STATE	FEDERAL PROJECT NO.
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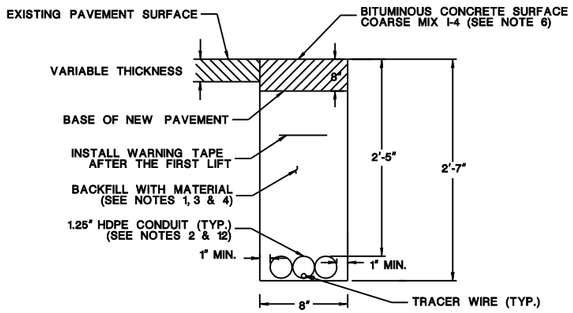
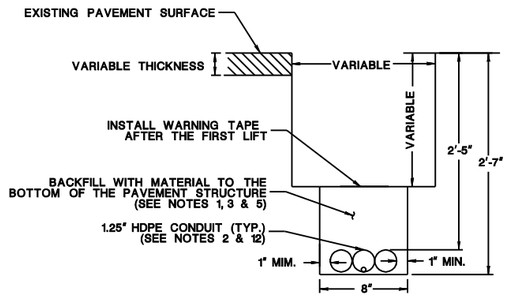


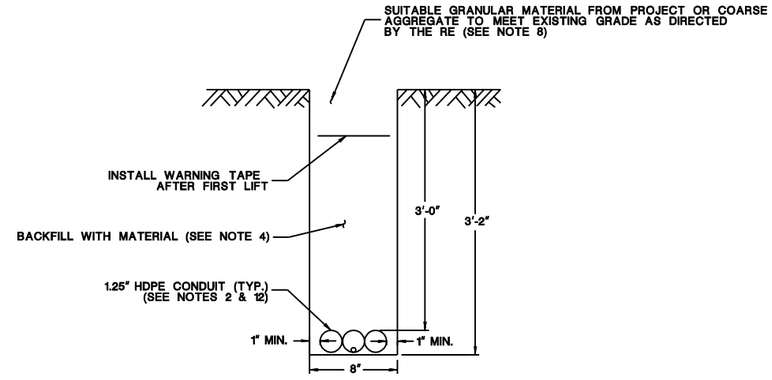
IN BITUMINOUS SHOULDER, TRAVELED WAY OR RAMP AREA



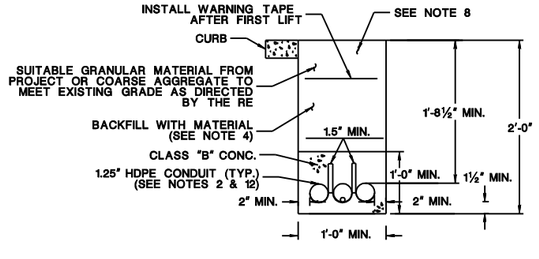
IN REHABILITATED/RECONSTRUCTED CONCRETE SHOULDER OR BITUMINOUS SHOULDER, TRAVELED WAY OR RAMP AREA

NOTES:

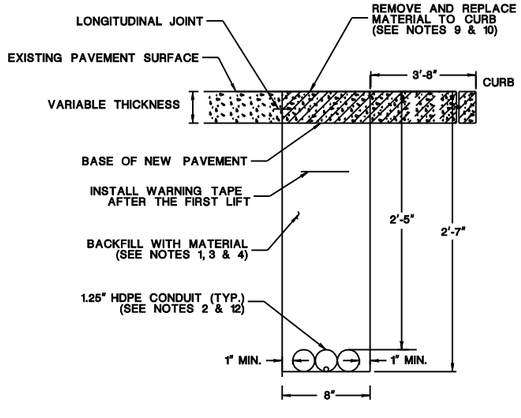
1. BEFORE BACK FILLING TRENCH, REMOVE ALL CUT DEBRIS FROM SITE.
2. CENTER THE THREE 1.25" HDPE CONDUITS IN THE TRENCH AND HOLD FIRMLY IN PLACE WHILE THE TRENCH IS BACK FILLED.
3. ENSURE THE BACK FILL MATERIAL IS COARSE AGGREGATE SIZE No. 8 OR No. 9 BROKEN STONE OR WASHED GRAVEL.
4. COMPACT THE BACK FILL MATERIAL IN EQUAL LIFTS TO A MAXIMUM OF 12" EACH MODIFIED VIBRATORY PLATE COMPACTOR, (MINIMUM OF THREE PASSES PER LIFT).
5. COMPACT THE BACK FILL MATERIAL IN ONE LIFT WITH A MODIFIED VIBRATORY PLATE COMPACTOR (MINIMUM OF THREE PASSES PER LIFT).
6. MOUND UP THE BITUMINOUS CONCRETE SURFACE COARSE MIX I-4 ABOVE THE EXISTING PAVEMENT SURFACE AND AFTER THOROUGH COMPACTION, ENSURE FINISHED GRADE IS¼" ABOVE THE ADJACENT PAVEMENT SURFACE. COMPACT IN ACCORDANCE WITH SECTION 1003 (10 TON VIBRATORY ROLLER).
7. PREPARE THE TRENCH BOTTOM FOR HDPE CONDUITS TO ELIMINATE LUMPS, RIDGES, JAGGED EDGES AND HOLLOWS UTILIZING BEDDING MATERIAL.
8. AFTER MATERIAL IS BACK FILLED, FERTILIZE, SEED AND MULCH IN ACCORDANCE WITH DIVISION 800.
9. WHEN THERE IS A CONCRETE SHOULDER, SAW-CUT, REMOVE THE CONCRETE MATERIAL BACK TO THE CURB. UTILIZE A TRENCHING MACHINE TO MAKE THE TRENCH. ENSURE REPLACEMENT MATERIAL COMPLIES WITH NOTE 11.
10. WHEN THERE IS A CONCRETE SHOULDER WITH BITUMINOUS OVERLAY, REPLACE WITH 8" MINIMUM BITUMINOUS MATERIAL OR MATCH EXISTING SECTION. (SEE NOTE 6)
11. ENSURE QUICK-SETTING CONCRETE IS TYPE 1A, AND COMPLIES WITH SECTION 903.07. ENSURE THE THICKNESS OF QUICK-SETTING CONCRETE IS THE SAME AS EXISTING. REPLACE EXPANSION JOINTS AND DOWELS IN KIND AND INSTALL LONGITUDINAL JOINT TIES IN ACCORDANCE WITH STANDARD CONSTRUCTION DETAILS. CONTRACTOR IS TO SUPPLY THE RE WITH DETAILED DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
12. INSTALL ONE #14 AWG CONDUCTOR TYPE THHN/THWN IN MIDDLE CONDUIT PER TRENCH.
13. FOR WARNING TAPE DETAILS SEE SHEET ITS-701-03.



AT INTERSTATE IN GRASS AREA



LANDSERVICE AREA



IN CONCRETE SHOULDER

FLEXIBLE NONMETALLIC CONDUIT INSTALLATION

ITSD- 701-01

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

TYPICAL FLEXIBLE NONMETALLIC CONDUIT INSTALLATION

SCALE:
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REFERENCE

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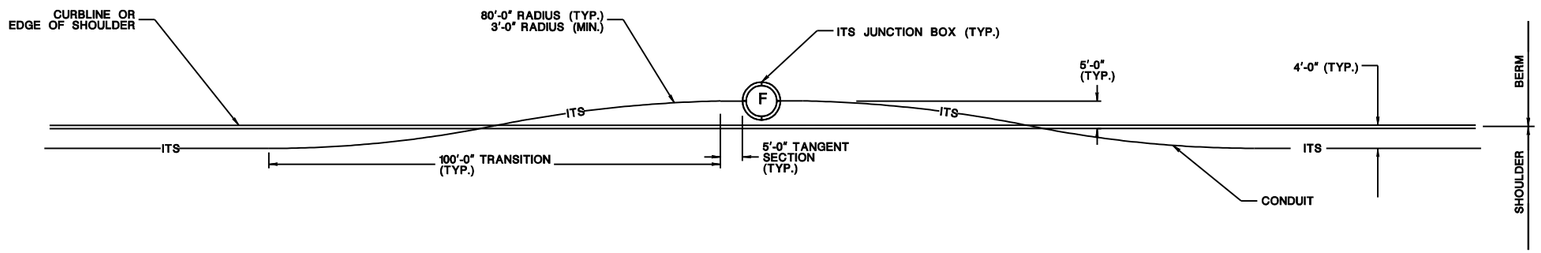
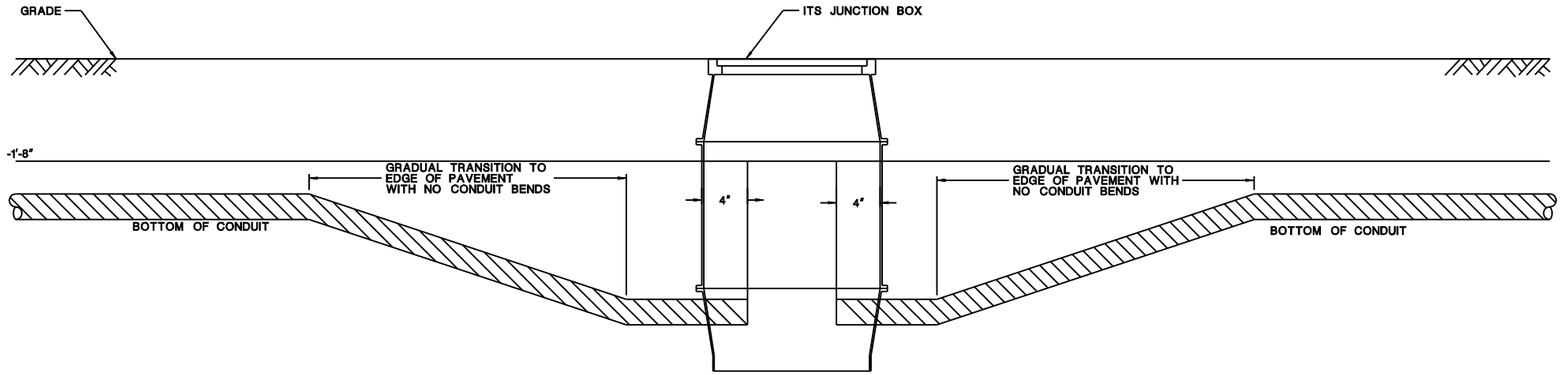


TYPICAL CONDUIT TRANSITION



ELEVATION OF CONDUIT TRENCH AND FIBER OPTIC JUNCTION BOX

NOTES:

1. BACKFILL THE TRENCH WITHIN THE SAME DAY.

ITSD- 701-02

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

TYPICAL UNDERGROUND CONDUIT, TRANSITION

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REVISION DESCRIPTION

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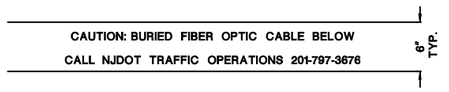
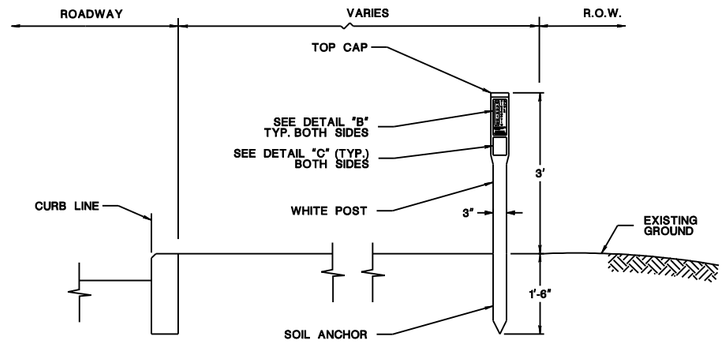


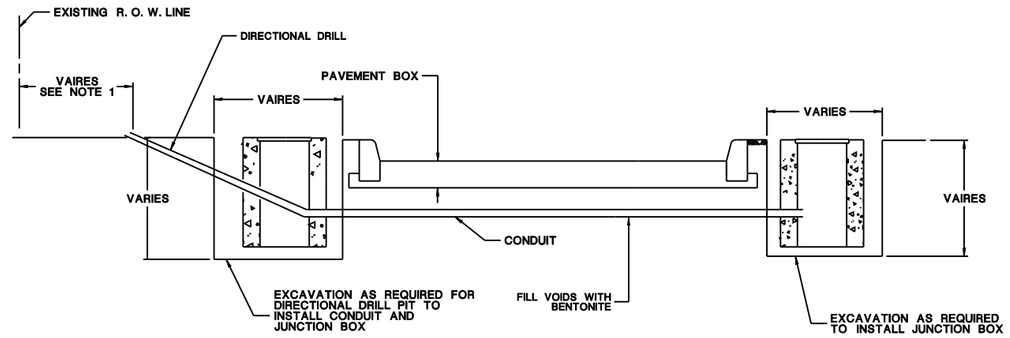
WARNING TAPE

(BLACK LETTERS ON ORANGE BACKGROUND)



DETAIL "A"

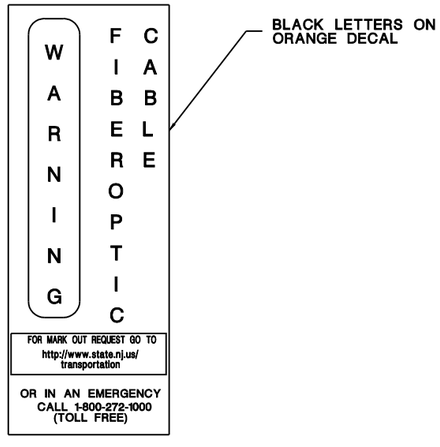
FIBER OPTIC CABLE MARKER
SPACE MARKERS 500' APART



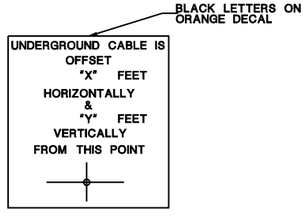
DIRECTIONAL DRILL DETAIL (NO R.O.W. RESTRICTIONS)

NOTE:

1. ENSURE DIRECTIONAL DRILLING MACHINE DOES NOT EXTEND BEYOND THE EXISTING R.O.W. LINE.
2. IF OBSTRUCTIONS OCCUR DURING THE COURSE OF THE DRILLING, OBTAIN PERMISSION FOR EXCAVATIONS TO CLEAR THE OBSTRUCTION.
3. ENSURE BENDS IN CONDUITS DO NOT EXCEED 45° OVER A MINIMUM LENGTH OF 100 FT. TO ENSURE INTEGRITY OF FIBER.
4. PROVIDE WARNING TAPE TO BE ORANGE, 4 MIL. FLEXIBLE POLYETHYLENE FILM AND IS RESISTANT TO ACIDS, BASES, HYDROCARBONS AND WATER.

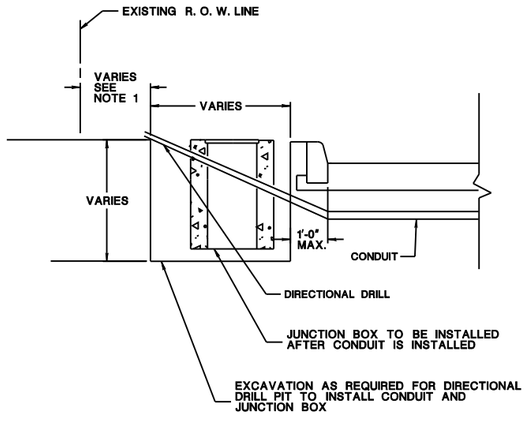


DETAIL "B"
3"x9" WARNING DECAL



DETAIL "C"

3"x9" WARNING DECAL



DIRECTIONAL DRILL (WITH R.O.W. RESTRICTIONS)

ITSD- 701-03

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

DIRECTIONAL DRILL / WARNING TAPE

SCALE:
NOT TO SCALE

FIBER OPTIC WARNING TAPE DECAL AND MARKER

REFERENCE

BDCOTD-03 REVISION DESCRIPTION

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STATE	FEDERAL PROJECT NO.
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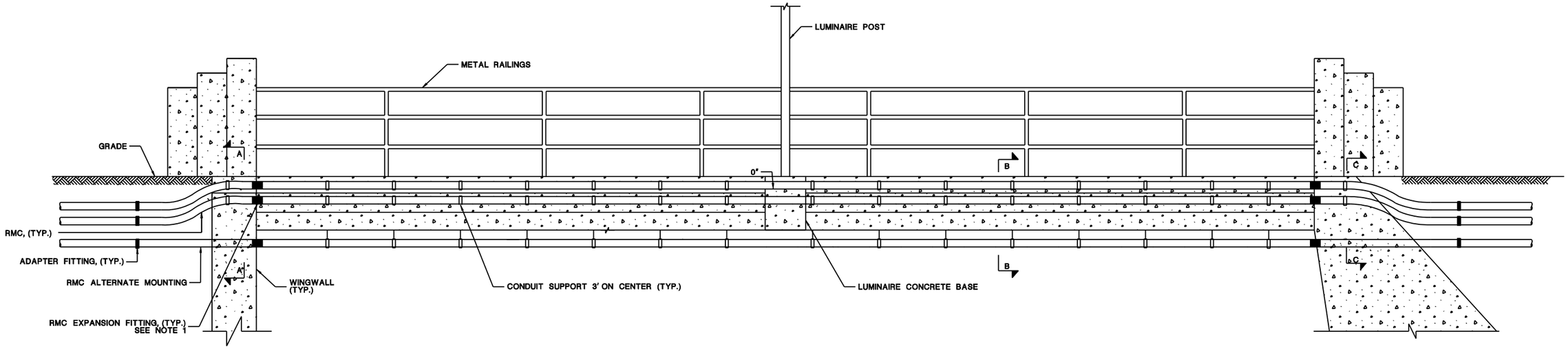
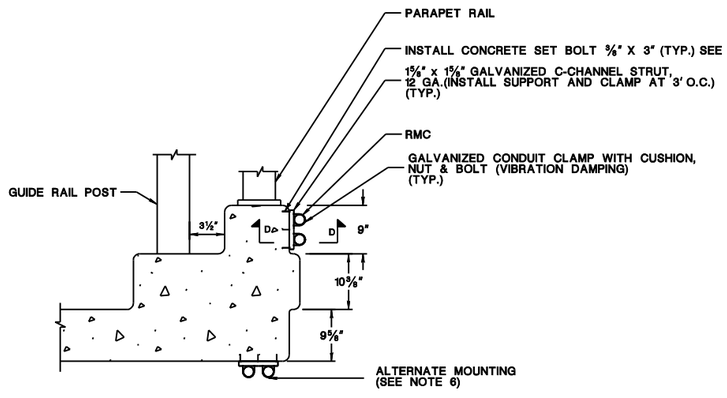
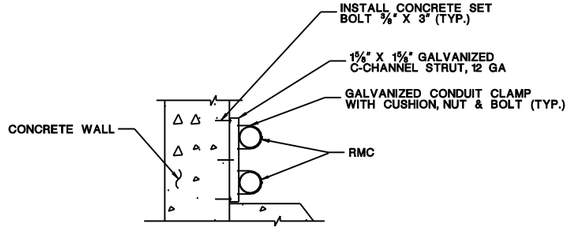


TYPICAL ELEVATION - CONDUIT INSTALLATION ON EXISTING BRIDGE / OVERPASS

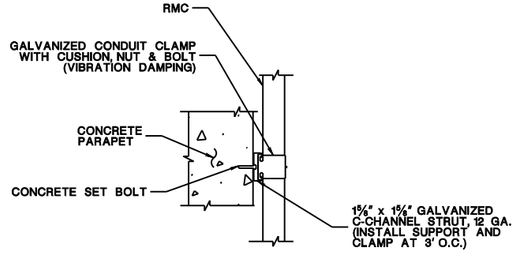
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES:

1. PROVIDE CONDUIT EXPANSION FITTINGS AT EXISTING STRUCTURE EXPANSION JOINTS.
2. ALTERNATE MOUNTING ON UNDERSIDE OF PARAPET MAY BE UTILIZED WHEN IT IS NECESSARY TO CORE DRILL THROUGH WING WALL. SEAL ALL WING WALL PENETRATIONS WITH EPOXY AROUND CONDUIT.
3. SURVEY EACH STRUCTURE AND SUBMIT SHOP DRAWING FOR CONDUIT ATTACHMENT DETAILS ALONG WITH MANUFACTURES RECOMMENDED EXPANSION FITTINGS.
4. IF THERE IS AN EXISTING BRIDGE APPROACH SLAB IN THE SHOULDER AT THE LOCATION OF THE PROPOSED CONDUIT, INSTALL THE CONDUIT BENEATH THE APPROACH SLAB AFTER CORING THROUGH THE BACK WALL. ENSURE THE EXISTING APPROACH SLAB IS NOT DISTURBED.
5. ENSURE THE CONCRETE SET BOLT MATERIAL CONFORMS TO ASTM B-633 AND IS MADE OF ZINC PLATED STEEL. ENSURE THE SET BOLT CHARACTERISTICS CONFORMS TO GSA SPECIFICATION FF S-325, GROUP VII, TYPE 2.
6. UTILIZE ALTERNATE MOUNTING AT LOCATIONS, WHERE MINIMUM CLEARANCE REQUIREMENTS ARE NOT COMPROMISE.

REFERENCE

BDC070-08 REVISION DESCRIPTION

ITSD- 701-04

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

TYPICAL CONDUIT HANGER ATTACHMENTS

SHEET 1 OF 3

SCALE:
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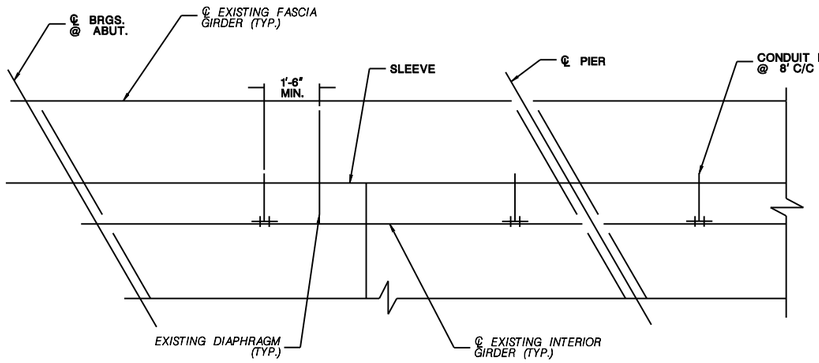
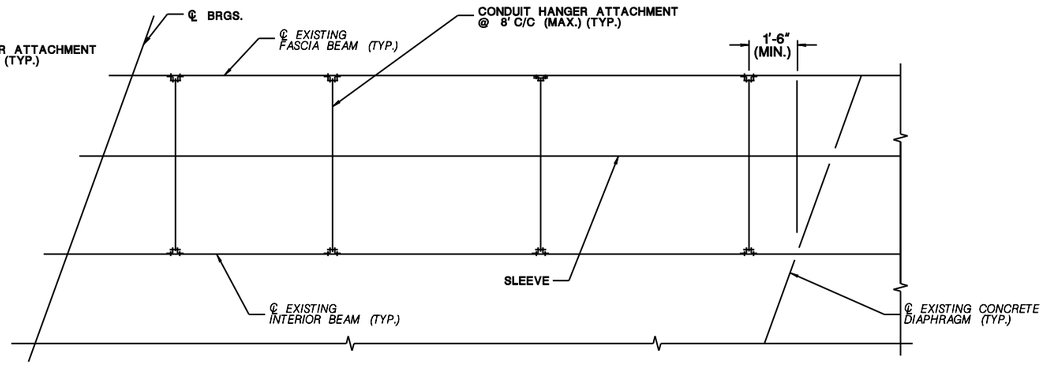


TYPICAL FRAMING PLAN STEEL STRUCTURE

CONDUIT HANGER ATTACHMENT ON EXISTING STRUCTURE

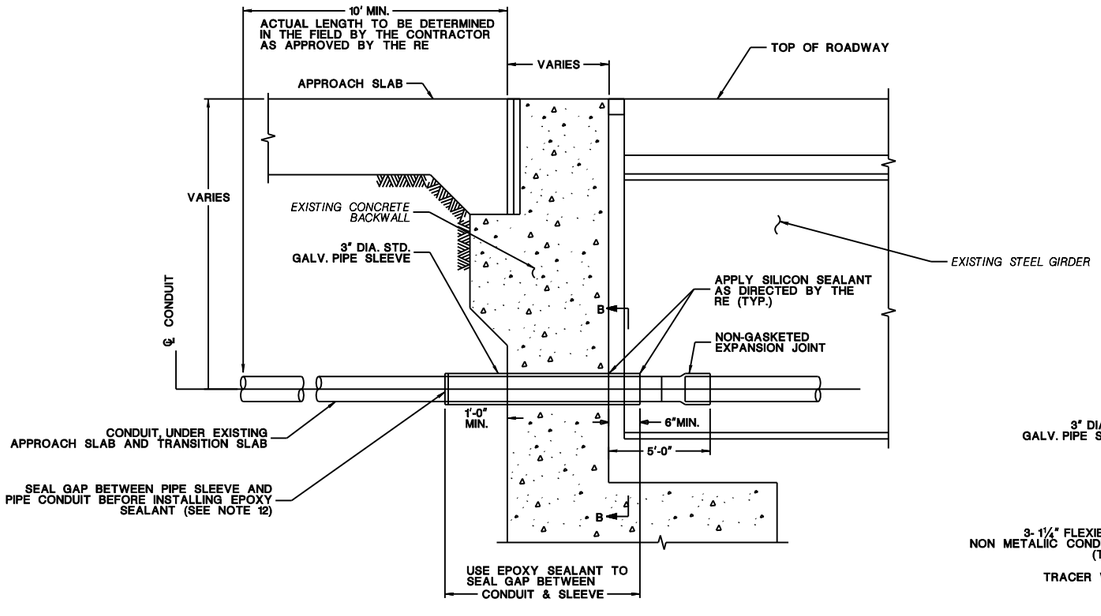


TYPICAL FRAMING PLAN PRESTRESSED CONCRETE STRUCTURE

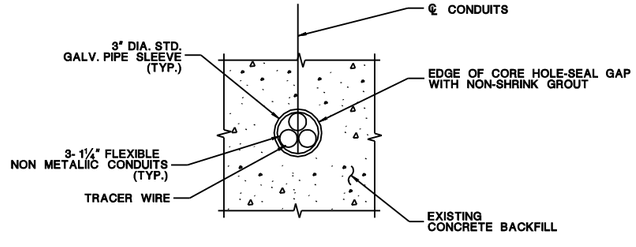
CONDUIT HANGER ATTACHMENT ON EXISTING STRUCTURE

NOTES:

1. SURVEY EACH STRUCTURE AND SUBMIT SHOP DRAWINGS FOR CONDUIT ATTACHMENT DETAILS AND EXPANSION JOINT DETAILS AND LOCATIONS ALONG EACH STRUCTURE TO THE ENGINEER FOR APPROVAL PRIOR TO THE FABRICATION OF THE CONDUIT SUPPORTS.
2. ENSURE ALL STEEL SHAPES CONFORM TO ASTM A36, BOLTS ARE HIGH STRENGTH, HEX HEAD, CONFORMING TO ASTM A325 AND SUPPLIED WITH ONE NUT AND WASHER. HOT-DIP GALVANIZE STEEL PLATES IN ACCORDANCE WITH ASTM A123. THREADED HANGER RODS, NUTS, WASHERS AND SPACER TUBES IN ACCORDANCE WITH ASTM A153.
3. ENSURE HANGER ATTACHMENTS, ARE CONCEALED BY THE FASCIA GIRDER AND THE PROPOSED CONDUIT AND SUPPORTS ARE POSITIONED SUCH THAT THE MINIMUM VERTICAL UNDER CLEARANCE IS NOT LESS THAN THE EXISTING CONDITION.
4. ENSURE STEEL PLATES AND HANGERS ARE CAPABLE OF SUPPORTING 1000 LBS. LOAD AND THE MAXIMUM HANGER SPACING IS 8FT. UNLESS OTHERWISE NOTED OR APPROVED BY THE RE.
5. NO WELDING IS PERMITTED.
6. PRIOR TO BOLTING PLATES OR ANGLES TO THE EXISTING GIRDER WEB, ENSURE THE CONNECTING AREA OF THE WEB IS THOROUGHLY CLEANED AND SPOT PAINTED AS PER STRUCTURAL REQUIREMENTS.
7. ENSURE CONDUIT LENGTHS ARE SELECTED SO THAT COUPLINGS DO NOT COINCIDE WITH HANGER LOCATIONS.
8. PROVIDE CONDUIT EXPANSION JOINTS NEAR EACH ABUTMENT AS SHOWN AND AT ALL PIER AND HINGE EXPANSION JOINTS.
9. PROVIDE A MINIMUM OF TWO EXPANSION JOINTS AT ALL BRIDGES WITH TYPES 1,2 AND 3 ATTACHMENTS. EXPANSION JOINT SPACING SHALL NOT EXCEED MANUFACTURER RECOMMENDATIONS.
10. ENSURE THE FINISH COAT PAINT COLOR MATCHES COLOR AT THE EXISTING STRUCTURE.
11. IF THERE IS AN EXISTING BRIDGE APPROACH SLAB AND/OR TRANSITION SLAB IN THE SHOULDER AT THE LOCATION OF THE PROPOSED CONDUIT, INSTALL THE CONDUIT BENEATH THE APPROACH SLAB AND/OR TRANSITION SLAB AFTER CORING THROUGH THE ABUTMENT BACKWALL. ENSURE THE EXISTING APPROACH SLAB AND/OR TRANSITION SLAB IS NOT DISTURBED.
12. SUBMIT DETAIL OF SEAL BETWEEN PIPE SLEEVE AND CONDUIT TO THE RE FOR APPROVAL.



SECTION THROUGH EXISTING ABUTMENT BACKWALL



SECTION B-B

ITSD- 701-05

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

TYPICAL CONDUIT HANGER ATTACHMENTS

SHEET 2 OF 3

SCALE:
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REFERENCE

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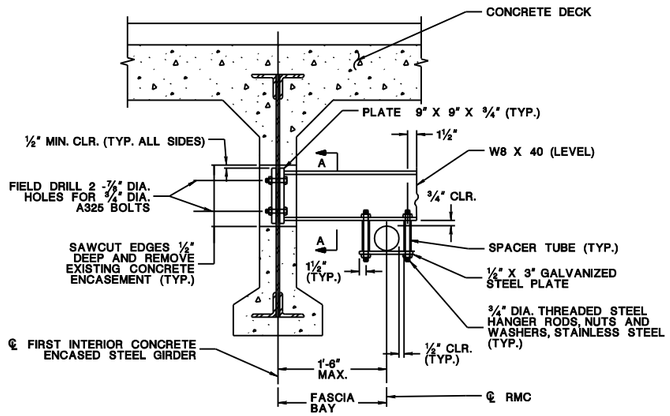
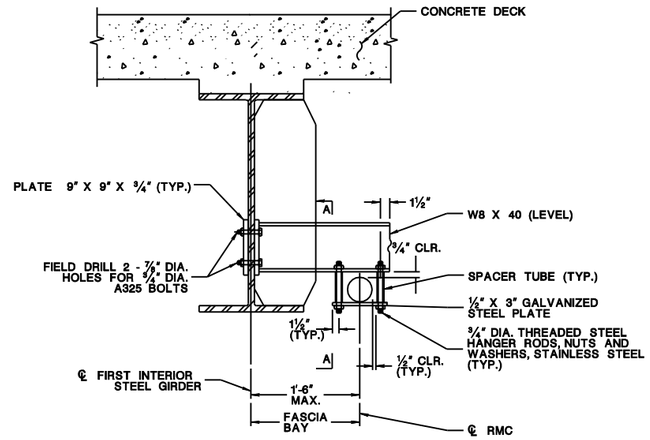
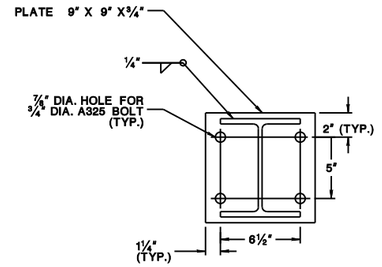


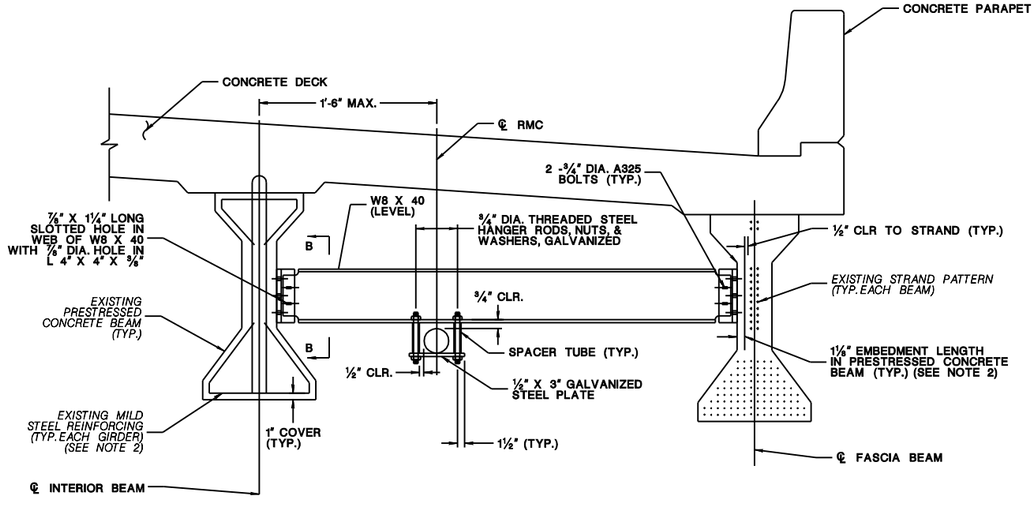
ATTACHMENT TO CONCRETE ENCASED STEEL GIRDER



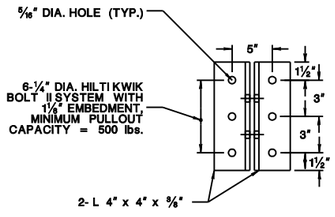
ATTACHMENT TO STEEL GIRDER



SECTION A-A



ATTACHMENT TO PRESTRESSED CONCRETE BEAM



SECTION B-B

NOTES:

1. POSITION CONDUIT, HANGER RODS AND PLATES SO THAT ALL PORTIONS REMAIN ABOVE BOTTOM OF LOWER GIRDER FLANGE ALONG ENTIRE LENGTH OF BRIDGE.
2. PRIOR TO CORING INTO BEAMS, FIELD VERIFY THE EXACT LOCATION OF THE REINFORCEMENT AND PRESTRESSING STRANDS WITH A TACHOMETER AND EXERCISE EXTREME CAUTION DURING DRILLING AND INSTALLATION OF FASTENERS AT PRESTRESSED CONCRETE BEAMS, PARTICULARLY WITH RESPECT TO THE DEPTH OF INSTALLATION.

TYPICAL EXPOSED CONDUIT ATTACHMENTS

ITSD- 701-06

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

TYPICAL CONDUIT HANGER ATTACHMENTS

SHEET 3 OF 3

SCALE:
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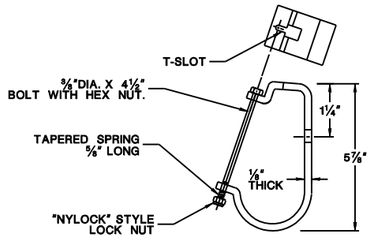
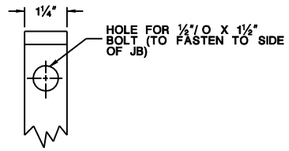
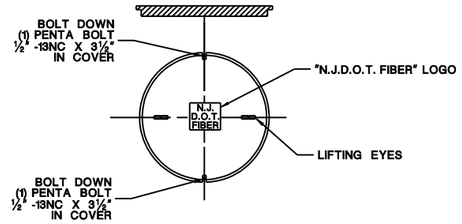


SIDE VIEW

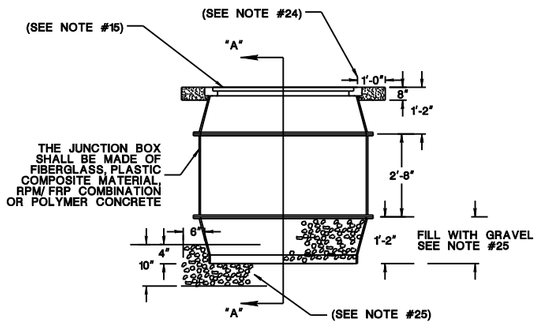


PARTIAL TOP VIEW

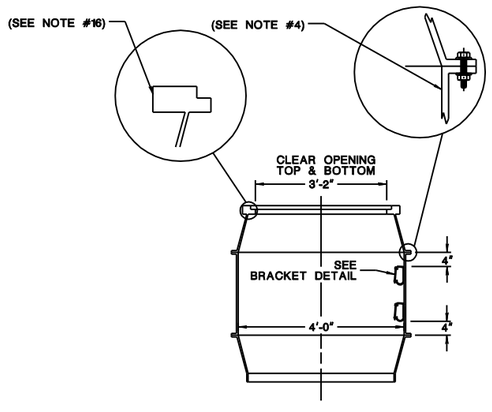


POLYMER CONCRETE COVER

COILING BRACKETS (STAINLESS STEEL)
6 EACH FOR JUNCTION BOX



FRONT



SECTION "A-A"

JUNCTION BOX ITS TYPE A

DO NOT INSTALL THIS BOX IN THE TRAVEL WAY AND SHOULDERS.

NOTES:

1. ENSURE ALL HARDWARE IS STAINLESS STEEL.
2. MOUNT THREE PAIRS OF COILING BRACKETS AT 120 DEGREES APART.
3. FASTEN EACH COILING BRACKET WITH A½" DIA. X 1½" BOLT AND (1) HEX NUT, (2) FLAT WASHERS.
4. FACTORY ASSEMBLE THE JUNCTION BOX AND USE SILICON CAULKING FOR ALL FLANGE JOINTS.
5. AS A MINIMUM, DESIGN THE BOX ASSEMBLY FOR TIER 22 LOADING AS SPECIFIED IN ANSI / SCTE 77 2002 'SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY".
6. PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY AND INCLUDE TEST RESULTS SHOWING THAT THE JUNCTION BOX AND COVER DESIGN MEET THE SPECIFIED LOADING REQUIREMENT.
7. ENSURE THE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5.
8. PERMANENTLY MOLD IDENTIFICATION OF THE COVER ON THE TOP SURFACE WITH "N.J.D.O.T. FIBER".
9. ENSURE THE COLOR OF THE COVER AND THE PART OF THE BOX THAT IS VISIBLE WHEN IT IS INSTALLED IS "CONCRETE GREY".
10. DESIGN THE JUNCTION BOX WITH A MINIMUM SAFETY FACTOR OF 2.0 FOR WHEEL LOADS AND 2.0 FOR SOIL LOADS, SO THAT COVER DEFLECTION AT DESIGN LOADS DOES NOT EXCEED 0.5 INCHES OF NET COVER DEFLECTION WIDTH AND SIDE WALL DEFLECTION DOES NOT EXCEED 0.25 INCHES PER FOOT OF COVER WIDTH AND SIDE WALL DEFLECTION. PERFORM TESTING ACCORDING TO CURRENT WESTERN UNDERGROUND COMMITTEE GUIDE NO. 3.6 NON-CONCRETE ENCLOSURES.
11. ENSURE ANY POINT ON THE COVER OR BOX WITHSTANDS A 70 FT. LBS. IMPACT ADMINISTERED WITH A C-TUP ACCORDING TO ASTM D-2444.
12. ENSURE THE MATERIALS UTILIZED IN THE MANUFACTURE OF JUNCTION BOXES AND COVERS ARE RESISTANT TO CHEMICALS COMMONLY FOUND IN THE SOIL OR IN THE OPERATING ENVIRONMENT, AND THEY ARE ALSO RESISTANT TO SUNLIGHT, UV AND ANY CLIMATIC CONDITIONS IN ACCORDANCE WITH ASTM G53, -40°F TO +140°F. DETERMINE CHEMICAL RESISTANCE PROPERTIES USING ASTM D543 AND ASTM D570 FOR WATER ABSORPTION.
13. ENSURE THE MATERIALS ARE RESISTANT TO DIRECT FLAME AND HEAT IN ACCORDANCE WITH ASTM D635.
14. SET THE TOP OF THE POLYMER CONCRETE COVER FLUSH WITH THE TOP OF THE JUNCTION BOX AT GRADE.
15. PROVIDE A CONCRETE LOCK-IN FEATURE AROUND THE TOP OF THE BOX.
16. LIMIT THE GAP FROM THE EDGE OF THE COVER TO THE INSIDE EDGE OF THE BOX TO A MAXIMUM OF ⅛" +⅛".
17. AS AN ALTERNATE, A SINGLE SECTION OR TWO SECTION JUNCTION BOX MAY BE SUPPLIED.
18. VIBRATE AND COMPACT SOIL THOROUGHLY AROUND ENTIRE JB UP TO GRADE PER SECTION 203.03.02D.
19. TERMINATE ALL NON-METALLIC CONDUITS WITH BELL END CONSTRUCTION IN JUNCTION BOX. SET THE BELL END FLUSH WITH THE INSIDE WALL OF THE JUNCTION BOX.
20. ENSURE CONDUITS ENTER INTO THE JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE RE. MAINTAIN A 2" SEPARATION BETWEEN ADJACENT WALLS, CONDUITS AND CABLE RACK LOCATIONS.
21. INSTALL A CONCRETE COLLAR AROUND THE TOP OF THE JUNCTION BOX OF CLASS "C" CONCRETE 4" THICK.
22. FIELD DRILL ALL CONDUIT ENTRANCES INTO THE JUNCTION BOX WITH A HOLE SAW, OR PUNCH OUT USING A HYDRAULIC HOLE PUNCH, UNLESS OTHERWISE DIRECTED BY THE RE.
23. SAND ALL CONDUIT OPENINGS AFTER THE CONDUITS ARE INSTALLED AND SEAL ALL CONDUIT ENTRANCES WITH AN EPOXY OR SILICON CAULK.
24. PROVIDE PROTECTIVE COVER WITH THE BOLT ASSEMBLY.
25. COMPACTED ¾" GRAVEL OR BROKEN STONE REQUIRED.

ITSD- 704-07

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

JUNCTION BOX ITS, TYPE A

SCALE:
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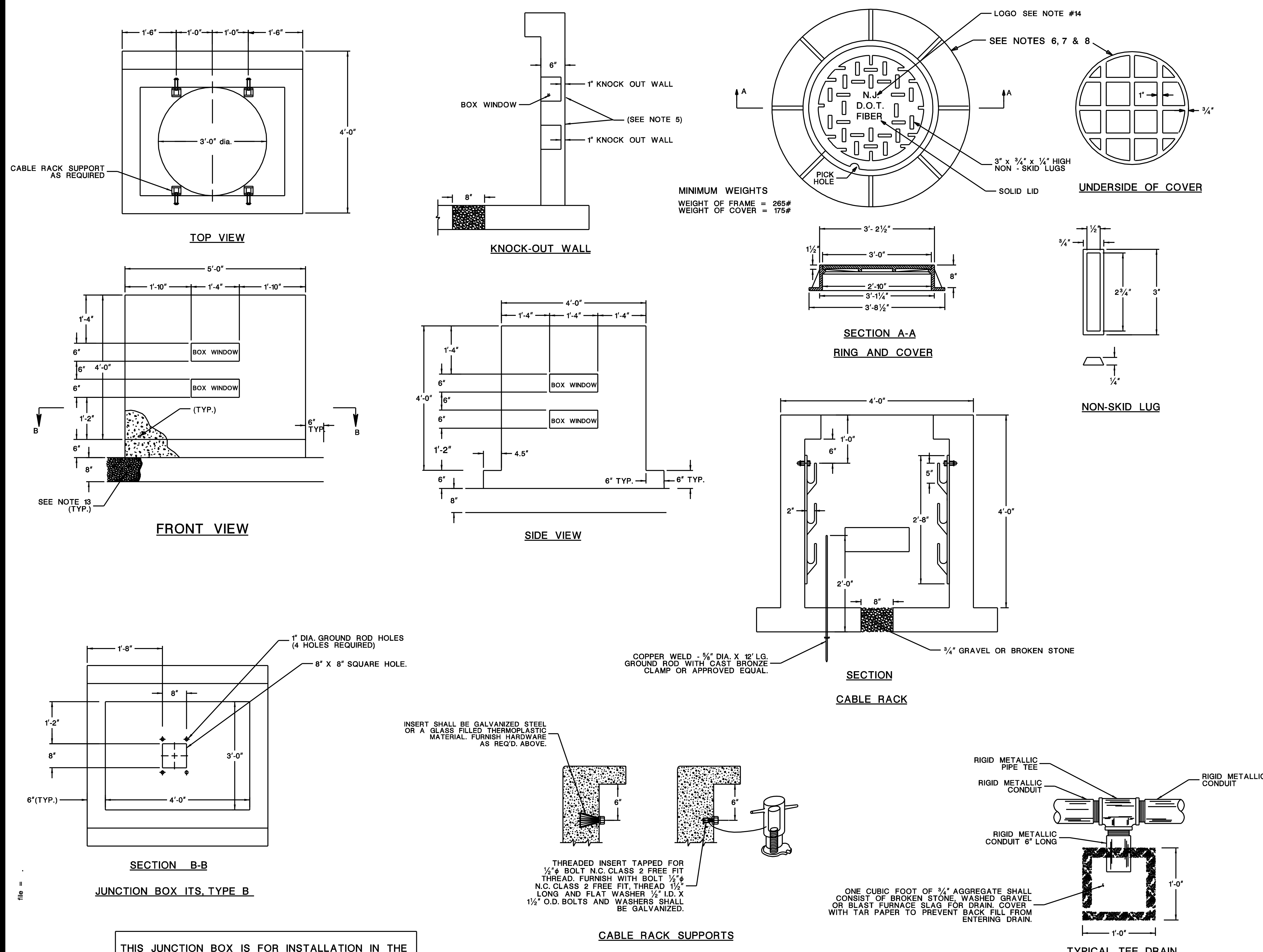
BDC07D-03
REVISION DESCRIPTION



THIS JUNCTION BOX IS FOR INSTALLATION IN THE TRAVELWAY AND SHOULDER.

STATE	FEDERAL PROJECT NO.
N.J.	•

NOTES:

1. ENSURE THE ROADWAY JUNCTION BOX COMPLIES WITH AASHTO HS20-44 OR TANDEM 24 KIP AXLES AT 4 FOOT CENTERS, WHICHEVER GOVERNS, FOR LIVE LOADING.
2. PROVIDE SUFFICIENT STEEL REINFORCEMENT PER ASTM-A615 (GRADE 60) (FS) = 24,000 psi. TO MEET THE LOADING REQUIREMENTS.
3. CONCRETE DESIGN STRESSES: CLASSA
   a. SPECIFIED DESIGN COMPRESSIVE STRENGTH (F'C)............4,000psi
   b. CLASS DESIGN STRENGTH ....4,600psi (IN ACCORDANCE WITH SECTION 914 OF THE SPECIFICATIONS)
4. COVER THE STEEL REINFORCEMENT WITH A MINIMUM OF 1" OF CONCRETE.
5. AFTER THE INSTALLATION OF CONDUIT, COMPLETELY BRICKED AND GROUTED ALL OPEN RECESSES.
6. ENSURE THE RING AND COVER MADE OF GRAY IRON, AND COMPLY WITH AASHTO M105, ASTM A-48, CLASS 30B, WITH A MIN. TENSILE STRENGTH OF 30,000 psi.
7. SET THE TOP OF THE RING AND COVER AT ROADWAY GRADE.
8. TERMINATE ALL NON-METALLIC CONDUITS WITH BELL END CONSTRUCTION IN JUNCTION BOX AND SET FLUSH WITH THE INSIDE WALL.
9. ENSURE CONDUITS ENTER INTO THE JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE RE. MAINTAIN A 2" SEPARATION BETWEEN ADJACENT WALLS, CONDUITS AND CABLE RACKS.
10. PROVIDE 4 CABLE RACKS AS INDICATED.
11. PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY FOR DESIGN CALCULATIONS SHOWING THE JUNCTION BOX MEETS ALL LOADING REQUIREMENTS.

ITSD- 704-08

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS
GENERAL SYSTEMS

JUNCTION BOX ITS, TYPE B

SCALE:
NOT TO SCALE

REFERENCE

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REVISION DESCRIPTION

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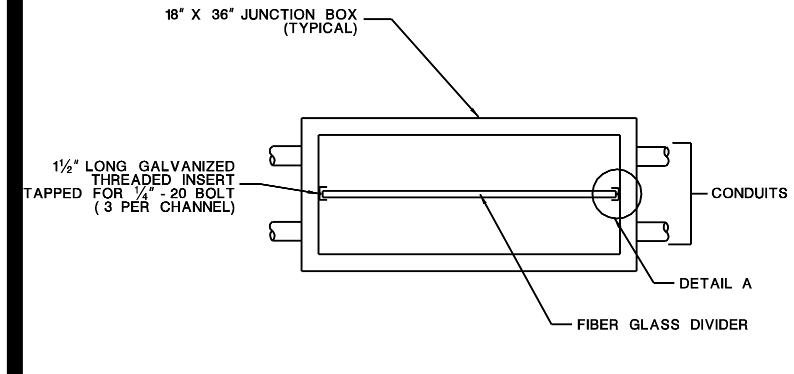
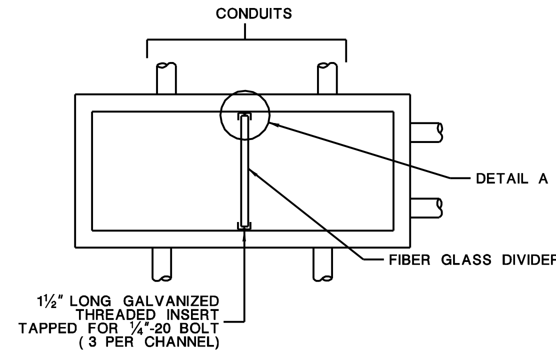
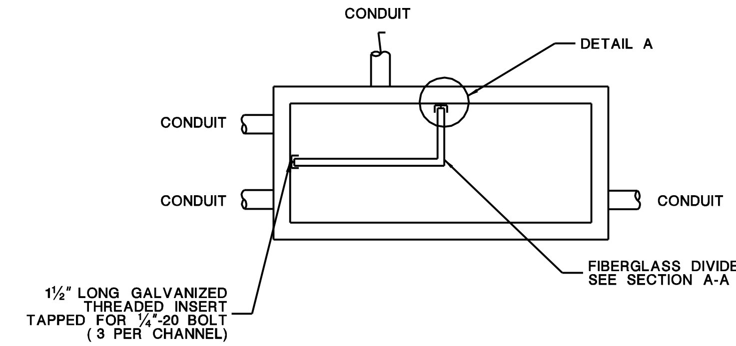


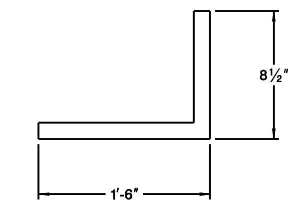
JUNCTION BOX WITH DIVIDER
(LONGITUDINAL INSTALLATION)



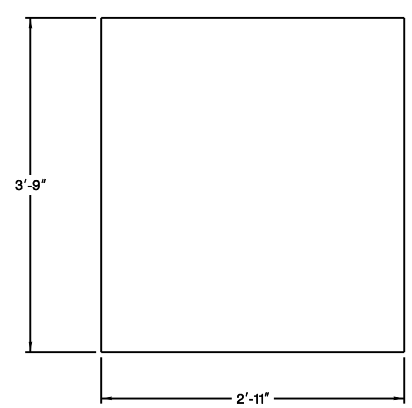
JUNCTION BOX WITH DIVIDER
(TRAVERSE INSTALLATION)



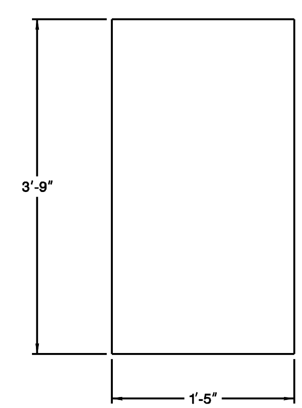
JUNCTION BOX WITH DIVIDER
(RIGHT ANGLE INSTALLATION)



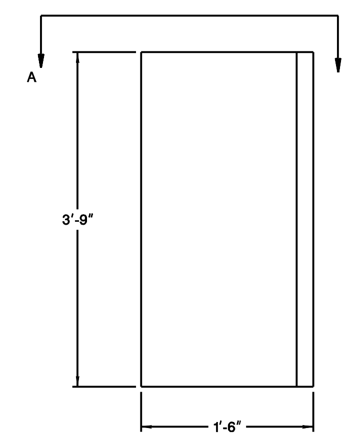
SECTION A-A



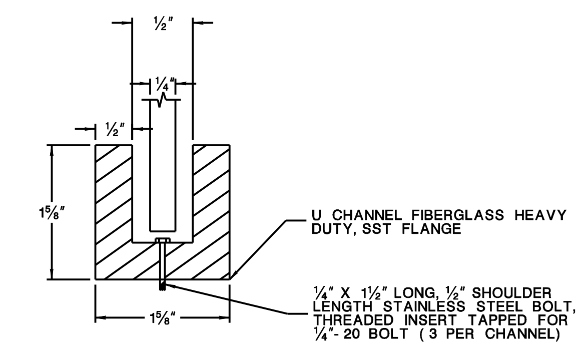
LONGITUDINAL DIVIDER



TRAVERSE DIVIDER



RIGHT ANGLE DIVIDER



DETAIL A

FIBERGLASS DIVIDER

ITSD- 704-09

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

JUNCTION BOX DIVIDER

SCALE:
NOT TO SCALE

REFERENCE

BDC07D-03
REVISION DESCRIPTION

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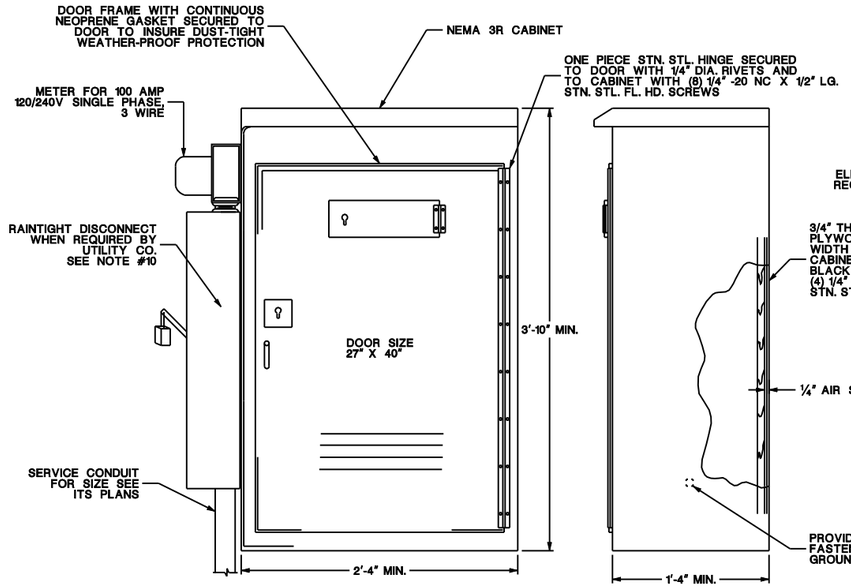
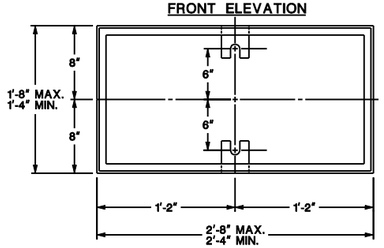
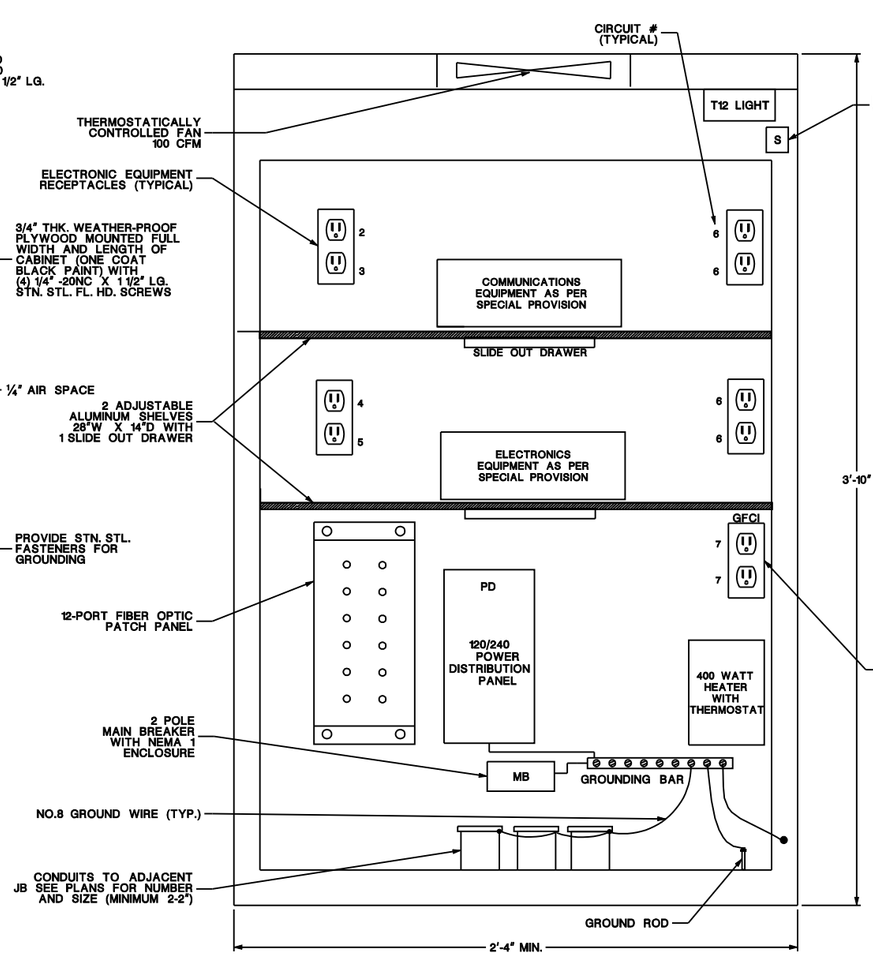


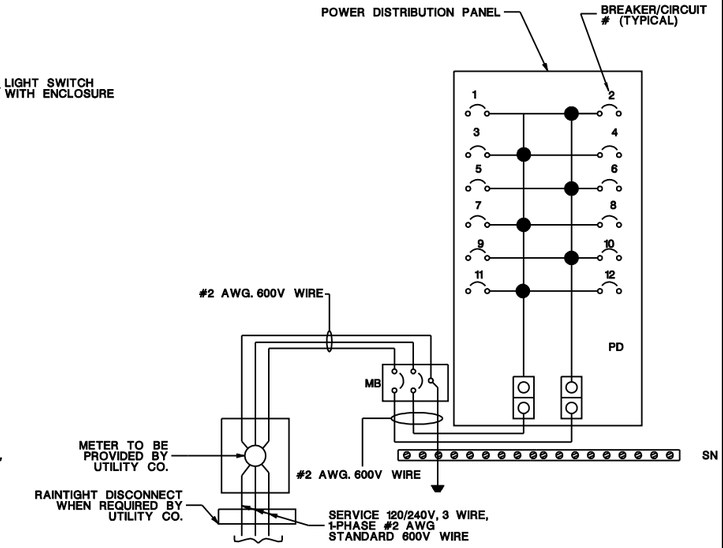


BOTTOM VIEW & ANCHOR BOLT LAYOUT

CABINET TYPE "M" - FABRICATED



CABINET EQUIPMENT LAYOUT



POWER DISTRIBUTION DIAGRAM

BREAKERS #	BREAKER RATING FUNCTION	TRIP RATING (AMPS)
MB	MAIN BREAKER 60 AMP	60
1	RECEPTACLE INSIDE CAMERA POLE BASE	15
2	ELECTRONIC EQUIPMENT RECEPTACLE	15
3	ELECTRONIC EQUIPMENT RECEPTACLE	15
4	ELECTRONIC EQUIPMENT RECEPTACLE	15
5	ELECTRONIC EQUIPMENT RECEPTACLE	15
6	ELECTRONIC EQUIPMENT RECEPTACLE	15
7	CONVENIENCE RECEPTACLE (GFCI)	15
8	FAN	
9	HEATER	
10	LIGHT	
11	SPARE	15
12	SPARE	15

NOTES:

1. ENSURE CABINET AND CABINET DOOR IS SHEET ALUMINUM ⅛" THICK, 5052-H32 ALLOY, UNPAINTED.
2. SUPPLY WITH EACH CABINET (2) ANCHOR BOLTS ¾"- 10NC X 15" LG. STL. WITH GALVANIZED 3" COUPLING (2) STAINLESS STEEL 1½" O.D. X ¼" THK. FLAT WASHERS AND (2)¾" - 10NC X 3" LG. STAINLESS STEEL CAP SCR.
3. SECURE CABINET DOOR WITH A SUB-TREASURY LOCK NO. 03575 AND KEYPAD ALIKE FOR KEY NO. 5 AVAILABLE FROM THE AMERICAN HARDWARE CO. NEW BRITAIN, CONN., OR A TUMBLER LOCK NO. 15481 ARS AND KEYPAD ALIKE FOR NO. 2 AVAILABLE FROM CORBIN LOCK CO. NEW BRITAIN, CONN.
4. SECURE CABINET LOCK TO THE DOOR WITH #10 - 24 X 1 ⅛" ROUND HEAD (STN. STL.) MACHINE SCREWS.
5. 120V EXPOSED WIRING IS NOT PERMITTED. ENCASE WIRING TO ENCLOSURES AND OUTLETS IN LIQUID TIGHT FLEXIBLE CONDUIT AND FITTINGS INSIDE THE CABINET.
6. ENSURE ALL EQUIPMENT IS UL & NEMA LISTED FOR OUTDOOR INSTALLATION INSIDE NEMA 3R CABINET.
7. LABEL ALL ELECTRICAL RECEPTACLES EXCEPT GFCI AS "ELECTRONIC EQUIPMENT ONLY". LABEL GFCI RECEPTACLE SHALL BE LABELED AS "CONVENIENCE RECEPTACLE".
8. FOR BREAKER RATINGS, SEE TABLE A.
9. PROVIDE SURGE SUPPRESSION TO THE DATA LINES.
10. METER, RAINTIGHT DISCONNECT SWITCH AND SERVICE CONDUIT ARE NOT REQUIRED IF ELECTRIC SERVICE IS CONNECTED TO ANOTHER LOAD CENTER AND NOT TO UTILITY COMPANY POWER SOURCE.

ITSD- 704-10

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

CONTROLLER ITS

SCALE:
NOT TO SCALE

REFERENCE

REVISION DESCRIPTION

BDC070-08

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STATE	FEDERAL PROJECT NO.
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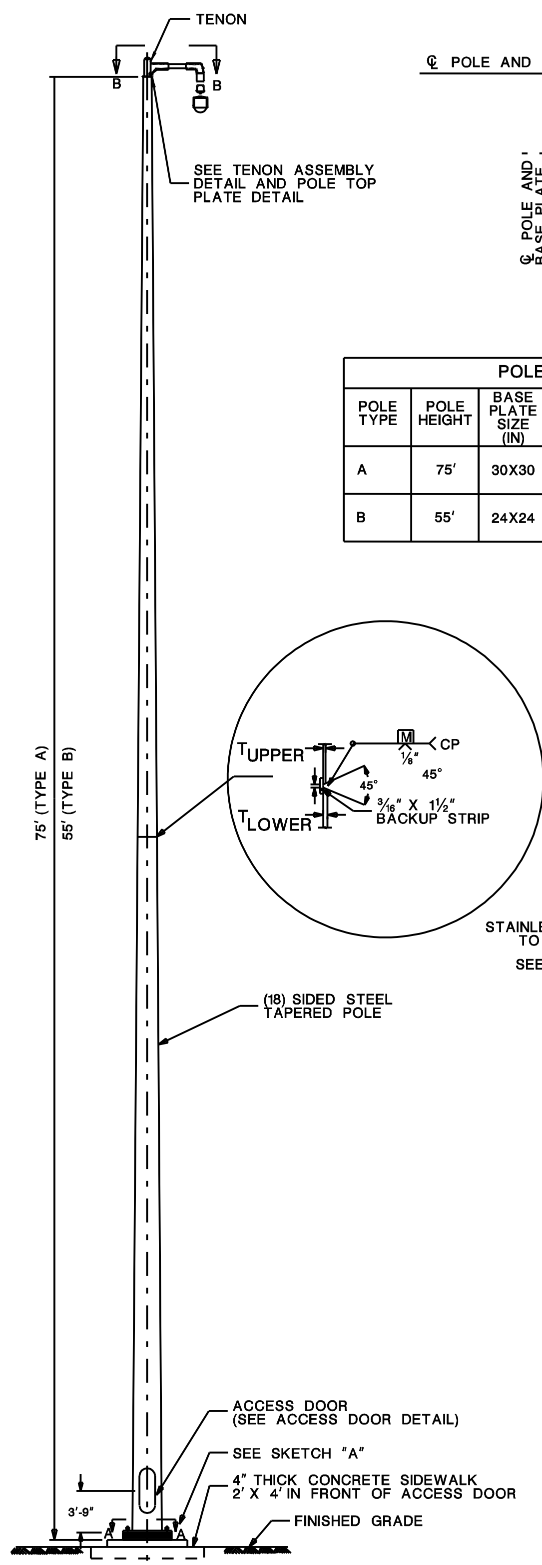
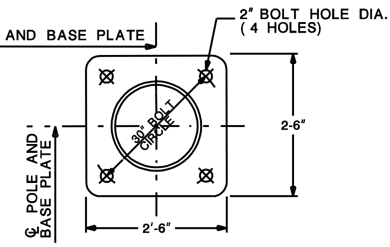


ELEVATION

CAMERA STANDARD TYPE A, B

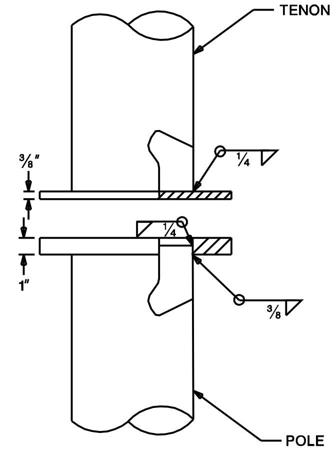
(SEE NOTES 3 & 6)

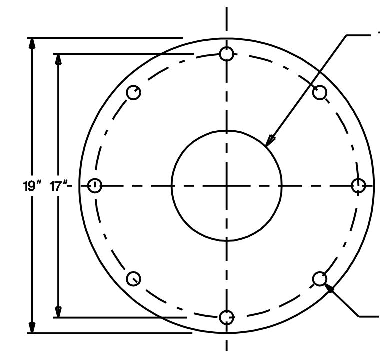


POLE BASE

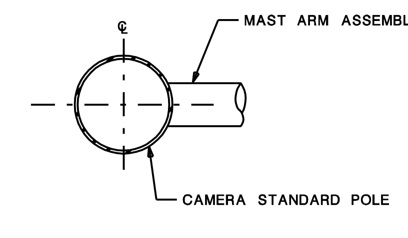
SECTION A-A

POLE BASE					
POLE TYPE	POLE HEIGHT	BASE PLATE SIZE (IN)	BOLT CIRCLE DIAMETER (IN)	BASE PLATE THICKNESS (IN)	BOLT HOLE DIAMETER (IN)
A	75'	30X30	30	2	2
B	55'	24X24	24	2	2

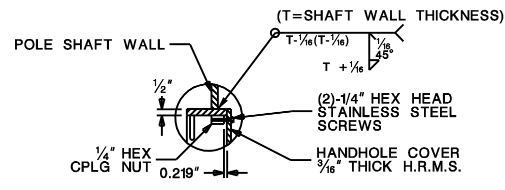




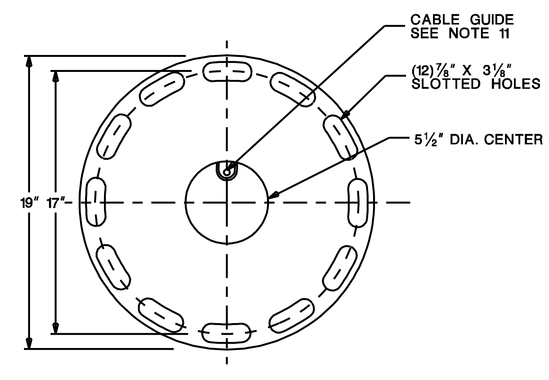
TOP PLATE



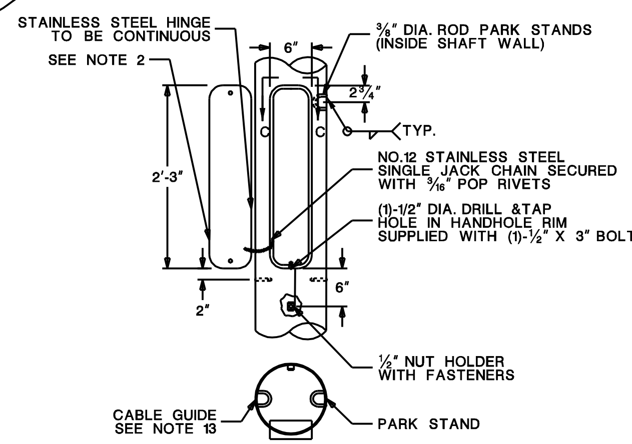
SECTION B-B



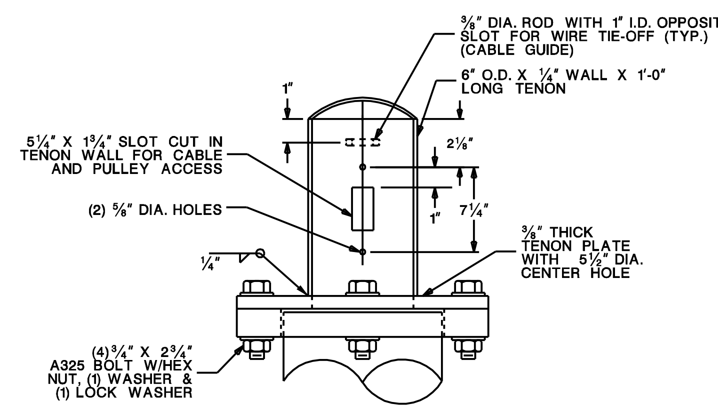
SECTION C-C



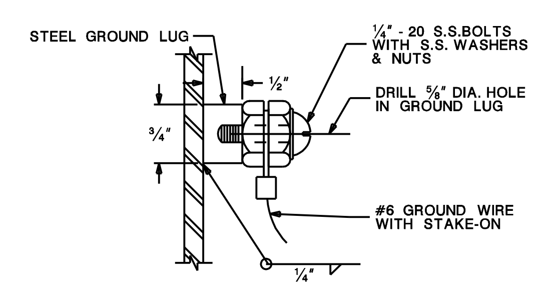
TENON PLATE



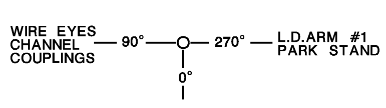
ACCESS DOOR DETAIL



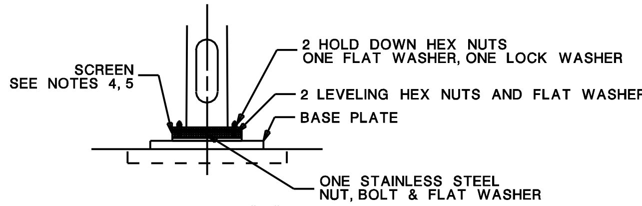
TENON ASSEMBLY DETAIL



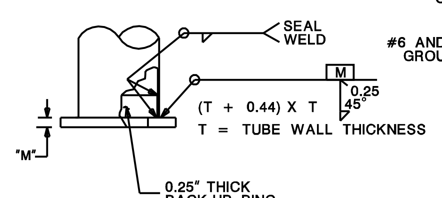
GROUND LUG DETAIL



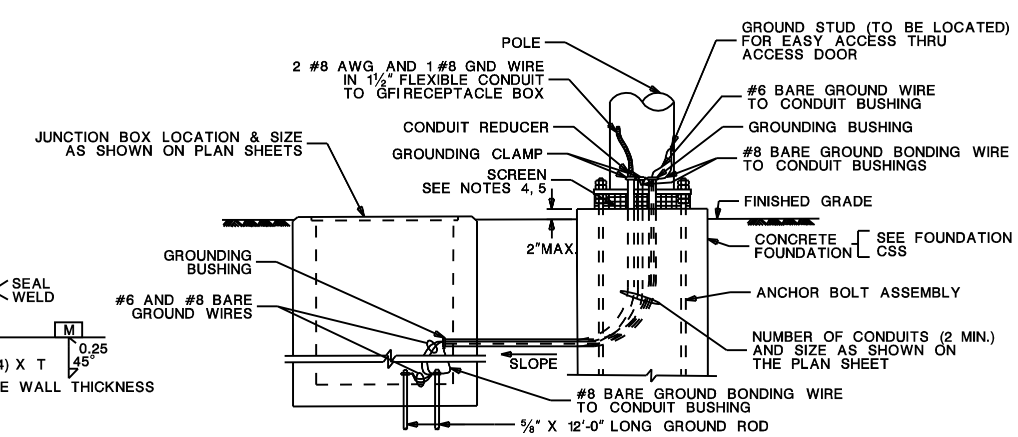
ORIENTATION VIEW



SKETCH "A"



BASE PLATE



GROUNDING DETAIL

DESIGN SPECIFICATIONS:

UTILIZE 2001 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH THE LATEST INTERIM.

DESIGN WIND VELOCITY	80 M.P.H. (APPENDIX C)
DESIGN ICE LOAD	3 P.S.F.
FATIGUE CATEGORY	2

ENSURE ALL LOADS APPLIED TO ALL MEMBERS HAVE BEEN TAKEN INTO ACCOUNT FOR STRENGTH DESIGN, AND ALL WELDED STRUCTURAL DETAILS HAVE BEEN ANALYZED AGAINST FATIGUE.

ENSURE MAXIMUM HORIZONTAL DEFLECTION AT THE TOP OF THE POLE COMPLETELY ASSEMBLED WITH CCTV CAMERA AND ALL FIXTURES ATTACHED DOES NOT EXCEED 4 INCHES FROM THE CENTER LINE DUE TO A 40 MPH FASTEST-MILE WIND SPEED (APPENDIX C WIND PRESSURE FORMULA).

SUBMIT DETAIL PLANS AND DESIGN CALCULATIONS OF CAMERA STANDARD POLES, CAMERA WEIGHT AND PROJECTION AREA AND ANCHOR BOLT ASSEMBLY FOR APPROVAL. ENSURE THE DESIGN CALCULATIONS AND WORKING DRAWINGS ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY.

MATERIALS:

TAPER THE STEEL POLE. ENSURE THE POLE AND TENON MATERIAL CONFORMS TO ASTM SPECIFICATIONS A595, GRADE A (MIN. YIELD POINT 55 KSI) OR GRADE B (MIN. YIELD POINT 60 KSI), AND ALL OTHER STEEL CONFORMS TO ASTM SPECIFICATION A709 (AASTHO M270) GRADE 36 OR GRADE 50. ENSURE ALL STEEL PLATES MEET THE REQUIREMENTS FOR NOTCH TOUGHNESS (CHARPY TESTING) ZONE 2. GALVANIZE THE ENTIRE UNIT OF POLE AND TENON PER ASTM A123 AFTER FABRICATION.

ENSURE ANCHOR BOLT MATERIALS CONFORM TO ASTM F1554, GRADE 36 OR 55. GALVANIZE THE ANCHOR BOLTS PER ASTM A153, CLASS C AFTER THREADING FOR THE FULL LENGTH OF THE BOLT.

PROVIDE STAINLESS STEEL FASTENERS (INCLUDING BOLTS, NUTS AND WASHERS) CONFORMING TO CURRENT ASTM A320, GRADE B8, CLASS 2 (ANSI TYPE 304) AND STRAIN HARDENED. ENSURE ALL NUTS LOCK TYPE WITH SEALING ALL THREADS.

ALL CONCRETE SHALL BE "CLASS B" AS DEFINED IN THE NJDOT STANDARD SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED BY THE DESIGNER.

NOTES:

1. ENSURE STEEL POLE CONSISTS OF A MAXIMUM OF TWO INDIVIDUAL STEEL SECTIONS WITH EACH SECTION A MINIMUM OF 35 FT. LONG AND CONTAIN ONLY ONE LONGITUDINAL SEAM WELD. SLIP JOINTS AND LAMINATED TUBES ARE NOT PERMITTED.
2. PROVIDE NEOPRENE DOOR GASKET.
3. INSTALL CAMERA STANDARD IN THE AREA BEYOND RECOVERY DISTANCE OR BEHIND THE GUIDE RAIL.
4. PROVIDE A GALVANIZED SCREEN, DOUBLE RAP AROUND THE BASE OF POLE.
5. ENSURE THE GALVANIZED SCREEN IS NO MORE THAN 1/2" OPENINGS AND IS HELD TOGETHER WITH STAINLESS STEEL NUTS, BOLTS AND FLAT WASHERS.
6. ENSURE ALL WELDING IS TO BE DONE WITH E-80T-1 WIRE.
7. DO NOT GROUT UNDER THE POLE .
8. PROVIDE TWO (2) LEVELING HEX NUTS, TWO (2) HOLD DOWN HEX NUTS AND ONE (1) FLAT WASHER PER ANCHOR BOLT. DETERMINE THE PROPER LENGTH OF THE ANCHOR BOLT FOR POSITIVE SEAT OF THE HEAD FRAME ASSEMBLY.
9. ENSURE WELDING CONFORMS TO THE ANSI/AWS D1.1 STRUCTURAL WELDING CODE-STEEL, WITH NJDOT AMENDMENTS IN NJDOT STANDARD SPECIFICATIONS, WELDING INSPECTION AND FULL PENETRATION WELD NONDESTRUCTIVE TESTING CONFORM TO AWS D1.1.
10. LOCATE TOP, CENTER AND BOTTOM ELECTRICAL CABLE GUIDES WITHIN THE POLE AND ALIGN WITH EACH OTHER. POSITION THE BOTTOM CABLE GUIDE 2 INCHES BELOW THE HANDHOLE AND THE TOP CABLE GUIDE 1 INCH DIRECTLY BELOW THE TOP OF TENON. POSITION TWO PARKING STANDS A MAXIMUM OF 2 3/4" INCHES BELOW THE TOP OF THE HANDHOLE AND LOCATED AT 90° AND 270° FROM THE HANDHOLE. ENSURE EACH CABLE GUIDE IS 3/8" WIRE EYE BOLT HAVING 1" INTERNAL DIA. FOR WIRE TIE OFF.
11. REFER TO MANUFACTURER'S SPECIFICATIONS FOR CCTV CAMERA WEIGHT AND PROJECTION AREA.

ITSD- 704-11

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCESYSTEMS

CAMERA STANDARD TYPE A AND B

SCALE:
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BDC 07D-03

STATE	FEDERAL PROJECT NO.
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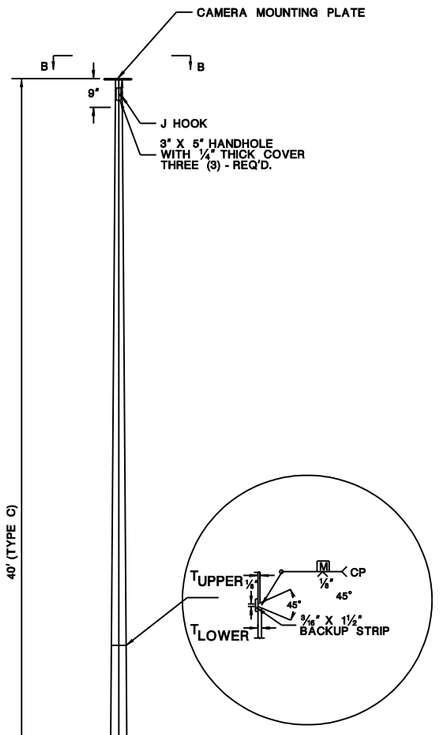
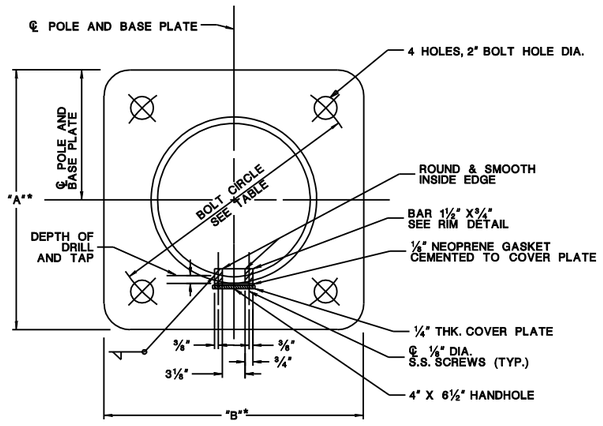


CAMERA STANDARD TYPE C

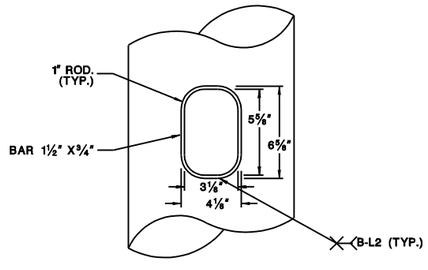


POLE BASE

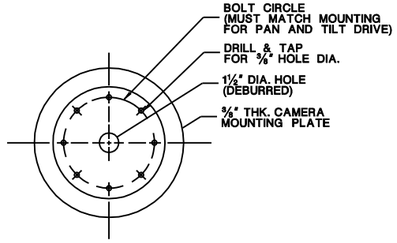
SECTION A-A

* FOR DIMENSIONS "A" AND "B", SEE POLE BASE TABLE.

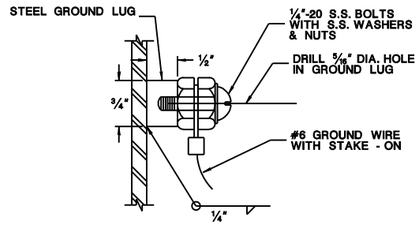
POLE BASE					
POLE TYPE	POLE HEIGHT	BASE PLATE SIZE(AXB) (IN)	BOLT CIRCLE DIAMETER (IN)	BASE PLATE THICKNESS (IN)	BOLT HOLE DIAMETER (IN)
C	40'	20X20	17	2	2



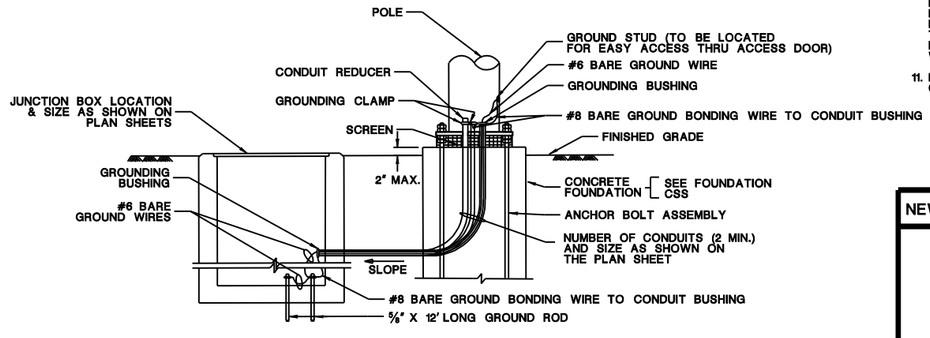
HAND HOLE DETAIL



SECTION B-B



GROUND LUG DETAIL



GROUNDING DETAIL

DESIGN SPECIFICATIONS:

UTILIZE 2001 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH THE LATEST INTERIM.

DESIGN WIND VELOCITY	80 M.P.H. (APPENDIX C)
DESIGN ICE LOAD	3 P.S.F.
FATIGUE CATEGORY	2

ENSURE ALL LOADS APPLIED TO ALL MEMBERS HAVE BEEN TAKEN INTO ACCOUNT FOR STRENGTH DESIGN, AND ALL WELDED STRUCTURAL DETAILS HAVE BEEN ANALYZED AGAINST FATIGUE.

ENSURE MAXIMUM HORIZONTAL DEFLECTION AT THE TOP OF THE POLE COMPLETELY ASSEMBLED WITH CCTV CAMERA AND ALL FIXTURES ATTACHED DOES NOT EXCEED 4 INCHES FROM THE CENTER LINE DUE TO A 40 MPH FASTEST-MILE WIND SPEED(APPENDIX C WIND PRESSURE FORMULA).

SUBMIT DETAIL PLANS AND DESIGN CALCULATIONS OF CAMERA STANDARD POLES, CAMERA WEIGHT AND PROJECTION AREA AND ANCHOR BOLT ASSEMBLY FOR APPROVAL. ENSURE THE DESIGN CALCULATIONS AND WORKING DRAWINGS ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY.

MATERIALS:

ENSURE TAPERED POLE MATERIAL CONFORMS TO ASTM SPECIFICATION A595, GRADE A (MIN. YIELD POINT 55 KSI) OR GRADE B (MIN. YIELD POINT 60 KSI), AND ALL OTHER STEEL CONFORMS TO ASTM SPECIFICATION A709 (AASTHO M270) GRADE 36 OR GRADE 50. ENSURE ALL STEEL PLATES MEET THE REQUIREMENTS FOR NOTCH TOUGHNESS (CHARPY TESTING) ZONE 2. GALVANIZE THE ENTIRE UNIT OF POLE PER ASTM A123 AFTER FABRICATION.

AS AN ALTERNATE, ENSURE SEAMLESS TUBE POLES CONFORMS TO ASTM A53, TYPE S OR TYPE E, GRADE B OR ASTM A252, GRADE 2 WITH MINIMUM YIELD STRENGTH OF 35 KSI.

ENSURE ANCHOR BOLT MATERIALS CONFORM TO ASTM F1554, GRADE 36 OR 55. GALVANIZE THE ANCHOR BOLTS PER ASTM A153, CLASS C AFTER THREADING FOR THE FULL LENGTH OF THE BOLT.

PROVIDE STAINLESS STEEL FASTENERS (INCLUDING BOLTS, NUTS AND WASHERS) CONFORMING TO CURRENT ASTM A320, GRADE B8, CLASS 2 (ANSI TYPE 304) AND STRAIN HARDENED. ENSURE ALL NUTS LOCK TYPE WITH SEALING ALL THREADS.

ALL CONCRETE SHALL BE "CLASS B" AS DEFINED IN THE NJDOT STANDARD SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED BY THE DESIGNER.

NOTES:

1. ENSURE STEEL POLE CONSISTS OF A MAXIMUM OF TWO INDIVIDUAL STEEL SECTIONS AND CONTAIN ONLY ONE LONGITUDINAL SEAM WELD. SLIP JOINTS AND LAMINATED TUBES ARE NOT PERMITTED.
2. PROVIDE NEOPRENE DOOR GASKET.
3. INSTALL CAMERA STANDARD IN THE AREA BEYOND RECOVERY DISTANCE OR BEHIND THE GUIDE RAIL.
4. PROVIDE A GALVANIZED SCREEN, DOUBLE RAP AROUND THE BASE OF POLE.
5. ENSURE THE GALVANIZED SCREEN IS NO MORE THAN ½" OPENINGS AND IS HELD TOGETHER WITH STAINLESS STEEL NUTS, BOLTS AND FLAT WASHERS.
6. ENSURE ALL WELDING IS TO BE DONE WITH E-80T-1 WIRE.
7. DO NOT GROUT UNDER THE POLE.
8. PROVIDE TWO (2) LEVELING HEX NUTS, TWO (2) HOLD DOWN HEX NUTS AND ONE (1) FLAT WASHER PER ANCHOR BOLT. DETERMINE THE PROPER LENGTH OF THE ANCHOR BOLT FOR POSITIVE SEAT OF THE HEAD FRAME ASSEMBLY.
9. ENSURE WELDING CONFORMS TO THE ANSI/AWS D1.1 STRUCTURAL WELDING CODE-STEEL, WITH NJDOT AMENDMENTS IN NJDOT STANDARD SPECIFICATIONS, WELDING INSPECTION AND FULL PENETRATION WELD NONDESTRUCTIVE TESTING CONFORM TO AWS D1.1.
10. LOCATE TOP, CENTER AND BOTTOM ELECTRICAL CABLE GUIDES WITHIN THE POLE AND ALIGN WITH EACH OTHER. POSITION THE BOTTOM CABLE GUIDE 2 INCHES BELOW THE HANDHOLE AND THE TOP CABLE GUIDE 1 INCH DIRECTLY BELOW THE TOP OF CAMERA PLATE. POSITION TWO PARKING STANDS A MAXIMUM OF 2¾ INCHES BELOW THE TOP OF THE HANDHOLE AND LOCATED AT 90° AND 270° FROM THE HANDHOLE. ENSURE EACH CABLE GUIDE IS ¾" WIRE EYE BOLT HAVING 1" INTERNAL DIA. FOR WIRE TIE OFF.
11. REFER TO MANUFACTURER'S SPECIFICATIONS FOR CCTV CAMERA WEIGHT AND PROJECTION AREA.

ITSD- 704-12

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCESYSTEMS

CAMERA STANDARD TYPE C

SCALE:
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REVISION DESCRIPTION

STATE	FEDERAL PROJECT NO.
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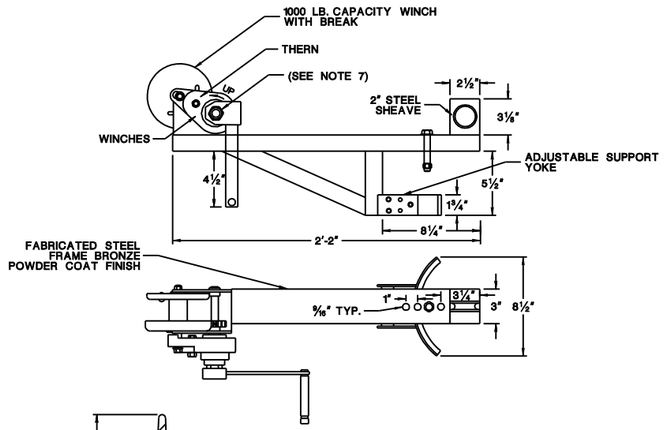
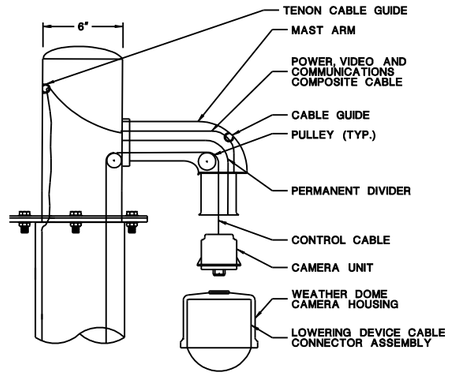
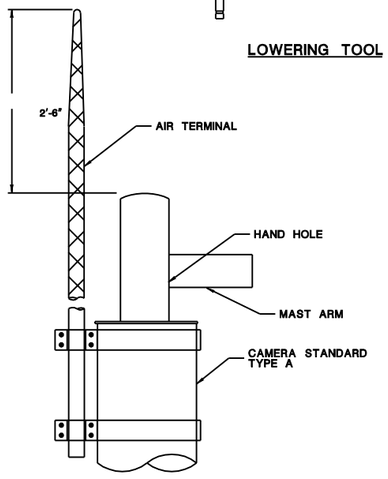


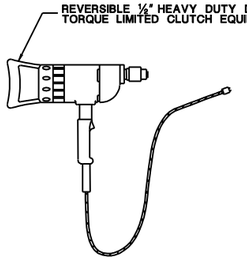
LOWERING TOOL

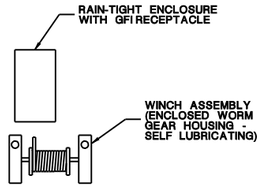


DETAIL A

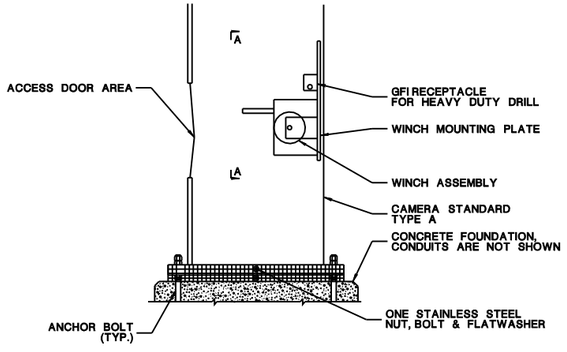


AIR TERMINAL





SECTION A-A

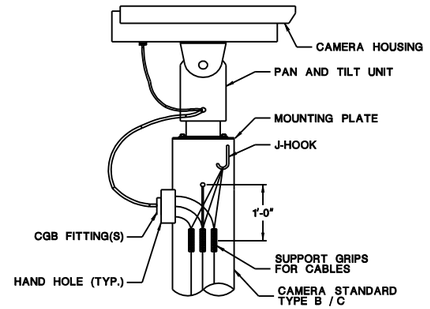


WINCH ASSEMBLY MOUNTING DETAIL

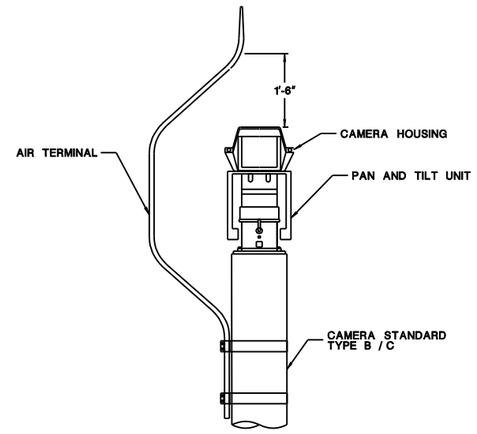
NOTES:

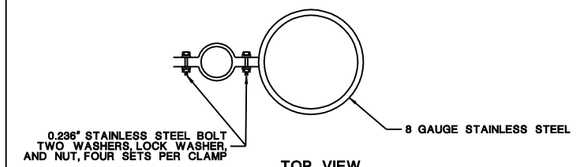
1. PROVIDE SEALED, SELF LUBRICATED BEARINGS, OIL TIGHT BRONZE BEARINGS OR SINTERED BRONZE BUSHINGS WITH ALL PULLEYS FOR THE CAMERA LOWERING DEVICE AND PORTABLE LOWERING TOOL.
2. ENSURE THE LOWERING CABLE HAS A MINIMUM OF ⅛" DIAMETER STAINLESS STEEL AIRCRAFT CABLE WITH A MINIMUM BREAKING STRENGTH OF 1740 POUNDS WITH (7) STRANDS OF 19 WIRE EACH.
3. PROTECT ALL ELECTRICAL AND VIDEO COAXIAL CONNECTIONS BETWEEN THE FIXED AND LOWERABLE PORTION OF THE CONTACT BLOCK FROM EXPOSURE TO THE WEATHER WITH A WATERPROOF SEAL TO PREVENT DEGRADATION OF THE ELECTRICAL CONTACTS.
4. DESIGN THE ELECTRICAL CONNECTIONS BETWEEN THE FIXED AND MOVABLE LOWERING DEVICE COMPONENTS TO CONDUCT HIGH FREQUENCY DATA BITS AND ONE (1) VOLT PEAK-TO-PEAK VIDEO SIGNALS AS WELL AS THE POWER REQUIREMENTS FOR OPERATION OF DOME ENVIRONMENTAL CONTROLS.
5. PROVIDE INTERFACE AND LOCKING COMPONENTS MADE OF STAINLESS STEEL.
6. ENSURE THE SUSPENSION CONTACT UNIT HAS LOAD CAPACITY OF 200 LBS. WITH A MINIMUM OF 4 TO 1 SAFETY FACTOR.
7. SUPPLY AN ADAPTOR FOR A STANDARD ½" ELECTRIC DRILL.
8. SUBMIT WINCH ASSEMBLY AND GFI RECEPTACLE BOX MOUNTING DETAILS TO THE RE FOR APPROVAL.

DOME CAMERA AND LOWERING DEVICE

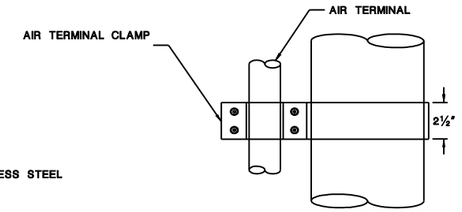


CAMERA MOUNTING AND CABLE DETAILS



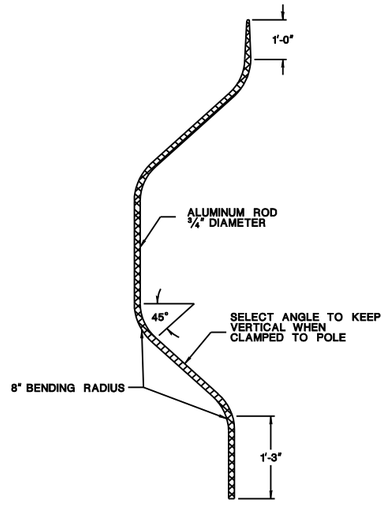


TOP VIEW



SIDE VIEW

AIR TERMINAL CLAMP



AIR TERMINAL DETAILS

NOTES:

1. INSTALL ALL WIRING INSIDE THE POLE AND PROVIDE STRAIN RELIEF FOR ALL CAMERA CABLES.
2. SUPPORT ELECTRICAL AND COMMUNICATION CABLES WITH SEPARATE GRIPS.

POSITIONAL CAMERA

ITSD- 704-13

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM

CAMERA AND LOWERING DEVICE

SCALE:
NOT TO SCALE

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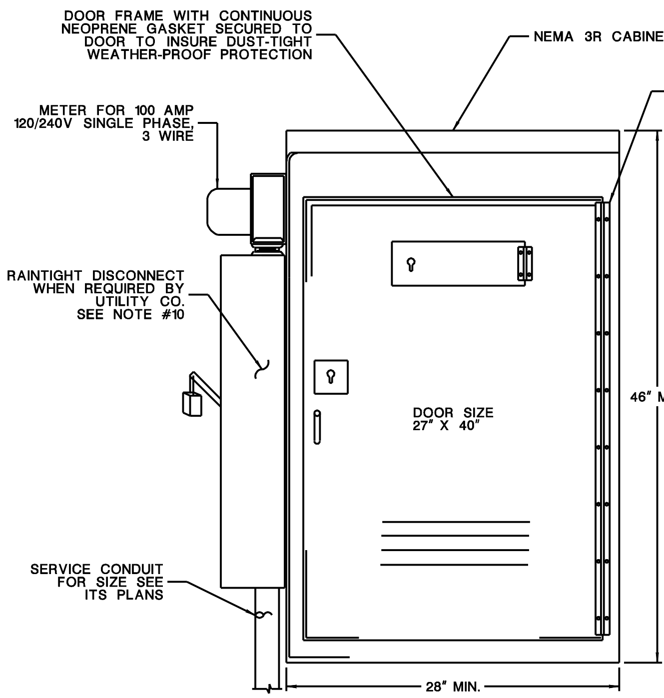
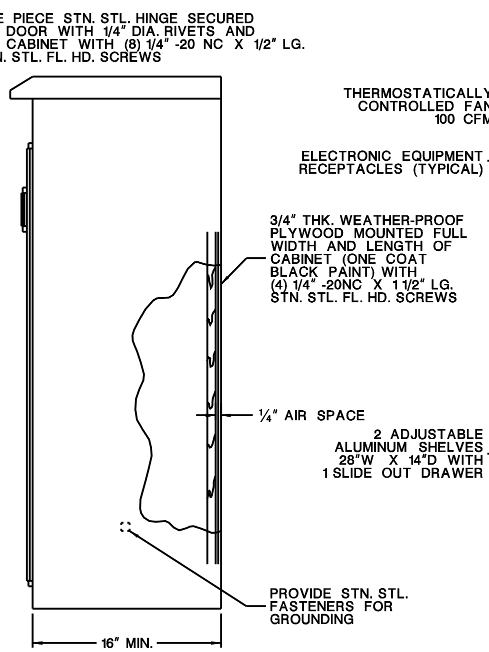


FRONT ELEVATION



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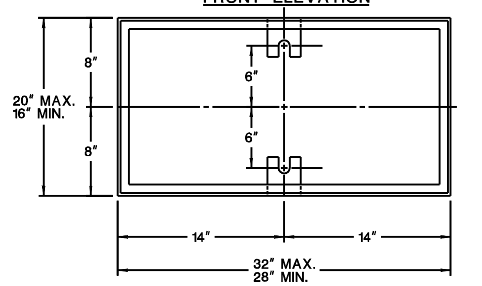
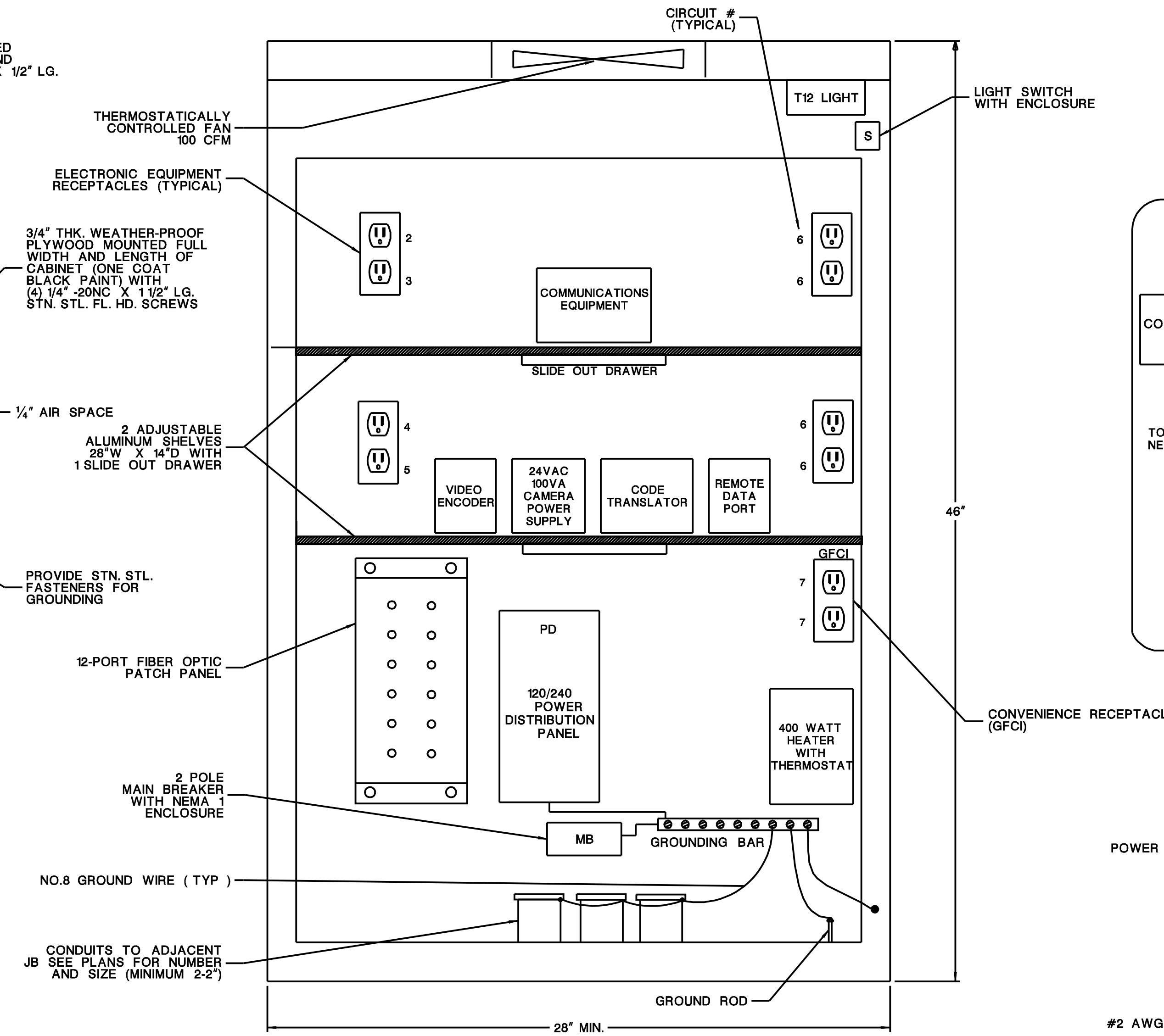
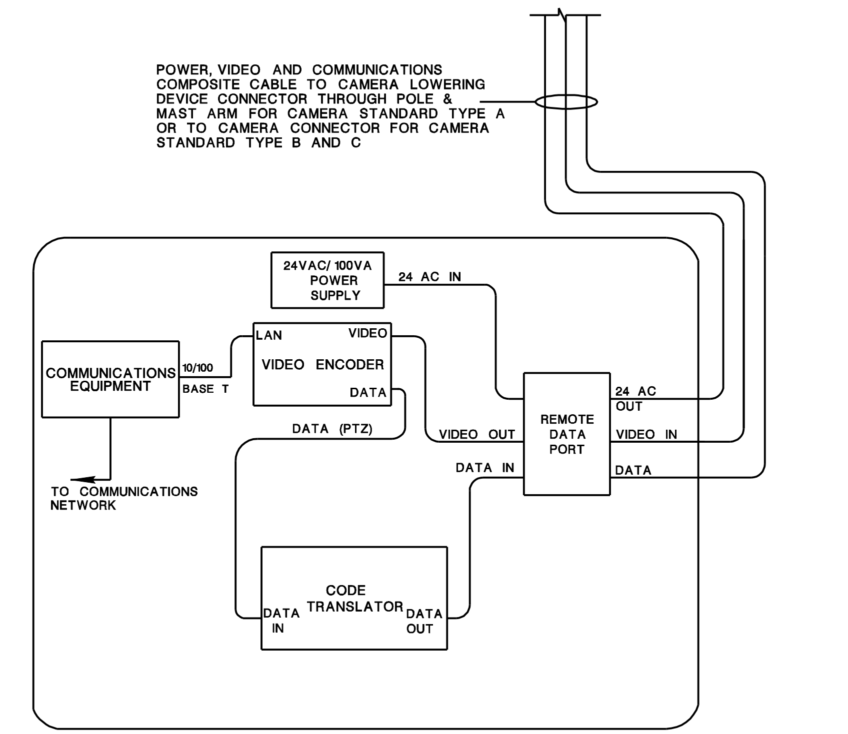


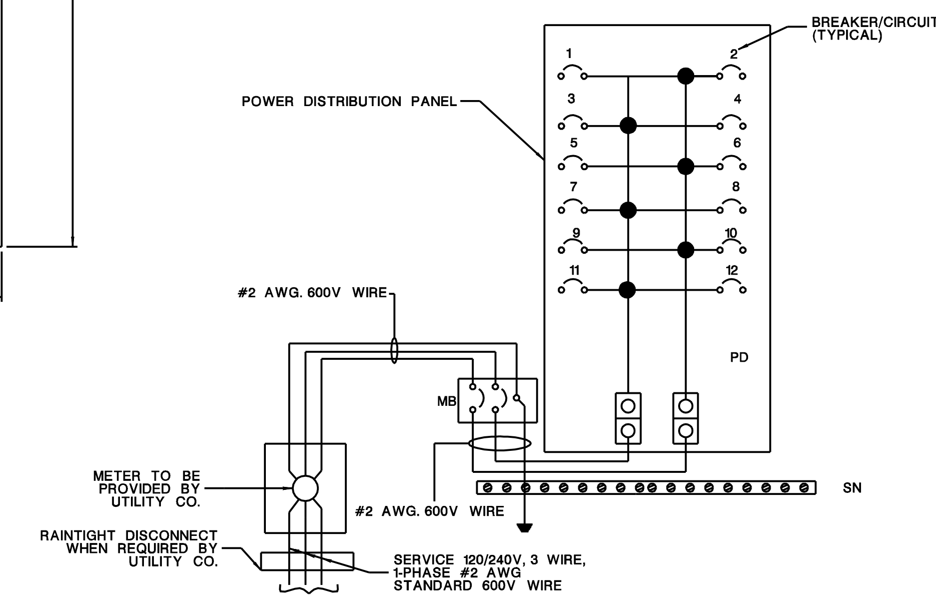
BOTTOM VIEW & ANCHOR BOLT LAYOUT



EQUIPMENT LAYOUT



COMMUNICATIONS BLOCK DIAGRAM



POWER DISTRIBUTION DIAGRAM

NOTES:

1. ENSURE CABINET AND CABINET DOOR IS SHEET ALUMINUM 1/8" THICK, 5052-H32 ALLOY, UNPAINTED.
2. SUPPLY WITH EACH CABINET (2) ANCHOR BOLTS 3/4"- 10NC X 15" LG. STL. WITH GALVANIZED 3" COUPLING (2) STAINLESS STEEL 1½" O.D. X 1/8" THK. FLAT WASHERS AND (2)3/4" - 10NC X 3" LG. STAINLESS STEEL CAP SCR.
3. SECURE CABINET DOOR WITH A SUB-TREASURY LOCK NO. 0357S AND KEYPAD ALIKE FOR KEY NO. 5 AVAILABLE FROM THE AMERICAN HARDWARE CO. NEW BRITAIN, CONN., OR A TUMBLER LOCK NO. 15481 ARS AND KEYPAD ALIKE FOR NO. 2 AVAILABLE FROM CORBIN LOCK CO. NEW BRITAIN, CONN.
4. SECURE CABINET LOCK TO THE DOOR WITH #10 - 24 X 1 1/8" ROUND HEAD (STN. STL.) MACHINE SCREWS.
5. 120V EXPOSED WIRING IS NOT PERMITTED. ENCASE WIRING TO ENCLOSURES AND OUTLETS IN LIQUID TIGHT FLEXIBLE CONDUIT AND FITTINGS INSIDE THE CABINET.
6. ENSURE ALL EQUIPMENT IS UL & NEMA LISTED FOR OUTDOOR INSTALLATION INSIDE NEMA 3R CABINET.
7. LABEL ALL ELECTRICAL RECEPTACLES EXCEPT GFCI AS "ELECTRONIC EQUIPMENT ONLY". LABEL GFCI RECEPTACLE AS "CONVENIENCE RECEPTACLE".
8. FOR BREAKER RATINGS, SEE TABLE A.
9. PROVIDE SURGE SUPPRESSION TO THE DATA LINES.
10. METER, RAIN TIGHT DISCONNECT SWITCH AND SERVICE CONDUIT ARE NOT REQUIRED IF ELECTRIC SERVICE IS CONNECTED TO ANOTHER LOAD CENTER AND NOT TO UTILITY COMPANY POWER SOURCE.

	BREAKER RATING	
BREAKERS #	FUNCTION	TRIP RATING (AMPS)
MB	MAIN BREAKER 60 AMP	60
1	RECEPTACLE INSIDE CAMERA POLE BASE	15
2	ELECTRONIC EQUIPMENT RECEPTACLE	15
3	ELECTRONIC EQUIPMENT RECEPTACLE	15
4	ELECTRONIC EQUIPMENT RECEPTACLE	15
5	ELECTRONIC EQUIPMENT RECEPTACLE	15
6	ELECTRONIC EQUIPMENT RECEPTACLE	15
7	CONVENIENCE RECEPTACLE (GFCI)	15
8	FAN	
9	HEATER	
10	LIGHT	
11	SPARE	15
12	SPARE	15

ITSD- 704-14

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILANCE SYSTEM

CONTROLLER CAMERA

SCALE:
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REFERENCE

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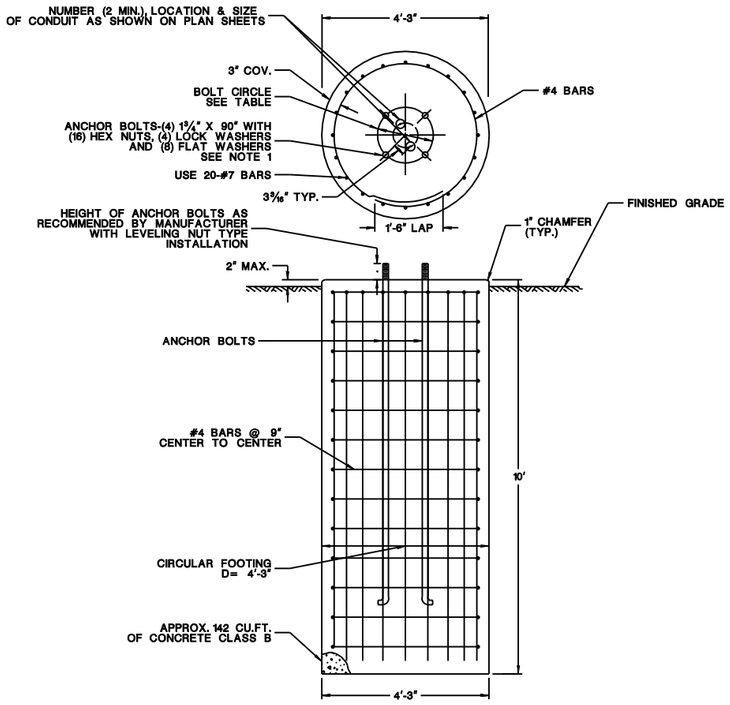
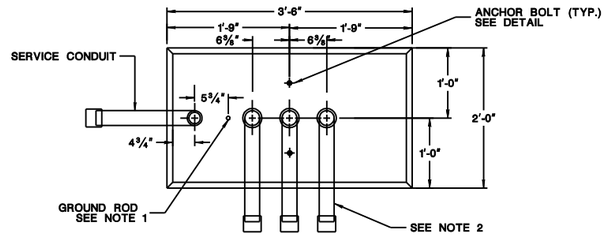


FOUNDATION CSS

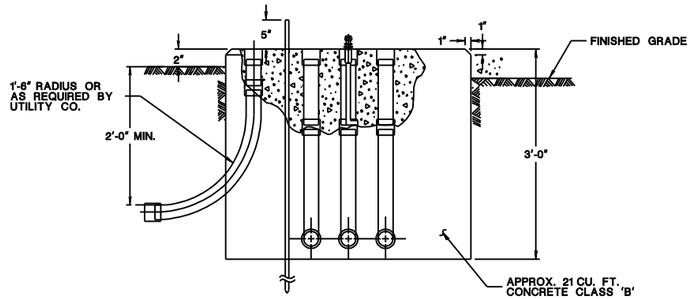
"BOLT CIRCLE TABLE"			
FOUNDATION TYPE	POLE HEIGHT	ANCHOR BOLT CIRCLE DIAMETER	ANCHOR BOLT SPECIFICATION
C	40'	17"	ASTM F1554 GRADE 36 OR 55
B	55'	24"	ASTM F1554 GRADE 36 OR 55
A	75'	30"	ASTM F1554 GRADE 36 OR 55

NOTE:

1. HOT DIPPED GALVANIZE ANCHOR BOLTS AFTER THREADING PER ASTM A153 FOR THE FULL LENGTH OF THE BOLT.



PLAN



ELEVATION

CONTROLLER FOUNDATION

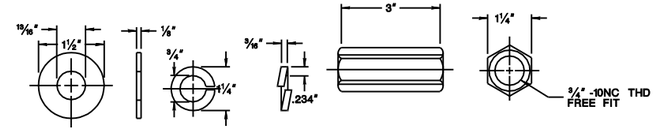
GENERAL DESIGN SPECIFICATIONS:

CONCRETE DESIGN STRESS:

SPECIFIED COMPRESSIVE STRENGTH (f'c) (CLASS B).....3,000 PSI
EXTREME FIBER COMPRESSIVE STRESS (fc).....1,200 PSI

REINFORCEMENT STEEL DESIGN STRESS:

YIELD STRENGTH (fy) (A615, GRADE 60).....60 KSI
TENSILE STRENGTH (ts).....24 KSI

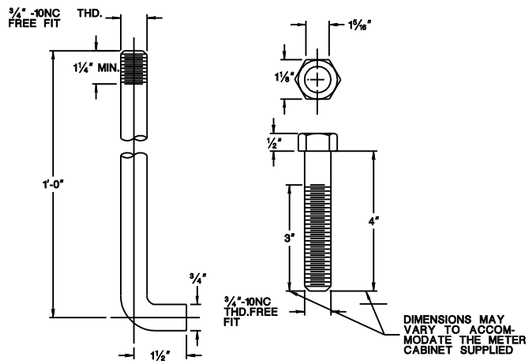


FLAT & LOCK WASHER

MAT'L - STAINLESS STEEL

COUPLING

MAT'L - STEEL, GALVANIZED AS PER ASTM A-153



ANCHOR BOLT

MAT'L -STEEL PER ASTM A-576

CAP SCREW

MAT'L- STAINLESS STEEL PER ASTM A-193 GRADE B-8

NOTES:

1. ⅝" DIA. X 12 FT. LONG GROUND ROD.
2. FOR NUMBER & SIZE OF CONDUITS, SEE PLANS.

ITSD- 704-15

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM

FOUNDATIONS

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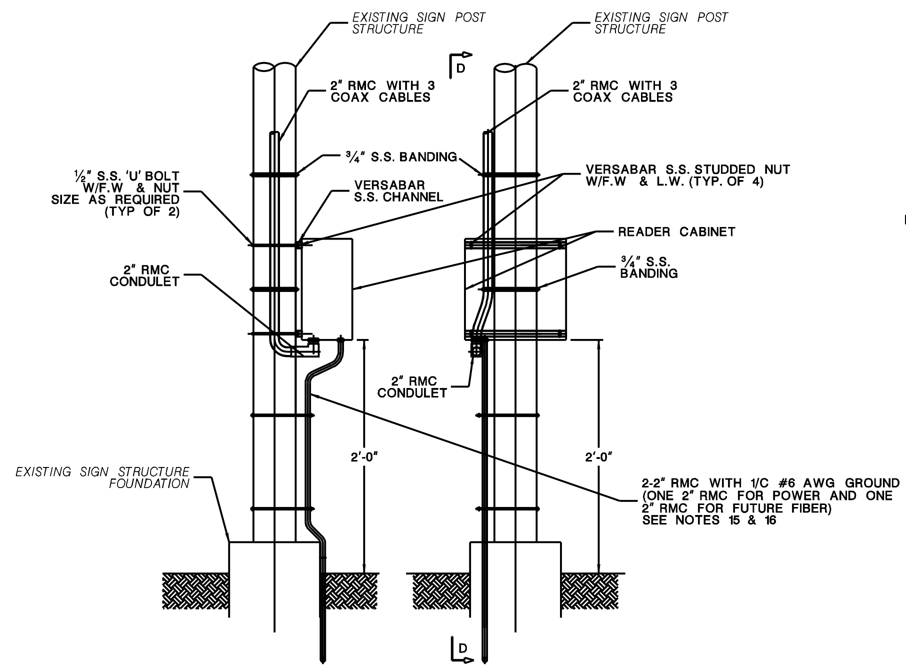
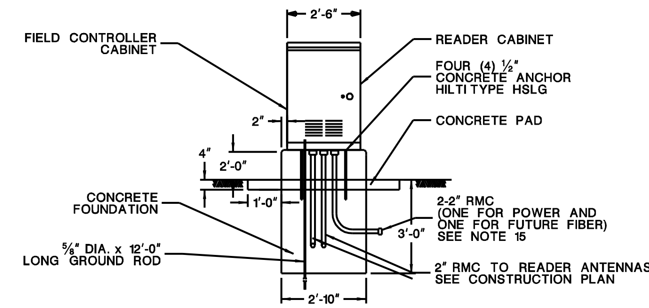


SECTION 'D-D'   DETAIL 'L'

TYP. DETAILS FOR POST MOUNTED READER CABINET ON EXISTING SIGN STRUCTURE



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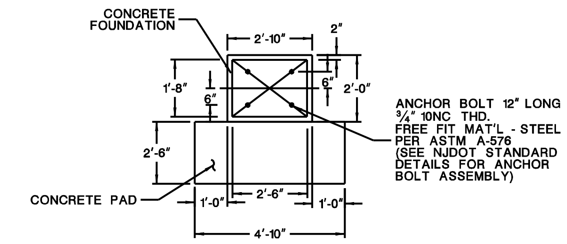
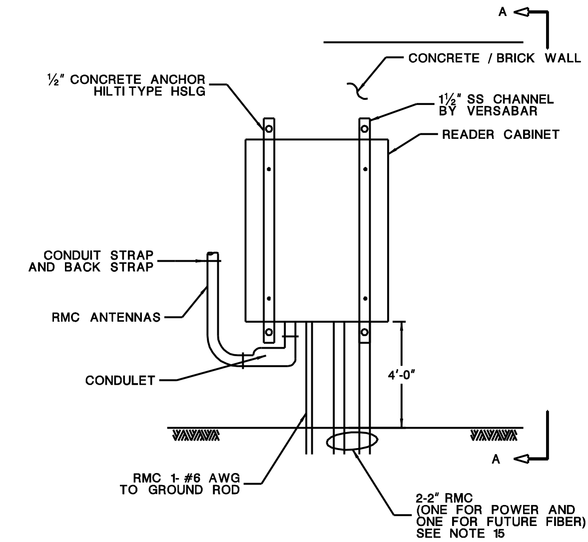
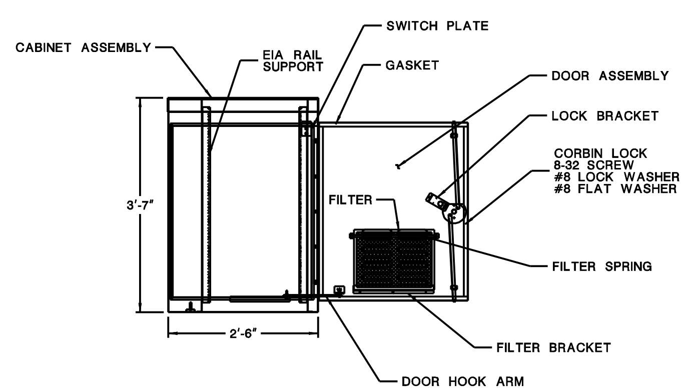


PLAN

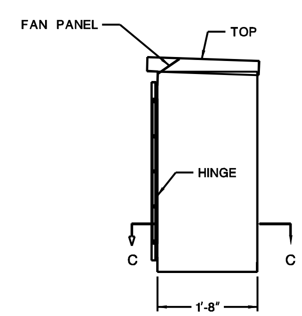
TYP. DETAILS FOR GROUND MOUNTED READER CABINET



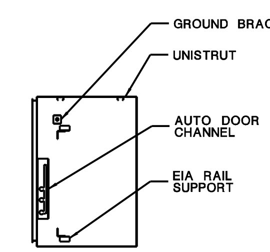
TYPICAL READER CABINET MOUNTING ON CONCRETE / BRICK WALL



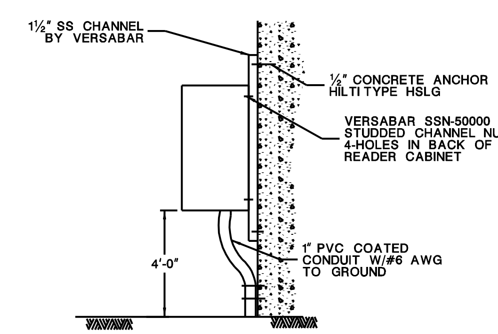
ELEVATION



SIDE VIEW



SECTION C-C



SECTION A-A

READER CABINET DETAILS

NOTES:

1. FABRICATE CABINET WITH 14 GAUGE TYPE 304 STAINLESS STEEL.
2. ENSURE DOOR IS NEMA TYPE 3R WITH CELLUAR NEOPRENE GASKET, AND HINGES ARE 14 GAUGE S.S., TYPE PIANO (CONTINUOUS).
3. PROVIDE CORBIN TYPE LOCK WITH 2 KEYS AND A THREE POINT LOCKING SYSTEM, THAT SECURES THE TOP, BOTTOM AND CENTER.
4. PROVIDE VENT HOLES ON THE UNDER SIDE OF THE COVER AND SLOTS ON THE DOOR TO CREATE A NATURAL FLOW OF AIR THAT HAS A COOLING EFFECT ON ELECTRICAL EQUIPMENT. COVER THE SLOTS WITH A FILTER ON THE INSIDE OF THE DOOR TO PREVENT DUST FROM ENTERING THE CABINET.
5. PROVIDE COOLING FAN AND HEATER WITH ADEQUATE CAPABILITIES.
6. PROVIDE ONE REMOVABLE ½" ALLEN KEY.
7. ENSURE DOOR CATCH HOLDS THE DOOR OPENS AT 90° AND 180°.
8. ENSURE CONTINUOUS HINGE, LEAVES DOES NOT EXPOSED EXTERNALLY WHEN DOOR IS CLOSED.
9. FURNISH AND INSTALL GROUND RODS, GROUND WIRE AND FITTINGS IN ACCORDANCE WITH NEC AND STANDARD SPECIFICATIONS.
10. ENSURE RACK IS RS-310-C EIA STANDARD.
11. TERMINATE THE RG-58 RIGHT ANGLE CONNECTORS WITH 50 OHM TERMINATORS.
12. ENSURE CONDUIT PENETRATION FOR THE READER CABINET IS EXCLUSIVELY MADE THROUGH THE BOTTOM SURFACE OF THE CABINET TO PREVENT WATER AND MOISTURE FROM PENETRATING INTO ELECTRONIC EQUIPMENT.
13. NO OPENING IS PERMITTED IN THE CABINET FLOOR OTHER THAN CONDUIT ENTRIES, WHICH HAS TO BE SEALED.
14. INSTALL READER CABINET AND COORDINATE WITH TRANSCOM AGENCY FOR SETTING UP READER AND ANTENNA.
15. CAP 2" RMC, FOR FUTURE FIBER CONNECTION 6" FROM THE FOUNDATION FOR FUTURE USE.
16. PROVIDE NO. 6 AWG GROUND WIRE FROM READER CABINET TO ADJACENT JUNCTION BOX (INSIDE 2" RMC FOR POWER). GROUND READER EQUIPMENT AT EXISTING SIGN STRUCTURE IN ACCORDANCE WITH NEC REQUIREMENTS. PROVIDE ADDITIONAL GROUND RODS IF REQUIRED.
17. PROVIDE AN ANTENNA EXTENSION AND MOUNTING DETAIL TO OBTAIN MAXIMUM WIRELESS SIGNAL RECEPTION / TRANSMISSION. SUBMIT THE DETAIL TO THE RE FOR APPROVAL.

ITSD- 704-16

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAVEL TIME SYSTEM

CONTROLLER TTS, SHEET 1 OF 2

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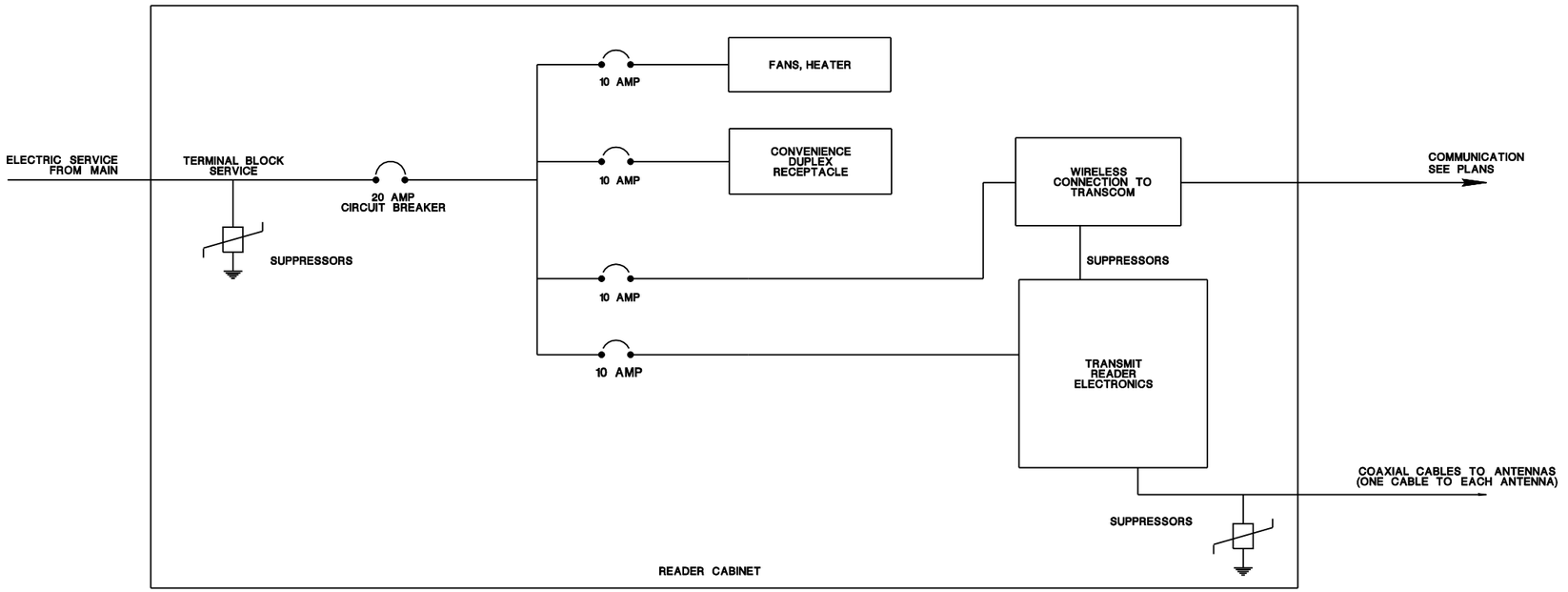
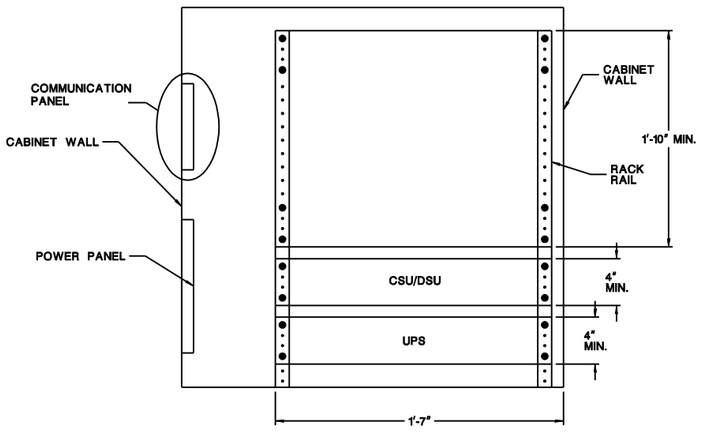
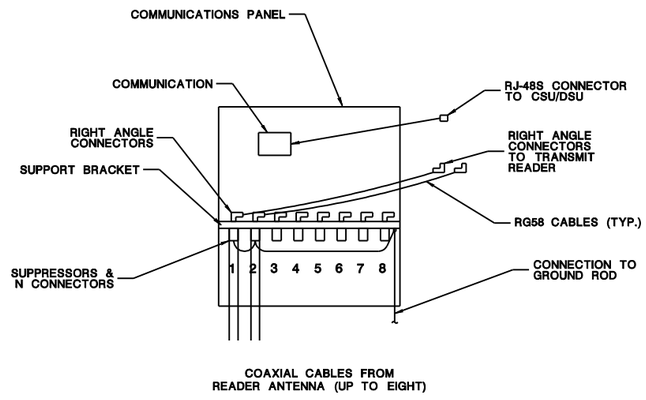


BLOCK DIAGRAM





COMMUNICATIONS PANEL

READER CABINET EQUIPMENT LAYOUT

REVISION DESCRIPTION	BY	CHECKED	DATE
BDC07-08			

ITSD- 704-17

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAVEL TIME SYSTEM

CONTROLLER TTS SHEET 2 OF 2

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NOT TO SCALE

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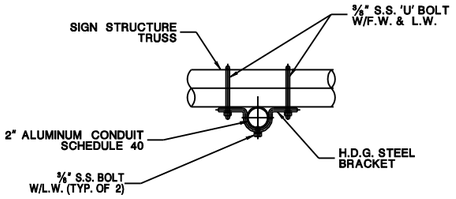
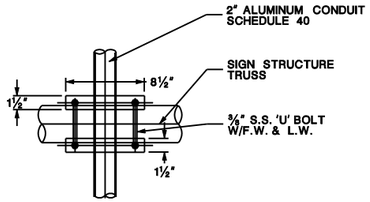
ID = .
REFERENCE

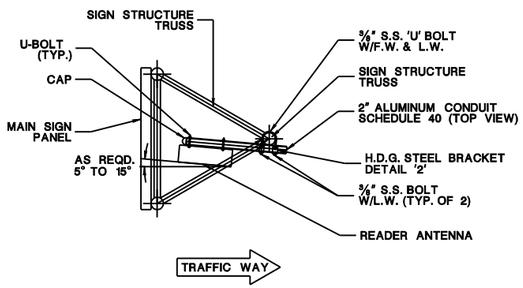
STATE	FEDERAL PROJECT NO.
N.J.	*



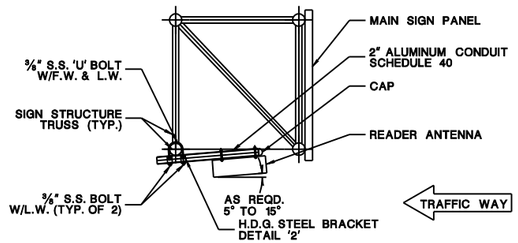
TOP VIEW



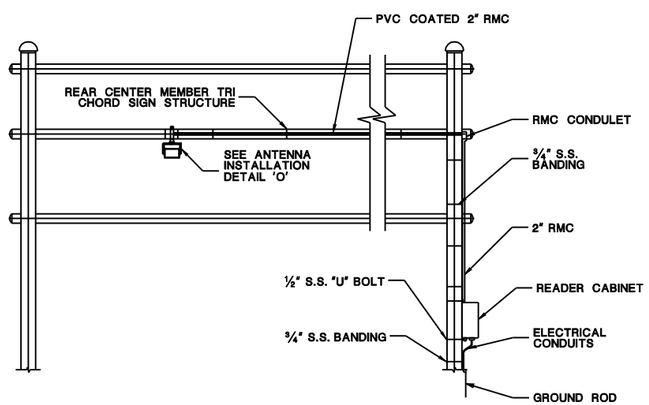
DETAIL '2'
SUPPORT BRACKET



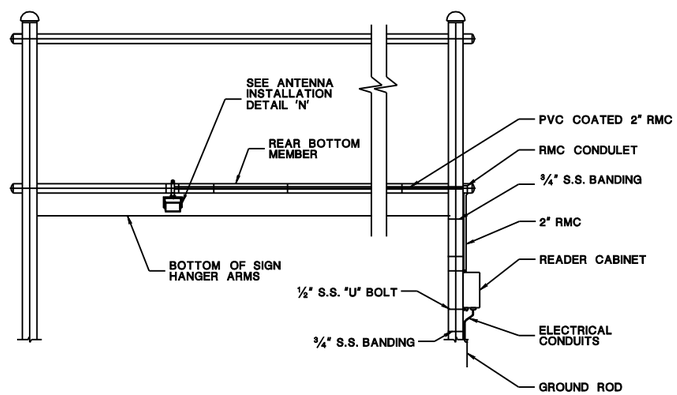
DETAIL "O"
TYP. READER ANTENNA MOUNTING
ON SIGN STRUCTURE



DETAIL "N"
TYP. READER ANTENNA MOUNTING
ON SIGN STRUCTURE



TYP. ANTENNA INSTALLATION
ON TRICHORD SIGN STRUCTURE



TYP. ANTENNA INSTALLATION ON SIGN STRUCTURE

NOTES:

1. READER ANTENNA, CONDUIT, AND JUNCTION BOX APPROXIMATE LOCATIONS ARE SHOWN ON THE PLAN SHEETS. THE ACTUAL LOCATION IN THE FIELD TO BE VERIFIED BY THE CONTRACTOR.
2. ENSURE ALL FASTENERS INCLUDING BOLTS, U-BOLTS, NUTS AND WASHERS ARE STAINLESS STEEL AND CONFORMS TO CURRENT ASTM SPECIFICATION A320, GRADE B8, CLASS 2 (ANSI TYPE 304) WITH NO. 4 FINISH AND STRAIN HARDENED.
3. SUBMIT DETAIL PLANS FOR MOUNTING ASSEMBLIES FOR REVIEW AND APPROVAL BY THE RE.
4. CONDUIT ROUTING ON THE STRUCTURE, AND BETWEEN STRUCTURE OR POLE AND UTILITY POLE LOCATION MAY BE MODIFIED AS REQUIRED BY THE FIELD CONDITIONS SUBJECT TO THE APPROVAL OF THE RE.
5. GROUND ALL SIGN STRUCTURES WHICH HAVE EQUIPMENT INSTALLED IN ACCORDANCE WITH THE NEC REGARDLESS OF EXISTING GROUNDING.
6. NO WELDING OR CUTTING OF EXISTING SIGN STRUCTURE WILL BE PERMITTED.
7. MAINTAIN THE MINIMUM BENDING RADIUS RECOMMENDED BY THE COAXIAL CABLE MANUFACTURER WHILE INSTALLING CABLE.
8. ENSURE CONDUIT PENETRATIONS FOR THE READER CABINETS ARE EXCLUSIVELY MADE THROUGH THE BOTTOM SURFACE OF THE CABINET TO PREVENT WATER AND MOISTURE FROM PENETRATING INTO ELECTRONIC EQUIPMENT.
9. WELDING IS NOT PERMITTED TO INSTALL THE TRANSMIT EQUIPMENT ON THE SIGN STRUCTURE.

ITSD- 704-18

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAVEL TIME SYSTEM

TTS DETECTOR, TYPE A
SHEET 1 OF 2

SCALE:
NOT TO SCALE

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REFERENCE
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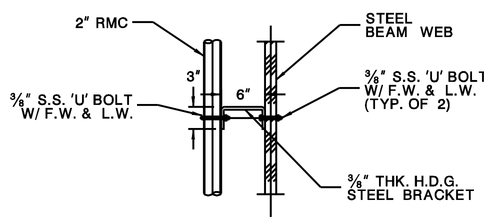
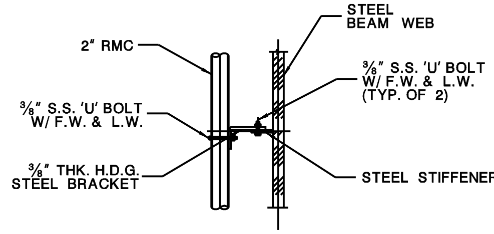
BDC07D-03
REVISION DESCRIPTION
BY
CHECKED
DATE

STATE	FEDERAL PROJECT NO.
N.J.	*



SECTION 'C-C'



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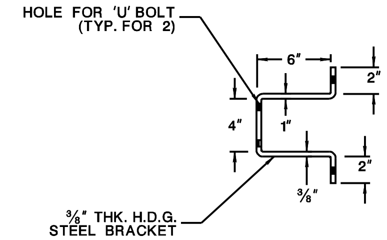

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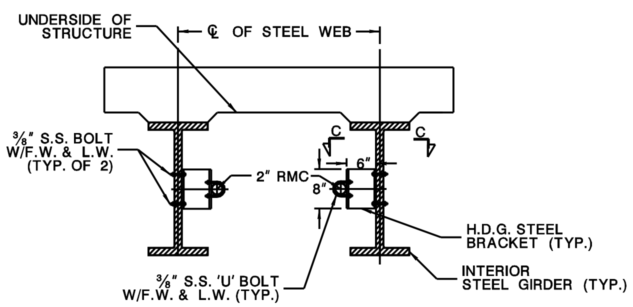

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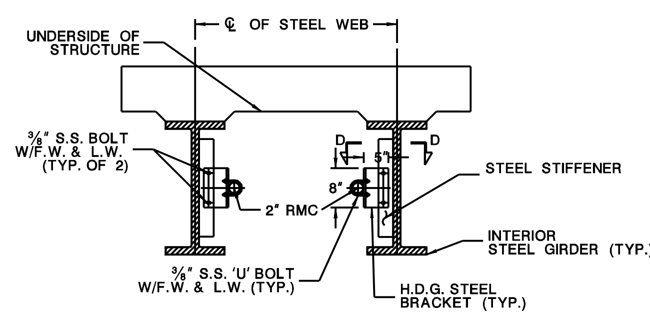
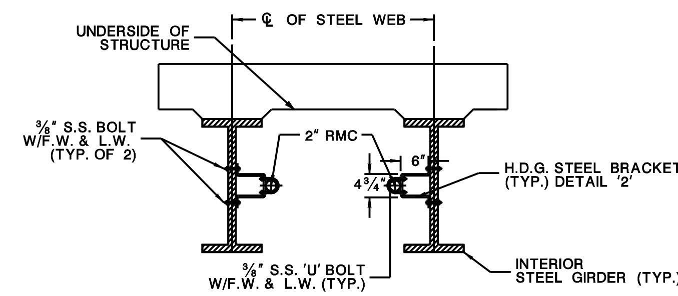
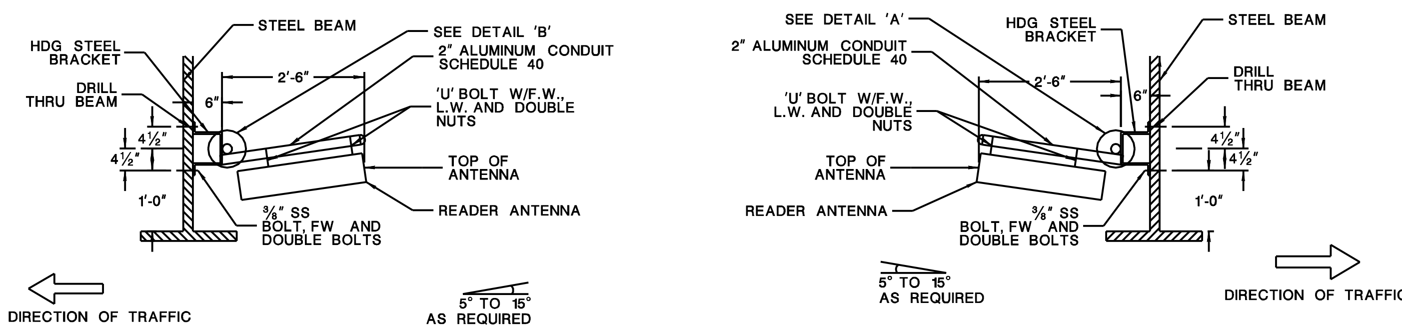


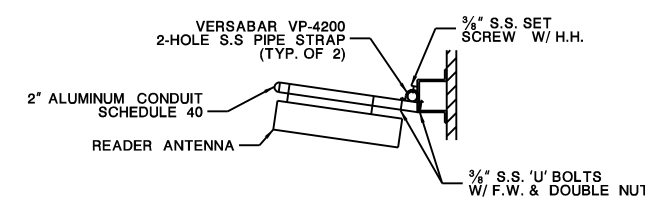
DETAIL 'G'



DETAIL 'E'



TYP. ANTENNA MOUNTING ON STEEL GIRDER



DETAIL 'A' SHOWN
DETAIL 'B' OPPOSITE HAND

NOTES:

1. ENSURE ALL FASTENERS, INCLUDING BOLTS, U-BOLTS, NUTS AND WASHERS ARE STAINLESS STEEL AND CONFORMS TO ASTM SPECIFICATION A320, GRADE B8, CLASS 2 (ANSI TYPE 304) WITH NO. 4 FINISH, AND STRAIN HARDENED.

2. ENSURE ALL SUPPORT MEMBERS, PLATES AND SHAPES ARE GALVANIZED. AFTER COMPLETE FABRICATION, HOT-DIP GALVANIZE EACH STEEL SUPPORT ASSEMBLY CONFORMING TO THE REQUIREMENTS OF AASHTO M270 (ASTM A709) GRADE 50W.

3. WELDING IS NOT PERMITTED TO INSTALL THE TRANSMIT EQUIPMENT ON THE BRIDGE STRUCTURE.

4. POSITION THE TRANSMIT EQUIPMENT SUCH THAT THE STRUCTURES VERTICAL UNDER CLEARANCE IS NOT REDUCED.
5. ADJUST THE READER ANTENNA MOUNTINGS AND POSITION THE READER ANTENNAS SUCH THAT THE MINIMUM VERTICAL UNDER CLEARANCE IS NOT LESS THAN THE EXISTING CONDITIONS. NO CUT IN THE EXISTING STRUCTURE IS ALLOWED TO AVOID REDUCING CLEARANCE.

6. THE DETAILS FOR CONDUIT SUPPORT BRACKET PRESENTED ON THIS SHEET ARE SHOWN FOR CONCEPT ONLY. SUBMIT SHOP DRAWINGS FOR THE CONDUIT SUPPORT AND BRACKET. SURVEY EACH TRANSMIT SITE AND SUBMIT SHOP DRAWINGS TO THE RE AND THE APPROPRIATE GOVERNING AGENCIES FOR APPROVAL BEFORE PROCEEDING WITH THE FABRICATION OF THE CONDUIT SUPPORTS.

7. FIELD VERIFY EXISTING STRUCTURE CONDITIONS AND DIMENSIONS RELATIVE TO PROPOSED CONDUIT SUPPORT LOCATIONS PRIOR TO FABRICATION AND CONSTRUCTION.

8. ENSURE MAXIMUM SPACING BETWEEN ADJACENT CONDUIT SUPPORTS IS 4 FEET UNLESS OTHERWISE APPROVED BY THE RE AND THE APPROPRIATE GOVERNING AGENCY.

9. POSITION THE PROPOSED CONDUIT SUPPORTS SUCH THAT THE VERTICAL UNDER CLEARANCE IS NOT LESS THAN THE EXISTING CONDITION.

10. FURNISH AND INSTALL APPROVED EXPANSION JOINT FITTINGS ON BRIDGES AND OTHER STRUCTURES, AT LOCATIONS WHERE CONDUITS CROSS OVER EXPANSION JOINTS. FURNISH AND INSTALL EXPANSION FITTINGS AS RECOMMENDED BY THE MANUFACTURER. SUBMIT CONDUIT EXPANSION JOINT SPACING TO THE RE FOR APPROVAL.

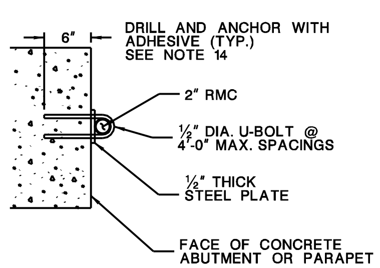
11. LABEL WITH PURPOSE AND VOLTAGE ALL CONDUIT RUNS AND JUNCTION BOXES WITH WEATHERPROOF MARKER TAPE. LABEL CONDUIT RUNS EVERY 50'-0" AND AT WALL PENETRATIONS.

12. INSTALL ALL WIRING (POWER, AND COMMUNICATIONS, ETC.) IN RIGID METALLIC CONDUITS UNLESS NOTED OTHERWISE. CONDUIT SIZE AS INDICATED.

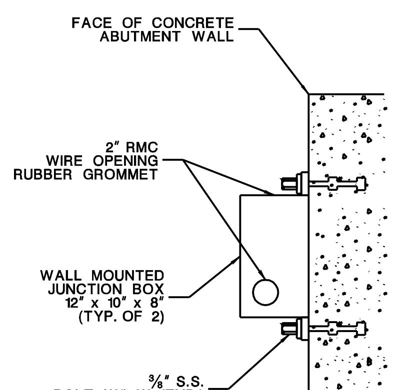
13. ENSURE ALL CONDUITS, EYS FITTINGS AND CONDULETS ARE RMC.

14. PLACE ALL U BOLTS SHOWN AS DRILL AND ANCHOR WITH ADHESIVE IN A CORE DRILLED HOLE WITH A DIA. 1/8" WIDER THAN THE U-BOLT AND ANCHORED WITH APPROVED ADHESIVE ANCHOR SUCH AS "HILTI HVA ADHESIVE ANCHOR".

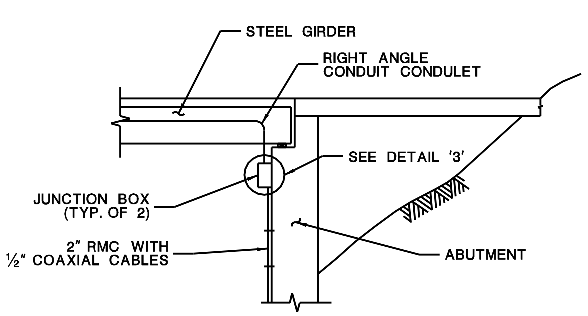
15. AVOID CONFLICTS WITH THE STRUCTURAL STEEL COMPONENTS OF THE BRIDGE, INCLUDING THE EXISTING ABUTMENT WALL REINFORCEMENTS WHEN DRILLING FOR PLACEMENT OF ANCHOR BOLTS. RESERVE THE STRUCTURAL INTEGRITY OF THE BRIDGE COMPONENTS.



TYPICAL CONDUIT ATTACHMENT AT ABUTMENT



DETAIL '3'
JUNCTION BOX



TYPICAL JUNCTION BOX MOUNTING AT ABUTMENT

TYPICAL OVERPASS/ BRIDGE INSTALLATION

ITSD- 704-19

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAVEL TIME SYSTEM

TTS DETECTOR, TYPE A SHEET 2 OF 2

SCALE:
NOT TO SCALE

REVISION DESCRIPTION	BY	CHECKED	DATE

BDC07D-03

REFERENCE

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STATE	FEDERAL PROJECT NO.
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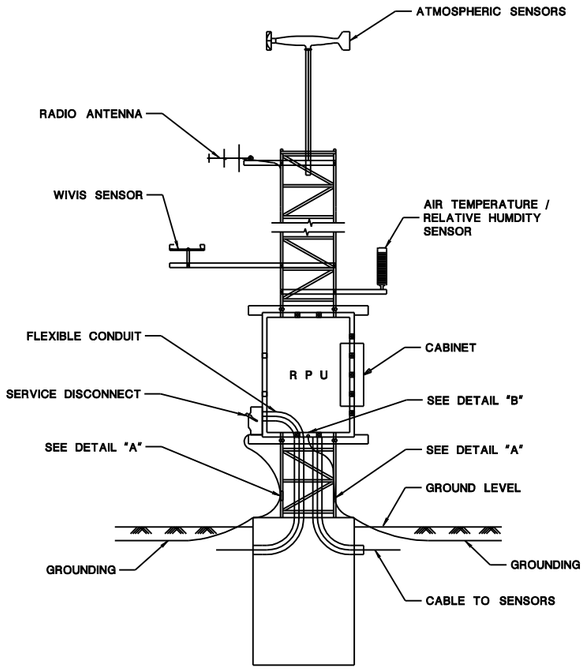
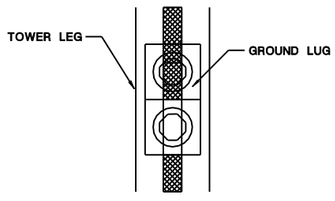


WIND SPEED / DIRECTION SENSOR
(FOR CONTROLLER TOWER DETAIL SEE ITS-704-21)



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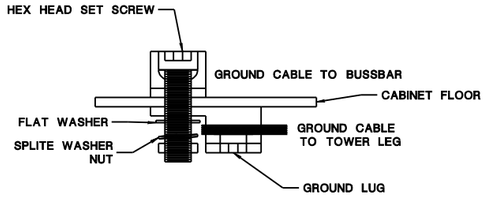

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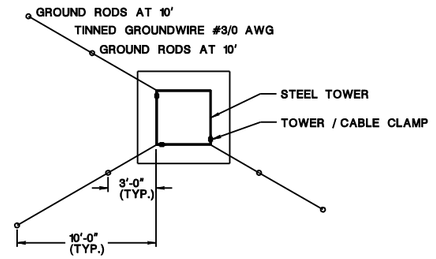
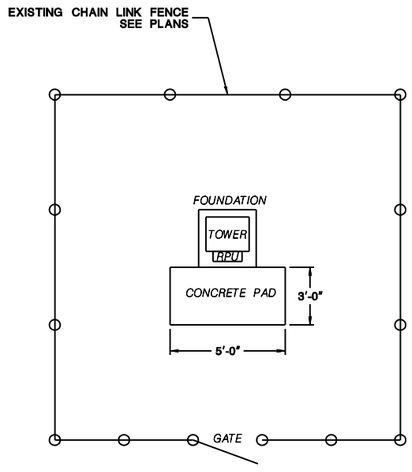


TOWER GROUNDING



GATE, CHAIN LINK FENCE

WEATHER STATION

REFERENCE	DATE	BY	REVISION DESCRIPTION
BDC07D-09			

ITSD- 704-20

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

ROADWAY WEATHER INFORMATION SYSTEM

WEATHER STATION SHEET 1 OF 2

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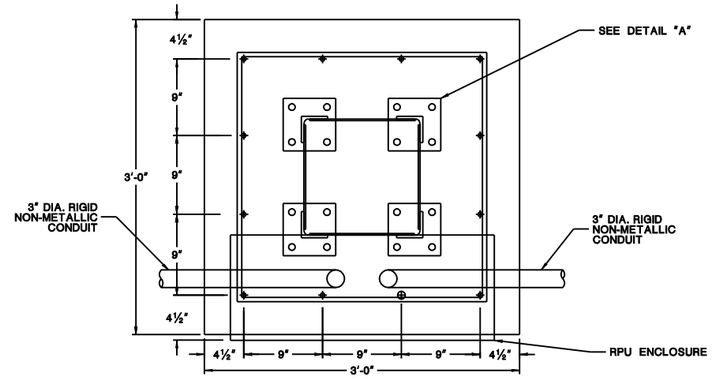
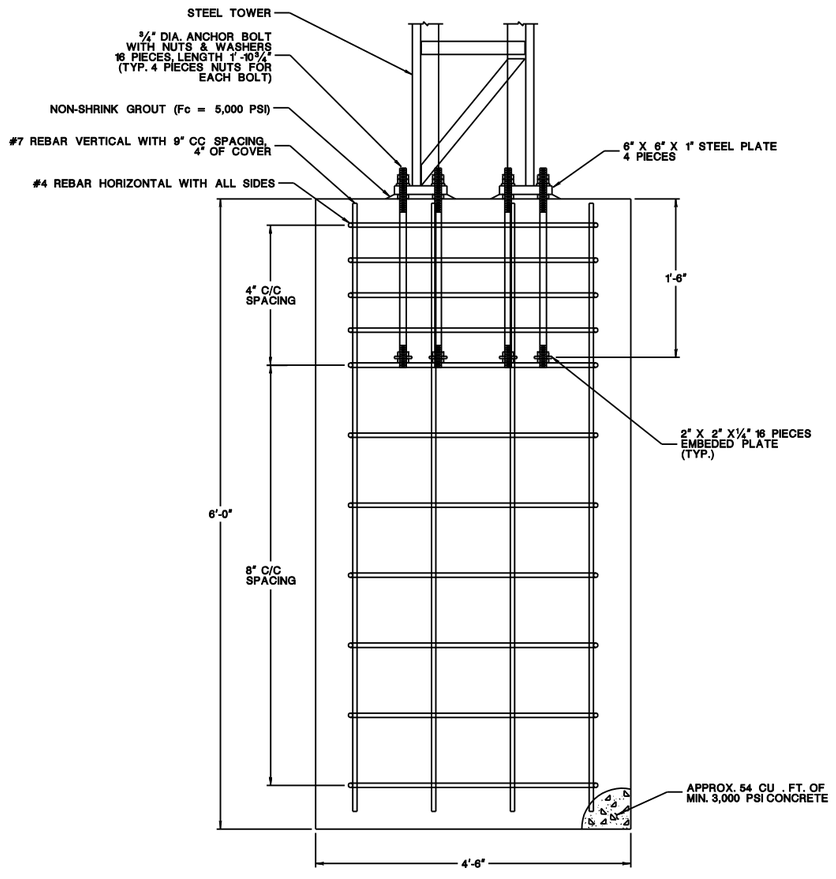
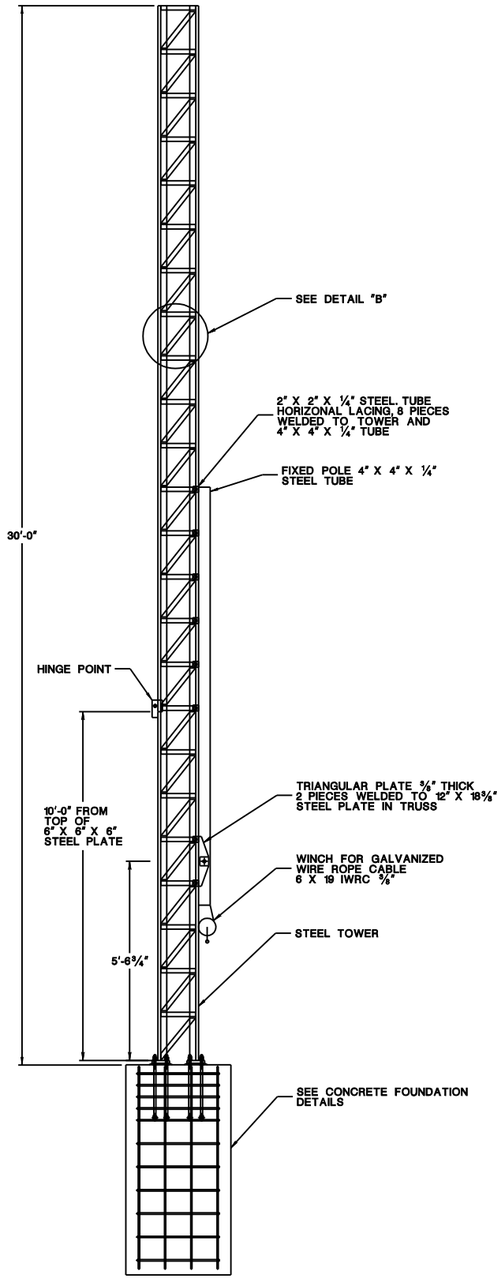


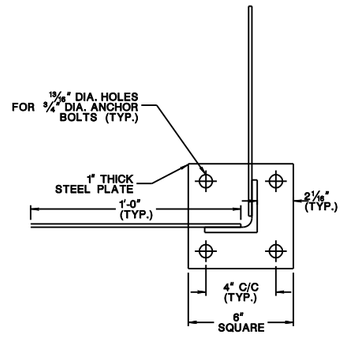
PLAN



FOUNDATION



TOWER



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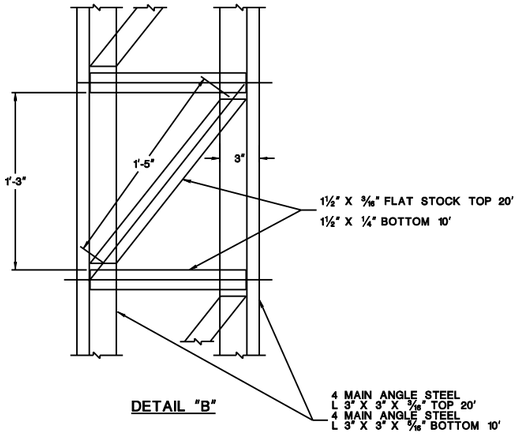

DETAIL "B"

NOTES

1. ALL STEEL PLATES PER ASTM A36.
2. ALL STEEL TUBES PER ASTM A36 OR EQUAL.
3. ALL STEEL FLATE BAR PER ASTM A36.
4. ALL STEEL ANGLES PER ASTM A36.
5. ALL ANCHOR BOLTS PER ASTM A307 & GALVANIZED PER ASTM A153.
6. ALL ANCHOR BOLT NUTS PER ASTM A563 GRADE 1H OR ASTM 194 GRADE 2H.
7. ALL WELD FILLER MATERIAL PER ER70S-3, AWS 5.18.
8. ALL BOLTS PER ASTM A325 & GALVANIZED PER ASTM A153.
9. FABRICATE STRUCTURE TO SUPPORT THE DESIGN CRITERIA OF 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURE SUPPORTS.
10. CONCRETE FOUNDATION PER ACI 301 & ACI 318 CONCRETE Fc = 3,000 PSI MIN.
11. REBAR Fy = 60,000 PSI MIN.
12. ALL WELDING PER AWS D1.1.
13. ENTIRE STRUCTURE TO BE GALVANIZED PER ASTM A153 AFTER FABRICATION.

ITSD- 704-21

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

ROADWAY WEATHER INFORMATION SYSTEM>>

WEATHER STATION SHEET 2 OF 2

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REFERENCE

BDC07D-03	REVISION DESCRIPTION	BY	CHECKED	DATE

STATE	FEDERAL PROJECT NO.
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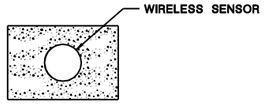
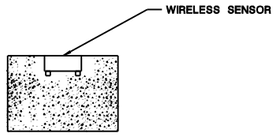
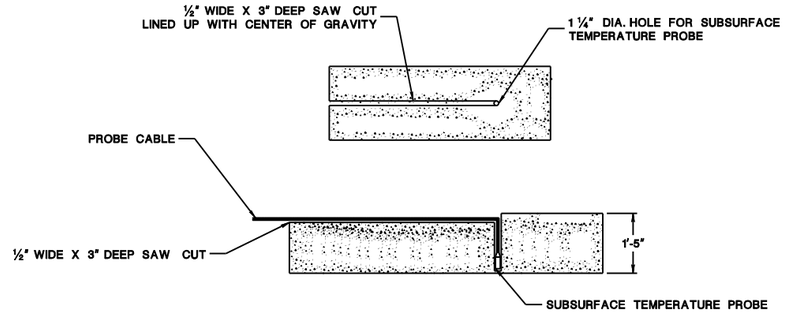


TOP VIEW



ELEVATION - VIEW

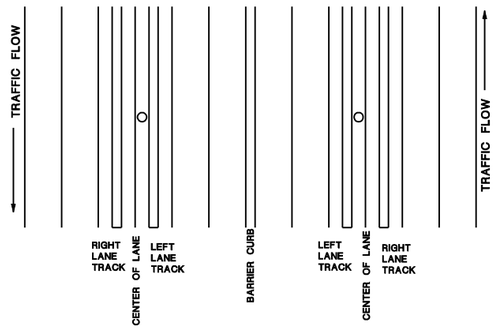
WIRELESS PAVEMENT SENSOR INSTALLATION



SUBSURFACE TEMPERATURE
PROBE INSTALLATION IN SHOULDER AREA

LOCATE THE SURFACE SENSORS AT AN EQUAL DISTANCE BETWEEN THE CENTER LINE OF THE LANE AND THE CENTER LINE OF THE WHEEL TRACK.

MULTI-LANE HIGHWAYS BRIDGE/ ROADWAY



SURFACE SENSOR

ROADWAY DEVICES

NO.	REVISION DESCRIPTION	BY	CHECKED	DATE
BDC070-08				

ITSD- 704-22

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

ROADWAY WEATHER INFORMATION SYSTEM

ROADWAY DEVICES

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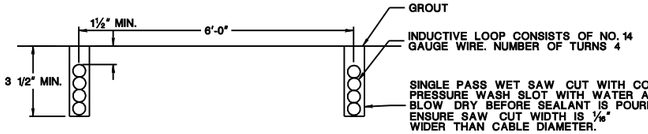
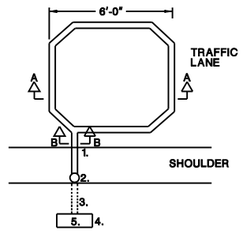
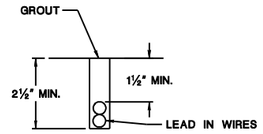
STATE	FEDERAL PROJECT NO.
N.J.	*



SECTION A-A



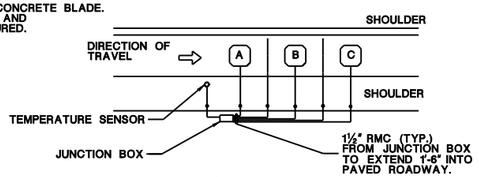
LOOP DETAILS



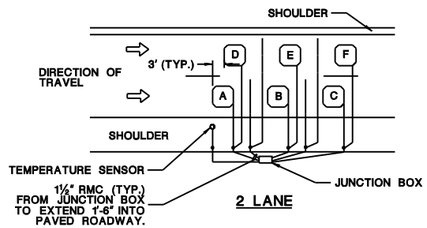
SECTION B-B

NOTES:

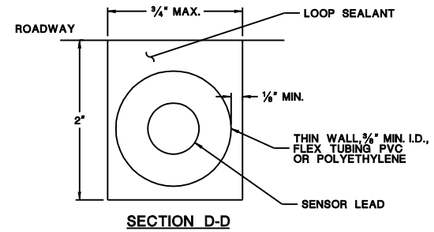
1. LEAD WIRES TWISTED MINIMUM OF 3 TURNS PER FOOT.
2. DRILL HOLE 1'-6" FROM EDGE OF SHOULDER TO INSTALL RMC CONDUIT.
3. 1½" RMC CONDUIT RUN BETWEEN JUNCTION BOX AND SHOULDER SURFACE.
4. INSTALL JUNCTION BOX AT ROAD EDGE FOR CONNECTIONS TO FEEDER CABLE.
5. MAKE ALL CONNECTIONS BETWEEN LEAD WIRES AND LOOP DETECTOR LEADS IN THE JUNCTION BOX.



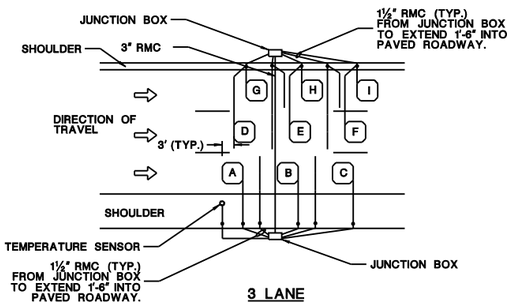
1 LANE



2 LANE



SECTION D-D



3 LANE

IDENTIFICATION OF TRAFFIC MONITORING LOOPS

1. IDENTFY LOOPS WITH DURABLE IDENTIFICATION TAGS ON EACH LOOP LEAD PAIR. AFFIX LETTERS AS FOLLOWS:

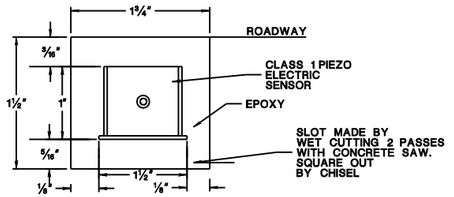
   TAG THE LEADING LOOP AS LOOP "A" (FIRST LOOP IN THE DIRECTION OF TRAVEL OF THE RIGHT MOST LANE VARIOUSLY CALLED SLOW, SHOULDER, OR TRAVEL LANE), LOOP "B" AS THE TRAILING (SECOND) LOOP IN THE SAME LANE AND LOOP "C" AS THE THIRD LOOP IN THE SAME LANE.

   IDENTIFY LOOPS IN GROUPS, WITH THE LEADING LOOP IN THE DIRECTION OF TRAVEL ALWAYS IDENTIFIED BY THE FIRST LETTER IN THE GROUP. ASSIGN THE GROUPS BY LANE ACROSS ROADWAY, TOWARD THE DIVIDER OR MEDIAN.

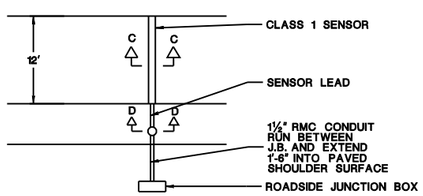
   SIMILARLY DESIGNATE LOOPS IN THE OPPOSITE DIRECTION BY LANE STARTING IN THE RIGHT MOST LANE, USING THE NEXT GROUP OF LETTERS, THEN ACROSS THE LANES TO THE DIVIDER OR MEDIAN.

NOTES:

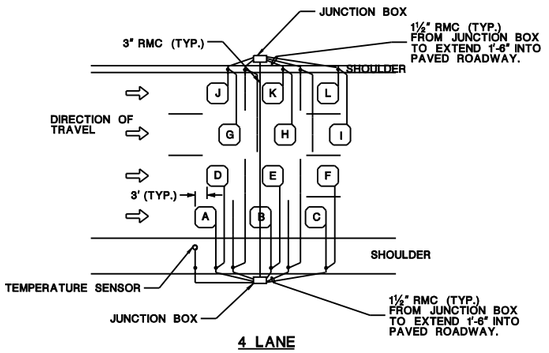
1. CLEAN SLOTS FOR PIEZOELECTRIC AXLE SENSOR, LOOPS AND LEAD-IN CABLES (PRESSURE WASHED WITH WATER) AND DRY PRIOR TO THE APPLICATION OF GROUT.
2. STAGGER ADJACENT LANE SENSORS.
3. WHERE CONCRETE ROADWAY EXISTS, INSTALL LOOPS IN CONCRETE SURFACE PRIOR TO RESURFACING.
4. WHERE REFLECTORS AND CASTINGS AND RUMBLE STRIPS ARE TO BE INSTALLED, ADJUST THE DEPTH OF THE LOOP LEADS AND AXLE SENSOR CABLES ACCORDINGLY TO AVOID DAMAGE.
5. ENSURE GROUT CURES AND IS CAPABLE OF SUPPORTING VEHICULAR TRAFFIC WITHIN A MAXIMUM OF 60 MINUTES FROM START OF INSTALLATION.
6. INSTALL LOOPS AFTER MILLING PROCESS, IF PERFORMED, AND PRIOR TO THE INSTALLATION OF THE FINAL OVERLAY.
7. SENSOR SPACING SHOWN IS TYPICAL SPACING REQUIREMENT. ACTUAL SENSOR SPACING MAY BE ALTERED TO SUIT SITE CONDTIONS AND MANUFACTURER'S RECOMMENDATION.
8. USE THIN WALLED PLASTIC TUBING TO CONTAIN THE SENSOR LEAD WIRE. INSTALL THE TUBING FROM THE END OF THE SENSOR SLOT TO A POINT 6-12 INCHES INSIDE THE JUNCTION BOX OR CONDUIT END.
9. INSTALL PIEZO SENSORS A MINIMUM OF 2 FEET FROM CRACKS, JOINTS, OR SAWCUTS WHEN POSSIBLE.
10. PROVIDE EACH SENSOR WITH A SUFFICIENT LENGTH OF SHIELDED LEAD CABLE FOR TERMINATION AT THE WIM COMPUTER IN THE CABINET WITHOUT SPLICING.
11. INSTALL TEMPERATURE SENSOR IN SHOULDER PER MANUFACTURER'S RECOMMENDATION. SUPPLY ONE TEMPERATURE SENSOR PER WIM COMPUTER.
12. WHEN ENCAPSULATION MATERIAL IS FULLY CURED, GRIND FLUSH WITH ROAD SURFACE USING AN ANGLE GRINDER OR BLET SANDER.



SECTION C-C

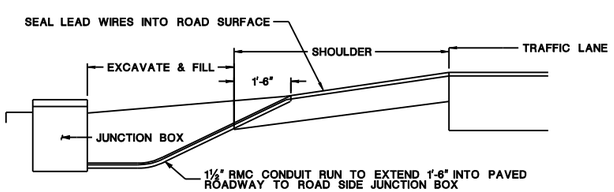


VIBRACOAX TYPE PIEZO AXLE SENSOR DETAILS

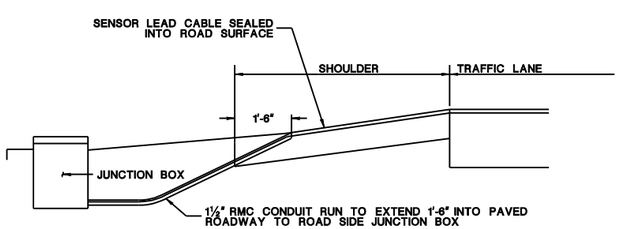


4 LANE

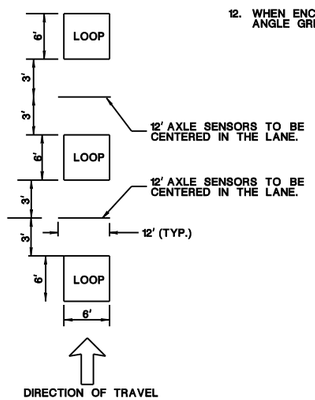
TYPICAL INSTALLATION WIM SITE



LOOP CABLE ROUTING DETAILS



AXLE SENSOR CABLE ROUTING DETAILS



SENSOR LAYOUT
FOR WEIGH IN MOTION SITES

ITSD- 704-23

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

WEIGHT IN MOTION SYSTEM

ROADWAY DEVICES

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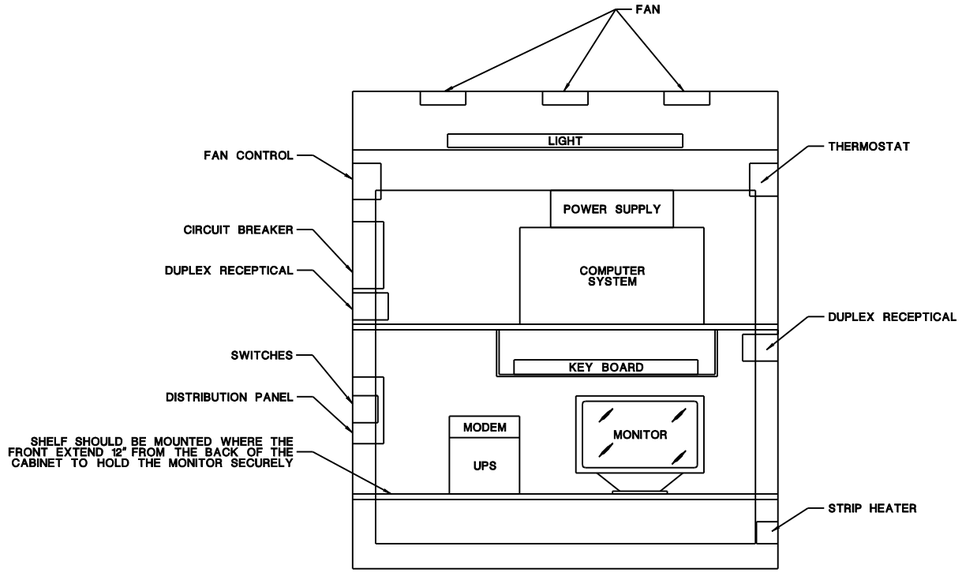

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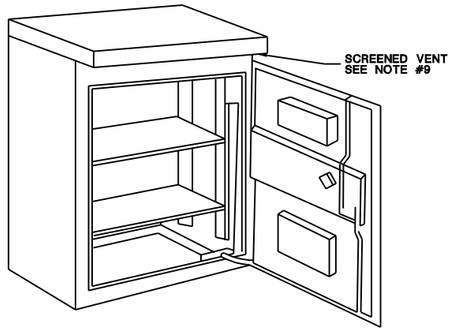
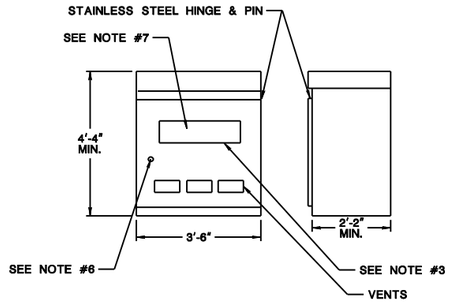


MINIMUM DIMENSIONS OF CABINET



CONTROLLER CABINET DETAILS

NOTES:

1. FABRICATE CABINET OF ¼" THK. ALUM. (GRADE 50-52-H32) THE CABINET TO BE MOUNTED WITH THE ANCHOR BOLT CONFIGURATIONS SHOWN, IF REQUIRED USE¼" THK. ALUM. BASE ADAPTER PLATES AND CONSTRUCTED TO MEET THE MINIMUM CONDUIT ENTRANCE AREA.
2. FIT EACH DOOR WITH A GASKET TO INSURE DUST TIGHT & WEATHERPROOF PROTECTION UNDER ALL WEATHER CONDITIONS.
3. MANUAL CONTROL WEATHERPROOF MOMENTARY CONTACT SWITCH CONNECTED TO 6'-0" REINFORCED CORD STORED IN RECESS BEHIND SMALL DOOR IN LARGE DOOR.
4. INSTALL THREE ADJUSTABLE SHELVES.
5. SECURE SMALL DOOR WITH A SUB-TREASURY LOCK #03675 AND KEYED ALIKE FOR #10 AS MANUFACTURED BY THE AMERICAN HARDWARE CO. NEW BRITIAN, CONN.
6. SECURE LARGE DOOR WITH A CCL LOCK #15481RS WITH A MATCH #2 KEY TO BE SUPPLIED TO NEW JERSEY DEPARTMENT OF TRANSPORTATION. FOR DOOR AND LOCK DETAILS, SEE DRAWING P-21 SHEET 2 OF 2, OF THE ELECTRICAL BUREAU SPECIFICATION EBM- TSC -ITB - 8.
7. WITH THE EXCEPTION OF LARGE DOOR LOCK DETAILS, ALL CABINET DIMENSIONS ARE APPROXIMATE.
8. SECURE THE LARGE DOOR AT THE TOP AND BOTTOM OF THE CABINET BY A LOCKING BAR.
9. INSTALL ALUMINUM VENT WITH SCREEN UNDER FRONT LIP ABOVE DOOR.
10. THERMOSTAT TO BE INSTALLED IN TOP OF CABINET.
11. ENSURE THE MAIN DOOR HANDLE ROTATES INWARD.
12. MOUNT CABINET ON 1'-6" SKIRT.
13. MOUNT THE ELECTRIC SERVICE METER AND DISCONNECT PER ITS-704-10.
14. FOR FOUNDATION DETAILS SEE FOUNDATION, TYPE P ON SHEET T-1607.

REFERENCE

NO.	REVISION / DESCRIPTION	BY	CHECKED	DATE
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ITSD- 704-24

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

WIM SYSTEM / TVS SYSTEM

CONTROLLER WIM / TVS

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STATE	FEDERAL PROJECT NO.
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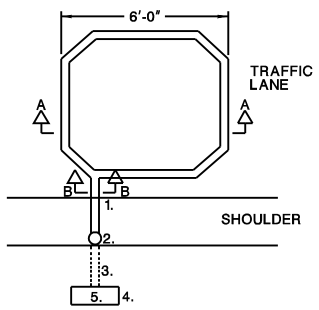
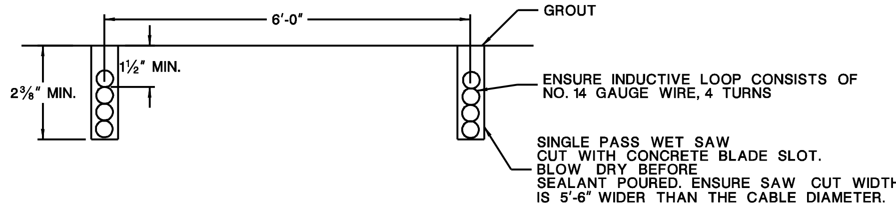
LOOP DETECTOR SCHEDULE

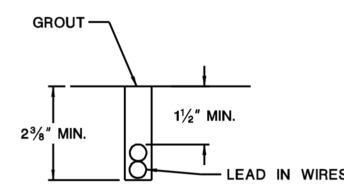
LOOP	SIZE	No.OF TURNS	μH
A	6'-0" X 6'-0"	4	
B	6'-0" X 6'-0"	4	
C	6'-0" X 6'-0"	4	
D	6'-0" X 6'-0"	4	
E	6'-0" X 6'-0"	4	
F	6'-0" X 6'-0"	4	
G	6'-0" X 6'-0"	4	
H	6'-0" X 6'-0"	4	



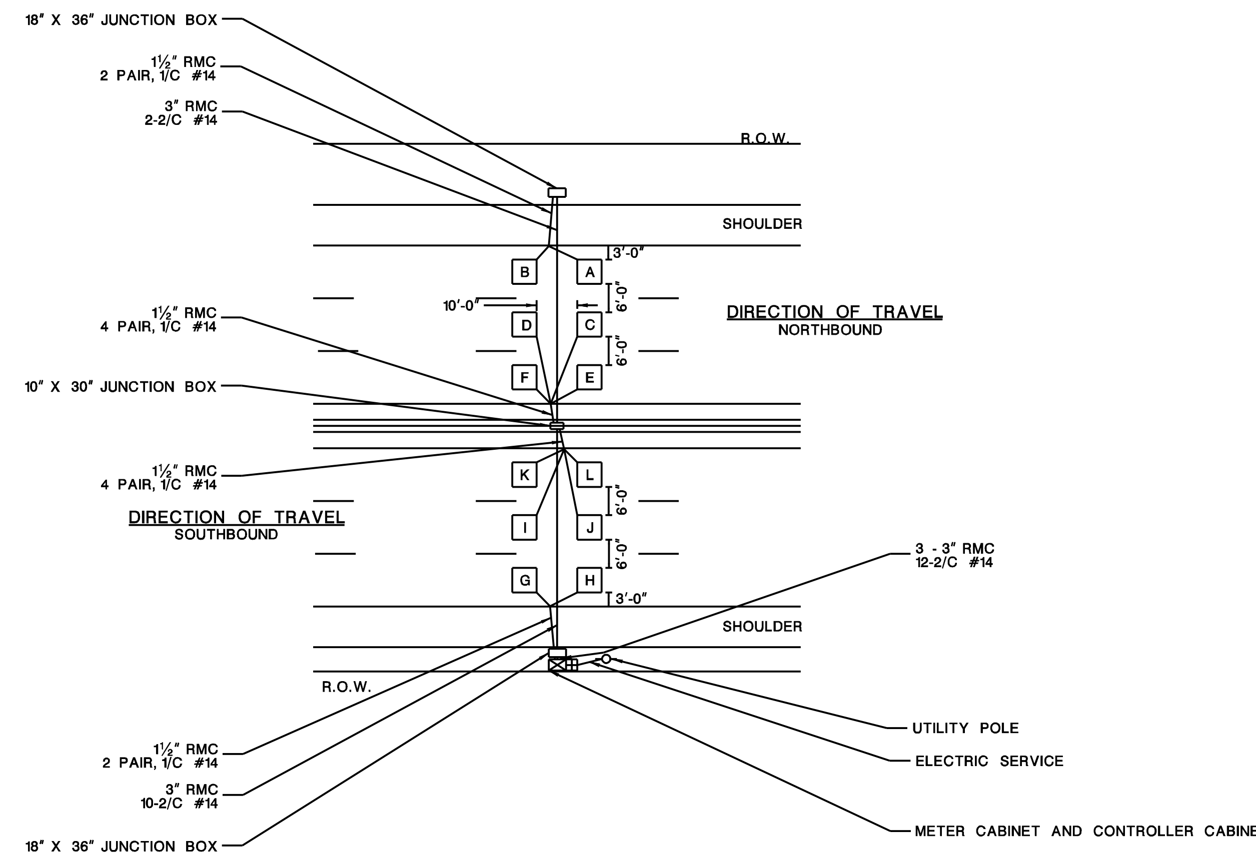
LOOP DETAILS



SECTION A-A



SECTION B-B



NOTES:

1. TWIST LEAD WIRES AT 7 TURNS PER FOOT.
2. DRILL A HOLE IN SHOULDER TO INSTALL RMC CONDUIT.
3. CONSTRUCT 1½" RMC CONDUIT BETWEEN JUNCTION BOX AND SHOULDER SURFACE.
4. INSTALL JUNCTION BOX INSTALLED AT ROAD EDGE FOR CONNECTIONS TO FEEDER CABLE.
5. PERFORM ALL CONNECTIONS BETWEEN LEAD WIRES AND LOOP DETECTOR LEADS IN THE JUNCTION BOX ONLY.

IDENTIFICATION OF TRAFFIC MONITORING LOOPS

1. IDENTIFY LOOPS CLEARLY MARKED BY DURABLE IDENTIFICATION TAGS ON EACH LOOP LEAD PAIR. AFFIX LETTERS TO LOOPS AS FOLLOWS:

   LOOP A SHALL BE THE LEADING LOOP (FIRST LOOP IN THE DIRECTION OF TRAVEL) OF THE RIGHTMOST LANE (VARIOUSLY CALLED SLOW, SHOULDER, OR TRAVEL LANE), IN THE NORTHBOUND OR EASTBOUND DIRECTION. LOOP B SHALL BE THE TRAILING (SECOND) LOOP IN THE SAME LANE.

   THE LOOPS SHALL BE IDENTIFIED IN PAIRS (C-D, E-F, G-H, I-J, K-L), WITH THE LEADING LOOP IN THE DIRECTION OF TRAVEL ALWAYS IDENTIFIED BY THE FIRST LETTER IN THE PAIR. THE PAIRS SHALL THEN BE ASSIGNED BY LANE ACROSS THE NORTHBOUND OR EASTBOUND ROADWAY, TOWARD THE DIVIDER OR MEDIAN, STARTING WITH LOOPS A-B IN THE RIGHTMOST NORTHBOUND OR EASTBOUND LANE.

   LOOP PAIRS IN THE SOUTHBOUND OR WESTBOUND LANES WILL BE SIMILARLY DESIGNATED BY LANE STARTING IN THE RIGHTMOST SOUTHBOUND OR WESTBOUND LANE, USING THE NEXT PAIR OF LETTERS, THEN ACROSS THE LANES TO THE DIVIDER OR MEDIAN.

ITSD-704-25

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAFFIC VOLUME SYSTEM

ROADWAY DEVICES

SCALE:
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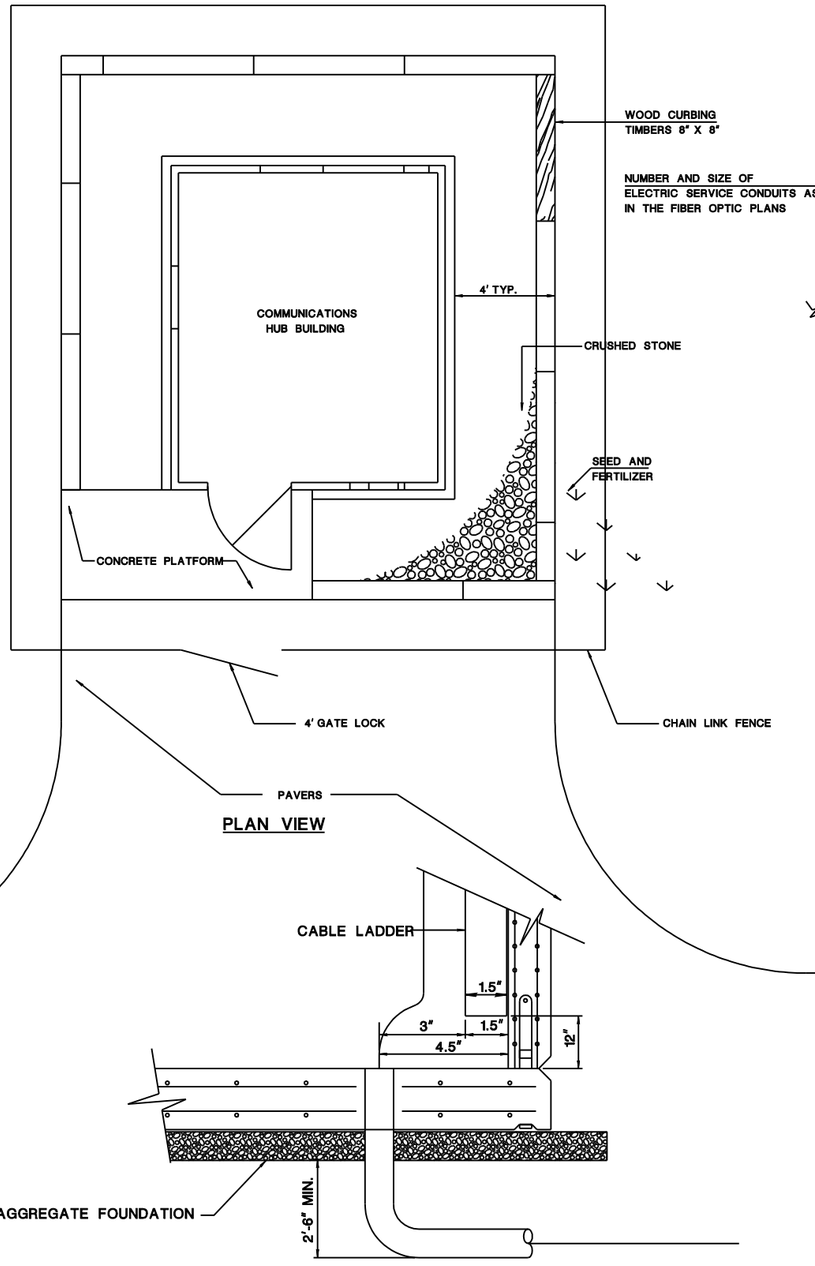
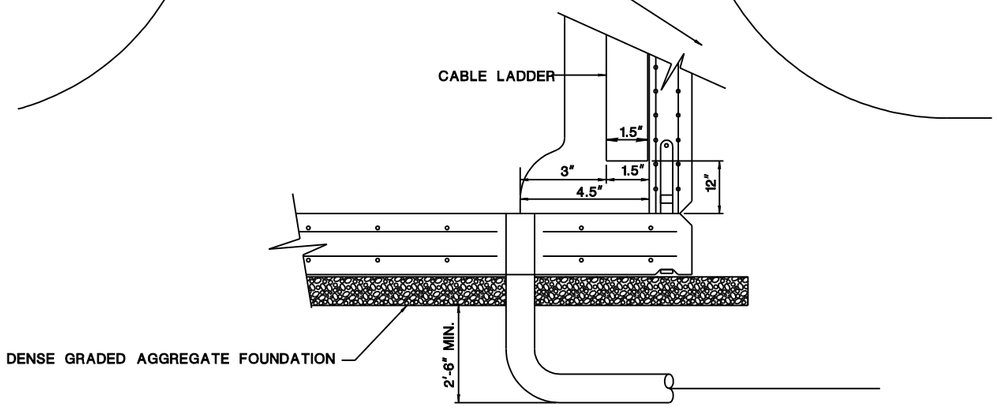
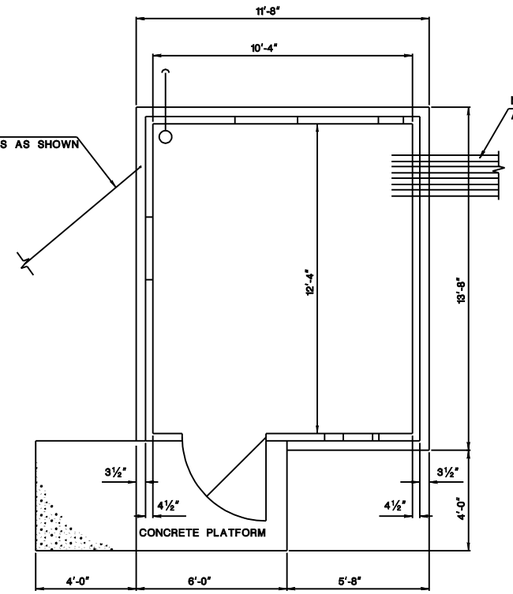


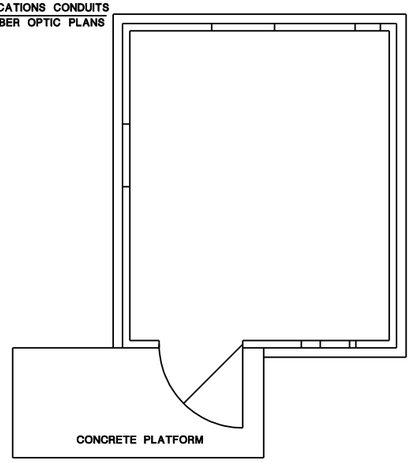
PLAN VIEW



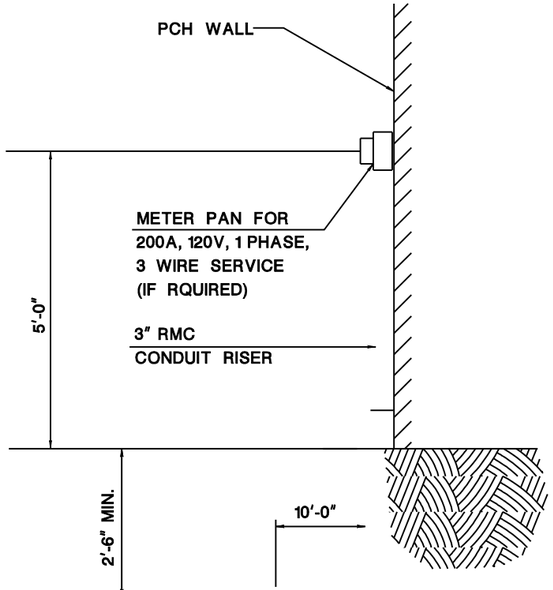
COMMUNICATIONS CABLE ENTRANCE DETAIL



PLAN VIEW



GROUNDING PLAN



SERVICE ENTRANCE DETAIL

ITSD- 704-26

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

COMMUNICATION HUB

SHEET 1 OF 4

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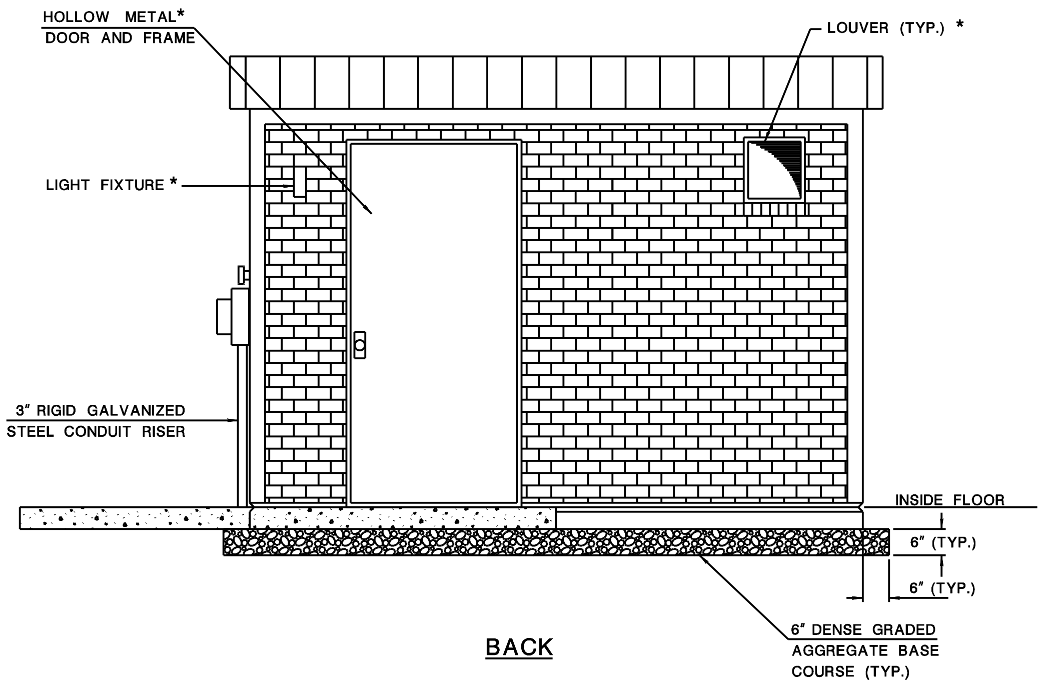

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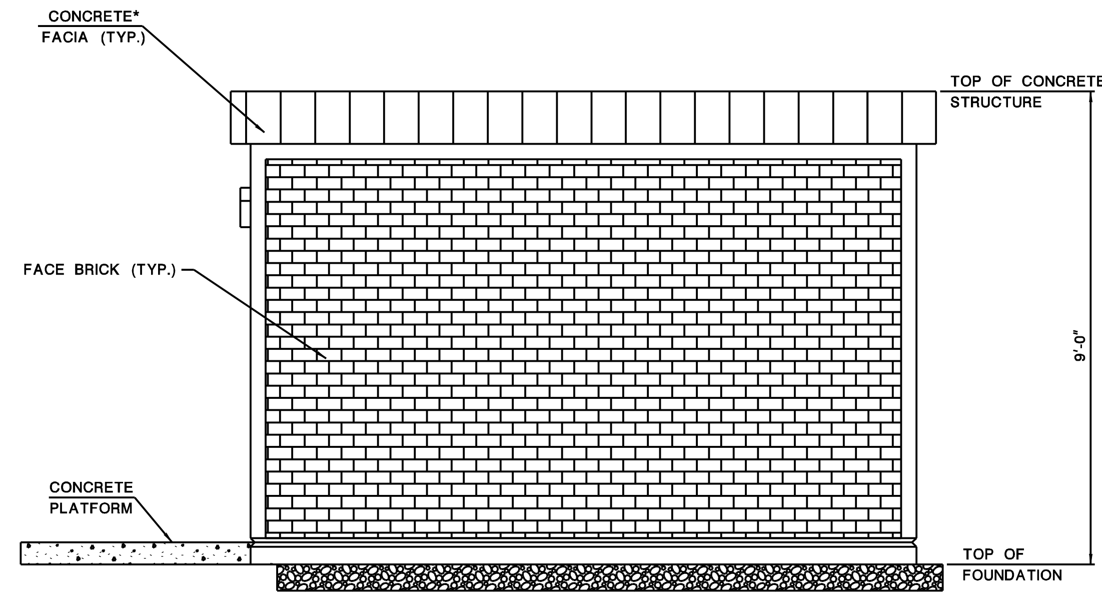
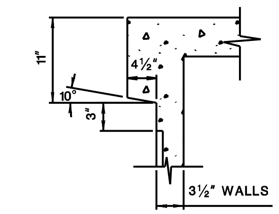
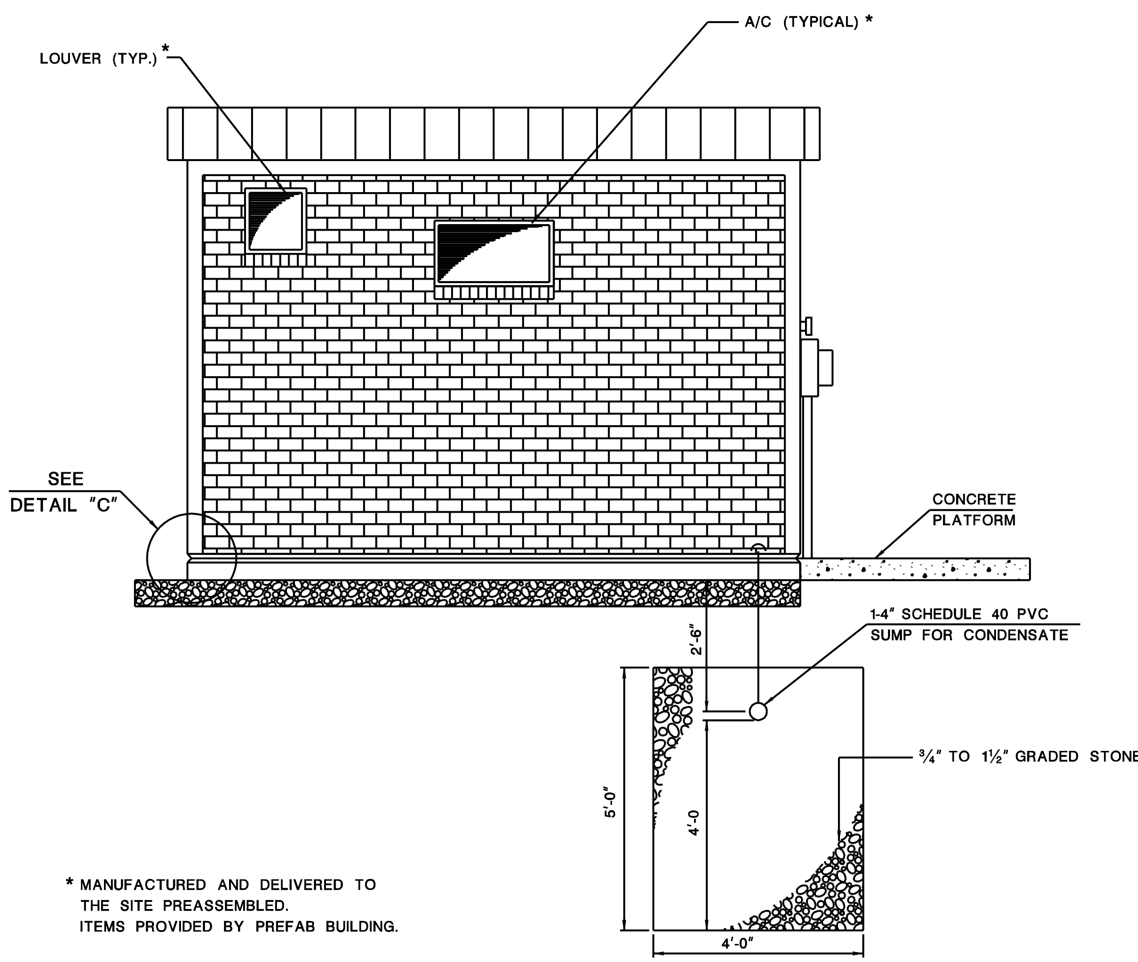


RIGHT SIDE



DETAIL "A"



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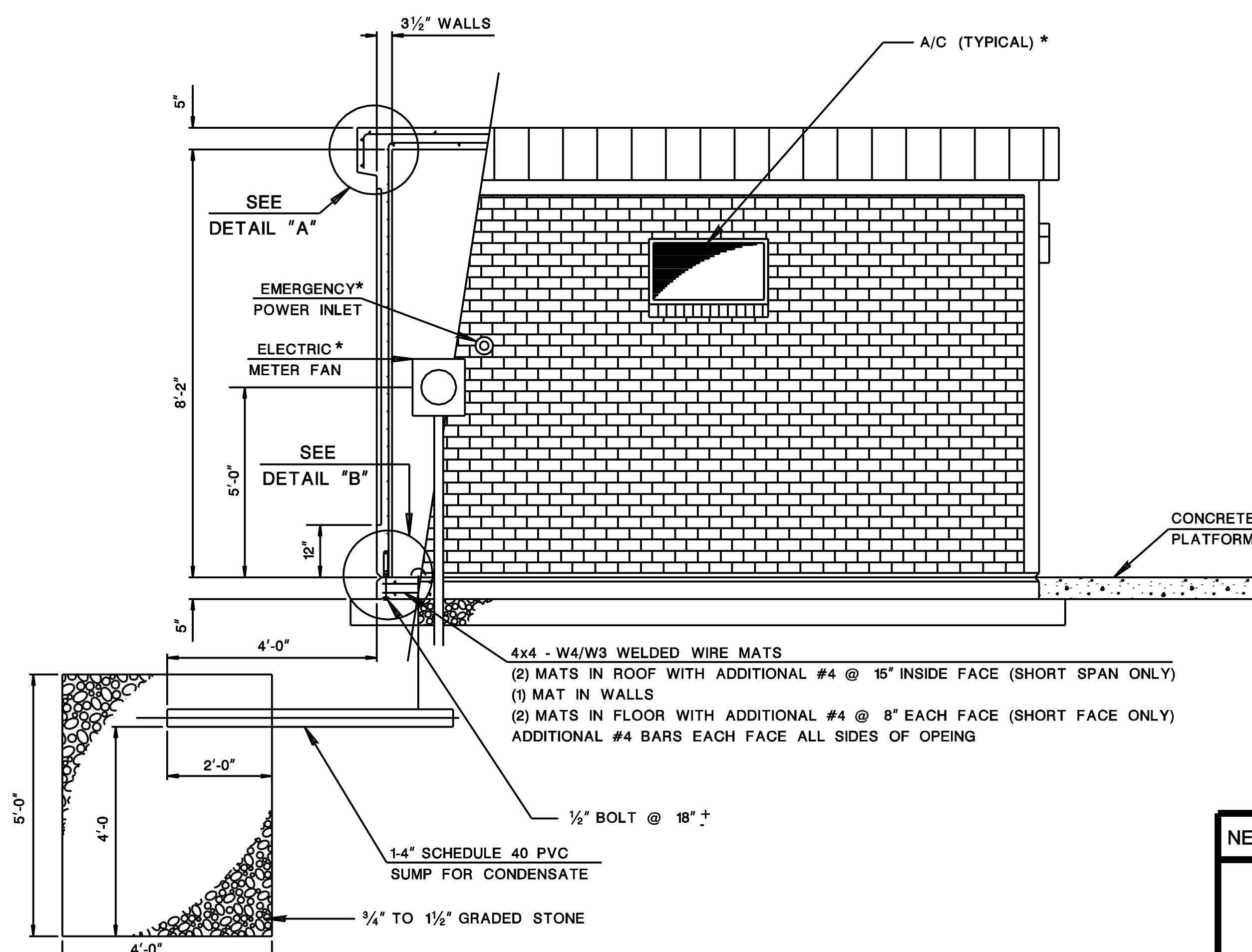

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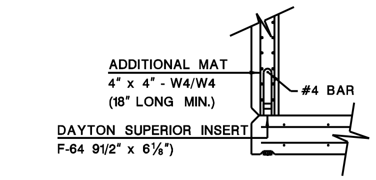
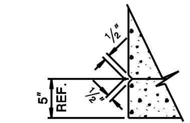


DETAIL "B" - ADDITIONAL REINFORCING



DETAIL "C"

* MANUFACTURED AND DELIVERED TO THE SITE PREASSEMBLED. ITEMS PROVIDED BY PREFAB BUILDING.

ITSD- 704-27

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

COMMUNICATION HUB

SHEET 2 OF 4

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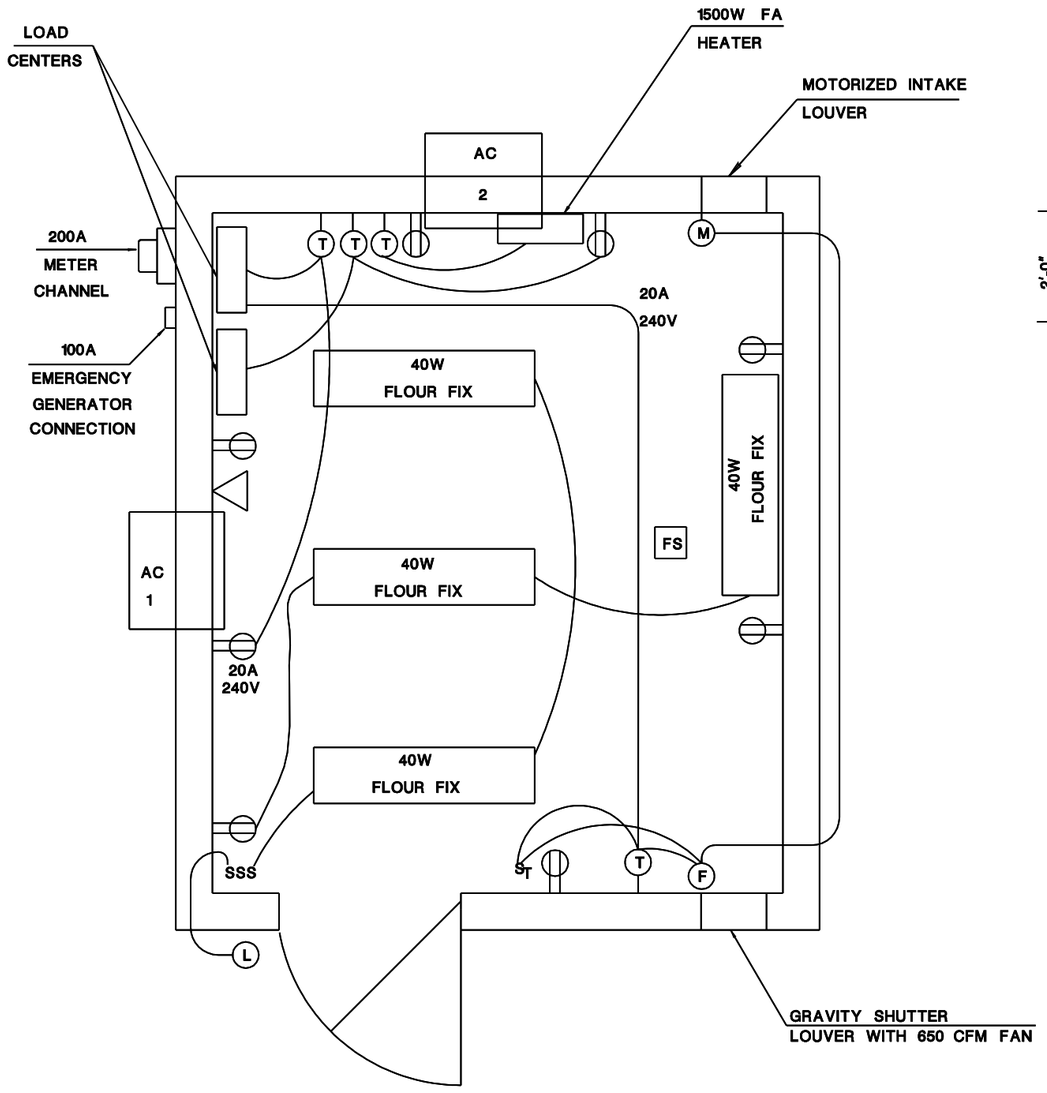
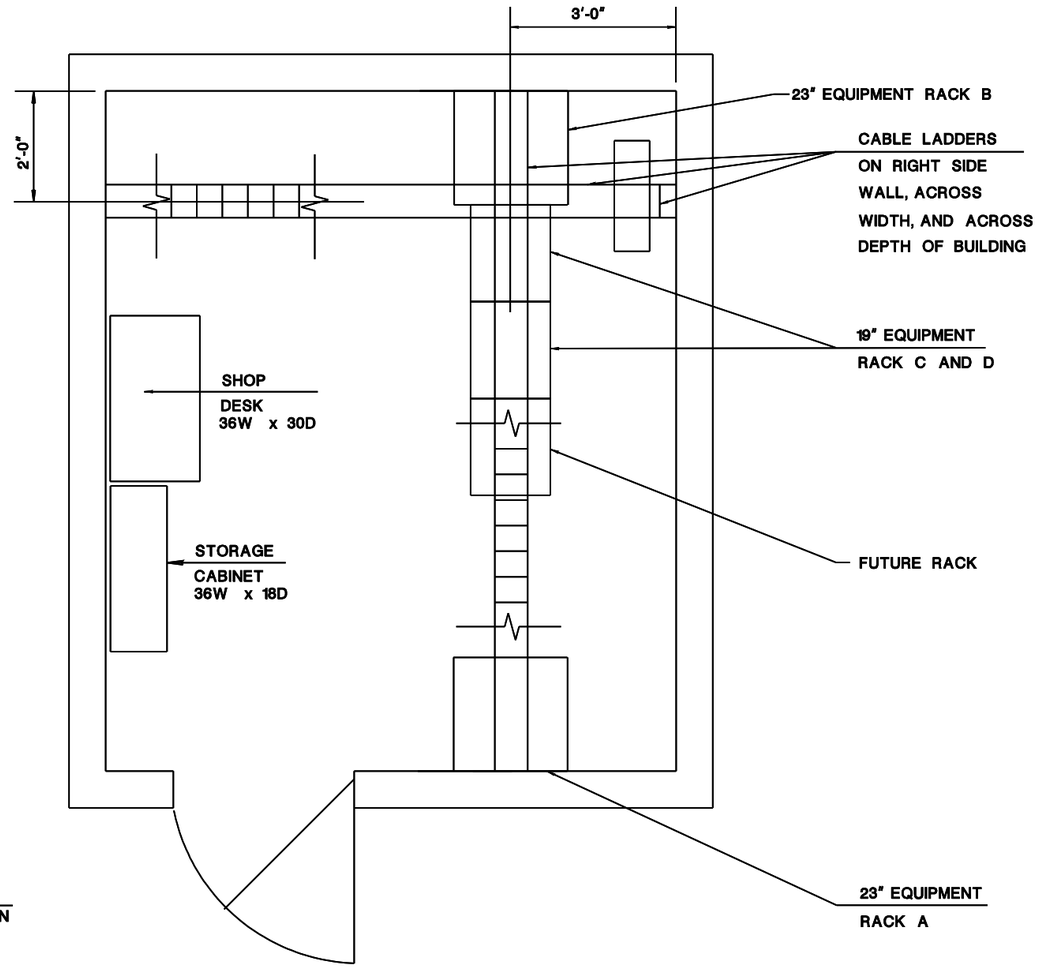


ELECTRIC WIRING PLAN



RACK AND EQUIPMENT LOCATION PLAN

ITSD- 704-28

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

COMMUNICATION HUB

SHEET 3 OF 4

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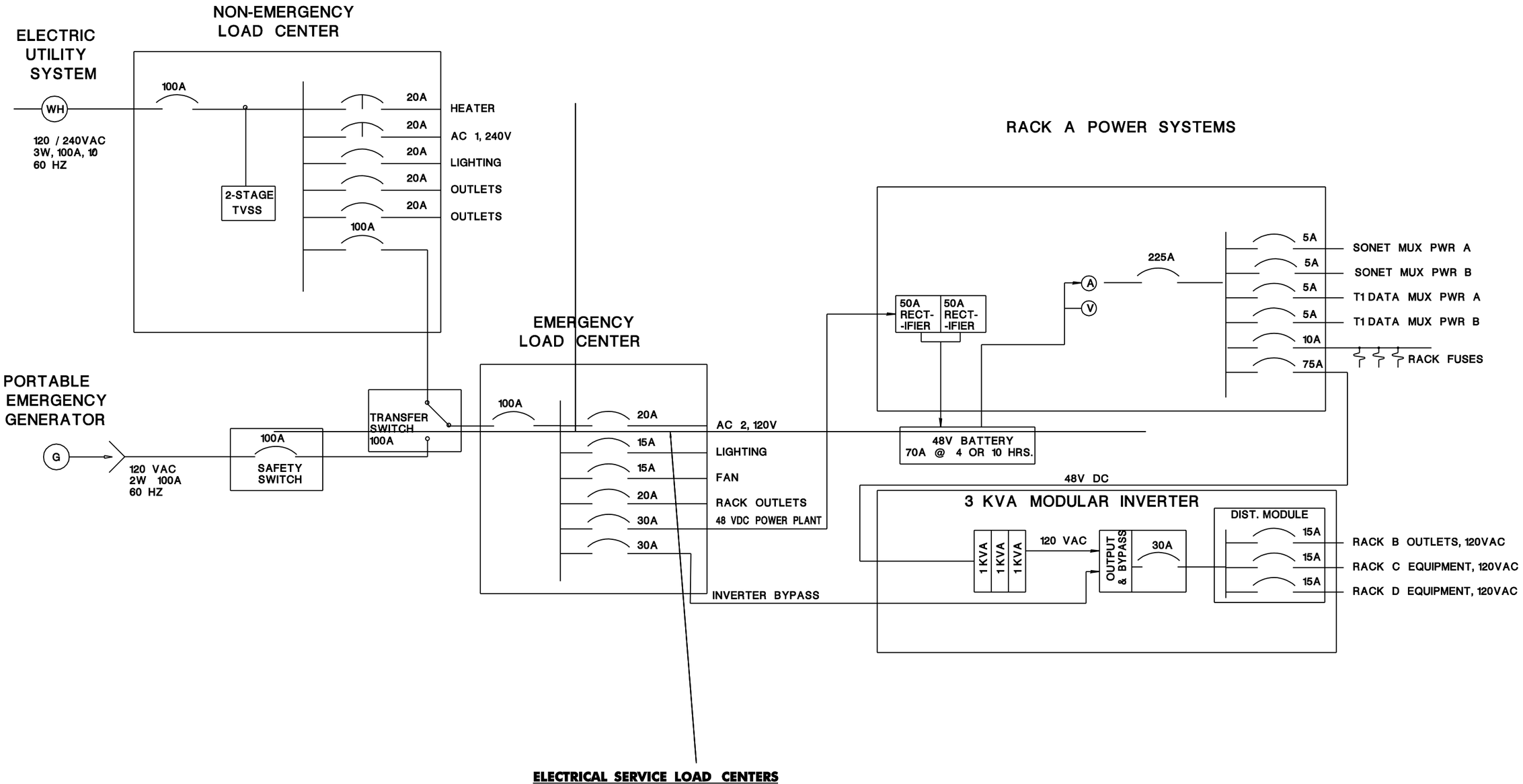

ELECTRICAL SERVICE LOAD CENTERS

ITSD- 704-29

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

GENERAL SYSTEMS

COMMUNICATION HUB

SHEET 4 OF 4

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