

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

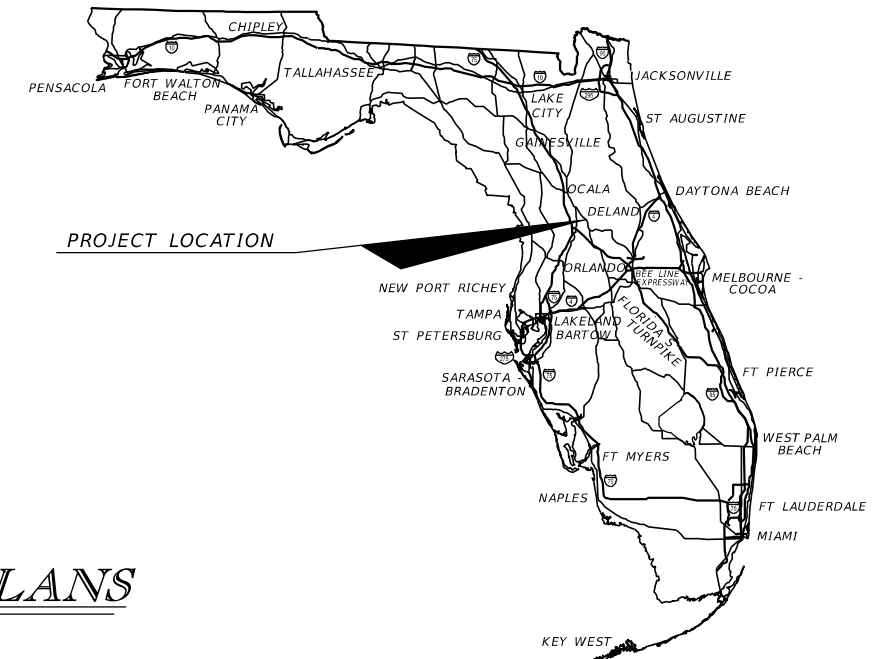
CONTRACT PLANS

FINANCIAL PROJECT ID 238275-2-52-01

LAKE COUNTY (11130)

STATE ROAD NO. 46

INTELLIGENT TRANSPORTATION SYSTEMS PLANS



INDEX OF ITS PLANS

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**GOVERNING STANDARDS AND SPECIFICATIONS:**  
Florida Department of Transportation, 2016 Design Standards and revised Index Drawings as appended herein, and January 2016 Standard Specifications for Road and Bridge Construction, as amended by Contract Documents.

For Design Standards click on the "Design Standards" link at the following web site:  
<http://www.dot.state.fl.us/rddesign/>

For the Standard Specifications for Road and Bridge Construction click on the "Specifications" link at the following web site:  
<http://www.dot.state.fl.us/specificationsoffice/>

INTELLIGENT TRANSPORTATION SYSTEMS PLANS  
SHOP DRAWINGS TO BE SUBMITTED TO:

MICHAEL J. NOESEN, P.E.  
BES INC.  
11007 N 56TH STREET, SUITE 208  
TEMPLE TERRACE, FL 33617

PLANS PREPARED BY:

BES Inc.  
C.A. No. 9835  
11007 N 56TH STREET, SUITE 208  
TEMPLE TERRACE, FL 33617  
TEL NO. (813) 985 7800  
FAX NO. (813) 985 7884  
VENDOR NO. 20-0242028  
CONTRACT NO. C-9862

NOTE: THE SCALE OF THESE PLANS MAY  
HAVE CHANGED DUE TO REPRODUCTION.

**PLANS UPDATE  
MARCH, 2016**

KEY SHEET REVISIONS	
DATE	DESCRIPTION

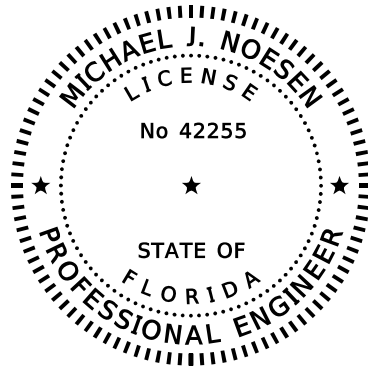
INTELLIGENT TRANSPORTATION SYSTEMS PLANS  
ENGINEER OF RECORD: MICHAEL J. NOESEN, P.E.

P.E. NO.: 42255

FISCAL YEAR	SHEET NO.
17	IT-1

FDOT PROJECT MANAGER: MEDHAT HASSAN, P.E.

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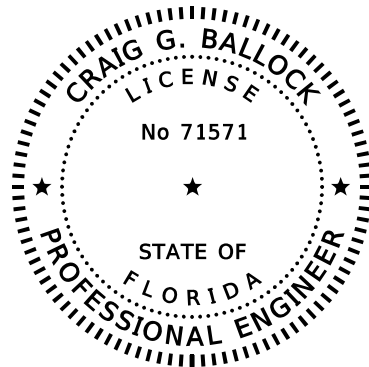
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
CERTIFICATE OF AUTHORIZATION: 9835  
MICHAEL J. NOESEN, P.E. No. 42255

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004. F.A.C.

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IT-48 TO IT-50	WIRING DIAGRAMS



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GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC.  
919 LAKE BALDWIN LANE  
ORLANDO, FLORIDA 32814  
CERTIFICATE OF AUTHORIZATION: 5882  
CRAIG G. BALLOCK, P.E. No. 71571

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INDEX OF ITS PLANS

SHEET NO. SHEET DESCRIPTION

IT-2	SIGNATURE SHEET
IT-51	REPORT OF SPT BORING RESULTS FOR CCTV POLES

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.  IT-2
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					SR 46	LAKE	238275-2-52-01	

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																				TOTAL THIS SHEET		GRAND TOTAL		REF SHEET
			IT-8		IT-9		IT-10		IT-11		IT-12		IT-13		IT-14		IT-15		IT-16		IT-17		PLAN	FINAL	PLAN	FINAL	
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	
630-2-11	CONDUIT,FURNISH & INSTALL,OPEN, OPEN TRENCH	LF	690		1380		640		700		700		820		700		700		700		700		7730				
630-2-12	CONDUIT,FURNISH & INSTALL,DIRECTIONAL BORE	LF																									
633-1-121	FIBER OPTIC CABLE,F&I,UNDERGROUND,2-12 FIBERS	LF			45		20						140									205					
633-1-123	FIBER OPTIC CABLE,F&I,UNDERGROUND,49-96 FIBERS	LF	940		1290		690		750		830		750		750		750		750		750		8250				
633-2-31	FIBER OPTIC CONNECTION,INSTALL,SPLICE	EA			168		12						12									192					
633-2-32	FIBER OPTIC CONNECTION,INSTALL, TERMINATION	EA	72																			72					
633-3-11	FIBER OPTIC CONNECTION,INSTALL,SPLICE ENCLOSURE	EA	1		2		1						1									5					
633-3-12	FIBER OPTIC CONNECTION HARDWARE,F&I,SPLICETRAY	EA	1		2		1						1									5					
633-3-15	FO CONN.,INSTALL, PATCH PNL PRETERMINATED	EA			1		1						1									3					
635-2-11	PULL & SPLICE BOX,F&I,13"x24"COVER SIZE				5		1						2									8					
635-2-13	PULL & SPLICE BOX, F&I, 36" ROUND COVER SIZE	EA	2		3		1		1		2		2		1		1		1		1		15				
639-1-112	ELEC PWR SERVICE,F&I,UG,METER, FURN BY POWER CO	AS			1								1									2					
639-2-1	ELECTRICAL SERVICE WIRE	LF			1875		1170						360									3405					
639-3-12	ELECTRICAL SERVICE DISCONNECT,F&I,CABINET	EA			1		1						1									3					
641-2-12	PRESTRESSED CONC POLE,F&I,TY P-II, SERV POLE	EA			1								1									2					
641-2-13	PRESTRESSED CONC POLE,F&I,TY P-III	EA					1																				
641-3-163	CONCRETE CCTV POLE,F&I,WITH LOWERING DEVICE, 63'	EA											1									1					
641-3-175	CONCRETE CCTV POLE,F&I,WITH LOWERING DEVICE, 75'	EA			1																	1					
660-3-11	VEH DET SYSTEM-MICROWAVE,F&I, CABINET EQUIPMENT	EA					1						1									2					
660-3-12	VEH DET SYSTEM-MICROWAVE, F&I, ABOVE GRD EQUIP	EA					1						1									2					
676-2-111	ITS FIELD CAB,F&I,336,POLE MOUNT,24"WX36"HX20"D	EA			1		1						1									3					
682-1-133	ITS CCTV CAM,F&I,DOME ENCLOS,NON-PRESS,IP,HD	EA			1								1									2					
684-1-1	MANAGED FIELD ETHERNET SWITCH, F& I	EA			1		1						1									3					
684-2-1	DEVICE SERVER, f&i	EA			1		1						1									3					
684-3-11	DIGITAL VIDEO ENCODER W/ SOFTWARE DECODER	EA			1								1									2					
685-106	SYSTEM AUX,F&I, UNINTERRUPTIBLE POWER SOURCE	EA			1		1						1									3					

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			TABULATION OF QUANTITIES	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		IT-3

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TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																				TOTAL THIS SHEET		GRAND TOTAL		REF SHEET
			IT-18		IT-19		IT-20		IT-21		IT-22		IT-23		IT-24												
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL					
630-2-11	CONDUIT,FURNISH & INSTALL,OPEN, OPEN TRENCH	LF	650		680		660		720		700		700		315								4425		12155		
630-2-12	CONDUIT,FURNISH & INSTALL,DIRECTIONAL BORE	LF	150																				150		150		
633-1-121	FIBER OPTIC CABLE,F&I,UNDERGROUND,2-12 FIBERS	LF																					0		205		
633-1-123	FIBER OPTIC CABLE,F&I,UNDERGROUND,49-96 FIBERS	LF	650		730		710		870		750		750		365								4825		13075		
633-2-31	FIBER OPTIC CONNECTION,INSTALL,SPLICE	EA																					0		192		
633-2-32	FIBER OPTIC CONNECTION,INSTALL, TERMINATION	EA	72												72								144		216		
633-3-11	FIBER OPTIC CONNECTION,INSTALL,SPLICE ENCLOSURE	EA													1								1		6		
633-3-12	FIBER OPTIC CONNECTION HARDWARE,F&I,SPLICETRAY	EA													1								1		6		
633-3-15	FO CONN.,INSTALL, PATCH PNL PRETERMINATED	EA	1																				1		4		
635-2-11	PULL & SPLICE BOX,F&I,13"x24"COVER SIZE	EA																					0		8		
635-2-13	PULL & SPLICE BOX, F&I, 36" ROUND COVER SIZE	EA	1		1		1		2		1		1		1								8		23		
639-1-112	ELEC PWR SERVICE,F&I,UG,METER, FURN BY POWER CO	AS																					0		2		
639-2-1	ELECTRICAL SERVICE WIRE	LF																					0		3405		
639-3-12	ELECTRICAL SERVICE DISCONNECT,F&I,CABINET	EA																					0		3		
641-2-12	PRESTRESSED CONC POLE,F&I,TY P-11, SERV POLE	EA																					0		2		
641-2-13	PRESTRESSED CONC POLE,F&I,TY P-111	EA																									
641-3-163	CONCRETE CCTV POLE,F&I,WITH LOWERING DEVICE,63'	EA																					0		1		
641-3-175	CONCRETE CCTV POLE,F&I,WITH LOWERING DEVICE,75'	EA																							1		
660-3-11	VEH DET SYSTEM-MICROWAVE,F&I, CABINET EQUIPMENT	EA																					0		2		
660-3-12	VEH DET SYSTEM-MICROWAVE, F&I, ABOVE GRD EQUIP	EA																					0		2		
676-2-111	ITS FIELD CAB,F&I,336,POLE MOUNT,24"WX36"HX20"D	EA																					0		3		
682-1-133	ITS CCTV CAM,F&I, DOME ENCLOS, NON-PRESS, 1P, HD	EA																					0		2		
684-1-1	MANAGED FIELD ETHERNET SWITCH, F & I	EA																					0		3		
684-2-1	DEVICE SERVER, f&i	EA																					0		3		
684-3-11	DIGITAL VIDEO ENCODER W/ SOFTWARE DECODER	EA																					0		2		
685-106	SYSTEM AUX,F&I, UNINTERRUPTIBLE POWER SOURCE	EA																					0		3		

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
 MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

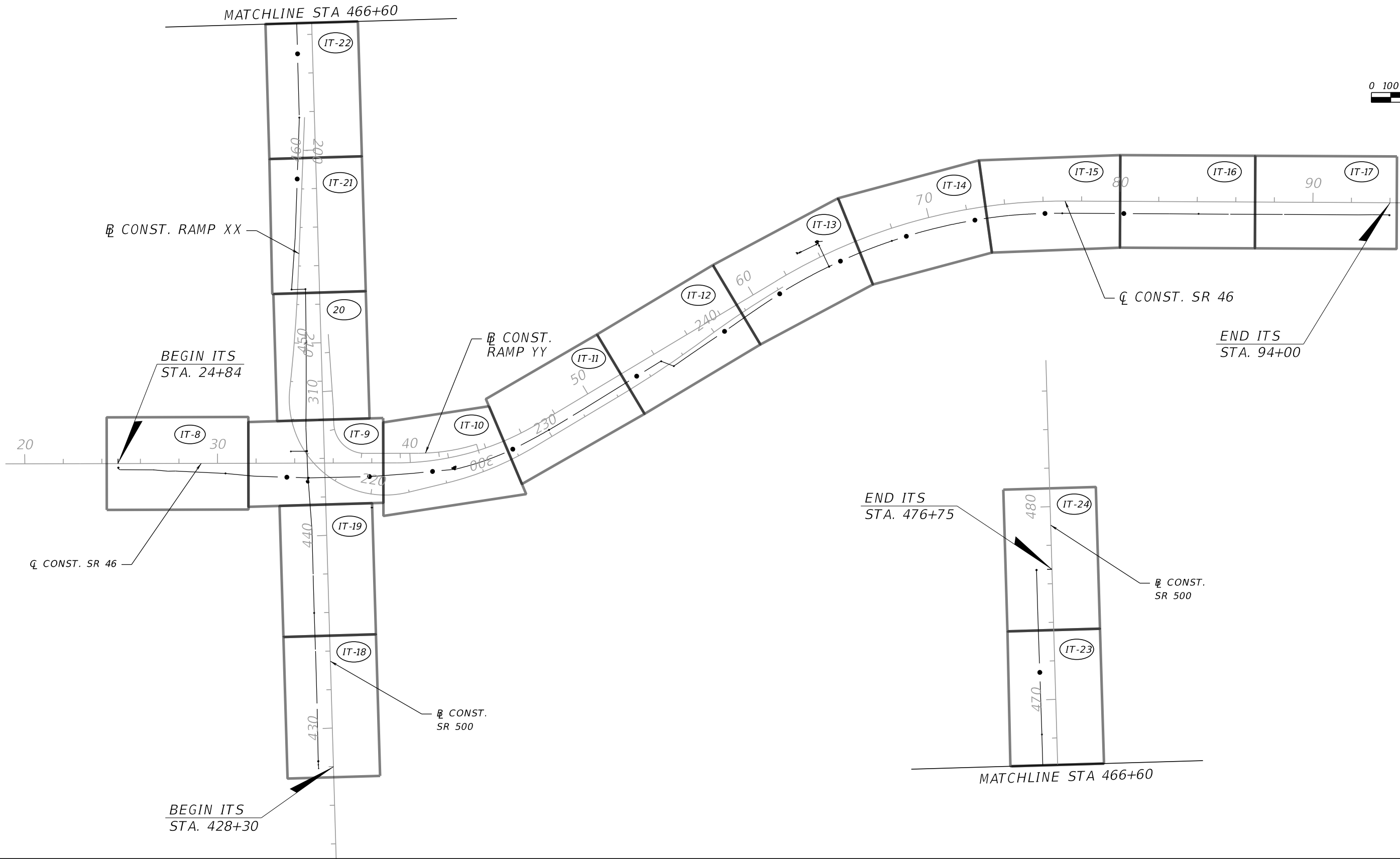
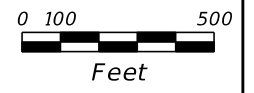
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

TABULATION OF QUANTITIES

SHEET NO.  
 IT-4

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BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
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**ITS PROJECT LAYOUT**









SHEET NO.  
IT-6

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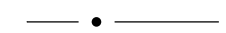
GENERAL NOTES  
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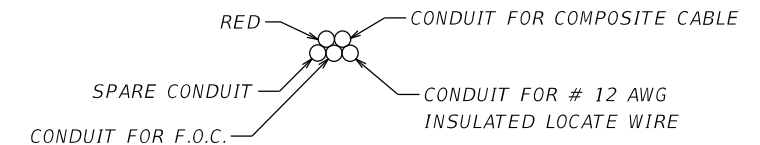
1. COORDINATE DESIGN AND CONSTRUCTION ACTIVITIES AND SCHEDULES WITH ON-GOING OR FUTURE PROJECTS IN THE VICINITY OF THE PROJECT LIMITS. OBTAIN REQUIRED PERMITS AND APPROVAL OF THE CONTRACT ITS PLANS PRIOR TO COMMENCING WORK.
2. NOTIFY FDOT DISTRICT 5 ITS AT LEAST 72 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. CALL SUNSHINE ONE-CALL , A MINIMUM OF FORTY EIGHT (48) HOURS AND A MAXIMUM OF NINETY SIX (96) HOURS BEFORE ANY EXCAVATION WORK. FDOT DISTRICT 5 ITS MAINTENANCE DEPARTMENT SHALL BE CONTACTED FOR ALL SUNGUIDE ITS RELATED UTILITY LOCATES AND QUESTIONS. NOTE THAT NOT ALL UTILITY COMPANIES ARE MEMBERS OF THE SUNSHINE ONE CALL, AND THEREFORE, CONTACT THEM INDIVIDUALLY.
4. EXISTING UTILITIES (IF ANY) SHOWN ON PLANS ARE FOR INFORMATION PURPOSES ONLY. VERIFY THE VERTICAL AND HORIZONTAL (VVH) PRESENCE OF ANY EXISTING UTILITIES, PRIOR TO UNDERGROUND OR DIRECTIONAL BORING OF CONDUIT INSTALLATIONS.
5. OBTAIN AND ANALYZE GEOTECHNICAL BORING INFORMATION AT THE PROPOSED POLE LOCATIONS. ADJUST THE FOUNDATION DEPTH AND WIDTH AS NECESSARY.
6. THE LOCATION OF PROPOSED POLE, FOUNDATION, CONDUIT AND PULL BOXES SHOWN IN THESE PLANS IS APPROXIMATE. THEIR LOCATION MAY BE CHANGED TO AVOID CONFLICTS WITH EXISTING /PROPOSED UTILITIES, DRAINAGE STRUCTURES, TREES, SIGNS AND EXISTING CONDUIT. NO PULL BOXES OF ANY TYPE SHALL BE INSTALLED IN DRAINAGE SWALES, DITCHES OR PAVED SHOULDERS.
7. INSTALL ONE 2" CONDUIT FOR ELECTRICAL SERVICE WIRES FOR POWER, BETWEEN THE UTILITY POLE AND ITS POLE DISCONNECT.
8. COORDINATE WITH DUKE ENERGY PRIOR TO ANY CONSTRUCTION WITHIN 20 FEET OF ENERGIZED ELECTRICAL CONDUCTORS. ALL PRECAUTIONARY MEASURES AND EXTREME CAUTION SHALL BE EXERCISED AROUND HIGH VOLTAGE AREAS.
9. ALL CONDUIT TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF EACH WORKING DAY OR WHEN THE WORK ZONE BECOMES INACTIVE.
10. ALL SPARE CONDUITS (IF ANY) SHALL BE CAPPED USING PLUGS/ CONDUIT CAPS TO AVOID ENTRY OF DUST, DIRT OR MOISTURE.
11. ALL ELECTRICAL EQUIPMENT SHALL BE WATERPROOF. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO THE GROUNDING ELECTRODES USING EXOTHERMIC WELDS.
12. MVDS WORK SHALL INCLUDE THE FURNISH AND INSTALL OF WEATHER HEAD, MOUNTING EQUIPMENT, POWER AND DATA CABLES, SURGE PROTECTION DEVICE (SPD) AND ANY OTHER INCIDENTAL FOR SUCCESSFUL INSTALLATION OF MVDS.
13. WORK SHALL INCLUDE THE FURNISH AND INSTALL OF A UPS. THE UPS AT EACH MICROWAVE TOWER SITE REQUIRES A 120V, NEMA L5-20P TWIST-LOCK PLUG. ("L"-LOCKABLE, "P"- PLUG).
14. INSTALL THE DRILL SHAFT FOUNDATION AND 10FT X 10FT CONCRETE MOW PAD, IN ADDITION TO THE FURNISH AND INSTALL OF THE ITS POLE. MOW PAD DIMENSIONS SUBJECT TO FIELD CONDITIONS AND ENGINEER APPROVAL.
15. PAY ITEM NUMBER 633-3-123: THE QUANTITIES INCLUDED 200 FT OF COILED SLACK INSIDE EACH SPICE BOX AND 50 FT INSIDE EACH FIBER OPTIC PULL BOX.
16. CONTACT DISTRICT 5 MAINTENANCE OFFICE AT (386) 740-3463 FOUR WEEKS PRIOR TO COMPLETION OF THE PROJECT TO SCHEDULE A POST CONSTRUCTION INSPECTION OF THE DMS STRUCTURES.

LEGEND

-  CCTV CAMERA
-  MICROWAVE VIDEO DETECTION SYSTEM
-  SPLICE BOX (36" DIA)
-  FO PULL BOX (36" DIA)
-  POWER PULL BOX (13"X24")
-  ITS FIELD CABINET
-  POWER SERVICE POLE
-  CONCRETE ITS POLE

 SCHEDULE 40 PVC DIRECTIONAL BORE CONDUIT WITH FOC CABLES INSIDE (AS SHOWN ON THE PLAN SHEETS).

 2- 2" HDPE CONDUITS WITH 3-1.25" HDPE CONDUITS RED FOR POWER (WITH SEPARATE PULL BOXES)

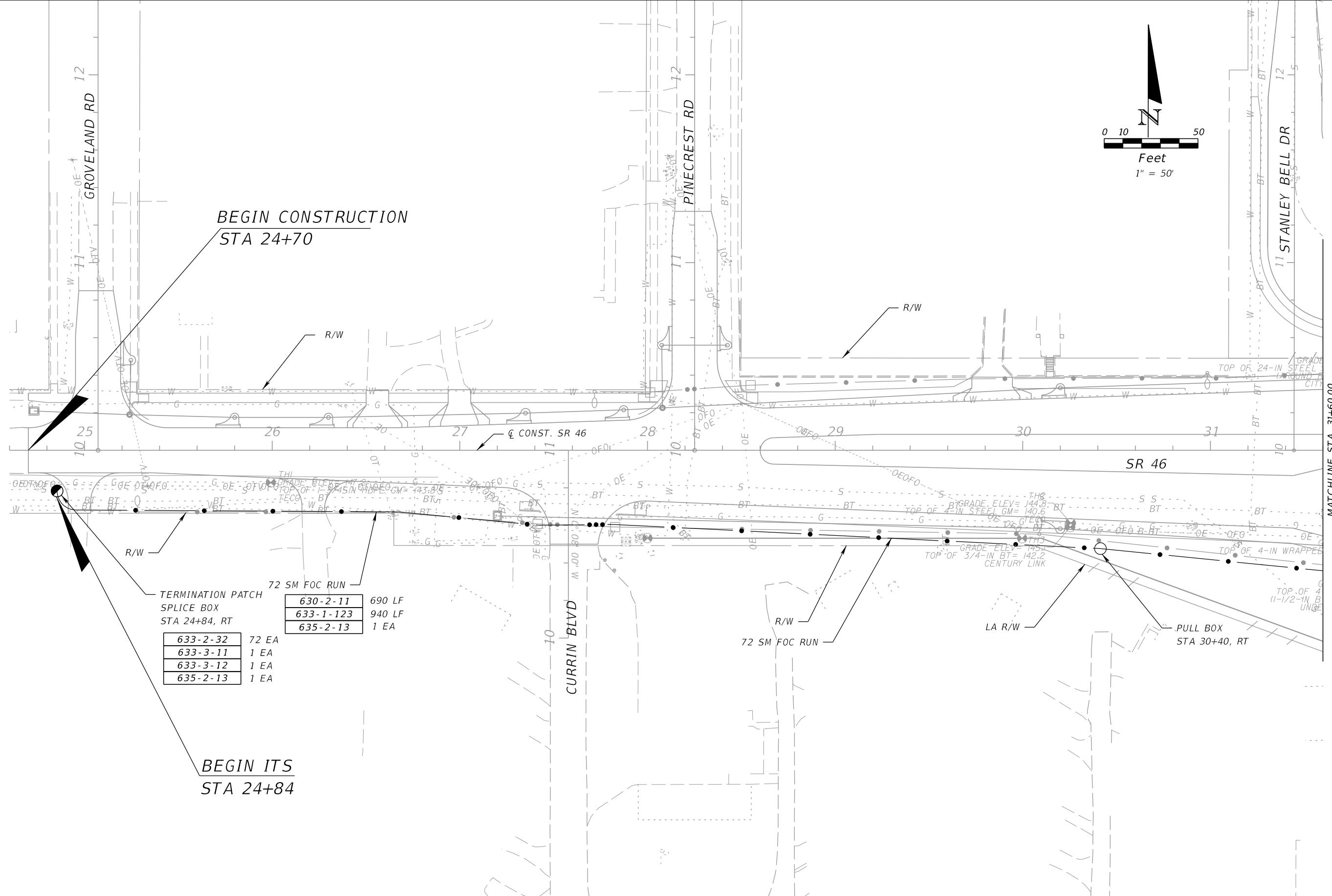
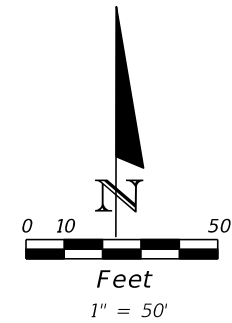


 3 #8 AWG MINIMUM SIZE CONDUCTORS FOR ITS DEVICE POWER AND GROUND INSIDE RED CONDUIT.

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.  IT-7
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					SR 46	LAKE	238275-2-52-01	

**GENERAL NOTES**

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BEGIN CONSTRUCTION  
STA 24+70

630-2-11	690 LF
633-1-123	940 LF
635-2-13	1 EA

TERMINATION PATCH  
SPLICE BOX  
STA 24+84, RT

633-2-32	72 EA
633-3-11	1 EA
633-3-12	1 EA
635-2-13	1 EA

BEGIN ITS  
STA 24+84

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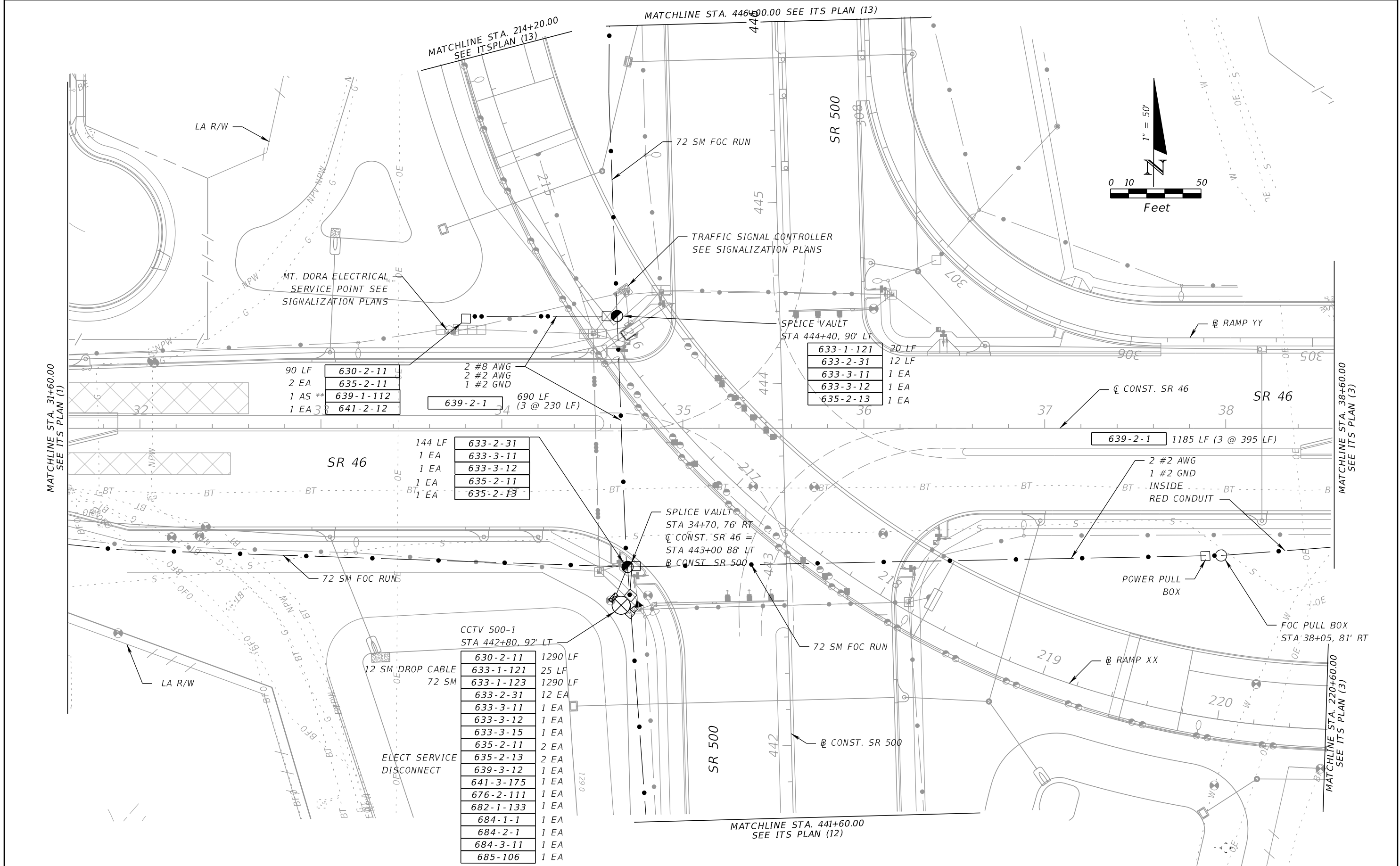
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
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**ITS PLAN (1)**

SHEET NO.  
**IT-8**

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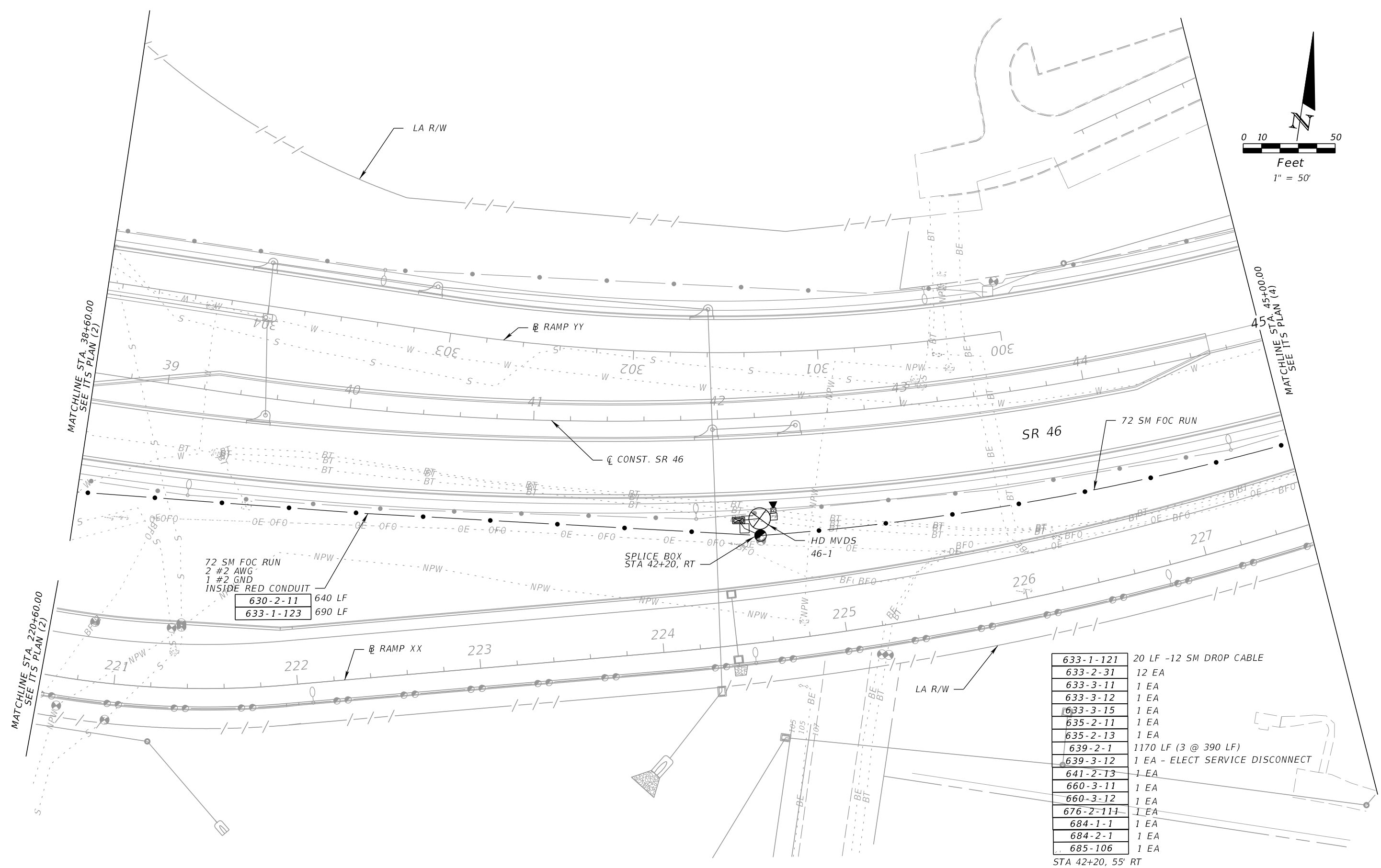
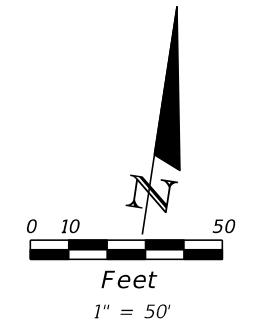
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**ITS PLAN (2)**

SHEET NO.  
IT-9



72 SM FOC RUN  
2 #2 AWG  
1 #2 GND  
INSIDE RED CONDUIT

630-2-11	640 LF
633-1-123	690 LF

633-1-121	20 LF -12 SM DROP CABLE
633-2-31	12 EA
633-3-11	1 EA
633-3-12	1 EA
633-3-15	1 EA
635-2-11	1 EA
635-2-13	1 EA
639-2-1	1170 LF (3 @ 390 LF)
639-3-12	1 EA - ELECT SERVICE DISCONNECT
641-2-13	1 EA
660-3-11	1 EA
660-3-12	1 EA
676-2-111	1 EA
684-1-1	1 EA
684-2-1	1 EA
685-106	1 EA

STA 42+20, 55' RT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

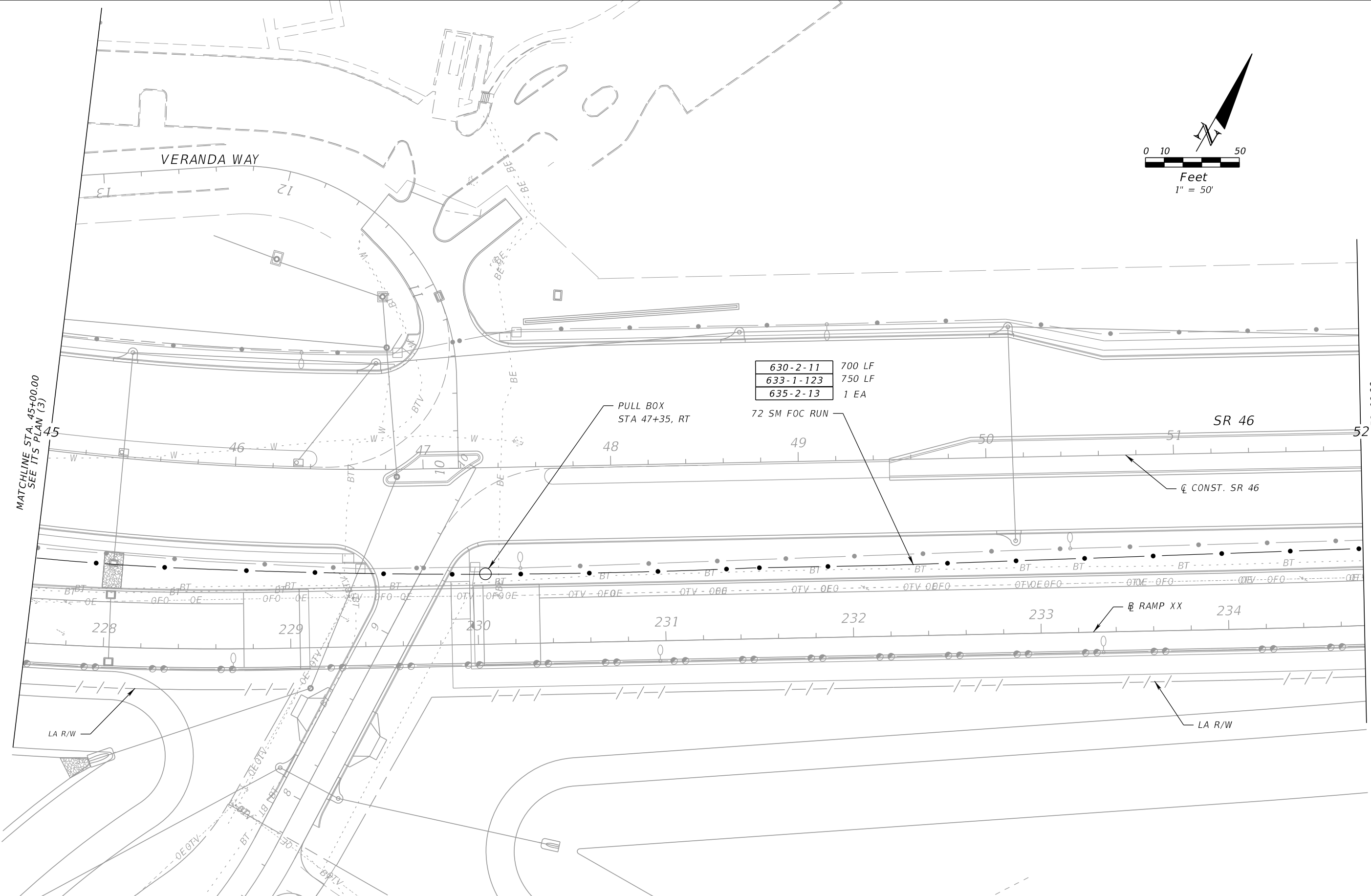
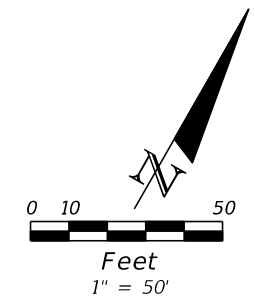
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**ITS PLAN (3)**

SHEET NO.  
**IT-10**

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



630-2-11	700 LF
633-1-123	750 LF
635-2-13	1 EA

PULL BOX  
STA 47+35, RT

72 SM FOC RUN

SR 46

CL CONST. SR 46

RAMP XX

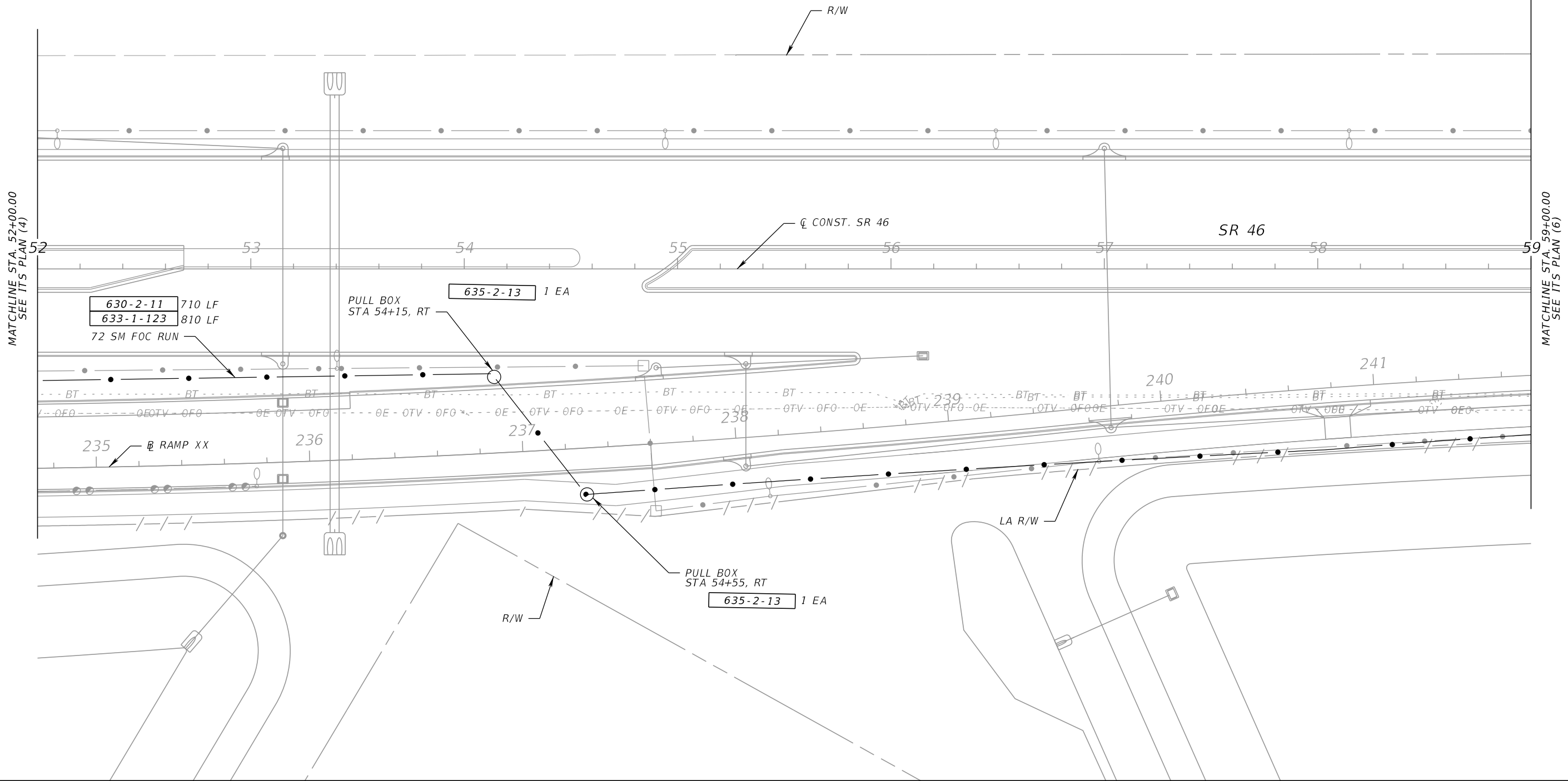
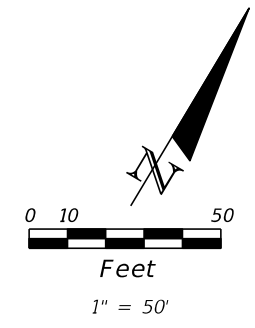
LA R/W

MATCHLINE STA. 45+00.00  
SEE ITS PLAN (3)

MATCHLINE STA. 52+00.00  
SEE ITS PLAN (5)

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ITS PLAN (4)	SHEET NO.  IT-11
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

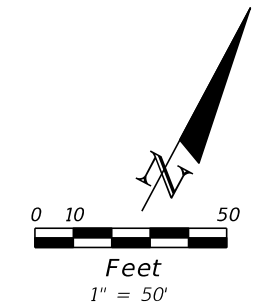


MATCHLINE STA. 52+00.00  
SEE ITS PLAN (4)

MATCHLINE STA. 59+00.00  
SEE ITS PLAN (6)

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ITS PLAN (5)	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		IT-12
					SR 46	LAKE	238275-2-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



STA 63+05, 70' LT

630-2-11	120 LF
635-2-11	1 EA
639-1-112	1 AS
639-2-1	360 LF
639-3-12	1 EA
641-2-12	1 EA

12 SM DROP CABLE

633-1-121	195 LF
635-2-11	1 EA
641-3-163	1 EA
660-3-11	1 EA
660-3-12	1 EA
676-2-111	1 EA
682-1-133	1 EA
684-1-1	1 EA
684-2-1	1 EA
684-3-11	1 EA
685-106	1 EA

STA 64+20, 65' LT

POWER SOURCE  
POWER POLE  
STA 63+00

2 #8 AWG  
1 #\* GND

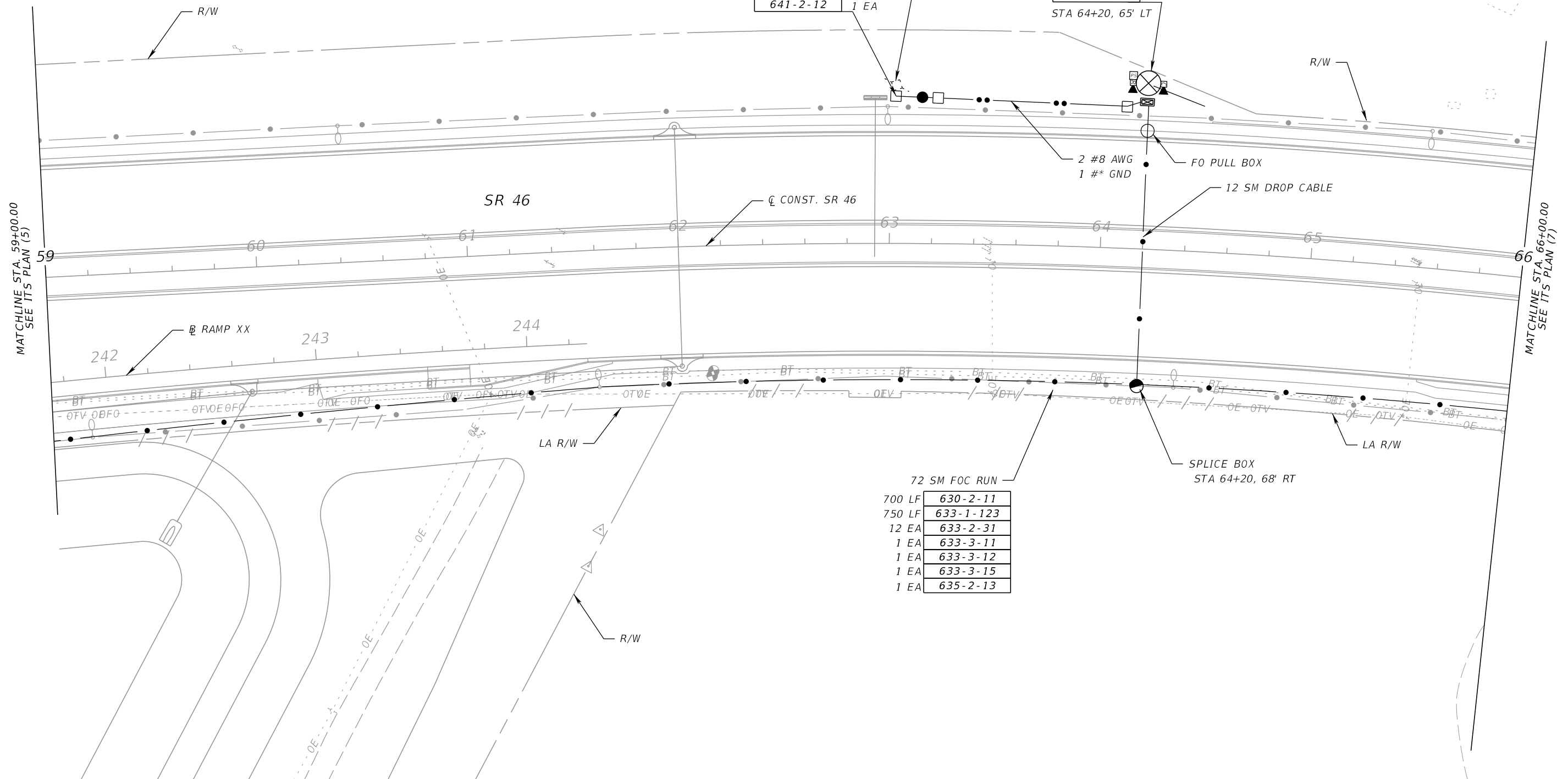
F0 PULL BOX

12 SM DROP CABLE

SPLICE BOX  
STA 64+20, 68' RT

72 SM FOC RUN

700 LF	630-2-11
750 LF	633-1-123
12 EA	633-2-31
1 EA	633-3-11
1 EA	633-3-12
1 EA	633-3-15
1 EA	635-2-13

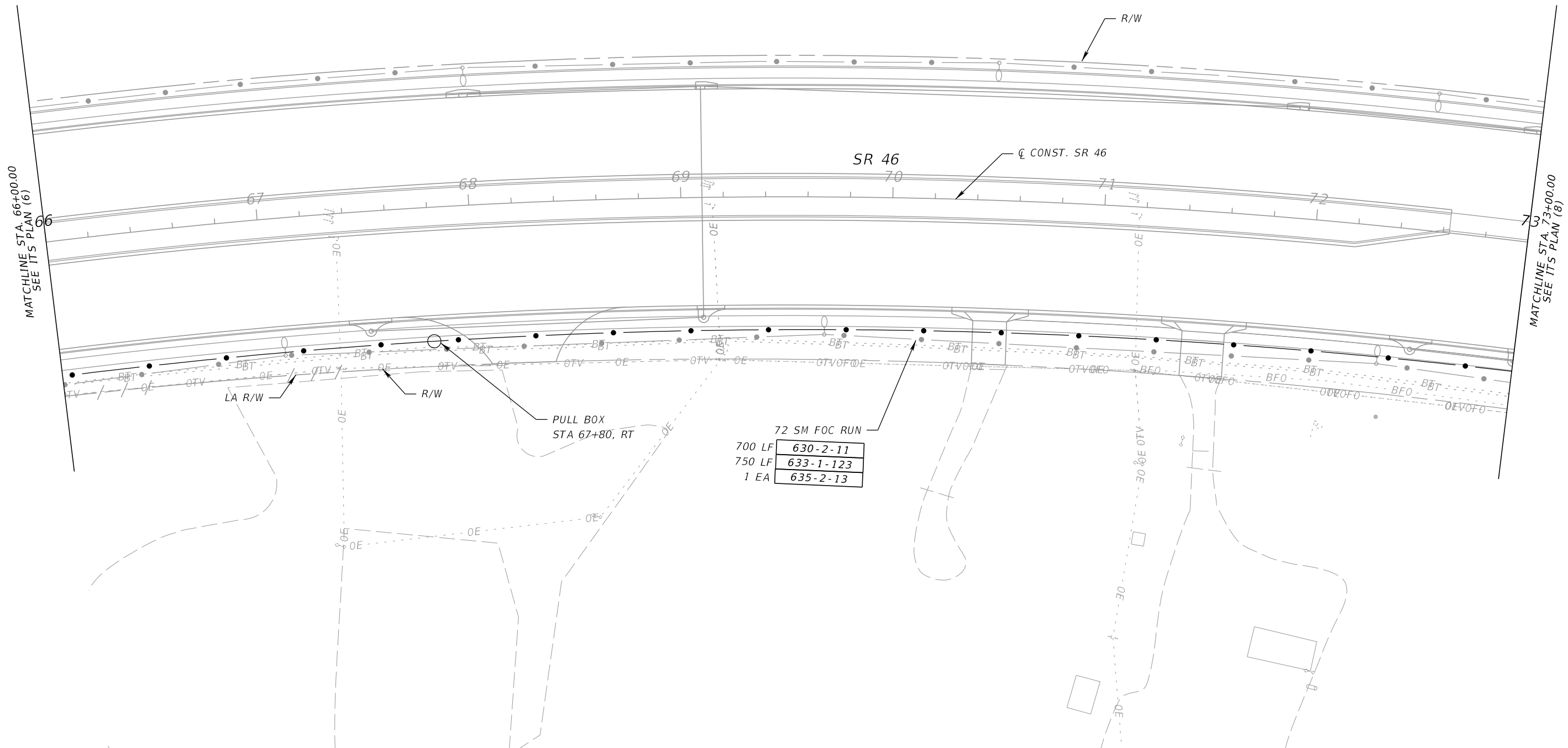
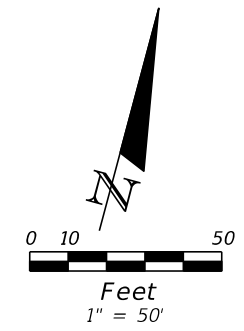


MATCHLINE STA. 59+00.00  
SEE ITS PLAN (5)

MATCHLINE STA. 66+00.00  
SEE ITS PLAN (7)

REVISIONS		DATE		DESCRIPTION	BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.  IT-13
DATE	DESCRIPTION	DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
						SR 46	LAKE	238275-2-52-01	

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MATCHLINE STA. 66+00.00  
SEE ITS PLAN (6)

MATCHLINE STA. 73+00.00  
SEE ITS PLAN (8)

72 SM FOC RUN	
700 LF	630-2-11
750 LF	633-1-123
1 EA	635-2-13

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

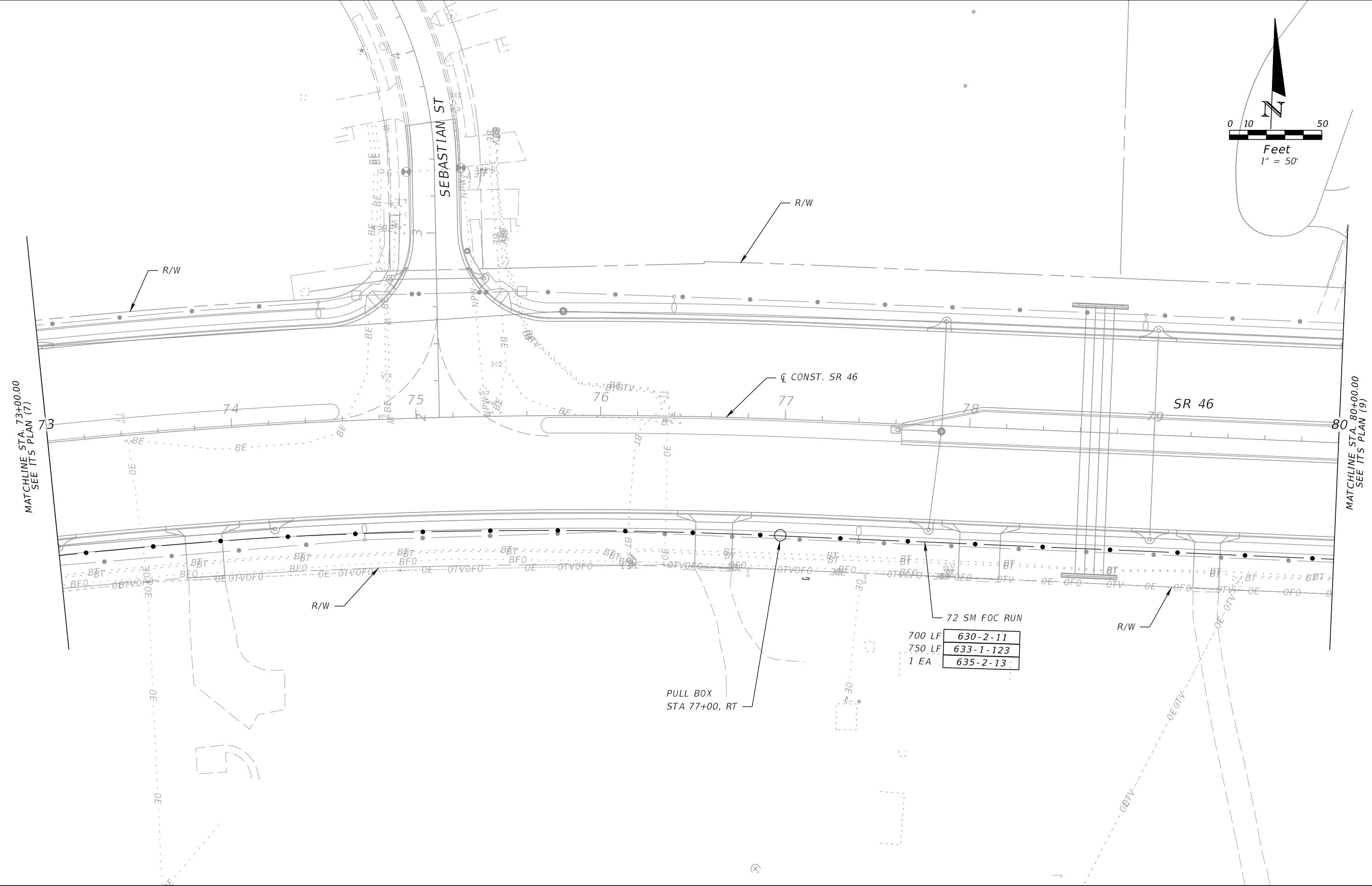
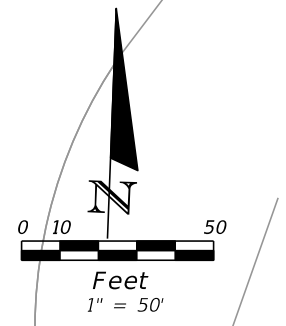
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**ITS PLAN (7)**

SHEET NO.  
**IT-14**

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MATCHLINE STA. 73+00.00  
SEE ITS PLAN (7)

MATCHLINE STA. 80+00.00  
SEE ITS PLAN (9)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

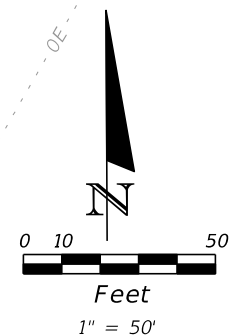
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**ITS PLAN (8)**

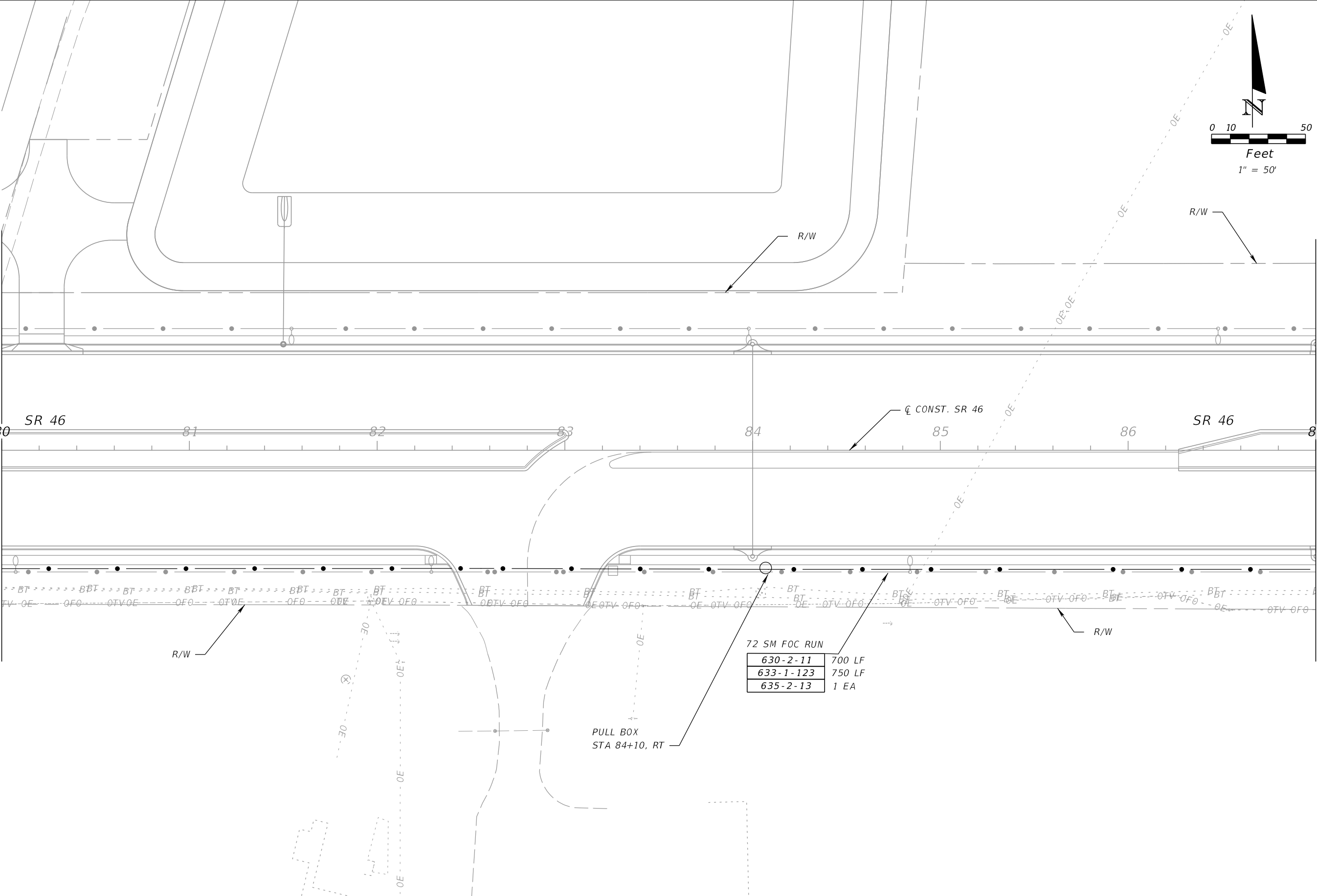
SHEET NO.  
**IT-15**

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MATCHLINE STA. 80+00.00  
SEE ITS PLAN (8)

MATCHLINE STA. 87+00.00  
SEE ITS PLAN (10)



72 SM FOC RUN

630-2-11	700 LF
633-1-123	750 LF
635-2-13	1 EA

PULL BOX  
STA 84+10, RT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

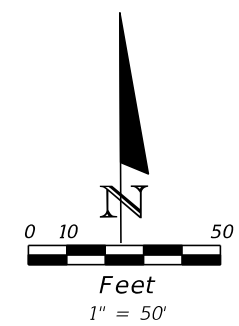
**ITS PLAN (9)**

SHEET NO.  
**IT-16**

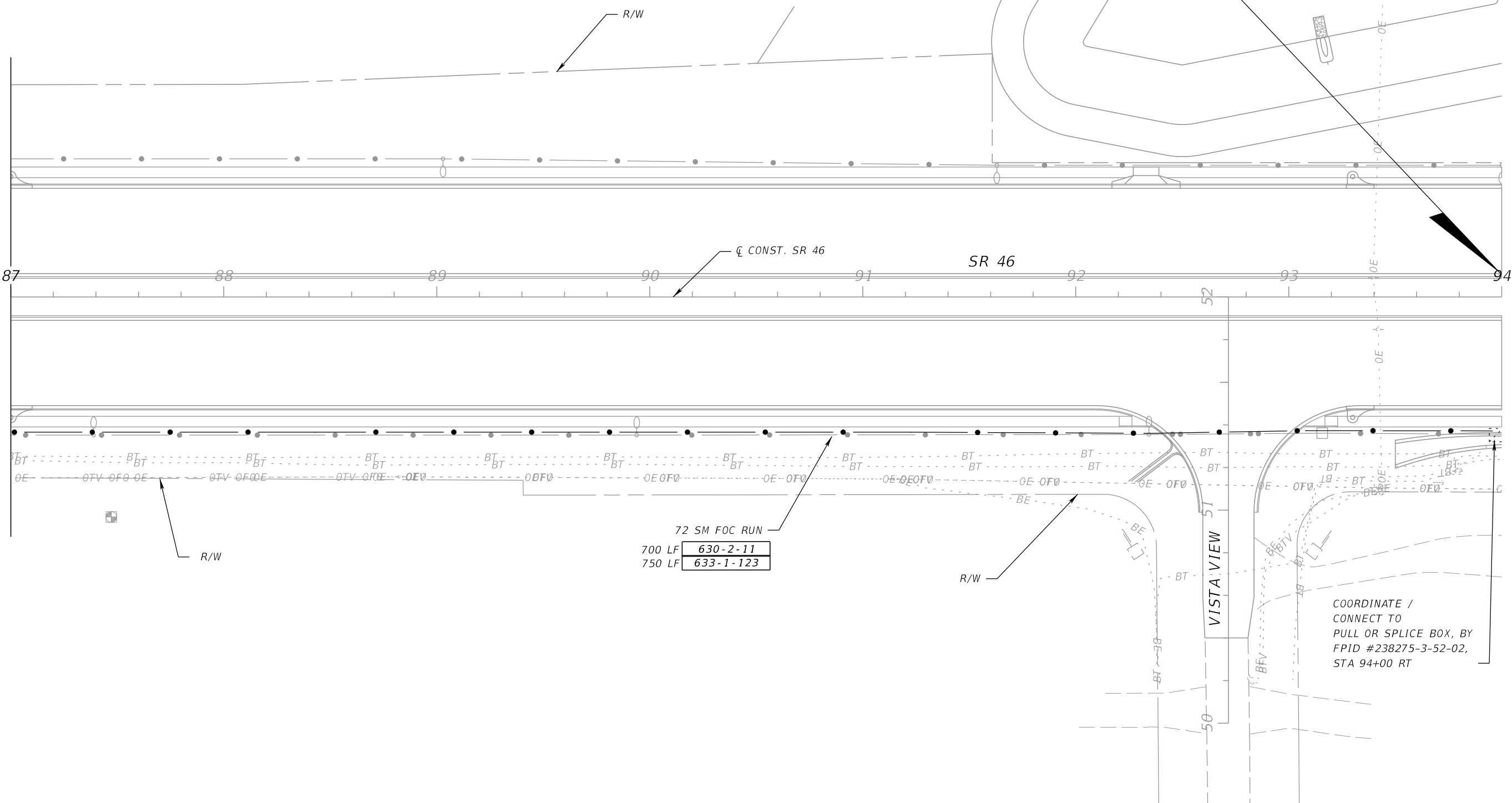
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



END PROJECT  
END ITS  
STA 94+00



MATCHLINE STA. 87+00.00  
SEE ITS PLAN (9)



COORDINATE /  
CONNECT TO  
PULL OR SPLICE BOX, BY  
FPID #238275-3-52-02,  
STA 94+00 RT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

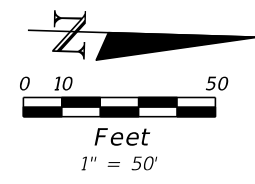
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**ITS PLAN (10)**

SHEET  
NO.  
**IT-17**

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



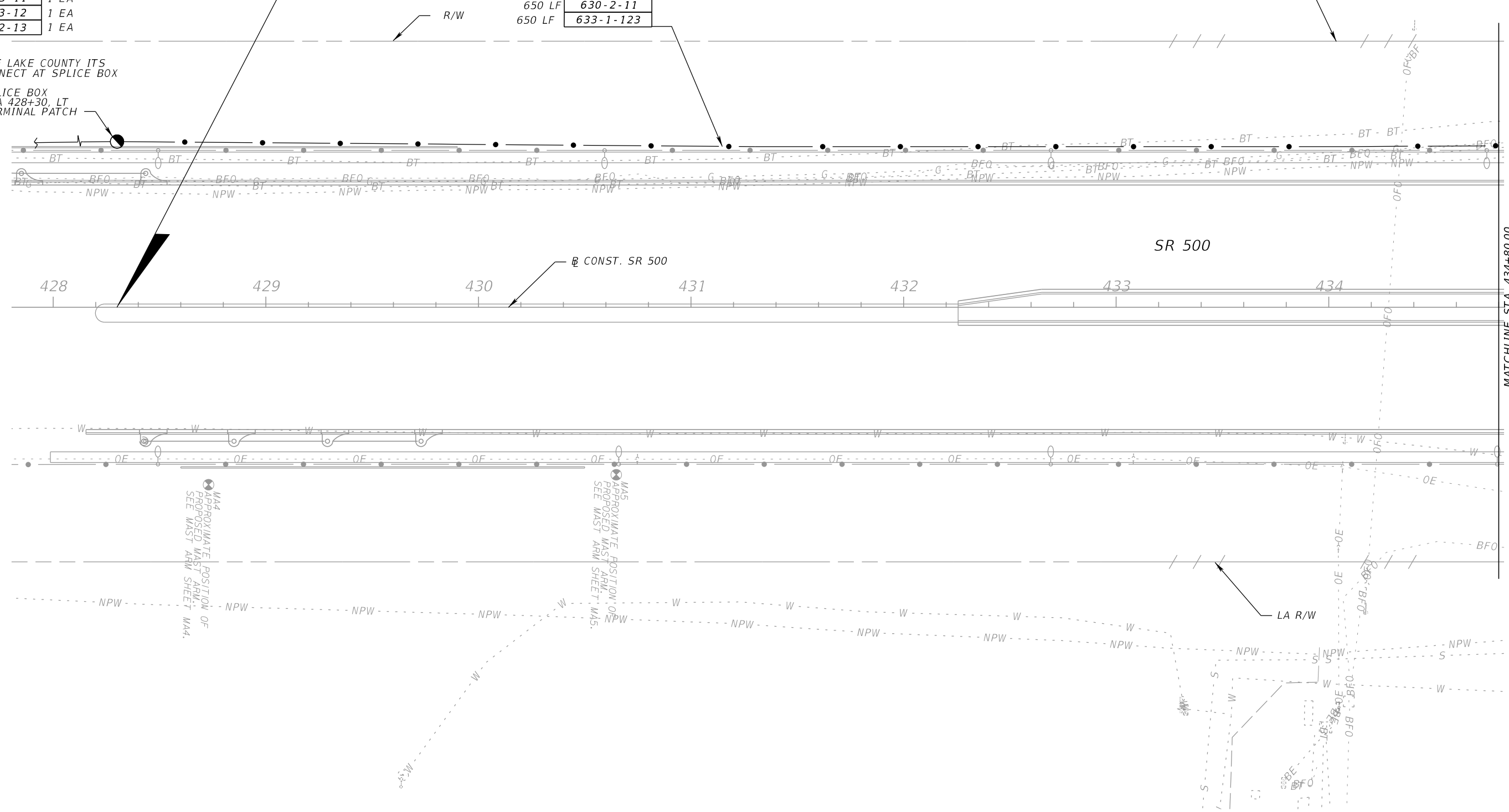
633-2-32	72 EA
633-3-11	1 EA
633-3-12	1 EA
635-2-13	1 EA

72 SM FOC RUN	
650 LF	630-2-11
650 LF	633-1-123

BEGIN ITS SR 500  
STA 428+30

FUTURE LAKE COUNTY ITS  
TO CONNECT AT SPLICE BOX

SPLICE BOX  
STA 428+30, LT  
TERMINAL PATCH



MATCHLINE STA. 434+80.00  
SEE ITS PLAN (12)

MA4  
APPROXIMATE POSITION OF  
PROPOSED MAST ARM.  
SEE MAST ARM SHEET MA4.

MA5  
APPROXIMATE POSITION OF  
PROPOSED MAST ARM.  
SEE MAST ARM SHEET MA5.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

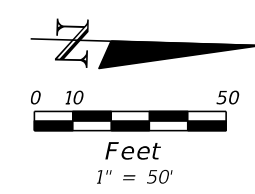
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

ITS PLAN (11)

SHEET  
NO.  
**IT-18**

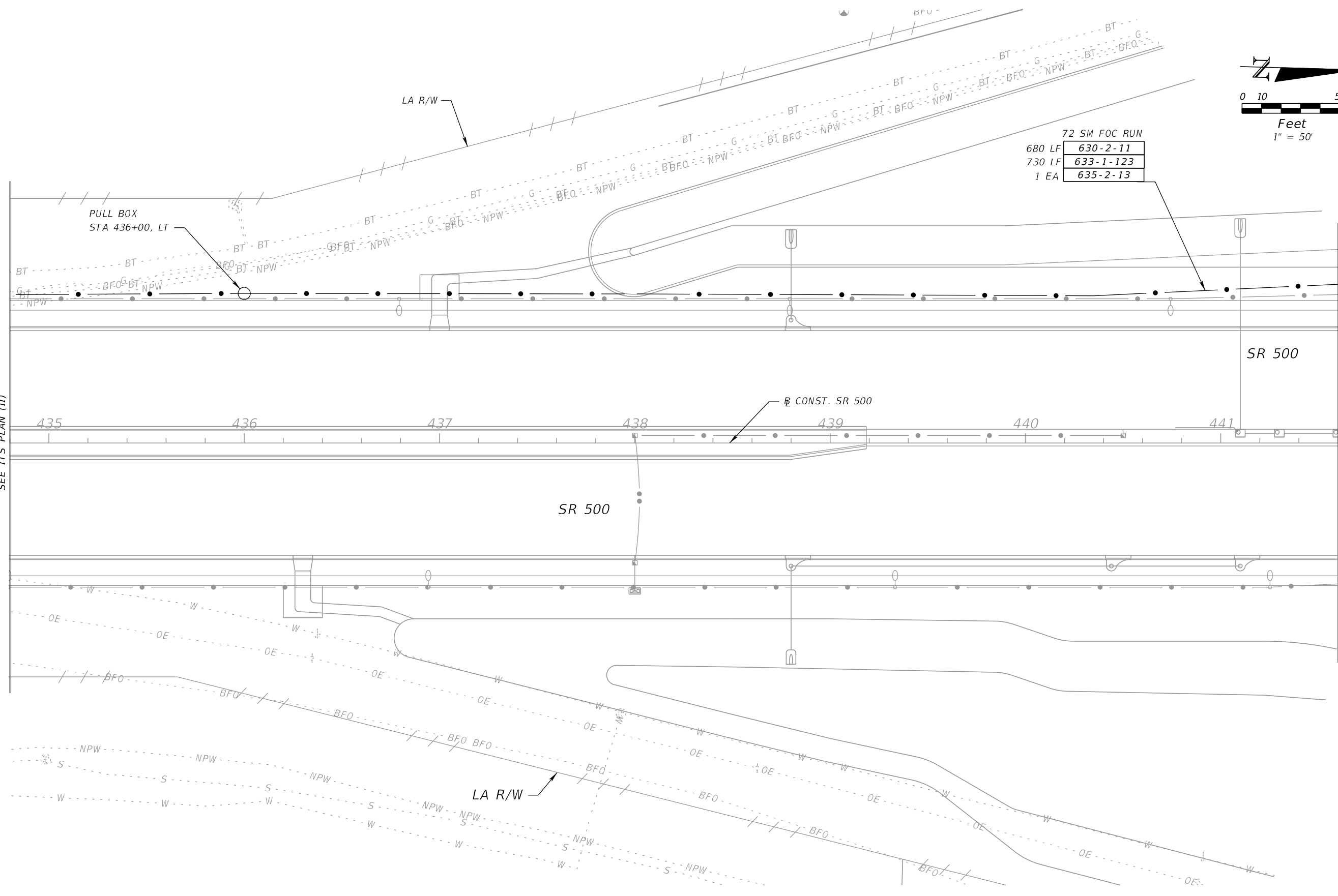
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



72 SM FOC RUN	
680 LF	630-2-11
730 LF	633-1-123
1 EA	635-2-13

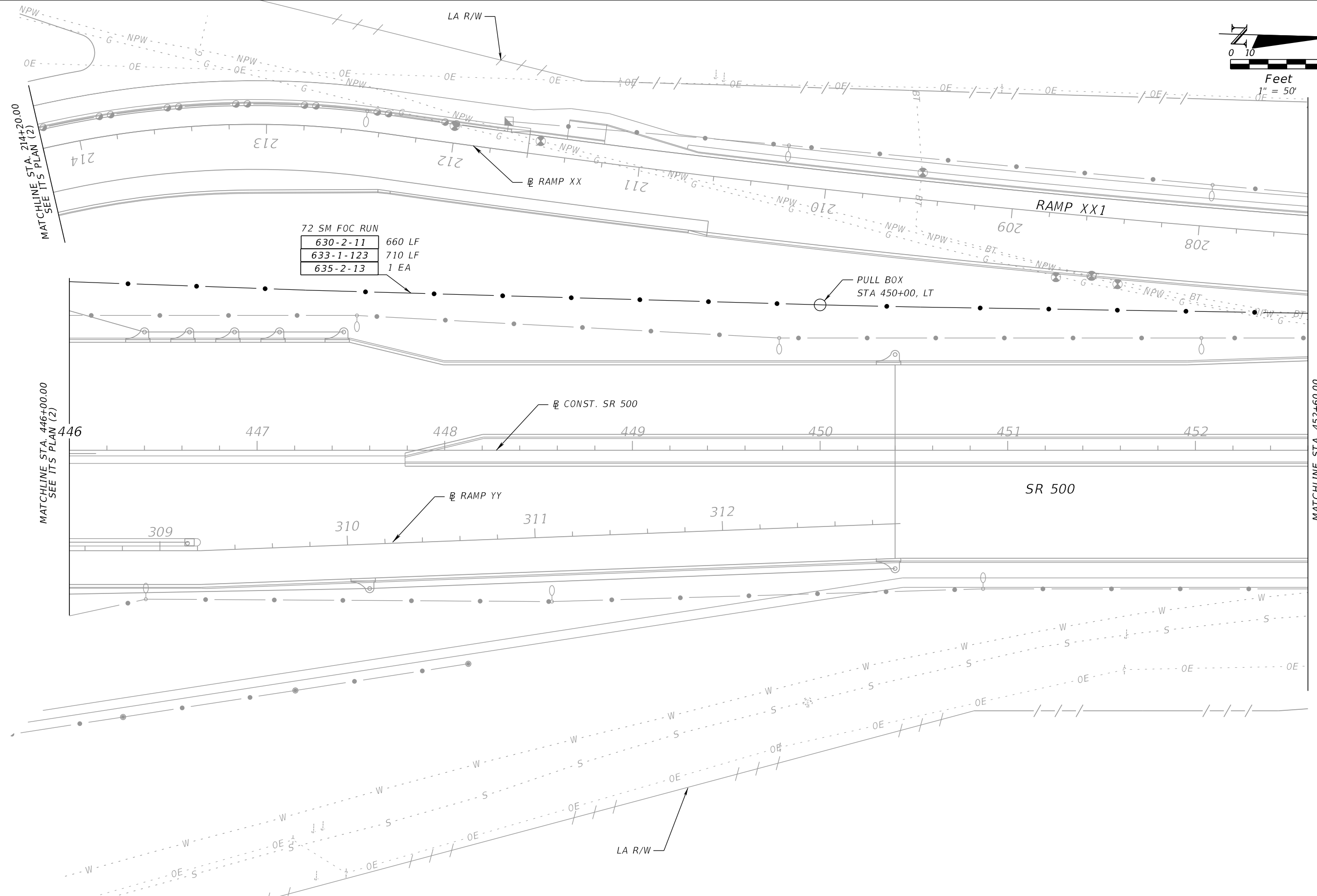
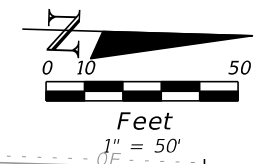
MATCHLINE STA. 434+80.00  
SEE ITS PLAN (11)

MATCHLINE STA. 441+60.00  
SEE ITS PLAN (2)



REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ITS PLAN (12)	SHEET NO.  IT-19
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



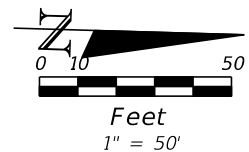
MATCHLINE STA. 214+20.00  
SEE ITS PLAN (2)

MATCHLINE STA. 446+00.00  
SEE ITS PLAN (2)

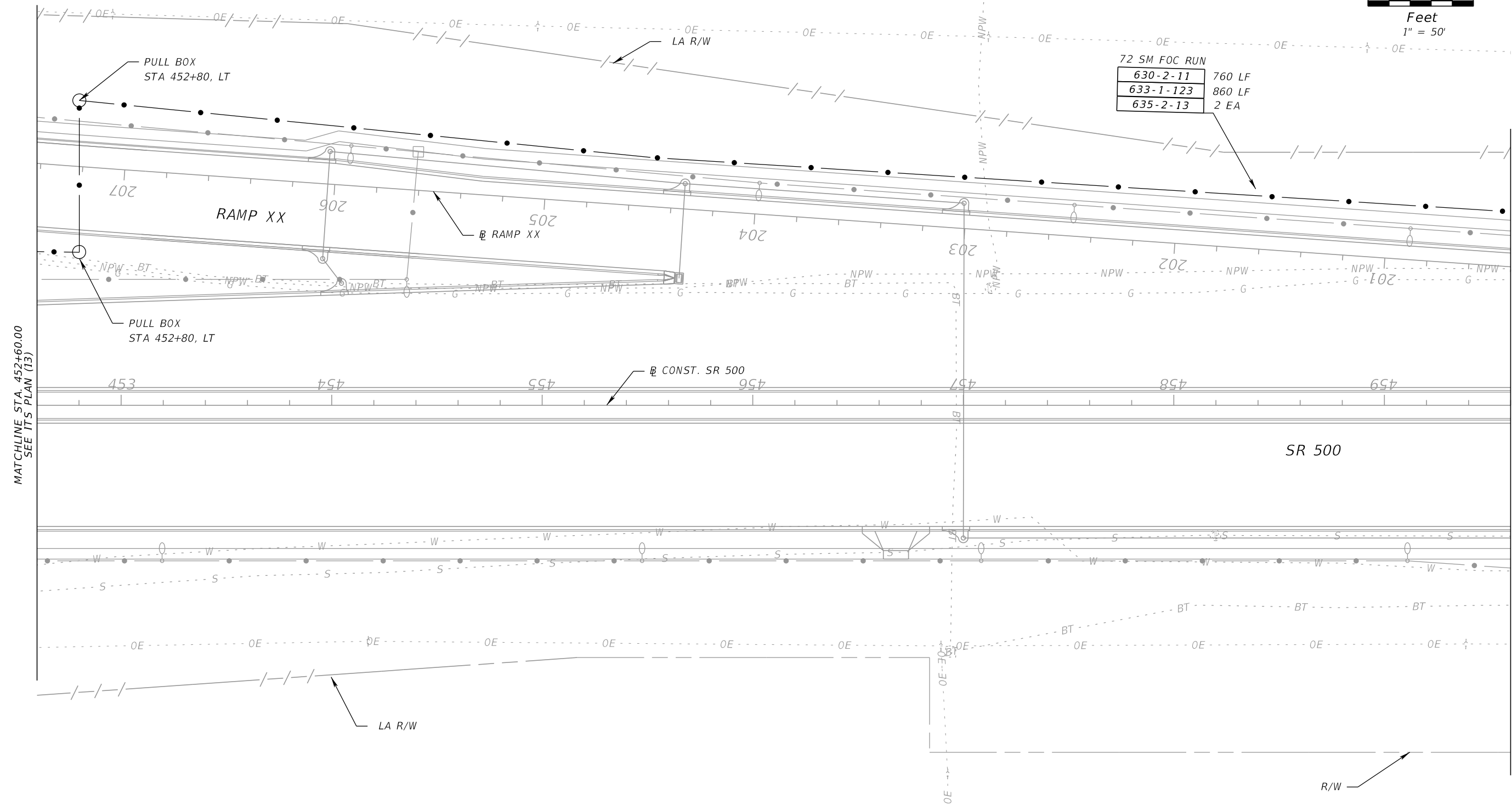
MATCHLINE STA. 452+60.00  
SEE ITS PLAN (14)

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ITS PLAN (13)	SHEET NO. IT-20
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

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72 SM FOC RUN	
630-2-11	760 LF
633-1-123	860 LF
635-2-13	2 EA



MATCHLINE STA. 452+60.00  
SEE ITS PLAN (13)

MATCHLINE STA. 459+60.00  
SEE ITS PLAN (15)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

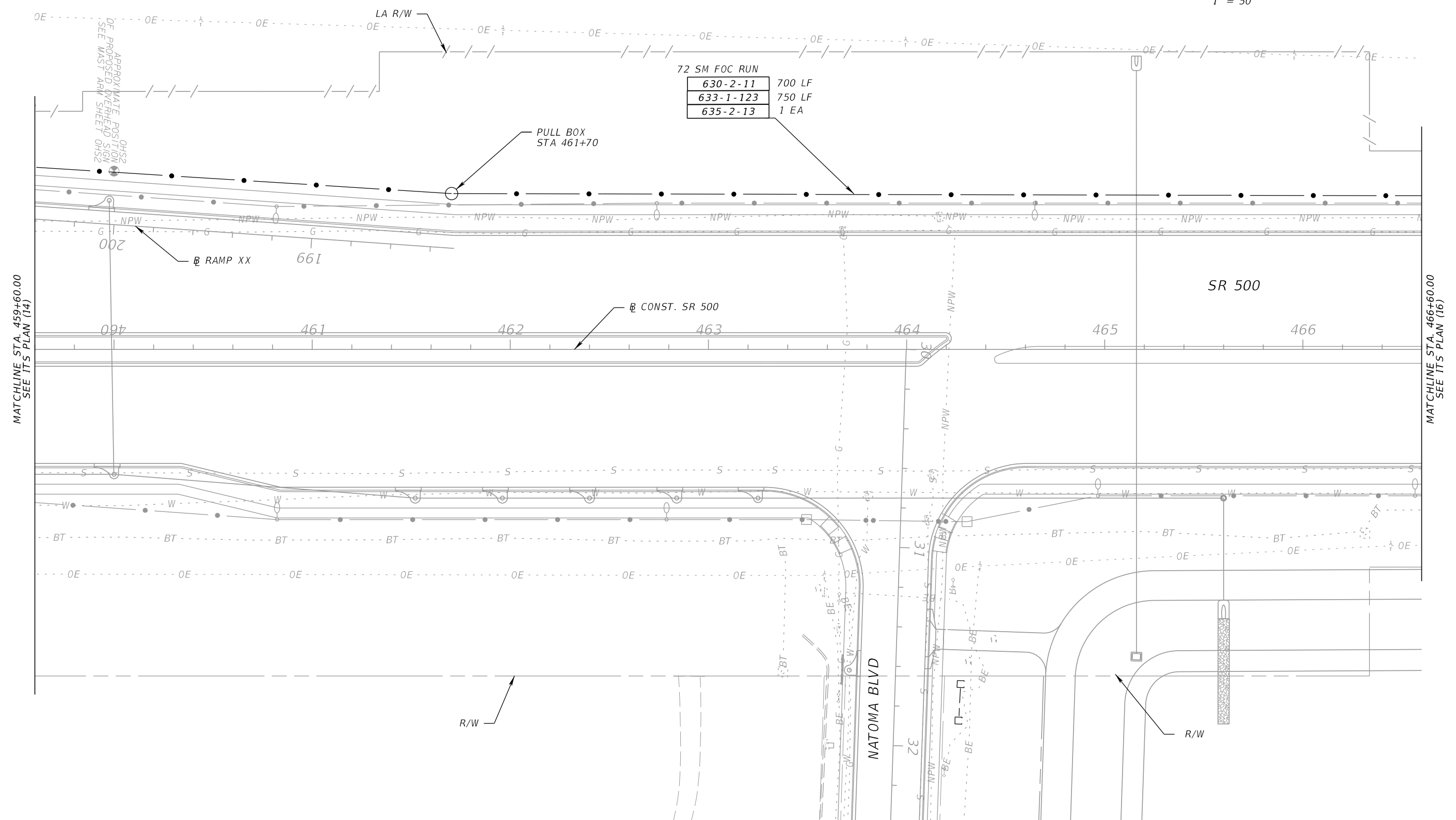
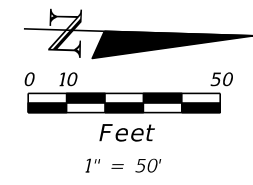
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

ITS PLAN (14)

SHEET NO.  
IT-21

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

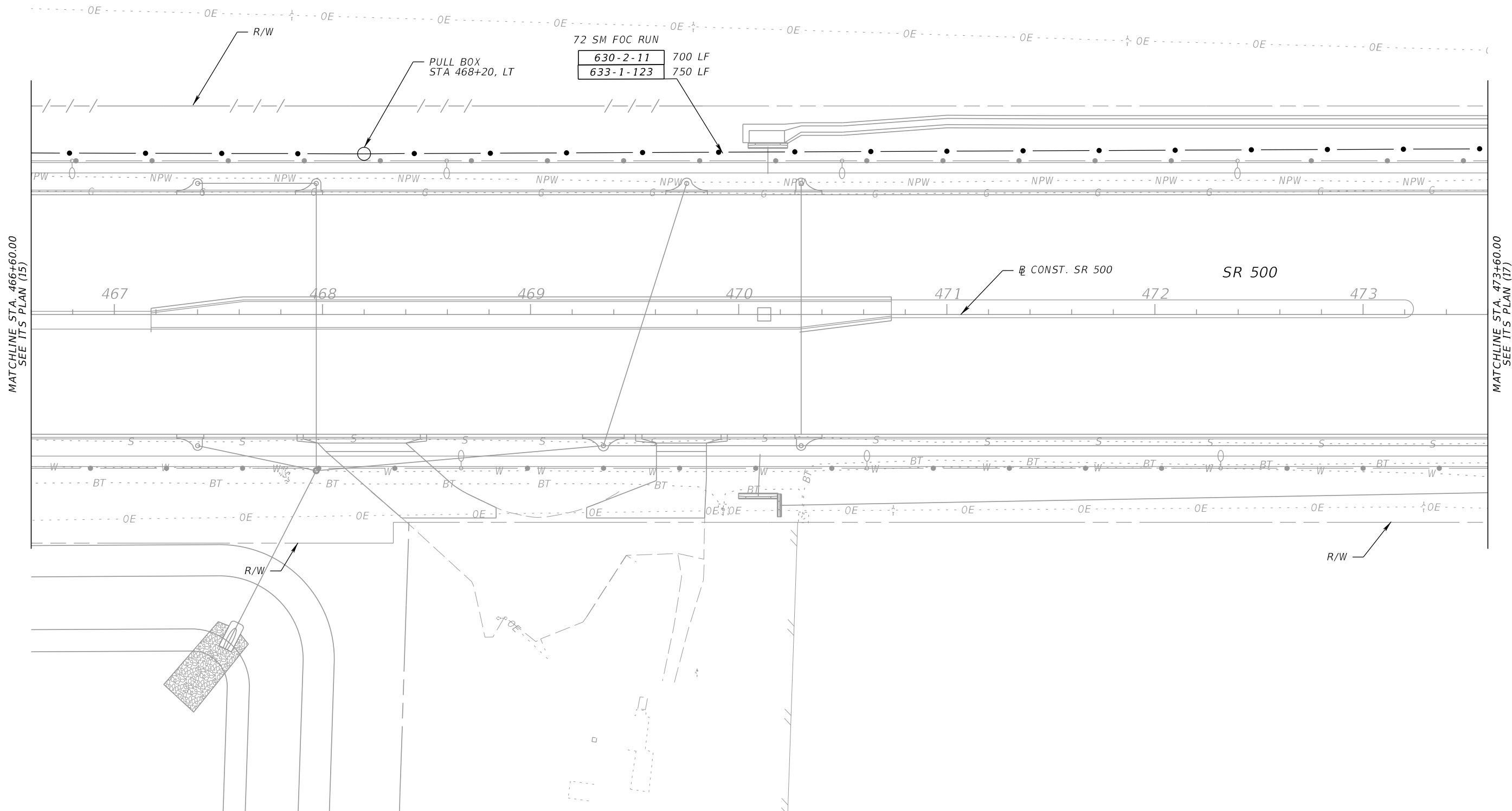
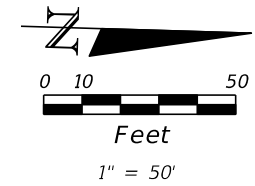
BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
 MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**ITS PLAN (15)**

SHEET NO.  
IT-22

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



72 SM FOC RUN	
630-2-11	700 LF
633-1-123	750 LF

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

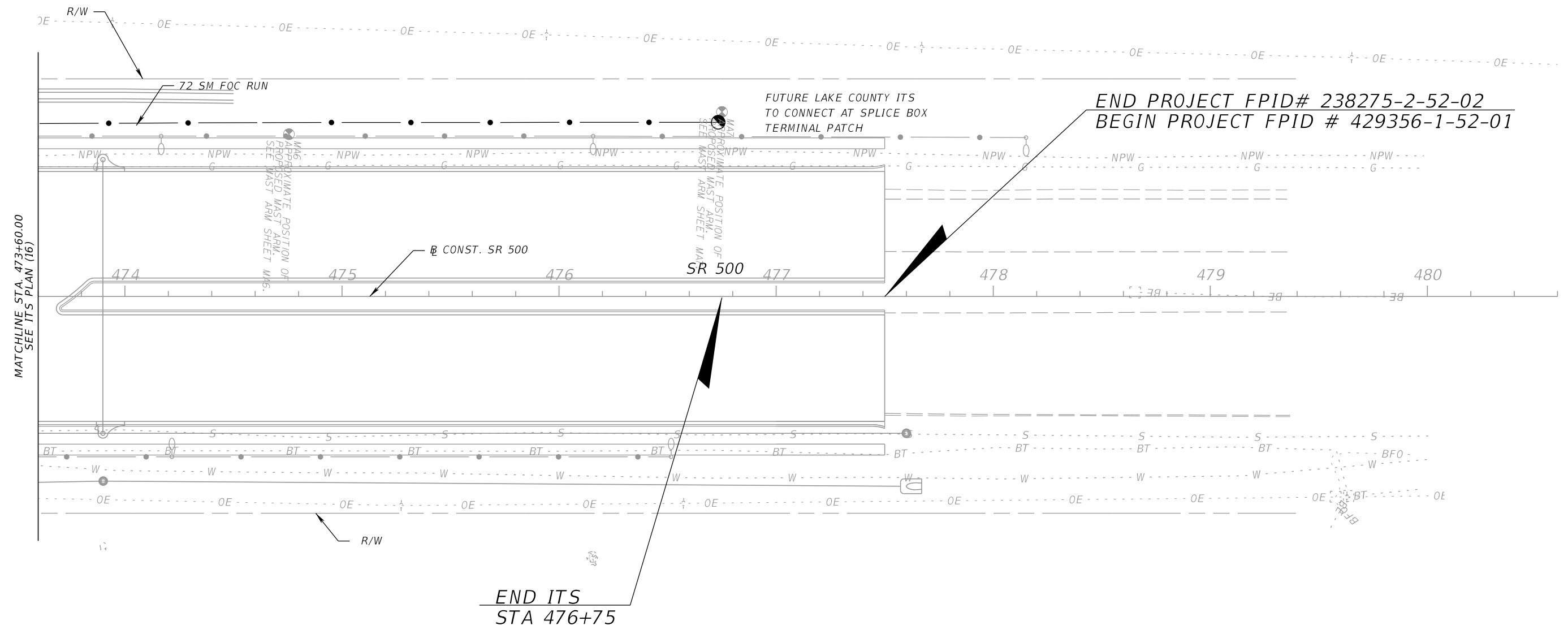
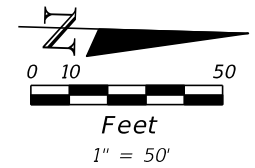
BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
 MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**ITS PLAN (16)**

SHEET NO.  
IT-23

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

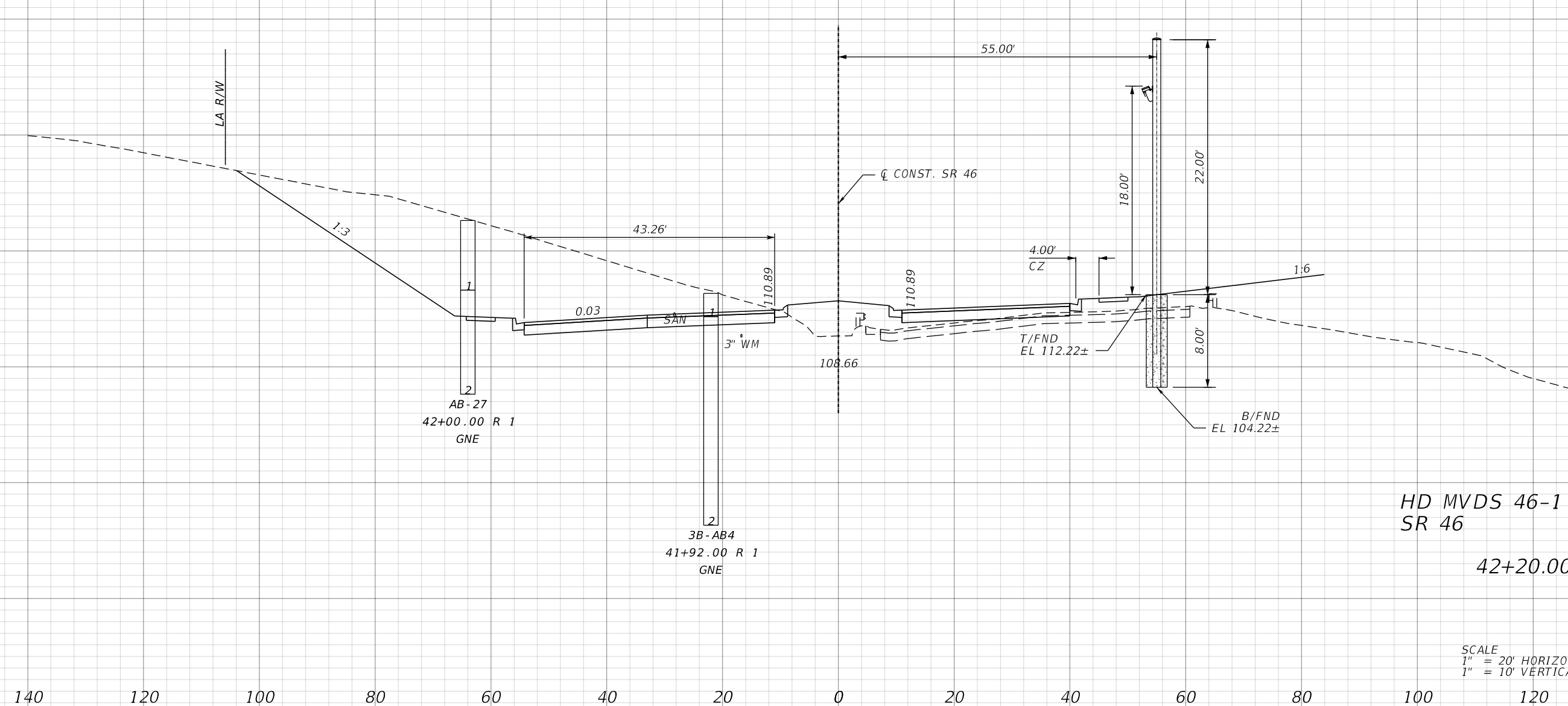


REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ITS PLAN (17)	SHEET NO.  IT-24
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



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HD MVDS 46-1  
SR 46  
42+20.00

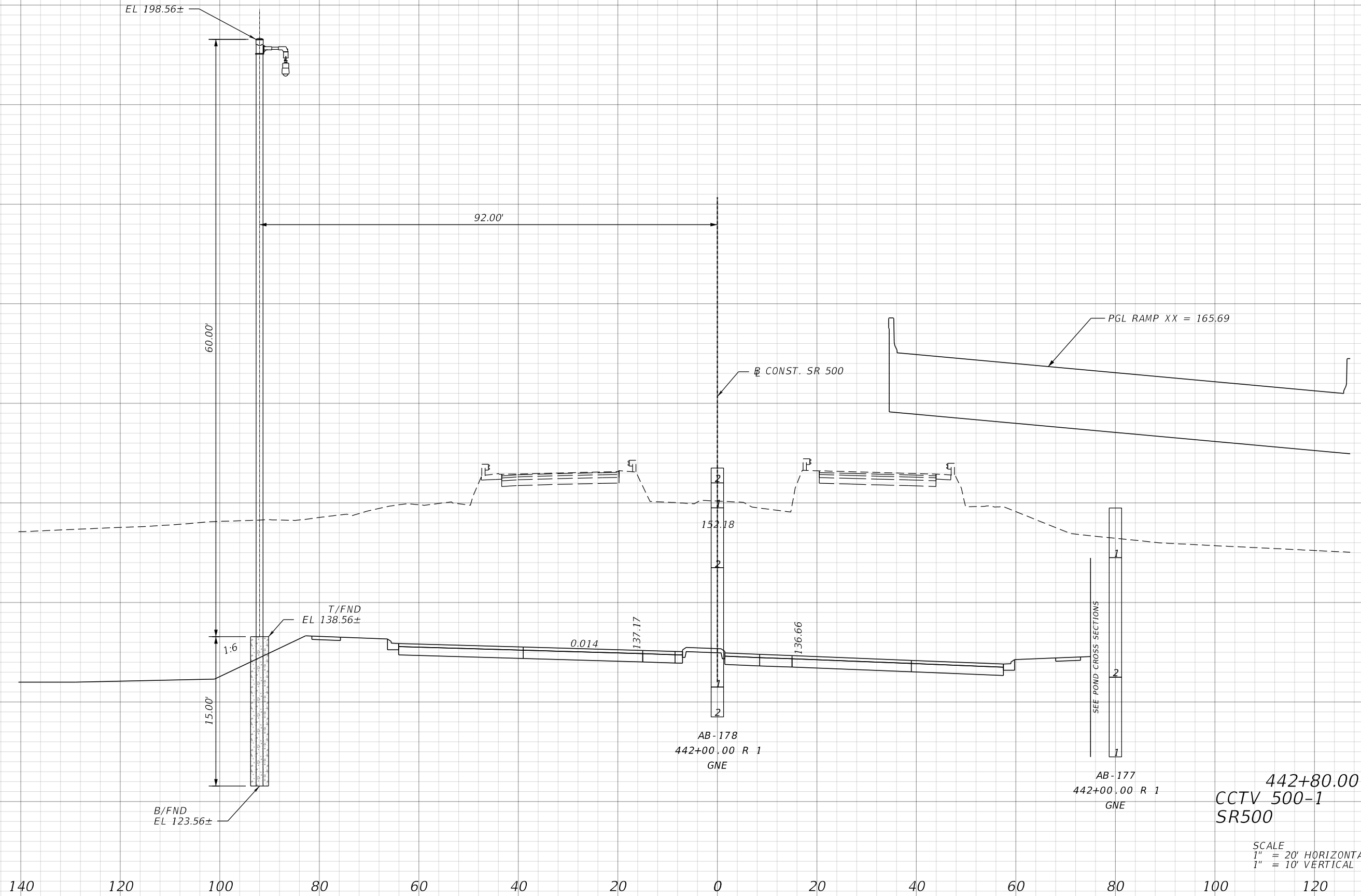
SCALE  
1" = 20' HORIZONTAL  
1" = 10' VERTICAL

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>ITS CROSS SECTION</b>	SHEET NO.  IT-25
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



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442+80.00  
CCTV 500-1  
SR500

SCALE  
1" = 20' HORIZONTAL  
1" = 10' VERTICAL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**ITS CROSS SECTION**

SHEET NO.  
IT-27

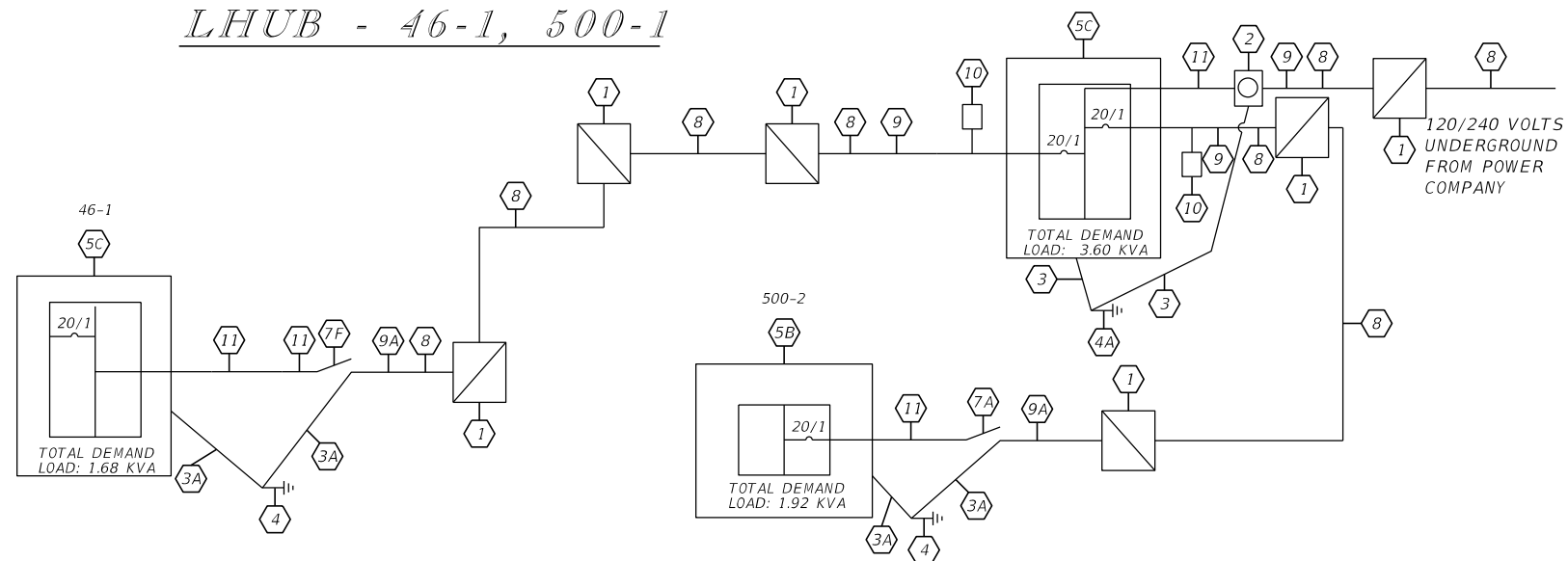
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

**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 TIN-PLATED BARE SOLID COPPER GROUNDING WIRE COPPER CLAD GROUND ROD 5/8" DIA. MEETING REQUIREMENTS PER ITS DETAILS, THIS SHEET AND THE SPECS.
- 4 COPPER CLAD GROUND ROD 5/8" DIA. 40' LONG
- 4A TYPE 336S CABINET W/CIRCUIT BREAKER
- 5A NEMA 3R ENCLOSURE
- 5C PANELBOARD WITH MAIN BREAKER (SIZE PER NEC REQUIREMENT)
- 5D TYPE 334 CABINET WITH CIRCUIT BREAKER
- 6A XFMR (3 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6B XFMR (5 KVA) (120V PRIMARY, 240/480V SECONDARY)
- 6BB XFMR (7.5 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6C XFMR (10 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6D XFMR (15 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6E XFMR (7.5 KVA) (600V PRIMARY, 120/240V SECONDARY)
- 6F XFMR (3 KVA) (240/480V PRIMARY, 120V SECONDARY)
- 6G XFMR (5 KVA) (240/480V PRIMARY, 120V SECONDARY)
- 6H XFMR (7.5 KVA) (240/480V PRIMARY, 120/240 SECONDARY)
- 6I XFMR (15 KVA) (240/480V PRIMARY, 120/240 SECONDARY)
- 6J XFMR (15 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 6K XFMR (3 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6L XFMR (15 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6M XFMR (15 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 6N XFMR (25 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6O XFMR (25 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 7A 15A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7AA 20A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7AB 15A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7B 20A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7C 40A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7D 30A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7E 40A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7F 40A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7G 60A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7H 80A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7I 80A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7J 180A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7K 30A, 600V NON-FUSED DISCONNECT
- 7L 60A, 600V NON-FUSED DISCONNECT
- 7M 80A, 600V NON-FUSED DISCONNECT
- 7O 60A, 600V FUSED DISCONNECT
- 7P 20A, 600V CIRCUIT BREAKER METALLIC ENCLOSURE
- 8 2" SCHEDULE 40 PVC CONDUIT / HDPE CONDUIT
- 9 2" RIGID GALVANIZED STEEL CONDUIT
- 9A 1.5" 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.

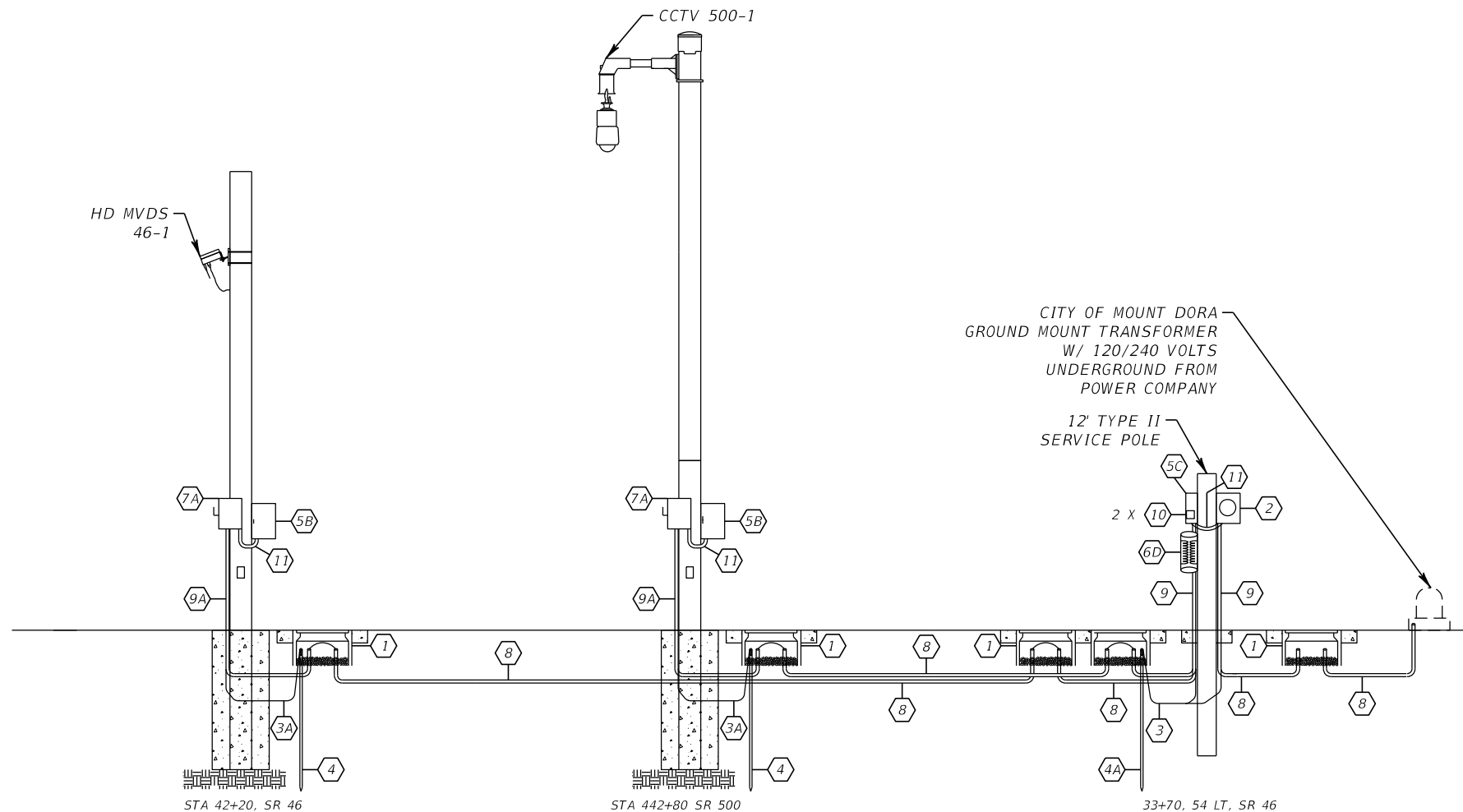
**LHUB - 46-1, 500-1**



**ONE LINE DIAGRAM**

LOAD ANALYSIS HD MVDS 46-1 STA 42+20	
ITEM	AMPS @ 120 VAC
ETHERNET SWITCH	1.0
HD MVDS	1.0
UPS	2.0
CONVENIENCE OUTLET	10.0
<b>TOTAL</b>	<b>14.0</b>

LOAD ANALYSIS CCTV 500-1 STA 442+80 SR 500	
ITEM	AMPS @ 120 VAC
ETHERNET SWITCH	1.0
CCTV / VIDEO ENCODER	2.0
UPS	2.0
TERMINAL SERVER	1.0
CONVENIENCE OUTLET	10.0
<b>TOTAL</b>	<b>16.0</b>



**SERVICE DETAIL**

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
 MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**POWER SERVICE DETAILS  
WITH CCTV AND MVDS POLES**

SHEET NO.  
IT-28

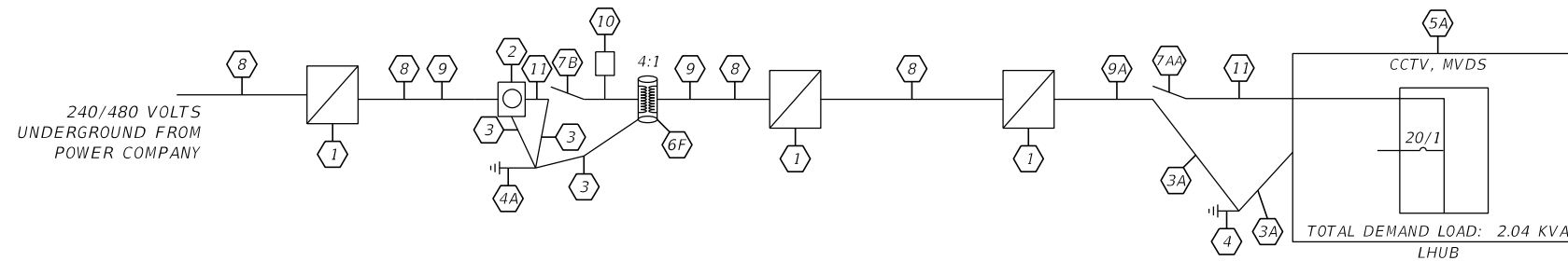
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

**KEYED NOTES:**

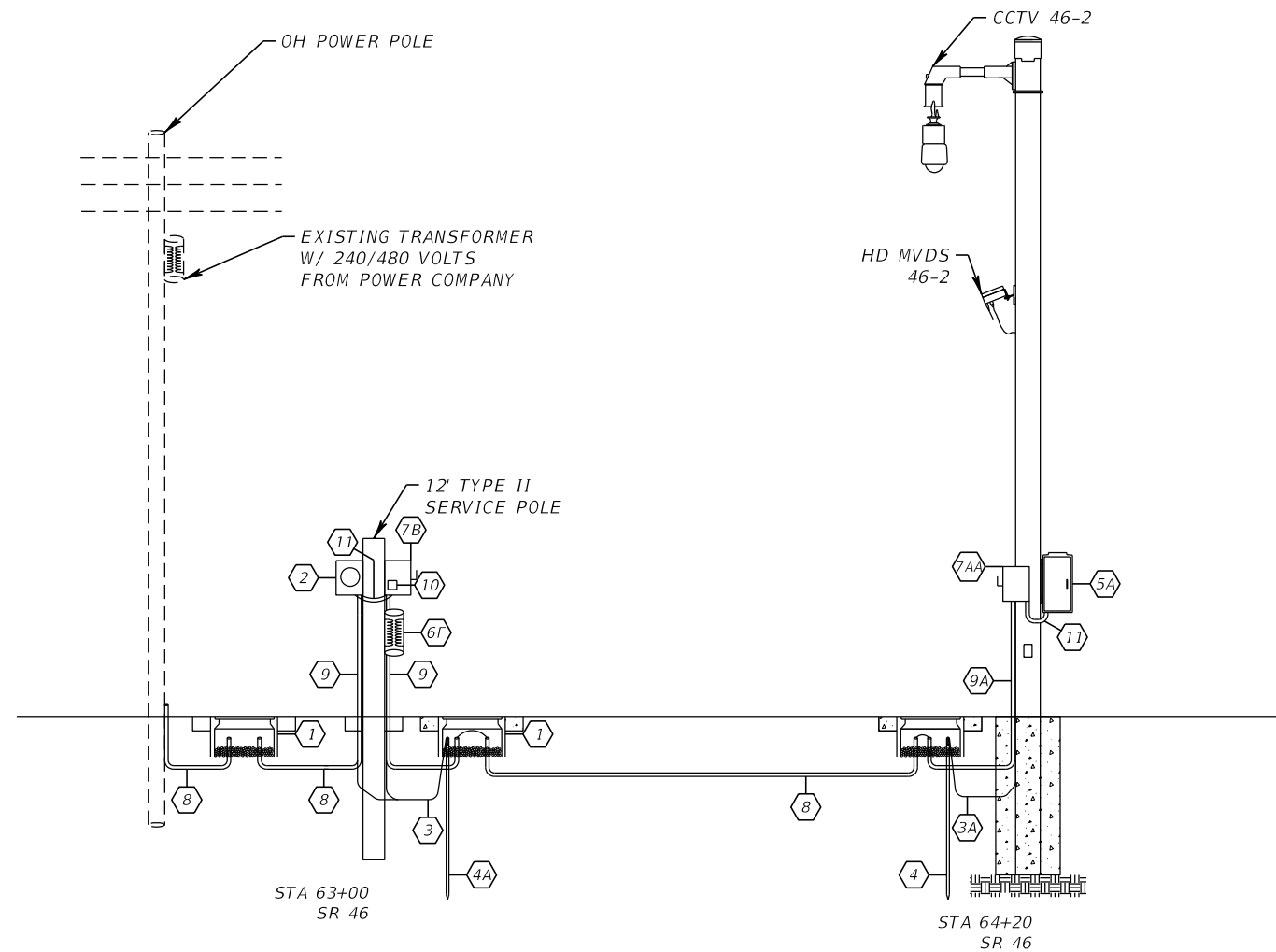
- 1 PULL BOX
- 2 METER SOCKET BY CONTRACTOR
- 3 #6 INSULATED COPPER GROUND WIRE IN 1/2" RIGID GALVANIZED STEEL OR BARE WIRE IF UNDERGROUND
- 3A #2 TIN-PLATED BARE SOLID COPPER GROUNDING WIRE COPPER CLAD GROUND ROD 5/8" DIA. MEETING REQUIREMENTS PER ITS DETAILS, THIS SHEET AND THE SPECS.
- 4 COPPER CLAD GROUND ROD 5/8" DIA. 40' LONG
- 4A TYPE 336S CABINET W/CIRCUIT BREAKER
- 5A NEMA 3R ENCLOSURE
- 5B PANELBOARD WITH MAIN BREAKER (SIZE PER NEC REQUIREMENT)
- 5D TYPE 334 CABINET WITH CIRCUIT BREAKER
- 6A XFMR (3 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6B XFMR (5 KVA) (120V PRIMARY, 240/480V SECONDARY)
- 6BB XFMR (7.5 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6C XFMR (10 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6D XFMR (15 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
- 6E XFMR (7.5 KVA) (600V PRIMARY, 120/240V SECONDARY)
- 6F XFMR (3 KVA) (240/480V PRIMARY, 120V SECONDARY)
- 6G XFMR (5 KVA) (240/480V PRIMARY, 120V SECONDARY)
- 6H XFMR (7.5 KVA) (240/480V PRIMARY, 120/240 SECONDARY)
- 6I XFMR (15 KVA) (240/480V PRIMARY, 120/240 SECONDARY)
- 6J XFMR (15 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 6K XFMR (3 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6L XFMR (15 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6M XFMR (15 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 6N XFMR (25 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6O XFMR (25 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 7A 15A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7AA 20A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7AB 15A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7B 20A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7C 40A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7D 30A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7E 40A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7F 40A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
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- 7I 80A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7J 180A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7K 30A, 600V NON-FUSED DISCONNECT
- 7L 60A, 600V NON-FUSED DISCONNECT
- 7M 80A, 600V NON-FUSED DISCONNECT
- 7O 60A, 600V FUSED DISCONNECT
- 7P 20A, 600V CIRCUIT BREAKER METALLIC ENCLOSURE
- 8 2" SCHEDULE 40 PVC CONDUIT/ HDPE CONDUIT
- 9 2" RIGID GALVANIZED STEEL CONDUIT
- 9A 1.5" 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.

LHUB - 46-2



ONE LINE DIAGRAM



SERVICE DETAIL

LOAD ANALYSIS CCTV 46-2 HD MVDS 46-2 STA 64+20, SR 46	
ITEM	AMPS @ 120 VAC
ETHERNET SWITCH	1.0
CCTV / VIDEO ENCODER	2.0
HD MVDS	1.0
UPS	2.0
TERMINAL SERVER	1.0
CONVENIENCE OUTLET	10.0
<b>TOTAL</b>	<b>17.0</b>

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**POWER SERVICE DETAILS  
WITH CCTV AND MVDS POLE**

SHEET NO.  
IT-29

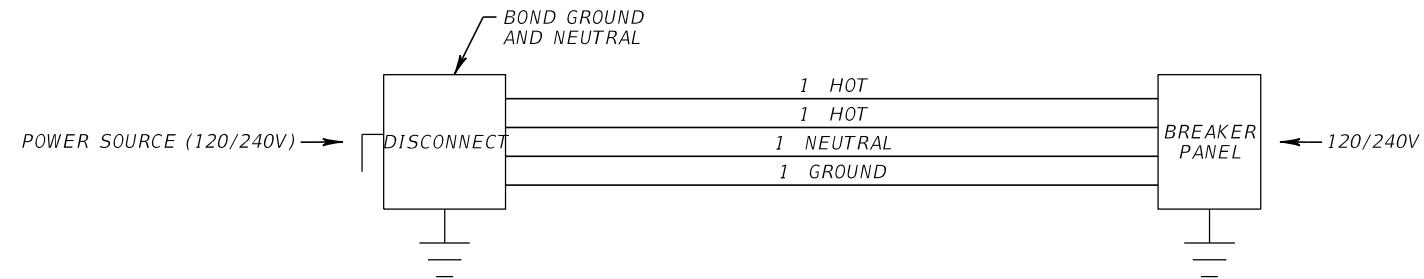
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**KEYED NOTES:**

- 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 TIN-PLATED BARE SOLID COPPER GROUNDING WIRE COPPER CLAD GROUND ROD 5/8" DIA. MEETING REQUIREMENTS PER ITS DETAILS, THIS SHEET AND THE SPECS.
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- 4A TYPE 336S CABINET W/CIRCUIT BREAKER
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- 5C PANELBOARD WITH MAIN BREAKER (SIZE PER NEC REQUIREMENT)
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- 6BB XFMR (7.5 KVA) (120/240V PRIMARY, 240/480V SECONDARY)
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- 6E XFMR (7.5 KVA) (600V PRIMARY, 120/240V SECONDARY)
- 6F XFMR (3 KVA) (240/480V PRIMARY, 120V SECONDARY)
- 6G XFMR (5 KVA) (240/480V PRIMARY, 120V SECONDARY)
- 6H XFMR (7.5 KVA) (240/480V PRIMARY, 120/240 SECONDARY)
- 6I XFMR (15 KVA) (240/480V PRIMARY, 120/240 SECONDARY)
- 6J XFMR (15 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 6K XFMR (3 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6L XFMR (15 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6M XFMR (15 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 6N XFMR (25 KVA) (600V PRIMARY, 120/240 SECONDARY)
- 6O XFMR (25 KVA) (120/240V PRIMARY, 600V SECONDARY)
- 7A 15A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7AA 20A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7AB 15A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
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- 7C 40A, 120V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7D 30A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7E 40A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
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- 7I 80A, 240/480V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7J 180A, 120/240V CIRCUIT BREAKER METALLIC ENCLOSURE
- 7K 30A, 600V NON-FUSED DISCONNECT
- 7L 60A, 600V NON-FUSED DISCONNECT
- 7M 80A, 600V NON-FUSED DISCONNECT
- 7O 60A, 600V FUSED DISCONNECT
- 7P 20A, 600V CIRCUIT BREAKER METALLIC ENCLOSURE
- 8 2" SCHEDULE 40 PVC CONDUIT/ HDPE CONDUIT
- 9 2" RIGID GALVANIZED STEEL CONDUIT
- 9A 1.5" 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.

NOTE:  
1. DIAGRAM REPRESENTS CONNECTION AFTER METER.

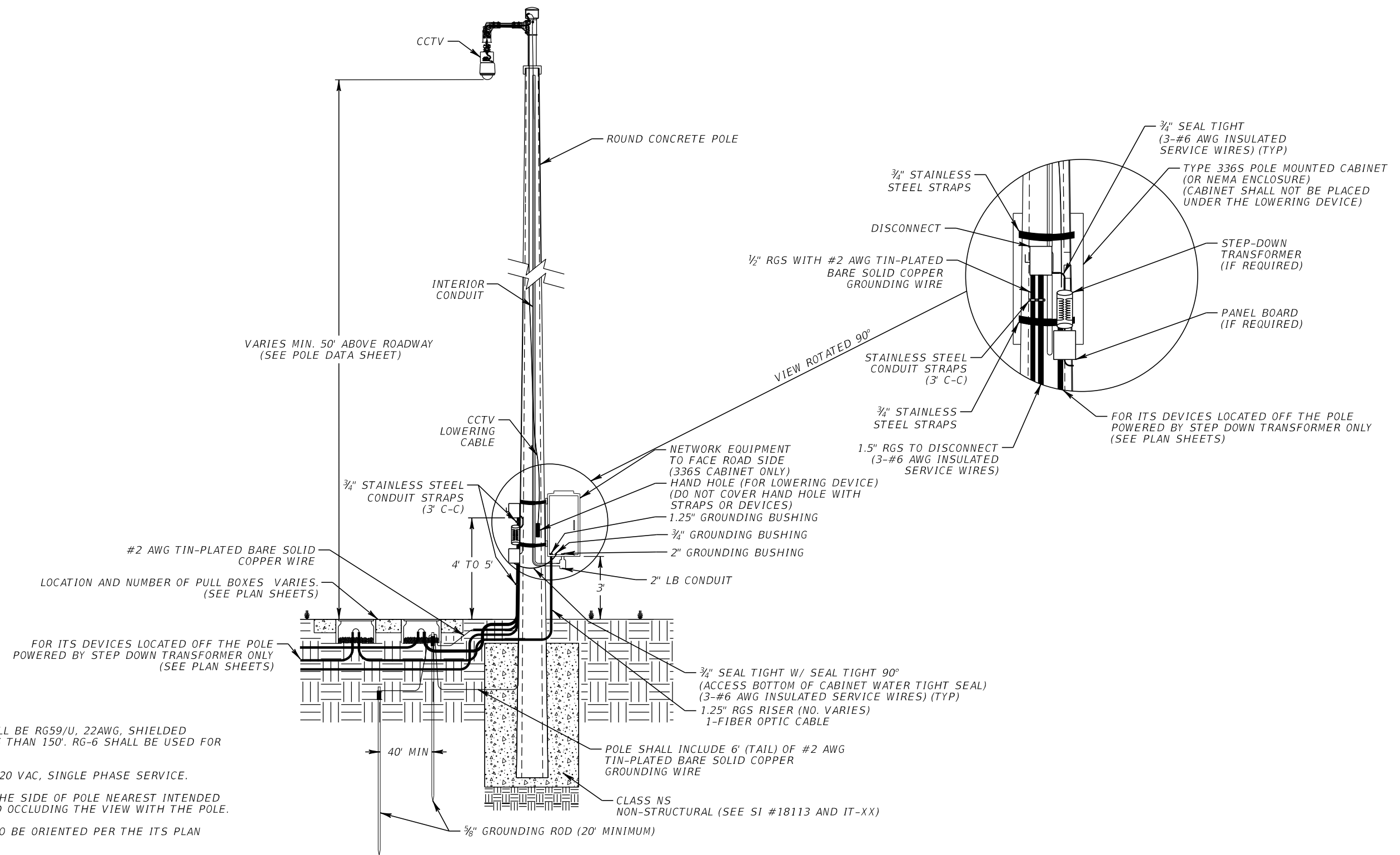


REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835  MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>POWER SERVICE SCHEMATICS</b>	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		IT-30
					SR 46	LAKE	238275-2-52-01		

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# TYPICAL CCTV INSTALLATION DETAILS

NTS



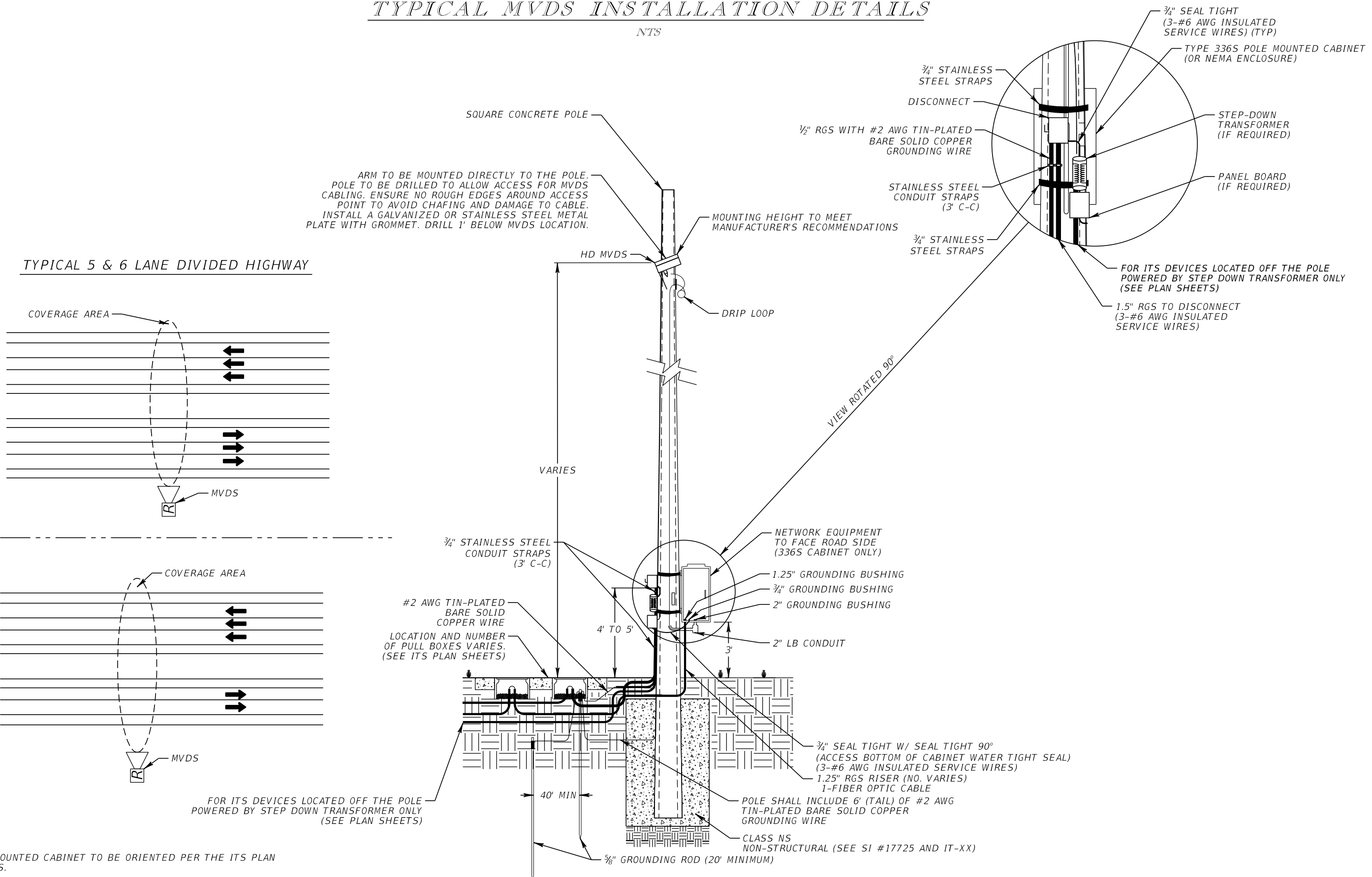
- NOTES:
1. CCTV (VIDEO) CABLE SHALL BE RG59/U, 22AWG, SHIELDED (MIN) FOR SEGMENTS LESS THAN 150'. RG-6 SHALL BE USED FOR RUNS LONGER THAN 150'.
  2. POWER CABLE SHALL BE 120 VAC, SINGLE PHASE SERVICE.
  3. MOUNT CCTV CAMERA ON THE SIDE OF POLE NEAREST INTENDED FIELD OF VIEW AND AVOID OCCLUDING THE VIEW WITH THE POLE.
  4. POLE MOUNTED CABINET TO BE ORIENTED PER THE ITS PLAN SHEETS.

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			CCTV MOUNTING DETAILS	SHEET NO.  IT-31
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

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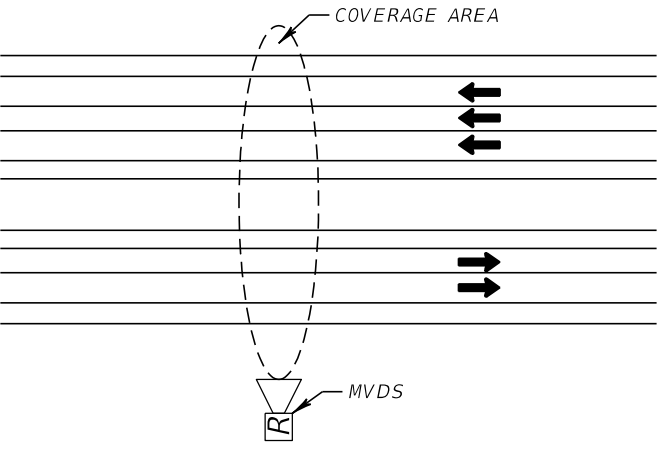
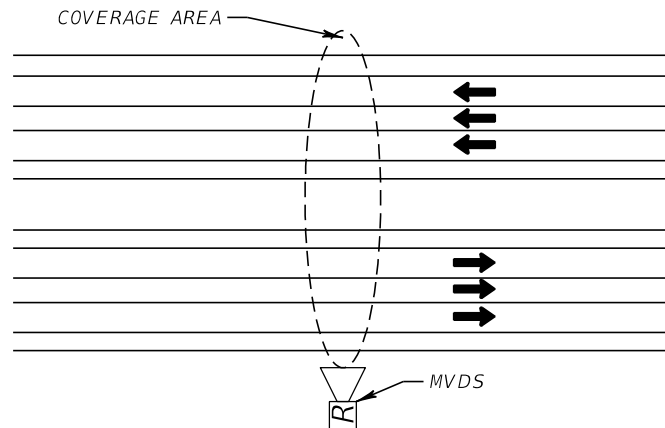
# TYPICAL MVDS INSTALLATION DETAILS

NTS



ARM TO BE MOUNTED DIRECTLY TO THE POLE. POLE TO BE DRILLED TO ALLOW ACCESS FOR MVDS CABLING. ENSURE NO ROUGH EDGES AROUND ACCESS POINT TO AVOID CHAFING AND DAMAGE TO CABLE. INSTALL A GALVANIZED OR STAINLESS STEEL METAL PLATE WITH GROMMET. DRILL 1' BELOW MVDS LOCATION.

## TYPICAL 5 & 6 LANE DIVIDED HIGHWAY



FOR ITS DEVICES LOCATED OFF THE POLE POWERED BY STEP DOWN TRANSFORMER ONLY (SEE PLAN SHEETS)

- NOTES:
- POLE MOUNTED CABINET TO BE ORIENTED PER THE ITS PLAN SHEETS.

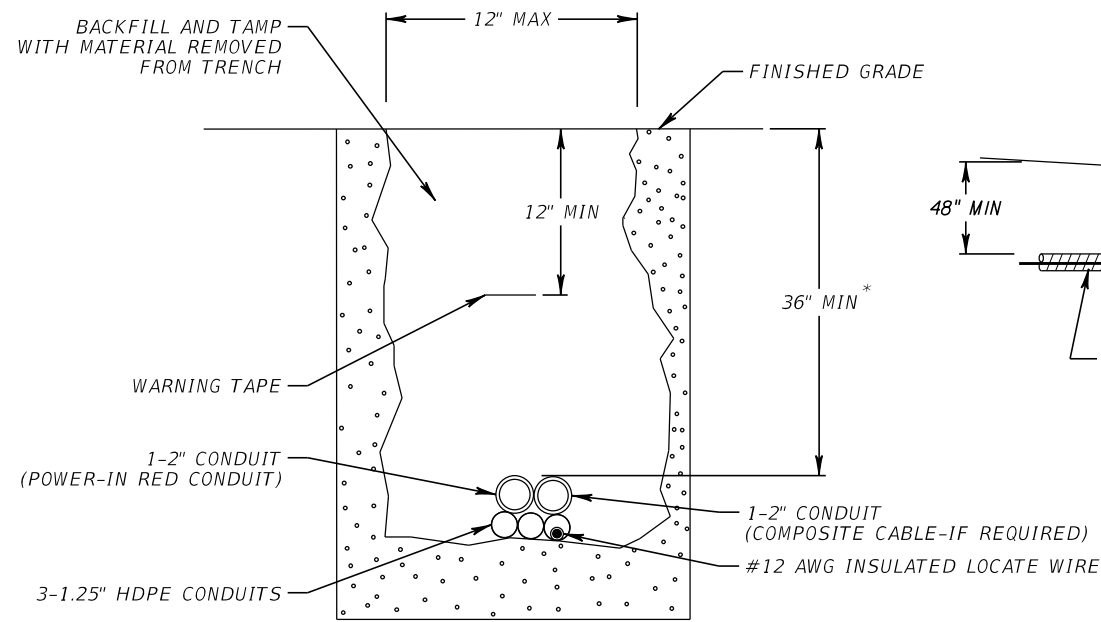
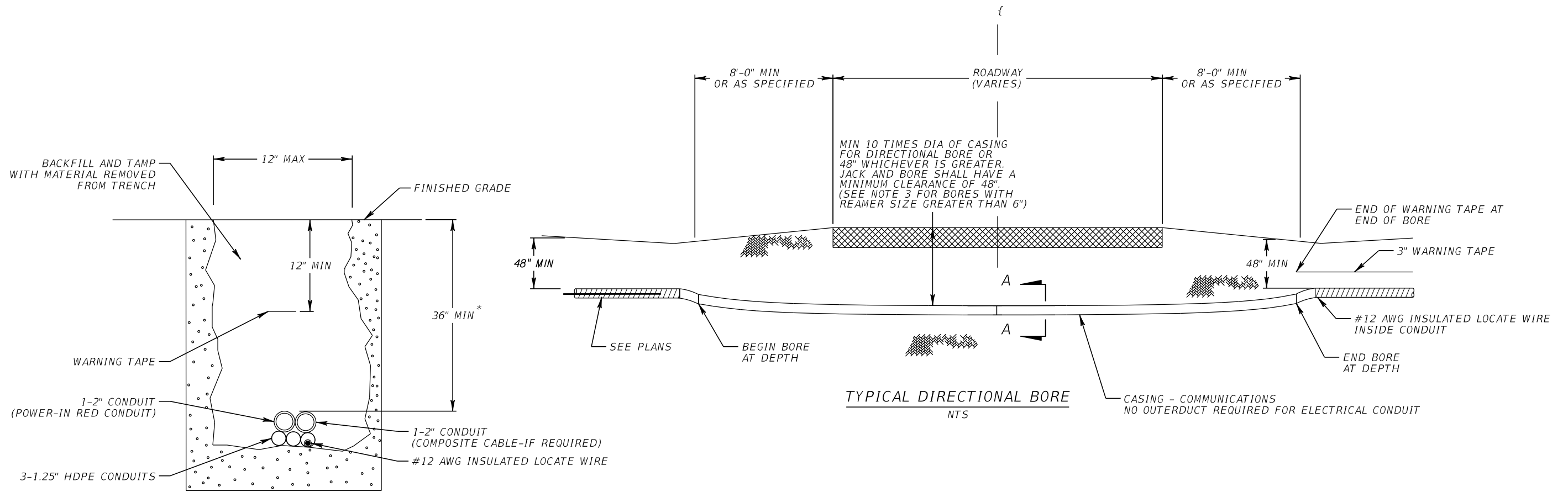
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.  IT-32
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
						SR 46	LAKE	

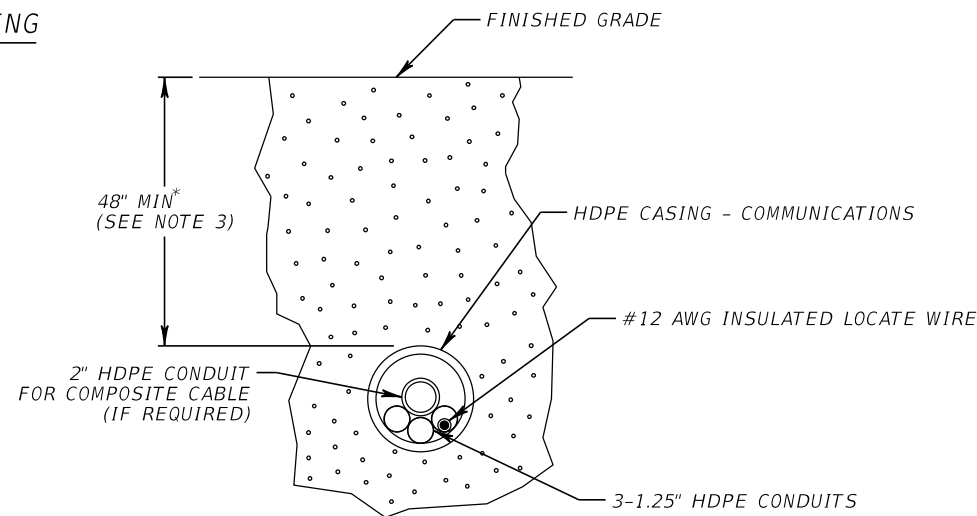
## MVDS MOUNTING DETAILS



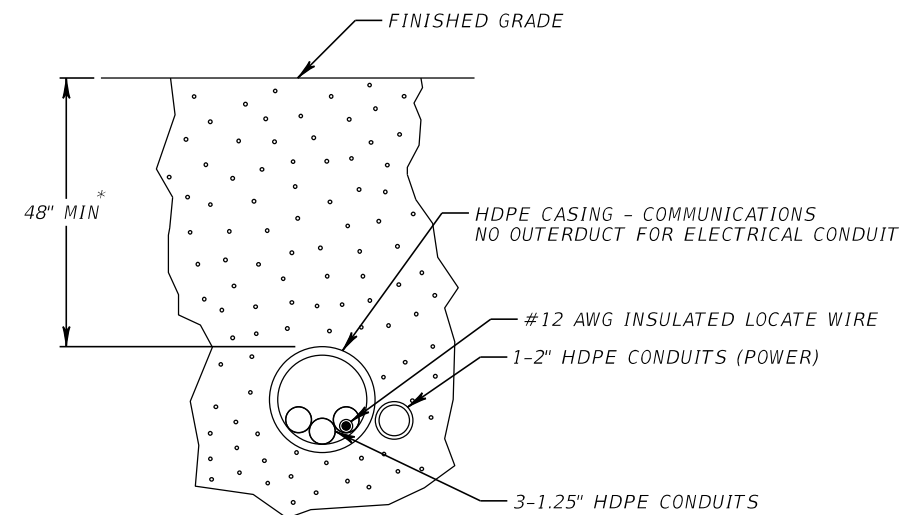




**TYPICAL TRENCHING**  
NTS



**SECTION A-A**  
NTS



\* MAY BE ADJUSTED DUE TO FIELD CONDITIONS UPON APPROVAL OF THE ENGINEER.

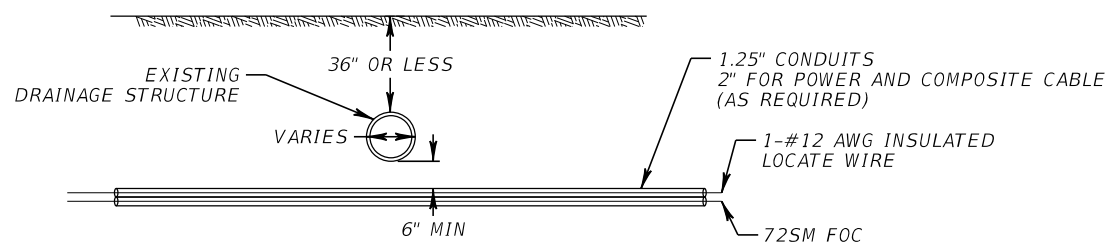
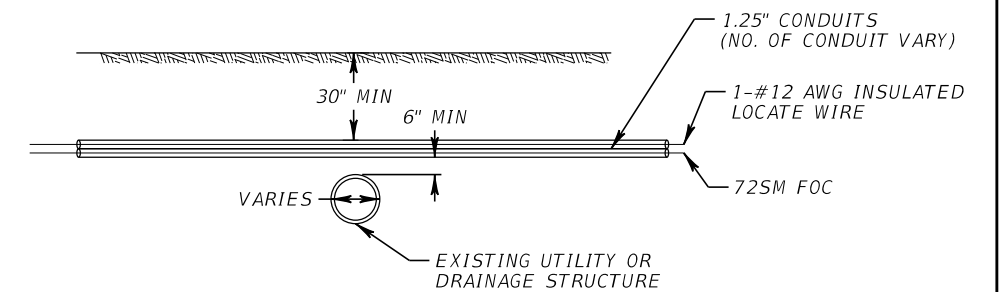
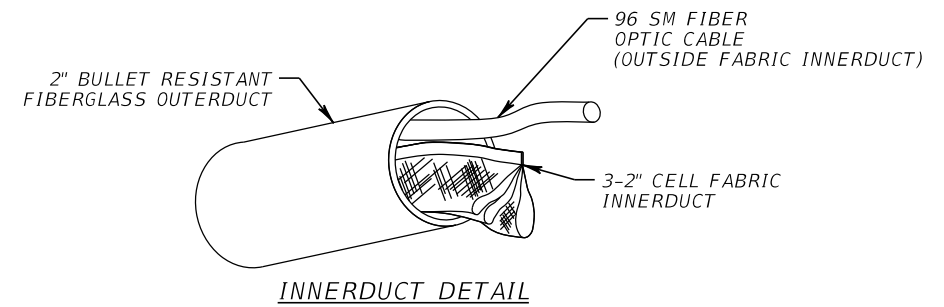
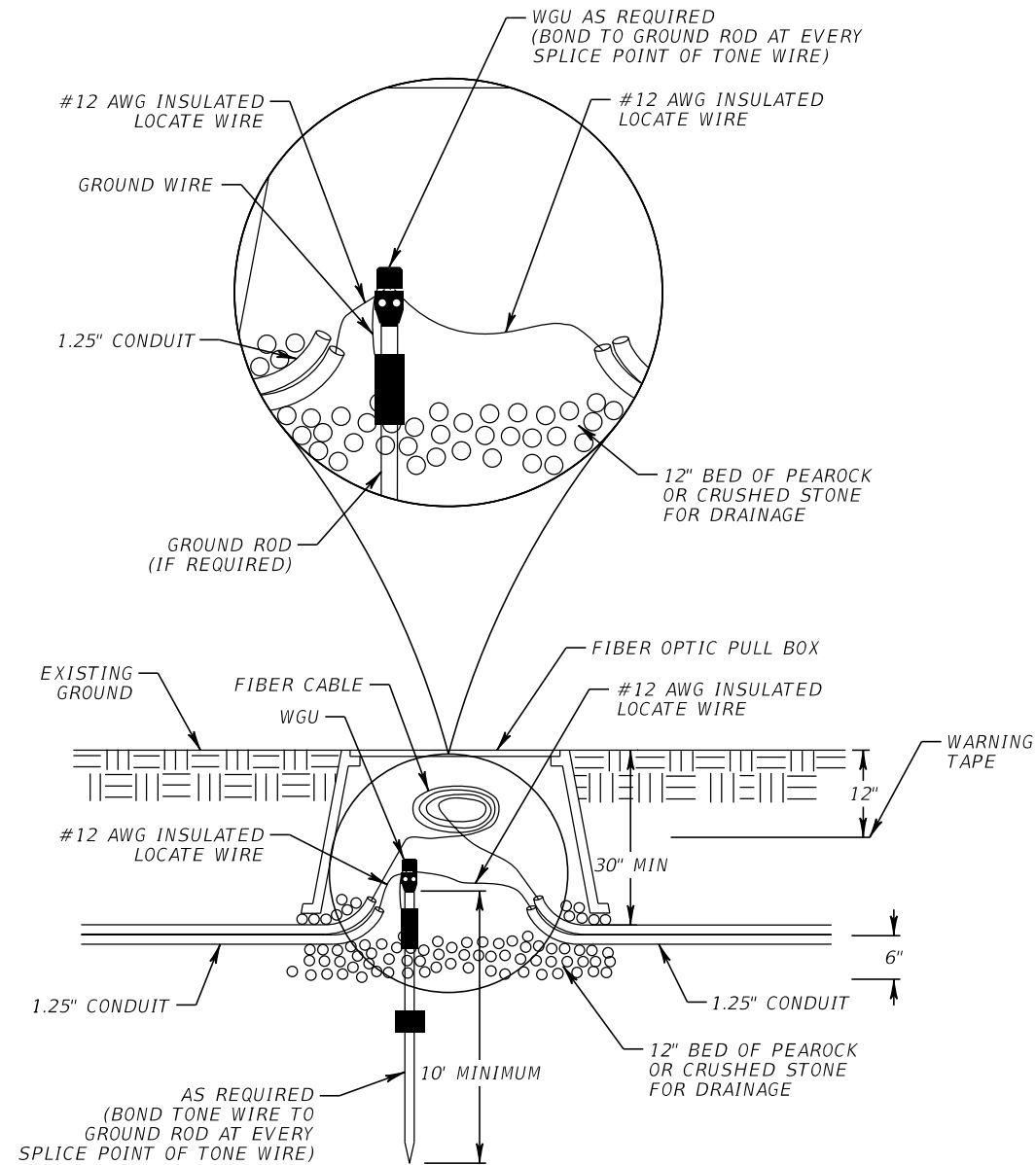
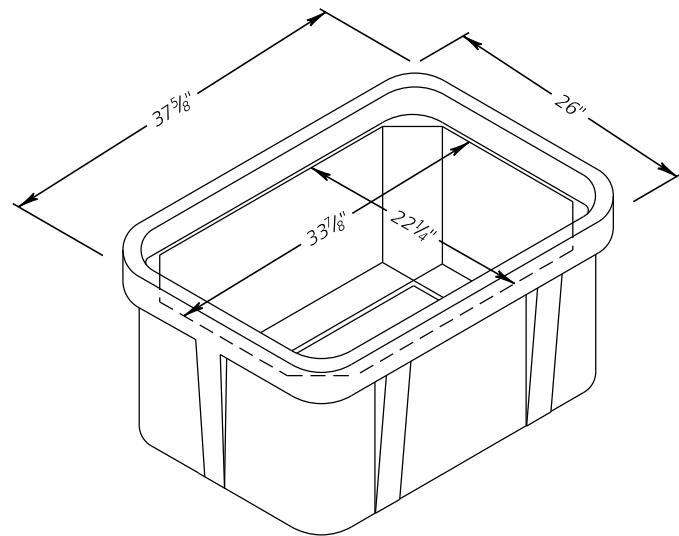
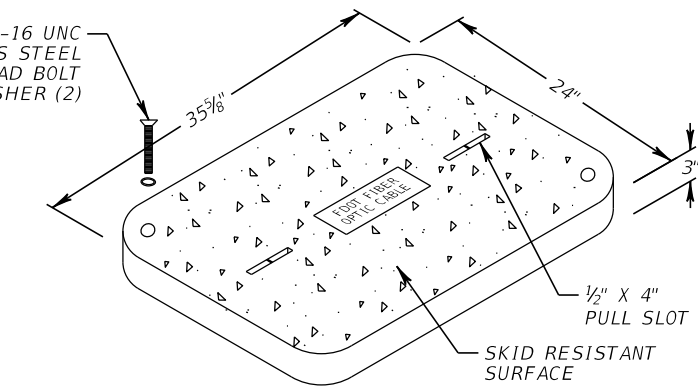
**GENERAL NOTES:**

- UTILITY IN THE PATH OF THE BORE SHALL BE LOCATED AND THE DEPTH OF THE BORE CROSSING SHALL BE DELINEATED TO CROSS UNDER OR OVER UTILITY WITH 6" MINIMUM SEPARATION.
- FOR BORES WITH REAMER SIZE GREATER THAN 6", THE DEPTH FOR ROADWAY CROSSINGS SHALL BE MAINTAINED AT A DEPTH EQUAL TO 10 TIMES THE BORE REAMER SIZE. SEE 4.3.11.1 OF THE 2010 FDOT UTILITY ACCOMODATION MANUAL FOR ADDITIONAL INFORMATION. THIS WILL AFFECT THE REQUIRED SETBACK DISTANCES IN ORDER TO MEET PROPER DRILL ENTRY AND EXIT ANGLE CRITERIA (NOT TO EXCEED A 1:4 OR 25% SLOPE).

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>DIRECTIONAL BORE AND TRENCHING DETAILS</b>	SHEET NO.  IT-34
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

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3/8 -16 UNC  
STAINLESS STEEL  
HEX HEAD BOLT  
W/ WASHER (2)



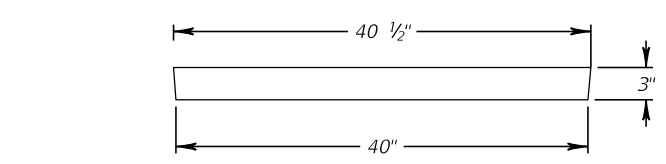
FIBER OPTIC PULL BOX NOTES:

1. FIBER OPTIC PULL BOX LENGTH (LONG SIDE) SHALL BE PARALLEL TO THE CONDUIT RUN. WHEN THE CONDUIT RUN IS PERPENDICULAR AT THE JUNCTION POINT, THE PULL BOX SHALL BE PARALLEL TO THE ROADWAY.
2. #2 STRANDED COPPER GROUNDING WIRES SHALL BE EXOTHERMICALLY WELDED TO GROUND RODS (AS REQUIRED).

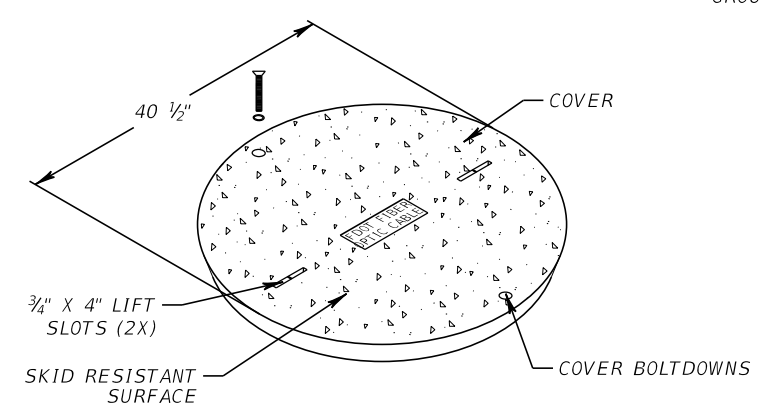
REVISIONS		DATE		DESCRIPTION	
DATE	DESCRIPTION	DATE	DESCRIPTION		

BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255			STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>PULL BOX AND CONDUIT DETAILS</b>	SHEET NO.  IT-35
ROAD NO.	COUNTY	FINANCIAL PROJECT ID					
SR 46	LAKE	238275-2-52-01					

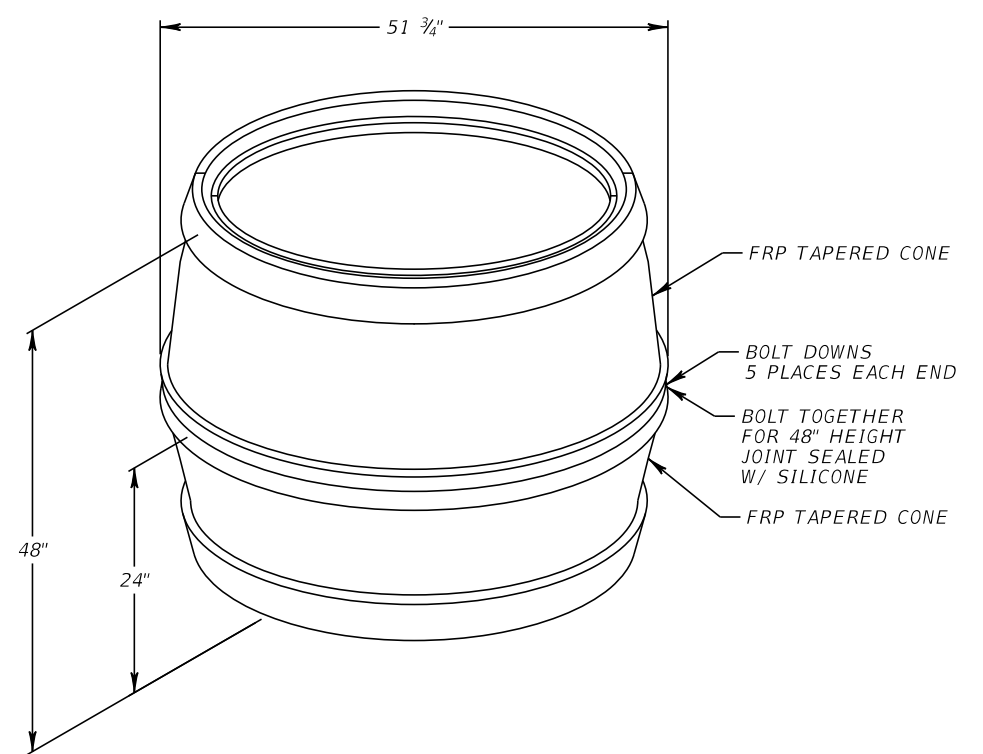
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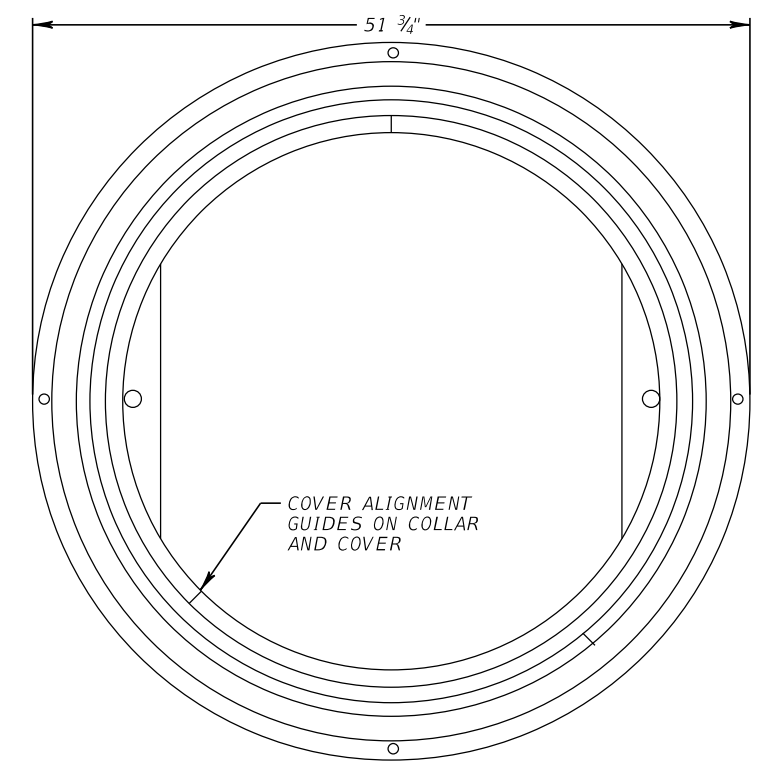
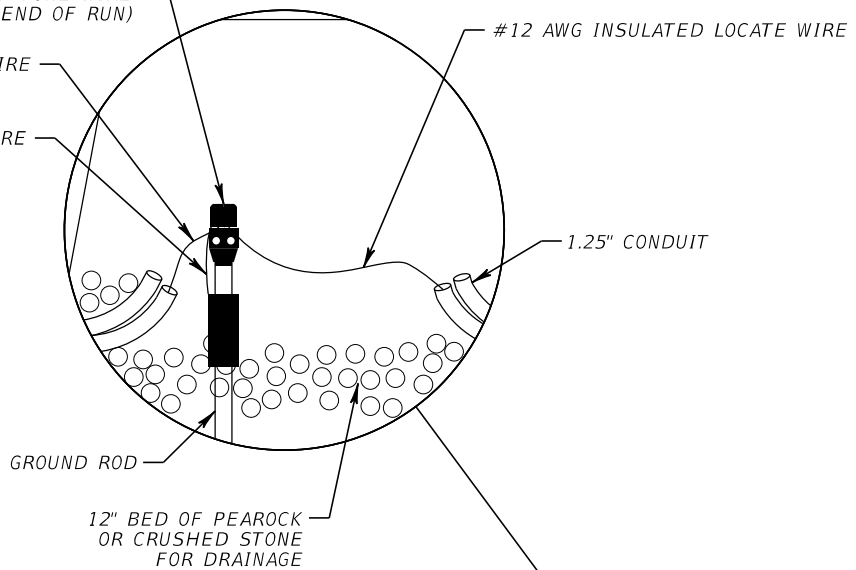
**COVER SECTION**



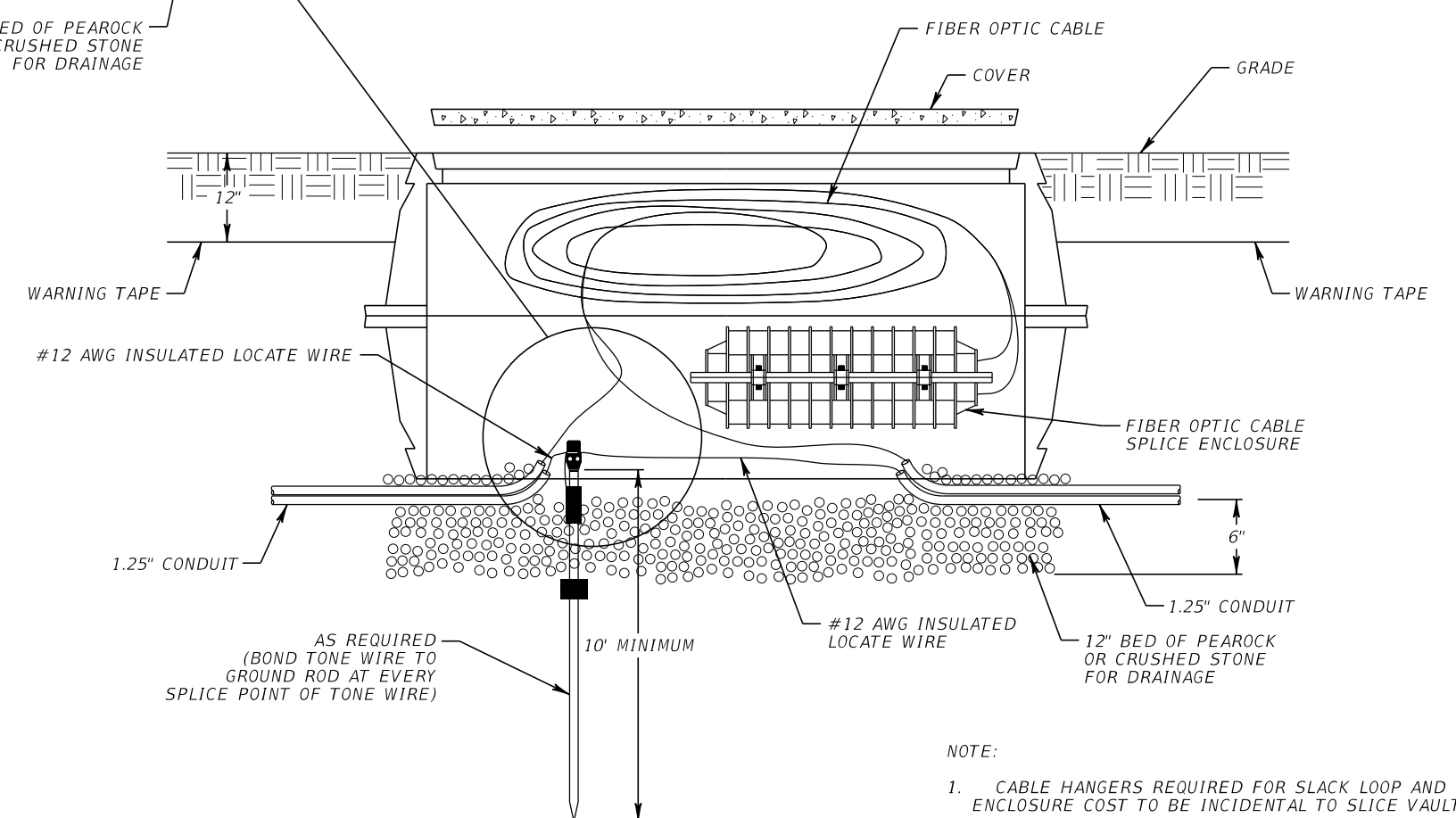
**COVER**



WGU AS REQUIRED  
(BOND TO GROUND ROD AT EVERY  
SPLICE POINT OF TONE WIRE  
OR END OF RUN)



**TOP VIEW**



NOTE:  
1. CABLE HANGERS REQUIRED FOR SLACK LOOP AND ENCLOSURE COST TO BE INCIDENTAL TO SLICE VAULT.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

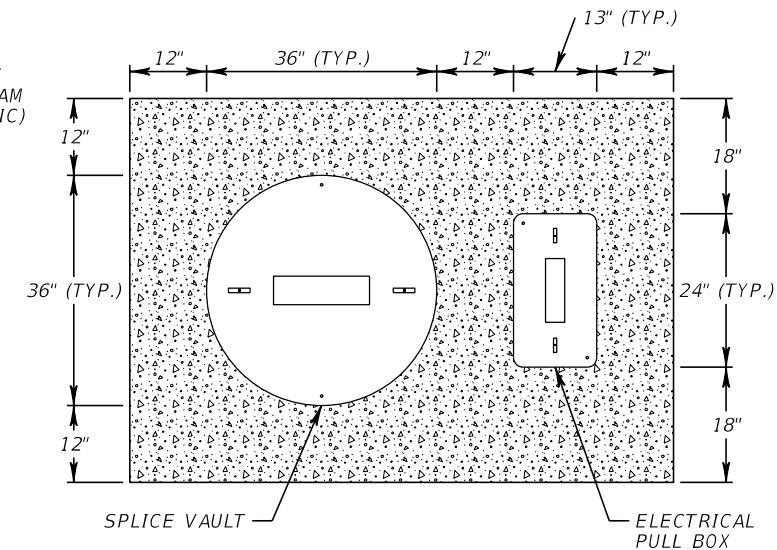
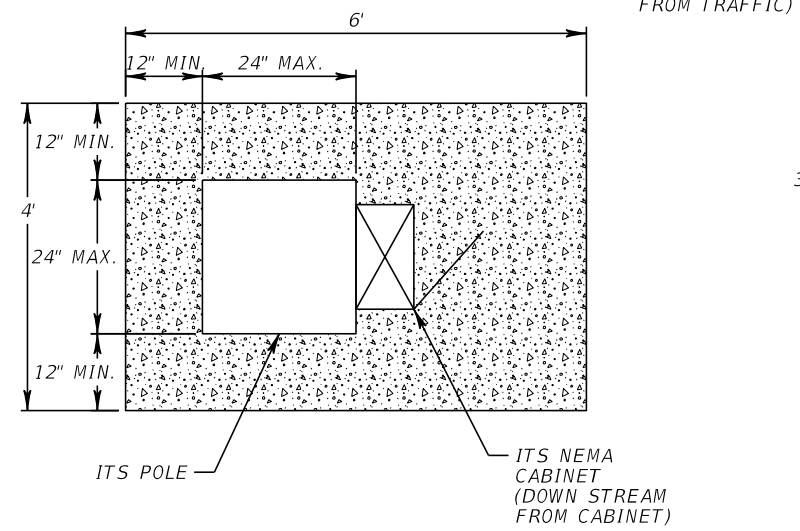
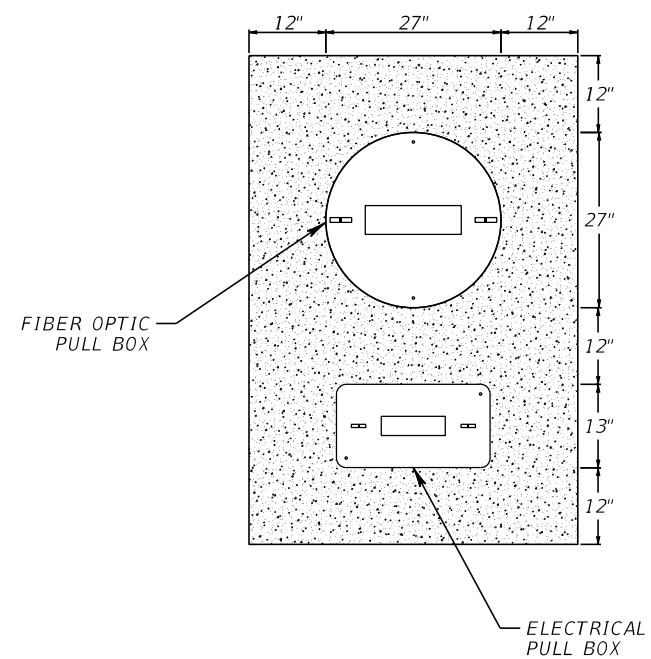
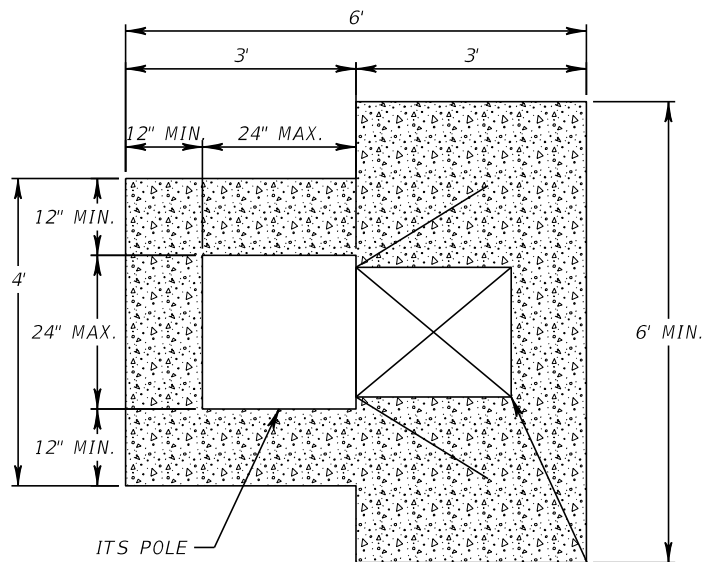
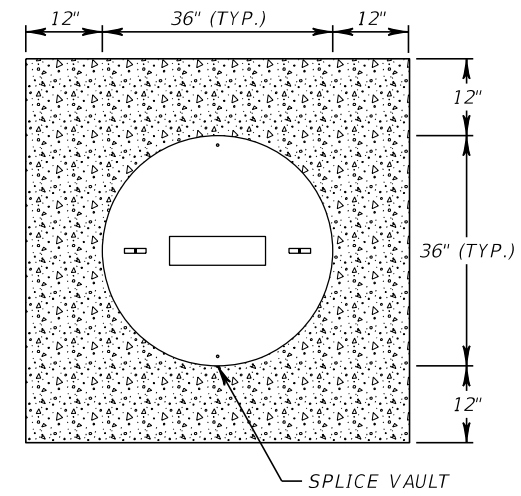
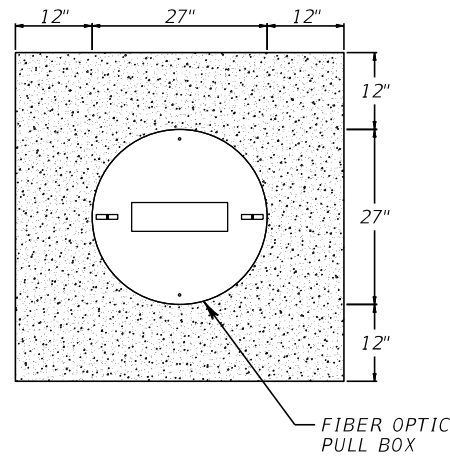
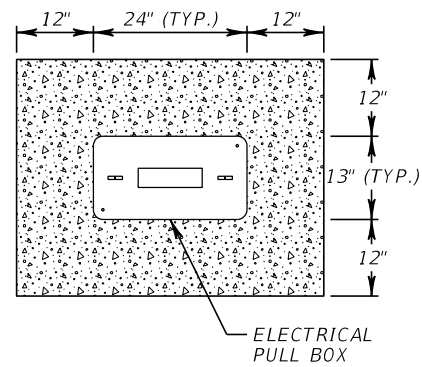
BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**SPLICE VAULT DETAILS**

SHEET NO.  
**IT-36**

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

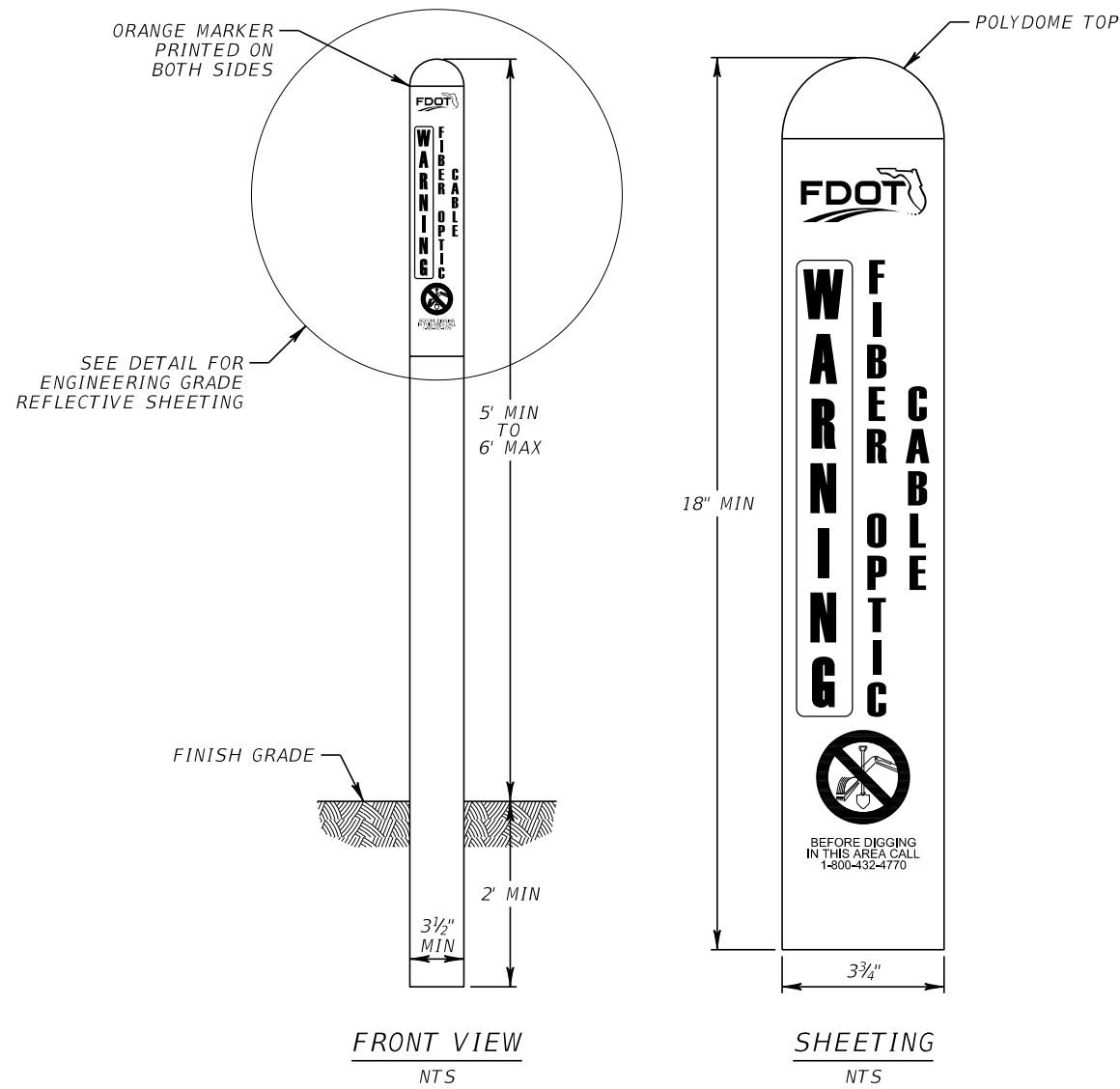


NOTES:  
 1. COST OF CONCRETE PADS SHALL BE INCLUSIVE TO THE DEVICES/EQUIPMENT THAT THE PADS ARE BEING INSTALLED FOR.

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			CONCRETE APRON DETAIL	SHEET NO.  IT-37
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					C.A. NO. 9835	SR 46	LAKE		

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FIBER OPTIC CABLE ROUTE MARKER  
NTS

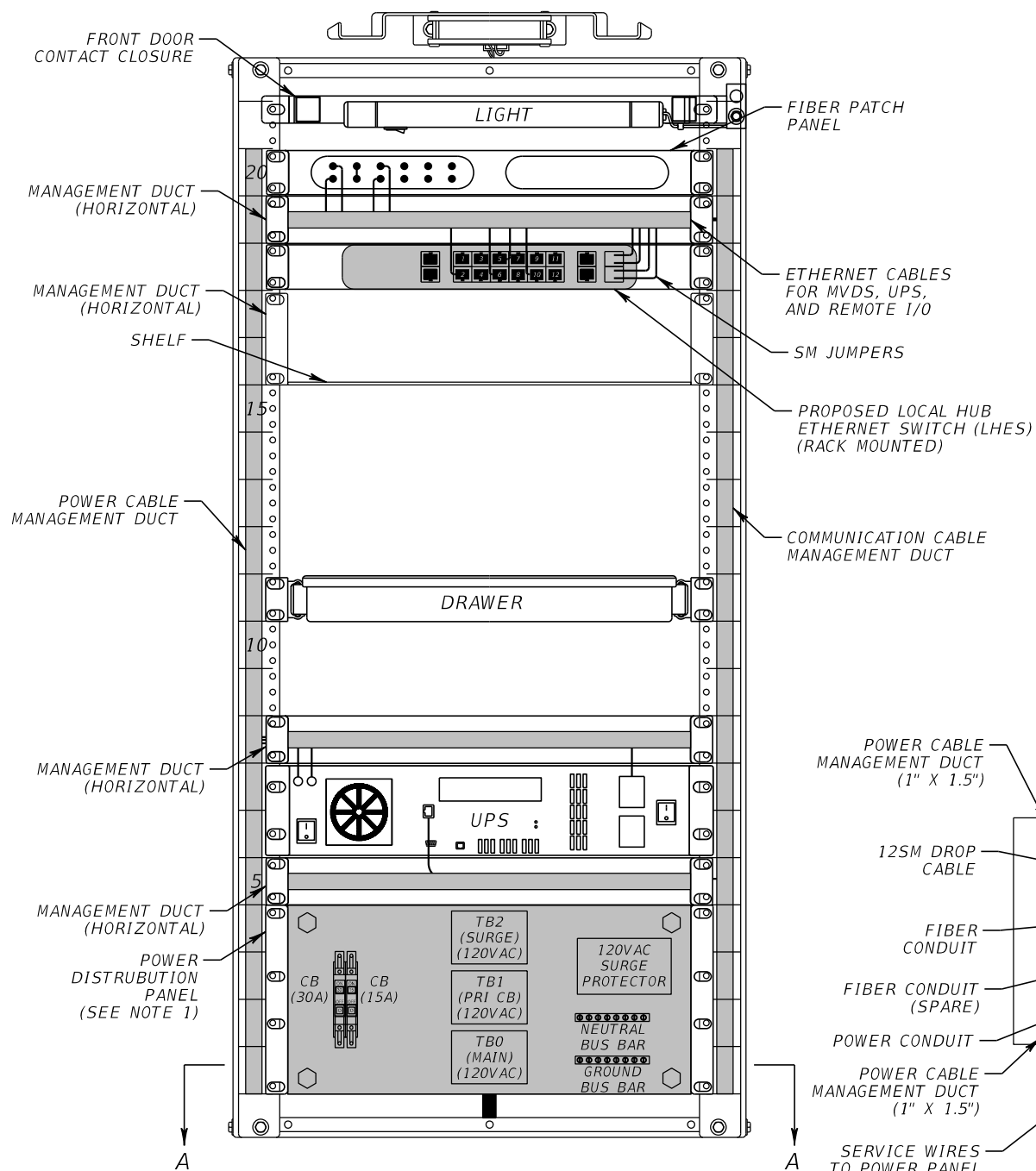


NOTES:

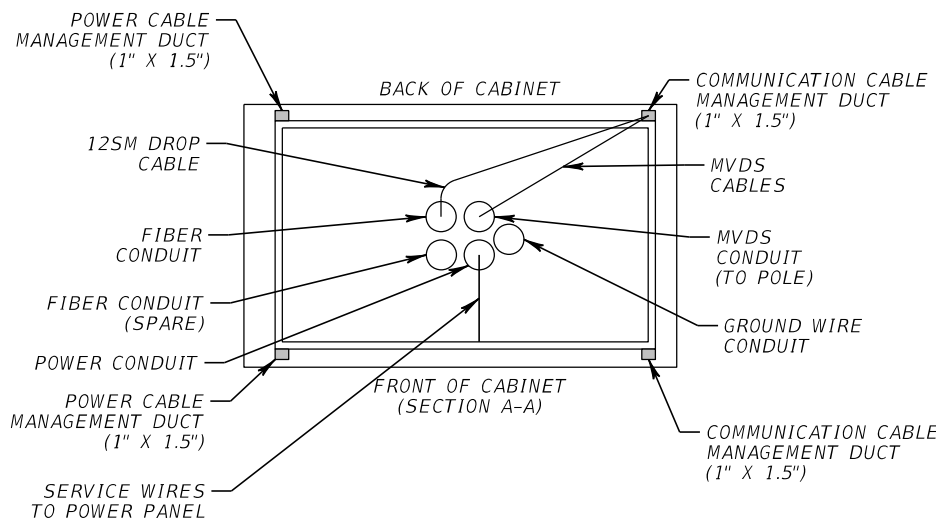
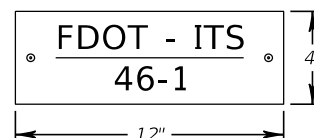
1. AN ORANGE POLYDOME TOP SHALL BE INSTALLED ON EACH MARKER.

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ROUTE MARKER DETAIL	SHEET NO.  IT-38
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

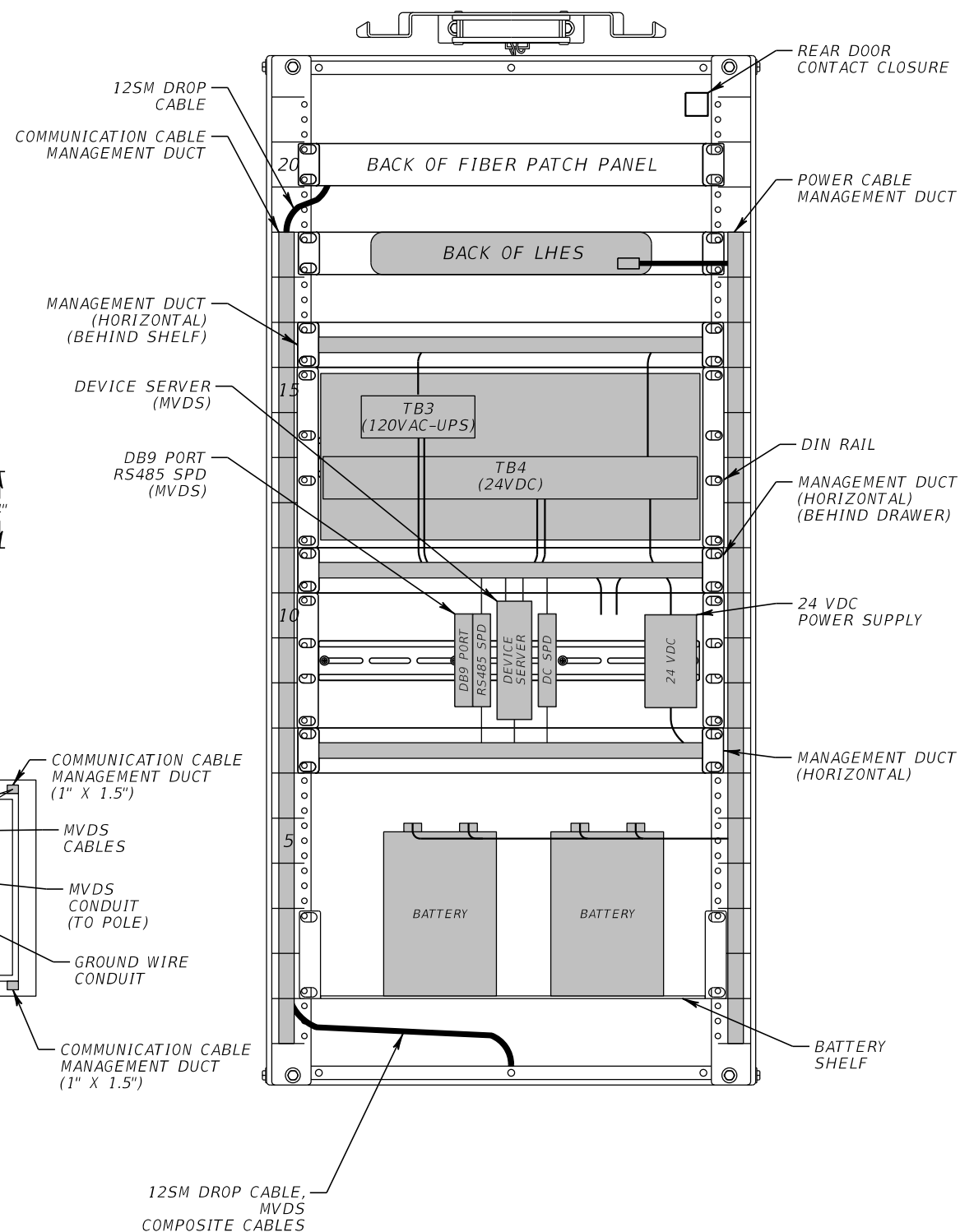
FRONT VIEW



CABINET TAG  
(SEE NOTE 2)



BACK VIEW



NOTES:

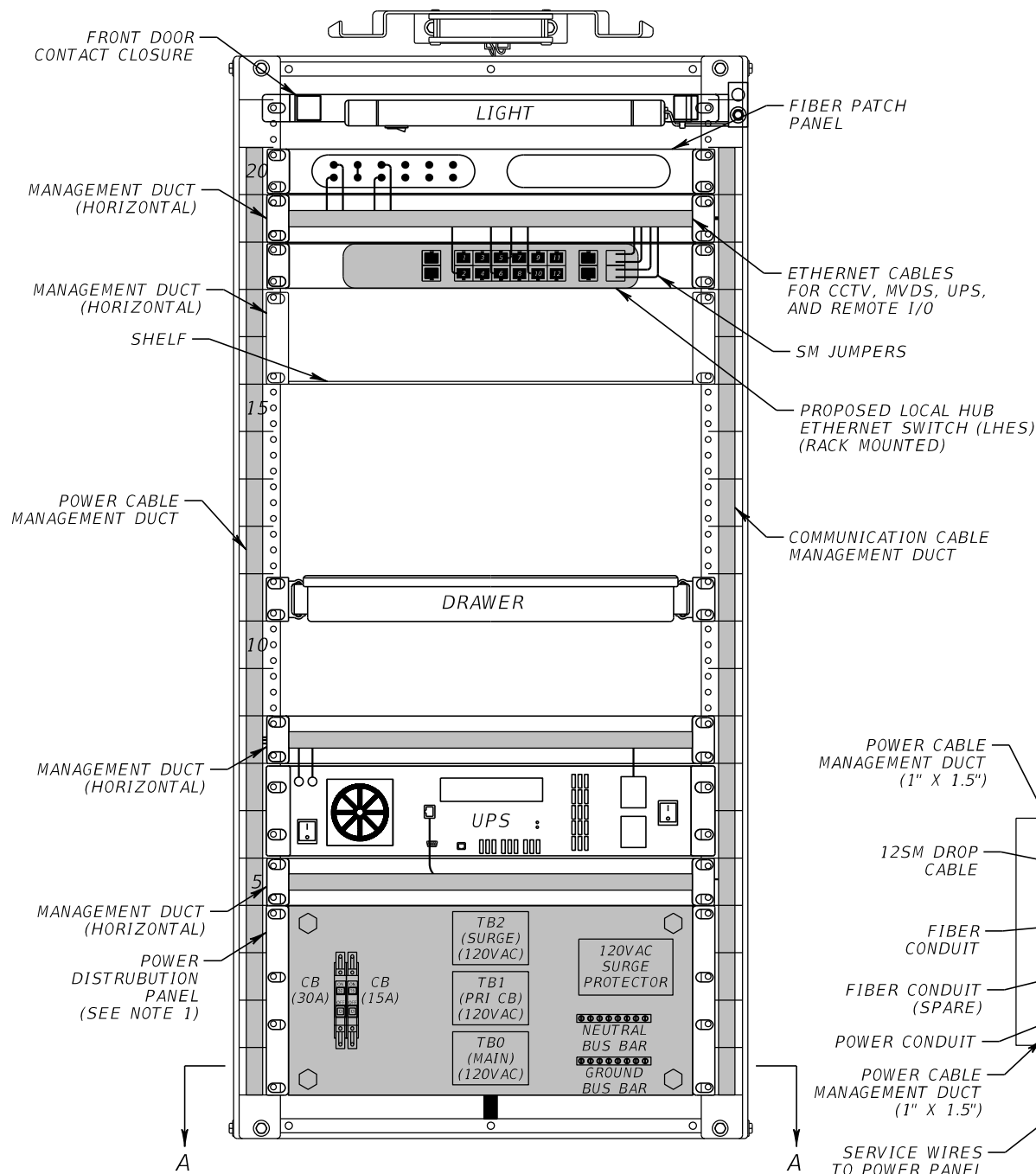
- SEE WIRING DIAGRAMS FOR DETAILED WIRING SCHEMATIC.
- CABINET IDENTIFICATION TAG SHALL BE MADE OF ALUMINUM GRADE HIGH INTENSITY PRISMATIC (HIP), GAUGE .080 WITH SQUARE CORNERS. THE TAG SHALL HAVE A GREEN BACKGROUND WITH WHITE 1 1/4" LETTERING AND SHALL BE SECURELY FASTENED TO THE CABINET IN LOCATION OPTIMAL FOR VIEWING FROM THE ROADWAY.

LHUB 46-1  
(HD MVDS)

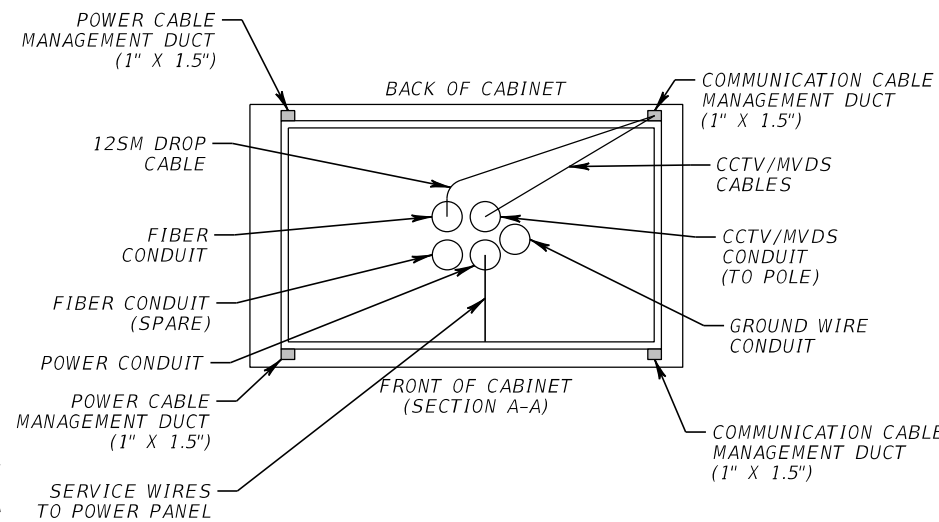
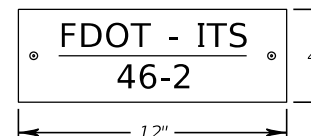
REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			LOCAL HUB CABINET DETAILS	SHEET NO. IT-39
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

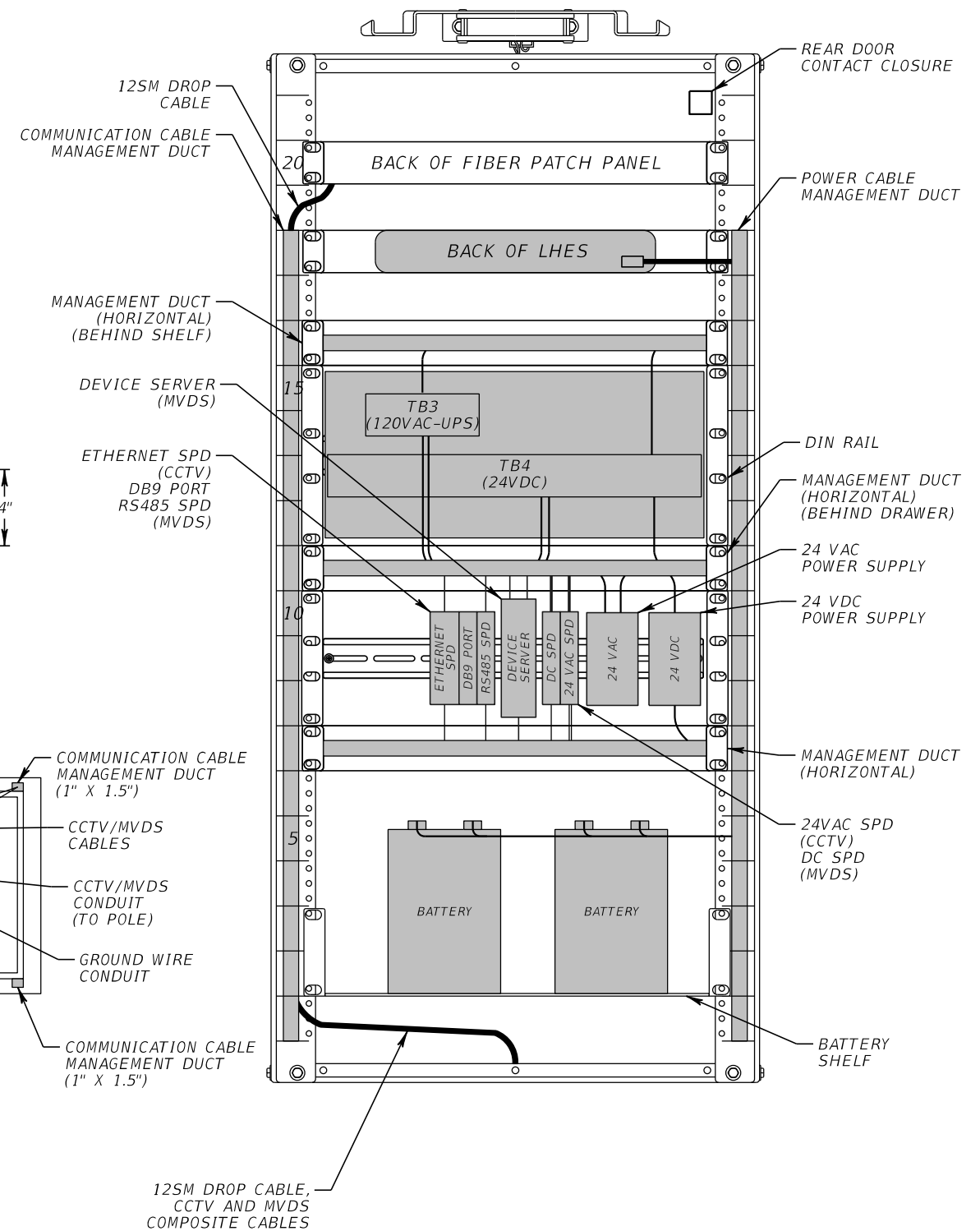
FRONT VIEW



CABINET TAG  
(SEE NOTE 2)



BACK VIEW



NOTES:

- SEE WIRING DIAGRAMS FOR DETAILED WIRING SCHEMATIC.
- CABINET IDENTIFICATION TAG SHALL BE MADE OF ALUMINUM GRADE HIGH INTENSITY PRISMATIC (HIP), GAUGE .080 WITH SQUARE CORNERS. THE TAG SHALL HAVE A GREEN BACKGROUND WITH WHITE 1 1/4" LETTERING AND SHALL BE SECURELY FASTENED TO THE CABINET IN LOCATION OPTIMAL FOR VIEWING FROM THE ROADWAY.

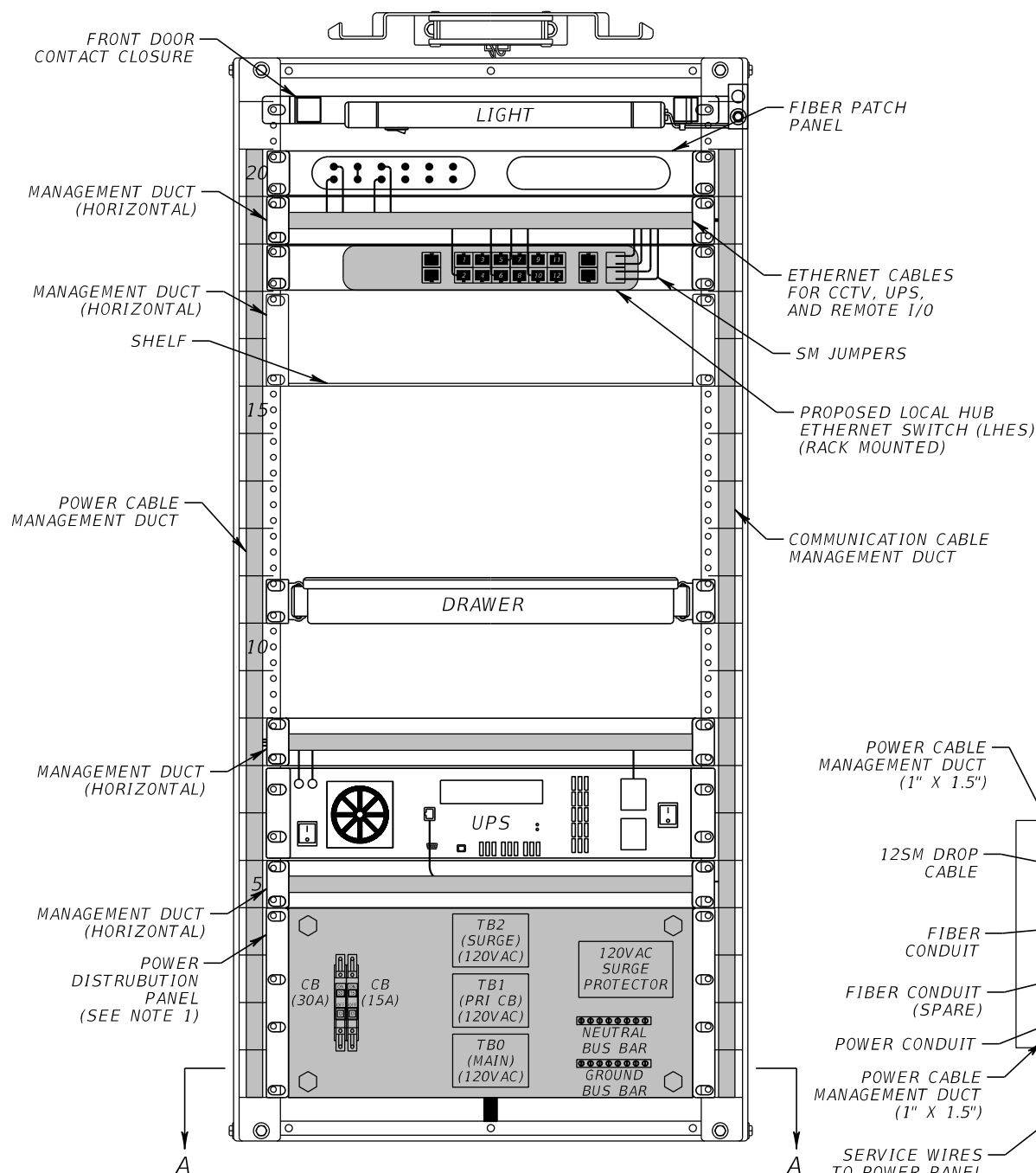
LHUB 46-2  
(CCTV & HD MVDS)

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			LOCAL HUB CABINET DETAILS	SHEET NO. IT-40
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

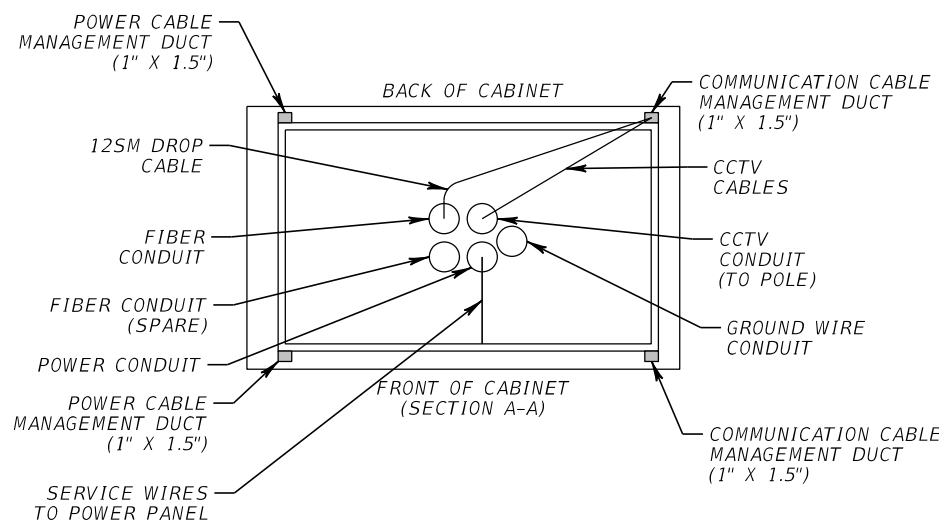
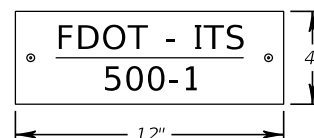
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



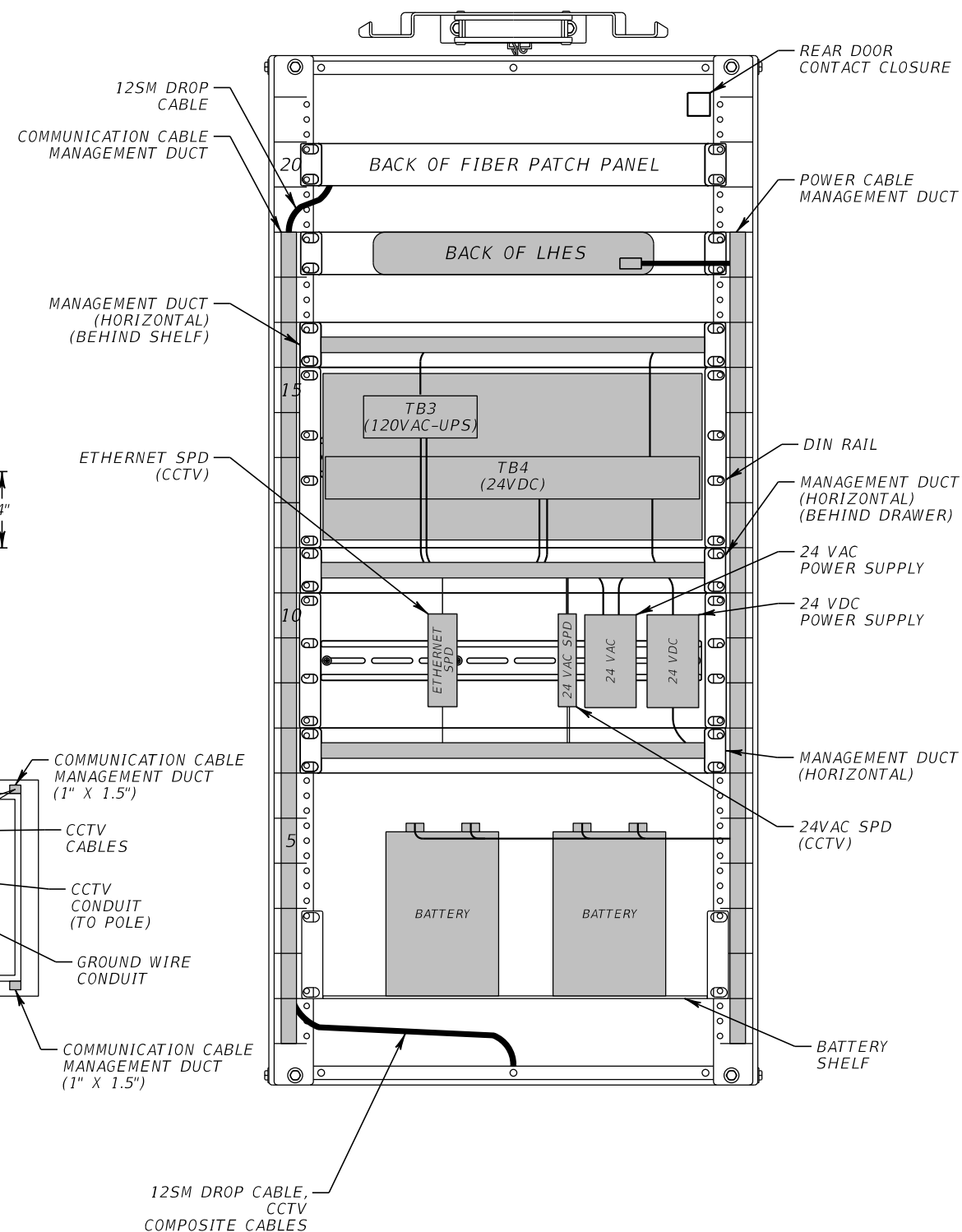
FRONT VIEW



CABINET TAG  
(SEE NOTE 2 & 3)



BACK VIEW



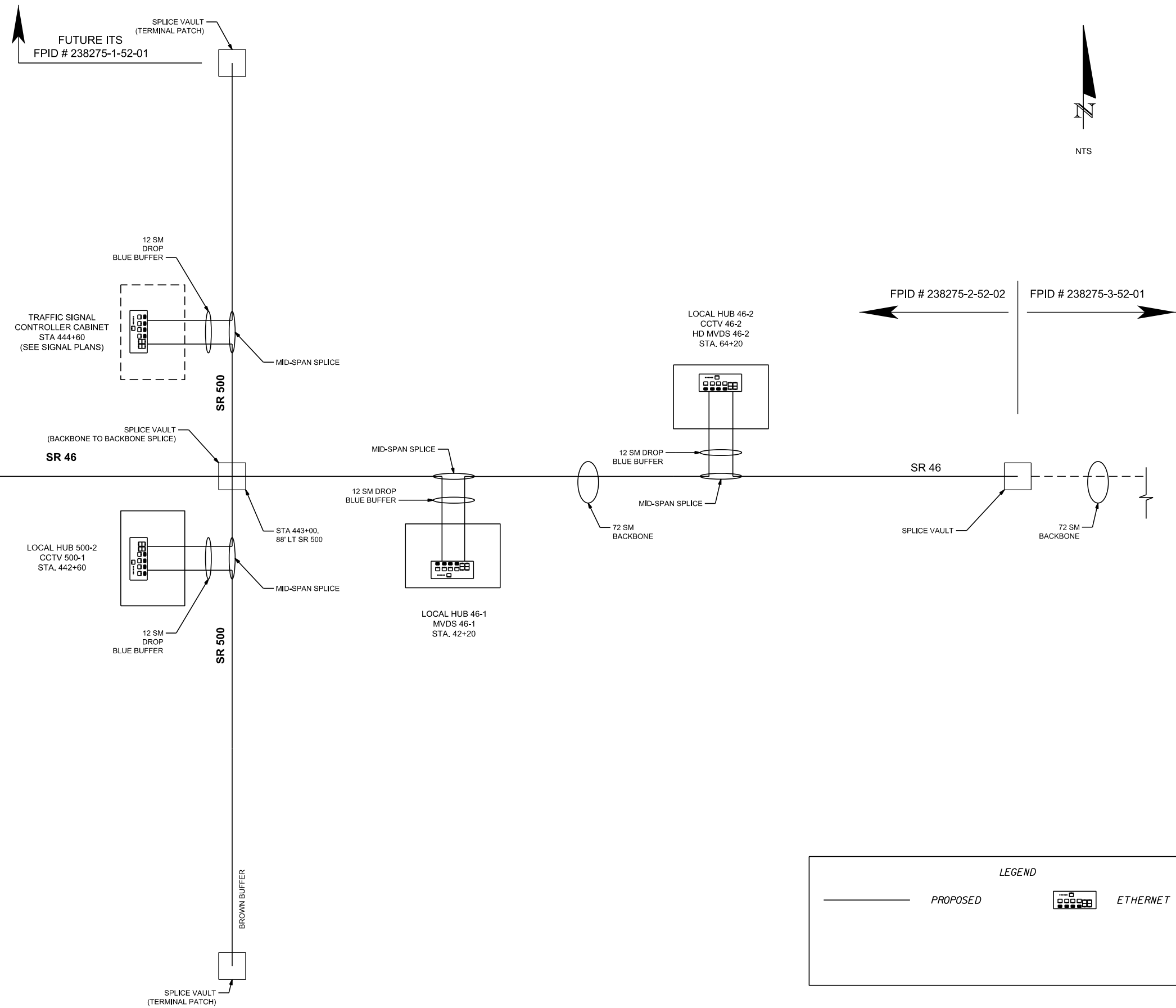
LHUB 500-1  
(CCTV)

NOTES:

- SEE WIRING DIAGRAMS FOR DETAILED WIRING SCHEMATIC.
- CABINET IDENTIFICATION TAG SHALL BE MADE OF ALUMINUM GRADE HIGH INTENSITY PRISMATIC (HIP), GAUGE .080 WITH SQUARE CORNERS. THE TAG SHALL HAVE A GREEN BACKGROUND WITH WHITE 1 1/4" LETTERING AND SHALL BE SECURELY FASTENED TO THE CABINET IN LOCATION OPTIMAL FOR VIEWING FROM THE ROADWAY.

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			LOCAL HUB CABINET DETAILS	SHEET NO. IT-41
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

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**LEGEND**

PROPOSED
  ETHERNET SWITCH

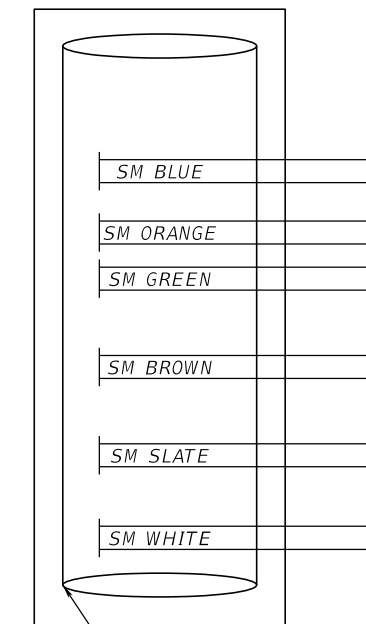
REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>LOGICAL NETWORK DIAGRAM</b>	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		IT-42
					SR 46	LAKE	238275-2-52-01		

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LEGEND	
□	CONNECTOR
•	FUSION SPLICE
└	TERMINATED
SM	SINGLE MODE

FUTURE ITS ← | → FPID # 238275-2-52-01

TERMINAL PATCH  
SPLICE VAULT  
SR 500 STA 428+30

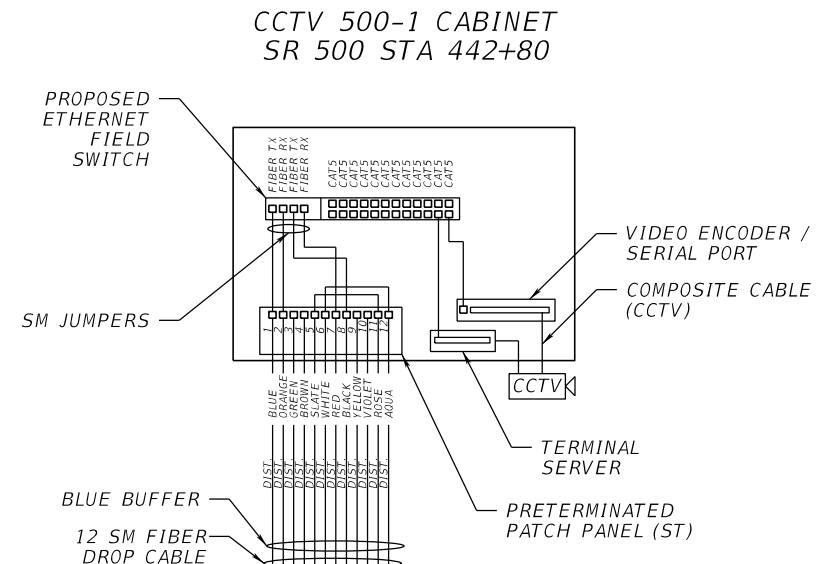


SPLICE ENCLOSURE

F.O. SPLICE VAULT  
SR 500

SM BLUE  
SM ORANGE  
SM GREEN  
SM BROWN  
SM SLATE  
SM WHITE

72 SM FIBER  
DROP CABLE



CCTV 500-1 CABINET  
SR 500 STA 442+80

PROPOSED  
ETHERNET  
FIELD  
SWITCH

SM JUMPERS

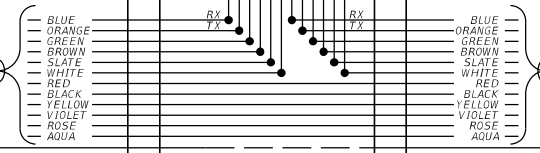
VIDEO ENCODER /  
SERIAL PORT  
COMPOSITE CABLE  
(CCTV)

CCTV

TERMINAL  
SERVER

PRETERMINATED  
PATCH PANEL (ST)

BLUE BUFFER  
12 SM FIBER  
DROP CABLE



SM BLUE  
SM ORANGE  
SM GREEN  
SM BROWN  
SM SLATE  
SM WHITE

SPLICE ENCLOSURE

F.O. SPLICE VAULT  
SR 500

MATCH LINE  
STA 442+90 SR 500

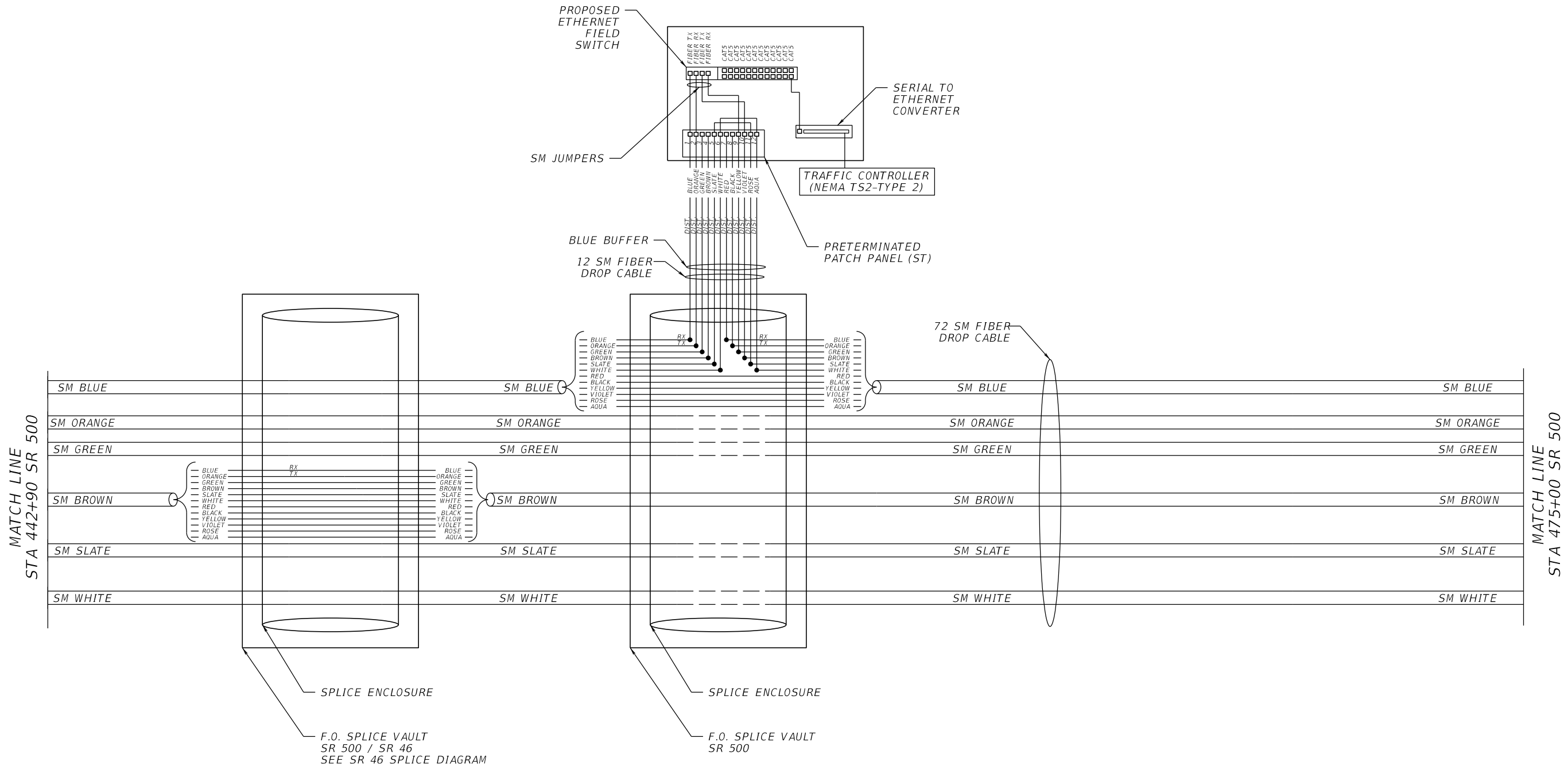
REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SPLICE DIAGRAM SHEET SR 500 (1 OF 3)	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

LEGEND	
□	CONNECTOR
•	FUSION SPLICE
├	TERMINATED
SM	SINGLE MODE

SPLICE VAULT  
SR 500 @ SR 46

TRAFFIC SIGNAL  
CONTROLLER CABINET  
SR 500 STA 444+60



SPLICE ENCLOSURE

F.O. SPLICE VAULT  
SR 500 / SR 46  
SEE SR 46 SPLICE DIAGRAM

SPLICE ENCLOSURE

F.O. SPLICE VAULT  
SR 500

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BES INC  
11007 N. 56TH ST., #208  
TEMPLE TERRACE, FL 33617  
(813) 985-7800 C.A. NO. 9835  
MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**SPLICE DIAGRAM SHEET**  
**SR 500 (2 OF 3)**

SHEET  
NO.

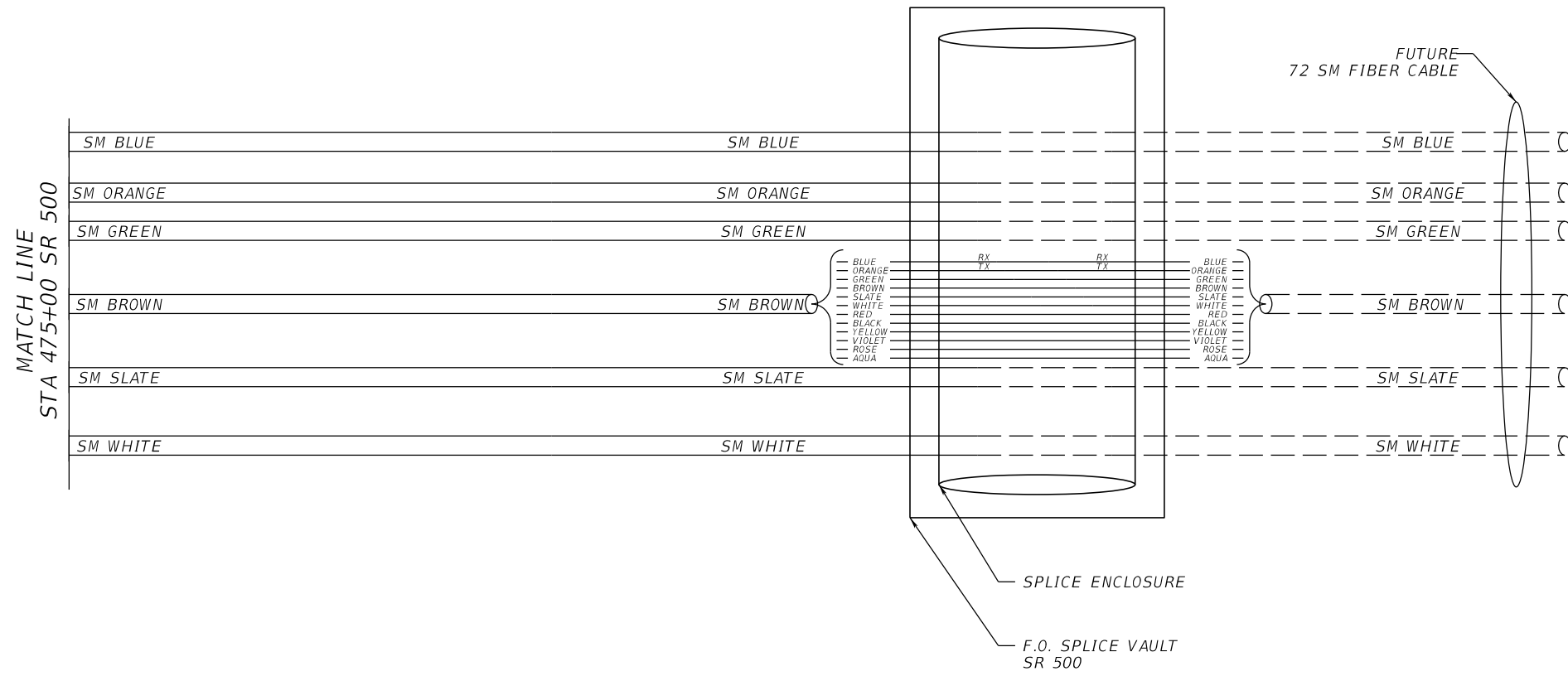
IT-44

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

LEGEND	
□	CONNECTOR
•	FUSION SPLICE
┌	TERMINATED
SM	SINGLE MODE

← FPID # 238275-2-52-01 | FPID # 238275-1-52-01 →  
 FUTURE ITS

**SPLICE VAULT**  
**SR 500 STA 476+76**  
**TERMINAL PATCH**



MATCH LINE  
 STA 475+00 SR 500

REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>SPLICE DIAGRAM SHEET</b> <b>SR 500 (3 OF 3)</b>	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		IT-45
					SR 46	LAKE	238275-2-52-01		

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LEGEND	
□	CONNECTOR
•	FUSION SPlice
├	TERMINATED
SM	SINGLE MODE

SPLICE VAULT  
 STA 34+70, 76' RT =  
 STA 443+00, 88' LT

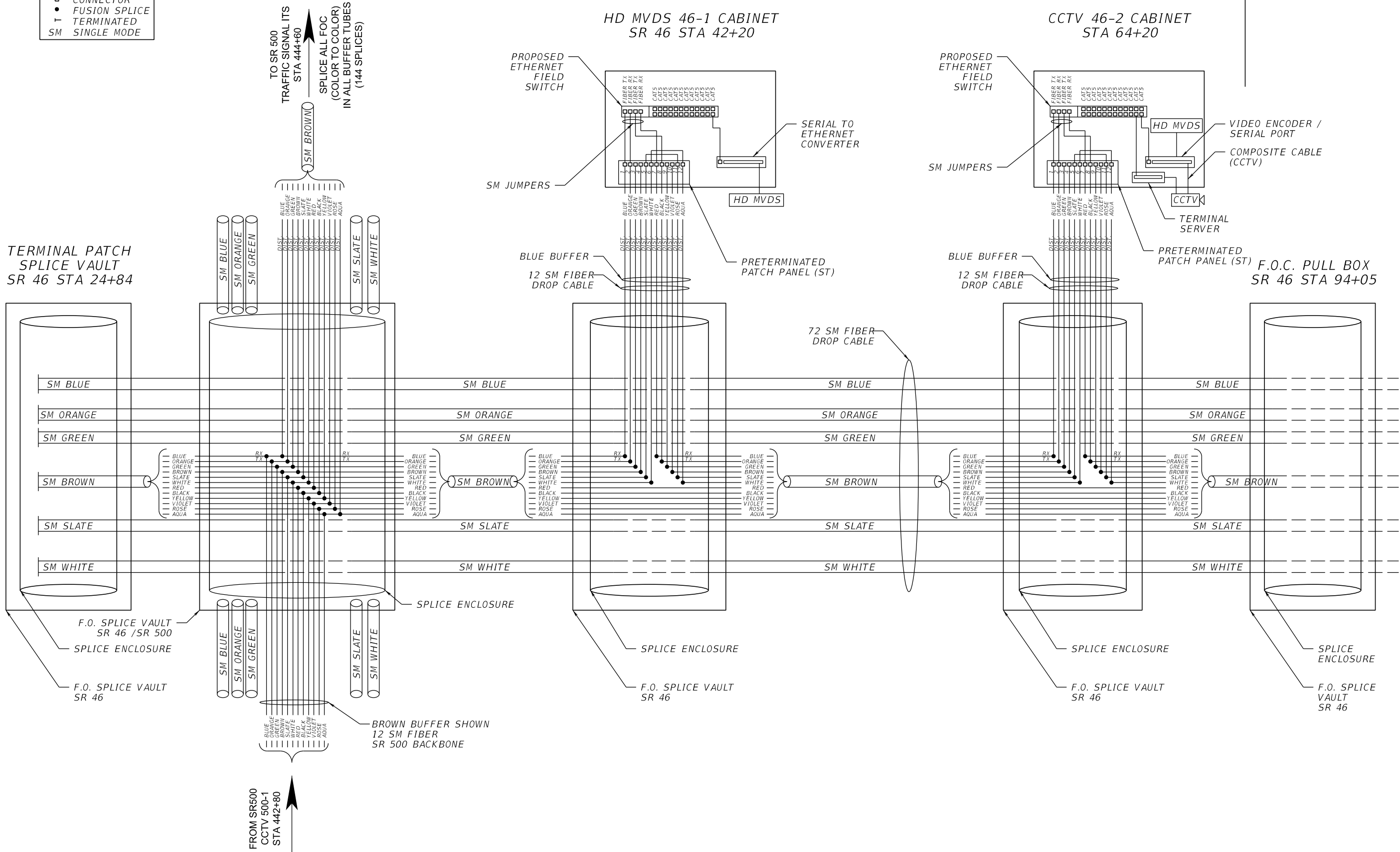
FPID # 238275-2-52-01

FPID # 238275-3-52-01

HD MVDS 46-1 CABINET  
 SR 46 STA 42+20

CCTV 46-2 CABINET  
 STA 64+20

TERMINAL PATCH  
 SPLICE VAULT  
 SR 46 STA 24+84



FROM SR500  
 CCTV 500-1  
 STA 442+80

BROWN BUFFER SHOWN  
 12 SM FIBER  
 SR 500 BACKBONE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

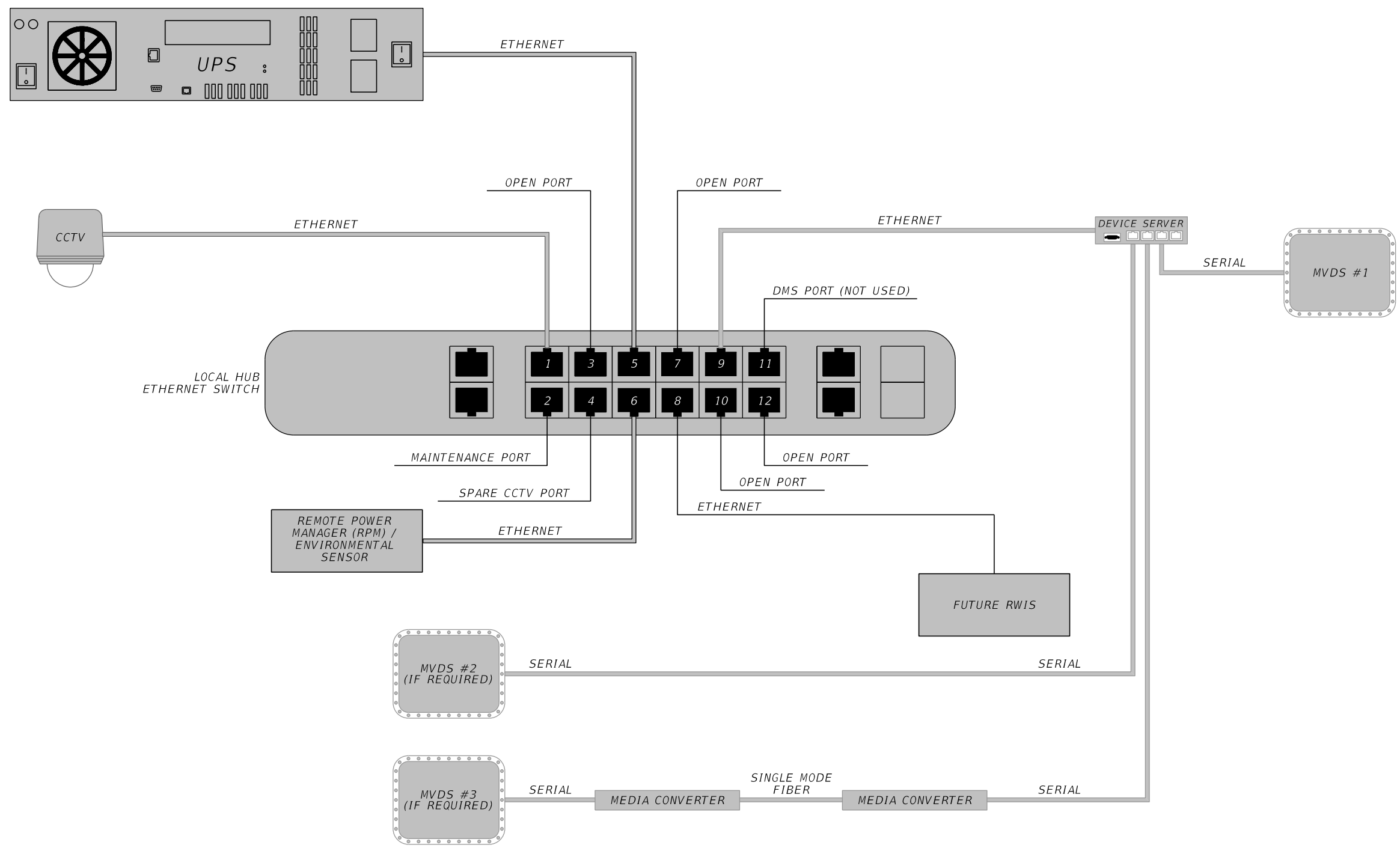
BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
 MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**SPLICE DIAGRAM SHEET**  
**SR 46 (1 OF 1)**

SHEET NO.  
 IT-46

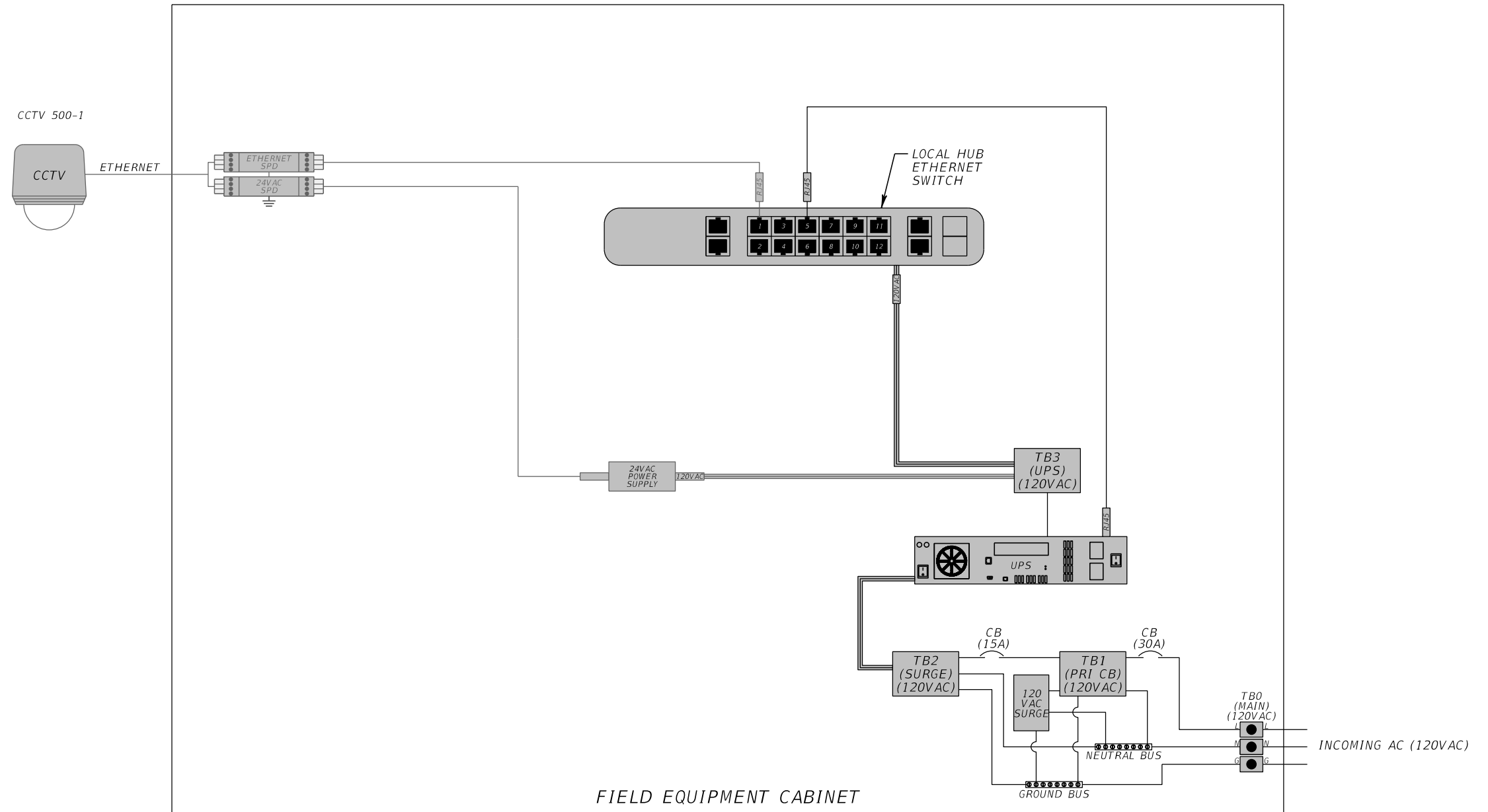
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>LOCAL HUB          ETHERNET SWITCH DETAIL</b>	SHEET NO. IT-47
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-01		

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LHUB 500-1



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
 MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

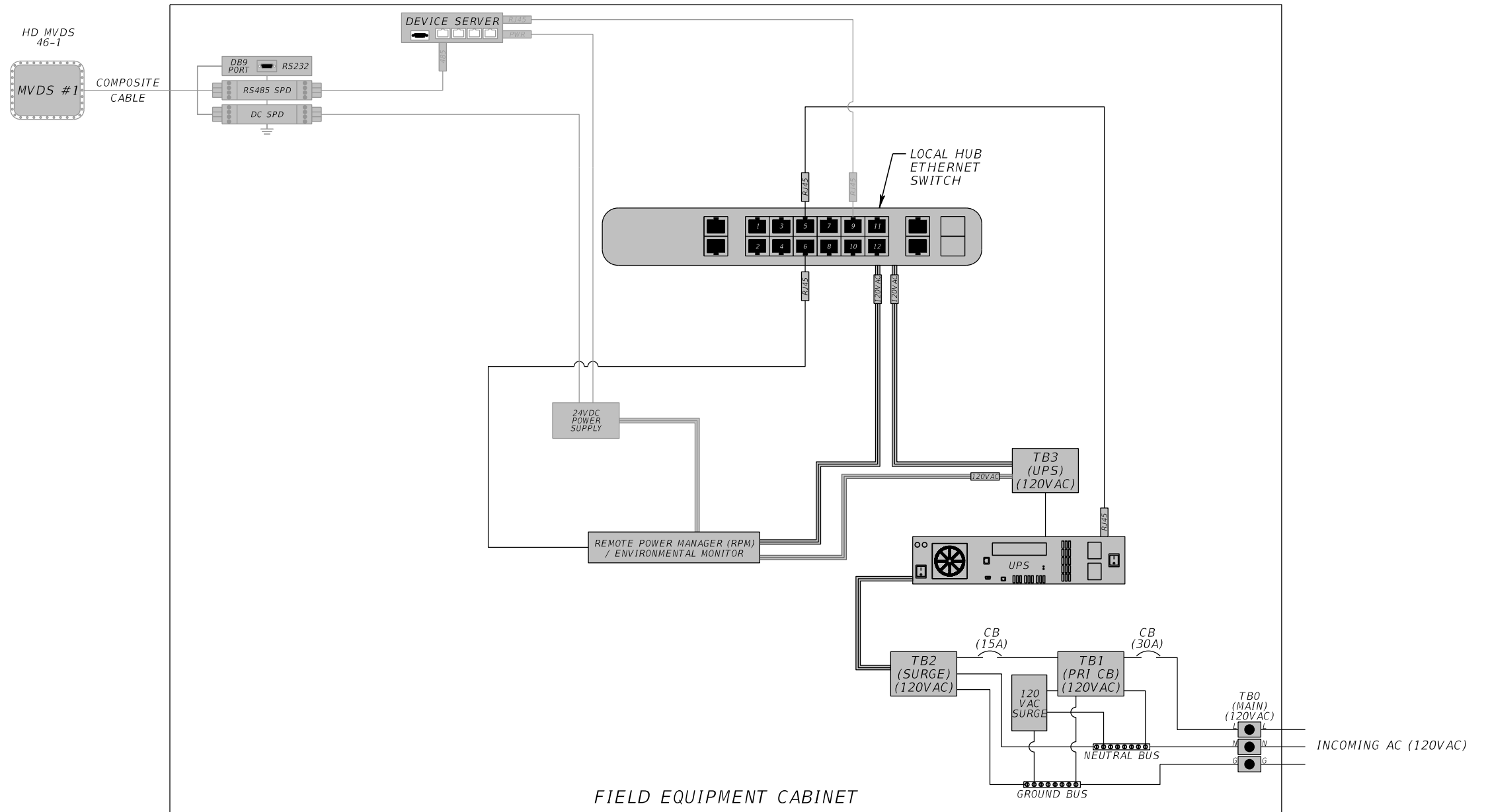
**WIRING DIAGRAMS**

SHEET NO.  
IT-48

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



LHUB 46-1

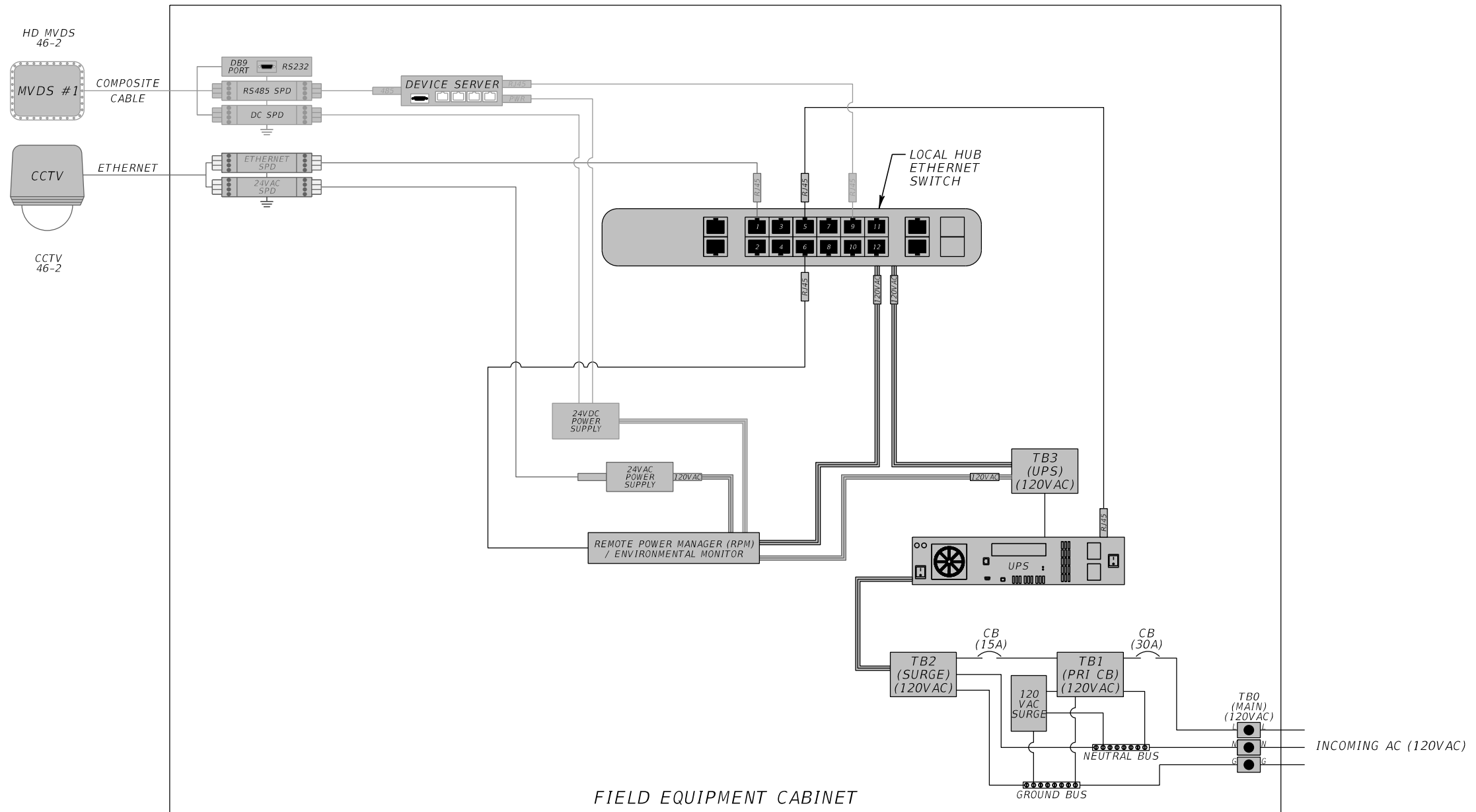


REVISIONS				BES INC 11007 N. 56TH ST., #208 TEMPLE TERRACE, FL 33617 (813) 985-7800 C.A. NO. 9835 MICHAEL J. NOESEN, P.E. NO. 42255	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.  <b>IT-49</b>
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					SR 46	LAKE	238275-2-52-01	

WIRING DIAGRAMS

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LHUB 46-2



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

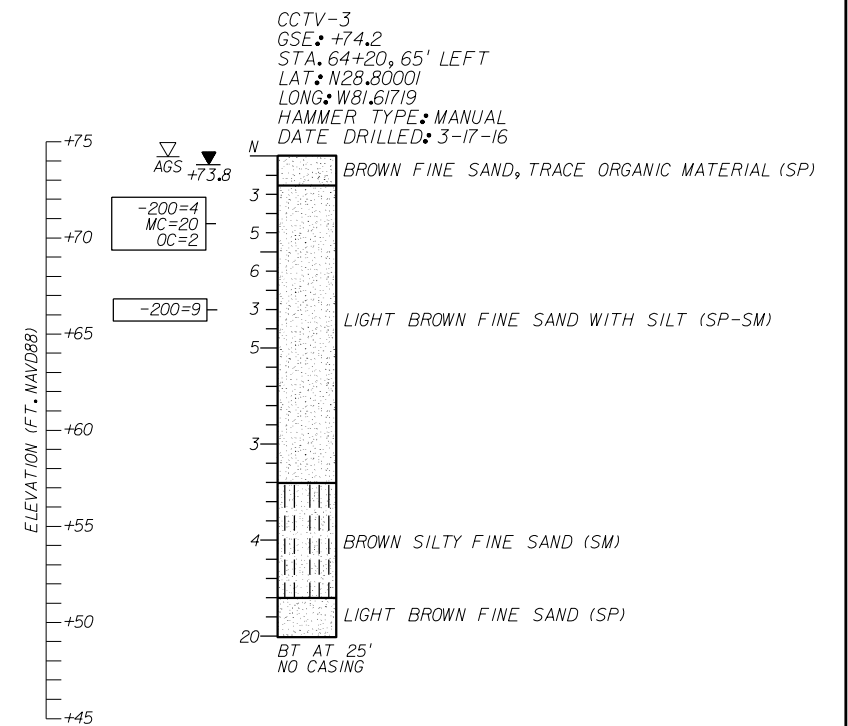
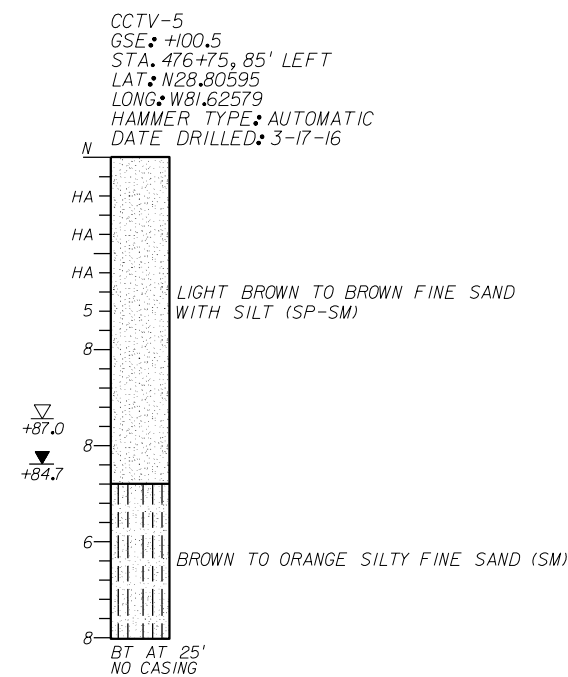
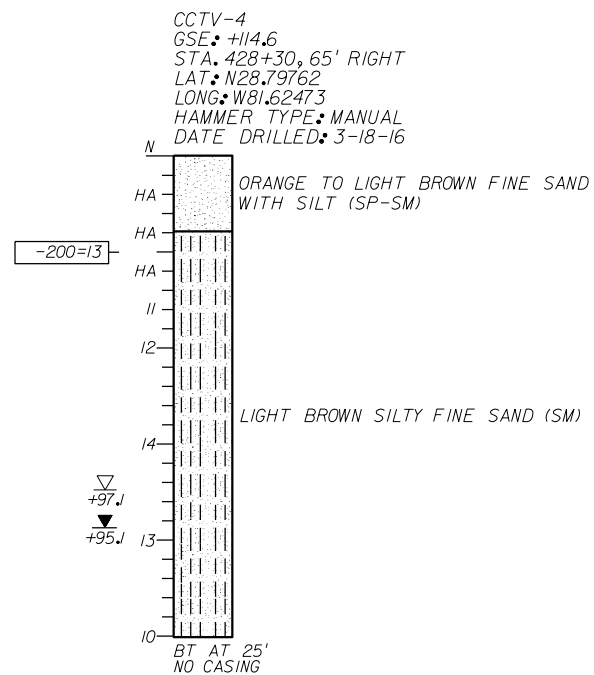
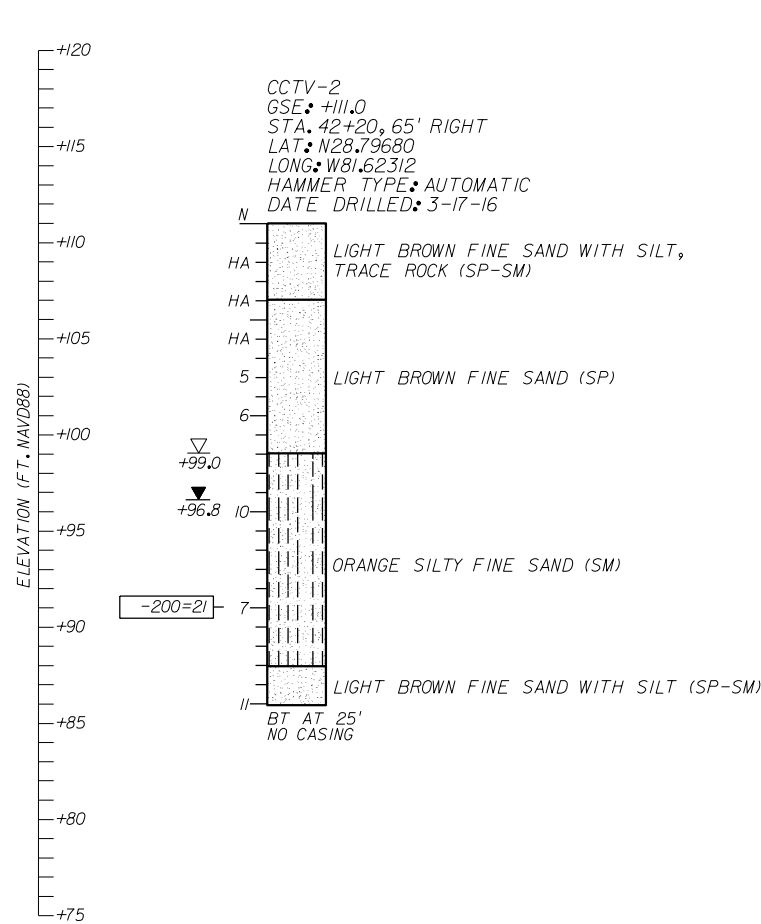
BES INC  
 11007 N. 56TH ST., #208  
 TEMPLE TERRACE, FL 33617  
 (813) 985-7800 C.A. NO. 9835  
 MICHAEL J. NOESEN, P.E. NO. 42255

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 46	LAKE	238275-2-52-01

**WIRING DIAGRAMS**

SHEET NO.  
IT-50

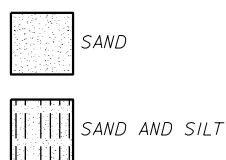
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**LEGEND**

- ▽ AGS ESTIMATED SEASONAL HIGH WATER LEVEL ABOVE GROUND SURFACE
- ▽ +97.1 ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATION (FT. NAVD88)
- ▽ +95.8 ENCOUNTERED GROUNDWATER ELEVATION (FT. NAVD88) 24 HRS. AFTER DRILLING BORING
- GSE GROUND SURFACE ELEVATION (FT. NAVD88)
- N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
- HA HAND AUGERED FOR UTILITY CLEARANCE
- (SP) UNIFIED SOIL CLASSIFICATION SYMBOL
- BT BORING TERMINATED AT SPECIFIED DEPTH (FEET) INDICATED
- 200= PERCENT PASSING NO. 200 U.S. STANDARD SIEVE (FM I-T 088)
- MC= PERCENT NATURAL MOISTURE CONTENT (FM I-T 265)
- OC= PERCENT ORGANIC CONTENT (FM I-T 267)

**SOILS LEGEND**



**GENERAL NOTES**

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE NOTED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND THE LABORATORY TESTING SHOWN.

THE BORING LOCATIONS WERE NOT SURVEYED. BORING LOCATIONS WERE ESTABLISHED IN THE FIELD USING A SUB-METER ACCURACY GPS UNIT (TRIMBLE 7X) FOR HORIZONTAL AND VERTICAL CONTROL. GROUND SURFACE ELEVATIONS ESTIMATED FROM PROJECT CROSS SECTIONS. BORING LOCATIONS (CCTV-2 AND CCTV-3) REFERENCES SR 46 CENTERLINE. BORING LOCATIONS (CCTV-4 AND CCTV-5) REFERENCES US 44I CENTERLINE.

BASED ON REVIEW OF THE U.S. GEOLOGICAL SURVEY MAP ENTITLED "POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER IN ST. JOHNS RIVER WATER MANAGEMENT DISTRICT AND VICINITY, FLORIDA, SEPTEMBER 2008" FOR THE PROJECT AREA, THE MAXIMUM ELEVATION OF THE ARTESIAN HEAD IS ESTIMATED TO BE +55 FT. NAVD88. THE CONTRACTOR SHALL BE PREPARED TO HANDLE ARTESIAN HEAD LEVELS UP TO +55 FT. NAVD88.

SPLIT SPOON SAMPLER: INSIDE DIAMETER: 1.375 IN. OUTSIDE DIAMETER: 2.0 IN.  
 AVERAGE HAMMER DROP: 30 IN. HAMMER WEIGHT: 140 LBS. HAMMER TYPE: SEE BORING

**CORRELATION OF STANDARD PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY OF SOIL**

GRANULAR SOILS	MANUAL N VALUE (blows per foot)	AUTOMATIC N VALUE (blows per foot)	RELATIVE DENSITY
SANDS	0-4	0-3	VERY LOOSE
	4-10	3-8	LOOSE
	10-30	8-24	MEDIUM DENSE
	30-50	24-40	DENSE
	OVER 50	OVER 40	VERY DENSE
NON-GRANULAR SOILS	MANUAL N VALUE (blows per foot)	AUTOMATIC N VALUE (blows per foot)	CONSISTENCY
SILTS, CLAYS, MUCK, PEAT	0-2	0-1	VERY SOFT
	2-4	1-3	SOFT
	4-8	3-6	FIRM
	8-15	6-12	STIFF
	15-30	12-24	VERY STIFF
	OVER 30	OVER 24	HARD

**FIGURE 34**

REVISIONS				<b>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC. (GEC)</b> 919 Lake Baldwin Lane Orlando, FL, 32814 T 407-898-1818 F 407-898-1837 Certificate of Authorization No. 5882 <b>CRAIG G. BALLOCK P.E. 71571</b>	<b>STATE OF FLORIDA</b> <b>DEPARTMENT OF TRANSPORTATION</b>			<b>REPORT OF SPT BORING RESULTS</b> <b>FOR CCTV POLES</b>	SHEET NO.  <b>IT-51</b>
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 46	LAKE	238275-2-52-02		

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.