

GENERAL NOTES:

1. THE LIMITS OF WORK FOR THIS PROJECT SHALL BE AS DETAILED IN THE SPECIAL PROVISIONS AND SHOWN ON THE CONDUIT PLANS.
2. CLEAR AND THIN VEGETATION IN AREAS INDICATED TO PROVIDE MAXIMUM VISIBILITY OF ADJACENT CAMERAS.
3. SURFACE MOUNTED CONDUIT SHALL BE MOUNTED ON STRUCTURE SURFACE, PARAPET, ABUTMENT OR PIER WALLS. IN-STRUCTURE CONDUIT SHALL BE THAT CONDUIT INSTALLED UNDER THE BRIDGE DECK AND WITHIN THE GIRDERS. SUPPORTED FIBER OPTIC CABLE SHALL BE STRAPPED TO EXISTING SURFACE MOUNTED OR IN-STRUCTURE CONDUIT.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING, VERIFYING AND PROTECTING ALL UTILITIES, BELOW AND ABOVE GROUND. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AND ALL UTILITIES WITHIN THE TOWNS ALONG THE PROJECT CORRIDOR. THE CONTRACTOR SHALL ALSO CONTACT D.O.T. DISTRICT ELECTRICAL TO MARK OUT THE UNDERGROUND ILLUMINATION CONDUIT AND APPURTENANCES AND MS. JACQUELINE HENRY-RAFIG OF PLANNING INVENTORY AND DATA AT 860-594-2089 TO MARK OUT TRAFFIC MONITORING STATION.
5. IN AREAS WHERE THE MAINLINE CONDUIT CROSSES THE EXISTING ILLUMINATION DUCT, THE CONTRACTOR WILL BE REQUIRED TO HAND EXCAVATE. THE MAINLINE CONDUIT WILL BE INSTALLED AT A SUFFICIENT DEPTH BELOW THE ILLUMINATION DUCT. ANY DAMAGE CAUSED TO THE ILLUMINATION AND TRAFFIC MONITORING STATIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. MARK OUT OF THE ILLUMINATION AND TRAFFIC MONITORING STATIONS WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY.
6. THE CONTRACTOR SHALL CONTACT MR. JAMES GANNON OF HIGHWAY OPERATIONS AT 203-673-7373 ONCE THE LOCATIONS OF THE PULLBOXES AND VAULTS ARE STAKED, FOR APPROVAL. THE LOCATIONS OF THESE ITEMS ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY, AND SHALL BE ADJUSTED FOR FIELD CONDITIONS.
7. IT IS NOT THE INTENT OF THESE DRAWINGS TO INCLUDE EVERY DETAIL OF THE WORK REQUIRED TO BE PERFORMED BY THE CONTRACTOR TO MAKE A COMPLETE INSTALLATION. ITEMS NOT SPECIFICALLY SHOWN ON THE DRAWINGS OR INCLUDED IN THE SPECIFICATIONS THAT ARE REQUIRED TO BE PERFORMED BY THE CONTRACTOR TO PERFORM THE WORK, ARE TO BE INCLUDED AS PART OF THE CONTRACTOR'S WORK.
8. THE CONDUIT IN TRENCH SHALL BE 4" (100) SCHEDULE 40 PVC UNLESS OTHERWISE NOTED ON THE PLANS. ALL CONDUIT UNDER ROADWAYS SHALL BE RIGID METAL. SURFACE MOUNTED OR IN-STRUCTURE CONDUIT SHALL BE RMC OR FIBERGLASS CONDUIT AS NOTED. MAINLINE CONDUIT SHALL BE DEFINED AS THAT WHICH WILL CARRY FIBER OPTIC COMMUNICATION CABLE WITHIN THE PROJECT LIMITS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERENCE TO ALL "CALL BEFORE YOU DIG" LOCATION RULES AND REQUIREMENTS PRIOR TO EXCAVATION.
10. THESE PLANS DEPICT THE INSTALLATION OF A 4" (100) MULTI-DUCT CONDUIT TO ACCOMMODATE A FUTURE FIBER OPTIC CABLE AS WELL AS 2" (50) BRANCH CONDUIT OVERLAPS WITHIN THE SAME TRENCH AS THE 4" (100) MAINLINE CONDUIT.
11. THE INSTALLATION OF 4" (100) CONDUIT SHALL INCLUDE AN EXPANSION COUPLING AT EACH BRIDGE JOINT AS NOTED IN THE APPROPRIATE DETAILS.
12. AT ALL RAMP CROSSINGS, THE RMC SHALL BE INSTALLED ACROSS THE ROADWAY IN THE STRAIGHTEST MANNER POSSIBLE.
13. ALL PROPOSED HANDHOLES SHALL BE TYPE II, EXCEPT WHERE NOTED.
14. AT SPECIFIED LOCATIONS SHOWN ON THE PLANS, THE 4" (100) MAINLINE CONDUIT WILL SHARE THE MAINLINE CONDUIT TRENCH WITH A 2" (50) RIGID METAL CONDUIT (RMC) FOR THE BRANCH CONDUIT OVERLAP RUNS. THESE 2" (50) BRANCH CONDUITS WILL SERVE AS FUTURE SERVICE CONNECTIONS FOR CCTV AND VMS LOCATIONS, TERMINATING AT PULLBOXES AND TYPE II CONCRETE HANDHOLES.

TYPICAL CROSS SECTION NOTES:

THESE TYPICAL PLAN AND CROSS SECTION DETAILS ARE DRAWN NOT TO SCALE AND PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THESE DETAILS DO NOT NECESSARILY REFLECT ALL OF THE SITE CONDITIONS IN THE PROJECT AREA. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE FIELD CONDITIONS AND SELECTING THE APPROPRIATE DETAIL FOR INSTALLATION OF THE CONDUIT.

LEGEND

- PB □ CONCRETE PULLBOX
- JB □ CAST IRON JUNCTION BOX - SIZE AS INDICATED
- V □ CONCRETE VAULT
- CONCRETE HANDHOLE TYPE II
- 2" (50) RMC OR 4" (100) PVC (MULTIDUCT)
- .-.-.-.- 2" (50) RMC OR 4" (100) RMC UNDER ROADWAY (MULTIDUCT)
- S-S-S- 2" (50) RMC OR 4" (100) RMC OR FIBERGLASS SURFACE & IN-STRUCTURE MOUNTED (MULTIDUCT)
- EXISTING LUMINAIRE
- EXISTING CATCH BASIN
- EXISTING CONCRETE HANDHOLE
- EXISTING GUIDE RAIL

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/9/2010

DESIGNER/DRAFTER:  
CHECKED BY:

SCALE IN FEET  
0 200 400  
SCALE 1"=200'



SIGNATURE/  
BLOCK:  
**OFFICE OF ENGINEERING**

APPROVED BY: DATE:

PROJECT TITLE:

TOWN:	PROJECT NO.
DRAWING TITLE: <b>TYPICAL SECTIONS GENERAL NOTES</b>	DRAWING NO.
	SHEET NO.

**CONDUIT SUPPORT INSTALLATION SEQUENCE:**

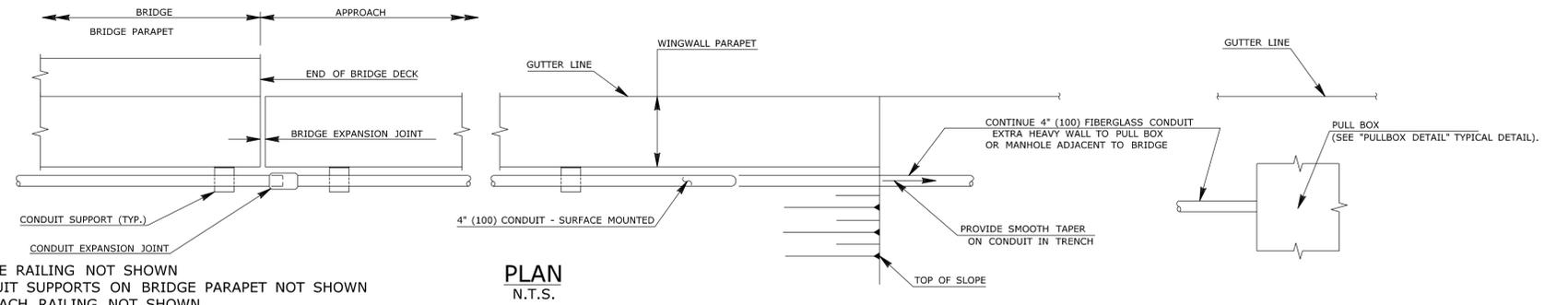
A. MOUNT CONDUIT SUPPORTS ON EXISTING BRIDGES AND WALLS. PLACE SUPPORTS ACCORDING TO MOUNTING LAYOUTS AND DETAILS AS SHOWN. DRILL HOLES IN EXISTING STRUCTURES ACCORDING TO "FIELD FASTENER NOTES" AND "STRUCTURAL NOTES".

B. FASTEN CONDUIT TO SUPPORTS WITH U-BOLTS.

**4" (100) SURFACE MOUNTED CONDUIT SUPPORT SPACING NOTES:**

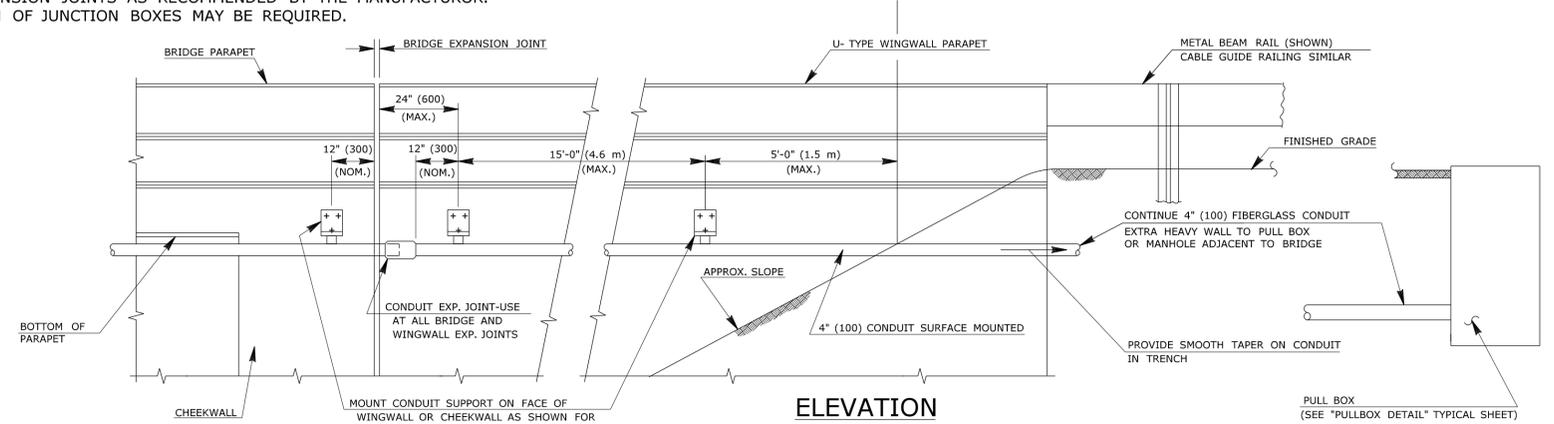
A. SPACE CONDUIT SUPPORTS AT 14'-9" (4.5 m) O.C. MAXIMUM FOR STRUCTURE MOUNTED 4" (100) CONDUIT - SURFACE MOUNTED AS SHOWN ON THE DETAILS AND AS DIRECTED BY THE ENGINEER.

B. ADDITIONAL CONDUIT SUPPORTS ARE REQUIRED AT LOCATIONS OF EXPANSION FITTINGS AND FIXED AND FLEXIBLE SWEEP BENDS AS SHOWN ON THE DETAILS OR AS DIRECTED BY THE ENGINEER.



- NOTES:
1. BRIDGE RAILING NOT SHOWN
  2. CONDUIT SUPPORTS ON BRIDGE PARAPET NOT SHOWN
  3. APPROACH RAILING NOT SHOWN
  4. INSTALL EXPANSION JOINTS AS RECOMMENDED BY THE MANUFACTURER.
  5. INSTALLATION OF JUNCTION BOXES MAY BE REQUIRED.

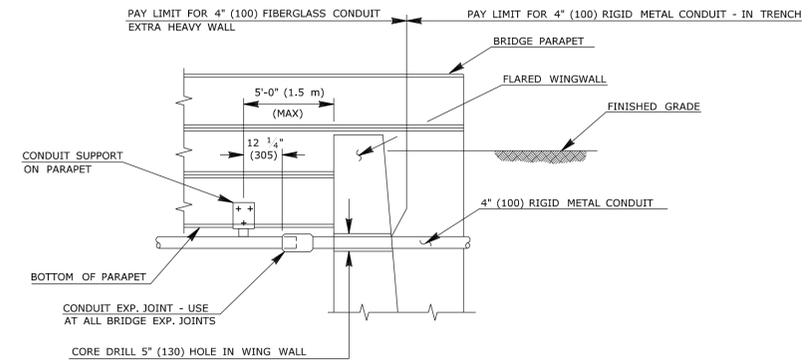
PLAN  
N.T.S.



ELEVATION

U - TYPE WINGWALL  
CONDUIT - PARAPET TO FILL  
N.T.S.

NOTE:  
MOUNT CONDUIT ON WING WALLS AT SAME POSITION AS CONDUIT ON PARAPET



FLARED WINGWALL  
CONDUIT - PARAPET TO FILL  
N.T.S.

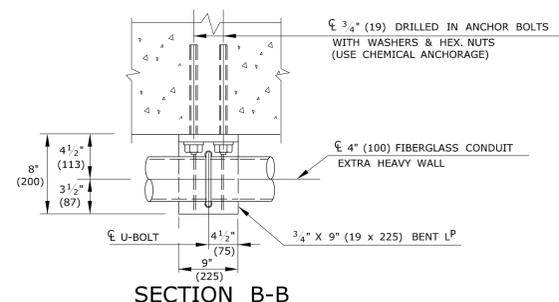
NOTE:  
BRIDGE RAILING & APPROACH RAILING NOT SHOWN.

**NOTES**

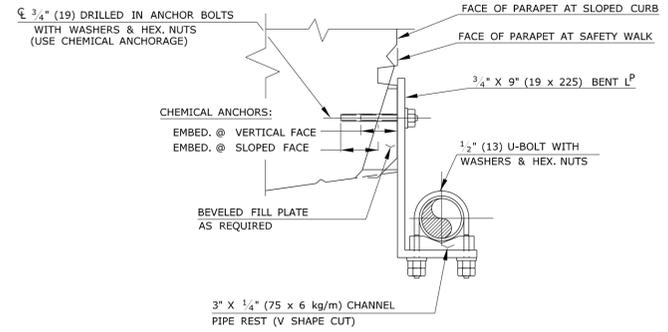
1. DETAILS SHOWN AT PARAPET, ATTACHMENT SIMILAR ON WALLS.
2. PROVIDE 3/4" (19) DIA. HOLES FOR 5/8" (16) DIA. BOLTS AND U-BOLTS IN CONDUIT SUPPORT AND CHANNEL PIPE REST.
3. MATERIAL FOR THREADED ANCHORS, NUTS, AND WASHERS FOR DRILLING AND CHEMICAL ANCHORING IN EXISTING CONCRETE ELEMENTS SHALL BE STAINLESS STEEL. ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A193(M), CLASS 2, GRADE B8M (TYPE 316). WASHERS SHALL CONFORM TO ASTM A276(M), TYPE 316, ANNEALED.

**NOTE**

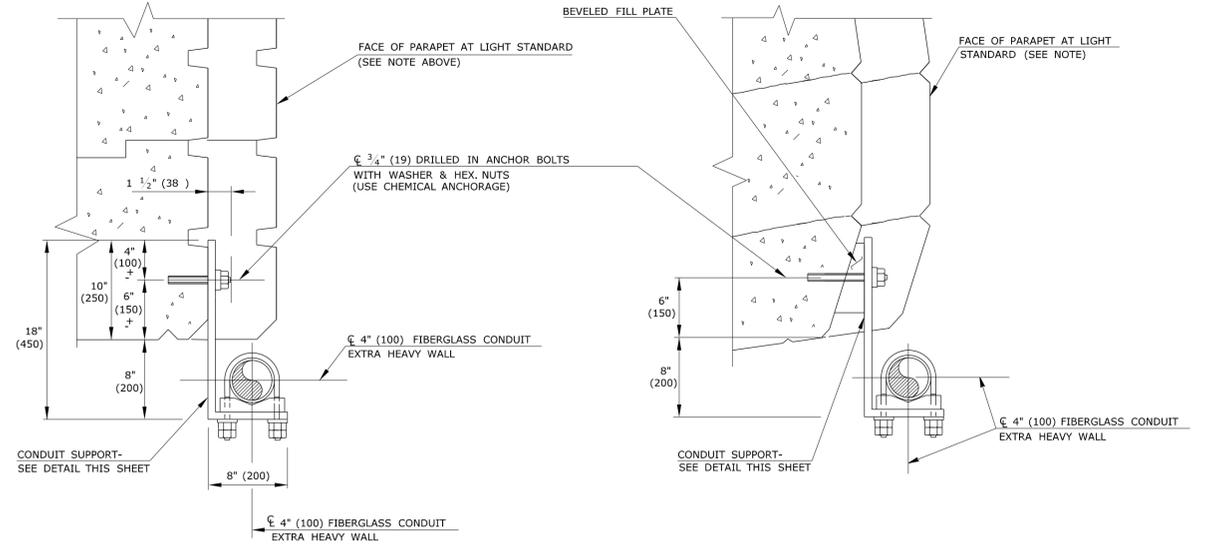
1. FACE OF PARAPET AT LIGHT STANDARDS SHOWN TO ILLUSTRATE CONDUIT MOUNTED TO CLEAR WIDENED PARAPET, DETAIL AT PARAPET MOUNTED SIGN SUPPORTS AND NOISE BARRIER WALLS, ETC. SIMILAR.



SECTION B-B

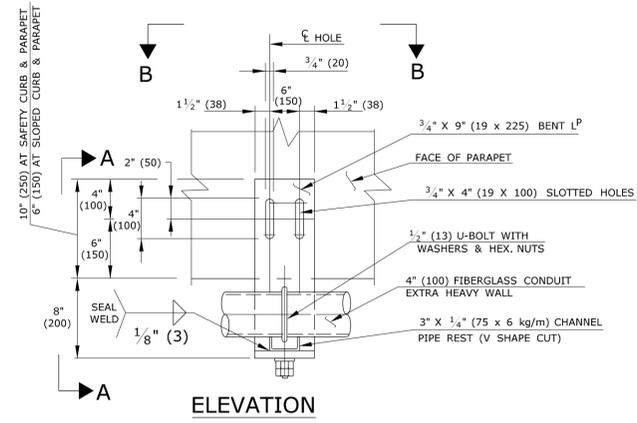


SECTION A-A



(SAFETY CURB & PARAPET)

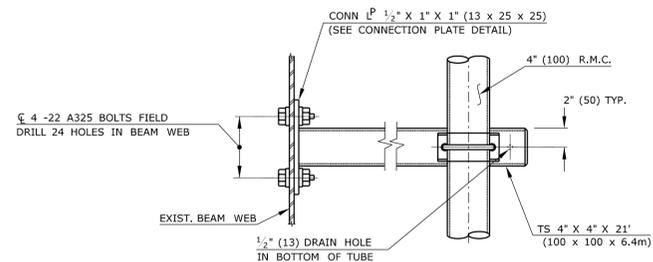
(SLOPED CURB AND PARAPET)



ELEVATION

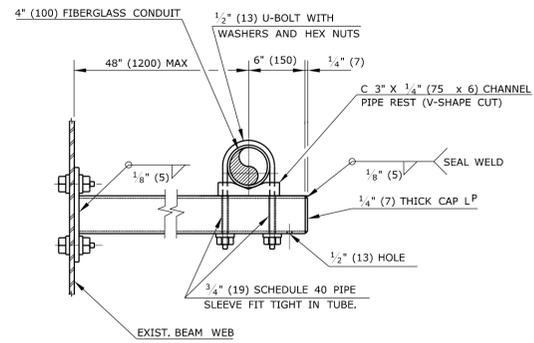
4" (100) SURFACE MOUNTED CONDUIT SUPPORT DETAILS  
CONDUIT SUPPORT SPACING: SPACE 4" (100) CONDUIT SUPPORTS AT 14 3/4' (4.5 m) O.C. MAXIMUM.

<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>		<p>DESIGNER/DRAFTER:</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>SIGNATURE/ BLOCK:</p> <p><b>OFFICE OF ENGINEERING</b></p>	<p>PROJECT TITLE:</p>	<p>TOWN:</p>	<p>PROJECT NO.</p>
<p>1 10-10 REVISED DIMENSIONS ON THE SURFACE MTD CONDUIT DETAILS</p>	<p>REVISION DESCRIPTION</p>	<p>CHECKED BY:</p>		<p>APPROVED BY: DATE:</p>	<p>DRAWING TITLE:</p> <p>U-TYPE &amp; FLARED WINGWALL CONDUIT PARAPET MTG, CONDUIT SUPPORT &amp; ATTCHMENTS</p>	<p>DRAWING NO.</p>	<p>SHEET NO.</p>
<p>10" (250) AT SAFETY CURB &amp; PARAPET 6" (150) AT SLOPED CURB &amp; PARAPET</p>	<p>SCALE IN FEET</p> <p>0 200 400</p> <p>SCALE 1"=200'</p>	<p>Plotted Date: 10/12/2010</p>	<p>Filename: ...CTDOT_HIGHWAY_OPS_GD.dgn</p>	<p>CONDUIT SUPPORT- SEE DETAIL THIS SHEET</p>	<p>CONDUIT SUPPORT- SEE DETAIL THIS SHEET</p>	<p>CONDUIT SUPPORT- SEE DETAIL THIS SHEET</p>	



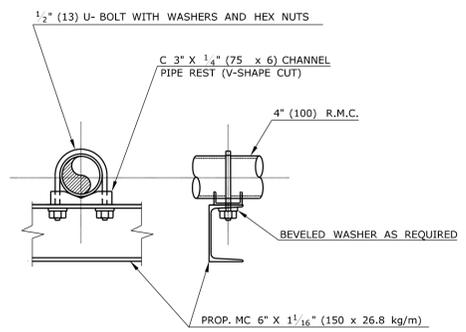
**PLAN**

NOTE: FOR INFORMATION NOT SHOWN, SEE ELEVATION.

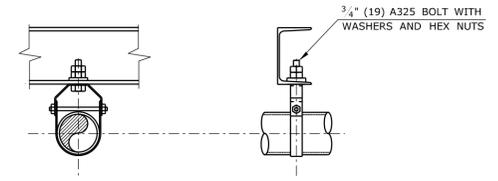


**ELEVATION**

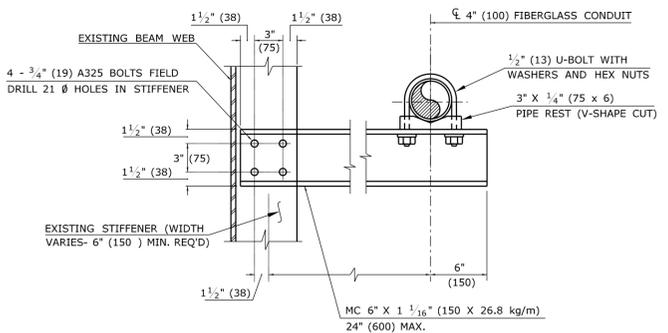
**TS CONDUIT SUPPORT**



**U-BOLT DETAILS**

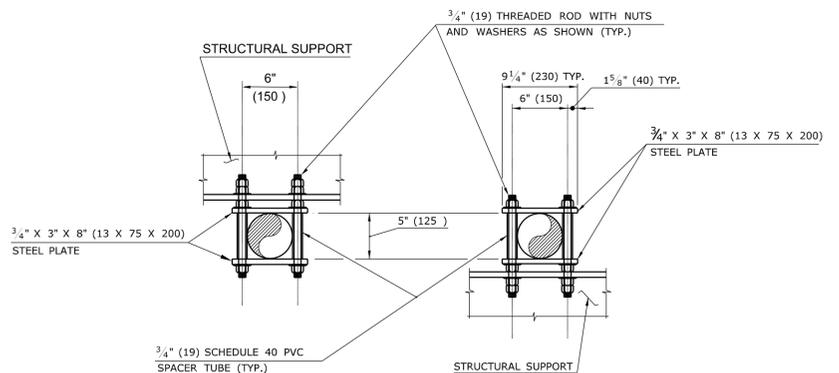


**DIRECT BOLTED ATTACHMENT**



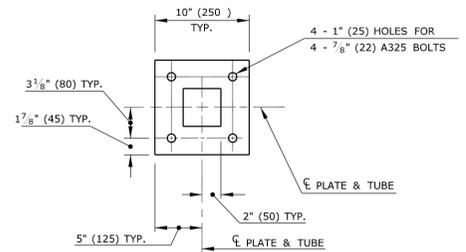
**ELEVATION**

**CANTILEVER CHANNEL CONDUIT SUPPORT**



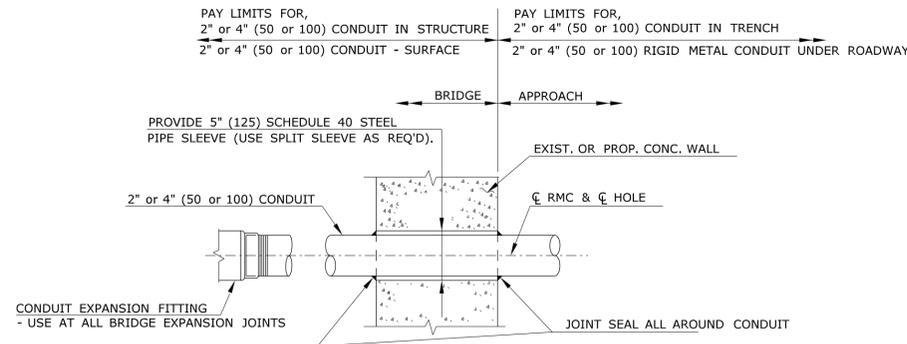
**ATTACHED HANGER SUPPORTED HANGER**

**CONDUIT RACK HANGER DETAILS**

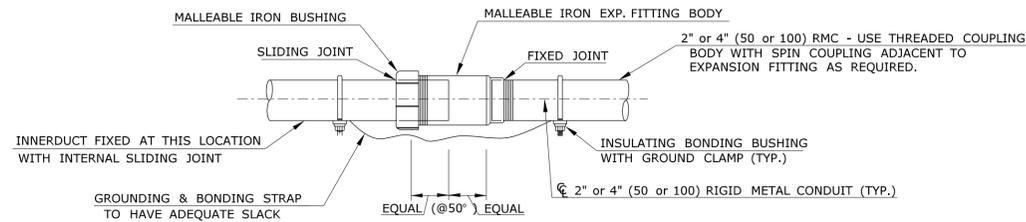


**CONNECTION PLATE DETAIL**

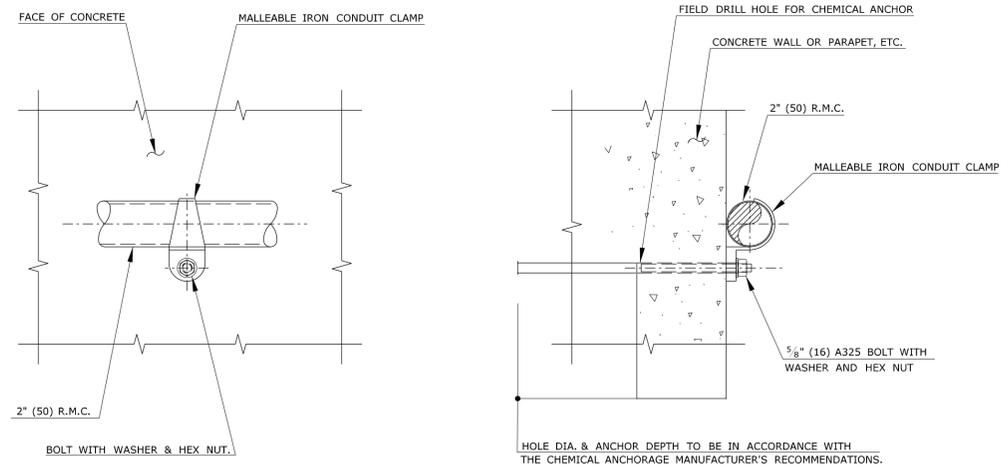
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted: 7/9/2010	DESIGNER/DRAFTER: D. K. SWINBURNE	CHECKED BY: R.M. WATERMAN	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	 <b>OFFICE OF ENGINEERING</b>	SIGNATURE/BLOCK:	APPROVED BY:	DATE:	PROJECT TITLE:	TOWN:	PROJECT NO.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DIMENSIONS ARE IN ENGLISH ( ' AND " ) AND METRIC UNITS ( mm ). METRIC CONVERSIONS OVER 1" ROUNDED TO NEAREST 5 mm - UNDER 1" TO NEAREST 1 mm.													DRAWING TITLE: TS CONDUIT SUPPORT, CANTILEVER CHANNEL CONDUIT SUPPORT, U-BOLTS, CONDUIT RACK HANGER, CONNECTION PLATE	
FILENAME: CTDOT_HIGHWAY_OPS_GD.dgn													SHEET NO.	



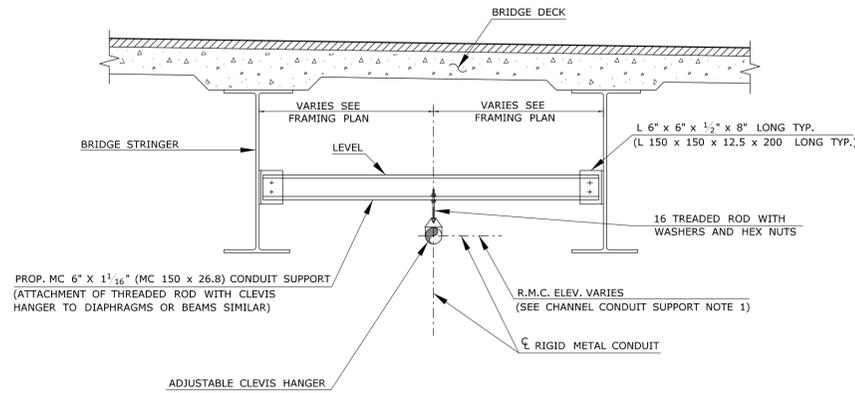
**WALL PENETRATION DETAIL**  
NOT TO SCALE



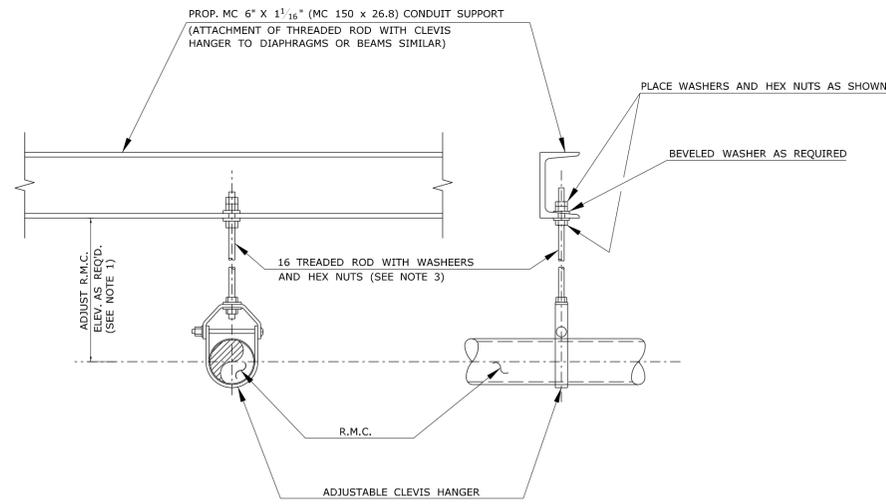
**EXPANSION FITTING**  
8" (200) TOTAL MOVEMENT  
NOT TO SCALE



**ONE HOLE CLAMP & FIELD FASTENER DETAILS**  
NOT TO SCALE



**CHANNEL CONDUIT SUPPORT DETAIL**  
NOT TO SCALE



**CLEVIS HANGER DETAIL**  
NOT TO SCALE

**CHANNEL CONDUIT SUPPORT NOTES:**

1. MOUNT CONDUIT & CLEVIS HANGER ABOVE BOTTOM OF BEAMS (U.N.O.).
2. SEE "R.M.C. - IN STRUCTURE" DETAILS FOR ADD'L. INFORMATION.
3. FIELD DRILL  $\frac{3}{4}$ " (19) DIA. HOLES IN FLANGES OF DIAPHRAGMS OR BEAMS.

**CLEVIS HANGER NOTES:**

1. CLEVIS HANGERS SHALL BE AS SHOWN AND AS MANUFACTURED BY ITT GRINNELL CO., FIG. 260 OR APPROVED EQUAL. THE CLEVIS, INCLUDING ALL HARDWARE, THREADED RODS AND NUTS SHALL BE GALVANIZED. THE THREADED RODS SHALL BE A MINIMUM OF  $\frac{5}{8}$ " (16) IN DIAMETER.
2. CLEVIS HANGER SPACING: SPACE CLEVIS HANGER WITH THREADED ROD ATTACHED TO EITHER PROPOSED CHANNEL CONDUIT SUPPORT OR EXIST. STRUCTURAL STEEL AT 15' (4.5 m) O.C. MAXIMUM.
3. FIELD DRILL  $\frac{3}{4}$ " (19) DIA. HOLES IN FLANGES OF DIAPHRAGMS OR BEAMS.

**FIELD FASTENER NOTES:**

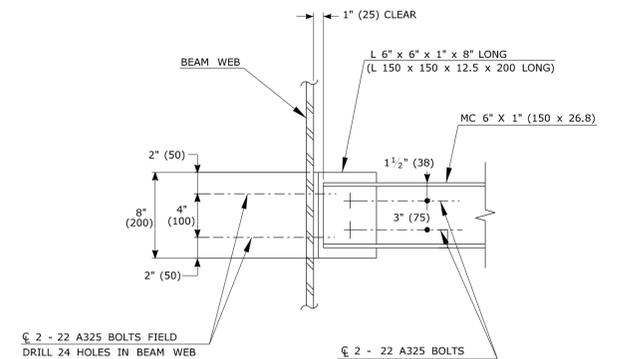
CONDUIT SUPPORTS SHALL BE ATTACHED TO THE EXISTING STRUCTURES UTILIZING ONE OF THE FOLLOWING METHODS AS APPROVED BY THE ENGINEER:

1. FIELD DRILL HOLES IN CONCRETE STRUCTURES. HOLE DIAMETER & ANCHOR DEPTH FOR THE CHEMICAL ANCHORAGE TO BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
2. CHEMICAL ANCHORS - SYSTEM APPROVED BY CONN. D.O.T. WITH THREADED RODS, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.
3. ONE HOLE CLAMP SHALL BE MALLEABLE IRON CONDUIT CLAMP AS SHOWN AND AS MANUFACTURED BY ITT GRINNELL CO., FIG. 126, OR APPROVED EQUAL. THE CLAMP SHALL BE GALVANIZED.
4. SPACE CLAMPS AT 60" (1500) MAXIMUM.

ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A193(M), CLASS 2, GRADE B8M (TYPE 316).

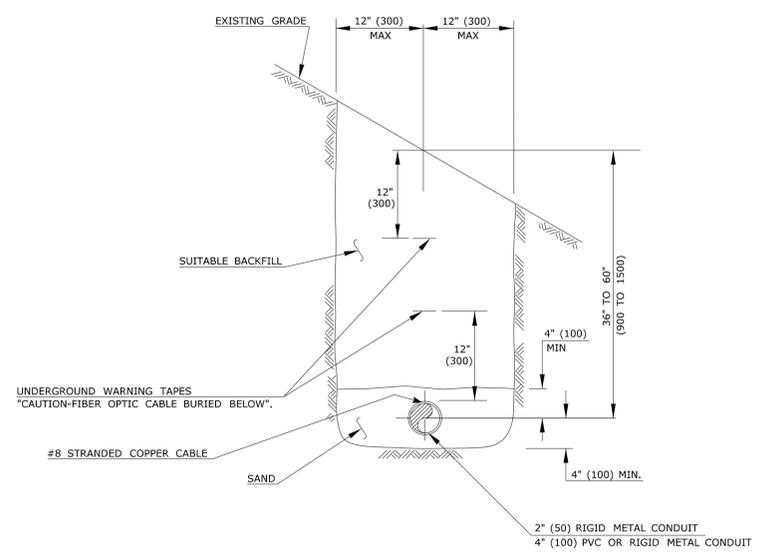
NUTS SHALL BE NYLON INSERT LOCK NUTS AND CONFORM TO ASTM A194(M), GRADE 8M, STRAIN HARDENED (TYPE 316).

WASHERS SHALL CONFORM TO ASTM A276(M), TYPE316, ANNEALED.



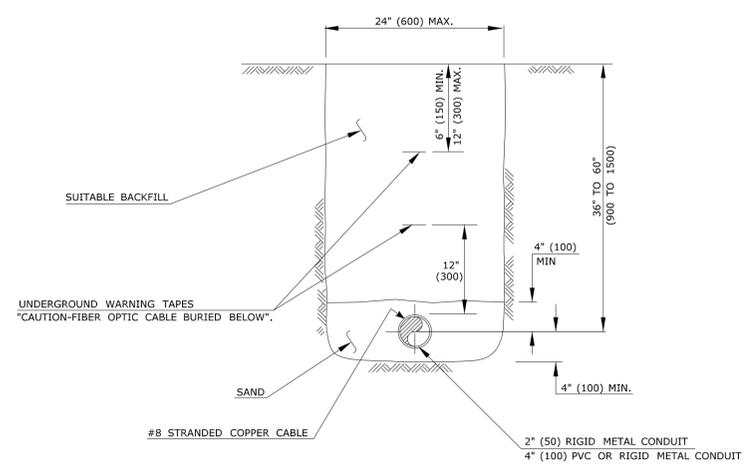
**CHANNEL CONDUIT SUPPORT CONNECTION DETAIL**  
NOT TO SCALE

DIMENSIONS ARE IN ENGLISH ( ' AND " ) AND METRIC UNITS (mm). METRIC CONVERSIONS OVER 1" ROUNDED TO NEAREST 5 mm - UNDER 1" TO NEAREST 1 mm.		DESIGNER/DRAFTER: D. K. SWINBURNE CHECKED BY: R.A. KENNEDY		<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: CTDOT_HIGHWAY_OPS_GD.dgn		SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>		PROJECT TITLE:		TOWN:		PROJECT NO.	
1 10-10 ADDED ASTM CONFORMANCES FOR NUTS, BOLTS & WASHERS		SHEET NO.		Plotted: 10/12/2010		DRAWING TITLE: RMC EXPANSION FITTING, WALL PENETRATION, CHANNEL CONDUIT SUPPORT CONNECTION, ONE HOLE CLAMP & FIELD FASTENER, CLEVIS HANGER DETAILS		SHEET NO.		DRAWING NO.		SHEET NO.	

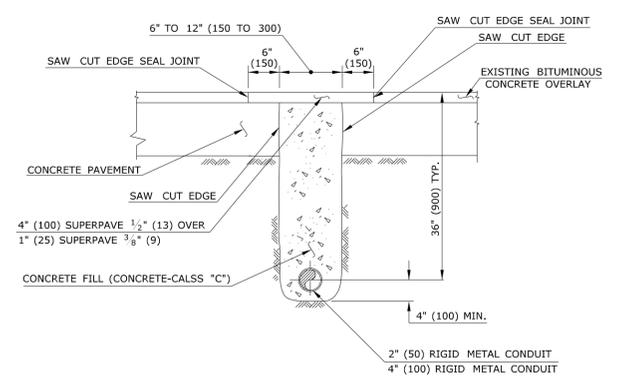


**CONDUIT IN SLOPED EARTH**

NOTE: IN SLOPES STEEPER THAN 1:2, CONDUIT SHALL HAVE A MINIMUM COVER OF 24" (600) PERPENDICULAR TO THE SLOPE.

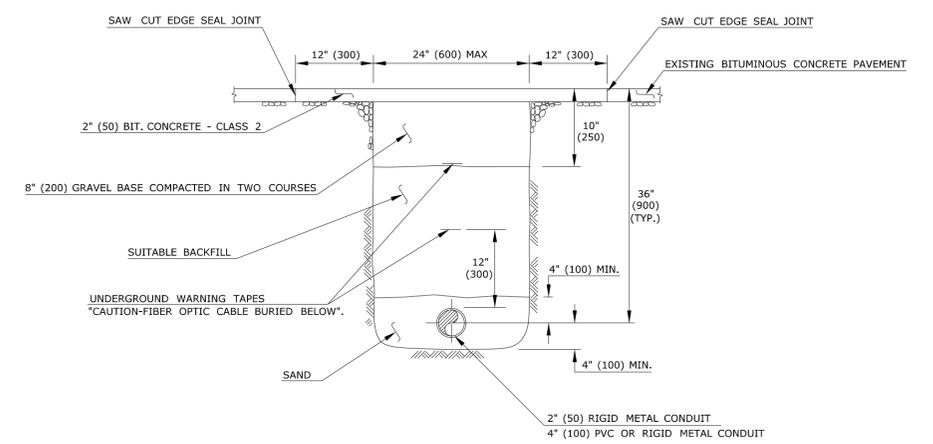


**CONDUIT IN LEVEL EARTH**

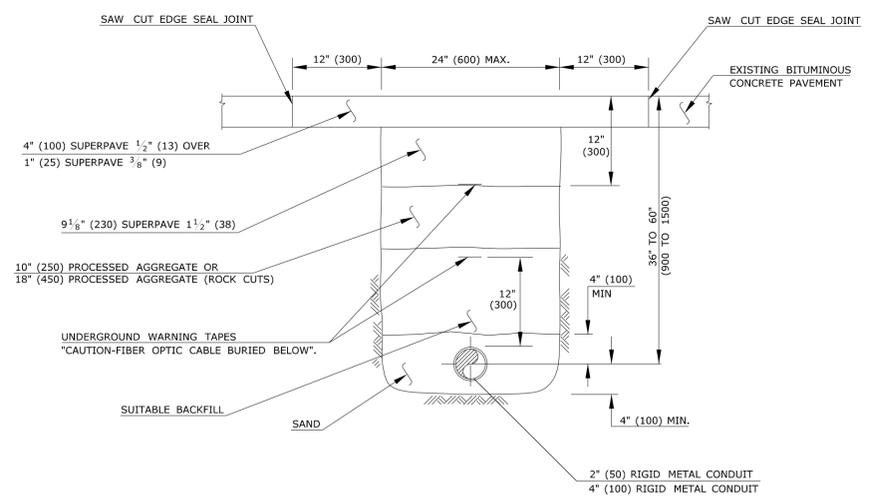


**R.M.C. UNDER BITUMINOUS CONCRETE OVERLAYED CONCRETE PAVEMENT**

NOTE: USE SUPERPAVE LAYERS AS SHOWN OR AS DIRECTED BY THE ENGINEER

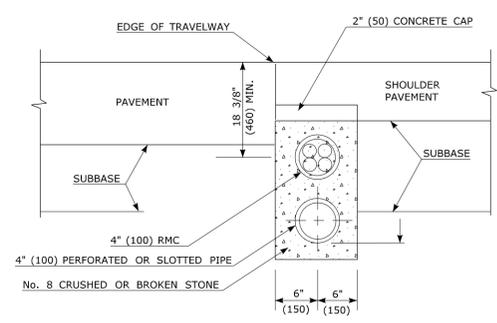


**R.M.C. UNDER BITUMINOUS CONCRETE SIDEWALK OR DRIVEWAY**

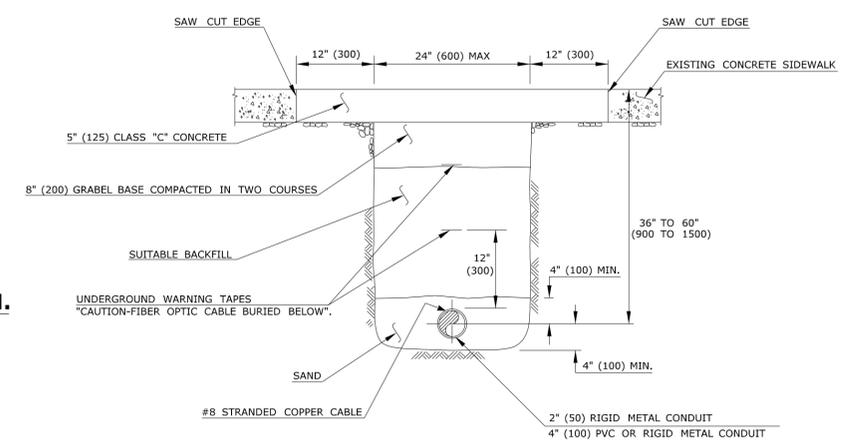


**R.M.C. UNDER BITUMINOUS CONCRETE PAVEMENT**

NOTE: USE SUPERPAVE LAYERS AS SHOWN OR AS DIRECTED BY THE ENGINEER

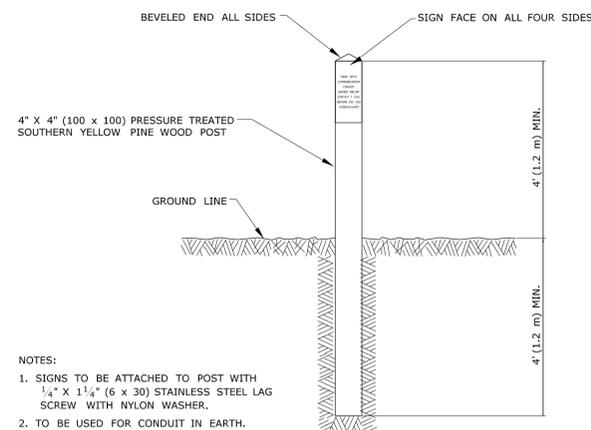


**TYPICAL CONDUIT INSTALLATION IN AREAS OF PAVEMENT EDGE DRAIN OR UNDERDRAIN.**

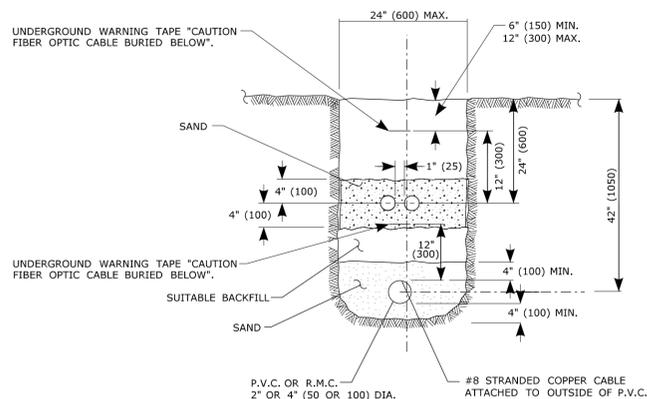


**CONDUIT UNDER CONCRETE SIDEWALK**

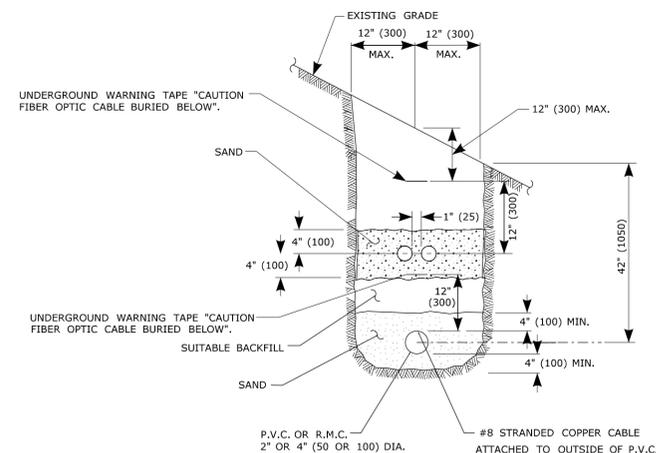
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010	DESIGNER/DRAFTER: D.K. SWINBURNE	 <p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
-	-	-	-	-	CHECKED BY: R.A. KENNEDY		APPROVED BY:	DATE:	DRAWING TITLE: <b>IMS TRENCHING DETAILS</b>	DRAWING NO.
-	-	-	-	-	SCALE IN FEET 0 20 40 SCALE 11"=200'		FILENAME: ...CTDOT_HIGHWAY_OPS_GD.dgn		SHEET NO.	



**IDENTIFICATION POST DETAIL**

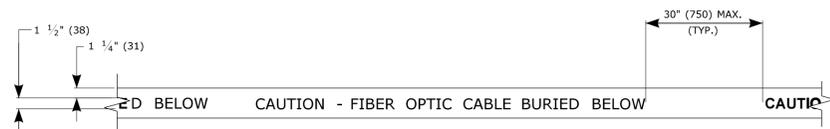


**CONDUIT IN LEVEL EARTH**

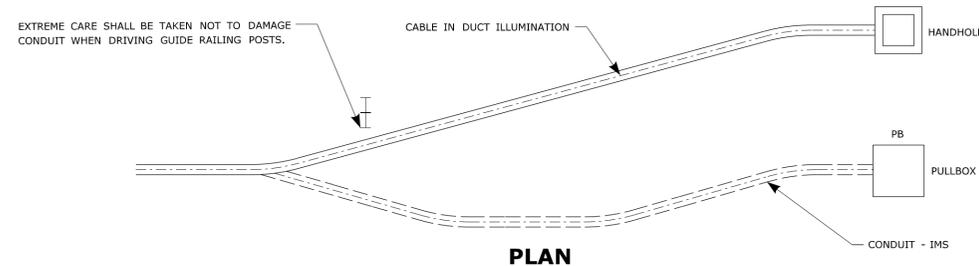


**CONDUIT IN SLOPED EARTH**

**IMS CONDUIT UNDER ILLUMINATION TRENCHING DETAILS**

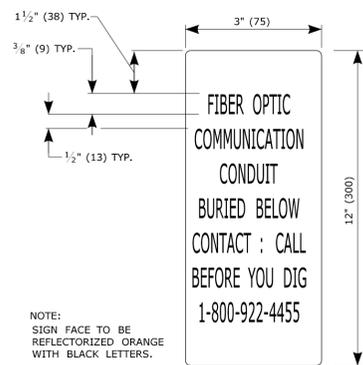


**WARNING TAPE**

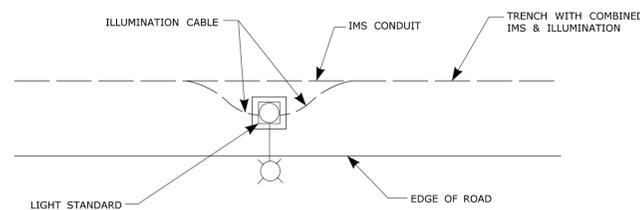


**PLAN**

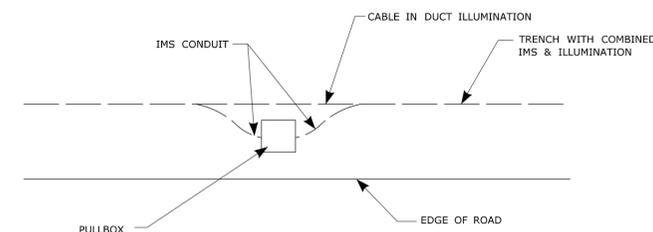
**IMS CONDUIT & ILLUMINATION CABLE IN DUCT IN TRENCH WHERE SEPARATED AT RAMP CROSSINGS AND BRIDGE STRUCTURES (TYP.)**



**SIGN FACE DETAIL**



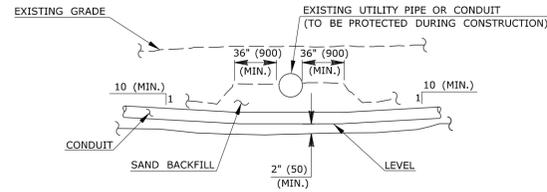
**AT LIGHT STANDARD**



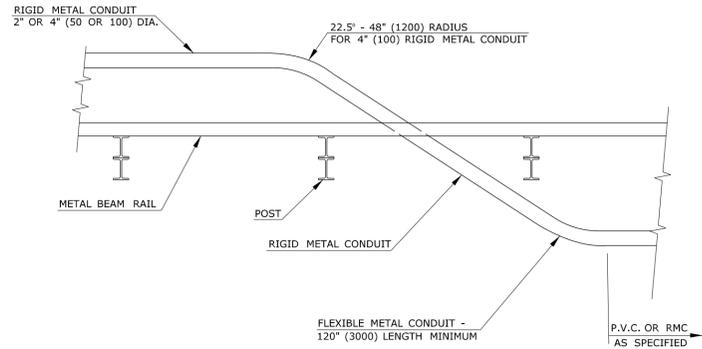
**AT PULL BOX**

**TYPICAL TRENCH DETAILS FOR IMS CONDUIT**

DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
CHECKED BY: <b>R.A. KENNEDY</b>		APPROVED BY:	DATE:	DRAWING TITLE: <b>IDENTIFICATION POST AND IMS WITH ILLUMINATION DETAILS</b>	DRAWING NO.
SCALE IN FEET <b>SCALE 11"=200'</b>	Filename: ...CTDOT_HIGHWAY_OPS_GD.dgn			SHEET NO.	
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010		

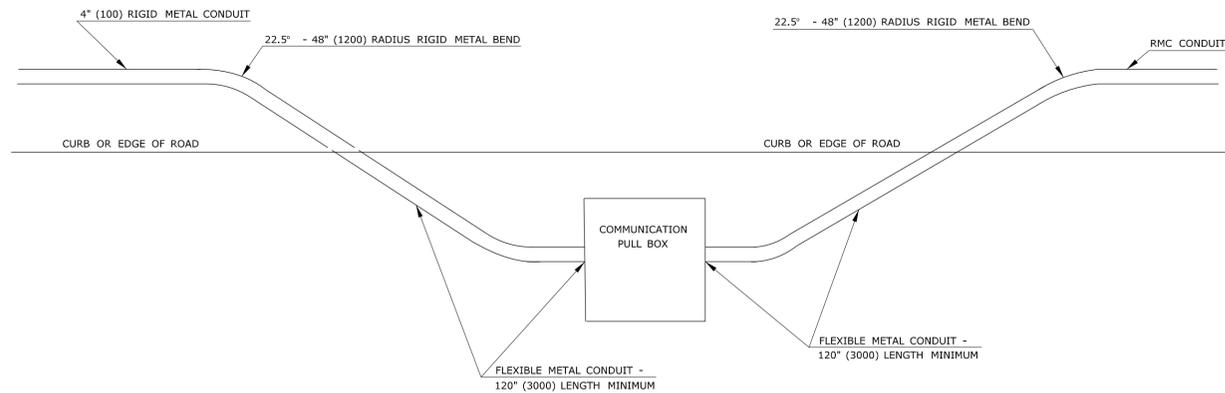


**CONDUIT CROSSING UNDER EXISTING UTILITY**



NOTES:  
 CONTRACTOR TO RESTORE AREAS DISTURBED BY TRENCH TO ORIGINAL CONDITION.  
 CONTRACTOR SHALL INSTALL CONDUIT AT A MINIMUM DEPTH OF 40" (1000).  
 CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THAT CONDUIT WILL NOT CONFLICT WITH UNDERGROUND UTILITIES.

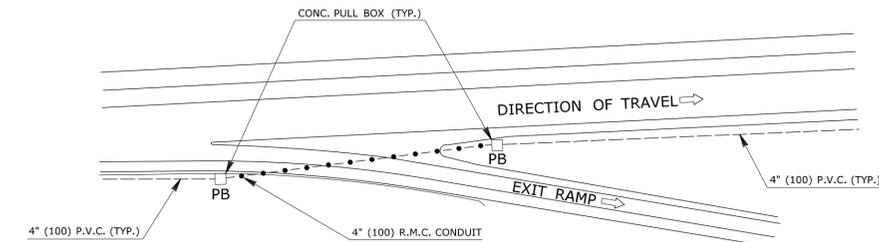
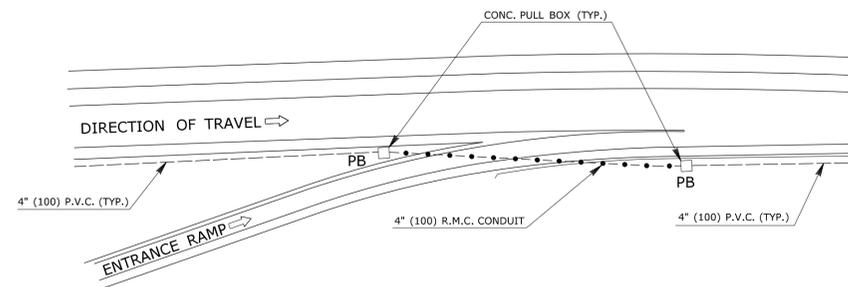
**TYPICAL GUIDE RAIL CROSSING**



NOTE:  
 THE CONTRACTOR SHALL BE REQUIRED TO INSTALL A MINIMUM OF 120" (3000) OF FLEXIBLE CONDUIT ON EACH SIDE OF THE PULLBOX. THIS IS REQUIRED TO INSURE THAT THE INNERDUCTS ENTERING AND EXITING THE PULLBOX WILL LINE UP AND BE PERPENDICULAR TO THE SIDEWALL OF THE PULLBOX.

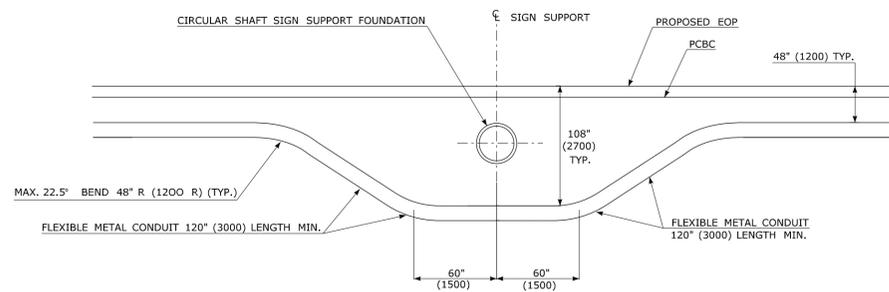
THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT THE RADIUS OF THE INSTALLED FLEXIBLE METAL PIPE IS GREATER THAN THE MINIMUM ALLOWED FOR THE FIBER OPTIC CABLE.

**TYPICAL PULLBOX INSTALLATION - CONDUIT UNDER ROADWAY**



NOTES:  
 PULLBOXES SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.  
 PULLBOXES SHALL BE ORIENTED TO PROVIDE THE STRAIGHTEST POSSIBLE PULL IN THE CABLE.

**TYPICAL RAMP CROSSING**

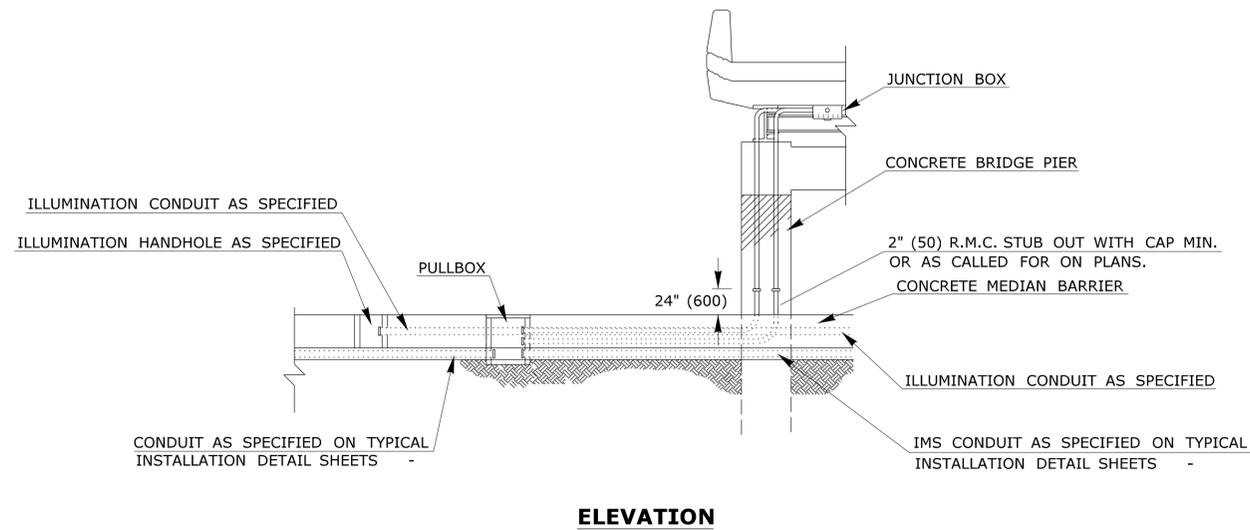


**4" (100) CONDUIT TREATMENT AT SIGN SUPPORT**

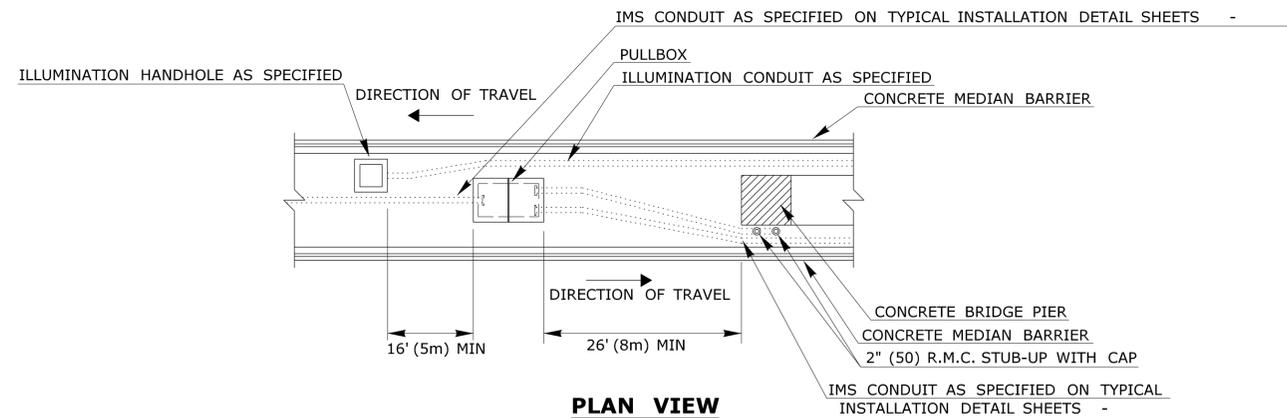
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010	DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	CHECKED BY: <b>R.A. KENNEDY</b>	SCALE IN FEET <b>SCALE 11"=200'</b>	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	APPROVED BY:	DATE:	PROJECT TITLE:	TOWN:	PROJECT NO.
-	-	-	-	-	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.				STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION		DRAWING TITLE: <b>TYPICAL IMS CONDUIT CROSSING DETAILS</b>		DRAWING NO.	
-	-	-	-	-	Filename: ...CTDOT_HIGHWAY_OPS_GD.dgn				APPROVED BY:		DATE:	PROJECT TITLE:	TOWN:	SHEET NO.

NOTES:

1. THE DETAIL PROVIDED PRESENTS A TYPICAL MEDIAN CROSS-SECTION. FOR MORE DETAILS, REFER TO CIVIL DRAWINGS.
2. FOR DETAILS ON CONDUIT ATTACHMENT TO UNDERSIDE OF BRIDGE, REFER TO THE TYPICAL INSTALLATION DETAIL SHEETS - -

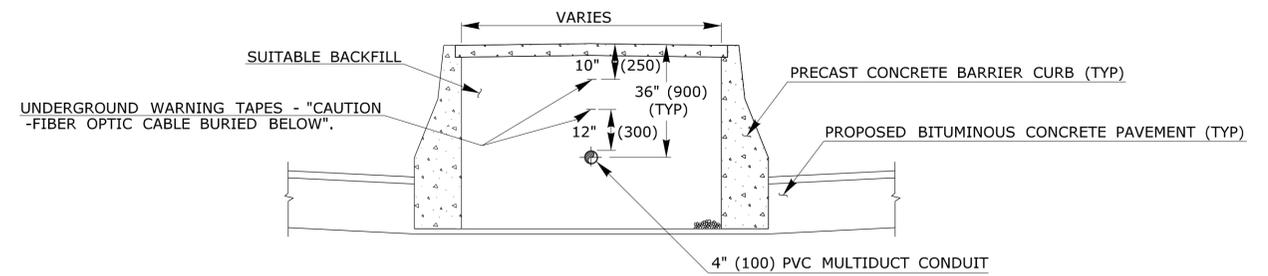


**ELEVATION**

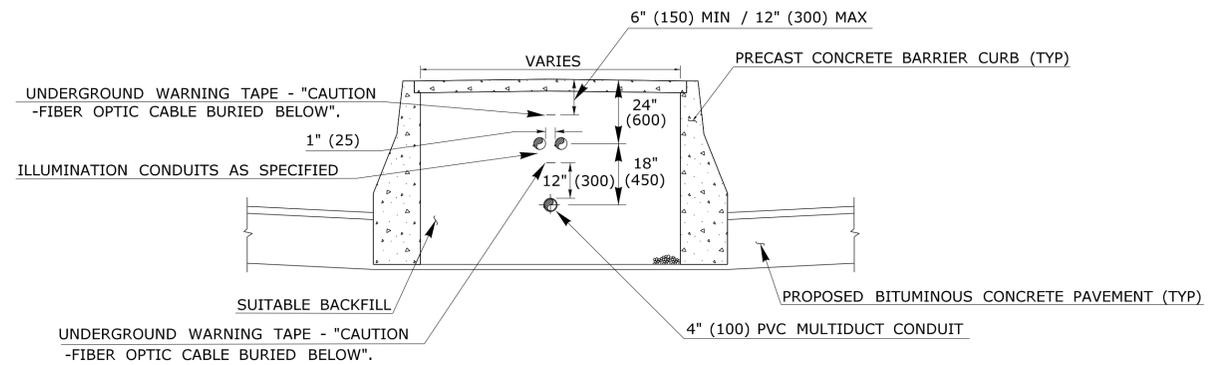


**PLAN VIEW**

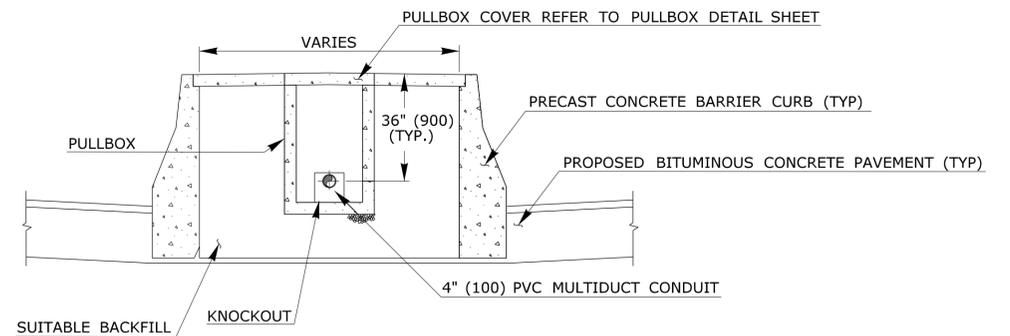
**CONDUIT INSTALLATION ADJACENT TO BRIDGE PIER**



**4\" (100) P.V.C. INSTALLED IN MEDIAN  
(TYPICAL SECTION)**



**4\" (100) P.V.C. INSTALLED IN MEDIAN  
WITH ILLUMINATION CONDUIT**



**P.V.C. AND PULLBOX INSTALLED IN MEDIAN  
(TYPICAL SECTION)**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
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-	-	-	-
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Plotted Date: 7/9/2010

DESIGNER/DRAFTER:  
**D.K. SWINBURNE**

CHECKED BY:  
**R.A. KENNEDY**

SCALE IN FEET  
**SCALE 11"=200'**



SIGNATURE/BLOCK:  
**OFFICE OF ENGINEERING**

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT TITLE:

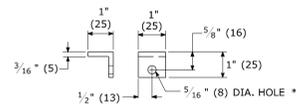
TOWN:

DRAWING TITLE:  
**TYPICAL IMS CONDUIT  
MEDIAN DETAILS**

PROJECT NO.

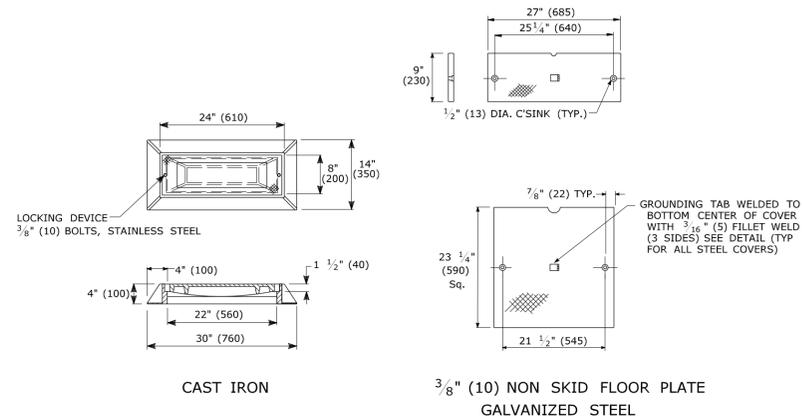
DRAWING NO.

SHEET NO.



\* NOTE:  
ATTACH 6' (2 m) LENGTH OF NO. 8 GROUND WIRE TO  
GROUNDING TAB WITH ONE HOLE LUG, 1/4" X 3/4"  
(M6 X 20) LG. SST HEX HEAD BOLT, AND SST FLAT  
WAHSER. ATTACH FREE END OF GROUND WIRE TO  
CONDUIT BONDING BUSHING IN HANDHOLE.

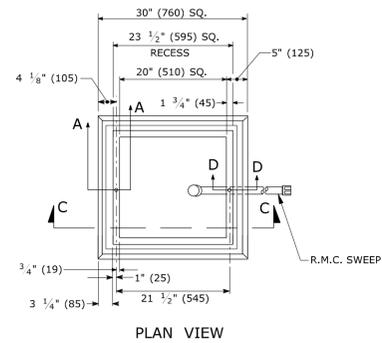
**STEEL GROUNDING TAB**



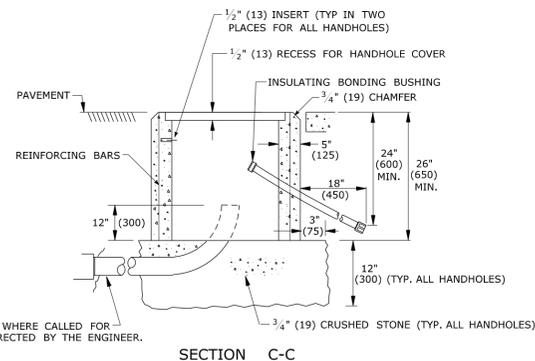
**HANDHOLE COVERS**

**CONCRETE HANDHOLE NOTES:**

- 1) BLOCK UNUSED OPENINGS OF HANDHOLE ON THE OUTSIDE WITH PRESSURE TREATED PLYWOOD.
- 2) GROUT AROUND ALL CONDUITS
- 3) USE 1 1/2" X 3/8" (40 X 10) CONCRETE INSERT. STANDARD THREAD, STAINLESS STEEL, FLAT HEAD BOLT, RECESSED IN PLATE COVER. INSERTS TO HAVE CLEANOUTS.
- 4) TYPE II HANDHOLE 30" (760) SIDE INSTALLED PARALLEL TO ROAD UNLESS OTHERWISE NOTED.
- 5) WHERE AN EXISTING CONCRETE SIDEWALK SLAB ABUTTING A HANDHOLE IS DAMAGED OR CUT DURING INSTALLATION THE ENTIRE SECTION SHALL BE REPLACED.
- 6) 12-#3 REINFORCING BARS REQUIRED FOR ALL HANDHOLES.



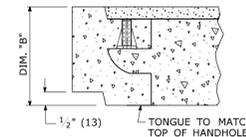
PLAN VIEW



SECTION C-C

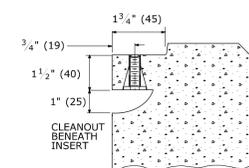
**CONCRETE HANDHOLE CLASS "A" CONCRETE**

DIM. "B" CHART	
ENGLISH HEIGHT	METRIC HEIGHT
2"	50
4"	100
6"	150
12"	300

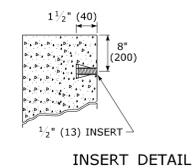


SECTION "A-A"

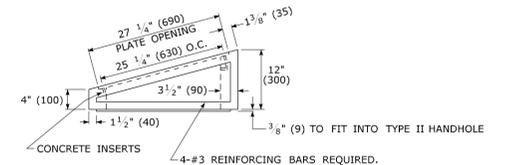
**HANDHOLE EXTENSIONS  
12 - #8 REINFORCING BARS REQ'D**



SECTION "D-D"



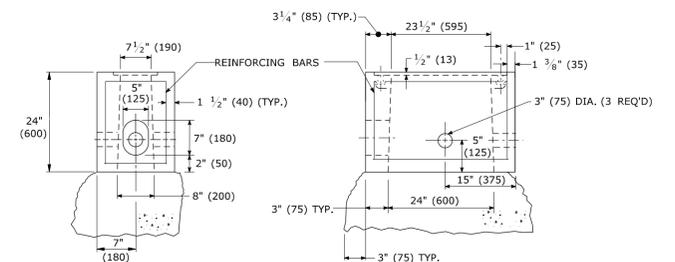
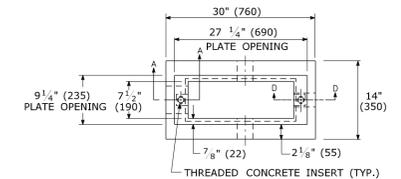
INSERT DETAIL



4-#3 REINFORCING BARS REQUIRED.

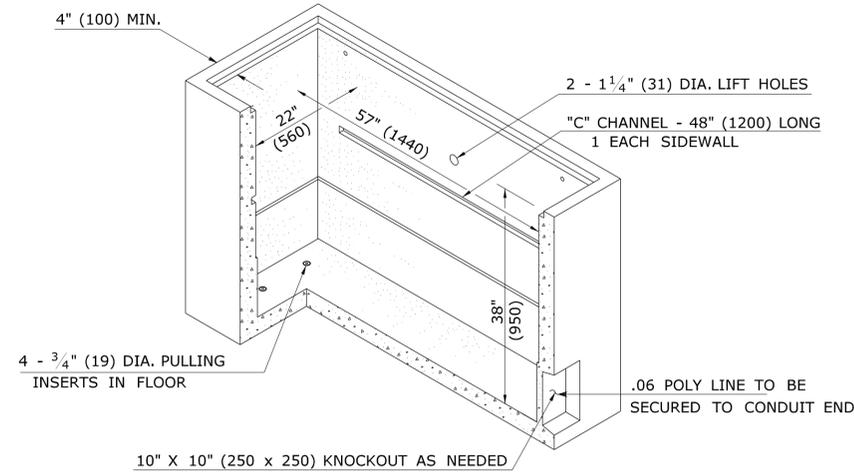
TOP VIEW DIMENSIONS AND SECTION VIEWS SAME AS CONCRETE HANDHOLE.

**CONCRETE HANDHOLE TYPE II BANK ADAPTER**

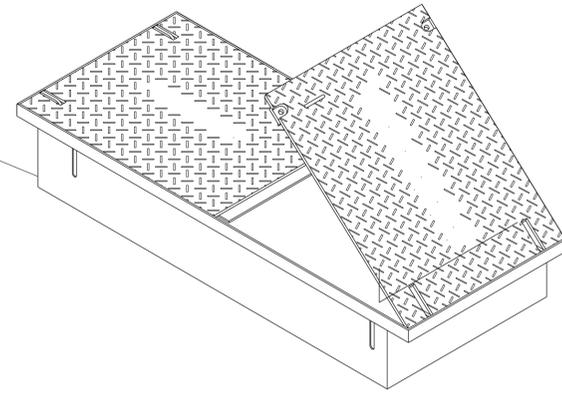


**CONCRETE HANDHOLE TYPE II CLASS "C" CONCRETE**

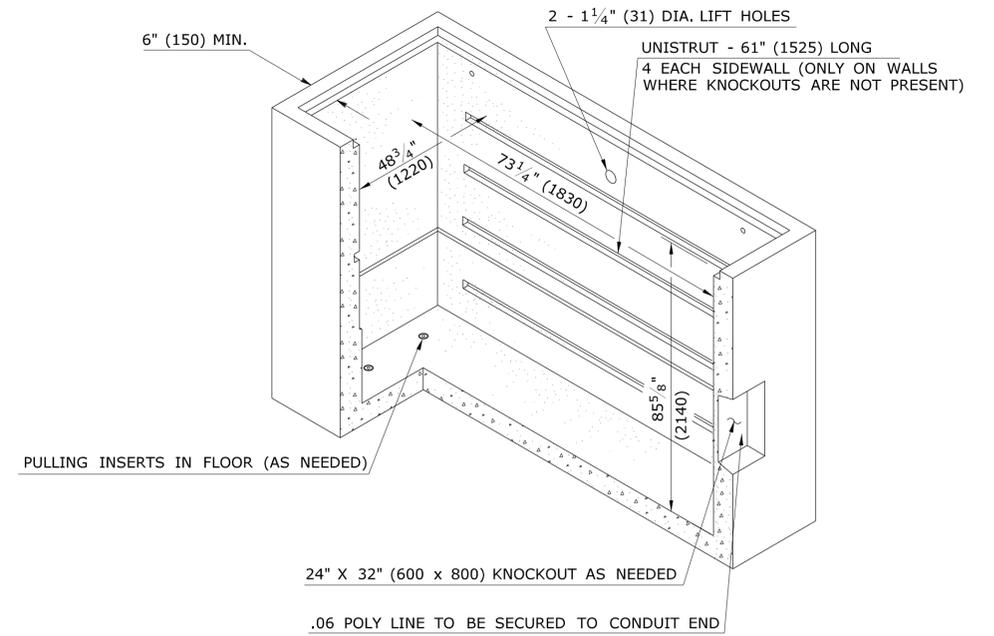
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010	DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	CHECKED BY: <b>R.A. KENNEDY</b>	SCALE IN FEET 0 20 40 SCALE 1"=20'	<b>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b> APPROVED BY: _____ DATE: _____	PROJECT TITLE:	TOWN:	PROJECT NO.
										DRAWING TITLE: <b>CONCRETE HANDHOLE DETAILS</b>		DRAWING NO.
												SHEET NO.



COVER WITH ADJ.  
FRAME 220lbs. (100 kg.)



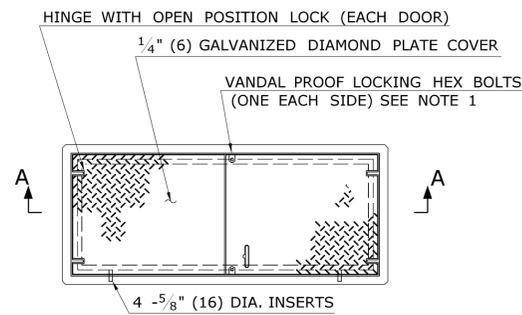
RECESSED COVER



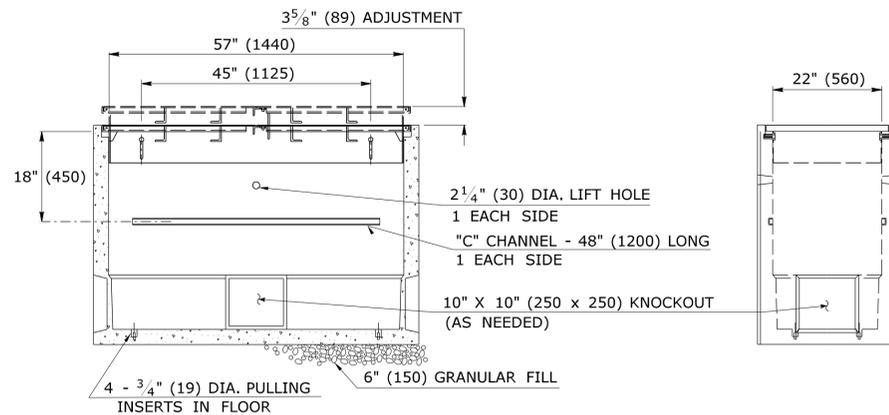
PULLING INSERTS IN FLOOR (AS NEEDED)

24" X 32" (600 X 800) KNOCKOUT AS NEEDED

.06 POLY LINE TO BE SECURED TO CONDUIT END



PLAN VIEW



SECTION A-A

END VIEW

PULL BOX - DETAIL

**GENERAL NOTES:**

- 1) SUITABLE IN OFF-STREET LOCATIONS WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC.
- 2) FOR EACH PULL BOX INSTALLED, ONE OF THE SPECIAL TOOLS REQUIRED TO OPEN THE HEX BOLTS SHALL BE PROVIDED TO THE STATE. COST OF TOOL IS INCLUDED IN THE ITEM FOR PULLBOX.
- 3) PULLBOXES SHALL BE INSTALLED SO THAT THE KNOCKOUTS ARE PARALLEL TO THE MIANLINE CONDUIT DIRECTION.

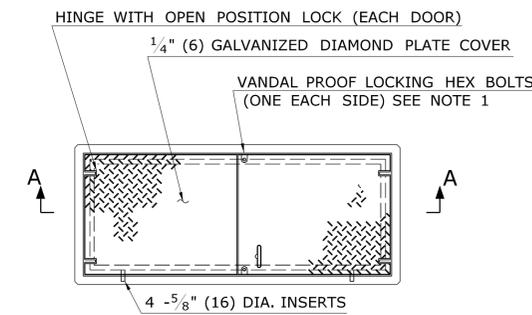
**DESIGN CRITERIA:**

**LIVE LOAD**

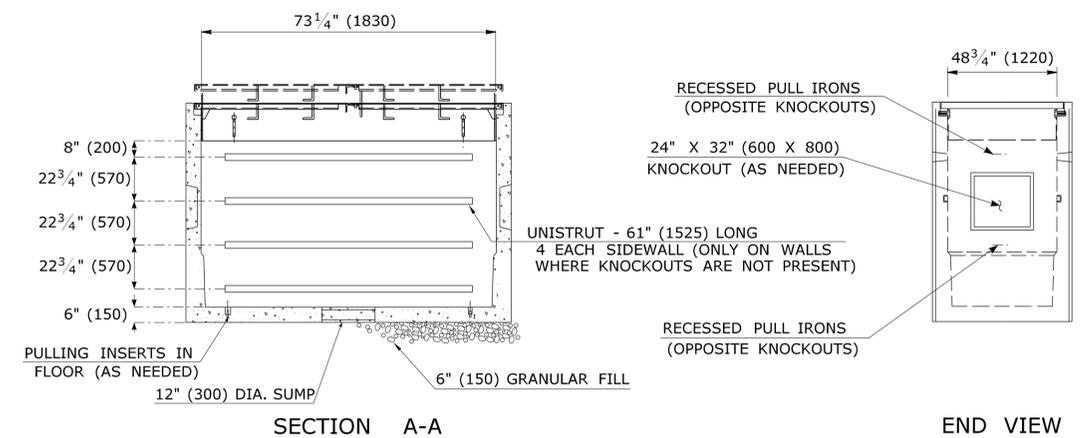
PULLBOX AND COVER SHALL BE DESIGNED BY THE CONTRACTOR TO SUPPORT H2O LIVE LOAD, WITH 30% IMPACT.

**EARTH PRESSURE**

AN EQUIVALENT FLUID PRESSURE (HORIZONTAL) OF NOT LESS THAN 53 lbs./S.F. (264 kg./Sq. m) SHALL BE USED FOR DESIGN. SITE CONDITIONS MAY NECESSITATE MODIFICATIONS TO THE EQUIVALENT FLUID PRESSURE (I.E. SLOPING, BACKFILL, WATER TABLE ETC.). THE CONTRACTOR IS RESPONSIBLE FOR EVALUATING SITE CONDITIONS WITH REGARDS TO DESIGN REQUIREMENTS.



PLAN VIEW



SECTION A-A

END VIEW

VAULT - DETAIL

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
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Plotted Date: 7/9/2010

DESIGNER/DRAFTER:  
**D.K. SWINBURNE**

CHECKED BY:  
**R.A. KENNEDY**

SCALE IN FEET  
0 20 40  
SCALE 1" = 20'



SIGNATURE/BLOCK:  
**OFFICE OF ENGINEERING**

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT TITLE:

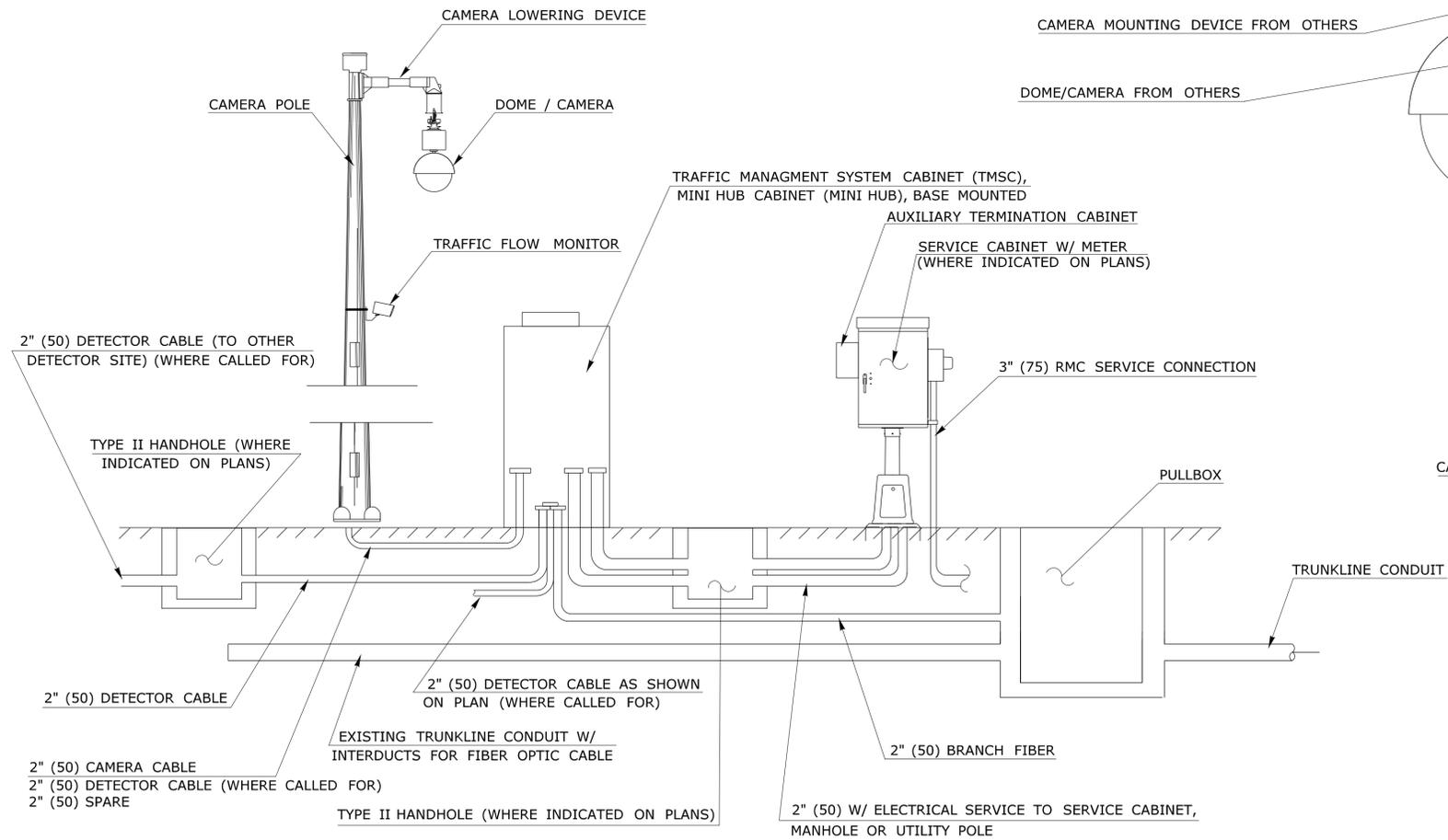
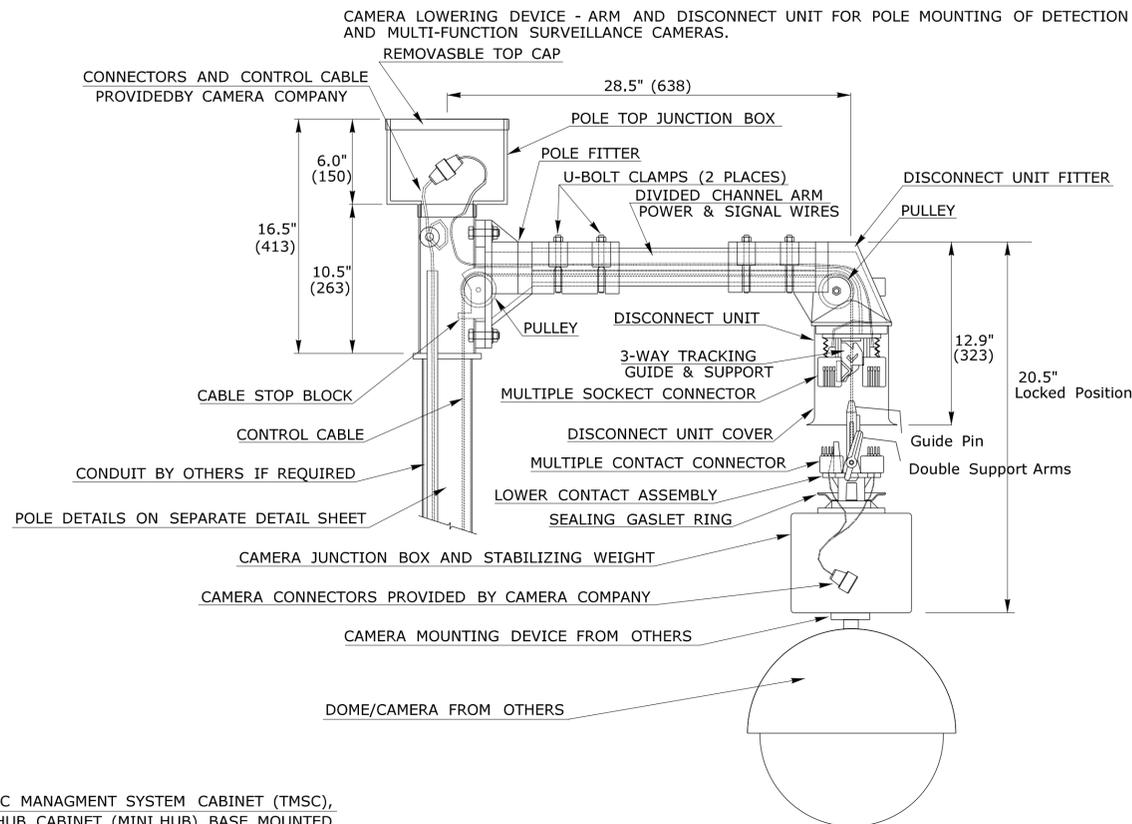
TOWN:

DRAWING TITLE:  
**PULLBOX AND VAULT DETAILS**

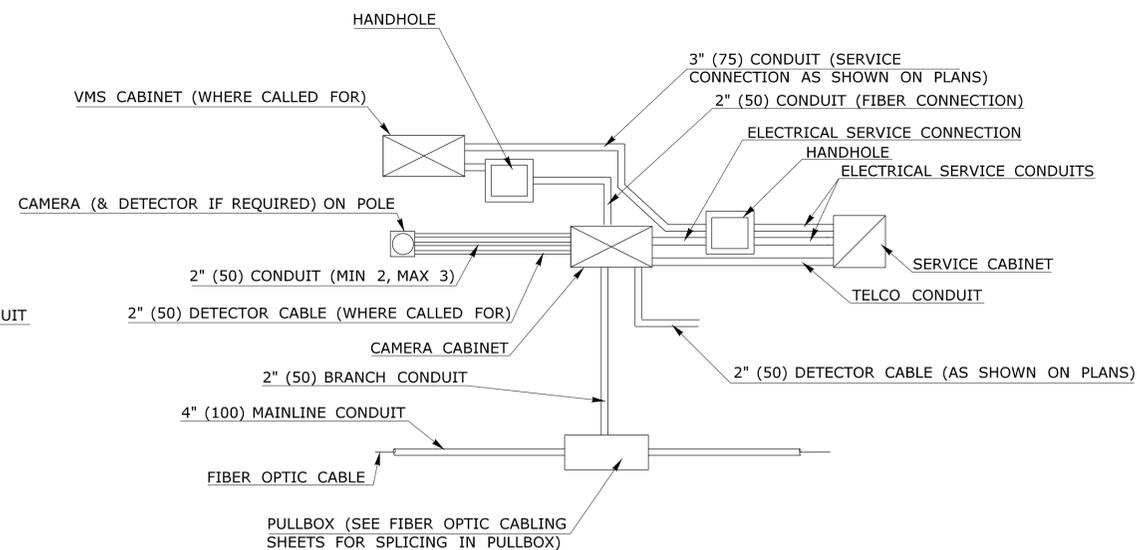
PROJECT NO. \_\_\_\_\_

DRAWING NO. \_\_\_\_\_

SHEET NO. \_\_\_\_\_

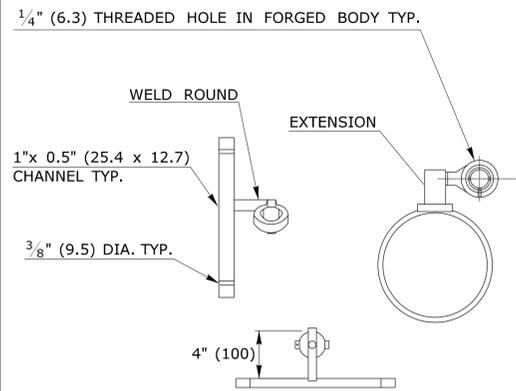


**CCTV ELEVATION SCHEMATIC**

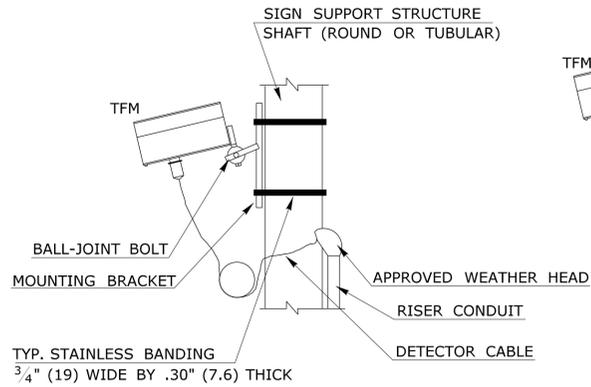


**CCTV SCHEMATIC PLAN**  
SEE SITE PLANS FOR SPECIFIC LAYOUT

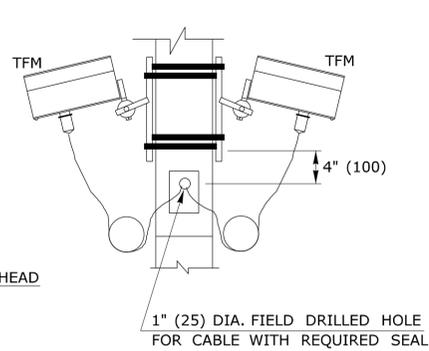
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010	DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	CHECKED BY: <b>R.A. KENNEDY</b>	SCALE IN FEET 0 200 400 SCALE 1"=200'	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/BLOCK: <b>OFFICE OF ENGINEERING</b>	APPROVED BY: _____ DATE: _____	PROJECT TITLE:	TOWN:	PROJECT NO.
<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>													
<p><b>DRAWING TITLE:</b> <b>LOWERING DEVICE AND CAMERA LOCATION SCHEMATICS</b></p>													



**TYPICAL BRACKET SUPPORT  
SIDE MOUNT WITH  
EXTENDED BRACKET**  
(SEE NOTE 3)

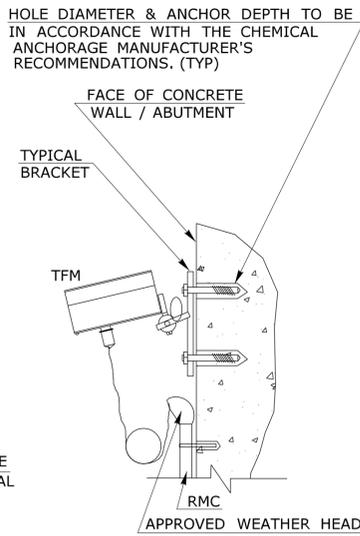


**TYPICAL ATTACHMENT  
DETAIL EXISTING  
SIGN SUPPORT**

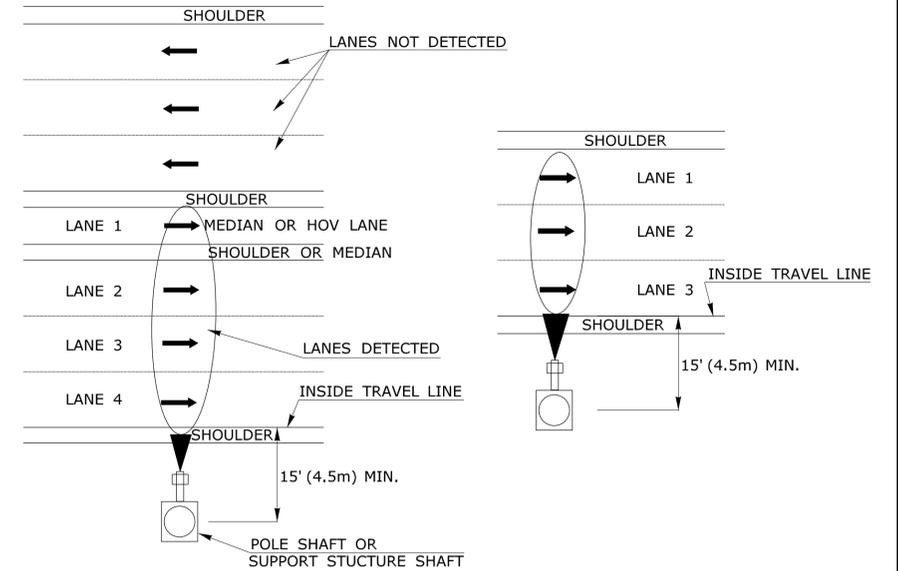


**TYPICAL ATTACHMENT  
DETAIL DUAL  
DETECTORS**

NOTE:  
TFM CAN BE MOUNTED ON SIDE OR ON  
FRONT FACE OF POLE. SIDE MOUNTED IS  
SHOWN ONLY AS AN EXAMPLE.

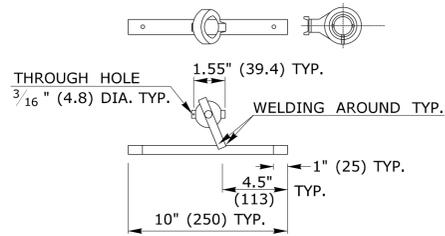


**TYPICAL ATTACHMENT  
DETAIL CONCRETE  
WALL / SURFACE**

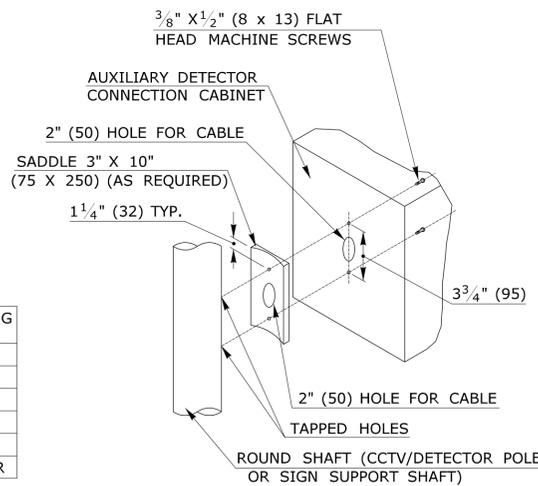


**TYPICAL HOV LANE  
INSTALLATION SCHEMATIC**

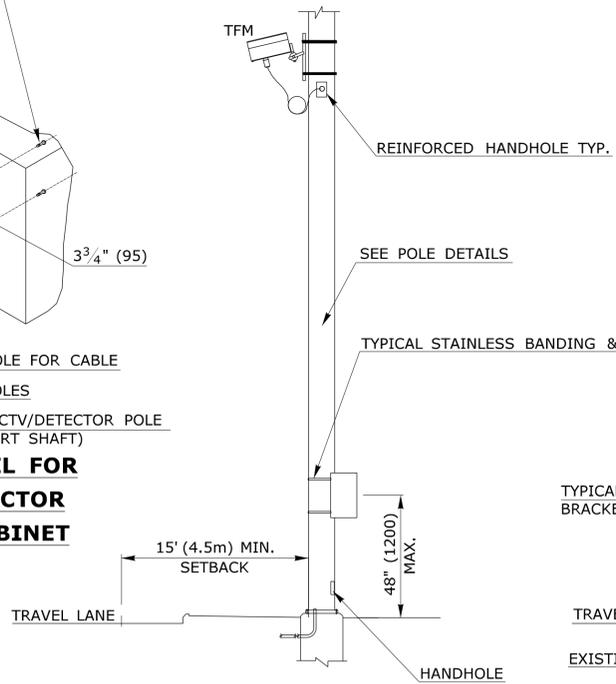
**TYPICAL NON-HOV LANE  
INSTALLATION SCHEMATIC**



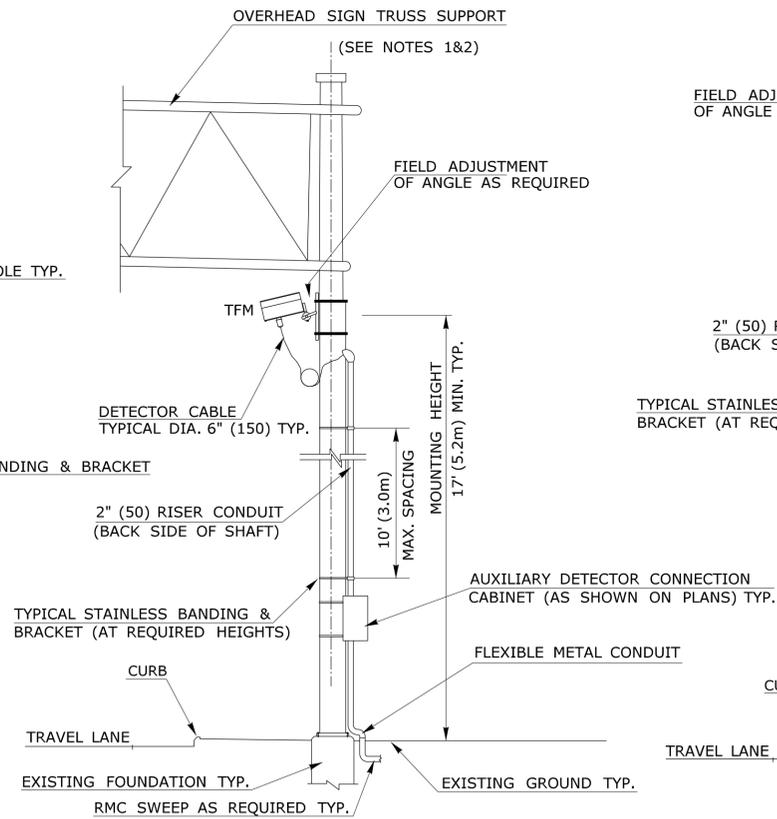
**TYPICAL BRACKET SUPPORT  
POLE FRONT MOUNT**  
(SEE NOTE 3)



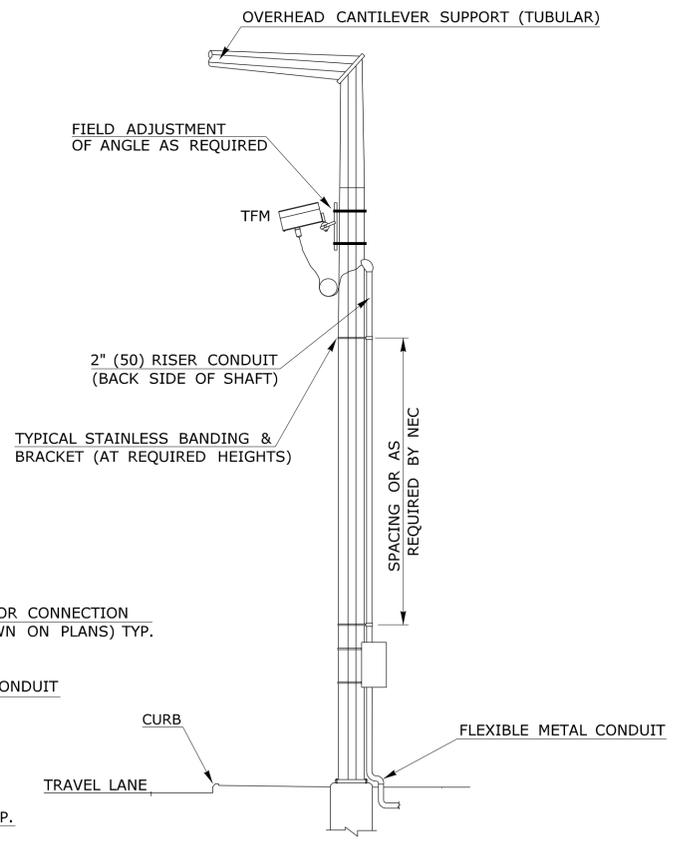
**MOUNTING DETAIL FOR  
AUXILIARY DETECTOR  
CONNECTION CABINET**



**TYPICAL POLE SIDE  
MOUNTING DETAIL**



**TYPICAL OVERHEAD SIGN  
SUPPORT MOUNTING DETAIL  
(ROUND SHAFT)**



**TYPICAL CANTILEVER SIGN  
SUPPORT MOUNTING DETAIL  
(TUBULAR SHAFT)**

NO. OF LANES DETECTED	REQUIRED MINIMUM SETBACK (m) *	RECOMMENDED MOUNTING HEIGHT (m.)
9 OR FEWER	13' (4) OR SHORTER	17' (5.2)
10	14'-9" (4.5)	17' (5.2)
12	17'-5" (5.3)	17' (5.2)
14	19'-8" (6.0)	17' (5.2)
18	24'-7" (7.5)	20' (6.1)
20 OR MORE	26'-0" (7.9)	20'-4" (6.2) OR HIGHER

**REQUIRED MINIMUM SETBACK AND  
RECOMMENDED MOUNTING HEIGHT CHART**

**NOTES:**

- TFM - TRAFFIC FLOW MONITOR
- TFM'S AND APPURTENANCES SHALL BE ATTACHED TO EXISTING STRUCTURES IN ACCORDANCE WITH THE FOLLOWING AND AS APPROVED BY THE ENGINEER:
- \* SETBACK DISTANCE IS DETERMINED FROM THE EDGE OF THE CLOSEST TRAVEL LANE.
- 1. FIELD DRILL HOLES IN CONCRETE STRUCTURES, HOLE DIAMETER AND ANCHOR DEPTH FOR THE CHEMICAL ANCHORAGE TO BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 2. CHEMICAL ANCHORS-SYSTEM APPROVED BE CONNECTICUT D.O.T. WITH THREADED RODS, ANCHOR BOLTS, NUTS AND WASHERS CONFORMING TO ASTM A449.
- 3. BRACKET SUPPORT TO BE PROVIDED BY TRAFFIC FLOW MONITOR MANUFACTURER.
- 4. THE BRACKETS SHALL BE ATTACHED WITH MANUFACTURER APPROVED " (20) WIDE, " (0.6) THICK, STAINLESS STEEL BANDS OR TO A CONCRETE WALL/BRIDGE USING 2 STAINLESS STEEL EXPANSION BOLTS OF SUFFICIENT LENGTH AND DIAMETER TO SUPPORT 100lbs. (45kg).

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:  
**D.K. SWINBURNE**  
CHECKED BY:  
**R.A. KENNEDY**  
SCALE IN FEET  
0 20 40  
SCALE 1"=20'

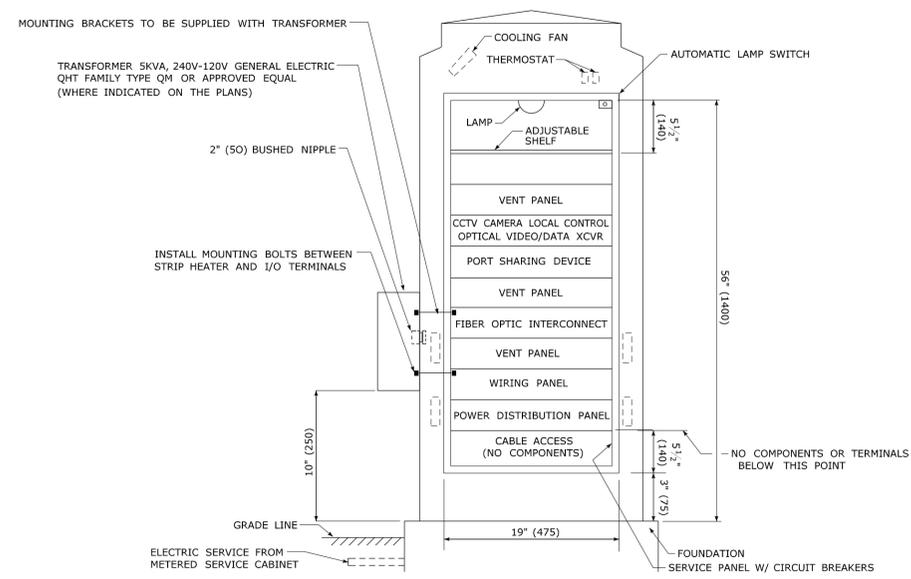
**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**

Filename: ...CTDOT\_HIGHWAY\_OPS\_GD.dgn

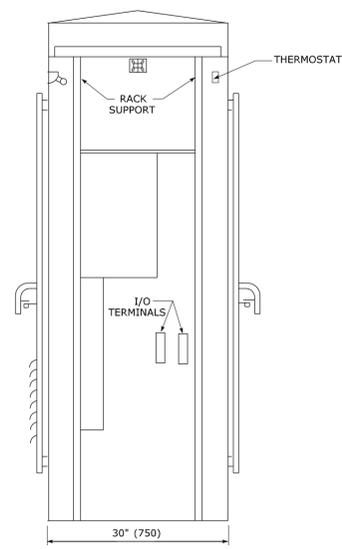
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BLOCK:  
**OFFICE OF ENGINEERING**  
APPROVED BY: DATE:

PROJECT TITLE:

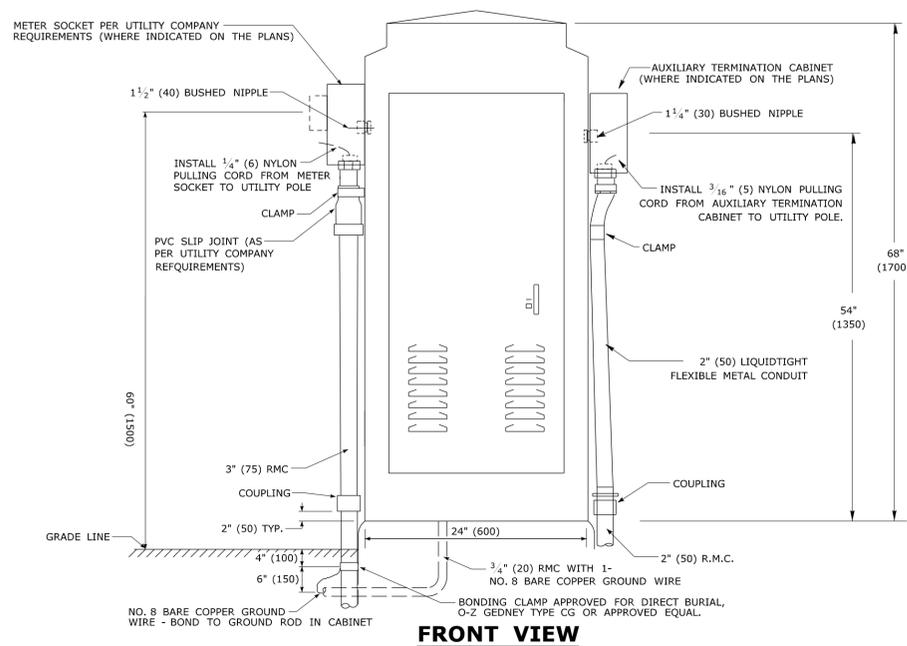
TOWN:  
DRAWING TITLE:  
**RTMS DETAILS**  
PROJECT NO.  
DRAWING NO.  
SHEET NO.



**TRAFFIC MANAGEMENT SYSTEM CABINET (OPEN VIEW)**



**SIDE VIEW (WITH SIDE PANEL REMOVED)**



**FRONT VIEW**

**TRAFFIC MANAGEMENT SYSTEM CABINET AND MINI-HUB CABINET**

**TRAFFIC MANAGEMENT SYSTEM CABINET AND MINI-HUB CABINET NOTES:**

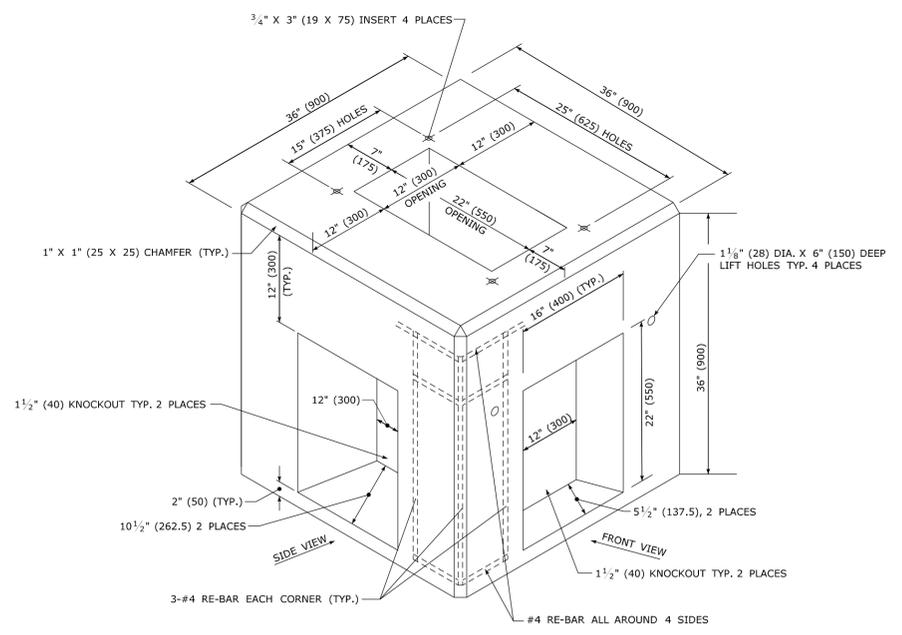
1. CAULK SEAM BETWEEN CABINET AND CONCRETE FOUNDATION.
2. INSTALL CONCRETE SIDEWALK ON FRONT AND BACK SIDE OF FOUNDATION, 36" X 36" (900 X 900), MIN. 4" (100) THICK PITCH SIDEWALK 1/4" PER FOOT (20 PER METER) AWAY FROM FOUNDATION AND INSTALL ON A MINIMUM 6" (150) GRAVEL OR MISCELLANEOUS AGGREGATE BASE, COMPACTED.
3. DUCT SEAL ALL CONDUITS THAT CONTAIN CABLE. CAP ALL UNUSED CONDUITS.
4. VERIFY ANCHOR BOLT PATTERN WITH CABINET MANUFACTURER.
5. FRONT CABINET DOOR TO OPEN FIELD SIDE.
6. CABINET TO BE 170 TYPE.
7. FIELD CABINET FOUNDATION TO SUPPORT TRAFFIC MANAGEMENT SYSTEM CABINET OR MINI HUB CABINET.
8. TRANSFORMER TO BE ATTACHED TO CABINET ON SAME SIDE AS METER LOCATION. CABINETS WITH METERS WHERE SHOWN ON SITE PLANS SHALL NOT REQUIRE TRANSFORMERS.
9. SERVICE PANEL W/ CIRCUIT BREAKERS.

**TRAFFIC CONTROL FOUNDATION NOTES, GENERAL:**

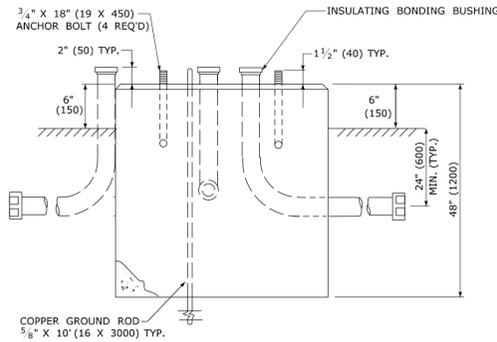
1. INSTALL FOUNDATION ON 6" (150) COMPACTED GRAVEL, IN ACCORDANCE WITH SECTION 2.14.
2. LEVEL FOUNDATION WITH A PROJECTION OF 6" (150) ABOVE FINISHED GRADE.
3. CONCRETE: CLASS "F" CONFORMING TO ARTICLE M. 03-01.
4. #4 RE-BAR, 2" (50) MIN. COVER AROUND ALL OPENINGS. 3 - #4 RE-BARS IN EACH CORNER.
5. CONDUITS SHALL NOT PROJECT MORE THAN 2" (50) ABOVE FOUNDATION.
6. INSTALL A MINIMUM OF ONE SPARE 2" (50) RMC SWEEP IN THE FOUNDATION. SPARE SWEEP SHALL EXTEND A MINIMUM OF 24" (600) OUTSIDE THE FOUNDATION.

**TRAFFIC CONTROL FOUNDATION NOTES, PRE-CAST:**

1. PLACE NO. 6 CRUSHED STONE IN THE CENTER OPENINGS AFTER THE CONDUITS AND GROUND ROD HAVE BEEN INSTALLED. THE OPENINGS SHALL BE CAPPED WITH A 2" (50) GROUT LEVEL WITH THE TOP OF THE FOUNDATION AND NEATLY FINISHED. THE GROUT SHALL CONFORM WITH THE REQUIREMENTS OF ARTICLE M. 03.01-12.
2. WEAKEN KNOCKOUT WALLS FOR PIPE INSTALLATION IN FIELD.
3. BOLT DOWN CABINET WITH 3/4" (19) HEX HEAD BOLTS 3" (75) LONG.
4. INSTALL A 5/8" X 10' (16 X 3000) COPPER GROUND ROD.



**PRE-CAST**

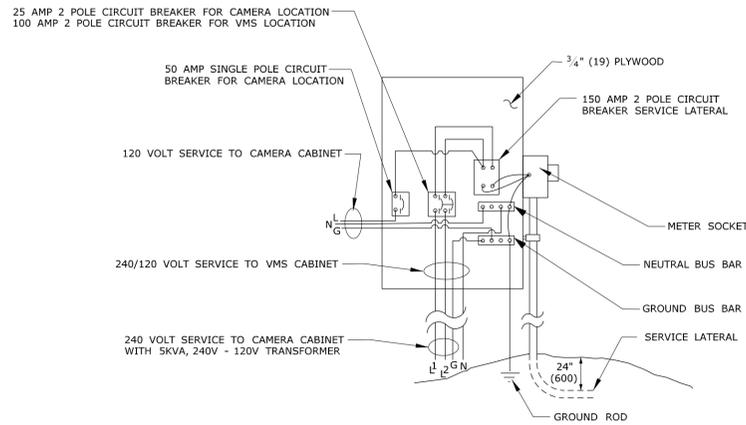


**CAST IN PLACE**

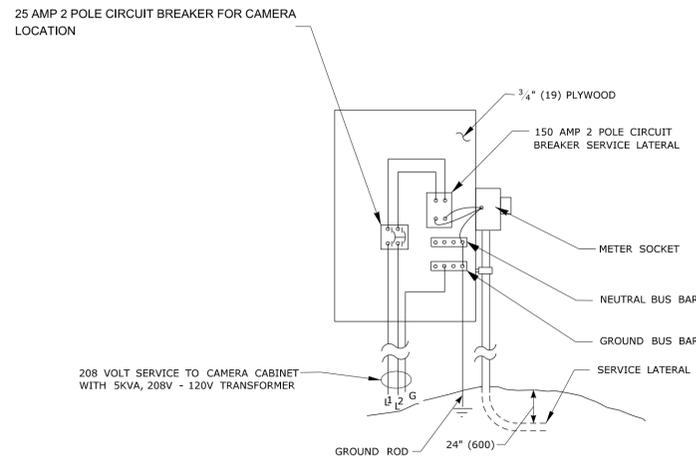
**TRAFFIC CONTROL FOUNDATION - CONTROLLER - TYPE IV MODIFIED**

DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
CHECKED BY: <b>R.A. KENNEDY</b>		APPROVED BY:	DATE:	DRAWING TITLE: <b>CAMERA CABINET DETAILS</b>	DRAWING NO.
<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>	<p>SCALE IN FEET</p> <p>SCALE 1" = 200'</p>				SHEET NO.
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010		

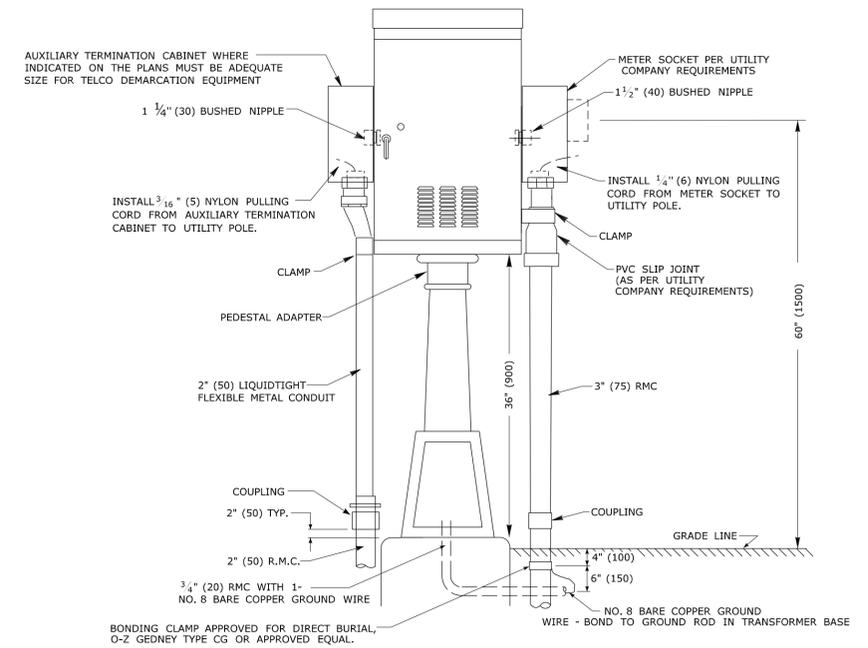




**SERVICE CABINET LAYOUT**  
SERVICE (120 VOLT, 240 VOLT AND 240/120 VOLT)

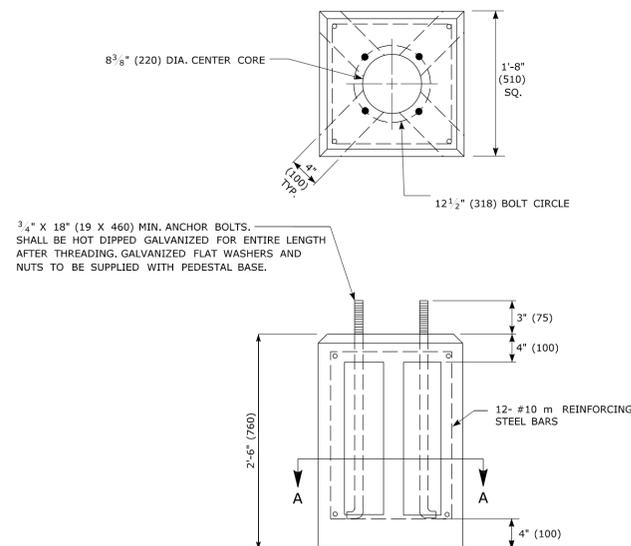


**SERVICE CABINET LAYOUT**  
SERVICE (208 VOLT)

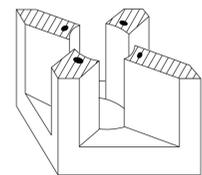


**PEDESTAL MOUNTED CABINET**

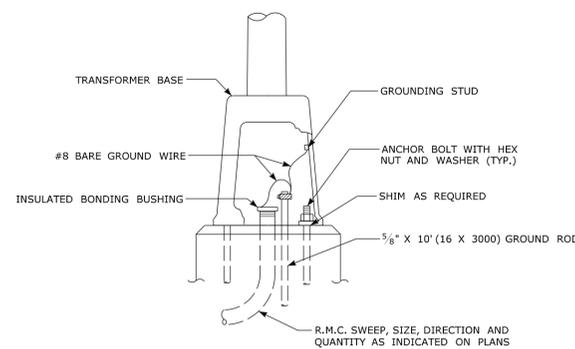
CABINET TYPE	HEIGHT	WIDTH	DEPTH
SERVICE CABINET	36" (900)	20" (500)	16" (400)
AUX. TERM. CABINET	16" (400)	12" (300)	6" (150)



**PRECAST PEDESTAL BASE - TYPE I**

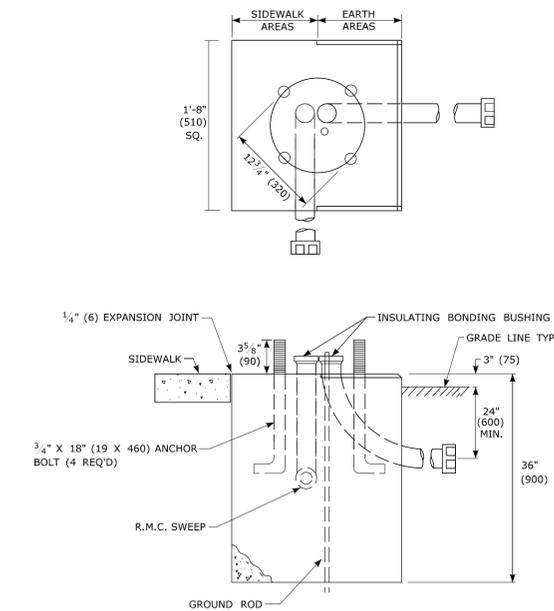


**SECTION A - A**



NOTES:  
PLACE NO. 6 CRUSHED STONE IN CENTER OPENING AFTER CONDUITS AND GROUND ROD HAVE BEEN INSTALLED. THE OPENING SHOULD BE CAPPED WITH 2" (50) GROUT LEVEL WITH THE TOP OF FOUNDATION AND NEATLY FINISHED. THE GROUT SHALL CONFORM WITH THE REQUIREMENTS OF ARTICLE M.03.01-12.

**36" (900) ALUMINUM PEDESTAL**



**TRAFFIC CONTROL FOUNDATION PEDESTAL TYPE I**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

DESIGNER/DRAFTER:  
**D.K. SWINBURNE**  
CHECKED BY:  
**R.A. KENNEDY**  
SCALE IN FEET  
0 20 40  
SCALE 1"=20'



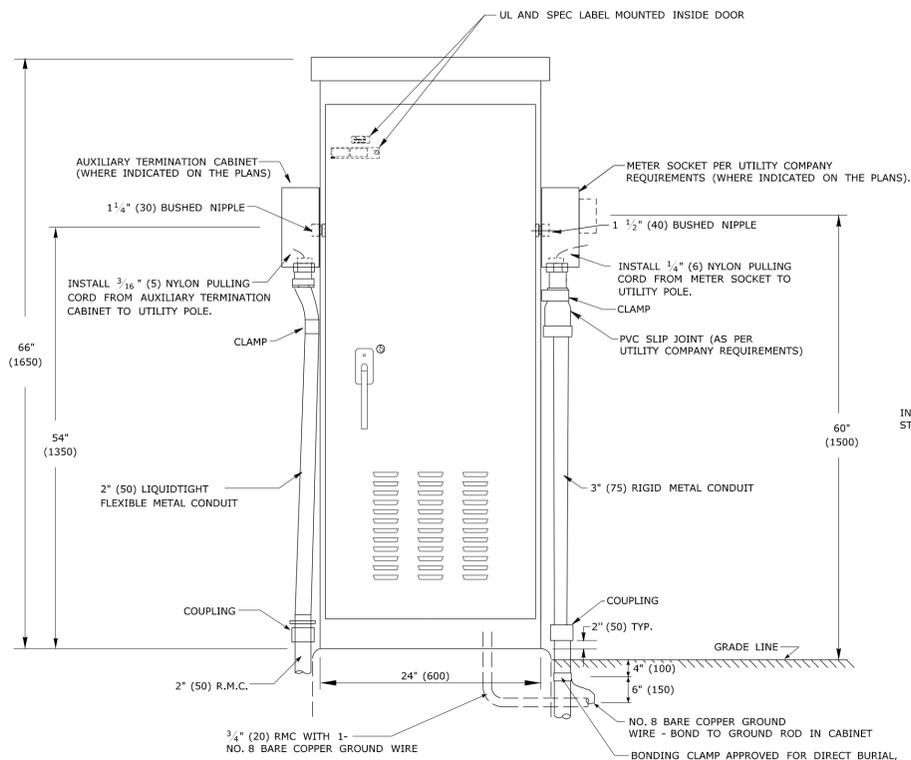
SIGNATURE/BLOCK:  
**OFFICE OF ENGINEERING**  
APPROVED BY: DATE:

PROJECT TITLE:  
**TYPICAL ELECTRICAL AND ATC DETAILS**

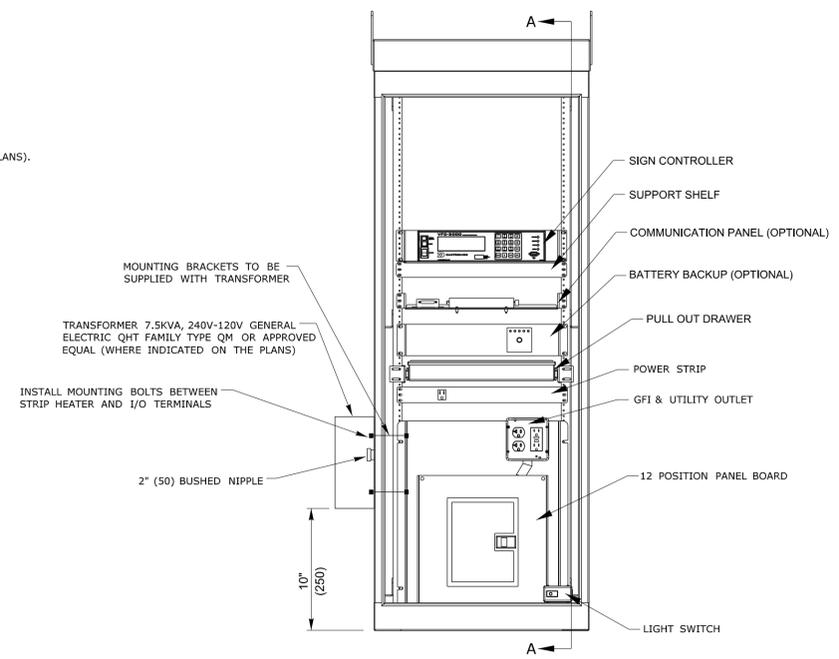
TOWN:  
PROJECT NO.  
DRAWING NO.  
SHEET NO.

Plotted Date: 7/9/2010

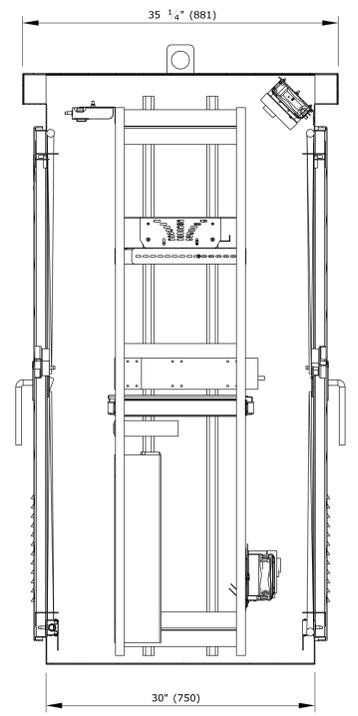
Filename: ...CTDOT\_HIGHWAY\_OPS\_GD.dgn



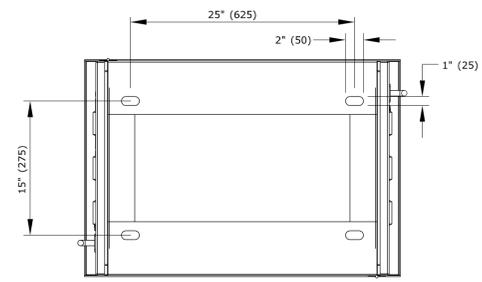
**FRONT VIEW**  
(DOOR SHOWN)



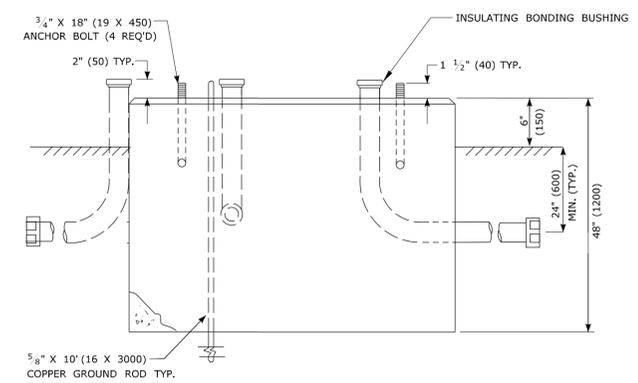
**FRONT VIEW**  
(NO DOOR SHOWN)



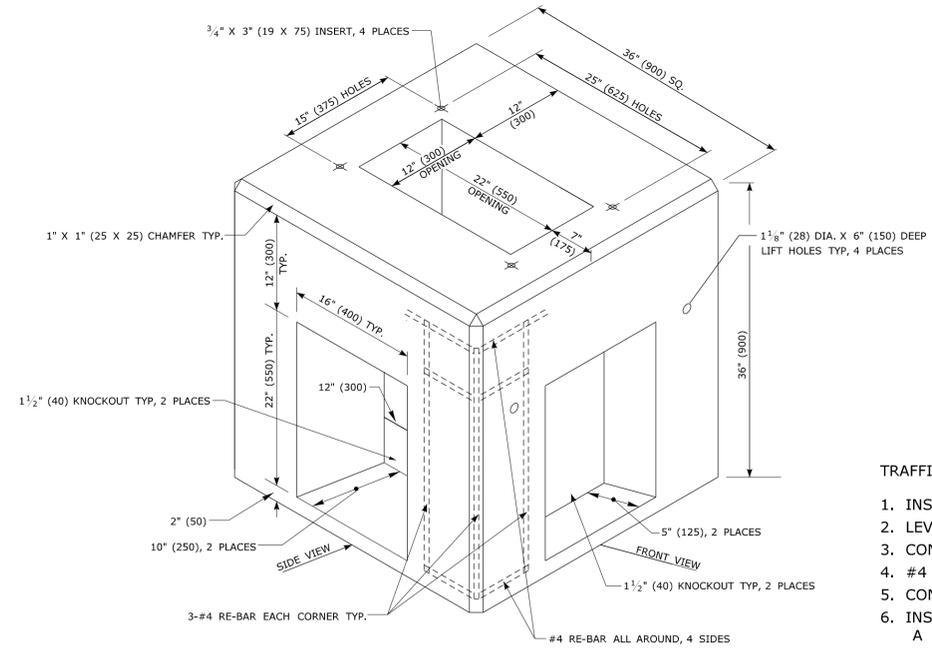
**SECTION: A-A**



**BOTTOM VIEW**  
(DOOR SHOWN)



**CAST IN PLACE**



**PRE-CAST**  
**TRAFFIC CONTROL FOUNDATION -**  
**CONTROLLER - TYPE IV MODIFIED**

**TRAFFIC CABINET NOTES:**

1. PAD MOUNT CONFIGURATION
2. 0.125" (3) ALUMINUM, 5052-H34 CONSTRUCTION WITH CONTINUOUSLY WELDED EXTERNAL SEAMS.
3. THREE POINT LATCH WITH STAINLESS STEEL HANDLE
4. DOUBLE FLANGED DOOR SEAL WITH 1/4" X 2" (6 X 50) CLOSED CELL NEOPRENE GASKET.
5. FULL LENGTH EIA GAGE FOR 19" (475) EQUIPMENT
6. ADJUSTABLE PULL OUT DRAWER
7. DOOR OPENING: 21.50" X 54.75" (538 X 1369).
8. FULL LENGTH STAINLESS STEEL HINGE
9. ALL STAINLESS STEEL HARDWARE
10. CORBIN LOCK KEYED TO CORBIN #2
11. NEMA 3R ENCLOSURE
12. SHIPPED ON A WOOD PALLET
13. INSTALL CONCRETE SIDEWALK ON FRONT AND BACK SIDE OF FOUNDATION 36" X 36", 4" THICK MIN. (900 X 900, 100 THICK MIN.). PITCH SIDEWALK 1/4" PER FOOT (20 PER METER) AWAY FROM FOUNDATION AND INSTALL ON A MINIMUM 6" (150) GRAVEL OR MISCELLANEOUS AGGREGATE BASE, COMPACTED.

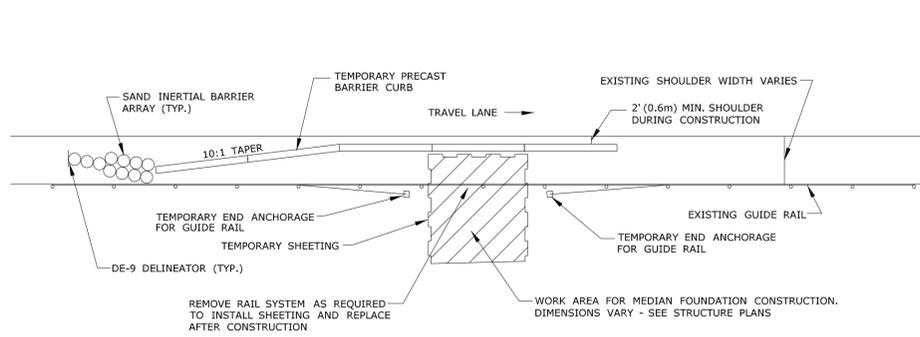
**TRAFFIC CONTROL FOUNDATION NOTES, GENERAL:**

1. INSTALL FOUNDATION ON 6" (150) COMPACTED GRAVEL, IN ACCORDANCE WITH SECTION 2.14.
2. LEVEL FOUNDATION WITH A PROJECTION OF 6" (150) ABOVE FINISHED GRADE.
3. CONCRETE: CLASS "F" CONFORMING TO ARTICLE M. 03-01.
4. #4 RE-BAR 2" (50) MIN. COVER AROUND ALL OPENINGS. 3 - #4 RE-BARS IN EACH CORNER.
5. CONDUITS SHALL NOT PROJECT MORE THAN 2" (50) ABOVE FOUNDATION.
6. INSTALL A MINIMUM OF ONE SPARE 2" (50) RMC SWEEP IN THE FOUNDATION. SPARE SWEEP SHALL EXTEND A MINIMUM OF 24" (600) OUTSIDE THE FOUNDATION.

**TRAFFIC CONTROL FOUNDATION NOTES, PRE-CAST:**

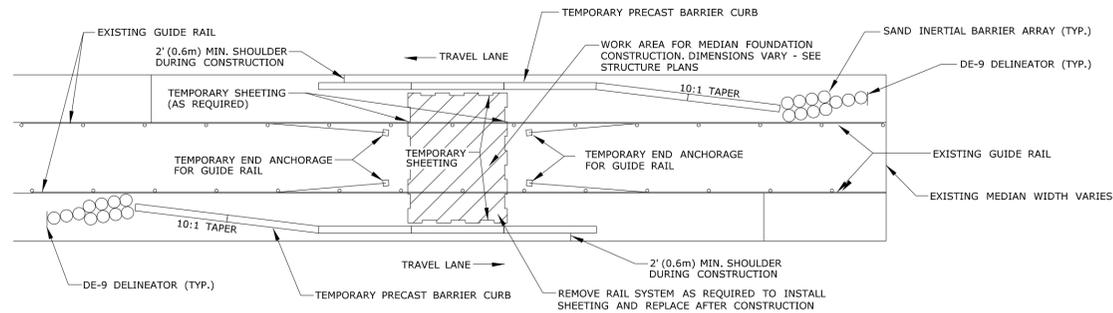
1. PLACE NO. 6 CRUSHED STONE IN THE CENTER OPENINGS AFTER THE CONDUITS AND GROUND ROD HAVE BEEN INSTALLED. THE OPENINGS SHALL BE CAPPED WITH A 2" (50) GROUT LEVEL WITH THE TOP OF THE FOUNDATION AND NEATLY FINISHED. THE GROUT SHALL CONFORM WITH THE REQUIREMENTS OF ARTICLE M. 03.01-12.
2. WEAKEN KNOCKOUT WALLS FOR PIPE INSTALLATION IN FIELD.
3. BOLT DOWN CABINET WITH 3/4" (19) HEX HEAD BOLTS 3" (75) LONG.
4. INSTALL A 5/8" X 10' (16 X 3000) COPPER GROUND ROD.

DESIGNER/DRAFTER: <b>D.L.K. SWINBURNE</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
CHECKED BY: <b>R.A. KENNEDY</b>		APPROVED BY:	DATE:	DRAWING TITLE: <b>VMS CONTROLLER CABINET AND FOUNDATION</b>	DRAWING NO.
SCALE IN FEET <b>SCALE 11"=200'</b>	Filename: ...CTDOT_HIGHWAY_OPS_GD.dgn			SHEET NO.	
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010		



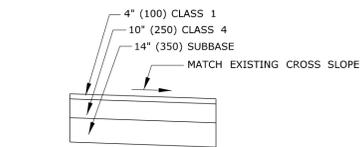
**TYPICAL STAGE CONSTRUCTION PLAN  
FOR VMS FOUNDATION WORK IN SHOULDER**

N.T.S.



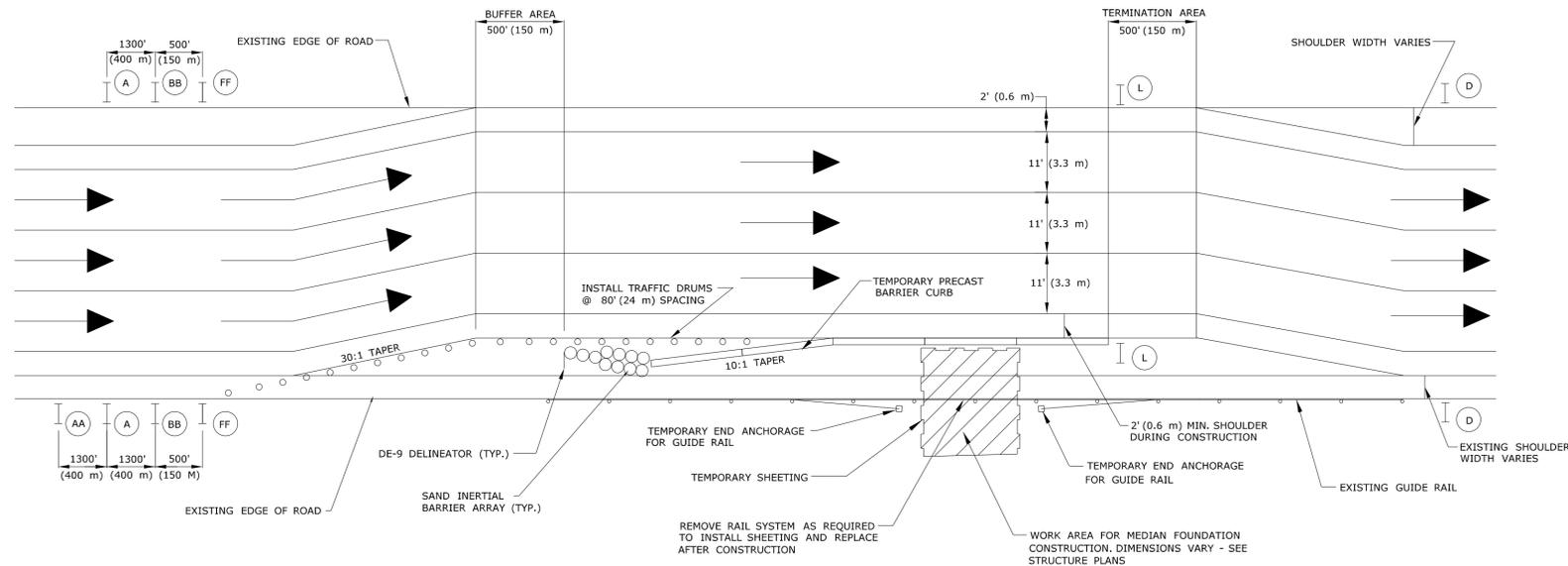
**TYPICAL STAGE CONSTRUCTION PLAN  
FOR VMS FOUNDATION WORK IN MEDIAN  
AND WITH EXISTING SHOULDER**

N.T.S.



**TYPICAL PAVEMENT  
REPAIR SECTION**

N.T.S.



**TYPICAL STAGE CONSTRUCTION PLAN  
FOR VMS FOUNDATION WORK IN TRAVEL LANE AND SHOULDER**

N.T.S.

**NOTES:**

- EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED OR COVERED, INCLUDING THOSE PAVEMENT MARKINGS OUTSIDE OF THE TRAVELWAY.
- THE APPROPRIATE TYPE DE-7 AND DE-7A DELINEATORS SHALL BE INSTALLED ON THE TEMPORARY PRECAST CONCRETE BARRIER CURB AS SPECIFIED ON THE STANDARD DRAWING "TYPICAL DELINEATION AND DELINEATOR AND OBJECT MARKER DETAILS".
- EXISTING SIGNS ARE TO BE RELOCATED AS NEEDED AND AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION SO THAT THEY ARE IN THE APPROPRIATE LOCATION AND VISIBLE TO MOTORISTS. SOME SIGNS MAY HAVE TO BE TEMPORARILY LOCATED WITHIN THE WORK AREA. THIS WORK WILL BE PAID FOR UNDER ITEM #097101A-MAINTENANCE AND PROTECTION OF TRAFFIC.
- EXISTING SIGNS IN CONFLICT WITH TEMPORARY SIGNS SHALL BE COVERED, REMOVED, OR REVISED TO MEET FIELD CONDITIONS.
- THE LOCATIONS OF TEMPORARY SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE ADJUSTED BY THE CONTRACTOR TO MEET FIELD CONDITIONS.
- TEMPORARY SIGNS SHALL BE MOUNTED ON POSTS WHEN FEASIBLE.
- THE LOCATIONS OF THE TRAFFIC DRUMS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE ADJUSTED BY THE CONTRACTOR TO MEET FIELD CONDITIONS AND TO CLEARLY DEFINE ACCESS TO AND EGRESS FROM ALL ROADWAYS AND DRIVEWAYS.
- THE HEIGHT OF THE TEMPORARY SHEET PILING SHALL NOT EXTEND ABOVE THE HEIGHT OF THE TEMPORARY PRECAST CONCRETE BARRIER CURB
- AS DIRECTED BY THE ENGINEER, INSTALL SERIES 16, ROAD WORK AHEAD - FINES DOUBLED, ROAD WORK AHEAD, AND SHOULDER CLOSED AHEAD SIGNS.

**SIGN LEGEND:**

AA ROAD WORK AHEAD FINES DOUBLED  
31-1906 48" X 42" (1200 X 1050)

A ROAD WORK AHEAD  
80-9604 48" X 48" (1200 X 1200)

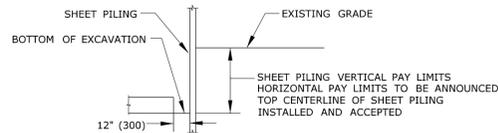
BB REDUCE SPEED TO 45 MPH  
80-9508 48" X 48" (1200 X 1200)

D END ROAD WORK  
80-9612 48" X 24" (1200 X 600)

FF LANES SHIFT LEFT  
80-9434 48" X 48" (1200 X 1200)

L LANES SHIFT RIGHT  
80-9436 48" X 48" (1200 X 1200)

CONSTRUCTION AHEAD  
ROAD USE RESTRICTED  
STATE LIABILITY LIMITED  
GENERAL STATUTES SEC 13a-115, 13a-145  
COMMISSIONER OF TRANSPORTATION  
80-1605 (16-E)  
84" X 60"  
(2100 X 1500)

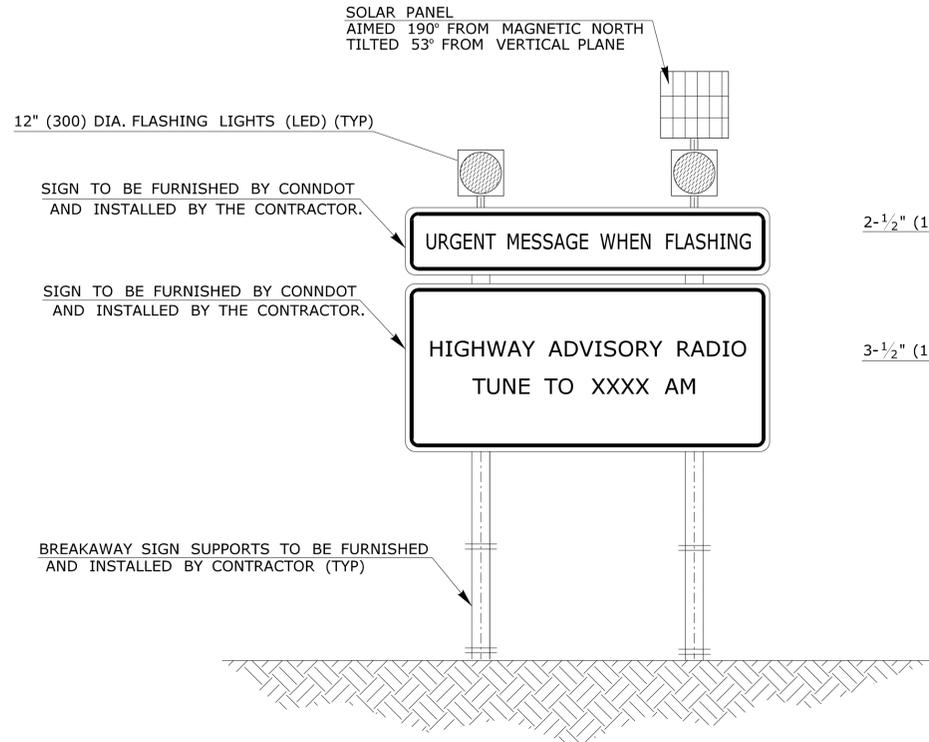


**TYPICAL SHEET  
PILING CROSS-SECTION**

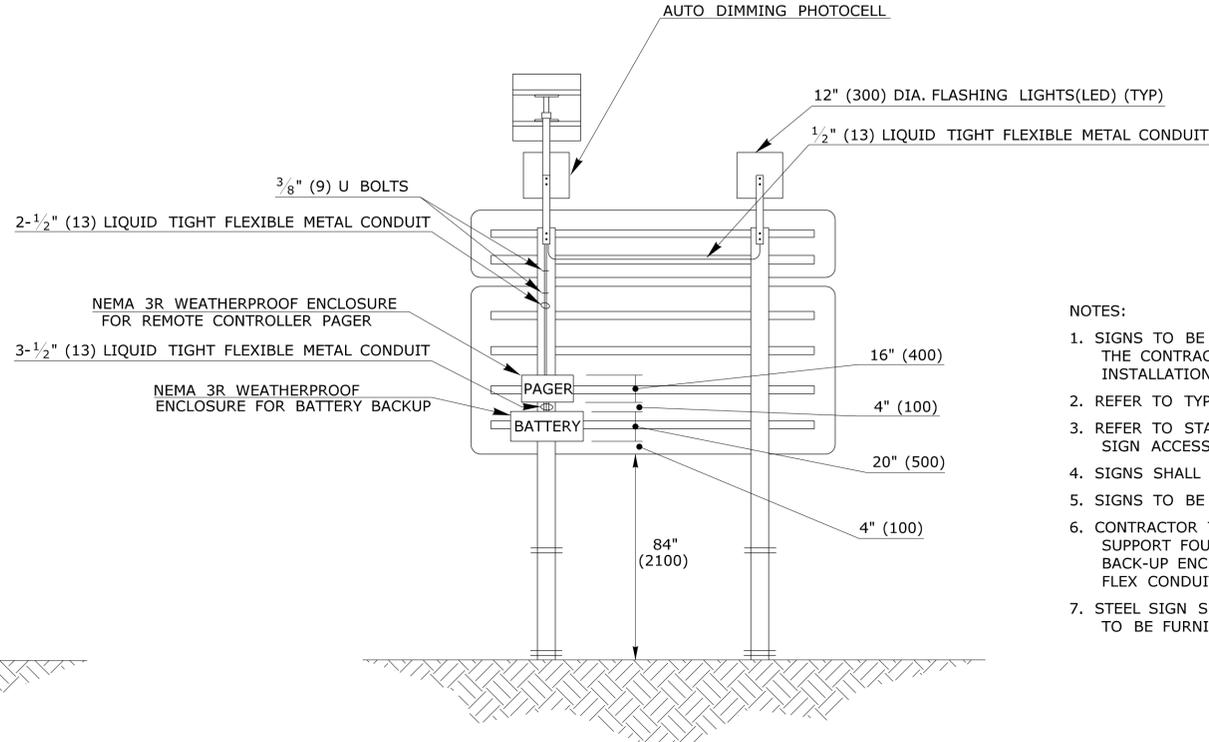
N.T.S.

DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	<p><b>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
CHECKED BY: <b>R.A. KENNEDY</b>		APPROVED BY:	DATE:	DRAWING TITLE: <b>STAGE CONSTRUCTION DETAILS</b>	DRAWING NO.
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010	SHEET NO.	

**HAR SIGN LAYOUT PLAN**



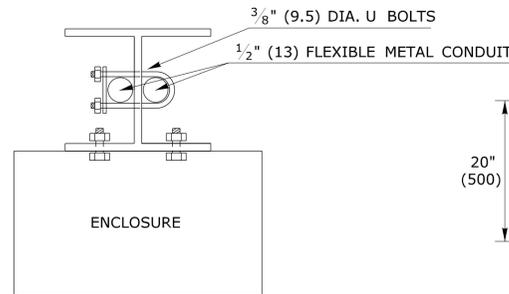
**FRONT VIEW OF SIGN**



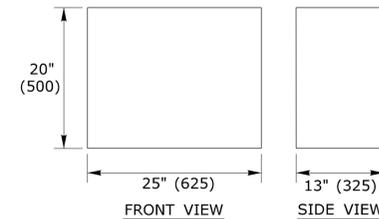
**BACK VIEW OF SIGN**

**NOTES:**

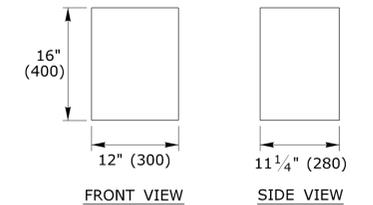
1. SIGNS TO BE FURNISHED BY THE DEPARTMENT AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE SIGN ORDER AND INSTALLATION. THE CONTRACTOR SHALL CALL (860) 258-4675 TO REQUEST SIGN ORDER.
2. REFER TO TYPICALS SHEETS ENTITLED "POST MOUNTED SIGNS ON BREAKAWAY COUPLING SYSTEM".
3. REFER TO STANDARD SHEETS ENTITLED "SIGN FACE SHEET ALUMINUM, LARGE SIGN ACCESSORY AND MOUNTING DETAILS.
4. SIGNS SHALL BE ORDERED FROM DOT SIGN CATALOG #52-5910 AND 41-5905.
5. SIGNS TO BE INSTALLED BY THE CONTRACTOR USING DOUBLE SIDED MOUNTING TAPE.
6. CONTRACTOR TO SUPPLY AND INSTALL STEEL SIGN SUPPORTS, STEEL, SIGN SUPPORT FOUNDATIONS, PAGER AND PAGER CONTROL ENCLOSURE, BATTERY BACK-UP ENCLOSURE WITH BATTERIES, SOLAR PANEL, FLASHING LIGHTS, FLEX CONDUIT, MOUNTING HARDWARE AS NEEDED AND DOUBLE SIDED TAPE.
7. STEEL SIGN SUPPORTS AND STEEL SIGN SUPPORT FOUNDATIONS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.



**BEAM DETAIL**



**BATTERY CABINET DETAIL**



**PAGER CABINET DETAIL**

SCHEDULE OF MATERIALS						
	QTY	HEIGHT	WIDTH	DEPTH	WEIGHT lbs. (kg)	METHOD OF MOUNTING
SOLAR PANEL	1	44" (1100)	26" (660)	7 5/8" (190)	75 (34)	2 1/2" (65) GALVANIZED TUBING ( SEE MOUNT BELOW)
MOUNT FOR SOLAR PANEL	1	60" (1500)	2" (50)	2" (50)	20 (9)	2 EACH 65mm (1.0)X9.5mm U-BOLT (STAINLESS STEEL)
FLASHING LIGHTS(LED)	2	12" (300)	12" (300)	18" (450)	14 1/2(6.6)	1 1/2" (38) U-CHANNEL
MOUNT FOR FLASHING LIGHTS	2	30" (750)	1 1/2" (38)	1 1/2" (38)	10 (4.5)	2 EACH 3/8" (9.5) STAINLESS STEEL BOLT PER LIGHT
PAGER CABINET	1	16" (400)	12" (300)	11 1/8" (280)	28 (12.7)	4 EACH 3/8" (9.5) STAINLESS STEEL BOLT
BATTERY CABINET	1	20" (500)	25" (625)	13" (325)	150 (68)	4 EACH 3/8" (9.5) STAINLESS STEEL BOLT
BATTERIES	1	SEE SPECIFICATIONS				AS PER MANUFACTURER'S SPECIFICATIONS
LARGE (LOWER) SIGN	1	60" (1500)	144" (3600)	-	-	SEE TYPICAL DRAWINGS
SMALL (UPPER) SIGN	1	18" (450)	144" (3600)	-	-	SEE TYPICAL DRAWINGS
STEEL SIGN SUPPORT	2	AS REQUIRED IN STATE TYPICAL DRAWINGS				-
FLEXIBLE CONDUIT	-	1/2" (13)				SEE BEAM DETAIL 9.5MM UBOLTS
STEEL SUPPORT FOUNDATIONS	2	AS REQUIRED IN STATE TYPICAL DRAWINGS				

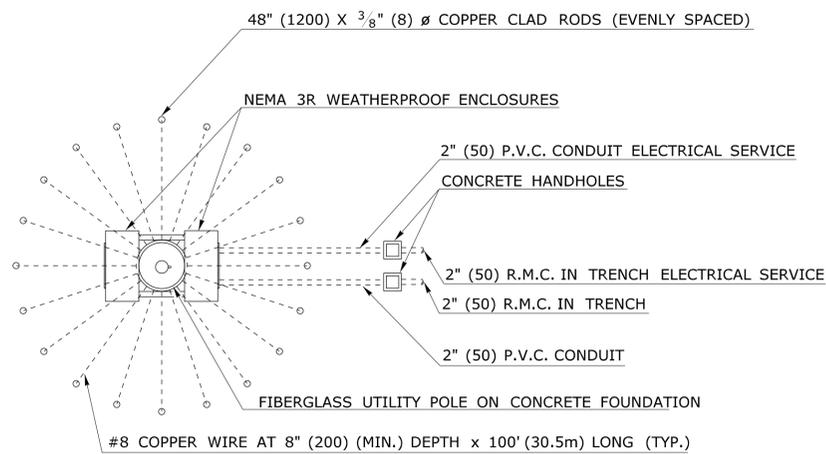
ALL EQUIPMENT TO BE MOUNTED TO SIGN POST BY FIELD DRILLING AND BOLTING DIRECTLY TO STEEL

DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
CHECKED BY: <b>R.A. KENNEDY</b>		APPROVED BY:	DATE:	DRAWING TITLE: <b>REMOTE CONTROL FLASHING LIGHT AND HAR SIGN LAYOUT PLAN</b>	DRAWING NO.
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010	SHEET NO.	

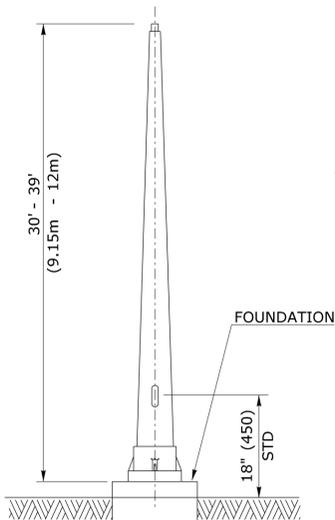
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

SCALE IN FEET  
0 20 40  
SCALE 1"=20'

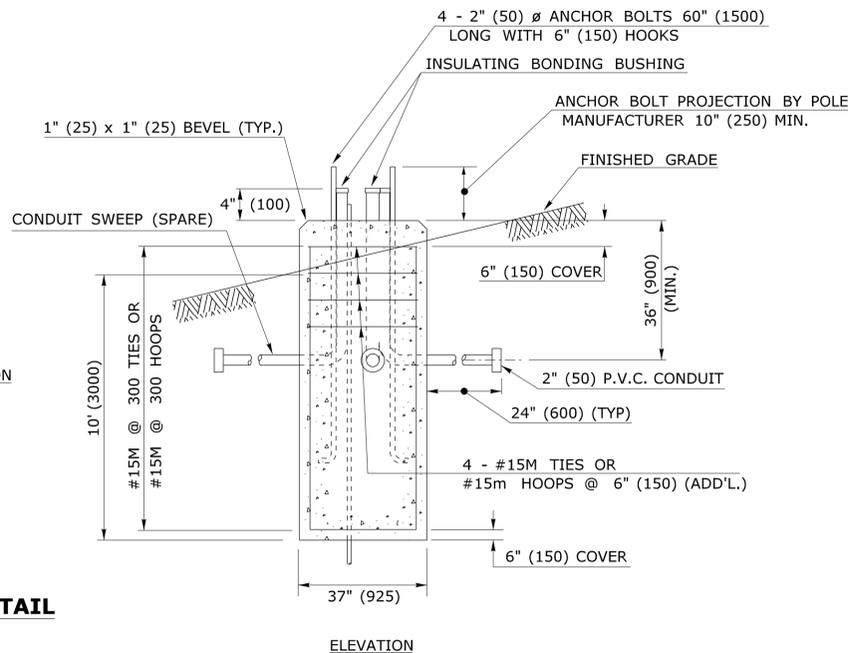
Filename: ...CTDOT\_HIGHWAY\_OPS\_GD.dgn



**HAR STATION AND GROUND PLANE PLAN**



**FIBERGLASS UTILITY POLE DETAIL**



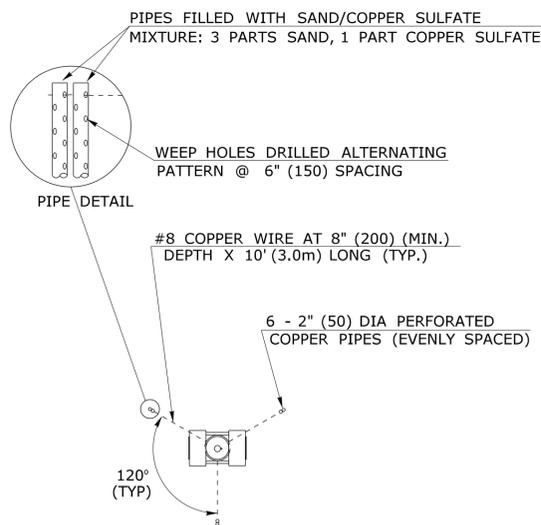
**ELEVATION**

**POLE FOUNDATION NOTES:**

- IF ANY FIELD CONDITIONS PRECLUDED COMPLIANCE WITH THE DRAWINGS AND/OR CONDITIONS SPECIFIED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK. CONTRACTOR SHALL PROVIDE REASONS AND RECOMMENDATIONS IN WRITING FOR APPROVAL TO CHANGE.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER 7 DAYS PRIOR TO THE INSTALLATION OF THE REINFORCING CAGE AND THE CONCRETE POUR.
- INSTALL ANCHOR BOLTS PER MANUFACTURER'S RECOMMENDATION.
- CONCRETE OPERATIONS SHALL START AS SOON AS POSSIBLE AFTER COMPLETION OF THE EXCAVATION. THE BOTTOM OF THE EXCAVATED HOLE SHALL BE CLEAN WITH NO STANDING WATER.
- DEPTH OF THE POLE FOUNDATIONS SHOWN IS MINIMUM.
- ALL PORTIONS OF THE FOUNDATIONS WHICH WILL REMAIN EXPOSED TO VIEW SHALL BE NEATLY FINISHED WITH A WOOD FLOAT AND GIVEN A BRUSH FINISH. ALL EXPOSED EDGES OF CONCRETE FOUNDATIONS TO HAVE 1" X 1" (25 X 25) BEVEL AS SHOWN.
- FOUNDATIONS TO BE PAID FOR UNDER THE ITEM "TRAFFIC CONTROL FOUNDATION - SPAN POLE - TYPE B".
- ALL REINFORCEMENT SHALL BE DEFORMED STEEL BARS AND CONFORM TO ASTM A615M GRADE 400.
- CONCRETE FOR POLE FOUNDATIONS SHALL BE CLASS "A" CONCRETE.
- NON-SHRINK GROUT SHALL CONFORM TO FORM 815, SECTION M.03.01-12.
- ANCHOR BOLTS FOR THE POLES SHALL CONFORM TO ASTM A449M. THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION AN ACCORDANCE WITH ASTM B695 CLASS 50.

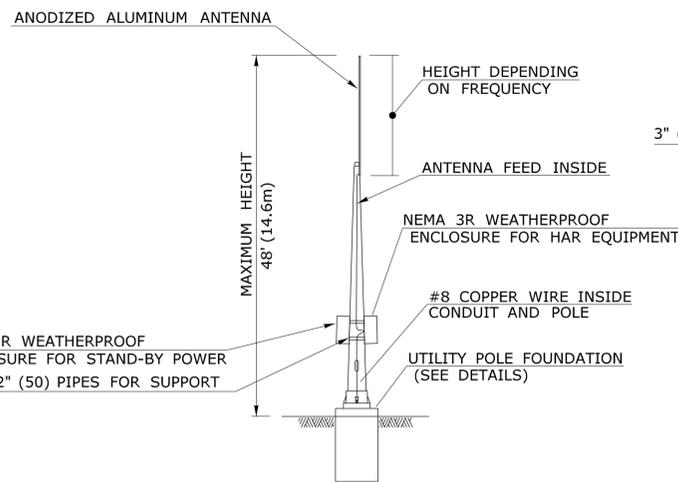
**GROUND PLANE NOTES:**

- 2" (50) PVC CONDUIT FROM THE WEATHERPROOF ENCLOSURE TO THE FIRST HANDHOLE OUTSIDE THE GROUND PLANE SHALL BE INCLUDED IN THE BID PRICE FOR HIGHWAY ADVISORY RADIO STATION. 2" (50) RMC AND TRENCHING & BACKFILL BEYOND THE FIRST HANDHOLE SHALL BE PAID AT THE CONTRACT UNIT PRICE FOR EACH ITEM.
- GROUND RODS: 4" (100) COPPER CLAD.
- GROUND WIRE: #8 BARE COPPER 8' (2540) LONG EACH.
- GROUND WIRE TO BE BURIED 6" (150) BELOW GRADE.
- BOND ALL RADIALS AROUND POST IN THE GROUND. RUN 3 GROUND WIRES UP UTILITY POLE AND CONNECT INSIDE ENCLOSURE.
- A WAGON WHEEL TYPE PATTERN (AS SHOWN) IS TYPICAL. HOWEVER ALTERNATE PATTERNS MAY BE USED, AS SITE CONDITIONS DICTATE, WITHOUT DETRIMENT TO BROADCAST, PROVIDED THE COMBINED LENGTH OF RADIAL EQUAL 2000'.
- RADIAL GROUND PLANE TO BE INSTALLED AS TYPICAL. CONTRACTOR TO INSTALL AS SHOWN. IF FIELD CONDITIONS DO NOT PERMIT RADIAL GROUND PLANE SYSTEM, THE CONTRACTOR MAY REQUEST THE USE OF THE ALTERNATE GROUND PLANE SYSTEM IN WRITING. THE USE OF AN ALTERNATE GROUND PLANE REQUIRES THE APPROVAL OF THE ENGINEER.

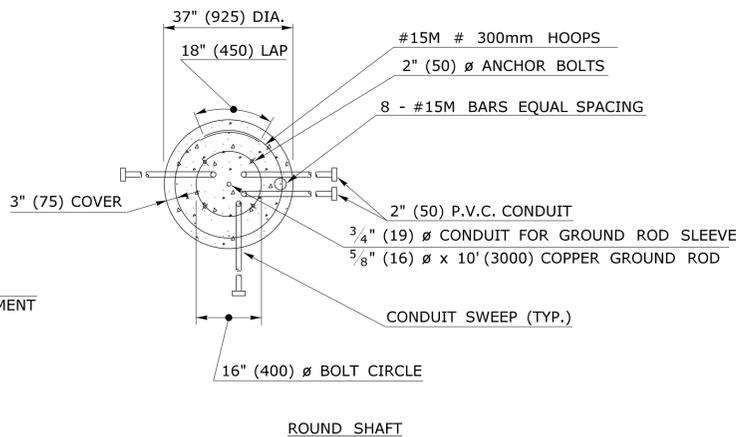


**TRIAD ALTERNATE GROUND PLANE**

SEE GROUND PLANE NOTES - NOTE 7

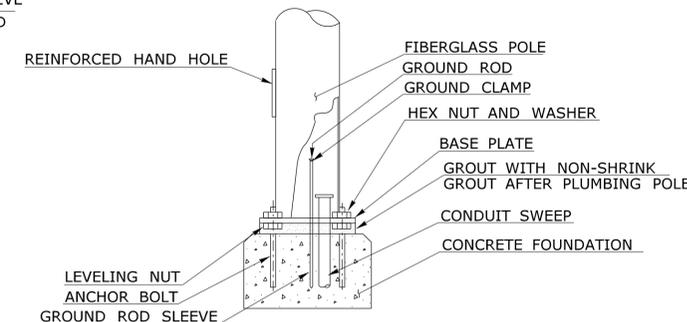


**HAR STATION ELEVATION**



**FIBERGLASS UTILITY POLE FOUNDATION DETAIL**

FOUNDATION SOIL PRESURE: 9765 kg/s

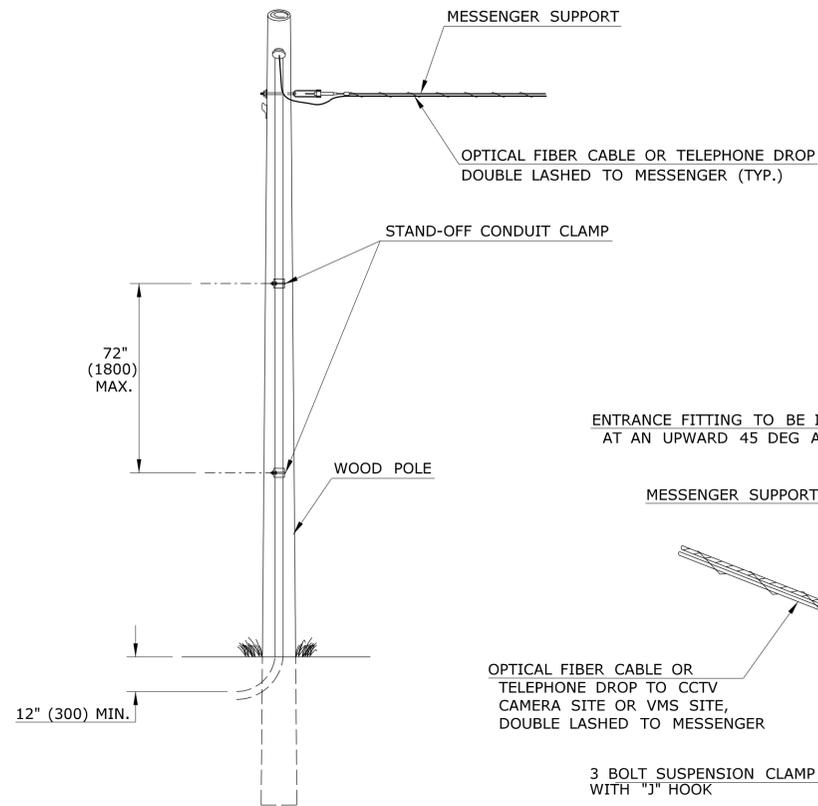


**POLE INSTALLATION DETAIL**

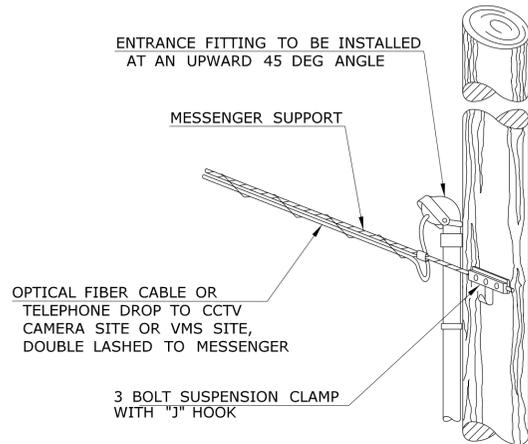
NOTE:  
COST OF FURNISHING AND PLACING NON-SHRINK GROUT SHALL BE INCLUDED IN THE PAY ITEM "FIBERGLASS UTILITY POLE".

**HAR GROUND PLANE AND POLE INSTALLATION PLANS**

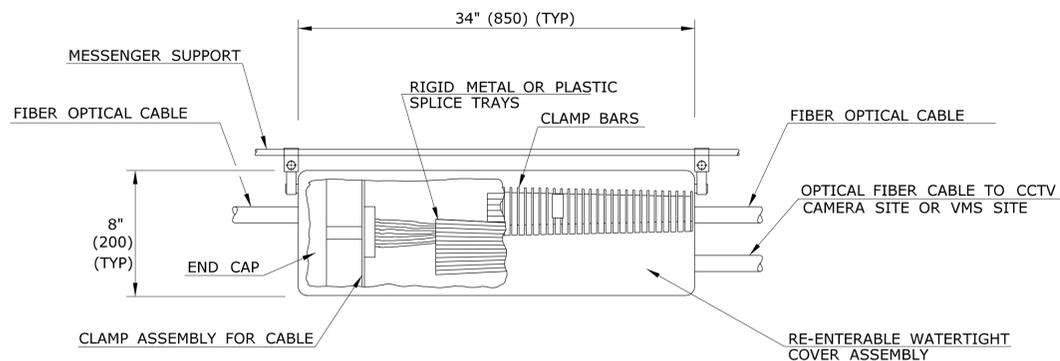
DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
CHECKED BY: <b>R.A. KENNEDY</b>		APPROVED BY:	DATE:	DRAWING TITLE: <b>INSTALLATION OF HAR STATIONS HAR STATION DETAILS</b>	DRAWING NO.
SCALE IN FEET <b>SCALE 11"=200'</b>	Filename: ...CTDOT_HIGHWAY_OPS_GD.dgn				SHEET NO.
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010		



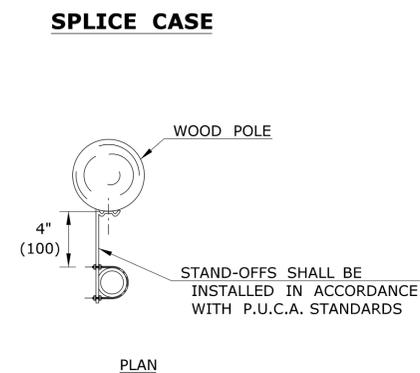
**STAND-OFF ELEVATION**



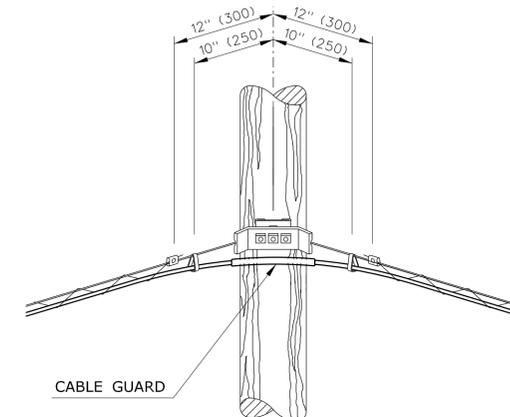
**STAND-OFF ENTRANCE DETAIL**



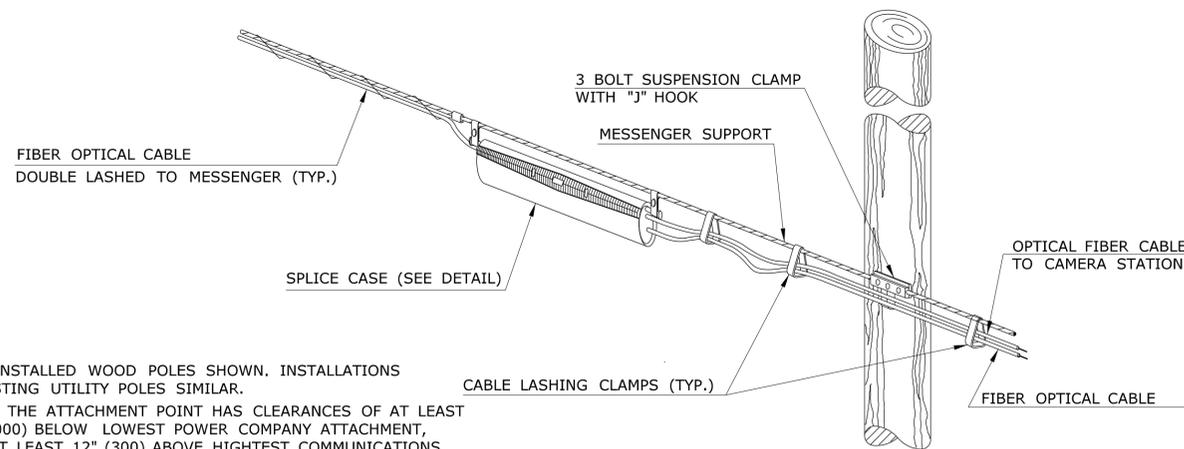
**CONDUIT CLAMP DETAIL**



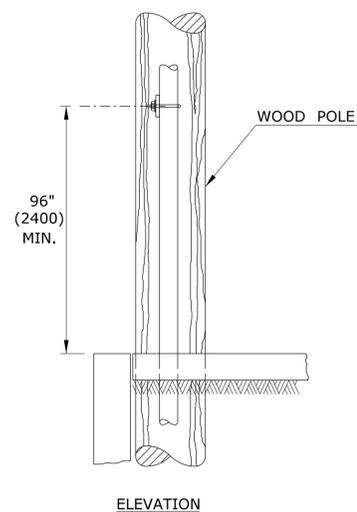
**SPLICE CASE**



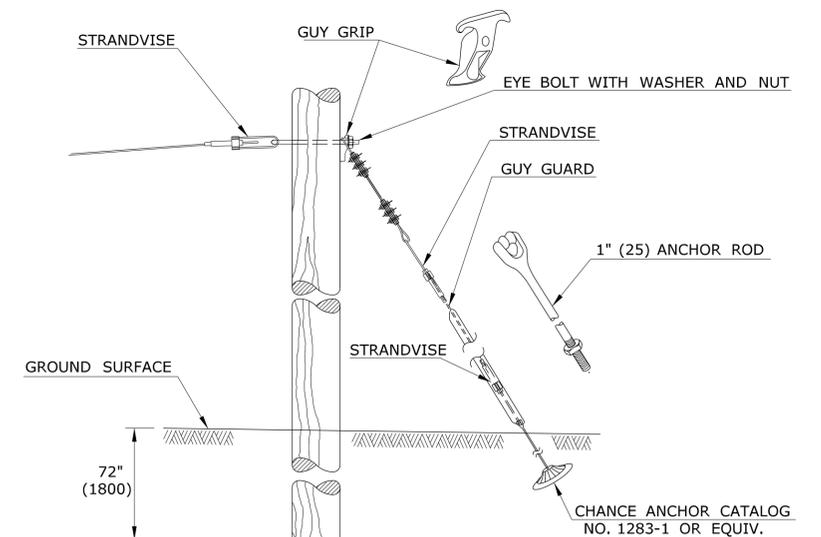
**CABLE LASHING AT A CORNER POLE DETAIL**



**CABLE-DROP INSTALLATION**



**CONDUIT STAND-OFF INSTALLATION FOR WOOD POLE**



**TYPICAL WOOD POLE AND GUY INSTALLATION**

- NOTES:
1. NEWLY INSTALLED WOOD POLES SHOWN. INSTALLATIONS TO EXISTING UTILITY POLES SIMILAR.
  2. ENSURE THE ATTACHMENT POINT HAS CLEARANCES OF AT LEAST 40" (1000) BELOW LOWEST POWER COMPANY ATTACHMENT, AND AT LEAST 12" (300) ABOVE HIGHEST COMMUNICATIONS ATTACHMENT, UNLESS OTHERWISE DIRECTED ON PLANS.
  3. SPLICE CASES SHALL BE PAID UNDER THE ITEM "FIBER OPTIC CABLE SPLICE ENCLOSURE."

DESIGNER/DRAFTER: <b>D.K. SWINBURNE</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE:	TOWN:	PROJECT NO.
CHECKED BY: <b>R.A. KENNEDY</b>		APPROVED BY:	DATE:	DRAWING TITLE: <b>UTILITY AND WOOD POLE INSTALLATION DETAILS</b>	DRAWING NO.
SCALE IN FEET <b>SCALE 11"=200'</b>	Filename: ...CTDOT_HIGHWAY_OPS_GD.dgn			SHEET NO.	
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/9/2010		