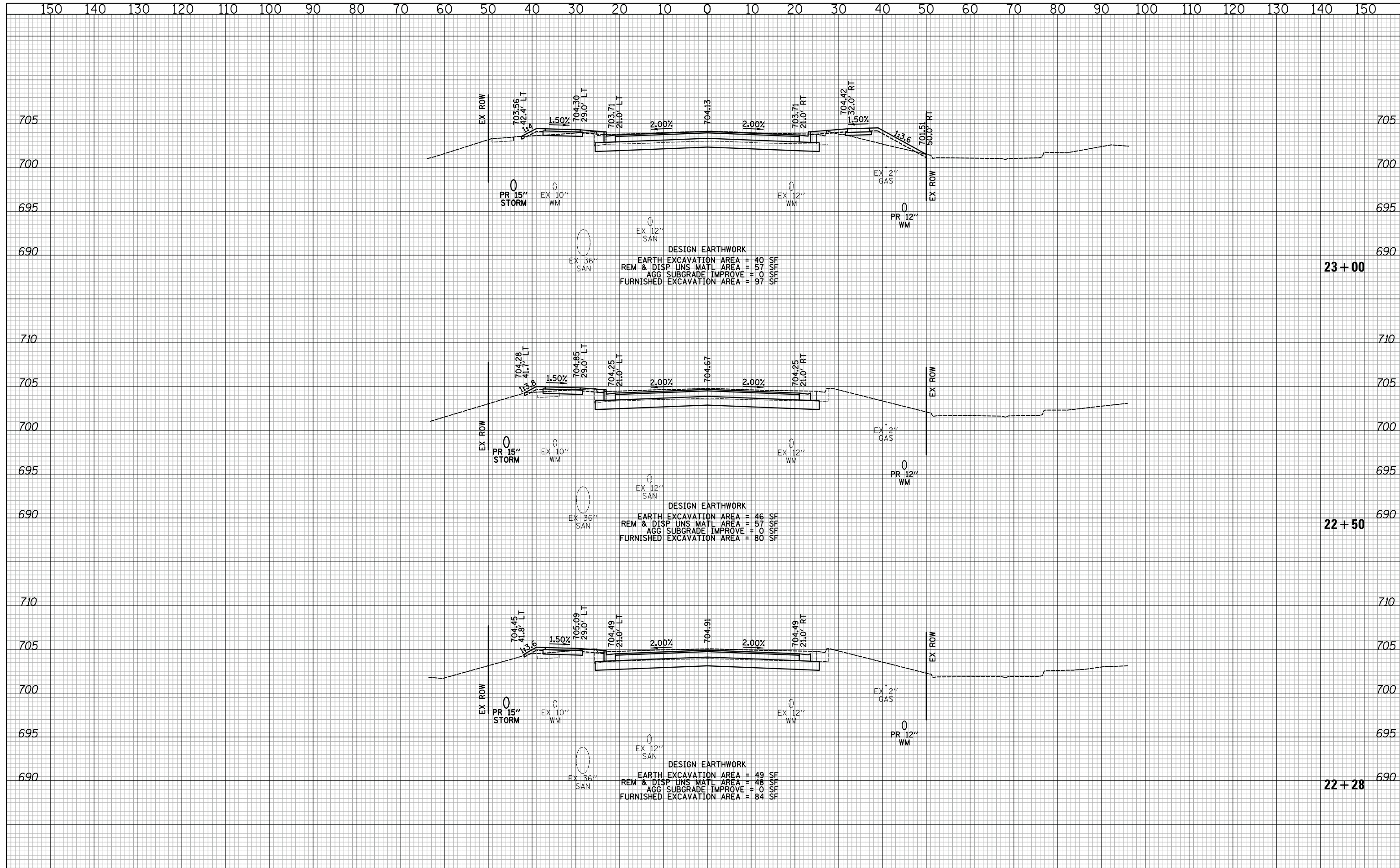
**CROSS SECTIONS - 14TH STREET**

SHEET NO. 20 OF 71 SHEETS STA. 21+50 TO STA. 22+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	489
				<b>CONTRACT NO. 61F33</b>
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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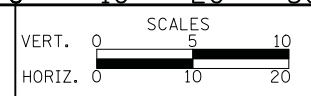
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**CROSS SECTIONS - 14TH STREET**

SHEET NO. 21 OF 71 SHEETS STA. 22+28 TO STA. 23+00

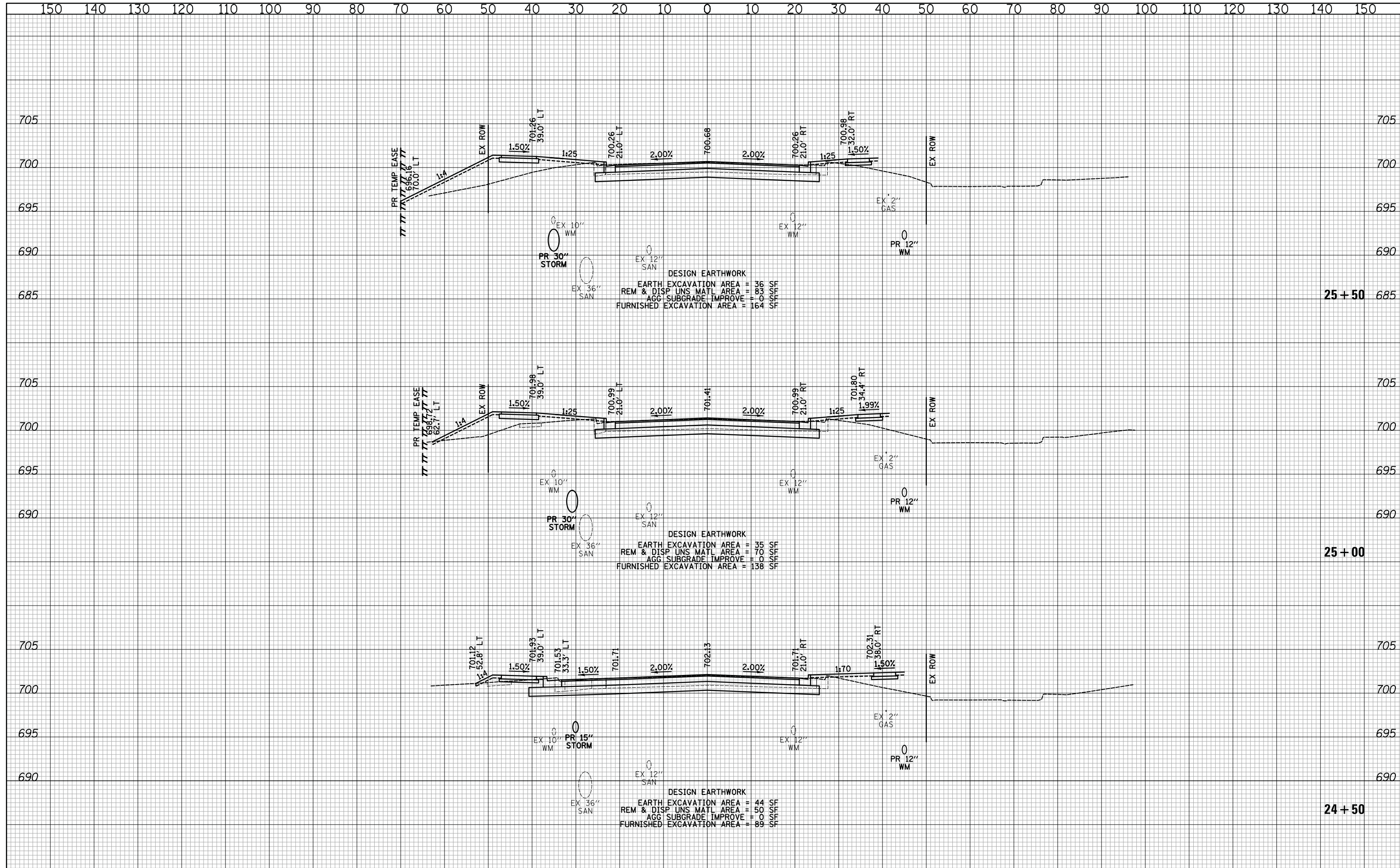
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	490
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				





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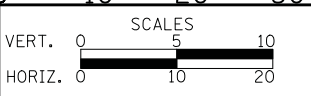
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**CROSS SECTIONS - 14TH STREET**  
 SHEET NO. 23 OF 71 SHEETS STA. 24+50 TO STA. 25+50

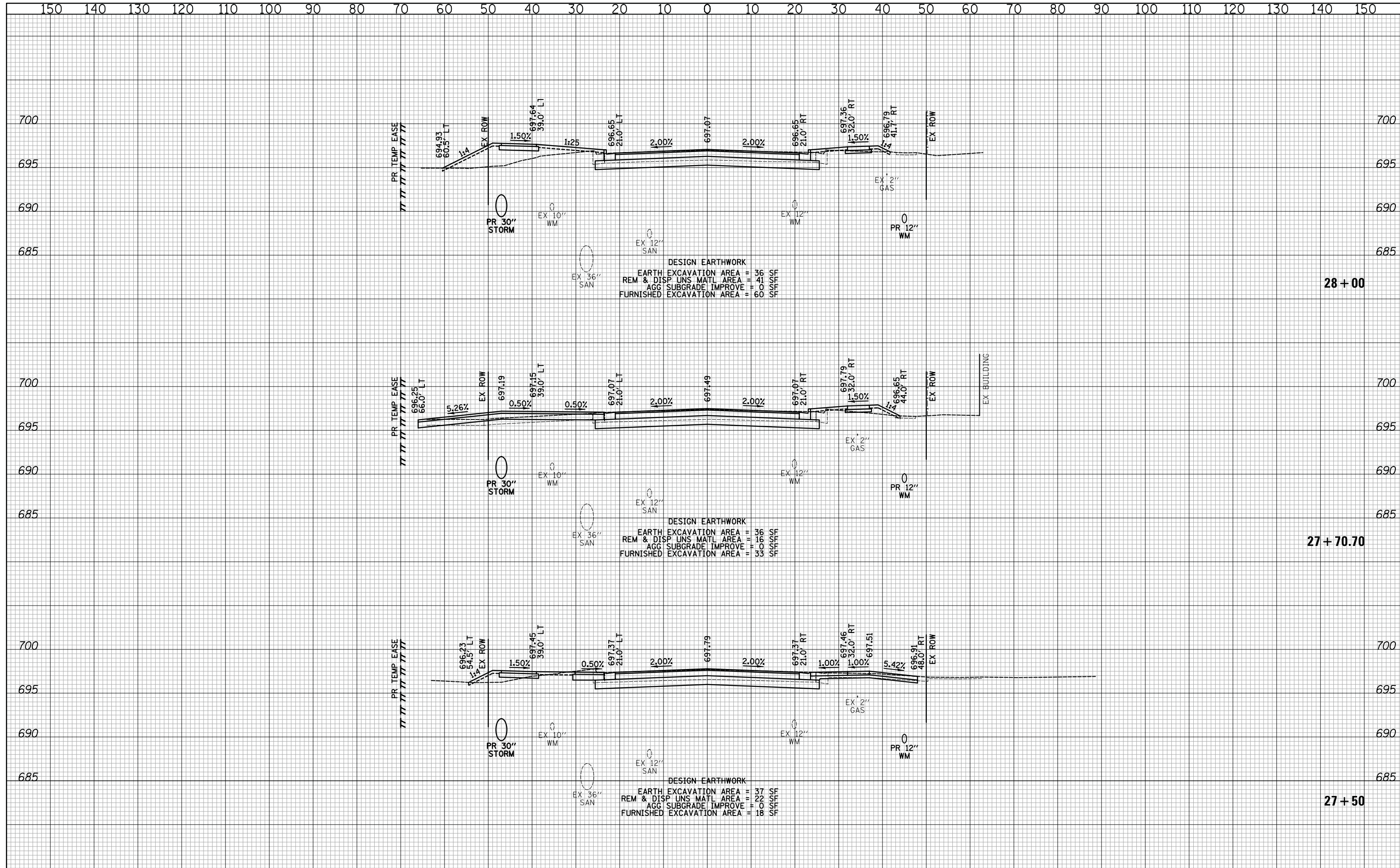
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	492
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				





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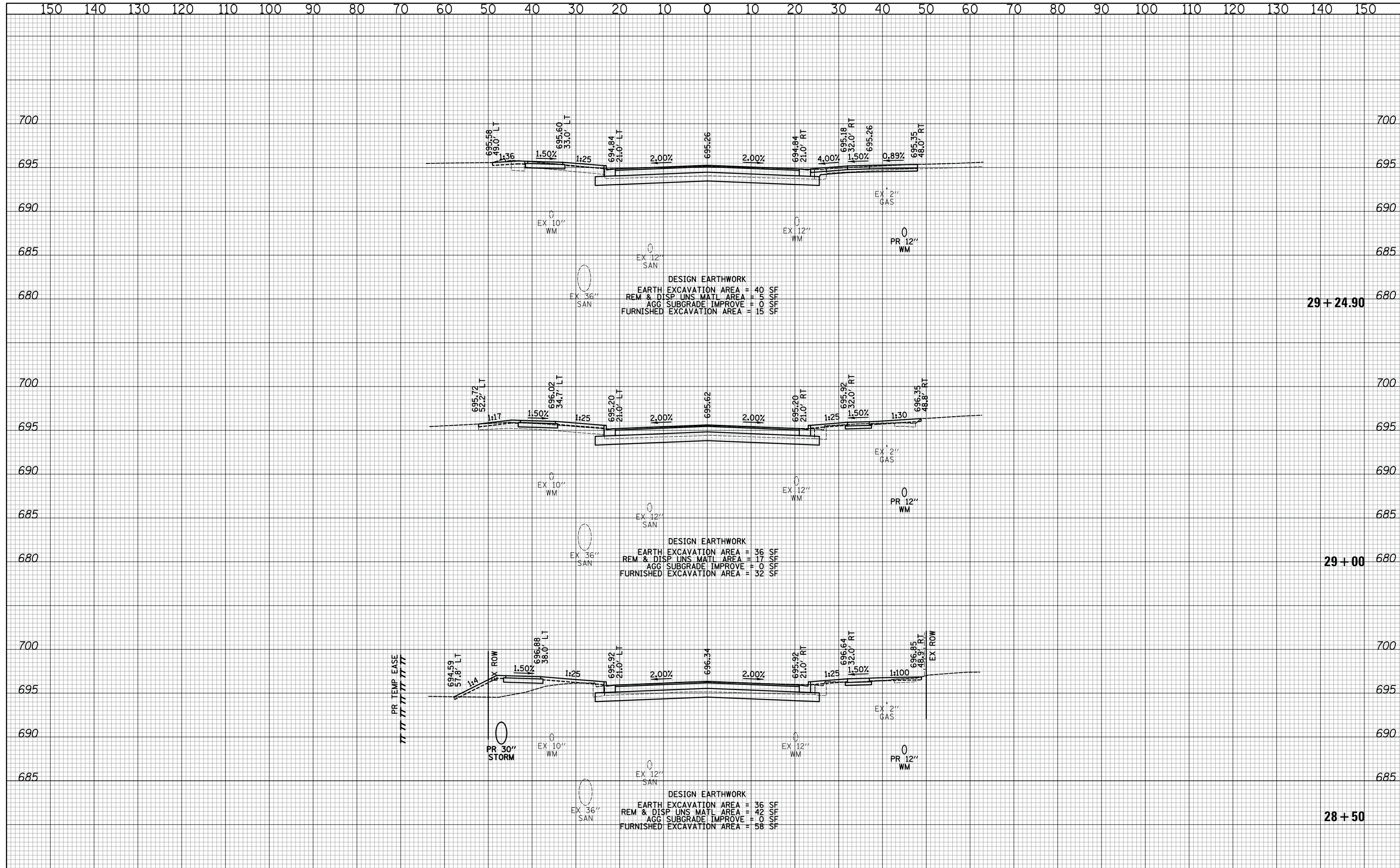
**CROSS SECTIONS - 14TH STREET**

SHEET NO. 25 OF 71 SHEETS STA. 27+50 TO STA. 28+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	494
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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

DATE	
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AREAS	
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ORIGINAL SURVEY	
NOTE BOOK	
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29 + 24.90

29 + 00

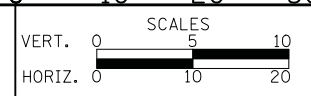
28 + 50



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DEPARTMENT OF TRANSPORTATION



CROSS SECTIONS - 14TH STREET  
SHEET NO. 26 OF 71 SHEETS STA. 28+50 TO STA. 29+24.90

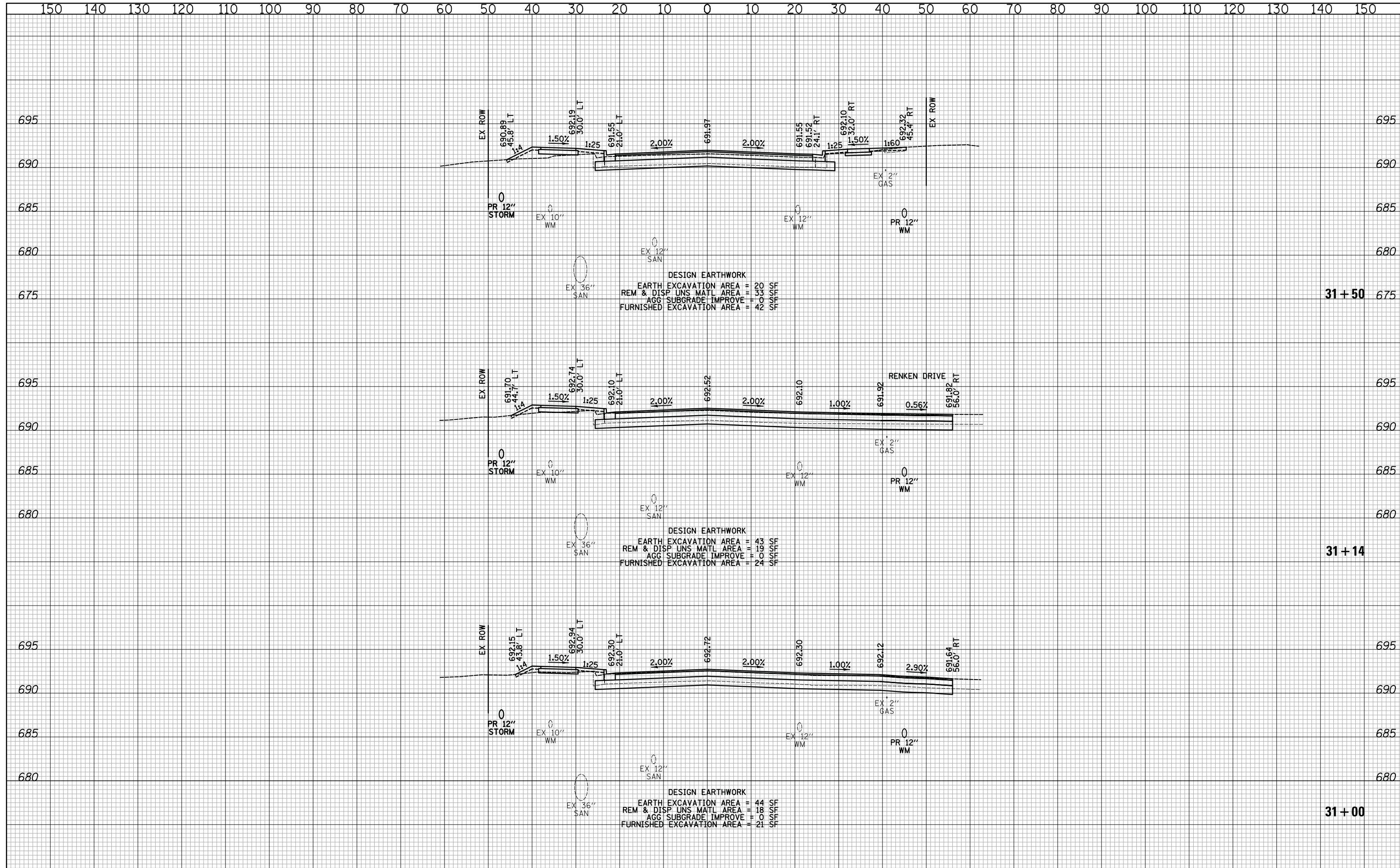
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	495
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				





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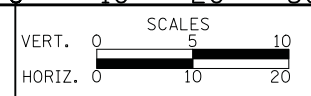
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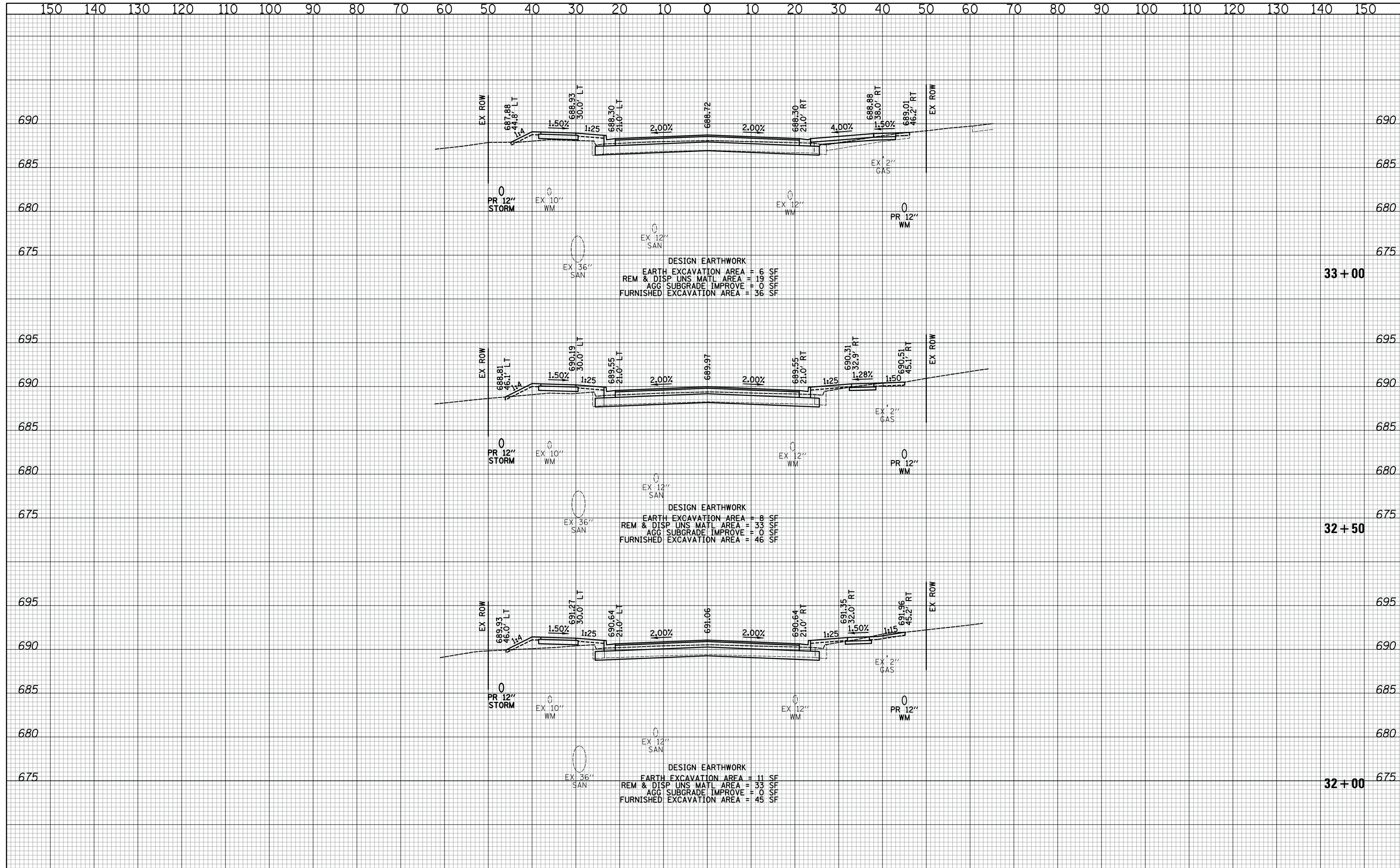
**CROSS SECTIONS - 14TH STREET**

SHEET NO. 28 OF 71 SHEETS STA. 31+00 TO STA. 31+50

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	497
				CONTRACT NO. 61F33
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
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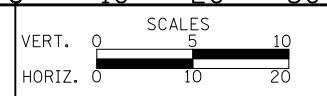
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SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



**CIVILTECH**  
 Two Pierce Place, Suite 1400  
 Itasca, Illinois 60143  
 Tel: 630.773.3900 Fax: 630.773.3975  
 www.civiltechinc.com

DESIGNED - PK	REVISED -
DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

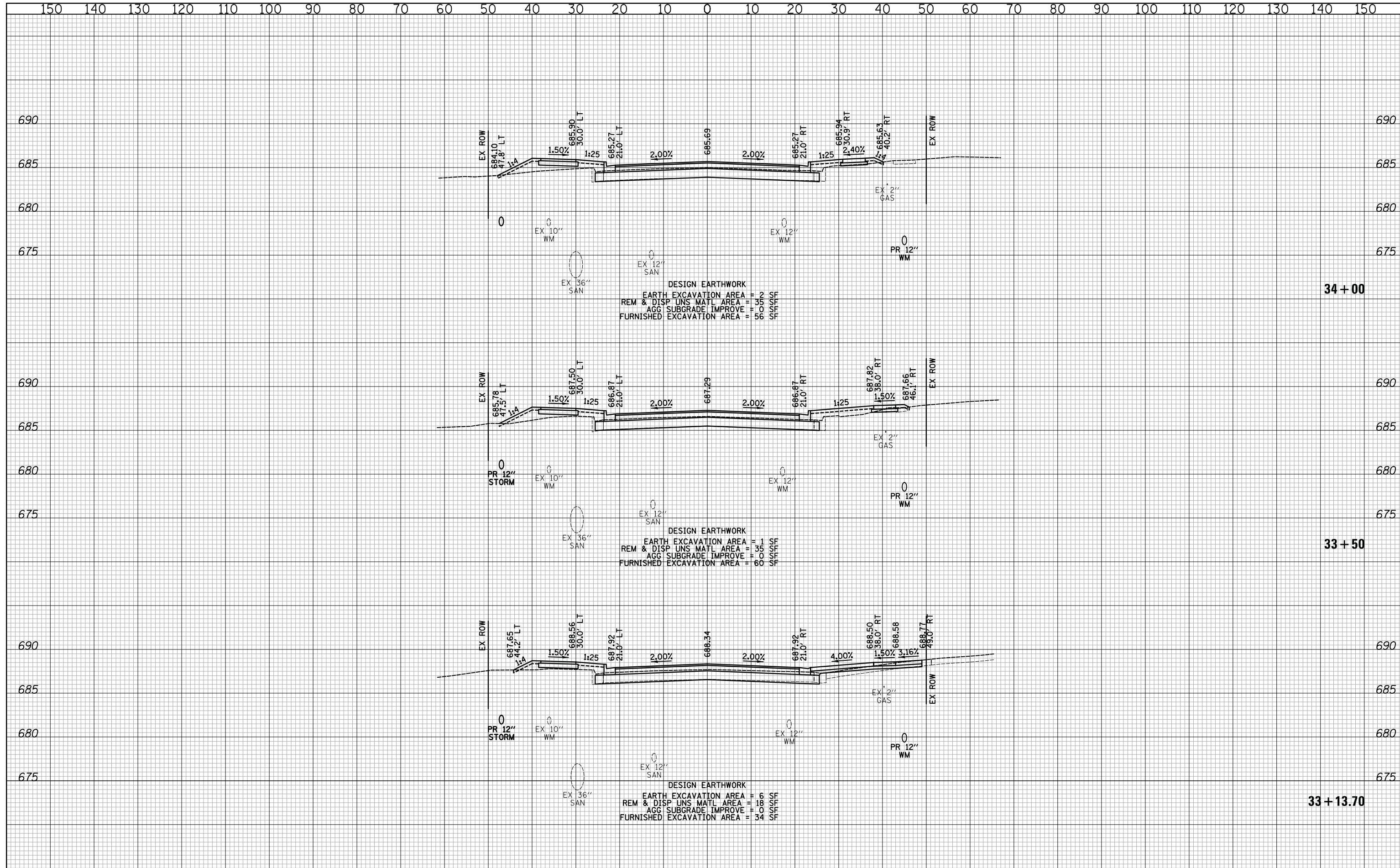


**CROSS SECTIONS - 14TH STREET**  
 SHEET NO. 29 OF 71 SHEETS STA. 32+00 TO STA. 33+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	498
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

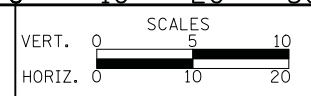
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



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DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**



**CROSS SECTIONS - 14TH STREET**

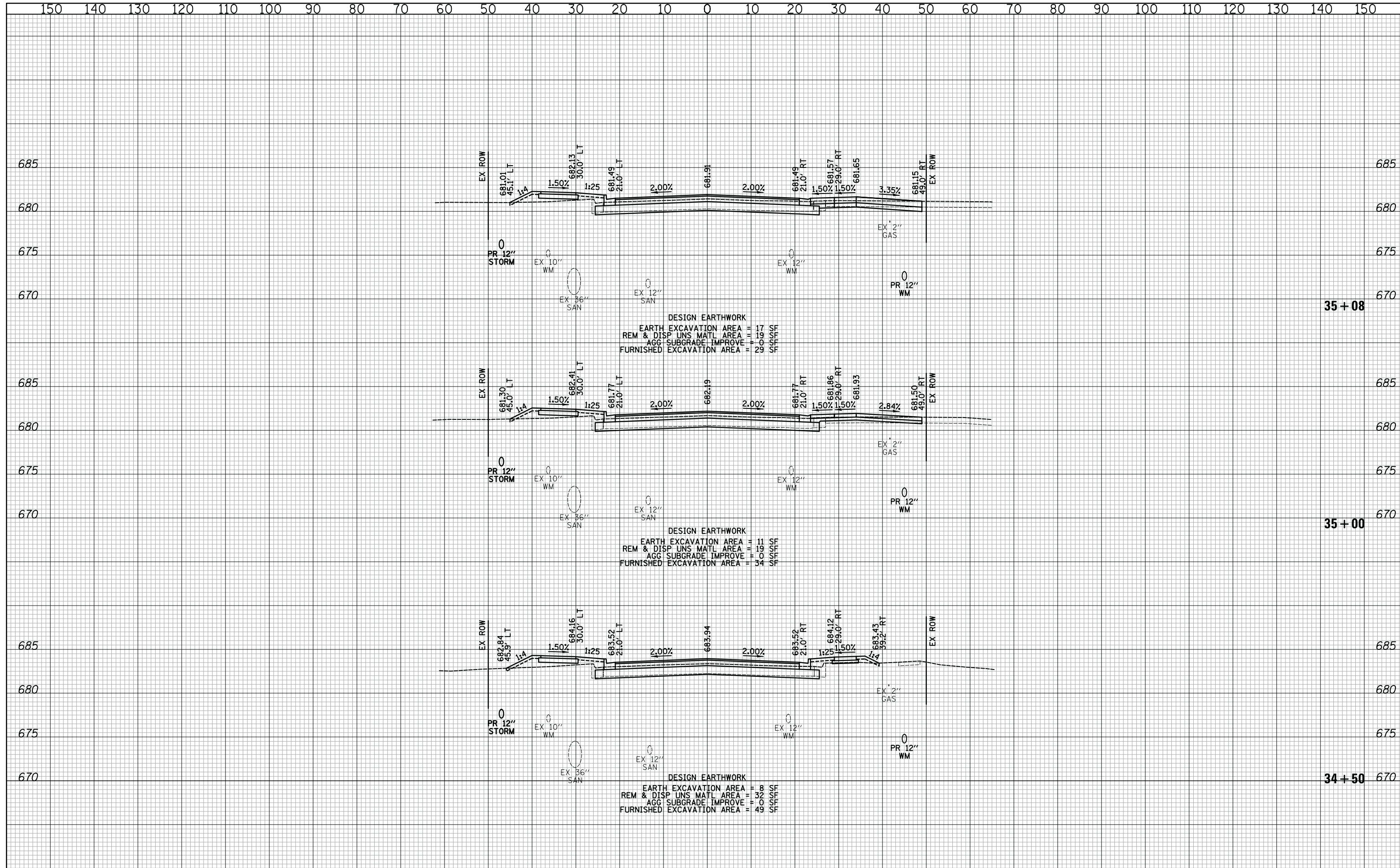
SHEET NO. 30 OF 71 SHEETS STA. 33+13.70 TO STA. 34+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	499
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				CONTRACT NO. 61F33



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

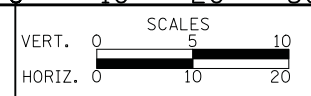
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



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DRAWN - PK	REVISED -
CHECKED - JRV	REVISED -
DATE - 11/7/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**



**CROSS SECTIONS - 14TH STREET**

SHEET NO. 31 OF 71 SHEETS STA. 34+50 TO STA. 35+08

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1228	99-00260-01-WR	LAKE	566	500
CONTRACT NO. 61F33				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				