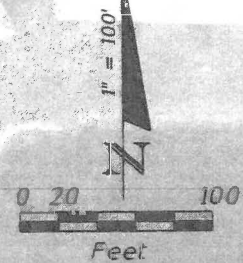


MATCH LINE STA. 182+00.00



LORRAINE ROAD

EXIST. R/W

EXIST. R/W

POT STA. 194+11.43

185

SURVEY UNIVERSITY PARKWAY

190

UNIVERSITY PKWY.

UNIVERSITY PKWY.

EXIST. 96 STR SMFOC

EXISTING FIBER OPTIC
PULL BOX TO REMAIN

EXIST. 96 STR SMFOC

LORRAINE ROAD

END PROJECT
STA 189+75

SURVEY UNIVERSITY PKWY.

EXIST. R/W

CONSTRUCTION NOTE:

1. SEE NEXT SHEET FOR DETAILS.



No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	BB
DRAWN BY	GS
CHECKED BY	CR



HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE
6/3/2016
PROJECT NO.
6052010

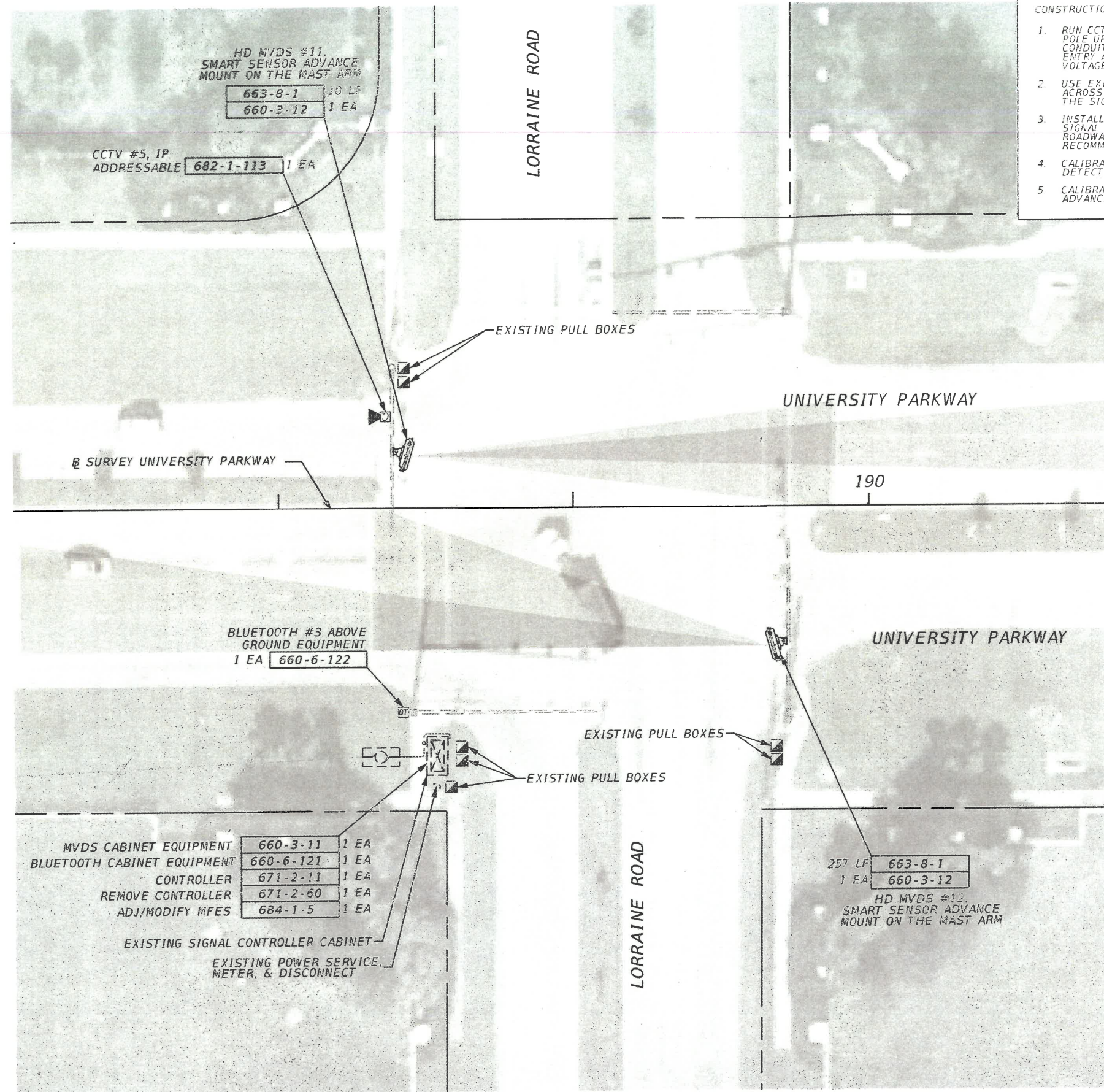
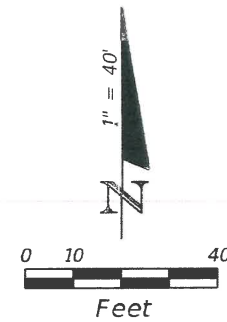


MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
BIJAN BEHZADI
FL. LICENSE NO.
43868

ATMS PLAN (II)

SHEET
NO.
IT-22

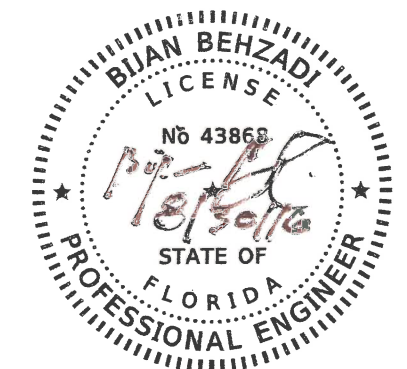


CONSTRUCTION NOTES:

1. RUN CCTV AND SMART SENSOR ADVANCE CABLES DOWN THE SIGNAL POLE UPRIGHT TO TERMINAL COMPARTMENT DOWN THROUGH EXISTING CONDUITS IN FOUNDATION AND USE EXISTING LOW VOLTAGE CONDUIT ENTRY AT THE POLE BASE TO BRING CABLES TO THE EXISTING LOW VOLTAGE PULL BOX.
2. USE EXISTING LOW VOLTAGE CONDUIT RACEWAYS TO ROUTE THE CABLES ACROSS UNIVERSITY PARKWAY AND LORRAINE ROAD AND TERMINATE IN THE SIGNAL CABINET.
3. INSTALL BLUETOOTH ANTENNA FOR BLUE TOAD POE SYSTEM ON SIGNAL UPRIGHT POLE IN SOUTHEAST CORNER AT 14' ABOVE ROADWAY IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION MANUAL.
4. CALIBRATE AND PROGRAM THE SMART SENSOR ADVANCE FOR PRESENT DETECTION ON UNIVERSITY PKWY.
5. CALIBRATE AND PROGRAM THE SMART SENSOR ADVANCE FOR 600 FEET ADVANCE DETECTION ON UNIVERSITY PKWY.

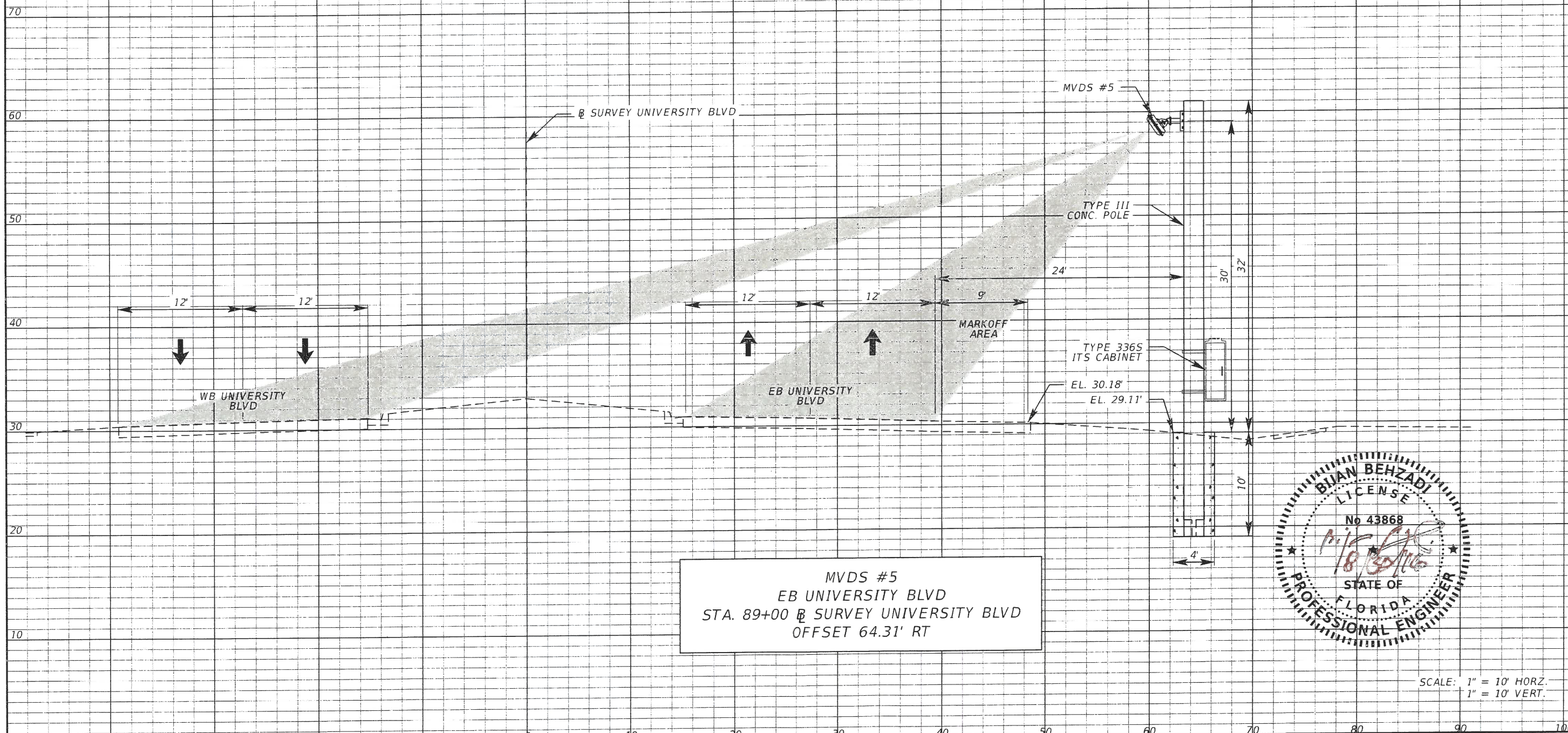
TABLE OF REFERENCES

DESCRIPTION OF DETAIL	SHEET #
SPLICE DIAGRAM	IT-28
CCTV AND SMART SENSOR ADVANCE MOUNTING DETAIL	IT-29
CCTV AND SMART SENSOR ADVANCE BLOCK DIAGRAM	IT-31

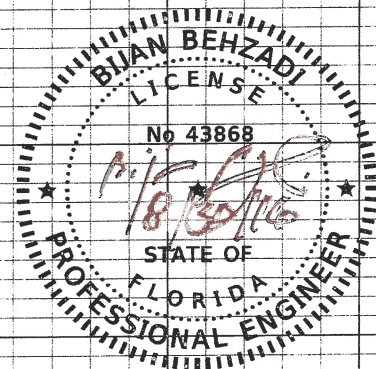


				SCALE	AS NOTED		HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	6/3/2016		MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	BIJAN BEHZADI	ATMS PLAN (11A)	SHEET NO.
				DESIGNED BY	BB			PROJECT NO. 6052010	FL. LICENSE NO. 43868			IT-23			
				DRAWN BY	GS										
				CHECKED BY	CR										
No.	REVISIONS	DATE	BY												

NOTE:
1. UTILITY LOCATIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF PRESTRESSED CONCRETE POLE.



MVDS #5
EB UNIVERSITY BLVD
STA. 89+00 @ SURVEY UNIVERSITY BLVD
OFFSET 64.31' RT



				SCALE	DATE		DESIGN ENGINEER		CROSS SECTION (1)	SHEET NO.	
				AS NOTED	6/3/2016		BIJAN BEHZADI			IT-24	
				DESIGNED BY BB	PROJECT NO. 6052010		FL. LICENSE NO. 43868				
				DRAWN BY GS							
				CHECKED BY CR							
No	REVISIONS			DATE	BY	MANATEE COUNTY PUBLIC WORKS					



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Sarasota, FL 34232-6233
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MANATEE COUNTY
PUBLIC WORKS



MANATEE COUNTY
PUBLIC WORKS

FL. LICENSE NO.
43868

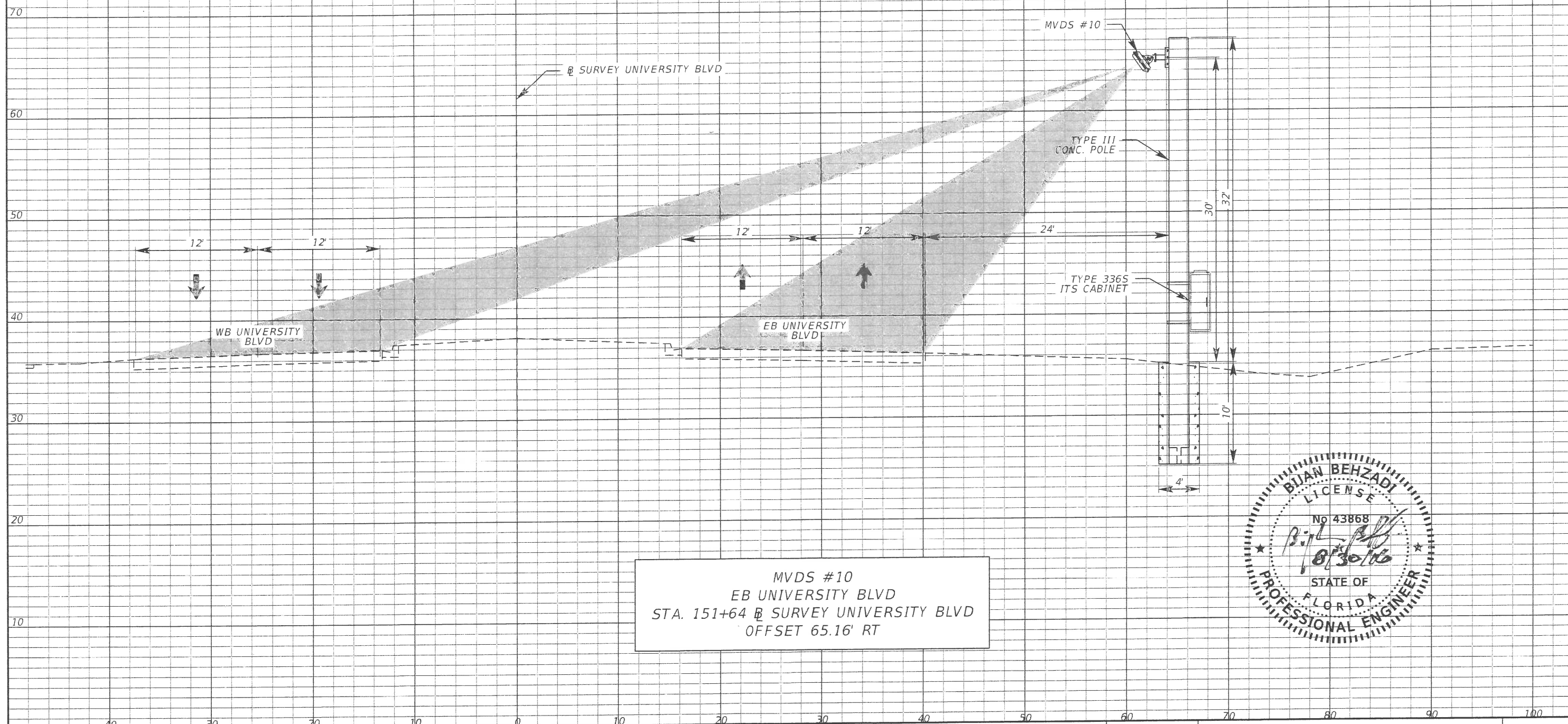
CROSS SECTION (1)

IT-24

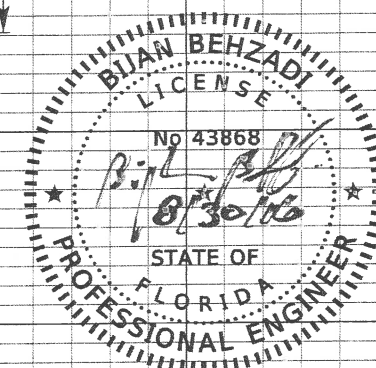
FILE: C:\Users\Bijan\Documents\2016\6052010\6052010.dgn

NOTE:

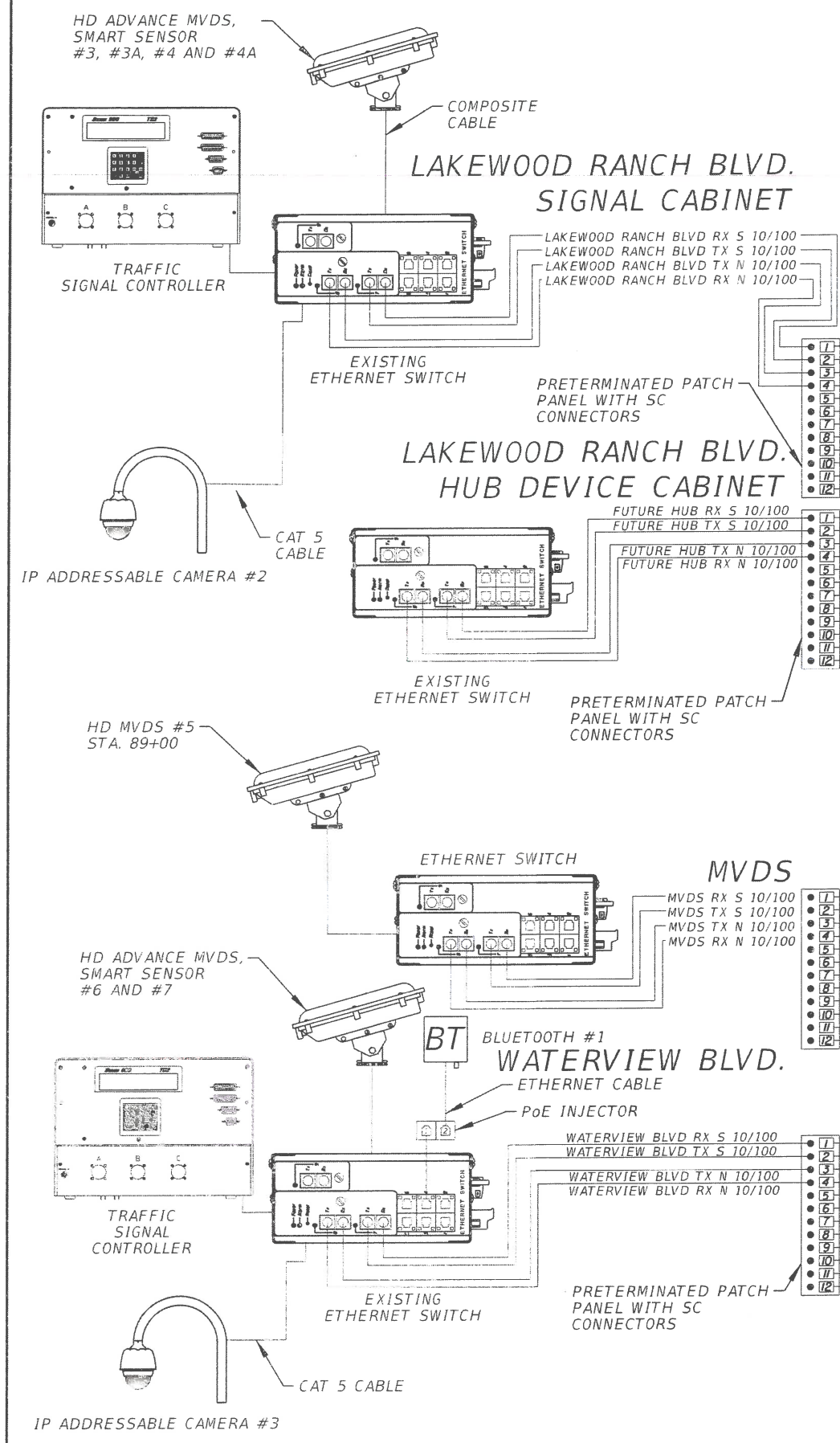
1. UTILITY LOCATIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF PRESTRESSED CONCRETE POLE.



MVDS #10
EB UNIVERSITY BLVD
STA. 151+64 @ SURVEY UNIVERSITY BLVD
OFFSET 65.16' RT



				SCALE	AS NOTED		HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	6/3/2016		MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	BIJAN BEHZADI	CROSS SECTION (2)	SHEET NO. IT-25		
				DESIGNED BY	BB		PROJECT NO.	6052010	FL. LICENSE NO.		43868						
				DRAWN BY	GS												
				CHECKED BY	CR												
No.	REVISIONS			DATE	BY	C:\Users\Bijan\OneDrive\Documents\Manatee County Public Works\2016\6052010\6052010.dgn											

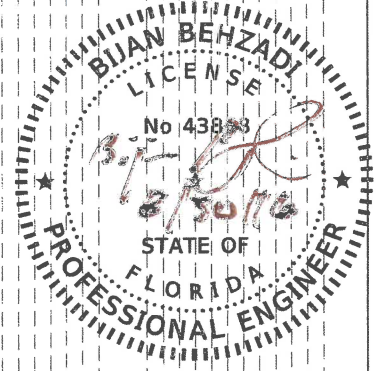
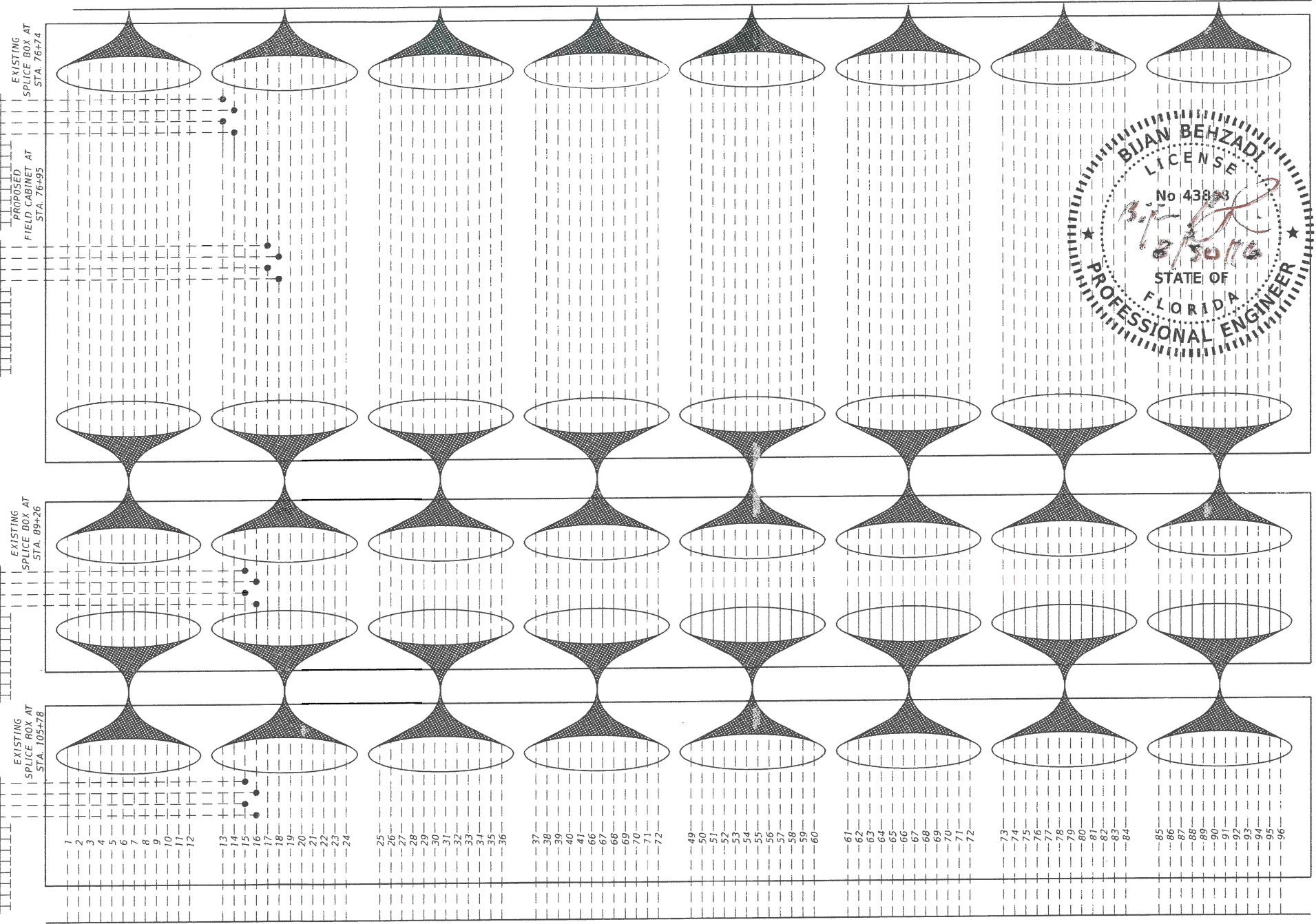


COLOR CODE
TIA/EIA 598A

- | | |
|------------|-------------|
| (1) BLUE | (7) RED |
| (2) ORANGE | (8) BLACK |
| (3) GREEN | (9) YELLOW |
| (4) BROWN | (10) VIOLET |
| (5) SLATE | (11) ROSE |
| (6) WHITE | (12) AQUA |

- NOTES:
1. UNUSED FIBERS SHALL BE LEFT COILED, CAPPED, AND STORED IN SPLICE BOX.
 2. UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN SPLICE TRAY.

MATCH LINE SPLICE DIAGRAM (1)



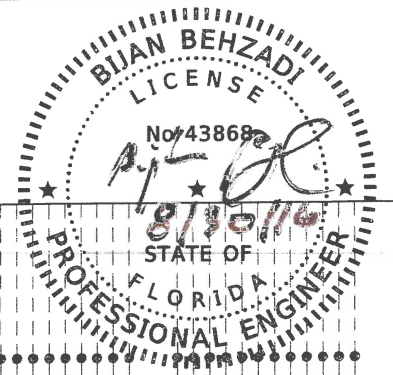
MATCH LINE SPLICE DIAGRAM (3)

BLUE ORANGE GREEN BROWN SLATE WHITE RED BLACK

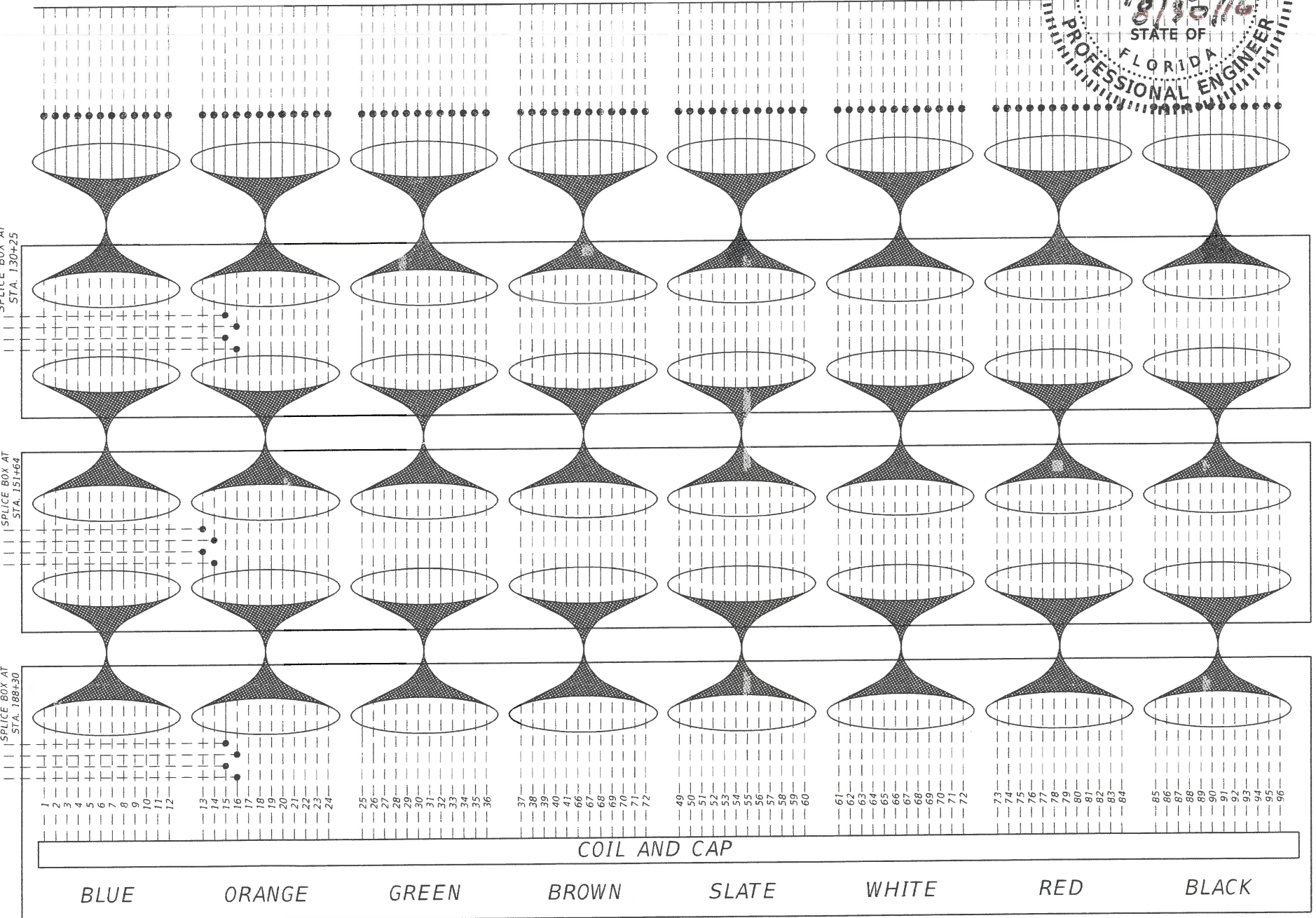
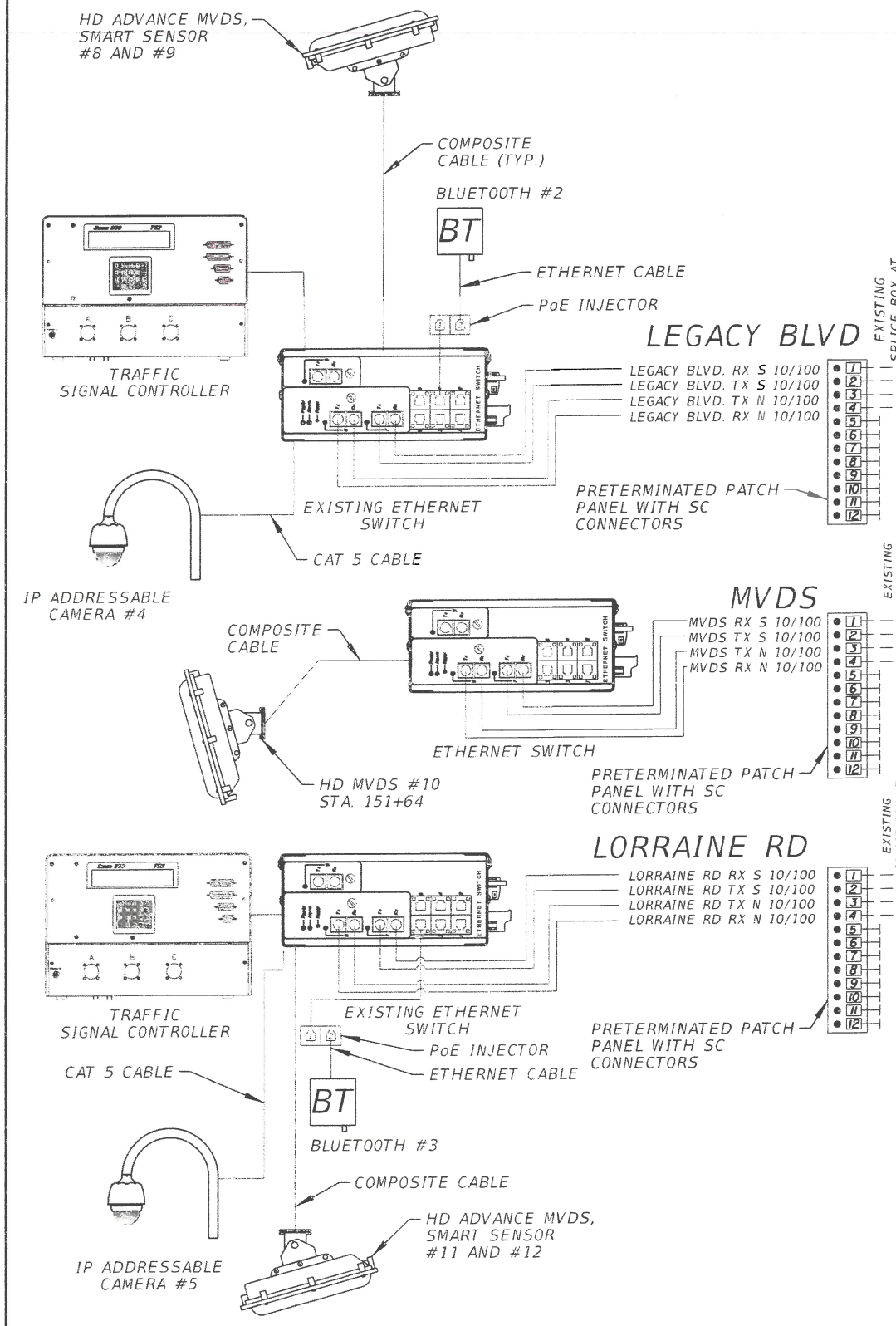
96-SM FOC UNDERGROUND

				SCALE		HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 6/3/2016		MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	<i>SPLICE DIAGRAM (2)</i>	SHEET NO. IT-27
				AS NOTED						BIJAN BEHZADI		
				DESIGNED BY BB			FL. LICENSE NO.					
				DRAWN BY GS			43868					
No.	REVISIONS			DATE	BY	CHECKED BY CR	PROJECT NO. 6052010					

SPLICE DIAGRAM (2)



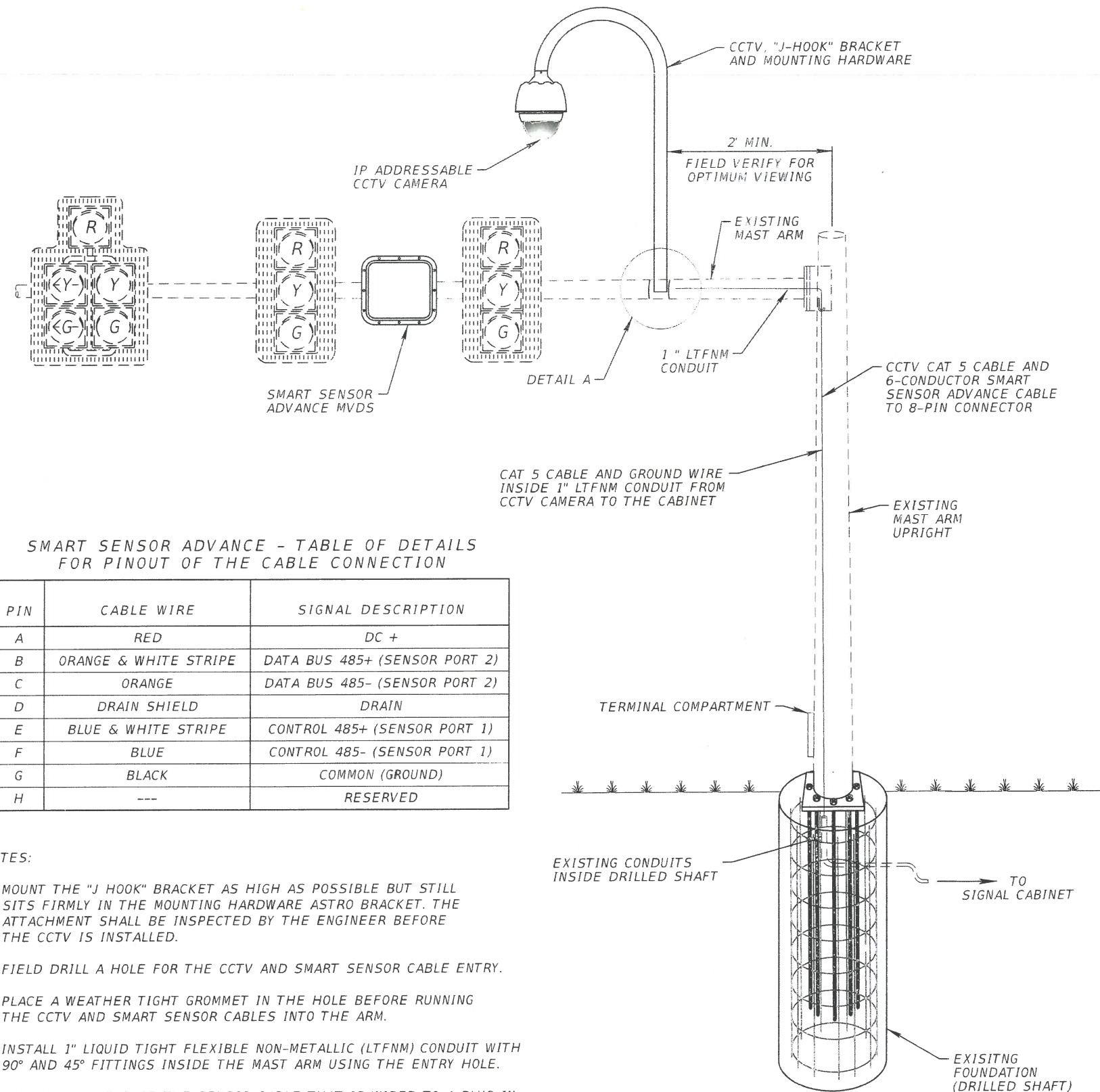
MATCH LINE SPLICE DIAGRAM (2)



COLOR CODE TIA/EIA 598A	
(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

- NOTES:**
- UNUSED FIBERS SHALL BE LEFT COILED, CAPPED, AND STORED IN SPLICE BOX.
 - UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN SPLICE TRAY.

					SCALE	AS NOTED		HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 6/3/2016		MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	SPLICE DIAGRAM (3)	SHEET NO. IT-28
					DESIGNED BY	BB						BIJAN BEHZADI		
					DRAWN BY	GS						FL. LICENSE NO.		
					CHECKED BY	CR						43868		
No.	REVISIONS			DATE	BY	p:64-02.DWG \\\007982\CON\0088774\7700								

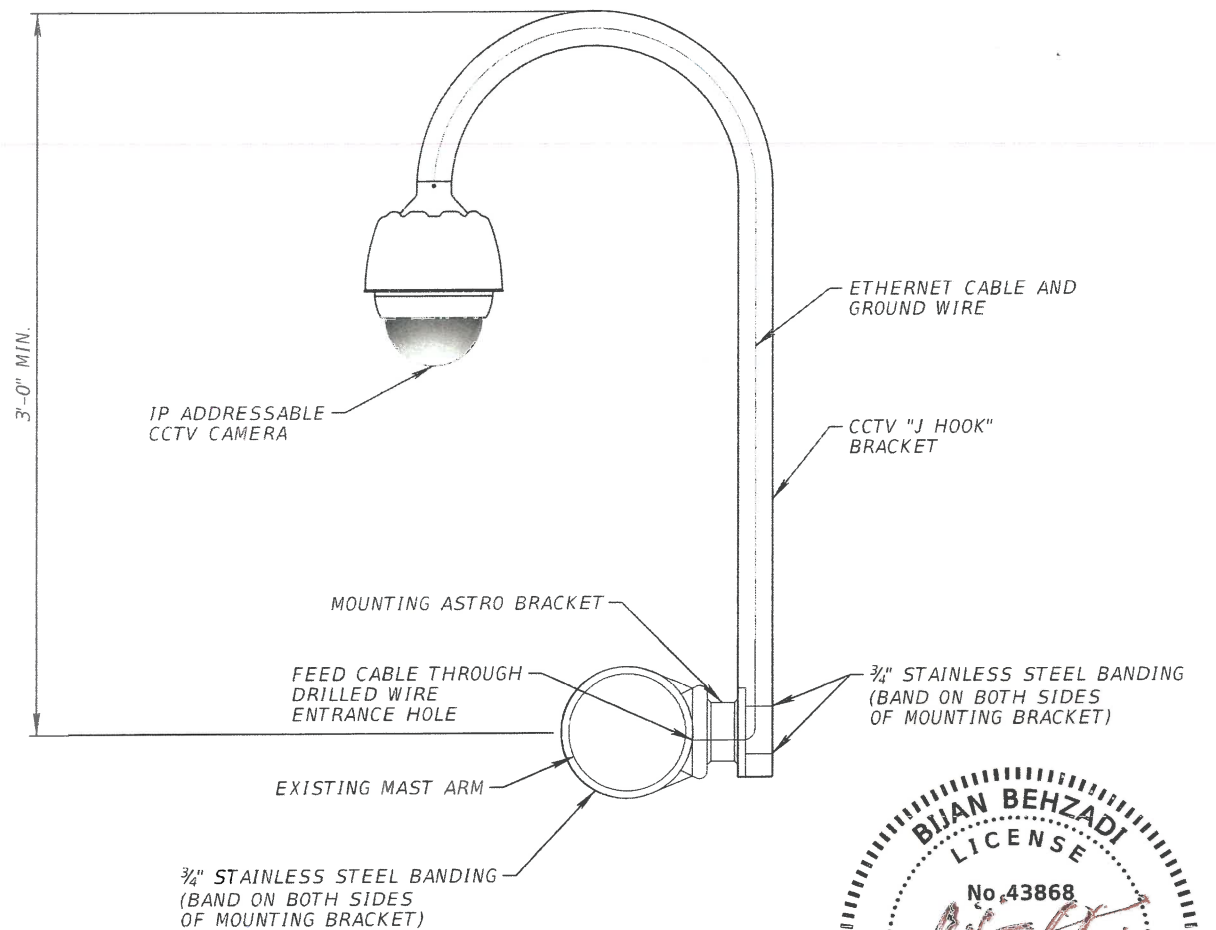


SMART SENSOR ADVANCE - TABLE OF DETAILS
FOR PINOUT OF THE CABLE CONNECTION

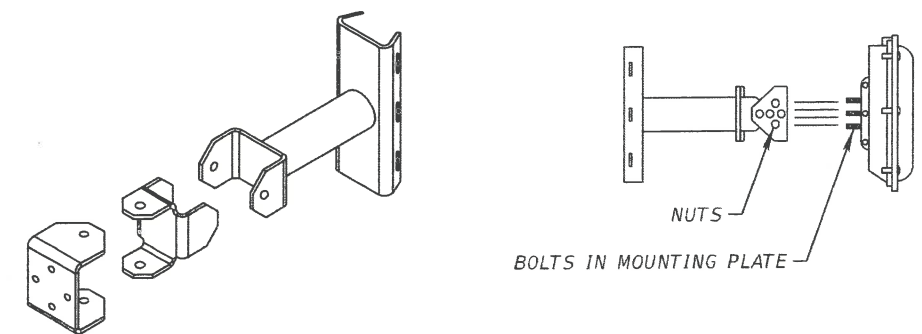
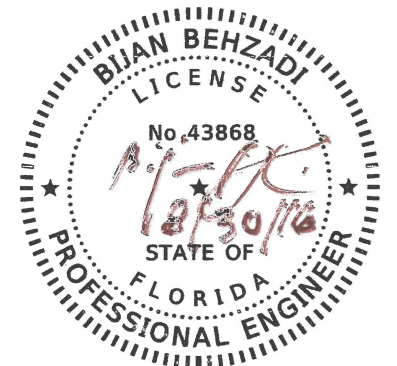
PIN	CABLE WIRE	SIGNAL DESCRIPTION
A	RED	DC +
B	ORANGE & WHITE STRIPE	DATA BUS 485+ (SENSOR PORT 2)
C	ORANGE	DATA BUS 485- (SENSOR PORT 2)
D	DRAIN SHIELD	DRAIN
E	BLUE & WHITE STRIPE	CONTROL 485+ (SENSOR PORT 1)
F	BLUE	CONTROL 485- (SENSOR PORT 1)
G	BLACK	COMMON (GROUND)
H	---	RESERVED

NOTES:

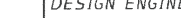
1. MOUNT THE "J HOOK" BRACKET AS HIGH AS POSSIBLE BUT STILL SITS FIRMLY IN THE MOUNTING HARDWARE ASTRO BRACKET. THE ATTACHMENT SHALL BE INSPECTED BY THE ENGINEER BEFORE THE CCTV IS INSTALLED.
2. FIELD DRILL A HOLE FOR THE CCTV AND SMART SENSOR CABLE ENTRY.
3. PLACE A WEATHER TIGHT GROMMET IN THE HOLE BEFORE RUNNING THE CCTV AND SMART SENSOR CABLES INTO THE ARM.
4. INSTALL 1" LIQUID TIGHT FLEXIBLE NON-METALLIC (LTFNM) CONDUIT WITH 90° AND 45° FITTINGS INSIDE THE MAST ARM USING THE ENTRY HOLE.
5. CONNECT THE END OF THE SENSOR CABLE THAT IS WIRED TO A PLUG-IN TERMINAL CONNECTOR. AFTER TERMINATING THE END OF THE CABLE, CONNECT TO A BACK PLATE OR CLICK 600/650.



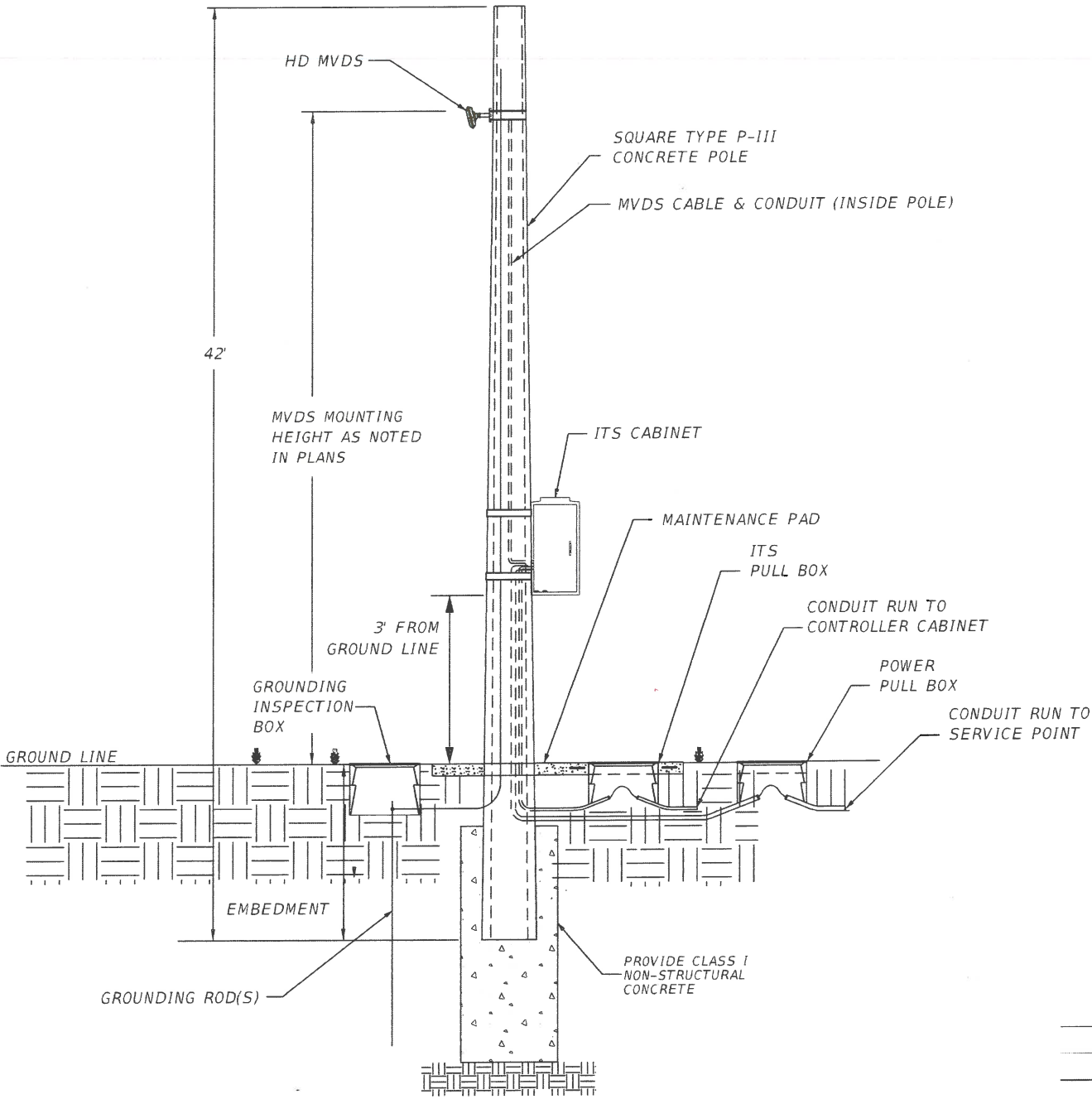
DETAIL A
NTS



SMART SENSOR ADVANCE
ATTACHMENT DETAIL
NTS

				SCALE	AS NOTED		HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	6/3/2016		MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	BIJAN BEHZADI	CCTV AND SMART SENSOR ADVANCE MOUNTING DETAIL	SHEET NO.
				DESIGNED BY	BB			PROJECT NO. 6052010	FL. LICENSE NO. 43868			IT-29			
				DRAWN BY	GS										
				CHECKED BY	CR										
No.	REVISIONS		DATE	BY											

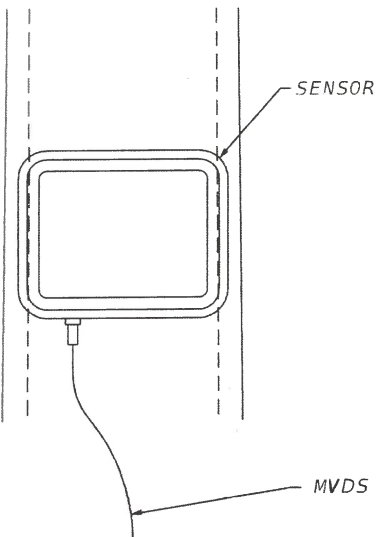
HD MVDS MOUNTING DETAILS
N.T.S.



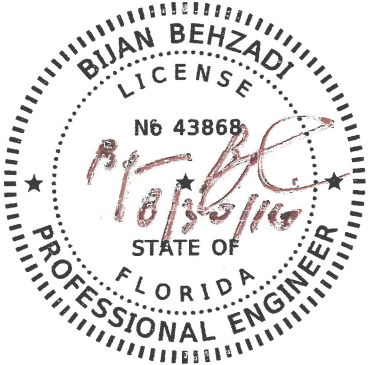
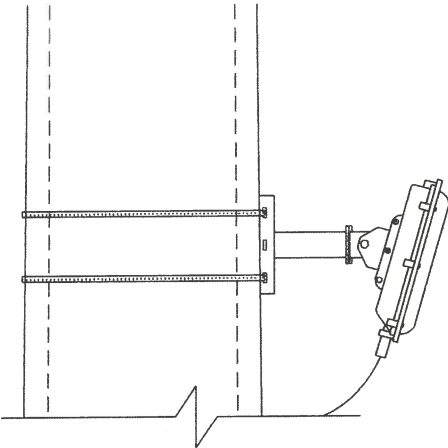
MVDS POLE INSTALLATION DETAIL
N.T.S.

- NOTES:
- 1. COMPONENT ARMS FOR THE MVDS ARE TO BE ATTACHED TO THE POLE USING 1/2" OR GREATER STAINLESS STEEL BANDING.
 - 2. SET UP VIRTUAL SPEED PAIRS ACCORDING TO THE REQUIREMENTS OF THE MVDS USERS MANUAL.

FRONT VIEW
N.T.S.

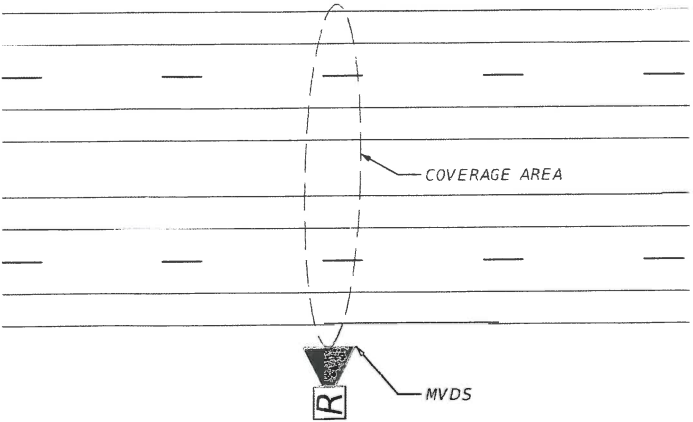


SIDE VIEW
N.T.S.



- GROUNDING NOTES:
- 1. ALL EXOTHERMIC WELDS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.
 - 2. THE CONTRACTOR SHALL USE EXOTHERMIC WELD MOLDS RECOMMENDED BY THE MANUFACTURER SPECIFIC TO EACH WELD APPLICATION. MOLDS SHALL BE APPROVED BY THE MANUFACTURER FOR #2 AWG TIN-PLATED SOLID CONDUCTOR WIRE.
 - 3. THE STRUCTURE SHALL BE CONNECTED TO THE GROUNDING ARRAY. POLE-MOUNTED CABINETS WHICH SUPPORT ITS DEVICES ON THE STRUCTURE SHALL ALSO BE GROUNDED TO THE COMMON GROUNDING ARRAY IF THE CABINETS ARE WITHIN 100 FEET OF THE STRUCTURE.
 - 4. GROUND WIRE LEADS SHALL BE BONDED TO EQUIPMENT CABINETS WITH A COPPER GROUND BAR. BOND SHALL BE LOCATED ON THE INSIDE OF THE CABINET WITH THE EARTH WIRE TERMINATED IN A CABLE LUG, BOLTED TO THE GROUND BAR AND PROTECTED WITH AN ELECTRICALLY CONDUCTIVE COMPOUND DESIGNED TO PREVENT OXIDATION AND CHEMICAL CORROSION.
 - 5. THE GROUNDING SYSTEM SHALL MEET THE REQUIREMENT OF 5 OHMS OR LESS AS MEASURED FROM THE ITS STRUCTURE USING THE THREE-POINT GROUND MEASUREMENT TECHNIQUE. IF THE 5-OHM REQUIREMENT IS NOT MET, LONGER GROUND RODS MAY BE USED OR THE GROUNDING ARRAY EXTENDED UNTIL THE 5-OHM REQUIREMENT IS MET.
 - 6. GROUNDING CONDUCTOR SHALL BE BONDED AT TOP AND BOTTOM OF RIGID GALVANIZED CONDUIT.

TYPICAL LAYOUT

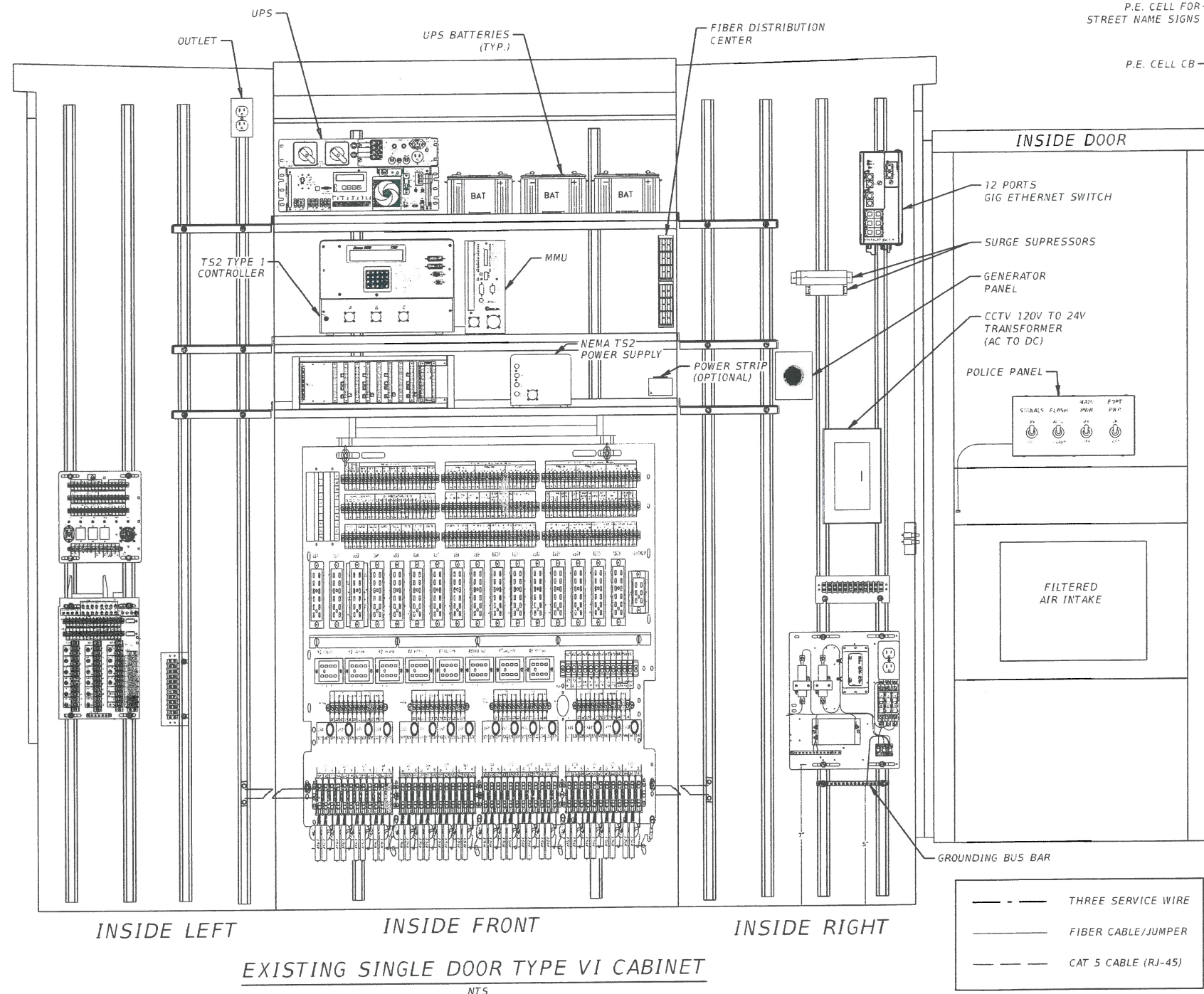


				SCALE AS NOTED		HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 6/3/2016	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER BIJAN BEHZADI	TYPICAL MVDS INSTALLATION DETAILS	SHEET NO.
				DESIGNED BY BB			PROJECT NO. 6052010		FL. LICENSE NO. 43868		IT-30
				DRAWN BY GS							
				CHECKED BY CR							
No.	REVISIONS	DATE	BY								

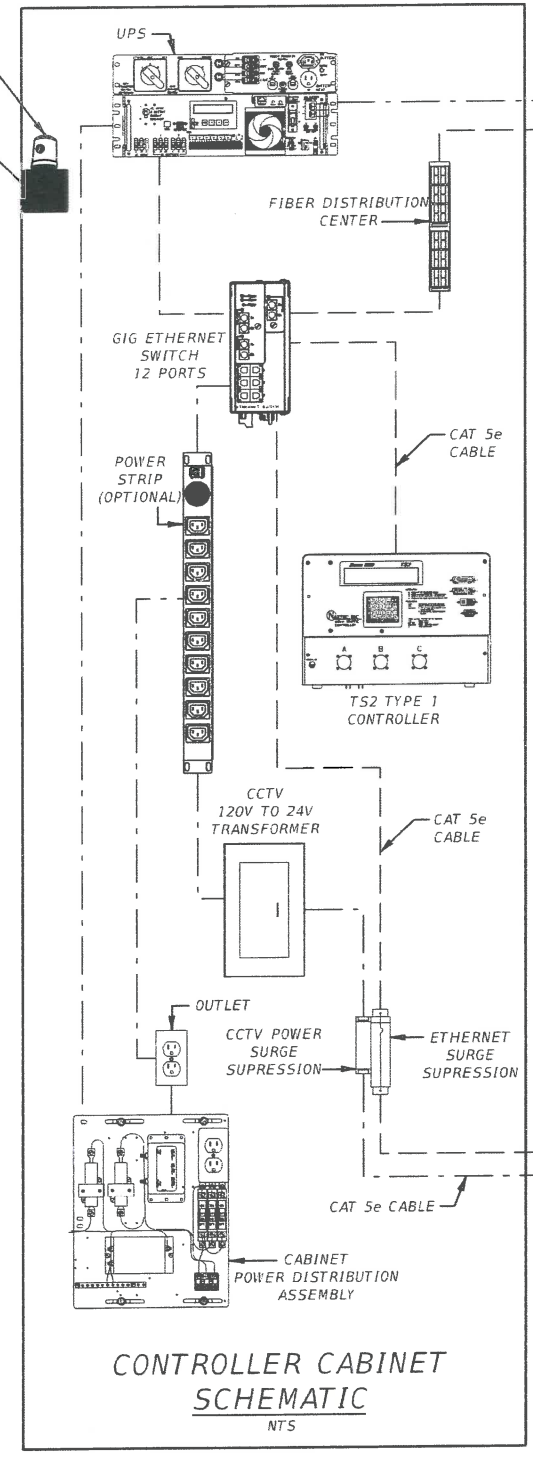
ETHERNET BASED BLUETOAD SYSTEM - COMPONENTS DETAIL

ITEM ID	DESCRIPTION	NOTE
1	FIBERGLASS ENCLOSURE	SEE NOTE 1
2	BLUETOOTH READER MODULE	ETHERNET BASED
3	BLUETOOTH ANTENNA	OMNI DIRECTIONAL
4	POWER OVER ETHERNET SPLITTER	
5	POWER OVER ETHERNET DC INJECTOR	POWERED BY AC IN TRAFFIC CONTROL CABINET

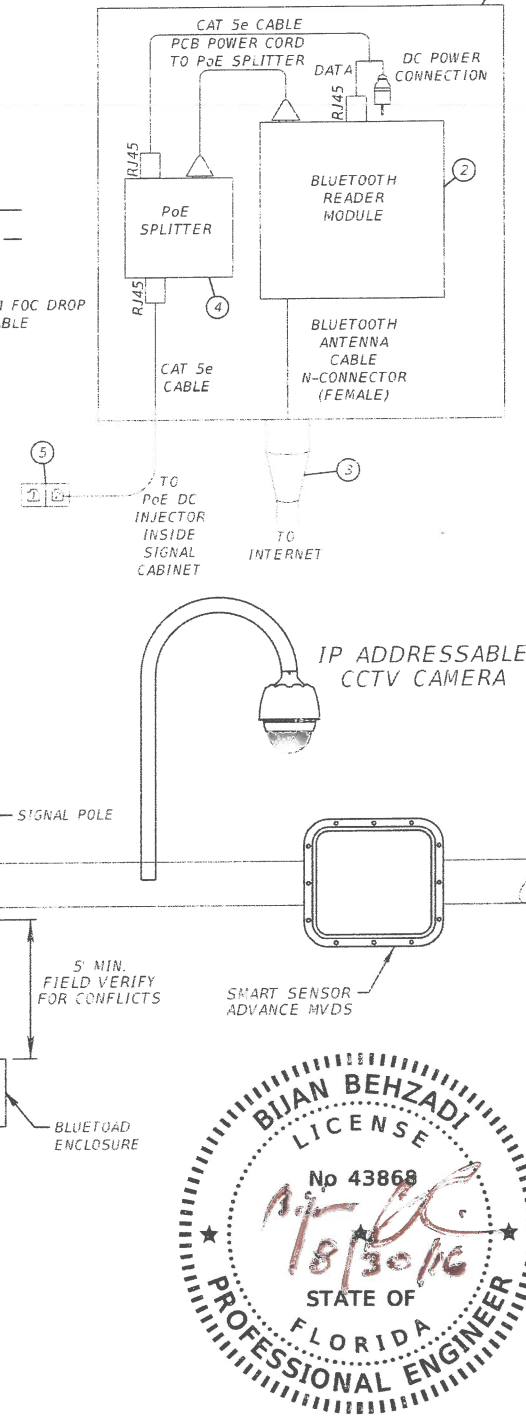
NOTE 1: FIBERGLASS NEMA 3R RATED ENCLOSURE WITH RAISED SNAP LATCH HINGED COVER 10" X 8" X 5.75". ENCLOSURE SHALL BE ATTACHED TO A POLE USING TWO GALVANNEALED STEEL AN BRACKETS.



CCTV CONNECTION DIAGRAM

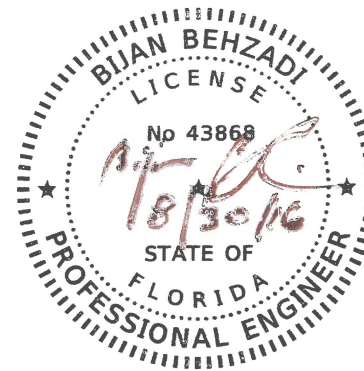


ETHERNET BASED BLUETOAD SYSTEM



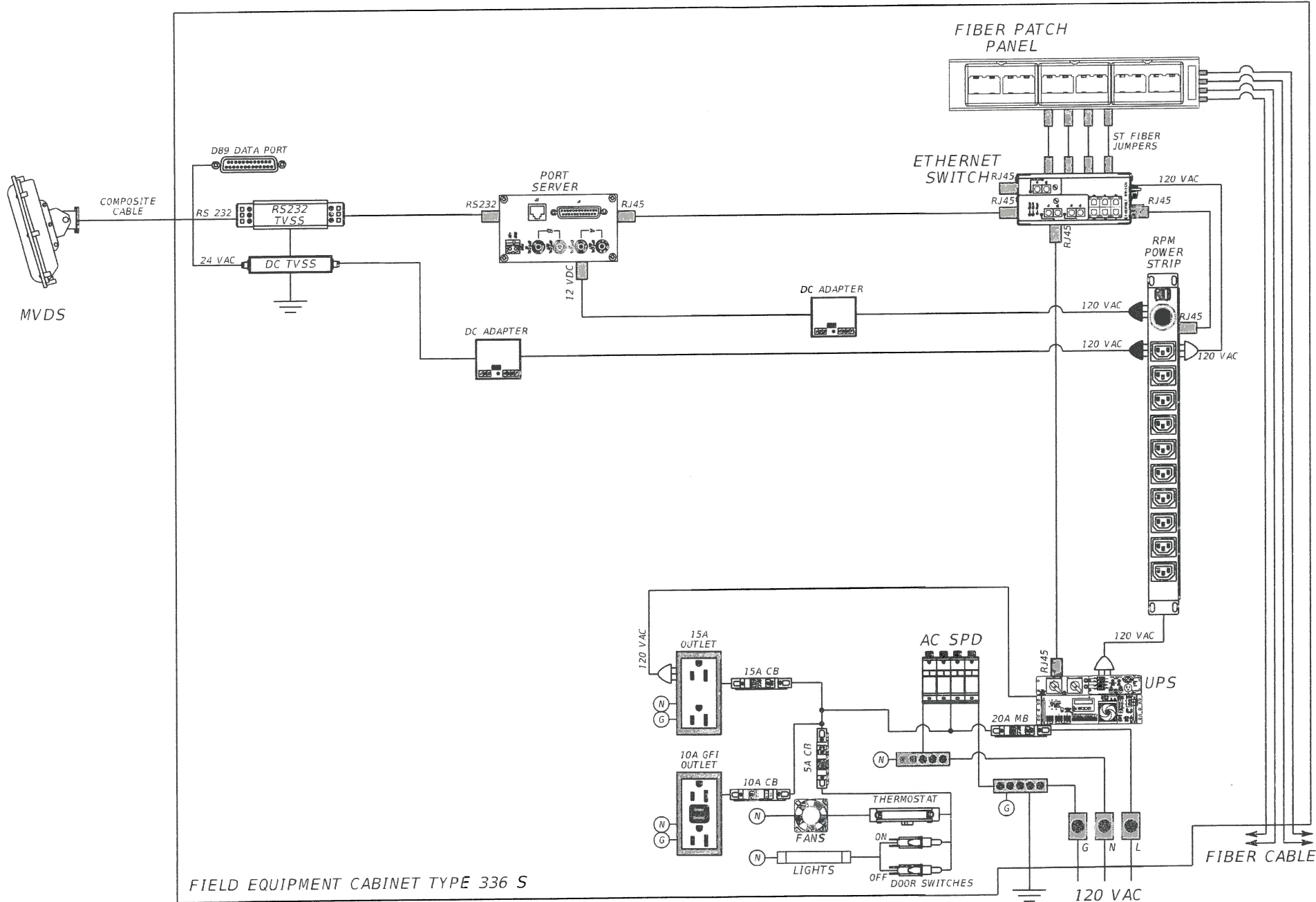
CCTV LOCATIONS:

SE CORNER OF TOWN CENTER PKWY
SE CORNER OF LAKEWOOD RANCH
SE CORNER OF WATERVIEW BLVD
NE CORNER OF LEGACY BLVD
NW CORNER OF LORRAINE RD



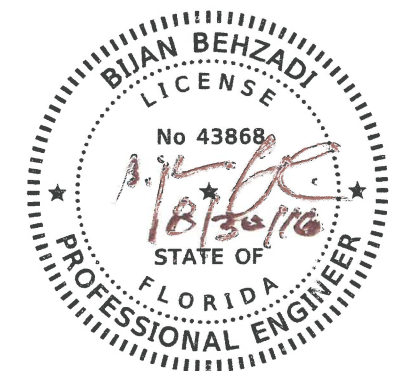
No.	REVISIONS	DATE	BY	CR	SCALE	AS NOTED	DESIGNED BY	BB	DRAWN BY	GS	CHECKED BY	CR	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	6/3/2016	PROJECT NO.	6052010	DESIGN ENGINEER	BIJAN BEHZADI	FL. LICENSE NO.	43868	SHEET NO.	IT-31
CCTV AND SMART SENSOR ADVANCE BLOCK DIAGRAM																							

MVDS CONNECTION DIAGRAM

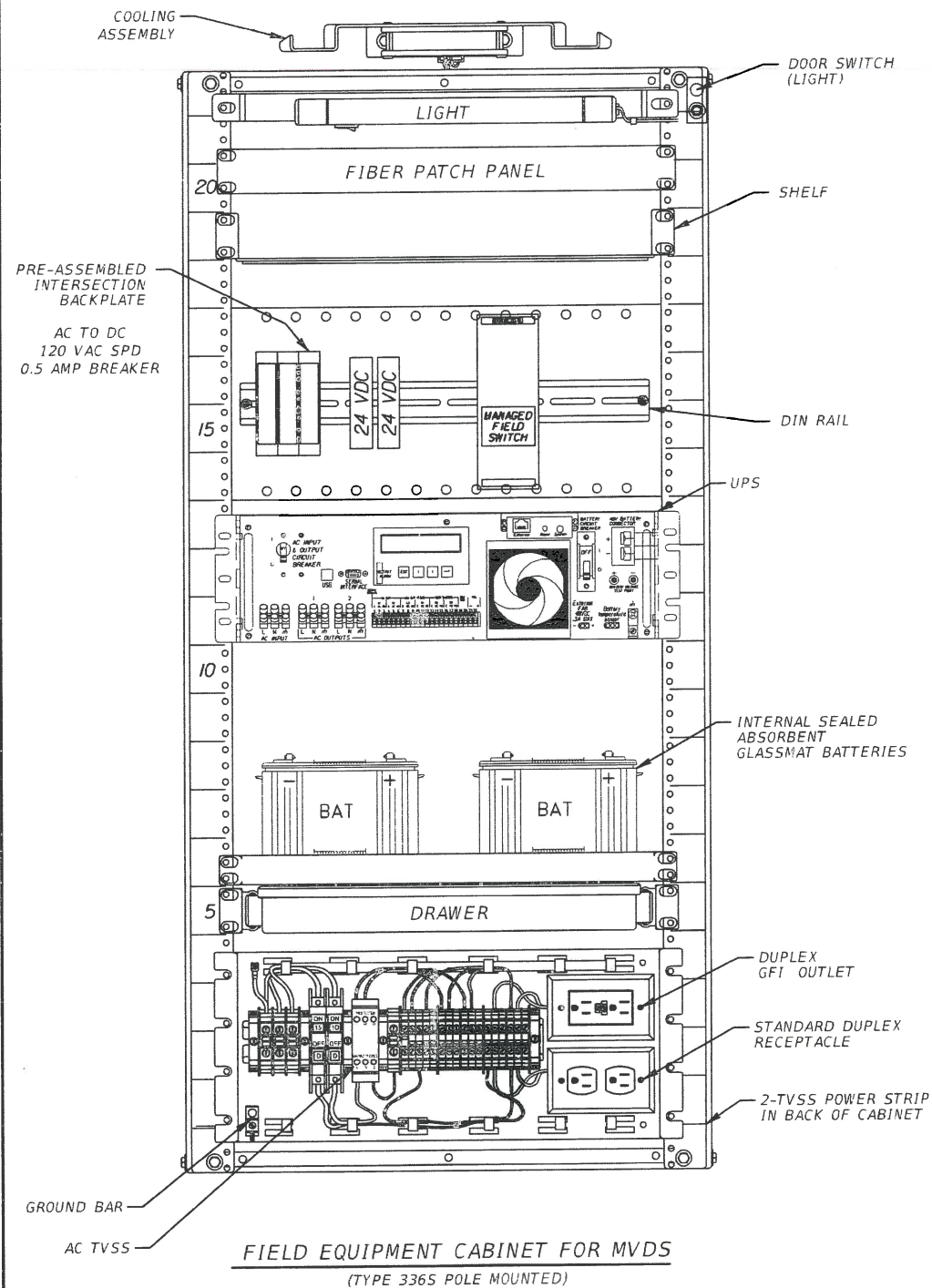


LOCATIONS:

STA 89+00
STA 151+64

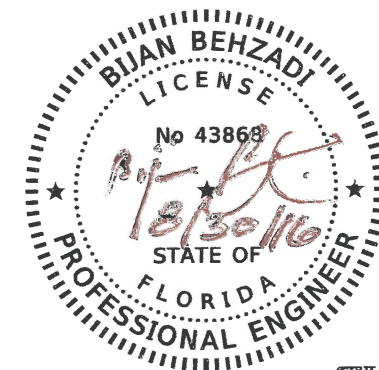
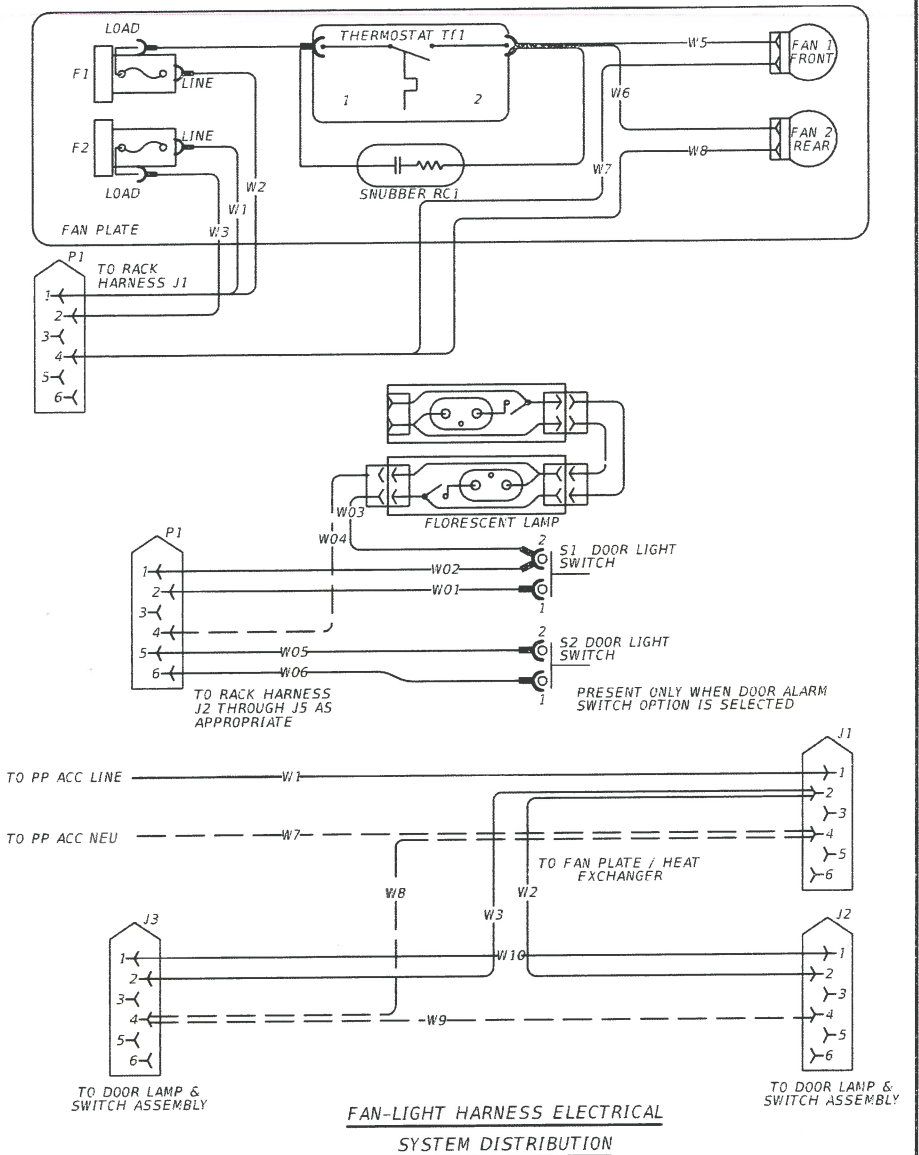
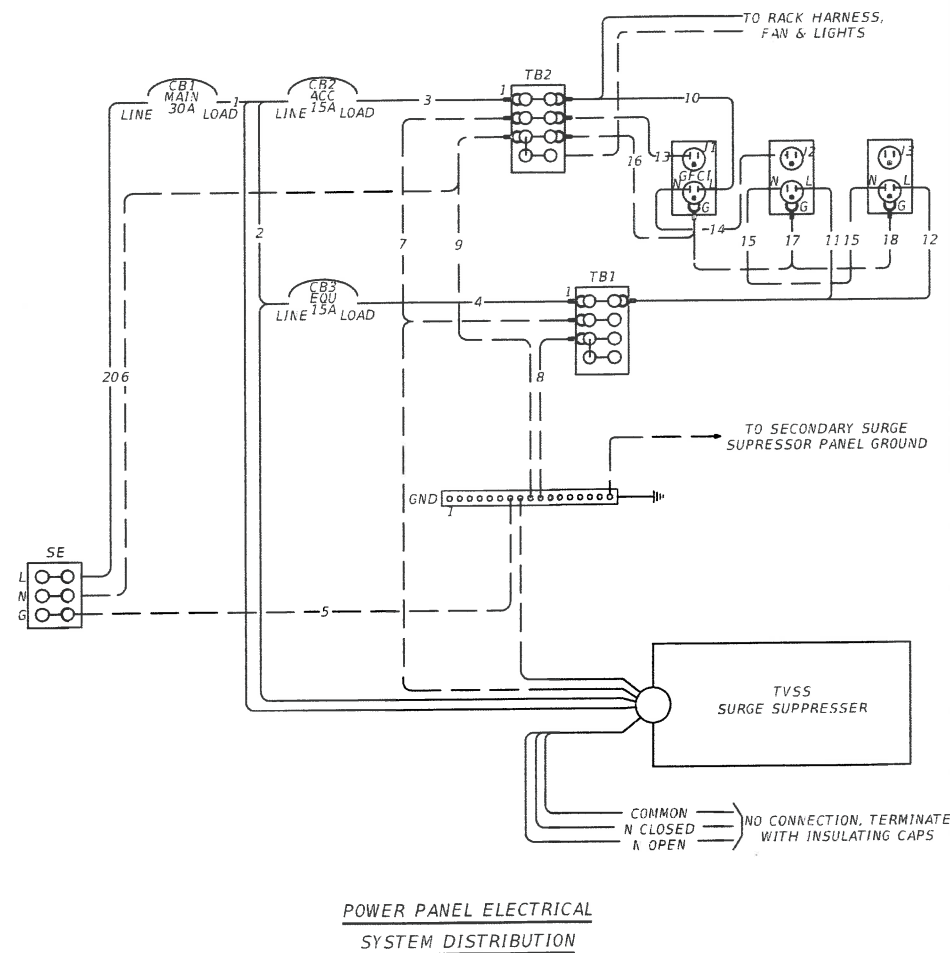


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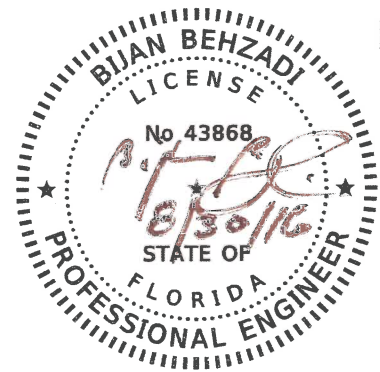
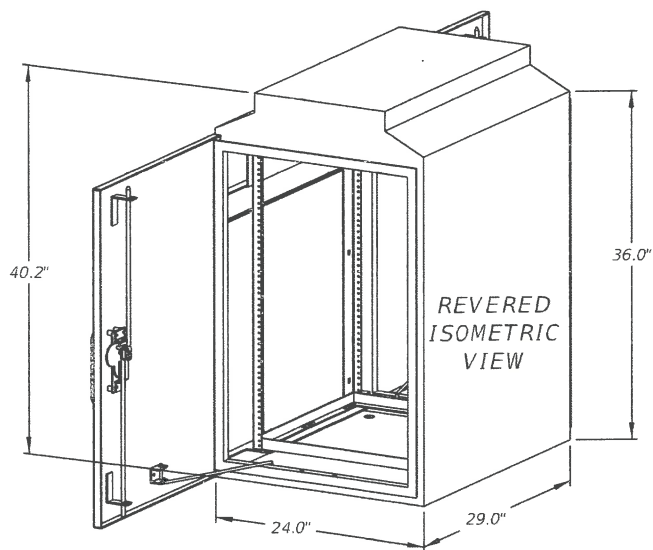
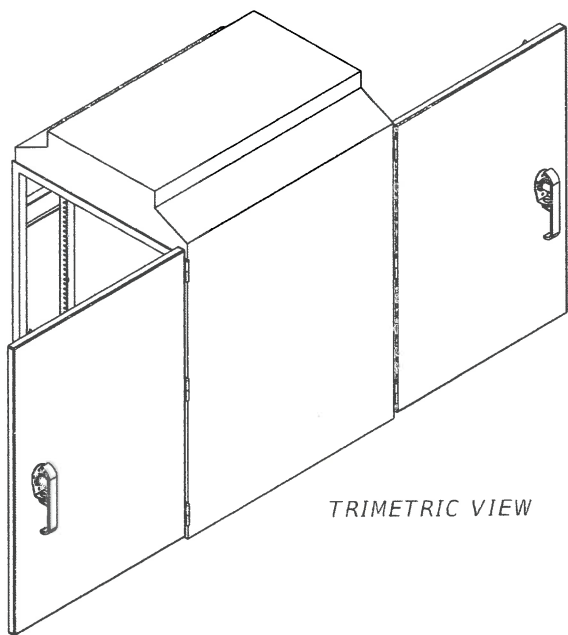
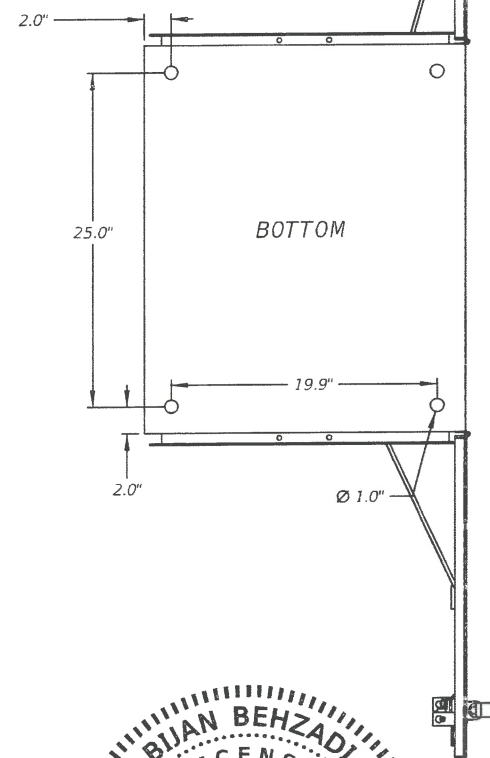
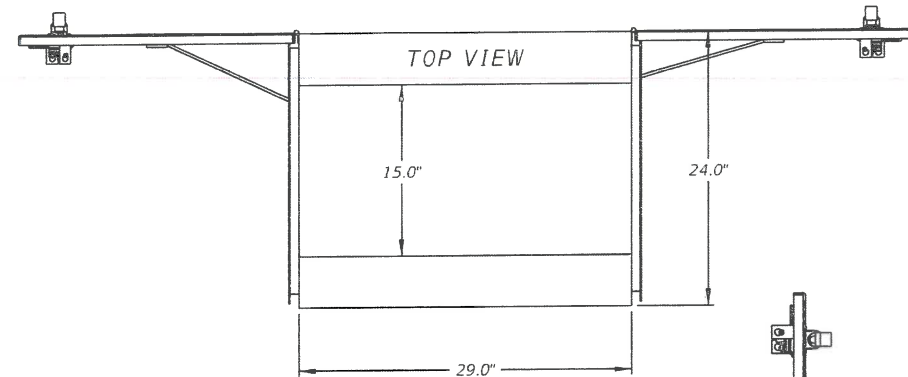
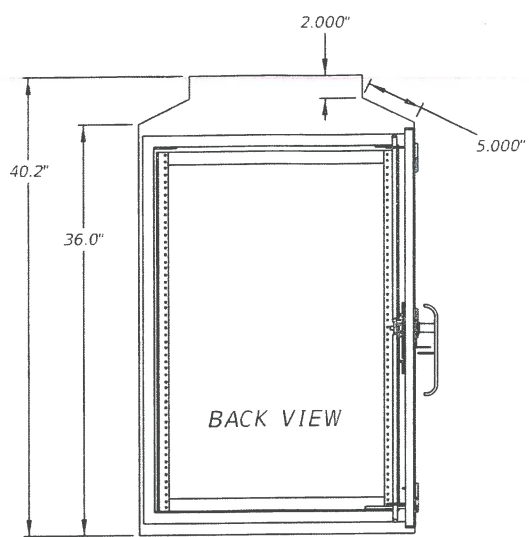
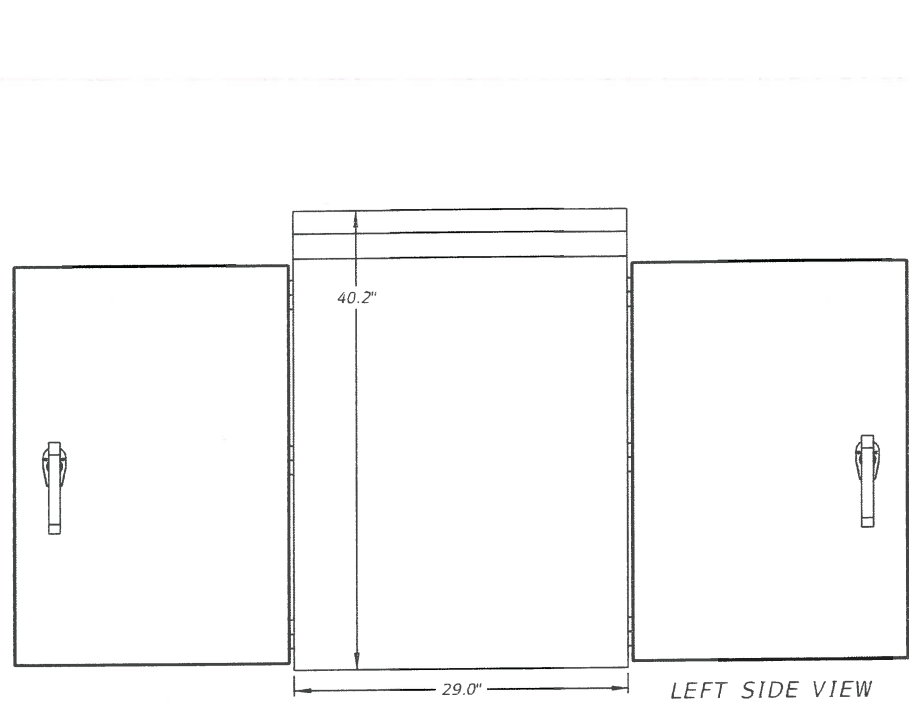
NOTES:

1. LABEL ALL ELECTRICAL RECEPTACLES EXCEPT GFCI AS "ELECTRONIC EQUIPMENT ONLY". LABEL GFCI RECEPTACLES AS "CONVENIENCE RECEPTACLES"
2. ALL DIN RAILS SHALL BE GROUNDED AS PART OF THE CABINET GROUNDING SYSTEM.

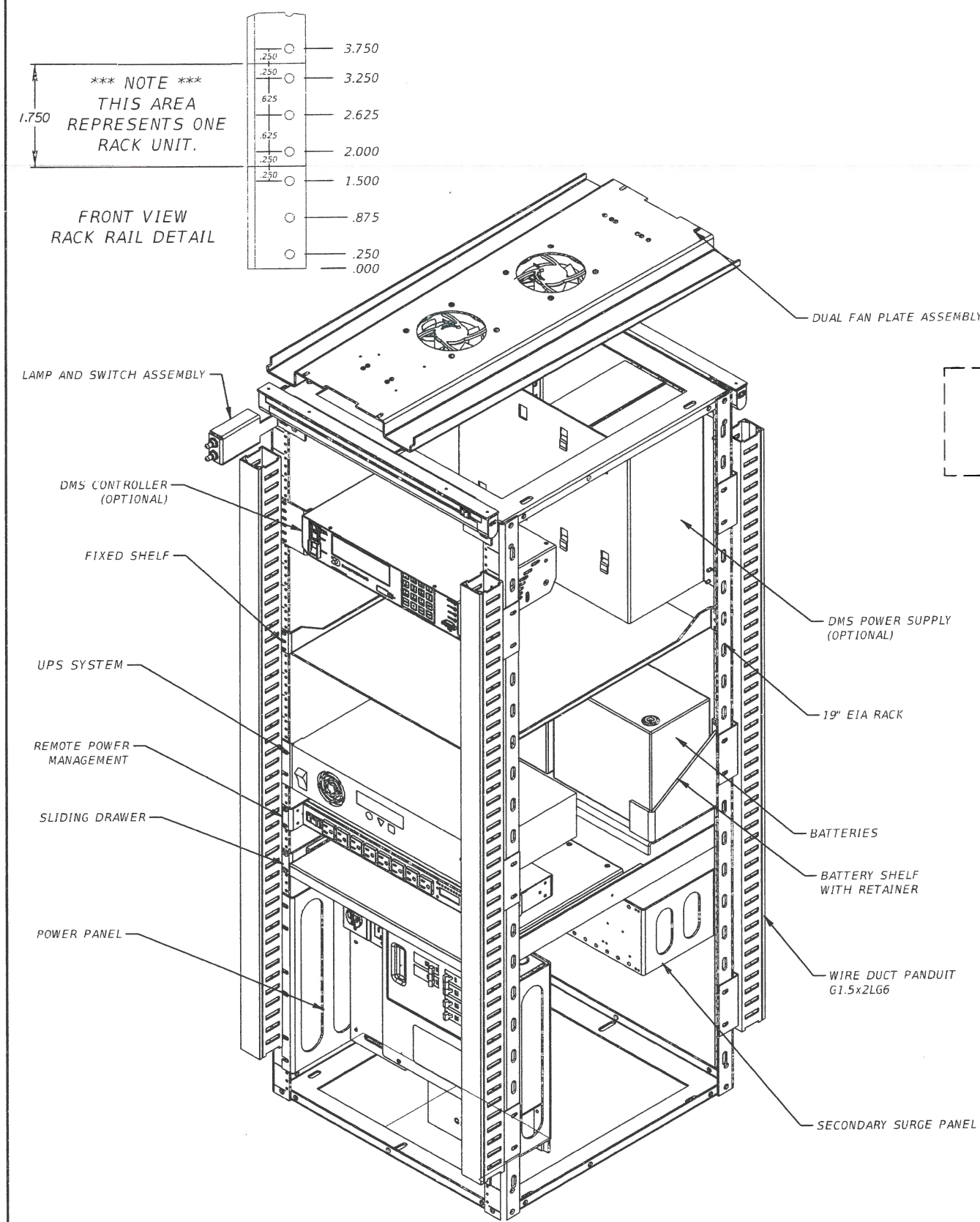


TYPE 336S CABINET

No.	REVISIONS	DATE	BY	CR	SCALE	AS NOTED	DESIGNED BY	BB	DRAWN BY	GS	CHECKED BY	CR	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 6/3/2016	PROJECT NO. 6052010	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER BIJAN BEHZADI FL. LICENSE NO. 43868	ITS CABINET & LINE DIAGRAM DETAILS	SHEET NO. IT-33
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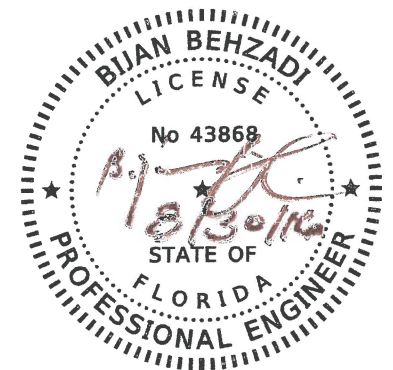
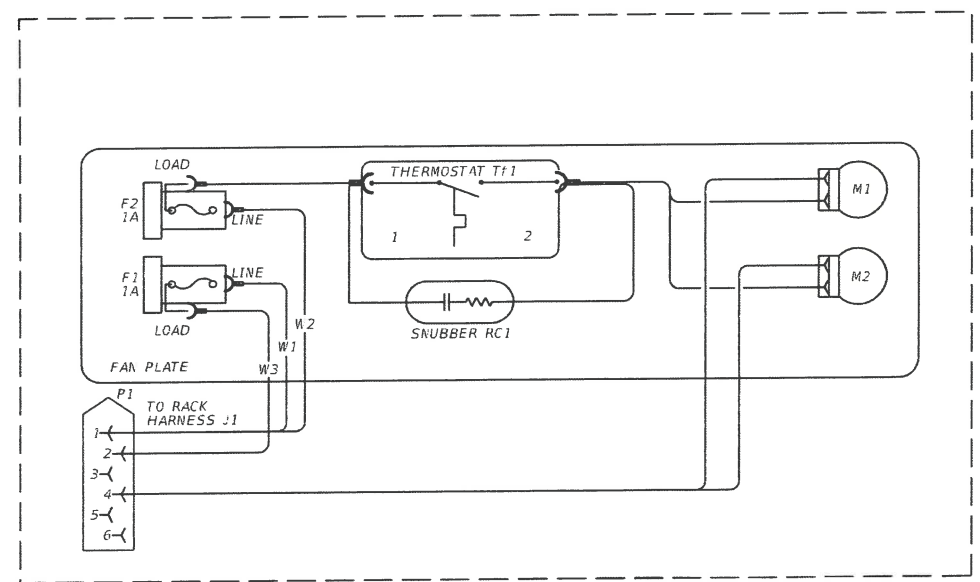
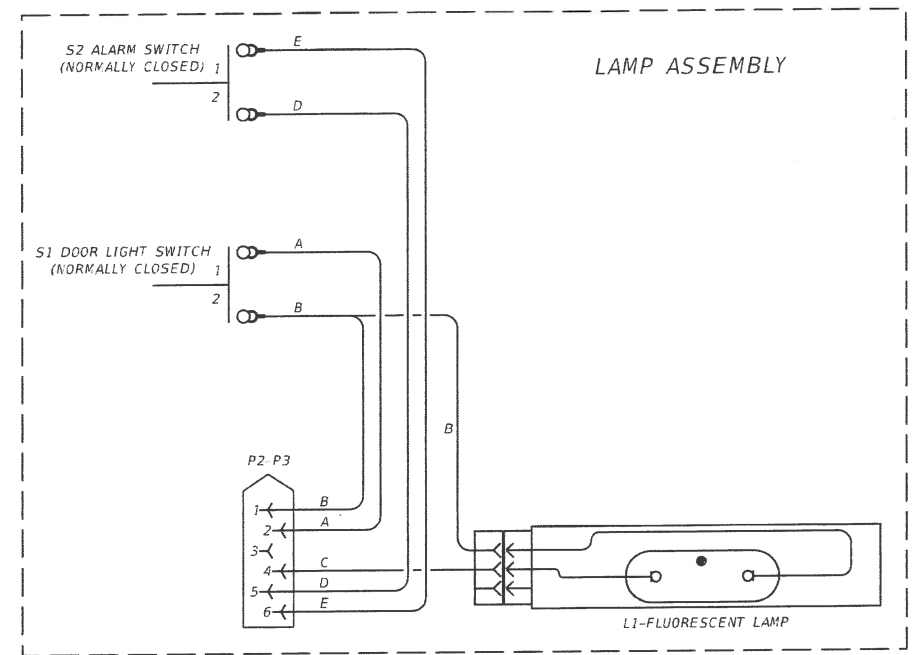
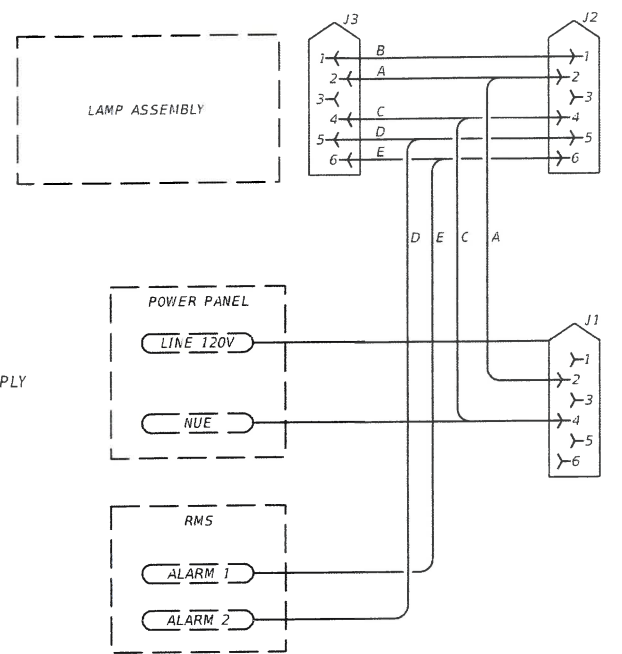


				SCALE	 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	CABINET TYPE 336S DETAILS	SHEET NO.
				AS NOTED		6/3/2016		BIJAN BEHZADI		
				DESIGNED BY		PROJECT NO. 6052010		FL. LICENSE NO.		
				DRAWN BY				43868		
				CHECKED BY						
No.	REVISIONS	DATE	BY	CR					IT-34	
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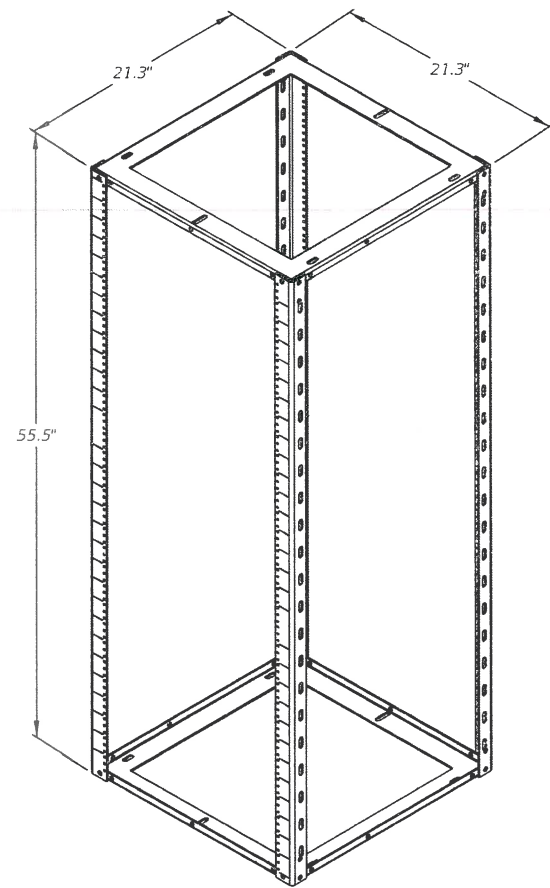


ISOMETRIC VIEW

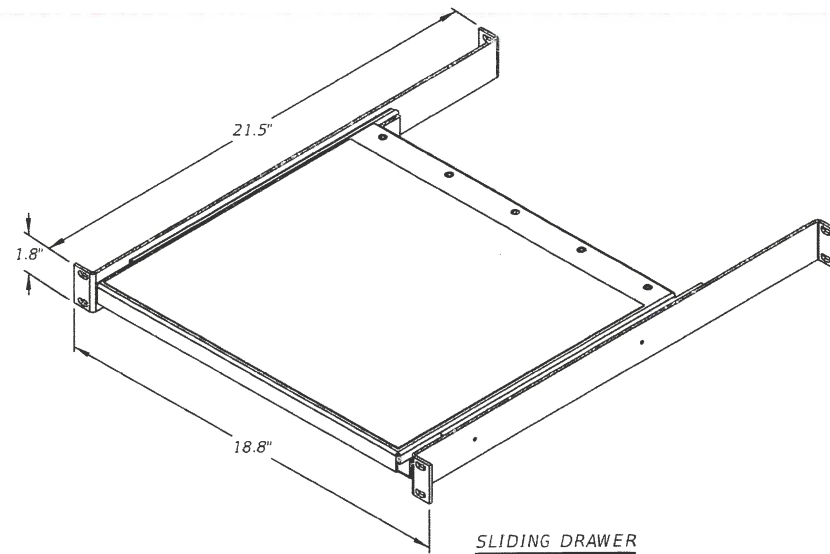
PIN	GAUGE	COLOR
A	#18	BLACK
B	#18	RED
C	#18	WHITE
D	#18	BLUE
E	#18	YELLOW



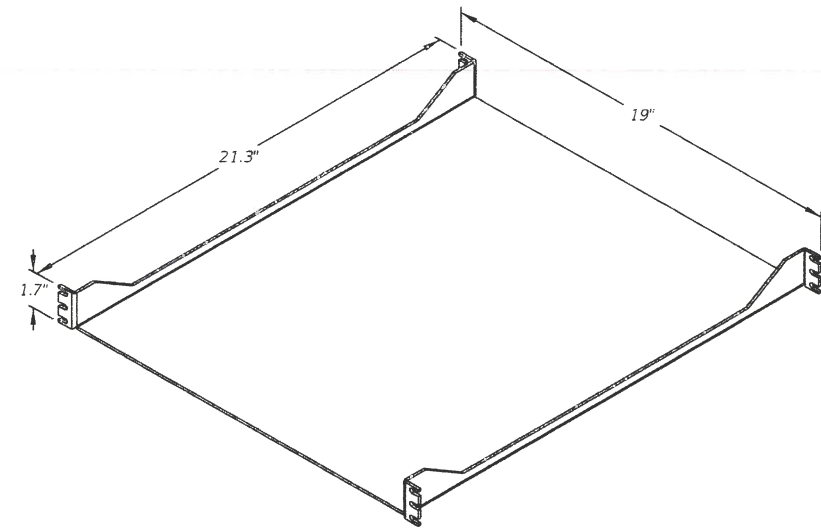
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				DESIGNED BY	BB						BIJAN BEHZADI		
				DRAWN BY	GS						FL. LICENSE NO.		
				CHECKED BY	CR						43868		
No.	REVISIONS			DATE	BY	8:54:14 PM PW:\007982\CON0086775\0000000279318\6.0 CAD BIM\6.2 Work In Progress\12345695201\ITS\SSDTIT01.DGN							



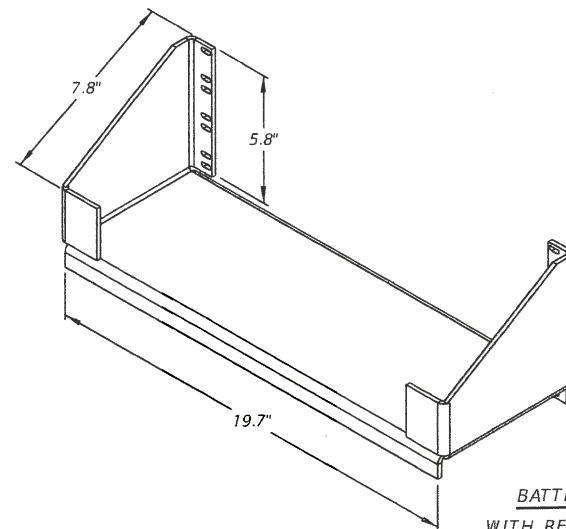
STANDARD 19" EIA
RACK ASSEMBLY



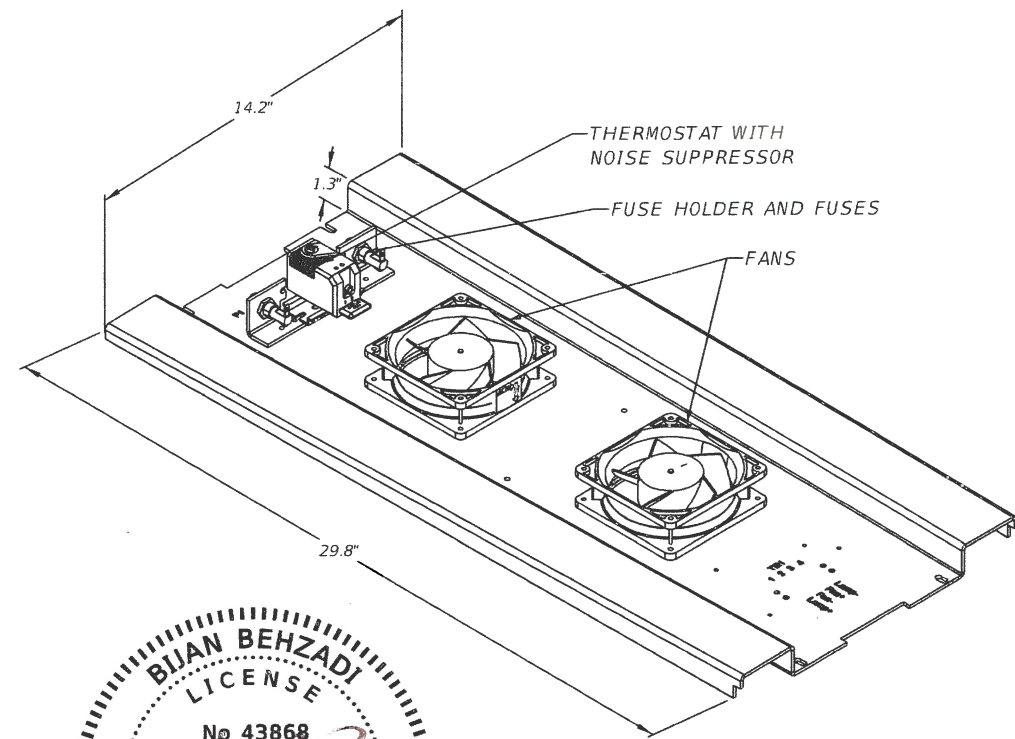
SLIDING DRAWER



FIXED SHELF



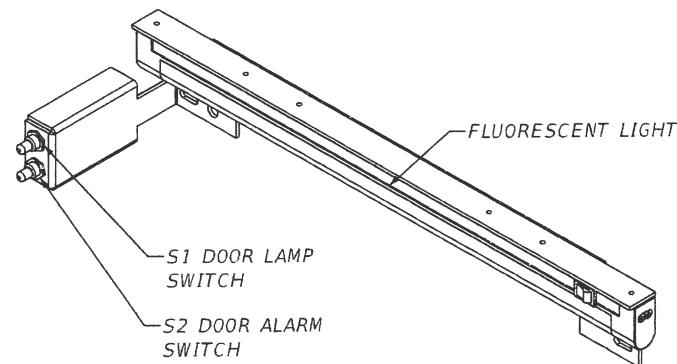
BATTERY SHELF
WITH REINFORCEMENT



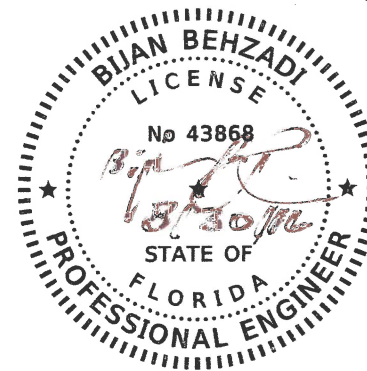
THERMOSTAT WITH
NOISE SUPPRESSOR

FUSE HOLDER AND FUSES

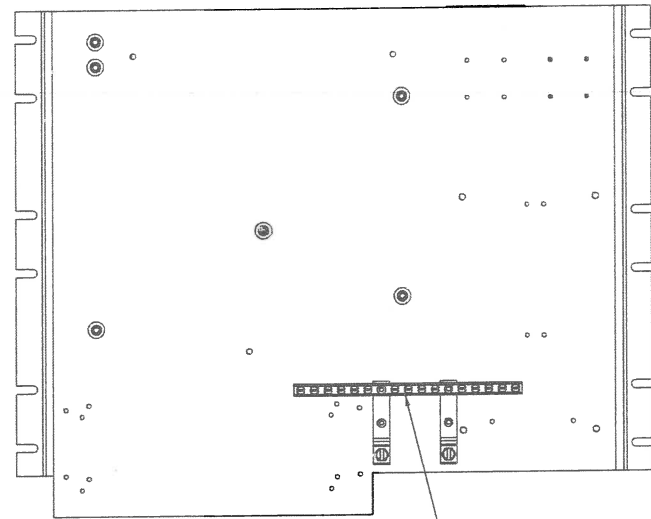
FANS



LAMP AND
SWITCH ASSEMBLY

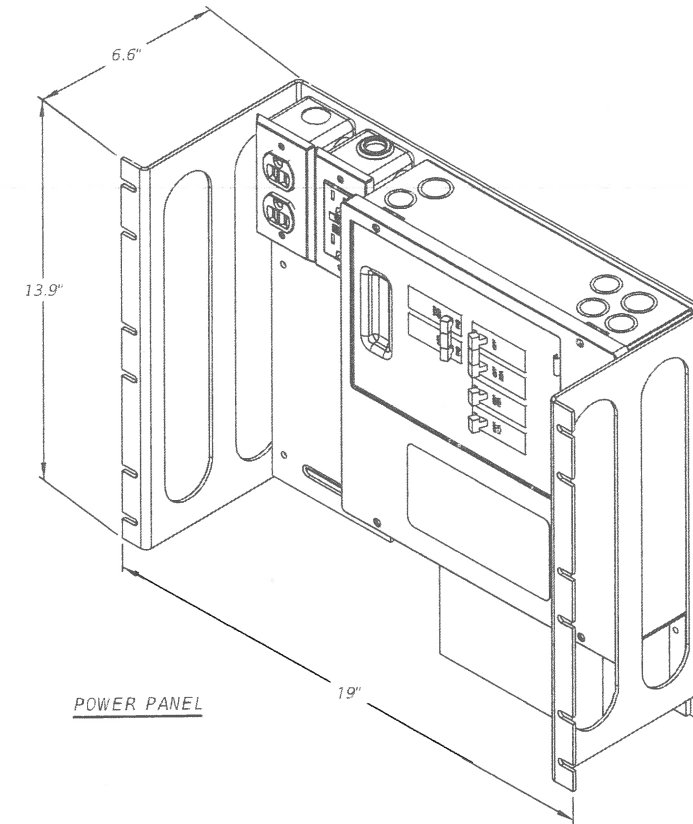


				SCALE	AS NOTED	 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	6/3/2016	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	BIJAN BEHZADI	TYPE 332 ITS CABINET DETAILS	SHEET NO.
				DESIGNED BY	BB		PROJECT NO.	6052010		FL. LICENSE NO.	43868		IT-36
				DRAWN BY	GS								
				CHECKED BY	CR								
No.	REVISIONS	DATE	BY										

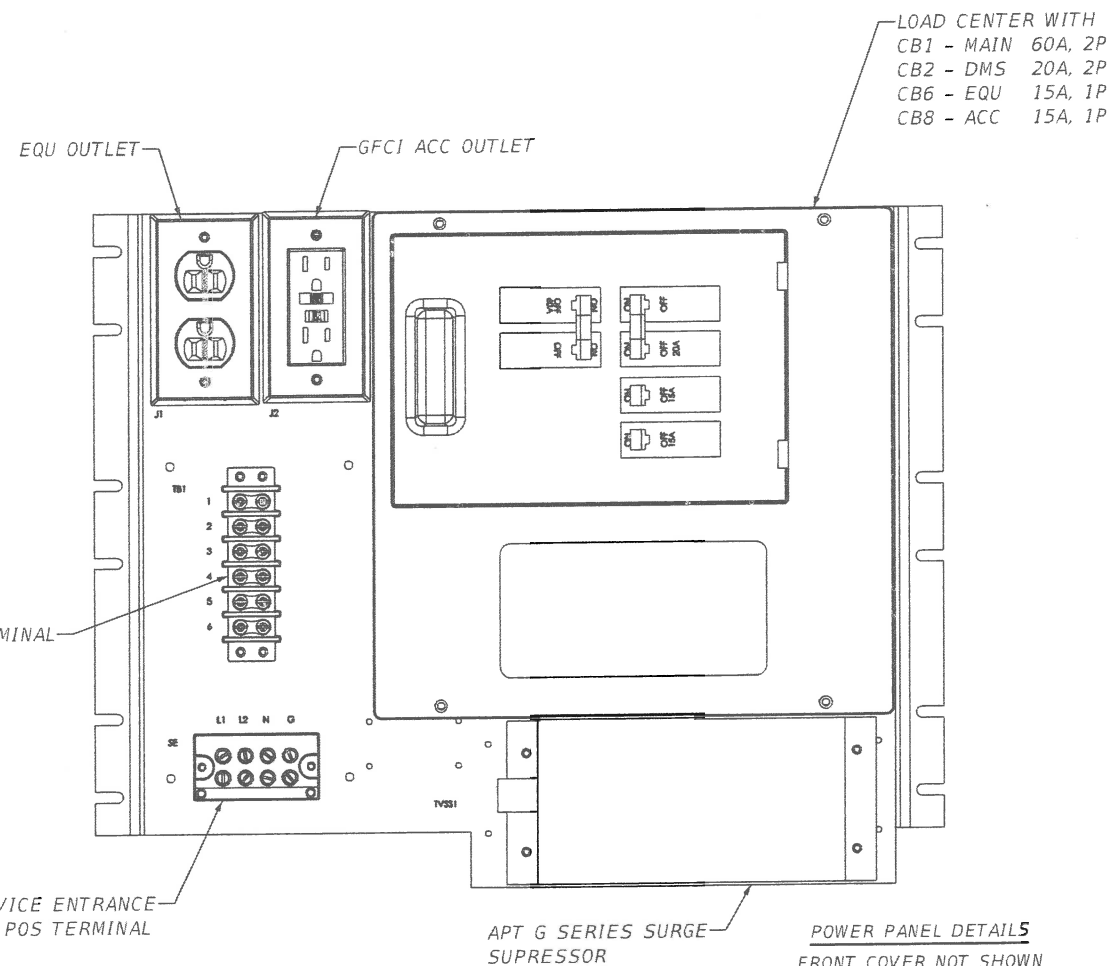


REAR VIEW

GROUND BAR WITH
PANDUIT LUGS



POWER PANEL



EQU OUTLET

GFCI ACC OUTLET

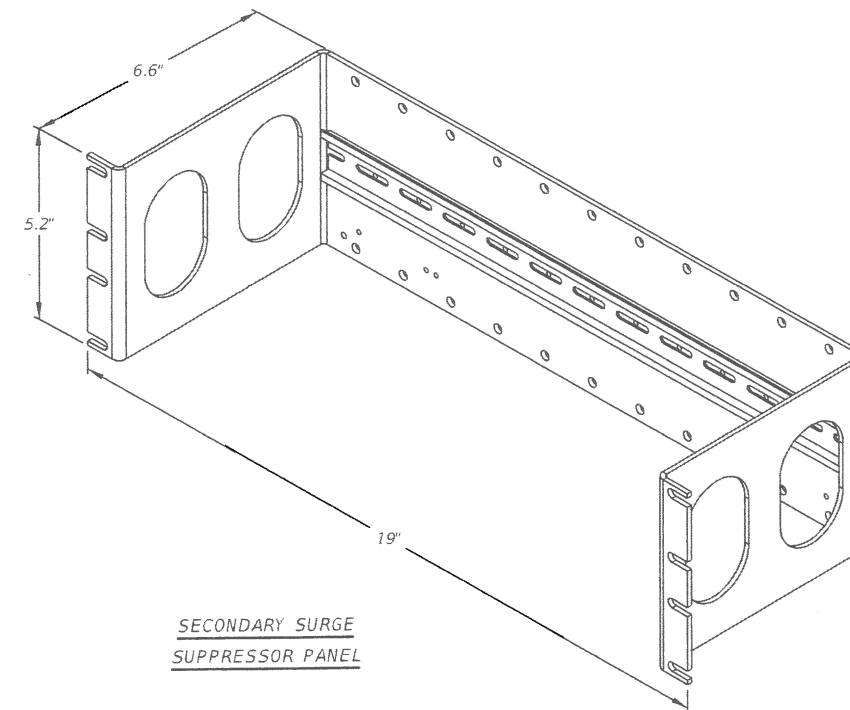
LOAD CENTER WITH
CB1 - MAIN 60A, 2P
CB2 - DMS 20A, 2P
CB6 - EQU 15A, 1P
CB8 - ACC 15A, 1P

TB1 6POS TERMINAL
BLOCK

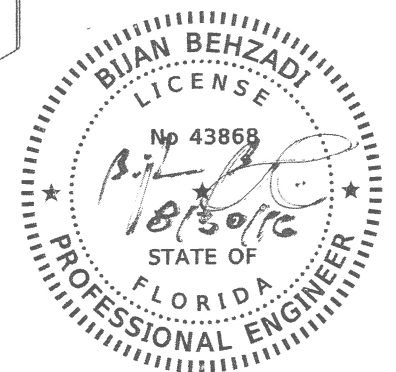
SE SERVICE ENTRANCE
600V, 4 POS TERMINAL
BLOCK

APT G SERIES SURGE
SUPPRESSOR

POWER PANEL DETAILS
FRONT COVER NOT SHOWN



SECONDARY SURGE
SUPPRESSOR PANEL



No.	REVISIONS	DATE	BY



HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE
6/3/2016
PROJECT NO.
6052010

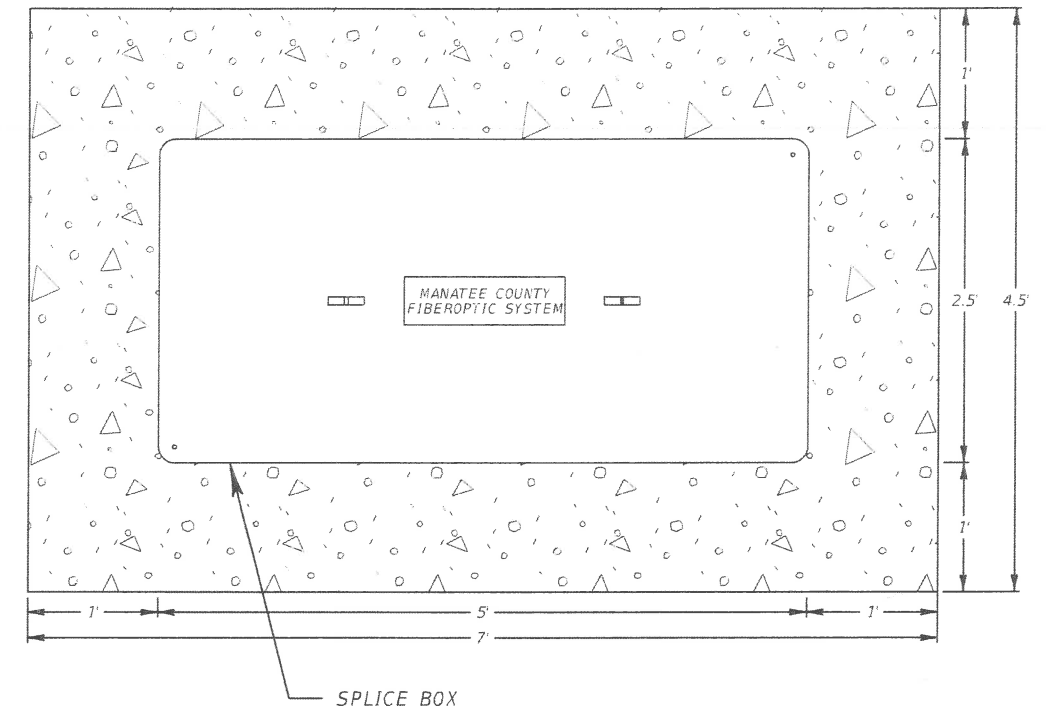
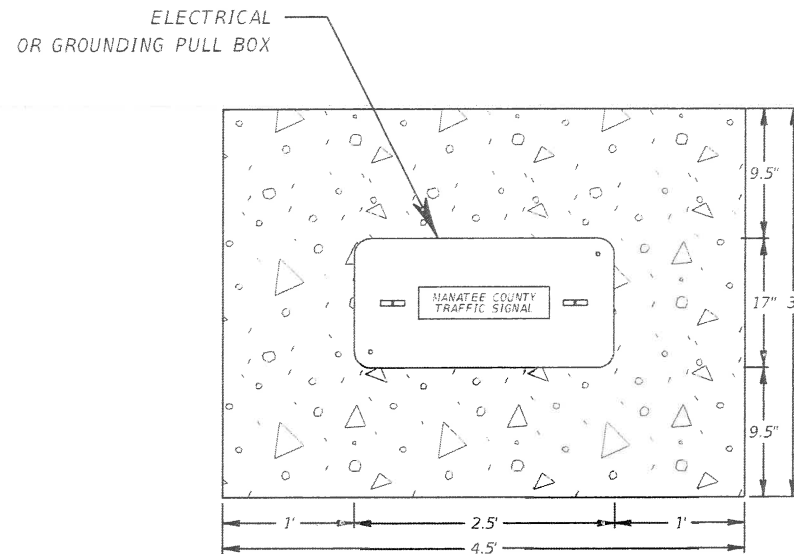


MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
BIJAN BEHZADI
FL. LICENSE NO.
43868

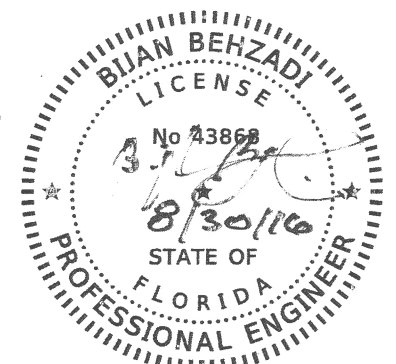
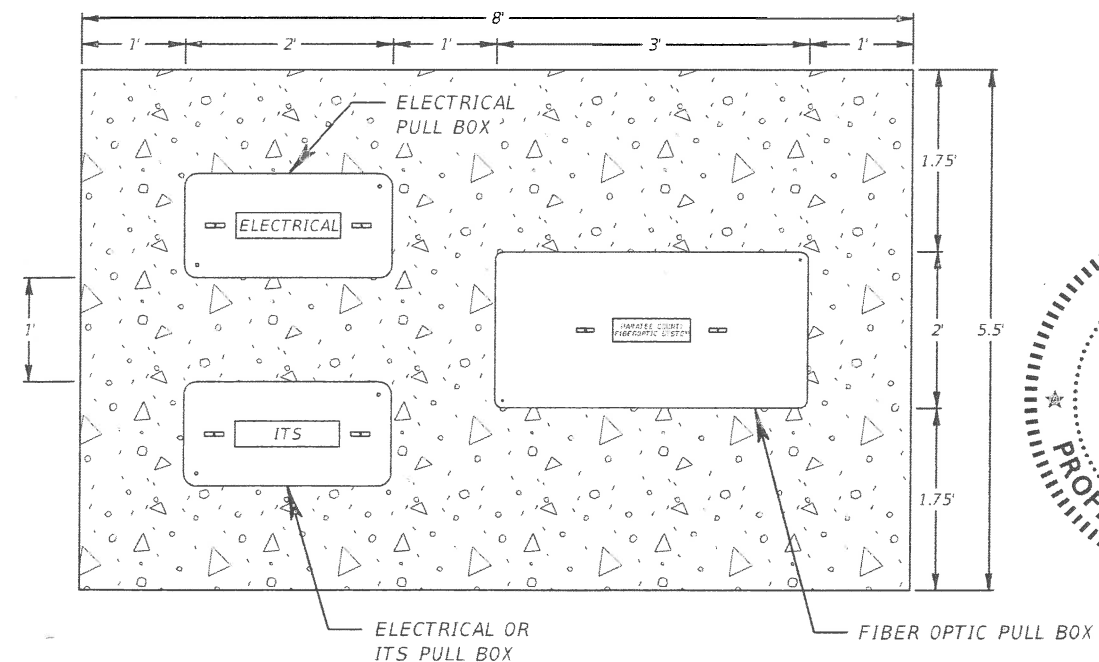
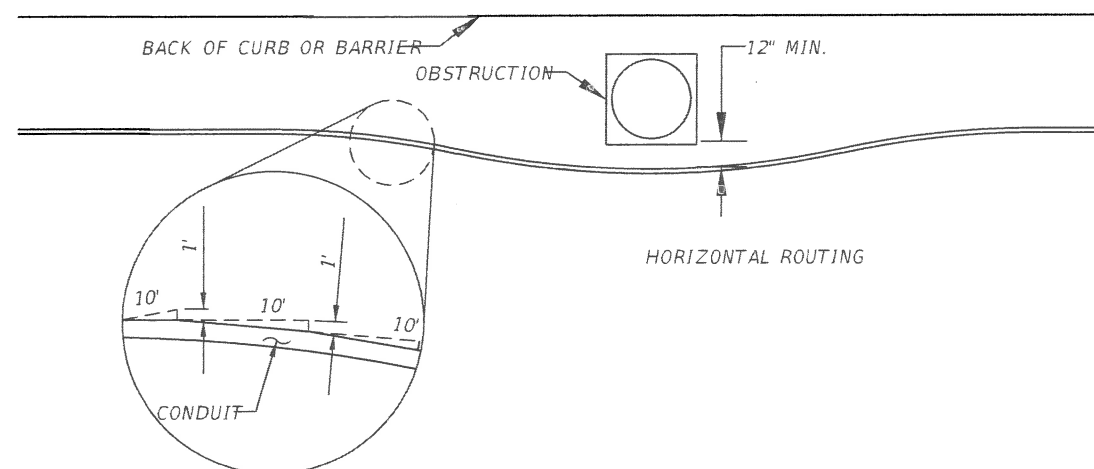
TYPE 332 ITS
CABINET DETAILS

SHEET
NO.
IT-37

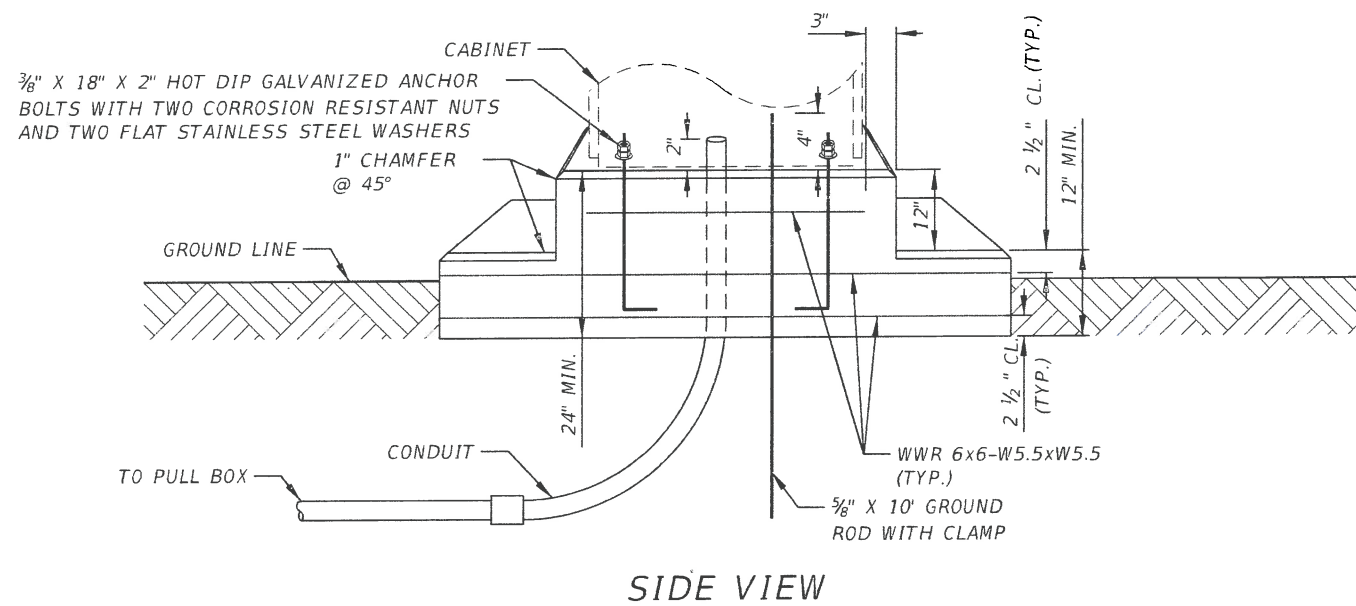
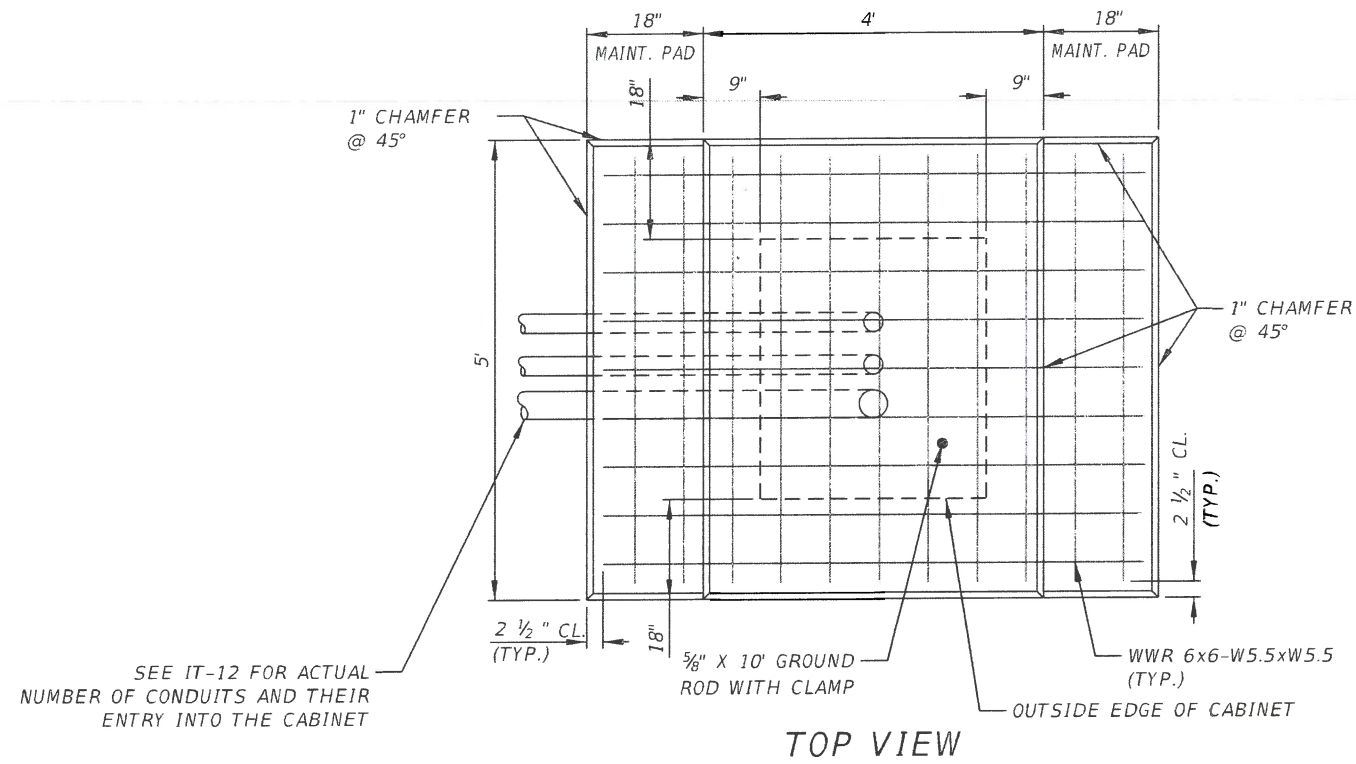


NOTES:

1. CONCRETE REINFORCEMENT AND INSTALLATION REQUIREMENTS TO BE PER INDEX 17500.
2. WHEN MULTIPLE CONFIGURATIONS OF PULL BOXES ARE ADJACENT TO ONE ANOTHER, THEY SHALL BE FORMED TOGETHER WITH AN EXPANSION JOINT BETWEEN THE APRONS UTILIZED TO AVOID CRACKING.
3. THE ORIENTATION OF CONCRETE APRONS WITH MULTIPLE PULL & JUNCTION BOXES SHALL BE DETERMINED IN THE FIELD.

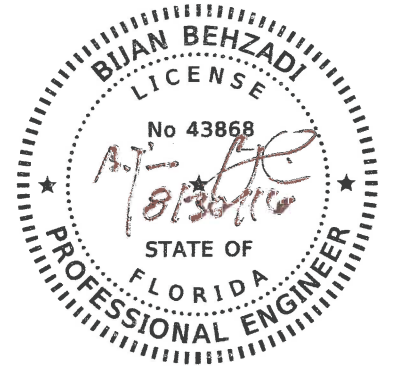
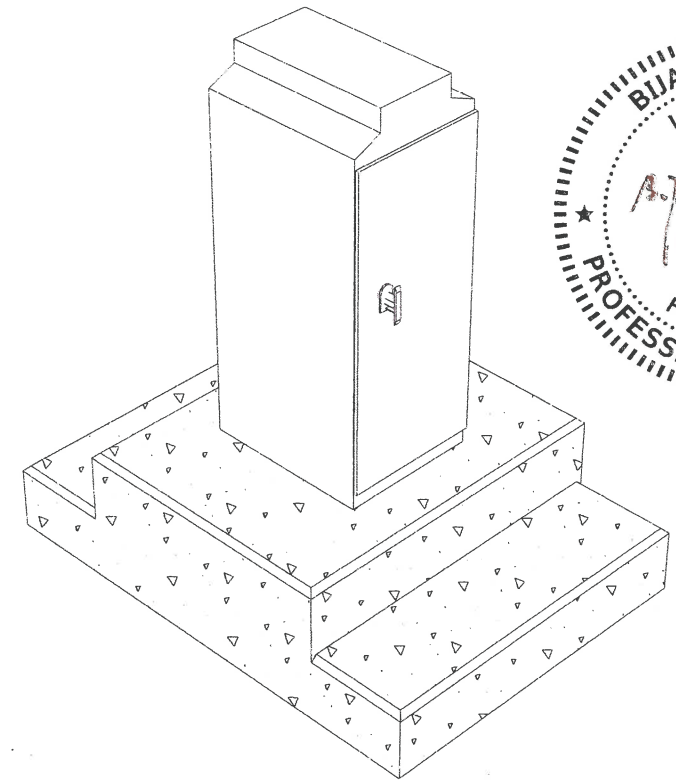


				SCALE	AS NOTED	 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	CONCRETE APRON DETAILS	SHEET NO.
				DESIGNED BY	BB		6/3/2016		BIJAN BEHZADI		
				DRAWN BY	GS		PROJECT NO.		FL. LICENSE NO.		
				CHECKED BY	CR		6052010		43868		IT-39
No.	REVISIONS	DATE	BY								



CONCRETE PAD DETAIL FOR TYPE 332 ITS CABINET

NTS



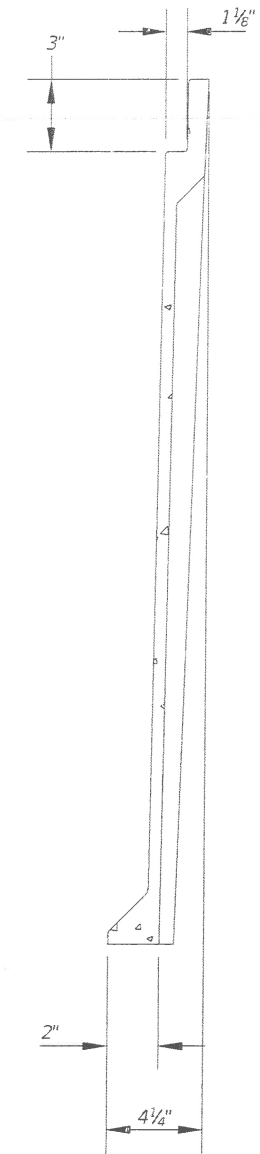
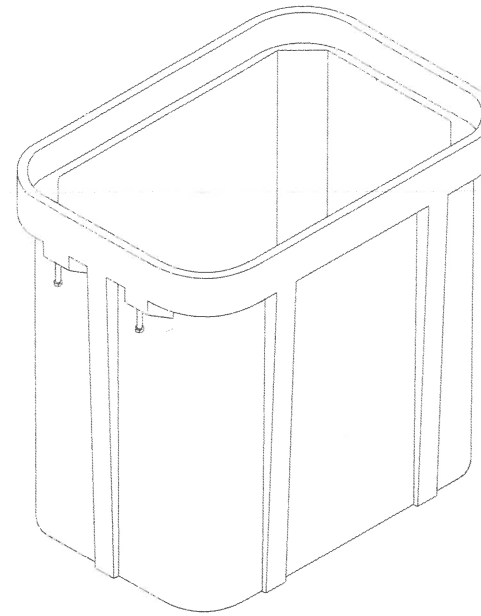
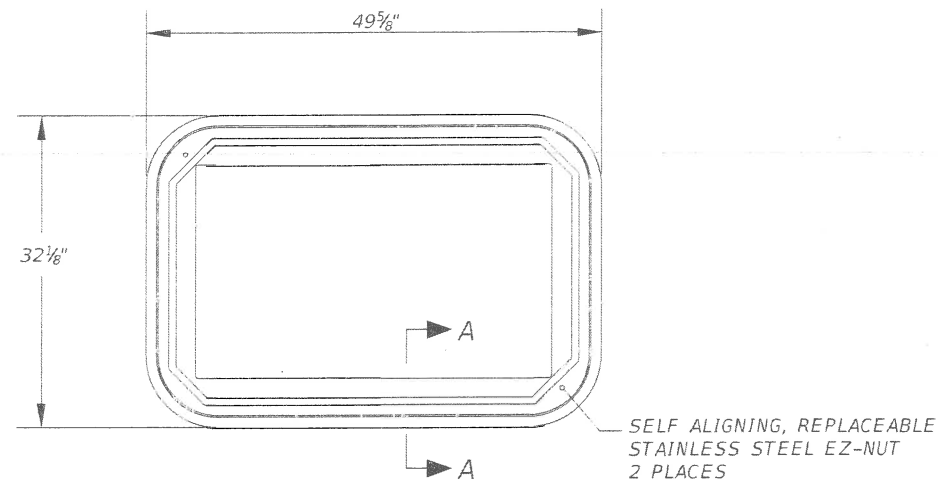
TYPICAL TYPE 332 ITS CABINET INSTALLATION

NTS

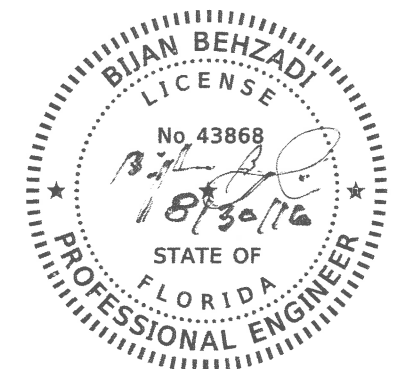
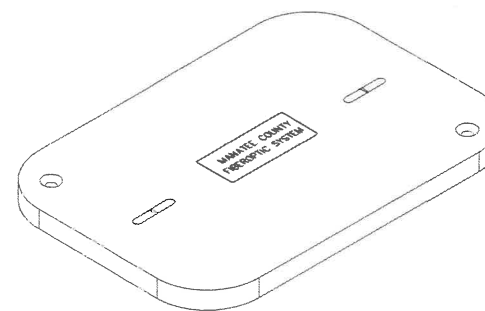
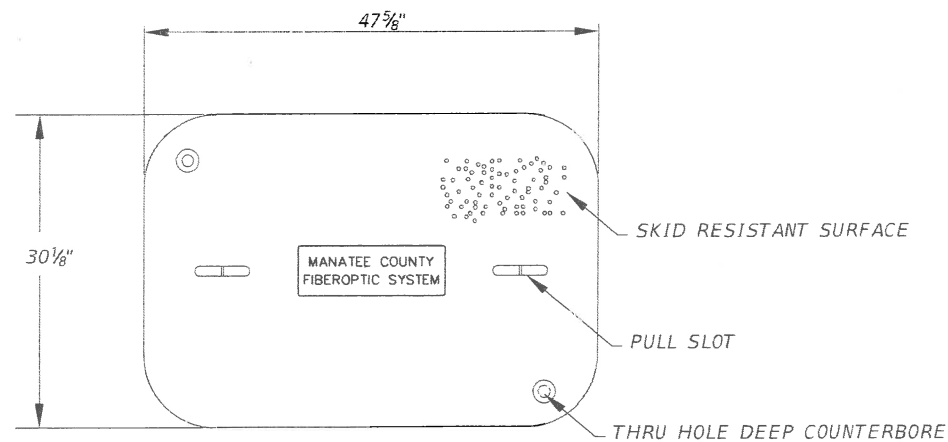
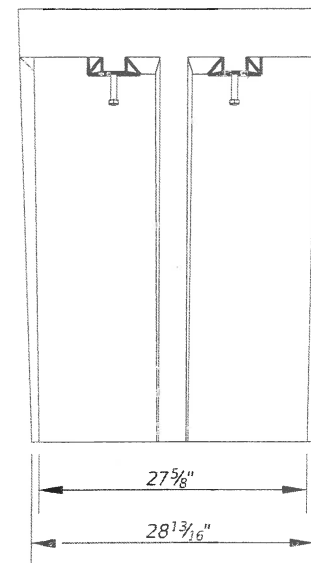
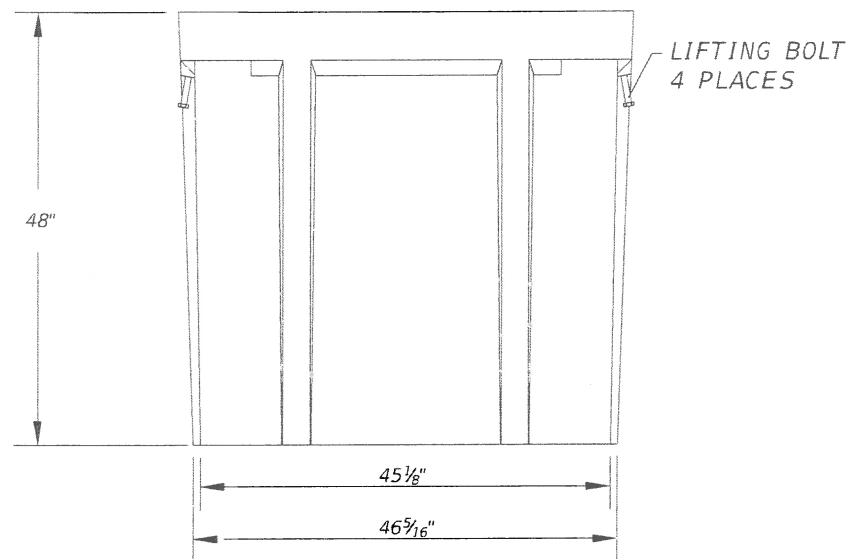
MATERIAL SPECIFICATIONS

- THE CABINET FOUNDATION SHALL BE CLASS "NS" CONCRETE. THE COST OF THE CONCRETE PAD AND STEPS ARE INCLUDED IN THE ITS CABINET ASSEMBLY.
- A MINIMUM OF 4 EXPANSION BOLTS ARE REQUIRED. STAINLESS STEEL KWIK BOLT WITH A MIN. EMBEDMENT OF 18", SHALL BE USED TO MOUNT THE CABINET TO THE CONCRETE PAD.

				SCALE		HDR Engineering, Inc. 2601 Cattleman Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE		MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	CONCRETE PAD DETAILS FOR ITS CABINET	SHEET NO. IT-40
				AS NOTED			6/3/2016			BIJAN BEHZADI		
				DESIGNED BY			PROJECT NO. 6052010			FL. LICENSE NO. 43868		
				BB								
				DRAWN BY								
				GS								
				CHECKED BY								
				CR								
No.	REVISIONS	DATE	BY									

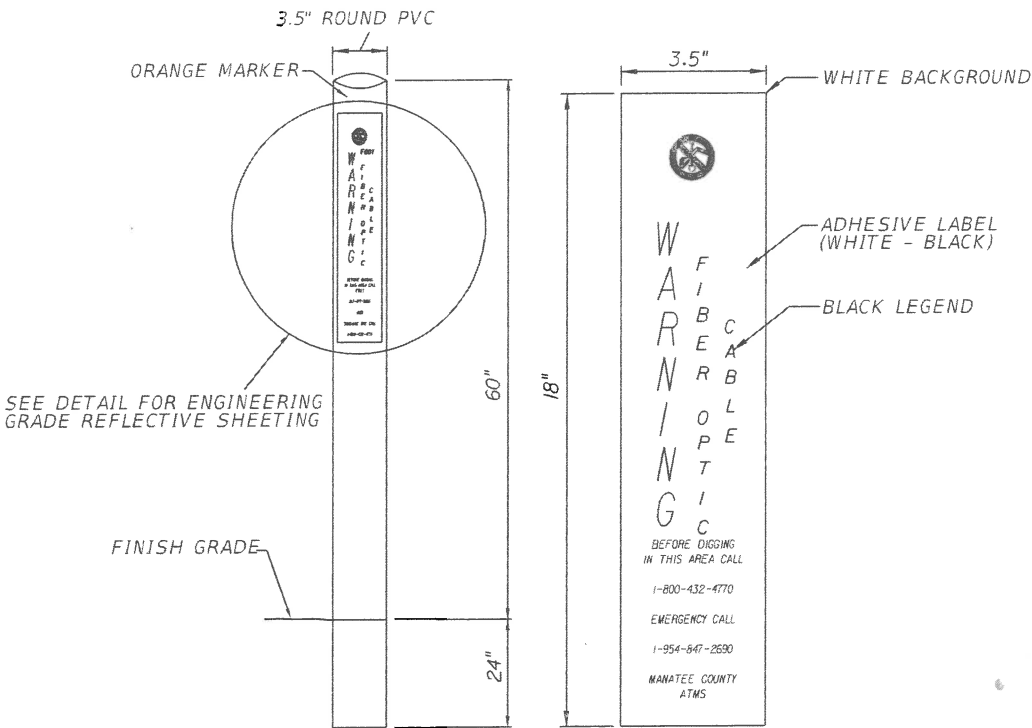


SECTION A-A



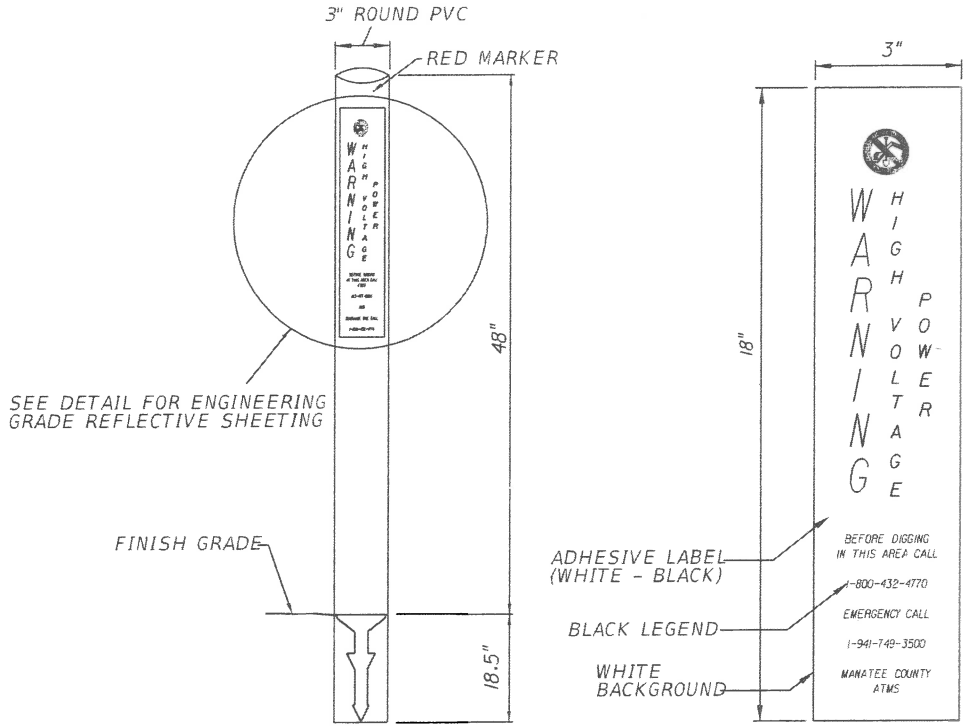
				SCALE	AS NOTED	 HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	FIBER OPTIC SPLICE BOX DETAILS	SHEET NO.
				DESIGNED BY	BB		6/3/2016		BIJAN BEHZADI		
				DRAWN BY	GS		PROJECT NO.		FL. LICENSE NO.		
				CHECKED BY	CR		6052010		43868		
No.	REVISIONS	DATE	BY								

FIBER OPTIC CABLE ROUTE MARKER



FRONT VIEW
NTS

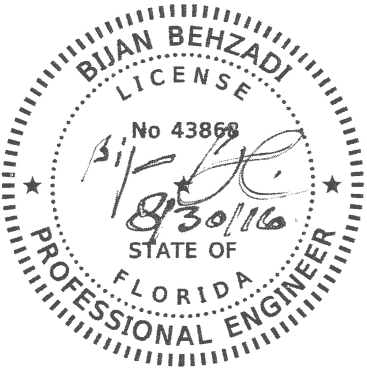
POWER CABLE ROUTE MARKER



FRONT VIEW
NTS

NOTES:

1. FOR TRENCH LINES WITH BOTH FIBER OPTIC CABLE AND POWER SERVICE WIRE, INSTALL POWER MARKER ALTERNATING WITH FIBER MARKER.
2. INSTALL FIBER OPTIC CABLE MARKER AT EVERY FIBER PULL BOX AND EVERY CHANGE IN DIRECTION NOT TO EXCEED 500 FEET.
3. TUBULAR MARKER TO BE PLACED OVER A V-CHANNEL METALLIC FENCE POST.
4. NO SEPARATE PAYMENT FOR ROUTE MARKERS. SHALL BE INCIDENTAL TO CONDUIT INSTALLATION.
5. A POLYDOME TOP SHALL BE INSTALLED ON EACH MARKER ORANGE, FOR FIBER AND RED FOR POWER.
6. ALL ROUTE MARKERS SHALL MEET SECTION 630 OF STANDARD SPECIFICATIONS.



				SCALE AS NOTED			HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 6/3/2016			MANATEE COUNTY PUBLIC WORKS		DESIGN ENGINEER BIJAN BEHZADI		CABLE ROUTE MARKER DETAILS	SHEET NO. IT-42
				DESIGNED BY BB				PROJECT NO. 6052010			FL. LICENSE NO. 43868					
				DRAWN BY GS												
				CHECKED BY CR												
No.	REVISIONS			DATE	BY											



HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213



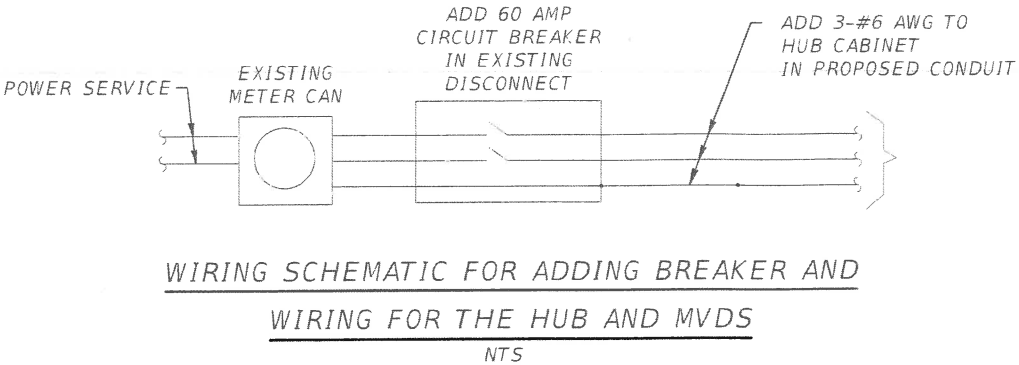
MANATEE COUNTY
PUBLIC WORKS

KEYED NOTES:

- 1 PULL BOX
- 2 METER SOCKET BY CONTRACTOR
- 3 #6 INSULATED COPPER GROUND WIRE IN 1/2" RIGID GALVANIZED STEEL OR BARE WIRE IF UNDERGROUND
- 3A #2 INSULATED COPPER GROUND WIRE IN 1/2" RIGID GALVANIZED STEEL OR BARE WIRE IF UNDERGROUND
- 4 COPPER CLAD GROUND ROD 5/8" DIA. MEETING REQUIREMENTS PER ITS DETAILS, THIS SHEET AND THE SPECS.
- 5 TYPE 336S EQUIPMENT CABINET
- 6 TYPE 3R NEMA ENCLOSURE
- 7 600V SERVICE DISCONNECT SWITCH METALLIC ENCLOSURE NEMA 3R
- 7B 15A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 8 2" SCHEDULE 40 PVC CONDUIT
- 9 2" RIGID GALVANIZED STEEL CONDUIT
- 10 SURGE ARRESTOR
- 11 1" FLEX CONDUIT

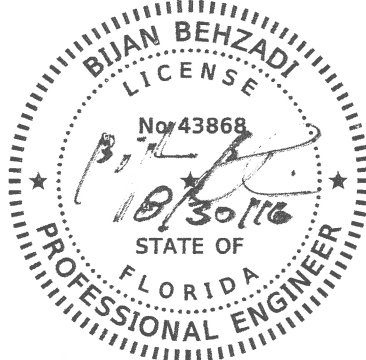
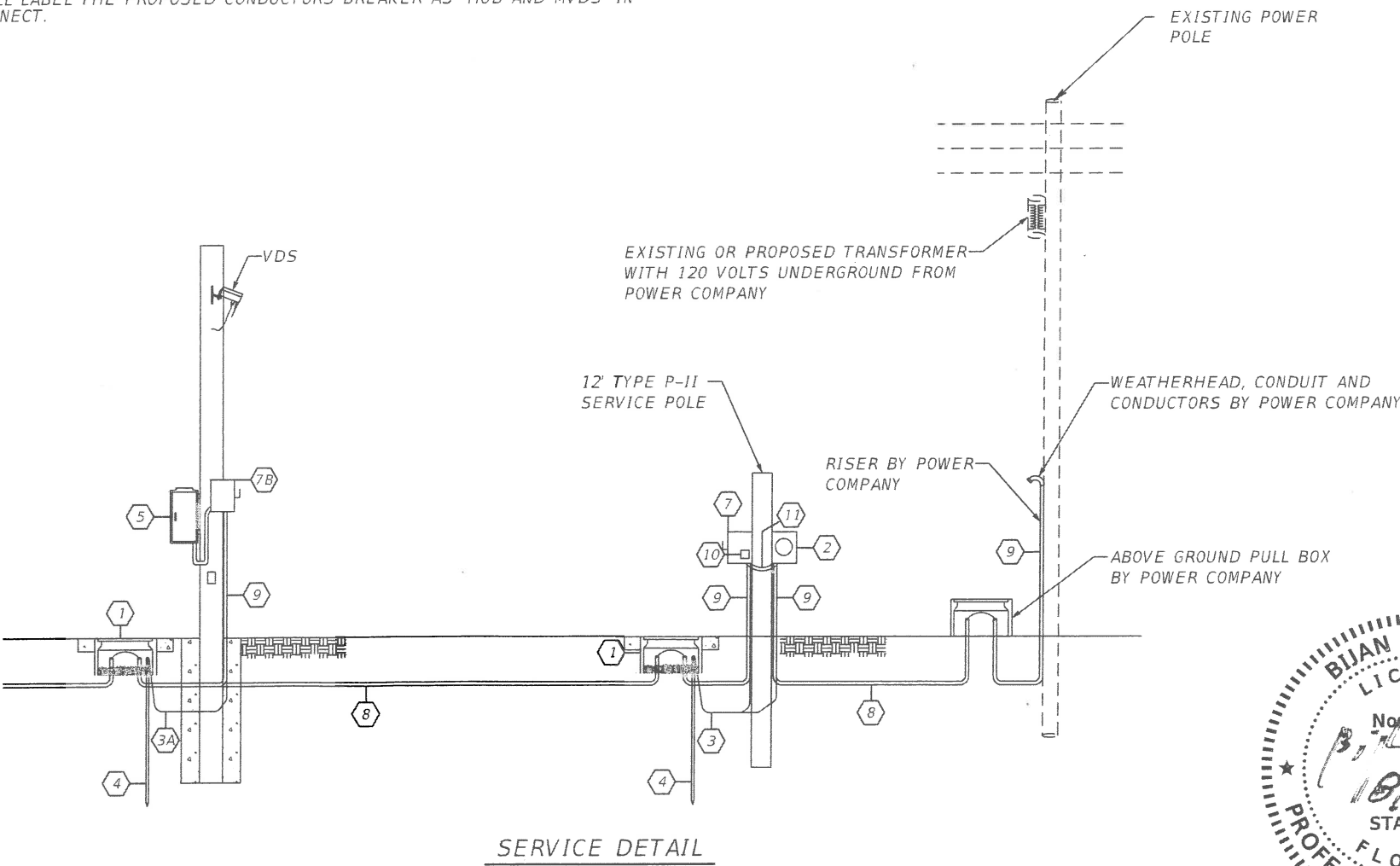
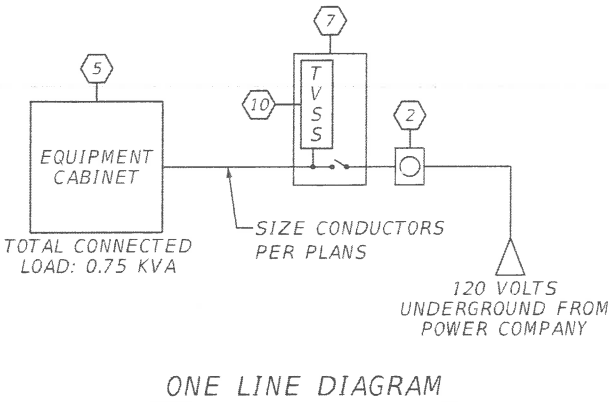
NOTES:

1. CONDUCTOR SIZE AND QUANTITY VARIES. SEE PLAN SHEETS.
2. DISCONNECT MAY NOT BE VISIBLE ON SERVICE DETAIL IF MOUNTED ON THE BACK OF THE POLE.
3. PULL BOXES LOCATION AND QUANTITY VARIES. SEE PLAN SHEETS.
4. THE CONTRACTOR AT HIS OWN COST, LIABILITY AND DISCRETION MAY ALTER THE SIZE OF CONDUITS ASSOCIATED WITH THE POWER SERVICE POLE, AS LONG AS THE SIZES MEET THE NEC REQUIREMENTS.

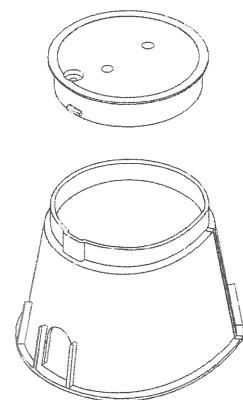
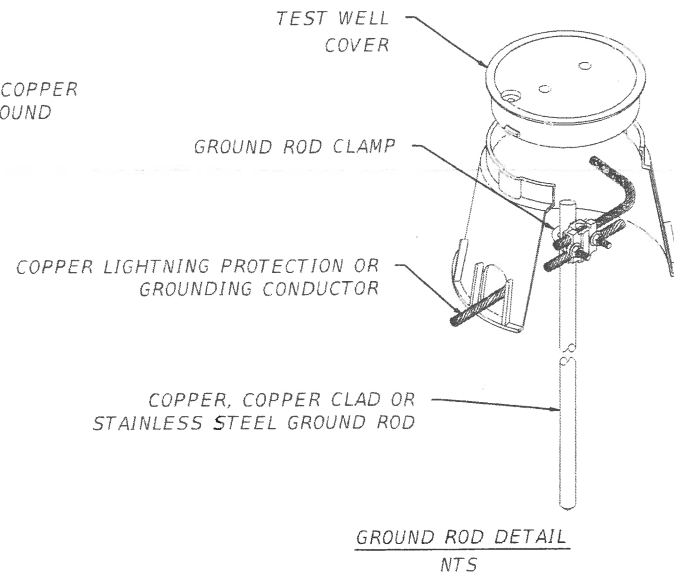
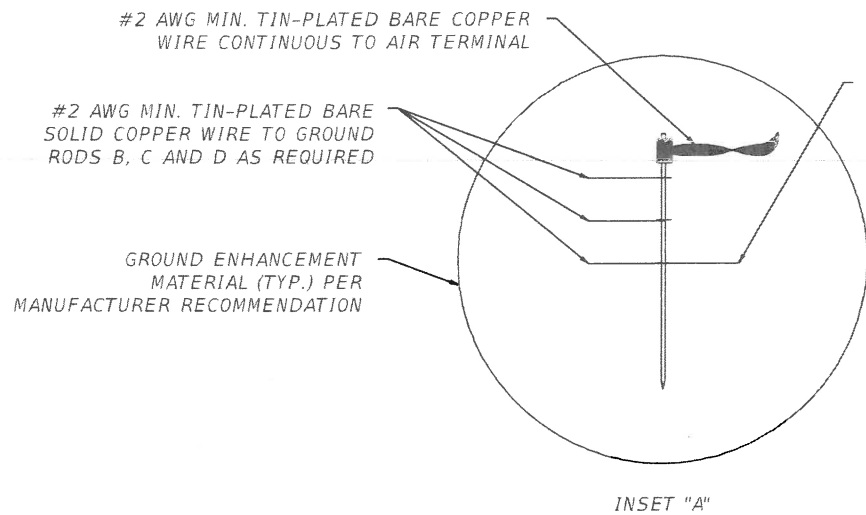


NOTES:

1. BUSSBAR TO BE ALUMINUM AND HAVE A MINIMUM RATING OF 100 AMPS. WHEN MAIN BREAKER EXCEEDS 100 AMPS, THE BUSSBAR SHALL MATCH THE BREAKER AMPERAGE.
2. ALL ABOVE GROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL.
3. THE CONTRACTOR SHALL VERIFY EXISTING SERVICE ARRESTOR OPERATION PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL LABEL THE PROPOSED CONDUCTORS BREAKER AS "HUB AND MVDS" IN THE EXISTING DISCONNECT.



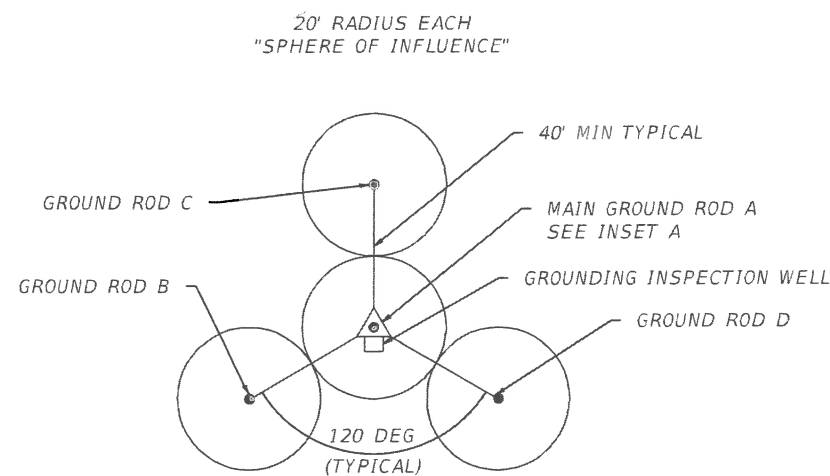
No.		REVISIONS	DATE	BY	SCALE	AS NOTED	HDR	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 6/3/2016 PROJECT NO. 6052010	 MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER BIJAN BEHZADI FL. LICENSE NO. 43868	POWER SERVICE DETAILS	SHEET NO. IT-43
					DESIGNED BY	BB							
					DRAWN BY	GS							
					CHECKED BY	CR							



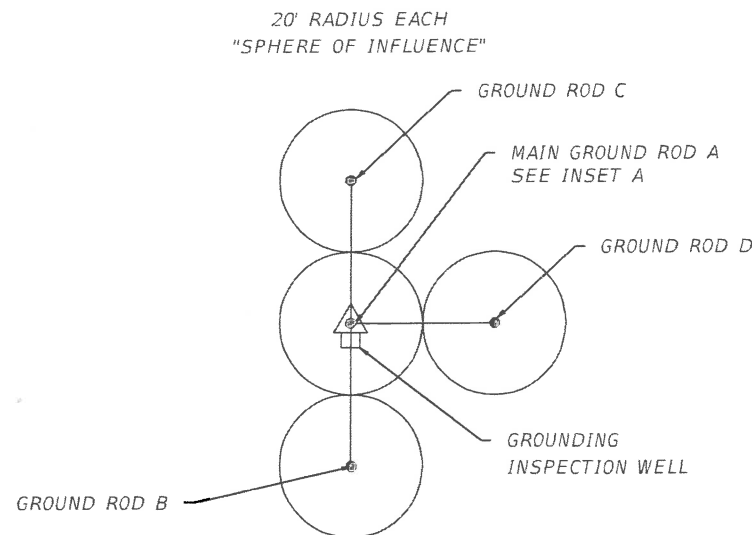
GROUNDING INSPECTION WELL

NOTES:

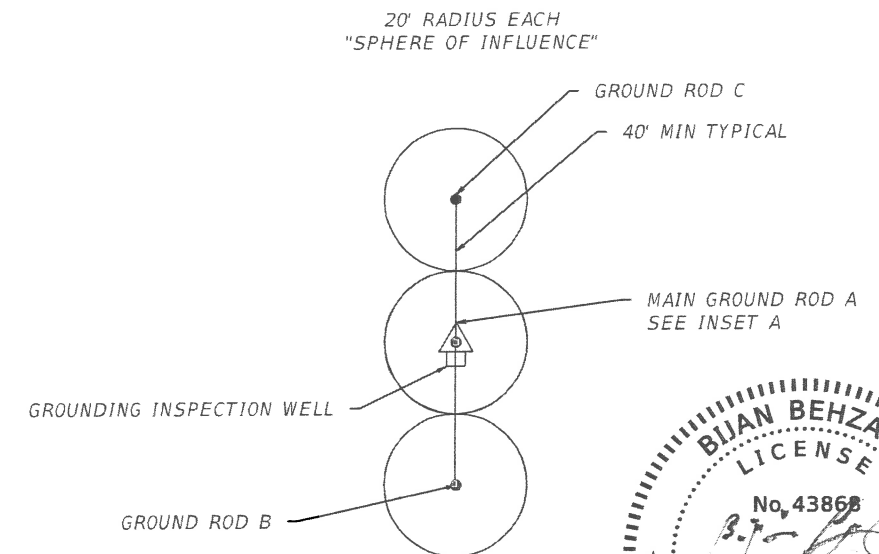
1. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
2. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 6" ABOVE WIRE.
3. GROUND ROD A IS REQUIRED AND SHALL BE INSTALLED IN A PULL BOX. GROUND RODS B, C AND D WILL BE REQUIRED AS NECESSARY TO MEET THE GROUND RESISTANCE REQUIREMENTS IN THE CONTRACT DOCUMENTS AS IDENTIFIED BY THE EOR.
4. PLACE GROUND SYSTEM WITHIN RIGHT WAY.
5. USE OPTIMAL CONFIGURATION IF SPACE IS AVAILABLE OTHERWISE USE GEOMETRIC CONFIGURATION. IN MEDIAN USE OPTIMAL IF POSSIBLE OTHERWISE USE GEOMETRIC OR MEDIAN CONCEPT IN THAT ORDER AS IDENTIFIED BY THE EOR.
6. MAIN GROUND ROD TO BE PLACED WITHIN 3 FEET OF POLE.
7. IF ANY PART OF A GROUNDING ARRAY IS WITHIN 100' OF ANY PART OF ANOTHER GROUND SYSTEM, THE MAIN GROUND ROD OF EACH SYSTEM SHALL BE BONDED WITH AN AWG #6 CONDUCTOR EXOTHERMIC WELDED TO THE MAIN GROUND ROD OF EACH SYSTEM.
8. AFTER COMPLETION OF THE GROUNDING ARRAY, AND ITS CONNECTION TO OTHER GROUND SYSTEMS IF APPLICABLE, IT SHALL BE TESTED BY A FULL FALL OF POTENTIAL TEST AS DEFINED IN IEEE STANDARD 81 (CURRENT EDITION).



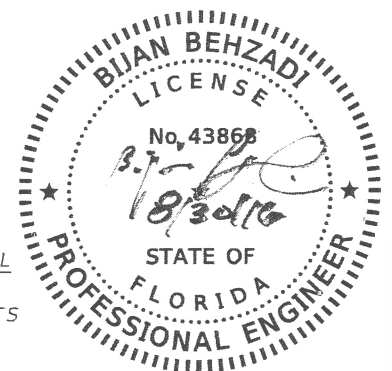
(PREFERRED)
GROUND ROD PLACEMENT DETAIL
(TYPICAL EACH POLE)
(OPTIMAL CONFIGURATION)



(ALTERNATIVE 1)
GROUND ROD PLACEMENT DETAIL
FOR POLE LOCATED IN GEOMETRIC
CONSTRAINT AREA SUCH AS LIMITATION
DUE TO R/W CONSTRAINT.



(ALTERNATIVE 2)
GROUND ROD PLACEMENT DETAIL
FOR POLE LOCATED IN NARROW
MEDIAN AND SIMILAR CONSTRAINTS



No.	REVISIONS	DATE	BY	SCALE AS NOTED DESIGNED BY BB DRAWN BY GS CHECKED BY CR	HDR HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 6/3/2016 PROJECT NO. 6052010	Manatee County Florida MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER BIJAN BEHZADI FL. LICENSE NO. 43868	GROUNDING INSPECTION BOX DETAILS	SHEET NO. IT-44
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