TITLE	DATE*
SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES	09-09
GROUNDING AND BONDING DETAILS	09-09
CCTV DETAILS	09-09
ELECTRICAL DETAILS-1	09-09
ELECTRICAL DETAILS-2	09-09

TITLE	DATE*

\*REVISED OR ADDED

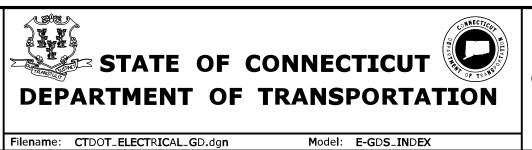
-	-	-	-	THE INFORMATION, INCLUDING ESTIMATED
-	-	-	-	QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED
-	-	-	-	INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE
-	-	-	-	THE CONDITIONS OF ACTUAL QUANTITIES
-	-	-	-	OF WORK WHICH WILL BE REQUIRED.
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SHEET NO. Plotted Date: 9/14/2009

REVISION DESCRIPTION

REV. DATE

NOT TO SCALE



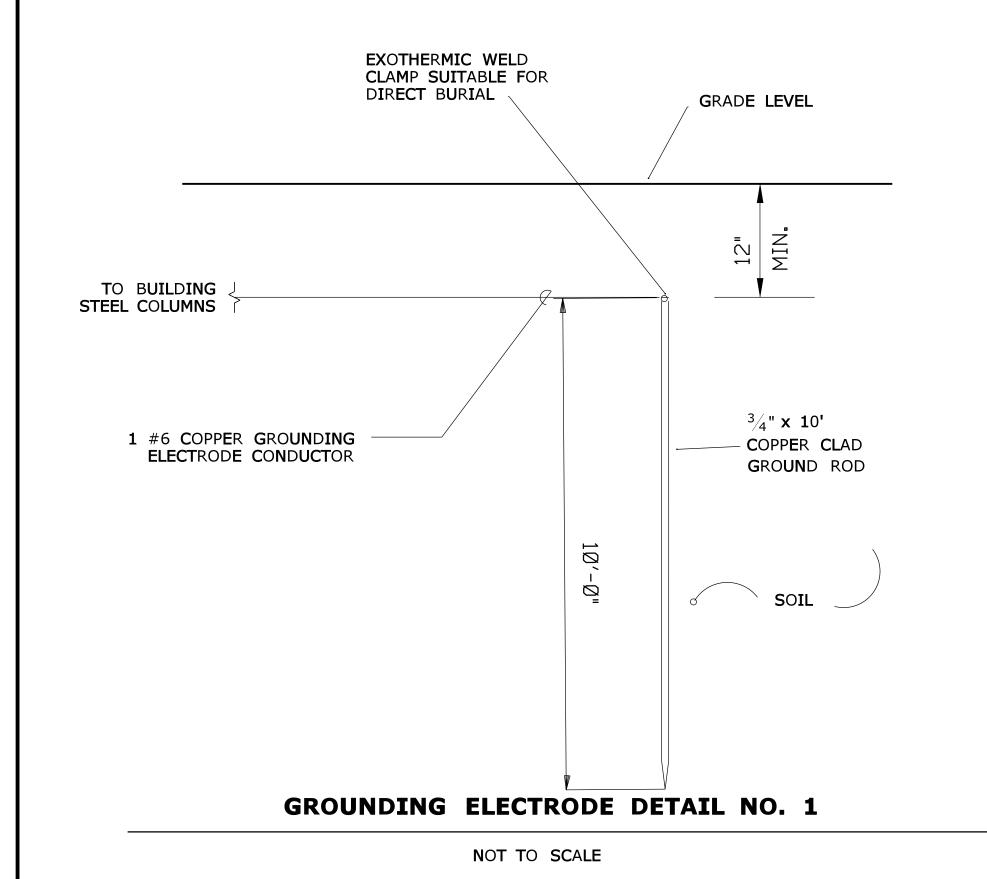
OFFICE OF ENGINEERING

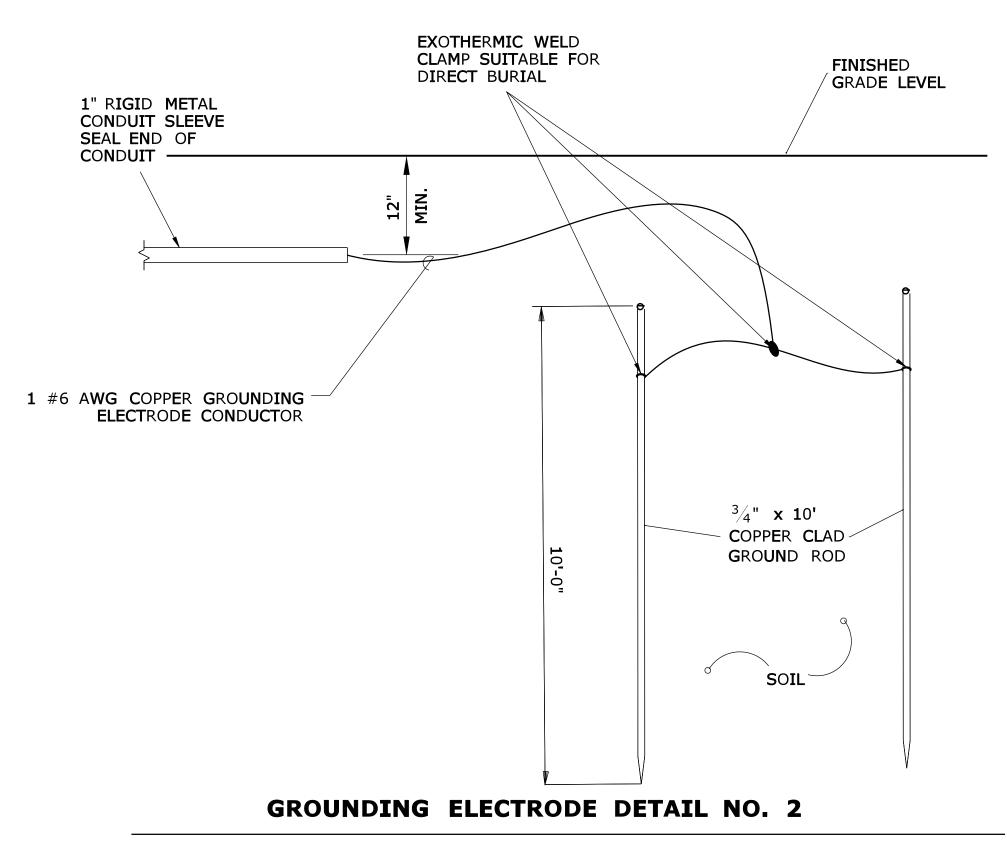
ELECTRICAL
GUIDE SHEET INDEX

E-GD\_INDEX

GUIDE SHEET NO.:

	SYMBOLS  COMED CYMBOLS		COMMUNICATION SYMPOLS				SWITCH CONTROL SYMBOLS
	POWER SYMBOLS		COMMUNICATION SYMBOLS	<u> </u>	ABBR <b>EVIATIONS</b>	S	MANUAL STARTER WITH THERMAL PROTECTION AND PILOT LIGHT
ATS	AUTOMATIC TRANSFER SWITCH	SP	PUBLIC ADDRESS SPEAKER - CEILING MOUNTED	А	A <b>M</b> PERE	S <sub>TP</sub> Sk	KEY LOCK SWITCH, 3-WAY, "b" INDICATES SWITCHING CIRCUIT
	MOLDED CASE CIRCUIT BREAKER	HS	PUBLIC ADDRESS SPEAKER - WALL MOUNTED	AFF	ABOVE FINISHED FLOOR	Sf Sf	FAN SPEED CONTROL SWITCH
400 AF 400 AT	400A FRAME RATING 400A TRIP RATING	$\blacksquare$	COMMUNICATION OUTLET BOX (VOICE AND DATA), 18"AFF UNLESS OTHERWISE INDICATED	AFG	ABOVE FINISHED GRADE	Sa	SWITCH, SINGLE POLE, "a" INDICATES SWITCHING CIRCUIT
<u></u>	GROUND CONNECTION			AHU AUTO	AIR HANDLING UNIT AUTOMATIC	<b>S</b> b <b>3</b>	SWITCH, 3-WAY, "b" INDICATES SWITCHING CIRCUIT
<u> </u>		W	COMMUNICATION OUTLET BOX (VOICE AND DATA) "W" DENOTES WALL HUNG TELEPHONE (48"AFF)	AIC	AMPS INTERRUPTING CAPACITY	Sb 4	SWITCH, 4-WAY, "b" INDICATING SWITCHING CIRCUIT
M	METER PER UTILITY REQUIREMENTS		BASE RADIO FOUNDATION, POLE, AND ANTENNA	ATC ATS	AUTOMATIC TEMPERATURE CONTROLLER AUTOMATIC TRANSFER SWITCH	ST	THERMAL SWITCH, MANUAL STARTER
_	120/208V POWER/LIGHTING PANEL			AVG	AMERICAN WIRING GAUGE		VIDEO MONITOD CYMPOLC
FACP	FIRE ALARM CONTROL PANEL		LIGHT FIXTURE SYMBOLS	BA <b>S</b> B <b>L</b> D <b>G</b>	BUILDING AUTOMATION SYSTEM BUILDING		VIDEO MONITOR SYMBOLS
		PC	PHOTOCELL	BRK.	BR <b>EAKE</b> R		VIDEO CAMERA
<b>⊕ GFI</b>	GROUND FAULT INTERRUPTER, QUADRUPLEX RECEPTACLE, 20A,125V. 42" AFF UNLESS OTHERWISE INDICATED	S	SWITCH BOX WITH SINGLE AUTO/MANUAL SWITCH	CKT.	CONDUIT CIRCUIT		VIDEO MONITOR
	DUPLEX RECEPTACLE, 20A, 125V, 24" AFF IN	10	ALUMINUM POLE WITH 250W, HPS SPOT LUMINAIRE. "LO" INDICATES	COL.	COLUMN		OCCUPANCY SENSORS
	OFFICE CORE, UNLESS OTHERWISE INDICATED	LO LP2-3	ALUMINUM POLE WITH 250W, HPS SPOT LUMINAIRE. "LO" INDICATES FIXTURE TYPE. "LP2-3" INDICATES PANEL AND CIRCUIT NUMBER. SEE LIGHTING FIXTURE SCHEDULE ON DRAWING NO. E-XXX FOR	CT CU	CURRENT TRANSFORMER COPPER	D <b>EVICE</b>	DESCRIPTION
₩BHR	BLOCK HEATER RECEPTACLE		POLE INFORMATION.	D <b>ISC.</b>	DISCONNECT	<b>15</b> 00 ⊗	CEILING MOUNTED PIR, 1500 SQ FT
	GROUND FAULT INTERRUPTER, DUPLEX RECEPTACLE,	L2 🔷 🖒 L2	ALUMINUM POLE WITH TENON BRACKET FOR TWO 150W, HPS LUMINAIRES. "LO" INDICATES FIXTURE TYPE. "PP2-8" INDICATES POWER PANEL	D <b>F</b> DP <b>1</b>	DRINKING FOUNTAIN FUEL POWER PANEL	500	CEILING MOUNTED ULTRASONIC, 500 SQ FT
GFI	20A,125V. 42" AFF UNLESS OTHERWISE INDICATED "+" INDICATES 6" ABOVE COUNTER TOP OR BACKSPLASH	PP <b>2-</b> 8	NO. 2 AND CIRCUIT NO. 8. SEE LIGHTING FIXTURE SCHEDULE ON DRAWING NO. E-XXX FOR POLE INFORMATION.	D <b>WG</b>	DRA <b>WING</b>	500	CEILING MOUNTED MULTI-TECHNOLOGY, 500 SQ FT
	+ INDICATES O ABOVE COUNTER TOP OR BACKSPEASH	L1,L2	ALUMINUM POLE WITH 150W, HPS LUMINAIRE AND ARM-BRACKET. "L1" AND "L2" INDICATES FIXTURE TYPE. "LP2-3" INDICATES PANELS	EDH EF	ELECTRICAL DUCT HEATER EXHAUST FAN	1000	
F	SPECIAL POWER OUTLET 208V, 3 PHASE, 42"AFF	□ LP2-3	AND CIRUIT NUMBER. SEE LIGHTING FIXTURE SCHEDULE ON DRAWING NO. E-XXX FOR POLE INFORMATION.	ELEC. ERV	ELECTRICAL ROOF VENTILATOR, EXHAUST	1000 <-⊗-⊳	CEILING MOUNTED MULTI-TECHNOLOGY, 1000 SQ FT
	FLUSH MOUNTED FLOOR DUPLEX RECEPTACLE, 20A, 125V	12 10	ALUMINUM POLE WITH TENON BRACKET FOR TWO HPS LUMINAIRES	EUH FA	ELECTRICAL UNIT HEATER FIRE ALARM	<b>1</b> 000 <	CEILING MOUNTED ULTRASONIC, 1000 SQ FT
	UNDERGROUND GROUNDING LOOP	L2 L0	(ONE SPOT AND ONE COBRA) "LO, L2" INDICATES FIXTURE TYPE. "PP2-8" INDICATES POWER PANEL NO. 2 AND CIRCUIT NO. 8. SEE LIGHTING FIXTURE	FA FACP	FIRE ALARM FIRE ALARM CONTROL PANEL	$\nabla_{i}$	WALL MOUNTED PIR, 2000 SQ FT (i DENOTES CONTROLLED FIXTURES)
	UNDERGROUND CONDUIT	LP2-4 LP2-3	SCHEDULE ON DRAWING NO. E-XXX FOR POLE INFORMATION.	FL G.C.	FLOOR GENERAL CONTRACTOR	$\bigcirc_{i}$	PIR BAY AREA SENSOR APPROXIMATELY 1000 SQ FT AT 18 FOOT MOUNTING HEIGHT (i DENOTES CONTROLLED FIXTURES)
	CONDUIT EXPOSED	G1 $igoplus$	FLAG POLE LIGHT	GEN	GENERATOR	w	PIR WASHBAY WET LOCATION SENSOR APPROXIMATELY 1000 SQ FT
LP1-3	HOMERUN, LP1-3 DENOTES LIGHTING PANEL NO. 1, CIRCUIT #3	C.		GFI G, GND	GROUND-FAULT INTERRUPTER GROUND	<u> </u>	AT 18 FOOT MOUNTING HEIGHT  POWER PACK FOR 120/230/277VAC SYSTEM
<b>•</b>	EXISTING UTILITY POLE	SL O	SHOWER LIGHT	HID	HIGH INTENSITY DISCHARGE	<>i M	(i DENOTES CONTROLLED FIXTURES)
$ \emptyset $	PROPOSED UTILITY POLE	D	WALL MOUNTED HIGH PRESSURE SODIUM (METAL HALIDE LIGHTING FIXTURE "D" INDICATES FIXTURE TYPE, "LP2-7" INDICATES	HP HPS	HORSEPOWER HIGH PRESSURE SODIUM	\$	WALL SWITCH MULTI-TECHNOLOGY, SELF POWERED
D <b>S</b> PB		LP2-7	PANEL AND CIRCUIT NUMBER, "a" INDICATES SWITCHING CIRCUIT)	HT.	HEIGHT		GENERAL NOTES:
W <sub>P</sub>	EXHAUST FAN WITH WP GFI	B, B <b>1</b> ,B <b>2</b> , B <b>2E</b>	RECESS MOUNTED FLUORESCENT FIXTURE ("B", "B1", "B2", AND "B2E" INDICATES FIXTURE TYPE, "LP2-3" INDICATES PANEL AND CIRCUIT	HTR HZ	HEATER HERTZ	1. MINIMUM SIZE	WIRE FOR POWER AND LIGHTING PANELS CIRCUITS SHALL BE
GFI	EXHAUST FAIN WITH WP GFI	LP2-3 A.C	NUMBER, AND CIRCUIT NUMBER, "a" INDICATES SWITCHING CIRCUIT)	IN.	INCH	#12 AWG. BRAN	NCH CIRCUITS EXCEEDING 100 FEET IN LENGTH SHALL BE #10 AWG. SHALL BE ADJUSTED AS NECESSARY TO REFLECT AMPACITY
		A,C a LP2-3	PENDANT FLUORESCENT LIGHTING FIXTURE ("A" AND "C") INDICATES FIXTURE TYPE, "LP2-3" INDICATES PANEL AND CIRCUIT	<b>J</b> B	JUNCTION BOX	RACEWAY. MININ	TO NUMBER OF LOADED CONDUCTORS SHARING A PARTICULAR MUM CONDUIT SIZE SHALL BE 3/4" AS OUTLINED IN SPECIFICATION
	PROP <b>ELLE</b> R <b>FAN,</b> P <b>LAN VIEW</b>		NUMBER, AND CIRCUIT NUMBER, "a" INDICATES SWITCHING CIRCUIT)	kVA kW	KILOVOLT AMPERE KILOWATTS	SECTION 26053	
	PROPELLER FAN SPEED CONTROL. "a" INDICATES	$\vdash \bigcirc$	WALL MOUNTED LED EXIT SIGN WITH SELF- CONTAINED NI-CAD BATTERY PACK AND CHARGER	LP	LIGHTING PANEL	2. INTERRUPTING ( GREATER THAN	CAPACITY OF ELECTRICAL EQUIPMENT SHALL BE EQUAL TO OR THE AVAILABLE SHORT-CIRCUIT CURRENT AT ITS SUPPLY TERMINAL.
a	FAN(S) CONTROLLED	\ <b>⊗</b>   <sub>X2</sub>	CEILING MOUNTED DOUBLE FACE DIRECTIONAL LED EXIT SIGN WITH	MDP MECH	MAIN DISTRIBUTION POWER PANEL MECHANICAL		ALL, IN A WORKMANLIKE MANNER, PROVIDE COMPLETE OPERABLE
	OVERHEAD DOOR OPERATOR	↓ <b>X</b> 2	SELF-CONTAINED NI-CAD BATTERY PACK AND CHARGER.	MH	METAL HALIDE	SYSTEMS.	
	PUSHBUTTON STATION	EM	EMERGENCY LIGHTING UNIT WITH BATTERY PACK		T. MOUNTING HEIGHT	4. INSTALLER SHAI LOCATE FIXTURI	LL COORDINATE ALL WORK WITH OTHER DIVISION TRADES, ES, DEVICES, ETC, IN ORDER TO AVOID INTERFERENCE.
		I	MIRROR LIGHT LUMINAIRE (LETTER INDICATES FIXTURE TYPE)	NEC N.C.	NATIONAL ELECTRICAL CODE NORMALLY CLOSED	5. ALL FEEDER AND	D BRANCH CIRCUITS SHALL HAVE AN EQUIPMENT GROUND
M	MOTOR AMPERE RATING AND HORSEPOWER AS INDICATED	<b>∣</b> E <b>M</b> R	WEATHERPROOF BATTERY OPERATED EMERGENCY EGRESS REMOTE HEAD	N.O.	NORMALLY OPEN		CLUDED WITH PHASE WIRING.
2	MOTOR STARTER			O <b>.C.</b> PB	ON CENTER PUSH BUTTON		N OUTLETS SHALL BE INSTALLED AND WIRED IN ACCORDANCE 568 STANDARDS.
	COMBINATION MOTOR STARTER		FIRE ALARM SYMBOLS	P <b>F</b> P <b>I</b> R	PADDLE FAN PASSIVE INFRARED		STALLER SHALL BE RESPONSIBLE FOR THE POWER WIRING GY MANAGEMENT SYSTEM. THE ELECTRICAL INSTALLER SHALL
	DISCONNECT SWITCH, AMPERE RATING AS INDICATED	FS	FLOW SWITCH	P.V.C. PF	POLYVINYL CHLORIDE CONDUIT POWER FACTOR	COORDINATE W	ITH BAS/ATC INSTALLER. ALL POWER FOR BAS/ATC CONTROLS  SAME UPS THAT POWERS THE BAS/ATC HEAD END.
F - 30A	FUSED DISCONNECT SWITCH, AMPERE RATING AS INDICATED	TS	TAMPER SWITCH	PP DNI	POWER PANEL PANEL		ING SHOWN ON THE PLANS ARE ONLY DIAGRAMMATIC IN NATURE.
	. 3325 51333 MEDICATED	PS	PRESSURE SWITCH	R <b>M</b> R <b>EC</b>	ROOM RECEPTACLE		SHALL HAVE SEPARATE NEUTRAL CONDUCTOR FROM
	CONCRETE HANDHOLE	$\boldsymbol{\boxminus}$	FIRE ALARM BELL FOR SPRINKLER SYSTEM	R <b>GS</b>	RIGID GALVANIZED STEEL	ELECTRICAL PAN	
			FIRE ALARM WITH STROBE LIGHT- SURFACE MOUNTED	RP R <b>TAC</b>	RECEPTACLE PANEL ROOF TOP AIR CONDITIONER		AND BOXES IN OFFICE CORE AREA ONLY SHALL BE D FOR TEMPERATURE SENSORS ASSOCIATED WITH BAS SYSTEM.
(J) [J]	JUNCTION BOX			SPECS S <sub>"X"</sub>	SPECIFICATIONS SWITCH, SINGLE POLE		RDS SHALL BE MOUNTED ON $\frac{3}{4}$ " FIRE RETARDANT PLYWOOD,
РВ	PULL BOX	F	FIRE ALARM HORN WITH STROBE LIGHT- SURFACE MOUNTED	SW	"X" INDICATES SWITCHING CIRCUIT SWITCH	TREATED ON A	LL SIDES, AND PAINTED WITH TWO COATS OF BLACK LAYER ENAMEL.
=	BRINE SYSTEM RECEPTACLE	<u> </u>	FIRE ALARM PULL STATION - SURFACE MOUNTED	3PH	THREE PHASE		STOP AROUND ALL ELECTRICAL CONDUIT PENETRATIONS RESISTANCE RATED WALLS.
		F	42" AFF. UNLESS OTHERWISE INDICATED.	<b>3</b> P <b>TY</b> P.	THREE POLE TYPICAL		UAL TO THE WIDTH AND DEPTH OF SERVICE EQUIPMENT,
AT	AUTOTRANSFORMER	(SD)	SMOKE DETECTOR IONIZATION TYPE.	UH UPS	UNIT HEATER UNINTERUPTABLE POWER SUPPLY	SWITCHBOARDS	S PANEL BOARDS AND MOTOR CONTROL CENTERS EXTENDING UP
	TRANSFORMED DATING AS INDICATED	( <b>3</b> D)		V	VOLT	CEILING, WHICH INSTALLATION. F	OR TO A HEIGHT OF 6'ABOVE THE EQUIPMENT OR TO THE STRUCTURAL HEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL FOREIGN SYSTEMS (SUCH AS WATER PIPING) INSTALLED DIRECTLY
3	TRANSFORMER, RATING AS INDICATED	(2)	DUCT MOUNTED SMOKE DETECTOR TO BE FURNISHED, WIRED, AND CONNECTED BY THE ELECTRICAL INSTALLER.	W WP	WATT OR WIRE WEATHERPROOF	ABOVE THE DED THAT OCCURENCE	DICATED SPACE MUST INCLUDE PROTECTIVE EQUIPMENT THAT INSURES CES SUCH AS LEAKS, CONDENSATION, AND BREAKS DO NOT DAMAGE
				<b>XFM</b> R	TRANSFORMER	ELECTRICAL EQU	UIPMENT BELOW. SEE NEC ARTICLE 110.26 FOR FURTHER DETAILS.
		DESIGNER/DRAFTER:	SIGNATURE/ BLOCK:		PROJECT TITLE:		TOWN: PROJECT NO.
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	-	SCALE AS	NOTED				SYMBOLS, ABBREVIATIONS, SHEET NO. AND GENERAL NOTES 2
REV. DATE RE	VISION DESCRIPTION SHEET NO. Plotted Date: 9/14/2009		Filename:\CTDOT_ELECTRICAL_GD.dgn				AND GLINAL HOTES



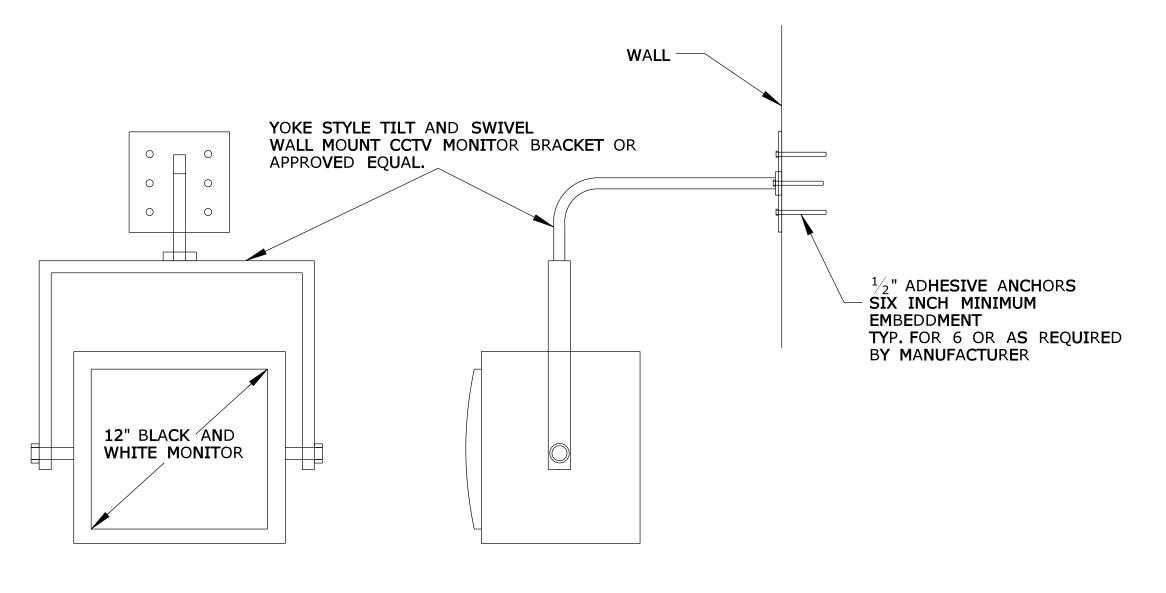


NOT TO SCALE

## **INSTALLATION NOTES:**

- 1. THE STEEL FRAMEWORK OF THE BUILDING SHALL BE GROUNDED WITH A DRIVEN GROUND ROD AT LOCATIONS SHOWN.
- 2. INSTALL GROUND RING 3 FEET FROM BUILDING AND 30 INCHES MINIMUM BELOW FINAL GRADE. COORDINATE WORK WITH PAVING AND STRUCTURAL WORK.
- 3. ALL GROUND CONDUCTORS SHALL BE CONCEALED.
- 4. THE STEEL FRAMEWORK OF THE BUILDING SHALL BE GROUNDED WITH A DRIVEN GROUND ROD AT THE BASE OF EVERY CORNER COLUMN AND AT INTERMEDIATE EXTERIOR COLUMN AT DISTANCES NOT MORE THAN 60 FEET

DESIG	SIGNER/DRAFTER:	SIGNATURE/	PROJECT TITLE:	TOWN:	PRO <b>JECT N</b> O.
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OF WORK WHICH WILL BE REQUIRED.				GROUNDING AND	SHEET NO.
	SCALE AS NOTED			DONDING DETAILS	3
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 9/14/2009	Filename:\CTDOT_ELECTRICAL_GD.dgn			BONDING DETAILS	





BLACK AND WHITE CCTV CAMERA
IN EVIROMENTAL ENCLOSURE
WITH HEATER

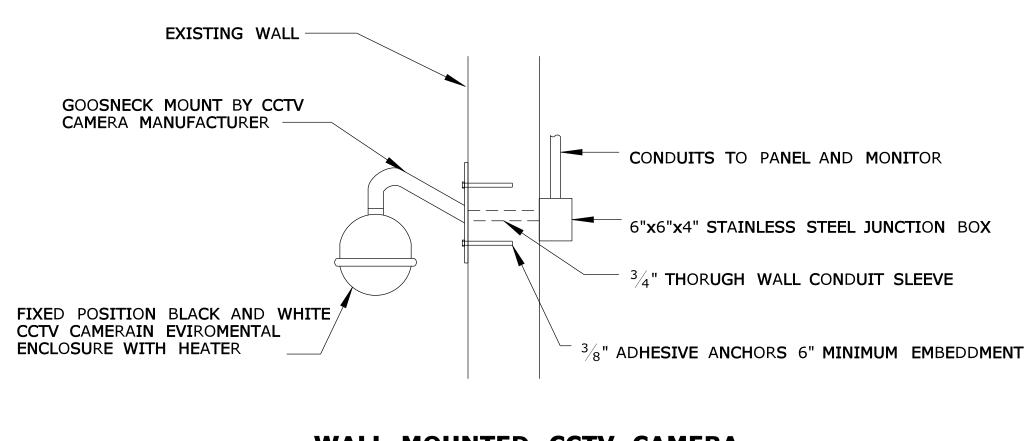
6"x6"x4" STAINLESS STEEL JUNCTION BOX

BLACK AND WHITE 12" MONITOR
WITH ROTATING AND TILTING
WALL MOUNTED

TO PANEL PX-XX
DEDICATED VIDEO
MONITOR RECEPTACLE

TO PANEL PX-XX
DEDICATED VIDEO
CAMERA CIRCUIT





WALL MOUNTED CCTV CAMERA

NTS

		DESIGNER/DRAFTER:	NNECT/C	SIGNATURE/	PROJECT TITLE:	TOWN:	PRO <b>JECT N</b> O.
	- THE INFORMATION, INCLUDING ESTIMAT	ED -		BLOCK:			_
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	-	SCALE AS NOTED				CCTV DETAILS	4
REV. DATE REVISION DESCRIPTION	SHEET NO. Plotted Date: 9/14/2009		Filename:\CTDOT_ELECTRICAL_GD.dgn			CCIV DETAILS	

