TRANSMITTAL LETTER

OBJECTIVE:

INFORMATION AND SPECIAL INSTRUCTIONS:
This edition replaces the previous version of Pub 647M. Following is a summary of changes:

- Incorporation of the Pennsylvania Turnpike Commission Standards for ITS Devices
- New details relating to ITS enclosures and additional details and guidance on maintainer pads
- Revised details relating to the installation of conduit and junction boxes
- New utility details
- New CCTV details, including camera lowering devices
- New Highway Advisory Radio details
- New Type A mount for Dynamic Message Signs
- New Portable Dynamic Message Sign details
- Significant changes to existing details and supporting publication references
- Removal of metric (‘M’) designation
- Removal of the Overhead Truss and Center-mount Dynamic Message Sign (DMS) details.
  Both will reside in the Bridge Design – BD – 600M Series (Pub 218M).

These revised ITS standards must be used on all applicable ITS projects with Preliminary Engineering submissions after May 1, 2013. Details may be used sooner if directed by the District ITS Coordinator. Pub 647M (Oct. 8, 2008 Version) shall be used for Overhead Truss and Center-mount DMS details until those details are finalized in Pub 218M.

CANCEL AND DESTROY THE FOLLOWING:
Publication 647M, ITS 1000M Series, August 2008 Edition

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APPROVED FOR ISSUANCE BY:
Charles C. Goodfrey, Bureau Director
Bureau of Maintenance and Operations
# INDEX OF CIVIL AND STRUCTURAL STANDARDS FOR INTELLIGENT TRANSPORTATION SYSTEMS

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These standard details and notes are intended to be used and/or referenced for the design and construction of intelligent transportation systems within the commonwealth of Pennsylvania. The standard details are not intended to replace standard practice. The latest NTCIP protocols and/or engineering judgement reasonable modifications of the details included in these standards may be made, with commonwealth approval, if conditions warrant.

Use these standard details as a guide in the preparation of intelligent transportation system plans.
POLE MOUNTED ITS ENCLOSURE ORIENTATION

GENERAL NOTES:
1. Mount enclosure so that maintenance personnel face the travel way while maintaining equipment. Provide maintained pad in front of enclosure.
2. Sizes and types of conduit for network communications, and the conduits connection box and the enclosure shall be stated in the contract document.
3. All network communications conduits and ducts shall be sealed with waterproof duct plugs and seals.
4. Locate junction boxes for power circuit and network communications within 5'-0" of enclosure, if so directed by the representative.
5. Ensure that enclosure and equipment is grounded to device pole grounding system. See ITS-1201 sheet 7 for details.
6. Transition conduit from 2'-0" (min) depth at the foundation to 3'-0" (min) depth based on the cable bending radius for all conduit runs.
7. Run all conduits out a window of 1'-0" beyond foundation, and cap ends.
8. Seal with galvanized wire mesh, 1/2" to 3/4" openings, to prevent entry of serpents/rodents. Wire mesh is to be sufficient stiffness to prevent entry between mesh and foundation with permitting distance.
9. All work shall comply with the latest edition of NFPA 70, National Electric Code and all applicable codes.

ENCLOSURE NOTES:
1. Provide enclosure in accordance with Pennsylvania code 408 section 1201.2 (c) and the contract document.
2. Rod enclosure attachment details see no.741M. Stainless steel straps are also approved for enclosure attachment.
3. Alternate enclosure attachment and pole penetrations may be required to meet cable bending radius. Provide specific requirements. Provide details in the contract document if required by design.
4. Contractor to submit proposed enclosure wiring schematic for approval.
5. No portion of any equipment, except fan, to be installed outside the enclosure or outside the pole opening for the purpose of attachment.
6. Provide duct sealant at all conduit entries into the enclosure to prevent serpent/rodent intrusion.

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INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
POLE MOUNTED ITS ENCLOSURES

NOTE 7
FOUNDATION
SEE ITS-1201 SHEET 1

RECOMMENDED
MARCH 1, 2013

NOTE 7
FOUNDATION
SEE ITS-1201 SHEET 1
GENERAL NOTES:
1. Mount enclosure so that maintenance personnel face the travel way while maintaining equipment. Provide maintainer pad in front of enclosure.
2. Reference 3 to mount enclosure. See 3 for enclosure orientation.
3. Conduit shall be installed tight to structure between finished grade and the enclosure.
4. Sizes and types of conduit for network communications between the communications junction box and the enclosure shall be stated in the contract documents.
5. All network communications conduits and ducts shall be sized with waterproof duct plugs and seals.
6. Locate junction boxes for power circuit and network communications within 5'-0" of enclosure, as directed by the representative.
7. Ensure that enclosure and equipment is bonded to the sign structure grounding system. See ITS-1201 for details.
8. Refer to ITS-1201 for installation of enclosure in conjunction with a new sign structure installation.
9. Transition between flexible conduit and PVC conduit using a coupling within 7" of the finished grade.
10. Seal with galvanized flange, 1/2" to 1/8" openings, to prevent entry of moisture and rodents. Seal with stainless steel hardware. New is to be of sufficient stiffness to prevent entry between hinge and foundation while permitting drainage.
11. All work shall comply with the latest edition of NFPA 70, National Electric Code and all applicable codes.

ENCLOSURE NOTES:
1. Provide enclosure in accordance with PennDOT PUB 408 and the contract documents.
2. For enclosure attachment details see BC-741M. Stainless steel straps are also approved for enclosure attachment.
3. Alternate enclosure attachment and pole penetrations may be required to meet cable bending radius and project specific requirements. Provide details on the contract documents if required by design.
4. Contractor to submit proposed enclosure piping schematic for approval.
5. No portion of any equipment, except fan, is to be installed between the top of sign opening and top of enclosure or bottom of sign opening and bottom of enclosure.
6. Provide duct sealant at all conduit entries into the enclosure to prevent moisture intrusion.

COMMONWEALTH OF PENNSYLVANIA
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INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
STRUCTURE MOUNTED ITS ENCLOSURES
TYPICAL CCTV ENCRYPTION EQUIPMENT LAYOUT

NOT TO SCALE

GENERAL NOTES:
1. PROVIDE A CCTV ENCLOSURE IN ACCORDANCE WITH PENNSYLVANIA TURNPIKE COMMISSION SPECIFICATIONS. INSTALL ENCLOSURE AS DETAILED IN ITS-1201 SHEET 1, 2, 3, 4, OR TC-8802 AND THE CONTRACT DOCUMENTS.
2. THE ENCLOSURE LAYOUT SHOWN IS FOR DIAGNOSTIC PURPOSES AND DOES NOT REFLECT A TYPICAL ENCLOSURE LAYOUT. CONTRACTOR TO SUMMARIZE PROPOSED ENCLOSURE LAYOUT FOR APPROVAL.
3. ALL EQUIPMENT SHOULD BE MOUNTED ON A STANDARD EIA/TIA 19 INCH RACK INCLUDING FIBER OPTIC SPLICE ENCLOSURE.
4. ALL ELECTRIC OUTLETS INTENDED FOR CRITICAL SERVICE (I.E., COMMUNICATIONS, ENCODER, ETC.) SHALL NOT BE GFCI DUPLEX OUTLETS.
5. CONTRACTOR TO SUMMARIZE PROPOSED ENCLOSURE LAYOUT FOR APPROVAL.
6. PROVIDE A MINIMUM OF 60 AMP SERVICE AT THE CCTV ENCLOSURE.
7. ENCLOSURE LAYOUT SHALL BE COMPATIBLE WITH THE REPRESENTATIVES CURRENT KEYING SYSTEM.
8. CONTRACTOR TO SUBMIT PROPOSED ENCLOSURE LAYOUT FOR APPROVAL.
9. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES.
GENERAL NOTES:

1. PROVIDE A HUB ENCLOSURE IN ACCORDANCE WITH PENNDOT PUB NO. 408 SECTION 1201.2. INSTALL ENCLOSURE AS DETAILED IN TC-8802 OR ITS-1201 SHEET 3 AND THE CONTRACT DOCUMENTS.

2. THE ENCLOSURE LAYOUT SHOWN IS FOR DIAGRAMATIC PURPOSES ONLY AND REFLECTS A TYPICAL ENCLOSURE LAYOUT. CONTRACTOR TO SUBMIT PROPOSED ENCLOSURE LAYOUT FOR APPROVAL.

3. ALL EQUIPMENT SHOULD BE MOUNTED ON A STANDARD EIA/TIA 19 INCH RACK INCLUDING FIBER OPTIC SPIKE ENCLOSURE.

4. ALL ELECTRIC OUTLETS INTENDED FOR CRITICAL SERVICE (I.E. COMMUNICATIONS, ENCODER, ETC.) SHALL NOT BE GFCI DUPLEX OUTLETS.

5. CONTRACTOR TO SUBMIT PROPOSED ENCLOSURE WIRING SCHEMATIC FOR APPROVAL.

6. PROVIDE A MINIMUM OF 60 AMP SERVICE AT THE HUB ENCLOSURE.

7. ENCLOSURE LOCK SHALL BE COMPATIBLE WITH THE REPRESENTATIVES CURRENT KEYING SYSTEM.

8. HUB ENCLOSURE SHALL HAVE A FILTERED AIR VENTILATION SYSTEM.

9. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA TO, NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES.

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DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION

INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL

HUB ITS ENCLOSURE LAYOUT

NOTE:

S/A - SURGE ARRESTOR
UPS - UNINTERRUPTED POWER SUPPLY

TYPICAL HUB ENCLOSURE LAYOUT

TYPICAL HUB WIRING DIAGRAM
1. PROVIDE A DMS ENCLOSURE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1230.2 (G). INSTALL ENCLOSURE AS DETAILED IN ITS-1201 SHEET 1, 2, 3, OR TC-8802.
2. THE ENCLOSURE LAYOUT SHOWN IS FOR DIAGRAMATIC PURPOSES ONLY AND NOT THE FINAL ENCLOSURE LAYOUT. CONTRACTOR TO SUBMIT PROPOSED ENCLOSURE LAYOUT FOR APPROVAL.
3. ALL EQUIPMENT SHALL BE MOUNTED ON A STANDARD EIA/TIA 19 INCH RACK.
4. CONTRACTOR TO SUBMIT DMS MANUFACTURERS PROPOSED ENCLOSURE LAYOUT FOR APPROVAL.
5. ALL ELECTRICAL OUTLETS INTENDED FOR CRITICAL SERVICE (I.E. COMMUNICATION, ENCODER, ETC.) SHALL NOT BE AFCI OUTLET OUTLETS.
6. PROVIDE A MINIMUM OF 60 AMP SERVICE AT THE DMS ENCLOSURE.
7. CABINET LOCK SHALL BE COMPATIBLE WITH THE REPRESENTATIVES CURRENT KEYING SYSTEM.
8. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRICAL CODE AND ALL APPLICABLE CODES.
GENERAL NOTES:
1. PROVIDE MAINTAINER PAD FOR POLE/STRUCTURE MOUNTED ENCLOSURE AS SPECIFIED IN PENNDOT PUB FOR SECTION 1201.2(b) 11.
2. THE MAINTAINER PAD DIMENSIONS ARE BASED ON A ENCLOSURE WITH THE MAXIMUM DEPTH OF 1'-4" DEEP. MAINTAINER PAD DIMENSIONS MAY BE MODIFIED BASED ON PROJECT, AND SIZE SPECIFIC REQUIREMENTS.
3. MAINTAINER PAD SHOWN IS FOR LEVEL IN EARTH APPLICATION. SLOPING AREAS REQUIRE SPECIAL CONSIDERATIONS, INCLUDING RETAINING STRUCTURE, EMBANKMENT, AND MAINTAINER PAD. USE WITH THE REPRESENTATIVE PRIOR TO COMPLETING DESIGN. USE WITH THE REPRESENTATIVE PRIOR TO COMPLETING DESIGN.
4. IF INDICATED ON THE CONTRACT DOCUMENTS, PROVIDE A 2'-0" WIDE CONCRETE SLAB ON TOP OF ENCLOSURE OR MAINTAINER PAD.
5. IF INDICATED ON THE CONTRACT DOCUMENTS, PROVIDE A 3'-0" WIDE CONCRETE SLAB ON TOP OF ENCLOSURE OR MAINTAINER PAD.
6. PROVIDE MAINTAINER PAD ONLY IN THE DIRECTION OF EXISTING DRAINAGE.
7. CONDUIT AND GROUNDING SYSTEM NOT SHOWN FOR CLARITY.

COMMONWEALTH OF PENNSYLVANIA
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INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL

MAINTAINER PADS
GENERAL NOTES:

1. PROVIDE JUNCTION BOX IN ACCORDANCE WITH PENGOT P8 FOR SECTION 1201.1(W) AND REFER TO STANDARD DRAWINGS 80-402 AND 80-403 FOR DETAILS OF JUNCTION BOXES. 80-402 AND 80-403 REFER TO STANDARD DRAWING 80-77-4 FOR JUNCTION BOX 20-25 DETAILS.

2. JUNCTION BOXES SHALL BE ORDERED BASED ON APPLICATION AND THE CABLE SIZING RATES AS SPECIFIED BY THE CABLE MANUFACTURER.

3. INSTALL CONCRETE APARTMENT RATING PLATE IN ACCORDANCE WITH PENGOT P8 4106 SECTION 1201.1(W). CONCRETE APRON IS EXCLUTED TO THE COST OF THE JUNCTION BOX. TO BE INSTALLED FOR IN-GROUND APPLICATIONS.

4. JUNCTION BOXES MAY BE INSTALLED IN GRADY CASSET OR OTHER GRADE CASSET IF ALL SPECIFICATIONS AND AS VESIDED IN THE CONTRACT DRAWINGS.

5. THE LEGEND "PREVIOUSLY COMMUNICATION CABLE" OF PENNSYLVANIA TURNPIKE COMMISSION COMMUNICATION CABLE SHALL BE PRINTED ON ALL COMMUNICATION JUNCTION BOX COVERS.

6. THE LEGEND "PREVIOUSLY ELECTRIC CABLES" ON PENNSYLVANIA TURNPIKE COMMISSION ELECTRIC CABLE SHALL BE PRINTED ON ALL ELECTRIC JUNCTION BOX COVERS.

7. JUNCTION BOXES SHALL BE INSTALLED FLUSH WITH THE FINISHED GRADE SURFACE.

8. JUNCTION BOX LENGTH 10" LONG SIDES SHALL BE PARALLEL TO THE ROADWAY.

9. A FULL RINSE MAY BE INSTALLED IN THE CEMENT CONSONTS FOR FUTURE USE.

10. INSTALL JUNCTION BOXES FOR FUTURE CONSIDERATION AND COMMUNICATIONS WITHIN 5'-0" OF EXISTING OR PROPOSED ROADWAY CONDITIONS.

11. COMMUNICATION BOXES SHALL NOT CONTAIN ELECTRIC bleibt CONSIDERATION AND ACCESSORIES SHALL NOT BE INSTALLED IN WETRADICILE BOXES.

12. THE SIZE AND TYPE OF CONSENT SHALL BE SHOWN ON PLANS.

13. PROVIDE LASTR-Qaeda-ORDERED CONSENTS ON OPEN-SIDED BOXES AND PENETRATIONS TO THE ROADWAY SHALL BE VENTED FOR FUTURE USE.

14. TRANSITION FROM 3'-0" WIDE TO COVERED LINE OF JUNCTION BOX KNOCKOUTS BASED ON CABLE READING BOXES.

15. S0 OF SACKER SHALL BE LEFT IN INTERIM JUNCTION BOXES AND 100" SHALL BE LEFT AT DEVICE LOCATIONS.

16. PROVIDE GROUNDING AS SPECIFIED IN PENGOT P8 4106 SECTION 1201.3(W).

17. INSTALL PLASTIC WIRING TAPES DIRECTLY ABOVE ALL JUNCTION BOXES AND CONSIDERATION. REFER TO PENGOT P8 4106 SECTION 1201.3(W).

18. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES.

DELINEATOR NOTES:

1. INSTALL A PEW ELECTRIC POST DELINERATOR WITH A LABEL ADJACENT TO EACH PEW ELECTRIC POST ON THE TOP EIGHTH OF THE OPEL. LABELS OF PEW ELECTRIC POST DELINERATOR DISTRICTS AND THEペンシルバニア TURNPIKE COMMISSION COMMUNICATION CABLE OF PENNSYLVANIA TURNPIKE COMMUNICATION CABLE SHALL BE PRINTED ON ALL PEW ELECTRIC POST DELINERATOR COVERS.

2. INSTALL A PEW ELECTRIC POST DELINERATOR WITH A LABEL ADJACENT TO EACH PEW ELECTRIC POST ON THE TOP EIGHTH OF THE PEW. LABEL OF PEW ELECTRIC POST DELINERATOR DISTRICTS AND THEペンシルバニア TURNPIKE COMMUNICATION CABLE OF PENNSYLVANIA TURNPIKE COMMUNICATION CABLE SHALL BE PRINTED ON ALL PEW ELECTRIC POST DELINERATOR COVERS.

COMMONWEALTH OF PENNSYLVANIA
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INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
ITS JUNCTION BOXES
GENERAL NOTES

RECOMMENDED: APRIL 2017
IMPLEMENTED: JULY 2017
SHEET 1 OF 23
JTS-1201
ITS DEVICES - GENERAL

**GENERAL NOTES:**

1. THE DETAILS DEPICTED ARE FOR RECONSTRUCTION OR NEW CONSTRUCTION PROJECTS. CONTACT THE REPRESENTATIVE PRIOR TO DESIGN FOR INSTALLATIONS AT EXISTING INFRASTRUCTURE.
2. KEEP JUNCTION BOX SUITABLY CLEAR OF GUIDE RAIL OR OTHER OBSTRUCTIONS TO MAINTAIN CLEAR ACCESS.
3. INSTALL CONDUIT INTO JUNCTION BOX AT 90 DEGREE ANGLE.
4. INSTALL CONDUIT 50 FT AT AN ANGLE THAT ACCOMMODATES THE CABLE BEND RADIUS, DO NOT EXCEED 45 DEGREES TO THE SHOULDER CENTER LINE.
5. INSTALL FLEXIBLE DELINER POST AT THE LOCATION WHERE THE CONDUIT PASSES UNDER THE EDGE OF SHOULDER. PROVIDE DELINER NOTES PER PENNDOT PUB 408 SECTION 45 DEG MAX. PROVIDE LABEL AS INDICATED ON ITS-1201 SHEET 8 DELINER NOTES.
6. PROVIDE SPACING BETWEEN COMMUNICATION JUNCTION BOXES BASED ON CABLE SIZE, TYPE AND COMPLEXITY OF RUN. DO NOT EXCEED MANUFACTURER'S RECOMMENDED PULL LENGTH.
7. PROVIDE JUNCTION BOX IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 937 AND AS APPROPRIATE FOR THE JUNCTION BOX LOCATION. LOCATE JUNCTION BOX AT TYPE 2-S APPROACH END TRANSITION IF POSSIBLE, BEYOND THE GUIDE RAIL.
8. TRANSITION CONDUIT FROM BEHIND THE GUIDE RAIL TO THE SHOULDER IN THE TYPE 2-S GUIDE RAIL SECTION.
9. AVOID INSTALLATION OF JUNCTION BOXES WITHIN PAVED SHOULDER AREA.
10. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES.

**CONDUIT SIZED BY DESIGN**

**FLEXIBLE DELINER POST**

**GUIDE RAIL**

**JUNCTION BOX (SEE NOTE 7)**

**JUNCTION BOX (SEE NOTE 7)**

**TYPE 2-S APPROACH END TRANSITION GUIDE RAIL**

**TYPE 2-S GUIDE RAIL**

**BRIDGE BARRIER**

**ITS JUNCTION BOX (PLAN VIEW)**

**TYPICAL FOR RECONSTRUCTION OR NEW CONSTRUCTION NOT TO SCALE**

**BRIDGE APPROACH END CONDUIT DETAIL (PLAN VIEW)**

**TYPICAL FOR RECONSTRUCTION OR NEW CONSTRUCTION NOT TO SCALE**

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**PENNSYLVANIA TURNPIKE COMMISSION**

**INTelligent TRANSPORTATION SYSTEMS**

**CIVIL AND STRUCTURAL STANDARD DRAWINGS**

**ITS DEVICES - GENERAL**

**ITS JUNCTION BOXES AND CONDUIT PLAN VIEW**

**RECOMMENDED: APR 1, 2013**

**RECOMMENDED: APR 1, 2013**

**SHEET 10 OF 25**

**JTS-1201**
THE FINAL BURIAL DEPTH OF THE CONDUIT(S) IN ORDER TO
TRAVERSE NONMOVABLE OBJECT CONFLICTS.
WHERE CONDUITS ARE TO BE INSTALLED OVER EXISTING UNDERGROUND
THE CONTRACTOR SHALL INSTALL THE CONDUIT TO PASS
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING
DAMAGE TO ANY UNDERGROUND INFRASTRUCTURE DURING CONSTRUCTION.
ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL
PVC TO BE USED FOR ALL UNDERGROUND APPLICATIONS AS REQUIRED BY DESIGN.
TRANSITION WITH A COUPLING TO RGS CONDUIT OR OTHER AS REQUIRED BY
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
ARE LESS THAN 3'-0" DEEP, THE CONTRACTOR SHALL ENCASE THE CONDUIT IN
CLASS C CEMENT CONCRETE FOR THE ENTIRE LENGTH OF THE CONDUIT THAT
IS INSTALLED AT A DEPTH OF LESS THAN 3'-0".
INFRASTRUCTURE (I.E., EXISTING UTILITY OR DRAINAGE STRUCTURE) WHICH
BELOW THE UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR ANY
UTILITY LOCATIONS WILL BE VERIFIED AT LEAST 100' IN ADVANCE OF TRENCHES, PLOWING OR BORING, SO THAT CHANGES IN CONDUIT
PLACEMENT CAN BE MADE IN THE EVENT OF CONFLICT.
VERTICAL AND 1'-6" HORIZONTAL OR A CLEARANCE DICTATED BY MUNICIPAL
CODE AND OR UTILITY OWNER SHALL BE MAINTAINED.
INSTALL PLASTIC WARNING TAPE DIRECTLY ABOVE ALL CONDUITS. PLACE
PLASTIC WARNING TAPE IN ACCORDANCE WITH PENNDOT PUB 408
SECTION 1201.3(e)1.
DRAINAGE STRUCTURE
EXISTING UTILITY OR

GENERAL NOTES:
1. THE CONTRACTOR, WITH APPROVAL FROM THE REPRESENTATIVE, MAY ADJUST
THE FINAL BURIAL DEPTH OF THE CONDUIT(S) IN ORDER TO
TRAVERSE NONMOVABLE OBJECT CONFLICTS.
2. BACKFILL IN ACCORDANCE WITH PENNDOT PUB 408
SECTION 1201.3(e)1.
3. WHERE CONDUITS ARE TO BE INSTALLED OVER EXISTING UNDERGROUND
INFRASTRUCTURE, I.E., EXISTING UTILITY OR DRAINAGE STRUCTURE WHICH
ARE LESS THAN 3'-0" DEEP, THE CONTRACTOR SHALL ENCASE THE CONDUIT IN
CLASS C CEMENT CONCRETE FOR THE ENTIRE LENGTH OF THE CONDUIT THAT
IS INSTALLED AT A DEPTH OF LESS THAN 3'-0".
4. IF THE AMOUNT OF COVER OVER THE ENCASEMENT IS LESS THAN 6".
THE CONTRACTOR MAY ADJUST THE COVER OF THE ENCASEMENT AS
RECOMMENDED.
5. ALL ELECTRICAL AND MECHANICAL CONDUITS SHALL BE MARKED OR
IDENTIFIED AS TO THE TYPE OF CONDUITS INSTALLED.
6. IF THE AMOUNT OF COVER OVER THE ENCASEMENT IS MORE THAN 6",
THE CONTRACTOR MAY ADJUST THE COVER OF THE ENCASEMENT AS
RECOMMENDED.
7. IF THE AMOUNT OF COVER OVER THE ENCASEMENT IS LESS THAN 6",
THE CONTRACTOR MAY ADJUST THE COVER OF THE ENCASEMENT AS
RECOMMENDED.
8. IF THE AMOUNT OF COVER OVER THE ENCASEMENT IS MORE THAN 6",
THE CONTRACTOR MAY ADJUST THE COVER OF THE ENCASEMENT AS
RECOMMENDED.
9. CONDUITS OF DIFFERENT MATERIAL MAY BE INSTALLED WITHIN THE
SAME TRENCH. SEPARATE CONDUITS BASED ON NFPA 70, NATIONAL
ELECTRIC CODE. DO NOT STACK CONDUITS VERTICALLY.
WITHIN THE SAME TRENCH. SEPARATE CONDUITS BASED ON NFPA 70, NATIONAL
ELECTRIC CODE. DO NOT STACK CONDUITS VERTICALLY.
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WITHIN THE SAME TRENCH. SEPARATE CONDUITS BASED ON NFPA 70, NATIONAL
ELECTRIC CODE. DO NOT STACK CONDUITS VERTICALLY.
10. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL
ELECTRIC CODE AND ALL APPLICABLE CODES.
11. PVC TO BE USED FOR ALL UNDERGROUND APPLICATIONS AS REQUIRED BY DESIGN.
TRANSITION WITH A COUPLING TO RGS CONDUIT OR OTHER AS REQUIRED BY
DESIGN THAT IS APPROVED FOR ABOVE GROUND APPLICATION.

SECTION A-A
CONDUIT INSTALLATION DETAIL ABOVE
EXISTING DRAIN PIPES OR UTILITIES
NOT TO SCALE

CONDUIT INSTALLATION DETAIL BELOW
EXISTING DRAIN PIPES OR UTILITIES
NOT TO SCALE

CONDUIT INSTALLATION TYPICAL DETAIL
NOT TO SCALE

EXISTING UNDERGROUND UTILITY

COMMONWEALTH OF PENNSYLVANIA
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PENNSYLVANIA TURNPIKE COMMISSION

INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
ITS CONDUIT AND TRENCH DETAILS

RECOMMENDED MARCH 1, 2013
RECOMMENDED MARCH 1, 2013
Sheet 11 of 23
Commonwealth of Pennsylvania
Department of Transportation
PENNSYLVANIA TURNPIKE COMMISSION
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
ITS CONDUIT AND TRENCH DETAILS

RECOMMENDED MARCH 1, 2013
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Sheet 11 of 23
GENERAL NOTES:

1. THE DETAILS DESCRIBED ON ITS-1201 SHEET 13 THROUGH ITS-1201 SHEET 18 ARE FOR RECONSTRUCTION OR NEW CONSTRUCTION PROJECTS. CONTACT THE REPRESENTATIVE PRIOR TO DESIGN FOR INSTALLATIONS AT EXISTING INFRASTRUCTURE.

2. EXTEND NO CONDUIT BELOW THE BOTTOM OF THE BEAMS (EXCEPTIONS AT END SPANS SUBJECT TO APPROVAL).

3. DO NOT ATTACH CONDUIT UNDER THE OVERHANDS UNLESS ABSOLUTELY NECESSARY. IF NECESSARY, CHIEF BRIDGE ENGINEER'S APPROVAL IS REQUIRED.

4. DRILLING IN PVC BEAMS OR FIELD HOLLOWING OF STEEL BEAMS MUST BE EVALUATED ON A CASE-BY-CASE BASIS AND APPROVED BY THE CHIEF BRIDGE ENGINEER.

5. ANY ACCESSORIES, EXCEPT STRUCTURAL STEEL COUPLES IN CONSTRUCTION, REQUIRED FOR THE ACCOMMODATION OF CONDUIT IS TO BE ENSURED AND DELIVERED TO THE CONDUIT SUPPLIER TO THE CHIEF BRIDGE ENGINEER AND/OR BRIDGE CONTRACTOR AS THE CASE MAY BE.

6. ALL MOUNT, SUPPORTS AND THEIR ASSOCIATED MOUNTING TO BE ENSURED OBSERVANCE OF THE NEW FRAME AND APPLY FINISH COAT TO MATCH STEEL BEAM COLOR.

7. ALL DUCTS WITH A DIAMETER SMALLER THAN THE INTERNAL DIAMETER OF THE INNER DUCT MUST BE EMBEDDED UNDER DIAPHRAGM AT NO EXPENSE TO THE DEPARTMENT AND RECEPT.

8. REFER TO BC-794M FOR UTILITY ATTACHMENT AND SUPPORT DETAILS.

LOCATION OF CONDUITS CARRYING ELECTRICAL POWER:

NOT ACCEPTABLE:

1. EMBEDMENT OF SUCH PIPES IN P/S ADJACENT BOX BEAMS.

2. EMBEDMENT OF SUCH PIPES IN CURBS OR BRIDGE RAILING UNLESS SPECIFIC PROVISIONS OF THE CHIEF BRIDGE ENGINEER TO BE ENSURED OBSERVANCE OF THE DEVELOPING HEAT.

ACCEPTABLE:

1. EXTEND B EMBEDMENT AS DESCRIBED ON SHEETS 13 OR 18, UNDER DIAPHRAGM IF IN EXISTENCE.

2. UNDER OVERHANGS, CHIEF BRIDGE ENGINEER'S APPROVAL OF THE DEPARTMENT REPRESENTATIVE'S APPROVAL.

3. ON COMPOSITE ADJACENT BEAMS WHEN SPREAD UP TO 1'-6" IN THIS CASE CONDUITS OF BEAMS ATTACHED UNTIL 4' AND SLAB THICKNESS BETWEEN BEAMS INCREASED TO 4" IN ADDITION TO THE ORIGINAL 5" COMPOSITE SLAB.

DESIGN NOTES:

1. FURNISH COMPUTATIONS FOR ADJACENT BEAMS WHEN CONDUIT LOAD IS LOCATED BETWEEN BEAMS AND IS MORE THAN 5 LBS/FT.

2. FURNISH COMPUTATIONS FOR ANY CASING WHEN CONDUIT IS SPACED FROM OVERHANGING SLAB OF INSULATION.

3. STRUCTURES WITH CATHODIC PROTECTION REQUIRE SPECIAL DETAILS.

4. CONDUIT TO INCORPORATE FOUR 1/2" PVC INNER-DUCTS.

5. LOCATION OF CONDUITS CARRYING ELECTRICAL POWER:

6. ALTERNATE INTERMEDIATE DIAPHRAGM AND AUXILIARY CONDUIT SUPPORTS AT A MAXIMUM 12'-6" SPACING.

7. DOUBLE NUT AT ALL LOCATIONS THAT NUTS ARE SHOWN.

8. EXPANSION COUPLING 5" TOTAL STROKE MUST BE INSTALLED SUCH THAT T=68 DEG F THE FEMALE CONDUIT IS AT THE ZERO POINT. 5" TOTAL STROKE IS AVAILABLE, 4" FOR EXPANSION AND 4" FOR CONTRACTION.

9. EXPANSION COUPLING MUST BE INSTALLED SUCH THAT T=68 DEG F THE FEMALE CONDUIT IS AT THE ZERO POINT.

10. CONDUIT ACCESSES BOX SHALL BE LOCATED 1'-8" MIN. CLEAR FROM ANY CIRCUIT SUPPORT LOCATION.

11. PROVIDE A GALVANIZED CONDUIT ACCESS BOX WITH A REMOVABLE COVER PLATE LOCATED OUTSIDE THE GROUND FOR BRIDGES > 50'. JUNCTION BOX SHOULD BE LOCATED NEAR THE MID-SPAN/PLATE.
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
OF SHEET 23
ITS-1201
13

TOP OF DECK
(TYP)
MAXIMUM SPACING
SUPPORT LOCATION
AUXILIARY CONDUIT
SUPPORT LOCATION
AUXILIARY CONDUIT
SUPPORT LOCATION

FABRICATED STRUCTURAL STEEL
INCIDENTAL TO LUMP SUM
(ITEM ____-____)

EXPANSION FITTING
1'-6" 0"
1'-2" 8"

MULTI-CELL GALVANIZED STEEL CONDUIT

DETAIL A
PIER CONDUIT SUPPORT DETAIL WITHOUT EXPANSION JOINTS
(DEVLOPED)

DETAIL B
PIER CONDUIT SUPPORT DETAIL WITH BACK-TO-BACK EXPANSION JOINTS

DETAIL C
PIER CONDUIT SUPPORT DETAIL WITH ONE EXPANSION JOINT

DETAIL D
PIER CONDUIT SUPPORT DETAIL WITH BACK-TO-BACK EXPANSION JOINTS AND MODIFIED JUNCTION BOX
(DEVLOPED)

DETAIL E
PIER CONDUIT SUPPORT DETAIL WITHOUT EXPANSION JOINTS

SECTION A-A

PLAN
END VIEW (SEE SECTION A-A)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
STRUCTURE MOUNTED ITS CONDUIT STEEL BEAMS

* AS REQUIRED BY DESIGN
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
STRUCTURE MOUNTED ITS CONDUIT
APPROACH DETAIL SHEET

GENERAL NOTES:
1. SIDE FACES OF CONCRETE ENCASED GALVANIZED STEEL CONDUIT PROTECTIVE COATING/PAINT LIMITS OF APPROACH SLAB
2. FOR APPROACH SLAB DETAIL, SEE CONTRACT DOCUMENTS.
3. INCIDENTAL TO APPROPRIATE PAY ITEM.

SUB-BASE*
APPROACH SLAB*
(ROADWAY ITEM)
JUNCTION BOX
CONDUIT
VARIES COUPLING AS REQUIRED
GALVANIZED STEEL (TYP)
BACKFILL*
STRUCTURE ENCASMENT
CLASS C CONCRETE
1'-8" X 1'-8"
GEOGRID*
END DIAPHRAGM
ABUTMENT
BRG.
TOP OF DECK
HANGER
CONDUIT
AUXILIARY (ITEM ____-____)
FABRICATED STRUCTURAL STEEL INCIDENTAL TO LUMP SUM
EXPANSION FITTING (BELOW CONDUIT ONLY)
ROLLER SUPPORT
PIPE SLEEVE
CONDUIT
APPROACH DETAIL

LIMITS OF APPROACH SLAB
LIMITS OF CONCRETE ENCASED GALVANIZED STEEL CONDUIT PROTECTIVE COATING/PAINT
SUB-BASE
APPROACH SLAB
MULTI-CELL GALVANIZED STEEL CONDUIT
FULL HANG PIPE AND SLEEVE WITH SHOES ROD MATERIAL AFTER INSTALLATION OF CONDUIT
1'-6" X 1'-6" CLASS C CONCRETE ENCASMENT
GALVANIZED STEEL COUPLING AS REQUIRED
STRUCTURE ENCASMENT (TYP)
1'-6" X 1'-6" CLASS C CONCRETE ENCASMENT
COMMONWEALTH OF PENNSYLVANIA
CHIEF ENGINEER,
DEPARTMENT OF TRANSPORTATION
BUREAU DIRECTOR, BUREAU OF PENNSYLVANIA TURNPIKE COMMISSION
MARCH 1, 2013
MARCH 1, 2013
TYPICAL END DIAPHRAGM CONDUIT SUPPORT DETAIL

TYPICAL INTERMEDIATE DIAPHRAGM CONDUIT SUPPORT DETAIL

TYPICAL AUXILIARY CONDUIT SUPPORT

NOTE: FOR DIAPHRAGM DETAIL REFER TO BC-754M

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION

INTELLIGENT TRANSPORTATION SYSTEMS
ITS DEVICES - GENERAL

STRUCTURE MOUNTED ITS CONDUIT
STEEL BEAM DETAILS
GENERAL NOTES:
1. ALL CONNECTIONS SHALL BE EXTRUSION WELDED TO GROUND RODS OR BRASS LUGS.
2. THE CONTRACTOR MAY, UPON APPROVAL OF THE REPRESENTATIVE, INSTALL A 3" HOUSING GROUND ROD FOR INSTANCES WHERE CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE THREE AUXILIARY GROUND RODS.
3. GROUND ROD A IS REQUIRED; GROUND RODS B, C, AND D WILL BE REQUIRED AS NECESSARY TO MEET THE GROUND RESISTANCE REQUIREMENT IN THE CONTRACT DOCUMENTS. #2 AND #4 BARE COPPER CONDUCTOR SHALL BE USED TO INTERCONNECT GROUND RODS.
4. COPPER FLAT SURFACES SHALL BE BOLTED, WELDED, OR BRAZED SECURELY TO MAINTAIN ELECTRICAL CONNECTION.
5. INSTALL PLASTIC WARNING TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 6".
6. GROUNDING SYSTEM SHALL BE PLACED WITHIN THE LEGAL RIGHT-OF-WAY.
7. CONTRACTOR SHALL TEST THE GROUND ROD BY PERFORMING A SOIL RESISTIVITY TEST. IF TEST RESULTS ARE INADEQUATE, ADDITIONAL GROUNDING CONDUCTORS SHALL BE INSTALLED UNTIL A GROUND RESISTANCE OF 25 OHMS OR LESS IS ACHIEVED; REFER TO GROUND ROD PLACEMENT DETAILS. GROUND TESTING RESULTS ARE HIGHER THAN 25 OHMS THEN ADDITIONAL GROUND RODS SHALL BE PLACED UNTIL 25 OHMS IS ACHIEVED.
8. ALL GROUND CONDUCTORS SHALL BE SIZED ACCORDING TO THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRIC CODE LATEST EDITION.
9. MAIN GROUND ROD (A) TO BE PLACED ADJACENT TO THE POLE OR SIGN STRUCTURE SUPPORT AND SHALL COMPLY WITH PENNDOT PUB 408 SECTION 1201.3(b) REQUIREMENTS.
10. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES.

GROUND ROD PLACEMENT DETAIL (TYPICAL EACH POLE)

GROUND ROD PLACEMENT DETAIL (TYPICAL EACH SIGN STRUCTURE SUPPORT)

GROUNDING DETAIL FOR POLE AND STRUCTURE MOUNTED ITS ENCLOSURE

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PENNSYLVANIA TURNPIKE COMMISSION

INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL

ITS DEVICE GROUNDING DETAILS
GENERAL NOTES:

1. USE NO CIRCUIT BREAKERS IN MAIN DISCONNECT. USE CIRCUIT BREAKERS UNLESS FUSES ARE RECOMMENDED BY MANUFACTURER.

2. USE NO FUSES IN MAIN DISCONNECT TO EXCEED 60 A OF THE CIRCUIT BREAKER RATING AND TRANSFORMER WITH A CIRCUIT BREAKER RATING OF 50 A. USE CIRCUIT BREAKERS UNLESS FUSES ARE RECOMMENDED BY MANUFACTURER.

3. METERS MUST BE INSTALLED ON CHANNEL STRUT MOUNTED BETWEEN two 3" STEEL PIPES ENCASED IN CONCRETE AWAY FROM VEHICLE AND PEDESTRIAN TRAFFIC. THERE MUST BE 3' OF CLEAR WORKING SPACE IN FRONT OF THE METER.

4. TYPICAL UTILITY PEDESTAL MUST BE MOUNTED ON UTILITY PEDESTAL COMMUNICATION DEMARCATION BOX. LOCAL UTILITY APPROVAL MUST BE OBTAINED. LOCAL UTILITY APPROVAL MUST BE OBTAINED.

5. PROVIDE LOCKING MECHANISM FOR MAIN DISCONNECT SWITCH. PROVIDE LOCKING MECHANISM FOR MAIN DISCONNECT SWITCH.

6. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES.

COMMONWEALTH OF PENNSYLVANIA
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 PENNSYLVANIA TURNPIKE COMMISSION

INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
ITS DEVICES - GENERAL
UTILITY SERVICE DETAIL

DETAIL "A" NOT TO SCALE

NOT TO SCALE

POST CONNECTION DETAIL

NOT TO SCALE

TYPICAL UTILITY PEDESTAL

NOT TO SCALE

FRONT VIEW

SIDE VIEW

UTILITY SERVICE DETAIL

NOT TO SCALE
WOODEN UTILITY POLE ELEVATION
(FRONT VIEW)
NOT TO SCALE

WOODEN UTILITY POLE ELEVATION
(BACK VIEW)
NOT TO SCALE

GENERAL NOTES:
1. USE A SINGLE WOODEN UTILITY POLE FOR BOTH ELECTRICAL AND TELEPHONE SERVICE.
2. ASSEMBLE IN A WAY TO BE SERVICE ENTRANCE RATED AND LABELED CONFORMING TO REQUIREMENTS OF THE UTILITY COMPANY.
3. INSTALL SO THAT METER PANEL FACES FRONT OF THE UTILITY POLE AND THE UTILITY WILL APPROACH THE SERVICE.
4. INSTALLATION REQUIREMENTS MAY VARY BY UTILITY COMPANY. COORDINATE WITH THE REPRESENTATIVE.
5. TRANSITION FROM RGS TO PVC CONDUIT WITHIN 6" OF THE GROUND ON SERVICE POLE.
6. UTILITY POLE SHALL BE PLACED AS FAR FROM THE TRAVEL WAY AS PRACTICAL.
THE PROJECT PRIOR TO POLE SIZING THROUGH DESIGN.

CCTV CAMERA POLES SHALL BE DESIGNED IN ACCORDANCE WITH PENNDOT PUB 408 UNLESS STAINLESS STEEL OR OTHERWISE INDICATED.

PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

NOTES TO DESIGNER:

1. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

2. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

3. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

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12. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

13. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

14. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

15. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

16. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

17. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

18. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

19. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

20. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

21. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

22. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

23. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

24. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

25. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

26. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

27. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

28. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

29. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.

30. PROVIDE MATERIALS AND CONSTRUCTION METHODS APPROPRIATE TO THE PROJECT IN ACCORDANCE WITH THE PROJECT'S CONTRACT DOCUMENTS AND SPECIFICATIONS.
GENERAL NOTES:
1. Refer to PennDOT PUB 440, Intelligent Transportation System Design Guide, Chapters 8 for design considerations and location and placement guidelines for CCTV system.
2. Provide a CCTV system in accordance with PennDOT PUB 440 Section 12-102.
3. Clear zone shall be designed to the edge of the foundation.
4. Distance must be in accordance with PennDOT design documents and greater than or equal to minimum clear zone requirements.
5. Clearance must meet minimum requirement for placement behind guidewire or barrier installed at the site.
6. Place CCTV pole behind existing barrier whenever possible.
7. For details of CCTV pole assembly, see ITS-1210 Sheet 3.
8. For details of CCTV pole foundation, see ITS-1210 Sheet 4.
9. For details of CCTV lowering system assembly see ITS-1210 Sheet 5.
10. For details of CCTV enclosure, see ITS-1210 Sheets 1, 2, 3, or 5. For CCTV enclosure, see ITS-1201 Sheet 4.
11. All work shall comply with the latest edition of NFPA 70, National Electric Code and all applicable codes.

REFERENCES:

TYPICAL SITE LAYOUT
GENERAL NOTES:
1. PROVIDE CCTV SUPPORT FOUNDATION IN ACCORDANCE WITH PENNDOT PUB 423 SHEET 2301, SECTION 1210.2(i).
2. FOR GROUNDING DETAILS, SEE ITS-1210 SHEET 19.
3. SEAL WITH GALVANIZED PIPE WRAP, 3/4" TO 1.5" DIAMETERS. ENSURE WRAP IS SUFFICIENT TO WITHSTAND DAMAGE AND ATTACHED TO RPC WITH STAINLESS STEEL HARDWARE. PREPARE WRAP TO PROTECT SLEEVE AND FOUNDATION WHILE PERMITTING DRAINAGE.
4. AN EIGHT ANCHOR BOLT CONFIGURATION IS PREFERRED FOR SYMMETRY FOR POLE HEIGHTS GREATER THAN 50'-0". HOWEVER, A MINIMUM OF SIX ANCHOR BOLTS IS REQUIRED FOR POLE HEIGHTS OF 50'-0" OR LESS. THE ANCHOR BOLT PATTERN SHALL BE ORIENTED TO MEET THE POLE ORIENTATION REQUIREMENTS SPECIFIED HEREIN.
5. GALVANIZE ANCHOR BOLTS IN ACCORDANCE WITH PENNDOT PUB 423 SECTION 1210.2(h).
6. TIE TOP AND BOTTOM MATS OF REINFORCING STEEL WITH #4 BARS AT A MAXIMUM SPACING OF 1'-0" IN BOTH DIRECTIONS. DECREASE SPACING TO 1/2'-0" AT 1'-0" AND 3'-0" DECREASE SPACING AT TOP IN ALTERNATE TIES.
7. REGRADE/STABILIZE THE CCTV SITE TO PROVIDE FINISHED GROUND THAT WILL ALLOW FOR NO SOIL INTRUSION INTO THE POLE FOOTING.
8. IF THE MINIMUM DIAMETER DRILLED CAISSON FOUNDATION OF 4'-0" CANNOT BE OBTAINED, AN ALTERNATE DESIGN MAY BE SUBMITTED TO THE REPRESENTATIVE FOR APPROVAL.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION

CIVIL AND STRUCTURAL STANDARD DRAWINGS
CLOSED CIRCUIT TELEVISION CAMERA

POLE FOUNDATION

RECOMMENDED: APRIL 1, 2013
RECOMMENDED: MARCH 1, 2013
SHEET 4 OF 6
ITS-1210
USE STAINLESS STEEL U BOLTS TO ATTACH THE SUPPORT BEAM TO CHORD.

ALTERNATE ATTACHMENT TO COLUMN AS RECOMMENDED BY CAMERA MANUFACTURER.

CABLES IN COLUMN (ALTERNATE)

USE STAINLESS STEEL U BOLTS TO ATTACH THE SUPPORT BEAM TO CHORD.

CABLES IN FLEXIBLE CONDUIT

STAINLESS STEEL STRAPS

FRONT ELEVATION

STAINLESS STEEL STRAPS TO ATTACH STRUT BRACKET TO POLE AS RECOMMENDED BY CAMERA MANUFACTURER.

POWER, VIDEO AND CONTROL CABLES

USE STAINLESS STEEL U BOLTS TO ATTACH POLE

SIDE ELEVATION

STAINLESS STEEL STRAPS

CABLES IN FLEXIBLE CONDUIT

CONDUIT CONNECTION TO EXISTING SIGNAL FOUNDATION

NOT TO SCALE

STAINLESS STEEL STRAPS TO ATTACH STRUT BRACKET TO POLE AS RECOMMENDED BY CAMERA MANUFACTURER.

NOT TO SCALE

GALVANIZED STEEL PIPE

SLIDE OVER 1" CAMERA PIPE MOUNT

CABLES IN COLUMN

ALTERNATE ATTACHMENT TO COLUMN AS RECOMMENDED BY CAMERA MANUFACTURER.

CONDUIT CONNECT TO EXISTING SIGNAL FOUNDATION

NOT TO SCALE

CIVIL AND STRUCTURAL STANDARD DRAWINGS

GENERAL NOTES:

1. IF REQUIRED IN THE CONTRACT DOCUMENTS, PROVIDE A LOWERING DEVICE THAT IS ORIENTED IN A MANNER THAT THE MAINTAINER WILL FACE TRAFFIC WHEN LOWERING THE CCTV CAMERA.

2. BOND THE CCTV CAMERA SUBSYSTEM TO THE STRUCTURES GROUNDING SYSTEM PERIODICALLY.

3. TEST AND INSPECT THE STRUCTURES GROUNDING SYSTEM TO ENSURE IT IS INTEGRAL AND FUNCTIONING PROPERLY.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
CLOSED CIRCUIT TELEVISION CAMERA
STRUCTURE MOUNTED CCTV CAMERA ASSEMBLY

NOT TO SCALE

NOTE: FOR ENCLOSURE DETAILS SEE ITS-1201 SHEET 1, 2, 3, OR TC-8802

MARCH 1, 2013
MARCH 1, 2013
GENERAL NOTES:
1. REFER TO PENNDOT PUB 646, INTELLIGENT TRANSPORTATION SYSTEMS DESIGN GUIDE, CHAPTER 4 FOR DESIGN CONSIDERATIONS AND LOCATION AND PLACEMENT GUIDELINES.
2. THESE DETAILS ARE PROVIDED FOR SOLAR PANEL, CONTROL ENCLOSURE, SIGNAL HEAD, JUNCTION BOX, CONDUIT, WIRING, AND ASSOCIATED HARDWARE ONLY.
3. ALL MOUNTING HARDWARE, INCLUDING MOUNTING BOLTS, WASHERS, NUTS, AND HARDWARE, SHALL BE STAINLESS STEEL.
4. ISOLATE DISSIMILAR METALS USING PROPER SEPARATION TECHNIQUES.
5. PROVIDE SLACK FOR THE FLASHER CABLE IN THE PULL BOX.
6. SUBMIT INSTALLATION DETAIL DRAWINGS TO THE REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.
7. INSTALL SOLAR PANELS AT 1220.2(h), SECTION 1220.2(h)1) IN ACCORDANCE WITH RECOMMENDATION OF SOLAR PANEL MANUFACTURER. INSTALL THE PANELS ON POST FARthest AWAY FROM THE ROADWAY. SUBMIT PLANS AND DETAILS FOR SOLAR PANEL INSTALLATION TO THE REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION. PLACE SOLAR PANEL AND SIGN TO PROVIDE A CONSTRUCTIVE MILE WITHOUT SOLAR ARRAY EXPOSURE.
8. LOCATION OF SIGNS WILL BE FINALIZED AFTER THE TRANSMITTER LOCATION IS DETERMINED.
9. INSTALL CONTROL ENCLOSURE ON THE POST LOCATED FARthest AWAY FROM THE ROAD.
10. INSTALL SIGNAL HEADS CAPABLE OF ADJUSTING FOR PAN AND TILT.
11. INSTALL CONDUIT SUPPORTS PER NEC 347-8 AND TABLE 347-8.
12. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
13. PROVIDE TYPE A AND TYPE E ADVISORY SIGNS IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h), FOR INSTALLATION DETAILS REFER TO TC-8702A AND TC-8702E.
14. PROVIDE SIGN LEGEND IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(i).
15. PROVIDE ENCLOSURE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).4.
16. PROVIDE BREAKAWAY BASE ASSEMBLY.
17. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
18. PROVIDE TRANSMITTER POLES IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
19. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
20. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
21. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
22. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
23. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
24. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
25. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
26. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
27. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
28. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
29. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
30. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
31. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
32. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
33. PROVIDE TRANSMITTER POLE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1220.2(h).
34. PROVIDE BREAKAWAY CABLE AND CONDUIT CONNECTORS AT THE BREAKAWAY BASE ASSEMBLY.
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS

OF SHEET 8

DYNAMIC MESSAGE SIGNS

EDGE OF PAVEMENT
SHOULDER
EDGE OF
REFERENCE LINE
TOP OF FOOTING
POST HINGE
POST BASE
POST #2
POST #3

LOCATED WHERE IT IS VERY UNLIKELY TO BE HIT BY 90 DEGREES OR LESS

DESIGN CRITERIA:

GENERAL NOTES:
1. PROVIDE MATERIALS AND WORKSHIPS IN ACCORDANCE WITH PENNDOT PUB 408, UNLESS NOTED OTHERWISE.
2. POST #1 IS ALWAYS ADJACENT TO ROADWAY, WHETHER DMS IS LOCATED ON LEFT OR RIGHT SIDE OF THE ROADWAY.
3. AT THE LOCATION OF PAVEMENT OR THE PTC, PROVIDE NON-BREAKAWAY SUPPORTS AND A "SAGGING" RAIL WHEN THE MAXIMUM HEIGHT PER POST EXCEEDS 10-3/4 FT. DETAILED DESIGN INFORMATION TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS UNLESS NON-BREAKAWAY SUPPORTS ARE REQUIRED.
4. AT LOCATIONS WHERE GUIDE RAIL, MEDIAN BARRIER, OR ROADSIDE SAFETY DEVICE, PLACE THE NEAR EDGE OF THE DMS A MINIMUM OF 2'-0" BEHIND THE GUIDE RAIL, MEDIAN BARRIER, OR ROADSIDE SAFETY DEVICE.
5. LOCATE DMS TO AVOID PLACING SUPPORTS IN DRAINAGE DITCHES.
6. MOUNT ENTIRE DMS AND ALL STATIC SIGN PANELS ABOVE POST HINGES.
7. FOR SELECTION OF POSTS, REFER TO POST SELECTION TABLES ON ITS-1230 SHEETS 2 AND 3.
8. FOR SELECTION OF POSTING SIZE AND REINFORCEMENT, REFER TO POSTING SELECTION TABLE ON TRAFFIC STANDARD TC-901A SHEET 9.
9. PROVIDE ENCLOSURE IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1230.2(g), SHEET 8
10. REFER TO POST SELECTION TABLES ON ITS-1230 SHEETS 2 AND 3.
11. PROVIDE ENCLOSEMENT IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1230.2(g), SHEET 8.
12. REFER TO ITS-1230, INTELLIGENT TRANSPORTATION SYSTEMS DESIGN GUIDE, CHAPTER 3 FOR DESIGN CONSIDERATIONS, LOCATION AND PLACEMENT GUIDELINES AND MAINTENANCE CONSIDERATIONS FOR DMS SUBSYSTEM.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
DYNAMIC MESSAGE SIGNS
POST MOUNTED DMS, TYPE A
ERECTION DETAILS

RECOMMENDED: MAR 1, 2013
RECOMMENDED: MAR 1, 2013
SHEET 1 OF 9
ITS-1230
## Post Selection Table - Two Posts

<table>
<thead>
<tr>
<th>Height (H)* in Ft</th>
<th># Post(s)</th>
<th>L* in Ft</th>
<th>4'</th>
<th>5'</th>
<th>6'</th>
<th>7'</th>
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<tr>
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</tbody>
</table>

### Post Selection Example
For a DMS where:
- \( W = 10' \)
- \( H = 9' \)
- \( L = 12' \)

Two \( P3 \times 46 \times 15 \) steel posts are required.

### Post Selection Notes:
1. Determine values of \( P*, H* \), and \( L* \) as indicated in sketches.
2. \( P*, W \), and \( H* \) maximum width of DMS.
3. \( H* \) maximum height of DMS.
4. \( L* \) maximum distance between top of footing and bottom of DMS.
5. For selection of posts, enter tables with values of \( P*, H* \) and \( L* \) in the table, use left nearest PS value.
6. All posts are ASTM A572, Grade 50 steel.
7. Use the longest post to select all post sizes.
8. Posts in the selection table have \( P*, W \), and \( H* \) not a minimum and are selected on the basis of weight contributed to the overhanging loads.
9. There is no need to check the weight criteria for posts determined using this post selection table. The weight criteria for posts in the table have been established for a single post and the same criteria apply to the installation of the post selection table.
10. A weight greater than \( 6 \) lb/ft. The total weight below the weight plate must not exceed \( 125 \) lb. For the post placed with less than \( 1' \) clearance, each post shall have a weight less than \( 7 \) lb/ft.

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### Commonwealth of Pennsylvania
Department of Transportation
Pennsylvania Turnpike Commission

Intelligent Transportation Systems
Civil and Structural Standard Drawings
Dynamic Message Signs
Post Mounted DMS, Type A
Post Selection Table

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**Legend:**
- \( P3 \times 46 \times 12 \)
- \( P3 \times 46 \times 15 \)
- \( P4 \times 50 \)
- \( P4 \times 44 \)
- \( P6 \times 70 \times 22 \)
- \( P6 \times 70 \times 26 \)
- \( P8 \times 84 \times 50 \)
- \( P9 \times 84 \times 35 \)
- \( P10 \times 108 \times 40 \)

---

**SEE NOTE 6**
### POST SELECTION TABLE - THREE POSTS

<table>
<thead>
<tr>
<th>N FT</th>
<th>L2</th>
<th>L3</th>
<th>4'</th>
<th>5'</th>
<th>6'</th>
<th>7'</th>
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</tbody>
</table>

### GENERAL NOTE:
1. **SEE ITS-1230 SHEET 2 FOR DMS POST SELECTION NOTES AND DMS ON TWO POSTS.**
GENERAL NOTES:
1. All dimensions are in U.S. customary units.
2. Provide 3-inch concrete cover on reinforcement bars, except as noted.
3. Use Class G cement concrete for 300 psi in footings, except as noted.
4. Provide grade 40 reinforcing steel bars that meet the requirements of ASTM A 615 for concrete reinforcement. All bars meeting the requirements of ASTM A 615 shall be used.
5. Tank ends all horizontal construction joints, except as indicated.
6. Verify all dimensions and geometry of the existing structures in the field as necessary. Do not proceed with the installation if any dimensions are not to the specifications.
7. Install the concrete foundation in accordance with PennDOT Pub 404 unless stainless steel of otherwise indicated.
8. All bolt holes shall be drilled.
9. Provide bolt holes 1/4 larger than bolt diameter.
10. Provide anchor bolt holes 1/4 larger than bolt diameter.
11. Provide a minimum anchor bolt embedment length of 20 anchor bolt diameters.
12. Provide nuts, washers, and jam nuts for each anchor bolt.
13. Provide sufficient concrete cover on reinforcement bars, except as noted.
14. ALL DIMENSIONS ARE BASED ON A NORMAL TEMPERATURE OF 68 DEGREES F.
15. Provide grout for all anchor bolts except as noted.
16. Use Class A cement concrete $f'_c = 3000$ psi in pedestals, footings, and caissons.
17. Use PC columns in accordance with the requirements for Penndot PDF's and 18,000 psi design concrete.
18. Use PC columns for the structural design of the building, complying with the requirements for load and related specifications for the building.
19. PIPE DIAMETERS SHOWN UP TO AND INCLUDING 12 INCHES ARE normal diameters. PIPE DIAMETERS SHOWN FROM 14 INCHES UP TO AND INCLUDING 24 INCHES ARE actual diameters.

CONSTRUCTION GENERAL NOTES:
1. MATERIALS AND WORKMEN'S :
   1.0 The materials and workmanship shall be in accordance with the current version of the Penndot Pub for use in current projects. All materials shall be made in accordance with the latest Penndot Pub and shall be used in the Penndot Pub for the project.
2. PROVIDE STRUCTURAL TUBULAR CONSTRUCTION TO THE FOLLOWING:

   PIPE COLUMN & PIPE CHORDS:
   PER PENNDOT PUB 404 SECTION 130.2.2.1
   A PIPE SPACING:
   PIPE COLUMN & PIPE CHORDS:
   PER PENNDOT PUB 406 SECTION 130.2.2.1
   ANGLES, SHAPES, AND PLATES:
   PER PENNDOT PUB 406 SECTION 130.2.2.1
3. ALTERNATE PRESSURE MEMBERS:
   PROVIDE PRESSURE MEMBERS WITH THE EQUAL STRENGTH OF THE MEMBER.
   PROVIDE PRESSURE MEMBERS WITH THE IF/IF MEMBERS IN ACCORDANCE WITH THE REQUIREMENTS FOR PRESSURE MEMBERS.
   PROVIDE PRESSURE MEMBERS WITH THE INSTEAD OF PRESSURE MEMBERS.
4. PROVIDE BOLTS CONFORMING TO THE FOLLOWING:
   ANCHOR BOLTS:
   PER PENNDOT PUB 408 SECTION 130.2.2.1
   BOLTS:
   PER PENNDOT PUB 408 SECTION 130.2.2.1
5. DESIGN SPECIFICATIONS:
   AASHTO STANDARDS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
   ENHANCED PERFORMANCE SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
6. ALL FITTED KEYS SHOWN ARE MINIMUM SIZE UNLESS NOTED OTHERWISE.
ELEVATION - TYPICAL CANTILEVER SIGN SUPPORT

SECTION A-A

SECTION B-B

NOTES TO DESIGNER:
1. THE CONNECTION DETAILS SHOWN IN THESE STANDARDS ARE CONCEPTUAL AND ARE THE MINIMUM REQUIREMENTS. ALL THE CONNECTION DETAILS SHOWN IN THESE STANDARDS ARE AS REQUIRED BY DESIGN.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION

INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
_DYNAMIC MESSAGE SIGNS
CANTILEVER STRUCTURES
TRUSS AND COLUMN DETAILS

RECOMMENDED: MARCH 1, 2013
MARCH 1, 2013

ITS-1230
THE MINIMUM WELD SIZE REQUIREMENT.

THE VERTICAL OR DIAGONAL EQUAL TO THE EDGE OF THE GUSSET PLATE IN MIN.

NOTES TO DESIGNER:
1. THE CONNECTION DETAILS SHOWN IN THESE STANDARDS ARE CONCEPTUAL AND ARE THE MINIMUM REQUIREMENTS. ALL MEMBERS, PLATES, AND BOLTS SHALL BE DETAILED ON THE CONTRACT PLANS AS REQUIRED BY DESIGN.
2. CHORD INTERMEDIATE SPLICING WILL NOT BE PERMITTED UNLESS APPROVED BY THE CHIEF BRIDGE ENGINEER.

APPROVED BY THE CHIEF BRIDGE ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PENNSYLVANIA TURNPIKE COMMISSION
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
DYNAMIC MESSAGE SIGNS
CANTILEVER STRUCTURES
TRUSS AND COLUMN DETAILS
GENERAL NOTES:
1. PROVIDE PORTABLE DYNAMIC MESSAGE SIGN IN ACCORDANCE WITH PENNDOT PUB 408 SECTION 1231.2.
2. DIMENSIONS ARE BASED ON A NORMAL TEMPERATURE OF 68° F.
3. ALL DIMENSIONS SHOWN ARE HORIZONTAL, EXCEPT AS NOTED.
4. USE CLASS A CEMENT CONCRETE IN DMS SLAB.
5. CHAMFER EXPOSED CONCRETE EDGES 1" X 1" EXCEPT AS NOTED.
6. RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS EXCEPT AS NOTED.
7. VERIFY ALL ELEVATIONS AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION AND FOUNDATION CONSTRUCTION.
8. SLOPE CONCRETE SLAB 2% TO PREVENT RUNOFF ON TO THE TRAVELWAY.
9. CONCRETE SLAB SHALL BE SIZED TO ACCOMMODATE ALL STABILIZING/LEVELING JACKS AND ALL OTHER EQUIPMENT REQUIRED TO OPERATE PORTABLE DMS. A 1'-0" (MIN) BUFFER SHALL BE ADDED TO EACH SIDE.

PORTABLE DMS ELEVATION
NOT TO SCALE

SECTION A-A
NOT TO SCALE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
Pennsylvania Turnpike Commission
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
PORTABLE DYNAMIC MESSAGE SIGNS
PAD DETAILS

NOTE: SIGN TRAILER NOT SHOWN FOR CLARITY.
2) SEE CONTRACT DOCUMENTS FOR LOCATION OF PORTABLE DMS PAD.
1) CONCRETE SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
2) SEE CONTRACT DOCUMENTS FOR LOCATION OF PORTABLE DMS PAD.

NOTE: SIGN TRAILER NOT SHOWN FOR CLARITY.

PORTABLE DMS ELEVATION
NOT TO SCALE

SECTION A-A
NOT TO SCALE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
Pennsylvania Turnpike Commission
INTELLIGENT TRANSPORTATION SYSTEMS
CIVIL AND STRUCTURAL STANDARD DRAWINGS
PORTABLE DYNAMIC MESSAGE SIGNS
PAD DETAILS

NOTE: SIGN TRAILER NOT SHOWN FOR CLARITY.
2) SEE CONTRACT DOCUMENTS FOR LOCATION OF PORTABLE DMS PAD.
1) CONCRETE SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.