

1	COVER SHEET
2	HIGHWAY STANDARDS, GENERAL NOTES, AND COMMITMENTS
3-4	SUMMARY OF QUANTITIES
5	TYPICAL SECTIONS
6	SCHEDULE OF QUANTITIES
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8-13	PLAN SHEETS
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20-20A	DETAILS
21-27	CROSS SECTIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROPOSED
HIGHWAY PLANS

F.A.S. ROUTE 509 (CATLIN INDIANOLA RD)
SECTION (84)RS
PROJECT STP-RZOR(434)
HIGHWAY RESURFACING
VERMILION COUNTY

C-95-042-20

SEE SHEET 2 FOR LIST OF HIGHWAY STANDARDS

DESIGN DESIGNATION: N/A

CURRENT TRAFFIC DATA
 SPEED LIMIT: 55 MPH

ADT = 1050 (2019) 1100 (2029)



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

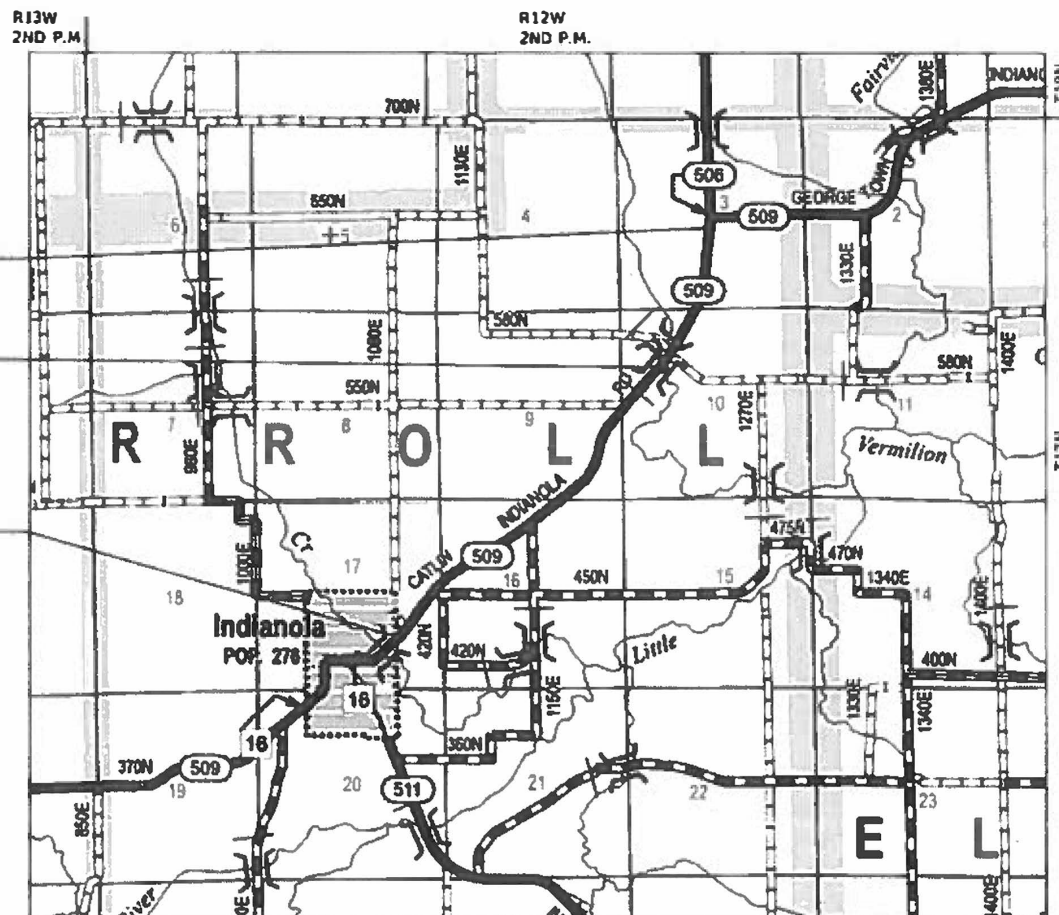
J.U.L.I.E.
 JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS
 1-800-892-0123
 OR 811 CARROLL TOWNSHIP

PROJECT ENGINEER - JASON W. STULTS, P.E.
 PROJECT MANAGER - DAVID F. JAYME, P.E.
 (217) 465-4181
 CONTRACT NO. 70D82

END PROJECT
 STA. 191 + 79.00

BRIDGE OMISSION
 S.N. 092-0170
 STA. 148 + 93.63 TO
 STA. 150 + 42.37

BEGIN PROJECT
 STA. 39 + 62.50



GROSS LENGTH = 15,217 FT. = 2.882 MILE
 NET LENGTH = 15,068 FT. = 2.854 MILE

LOCATION MAP



Prairie Engineers
 ENGINEERS SURVEYORS SCIENTISTS
 www.prairieengineers.com
 professional design firm no. 184-005265
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F.A.S. RITE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
509	(84)RS	VERMILION	* 47	1
P-95-026-20		ILLINOIS	CONTRACT NO. 70D82	

* 47 + 1 = 48 TOTAL SHEETS



LOCATION OF SECTION INDICATED THUS: -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SUBMITTED March 12, 2020
Jason W. Stults
 REGIONAL ENGINEER

MAY 8 2020
Jason W. Stults
 ENGINEER OF DESIGN AND ENVIRONMENT

MAY 8 2020
Jason W. Stults
 DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION



Zachary D. Leach 03/10/20
 Signature Date

Zachary D. Leach
 Printed or Typed Name License Number 062-065588

My license renewal date is November 30, 2021

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 OF THE STATE OF ILLINOIS**

F.A.S. 509 (CATLIN INDIANOLA ROAD)
 RURAL 2L/2W
 MAJOR COLLECTOR
 STA. 39+62.50 TO STA. 191+79.00
 VERMILION COUNTY

FUNDING STP 80% FED / 20% STATE
 CONSTR. CODE 0005
 UNIT TOTAL QUANTITY

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
30201700	PORTLAND CEMENT	TON	61
35800100	PREPARATION OF BASE	SQ YD	216
40400020	BUMP REMOVAL	EACH	152
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	487
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	36,594
40600985	PORTLAND CEMENT CONCRETE SURFACE REMOVAL - BUTT JOINT	SQ YD	1,317
40600990	TEMPORARY RAMP	SQ YD	335
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	3,416
40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	382
44201747	CLASS D PATCHES, TYPE IV, 8 INCH	SQ YD	394
48101200	AGGREGATE SHOULDERS, TYPE B	TON	3,885
* 66700305	PERMANENT SURVEY MARKERS, TYPE II	EACH	18
* XZ193400	SURVEY MARKER, TYPE 2 (SPECIAL)	EACH	18
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	4
67100100	MOBILIZATION	L SUM	1



* DENOTES SPECIALTY ITEM

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 404 N. Main Street
 Columbia, IL 62236
 (217) 605-0403
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PLOT DATE = 3/9/2020	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SHEET 1 OF 2 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
509	(84)RS	VERMILION	47	3
P-95-026-20			CONTRACT NO. 70D82	
ILLINOIS		FED. AID PROJECT		

REVISED 5/29/20 REV. 4/9/20

EXIST. CURVE 20
 PI STA. = 41+95.19
 $\Delta = 11^\circ 08' 32''$ (LT)
 D = 2° 09' 55"
 R = 2,646.26'
 T = 258.12'
 L = 514.61'
 E = 12.56'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 39+37.07
 P.T. STA. = 44+51.68

EXIST. CURVE 21
 PI STA. = 59+09.09
 $\Delta = 23^\circ 25' 56''$ (RT)
 D = 2° 00' 00"
 R = 2,864.94'
 T = 594.14'
 L = 1,171.67'
 E = 60.96'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 53+14.95
 P.T. STA. = 64+86.63

EXIST. CURVE 22
 PI STA. = 85+18.33
 $\Delta = 6^\circ 30' 28''$ (LT)
 D = 0° 30' 02"
 R = 11,445.68'
 T = 650.70'
 L = 1,300.00'
 E = 18.48'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 78+67.63
 P.T. STA. = 91+67.63

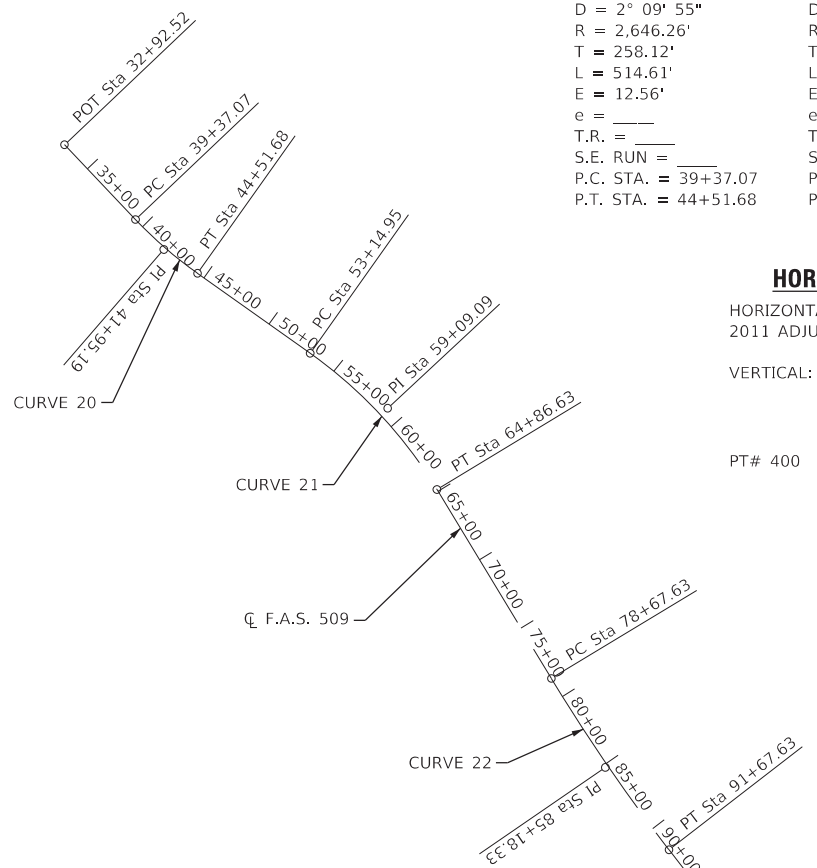
EXIST. CURVE 23
 PI STA. = 112+25.68
 $\Delta = 37^\circ 49' 45''$ (LT)
 D = 4° 00' 05"
 R = 1,431.88'
 T = 490.65'
 L = 945.39'
 E = 81.73'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 107+35.03
 P.T. STA. = 116+80.42

EXIST. CURVE 24
 PI STA. = 123+78.32
 $\Delta = 25^\circ 59' 52''$ (RT)
 D = 3° 59' 30"
 R = 1,435.37'
 T = 331.35'
 L = 651.29'
 E = 37.75'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 120+46.97
 P.T. STA. = 126+98.26

EXIST. CURVE 25
 PI STA. = 154+72.46
 $\Delta = 11^\circ 20' 42''$ (LT)
 D = 2° 00' 11"
 R = 2,860.50'
 T = 284.13'
 L = 566.40'
 E = 14.08'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 151+88.33
 P.T. STA. = 157+54.73

EXIST. CURVE 26
 PI STA. = 171+94.57
 $\Delta = 23^\circ 10' 39''$ (LT)
 D = 2° 00' 02"
 R = 2,864.12'
 T = 587.33'
 L = 1,158.60'
 E = 59.60'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 166+07.24
 P.T. STA. = 177+65.84

EXIST. CURVE 27
 PI STA. = 194+24.76
 $\Delta = 8^\circ 19' 30''$ (LT)
 D = 1° 14' 11"
 R = 4,634.20'
 T = 337.27'
 L = 673.35'
 E = 12.26'
 e = _____
 T.R. = _____
 S.E. RUN = _____
 P.C. STA. = 190+87.49
 P.T. STA. = 197+60.85



HORIZONTAL & VERTICAL DATUMS

HORIZONTAL: NAD 83, ILLINOIS STATE PLANE, EAST ZONE, 2011 ADJUSTMENT AND GEOID 12A.

VERTICAL: NAVD 88

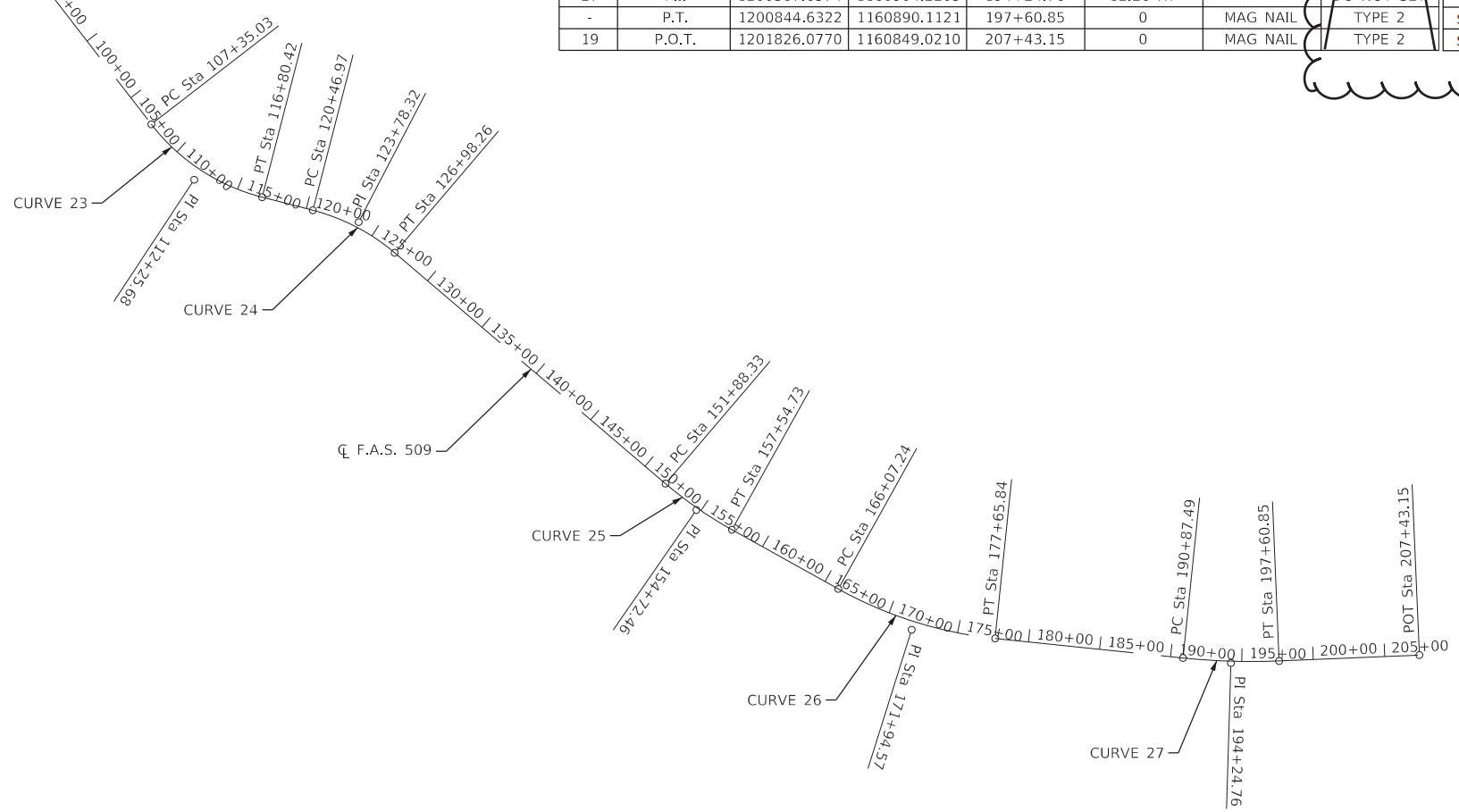
BENCHMARKS

PT# 400 IRON PIN
 NORTHING 1,195,241.3040
 EASTING 1,158,422.4630
 ELEVATION 674.869
 STATION 133+95.77
 OFFSET 83.9644 LT



F.A.S. 509 ALIGNMENT

POINT	DESCRIPTION	NORTHING	EASTING	STATION	OFFSET	EXISTING MARKER	SURVEY MARKERS TO SET	SURVEY MARKERS TO SET
1	P.O.T.	1188214.6380	1151486.2220	32+92.52	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1188658.3232	1151953.7578	39+37.07	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
20	P.I.	1188836.0035	1152140.9893	41+95.19	12.56 RT	-	DO NOT SET	DO NOT SET
-	P.T.	1189046.5160	1152290.3560	44+51.68	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1189750.5666	1152789.9066	53+14.95	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
21	P.I.	1190235.1239	1153133.7184	59+09.09	60.96 LT	-	DO NOT SET	DO NOT SET
-	P.T.	1190542.9992	1153641.8672	64+86.63	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1191258.6188	1154822.9985	78+67.63	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
22	P.I.	1191595.8027	1155379.5212	85+18.33	18.48 RT	-	DO NOT SET	DO NOT SET
-	P.T.	1191993.8881	1155894.2430	91+67.63	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1192952.7907	1157134.0979	107+35.03	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
23	P.I.	1193252.9607	1157522.2156	112+25.68	81.73 RT	-	DO NOT SET	DO NOT SET
-	P.T.	1193728.0843	1157644.6698	116+80.42	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1194083.0306	1157736.1505	120+46.97	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
24	P.I.	1194403.8952	1157818.8472	123+78.32	37.75 LT	-	DO NOT SET	DO NOT SET
-	P.T.	1194656.0430	1158033.8223	126+98.26	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1196550.9125	1159649.3414	151+88.33	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
25	P.I.	1196767.1273	1159833.6808	154+72.46	14.08 RT	-	DO NOT SET	DO NOT SET
-	P.T.	1197015.3800	1159971.8852	157+54.73	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1197760.2477	1160386.5593	166+07.24	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
26	P.I.	1198273.4151	1160672.2439	171+94.57	59.60 RT	-	DO NOT SET	DO NOT SET
-	P.T.	1198857.6047	1160732.8990	177+65.84	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
-	P.C.	1200172.1908	1160869.3897	190+87.49	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
27	P.I.	1200507.6574	1160904.2205	194+24.76	12.26 RT	-	DO NOT SET	DO NOT SET
-	P.T.	1200844.6322	1160890.1121	197+60.85	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)
19	P.O.T.	1201826.0770	1160849.0210	207+43.15	0	MAG NAIL	TYPE 2	SURVEY MARKER, TYPE 2 (SPECIAL)



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 404 N. Main Street
 Columbia, IL 62236
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

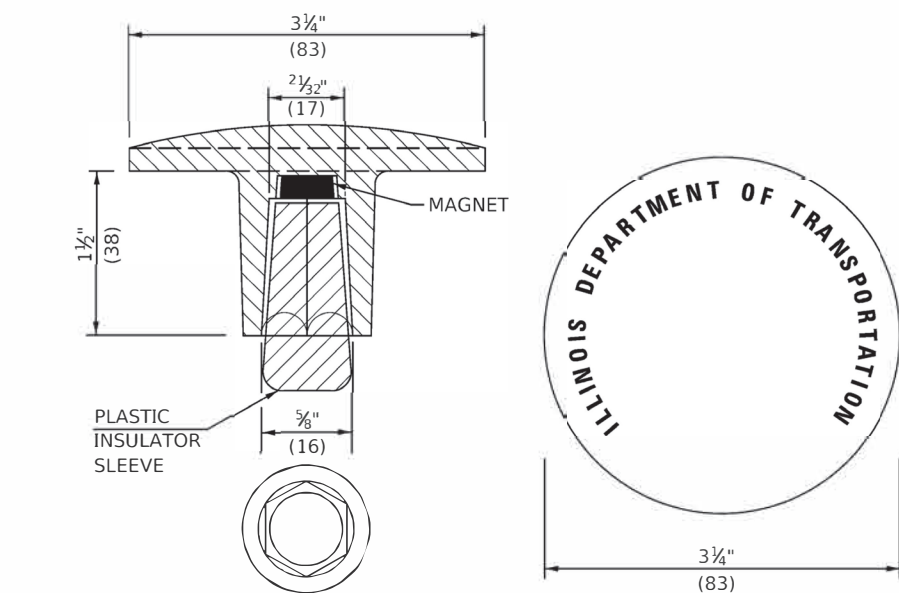
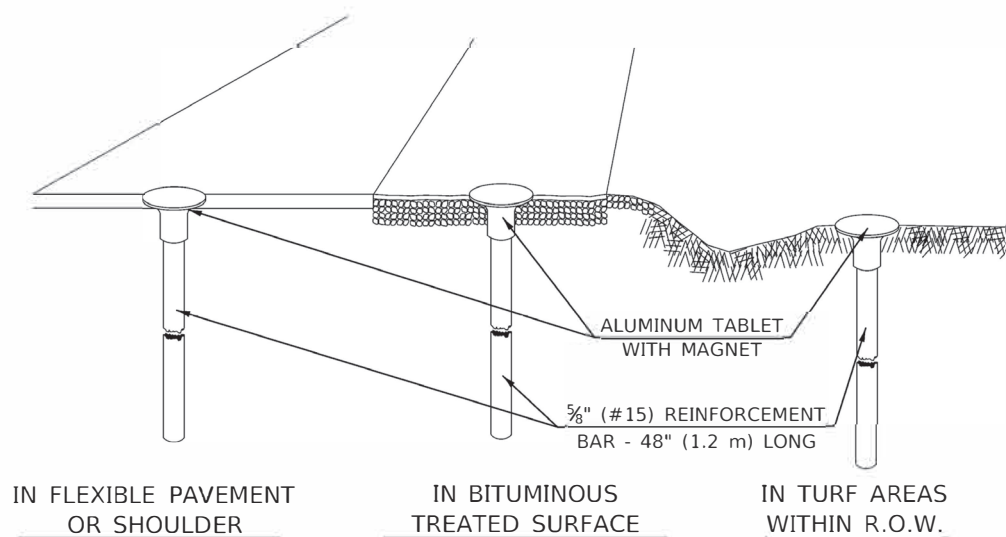
ALIGNMENT, TIES, AND BENCHMARKS

SHEET 1 OF 1 SHEETS

F.A.S. RTE. 509	SECTION (84)RS	COUNTY VERMILION	TOTAL SHEETS 47	SHEET NO. 7
P-95-026-20			CONTRACT NO. 70D82	
ILLINOIS		FED. AID PROJECT		

XZ193300 – SURVEY MARKER, TYPE 1 (SPECIAL)

TO BE INSTALLED IN FLEXIBLE PAVEMENT OR SHOULDER, BITUMINOUS TREATED SURFACE AND TURF AREAS WITHIN THE RIGHT-OF-WAY FOR PRESERVING PERMANENT SURVEY MARKERS (PI'S, PT'S, PC'S, POC'S, & POT'S)



THE DIMENSIONS SHOWN SHALL BE EXACT, OTHERS MAY VARY, BUT SHALL BE SHOWN ON SHOP DRAWINGS.

GENERAL NOTES

1. THE CONTRACT UNIT PRICE, EACH, FOR SURVEY MARKER, TYPE 1 (SPECIAL) SHALL BE PAYMENT IN FULL FOR FURNISHING THE REINFORCEMENT BAR AND ALUMINUM TABLET AND FOR ALL LABOR AND MATERIAL REQUIRED TO SET THE MARKER IN PLACE.
2. ALL SURVEY MARKERS, TYPE 1 (SPECIAL) SHALL BE PLACED ±1/4" (6 mm) BELOW THE FINAL SURFACE.
3. WHEN THE TABLET AND REBAR ARE PLACED AS PART OF A SURVEY MARKER VAULT, THEY SHALL BE CONSIDERED AS INCLUDED IN THAT PAY ITEM AND THERE WILL BE NO PAYMENT FOR THE SURVEY MARKER, TYPE 1 (SPECIAL).

SPECIFICATIONS FOR ALUMINUM TABLET

SURVEY CAP FOR REBAR. 3 3/4" (83 mm) CONVEX SURVEY CAP FOR 5/8" (15 mm) REBAR WITH ILLINOIS DEPARTMENT OF TRANSPORTATION LOGO. THIS LOGO SHALL PROVIDE LETTERS RECESSED INTO THE SURFACE A MINIMUM OF 1/32" (0.8 mm) FOR EASY AND LONG-TERM LEGIBILITY. THE ALUMINUM CAP FOR REBAR SHALL BE PRODUCED BY THE PROCESS OF ORBITAL FORGING TO PRODUCE A HIGH-STRENGTH AND DURABLE MARKER CAP WHICH WILL NOT CHIP OR BREAK AND PROVIDE A SMOOTH FINISH FOR STAMPING OF DATA IN THE FIELD. THE ALUMINUM CAP FOR REBAR SHALL BE TAPERED FOR A PERFECT COMPRESSION FIT. A SPECIAL PLASTIC INSULATOR SHALL BE INSTALLED TO PREVENT DISSIMILAR METAL CONTACT AND CORROSION. THE PLASTIC INSULATOR SHALL FORM READILY TO THE OUTER SHAPE OF THE REBAR AND TO THE INNER SHAPE OF THE ALUMINUM CAP SOCKET. THE PLASTIC INSULATOR SHALL BE LOW DENSITY POLYETHYLENE, A MINIMUM 1 1/2" (38 mm) LONG AND CONFORM TO FEDERAL SPECIFICATION L-P 390.

COMPOSITION: ALUMINUM 98.3-98.7%; OTHER 1.3-1.7%; STRENGTH: YIELD 28 KSI (193 MPa), ULTIMATE 32 KSI (221 MPa). ELONGATION 15% [IN 2" (50 mm)]. SPECIFICATIONS: ALUMINUM ALLOY 6101-0; ASTM B317-83 (EXCEPT TEMPER) AS FORGED. NO EXCEPTIONS.

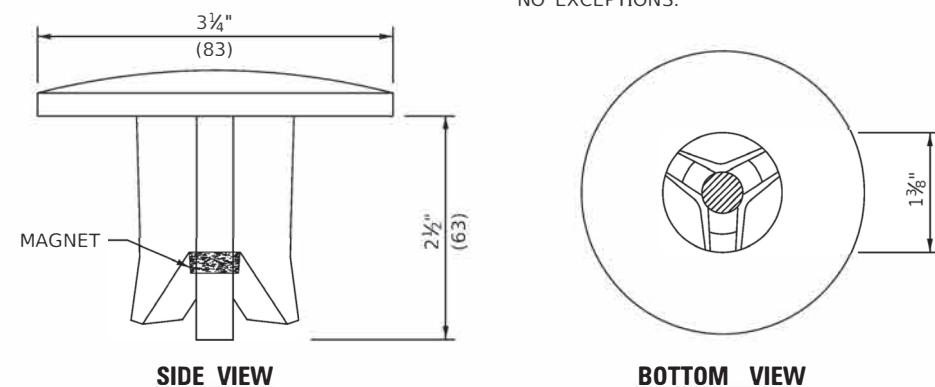
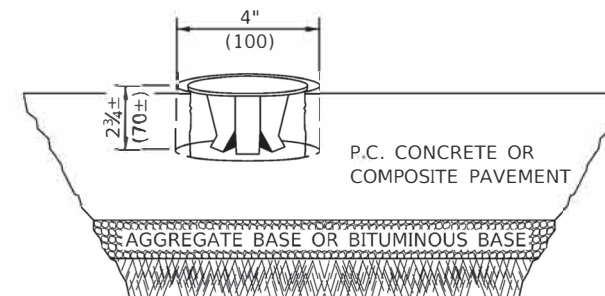
SPECIFICATIONS FOR REBAR

REBAR FOR ALUMINUM TABLET. REINFORCEMENT BAR SHALL BE 5/8" (#15) X 48" (1.2 m) (DEFORMED).

INSPECTION OF REINFORCEMENT BAR 5/8" (#15) SHALL BE DONE BY DISTRICT PERSONNEL OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS.

XZ193400 – SURVEY MARKER, TYPE 2 (SPECIAL)

TO BE INSTALLED IN RIGID OR COMPOSITE PAVEMENT FOR PRESERVING PERMANENT SURVEY MARKERS (PI'S, PT'S, PC'S, POC'S, & POT'S)



THE DIMENSIONS SHOWN SHALL BE EXACT, OTHERS MAY VARY, BUT SHALL BE SHOWN ON SHOP DRAWINGS.

GENERAL NOTES

1. WORK ON THIS ITEM SHALL NOT START UNTIL THE FINAL SURFACE IS COMPLETED.
2. THE ALUMINUM TABLET (FORKED) SHALL REST UPON THE BOTTOM OF THE 4" (100 mm) CORE HOLE. IF THE HOLE IS TOO DEEP, EPOXY GROUT MUST BE USED TO DECREASE THE DEPTH AND ALLOWED TO HARDEN BEFORE PROCEEDING.
3. THE ALUMINUM TABLET SHALL BE ANCHORED IN THE 4" (100 mm) DIAMETER HOLE IN THE NEW PAVEMENT WITH TWO-COMPONENT EPOXY CONFORMING TO APPLICABLE PORTIONS OF ARTICLE 1025.01 OF THE STANDARD SPECIFICATIONS.
4. THE 4" (100 mm) CORE HOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
5. THE CONTRACT PRICE, EACH, FOR SURVEY MARKER, TYPE 2 (SPECIAL) SHALL BE PAYMENT IN FULL FOR FURNISHING THE ALUMINUM TABLET AND FOR ALL LABOR AND MATERIAL REQUIRED TO SET THE MARKER IN PLACE, AS SPECIFIED, INCLUDING CORING THE NEW PAVEMENT.
6. ALL SURVEY MARKERS, TYPE 2 (SPECIAL) SHALL BE PLACED ± 1/4" (6 mm) BELOW THE FINAL SURFACE.

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SURVEY MARKERS TYPE 1 & 2 (SPECIAL)

SHEET 1 OF 1 SHEETS

DISTRICT 5 DETAIL NO. XZ193AAA

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
509	(84)RS	VERMILION	47	20A
P-95-026-20			CONTRACT NO. 70D82	
ILLINOIS FED. AID PROJECT				