6-13-08 Letting, Item 320

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-I-12	WILL	11	1
FED. ROAD DIST. NO. _	ILLINOIS	CONTRACT NO.		60E34

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

FAI 80 (INTERSTATE 80)
SECTION: 99–5–1–I–12
WESTBOUND FRANKFORT WEIGH STATION
WILL COUNTY
C–91–359–08

FOR INDEX OF SHEETS SEE SHEET NUMBER 2

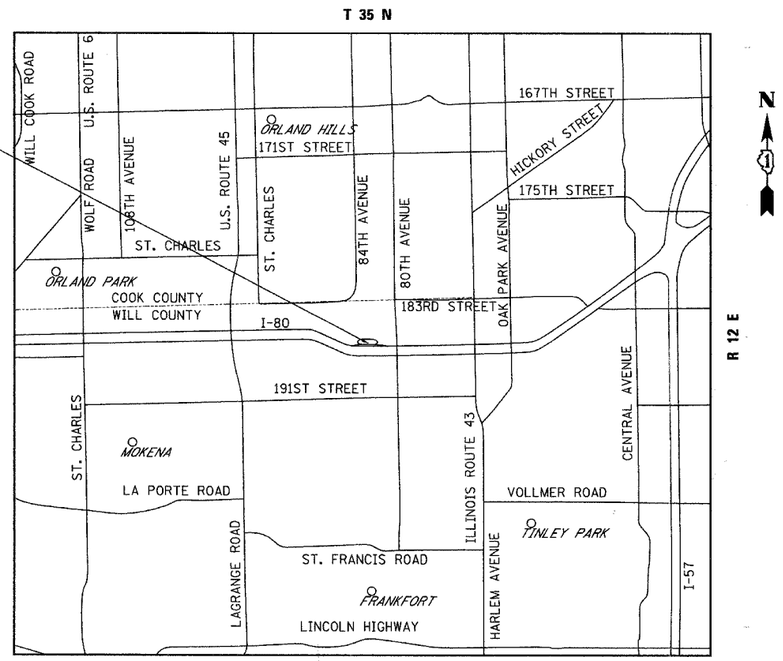
THIS IMPROVEMENT IS LOCATED IN FRANKFORT TOWNSHIP

TRAFFIC DATA

2005 ADT – 103,200
POSTED SPEED LIMIT – 65 MPH

IMPROVEMENT LOCATION

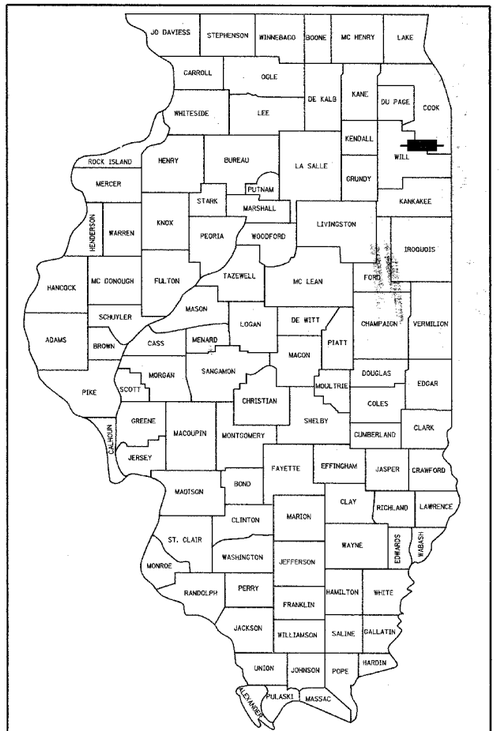
T 35 N



FRANKFORT TOWNSHIP

LOCATION MAP
1" = 5000'

D–91–359–08



LOCATION OF SECTION INDICATED THUS: –■–

0 100′ 200′ 300′ — 1" = 100′
0 10′ 20′ 30′ — 1" = 10′
0 50′ 100′ — 1" = 50′
0 50′ 100′ — 1" = 40′
0 50′ 100′ — 1" = 30′
0 50′ 100′ — 1" = 20′

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

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

Ciorba Group, Inc.

DESIGN FIRM
REGISTRATION NUMBER

184-001016

CONSULTING ENGINEERS
SUITE 402, 5507 NORTH CUMBERLAND AVE
CHICAGO, ILLINOIS 60656 :: (773) 775-4009

MATTHEW J. LEHAN
062-057159
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS
DATE: 4/17/2008
SEAL EXPIRES: 11/30/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED APRIL 11, 20 08

Diane M. O'Keefe
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 9, 20 08

Eric E. Harm
Interim ENGINEER OF DESIGN AND ENVIRONMENT

May 9, 20 08

Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

DISTRICT 1 DESIGN PLAN PREPARATION ENGINEER: K. ENG (847) 705-4247

CONTRACT NO. 60E34

INDEX OF SHEETS

STATE STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
601001-02	SUB-SURFACE DRAINS
701901	TRAFFIC CONTROL DEVICES

GENERAL NOTES

1. BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, AND GAS FACILITIES. (48 HOUR NOTIFICATIONS IS REQUIRED)
2. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES.
3. WHEN ARTIFICIAL LIGHTING IS USED IN NIGHT OPERATIONS THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING RESIDENTIAL AREAS.
4. ALL DAMAGE TO EXISTING PAVEMENT MARKINGS OUTSIDE THE PAVEMENT MARKING LIMITS SHOWN ON THE PLANS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS PRIOR TO THE PLACEMENT OF ANY TEMPORARY TRAFFIC CONTROL DEVICES.
6. IF THE CONTRACTOR REMOVES, DAMAGES OR UNDERMINES THE PAVEMENT OUTSIDE OF THE LIMITS DESIGNATED BY THE ENGINEER FOR REMOVAL, HE WILL BE REQUIRED TO REPAIR THAT PORTION AT HIS OWN EXPENSE TO THE SATISFACTION OF THE ENGINEER.
7. THE LOCATION FOR THE RIP RAP DRAINAGE PIT SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

COMMITMENTS

THE CENTRAL BUREAU OF OPERATIONS REQUIRES THE INSTALLATION OF BARRICADES FOR THE CLOSURE OF THE WEIGH STATION ENTRANCE.

FILE NAME = N:\PROJ\3329\3329_39\Design\ProposedPlan\3329_39-02-index.dgn

Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402
Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014

USER NAME = jooleman	DESIGNED - JCC	REVISED -
	DRAWN - JCC	REVISED -
PLOT SCALE = 1.0000 ' / IN.	CHECKED - MJL	REVISED -
PLOT DATE = 4/16/2008	DATE - 03/28/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAI 80 / INTERSTATE 80
WEIGH STATION SCALE REPLACEMENT
INDEX OF SHEETS, GENERAL NOTES & STATE STANDARDS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-I-12	WILL	11	2
		CONTRACT NO. 60E34		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES			TOTAL QUANTITY	URBAN CONSTRUCTION CODE 100% STATE
CODE NO.	DESCRIPTION	UNIT		TRUCK SCALES (FIXED) Y222
X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	L SUM	1	1
Z0026290	FURNISHING AND INSTALLING WEIGH-IN-MOTION COMPONENTS	L SUM	1	1

FILE NAME = N:\PROJ\3329\3329_39\Design\Proposed Plan\3329_39-03-soq.dgn

Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402
Chicago, Illinois 60656
Tel. 773.775.4000 Fax 773.775.4014

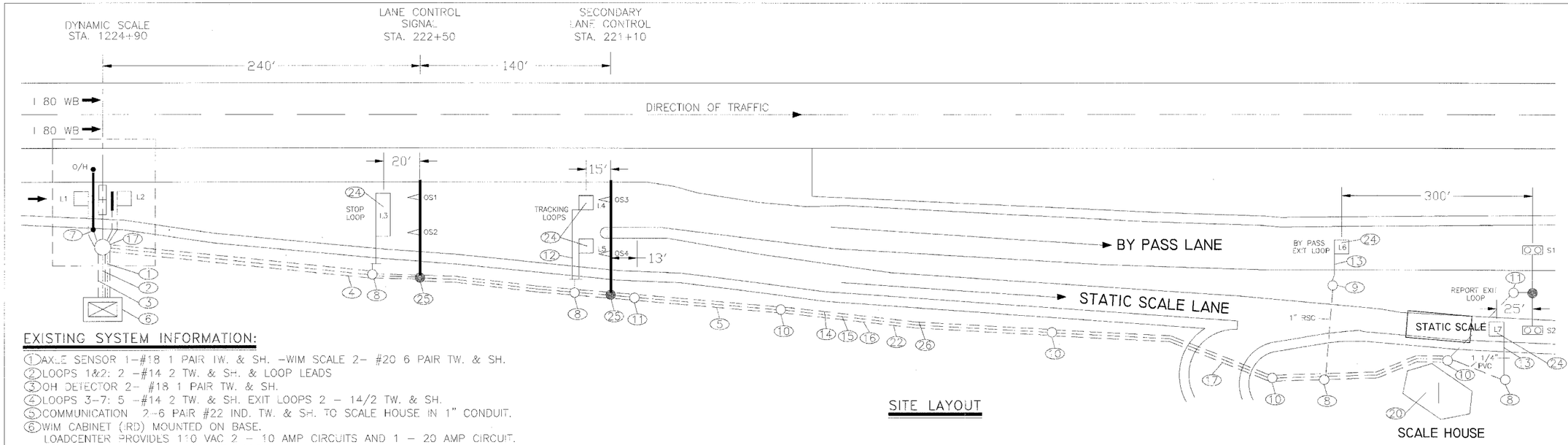
USER NAME = jcoleman	DESIGNED - JCC	REVISED -	
	DRAWN - JCC	REVISED -	
PLOT SCALE = 1.0000 ' / IN.	CHECKED - MJL	REVISED -	
PLOT DATE = 4/16/2008	DATE - 03/28/08	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAI 80 / INTERSTATE 80
WEIGH STATION SCALE REPLACEMENT
SUMMARY OF QUANTITIES

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-I-12	WILL	11	3
		CONTRACT NO. 60E34		
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		



SITE LAYOUT

EXISTING SYSTEM INFORMATION:

(1) AXLE SENSOR 1–#18 1 PAIR TW. & SH. –WIM SCALE 2– #20 6 PAIR TW. & SH.
(2) LOOPS 1&2: 2 –#14 2 TW. & SH. & LOOP LEADS
(3) OH DETECTOR 2– #18 1 PAIR TW. & SH.
(4) LOOPS 3–7: 5 –#14 2 TW. & SH. EXIT LOOPS 2 – 14/2 TW. & SH.
(5) COMMUNICATION 2–6 PAIR #22 IND. TW. & SH. TO SCALE HOUSE IN 1" CONDUIT.
(6) WIM CABINET (RD) MOUNTED ON BASE.
LOADCENTER PROVIDES 110 VAC 2 – 10 AMP CIRCUITS AND 1 – 20 AMP CIRCUIT.
DRY TYPE TRANSFORMER 480V TO 120V.
(7) OVERHEIGHT BASES MUST BE LOCATED BETWEEN L1 AND L2.
(8) PROPOSED HAND HOLE.
(9) PROPOSED HEAVY DUTY HANDHOLE.
(10) HANDHOLE.
(11) HEAVY DUTY HANDHOLE.
(12) 2 – 1"
(13) 1"
(14) 1" UNIT DUCT WITH 2 – 6 PAIR #22.
(15) 1 1/4" SCH. 40 PVC WITH 2–2C #14 TW./SH. LEAD IN CABLES.
(16) 1 1/2" SCH. 40 PVC WITH 3–1C #6 (POWER CABLES) FOR SOUTHBOUND SCALES.
(17) 2 1/2" (MIN.) GALVINIZED RIGID STEEL CONDUIT UNDER ROADWAY FOR 1 1/4" & 1 1/2" PVC CONDUIT.

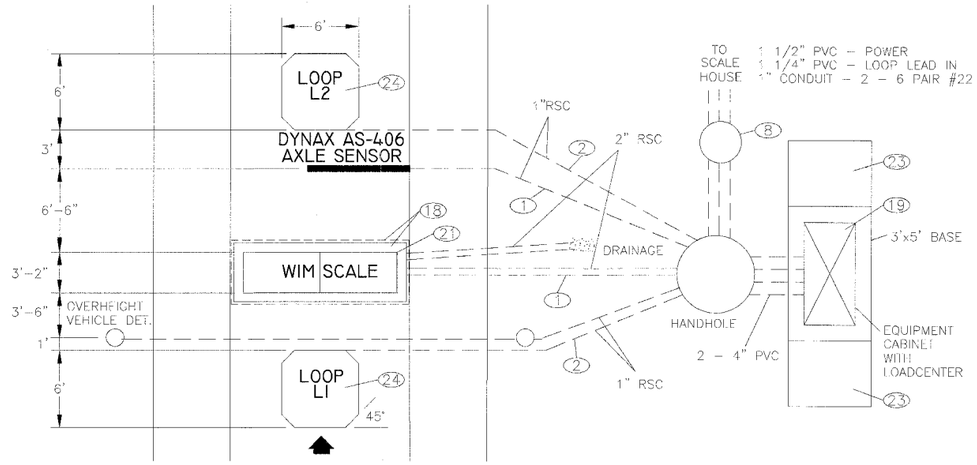
POWER TO OS1, OS2, OS3 AND OS4 TO BE SUPPLIED FROM WIM CABINET.
POWER TO S1 AND S2 TO BE SUPPLIED FROM SCALEHOUSE.
CONDUIT AND PULLBOXES AS REQUIRED (BY OTHERS).
CABLE CROSSING UNDER PAVED SURFACES IS PLACED IN GALVANIZED RIGID STEEL CONDUIT.
ALL OTHER CONDUITS INSTALLED WILL BE SCH 40 PVC.
POWER FOR SIGNALS WILL BE WITH 1–3C #12 IMSA 19–1 SOLID COPPER AT EACH END.

NOTES:

(18) REMOVE EXISTING WIM SCALE AND REPLACE WITH NEW SINGLE LOAD CELL (SLC) SCALE. SEE SHEETS 2 AND 3 FOR DETAILS. OVER CUT EXISTING WIM SCALE APPROXIMATELY THREE TO SIX INCHES TOTAL TO REMOVE AND ACCOMMODATE NEW SINGLE LOAD CELL (SLC) SCALE.
(19) REMOVE EXISTING WIM CABINET AND WIM ELECTRONICS AND REPLACE WITH NEW WIM CABINET AND ELECTRONICS.
(20) REMOVE EXISTING WIM SCALE HOUSE COMPUTER AND REPLACE WITH NEW WIM SCALE HOUSE COMPUTER.
(21) THE EXISTING WIM SCALE, CONSISTING OF TWO WEIGH SCALES IN VAULTS AND FRAME, WIM CABINET AND SCALE HOUSE COMPUTER SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
(22) THE EXISTING POWER SERVICE, CONDUIT AND CABLING THAT RUNS FROM THE SCALE HOUSE TO THE EXISTING CABINET WILL BE REUSED.
(23) THE EXISTING WIM CABINET BASE WILL BE REUSED. THE NEW WIM CABINET WILL BE INSTALLED UPON THIS EXISTING CABINET BASE USING MECHANICAL ANCHORS. A 4 FOOT X 4 FOOT X 8 INCH PAD WILL BE POURED ON THE EAST AND WEST SIDES OF THE EXISTING CABINET BASE TO ACCOMMODATE THE NEW WIM CABINET.
(24) ALL EXISTING WIM LOOPS WILL BE REUSED WITHIN THE NEW WIM SYSTEM.
(25) ALL EXISTING POLE BASES, POLE STRUCTURES AND SIGNAL HEADS WILL BE REUSED WITHIN THE NEW WIM SYSTEM.
(26) THE EXISTING COMMUNICATIONS CONDUIT THAT RUNS FROM THE WIM CABINET TO THE SCALE HOUSE WILL BE REUSED. THE EXISTING 2–6 PAIR #22 GAUGE WIRING WILL BE REMOVED AND NEW FIBER OPTIC CABLE WILL BE PULLED IN FOR COMMUNICATIONS.

LOOP DETAILS:

LOOP #	SIZE	NUMBER OF TURNS
L1–L2	6' x 6'	4
L3	6' x 14'	3
L4–L5	8' x 8'	4
L6–L7	8' x 8'	7



WIM – SITE LAYOUT

REV.	DESCRIPTION	DWN/DSN	APPR.	APPR.	DATE
1	PRELIMINARY RELEASE	JGi/RCz			

NOT TO SCALE

SIZE: B

DIMENSIONS IN: FEET

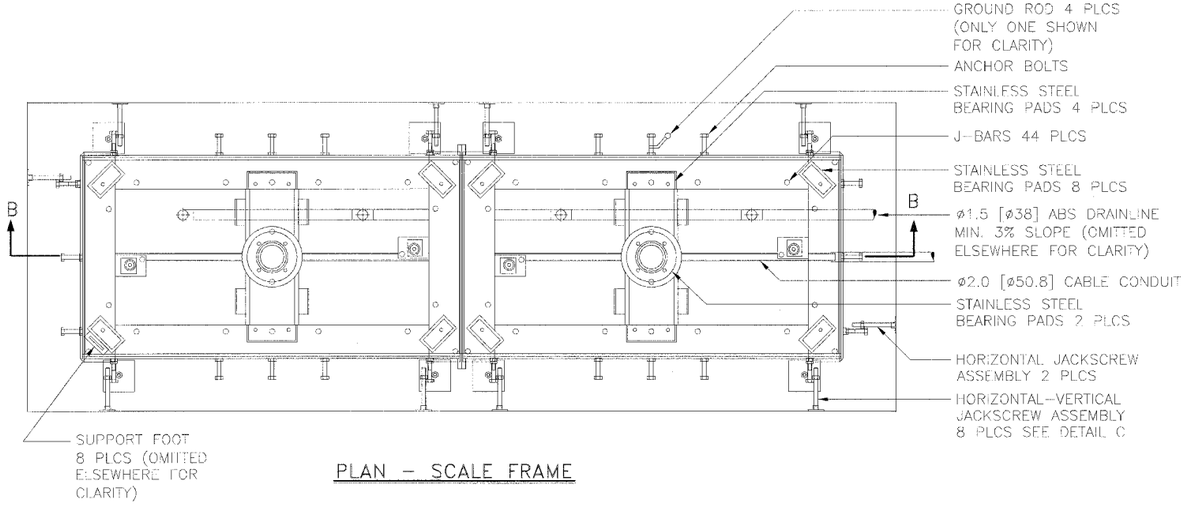
INTERNATIONAL ROAD DYNAMICS INC.
SASKATOON SASKATCHEWAN CANADA

DWG. TITLE:
SITE LAYOUT
SLC WIM SORTER - WESTBOUND
ILLINOIS DOT - 1-80 FRANKFORT

DWG. No. MILMLS01

REV.: 1

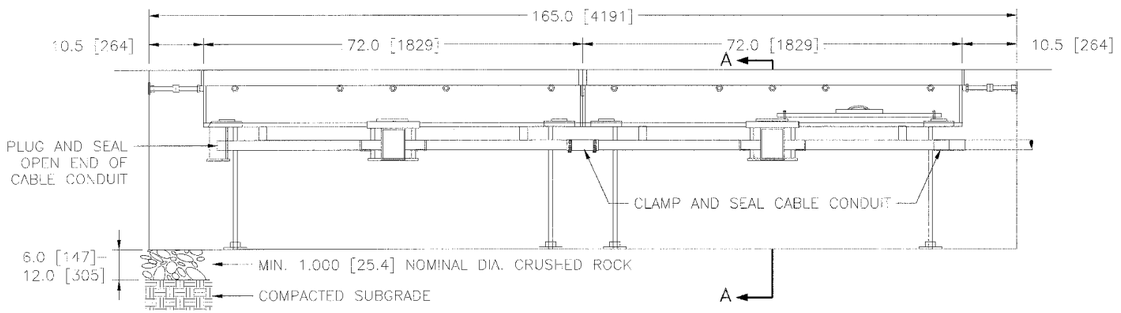
CAD FILE: MILMLS01.DWG



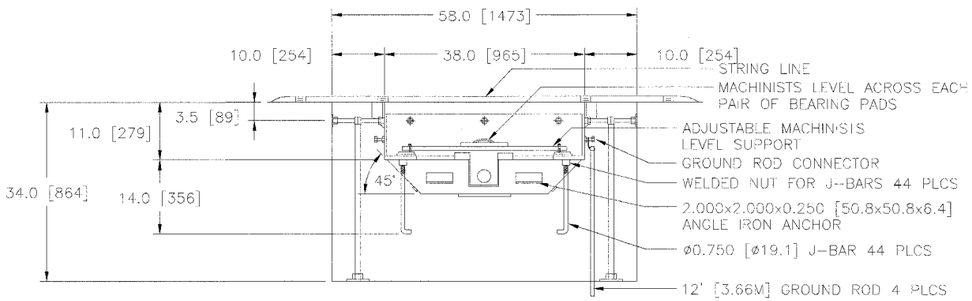
PLAN – SCALE FRAME

GENERAL INSTALLATION INSTRUCTIONS:

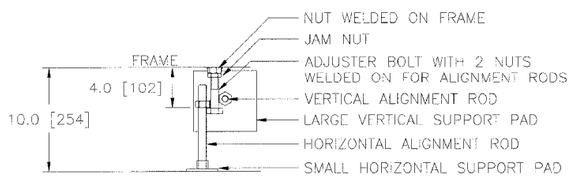
1. SHIPMENT INCLUDES: FRAMES, J-BARS, O-RINGS, GROUND ROD CONNECTORS, 2-10'[3658] LENGTHS OF DRAIN PIPE – 3 TEES AND 1 ELBOW, ALL NECESSARY CONCRETE ANCHOR BOLTS, JACK SCREWS, LOCATING SCREWS, SUPPORT PADS, CONDUIT CONNECTING HOSE AND CLAMPS, AND GROUND RODS.
2. INSTALL CONCRETE ANCHOR BOLTS, JACK SCREWS AND J-BARS ONTO SCALE FRAMES.
3. EXCAVATE SCALE VAULT TO DEPTH OF 40"[1016] AND COMPACT PIT BOTTOM.
4. PLACE 6"[152.4] OF 1"[25.4] NOMINAL CRUSHED ROCK AND VIBRATE COMPACT.
5. SET FRAME IN PREPARED PIT WITH NECESSARY REBAR CAGE IN PLACE.
6. INSTALL DRAIN PIPES AND CONDUITS. SEAL ALL CONNECTIONS. DRAINAGE AT EDGE OF ROADWAY MUST ALLOW FREE FLOW AWAY FROM THE OUTLET OF DRAIN PIPE. THE OUTLET MUST BE WELL ABOVE THE HIGH WATER LEVEL OF THE DITCH OR MANHOLE. THE FLOW ALONG THE DRAIN AND AWAY FROM THE OUTLET MUST BE MAINTAINED AT ALL TIMES.
7. USE JACK SCREWS TO POSITION FRAME PROPERLY – HORIZONTALLY AND VERTICALLY.
8. INSTALL GROUND CLAMPS AND GROUND RODS.
9. LOCATE THE EDGE OF THE SCALE FRAME FLUSH WITH THE SURROUNDING ROAD SURFACE USING A STRING LINE FROM THE ROADWAY ACROSS THE CORNERS OF THE SCALE FRAME.
10. FINAL SET OF THE SCALE USING A MACHINISTS LEVEL MOUNTED ON AN ADJUSTABLE SUPPORT, SPANNING ACROSS ADJACENT SCALE BEARING PADS TO ENSURE THAT ALL FRAME EDGES ARE PARALLEL AND THERE IS NO TWIST IN THE SCALE FRAME.
11. WET PIT WALLS.
12. POUR AND VIBRATE CONCRETE AROUND FRAME. CONCRETE SHOULD HAVE MAX. SLUMP OF 3"[76.2].
13. SLOPE AND FINISH PIT SURFACE AND SCALE FRAME FLOOR FOR PROPER DRAINAGE TO DRAINPIPE INLET.
14. CONCRETE MUST MEET THE FOLLOWING SPECIFICATIONS:
    1500PSI [10MPA] – INSTALL PLATFORM IN FRAME
    3000PSI [20MPA] – OPEN TO TRAFFIC
    4500PSI [30MPA] – ULTIMATE STRENGTH



SECTION B–B



SECTION A–A



PLAN OF FRAME ALIGNMENT
JACK SCREWS – DETAIL C

REV.	DESCRIPTION	DWN/DSN	APPR.	APPR.	DATE
1	PRELIMINARY RELEASE	JGi/RCz			

NOT TO SCALE

SIZE: B

DIMENSIONS IN: INCHES [mm]

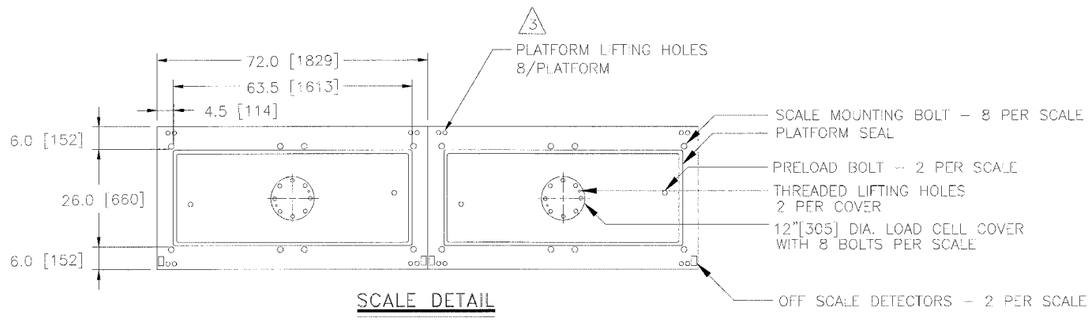
INTERNATIONAL ROAD DYNAMICS INC.
SASKATOON SASKATCHEWAN CANADA

DWG. TITLE:
SITE LAYOUT
SLC WIM SORTER - WESTBOUND
ILLINOIS DOT - 1-80 FRANKFORT

DWG. No. MILMLS01

REV.: 1

CAD FILE: MILMLS01.DWG

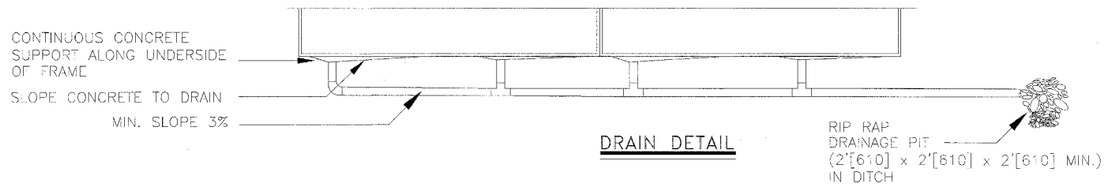


SCALE DETAIL

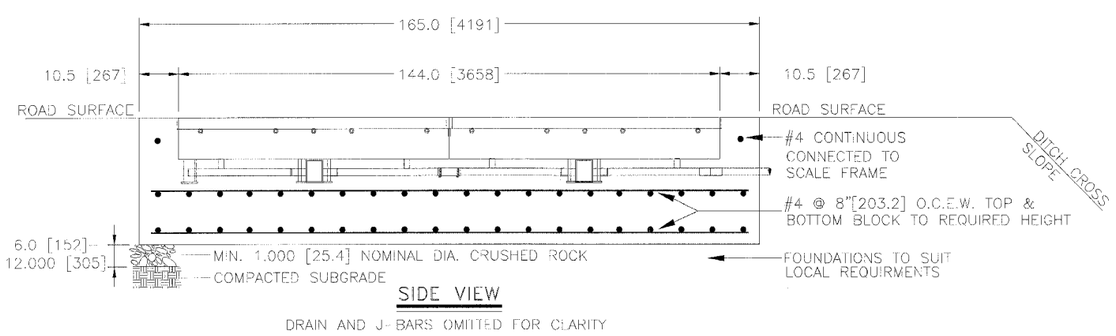
NOTES:

1. REINFORCEMENTS AND DOWELS AS SHOWN ARE MINIMUM REQUIREMENTS AND MAY BE SUPERCEDED BY STATE CONSTRUCTION CODES.
2. FOR PCC PAVEMENTS INSTALL 1–1/8"[28.5]ø x 16"[406] EPOXY COATED DOWELS IN 1–1/4"[19]ø x 8"[203] DEEP HOLE @ 16"[406] O.C. SECURE DOWEL INTO HOLE WITH EPOXY. ENSURE DOWELS ARE EXACTLY 90° TO LONGITUDINAL PAVEMENT DIRECTION BOTH VERTICALLY AND HORIZONTALLY.

3 SEE 69028801 FOR LIFTING PROCEDURE.

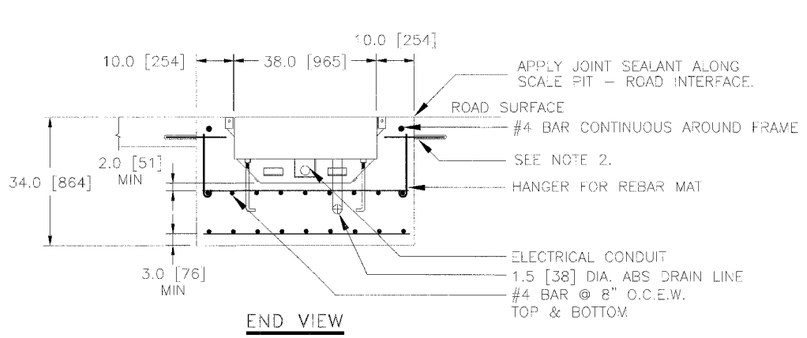


DRAIN DETAIL



SIDE VIEW

DRAIN AND J-BARS OMITTED FOR CLARITY



END VIEW

REV.	DESCRIPTION	DWN/DSN	APPR.	APPR.	DATE
1	PRELIMINARY RELEASE	JGi/RCz			

INTERNATIONAL ROAD DYNAMICS INC.
SASKATOON SASKATCHEWAN CANADA

DWG. TITLE:
SITE LAYOUT
SLC WIM SORTER - WESTBOUND
ILLINOIS DOT - I-80 FRANKFORT

NOT TO SCALE

SIZE: B

DWG. No. **MILMLS01**

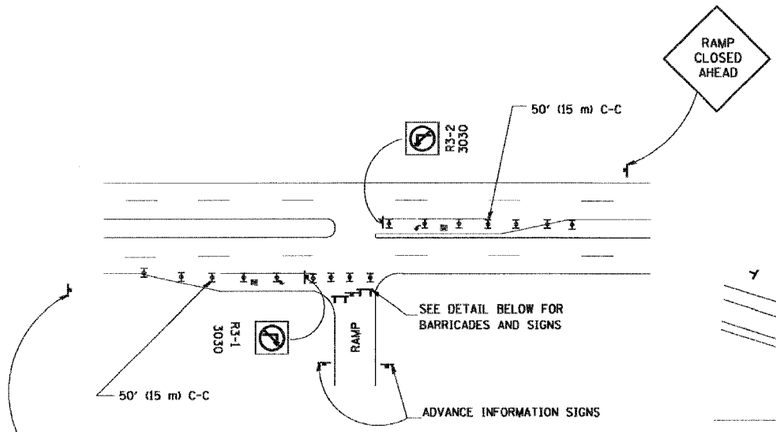
REV.: 1

DIMENSIONS IN: INCHES [mm]

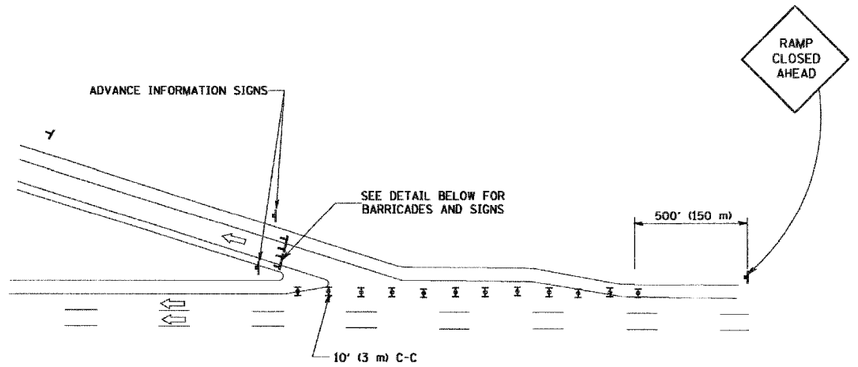
CAD FILE: MILMLS01.DWG

CONTRACT NO.

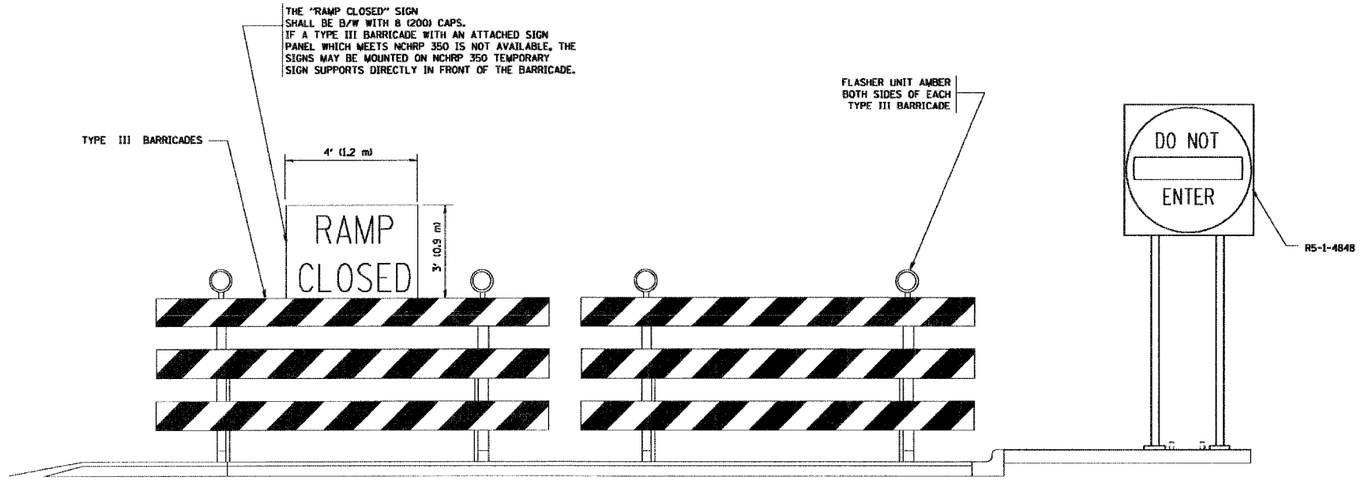
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-I-12	WILL	11	7
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



ENTRANCE RAMP CLOSURE



EXIT RAMP CLOSURE



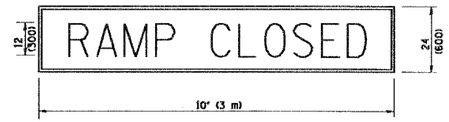
DETAIL FOR REQUIRED BARRICADES & SIGNS

SYMBOLS

TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT

TYPE III BARRICADE WITH FLASHING LIGHT

RAMP CLOSURE ADVANCE WARNING SIGN

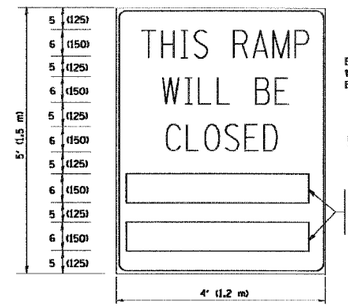


BLACK LEGEND ON ORANGE REFLECTORIZED BACKGROUND

1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR THE CLOSED EXIT RAMPS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



BLACK LEGEND ON WHITE REFLECTORIZED BACKGROUND

½ (12) BORDER

THESE BLANK AREAS SHALL BE FILLED WITH THE DATES AND THE TIME THAT THE RAMP WILL BE CLOSED.

THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

GENERAL NOTES:

1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
2. STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES.
4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY- FOUR 24 HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED TWENTY FOUR 24 HOURS IN LENGTH.

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

REVISIONS	
NAME	DATE
DWS	2-83
DWS	1/90
DWS	9/94
DWS	12/94
DWS/JAF	12/02
JAF	2/06
SPB	1/07
Revise devices to meet NCHRP 350	4/03

ILLINOIS DEPARTMENT OF TRANSPORTATION

FREEWAY ENTRANCE AND EXIT RAMP CLOSURE DETAILS

SCALE: NONE

DRAWN BY

CHECKED BY

TC-8

PLOT DATE = 3/6/2007
FILE NAME = c:\projects\tc08.dgn
PLOT SCALE = 50.0000 '/ IN.
USER NAME = bauerdj

CONTRACT NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-1-12	WILL	11	8
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE UNIT DUCT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). UNIT DUCT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.

2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.

3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.

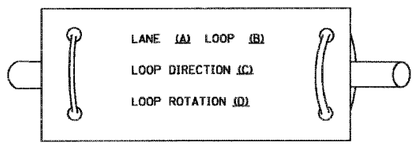
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.

6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.

7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

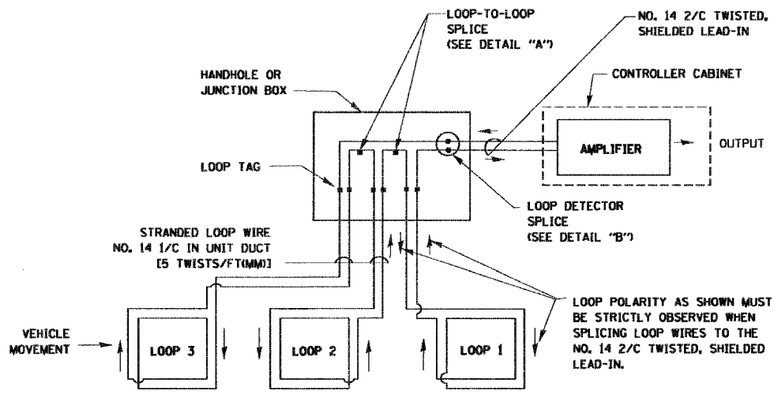


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.

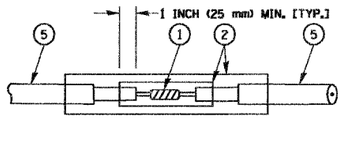
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

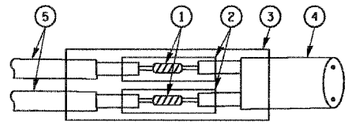


DETECTOR LOOP WIRING SCHEMATIC

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



DETAIL "A"
LOOP-TO-LOOP SPLICE



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

(1) WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.

(2) WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.

(3) WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGHT 6" (150 mm), UNDERWATER GRADE.

(4) NO. 14 2/C TWISTED, SHIELDED CABLE.

(5) LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

REVISIONS	
NAME	DATE
CADD	5/30/00
ADD NOTE NO. 8	11/12/01
BUREAU OF TRAFFIC	1-01-02

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: NONE

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

TS05

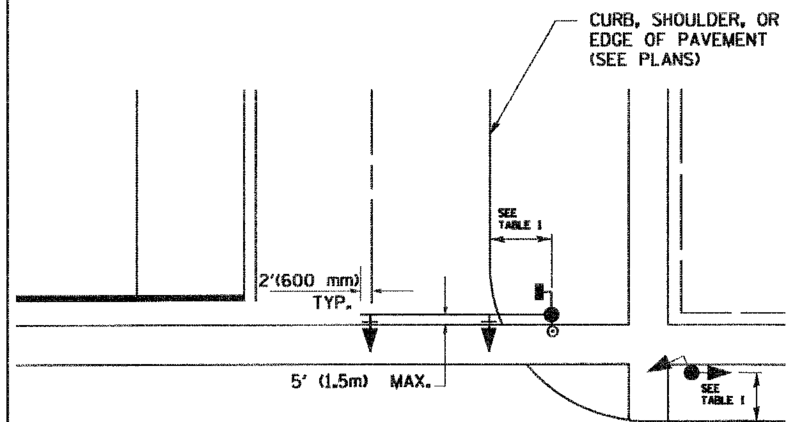
PLOT DATE = 3/7/2007
FILE NAME = c:\projects\dgn\ts05.dgn
PLOT SCALE = 1.0000 '/ IN.
USER NAME = bauerdl

CONTRACT NO.

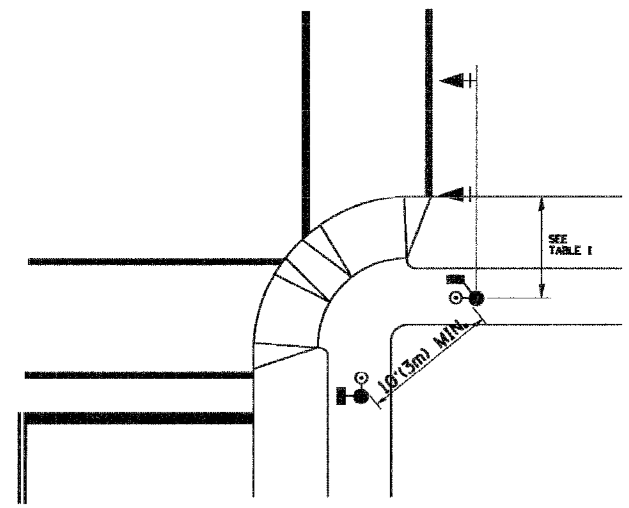
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-I-12	WILL	11	9
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TRAFFIC SIGNAL MAST ARM AND POST

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



PEDESTRIAN SIGNAL PUSHBUTTON



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

NOTES:

1. AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS WITH PEDESTRIAN ACTUATION. EACH PUSHBUTTON SHALL ACTIVATE BOTH THE WALK INTERVAL AND THE ACCESSIBLE PEDESTRIAN SIGNALS.

   AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS, PUSHBUTTONS SHOULD CLEARLY INDICATE WHICH CROSSWALK SIGNAL IS ACTUATED BY EACH PUSHBUTTON. PUSHBUTTONS AND TACTILE ARROWS SHOULD HAVE HIGH VISUAL CONTRAST (SEE THE DEPARTMENT OF JUSTICE'S AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN, 1991). TACTILE ARROWS SHOULD POINT IN THE SAME DIRECTION AS THE ASSOCIATED CROSSWALK. AT CORNERS OF SIGNALIZED LOCATIONS WITH ACCESSIBLE PEDESTRIAN SIGNALS WHERE PEDESTRIAN PUSHBUTTONS ARE PROVIDED, THE PUSHBUTTONS SHOULD BE SEPARATED BY THE DISTANCE OF AT LEAST 10 FT (3m). THIS ENABLES PEDESTRIANS WHO HAVE VISUAL DISABILITIES TO DISTINGUISH AND LOCATE THE APPROPRIATE PUSHBUTTON.

   PUSHBUTTONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHOULD BE LOCATED AS FOLLOWS:

   A: ADJACENT TO A LEVEL ALL-WEATHER SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS AN ALL WEATHER SURFACE, WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP.

   B: WITHIN 5 FT (1.5m) OF THE CROSSWALK EXTENDED.

   C: WITHIN 10 FT (3m) OF THE EDGE OF CURB, SHOULDER, OR PAVEMENT.

   D: PARALLEL TO THE CROSSWALK TO BE USED (SEE MUTCD FIGURE 4E-2).

   E: NORMAL PEDESTRIAN PUSHBUTTON MOUNTING HEIGHT SHOULD BE 3.5 FT (1.05m) ABOVE ADJACENT SIDEWALK

2. PEDESTRIAN SIGNAL FACES SHALL BE MOUNTED WITH THE BOTTOM OF THE HOUSING NOT LESS THAN 8 FT (2.4m) NOR MORE THAN 10 FT (3.0m) ABOVE THE SIDEWALK LEVEL AND SO THERE IS A PEDESTRIAN INDICATION IN THE LINE OF PEDESTRIANS' VISION WHICH PERTAINS TO THE CROSSWALK BEING USED.

3. THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, NOT MOUNTED OVER A ROADWAY, SHALL BE AT LEAST 10 FT (3.0m) BUT NOT MORE THAN 15 FT (4.5m) ABOVE THE SIDEWALK OR, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE HIGHWAY IF NO SIDEWALKS EXIST.

4. THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, MOUNTED OVER A ROADWAY, SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001 AND 877006. (16 FT (5m) MIN., 18 FT (5.5m) MAX., FROM HIGHEST POINT OF PAVEMENT)

PEDESTRIAN SIGNAL POST

PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON DETECTOR LOCATION

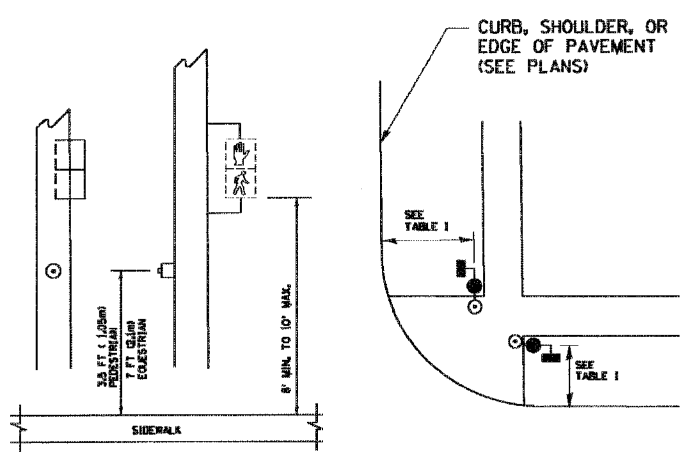


TABLE I

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

REVISIONS	
NAME	DATE
BUREAU OF TRAFFIC	1/01/02

ILLINOIS DEPARTMENT OF TRANSPORTATION

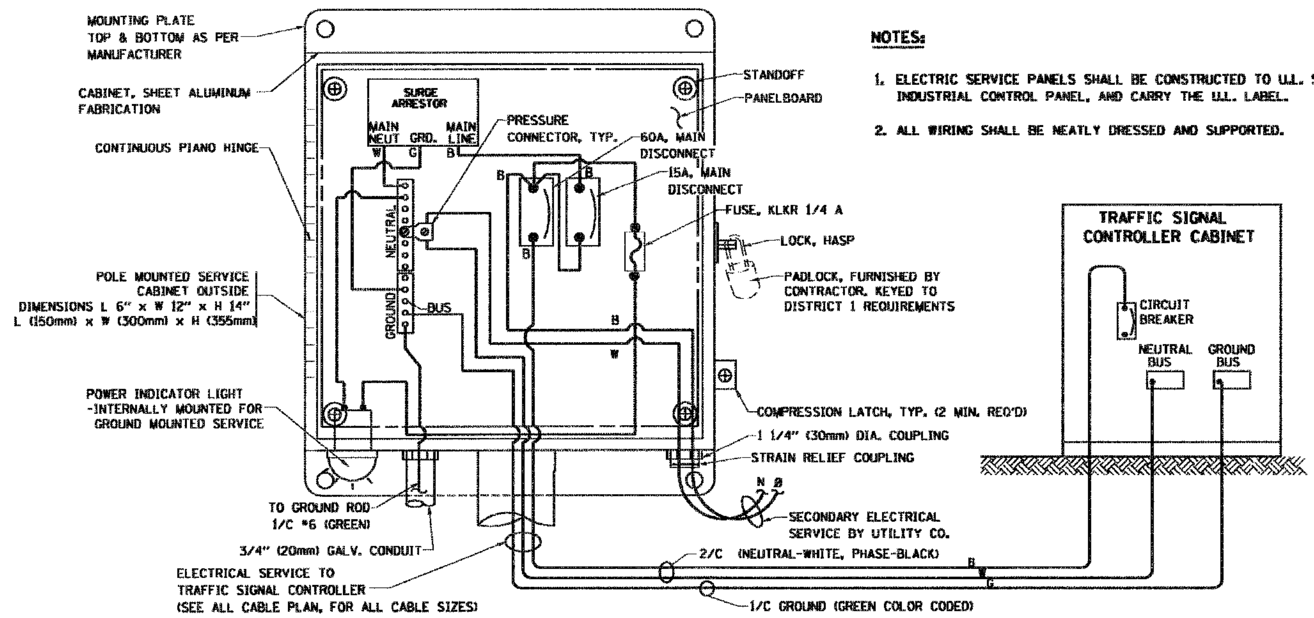
DISTRICT 1
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: NONE

DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 2 OF 4

TS05

CONTRACT NO.				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-I-12	WILL	11	10
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



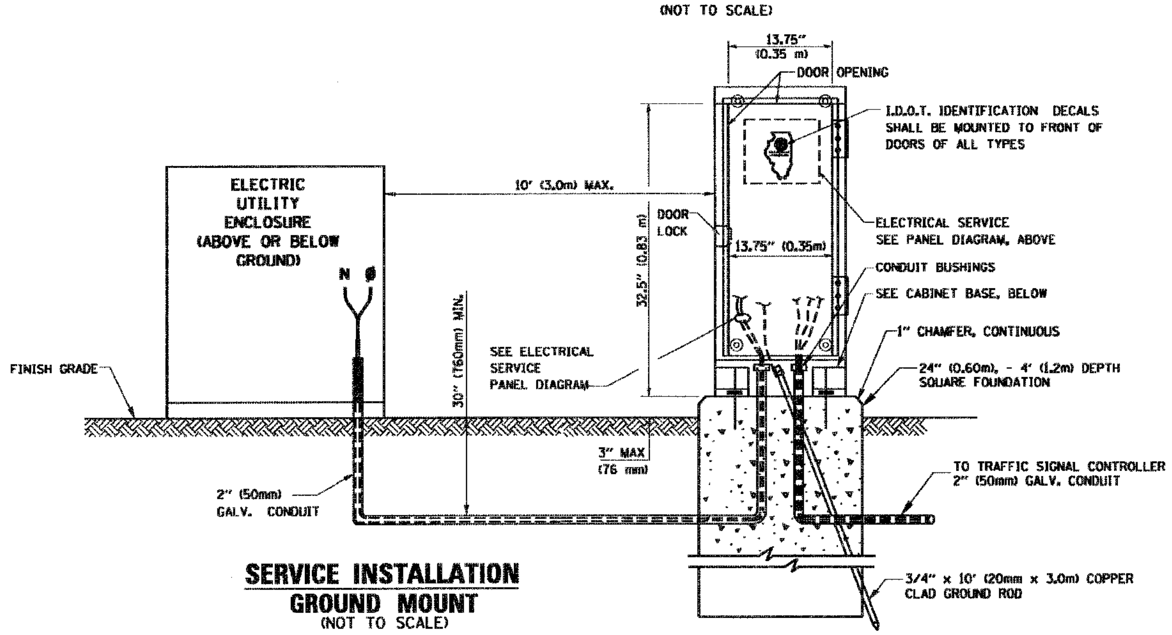
NOTES:

1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)

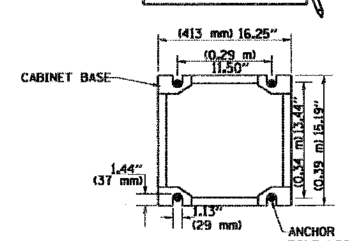
SERVICE INSTALLATION POLE MOUNT (SHOWN)

(NOT TO SCALE)



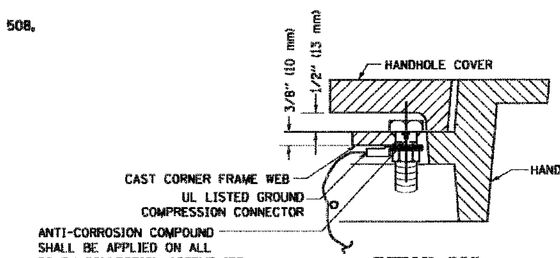
SERVICE INSTALLATION GROUND MOUNT

(NOT TO SCALE)

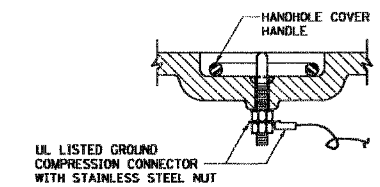


CABINET – BASE BOLT PATTERN

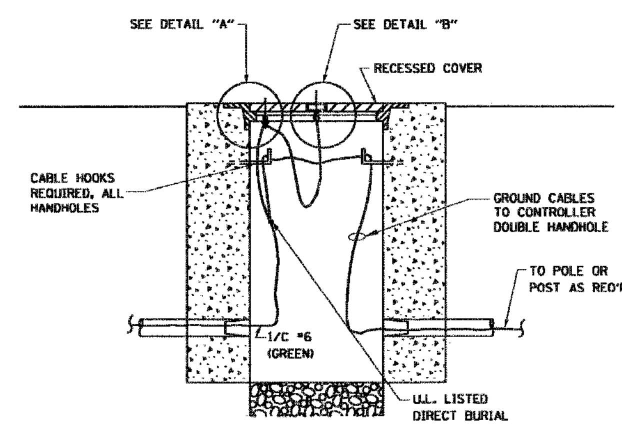
(NOT TO SCALE)



DETAIL "A"



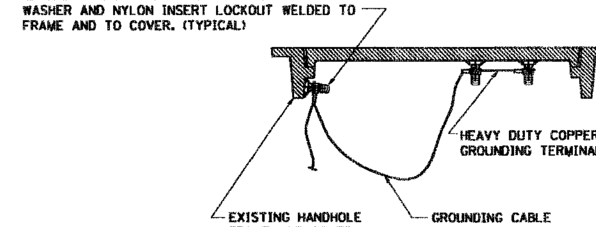
DETAIL "B"



HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)

(2) 1/2" x 1 1/4" STAINLESS STEEL BOLT WITH SPLIT LOCK WASHER AND NYLON INSERT LOCKOUT WELDED TO FRAME AND TO COVER. (TYPICAL)



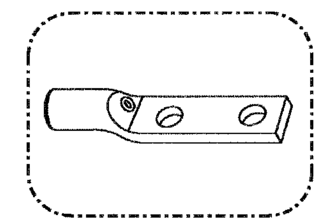
EXISTING HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)

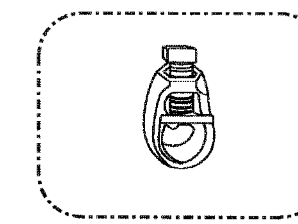
NOTES:

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.



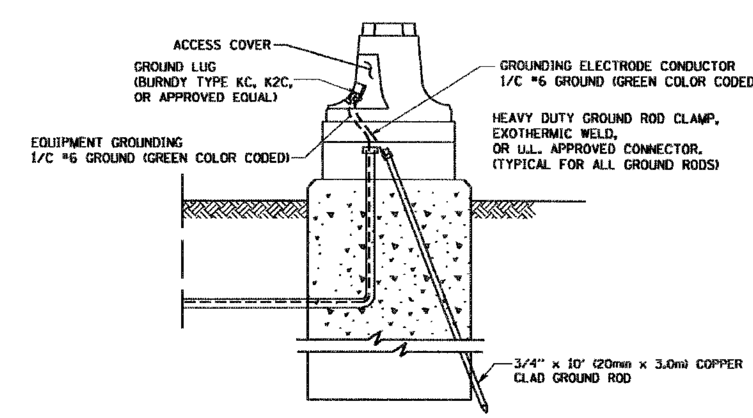
HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)



3/4" (20mm) HEAVY-DUTY GROUND ROD CLAMP (BURNDY TYPE GRC OR APPROVED EUAL)

NOTES:

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



MAST ARM POLE / POST–GROUNDING DETAIL

(NOT TO SCALE)

REVISIONS	
NAME	DATE
CADD	5/30/00
CADD	3/15/01
BUREAU OF TRAFFIC	1/01/02

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: NONE

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

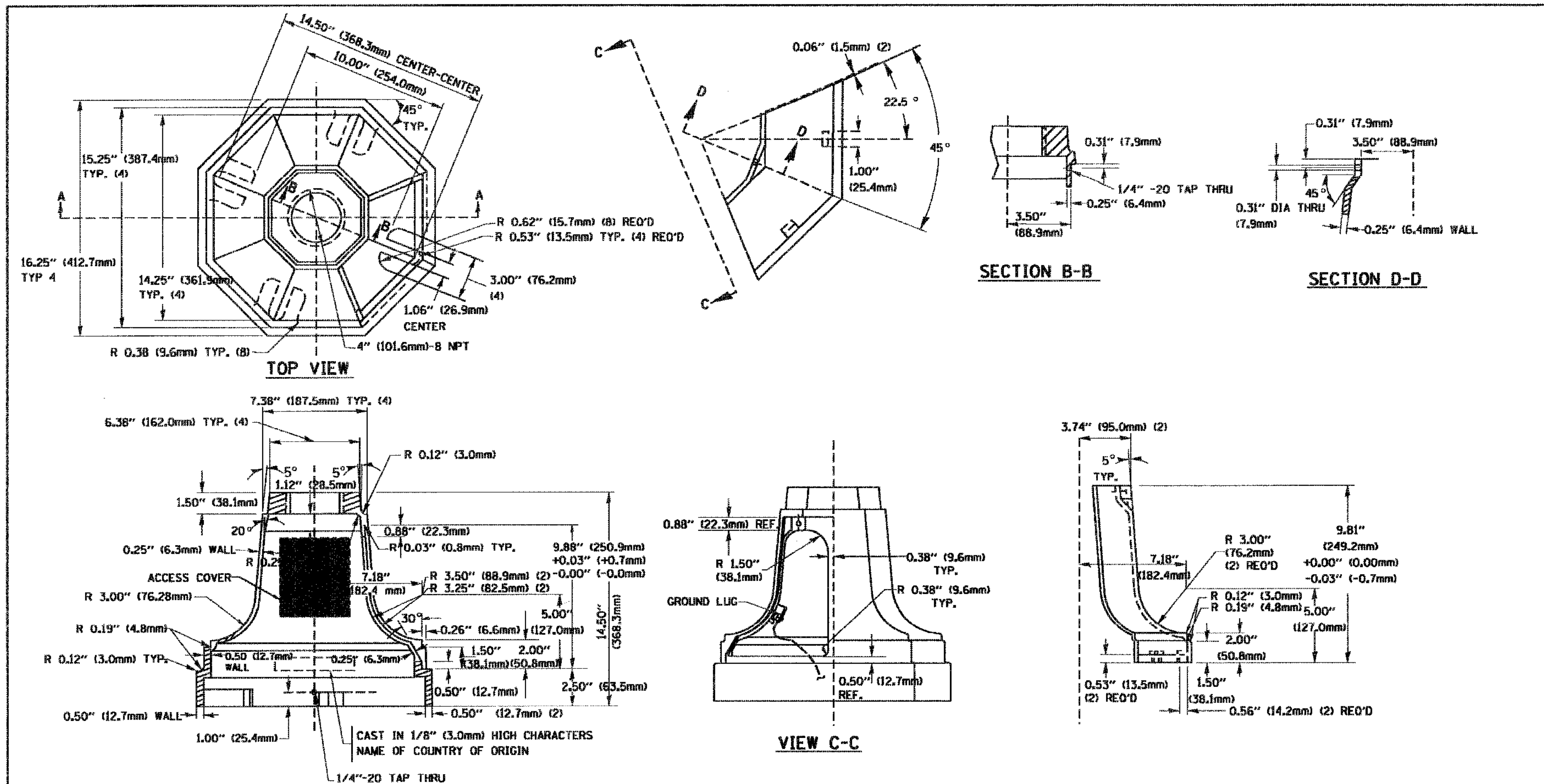
TS05

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	99-5-1-I-12	WILL	11	11

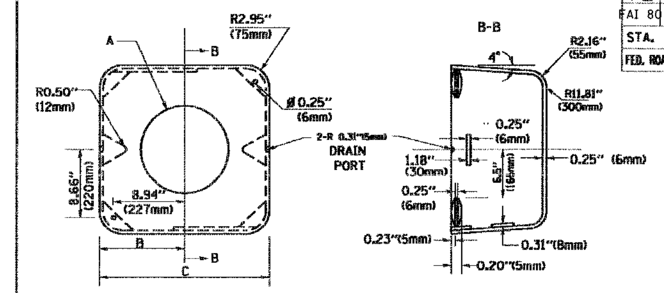
CONTRACT NO.

STA. TO STA.

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



TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A

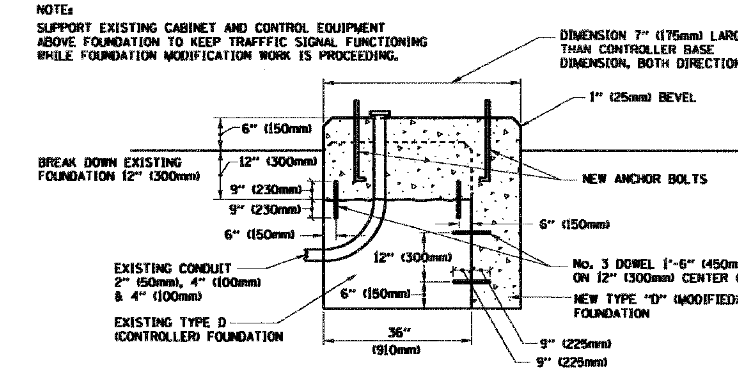


MATERIAL:
- ASTM A48 CLASS 30 GREY IRON
- ASTM A123 HOT DIPPED GALVANIZED

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

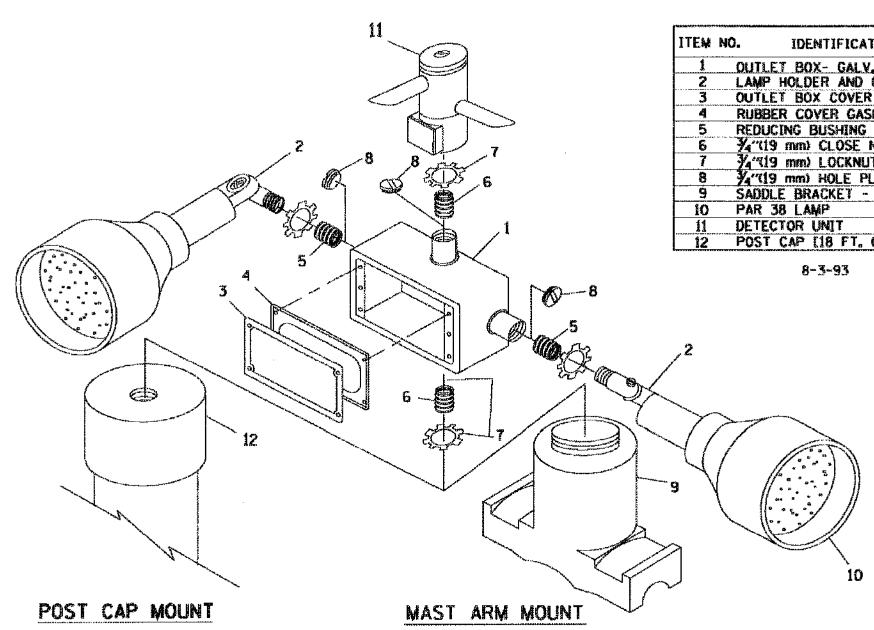
SHROUD DETAIL

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



MODIFY EXISTING TYPE "D" FOUNDATION

(NOT TO SCALE)



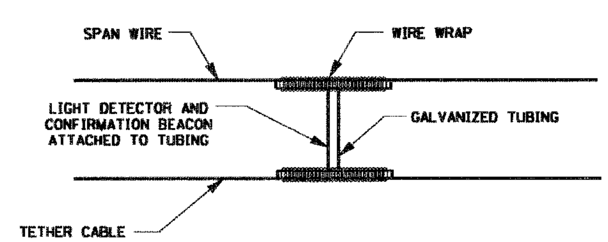
ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	¾"(19 mm) CLOSE NIPPLE
7	¾"(19 mm) LOCKNUT
8	¾"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	PAR 38 LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

8-3-93

EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

NOTES:

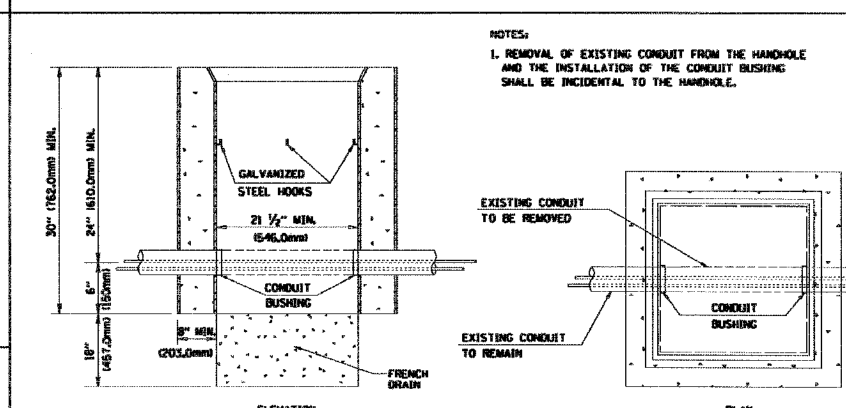
1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
   ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
   ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
3. WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A ¾"(19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



LIGHT DETECTOR AND CONFIRMATION BEACON MOUNTING FOR TEMPORARY TRAFFIC SIGNALS

(NOT TO SCALE)

NOTES:
1. REMOVAL OF EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHING SHALL BE INCIDENTAL TO THE HANDHOLE.



DETAIL
HANDHOLE TO INTERCEPT EXISTING CONDUIT

N.T.S.

REVISIONS	
NAME	DATE
BUREAU OF TRAFFIC	5/30/00
BUREAU OF TRAFFIC	3/15/01
BUREAU OF TRAFFIC	11/12/01
BUREAU OF TRAFFIC	1-01-02

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: NONE

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

TS05