INDEX FOR STANDARD ELECTRICAL DETAILS

DRAWING NUMBER	D E S C R I P T I O N
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T-0207	TRAFFIC SIGNAL ALUMINUM TRANSFORMER BASE TB-20
T-0307	TRAFFIC SIGNAL MAST ARM ALUMINUM 15', 20' & 25' WITH CLAMP DETAILS
	FOR "T" & "C" STANDARDS, & SAFETY CHAIN INSTALLATION
T-0407	UNIVERSAL JOINT, WIRE OUTLET, MAST ARM SLIP FITTER, POST TOP ADAPTER
	AND ELEVATOR PLUMBIZER
T-0507	DETAILS OF SIGNAL ASSEMBLY SPIDER AND T-BAR
T-0607	CLAMP MOUNTING DETAILS
T-0707	PEDESTRIAN SIGNAL STANDARD, SLIP FITTER, PUSH BUTTON & ANCHOR BOLT
T-0807	TRAFFIC SIGNAL STANDARD "C"
T-0907	TRAFFIC SIGNAL MAST ARM 15', 20' & 25' WITH CLAMP DETAIL FOR "K" STANDARD
T-1007	TRAFFIC SIGNAL STANDARD "K" TRANSFORMER BASE & TRAFFIC SIGNAL EXTENSION "KE"
T-1107	TRAFFIC SIGNAL STANDARD, STEEL AND MAST ARM DETAILS
T-1207	TRAFFIC SIGNAL MAST ARM-TROMBONE WITH CLAMP DETAILFOR "T" & "C" STANDARDS
T-1307	TRAFFIC SIGNAL STANDARD, SC AND MAST ARM ASSEMBLY DETAILS
T-1407	"RED SIGNAL AHEAD" SIGN
T-1607	TYPICAL DETAILS FOR FOUNDATION MCF, P & P-MC
T-1707	TYPICAL DETAILS FOR FOUNDATION SFT, SFK & SPF
T-1807	TYPICAL TRAFFIC SIGNAL INSTALLATION
T-1907	METER CABINET "T" AND "TL" ELECTRICAL INSTALLATION
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T-2907	FOUNDATION "SFX" BARRIER CURB
T-3407	TRAFFIC SIGNAL STANDARD STEEL AND ARM DETAILS FOR ELECTRICAL SIGNS
T-3507	METER CABINET FABRICATED TYPE 40" AND 50"
T-3807	17" x 30" COMPOSITION JUNCTION BOX
T-4307	STEEL TRAFFIC SIGNAL STANDARD FOUNDATION DETAILS
T-4507	OVERHEAD MAST ARM ADJUSTABLE SWING SIGN BRACKETS

DRAWING NUMBER	D E S C R I P T I O N
L-0107	LIGHTING STANDARD WITH LIGHTING MAST ARMS
L-0207	METER CABINET 2M 240/480 VOLT AND 2M-MC 240/480 VOLT
L-0307	METER CABINET FOUNDATION TYPE "1-M", "2-M", "1M-MC", "2M-MC" & "MCF"
L-0407	JUNCTION BOX FOUNDATION "JBF" CAST IN PLACE
L-0507	JUNCTION BOX FOUNDATION "JBF", 18" x 36" JUNCTION BOX "JB" PRECAST
L-0607	18" x 36" JUNCTION BOX CAST IN PLACE, TYPICAL INSTALLATION
	OF JUNCTION BOX & UNDER ROADWAY CONDUIT
L-0707	METER CABINET, 1M, 120/240 VOLT AND TYPE 1M-MC, 120/240 VOLT
L-0907	METER CABINET DETAILS "L" ELECTRICAL INSTALLATION
L-1007	SIGN LIGHTING FOR "GO" SIGNS
L-1107	BRIDGE DETAILS
L-1307	CAPPING DETAILS FOR JBF & 18" x 36" JUNCTION BOX
L-1407	METER CABINET, CAST & FABRICATED
L-1507	ALUMINUM TRANSFORMER BASE DETAILS PART No. NJTB - 30
L-1707	SCHEMATIC WIRING DIAGRAM
L-1807	LIGHTING STANDARD
L-1907	DETAIL OF TYPICAL UNDERDECK LIGHTING INSTALLATION
L-2007	TOWER LIGHTING (SHEET 1 OF 2)
L-2007	TOWER LIGHTING (SHEET 2 OF 2)
L-2107	LIGHTING ALUMINUM TRANSFORMER BASE PART No. TB-17 (BREAKAWAY)

DRAWING NUMBER	D E S C R I P T I O N
ITS-704-01	TYPICAL CONDUIT HANGER ATTACHMENTS SHEET 1 OF 2
ITS-704-02	TYPICAL CONDUIT HANGER ATTACHMENTS SHEET 2 OF 2
ITS-704-03	TYPICAL CONDUIT OVER CULVERT
ITS-704-04	TYPICAL UNDERGROUND ITS CONDUIT TRANSITION AND LAYOUT
ITS-704-05	ITS CONDUIT TYPE A
ITS-704-06	FIBER OPTIC WARNING TAPE, MARKER AND TAG
ITS-704-07	JUNCTION BOX ITS TYPE A
ITS-704-08	JUNCTION BOX ITS TYPE B
ITS-704-09	JUNCTION BOX ITS TYPE C
ITS-704-10	JUNCTION BOX ITS TYPE D
ITS-704-11	CAMERA SURVEILLANCE SYSTEM, CAMERA STANDARD TYPE A & B SHEET 1 OF 3
ITS-704-12	CAMERA SURVEILLANCE SYSTEM, CAMERA STANDARD TYPE A & B SHEET 2 OF 3
ITS-704-13	CAMERA SURVEILLANCE SYSTEM, CAMERA STANDARD TYPE A & B SHEET 3 OF 3
ITS-704-14	CAMERA SURVEILLANCE SYSTEM, CAMERA STANDARD TYPE C SHEET 1 OF 2
ITS-704-15	CAMERA SURVEILLANCE SYSTEM, CAMERA STANDARD TYPE C SHEET 2 OF 2
ITS-704-16	CAMERA SURVEILLANCE SYSTEM, FOUNDATION CSS
ITS-704-17	CAMERA SURVEILLANCE SYSTEM, CONTROLLER CAMERA
ITS-704-18	TRAVEL TIME SYSTEM, TTS DETECTOR TYPE A SHEET 1 OF 2
ITS-704-19	TRAVEL TIME SYSTEM, TTS DETECTOR TYPE A SHEET 2 OF 2
ITS-704-20	TRAVEL TIME SYSTEM, CONTROLLER TTS & FOUNDATION TTS TYPE A
ITS-704-21	CONTROLLER ITS
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ITS-704-23	METER CABINET ITS & FOUNDATION ITS TYPE MC
ITS-704-24	FOUNDATION ITS TYPE C, C-MC, D & D-MC
ITS-704-25	COMMUNICATION HUB SHEET 1 OF 4
ITS-704-26	COMMUNICATION HUB SHEET 2 OF 4
ITS-704-27	COMMUNICATION HUB SHEET 3 OF 4
ITS-704-28	COMMUNICATION HUB SHEET 4 OF 4
ITS-704-29	WEIGH IN MOTION SYSTEMS, ROADWAY DEVICES
ITS-704-30	TRAFFIC VOLUME SYSTEM (TVS), ROADWAY LOOPS
ITS-704-31	CONTROLLER CABINET TYPE P-TMS
ITS-704-32	ROADWAY WEATHER INFORMATION SYSTEM, WEATHER STATION SHEET 1 OF 2
ITS-704-33	ROADWAY WEATHER INFORMATION SYSTEM, WEATHER STATION SHEET 2 OF 2
ITS-704-34	ROADWAY WEATHER INFORMATION SYSTEM, ROADWAY DEVICES

LEGEND:

T	TRAFFIC SIGNAL DETAILS, SECTION 702
L	HIGHWAY LIGHTING DETAILS, SECTION 703
ITS	INTELLIGENT TRANSPORTATION SYSTEMS DETAILS, SECTION 704

NOTE:

DETAILS FOR GENERAL ITEMS, SECTION 701 ARE COVERED UNDER EITHER T, L OR ITS.

BDC-11D-03 CHANGES TO ITS INDEX
BDC-07D -03 ORIGINAL SHEET

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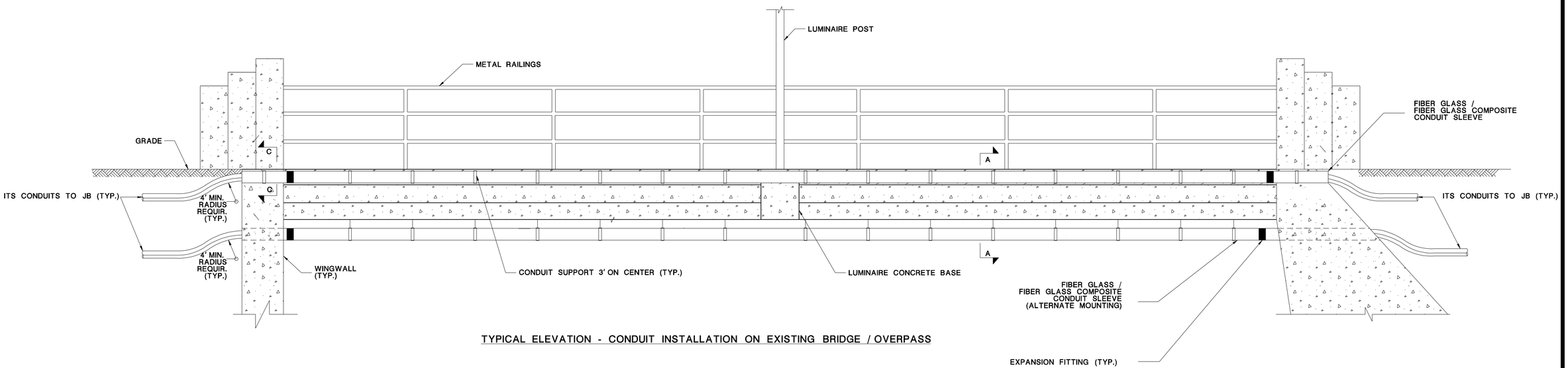
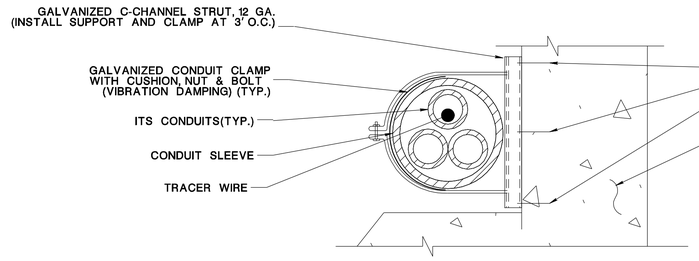
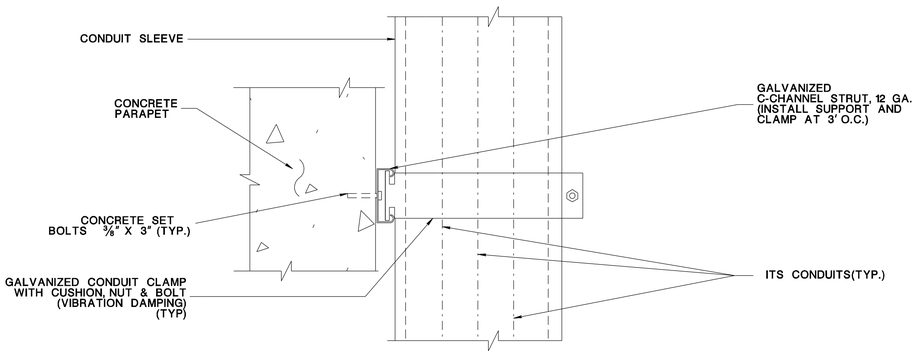


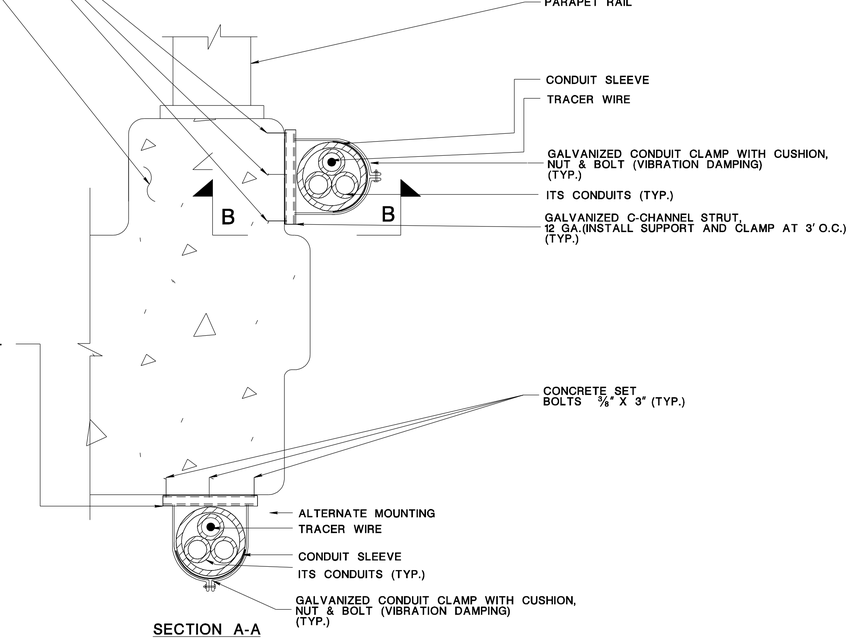
TYPICAL ELEVATION - CONDUIT INSTALLATION ON EXISTING BRIDGE / OVERPASS



SECTION C-C



SECTION B-B



SECTION A-A

NOTES:

1. PROVIDE CONDUIT EXPANSION FITTINGS AT EXISTING STRUCTURE EXPANSION JOINTS.
2. ALTERNATE MOUNTING ON UNDERSIDE OF PARAPET MAY BE PERMITTED WHEN IT IS NECESSARY TO CORE DRILL THROUGH WING WALL IN LIEU OF ABUTMENT WALL. SEAL ALL WING WALL PENETRATIONS WITH EPOXY AROUND CONDUIT.
3. SURVEY EACH STRUCTURE AND SUBMIT SHOP DRAWINGS OF CONDUIT ATTACHMENT DETAILS ALONG WITH MANUFACTURERS RECOMMENDED EXPANSION FITTINGS FOR APPROVAL.
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. WHEN ALTERNATE MOUNTING IS PROPOSED TO BE USED, ENSURE THAT EXISTING UNDER CLEARANCE IS MAINTAINED.

NOT TO SCALE

ITS-704-01

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TYPICAL CONDUIT HANGER ATTACHMENTS

SHEET 1 OF 2

REFERENCE

BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

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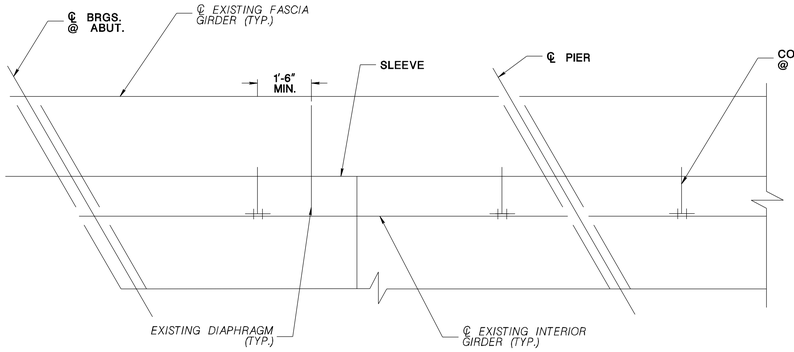
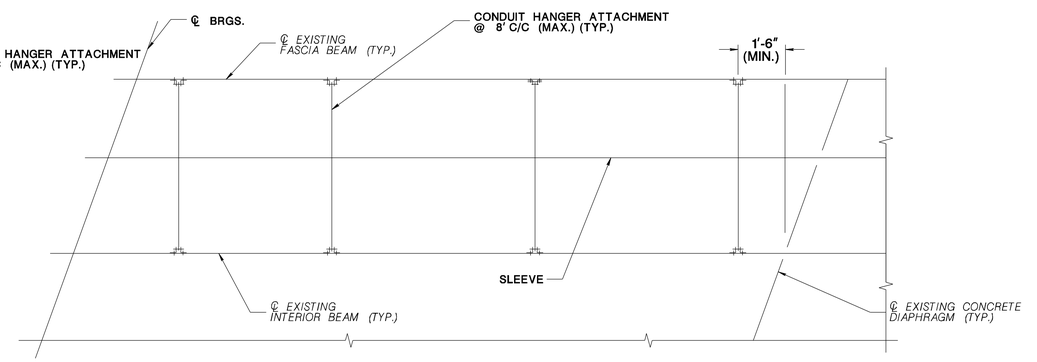


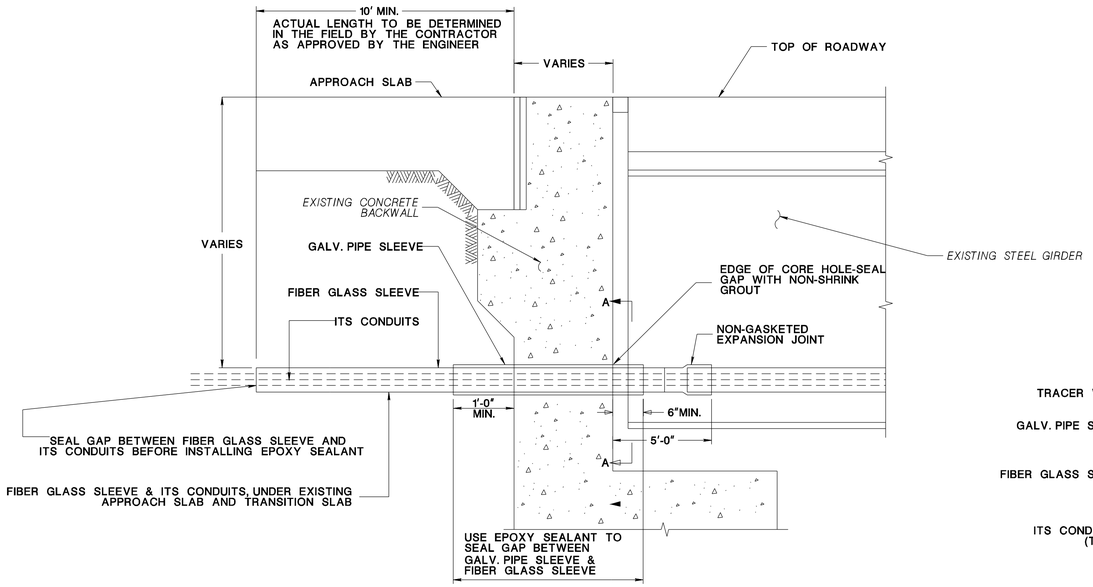
TYPICAL FRAMING PLAN STEEL STRUCTURE

CONDUIT HANGER ATTACHMENT ON EXISTING STRUCTURE

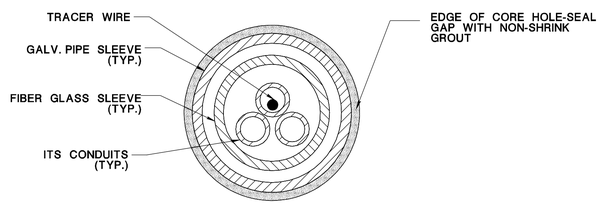


TYPICAL FRAMING PLAN PRESTRESSED CONCRETE STRUCTURE

CONDUIT HANGER ATTACHMENT ON EXISTING STRUCTURE



SECTION THROUGH EXISTING ABUTMENT BACKWALL



SECTION A-A

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 PER BOLT. HOT-DIP GALVANIZE STEEL PLATES IN ACCORDANCE WITH ASTM A123 AND ALL 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 ENGINEER.
5. WELDING IS NOT 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. EXPANSION JOINT SPACING NOT TO EXCEED MANUFACTURER'S RECOMMENDATIONS.
10. ENSURE THE FINISH COAT PAINT COLOR MATCHES WITH THE PAINT COLOR ON 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 ENGINEER FOR APPROVAL.

NOT TO SCALE

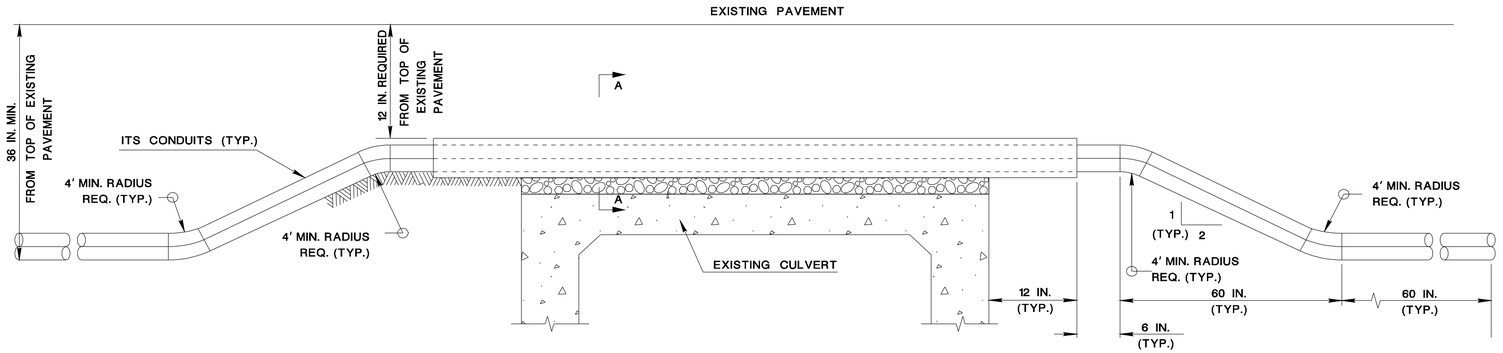
ITS-704-02

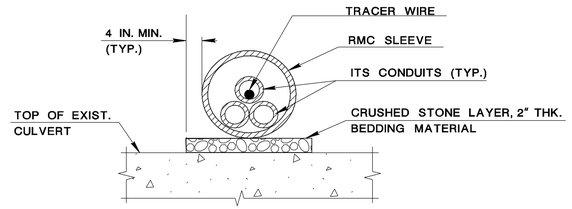
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TYPICAL CONDUIT HANGER ATTACHMENTS

SHEET 2 OF 2





SECTION A-A

NOTES:

1. CONTRACTOR TO SURVEY THE STRUCTURE AND SUBMIT SHOP DRAWINGS FOR INSTALLATION DETAILS TO THE ENGINEER FOR APPROVAL PRIOR TO SLEEVE CONSTRUCTION.
2. SEAL ENDS OF RMC SLEEVE WITH OAKUM AND PACK WITH DUCT SEALANT.
3. INSTALL RMC SLEEVE ACCORDING TO MIN. TRENCH DEPTH FOR TYPICAL AREA. HOWEVER CONDUIT MAY NEED TO BE SET AT DEPTHS LESS THAN THOSE INDICATED IN ORDER TO CROSS THE STRUCTURE.
4. BEDDING MATERIAL IS REQUIRED AT LOCATIONS WHERE TYPICAL PLACEMENT DEPTH IS NOT POSSIBLE AND REQUIRES RMC SLEEVE TO BE PLACED AT SHALLOWER DEPTH ATOP EXISTING STRUCTURE.

NOT TO SCALE

ITS-704-03

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TYPICAL CONDUIT OVER CULVERT

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BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

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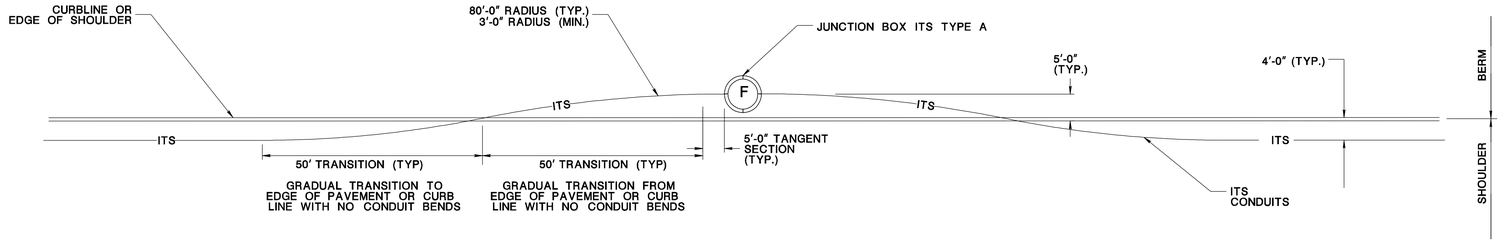
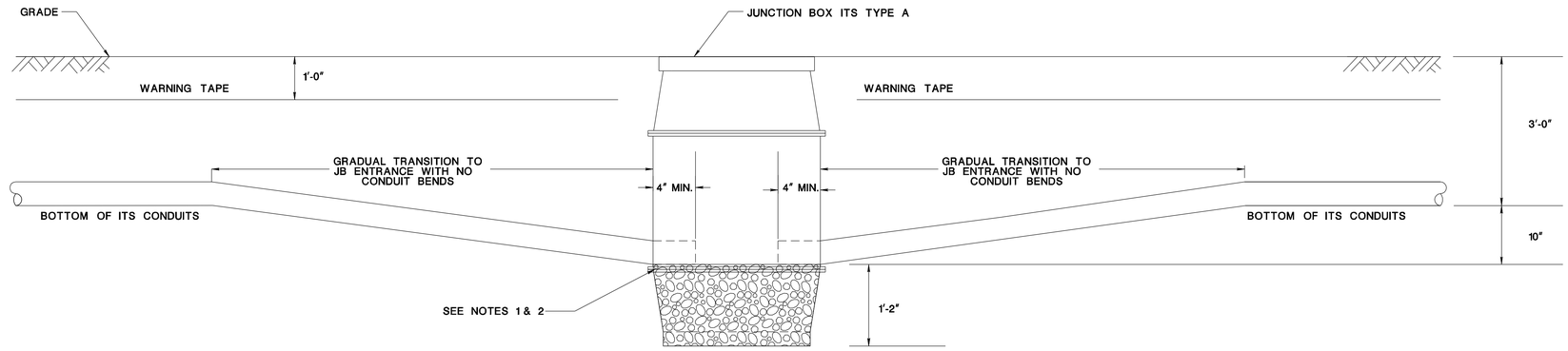


TYPICAL ITS CONDUIT HORIZONTAL TRANSITION



TYPICAL ITS CONDUIT VERTICAL TRANSITION

TYPICAL UNDERGROUND ITS CONDUIT TRANSITION AND LAYOUT

NOTES:

1. THE GRADUAL TRANSITION OF CONDUITS ENTERING THE JUNCTION BOX IS TO BE SUCH THAT THE CONDUIT ENDS REST ON THE STONES INSIDE THE JUNCTION BOX.
2. THE TRANSITION MUST PROVIDE FOR SUFFICIENT DRAINAGE TO ENSURE THAT WATER DOES NOT GET TRAPPED IN THE CONDUITS.
3. BACKFILL THE TRENCH WITHIN THE SAME DAY.
4. TRANSITION LAYOUT FOR ITS CONDUITS LEADING TO JUNCTION BOXES ITS TYPE C AND D IS TO BE SIMILAR.

NOT TO SCALE

ITS-704-04

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TYPICAL UNDERGROUND ITS CONDUIT TRANSITION AND LAYOUT

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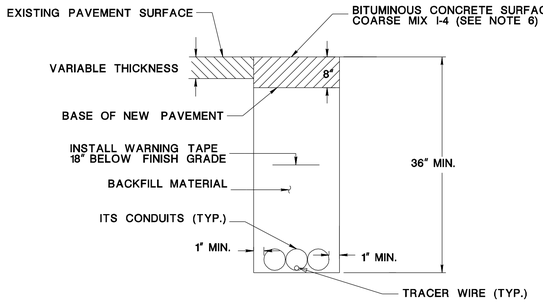
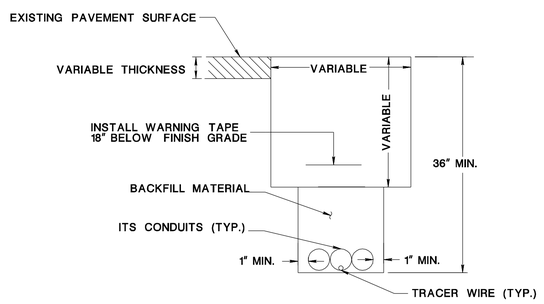
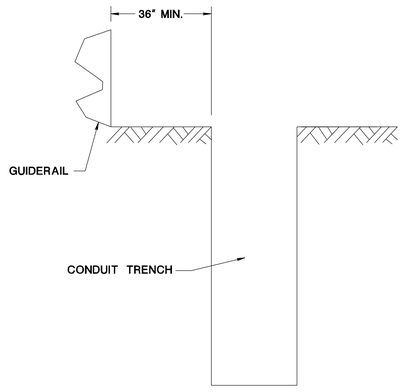


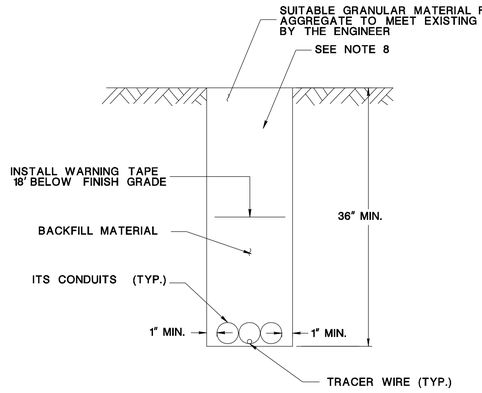
IN BITUMINOUS SHOULDER, TRAVELED WAY OR RAMP AREA



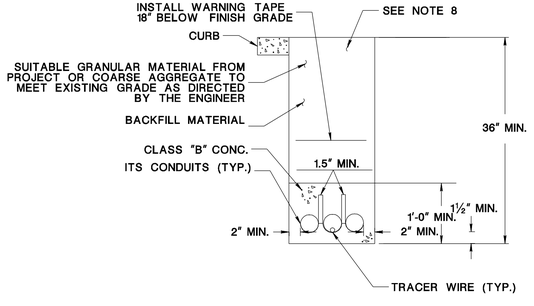
IN REHABILITATED/RECONSTRUCTED CONCRETE SHOULDER OR BITUMINOUS SHOULDER, TRAVELED WAY OR RAMP AREA



CONDUIT TRENCH OFFSET FROM EXISTING AND PROPOSED GUIDERAIL



IN GRASS AREA



BEHIND THE CURB

ITS CONDUIT, TYPE A

NOTES:

1. BEFORE BACKFILLING TRENCH, REMOVE ALL CUT DEBRIS FROM SITE.
2. PREPARE THE TRENCH BOTTOM FOR ITS CONDUITS TO ELIMINATE LUMPS, RIDGES, JAGGED EDGES AND HOLLOWS, UTILIZING CLASS C BEDDING MATERIALS.
3. CENTER THE ITS CONDUITS IN THE TRENCH AND HOLD FIRMLY IN PLACE WHILE THE TRENCH IS BACKFILLED.
4. ENSURE THE BACKFILL MATERIAL IS CLASS C BEDDING 2' ABOVE THE TOP OF CONDUIT OR TO THE BOTTOM OF THE PAVEMENT BOX.
5. COMPACT THE BACKFILL MATERIAL IN EQUAL LIFTS TO A MAXIMUM OF 6" EACH WITH A MODIFIED VIBRATORY PLATE COMPACTOR. (MINIMUM THREE PASSES PER LIFT)
6. MOUND UP THE BITUMINOUS CONCRETE SURFACE COARSE MIX I-4 ABOVE THE EXISTING PAVEMENT SURFACE. AFTER THOROUGH COMPACTION ENSURE FINISH GRADE IS ½" ABOVE THE ADJACENT PAVEMENT SURFACE. COMPACT IN ACCORDANCE WITH SECTION 1003 (10 TON VIBRATORY ROLLER).
7. FOR WARNING TAPE DETAILS SEE FIBER OPTIC WARNING TAPE, MARKER & TAG DETAIL.
8. AFTER MATERIAL IS BACKFILLED, SEED AND MULCH IN ACCORDANCE WITH DIVISION 800.
9. WHEN THERE IS A CONCRETE SHOULDER, SAW CUT AND REMOVE THE CONCRETE MATERIAL BACK TO THE CURB, UTILIZING 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. FOR CONCRETE REPLACEMENT ENSURE THE THICKNESS OF THE QUICK SETTING CONCRETE IS THE SAME AS THE EXISTING. REPLACE EXPANSION JOINTS AND DOWELS IN KIND AND INSTALL LONGITUDINAL JOINT TIES IN ACCORDANCE WITH THE STANDARD CONSTRUCTION DETAILS. CONTRACTOR IS TO SUPPLY THE ENGINEER WITH DETAILED DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
12. INSTALL ONE #14 AWG CONDUCTOR TYPE THHW/THWN IN THE MIDDLE CONDUIT PER TRENCH.
13. UNLESS OTHERWISE SPECIFIED, EACH ITS CONDUIT IS 2" IN DIAMETER (I.D.) MEETING ALL CONDUIT REQUIREMENTS FOR FNMC (HDPE).
14. PRIOR TO TERMINATION, ENSURE THE ITS CONDUITS NORMALIZES A MINIMUM OF 24 HOURS. ENSURE CONDUIT SLACK AND TERMINATIONS INSIDE THE JUNCTION BOX ARE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR DISTANCES BETWEEN JUNCTION BOXES AND THE PROPER TEMPERATURE VARIATION TO ENSURE THE PROPER SLACK AND TERMINATION.
15. ENSURE THAT ONE OF ITS CONDUITS IS RED IN COLOR AND IS INSTALLED ON EITHER THE LEFT OR RIGHT SIDE OF THE TRENCH. THE REMAINING TWO ITS CONDUITS ARE TO BE ORANGE IN COLOR.

NOT TO SCALE

ITS-704-05

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

ITS CONDUIT TYPE A

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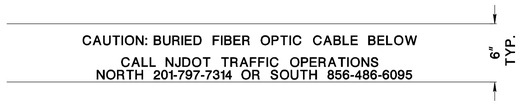
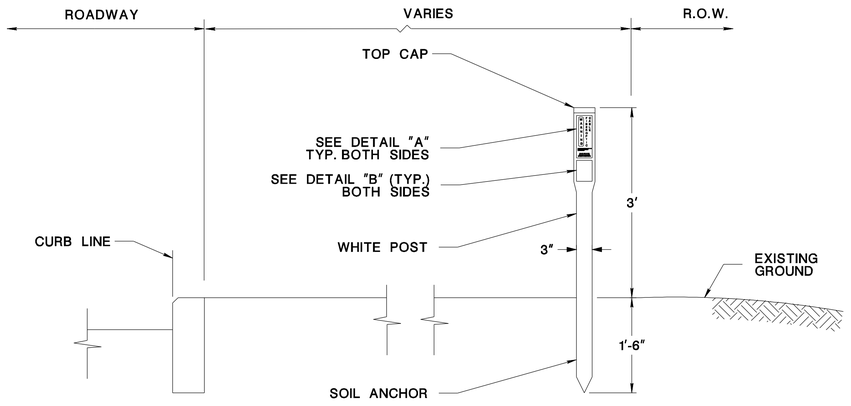


WARNING TAPE

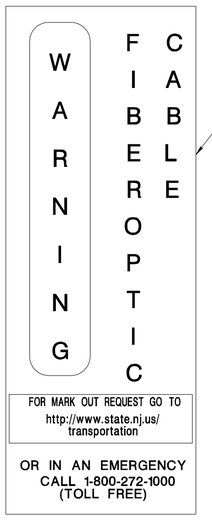
(BLACK LETTERS ON ORANGE BACKGROUND)

NOTE:

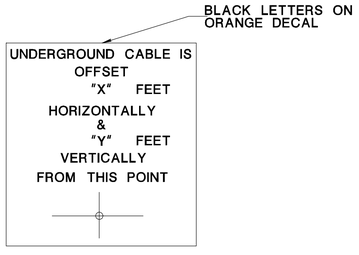
1. PROVIDE WARNING TAPE TO BE ORANGE, 4 MIL. FLEXIBLE POLYETHYLENE FILM AND IS RESISTANT TO ACIDS, BASES, HYDROCARBONS AND WATER.



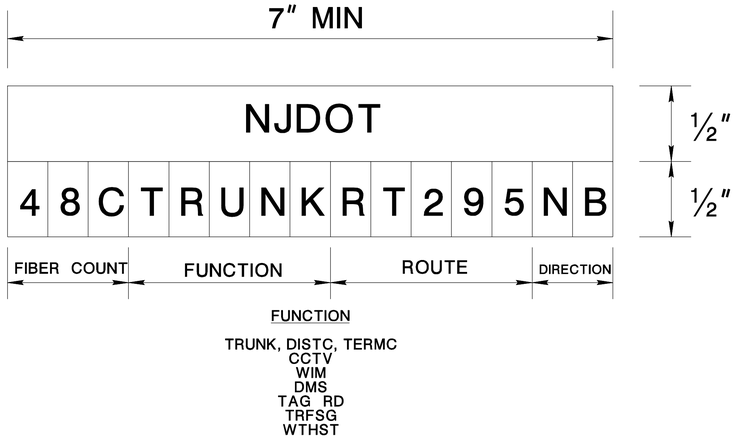
FIBER OPTIC CABLE MARKER
SPACE MARKERS 500' APART



DETAIL "A"
3"x9" WARNING DECAL



DETAIL "B"
3"x4" WARNING DECAL



FUNCTION

TRUNK, DISTC, TERMC
CCTV
WIM
DMS
TAG RD
TRFSG
WTHST

FIBER OPTIC CABLE TAG

NOT TO SCALE

FIBER OPTIC WARNING TAPE, MARKER AND TAG

ITS-704-06

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

FIBER OPTIC WARNING TAPE, MARKER AND TAG

* / *

NJDOT Design Services
BDC-11D-03 MISC. CHANGES
BDC07A-03 - ORIGINAL SHEET
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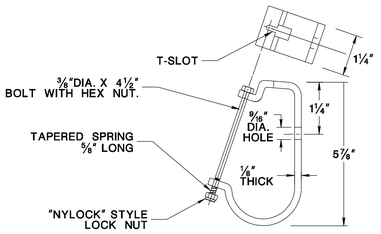
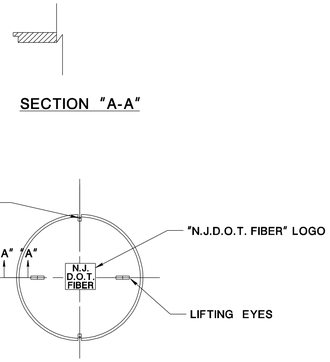


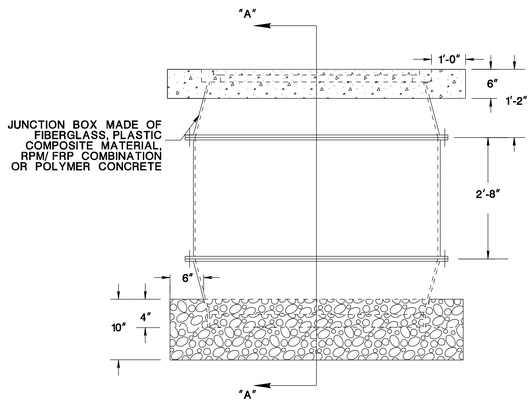
(6) CABLE BRACKETS (STAINLESS STEEL)



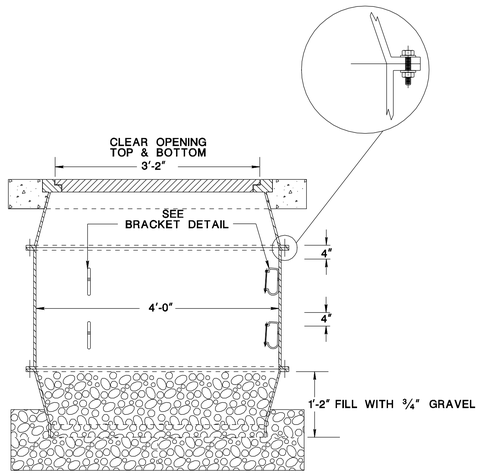
POLYMER CONCRETE COVER

NOTES:

1. AS A MINIMUM, DESIGN THE BOX ASSEMBLY FOR TIER 22 LOADING AS SPECIFIED IN ANSI/ SCTE 77 2002 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY".
2. PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER AND INCLUDE TEST RESULTS SHOWING THAT THE JUNCTION BOX AND COVER DESIGN MEETS THE LOADING REQUIREMENT.
3. DESIGN THE JUNCTION BOX WITH A MINIMUM SAFETY FACTOR OF 2.0 FOR WHEEL LOADS AND 2.0 FOR SOIL LOADS, SO THAT THE COVER DEFLECTION AT DESIGN LOADS DOES NOT EXCEED 0.5 INCHES AND SIDE WALL DEFLECTION DOES NOT EXCEEED 0.25 INCHES PER FOOT OF HEIGHT OF BOX. PERFORM TESTING ACCORDING TO CURRENT WESTERN UNDERGROUND COMMITTEE GUIDE NO. 3.6 NON-CONCRETE ENCLOSURE.
4. ENSURE ANY POINT ON THE COVER OR BOX WITHSTANDS A 70 FT. LBS. IMPACT ADMINISTERED WITH A C-TUP ACCORDING TO ASTM D-2444.
5. 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.
6. ENSURE THE MATERIALS ARE RESISTANT TO DIRECT FLAME AND HEAT IN ACCORDANCE WITH ASTM D635.
7. ENSURE ALL HARDWARE IS STAINLESS STEEL.
8. MOUNT THREE PAIRS OF CABLE BRACKETS AT 120 DEGREES APART.
9. FASTEN EACH CABLE BRACKET WITH A ½" DIA. X 1½" LONG BOLT AND (1) HEX NUT, (2) FLAT WASHERS.
10. FACTORY ASSEMBLE THE JUNCTION BOX AND USE SILICON CAULKING FOR ALL FLANGE JOINTS.
11. ENSURE THE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5.
12. PERMANENTLY MOLD IDENTIFICATION OF THE COVER ON THE TOP SURFACE WITH "N.J.D.O.T. FIBER".
13. ENSURE THE COLOR OF THE COVER AND THE PART OF THE BOX THAT REMAINS VISIBLE AFTER INSTALLATION IS "CONCRETE GREY".
14. SET THE TOP OF THE POLYMER CONCRETE COVER FLUSH WITH THE TOP OF THE JUNCTION BOX AT GRADE.
15. PROVIDE AND INSTALL 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 OF NJDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION 2007.
19. TERMINATE RIGID NON-METALLIC CONDUITS WITH BELL END FLUSH WITH THE INSIDE WALL OF THE JUNCTION BOX.
20. TERMINATE FLEXIBLE NON-METALLIC CONDUIT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND MANUFACTURER'S REQUIREMENTS. LAY FNMC ON THE GRAVEL/BROKEN STONE IN JB. EXTEND CONDUIT ENDS 4" PAST THE INSIDE WALL OF THE JB.
21. ENSURE CONDUITS ENTER INTO THE JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE RE.
22. INSTALL A CONCRETE COLLAR AROUND THE TOP OF THE JUNCTION BOX OF CLASS "C" CONCRETE 6" THICK.
23. 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.
24. SAND ALL CONDUIT OPENINGS. AFTER THE CONDUITS ARE INSTALLED, SEAL ALL CONDUIT ENTRANCES WITH AN EPOXY OR SILICON CAULK.
25. PROVIDE AND INSTALL PROTECTIVE COVER WITH THE BOLT ASSEMBLY.
26. PROVIDE AND INSTALL COMPACTED ¾" GRAVEL OR BROKEN STONE.
27. PROVIDE AND INSTALL GROUNDING ROD (NOT SHOWN) AS PER NEC.



ELEVATION



SECTION "A-A"

JUNCTION BOX ITS, TYPE A

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

NOT TO SCALE

ITS-704-07

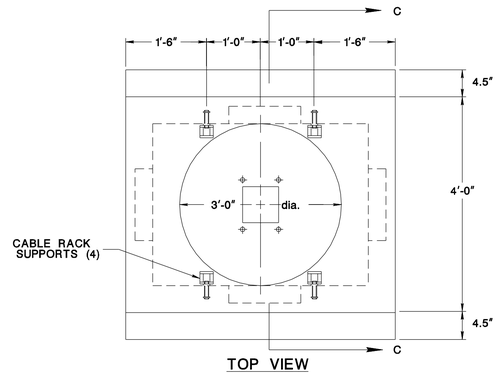
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

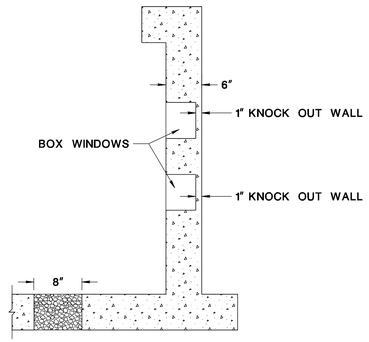
JUNCTION BOX ITS TYPE A

BDC-11D-03 MISC. CHANGES
BDC-07D-09 ORIGINAL SHEET

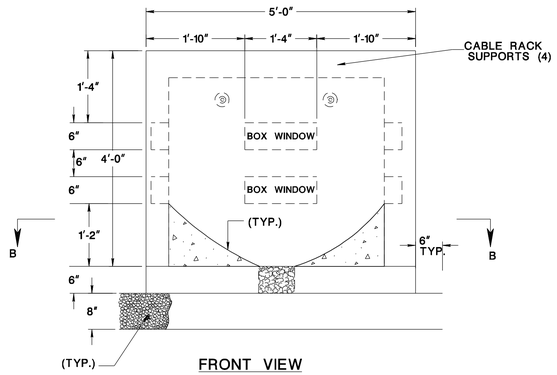
NJDOT Design Services



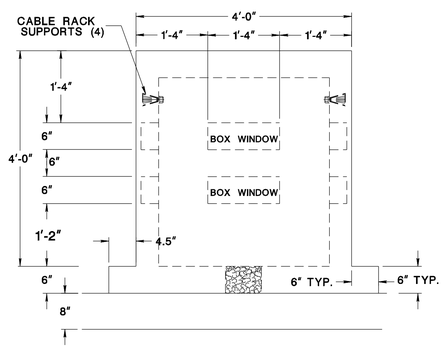
TOP VIEW



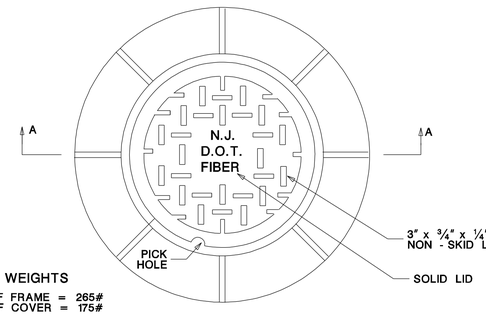
KNOCK-OUT WALL SECTION



FRONT VIEW

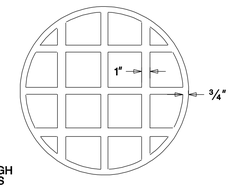


SIDE VIEW

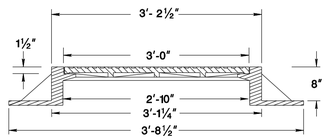


MINIMUM WEIGHTS

WEIGHT OF FRAME = 265#
WEIGHT OF COVER = 175#

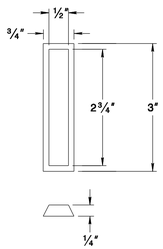


UNDERSIDE OF COVER

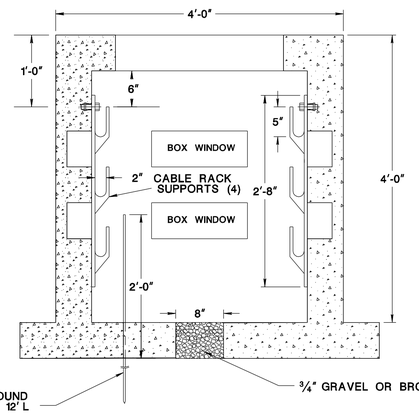


SECTION A-A

RING AND COVER

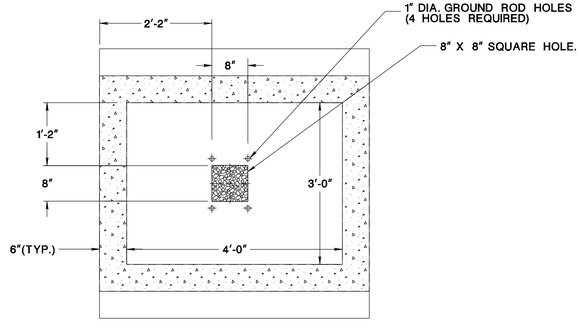


NON-SKID LUG

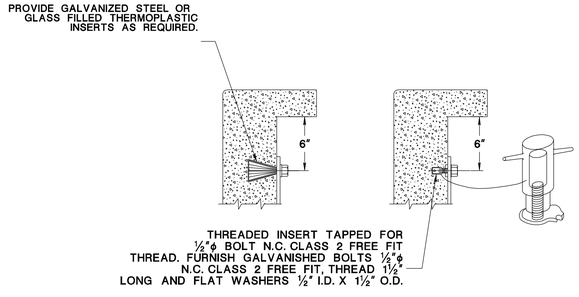


SECTION C-C

CABLE RACK



SECTION B-B



CABLE RACK SUPPORTS

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)
   COVER THE STEEL REINFORCEMENT WITH A MINIMUM OF 1" OF CONCRETE.
5. AFTER THE INSTALLATION OF CONDUIT, COMPLETELY SEAL ALL OPEN RECESSES WITH BRICK AND GROUT.
6. ENSURE THE RING AND COVER ARE 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 RIGID NON-METALLIC CONDUITS WITH BELL END FLUSH WITH THE INSIDE WALL OF THE JUNCTION BOX.
9. TERMINATE FLEXIBLE NON METALLIC CONDUIT (FNMC) IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND MANUFACTURERS REQUIREMENTS. FNMC TO LAY ON THE GRAVEL/BROKEN STONE IN JB. CONDUIT ENDS TO EXTEND 4" PAST THE INSIDE WALL OF JB.
10. ENSURE CONDUITS ENTER INTO THE JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE ENGINEER. MAINTAIN A 2" SEPARATION BETWEEN ADJACENT WALLS, CONDUITS AND CABLE RACKS.
11. PROVIDE 4 CABLE RACKS AS INDICATED.
12. PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER FOR DESIGN CALCULATIONS SHOWING THE JUNCTION BOX MEETS ALL LOADING REQUIREMENTS.
13. PROVIDE 8" THK. LAYER OF COMPACTED ¾" GRAVEL OR BROKEN STONE.
14. PERMANENTLY MOLD IDENTIFICATION OF THE COVER ON THE TOP SURFACE WITH "NJDOT FIBER".
15. PROVIDE AND INSTALL GROUND ROD AS PER NEC REQUIREMENTS.

JUNCTION BOX ITS, TYPE B

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

NOT TO SCALE

ITS-704-08

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

JUNCTION BOX ITS TYPE B

NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-08 - ORIGINAL SHEET

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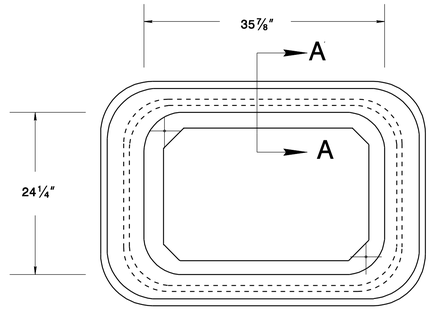
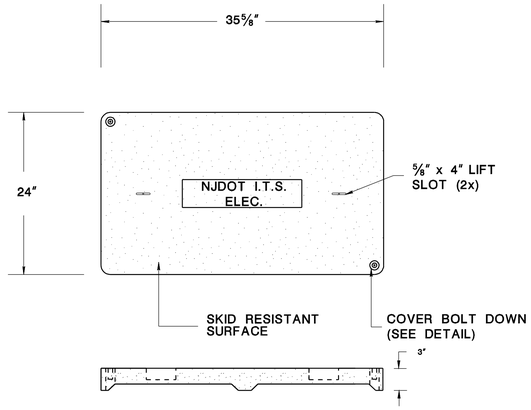


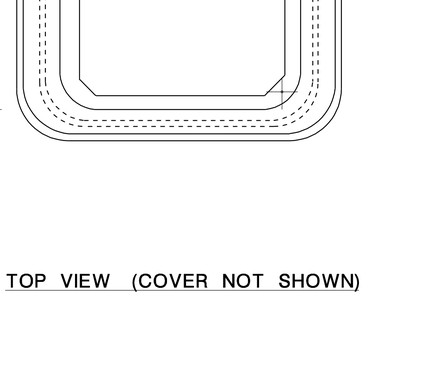
TOP VIEW (COVER NOT SHOWN)



COVER

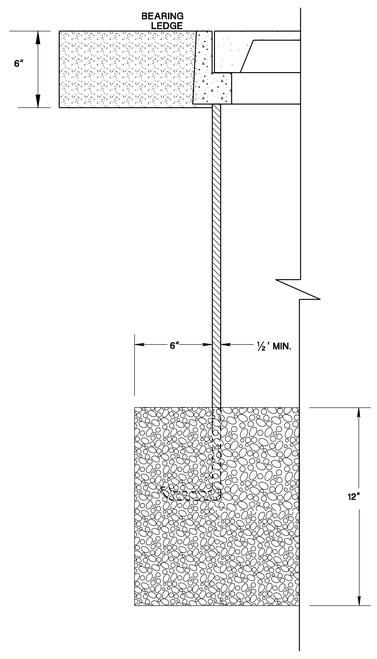
NOTES:

1. ENSURE THE COVER IS FASTENED TO THE BOX WITH TWO ½" -13NC STAINLESS STEEL HEX BOLTS, LOCATED AT OPPOSITE CORNERS OF THE COVER. BOLTS TO BE CAPTIVE TO LID.
2. ENSURE THE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5.
3. ENSURE THE DESIGN AND FABRICATION OF THE BOX AND COVER CONFORMS TO ALL ASPECTS OF ANSI/SCTE 77. ENSURE LOADING IS ENSURE THE LOADING TIER 15.
4. ENSURE THE JUNCTION BOX IS MADE OF FIBER POLYMER CONCRETE. ENSURE THE COVER IS MADE OF FIBER GLASS REINFORCED POLYMER CONCRETE.
5. ENSURE THE COLOR OF THE COVER AND ANY PART OF THE BOX VISIBLE WHEN IT IS INSTALLED, IS "CONCRETE GREY."
6. ENSURE THE IDENTIFICATION OF THE COVER IS PERMANENTLY MOLDED ON THE TOP SURFACE WITH "NJDOT ITS".
7. UNLESS OTHERWISE DIRECTED BY THE ENGINEER ALL CONDUIT ENTRANCES INTO THE JUNCTION BOX ARE TO BE FIELD DRILLED WITH A HOLE SAW OR PUNCHED OUT USING A HYDRAULIC HOLE PUNCH.
8. ALL CONDUIT OPENINGS MUST BE SANDED. AFTER THE CONDUITS ARE INSTALLED, ALL CONDUIT ENTRANCES MUST BE SEALED WITH AN EPOXY PUTTY OR SILICON CAULK.
9. IN GRASS OR DIRT AREAS, A CONCRETE PAD, CLASS "C", MUST BE POURED AROUND THE TOP OF THE JUNCTION BOX.
10. COMPACTED ¾" GRAVEL OR BROKEN STONE IS REQUIRED BELOW THE BOX. SUPPLY AN ADDITIONAL SIX (6) INCHES OF TIGHTLY COMPACTED ¾" CLEAN STONE PLACED IN BOTTOM OF BOX.
11. PROVIDE A CONCRETE LOCK-IN FEATURE AT THE TOP OF THE BOX. ACTUAL DESIGN CAN VARY PER MANUFACTURER.
12. ENSURE THE GAP FROM THE EDGE OF THE COVER TO THE INSIDE EDGE OF THE BOX IS A MAXIMUM OF ⅛" +/- ⅛".
13. ENSURE THE TOP OF THE POLYMER CONCRETE COVER IS SET FLUSH WITH THE TOP OF THE JUNCTION BOX.
14. PROVIDE EMBOSSED CERTIFICATION BY A PROFESSIONAL ENGINEER OF TEST RESULTS SHOWING THAT THE JUNCTION BOX AND COVER MEET THE DESIGN SPECIFIED LOADING REQUIREMENTS.
15. UTILIZE BOX EXTENSION TO PROVIDE REQUIRED DEPTH.
16. SUPPLY BOX WITH CABLE RACK SYSTEMS AFFIXED TO BOTH LONG SIDES OF THE BOX FOR STORAGE OF CABLE SLACK.
17. THE BOX MUST MEET REQUIREMENTS OF NEC ARTICLE 314.
18. ALL EXPOSED HARDWARE TO BE STAINLESS STEEL.
19. DIMENSIONS ARE TYPICAL. ENSURE CUT SHEETS ARE SUBMITTED FOR APPROVAL FOR THE EXACT BOX TO BE UTILIZED. THE BOX IS TO HAVE AN OPEN BOTTOM.

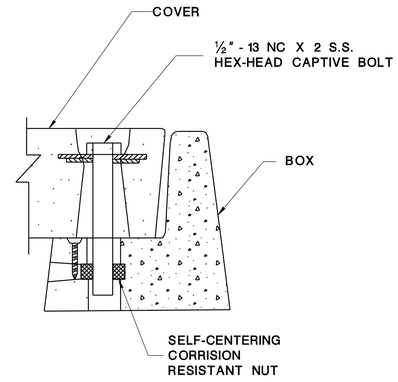


ELEVATION

SIDE VIEW



SECTION A-A



COVER BOLT DOWN DETAIL

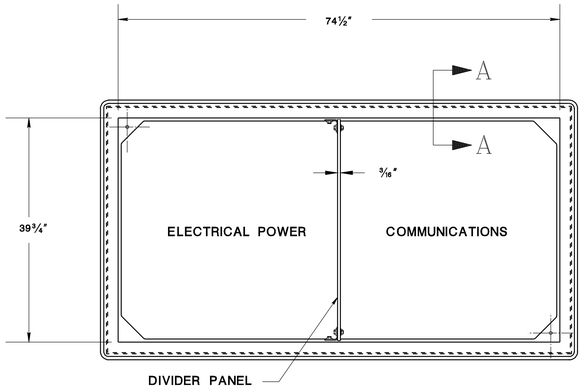
NOT TO SCALE

ITS-704-09

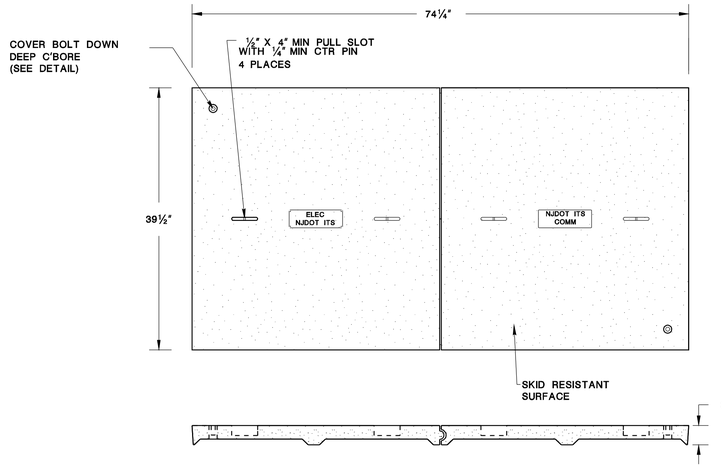
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

JUNCTION BOX ITS TYPE C



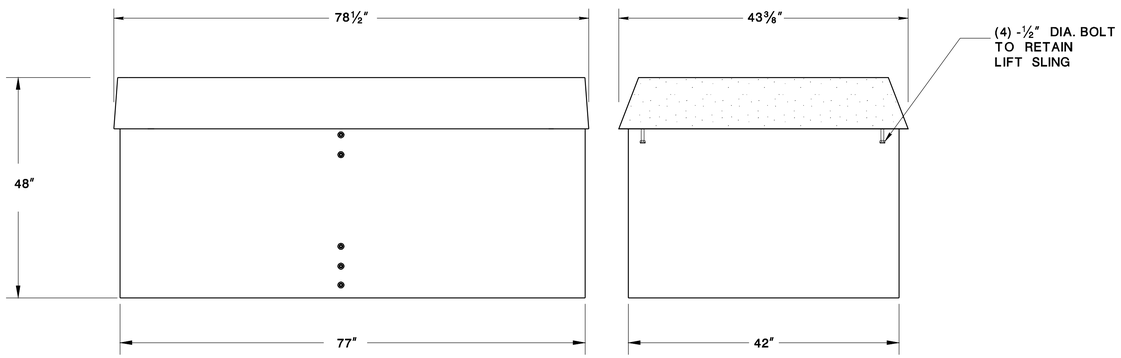
TOP VIEW (COVER NOT SHOWN)



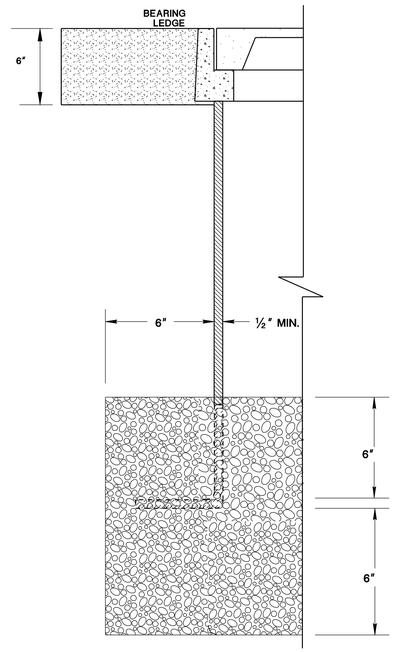
COVER

NOTES:

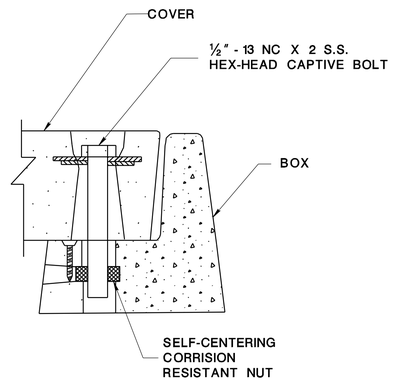
1. ENSURE THE COVER IS FASTENED TO THE BOX WITH TWO (2) ½" -13NC STAINLESS STEEL HEX BOLTS, LOCATED AT OPPOSITE CORNERS OF THE COVER. ENSURE BOLTS ARE CAPTIVE TO LID.
2. ENSURE THE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5.
3. ENSURE THE DESIGN AND FABRICATION OF THE BOX AND COVER CONFORMS TO ALL ASPECTS OF ANSI/SCTE 77. ENSURE LOADING IS TIER 22.
4. ENSURE THE JUNCTION BOX IS PRECAST POLYMER CONCRETE. ENSURE THE COVER IS MADE OF FIBER GLASS REINFORCED POLYMER CONCRETE.
5. ENSURE THE COLOR OF THE COVER AND ANY PART OF THE BOX VISIBLE WHEN IT IS INSTALLED, IS "CONCRETE GREY."
6. ENSURE THE IDENTIFICATION OF THE COVER IS PERMANENTLY MOLDED ON THE TOP SURFACE WITH "NJDOT ITS".
7. UNLESS OTHERWISE DIRECTED BY THE ENGINEER ALL CONDUIT ENTRANCES INTO THE JUNCTION BOX ARE TO BE FIELD DRILLED WITH A HOLE SAW OR PUNCHED OUT USING A HYDRAULIC HOLE PUNCH.
8. ALL CONDUIT OPENINGS MUST BE SANDED. AFTER THE CONDUITS ARE INSTALLED, ALL CONDUIT ENTRANCES MUST BE SEALED WITH AN EPOXY PUTTY OR SILICON CAULK.
9. IN GRASS OR DIRT AREAS, A CONCRETE PAD, CLASS "C", MUST BE POURED AROUND THE TOP OF THE JUNCTION BOX.
10. COMPACTED ¾" GRAVEL OR BROKEN STONE IS REQUIRED BELOW THE BOX. SUPPLY AN ADDITIONAL SIX (6) INCHES OF TIGHTLY COMPACTED ¾" CLEAN STONE PLACED IN BOTTOM OF BOX.
11. PROVIDE A CONCRETE LOCK-IN FEATURE AT THE TOP OF THE BOX. ACTUAL DESIGN CAN VARY PER MANUFACTURER.
12. ENSURE THE GAP FROM THE EDGE OF THE COVER TO THE INSIDE EDGE OF THE BOX IS A MAXIMUM OF ⅛" +/- 1/16".
13. ENSURE THE TOP OF THE POLYMER CONCRETE COVER IS SET FLUSH WITH THE TOP OF THE JUNCTION BOX.
14. PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER OF TEST RESULTS SHOWING THAT THE JUNCTION BOX AND COVER MEET THE DESIGN SPECIFIED LOADING REQUIREMENTS.
15. UTILIZE BOX EXTENSION TO PROVIDE REQUIRED DEPTH.
16. SUPPLY BOX WITH CABLE RACK SYSTEMS AFFIXED TO BOTH LONG SIDES OF THE BOX FOR STORAGE OF CABLE SLACK.
17. THE BOX MUST MEET REQUIREMENTS OF NEC ARTICLE 314.
18. ALL EXPOSED HARDWARE TO BE STAINLESS STEEL.
19. DIMENSIONS ARE TYPICAL. ENSURE CUT SHEETS ARE SUBMITTED FOR APPROVAL FOR THE EXACT BOX TO BE UTILIZED. THE BOX IS TO HAVE AN OPEN BOTTOM.



ELEVATION SIDE VIEW



SECTION A-A



COVER BOLT DOWN DETAIL

NOT TO SCALE

ITS-704-10

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

JUNCTION BOX ITS TYPE D

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BDC-IID-03 - ORIGINAL SHEET

NJDOT Design Services

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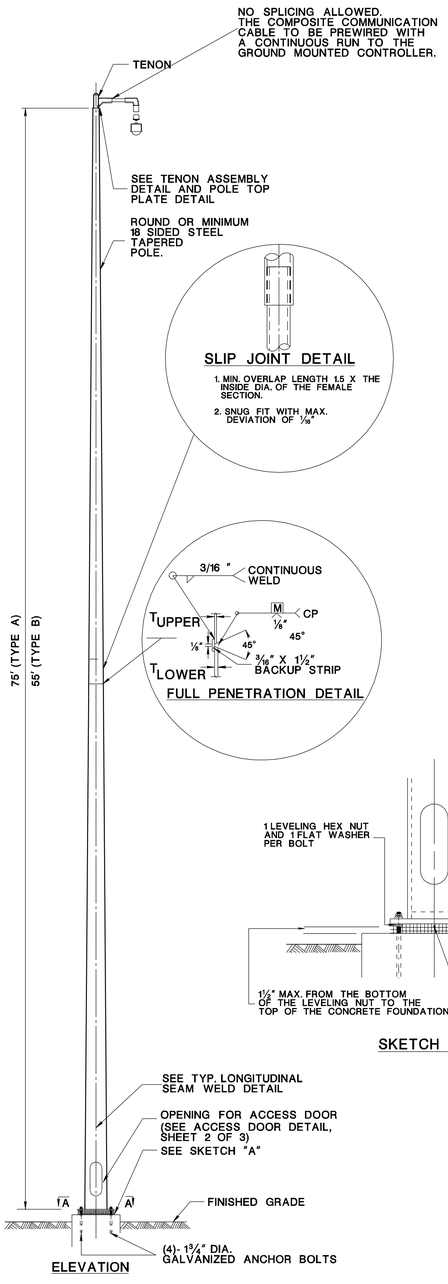
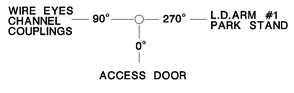
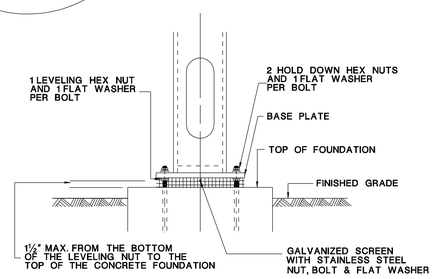


CAMERA STANDARD TYPE A, B



ORIENTATION VIEW



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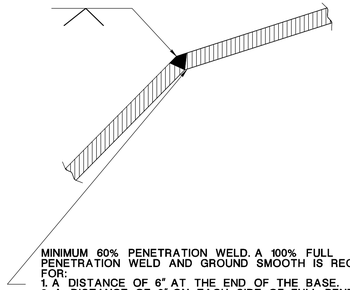
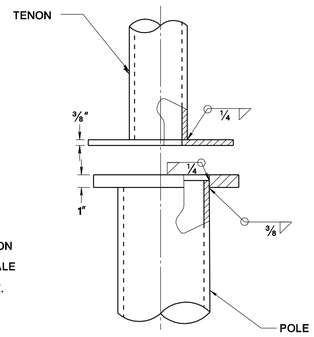


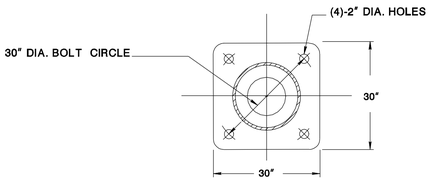
MINIMUM 60% PENETRATION WELD. A 100% FULL PENETRATION WELD AND GROUND SMOOTH IS REQUIRED FOR:
1. A DISTANCE OF 6" AT THE END OF THE BASE.
2. A DISTANCE OF 6" ON EACH SIDE OF FULL PENETRATION WELD JOINT.
3. A DISTANCE OF THE SLIP JOINT PLUS 6" AT THE FEMALE END.

VISUALLY INSPECT THE FINAL WELD INSIDE AND OUTSIDE.

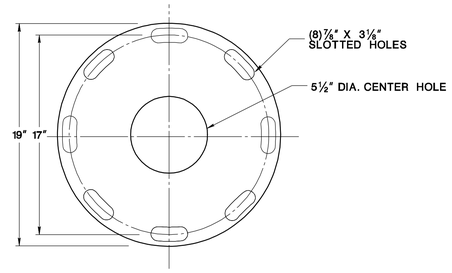
TYPICAL LONGITUDINAL SEAM WELD



POLE TOP / TENON PLATES DETAIL



SECTION A-A (BASE PLATE)
(BOLTS NOT SHOWN)



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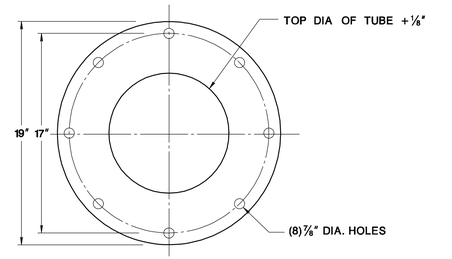
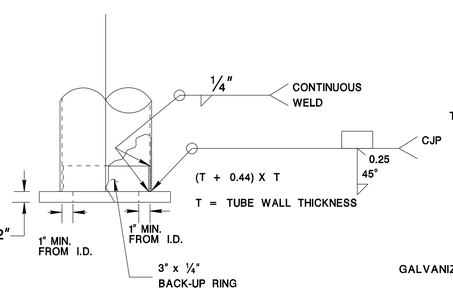
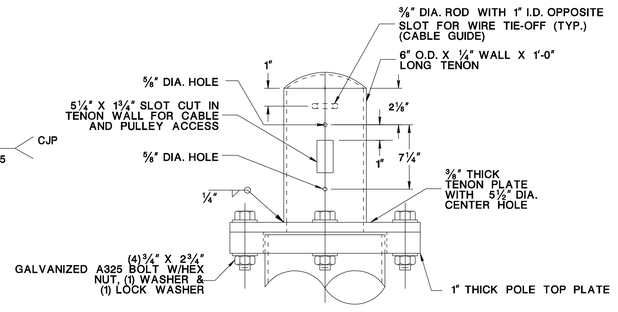


POLE TOP PLATE

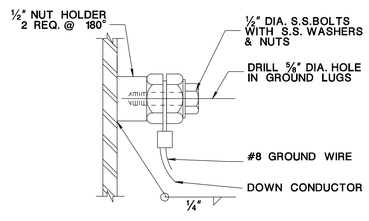
SKETCH "A"



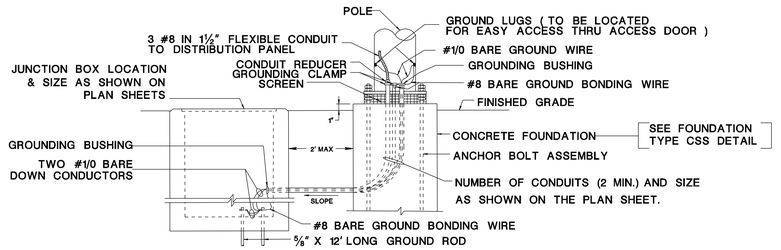
BASE PLATE



TENON ASSEMBLY DETAIL



GROUND LUGS DETAIL



LIGHTNING & BONDING DETAIL

DESIGN SPECIFICATIONS:

UTILIZE 2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORT 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
DESIGN LIFE 50 YEARS

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. THE DESIGN ANALYSIS IS NOT LIMITED TO POLE, BUT OTHER COMPONENTS LIKE ACCESS DOOR, TENON, LOWERING DEVICE, WINCH ASSEMBLY, BASE PLATE, POLE-TO-BASE CONNECTION, ANCHOR BOLTS EMBEDMENT, ETC., MUST ALSO BE CONSIDERED.

ENSURE MAXIMUM HORIZONTAL DEFLECTION AT THE TOP OF THE POLE COMPLETELY ASSEMBLED WITH CCTV CAMERA AND ALL FIXTURES ATTACHED DOES NOT EXCEED 2 INCHES FROM THE CENTER LINE DUE TO A 40 MPH GUST FACTOR 1.3) WIND SPEED (APPENDIX C WIND PRESSURE FORMULA)

SUBMIT DETAIL PLANS AND DESIGN CALCULATIONS OF CAMERA STANDARD POLES WITH CAMERA SHOWING STRENGTH, FATIGUE AND DEFLECTION CHECKS. SHOW CAMERA ASSEMBLY WEIGHT, INCLUDING LOWERING DEVICE AND EFFECTIVE PROJECTED AREA (EPA). ENSURE THE DESIGN CALCULATIONS AND WORKING DRAWINGS ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.

MATERIALS:

ENSURE THE POLE MATERIAL CONFORMS TO ASTM SPECIFICATIONS A595,GRADE A (MIN. YIELD POINT 55 KSI) OR GRADE B (MIN. YIELD POINT 60 KSI). TENON MATERIAL CONFIRMS TO ASTM A53, GRADE B (MIN. YIELD POINT 35 KSI).THE POLE TAPER TO BE 0.14 IN./FT. MAX. TWO SEGMENTS MUST BE THE SAME MATERIAL AS AN ALTERNATE THE POLE (18 SIDED MIN.) AND TENON MAY BE FORMED FROM STEEL CONFORMING TO ASTM A572 GRADE 55 OR GRADE 60, ALL OTHER STEEL CONFORMS TO ASTM SPECIFICATION A709(AASHO M270) GRADE 36 OR GRADE 50.ENSURE ALL POLES REGARDLESS OF THICKNESS AND ALL OTHER STEEL PLATES GREATER THAN ½" THICKNESS MEET THE AASHTO REQUIREMENTS FOR NOTCH TOUGHNESS (CHARPY TESTING) ZONE 2. GALVANIZE BOTH UNITS OF THE POLE AND TENON PER ASTM A123 AFTER FABRICATION.

PROCURE BOLTS/ANCHOR BOLTS, NUTS AND WASHERS AS A PACKAGE FROM THE MANUFACTURER.

ENSURE ANCHOR BOLT MATERIALS CONFORM TO ASTM F1554, GRADE 55. GALVANIZE THE ANCHOR BOLTS PER ASTM A153, CLASS C AFTER THREADING FOR THE FULL LENGTH OF THE BOLT, AS WELL AS NUTS AND WASHERS.

HIGH STRENGTH BOLTS, NUTS AND WASHERS TO BE GALVANIZED PER ASTM A153 CLASS C.

PROVIDE STAINLESS STEEL FASTENERS (INCLUDING BOLTS, NUTS AND WASHERS) CONFORMING TO CURRENT ASTM A320, GRADE B8, CLASS 2 (AISI TYPE 304) AND STRAIN HARDENED. ALTERNATE MATERIALS PROPOSED TO BE USED FOR FASTNERS MUST BE PRE-APPROVED SEPERATELY PRIOR TO SUBMISSION OF WORKING DRAWINGS.

ALL CONCRETE TO BE "CLASS B" AS DEFINED IN THE NJDOT STANDARD SPECIFICATIONS.

NOTES:

1. ENSURE STEEL POLE CONSISTS OF A MAXIMUM OF TWO STEEL SECTIONS.THE LOWER SECTION TO BE A MIN. OF 40 FT AND MAXIMUM OF 50' LONG WITH A MIN. THICKNESS OF ¼" WITH ONLY ONE LONGITUDINAL SEAM WELD. IF THE POLE DIA. IS GREATER THAN 24 INCHES, TWO LONGITUDINAL SEAM WELDS WILL BE PERMITTED. EITHER SLIP JOINTS OR FULL PENETRATION WELD JOINTS ARE ACCEPTABLE. SEE SLIP JOINT AND FULL PENETRATION DETAILS. LAMINATED TUBES ARE NOT PERMITTED. SEE TYPICAL LONGITUDINAL SEAM WELD DETAIL.
2. ENSURE THAT THE POLE DIAMETER IS SUFFICIENT TO ACCOMMODATE THE WINCH / MOTOR ASSEMBLY COMPLETELY INSIDE THE POLE.
3. PROVIDE NEOPRENE DOOR GASKET CEMENTED TO DOOR.
4. PROVIDE A GALVANIZED SCREEN, WRAPPED AROUND THE BASE OF POLE.
5. ENSURE THE GALVANIZED SCREEN HAS NO MORE THAN ½" OPENINGS AND IS HELD TOGETHER WITH STAINLESS STEEL NUT, BOLT AND FLAT WASHER.
6. DO NOT GROUT UNDER THE POLE .
7. PROVIDE ONE (1) LEVELING HEX NUT, TWO (2) HOLD DOWN HEX NUTS AND TWO (2) FLAT WASHERS PER ANCHOR BOLT. (SEE SKETCH A) DETERMINE THE PROPER LENGTH OF THE ANCHOR BOLT FOR PROJECTION AND EMBEDMENT. THE CLEARANCE BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE LEVELING NUT NOT TO EXCEED 1½". THE PROJECTION LENGTH TO BE A MINIMUM OF 9".
8. ENSURE WELDING CONFORMS TO THE ANSI/AWS D1.1 STRUCTURAL WELDING CODE-STEEL WITH NJDOT AMENDMENTS IN NJDOT STANDARD SPECIFICATIONS. ENSURE WELDING INSPECTION AND FULL PENETRATION WELD NONDESTRUCTIVE TESTING CONFORM TO AWS D1.1. UNLESS OTHERWISE SPECIFIED.
9. 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 BOTTOM OF THE ACCESS DOOR AND THE TOP CABLE GUIDE 1 INCH DIRECTLY BELOW THE TOP OF TENON. POSITION TWO PARKING STANDS A MAXIMUM OF 2¼" INCHES BELOW THE TOP OF THE ACCESS DOOR AND LOCATED AT 90° AND 270° FROM THE ACCESS DOOR. ENSURE EACH CABLE GUIDE IS ⅜" WIRE EYE BOLT HAVING 1" INTERNAL DIA. FOR WIRE TIE OFF.
10. ENSURE THE TIGHTENING PROCEDURE FOR ANCHOR BOLTS CONFORMS WITH SECTION 6.9 OF THE 2005 FHWA " GUIDELINES FOR THE INSTALLATION, INSPECTION, MAINTENANCE AND REPAIR OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS".

NOT TO SCALE

ITS-704-11

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM CAMERA STANDARD TYPE A & B

SHEET 1 OF 3

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NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-09 ORIGINAL SHEET

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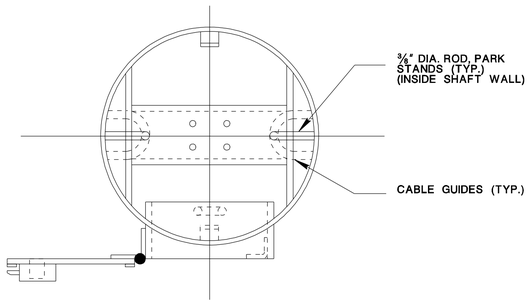
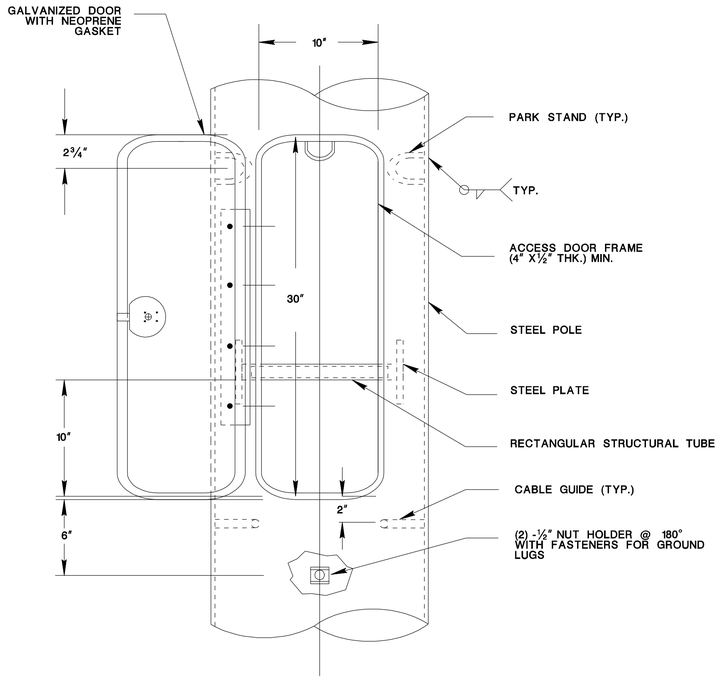
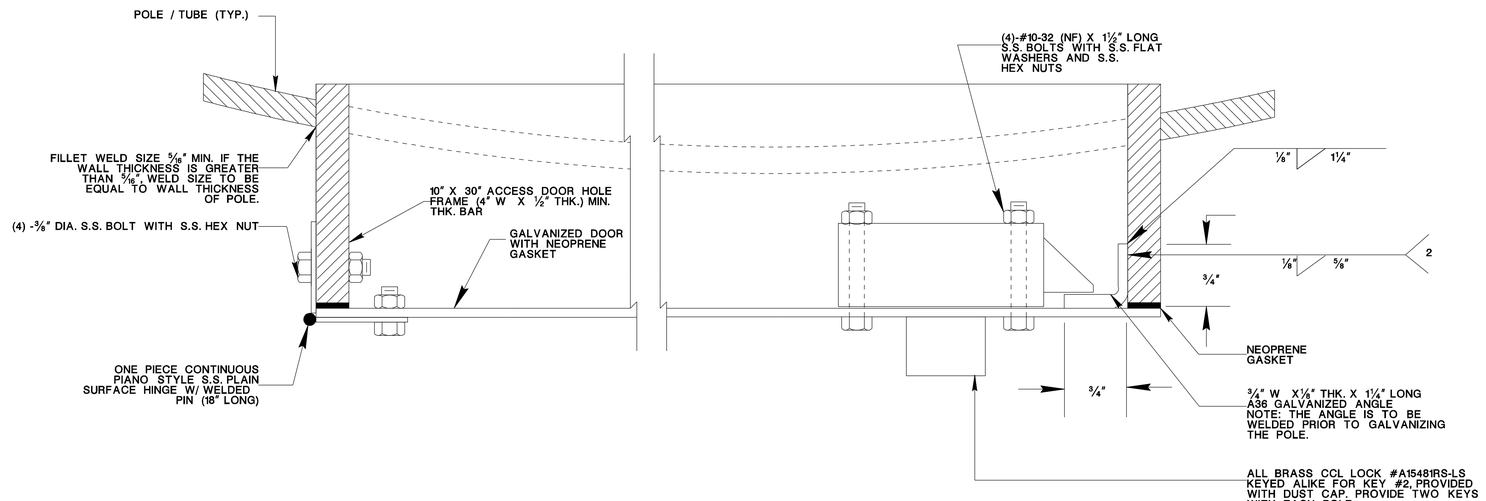
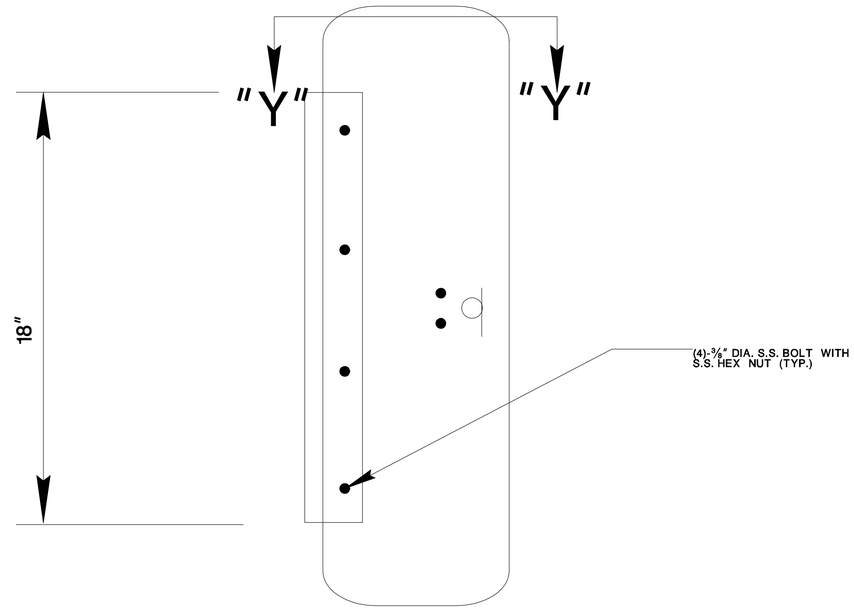




ACCESS DOOR DETAIL
(10" X 30" CLEAR OPENING)



SECTION Y-Y



ACCESS DOOR COVER DETAIL
(FACTORY ASSEMBLED, TUBE & FRAME NOT SHOWN)

NOT TO SCALE

ITS-704-12

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM
CAMERA STANDARD TYPE A & B

SHEET 2 OF 3

NJDOT Design Services
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BDC-07D-03 - ORIGINAL SHEET
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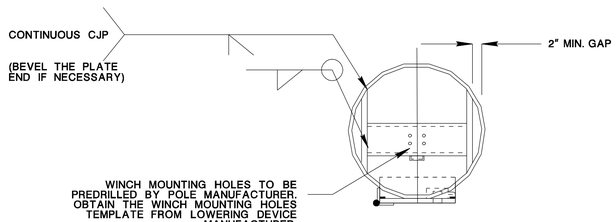
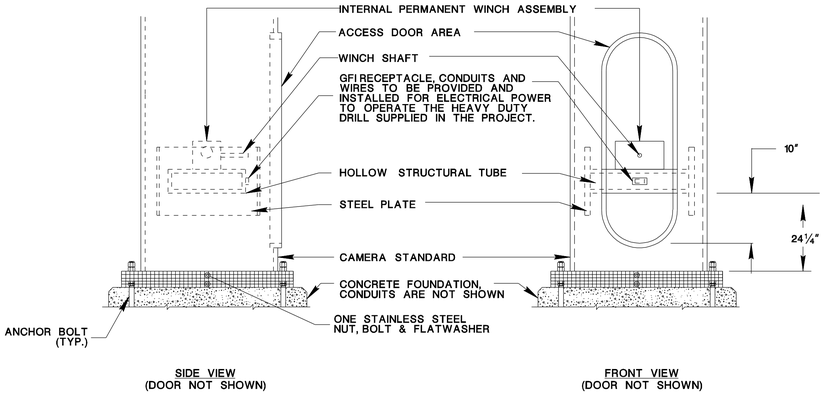
THE DIMENSIONS OF THE MOUNTING TUBE-PLATE ASSEMBLY AND WELD SIZE TO BE DETERMINED BY THE MANUFACTURER TO ENSURE THE ASSEMBLY CAN WITHSTAND ALL LOADS FROM WINCH/CAMERA LOWERING DEVICE SYSTEM.

WELD THE TWO PLATES OF THE ASSEMBLY INSIDE THE POLE PRIOR TO GALVANIZING. ENSURE NO CRACKING AT WELDS.

POSITION THE WINCH ASSEMBLY SO THAT THE WINCH SHAFT CAN ACCOMMODATE THE DRILL ADAPTER ASSEMBLY AND MANUAL HAND CRANK ASSEMBLY.



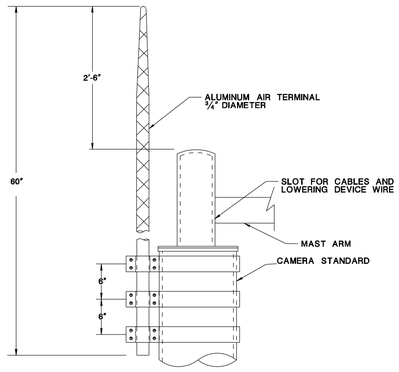
MOUNTING TUBE-PLATE ASSEMBLY
(WINCH NOT SHOWN)



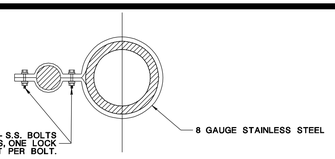
SIDE VIEW
(DOOR NOT SHOWN)

FRONT VIEW
(DOOR NOT SHOWN)

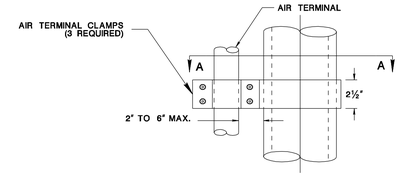
WINCH ASSEMBLY MOUNTING DETAIL



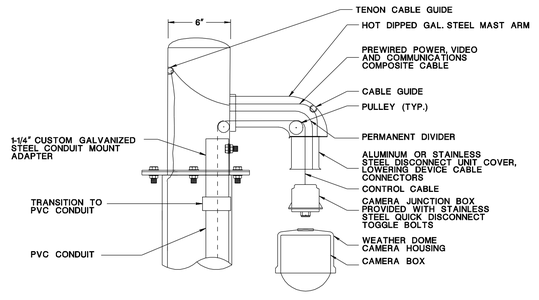
AIR TERMINAL



SECTION A-A



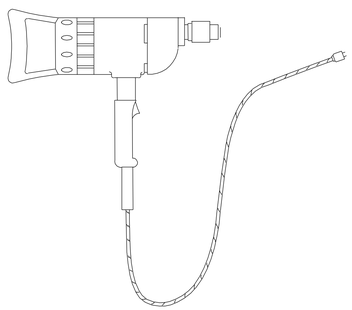
AIR TERMINAL CLAMP DETAIL



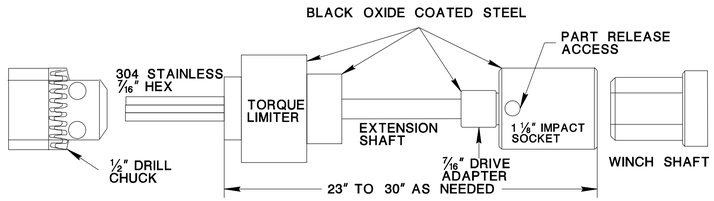
DOME CAMERA AND LOWERING DEVICE ASSEMBLY
(LINE DIAGRAM)

NOTES:

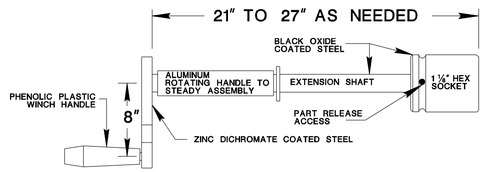
1. PROVIDE SEALED, SELF LUBRICATED BEARINGS, OIL TIGHT BRONZE BEARINGS OR SINTERED BRONZE BUSHINGS WITH ALL PULLEYS FOR THE CAMERA LOWERING DEVICE.
2. ENSURE THE LOWERING CABLE HAS A MINIMUM OF ⅛" DIAMETER STAINLESS STEEL AIRCRAFT CABLE WITH A MINIMUM BREAKING STRENGTH OF 1740 POUNDS WITH (7) STRANDS 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 600 LBS. WITH A MINIMUM OF 4 TO 1 SAFETY FACTOR.
7. SUPPLY DRILL ADAPTOR ASSEMBLY AND MANUAL HAND CRANK ASSEMBLY AS SHOWN.
8. INCLUDE INTERNAL PERMANENT WINCH ASSEMBLY AND GFI RECEPTACLE BOX MOUNTING DETAILS, IN THE WORKING DRAWINGS FOR APPROVAL.
9. DURING THE INSTALLATION OF THE FIRST CAMERA SURVEILLANCE SYSTEM IN THE PROJECT, PROCURE ASSISTANCE FROM THE LOWERING DEVICE MANUFACTURER. THE FACTORY REPRESENTATIVE OF THE LOWERING DEVICE MANUFACTURER IS REQUIRED TO BE PRESENT DURING THE ASSEMBLY AND TESTING OF THE VERY FIRST LOWERING DEVICE AND WINCH ASSEMBLY ON THE CAMERA STANDARD. FOR SUBSEQUENT INSTALLATIONS WITHIN THE SAME PROJECT, IF A FACTORY REPRESENTATIVE OF THE LOWERING DEVICE MANUFACTURER IS NOT PROVIDED THEN A CERTIFICATION FROM THE LOWERING DEVICE MANUFACTURER WILL BE REQUIRED STATING THAT THE CONTRACTOR HAS BEEN INSTRUCTED AND TRAINED ON THE INSTALLATION OPERATION AND SAFETY FEATURES OF THE LOWERING DEVICE AND WINCH ASSEMBLY.
10. ARRANGE FOR AND PROVIDE "ON SITE" OPERATIONAL INSTRUCTIONS AND TRAINING TO DOT-ITS MAINTENANCE PERSONNEL.



REVERSIBLE ½" HEAVY DUTY DRILL
WITH TORQUE LIMITED CLUTCH EQUIPPED



DRILL ADAPTER ASSEMBLY
(LINE DIAGRAM)



MANUAL HAND CRANK ASSEMBLY
(LINE DIAGRAM)

NOT TO SCALE

ITS-704-13

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM CAMERA STANDARD TYPE A & B

SHEET 3 OF 3

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BDC-07D-03- ORIGINAL SHEET
BDC-11D-03 MISC. CHANGES

NJDOT Design Services

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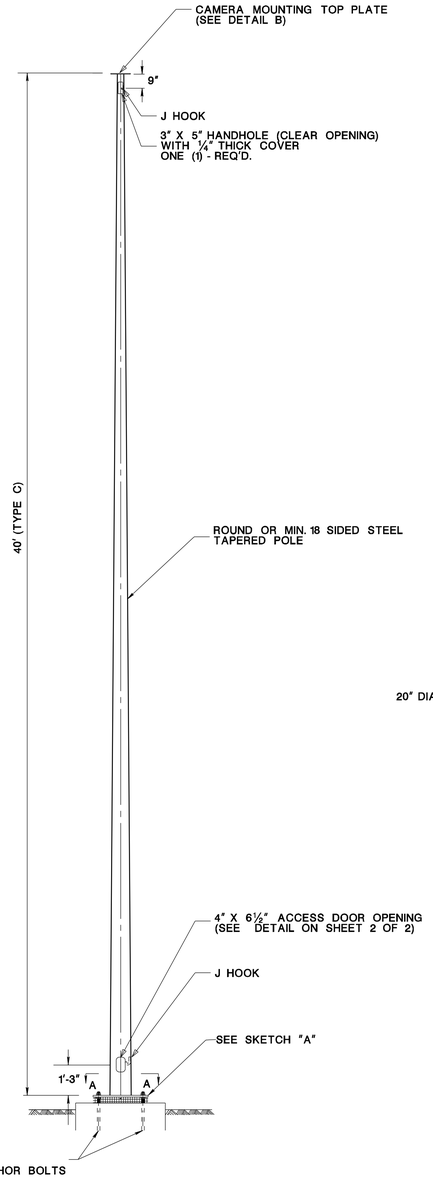
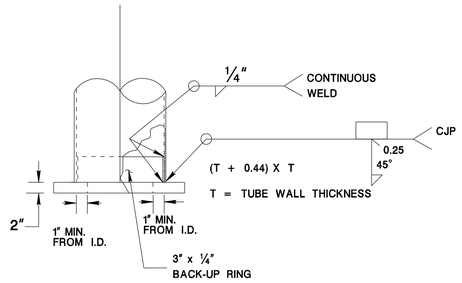
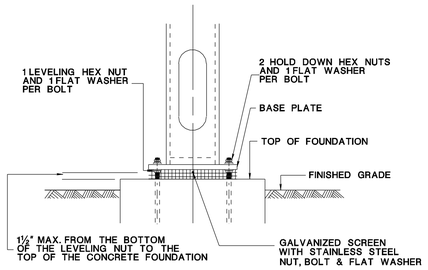


CAMERA STANDARD TYPE C

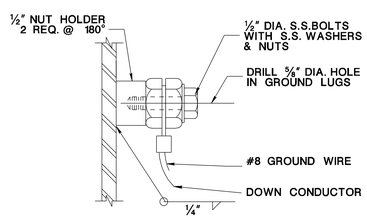


BASE PLATE

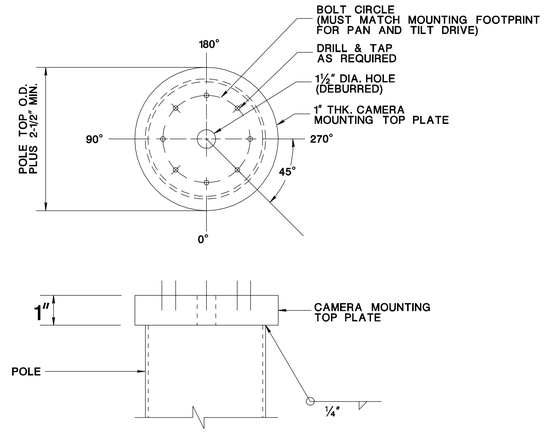


SKETCH "A"

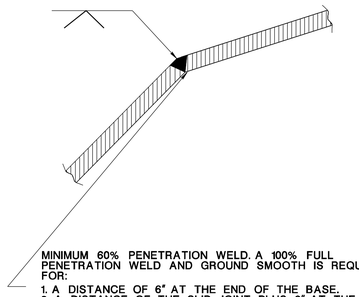
SECTION A-A (BASE PLATE)
(BOLTS NOT SHOWN)



GROUND LUGS DETAIL



DETAIL B

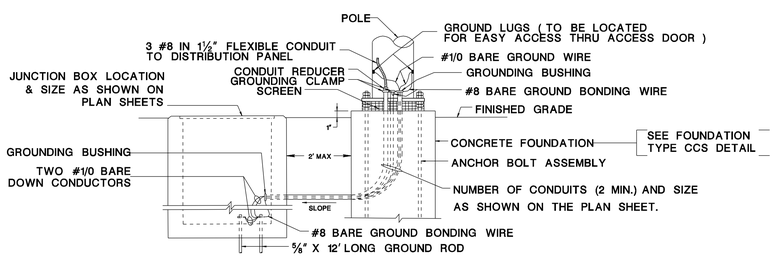


MINIMUM 60% PENETRATION WELD. A 100% FULL PENETRATION WELD AND GROUND SMOOTH IS REQUIRED FOR:

1. A DISTANCE OF 6" AT THE END OF THE BASE.
2. A DISTANCE OF THE SLIP JOINT PLUS 6" AT THE FEMALE END.

VISUALLY INSPECT THE FINAL WELD INSIDE AND OUTSIDE.

TYPICAL LONGITUDINAL SEAM WELD



LIGHTNING & BONDING DETAIL

DESIGN SPECIFICATIONS:

UTILIZE 2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORT 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
DESIGN LIFE	50 YEARS

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. THE DESIGN ANALYSIS IS NOT LIMITED TO POLE BUT OTHER COMPONENTS LIKE ACCESS DOOR AND HANDHOLE OPENINGS/FRAMES, CAMERA MOUNTING TOP PLATE, CAMERA WEIGHT, AIR TERMINAL, BASE PLATE, POLE-TO-BASE CONNECTION, ANCHOR BOLTS EMBEDMENT, ETC., MUST ALSO BE CONSIDERED.

ENSURE MAXIMUM HORIZONTAL DEFLECTION AT THE TOP OF THE POLE COMPLETELY ASSEMBLED WITH CCTV CAMERA AND ALL FIXTURES ATTACHED DOES NOT EXCEED 2 INCHES FROM THE CENTER LINE DUE TO A 40 MPH (GUST FACTOR 1.3) WIND SPEED (APPENDIX C WIND PRESSURE FORMULA)

SUBMIT DETAIL PLANS AND DESIGN CALCULATIONS OF CAMERA STANDARD POLES WITH CAMERA SHOWING STRENGTH, FATIGUE AND DEFLECTION CHECKS. SHOW CAMERA ASSEMBLY WEIGHT, INCLUDING LOWERING DEVICE AND EFFECTIVE PROJECTED AREA (EPA). ENSURE THE DESIGN CALCULATIONS AND WORKING DRAWINGS ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.

MATERIALS:

ENSURE THE POLE MATERIAL CONFORMS TO ASTM SPECIFICATIONS A595, GRADE A (MIN. YIELD POINT 55 KSI). AS AN ALTERNATE THE POLE (18 SIDED MIN.) MAY BE FORMED FROM STEEL CONFORMING TO ASTM A36 OR A572 GRADE 55. ALL OTHER STEEL CONFORMS TO ASTM SPECIFICATION A709 (AASTHO M270) GRADE 36 OR GRADE 50. ENSURE ALL POLES REGARDLESS OF THICKNESS AND ALL OTHER STEEL PLATES GREATER THAN ½" THICKNESS MEET THE AASHTO REQUIREMENTS FOR NOTCH TOUGHNESS (CHARPY TESTING) ZONE 2. GALVANIZE THE ENTIRE UNIT OF THE POLE PER ASTM A123 AFTER FABRICATION.

CONTRACTOR IS RESPONSIBLE TO PROCURE BOLTS/ANCHOR BOLTS, NUTS AND WASHERS AS A PACKAGE FROM THE MANUFACTURER AND TO ENSURE SAFE INSTALLATION.

ENSURE ANCHOR BOLT MATERIALS CONFORM TO ASTM F554, GRADE 55. GALVANIZE THE ANCHOR BOLTS PER ASTM A153, CLASS C AFTER THREADING FOR THE FULL LENGTH OF THE BOLT, AS WELL AS NUTS AND WASHERS.

HIGH STRENGTH BOLTS, NUTS AND WASHERS TO BE GALVANIZED PER ASTM A153 CLASS C.

PROVIDE STAINLESS STEEL FASTENERS (INCLUDING BOLTS, NUTS AND WASHERS) CONFORMING TO CURRENT ASTM A320, GRADE B8, CLASS 2 (AISI TYPE 304) AND STRAIN HARDENED. ALTERNATE MATERIALS PROPOSED TO BE USED FOR FASTNERS MUST BE PRE-APPROVED SEPERATELY PRIOR TO SUBMISSION OF WORKING DRAWINGS.

ALL CONCRETE TO BE "CLASS B" AS DEFINED IN THE NJDOT STANDARD SPECIFICATIONS.

NOTES:

1. ENSURE STEEL POLE CONSISTS OF ONE STEEL SEGMENT AND CONTAINS ONLY ONE LONGITUDINAL SEAM WELD. LAMINATED TUBES ARE NOT PERMITTED. SEE TYPICAL LONGITUDINAL SEAM WELD DETAIL.
2. PROVIDE NEOPRENE DOOR GASKET CEMENTED TO DOOR.
3. PROVIDE A GALVANIZED SCREEN, WRAPPED AROUND THE BASE OF POLE.
4. ENSURE THE GALVANIZED SCREEN HAS NO MORE THAN ½" OPENINGS AND IS HELD TOGETHER WITH STAINLESS STEEL NUT, BOLT AND FLAT WASHER.
5. DO NOT GROUT UNDER THE POLE .
6. PROVIDE ONE (1) LEVELING HEX NUT, TWO (2) HOLD DOWN HEX NUTS AND TWO (2) FLAT WASHER PER ANCHOR BOLT.(SEE SKETCH A) DETERMINE THE PROPER LENGTH OF THE ANCHOR BOLT FOR PROJECTION AND EMBEDMENT. THE CLEARANCE BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE LEVELING NUT NOT TO EXCEED 1½". THE PROJECTION LENGTH TO BE A MINIMUM OF 9".
7. ENSURE WELDING CONFORMS TO THE ANSI/AWS D1.1 STRUCTURAL WELDING CODE-STEEL WITH NJDOT AMENDMENTS IN NJDOT STANDARD SPECIFICATIONS. ENSURE WELDING INSPECTION AND FULL PENETRATION WELD NONDESTRUCTIVE TESTING CONFORM TO AWS D1.1, UNLESS OTHERWISE SPECIFIED.
8. ENSURE THE TIGHTENING PROCEDURE FOR ANCHOR BOLTS CONFORMS WITH SECTION 6.9 OF THE 2005 FHWA GUIDELINES FOR THE INSTALLATION, INSPECTION, MAINTENANCE AND REPAIR OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS".

NOT TO SCALE

ITS-704-14

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM
CAMERA STANDARD TYPE C

SHEET 1 OF 2

BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

NJDOT Design Services

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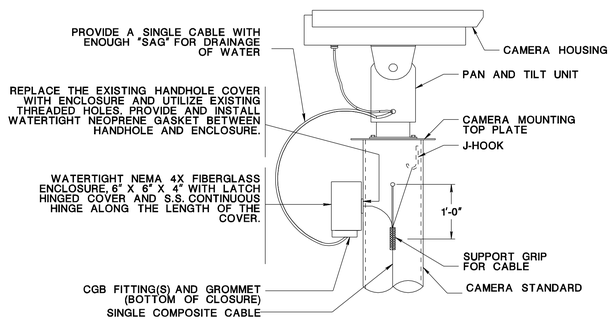
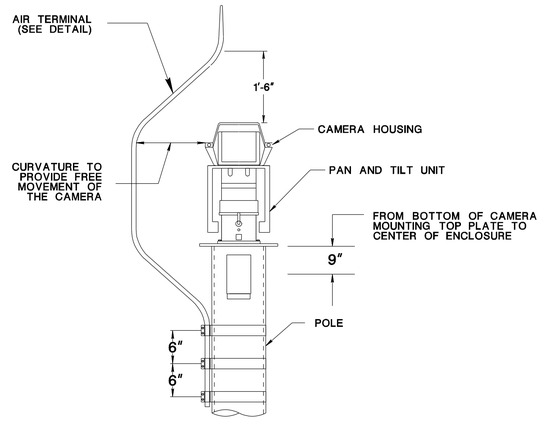
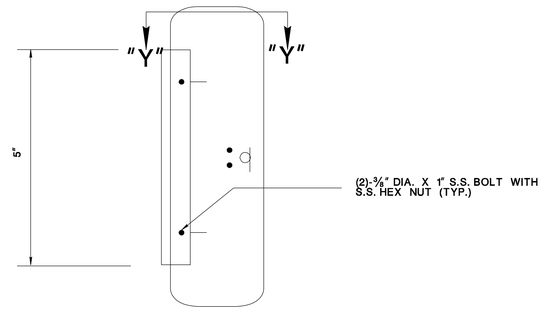


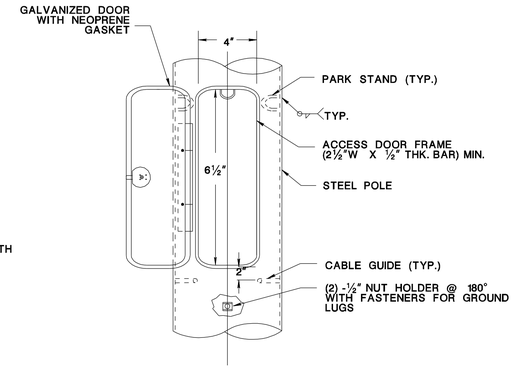
CAMERA MOUNTING AND CABLE DETAILS





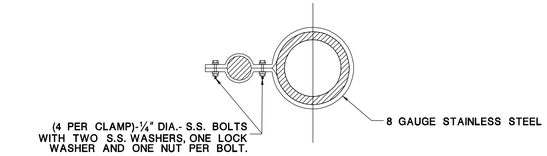
ACCESS DOOR DETAIL

(TO BE SHIPPED PRE-ASSEMBLED, POLE NOT SHOWN)

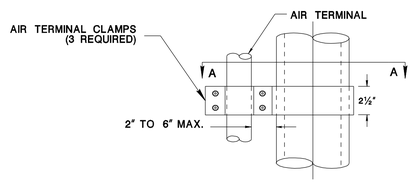


ACCESS DOOR FRAME DETAIL

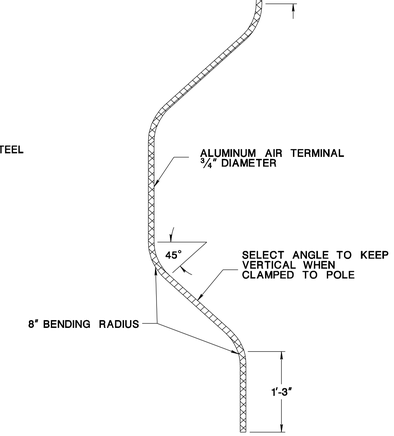
(4" X 6½" CLEAR OPENING)



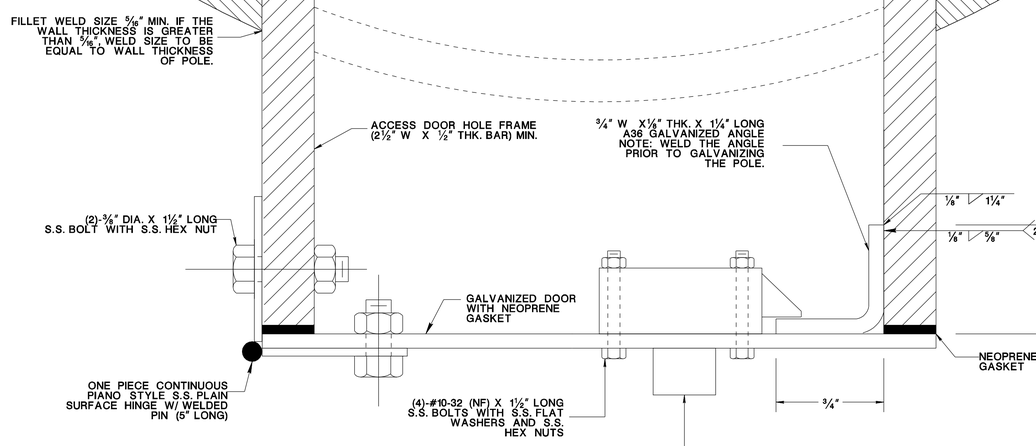
SECTION A-A



AIR TERMINAL CLAMP DETAIL



AIR TERMINAL DETAIL



SECTION Y-Y

NOT TO SCALE

NOTES:

1. INSTALL ALL WIRING INSIDE THE POLE AND PROVIDE STRAIN RELIEF FOR ALL CAMERA CABLES.
2. SUPPORT CAMERA CABLE WITH SEPARATE GRIP.
3. PROVIDE AND INSTALL APPROVED INTERNAL TWISTLOCK CONNECTORS.
4. AIR TERMINAL POSITIONING NOT TO OBSTRUCT THE PREDETERMINED FIELD OF VIEW AND MUST PROVIDE CLEAR ACCESS TO NEMA ENCLOSURE COVER.

ITS-704-15

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM CAMERA STANDARD TYPE C

SHEET 2 OF 2

*
*

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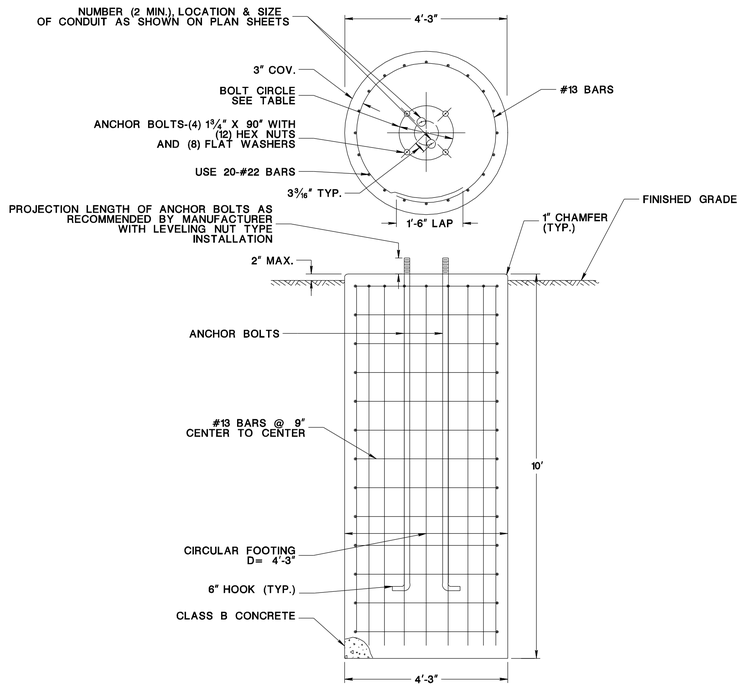
BDC-11D-03 MISC. CHANGES
BDC-07D-03 ORIGINAL SHEET

FOUNDATION CSS



"BOLT CIRCLE TABLE"		
STANDARD TYPE	POLE HEIGHT	ANCHOR BOLT CIRCLE DIAMETER
A	75'	30"
B	55'	30"
C	40'	20"

NOTES:

1. HOT DIP GALVANIZE ANCHOR BOLTS PER ASTM A153 FOR THE FULL LENGTH OF THE BOLT AFTER THREADING.
2. PROCURE ANCHOR BOLTS MEETING ASTM F 1554 GRADE 55 STEEL FROM THE MANUFACTURER OF CAMERA STANDARD. ANCHOR BOLTS EMBEDMENT LENGTH, THREADED LENGTH AND PROJECTION LENGTH ARE TO BE DETERMINED AND PROVIDED BY THE MANUFACTURER.
3. LUBRICATE ANCHOR BOLT PROJECTION PORTION BEFORE MOUNTING THE POLE.
4. FOR ANCHOR BOLT TIGHTENING PROCEDURE SEE NOTE 11 ON CSS CAMERA STANDARD TYPE A AND B DETAIL, SHEET 1 OF 3 OR NOTE 9 ON CSS CAMERA STANDARD TYPE C DETAIL, SHEET 1 OF 2.
5. ALL BAR SIZES ARE DESIGNATED IN SOFT METRIC SIZES.

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).....90 KSI

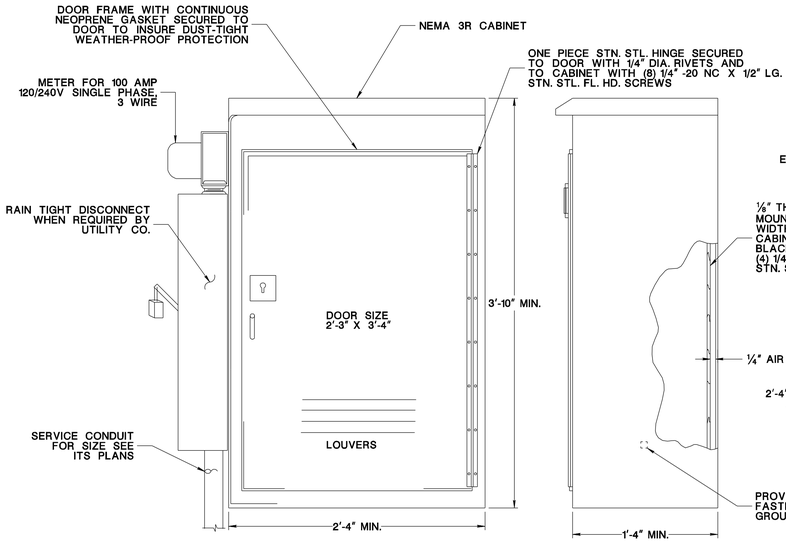
NOT TO SCALE

ITS-704-16

NEW JERSEY DEPARTMENT OF TRANSPORTATION

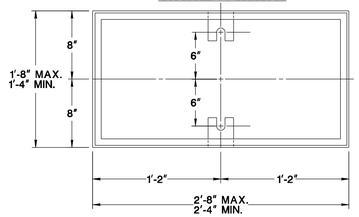
ITS DETAILS

CAMERA SURVEILLANCE SYSTEM
FOUNDATION CSS

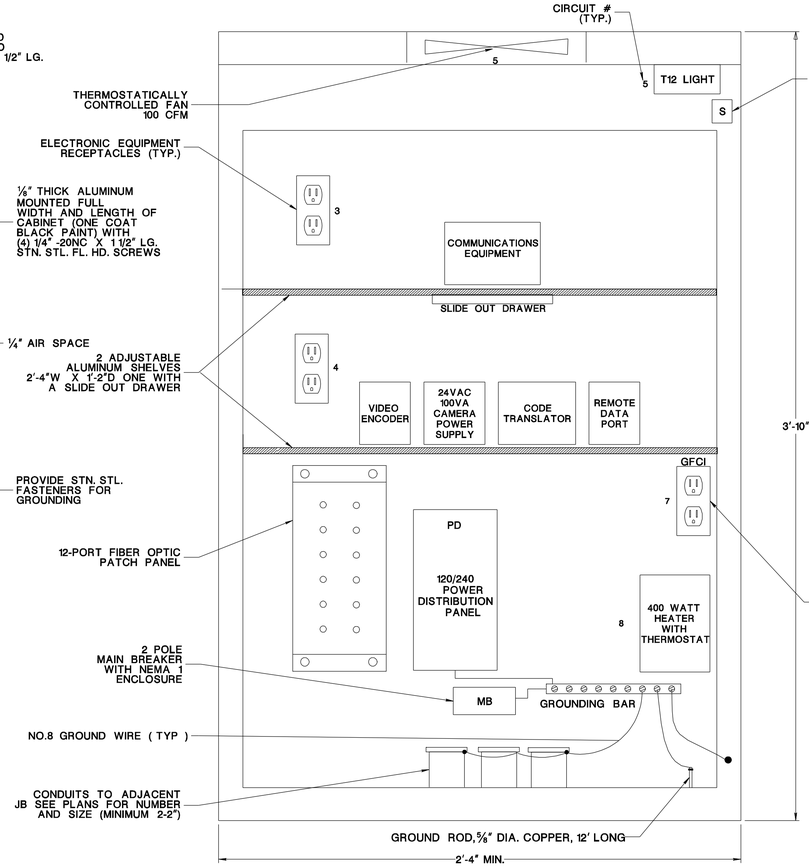


FRONT ELEVATION

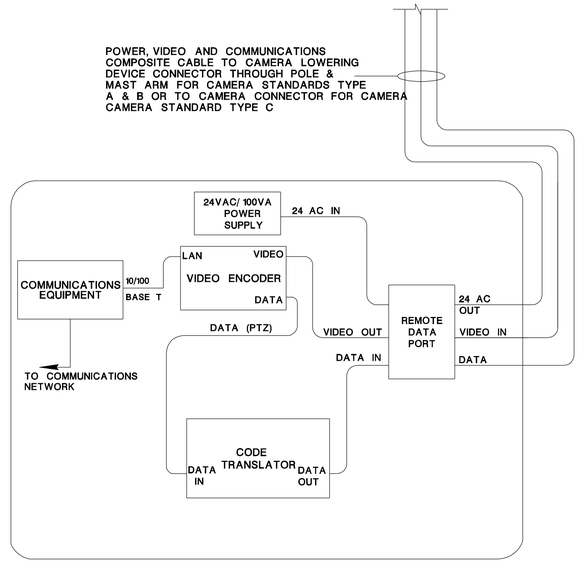
SIDE ELEVATION



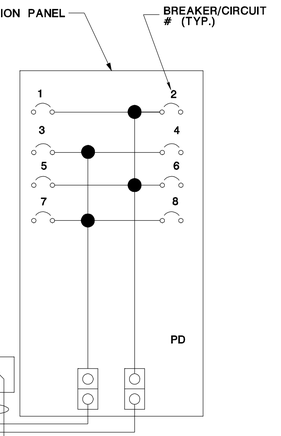
BOTTOM VIEW & ANCHOR BOLT LAYOUT



CABINET EQUIPMENT LAYOUT (TYP.)



COMMUNICATIONS BLOCK DIAGRAM



POWER DISTRIBUTION DIAGRAM

NOTES:

1. ENSURE CABINET AND CABINET DOOR IS FABRICATED FROM 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 1 1/2" 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.
11. WHERE REQUIRED, ENSURE METER PAN CONFORMS TO UTILITY COMPANY'S HEIGHT REQUIREMENTS.

TABLE A

BREAKERS #	BREAKER RATING FUNCTION	TRIP RATING (AMPS)
MB	MAIN BREAKER 60 AMP	60
1	RECEPTACLE INSIDE CAMERA POLE BASE	15
2	SPARE	15
3	ELECTRONIC EQUIPMENT RECEPTACLE	15
4	ELECTRONIC EQUIPMENT RECEPTACLE	15
5	FAN & LIGHT	15
6	SPARE	15
7	CONVENIENCE RECEPTACLE (GFCI)	15
8	HEATER	20

NOT TO SCALE

ITS-704-17

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CAMERA SURVEILLANCE SYSTEM CONTROLLER CAMERA

* / *

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BDC-11D-03 MISC. CHANGES
BDC-07D-03 ORIGINAL SHEET
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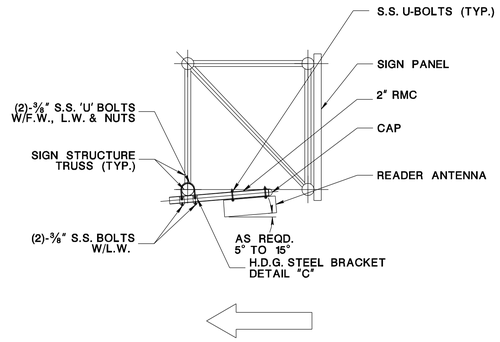
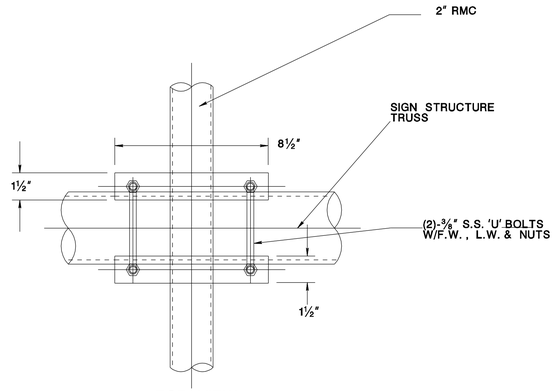
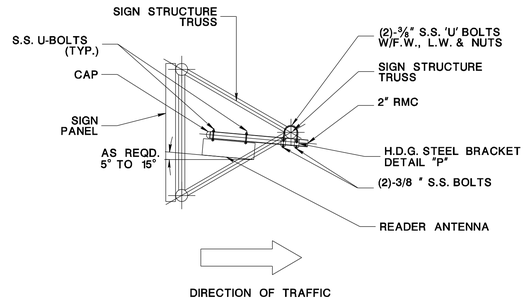


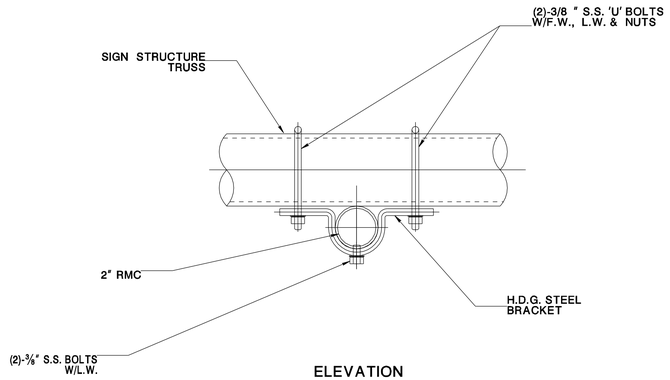
TYP. READER ANTENNA MOUNTING
DETAIL "A"



TOP VIEW

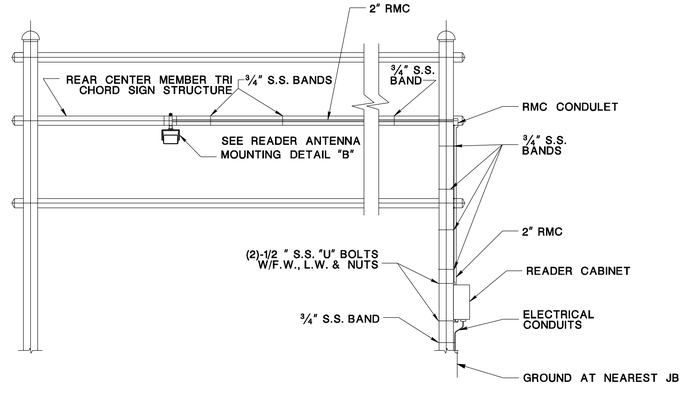


TYP. READER ANTENNA MOUNTING
DETAIL "B"

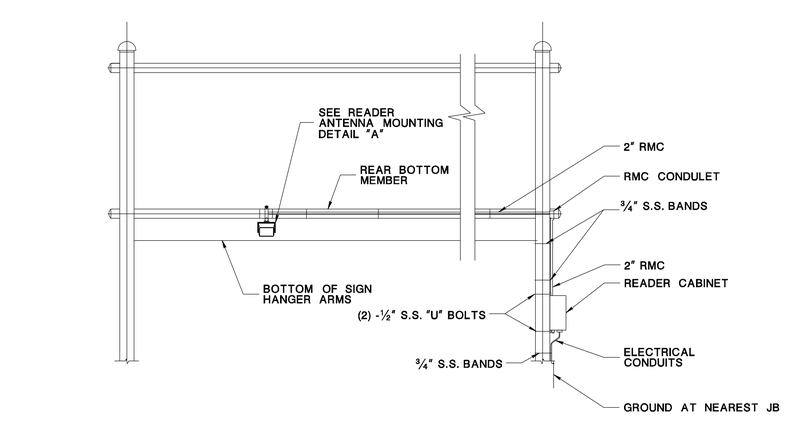


ELEVATION

DETAIL "C"



TYP. ANTENNA INSTALLATION
ON TRICHORD SIGN STRUCTURE



TYP. ANTENNA INSTALLATION ON SIGN STRUCTURE

NOTES:

1. APPROXIMATE LOCATIONS OF READER ANTENNA, CONDUIT, AND JUNCTION BOX ARE SHOWN ON THE PLAN SHEETS. THE EXACT PLACEMENT IN THE FIELD TO BE VERIFIED BY THE CONTRACTOR WITH TRANSCOM.
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 NJDOT.
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 NJDOT.
5. A SEPERATE GROUND IS REQUIRED FOR TTS EQUIPMENT. SEE READER CABINET DETAIL SHEET REGARDING GROUND REQUIRMENTS.
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 CONDUIT AND 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.
10. MOUNT READER ANTENNAS WITH WEEP HOLE POSITIONED TO PERMIT CONTINUOUS MOISTURE DRAINAGE.
11. ONLY GALVANIZED RMC IS PERMITTED TO BE ATTACHED ON EXISTING STEEL STRUCTURES.

NOT TO SCALE

ITS-704-18

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAVEL TIME SYSTEM
TTS DETECTOR TYPE A

SHEET 1 OF 2

NJDOT Design Services
BDC-11D-03 MISC. CHANGES
BDC-07D-03 ORIGINAL SHEET
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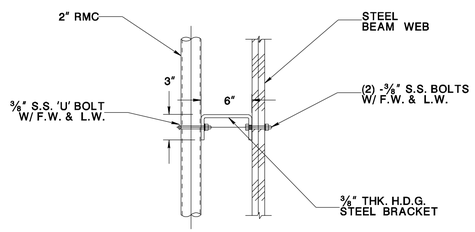
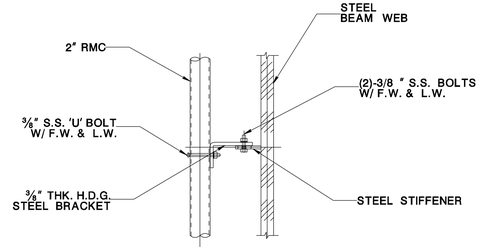


SECTION "A-A"



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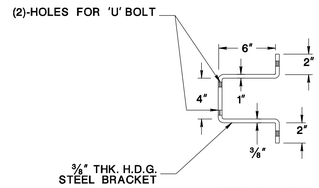

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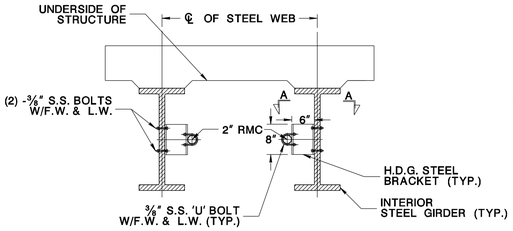

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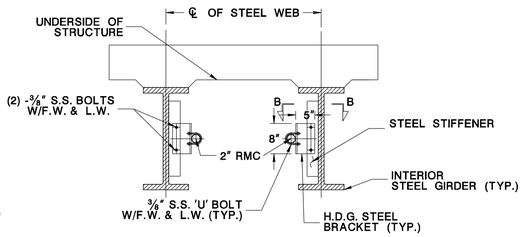

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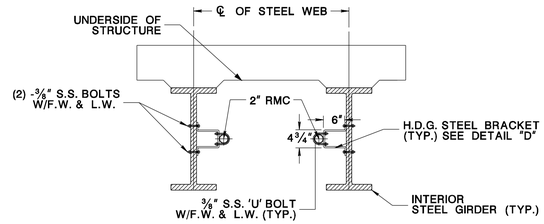

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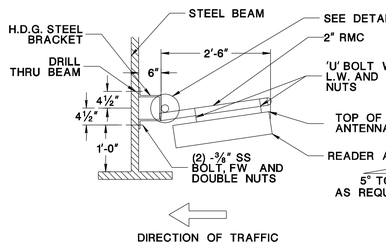
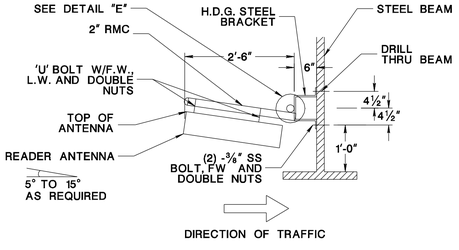
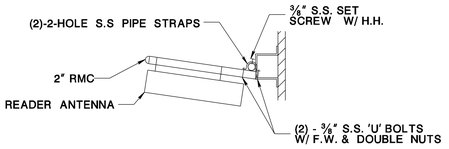


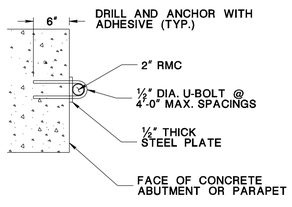


TYP. ANTENNA MOUNTING ON STEEL GIRDER

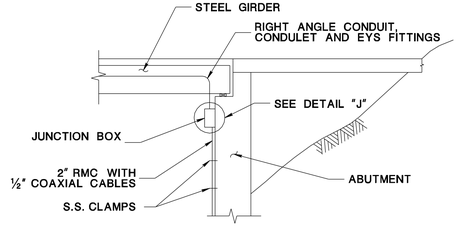
(SEE DETAILS G, H AND I)



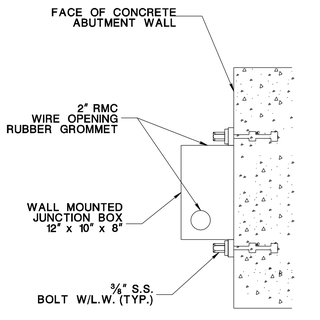
DETAIL "E" SHOWN
DETAIL "F" OPPOSITE HAND



TYPICAL CONDUIT ATTACHMENT
AT ABUTMENT



TYPICAL JUNCTION BOX MOUNTING
AT ABUTMENT



DETAIL "J"
JUNCTION BOX

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. THE DETAILS FOR CONDUIT SUPPORT BRACKET SHOWN ON THIS SHEET ARE CONCEPTUAL. SURVEY EACH TRANSMIT SITE AND SUBMIT SHOP DRAWINGS TO TRANSCOM FOR APPROVAL BEFORE SEEKING APPROVAL FROM NJDOT.
5. FIELD VERIFY EXISTING STRUCTURE CONDITIONS AND DIMENSIONS RELATIVE TO PROPOSED CONDUIT SUPPORT LOCATIONS PRIOR TO FABRICATION AND CONSTRUCTION.
6. 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 OR PAVEMENT IS ALLOWED TO AVOID REDUCING CLEARANCE.
7. MOUNT READER ANTENNAS WITH WEEP HOLE POSITIONED TO PERMIT CONTINUOUS MOISTURE DRAINAGE.
8. ENSURE MAXIMUM SPACING BETWEEN ADJACENT CONDUIT SUPPORTS IS 4 FEET UNLESS OTHERWISE APPROVED BY THE ENGINEER.
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 ENGINEER FOR APPROVAL.
11. LABEL ALL CONDUIT RUNS AND JUNCTION BOXES WITH WEATHERPROOF MARKER TAPE INDICATING THE PURPOSE AND VOLTAGE. LABEL CONDUIT RUNS EVERY 50'-0"AND AT WALL PENETRATIONS.
12. INSTALL ALL WIRING (POWER, AND COMMUNICATIONS, ETC.) IN GALVANIZED CONDUITS. CONDUIT SIZE AS INDICATED.
13. ENSURE ALL CONDUITS, EYS FITTINGS AND CONDULETS ARE GALVANIZED.
14. PLACE ALL U BOLTS SHOWN AS DRILL AND ANCHOR WITH ADHESIVE IN A CORE DRILLED HOLE WITH A DIA.⅛" 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. PRESERVE THE STRUCTURAL INTEGRITY OF THE BRIDGE COMPONENTS.

NOT TO SCALE

TYPICAL OVERPASS/ BRIDGE INSTALLATION

ITS-704-19

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAVEL TIME SYSTEM
TTS DETECTOR TYPE A

SHEET 2 OF 2

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BDC-07D-03 - ORIGINAL SHEET
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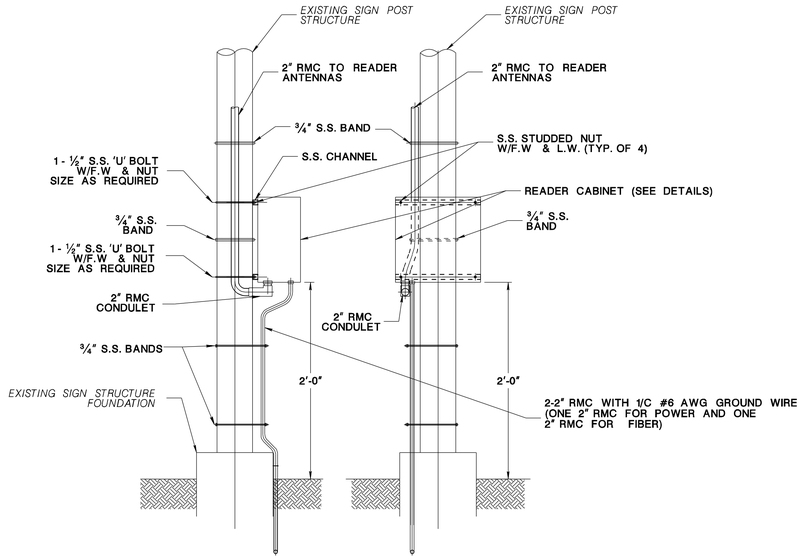
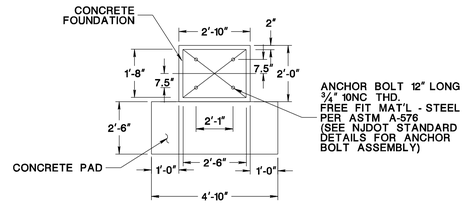


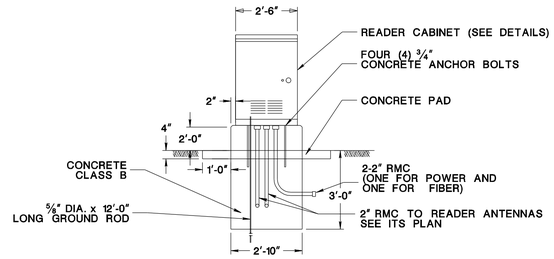
SIDE VIEW ELEVATION

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



PLAN

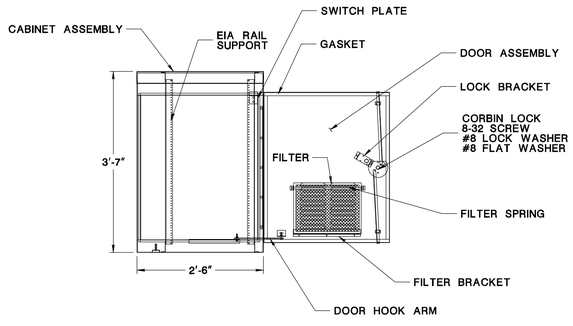
TYP. DETAILS FOR GROUND MOUNTED READER CABINET ON FOUNDATION TTS, TYPE A



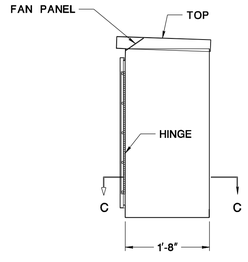
ELEVATION

NOTES:

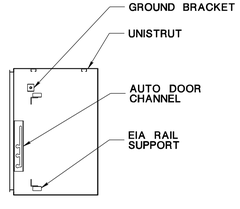
1. FABRICATE CABINET WITH 14 GAUGE TYPE 304 STAINLESS STEEL.
2. ENSURE DOOR IS NEMA TYPE 3R WITH CELLULAR NEOPRENE GASKET, AND HINGES ARE 14 GAUGE S.S., TYPE PIANO (CONTINUOUS).
3. PROVIDE CORBIN TYPE LOCK WITH 2 KEYS AND A THREE POINT LOCKING SYSTEM, THAT SECURES THE TOP, BOTTOM AND CENTER.
4. PROVIDE 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 AND INSECTS 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 OPEN AT 90° AND 180°.
8. ENSURE CONTINUOUS HINGE LEAVES ARE 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 SEALED CONDUIT ENTRIES.
14. INSTALL READER CABINET AND COORDINATE WITH TRANSCOM INC., FOR SETTING UP READER AND ANTENNA.
15. CAP 2" RMC, FOR FIBER CONNECTION 6" FROM THE FOUNDATION IF FIBER IS NOT INSTALLED.
16. PROVIDE AND INSTALL NO. 6 AWG GROUND WIRE AND GROUND IN ACCORDANCE WITH NEC REQUIRMENTS.
17. PROVIDE AN ANTENNA EXTENSION TO OBTAIN MAXIMUM WIRELESS SIGNAL RECEPTION / TRANSMISSION. SUBMIT MOUNTING DETAILS.



ELEVATION

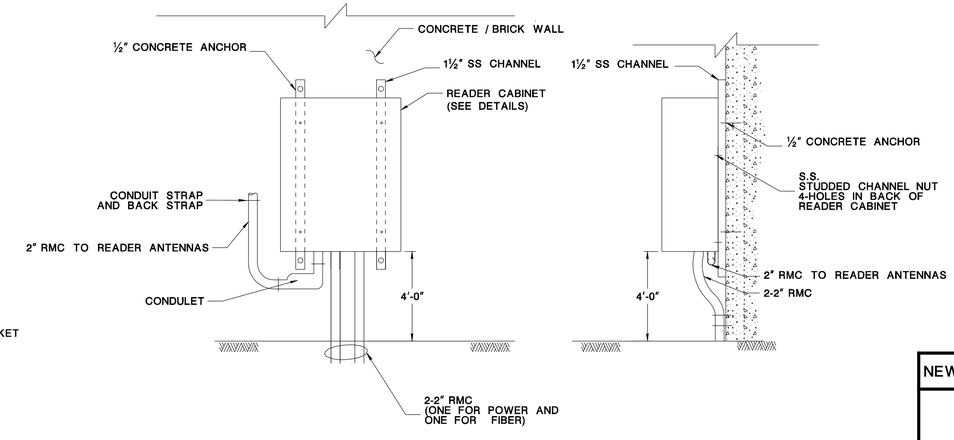


SIDE VIEW



SECTION C-C

TYP. READER CABINET DETAILS



ELEVATION SIDE VIEW

TYP. DETAILS FOR CONCRETE/BRICK WALL MOUNTED READER CABINET

NOT TO SCALE

ITS-704-20

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

TRAVEL TIME SYSTEM CONTROLLER TTS & FOUNDATION TTS TYPE A

* / *

NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-03 ORIGINAL SHEET

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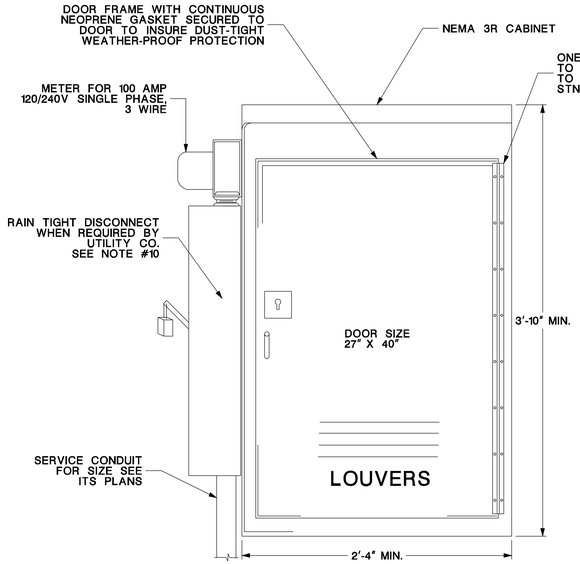
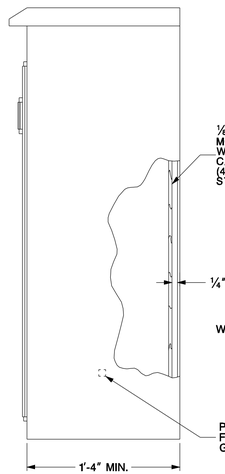


FRONT ELEVATION



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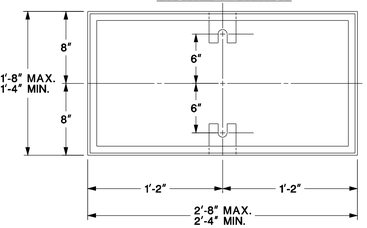
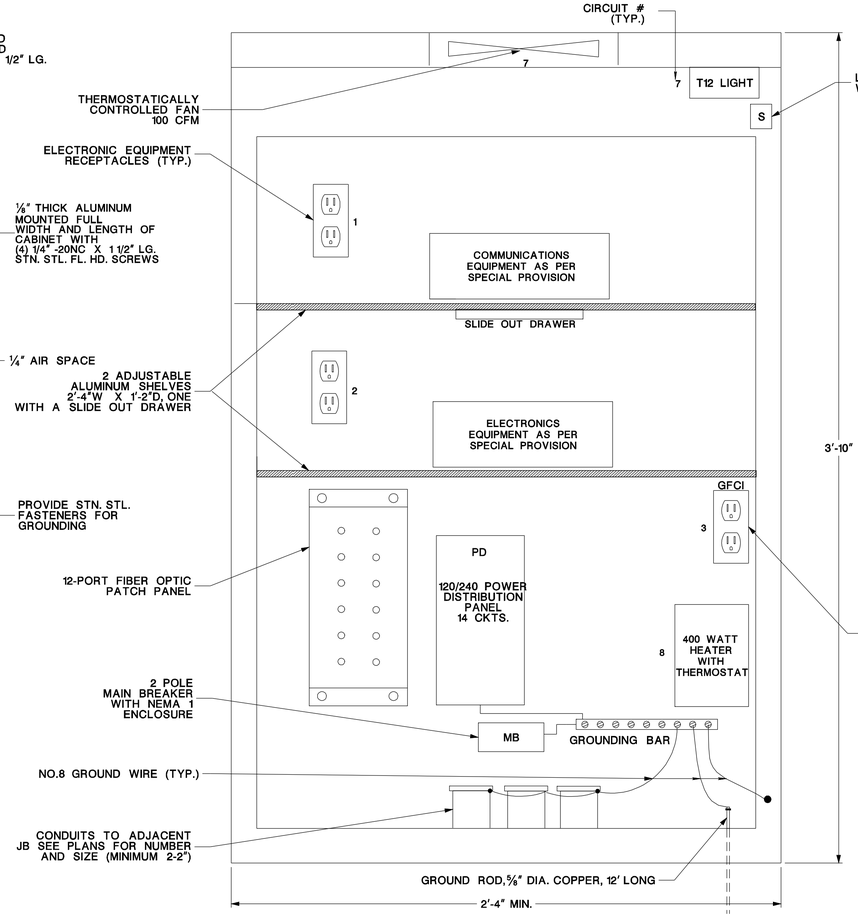
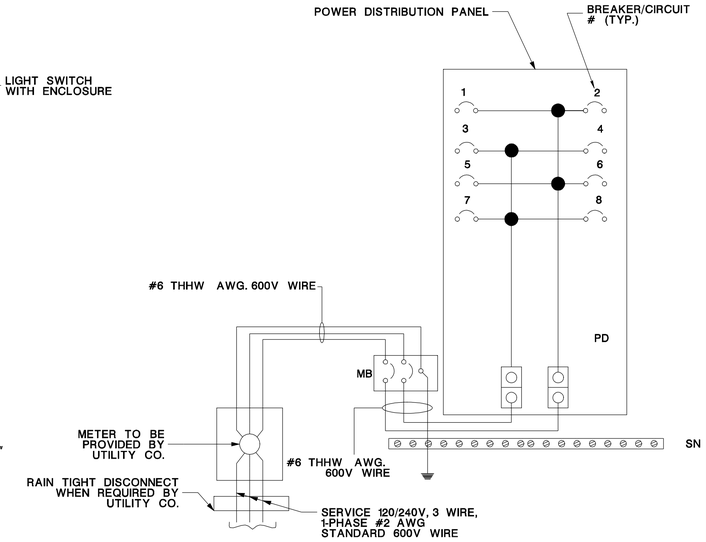


BOTTOM VIEW & ANCHOR BOLT LAYOUT

CABINET TYPE "M" - FABRICATED



CABINET EQUIPMENT LAYOUT (TYP.)



POWER DISTRIBUTION DIAGRAM

TABLE A

BREAKERS #	BREAKER RATING FUNCTION	TRIP RATING (AMPS)
MB	MAIN BREAKER 60 AMP	60
1	ELECTRONIC EQUIPMENT RECEPTACLE	15
2	ELECTRONIC EQUIPMENT RECEPTACLE	15
3	CONVENIENCE RECEPTACLE (GFCI)	15
4	SPARE	15
5	SPARE	15
6	SPARE	15
7	FAN & LIGHT	15
8	HEATER	20

NOTES:

1. ENSURE CABINET AND CABINET DOOR IS FABRICATED FROM 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 1 1/2" 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". AND GFCI RECEPTACLE AS "CONVENIENCE RECEPTACLE".
8. FOR BREAKER RATINGS, SEE TABLE A.
9. PROVIDE SURGE SUPPRESSION.
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.
11. WHERE REQUIRED, ENSURE METER PAN CONFORMS TO UTILITY COMPANY'S HEIGHT REQUIREMENTS.

NOT TO SCALE

ITS-704-21

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

ITS CONTROLLER

NJDOT Design Services
BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET
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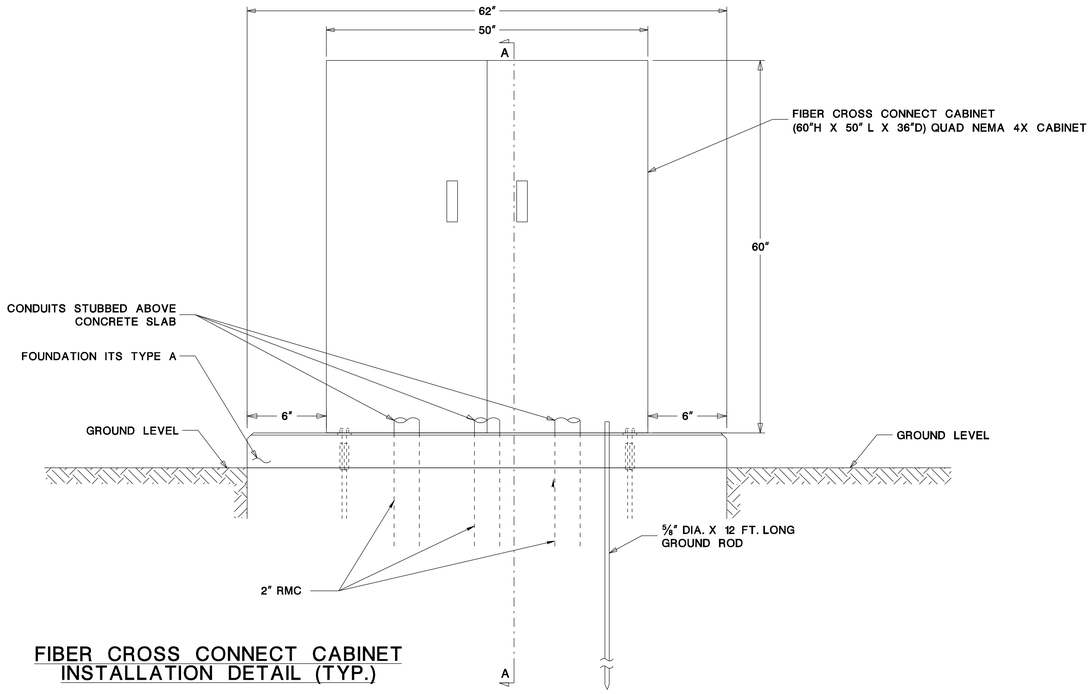
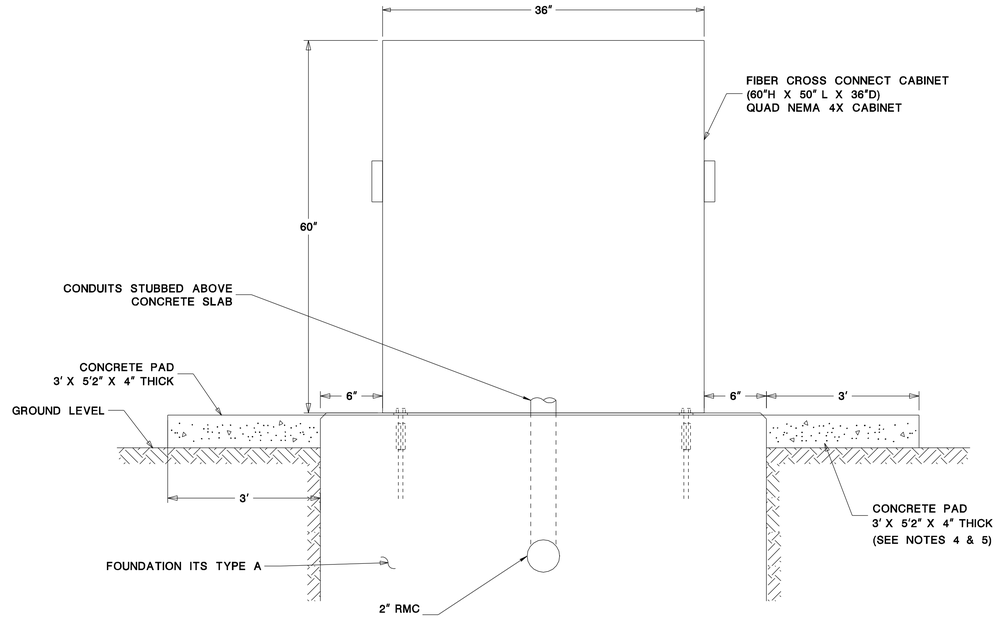
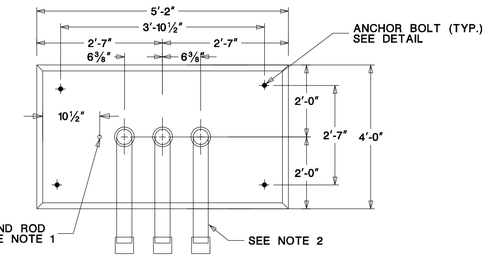


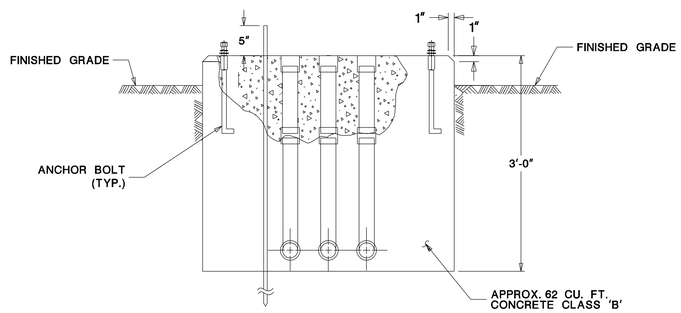
FIBER CROSS CONNECT CABINET INSTALLATION DETAIL (TYP.)



SECTION A-A

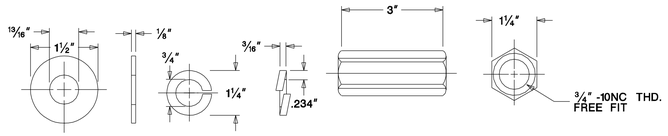


PLAN



ELEVATION

CABINET FOUNDATION

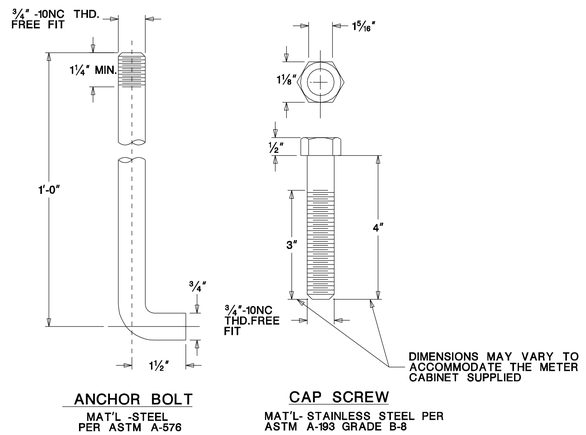


FLAT & LOCK WASHER

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

FOUNDATION ITS TYPE A DETAIL (TYP.)

GENERAL DESIGN SPECIFICATIONS:

CONCRETE DESIGN STRESS:

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

REINFORCEMENT STEEL DESIGN STRESS:

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

NOTES:

1. ⅝″ DIA. X 12 FT. LONG GROUND ROD. PROVIDE GROUNDING AND BONDING AS PER NEC. REQUIREMENTS.
2. FOR NUMBER AND SIZE OF CONDUITS, SEE ITS PLANS.
3. COORDINATE THE LOCATION OF ANCHOR BOLTS WITH THE MOUNTING HOLES OF THE CABINET SUPPLIED.
4. PROVIDE CONCRETE PAD ON THE FRONT AND BACK OF CABINET FOUNDATION.
5. PAYMENT FOR CONCRETE PAD TO BE INCLUDED UNDER PAY ITEM, FOUNDATION ITS, TYPE A.

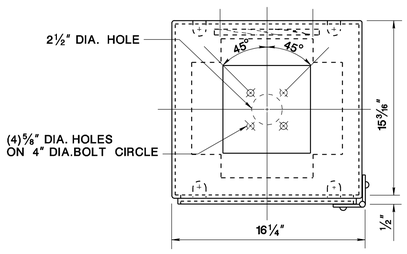
NOT TO SCALE

ITS-704-22

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

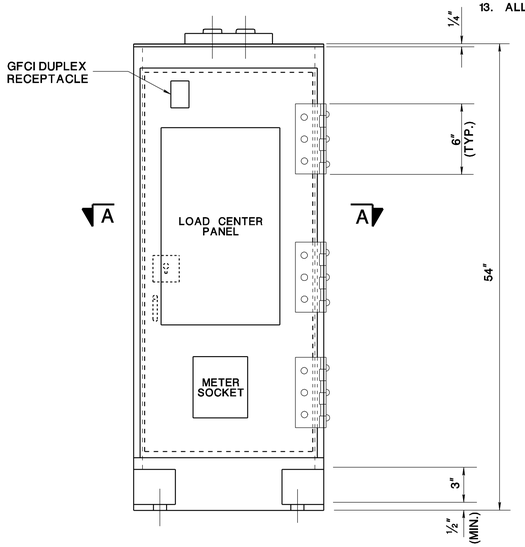
GENERAL SYSTEMS
FIBER CROSS CONNECT CABINET &
FOUNDATION ITS TYPE A



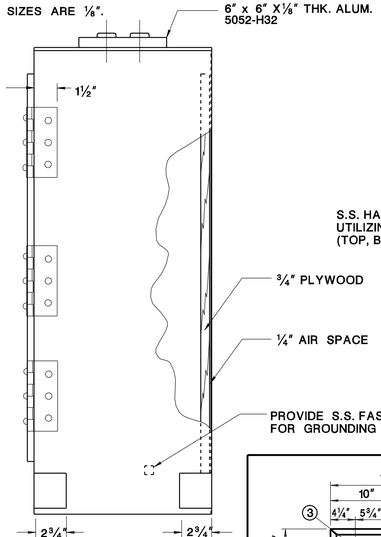
TOP VIEW

NOTES

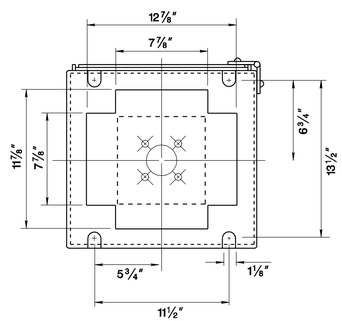
1. CABINET CONSTRUCTED OF FORMED ALUMINUM ALLOY 5052-H32 0.125 INCH THICK WELDED WHERE SHOWN.
2. CABINET IS NOT PAINTED.
3. ALL BOLTS TO BE VANDAL PROOF TYPE.
4. ANY VARIATIONS TO THE DIMENSIONS MUST BE APPROVED IN WRITING BY THE N.J.D.O.T. ENGINEER BEFORE FABRICATION.
5. NO CHANGES IN ANCHORAGE DIMENSIONS ARE PERMITTED.
6. IF METER IS NOT REQUIRED, INSTALL 1¼" I.D. SEALTITE FLEXIBLE CONDUIT AND 1¼" I.D. NIPPLE FROM REDUCER COUPLING TO MAIN BREAKER PANEL.
7. THE BASE OF THE CABINET TO BE ½" MINIMUM THICKNESS.
8. AS AN ALTERNATE A STAINLESS STEEL PIANO TYPE HINGE MAY BE UTILIZED.
9. IF REQUIRED BY UTILITY COMPANY, PROVIDE SERVICE DISCONNECT SWITCH WITH 240 VOLT, 100 A RATED, S/N, NEMA 3R ENCLOSURE AND PADLOCK PROVISIONS. (LOCK TO BE SUPPLIED BY UTILITY COMPANY). SUBMIT WORKING DRAWINGS SHOWING SERVICE DISCONNECT SWITCH INSTALLATION FOR REVIEW AND APPROVAL.
10. PROVIDE SCALED DRAWING TO VERIFY THAT PROPOSED COMPONENTS WILL FIT IN THE CABINET.
11. PROVIDE GROUNDING AND BONDING IN ACCORDANCE WITH NEC REQUIREMENTS.
12. SECURE CABINET DOOR WITH A CORBIN LOCK NO. 15481RS KEYED FOR #2 SERIES. PROVIDE TWO (2) COPIES OF THE KEY TO NJDOT AND ONE (1) COPY TO THE ELECTRIC UTILITY.
13. ALL WELDS SIZES ARE ⅛".



FRONT ELEVATION



SIDE ELEVATION



BOTTOM VIEW

ITEM

① ⅝" DIA. X 12 FT. LONG GROUND ROD.

② RIGID METALLIC SERVICE CONDUIT. (SEE GENERAL CONSTRUCTION PLANS FOR DIRECTION AND SIZE.)

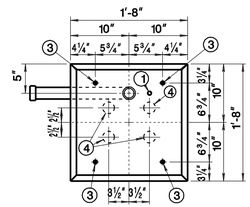
③ ANCHOR BOLT DETAIL AS SHOWN.

④ LOCATIONS FOR DISTRIBUTION CONDUITS - FOR NUMBER, SIZE AND POSITION SEE GENERAL PLANS.

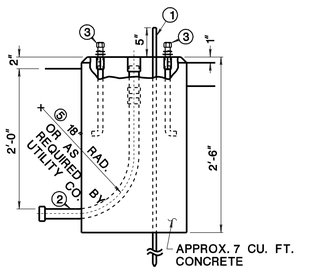
⑤ RADIUS - SUBJECT TO APPROVAL OF UTILITY COMPANY.

NOTE:

ALL CONCRETE SHALL BE CLASS "B".

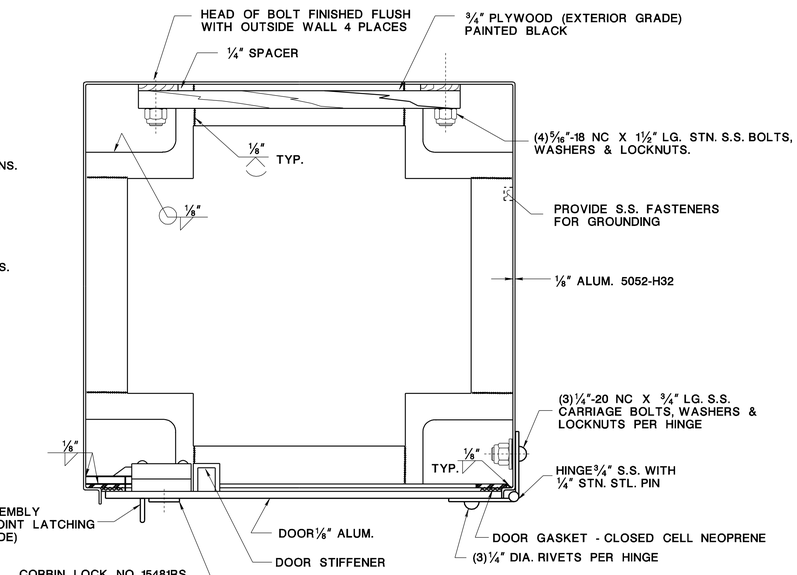


PLAN

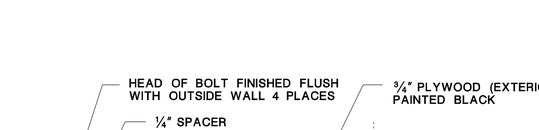


ELEVATION

FOUNDATION ITS TYPE MC

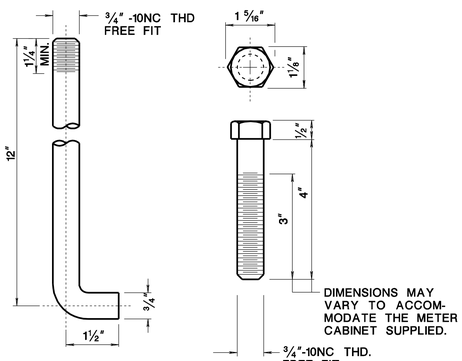


SECTION A-A



FLAT & LOCK WASHER
MAT'L - STN. STL.

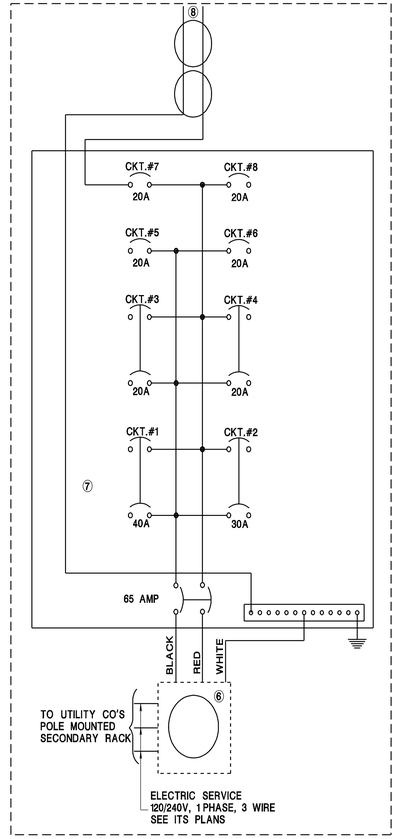
COUPLING
MAT'L - STEEL, GALVANIZED
PER ASTM A-153



ANCHOR BOLT
MAT'L - STEEL
PER ASTM A-576

CAP SCREW
MAT'L - STN. STL. PER
ASTM A-193 GRADE B-8

③ ANCHOR BOLT ASSEMBLY



SCHEMATIC WIRING DIAGRAM: 120/240 VOLT

LEGEND

⑥ METER SOCKET-INSTALLED BY CONTRACTOR-PROVIDED BY UTILITY COMPANY ON REQUEST. (IN JCP&L CO. AREA METER SOCKET IS TO BE INSTALLED AND FURNISHED BY CONTRACTOR).

⑦ LOAD CENTER PANEL WITH ENCLOSURE- PROVIDE 125 AMP MAIN-RATED BUS, CONFORMING TO FEDERAL SPECIFICATION W-P-115C, TYPE 1, CLASS 1. PROVIDE CIRCUIT BREAKERS THAT ARE UL LISTED, COMPLY WITH NEMA STANDARDS, AND TO FEDERAL SPECIFICATION W-C-375B FOR CLASS 10A OR CLASS 10B. PROVIDE ONE (1) MAIN BREAKER 2-POLE 65 AMP; ONE (1) 2-POLE 40 AMP, ONE (1) 2-POLE 30 AMP TWO (2) 2-POLE 20 AMP, AND FOUR (4) 1-POLE 20 AMP BREAKERS.

⑧ WEATHERPROOF, 20AMP GFCI DUPLEX RECEPTACLE GROUND FAULT, IN MALLEABLE IRON BOX.

NOT TO SCALE

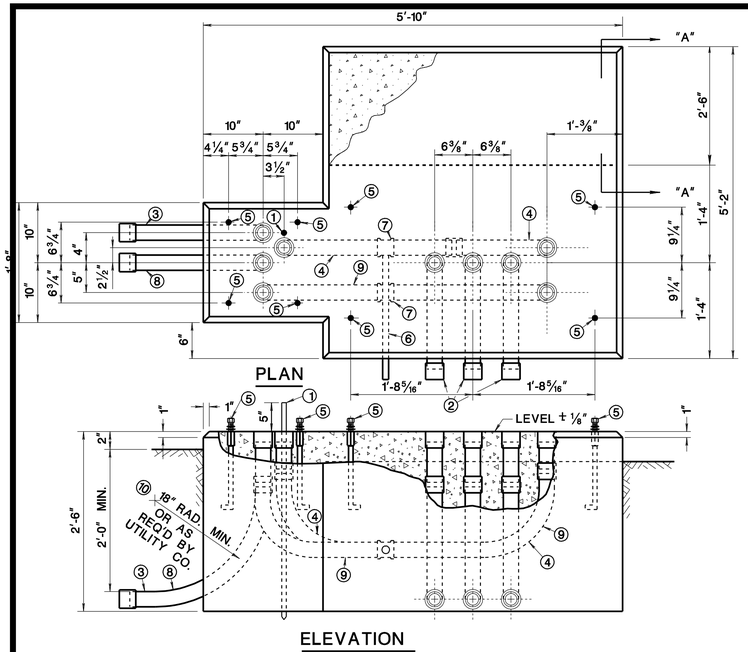
ITS-704-23

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

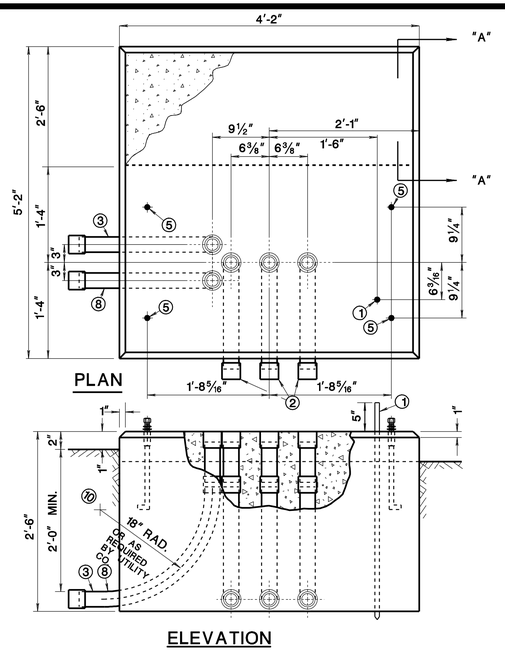
METER CABINET ITS & FOUNDATION
ITS TYPE MC

* / *



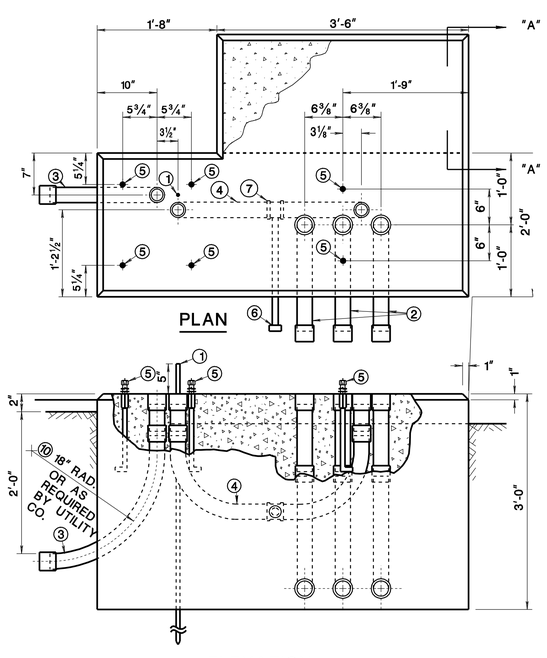
FOUNDATION ITS TYPE "D-MC"

DIRECTION OF TRAFFIC



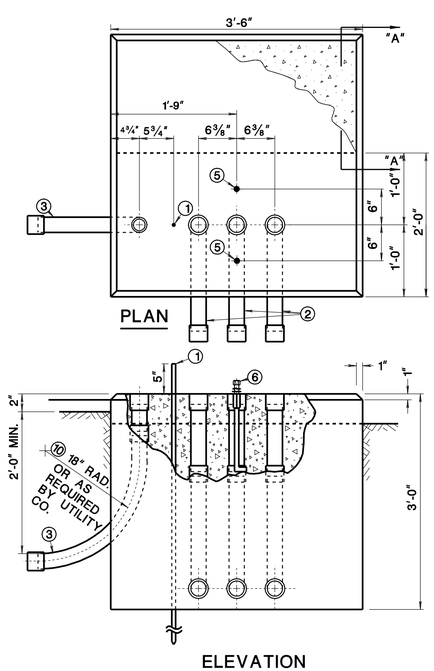
FOUNDATION ITS TYPE "D"

DIRECTION OF TRAFFIC



FOUNDATION ITS TYPE "C-MC"

DIRECTION OF TRAFFIC



FOUNDATION ITS TYPE "C"

DIRECTION OF TRAFFIC

ITEM DESCRIPTION

① ⅝" DIA. X 12 FT. LONG GROUND ROD.

② 3" DIA. RMC TERMINATED INTO JUNCTION BOX.

③ RMC (SERVICE CONDUIT). SEE GENERAL CONSTRUCTION PLANS FOR DIRECTION AND SIZE. IF NOT SPECIFIED, INSTALL 2" DIA. RMC.

④ 2" DIA. RIGID METALLIC CONDUIT. (SERVICE CONDUIT)

⑤ ANCHOR BOLT (TYP. SEE "ANCHOR BOLT DETAIL").

⑥ DRAIN - 1" DIA. RIGID METALLIC CONDUIT. (PITCH DOWN TO JUNCTION BOX.)

⑦ 2" X 2" X 1" GALVANIZED TEE FITTING FOR DRAIN.

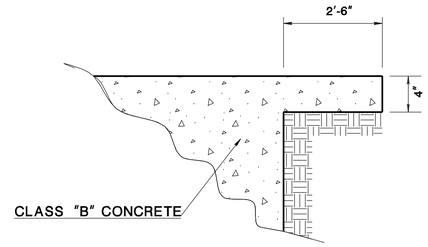
⑧ RMC (INTERCONNECT CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE. IF NOT SPECIFIED INSTALL 2" DIA. RMC.

⑨ 2" DIA RMC (INTERCONNECT CONDUIT)

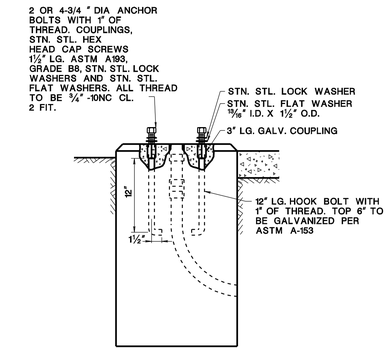
⑩ RADIUS - SUBJECT TO APPROVAL OF UTILITY COMPANY.

NOTES:

1. ALL CONDUITS WITH COUPLINGS ARE TO BE EMBEDDED, PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.
2. INSERT J-BOLT 1½" +/- 1/16" INTO 3" COUPLING
3. POUR MONOLITHIC FOUNDATIONS.
4. ALL CONCRETE TO BE CLASS "B".
5. PLUG/CAP ALL CONDUIT ENDS.
6. FOUNDATION AS REQUIRED BY THE UTILITY COMPANY.



SECTION A-A



TYP. ANCHOR BOLT DETAIL **NOT TO SCALE**

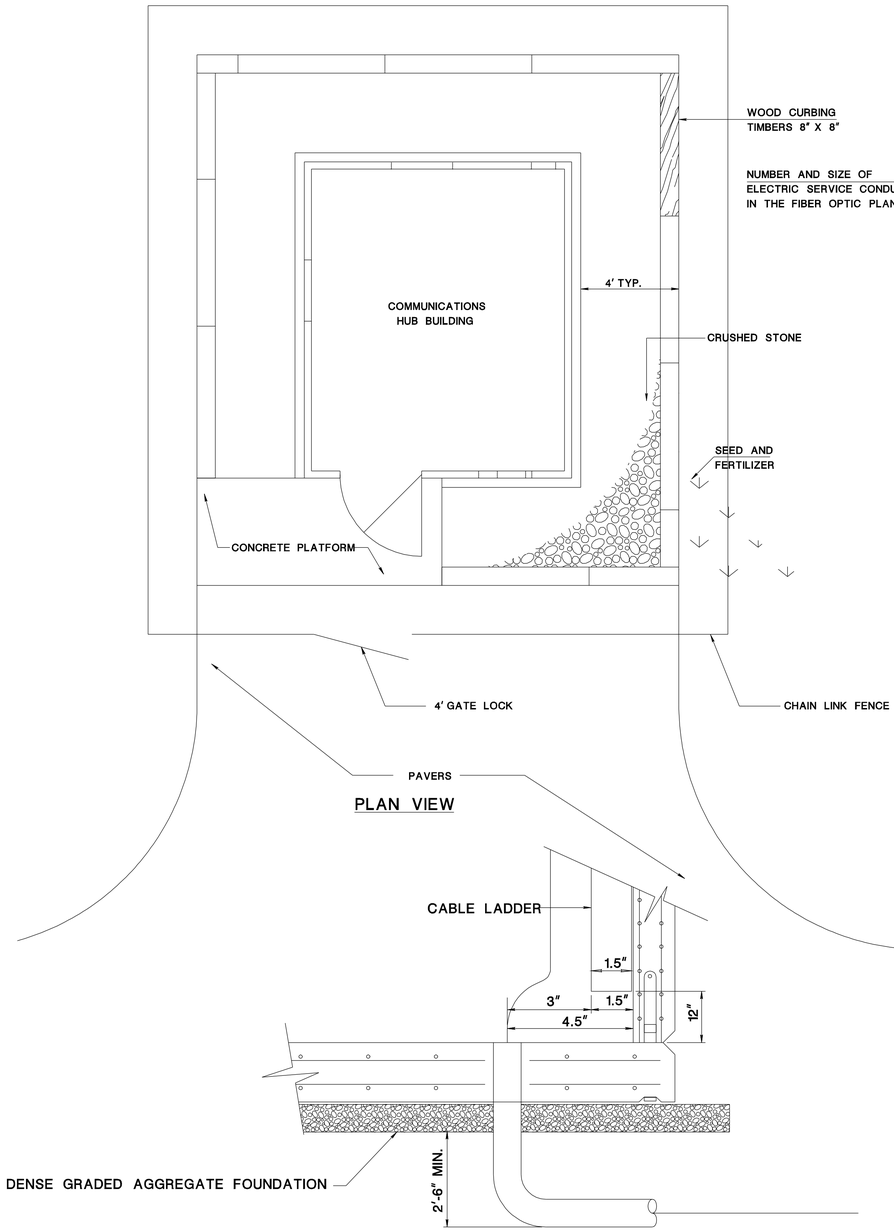
ITS-704-24

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

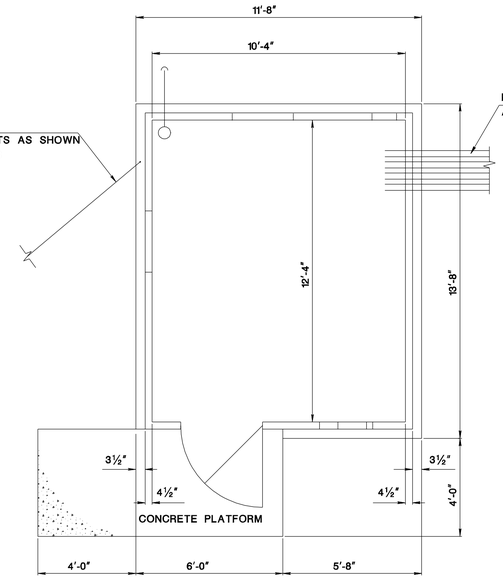
FOUNDATION ITS TYPE
C, C-MC, D & D-MC

* / *

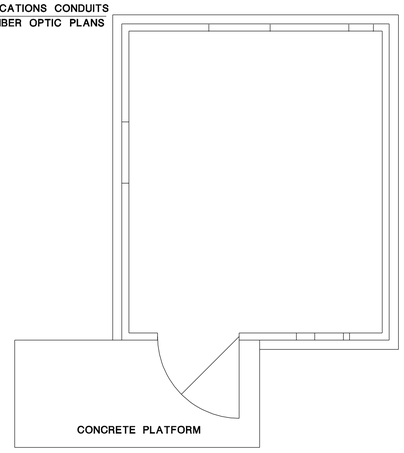


PLAN VIEW

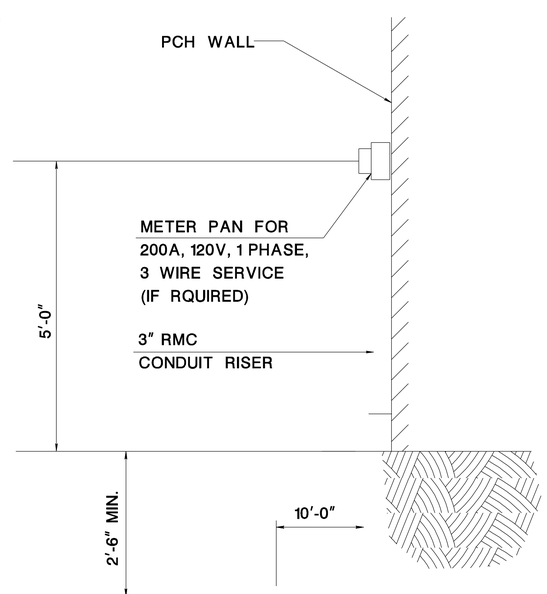
COMMUNICATIONS CABLE ENTRANCE DETAIL



PLAN VIEW



GROUNDING PLAN



NEW 3" RMC SERVICE ENTRANCE DETAIL

NOT TO SCALE

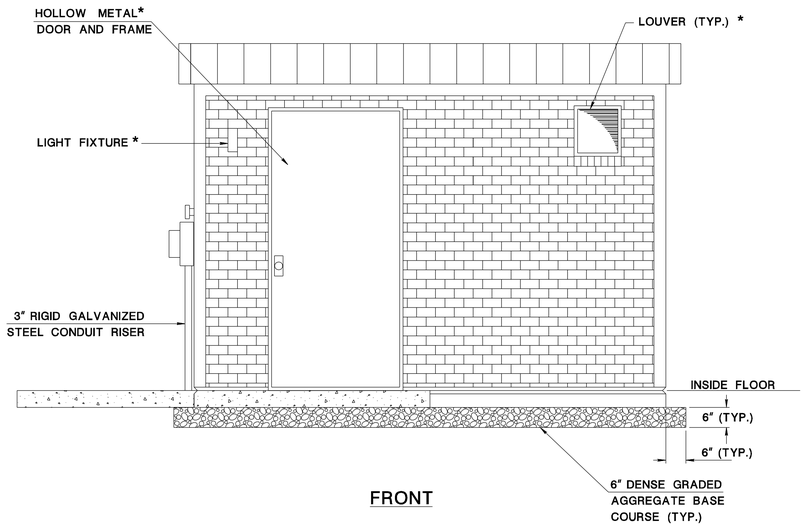
ITS-704-25

NEW JERSEY DEPARTMENT OF TRANSPORTATION

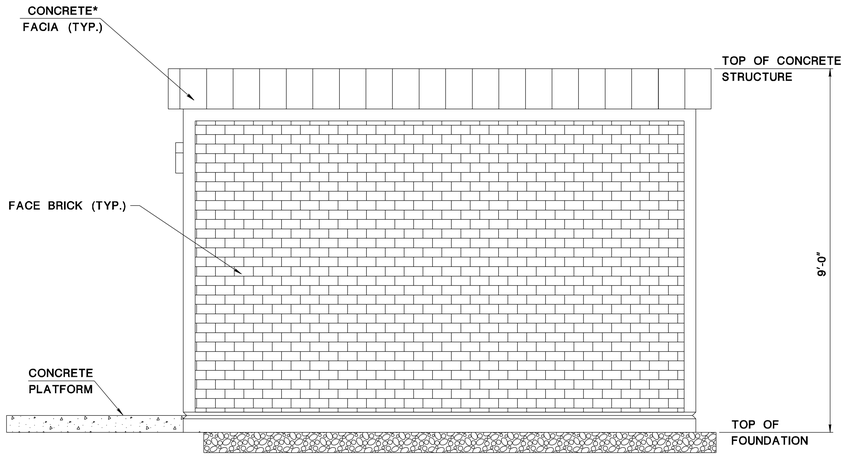
ITS DETAILS

COMMUNICATION HUB

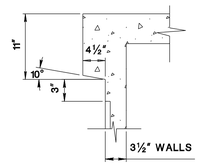
SHEET 1 OF 4



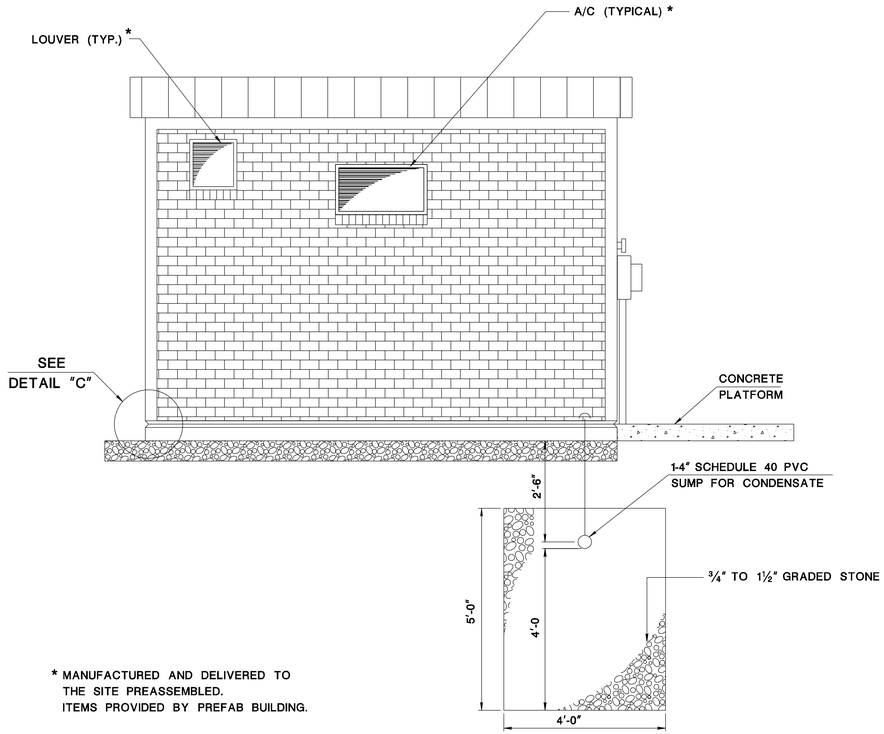
FRONT



RIGHT SIDE

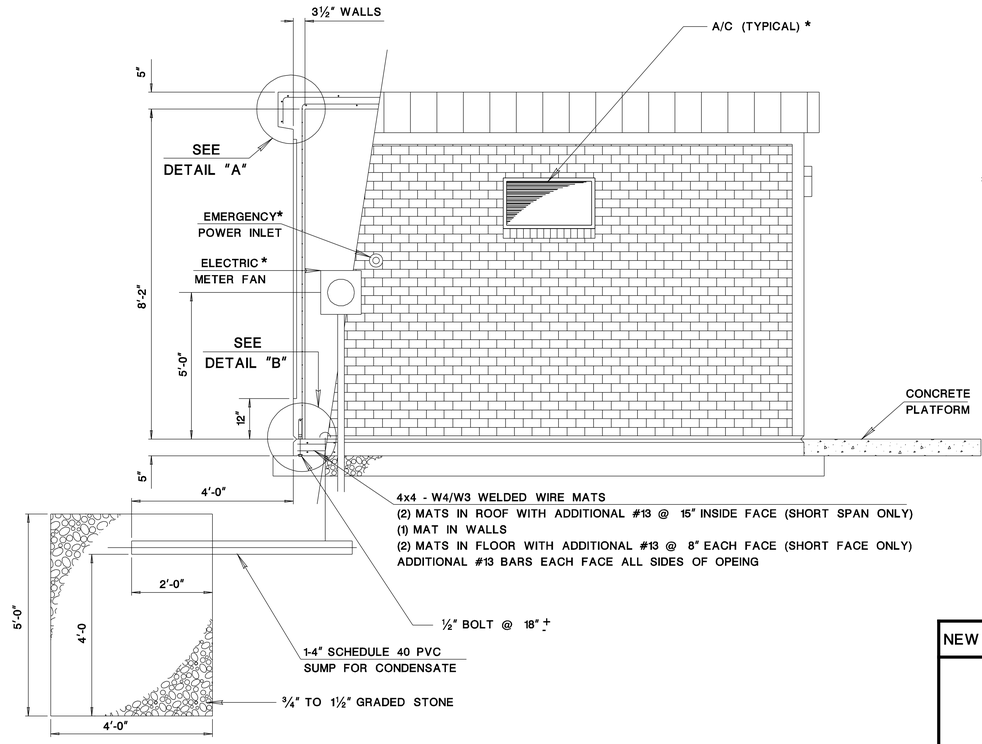


DETAIL "A"



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

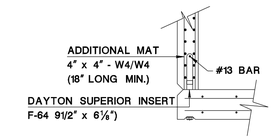
BACK



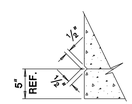
LEFT SIDE

NOTE:

1. ALL BAR SIZES ARE DESIGNATED IN SOFT METRIC SIZES.



DETAIL "B" - ADDITIONAL REINFORCING



DETAIL "C"

NOT TO SCALE

ITS-704-26

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

COMMUNICATION HUB

SHEET 2 OF 4

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NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

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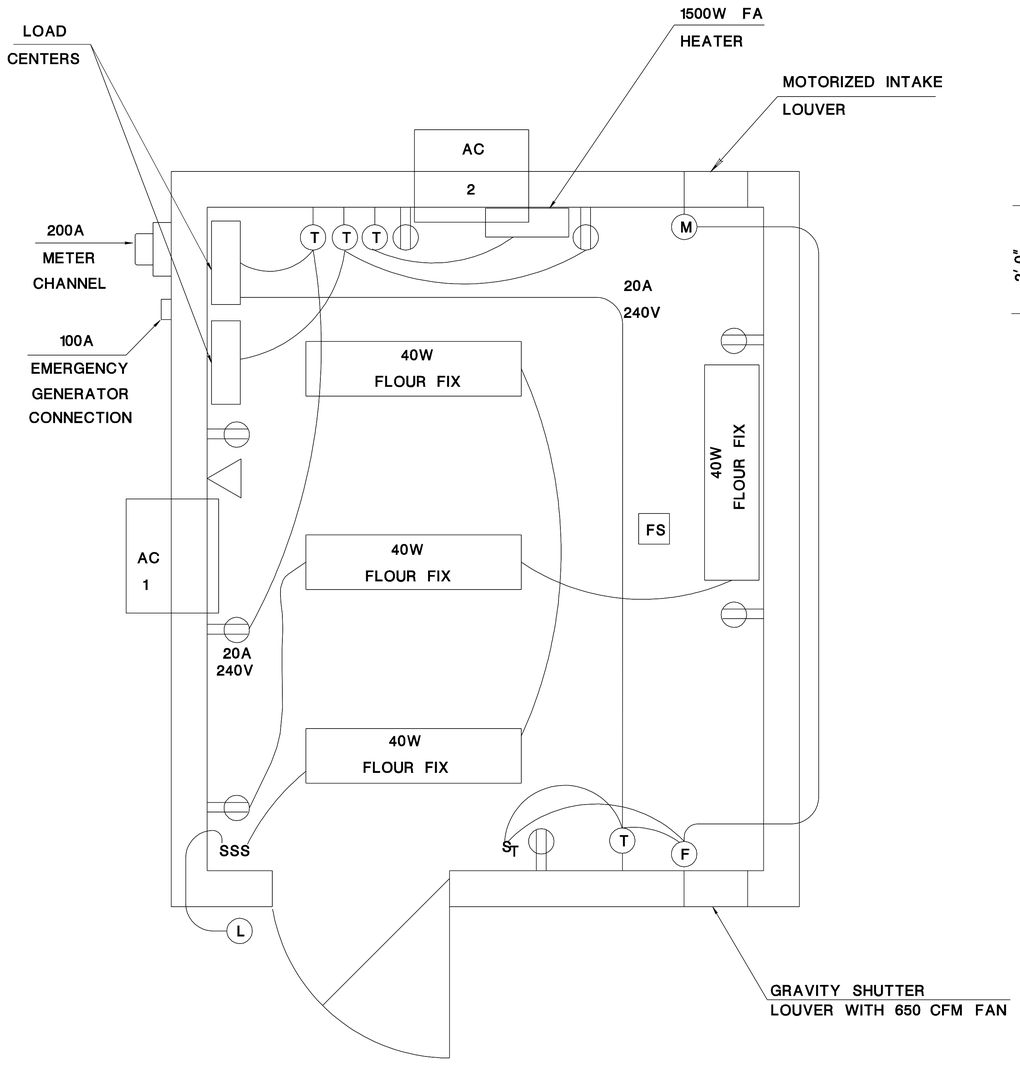
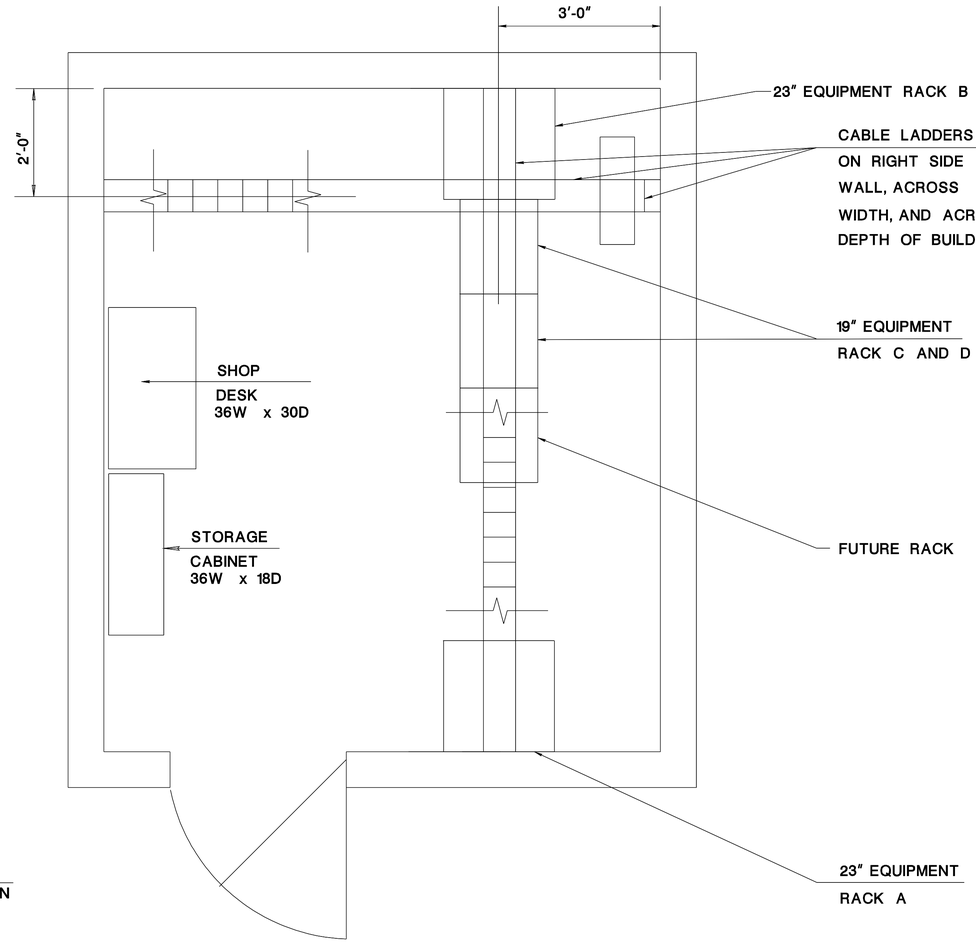


ELECTRIC WIRING PLAN



RACK AND EQUIPMENT LOCATION PLAN

NOT TO SCALE

ITS-704-27

NEW JERSEY DEPARTMENT OF TRANSPORTATION

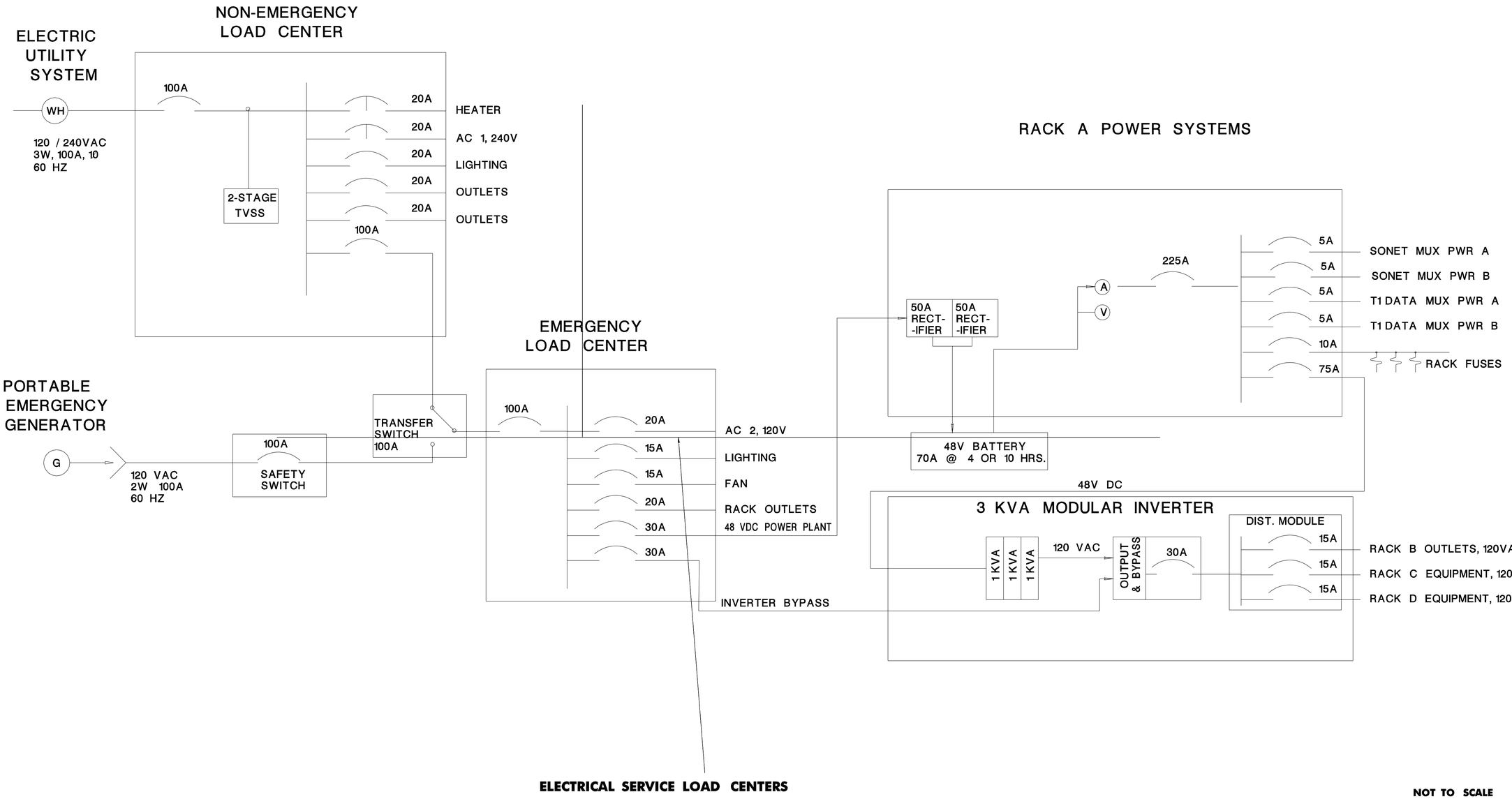
ITS DETAILS

COMMUNICATION HUB

SHEET 3 OF 4

NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-03 ORIGINAL SHEET



ELECTRICAL SERVICE LOAD CENTERS

NOT TO SCALE

ITS-704-28

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

COMMUNICATION HUB

SHEET 4 OF 4

NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

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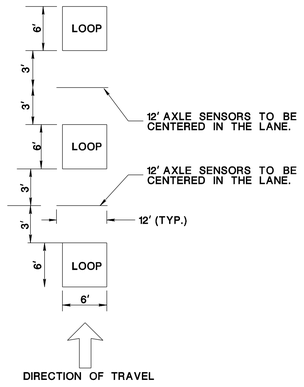
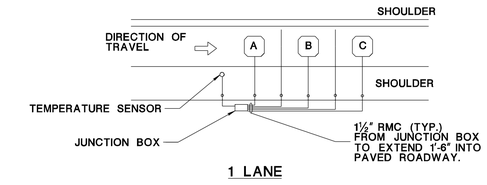
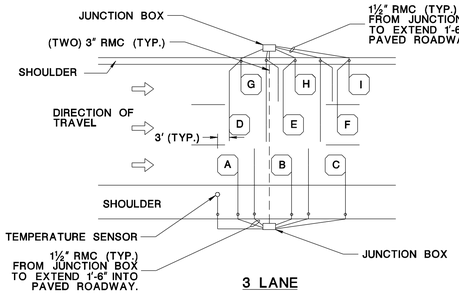


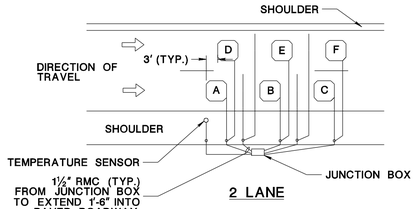
SENSOR LAYOUT
FOR WEIGH IN MOTION SITES



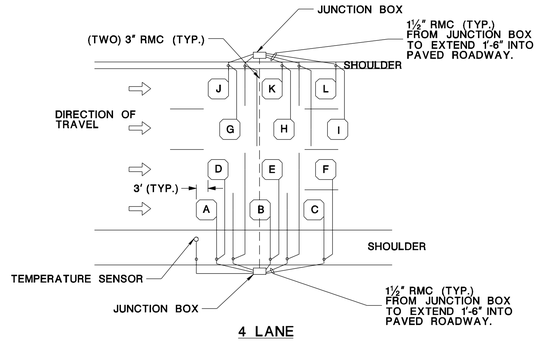
1 LANE



3 LANE



2 LANE



4 LANE

TYPICAL INSTALLATION - WIM ROADWAY DEVICES

IDENTIFICATION OF TRAFFIC MONITORING LOOPS

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

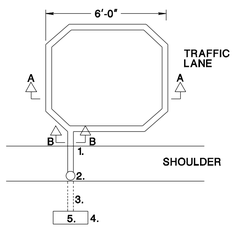
   TAG THE LEADING LOOP AS LOOP "A" (FIRST LOOP IN THE DIRECTION OF TRAVEL OF THE RIGHT MOST LANE VARIOUSLY CALLED SLOW, SHOULDER, OR TRAVEL LANE), LOOP "B" AS THE TRAILING (SECOND) LOOP IN THE SAME LANE AND LOOP "C" AS THE THIRD LOOP IN THE SAME LANE.

   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.

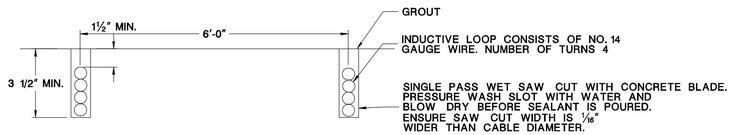
   SIMILARLY DESIGNATE LOOPS IN THE OPPOSITE DIRECTION BY LANE STARTING IN THE RIGHT MOST LANE, USING THE NEXT GROUP OF LETTERS, THEN ACROSS THE LANES TO THE DIVIDER OR MEDIAN.

NOTES:

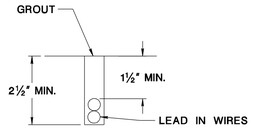
1. CLEAN SLOTS FOR WEIGHT AXLE SENSOR, LOOPS AND LEAD-IN CABLES (PRESSURE WASHED WITH WATER) AND DRY PRIOR TO THE APPLICATION OF GROUT.
2. STAGGER ADJACENT LANE SENSORS.
3. WHERE CONCRETE ROADWAY EXISTS, INSTALL LOOPS IN CONCRETE SURFACE PRIOR TO RESURFACING.
4. WHERE REFLECTORS AND CASTINGS AND RUMBLE 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 CONTROLLER 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 BELT SANDER.



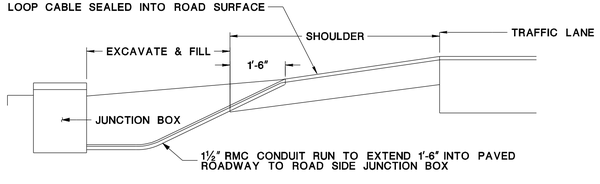
INDUCTIVE LOOP DETAILS



SECTION A-A



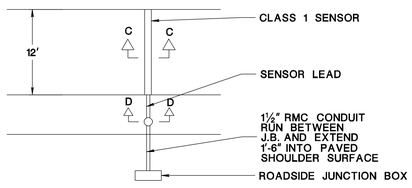
SECTION B-B



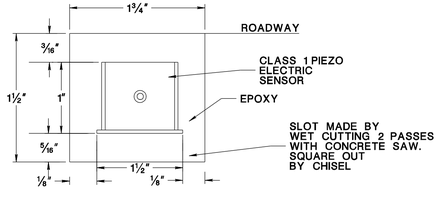
LOOP CABLE ROUTING DETAILS

NOTES:

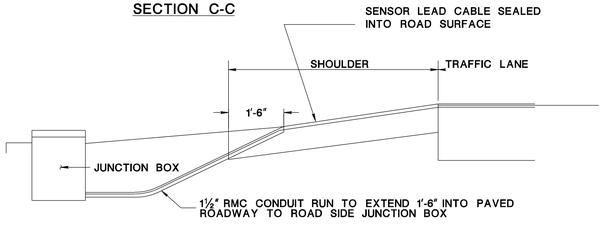
1. LEAD WIRES TWISTED MINIMUM OF 3 TURNS PER FOOT.
2. DRILL HOLE 1'-6" FROM EDGE OF SHOULDER TO INSTALL RMC CONDUIT.
3. 1½" RMC CONDUIT RUN BETWEEN JUNCTION BOX AND SHOULDER SURFACE.
4. INSTALL JUNCTION BOX AT ROAD EDGE FOR CONNECTIONS TO FEEDER CABLE.
5. MAKE ALL CONNECTIONS BETWEEN LEAD WIRES AND LOOP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



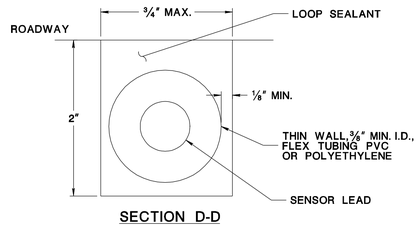
PIEZO TYPE AXLE SENSOR DETAILS



SECTION C-C



AXLE SENSOR CABLE ROUTING DETAILS



SECTION D-D

NOT TO SCALE

ITS-704-29

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

WEIGH IN MOTION SYSTEMS, ROADWAY DEVICES

* / *

NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

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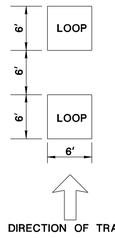
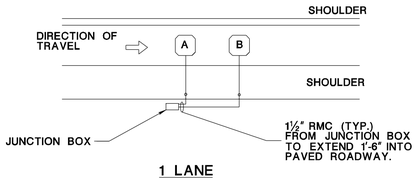
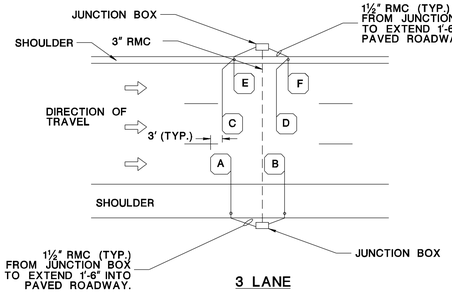


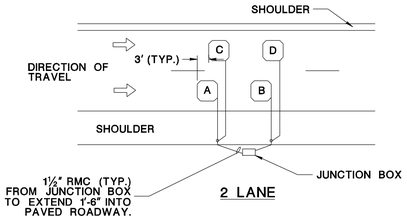
LOOP LAYOUT
FOR TRAFFIC VOLUME SYSTEM



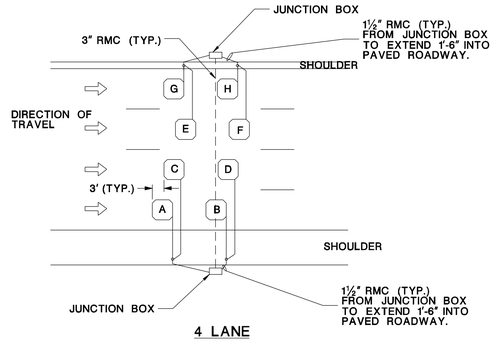
1 LANE



3 LANE



2 LANE



4 LANE

TYPICAL INSTALLATION TVS ROADWAY LOOPS

IDENTIFICATION OF TVS ROADWAY LOOPS

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

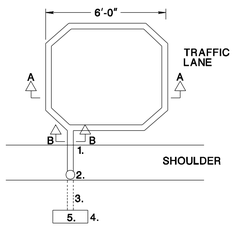
   TAG THE LEADING LOOP AS LOOP "A" (FIRST LOOP IN THE DIRECTION OF TRAVEL OF THE RIGHT MOST LANE VARIOUSLY CALLED SLOW, SHOULDER, OR TRAVEL LANE), LOOP "B" AS THE TRAILING (SECOND) LOOP IN THE SAME LANE AND LOOP "C" AS THE THIRD LOOP IN THE SAME LANE.

   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.

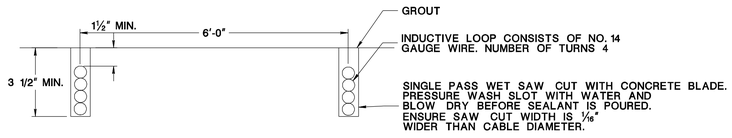
   SIMILARLY DESIGNATE LOOPS IN THE OPPOSITE DIRECTION BY LANE STARTING IN THE RIGHT MOST LANE, USING THE NEXT GROUP OF LETTERS, THEN ACROSS THE LANES TO THE DIVIDER OR MEDIAN.

NOTES:

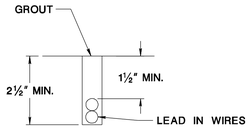
1. STAGGER ADJACENT LANE LOOPS.
2. WHERE CONCRETE ROADWAY EXISTS, INSTALL LOOPS IN CONCRETE SURFACE PRIOR TO RESURFACING.
3. WHERE REFLECTORS AND CASTINGS AND RUMBLE STRIPS ARE TO BE INSTALLED, ADJUST THE DEPTH OF THE LOOP LEADS ACCORDINGLY TO AVOID DAMAGE.
4. INSTALL LOOPS AFTER MILLING PROCESS, IF PERFORMED, AND PRIOR TO THE INSTALLATION OF THE FINAL OVERLAY.
5. LEAD WIRES TWISTED MINIMUM OF 3 TURNS PER FOOT.
6. DRILL HOLE 1'-6" FROM EDGE OF SHOULDER TO INSTALL RMC CONCUIT.
7. 1½" RMC CONDUIT RUN BETWEEN JUNCTION BOX AND SHOULDER SURFACE.
8. INSTALL JUNCTION BOX AT ROAD EDGE FOR CONNECTIONS TO FEEDER CABLE.
9. MAKE ALL CONNECTIONS BETWEEN LEAD WIRES AND LOOP DETECTOR CABLE IN THE JUNCTION BOX.



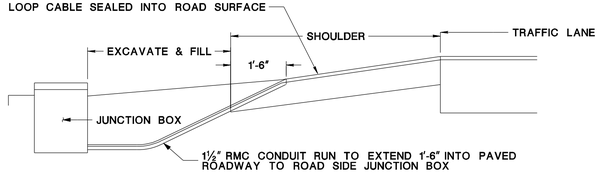
INDUCTIVE LOOP DETAILS



SECTION A-A



SECTION B-B



LOOP CABLE ROUTING DETAILS

NOT TO SCALE

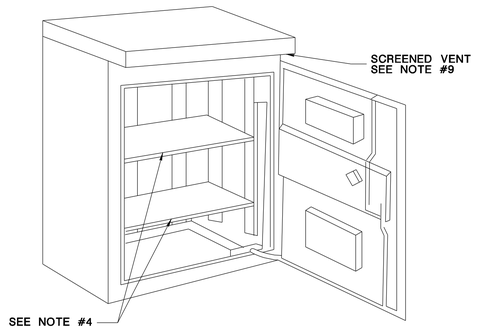
ITS-704-30

NEW JERSEY DEPARTMENT OF TRANSPORTATION

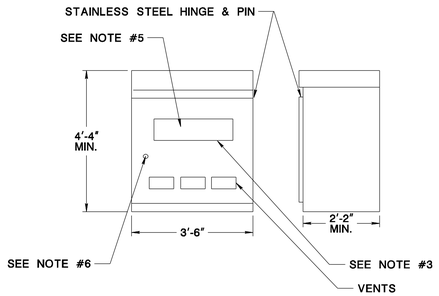
ITS DETAILS

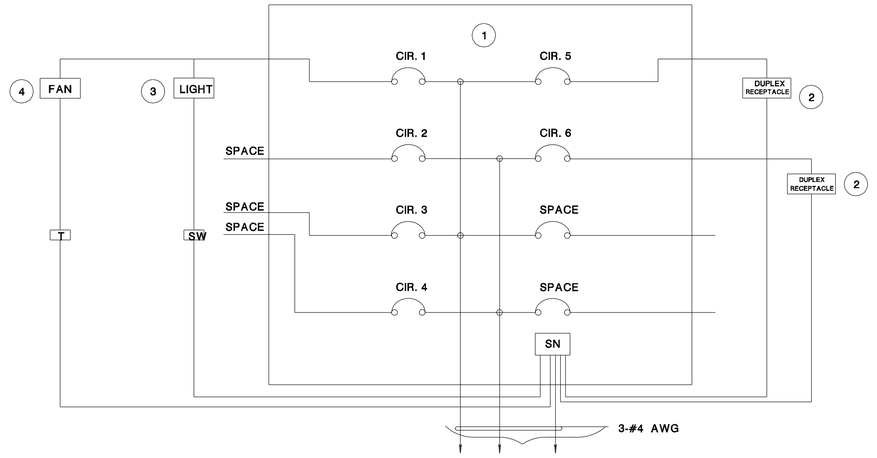
TRAFFIC VOLUME SYSTEM (TVS), ROADWAY LOOPS

* / *



MINIMUM DIMENSIONS
OF CABINET





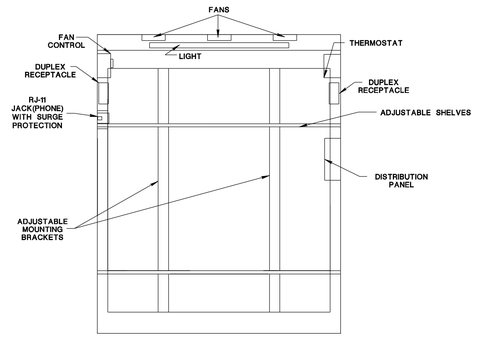
SCHEMATIC WIRING DIAGRAM: 120/240 VOLT
(100 AMPS)

WIRING DIAGRAM ACCESSORIES:

1. LOAD CENTER DISTRIBUTION PANEL BOARD.
2. DUPLEX RECEPTACLE.
3. CABINET LIGHT AND SWITCH.
4. THERMOSTATICALLY CONTROLLED FAN.

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 TWO ADJUSTABLE SHELVES FOR TVS SYSTEM AND ONE ADJUSTABLE SHELVE FOR THE WIM SYSTEM.
5. SECURE SMALL DOOR WITH A SUB-TREASURY LOCK #0357S 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 THE ELECTRIC SERVICE METER AND DISCONNECT PER METER CABINET ITS & FOUNDATION ITS TYPE MC DETAIL.
13. FOR FOUNDATION DETAILS SEE FOUNDATION, TYPE "D" OR TYPE "D-MC" ON THE FOUNDATION ITS TYPE C, C-MC, D & D-MC DETAIL.



FRONT

METER CABINET TYPE P-TMS
(SHOWN WITH DOOR REMOVED)

NOT TO SCALE

ITS-704-31

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

CONTROLLER CABINET TYPE P-TMS

*
*

NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

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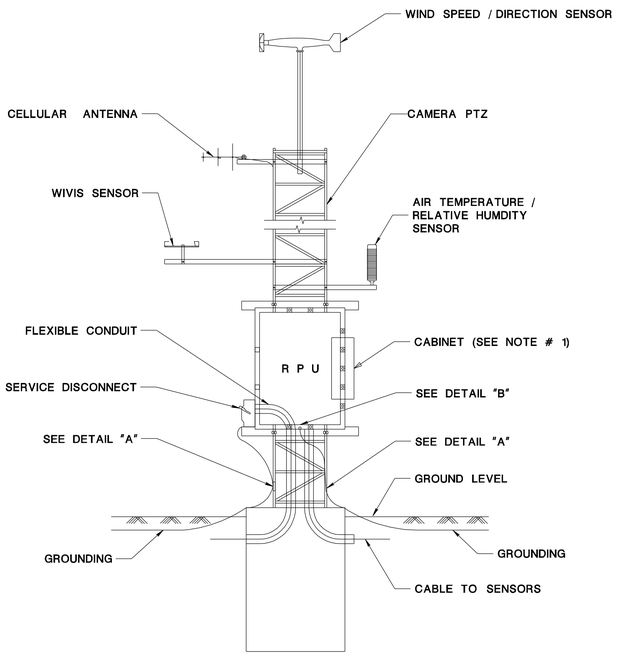
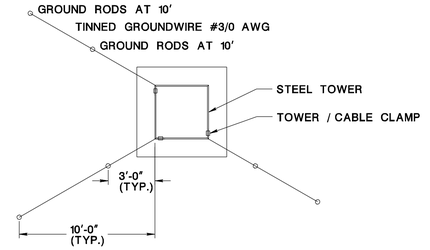
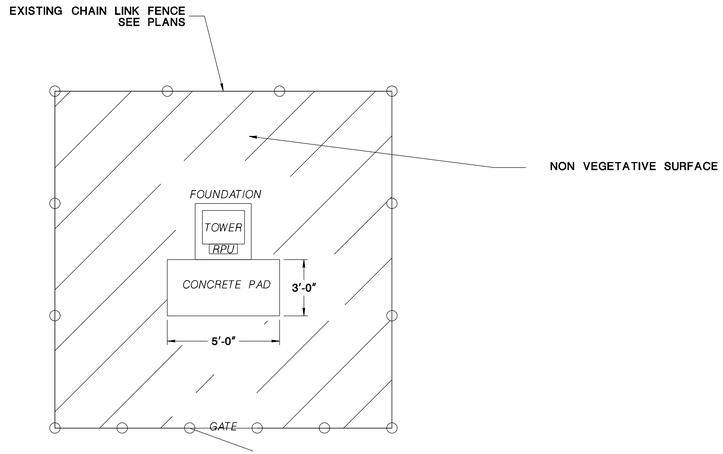


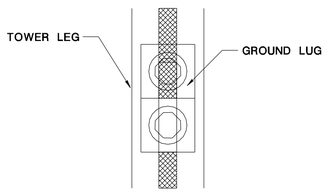
(FOR CONTROLLER TOWER DETAIL SEE ITS-704-19)



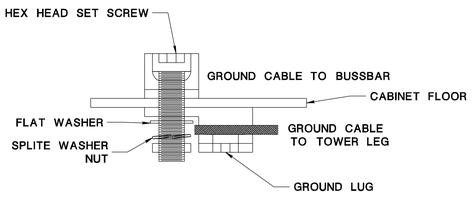
TOWER GROUNDING



GATE, CHAIN LINK FENCE



DETAIL "A"



DETAIL "B"

WEATHER STATION

NOTE:

INSTALL COPPER MESH OR STEEL WOOL IN ALL CONDUITS WITHIN THE RPU ENCLOSURE TO PREVENT RODENT INTRUSION.

NOT TO SCALE

ITS-704-32

NEW JERSEY DEPARTMENT OF TRANSPORTATION

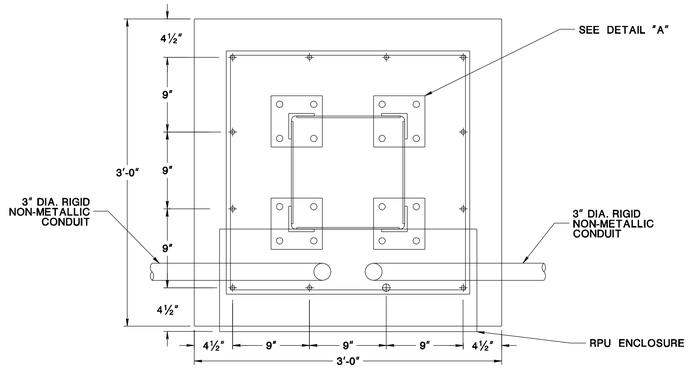
ITS DETAILS

ROADWAY WEATHER INFORMATION SYSTEM, WEATHER STATION

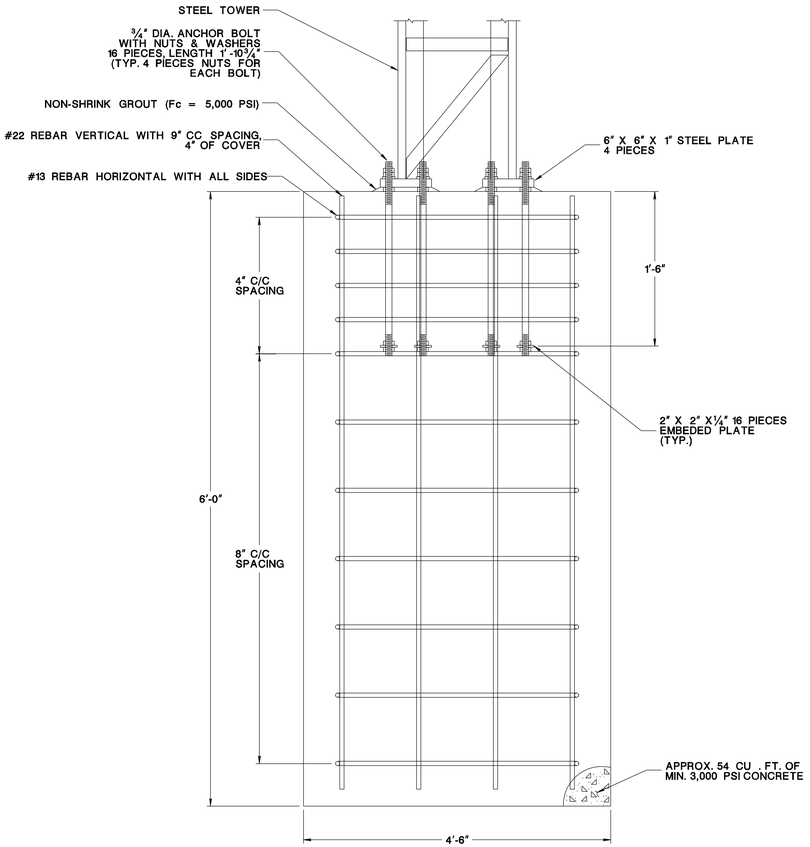
SHEET 1 OF 2

BDC-11D-03 MISC. CHANGES
BDC-07D-03 ORIGINAL SHEET

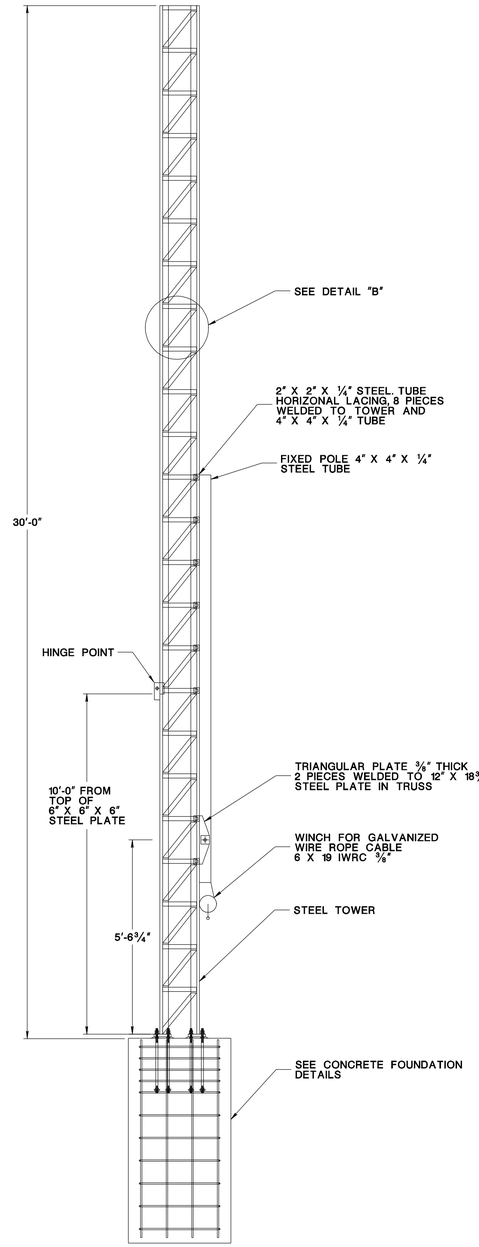
NJDOT Design Services



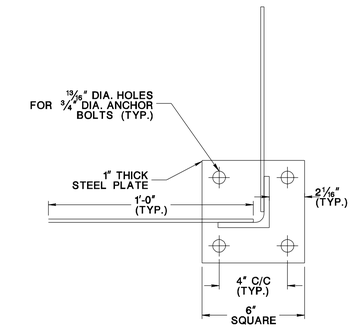
PLAN



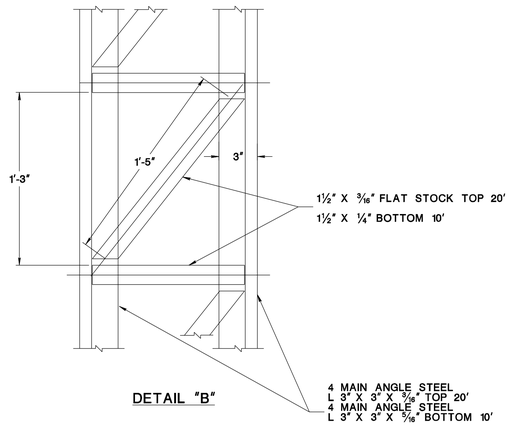
FOUNDATION



TOWER



DETAIL "A"



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 2009 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.
14. ALL REBARS ARE DESIGNATED IN SOFT METRIC BAR SIZES.

NOT TO SCALE

ITS-704-33

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

ROADWAY WEATHER INFORMATION SYSTEM, WEATHER STATION

SHEET 2 OF 2

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NJDOT Design Services

BDC-11D-03 MISC. CHANGES
BDC-07D-03 - ORIGINAL SHEET

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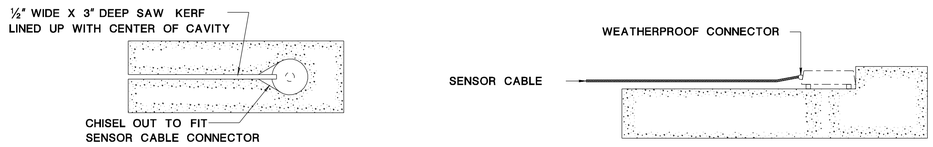
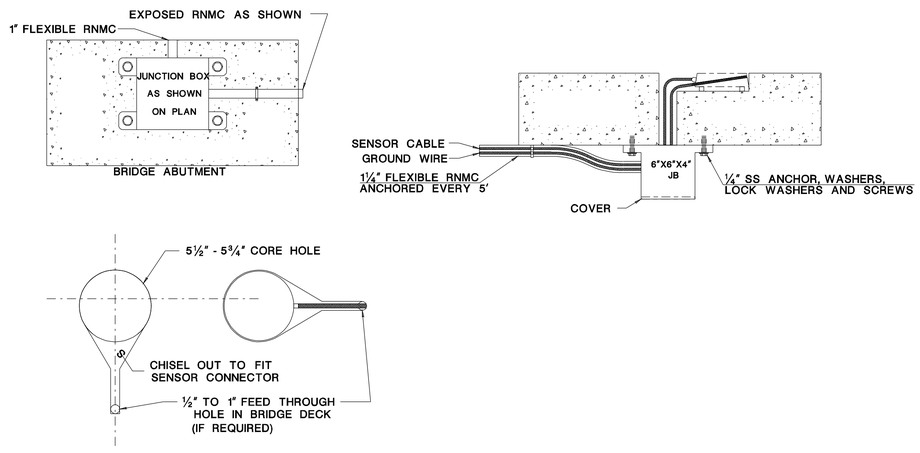
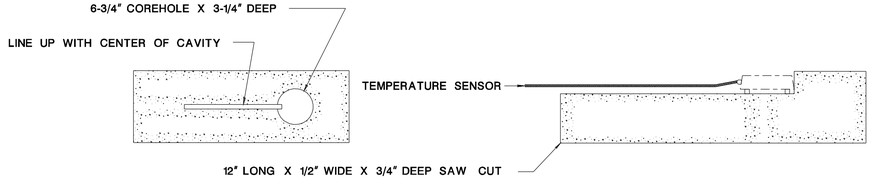


ROADWAY INSTALLATION



BRIDGE INSTALLATION

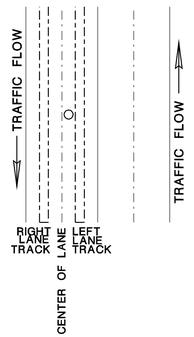


WIRELESS INSTALLATION

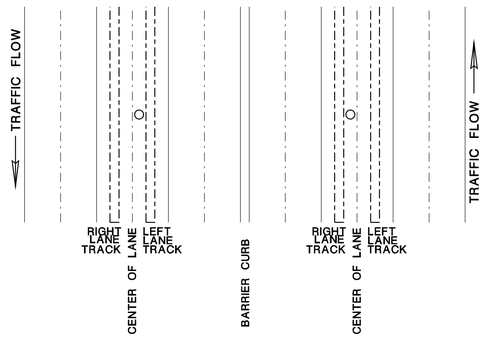
SURFACE SENSOR

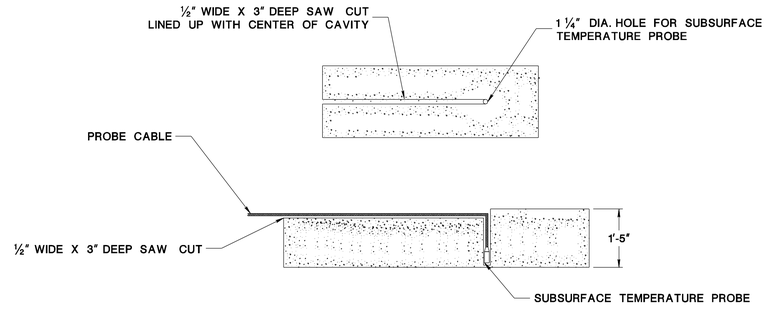
LOCATE THE SURFACE SENSORS AN EQUAL DISTANCE BETWEEN THE CENTER LINE OF THE LANE AND THE CENTER LINE OF THE WHEEL TRACK. INSTALL SUB SURFAC TEMPERATURE PROBE IN ROADWAY SHOULDER.

2 LANE HIGHWAYS



MULTI-LANE HIGHWAYS BRIDGE/ROADWAY





SUBSURFACE TEMPERATURE
PROBE INSTALLATION IN SHOULDER AREA

NOT TO SCALE

ITS-704-34

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ITS DETAILS

ROADWAY WEATHER INFORMATION SYSTEM, ROADWAY DEVICES

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BDC-11D-03 MISC. CHANGES
BDC-07D-03 ORIGINAL SHEET

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