THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY

August 28, 2020

DESIGN BULLETIN No. 20-04

SUBJECT: VWIM Base Sheets Updates

The following revisions and additions have been made to the Illinois Tollway Base Sheets M-ITS-1600 series and the associated Virtual Weigh-In-Motion (VWIM) and Tire Anomaly Classification System special provision:

- Revised the layout for 3, 4 and 6 lanes and created (3) sheets for each lane configuration to show the layout, conduit/wiring sizes and conduit locations.
- Revised the details for precast (replacement) or cast-in-place (new construction) installation.
- Tightened up the sensor/loop arrangement.
- Revised cabinet foundation detail.
- Combined the overheight detector onto the camera poles and added distance of poles to VWIM sensors.
- Added detail for preformed loops and eliminated detector housings in shoulder.
- Increased size of median junction boxes to accommodate Vectorsense electronics box.
- Revised to utilize JPC pavement in VWIM section (new construction) with no overlay to allow diamond grinding.
- Revised to allow asphalt or concrete shoulders.
- Added details for sensor installation.

The affected Base Sheets are per below:

Revised Drawings: M-ITS-1600, M-ITS-1601, M-ITS-1602, M-ITS-1603, M-ITS-1604, M-ITS-1605, M-ITS-1606, M-ITS-1607

New Drawings: M-ITS-1603 (sheet 2 of 3), M-ITS-1603 (sheet 3 of 3), M-ITS-1604 (sheet 2 of 3), M-ITS-1604 (sheet 3 of 3), M-ITS-1605 (sheet 2 of 3), M-ITS-1605 (sheet 3 of 3), M-ITS-1608, M-ITS-1609

Design Section Engineers (DSE) are hereby directed to incorporate this design bulletin into all contracts currently under design, currently being advertised and all future contracts. DSEs shall use the revised drawings and special provision for the VWIM system.

Paul Kovacs

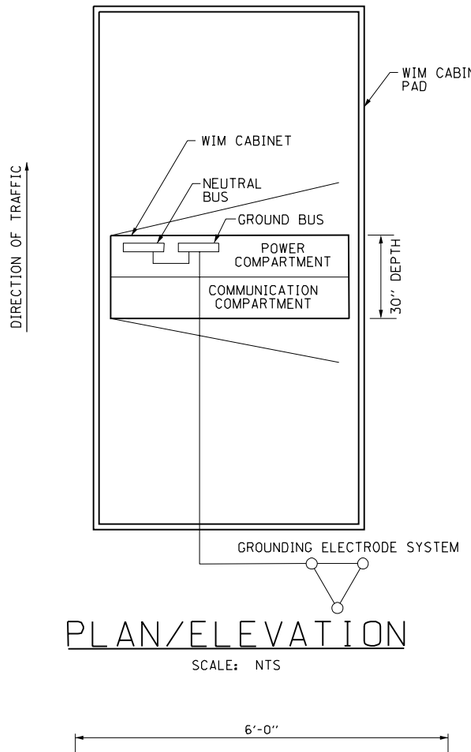
Paul D. Kovacs, P.E.
Chief Engineering Officer

08/31/2020
Date

Illinois Tollway Base Sheet Revisions

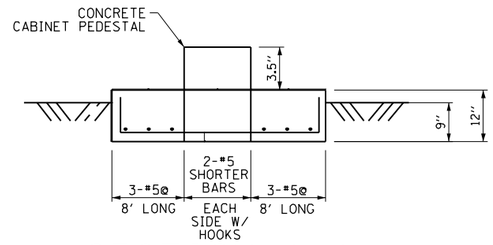
Section M	Base Sheet Drawings	
	Drawing	Modification Summary Effective: 2020-08-28
		Weigh-in-Motion (ITS)-Series 1600
	M-ITS-1600	**Weigh-In-Motion Cabinet and Foundation Details**
		Revised the cabinet foundation heights, added detail of front door and revised foundation note 1.
	M-ITS-1601	**Weigh-In-Motion IP Camera Details**
		Revised details to show all devices on the IP camera poles, use 22.5' median pole, revised conduits and cabling, and clarified setback requirements.
	M-ITS-1602	**Weigh-In-Motion Loop Detector Details**
		Added loop cable routing details, added preformed loop details, removed detector housings, and revised notes.
	M-ITS-1603	**Weigh-In-Motion Site Layout 3 Lanes (3 sheets)**
		Complete revision to this sheet. Previous sheet was for 4 lanes. Created 3 sheets for site overview, wiring layout and site layout.
	M-ITS-1604	**Weigh-In-Motion Site Layout 4 Lanes (3 sheets)**
		Complete revision to this sheet. Previous sheet was for detector housing. Created 3 sheets for site overview, wiring layout and site layout.
	M-ITS-1605	**Weigh-In-Motion Site Layout 6 Lanes (3 sheets)**
		Complete revision to this sheet. Previous sheet was for detector housing. Created 3 sheets for site overview, wiring layout and site layout.
	M-ITS-1606	**Weigh-In-Motion Junction Box Detail**
		Increased size of junction box to accommodate Vectorsense electronics box, revised conduits to match revised layouts and revised notes.
	M-ITS-1607	**Weigh-In-Motion Height Detector**
		Added IP cameras and IR illuminators to poles, clarified pole types and detector height requirements, eliminated metric units, and revised conduit/handholes to match revised layouts.
	M-ITS-1608	**Weigh-In-Motion Quartz Sensor Details**
		New sheet
	M-ITS-1609	**Weigh-In-Motion Vectorsense Sensor Details**
		New sheet

New Sheet Retired Standard



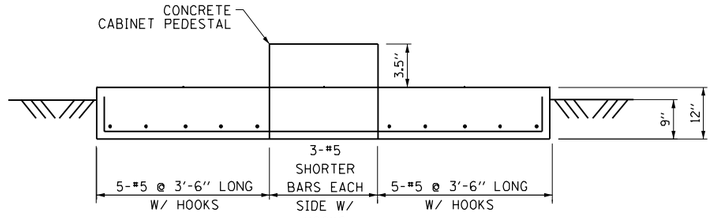
PLAN/ELEVATION

SCALE: NTS



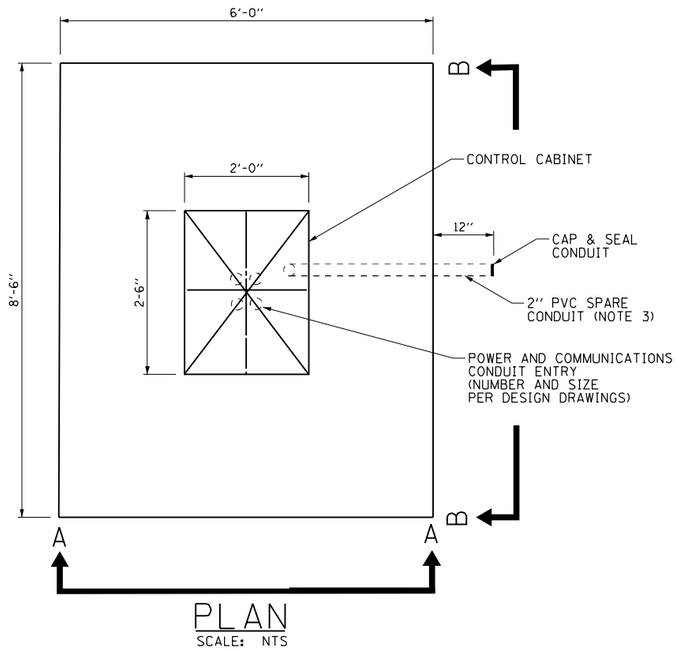
SECTION A-A

SCALE: NTS



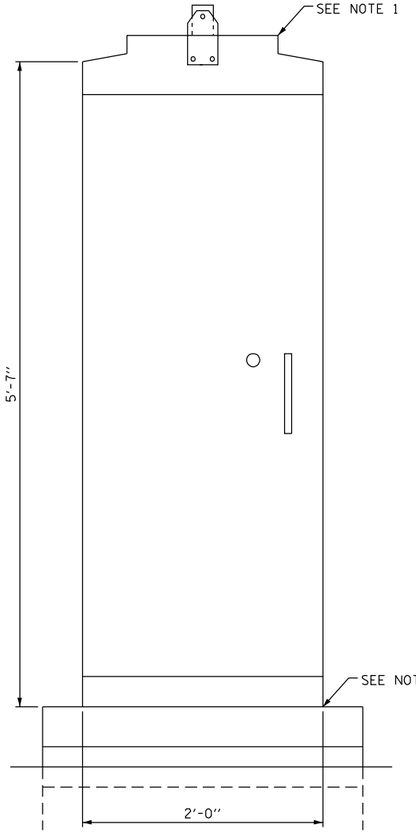
SECTION B-B

SCALE: NTS



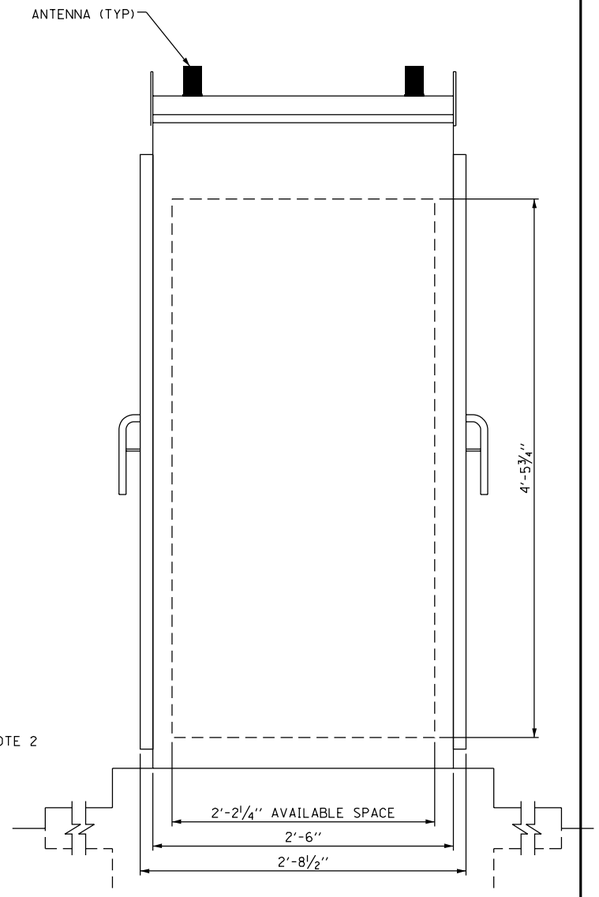
PLAN

SCALE: NTS



FRONT VIEW

(NO DOOR SHOWN)



SIDE VIEW

NOTES:

1. THE WIM INTERNAL CABINET LAYOUT SHALL BE AS PER WIM MANUFACTURER'S RECOMMENDATION AND APPROVED BY THE ILLINOIS TOLLWAY.
2. SEAL CABINET TO FOUNDATION JOINT WITH SILICONE SEALANT TO PREVENT WATER INTRUSION. LOCATE CABINET ABOVE HIGH WATER LEVEL.
3. INSTALL 2" PVC SPARE CONDUIT FOR FUTURE USE. EXTEND 12" OUTSIDE OF CONCRETE FOUNDATION. PROVIDE CONDUIT MARKING FOR EASE OF FUTURE LOCATING.

WIM CABINET FOUNDATION NOTES:

1. COORDINATE SIZE OF CONDUIT STUB-UP GROUPING WITH WIM CONTROLLER CABINET BOTTOM CONDUIT CUT-OUTS
2. CONCRETE = 4,000 PSI (MIN.)
3. REBAR=EPOXY COATED FY=60,000 PSI (MIN.)
4. PROVIDE SHOP DRAWINGS PRIOR TO CONSTRUCTION
5. INCLUDE CONDUITS

WIM CONTROLLER FOUNDATION DETAILS

SCALE: NTS

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1600

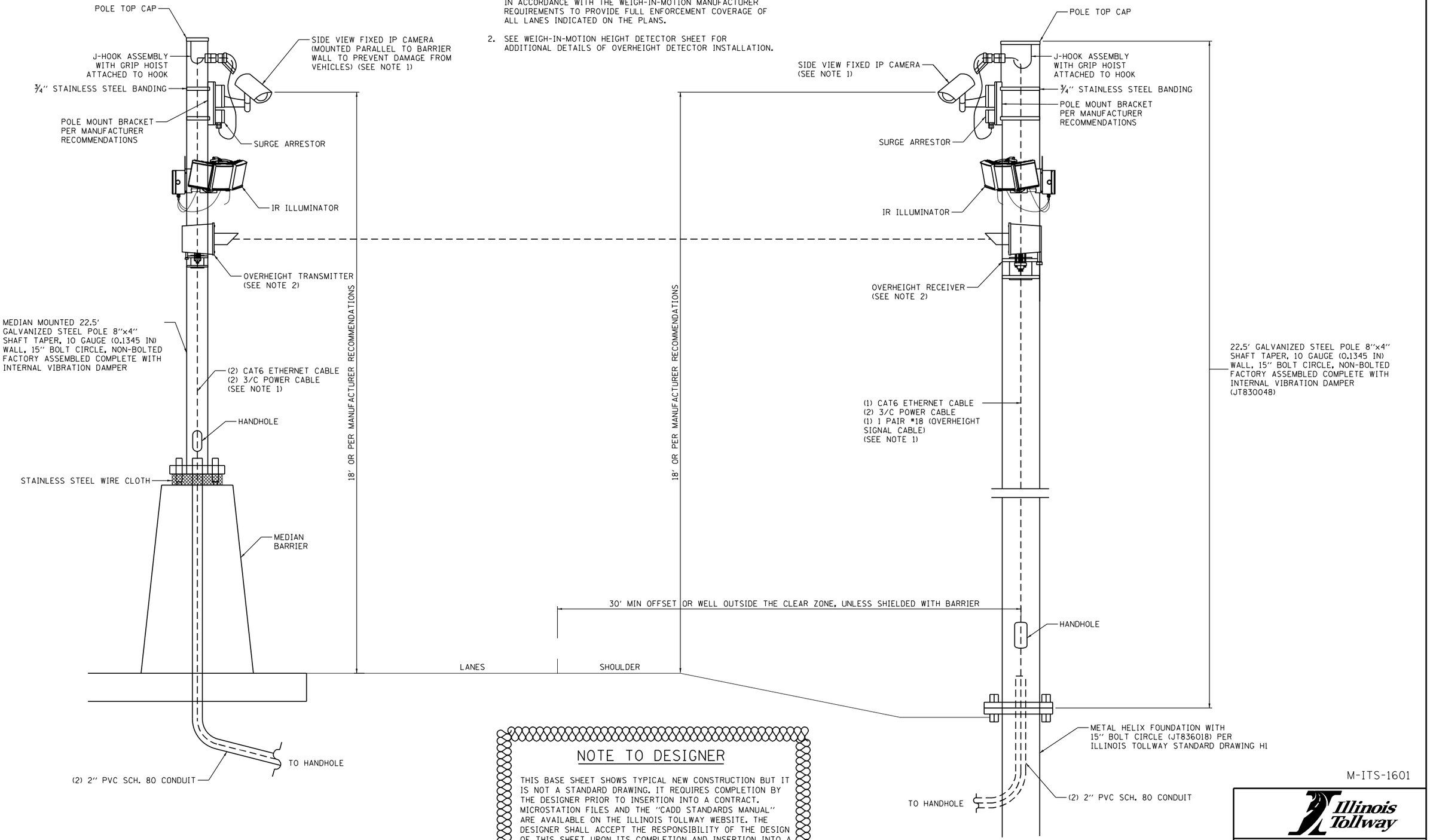
Illinois Tollway

WEIGH-IN-MOTION CABINET AND FOUNDATION DETAILS

DATE
8-28-2020

NOTE:

1. THE NUMBER OF CAMERAS AND ASSOCIATED CABLING SHALL BE IN ACCORDANCE WITH THE WEIGH-IN-MOTION MANUFACTURER REQUIREMENTS TO PROVIDE FULL ENFORCEMENT COVERAGE OF ALL LANES INDICATED ON THE PLANS.
2. SEE WEIGH-IN-MOTION HEIGHT DETECTOR SHEET FOR ADDITIONAL DETAILS OF OVERHEIGHT DETECTOR INSTALLATION.



NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE ''CADD STANDARDS MANUAL'' ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL ''NOTE TO DESIGNER'' BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1601

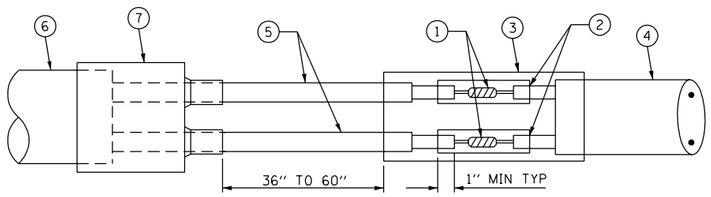
Illinois Tollway

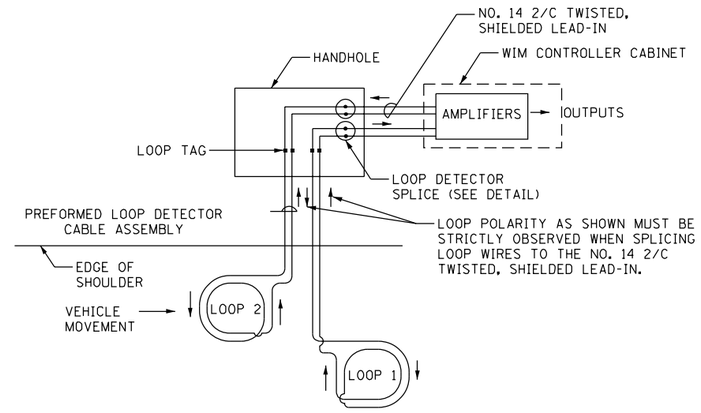
WEIGH-IN-MOTION
IP CAMERA DETAILS

DATE
8-28-2020

LOOP DETECTOR SPLICE DETAIL

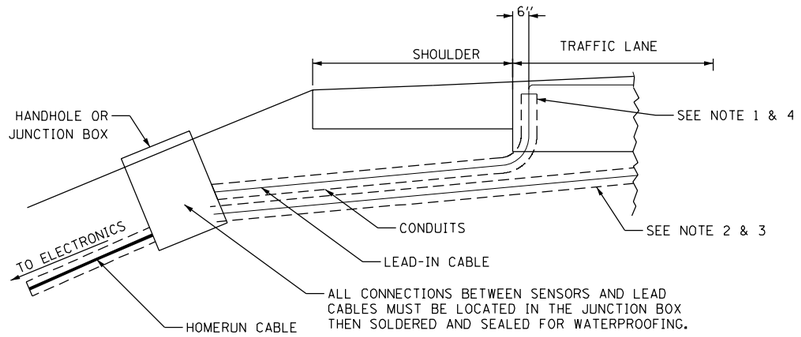
1. WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH. THE WESTERN UNION SPLICES SHALL BE STAGGERED.
2. WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
3. WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER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





DETECTOR LOOP WIRING SCHEMATIC

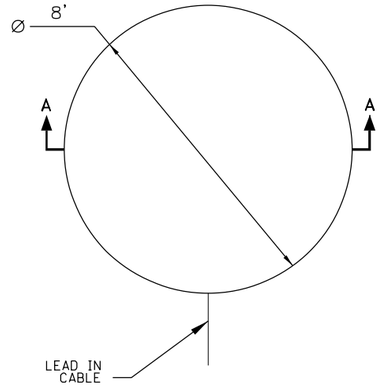
LOOP CABLE ROUTING DETAILS

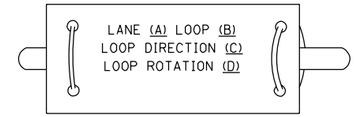


1. SPARE/FUTURE STUB-UP CONDUIT TO 2" BELOW CONCRETE SURFACE. BEFORE POURING CONCRETE, CAP OPENINGS AND PROTECT WITH TAPE AND SOFT MATERIAL TO PREVENT DAMAGE IN FUTURE DISCOVERY. TO BE CUT TO PROPER HEIGHT WHEN SENSORS ARE INSTALLED. USE METALLIC CAP TO ALLOW EASIER DETECTION FOR RE-ENTRY.
2. PLUG AND SEAL CONDUIT OPENING AFTER INSTALLING LOOP LEAD-IN CABLE.
3. INITIAL INSTALL - ROUTE PREFORMED LOOP PROTECTED LEAD TO HANDHOLE OR JUNCTION BOX.
4. FOR FUTURE REPLACEMENT - PLACE STUB UP FOR LOOP TO ALLOW FUTURE SAWCUT LOOP.

TOP VIEW OF PERFORMED LOOP

Ø 8' PERFORMED LOOP INSTALL CENTERED IN THE LANE INTO ASPHALT BASE BEFORE CONCRETE POUR





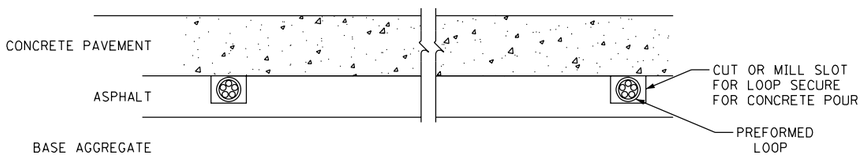
A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY.

B. LOOP #1 IS THE LOOP IN THE LANE DOWN STREAM OF THE QUARTZ SENSORS.

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

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

LOOP LEAD-IN CABLE TAG



SECTION A-A

PREFORMED LOOP IN ASPHALT BELOW CONCRETE PAVEMENT DETAIL

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

NOTES:

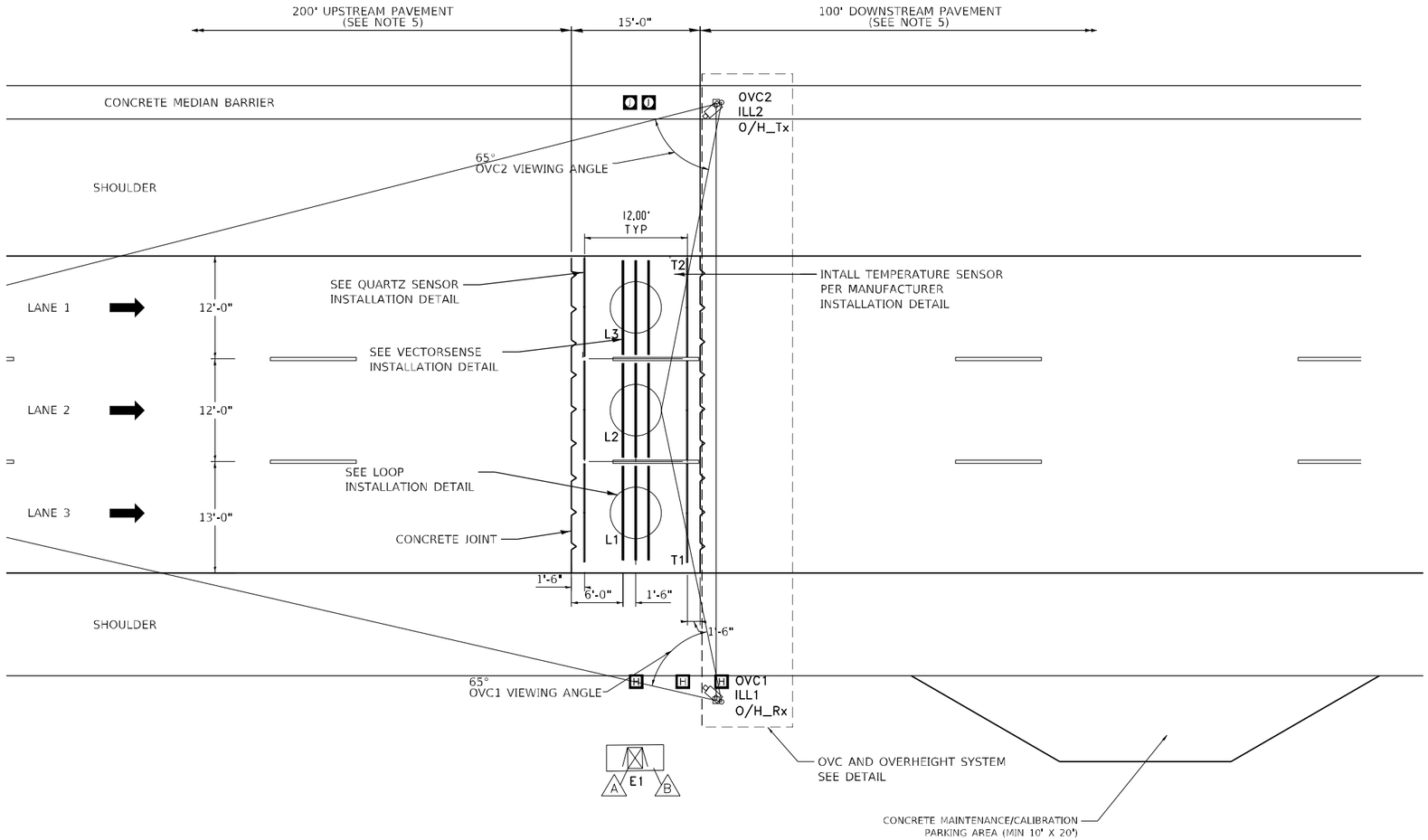
1. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, SINCE NEW CONCRETE PAVEMENT IS PROPOSED. INSTALLATION SHALL BE ACCORDING TO THE STANDARD SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. FOLLOW LOOP DETECTOR MANUFACTURER RECOMMENDATIONS FOR MINIMUM SEPARATION DISTANCE FROM REBAR MATS (APPLICABLE FOR 3 OR 4 LANE PRECAST CONCRETE INSTALLATIONS). USE STAND OFFS AS REQUIRED.
3. LOOP SIZE AND NUMBER OF TURNS AS SPECIFIED ON SITE LAYOUT AND IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

M-ITS-1602

Illinois Tollway

WEIGH-IN-MOTION
LOOP DETECTOR DETAILS

DATE
8-28-2020



SITE OVERVIEW
SCALE: NTS

LEGEND

E	- ELECTRONICS ENCLOSURE
ILL	- ILLUMINATOR
L	- INDUCTIVE LOOP
O/H	- OVERHEIGHT SENSOR
OVC	- OVERVIEW CAMERA
Q	- QUARTZ WIM SENSOR
T	- TEMPERATURE SENSOR
V	- VECTORSENSE SENSOR
Tx	- TRANSMITTER
Rx	- RECEIVER
	- CABINET
1	- SIGNAL CONDUIT
1	- POWER CONDUIT
A	- NOTE
	- JUNCTION BOX
H	- HANDHOLE
	- WIM HEIGHT DETECTOR
	- WIM CAMERA

NOTES: (THIS SHEET ONLY)

A CABINET WITH WIM ELECTRONICS.

B CABINET FOUNDATION.

NOTE TO DESIGNERS

DIAMOND GRINDING OF THE 315' LENGTH OF CONCRETE PAVEMENT SHALL OCCUR AFTER PRECAST PANELS ARE INSTALLED. DSE SHALL COORDINATE CONSTRUCTION SCHEDULE AND MAINTENANCE OF TRAFFIC ACCORDINGLY.

GENERAL NOTES

1. ALL CONNECTIONS BETWEEN SENSORS AND LEAD CABLES SHALL BE DONE WITHIN A PULL BOX BY SOLDERING THEN SEALING FOR WATERPROOFING. PLACEMENT OF PULL BOXES MAY BE DIFFERENT FROM THAT SHOWN TO MEET SITE REQUIREMENTS.
2. AC POWER CABLES MUST BE RUN IN SEPARATE CONDUITS/PULLBOXES FROM SIGNAL CABLES OR SEPARATED INSIDE PULLBOXES WITH A DIVIDER.
3. SENSOR SPACING SHOWN IS TYPICAL SPACING REQUIREMENT, ACTUAL SENSOR SPACING MAY BE ALTERED TO SUIT SITE CONDITIONS IF APPROVED BY THE ENGINEER AND MANUFACTURER REPRESENTATIVE.
4. SITE CONDITIONS MUST MEET ASTM E1318-09 TYPE 1 REQUIREMENTS TO ACHIEVE OPTIMAL WIM SYSTEM PERFORMANCE.
5. A CONCRETE PAVEMENT SECTION ON STRAIGHT GRADE WITH NO VERTICAL CURVES AND NO SUPERELEVATION TRANSITIONS IS REQUIRED FOR WIM LANES, FROM 200' BEFORE THE SENSORS UP TO 100' AFTER THE SENSORS, TO IMPROVE LONG TERM PERFORMANCE AND REDUCE MAINTENANCE. DIAMOND GRINDING OF THE 315' LENGTH OF CONCRETE PAVEMENT SHALL OCCUR AFTER PRECAST PANELS ARE INSTALLED.
6. CABLES MUST BE PROTECTED BY PVC SLEEVES WHERE THEY CROSS PAVEMENT JOINTS/CRACKS.
7. ADDITIONAL DRAINAGE MAY BE REQUIRED DEPENDING ON SLOPE OF ROADWAY.
8. EXACT ROUTING OF CONDUIT TO BE DETERMINED ON SITE.
9. PROVIDE 6" MINIMUM SPACING BETWEEN ADJACENT MEDIAN BARRIER JUNCTION BOXES.
10. OVC AND OVERHEIGHT SYSTEM POLES SHALL BE INSTALLED 20' (PREFERRED) TO 100' (MAX) DOWNSTREAM OF WIM SENSORS. POLES SHALL BE APPROXIMATELY IN-LINE WITH EACH OTHER AS SHOWN ON THIS SHEET.

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

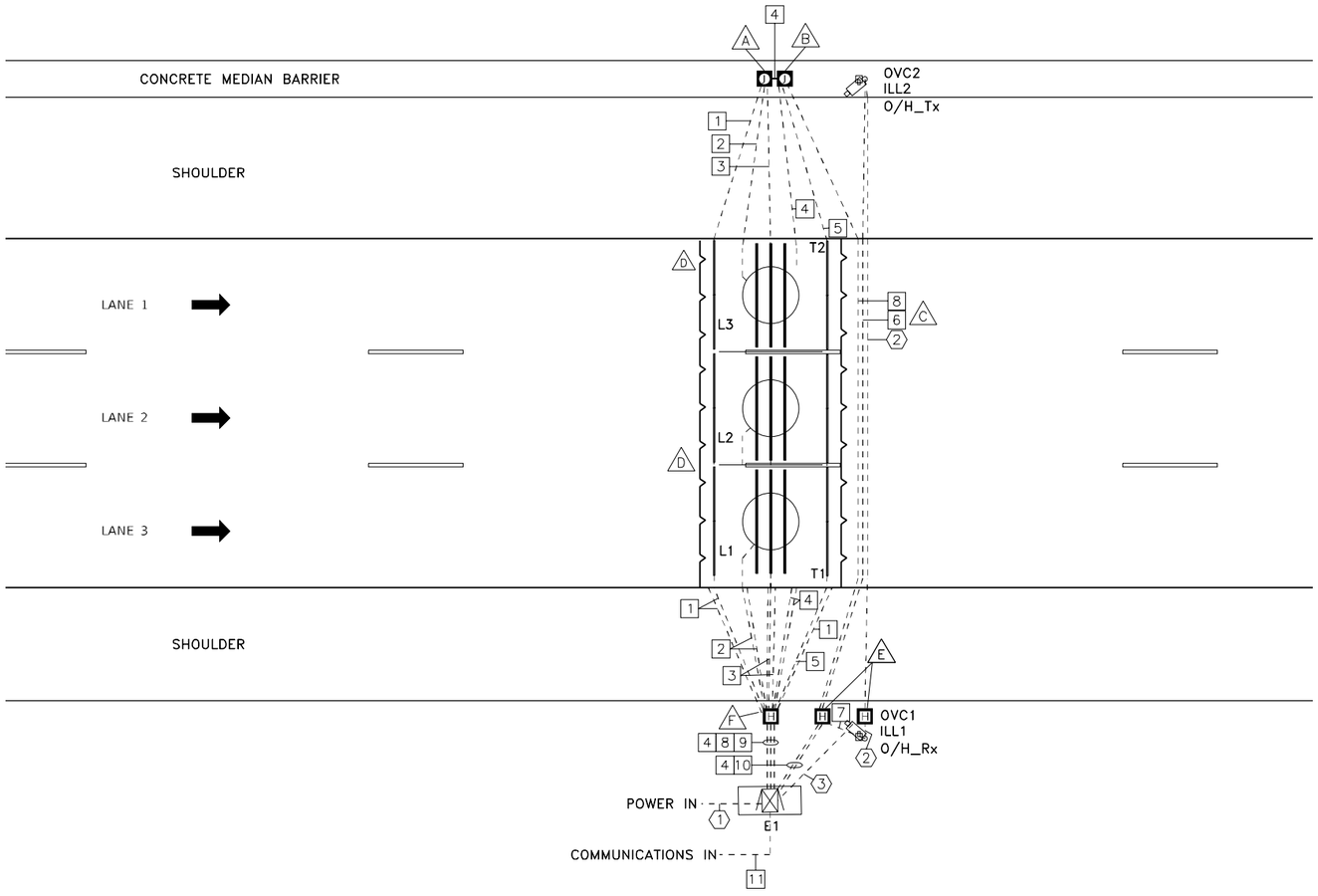
M-ITS-1603
(SHEET 1 OF 3)

Illinois Tollway

WEIGH-IN-MOTION SITE OVERVIEW 3 LANES

DATE: 08-28-2020

PLOT DRIVER: SPLTDRVLS
PENTABLE: SPENTBLS
PLOTTED: %DATE% PLOT TIME: $TIMES
PLOTTED BY: $USERNAMES
MODEL NAME: $MODELNAMES
FILENAME: $FILES
PLOT SCALE: %SCALE%
PAGE SIZE: $PAGESIZE



SITE OVERVIEW
SCALE: NTS

CONDUIT DETAIL

SIGNAL CONDUITS:

1 — 2" [50mm] CONDUIT
2 - QUARTZ SENSOR LEAD
1 - GROUND WIRE (QUARTZ)

2 — 2" [50mm] CONDUIT
2 - LOOP WIRE

3 — 2" [50mm] CONDUIT
3 - VECTORSENSE SENSOR LEAD

4 — 2" [50mm] CONDUIT SPARE

5 — 2" [50mm] CONDUIT
2 - QUARTZ SENSOR LEAD
1 - GROUND WIRE (QUARTZ)
1 - TEMPERATURE SENSOR LEAD

6 — 2" [50mm] CONDUIT
1 - OVC SIGNAL CABLE

7 — 2" [50mm] CONDUIT
1 - OVC SIGNAL CABLE
1 - O/H_Rx SIGNAL CABLE

8 — 2" [50mm] CONDUIT
4 - QUARTZ SENSOR LEAD
2 - GROUND WIRE (QUARTZ)
1 - TEMPERATURE SENSOR LEAD
2 - VECTORSENSE SIGNAL CABLE
1 - GROUND WIRE (VECTORSENSE)
1 - LOOP LEAD

9 — 2" [50mm] CONDUIT
4 - QUARTZ SENSOR LEAD
2 - GROUND WIRE (QUARTZ)
2 - VECTORSENSE SIGNAL CABLE
1 - GROUND WIRE (VECTORSENSE)
1 - LOOP LEAD

10 — 2" [50mm] CONDUIT
4 - QUARTZ SENSOR LEAD
2 - GROUND WIRE (QUARTZ)
2 - VECTORSENSE SIGNAL CABLE
1 - GROUND WIRE (VECTORSENSE)
1 - LOOP LEAD
2 - OVC SIGNAL CABLE
1 - O/H_Rx SIGNAL CABLE

11 — 2" CONDUIT WIM CABINET FIBER

POWER CONDUITS

(1) — 2" CONDUIT
WIM CABINET POWER

(2) — 2" CONDUIT
1 - O/H POWER
1 - ILLUMINATOR POWER

(3) — 2" CONDUIT
2 - O/H POWER
2 - ILLUMINATOR POWER

NOTES: (THIS SHEET ONLY)

A — JUNCTION BOX WITH VECTORSENSE" ELECTRONICS.
(40" X 14" X 12" IN TOP OF BARRIER WALL)

B — JUNCTION BOX.
(40" X 14" X 12" IN TOP OF BARRIER WALL)

C — BURIED CONDUIT.

D — CABLES FOR INTERIOR LANES EQUIPMENT RUN UNDER ADJACENT LANE PANELS. NOT ALL CONDUITS SHOWN, FOR CLARITY

E — HANDHOLE.
(30" X 30" X 39" IN GROUND)

F — HANDHOLE WITH VECTORSENSE ELECTRONICS.
(30" x 30" x 39" IN GROUND)

ALL CONDUITS SHALL BE PVC SCH 80 UNLESS NOTED OTHERWISE

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

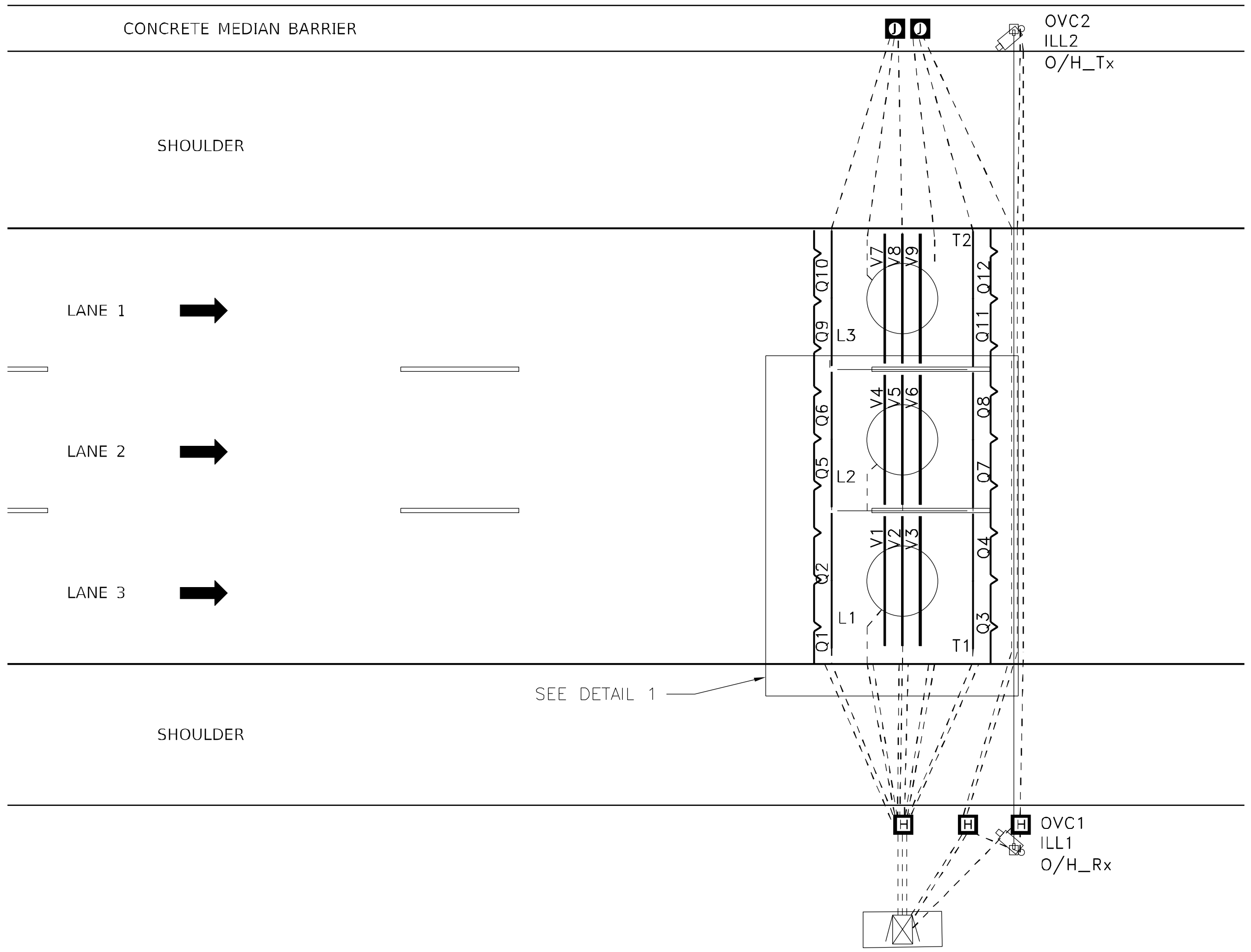
M-ITS-1603
(SHEET 2 OF 3)

Illinois Tollway

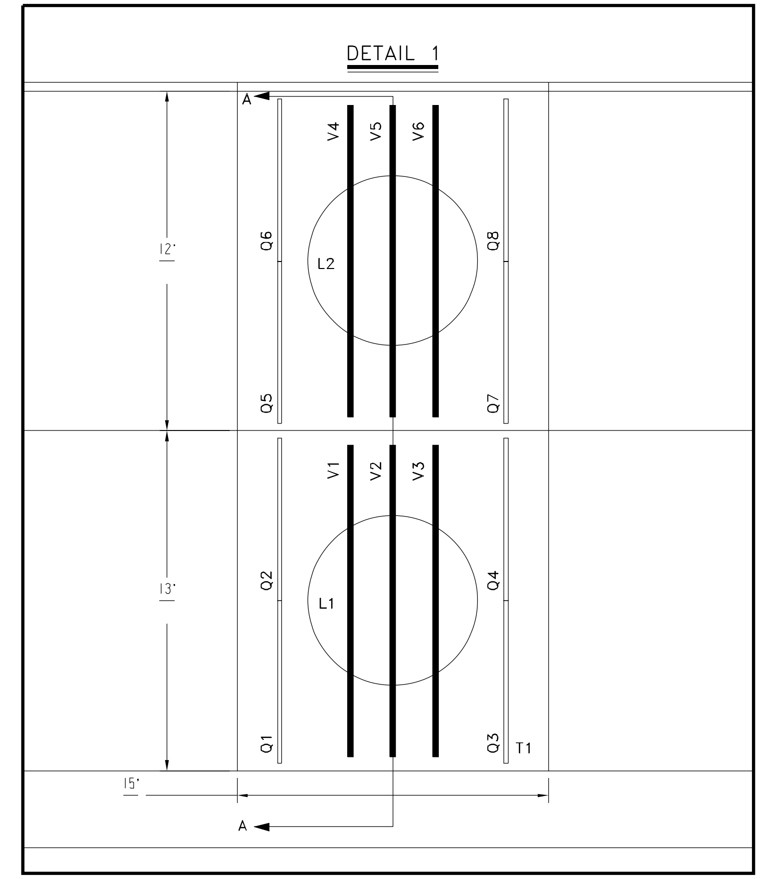
WEIGH-IN-MOTION WIRING LAYOUT 3 LANES

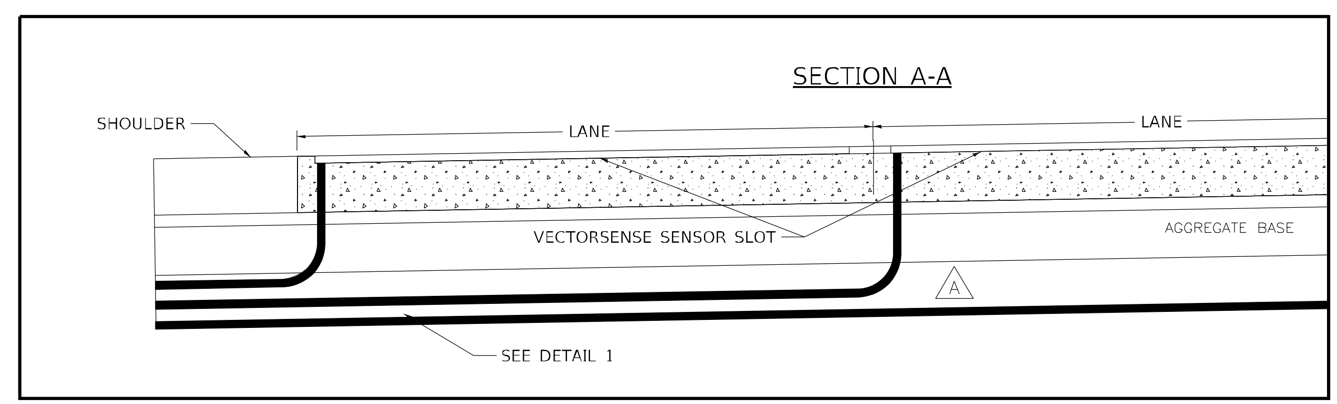
DATE: 08-28-2020

PLOT DRIVER: $PLTDRV$
PENTABLE: $PENTBL$
PLOTTED: $DATE$ PLOT TIME: $TIME$
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILE NAME: $FILE$
PLOT SCALE: $SCALE$
PAGE SIZE: $SHEETSIZE$



SITE LAYOUT
SCALE: NTS





NOTES: (THIS SHEET ONLY)

A. GENTLY CURVE CONDUIT AS NECESSARY TO FOLLOW ROAD SLOPE AND TO PASS OVER INTERSECTING CONDUIT. NO 90° PIPE FITTINGS PERMITTED, ONLY SWEEPS.

B. CONDUIT AND FITTINGS, OTHER THAN AT PRECAST PANEL CONNECTION LOCATION, ARE PLACED BELOW THE AGGREGATE LAYER, BACKFILLED WITH BEDDING SAND. ENSURE SAND SURROUNDS CONDUITS AND FITTINGS AND COMPACT THE MATERIAL.

C. CONDUIT DEPTH SHALL BE 33"MIN TO 45"MAX BELOW TOP OF PAVEMENT.

NOTE TO DESIGNERS

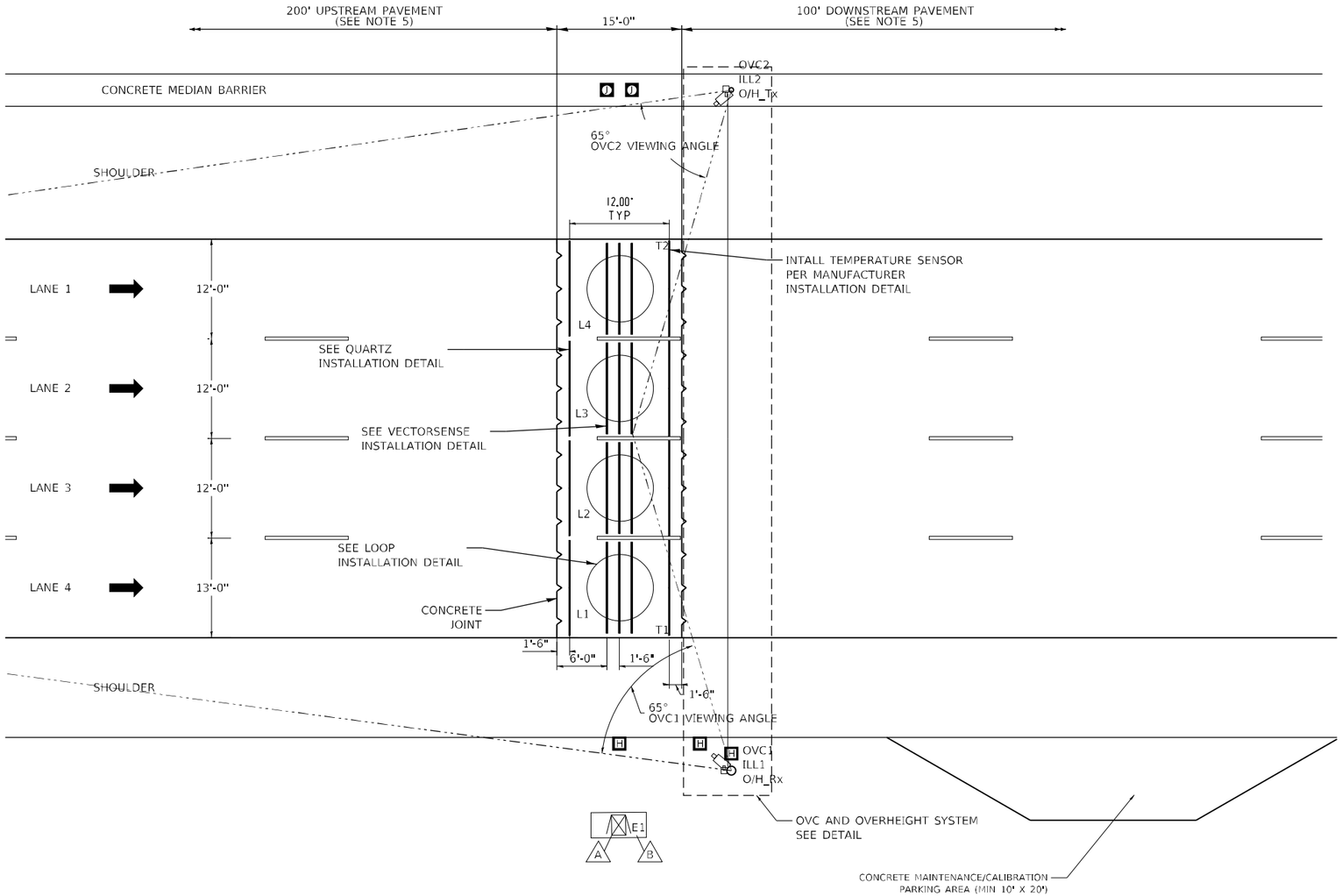
THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1603
(SHEET 3 OF 3)

Illinois Tollway

WEIGH-IN-MOTION SITE LAYOUT 3 LANES

DATE: 08-28-2020



SITE OVERVIEW
SCALE: NTS

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

LEGEND

- E - ELECTRONICS ENCLOSURE
- ILL - ILLUMINATOR
- L - INDUCTIVE LOOP
- O/H - OVERHEIGHT SENSOR
- OVC - OVERVIEW CAMERA
- Q - QUARTZ WIM SENSOR
- T - TEMPERATURE SENSOR
- V - VECTORSENSE SENSOR
- Tx - TRANSMITTER
- Rx - RECEIVER
- ⊠ - CABINET
- [1] - SIGNAL CONDUIT
- (1) - POWER CONDUIT
- △A - NOTE
- ◘ - JUNCTION BOX
- [H] - HANDHOLE
- ☗ - WIM HEIGHT DETECTOR
- ◇ - WIM CAMERA

NOTES: (THIS SHEET ONLY)

A CABINET WITH WIM ELECTRONICS.

B CABINET FOUNDATION.

NOTE TO DESIGNERS

DIAMOND GRINDING OF THE 315' LENGTH OF CONCRETE PAVEMENT SHALL OCCUR AFTER PRECAST PANELS ARE INSTALLED. DSE SHALL COORDINATE CONSTRUCTION SCHEDULE AND MAINTENANCE OF TRAFFIC ACCORDINGLY.

GENERAL NOTES

1. ALL CONNECTIONS BETWEEN SENSORS AND LEAD CABLES SHALL BE DONE WITHIN A PULL BOX BY SOLDERING THEN SEALING FOR WATERPROOFING. PLACEMENT OF PULL BOXES MAY BE DIFFERENT FROM THAT SHOWN TO MEET SITE REQUIREMENTS.
2. AC POWER CABLES MUST BE RUN IN SEPARATE CONDUITS/PULLBOXES FROM SIGNAL CABLES OR SEPARATED INSIDE PULLBOXES WITH A DIVIDER.
3. SENSOR SPACING SHOWN IS TYPICAL SPACING REQUIREMENT, ACTUAL SENSOR SPACING MAY BE ALTERED TO SUIT SITE CONDITIONS APPROVED BY THE ENGINEER AND MANUFACTURER REPRESENTATIVE.
4. SITE CONDITIONS MUST MEET ASTM E1318-09 TYPE 1 REQUIREMENTS TO ACHIEVE OPTIMAL WIM SYSTEM PERFORMANCE.
5. A CONCRETE PAVEMENT SECTION ON STRAIGHT GRADE WITH NO VERTICAL CURVES AND NO SUPERELEVATION TRANSITIONS IS REQUIRED FOR WIM LANES, FROM 200' BEFORE THE SENSORS UP TO 100' AFTER THE SENSORS, TO IMPROVE LONG TERM PERFORMANCE AND REDUCE MAINTENANCE. DIAMOND GRINDING OF THE 315' LENGTH OF CONCRETE PAVEMENT SHALL OCCUR AFTER PRECAST PANELS ARE INSTALLED.
6. CABLES MUST BE PROTECTED BY PVC SLEEVES WHERE THEY CROSS PAVEMENT JOINTS/CRACKS.
7. ADDITIONAL DRAINAGE MAY BE REQUIRED DEPENDING ON SLOPE OF ROADWAY.
8. EXACT ROUTING OF CONDUIT TO BE DETERMINED ON SITE.
9. PROVIDE 6" MINIMUM SPACING BETWEEN ADJACENT MEDIAN BARRIER JUNCTION BOXES.
10. OVC AND OVERHEIGHT SYSTEM POLES SHALL BE INSTALLED 20' (PREFERRED) TO 100' (MAX) DOWNSTREAM OF WIM SENSORS. POLES SHALL BE APPROXIMATELY IN-LINE WITH EACH OTHER AS SHOWN ON THIS SHEET.

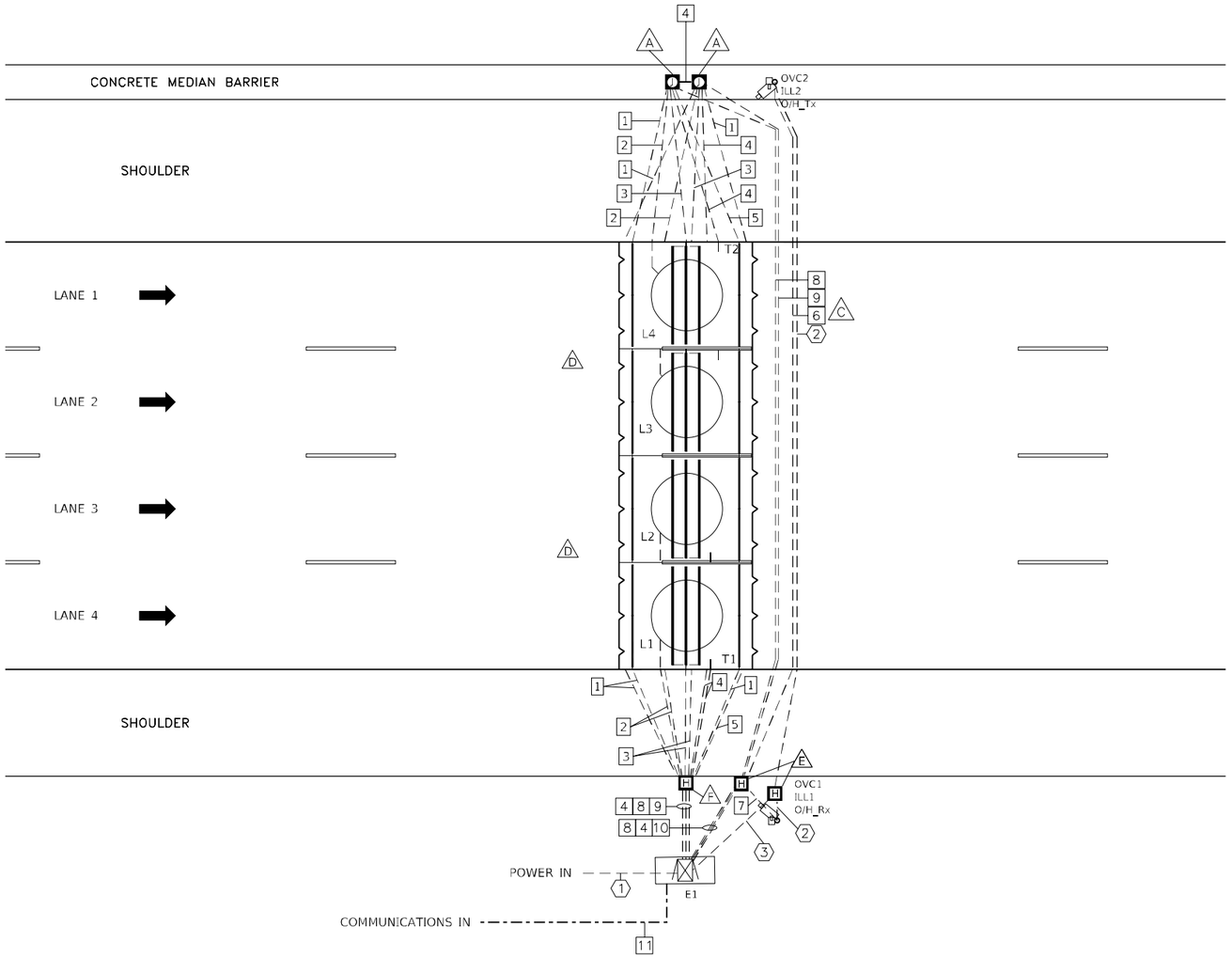
M-ITS-1604
(SHEET 1 OF 3)

Illinois Tollway

WEIGH-IN-MOTION SITE OVERVIEW 4 LANES

DATE: 08-28-2020

PLOT DRIVER: SPLTDRVLS
PENTABLE: SPENTBLS
PLOT STYLES: ADOTLS PLOT TIME: $TIME$
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILENAME: $FILE$
PLOT SCALE: 1SCA=1S PAGE SIZE: $SHEETISIZE$



CONDUIT DETAIL

SIGNAL CONDUITS:

1 — 2" CONDUIT
2 - QUARTZ SENSOR LEAD
1 - GROUND WIRE (QUARTZ)

2 — 2" CONDUIT
2 - LOOP WIRE

3 — 2" CONDUIT
3 - VECTORSENSE SENSOR LEAD

4 — 2" CONDUIT
SPARE

5 — 2" CONDUIT
2 - QUARTZ SENSOR LEAD
1 - GROUND WIRE (QUARTZ)
1 - TEMPERATURE SENSOR LEAD

6 — 2" CONDUIT
1 - OVC SIGNAL CABLE

7 — 2" CONDUIT
1 - OVC SIGNAL CABLE
1 - O/H_Rx SIGNAL CABLE

8 — 2" CONDUIT
4 - QUARTZ SENSOR LEAD
2 - GROUND WIRE (QUARTZ)
1 - TEMPERATURE SENSOR LEAD
2 - VECTORSENSE SIGNAL CABLE
1 - GROUND WIRE (VECTORSENSE)
1 - LOOP LEAD

9 — 2" CONDUIT
4 - QUARTZ SENSOR LEAD
2 - GROUND WIRE (QUARTZ)
2 - VECTORSENSE SIGNAL CABLE
1 - GROUND WIRE (VECTORSENSE)
1 - LOOP LEAD

10 — 2" CONDUIT
4 - QUARTZ SENSOR LEAD
2 - GROUND WIRE (QUARTZ)
2 - VECTORSENSE SIGNAL CABLE
1 - GROUND WIRE (VECTORSENSE)
1 - LOOP LEAD
2 - OVC SIGNAL CABLE
1 - O/H_Rx SIGNAL CABLE

11 — 2" CONDUIT WIM CABINET FIBER

POWER CONDUITS

(1) — 2" CONDUIT
WIM CABINET POWER

(2) — 2" CONDUIT
1 - O/H POWER
1 - ILLUMINATOR POWER

(3) — 2" CONDUIT
2 - O/H POWER
2 - ILLUMINATOR POWER

NOTES: (THIS SHEET ONLY)

A — JUNCTION BOX WITH VECTORSENSE™ ELECTRONICS. (40" X 14" X 12" IN TOP OF BARRIER WALL)

C — BURIED CONDUIT.

D — CABLES FOR INTERIOR LANES EQUIPMENT RUN UNDER ADJACENT LANE PANELS. NOT ALL CONDUITS SHOWN, FOR CLARITY.

E — HANDHOLE. (30" X 30" X 39" IN GROUND)

F — HANDHOLE WITH VECTORSENSE ELECTRONICS. (30" x 30" x 39" IN GROUND)

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

SITE OVERVIEW
SCALE: NTS

M-ITS-1604
(SHEET 2 OF 3)

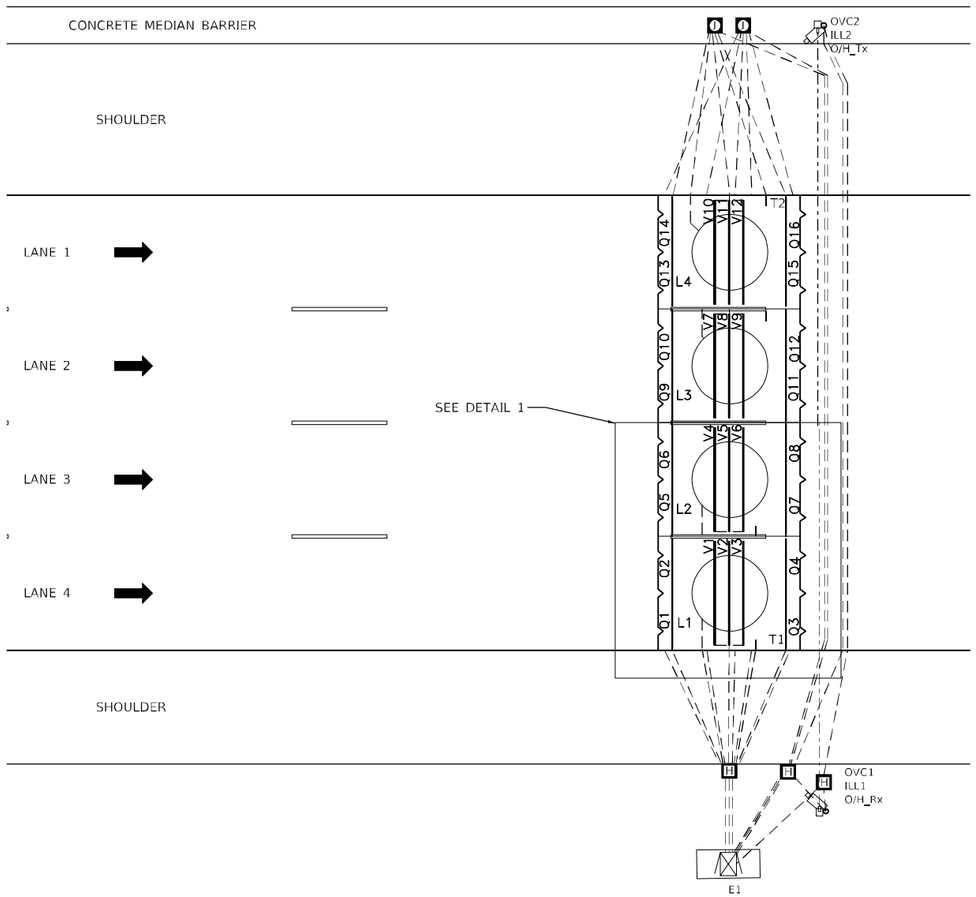
Illinois Tollway

WEIGH-IN-MOTION WIRING LAYOUT 4 LANES

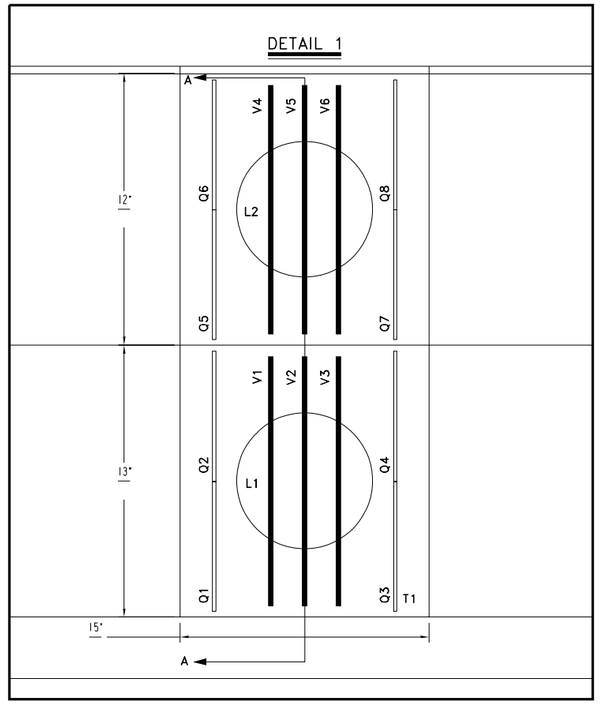
DATE: 08-28-2020

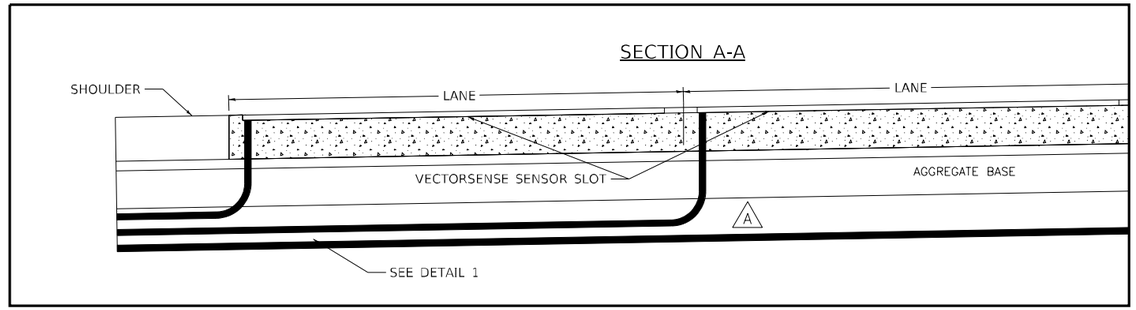
PLOT DRIVER: $PLTDRV$
PENTABLE: $PENTBL$
PLOTTED: $DATE$ PLOT TIME: $TIME$
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILE NAME: $FILE$

PLOT SCALE: $SCALE$ PAGE SIZE: $SHEETSIZE$



SITE LAYOUT
SCALE: NTS





NOTES: (THIS SHEET ONLY)

A GENTLY CURVE CONDUIT AS NECESSARY TO FOLLOW ROAD SLOPE AND TO PASS OVER INTERSECTING CONDUIT. NO 90° PIPE FITTINGS PERMITTED, ONLY SWEEPS.

B CONDUIT AND FITTINGS, OTHER THAN AT PRECAST PANEL CONNECTION LOCATION, ARE PLACED BELOW THE AGGREGATE LAYER, BACKFILLED WITH BEDDING SAND. ENSURE SAND SURROUNDS CONDUITS AND FITTINGS AND COMPACT THE MATERIAL.

C CONDUIT DEPTH SHALL BE 33"MIN TO 45"MAX BELOW TOP OF PAVEMENT.

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1604
(SHEET 3 OF 3)

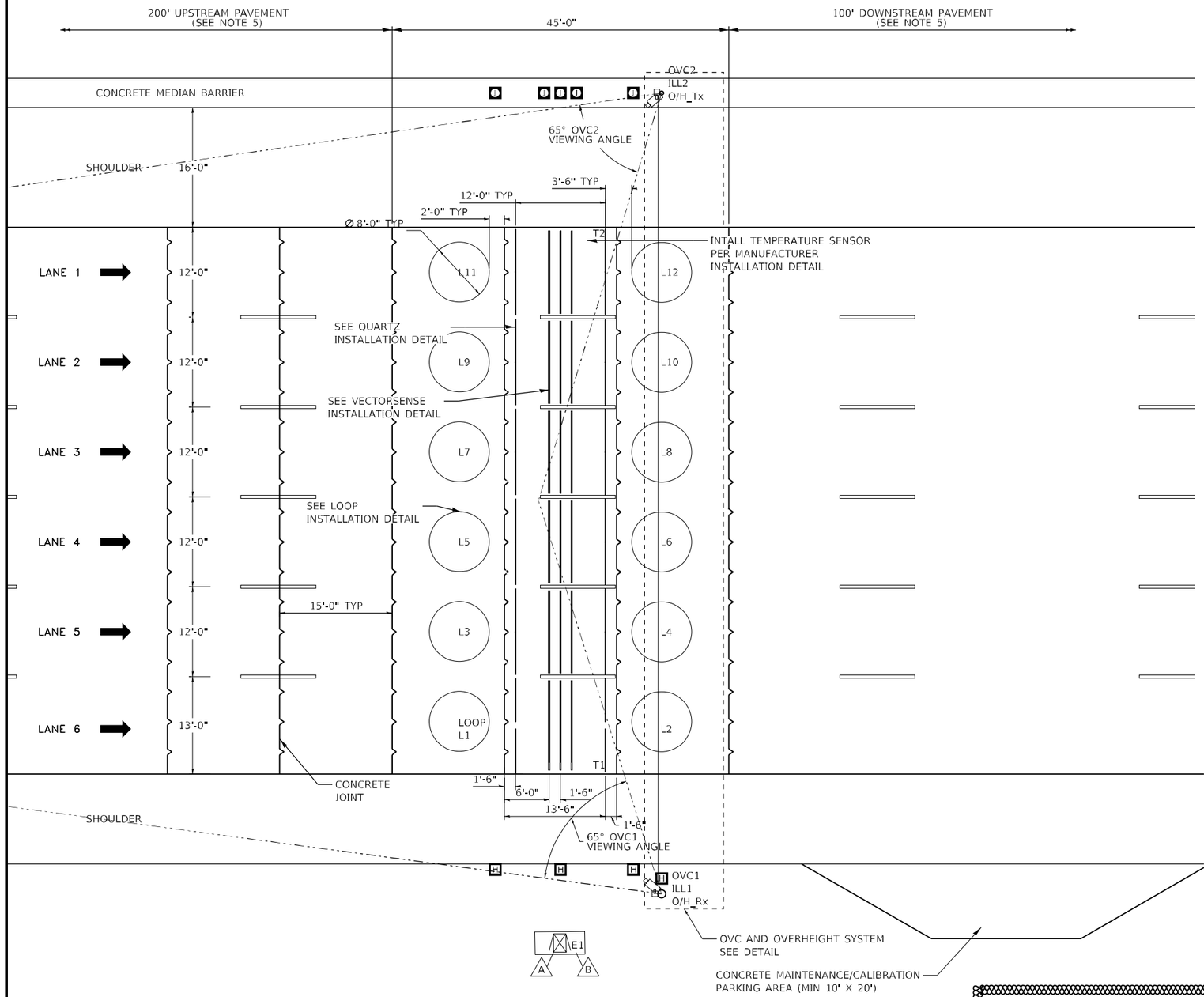
Illinois Tollway

WEIGH-IN-MOTION SITE LAYOUT 4 LANES

DATE: 08-28-2020

PLOT DRIVER: $PLTDRV$
PENTABLE: $PENTBLS
PLOTTED: $DATE$ PLOT TIME: $TIME$
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILENAME: $FILE$

PLOT SCALE: $SCALE$ PROJECT: $PROJECTS$



SITE OVERVIEW
SCALE: NTS

LEGEND

E	- ELECTRONICS ENCLOSURE
ILL	- ILLUMINATOR
L	- INDUCTIVE LOOP
O/H	- OVERHEIGHT SENSOR
OVC	- OVERVIEW CAMERA
Q	- QUARTZ WIM SENSOR
T	- TEMPERATURE SENSOR
V	- VECTORSENSE SENSOR
Tx	- TRANSMITTER
Rx	- RECIEVER
	- CABINET
1	- SIGNAL CONDUIT
1	- POWER CONDUIT
A	- NOTE
	- JUNCTION BOX
H	- HANDHOLE
	- WIM HEIGHT DETECTOR
	- WIM CAMERA

NOTES: (THIS SHEET ONLY)

A CABINET WITH WIM ELECTRONICS.

B CABINET FOUNDATION.

NOTE TO DESIGNERS

DIAMOND GRINDING OF THE 345' LENGTH OF CONCRETE PAVEMENT SHALL OCCUR BEFORE SAW CUT SLOTS ARE MADE FOR SENSOR INSTALLATION. DSE SHALL COORDINATE CONSTRUCTION SCHEDULE AND MAINTENANCE OF TRAFFIC ACCORDINGLY.

GENERAL NOTES

1. ALL CONNECTIONS BETWEEN SENSORS AND LEAD CABLES SHALL BE DONE WITHIN A PULL BOX BY SOLDERING THEN SEALING FOR WATERPROOFING. PLACEMENT OF PULL BOXES MAY BE DIFFERENT FROM THAT SHOWN TO MEET SITE REQUIREMENTS.
2. AC POWER CABLES MUST BE RUN IN SEPARATE CONDUITS/PULLBOXES FROM SIGNAL CABLES OR SEPARATED INSIDE PULLBOXES WITH A DIVIDER.
3. SENSOR SPACING SHOWN IS TYPICAL SPACING REQUIREMENT, ACTUAL SENSOR SPACING MAY BE ALTERED TO SUIT SITE CONDITIONS IF APPROVED BY THE ENGINEER AND MANUFACTURER REPRESENTATIVE.
4. SITE CONDITIONS MUST MEET ASTM E1318-09 TYPE 1 REQUIREMENTS TO ACHIEVE OPTIMAL WIM SYSTEM PERFORMANCE.
5. A CONCRETE PAVEMENT SECTION ON STRAIGHT GRADE WITH NO VERTICAL CURVES AND NO SUPERELEVATION TRANSITIONS IS REQUIRED FOR WIM LANES, FROM 200' BEFORE THE SENSORS UP TO 100' AFTER THE SENSORS, TO IMPROVE LONG TERM PERFORMANCE AND REDUCE MAINTENANCE. DIAMOND GRINDING OF THE 345' LENGTH OF CONCRETE PAVEMENT SHALL OCCUR BEFORE SAW CUT SLOTS ARE MADE FOR SENSOR INSTALLATION.
6. CABLES MUST BE PROTECTED BY PVC SLEEVES WHERE THEY CROSS PAVEMENT JOINTS/CRACKS.
7. ADDITIONAL DRAINAGE MAY BE REQUIRED DEPENDING ON SLOPE OF ROADWAY.
8. EXACT ROUTING OF CONDUIT TO BE DETERMINED ON SITE.
9. PROVIDE 6" MINIMUM SPACING BETWEEN ADJACENT MEDIAN BARRIER JUNCTION BOXES.
10. OVC AND OVERHEIGHT SYSTEM POLES SHALL BE INSTALLED 20' (PREFERRED) TO 100' (MAX) DOWNSTREAM OF WIM SENSORS. POLES SHALL BE APPROXIMATELY IN-LINE WITH EACH OTHER AS SHOWN ON THIS SHEET.

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

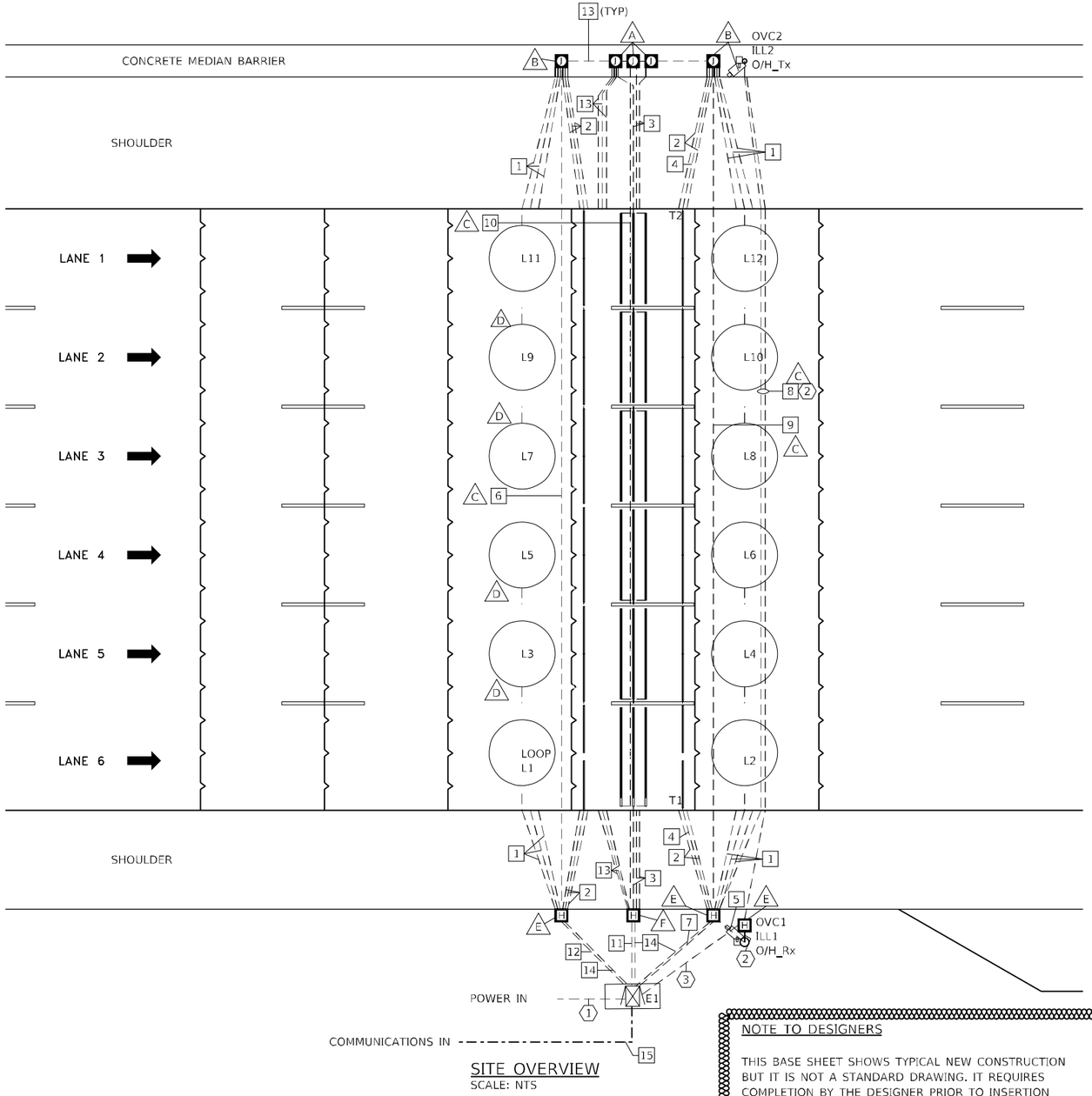
M-ITS-1605
(SHEET 1 OF 3)

Illinois Tollway

WEIGH-IN-MOTION SITE OVERVIEW 6 LANES

DATE: 08-28-2020

PLOT DRIVER: SPLTDRV.S
PENTABLE: SPENTBL.S
PLOT STYLES: $DGNS
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILE NAME: $FILE$
PLOT TIME: $TIME$
PLOT SCALE: $SCALE$
PAGE SIZE: $SHEETSIZE$



SITE OVERVIEW
SCALE: NTS

CONDUIT DETAIL

SIGNAL CONDUITS:

[1] 2" CONDUIT
2 - LOOP WIRE

[2] 2" CONDUIT
2 - QUARTZ SENSOR LEAD
1 - GROUND WIRE (QUARTZ)

[3] 2" CONDUIT
3 - VECTORSENSE SENSOR LEAD

[4] 2" CONDUIT
2 - QUARTZ SENSOR LEAD
1 - TEMPERATURE SENSOR LEAD
1 - GROUND WIRE (QUARTZ)

[5] 2" CONDUIT
1 - OVC SIGNAL CABLE
1 - O/H_Rx SIGNAL CABLE

[6] 2" CONDUIT
3 - LOOP LEAD
6 - QUARTZ SENSOR LEAD
3 - GROUND WIRE (QUARTZ)

[7] 3" CONDUIT
6 - LOOP LEAD
12 - QUARTZ SENSOR LEAD
6 - GROUND WIRE (QUARTZ)
2 - TEMPERATURE SENSOR LEAD
2 - OVC SIGNAL CABLE
1 - O/H_Tx SIGNAL CABLE

[8] 2" CONDUIT
1 - OVC SIGNAL CABLE

[9] 2" CONDUIT
3 - LOOP LEAD
6 - QUARTZ SENSOR LEAD
3 - GROUND WIRE (QUARTZ)
1 - TEMPERATURE SENSOR LEAD

[10] 2" CONDUIT
6 - VECTORSENSE SIGNAL CABLE
3 - GROUND WIRE (VECTORSENSE)

[11] 3" CONDUIT
12 - VECTORSENSE SIGNAL CABLE
6 - GROUND WIRE (VECTORSENSE)

[12] 3" CONDUIT
6 - LOOP LEAD
12 - QUARTZ SENSOR LEAD
6 - GROUND WIRE (QUARTZ)

[13] 2" CONDUIT
SPARE

[14] 3" CONDUIT
SPARE

[15] 2" CONDUIT WIM CABINET FIBER

POWER CONDUITS

(1) 2" CONDUIT
WIM CABINET POWER

(2) 2" CONDUIT
1 - O/H POWER
1 - ILLUMINATOR POWER

(3) 2" CONDUIT
2 - O/H POWER
2 - ILLUMINATOR POWER

NOTES: (THIS SHEET ONLY)

A JUNCTION BOX WITH VECTORSENSETM ELECTRONICS. (40" X 14" X 12" IN TOP OF BARRIER WALL)

B JUNCTION BOX. (40" X 14" X 12" IN TOP OF BARRIER WALL)

C BURIED CONDUIT.

D CABLES FOR INTERIOR LANES EQUIPMENT RUN UNDER ADJACENT LANE PANELS. NOT ALL CONDUITS SHOWN FOR CLARITY.

E HANDHOLE. (30" X 30" X 39" IN GROUND)

F HANDHOLE WITH VECTORSENSE ELECTRONICS. (30" x 30" x 39" IN GROUND)

ALL CONDUITS SHALL BE PVC SCH 80 UNLESS NOTED OTHERWISE

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

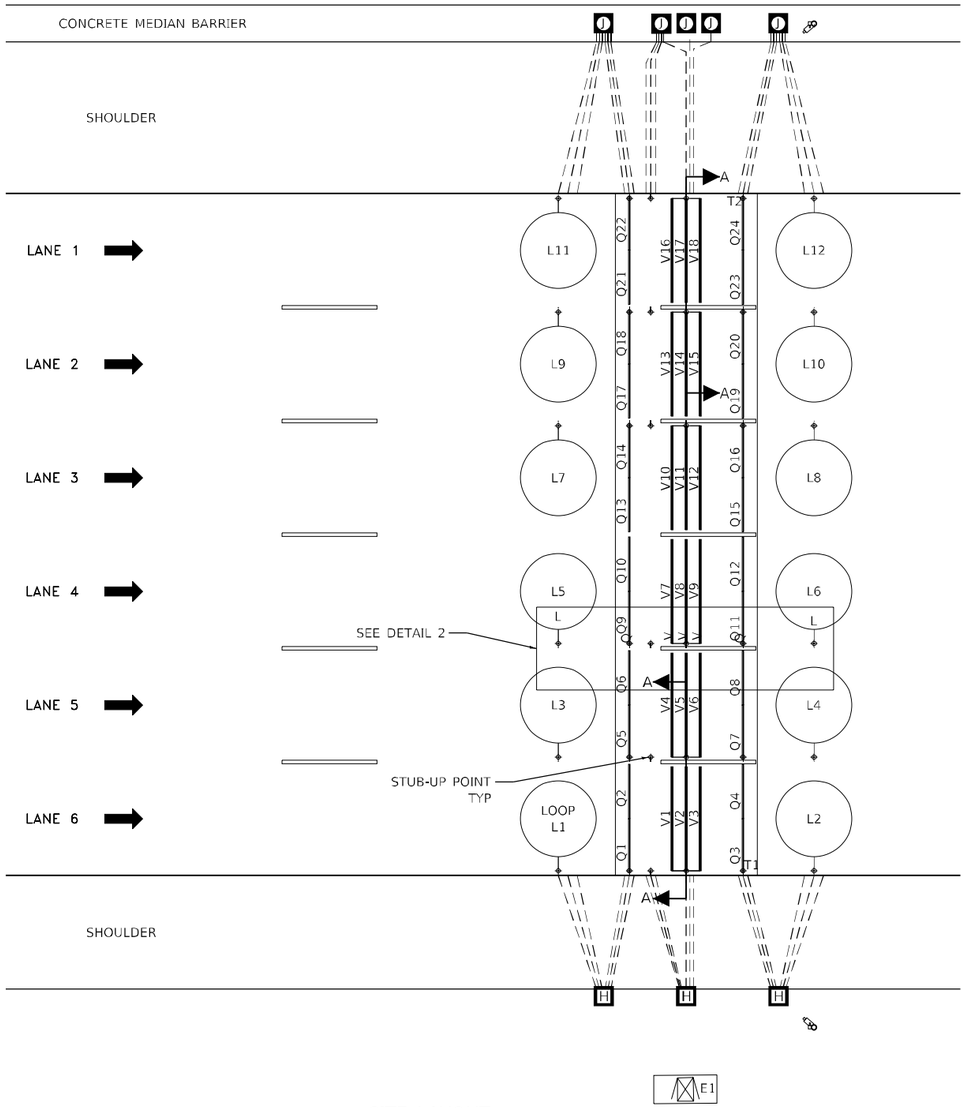
M-ITS-1605
(SHEET 2 OF 3)

Illinois Tollway

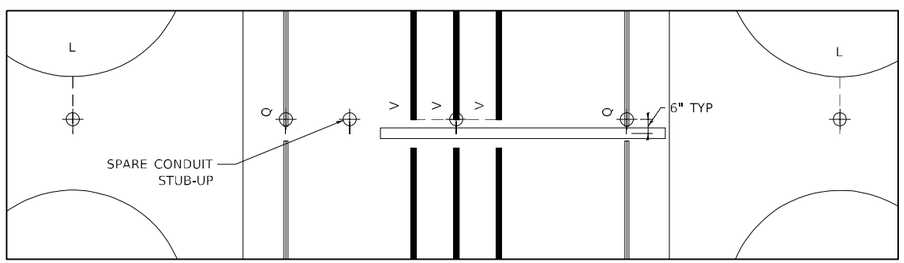
WEIGH-IN-MOTION WIRING LAYOUT 6 LANES

DATE: 08-28-2020

PLOT DRIVER: $PLTDRV$
PENTABLE: $PENTBL$ PLOT TIME: $TIMES
PLOTTED: $DATE$ $TIMES
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILE NAME: $FILES
PLOT SCALE: $SCALE$
PAGE SIZE: $PAGESIZE$



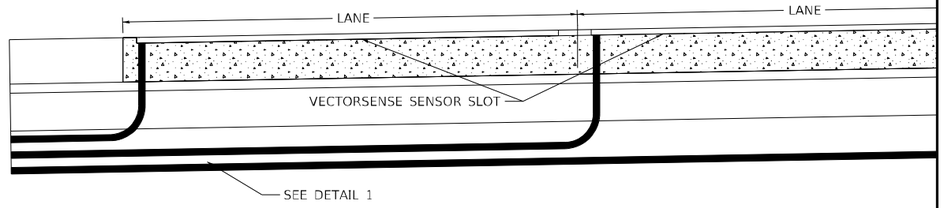
SITE LAYOUT
SCALE: NTS

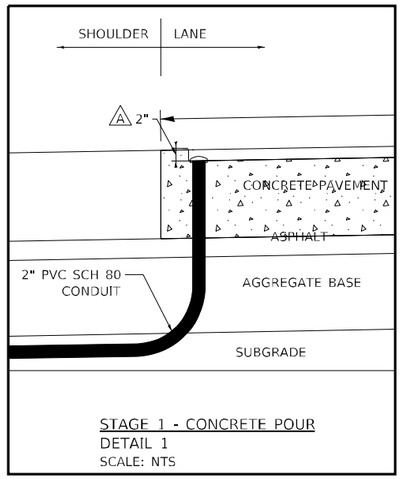


DETAIL 2
SCALE: NTS

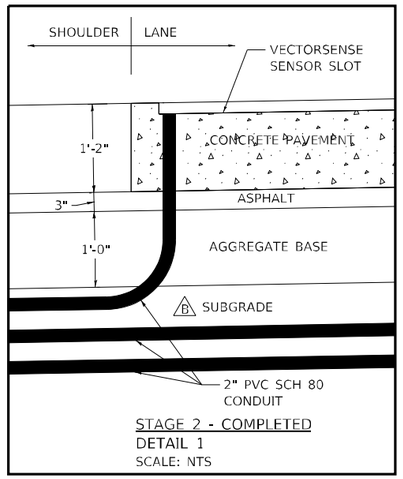
STUB-UP POINT DETAIL

SECTION A-A





STAGE 1 - CONCRETE POUR
DETAIL 1
SCALE: NTS



STAGE 2 - COMPLETED
DETAIL 1
SCALE: NTS

NOTES: (THIS SHEET ONLY)

A. STUB-UP CONDUIT TO 2" BELOW CONCRETE SURFACE. BEFORE POURING CONCRETE, CAP OPENINGS AND PROTECT WITH TAPE AND SOFT MATERIAL TO PREVENT DAMAGE IN FUTURE DISCOVERY. TO BE CUT TO PROPER HEIGHT WHEN SENSORS ARE INSTALLED. METAL CAP WILL ALLOW EASIER DETECTION FOR RE-ENTRY.

B. GENTLY CURVE CONDUIT AS NECESSARY TO FOLLOW ROAD SLOPE AND TO PASS OVER INTERSECTING CONDUIT. NO 90° PIPE FITTINGS PERMITTED, ONLY SWEEPS.

C. ALL CONDUIT DIMENSIONS HAVE A TOLERANCE OF +/- 2".

D. CONDUIT AND FITTINGS, OTHER THAN AT STUB-UP LOCATION, ARE PLACED BELOW THE AGGREGATE LAYER, BACKFILLED WITH BEDDING SAND. ENSURE SAND SURROUNDS CONDUITS AND FITTINGS AND COMPACT THE MATERIAL. AT CONDUIT STUB-UP LOCATIONS RAPCAP THE TOP 3" TO MATCH 3" ASPHALT LAYER.

E. CONDUIT DEPTH SHALL BE 33" MIN TO 45" MAX BELOW TOP OF PAVEMENT.

F. SPACING OF REBAR DOWELS AT PAVEMENT JOINTS TO METAL CONDUIT CAPS SHALL BE COORDINATED TO MAINTAIN 12"MINIMUM HORIZONTAL SEPARATION.

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1605
(SHEET 3 OF 3)

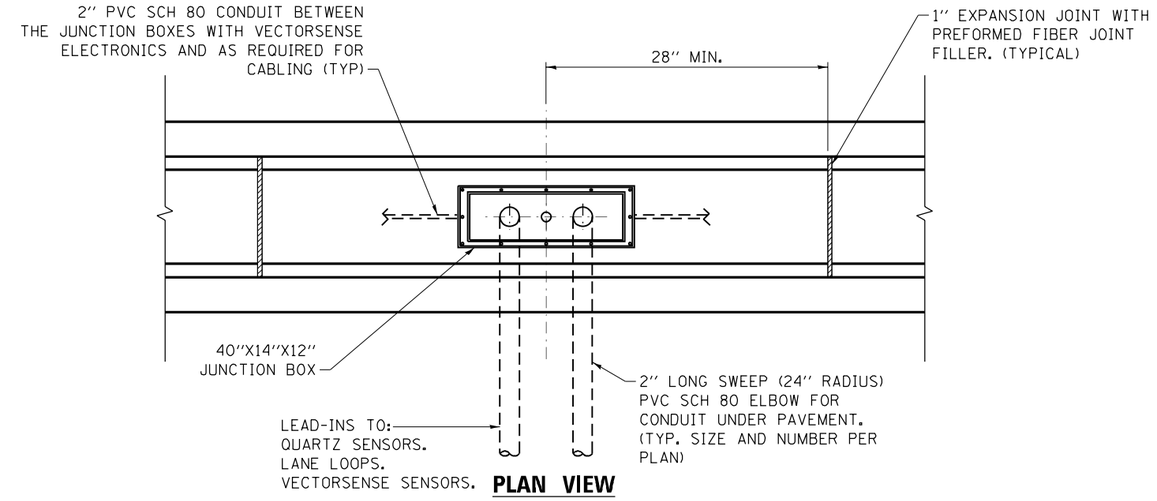
Illinois Tollway

WEIGH-IN-MOTION SITE LAYOUT 6 LANES

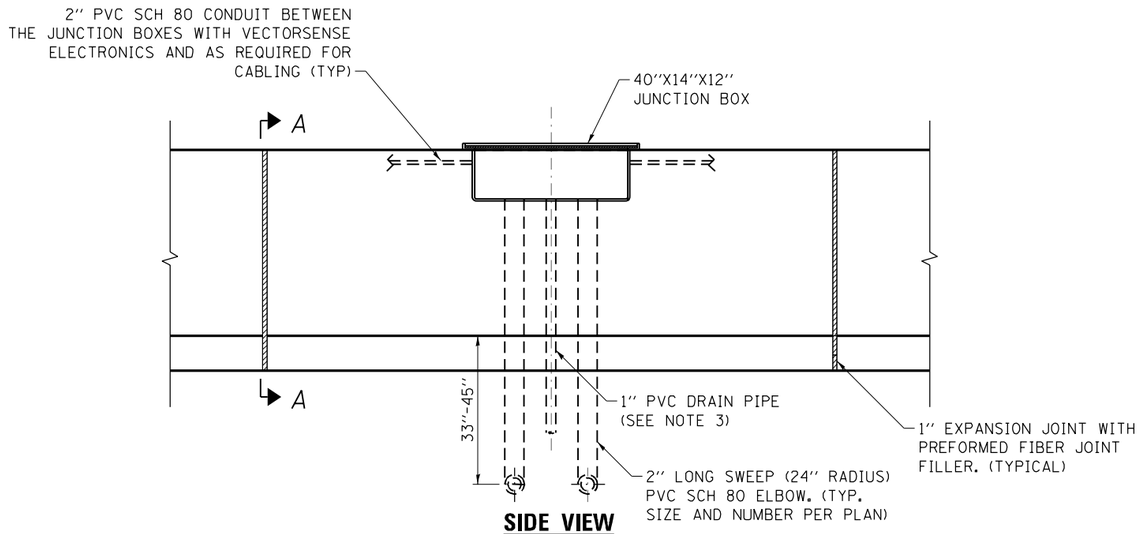
DATE: 08-28-2020

PLOT DRIVER: $PLTDRV$
PENTABLE: $PENTBL$
PLOTTED: $DATE$ PLOT TIME: $TIME$
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILENAME: $FILE$

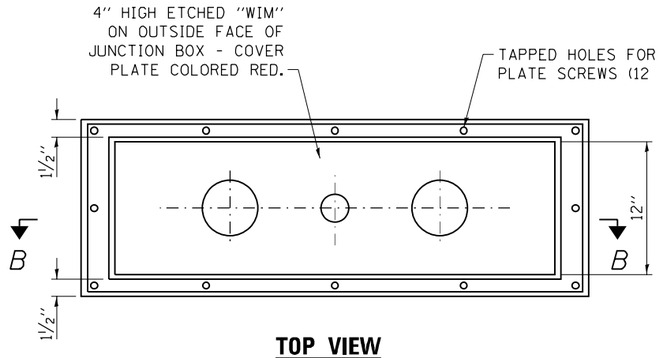
PLOT SCALE: $SCALE$ PAGE SIZE: $SHEETSIZE$



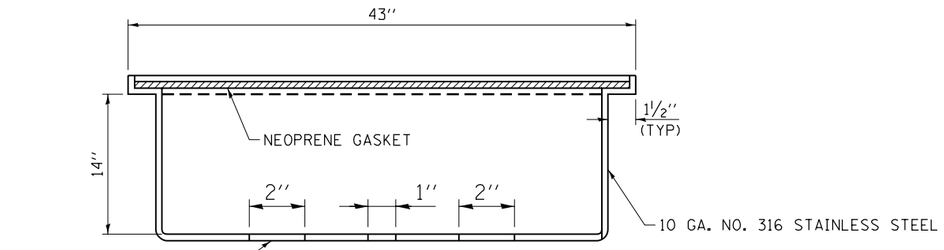
PLAN VIEW



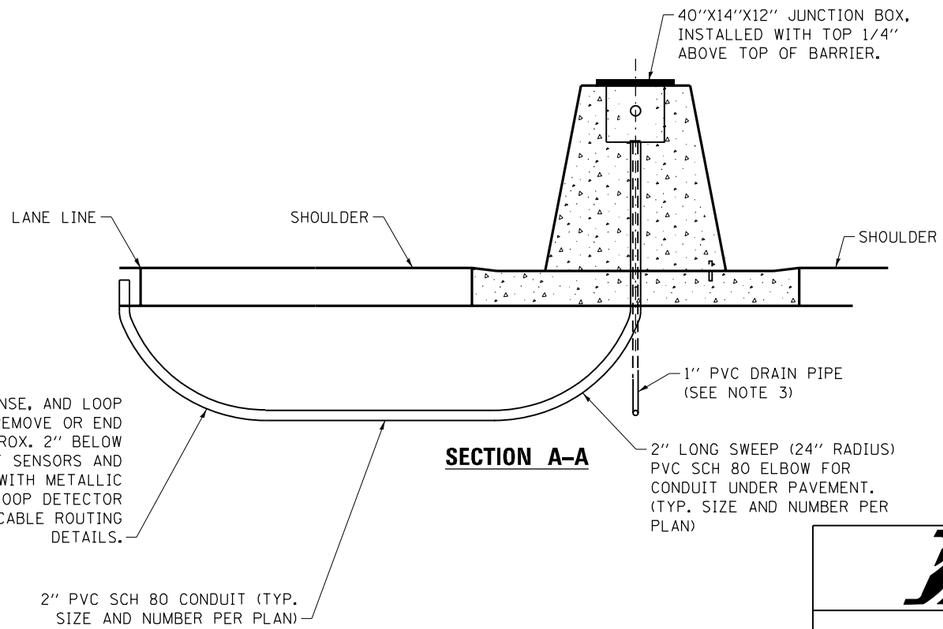
SIDE VIEW



TOP VIEW



SECTION B–B



SECTION A–A

NOTES:

1. THE JUNCTION BOX SHALL BE ACCESSED FROM THE TOP OF MEDIAN BARRIER.
2. DUCT SHALL BE CUT AND REMOVED AT JUNCTION BOX CONDUIT OPENINGS AND INSIDE BOX. ELECTRICAL CONDUITS SHALL PROTRUDE ¼" INTO BOX.
3. CONTRACTOR SHALL INSTALL 1" PVC PIPE TO DRAIN JUNCTION BOX TO AGGREGATE SUBGRADE. INSTALL S.S. SCREEN OVER DRAIN INSIDE JUNCTION BOX.
4. SLIPFORMING OF BARRIER WALL PROHIBITED AT JUNCTION BOXES.

NOTE TO DESIGNER

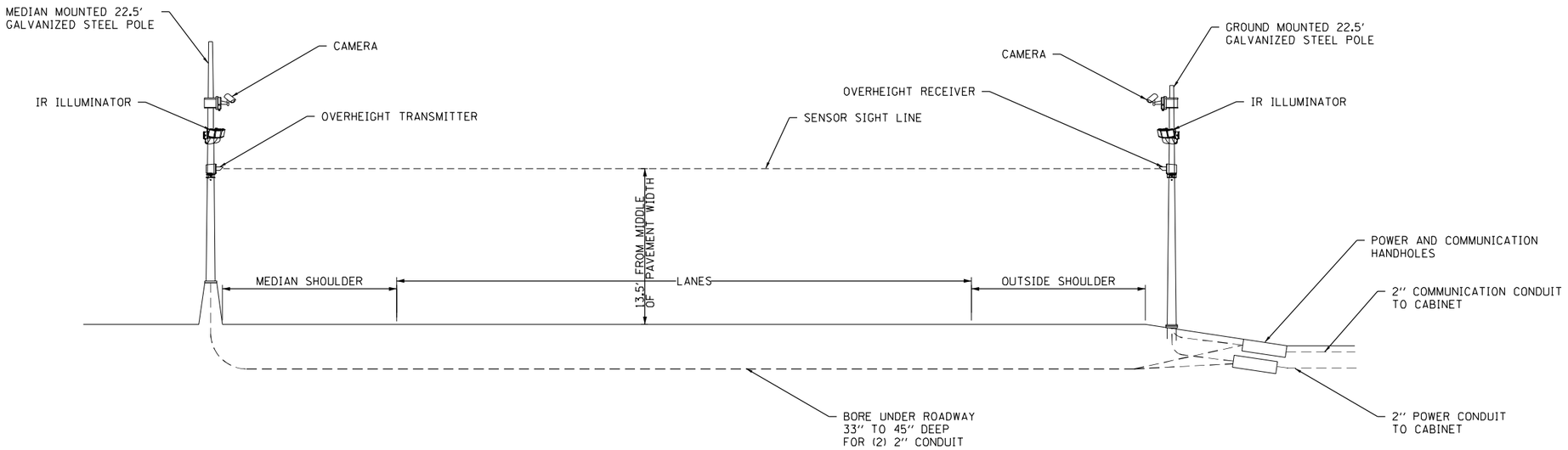
THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CAD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER MUST ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES MUST BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1606

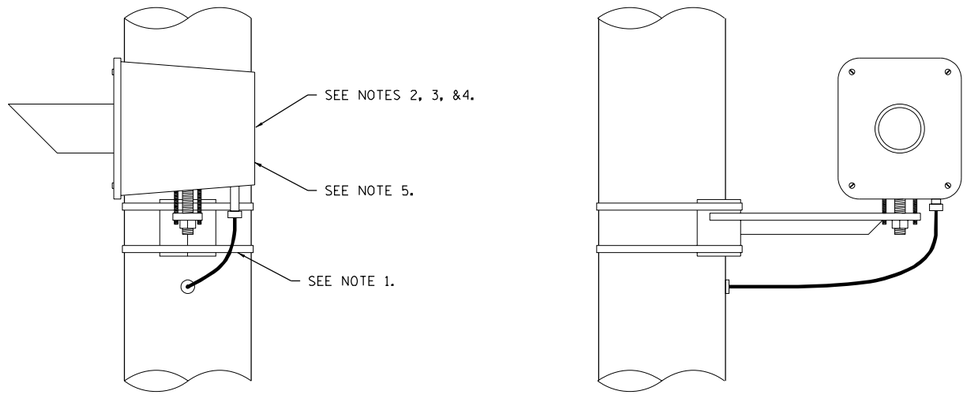
Illinois Tollway

WEIGH-IN-MOTION JUNCTION BOX DETAIL

DATE
8-28-2020



SENSOR CONFIGURATION



SENSOR DETAIL

NOTES:

1. BAND MOUNTING BRACKET TO POLE AT APPROPRIATE HEIGHT.
2. MOUNT, WIRE AND AIM THE OVERHEIGHT TRANSMITTER AND RECIEVER IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
3. DETECTOR AND BRACKET WEIGHT: 40 lbs
4. DETECTOR HOUSING SIZE: 15-1/2'' X 10'' X 8-3/4''
5. DETECTOR POWER: 115 VAC, 0.3 AMP.

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE ''CADD STANDARDS MANUAL'' ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL ''NOTE TO DESIGNER'' BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1607

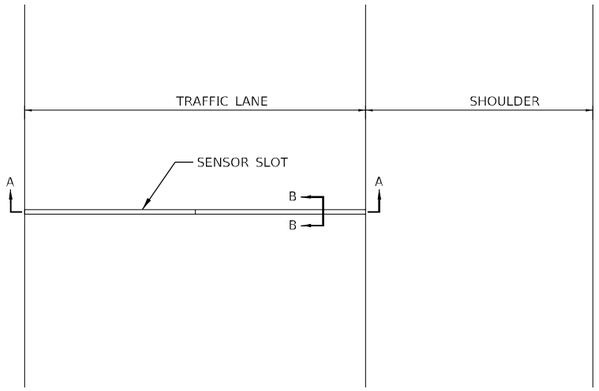
Illinois Tollway

WEIGH-IN-MOTION HEIGHT DETECTOR

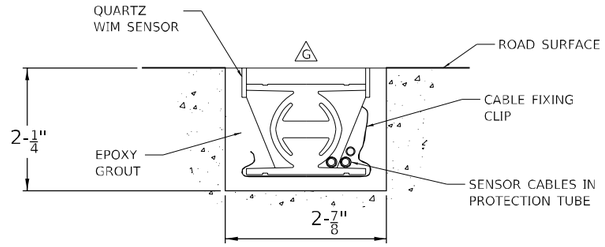
DATE 8-28-2020

QUARTZ SENSOR INSTALLATION

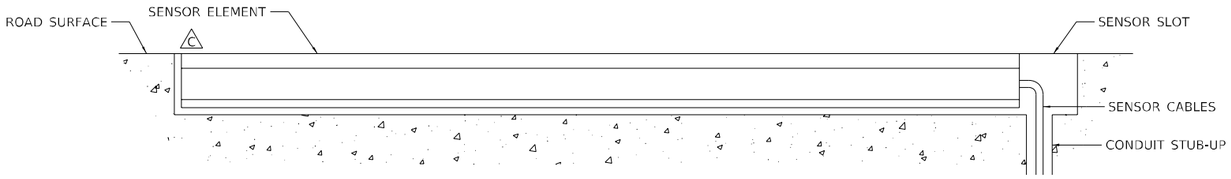
PLAN VIEW - SENSOR INSTALLATION



SECTION B-B



SECTION A-A



NOTES:

A FOR INSTALLATION PROCESS REFER TO MANUFACTURERS INSTALLATION MANUAL.

B SLOT LENGTH IS 6" LONGER THAN SENSOR.

C SET SENSOR FLUSH WITH OR SLIGHTLY HIGHER THAN ROAD SURFACE USING INCLUDED LEVELING BEAMS.

D CHECK THE RESISTANCE OF THE SENSOR BY PLACING A DIGITAL MULTIMETER ACROSS THE CENTER CONDUCTOR OF THE BNC CONNECTOR AND THE OUTER BODY. THE READING SHOULD BE INFINITY.

E CHECK THE VOLTAGE OUTPUT OF THE SENSOR BY MONITORING THE METER WHEN A TRUCK PASSES OVER THE SENSOR INSTALLED IN THE ROADWAY. AS THE TRUCK PASSES OVER THE SENSOR, VOLTAGE DEFLECTION SHOULD BE OBSERVED.

F CRACKS OR SAW CUTS IN THE ROADWAY MUST NOT BE LOCATED CLOSER THAN 18" UPSTREAM AND 18" DOWNSTREAM OF THE CENTERLINE OF THE SENSOR.

G SENSOR MUST BE GROUND FLUSH WITH ROAD SURFACE AFTER GROUT HAS CURED.

H CONNECT INSULATED GROUND WIRE PER MANUFACTURER RECOMMENDATIONS. OTHER END OF GROUND WIRE CONNECTS CABINET GROUND BUSBAR.

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1608

Illinois Tollway

WEIGH-IN-MOTION QUARTZ SENSOR DETAILS

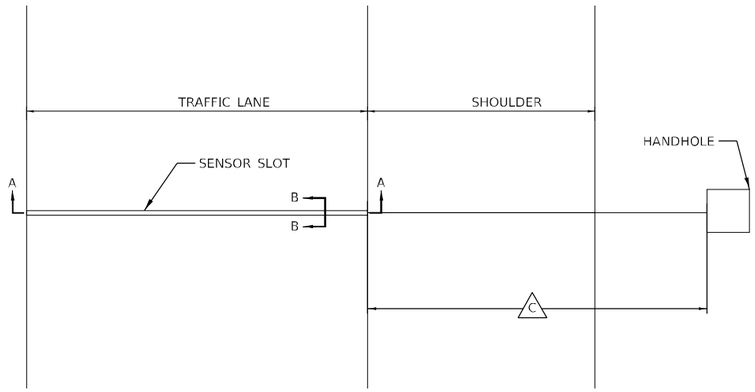
DATE: 08-28-2020

PLOT DRIVER: SPLTDRVLS
PENTABLE: SPENTBLS
PLOTSCALE: 100.000 PLOT TIME: $TIMES
PLOTTED BY: $USERNAMES
MODEL NAME: $MODELNAMES
FILE NAME: $FILES

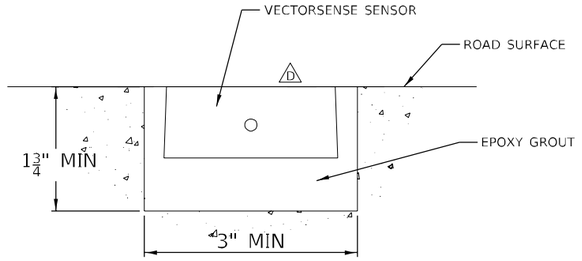
PLOT SCALE: 100.0000 '= 1.0000"
PLOT SCALE: 100.0000 '= 1.0000"

VECTORSENSE SENSOR INSTALLATION

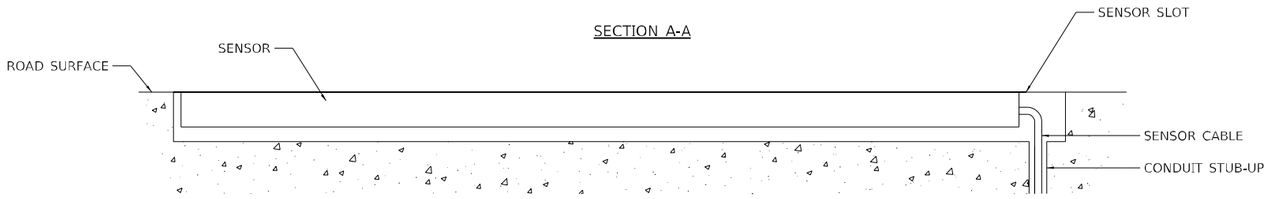
PLAN VIEW - SENSOR INSTALLATION



SECTION B-B



SECTION A-A



NOTES:

A CRACKS IN THE ROADWAY MUST NOT BE LOCATED CLOSER THAN 18" UPSTREAM AND 18" DOWNSTREAM OF THE CENTERLINE OF THE SENSOR.

B SLOT LENGTH IS 2" LONGER THAN SENSOR.

△C 50' MAXIMUM DISTANCE BETWEEN SENSOR AND ELECTRONICS INSIDE HANDHOLE OR JUNCTION BOX.

△D SENSOR GROUT MUST BE GROUND FLUSH WITH ROAD SURFACE AFTER GROUT HAS CURED.

NOTE TO DESIGNERS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

M-ITS-1609

Illinois Tollway

WEIGH-IN-MOTION VECTORSENSE SENSOR DETAILS

DATE: 08-28-2020

PLOT DRIVER: $PLTDRV$
PENTABLE: $PENTBL$
PLOTTED: $DATE$ $TIME$ PLOT TIME: $TIME$
PLOTTED BY: $USERNAME$
MODEL NAME: $MODELNAME$
FILE NAME: $FILE$

PLOT SCALE: 100.0 '= 1"

PAGE SIZE: 30.00 IN X 42.00 IN