CONTRACT #: 000851

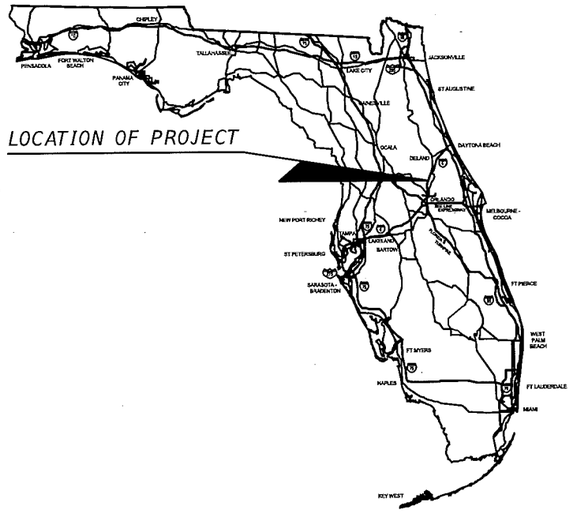
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

PLANS OF PROPOSED S.R. 429 (WEKIVA PARKWAY) N. OF PONKAN RD. TO N. OF KELLY PARK RD. ORANGE COUNTY

CFX PROJECT NUMBER - 429-203

FIBER OPTIC NETWORK PLANS

INDEX OF FIBER OPTIC NETWORK PLANS



CENTRAL FLORIDA EXPRESSWAY AUTHORITY
BOARD MEMBERS

WELTON G. CADWELL	CHAIRMAN
S. SCOTT BOYD	VICE CHAIRMAN
BRENDA CAREY	SECRETARY/TREASURER
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FRED HAWKINS, JR.	BOARD MEMBER
TERESA JACOBS	EX-OFFICIO, ORANGE COUNTY MAYOR
WALTER A. KETCHAM, JR.	BOARD MEMBER
JAY MADARA	BOARD MEMBER
SHAWN "MICHAEL" SCHEERINGA	BOARD MEMBER

FIBER OPTIC NETWORK SHOP DRAWINGS
TO BE SUBMITTED TO:
ANDREW LUCYSHYN, P.E., PTOE
482 S. KELLER ROAD
ORLANDO, FL 32810

PLANS PREPARED BY:

ATKINS
482 S. KELLER ROAD
ORLANDO, FL 32810
(407) 647-7275
VENDOR #: 59-0896138.007
CERTIFICATE OF AUTHORIZATION #: 24

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

WEKIVA PARKWAY - 429-203
APPROVED FOR CONSTRUCTION
JUNE 2015

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2014,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2014,
AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 01/01/13
For Design Standards Modifications click on
"Design Standards" at the following web site:
http://www.dot.state.fl.us/rddesign/

KEY SHEET ADDENDUM	
DATE	DESCRIPTION

FIBER OPTIC NETWORK PLANS
ENGINEER OF RECORD: ANDREW J. LUCYSHYN, P.E., PTOE

P.E. NO.: 54624

FISCAL YEAR	SHEET NO.
14	FO-1

CFX PROJECT MANAGER: GLENN PRESSIMONE, P.E. ATKINS PROJECT MANAGER: ANDREW LUCYSHYN, P.E., PTOE

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SUMMARY OF PAY ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	
			PLAN	FINAL
612-100	GEOLOCATION OF ALL ITS EQUIPMENT & INFRASTRUCTURE	LS	1	
631-100	FIBER OPTIC CABLE INVENTORY	EA	2	
631-101	FIBER OPTIC SPLICE HOUSING INVENTORY	EA	2	
633-121-2	FIBER OPTIC CABLE (SINGLE MODE, 12 FIBER) (F&I)	LF	2218	
633-121-4	FIBER OPTIC CABLE (SINGLE MODE, 72 FIBER) (F&I)	LF	58402	
633-141-3	F.O. SPLICE ENCLOSURE (72 SPLICE) (F&I)	EA	5	
633-141-4	FIBER OPTIC FUSION SPLICE	EA	296	
635-1-11	PULL BOX (F&I)	EA	24	
635-1-15	SMALL FIBER OPTIC PULL BOX (F&I)	EA	9	
638-001-0211	F.O.C., 2-1" HDPE/SDR 11 (TRENCH OR PLOW) (F&I)	LF	877	
638-001-0911	F.O.C., 9-1" HDPE/SDR 11 (TRENCH OR PLOW) (F&I)	LF	18791	
638-260-0011	F.O.C., 6" SPLIT BSP SLEEVE (TRENCH OR PLOW) (F&I)	LF	616	
638-361-0911	F.O.C., 6" PVC CASING W/ 9-1" HDPE/SDR (TRENCH)	LF	499	
638-461-0914	F.O.C., 6" BRFG BULLET-RESISTIVE FIBERGLASS OUTERDUCT W/ 9-1" HDPE/SDR 11, INSTALL ON BRIDGE	LF	1299	
639-1-22	ELECTRICAL POWER ASSEMBLY (F&I)	EA	2	
639-3-11	ELECTRICAL SERVICE DISCONNECT (F&I) (POLE)	EA	5	
641-2-12	CONCRETE POLE (F&I) (12' TYPE P-II SERVICE POLE)	EA	7	
663-74-142	DCS FIELD EQUIPMENT 2 LANES (F&I)	EA	2	
663-74-143	DCS FIELD EQUIPMENT 3 LANES (F&I)	EA	1	
664-1-140	TMS - POLE MOUNTED (F&I)	EA	4	
664-3-140	TMS - POLE MOUNTED (30' POLE) (F&I)	EA	1	
664-3-141	TMS - POLE MOUNTED (40' POLE) (F&I)	EA	1	
668-13	TYPE 170 CABINET (POLE MOUNTED) (F&I)	EA	5	
678-1-111	TRAFFIC CONTROLLER ACCESSORIES, (F&I) (POWER REDUCTION ASSEMBLY)	EA	5	
683-101	GIGABIT ETHERNET FIELD SWITCH (F&I)	EA	5	
683-103	HARDENED TERMINAL SERVER (F&I)	EA	4	
683-105	FIBER OPTIC PATCH PANEL - 12 PORT (F&I)	EA	5	
683-110	CUT-TO-LENGTH FIBER OPTIC JUMPER (F&I)	EA	18	
685-101	UNINTERRUPTIVE POWER SUPPLY (F&I)	EA	5	
685-101A	REMOTE POWER MANAGER (F&I)	EA	5	
686-101	CCTV FIELD ASSEMBLY (F&I)	EA	2	
686-105	CAMERA LOWERING SYSTEM (50' POLE) (F&I)	EA	2	
700-22-240	OVER HEAD TRUSS SPAN SIGN, (F&I) 151-200'	EA	1	
700-89-13F	DMS (FULL COLOR) (LED) (WALK-IN)(F&I)	EA	2	
700-89-13F-SP	FULL COLOR DMS (LED) (WALK-IN) (F&I)	EA	2	
715-1-113	CONDUCTORS (F&I) (INSULATED) #6 AWG	LF	11347	
715-2-115	CONDUIT 2" SCHEDULE 40 PVC (UNDERGROUND) (F&I)	LF	3901	
783-8-1	TRAFFIC MONITORING STATION COMPOSITE CABLE (F&I)	LF	315	
4210-11	4'X4'X4' CONCRETE MANHOLE (F&I)	EA	21	
4210-12	4'X6.5'X6.5' CONCRETE MANHOLE (F&I)	EA	5	

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Andrew J. Lucyshyn, P.E. No. 54624

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SUMMARY OF PAY ITEMS

SHEET NO. F0-2

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TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																		TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			FO-11		FO-12		FO-13		FO-14		FO-15		FO-16		FO-17		FO-18		FO-19		FO-20					
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	
612-100	GEOLOCATION OF ALL ITS EQUIPMENT & INFRASTRUCTURE	LS																							
631-100	FIBER OPTIC CABLE INVENTORY	EA	2																				2		
631-101	FIBER OPTIC SPLICE HOUSING INVENTORY	EA	2																				2		
633-121-2	FIBER OPTIC CABLE (SINGLE MODE, 12 FIBER) (F&I)	LF																							
633-121-4	FIBER OPTIC CABLE (SINGLE MODE, 72 FIBER) (F&I)	LF																							
633-141-3	F.O. SPLICE ENCLOSURE (72 SPLICE) (F&I)	EA	4																				4		
633-141-4	FIBER OPTIC FUSION SPLICE	EA	288																				288		
635-1-11	PULL BOX (F&I)	EA	7		2																		9		
635-1-15	SMALL FIBER OPTIC PULL BOX (F&I)	EA	4																				4		
638-001-0211	F.O.C., 2-1" HDPE/SDR 11 (TRENCH OR PLOW) (F&I)	LF	258																				258		
638-001-0911	F.O.C., 9-1" HDPE/SDR 11 (TRENCH OR PLOW) (F&I)	LF	276		1362		565		1244		1401		1402		1401		1393		1394		1401		11839		
638-260-0011	F.O.C., 6" SPLIT BSP SLEEVE (TRENCH OR PLOW) (F&I)	LF			20		20		30		20						10		20		20		140		
638-361-0911	F.O.C., 6" PVC CASING W/ 9-1" HDPE/SDR (TRENCH)	LF					116		37														153		
638-461-0914	F.O.C., 6" BRFG BULLET-RESISTIVE FIBERGLASS OUTERDUCT	LF					716		111														827		
	W/ 9-1" HDPE/SDR 11, INSTALL ON BRIDGE																								
639-1-22	ELECTRICAL POWER ASSEMBLY (F&I)	EA	1																				1		
639-3-11	ELECTRICAL SERVICE DISCONNECT (F&I) (POLE)	EA	2																				2		
641-2-12	CONCRETE POLE (F&I) (12' TYPE P-II SERVICE POLE)	EA	3																				3		
663-74-142	DCS FIELD EQUIPMENT 2 LANES (F&I)	EA	2																				2		
663-74-143	DCS FIELD EQUIPMENT 3 LANES (F&I)	EA																							
664-1-140	TMS - POLE MOUNTED (F&I)	EA			2																		2		
664-3-140	TMS - POLE MOUNTED (30' POLE) (F&I)	EA			2																		2		
664-3-141	TMS - POLE MOUNTED (40' POLE) (F&I)	EA																							
668-13	TYPE 170 CABINET (POLE MOUNTED) (F&I)	EA	2																				2		
678-1-111	TRAFFIC CONTROLLER ACCESSORIES, (F&I)	EA	2																				2		
	(POWER REDUCTION ASSEMBLY)																								
683-101	GIGABIT ETHERNET FIELD SWITCH (F&I)	EA	2																				2		
683-103	HARDENED TERMINAL SERVER (F&I)	EA	2																				2		
683-105	FIBER OPTIC PATCH PANEL - 12 PORT (F&I)	EA	2																				2		
683-110	CUT-TO-LENGTH FIBER OPTIC JUMPER (F&I)	EA	8																				8		
685-101	UNINTERRUPTIVE POWER SUPPLY (F&I)	EA	2																				2		
685-101A	REMOTE POWER MANAGER (F&I)	EA	2																				2		
685-103	CABINET/ENVIRONMENTAL MONITOR (F&I)	EA	2																				2		
700-22-240	OVER HEAD TRUSS SPAN SIGN, (F&I) 151-200'	EA	1																				1		
700-89-13F	DMS (FULL COLOR) (LED) (WALK-IN)(F&I)	EA	2																				2		
700-89-13F-SP	FULL COLOR DMS (LED) (WALK-IN) (F&I)	EA	2																				2		
715-1-113	CONDUCTORS (F&I) (INSULATED) #6 AWG	LF	1666																				1666		
715-2-115	CONDUIT 2" SCHEDULE 40 PVC (UNDERGROUND) (F&I)	LF	432		363																		795		
783-8-1	TRAFFIC MONITORING STATION COMPOSITE CABLE (F&I)	LF	18		363																		381		
4210-11	4'X4'X4' CONCRETE MANHOLE (F&I)	EA					3		1		1		1		2				1				9		
4210-12	4'X6.5'X6.5' CONCRETE MANHOLE (F&I)	EA																	1				1		

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

TABULATION OF QUANTITIES

SHEET NO. F0-3

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TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS									TOTAL THIS SHEET	GRAND TOTAL	REF. SHEET
			FO-21	FO-22	FO-23	FO-24	FO-25	FO-26	FO-27	FO-28	FO-29			
612-100	GEOLOCATION OF ALL ITS EQUIPMENT & INFRASTRUCTURE	LS											1	
631-100	FIBER OPTIC CABLE INVENTORY	EA											2	
631-101	FIBER OPTIC SPLICE HOUSING INVENTORY	EA											2	
633-121-2	FIBER OPTIC CABLE (SINGLE MODE, 12 FIBER) (F&I)	LF											2218	
633-121-4	FIBER OPTIC CABLE (SINGLE MODE, 72 FIBER) (F&I)	LF											58402	
633-141-3	F.O. SPLICE ENCLOSURE (72 SPLICE) (F&I)	EA			1							1	5	
633-141-4	FIBER OPTIC FUSION SPLICE	EA			4							4	296	
635-1-11	PULL BOX (F&I)	EA			4	2			1	1	5	13	24	
635-1-15	SMALL FIBER OPTIC PULL BOX (F&I)	EA			1			2				3	9	
638-001-0211	F.O.C., 2-1" HDPE/SDR 11 (TRENCH OR PLOW) (F&I)	LF			25							25	877	
638-001-0911	F.O.C., 9-1" HDPE/SDR 11 (TRENCH OR PLOW) (F&I)	LF	1404	1102	1402	1402	1414	228				6952	18791	
638-260-0011	F.O.C., 6" SPLIT BSP SLEEVE (TRENCH OR PLOW) (F&I)	LF	20		245	30	45	136				476	616	
638-361-0911	F.O.C., 6" PVC CASING W/ 9-1" HDPE/SDR (TRENCH)	LF		144			40	162				346	499	
638-461-0914	F.O.C., 6" BRFG BULLET-RESISTIVE FIBERGLASS OUTERDUCT	LF		156				316				472	1299	
	W/ 9-1" HDPE/SDR 11, INSTALL ON BRIDGE													
639-1-22	ELECTRICAL POWER ASSEMBLY (F&I)	EA									1	1	2	
639-3-11	ELECTRICAL SERVICE DISCONNECT (F&I) (POLE)	EA			1							1	5	
641-2-12	CONCRETE POLE (F&I) (12' TYPE P-II SERVICE POLE)	EA			1						1	2	7	
663-74-142	DCS FIELD EQUIPMENT 2 LANES (F&I)	EA											2	
663-74-143	DCS FIELD EQUIPMENT 3 LANES (F&I)	EA			1							1	1	
664-1-140	TMS - POLE MOUNTED (F&I)	EA			2	a						2	4	
664-3-140	TMS - POLE MOUNTED (30' POLE) (F&I)	EA											1	
664-3-141	TMS - POLE MOUNTED (40' POLE) (F&I)	EA			1							1	1	
668-13	TYPE 170 CABINET (POLE MOUNTED) (F&I)	EA			1							1	5	
678-1-111	TRAFFIC CONTROLLER ACCESSORIES, (F&I)	EA			1							1	5	
	(POWER REDUCTION ASSEMBLY)													
683-101	GIGABIT ETHERNET FIELD SWITCH (F&I)	EA			1							1	5	
683-103	HARDENED TERMINAL SERVER (F&I)	EA			1							1	4	
683-105	FIBER OPTIC PATCH PANEL - 12 PORT (F&I)	EA			1							1	5	
683-110	CUT-TO-LENGTH FIBER OPTIC JUMPER (F&I)	EA			2							2	18	
685-101	UNINTERRUPTIVE POWER SUPPLY (F&I)	EA			1							1	5	
685-101A	REMOTE POWER MANAGER (F&I)	EA			1							1	5	
686-101	CCTV FIELD ASSEMBLY (F&I)	EA											2	
686-105	CAMERA LOWERING SYSTEM (50' POLE) (F&I)	EA											2	
700-22-240	OVER HEAD TRUSS SPAN SIGN, (F&I) 151-200'	EA											1	
700-89-13F	DMS (FULL COLOR) (LED) (WALK-IN)(F&I)	EA											2	
700-89-13F-SP	FULL COLOR DMS (LED) (WALK-IN) (F&I)	EA											2	
715-1-113	CONDUCTORS (F&I) (INSULATED) #6 AWG	LF			1218	657			2055	2118	1566	7814	11347	
715-2-115	CONDUIT 2" SCHEDULE 40 PVC (UNDERGROUND) (F&I)	LF			468	219			685	706	522	2600	3901	
783-8-1	TRAFFIC MONITORING STATION COMPOSITE CABLE (F&I)	LF			124							124	315	
4210-11	4'X4'X4' CONCRETE MANHOLE (F&I)	EA	2	4	3		3					12	21	
4210-12	4'X6.5'X6.5' CONCRETE MANHOLE (F&I)	EA			1		1	2				4	5	

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

TABULATION OF QUANTITIES

SHEET NO. FO-4

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GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE CENTRAL FLORIDA EXPRESSWAY AUTHORITY 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

2. THESE PLANS REFLECT CONDITIONS KNOWN DURING PLAN DEVELOPMENT. IN THE EVENT ACTUAL PHYSICAL CONDITIONS PREVENT THE APPLICATION OR THE PROGRESSION OF ANY WORK SPECIFIED IN THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND PRIOR TO ANY FURTHER WORK ACTIVITY.

3. IN ORDER TO MINIMIZE IMPACT TO LANDSCAPING MATERIAL, THE CONTRACTOR SHALL EXERCISE CAUTION THROUGH LANDSCAPING LIMITS DURING ALL PHASES OF CONSTRUCTION ACTIVITY. ANY LANDSCAPE MATERIAL DAMAGED DURING THE CONSTRUCTION PROCESS SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

4. CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH ALL OTHER CONTRACTORS OPERATING IN THE PROJECT AREA.

5. THE CONTRACTOR SHALL EXERCISE ALL APPROPRIATE SAFETY MEASURES WHEN WORKING IN OR AROUND AREAS OF OVERHEAD ELECTRICAL/TRANSMISSION LINES OR UNDERGROUND UTILITIES. HAND DIGGING SHALL BE USED AROUND ALL KNOWN AND LOCATED UTILITIES.

6. FLORIDA STATUTE 556 REQUIRES CONTRACTORS TO CALL SUNSHINE STATE ONE-CALL OF FLORIDA, INC., AT 1-800-432-4770, NOT LESS THAN 2 OR MORE THAN 5 BUSINESS DAYS BEFORE BEGINNING ANY EXCAVATION OR DEMOLITION. NOT ALL UTILITY AGENCIES/OWNERS ARE MEMBERS OF SUNSHINE STATE ONE-CALL OF FLORIDA, INC.

7. THE CONTRACTOR IS RESPONSIBLE FOR PAYING OF ALL TOLLS INCURRED FROM USING THE AUTHORITY SYSTEM IN TRANSPORTING WORKERS, EQUIPMENT OR MATERIALS TO AND FROM THE SITE OF WORK AT NO ADDITIONAL COST TO THE AUTHORITY. CONTRACTOR SHALL ACCESS THE PROJECT BY EXISTING RAMPS. NO ACCESS WILL BE ALLOWED THROUGH THE RIGHT-OF-WAY FENCE UNLESS APPROVED BY THE AUTHORITY. NO U-TURNS SHALL BE PERMITTED IN THE MEDIAN.

8. VIBRATORY ROLLERS SHALL NOT BE ALLOWED FOR COMPACTION OPERATIONS OF PAVEMENT, SOILS, ETC. ABOVE FIBER OPTIC CABLES (AT&T, MCI WORLD COM, CFX FIBER OPTIC ETC). THE LOCATION OF ALL PROPOSED EQUIPMENT TO BE INSTALLED SHALL BE CONSIDERED TO BE APPROXIMATE.

9. THE WORK CORRIDOR SHALL BE RESTORED TO PRE-WORK CONDITIONS.

10. ALL CONCRETE GUTTERS SHALL BE MAINTAINED OR RESTORED TO PRE-WORK CONDITIONS.

11. FOR ALL OVERHEAD SIGN STRUCTURES, THE CONTRACTOR SHALL EXERCISE ALL APPROPRIATE SAFETY MEASURES WHEN WORKING IN OR AROUND THESE AREAS. CAUTION SHALL BE TAKEN IN RESPECT TO MAINTAINING THE POWER FEED AND ROUNDING CIRCUITRY. ALL FEATURES SHALL BE RESTORED TO ORIGINAL PRE-WORK CONDITIONS.

12. THE CONTRACTOR SHALL HAND DIG THE FIRST 4' AT EACH POLE INSTALLATION LOCATION. BACKFILLING AROUND POLE SHALL CONFORM TO SECTION 125 OF THE STANDARD SPECIFICATIONS.

13. CONTRACTOR SHALL MAKE SURE THAT ALL NECESSARY PROTECTIVE MEASURES ARE TAKEN TO SAFEGUARD EXISTING UTILITIES DURING FIBER/EQUIPMENT INSTALLATIONS.

14. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRIC SAFETY CODE, AND THE STATE OF FLORIDA D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER N.E.C. REQUIREMENTS.

15. PULLING INSTRUCTIONS FOR POWER CONDUCTORS: CONNECT PULLING DEVICES TO COPPER WIRE AND NOT TO JACKET AND MEET MANUFACTURERS REQUIREMENTS. USE PULLING COMPOUND PER MANUFACTURES REQUIREMENTS. ALL BENDS SHALL NOT BE LESS THAN RECOMMENDED BY N.E.C. OR N.E.S.C. FOR CABLE USED.

16. ALL APPLICABLE PROVISIONS OF EXISTING UTILITY EASEMENTS WILL BE ADHERED TO BY THE CONTRACTOR.

17. ALL MISCELLANEOUS WORK NECESSARY IN THE SHOULDER AREA TO CONSTRUCT POLES, PULL BOXES, ETC. (I.E. GRADING, SODDING, CLEARING AND GRUBBING, GUARDRAIL OR FENCE RESETTING) IS CONSIDERED INCIDENTAL, AND IS TO BE INCLUDED IN THE COST OF POLE ASSEMBLY, PULL BOX, ETC. ALL DISTURBED AREAS SHALL BE SODDED. THE CONTRACTOR SHALL HAUL ALL EXCESS EXCAVATION AND WASTE MATERIALS OFF-SITE. REMOVAL OF THESE MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE POLE ASSEMBLY, PULL BOX, ETC.

18. THE CONTRACTOR SHALL ESTABLISH, STAKE AND PAINT POLE LOCATIONS WITH THE USE OF A FLORIDA REGISTERED LAND SURVEYOR. IF, DURING THE CONSTRUCTION PROCESS, THE STAKES AND/OR PAINTED MARKS ARE OBLITERATED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE POLE LOCATIONS RE-ESTABLISHED BY A FLORIDA REGISTERED LAND SURVEYOR. NO ADDITIONAL PAYMENT WILL BE ALLOWED.

19. A GROUNDING ELECTRODE IS REQUIRED PER EACH POLE, DMS SIGN STRUCTURE, DMS BOX, AND DMS CABINET. INSTALLATION SHALL BE IN ACCORDANCE WITH CFX SPECIFICATIONS 620A, 720 AND 721, WITH A MINIMUM LENGTH OF 20 LINEAR FEET AND A MEASURED RESISTANCE 5 OHMS OR LESS. ALL CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. IF 5 OHMS IS NOT OBTAINED WITH THE INITIAL 20 LINEAR FEET OF GROUNDING ELECTRODE, THEN ADDITIONAL GROUND ELECTRODE OR A GROUND ARRAY SHALL BE INSTALLED UNTIL MEASURED RESISTANCE OF 5 OHMS OR LESS IS ACHIEVED AT NO ADDITIONAL COST TO THE AUTHORITY.

20. ALL OF THE GENERAL NOTES FOR THE CONTRACT CONSTRUCTION DOCUMENT SET WILL APPLY TO THIS PLAN SET.

21. UPON FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL FORWARD A COMPLETE SET OF AS-BUILT PLANS WITH ALL CHANGES MARKED IN RED TO THE ENGINEER. THE AS-BUILTS SHALL CONTAIN ACCURATELY DIMENSIONED LOCATIONS FOR FIBER OPTIC CABLE, PULL BOXES, POWER SERVICES, CONDUITS, STRUCTURES, AND FIELD COMPONENTS. THE AS-BUILT PLANS SHALL INCLUDE A RECORD OF THE COLOR DESIGNATIONS OF ALL HDPE CONDUIT USED, AS WELL AS FIBER SPLICING AND PORT ASSIGNMENTS.

22. ALL ELECTRICAL EQUIPMENT SHALL BE WEATHERPROOF.

23. THE LOCATION OF THE CONDUCTORS, CONDUITS, JUNCTION BOXES, SERVICE POINTS, AND CONTROLLER BOXES ARE DIAGRAMMATIC ONLY AND MAY BE SHIFTED BY THE ENGINEER TO ACCOMMODATE LOCAL CONDITIONS AND EXISTING UTILITY LOCATIONS. CONDUIT SHALL BE PLACED WITHIN EXISTING RIGHT-OF-WAY.

24. THE CONTRACTOR SHALL REFERENCE SIGNING & MARKING PLANS AND COORDINATE WITH S&PM CONTRACTOR REGARDING LOCATIONS OF PULL BOXES AND COORDINATE WITH FIBER OPTIC CONTRACTOR FOR LOCATION OF MANHOLE TIE-INS.

25. ALL SYMBOLS FOR ROADWAY LIGHTING ARE SHOWN FOR REFERENCE ONLY.

26. THE CONTRACTOR SHALL AVOID AND/OR PROTECT ALL TREES AND ROOTS BY HAND DIGGING AS NECESSARY.

27. THE CONTRACTOR SHALL ACQUIRE ALL PERMITS BY OTHER AGENCIES FOR INSTALLATION OF INFRASTRUCTURE NOT ON CFX FACILITIES. NO ADDITIONAL TIME OR MONEY WILL BE ALLOTTED.

28. MAINTENANCE OF TRAFFIC:

A. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE AUTHORITY FOR APPROVAL WHICH CONSISTS OF UNMODIFIED FDOT DESIGN STANDARDS (600 SERIES); OTHERWISE THE CONTRACTOR MUST PROVIDE A TRAFFIC CONTROL PLAN WHICH IS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF FLORIDA. ONCE APPROVED BY THE AUTHORITY, THE TRAFFIC CONTROL PLAN MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. ALL COSTS ASSOCIATED WITH THE MAINTENANCE OF TRAFFIC SHALL BE INCLUDED IN PAY ITEM 102-1 MAINTENANCE OF TRAFFIC (LUMP SUM)

B. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH FDOT DESIGN STANDARDS, INDEX 600 SERIES.

C. LANE WIDTH SHALL NOT BE LESS THAN 11 FEET. LANES SHALL BE PROPERLY DELINEATED DURING ALL PHASES OF CONSTRUCTION.

D. FOR ADDITIONAL SIGN INFORMATION, INCLUDING SIZES, REFER TO STANDARD HIGHWAY SIGNS MANUAL SPECIFIED IN THE MUTCD

E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A LAW ENFORCEMENT OFFICER DURING ALL LANE CLOSURE OPERATIONS AND DURING ALL NIGHT OPERATIONS.

F. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL UNUSED BARRICADES, SIGNS, AND/OR WARNING DEVICES TO THE APPROPRIATE STORAGE FACILITY UPON COMPLETION OF THEIR USE FOR THE DESIGNED TRAFFIC CONTROL OPERATION. DURING RESTRICTED HOURS OF OPERATION, UNUSED MOT SIGNS MAY SIGNS WAY REMAIN IN PLACE, BUT SHALL NOT FACE TRAFFIC AND SHALL BE COMPLETELY COVERED SO AS NOT TO BE READABLE.

G. DELAY COSTS TO THE CONTRACTOR WILL RESULT IF ALL TRAVEL LANES AND RAMPS ARE NOT OPEN TO TRAFFIC DURING THE TIMES OUTSIDE OF THE PERMITTED LANE CLOSURE HOURS. THE CONTRACTOR SHALL PLAN OPERATIONS SUCH THAT ALL EQUIPMENT AND MATERIALS INSTALLED BY THE CONTRACTOR FOR LANE CLOSURES ARE REMOVED FROM THE CLEAR ZONE AND TRAVEL LANES ARE REOPENED TO TRAFFIC. FOR MAINLINE AND RAMP CLOSURES THAT OCCUR OUTSIDE THE PERMITTED LANE CLOSURE HOURS, A LANE RENTAL FEE WILL BE ASSESSED TO THE CONTRACTOR IN THE AMOUNT OF $1,000 PER LANE/RAMP FOR EACH MINUTE THAT ANY LANE/RAMP IS NOT OPEN TO TRAFFIC.

H. LANE RENTAL FEES WILL BE ASSESSED AND WILL CONTINUE TO ACCRUE UNTIL SUBJECT LANE/RAMP IS OPEN TO A TRAFFIC FLOW AS RECORDED BY THE AUTHORITY. THE AUTHORITY SHALL HAVE THE RIGHT TO APPLY AS PAYMENT ON SUCH FEES ANY MONEY THAT IS DUE TO THE CONTRACTOR BY THE AUTHORITY. AT THE DISCRETION OF THE DIRECTOR OF CONSTRUCTION AND/OR HIS DESIGNEE, LANE RENTAL FEES WILL NOT BE CHARGED FOR FAILURE TO OPEN TRAFFIC LANES/RAMPS IF SUCH CAUSE IS BEYOND THE CONTROL OF THE CONTRACTOR, I.E. CATASTROPHIC EVENTS, AND ACCIDENTS NOT NOT RELATED OR CAUSED BY THE CONTRACTOR'S OPERATIONS.

I. CONTRACTOR SHALL COORDINATE WITH TOLL PLAZA MANAGERS 72 HOURS PRIOR TO PERFORMING ANY WORK WITHIN 2,000 FEET OF A TOLL PLAZA.

J. AUTHORITY PROPERTY AFFECTED BY THE CONSTRUCTION WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING PRE-CONSTRUCTION CONDITION UNLESS SPECIFICALLY EXEMPT IN THE PLANS. COST SHALL BE INCIDENTAL TO OTHER CONSTRUCTION.

29. FON UTILITY WORK PROCEDURE: AN ANS TICKET MUST BE OPENED WITH CENTURYLINK FOR ALL WORK PERFORMED IN ANY MANHOLE LOCATED ON THE FIBER OPTIC NETWORK (FON)-NO EXCEPTIONS.

A. CALL CENTURYLINK ANS TO OPEN A NEW TICKET. THE PHONE NUMBER IS 407-621-3802, THEN OPTION 1, THEN OPTION 1.

B. IDENTIFY YOURSELF AS A CONTRACTOR WORKING FOR THE "CENTRAL FLORIDA EXPRESSWAY AUTHORITY" (CFX).

C. PROVIDE YOUR NAME AND CONTACT INFORMATION (INCLUDING PHONE NUMBER).

D. IDENTIFY THE AREA IN WHICH YOU ARE GOING TO BE WORKING AND WHICH SITES YOU ANTICIPATE AN ALARM FOR IDENTIFY BY THE NEAREST MAINLINE PLAZA OR ON/OFF RAMP OR HEADQUARTERS).

E. ADVISE THE CENTURYLINK TECHNICIAN OF THE ESTIMATED TIME FRAME OF THE BEGINNING AND ENDING OF YOUR WORK.

F. ASK THE CENTURYLINK TECHNICIAN FOR A REMEDY TROUBLE TICKET NUMBER.

G. ONCE WORK IS COMPLETE, CALL BACK IN AND REFERENCE THE REMEDY TROUBLE TICKET NUMBER RECEIVED EARLIER AND ADVISE THE CENTURYLINK TECHNICIAN THAT WORK HAS BEEN COMPLETED. BE SURE TO ASK THE TECHNICIAN IF ALL ALARMS ASSOCIATED WITH THE TICKET ARE CLEAR. IF ALL ALARMS ARE CLEAR, ADVISE THE TECHNICIAN IT IS OK TO CLEAR THE TROUBLE TICKET. IF ALARMS REMAIN, ADVISE CEI IMMEDIATELY AND WORK TO RESOLVE THE ISSUE.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Andrew J. Lucyshyn, P.E. No. 54624

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

GENERAL NOTES (1)

SHEET NO. F0-5

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GENERAL NOTES (CONTINUED):

30. FON UTILITY WORK GUIDELINES:

A. NO CONTRACTOR SHALL BE PERMITTED TO ENTER THE MAINLINE OR RAMP PLAZAS WITHOUT PRIOR APPROVAL FROM THE AUTHORITY.

B. NO CONTRACTOR SHALL BE PERMITTED TO MOVE ANY PATCH PANEL CONNECTIONS UNLESS INDICATED ON THE PLANS OR WITHOUT PRIOR APPROVAL. ANY PATCH PANEL CHANGES SHALL BE DOCUMENTED IN WRITING.

C. FOR ALL WORK INVOLVING THE DISRUPTION OF LIVE NETWORK TRAFFIC, THE CONTRACTOR SHALL PROVIDE A HIGH LEVEL OF METHOD OF PROCEDURE (MOP) AT LEAST ONE (1) WEEK IN ADVANCE OF THE PRE-SPLICING MEETING. THIS MOP MUST BE REVIEWED AND APPROVED PRIOR TO BEGINNING WORK. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO FIBER OPTIC SPLICING PAY ITEMS.

D. A PRE-SPLICE MEETING SHALL BE HELD AT LEAST ONE (1) WEEK IN ADVANCE OF THE PROPOSED SPLICING DATE.

E. A PRIMARY AND BACKUP EMERGENCY CONTACT SHALL BE PROVIDED AS WELL AS AN ESCALATION CONTACT BEFORE BEGINNING WORK.

F. THE CONTRACTOR SHALL VERIFY WITH EITHER THE GEC OR THE CEI THAT THEY ARE IN POSSESSION OF THE MOST RECENT PLAN UPDATES BEFORE BEGINNING ANY WORK.

G. AN AUTHORITY REPRESENTATIVE SHALL BE PRESENT ON-SITE WHEN SPLICING LIVE FIBER, OR "HOT CUTS", ARE TAKING PLACE.

H. THE CONTRACTOR SHALL OPEN A TICKET WITH CENTURYLINK PRIOR TO BEGINNING ANY WORK, AND CONTACT CENTURY LINK TO CLOSE TICKET AFTER THE WORK IS COMPLETE, AS CURRENTLY INSTRUCTED IN THE FON UTILITY WORK PROCEDURE. IN ADDITION TO THIS PROCEDURE, CENTURYLINK SHALL VERIFY THAT ALL ROUTER ALARMS HAVE CLEARED.

I. ALL WORK INVOLVING THE SPLICING OR TESTING OF LIVE FIBERS IS TO BE PERFORMED OUTSIDE OF NORMAL BUSINESS HOURS (7AM-6PM MONDAY-FRIDAY) UNLESS APPROVED BY THE AUTHORITY.

31. CABINET EQUIPMENT IS NOT TO BE STACKED. THE WIRING DIAGRAMS SHOW BLOCKS ON TOP OF ONE ANOTHER FOR CLARITY ONLY.

32. FIBER OPTIC MANHOLE SPACING:
THE SPACING BETWEEN FIBER OPTIC MANHOLES (FOMH) INSTALLED IN A PAVED SHOULDER SHALL NOT EXCEED 1500'. SPACING BETWEEN FOMH INSTALLED IN AN UNPAVED SHOULDER SHALL NOT EXCEED 4000'.

CONDUIT:

1. THE BACKBONE FIBER OPTIC CONDUIT NETWORK SHALL BE MAINTAINED AT A CONSTANT HORIZONTAL AND VERTICAL LOCATION.

2. ALL FIBER OPTIC CONDUIT SHALL HAVE AN "CFX FIBER OPTIC CABLE BURIED BELOW" WARNING TAPE CONTINUOUSLY RUN IN THE TRENCH 18" BELOW GRADE. IN ADDITION, RAISED MARKERS INDICATING F.O. CABLE BURIED BELOW SHALL BE INSTALLED AT EACH MANHOLE ALONG THE FIBER ROUTE AND AT ANY TURNS IN THE CONDUIT RUN.

3. CONDUIT RUN SHALL NOT EXCEED 270° OF BENDS BETWEEN MANHOLES OR JUNCTION BOXES.

4. THE BLUE HDPE CONDUIT ENTERING A PROPOSED FIBER OPTIC MANHOLE (FOMH) SHOULD CONNECT TO THE BLUE 1" CONDUITS LOCATED INSIDE THE 4" STUBOUT. A 4" DUCT ORGANIZER IS REQUIRED FOR CONDUIT ENTRY INTO THE MANHOLES. LEAVE MINIMUM OF 100 FEET OF CABLE SLACK INSIDE FOMH BEFORE ENTERING THE EXISTING FIBER OPTIC BACKBONE.

5. ALL HDPE CONDUIT CONNECTIONS SHALL BE JOINED WITH ELECTROFUSION COUPLE.

6. ALL EMPTY POWER CONDUITS SHALL BE CAPPED AND FURNISHED WITH A PULL STRING FOR FUTURE USE.

7. MINIMUM REQUIRED CONDUIT BURY DEPTHS SHALL BE MAINTAINED WHERE CONFLICTS OCCUR WITH DRAINAGE OR OTHER UTILITIES PER THESE PLANS.

8. IN ACCORDANCE WITH N.E.C. IDENTIFY ALL CIRCUITS AND EQUIPMENT WITH "LAMICOID TAGS".

9. THE TONE WIRE FOR THE TMS, DCS AND DMS FIBER OPTIC CONDUIT RUNS SHALL BE CONNECTED TO THE GROUNDING SYSTEM IN THE FIBER OPTIC MANHOLE AND 2 FEET OF TONE WIRE SHALL BE COILED IN THE FIBER OPTIC PULL BOX AT THE DEVICE LOCATION. THE TONE WIRE FOR THE 9-1" BACKBONE FON CONDUIT SHALL BE SPLICED CONTINUOUS IN THE FIBER OPTIC MANHOLES. SPLICING THE TONE WIRE FOR THE TMS, DCS OR DMS TO THE BACKBONE TONE WIRE WILL NOT BE PERMITTED.

10. ALL NEW UNDERGROUND CONDUIT SHALL BE SEALED AT BOTH ENDS TO PREVENT THE ENTRY OF DUST, DIRT OR MOISTURE.

11. ALL CONDUIT TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF EACH WORKING DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE. THE CONTRACTOR SHALL NOT OPEN ANY AREA THAT CANNOT BE BACKFILLED IN THE SAME DAY/NIGHT OPERATION.

12. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY JACKING OR TRENCHING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS IN ACCORDANCE WITH SECTION 2-4 OF THE FDOT SPECIFICATIONS. THE CONTRACTOR SHALL HAND DIG THE FIRST 4' TO VERIFY POSSIBLE UTILITY CONFLICT.

13. MULTIPLE CONDUIT RUNS IN THE SAME TRENCH SHALL BE JACK AND BORED OR DIRECTIONAL BORED FOR THE FIRST CONDUIT ONLY. SUBSEQUENT CONDUIT RUNS WILL BE PAID FOR AS UNDERGROUND.

14. THE BACKBONE FIBER OPTIC CONDUIT NETWORK SHALL BE MAINTAINED AT A CONSTANT HORIZONTAL AND VERTICAL LOCATION AS SHOWN IN THE ROADWAY CROSS SECTIONS OF THE ROADWAY PLANS, DRAINAGE PLANS, STRUCTURE PLANS AND OTHER PLAN COMPONENTS OF THIS PROJECT.

15. ALL HARDWARE AND BRACKETS ASSOCIATED WITH BRIDGE-MOUNTED BRFG SHALL BE INCIDENTAL TO THE COST OF BRFG.

PULL BOXES:

1. ALL FIBER OPTIC PULL BOXES SHALL HAVE "CFX" STAMPED ON THE COVER AND ALL POWER PULL BOXES SHALL HAVE "CFX POWER" STAMPED ON THE COVER.

2. MAXIMUM PULL BOX SPACING FOR POWER SERVICE SUPPLY TO BE 500'.

3. EACH FIBER OPTIC PULL BOX SHALL INCLUDE A MINIMUM OF 20 LINEAR FEET OF GROUNDING ELECTRODE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS SECTION 620 AND SHALL MEET A MEASURED RESISTANCE OF 25 OHMS OR LESS. IF 25 OHMS OR LESS IS NOT OBTAINED WITH THE INITIAL 20 LINEAR FEET OF GROUNDING ELECTRODE, THEN ADDITIONAL GROUNDING ELECTRODE OR A GROUNDING ARRAY SHALL BE INSTALLED UNTIL MEASURED RESISTANCE OF 25 OHMS OR LESS IS ACHIEVED.

4. ANY MANHOLE INSTALLED WITHIN PAVEMENT SHALL HAVE STUBOUTS.

DMS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATIONS OF EXISTING ROADWAY LIGHTING AND OTHER CFX CONDUIT PRIOR TO INSTALLATION OF DMS STRUCTURE FOUNDATIONS.

2. IN AREAS WHERE DIMENSIONS ARE NOT PROVIDED ON THE PLANS OR WHERE THE EXISTING MONUMENTS HAVE BEEN OBLITERATED THE CONTRACTOR SHALL ESTABLISH, STAKE AND PAINT DMS LOCATIONS WITH THE USE OF A FLORIDA REGISTERED LAND SURVEYOR. IF, DURING THE CONSTRUCTION PROCESS, THE STAKES AND/OR PAINTED MARKS ARE OBLITERATED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE DMS LOCATIONS RE-ESTABLISHED BY A FLORIDA REGISTERED LAND SURVEYOR. NO ADDITIONAL PAYMENT WILL BE ALLOWED.

3. DCS EQUIPMENT IS NOT TO UTILIZE THE GFCI RECEPTACLE FOR POWERING EQUIPMENT. THE CONTRACTOR SHALL POWER THE DCS EQUIPMENT FROM A CONTRACTOR FURNISHED UPS CONNECTED TO THE EXISTING "AUX" CIRCUIT OUTLET AS SHOWN IN THE BLOCK DIAGRAMS.

4. THE FIBER OPTIC LOCATE WIRE IS NOT BE RUN INTO THE CABINET OR DMS HOUSING.

5. CONTRACTOR TO COORDINATE WITH LIGHTING AND SIGNING CONTRACTOR REGARDING FINAL LOCATION OF DMS EQUIPMENT.

6. THE GALVANIZED RIGID STEEL CONDUITS TO BE LOCATED ON EACH OF THE OVERHEAD SIGN STRUCTURES, AND CONNECTED TO THE DMS BOX, SHALL BE 1-2" FOR THE POWER AND 1-2" FOR THE SIGNAL.

FIBER OPTIC CABLE:

1. THE FIBER OPTIC CABLE INSTALLATION TECHNIQUES AND PROCEDURES SHALL BE AS SPECIFIED BY THE CABLE MANUFACTURER AND SHALL BE SUCH THAT THE OPTICAL AND MECHANICAL CHARACTERISTICS OF THE CABLES ARE NOT DEGRADED AT THE TIME OF INSTALLATION. THE CENTRAL STRENGTH MEMBER AND ARAMID YARN SHALL BE ATTACHED DIRECTLY TO THE PULLING EYE DURING CABLE PULLING. "BASKET GRIP" OR "CHINESE FINGER" TYPE ATTACHMENTS TO THE CABLE OUTER TENSILE RATING SHALL BE USED ON ALL PULLS.

2. ALL FIBER OPTIC CABLE INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY STANDARDS.

3. CONTRACTOR SHALL COORDINATE WITH CFX REPRESENTATIVE PRIOR TO DISCONNECTING ANY FIBERS AND ALL FIBER SPLICING.

4. UNDER NO CIRCUMSTANCES SHALL ENERGIZED CABLE BE PLACED IN THE SAME CONDUIT OR PULL BOX AS FIBER OPTIC CABLE.

TMS:

1. EACH TMS SENSOR SHALL READ ONE DIRECTION OF TRAVEL AS INDICATED IN THE PLANS. THIS SHALL INCLUDE ALL LANES IN THE DIRECTION, THROUGH LANES AND RAMP LANES (IF APPLICABLE).

2. WHEN MOUNTING MORE THAN ONE SENSOR PER LOCATION, ENSURE THAT THEY ARE ON DIFFERENT CHANNELS TO AVOID INTERFERENCE.

PAY ITEM NOTES:

1. NO. 603A-100. SEE SECTION 603A OF THE TECHNICAL SPECIFICATIONS FOR REQUIREMENTS

2. NO. 633-121-2 AND NO. 633-121-4. SEE SECTION 633 OF THE TECHNICAL SPECIFICATIONS FOR REQUIREMENTS.

3. NO. 635-1-11, NO. 635-1-15 AND NO. 635-1-16. SEE SECTION 635 OF THE TECHNICAL SPECIFICATIONS FOR REQUIREMENTS.

4. NO. 638-001-0211, NO. 638-001-0911, NO. 638-260-0011, NO. 638-361-0911, NO. 638-461-0914 & NO. 4230-1. SEE SECTION 638 OF THE TECHNICAL SPECIFICATIONS FOR REQUIREMENTS.

5. NO. 638-001-0211, NO. 638-001-0911, NO. 638-260-0011, NO. 638-361-0911, NO. 638-461-0914 & NO. 4230-1. PAYMENT FOR THESE ITEMS SHALL INCLUDE FURNISHING AND INSTALLING AN ADDITIONAL 1" HDPE CONDUIT AS A DUCT FOR THE TONE WIRE. HDPE CONDUIT SHALL BE CONNECTED TO FIBER OPTIC MANHOLES ON BOTH ENDS AND SHALL MEET ALL MATERIAL REQUIREMENTS OF HDPE CONDUIT CONTAINED IN SECTION 638 OF THE TECHNICAL SPECIFICATIONS. TONE WIRE SHALL BE ENCLOSED IN 1" HDPE CONDUIT ONLY WHEN FIBER OPTIC CONDUIT BANK IS BURIED UNDER PAVEMENT.

6. NO. 639-X-XX . SHALL INCLUDE AND PAY FOR RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE REQUIRED DISCONNECTS AND OTHER COMPONENETS NECESSARY FOR AN ACCEPTABLE INSTALLATION PER THE LATEST OUC AND DUKE ENERGY STANDARDS. THE POWER SERVICE DETAILS IN THESE PLANS SHOULD BE CONSIDERED THE MINIMUM REQUIREMENTS AND DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILTY TO MEET ALL LOCAL REQUIREMENTS FOR A FULLY FUNCTIONAL INSTALLATION (I.E. CIRCUIT BREAKERS, PHOTO CELLS, ETC.) SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THIS PAY ITEM.

7. 639-1-22. EACH POWER SERVICE METER ENCLOSURE SHALL BE CORRECTLY IDENTIFIED ON THE OUTSIDE FRONT BY A NON-FERROUS METAL OR PLASTIC PLATE PER DUKE ENERGY OR OUC STANDARDS. THE PLATE SHALL BE RIVETED TO THE METER ENCLOSURE.

8. NO. 663-74-1XX. SHALL INCLUDE ALL ADDITIONAL COMPONENTS AND ACCESSORIES NECESSARY TO COMPLETE A FULLY FUNCTIONAL INSTALLATION. THE WIRING DIAGRAMS ARE CONSIDERED THE MINIMUM REQUIRED EQUIPMENT AN DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF COMPLETING A FULLY FUNCTIONAL INSTALLATION. ALL REQUIRED EQUIPMENT NOT PAID FOR BY A SEPARATE PAY ITEM NO. SHALL BE INCLUDED IN THIS ITEM.

9. 664-1-XXX SHALL INCLUDE ALL ADDITIONAL COMPONENTS, CABLING, AND ACCESSORIES NECESSARY TO COMPLETE A FULLY FUNCTIONAL TMS INSTALLATION. ANY NEMA ENCLOSURE REQUIRED TO COMPLETE A FULLY FUNCTIONAL TMS INSTALLATION SHALL BE INCIDENTAL TO THIS PAY ITEM. THE WIRING DIAGRAMS ARE CONSIDERED THE MINIMUM REQUIRED EQUIPMENT AND DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF COMPLETING A FULL FUNCTIONAL INSTALLATION. ALL REQUIRED EQUIPMENT NOT PAID FOR BY A SEPARATE PAY ITEM NO. SHALL BE INCLUDED IN THIS ITEM, THIS INCLUDES THE 4' CANTILEVER ARM AS SHOWN IN THE PLANS. TMS SENSORS SHALL BE MOUNTED PER MANUFACTURER'S USER GUIDE.

10. NO. 678-1-111. ALL TRANSFORMERS SHALL BE RATED FOR OUTDOOR USE AND HAVE THE APPROPRIATE LUGS FOR 120, 240 AND 480 SERVICES PER THE POWER SERVICE DETAILS. TRANSFORMERS ARE TO INCLUDE WINDING TAPS (4-2/ 2+,2-)

REVISIONS					
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CENTRAL FLORIDA EXPRESSWAY AUTHORITY	
ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

GENERAL NOTES (2)

SHEET NO. F0-6

PAY ITEM NOTES (CONTINUED):

11. NO. 700-89-13F. THE DYNAMIC MESSAGE SIGN SYSTEMS (LED) (3 LINE) FOR THIS PROJECT ARE TO BE FURNISHED & INSTALLED AS DESCRIBED IN THE SPECIFICATIONS AND PAID FOR UNDER PAY ITEM 700-89-13F, ELECTRICAL POWERED SIGN (CHANGEABLE - LED). THE PAY ITEM IS TO INCLUDE A POLE MOUNTED MAINTENANCE CABINET, STEP-DOWN TRANSFORMER, GALVANIZED CONDUITS U-CHANNELS FOR MOUNTING ELECTRICAL EQUIPMENT, ELECTRICAL SUPPRESSION DEVICES INCLUDING TRANSIENT VOLTAGE SURGE SUPPRESSION, BREAKER PANELS, WIRING, AND A 6' X 6' CONCRETE PAD (F & I) AS SHOWN HEREIN. PER SECTION 4.4 AND 4.5 OF THE DMS SPECIFICATIONS, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ETHERNET SWITCHES, AND TERMINAL SERVICE, FIBER OPTIC JUMPER CABLES AS NECESSARY.

12. NO. 715-1-114, NO. 715-1-115, NO. 715-1-116. SHALL INCLUDE CONDUCTORS AS INDICATED IN THE PLANS, SPECIFICATIONS, AND THE "ROADWAY AND TRAFFIC DESIGN STANDARDS" PAYMENT SHALL BE MADE BASED ON LINEAR FEET OF SINGLE CONDUCTOR.

13. NO. 715-2-115. SHALL INCLUDE CONDUIT ELBOWS; SWEEPS, CONNECTING HARDWARE, TRENCHING AND BACK FILL AS INDICATED IN THE PLANS, SPECIFICATIONS, AND THE "DESIGN STANDARDS". THE LINEAR FOOT PRICE FOR CONDUIT SHALL ALSO INCLUDE RESTORING CUT PAVEMENT, SOD, & ETC. TO ITS ORIGINAL CONDITION.

14. NO. 715-2-334. THE 1-2" RGS SURFACE MOUNTED CONDUIT WILL HAVE 4 RUNS PER DMS.

15. NO. 4210-11 AND 4210-12. SEE SECTION 636 OF THE TECHNICAL SPECIFICATION FOR REQUIREMENTS. THE CONTRACTOR SHALL INCLUDE STUBOUTS IN ALL INSTALLED MANHOLES.

UTILITY NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE POWER COMPANY AT LEAST 48 HOURS PRIOR TO ANY INSTALLATION THAT IS WITHIN 10 FEET OF ENERGIZED ELECTRICAL CONDUCTORS. THE POWER COMPANY, AT ITS OPTION, SHALL ASSIST THE CFX CONTRACTOR. COVER UP ENERGIZED CONDUCTORS AT INSTALLATION SITE, OR TAKE OTHER SAFETY PRECAUTIONS AS NECESSARY. EXTREME CAUTION SHALL BE EXERCISED AT ALL TIMES IN PERFORMANCE OF WORK AROUND THE PRIMARY HIGH VOLTAGE COMPONENTS.

2. THE LOCATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, ARE APPROXIMATE AND BASED ON THE INFORMATION FURNISHED TO THE ENGINEER BY THE UTILITY OWNER(S) AND ARE SHOWN AS NOTICE TO THE CONTRACTOR THAT UNDERGROUND UTILITIES EXIST. BEFORE EXCAVATING THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY OWNER(S) AND REQUEST THEM TO LOCATE AND STAKE THEIR UNDERGROUND FACILITIES. UTILITIES ARE TO BE ADJUSTED BY OTHERS AS DIRECTED BY THE ENGINEER.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING UNDERGROUND UTILITIES VERTICALLY AND HORIZONTALLY (VVH) FOR ALL CONDUIT INSTALLATIONS. THE COST FOR THE VVH'S SHALL BE INCLUDED IN THE COST OF THE CONDUIT. WHEN BORING UNDER PAVEMENT, THE CONTRACTOR SHALL VERIFY DEPTH BY POT HOLING PRIOR TO SHOOTING THE BORE. ANY OTHER METHOD MUST BE APPROVED BY THE ENGINEER.

4. CONTRACTOR SHALL STAKE ALL POLE LOCATIONS AND REQUEST UTILITY COMPANIES TO LOCATE AND STAKE UNDERGROUND UTILITIES PRIOR TO EXCAVATING.

POWER CONNECTIONS:

1. POWER SUPPLY LOCATIONS HAVE BEEN COORDINATED WITH DUKE ENERGY. IT IS RECOMMENDED THAT THE CONTRACTOR CONTACT EACH RESPECTIVE POWER COMPANY CONTACT PERSON AS SOON AS POSSIBLE TO ENSURE ALL POWER SOURCES CAN BE INSTALLED AS SHOWN IN THE PLANS OR IN THE EVENT A PROPOSED POWER SOURCE IS NOT READILY AVAILABLE.

2. DUKE ENERGY SERVICE: CONTRACTOR TO RUN UNDERGROUND CONDUIT TO THE BASE OF PEDESTAL THAT EXISTS OR CONTRACTOR INSTALLS AND SET A PULL BOX WITH APPROX. 10' OF ELECTRICAL SERVICE WIRE COILED INSIDE. CONTACT DUKE ENERGY NEW CONSTRUCTION AT 866-372-4663 FOR FINAL CONNECTION BY DUKE ENERGY PERSONNEL.

3. CONNECTIONS TO EXISTING POWER METERS TO BE ACCOMPLISHED PER STATE AND LOCAL CODES. CONTRACTOR'S ELECTRICIAN TO PRE-EXAMINE EACH SITE TO DETERMINE THE FEASIBILITY OF CONNECTING TO THE PROPOSED POWER SOURCE. CONNECTIONS MUST BE MADE THROUGH AN EXISTING OR NEW BREAKER PANEL WITH THE APPROPRIATE CIRCUIT BREAKER. ALL MATERIALS, EQUIPMENT AND LABOR TO BE SUPPLIED FOR A COMPLETE CONNECTION AND IS TO BE PAID UNDER PAY ITEM NUMBER 639-1-12 AND 639-1-22.

FIBER CABLE AND CONNECTION DISTRIBUTION:

1. BACKBONE CABLE
   - 9-1" HDPE CONDUITS WITH 72-STRAND FIBER CABLE IN ORANGE CONDUIT FOR BACKBONE TRUNK CABLE AND 72-STRAND FIBER CABLE IN BLUE CONDUIT FOR FEEDER TRUNK CABLE. TONE WIRE AND TONE WIRE CONDUIT SHALL BE INCLUDED AS REQUESTED.

2. FEEDER DROP CABLE
   - 2-1" BLUE AND ORANGE HDPE CONDUITS W/ 1-12 STRAND FIBER CABLE IN BLUE CONDUIT FOR FEEDER CABLE. TONE WIRE AND TONE WIRE CONDUIT SHALL BE INCLUDED AS REQUESTED.

3. SECONDARY FEEDER DROP CABLE
   - 2-1" BLUE AND ORANGE HDPE CONDUITS W/ 1-12 STRAND FIBER CABLE IN BLUE CONDUIT FOR FEEDER CABLE. TONE WIRE AND TONE WIRE CONDUIT SHALL BE INCLUDED AS REQUESTED.

CCTV CAMERA

1. ALL MISCELLANEOUS WORK NECESSARY IN THE SHOULDER AREA TO CONSTRUCT CAMERA POLES, PULL BOXES, ETC. (I.E. GRADING, SODDING, CLEARING AND GRUBBING, GUARDRAIL OR FENCE RESETTING) IS CONSIDERED INCIDENTAL, AND IS TO BE INCLUDED IN THE COST OF CAMERA POLE ASSEMBLY, PULL BOX, ETC. ALL DISTURBED AREAS SHALL BE SODDED. THE CONTRACTOR SHALL HAUL ALL EXCESS EXCAVATION AND WASTE MATERIALS OFF-SITE. REMOVAL OF THESE MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE CAMERA POLE ASSEMBLY, PULL BOX, ETC.

2. THE CONTRACTOR SHALL ESTABLISH, STAKE AND PAINT CAMERA POLE LOCATIONS WITH THE USE OF A FLORIDA REGISTERED LAND SURVEYOR. IF, DURING THE CONSTRUCTION PROCESS, THE STAKES AND/OR PAINTED MARKS ARE OBLITERATED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE CAMERA POLE LOCATIONS RE-ESTABLISHED BY A FLORIDA REGISTERED LAND SURVEYOR. NO ADDITIONAL PAYMENT WILL BE ALLOWED.

3. VEGETATION SHALL BE REMOVED OR CUT BACK AS DIRECTED BY THE CONSTRUCTION ENGINEER TO PROVIDE ADEQUATE SIGHT DISTANCE FOR ALL CAMERA LOCATIONS. VEGETATION REMOVAL AND TRIMMING SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE OF THE CAMERA POLE.

4. A GROUNDING ELECTRODE IS REQUIRED PER EACH CAMERA POLE, DMS SIGN STRUCTURE, DMS BOX, AND DMS CABINET. INSTALLATION SHALL BE IN ACCORDANCE WITH CFX SPECIFICATIONS 620A, 720 AND 721, WITH A MINIMUM LENGTH OF 20 LINEAR FEET AND A MEASURED RESISTANCE 5 OHMS OR LESS. ALL CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. IF 5 OHMS IS NOT OBTAINED WITH THE INITIAL 20 LINEAR FEET OF GROUNDING ELECTRODE, THEN ADDITIONAL GROUND ELECTRODE OR A GROUND ARRAY SHALL BE INSTALLED UNTIL MEASURED RESISTANCE OF 5 OHMS OR LESS IS ACHIEVED AT NO ADDITIONAL COST TO THE AUTHORITY. ALL DEVICES WITHIN THE HUBS PARAMETER OF INFLUENCE SHALL BE PART OF A SINGLE POINT GROUNDING SYSTEM.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

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GENERAL NOTES (3)

SHEET NO. F0-7

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LEGEND

PROPOSED UNDERGROUND SPARE POWER 2" SCHEDULE 40 P.V.C UNDERGROUND CONDUIT WITH AWG THWN STRANDED COPPER CIRCUIT INSULATED CONDUCTORS INSIDE (CONDUCTOR AND GROUND WIRE SIZES SHOWN ON DETAIL SHEETS) AND INSULATED GREEN STRANDED CU BOND WIRE CONNECTING ALL ITEMS.

PROPOSED UNDERGROUND SPARE CONDUIT 2" SCHEDULE 40 PVC UNDERGROUND CONDUIT WITH PULL STRING.

1-4" SCHEDULE 40 PVC WITH PROPOSED 2-1" FIBER OPTIC HDPE CONDUIT - SDR 11.

POLE MOUNTED CABINET AND ANCILLARY ELECTRICAL EQUIPMENT. CABINET TO BE SIZED BY CONTRACTOR.

PROPOSED POINT OF ELECTRICAL SERVICE

PROPOSED PULL BOX (SEE INDEX 17700 DESIGN STANDARDS BOOKLET) PULL BOX COVER SHALL HAVE DMS LOGO.

OVERHEAD SIGN TRUSS AND STATIC SIGN PANELS TO BE INSTALLED BY SIGNING AND MARKING CONTRACTOR AS PART OF THE SIGNING AND PAVEMENT MARKING PLAN SET.

PROPOSED TMS

PROPOSED TMS DETECTION ZONES (SYMBOL SHOULD BE PLACED OVER EACH LANE DETECTED)

EXISTING POLE MOUNTED CABINET & CAMERA W/ LOWERING SYSTEM ON STEEL POLE W/ FOUNDATION

RELOCATED POLE MOUNTED CABINET & CAMERA W/ LOWERING SYSTEM ON STEEL POLE W/ NEW FOUNDATION

EXISTING FIBER OPTIC ROUND PULL BOX (OPENING 36", BASE 44"x24" DEEP)

PROPOSED FIBER OPTIC ROUND PULL BOX (OPENING 36", BASE 44"x24" DEEP)

EXISTING PULL BOX (13"x24"x12"D)

PULL BOX (13"x24"x12"D)

EXISTING FIBER OPTIC PULL BOX (17"x30"x12"D)

FIBER OPTIC PULL BOX (17"x30"x12"D)

EXISTING CONCRETE PEDESTAL FOR POWER SERVICE.

PROPOSED CONCRETE PEDESTAL FOR POWER SERVICE.

EXISTING FIBER OPTIC MANHOLE

FIBER OPTIC MANHOLE (4'x4'x4')

FIBER OPTIC MANHOLE (4'x6.5'x6.5')

FIBER OPTIC MANHOLE WITH STUBOUT (4'x4'x4')

FIBER OPTIC MANHOLE WITH STUBOUT (4'x6.5'x6.5')

6" BLACK STEEL PIPE (BSP) E/W 8-1" HDPE CONDUITS

1-6" BULLET RESISTIVE FIBERGLASS (BRFG) CONDUIT ATTACHED TO BRIDGE E/W HDPE 8-1" CONDUITS

6" PVC, SCHEDULE 40 E/W 8-1" HDPE

2-1" HDPE CONDUITS (FEEDER)

9-1" HDPE CONDUITS (BACKBONE)

6" SPLIT BLACK STEEL PIPE (BSP) E/W HDPE CONDUITS

EXISTING 9-1" HDPE CONDUITS

EXISTING BLACK STEEL PIPE (BSP)

DATA COLLECTION SENSOR ANTENNA SITE (# INDICATES NUMBER OF LANES READ, ARROW POINTS IN DIRECTION OF TRAVEL)

ABBREVIATIONS

BRFG = BULLET RESISTIVE FIBERGLASS OUTER DUCT
BSP = BLACK STEEL PIPE POLYETHYLENE CONDUIT
COND. 1 = CONDITION 1 CROSSING (SEE FIBER OPTIC TRENCHING DETAILS)
COND. 2 = CONDITION 2 CROSSING (SEE FIBER OPTIC TRENCHING DETAILS)
DCS = DATA COLLECTION SENSOR
DMS = DYNAMIC MESSAGE SIGN
FO = FIBER OPTIC
FOMH = FIBER OPTIC MANHOLE
FOPB = FIBER OPTIC PULL BOX
PVC = POLYVINYL CHLORIDE OUTER DUCT
E/W = EQUIPPED WITH
SDR = SIZE DIMENSION RATIO
TMS = TRAFFIC MONITORING STATION

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GENERAL NOTES AND LEGEND

SHEET NO. F0-8

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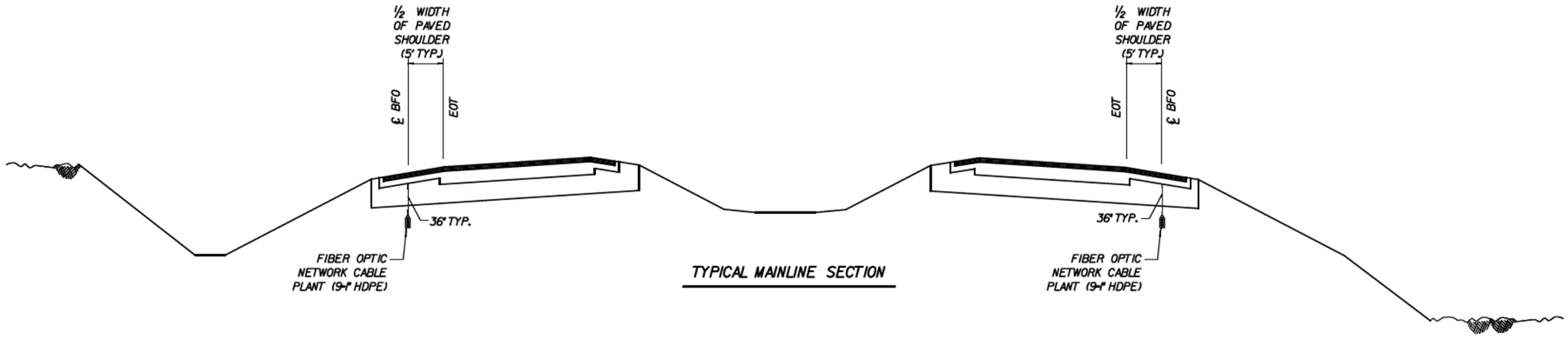
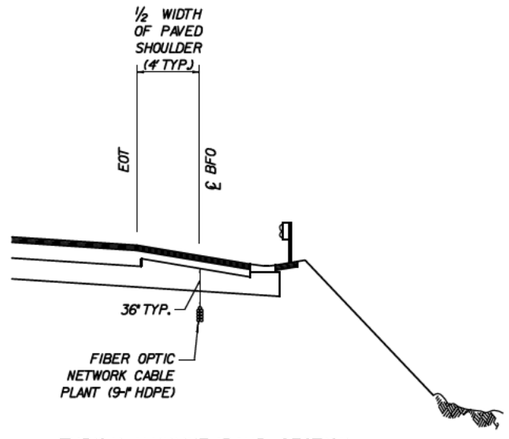


TYPICAL MAINLINE SECTION



TYPICAL MAINLINE/RAMP SECTION WITH GUARDRAIL

NOTE: WHEN FIBER OPTIC CONDUIT BANK IS INSTALLED UNDER PAVEMENT, ONE ADDITIONAL 1" HDPE CONDUIT SHALL BE INSTALLED TO SLEEVE THE TONE WIRE. 8 HDPE CONDUITS SHALL BE RESERVED FOR FIBER OPTIC CABLE.

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TYPICAL MAINLINE AND RAMP SECTIONS

SHEET NO. F0-42

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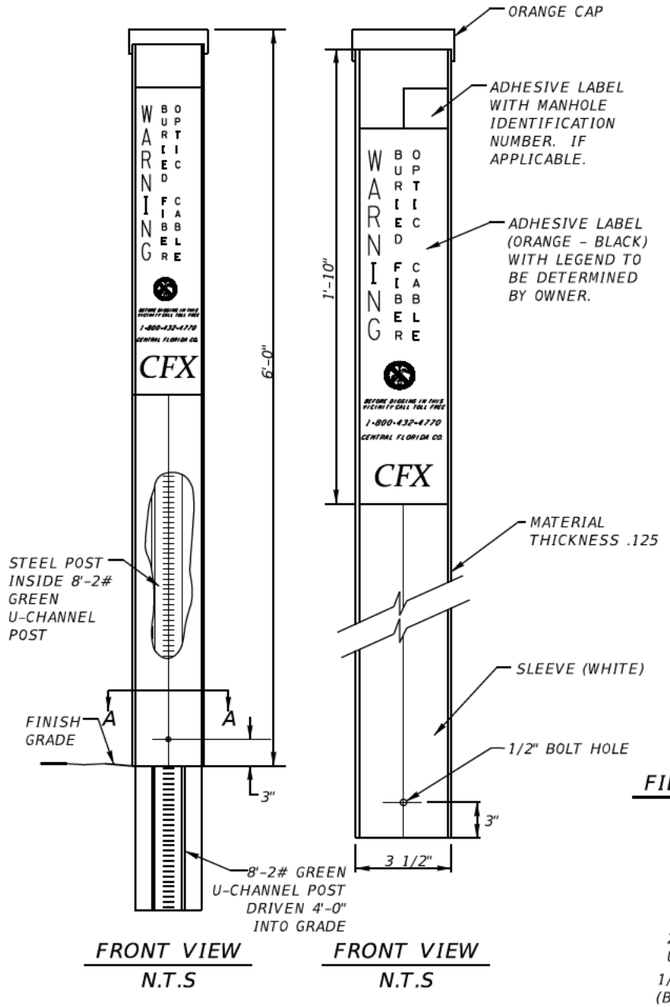
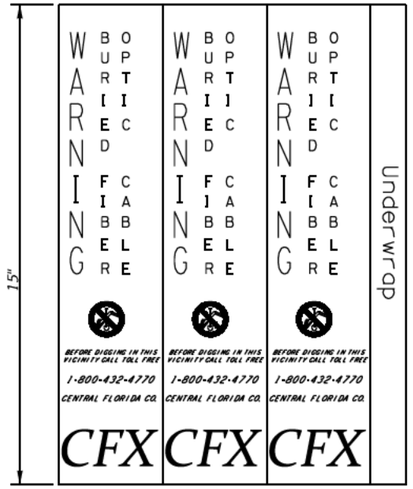
FIBER OPTIC ROUTE MARKER



FRONT VIEW
N.T.S

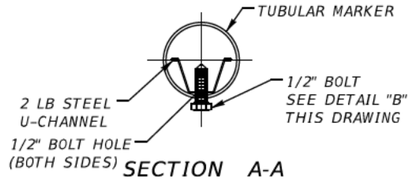
FRONT VIEW
N.T.S



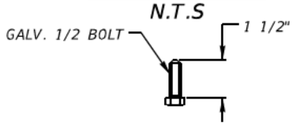
ROUTE MARKER LABEL DETAIL
N.T.S

NOTES:
1. ORANGE TAPE WITH BLACK LETTERS
2. TAPE TO READ: "CFX FIBER OPTIC CABLE BURIED BELOW"

FIBER OPTIC WARNING TAPE DETAIL
N.T.S



SECTION A-A
N.T.S

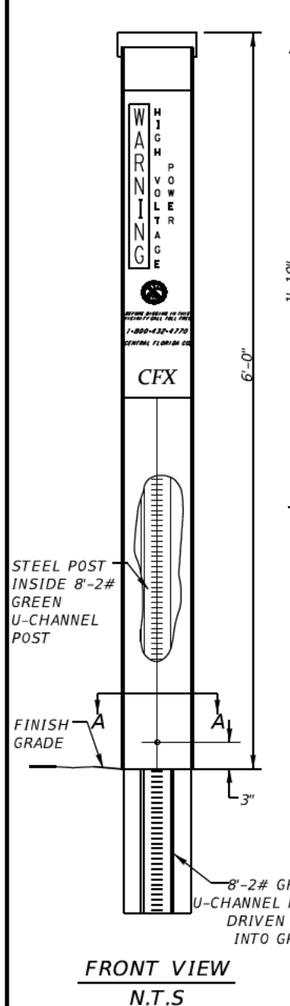


DETAIL B
N.T.S

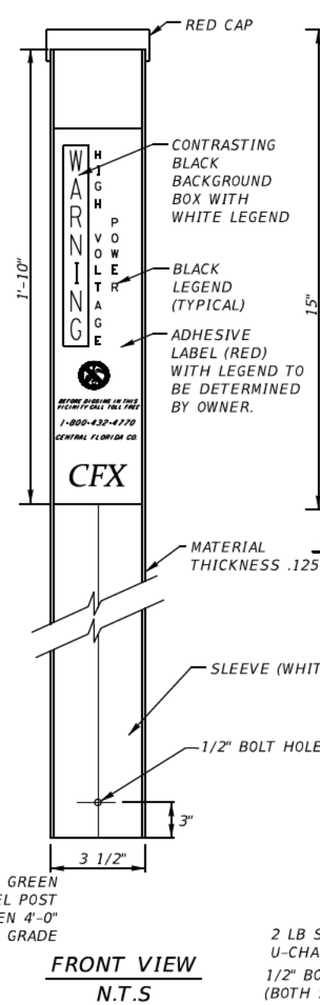
NOTES:

1. 8'-2#/FT. GREEN STEEL U-CHANNEL POST VULCAN UTILITY SIGNS & PRODUCTS PN 0550145 OR CFX APPROVED EQUAL.
2. 72" H-41-RF TUBULAR ROUTE MARKER VULCAN UTILITY SIGNS & PRODUCTS PN 0300876 OR CFX APPROVED EQUAL.
3. ROUTE MARKER WRAP DECAL, BLACK TEXT ON ORANGE BACKGROUND, VULCAN UTILITY SIGNS & PRODUCTS PN 0900466 OR CFX APPROVED EQUAL.

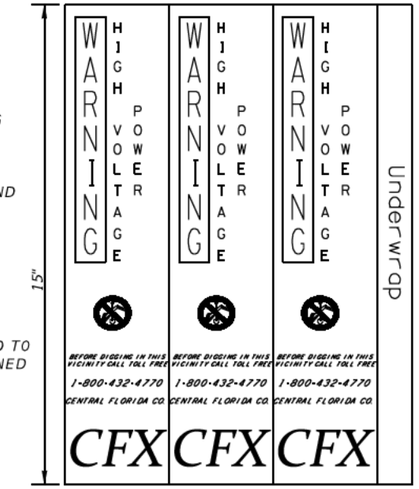
POWER ROUTE MARKER



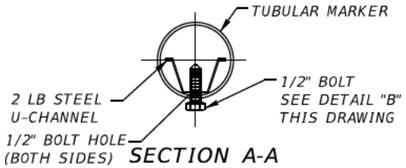
FRONT VIEW
N.T.S



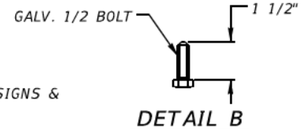
FRONT VIEW
N.T.S



ROUTE MARKER LABEL DETAIL
N.T.S



SECTION A-A
N.T.S



DETAIL B
N.T.S

NOTES:

1. 8'-2#/FT. GREEN STEEL U-CHANNEL POST VULCAN UTILITY SIGNS & PRODUCTS PN 0550145 OR CFX APPROVED EQUAL.
2. 72" H-41-RF TUBULAR ROUTE MARKER VULCAN UTILITY SIGNS & PRODUCTS PN 0300876 OR CFX APPROVED EQUAL.
3. ROUTE MARKER WRAP DECAL, BLACK TEXT ON RED BACKGROUND, VULCAN UTILITY SIGNS & PRODUCTS PN 0900466 OR CFX APPROVED EQUAL.

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ROUTE MARKER DETAILS

SHEET NO.
FO-43

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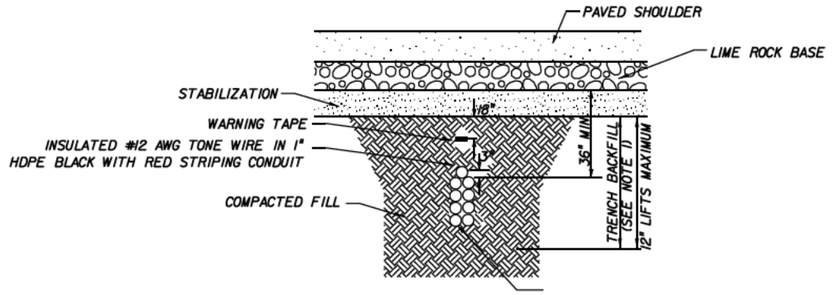
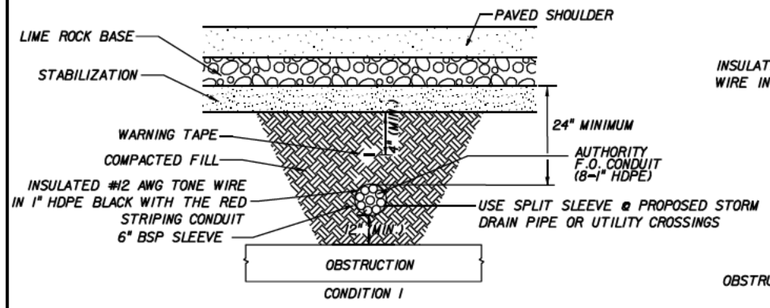
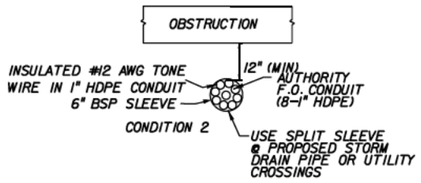


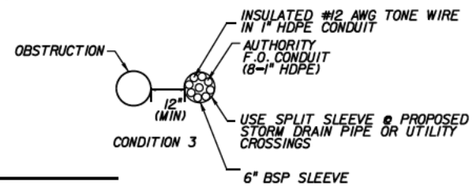
NOTES:

1. TRENCH BACKFILL: COMPACTED TO 100% OF THE MAXIMUM DENSITY AS PER AASHTO T-99.
2. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION
3. THE F.O. CONDUIT SHALL BE INSTALLED SUCH THAT IT MAINTAINS A SUBSTANTIALLY UNIFORM ALIGNMENT (+/- 4 INCHES) BOTH HORIZONTALLY AND VERTICALLY RELATIVE TO THE PAVED SHOULDER AS DETAILED IN THE TYPICAL MAINLINE SECTION.

DETAIL "A"
TYPICAL BEDDING AND TRENCHING DETAIL
NTS



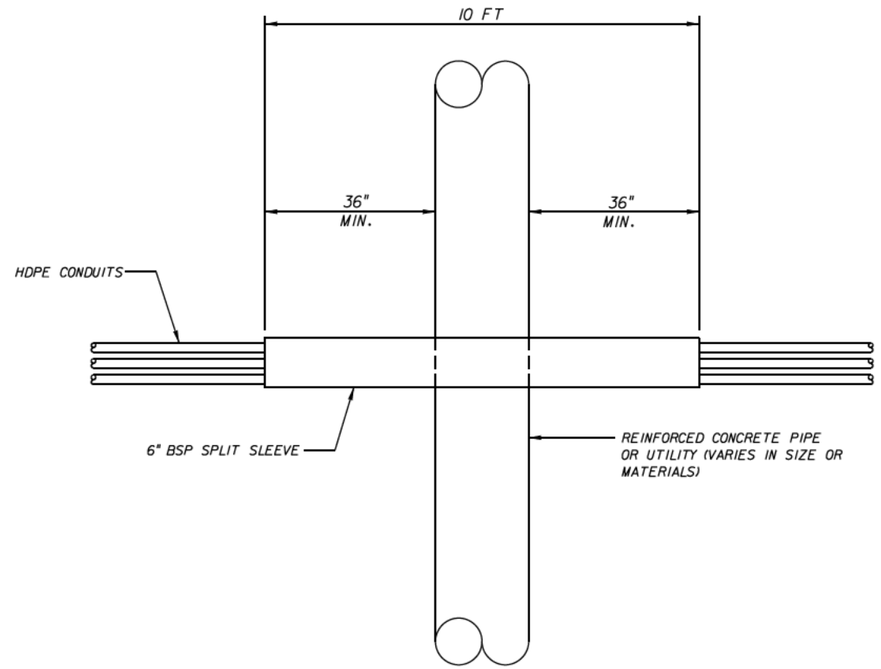




DETAIL "B"
TYPICAL STEEL SLEEVE TRENCH DETAIL TO CROSS OBSTRUCTION
NTS

NOTES:

1. TRENCH BACKFILL: COMPACTED TO 100% OF THE MAXIMUM DENSITY AS PER AASHTO T-99.
2. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
3. BLACK STEEL PIPE (BSP) SLEEVE TO EXTEND A MIN. OF 3' PAST ENDS OF OBSTRUCTION.
4. 6" BSP SLEEVE SHALL BE SEALED AT BOTH ENDS WITH THE F.O. CONDUITS TO PREVENT THE INFILTRATION OF SURROUNDING FILL. METHOD AND MATERIALS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
5. F.O. CONDUITS MAY ALSO BE ROUTED UNDER OBSTRUCTIONS AS SHOWN IN CONDITION 2, IF MINIMUM COVERS SHOWN IN CONDITION I CANNOT BE MET.
6. PROPOSED OBSTRUCTION CROSSING PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
7. OBSTRUCTION CROSSINGS ARE LABELED ON THE PLAN SHEETS AS COND. I FOR A CONDITION I CROSSING, COND. 2 FOR A CONDITION 2 CROSSING, OR COND. 3 FOR A CONDITION 3 CROSSING.
8. DURING ALL HDPE INTERDUCT INSTALLATION INSIDE PVC, BSP, BRFG CONDUIT THE CONTRACTOR SHALL USE POLYWATER FRONT END PACKS, PART NUMBERS J-27 OR J-55, AS APPROPRIATE, OR APPROVED EQUIVALENT AS PULLING LUBRICANT.
9. TONE WIRE ONLY INSTALLED IN DEDICATED 1" HDPE CONDUIT WHEN FON CONDUIT BANK IS INSTALLED UNDER PAVEMENT.



DETAIL "C"
SPLIT SLEEVE PLAN DETAIL AT STORM DRAIN PIPE OR UTILITY CROSSINGS
NTS

ABBREVIATIONS

BRFG= BULLET RESISTIVE FIBERGLASS OUTER DUCT
BSP= BLACK STEEL PIPE OUTER DUCT
HDPE= HIGH DENSITY POLYETHYLENE CONDUIT
FO= FIBER OPTIC
FOMH= FIBER OPTIC MANHOLE
PVC= POLYVINYL CHLORIDE OUTER DUCT
E/W= EQUIPPED WITH
SDR= SIZE DIMENSION RATIO
COND.1= CONDITION I CROSSING (SEE DETAIL 'B")
COND.2= CONDITION 2 CROSSING (SEE DETAIL 'B")
COND.3= CONDITION 3 CROSSING (SEE DETAIL 'B")

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TRENCHING DETAILS

SHEET NO.
FO-44

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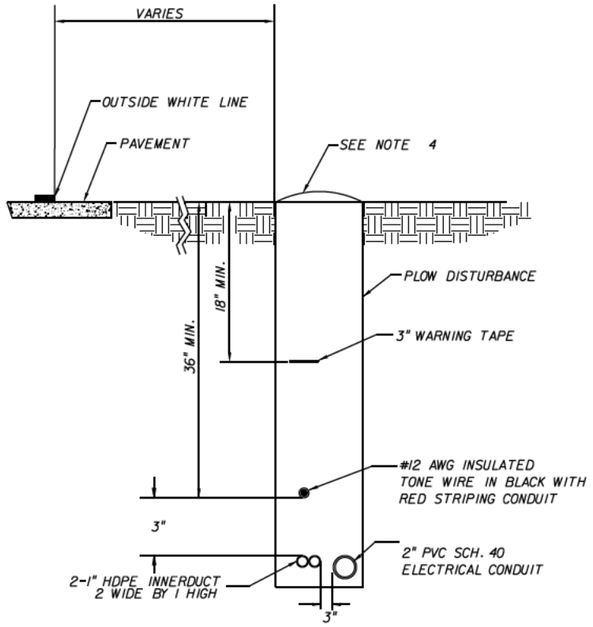
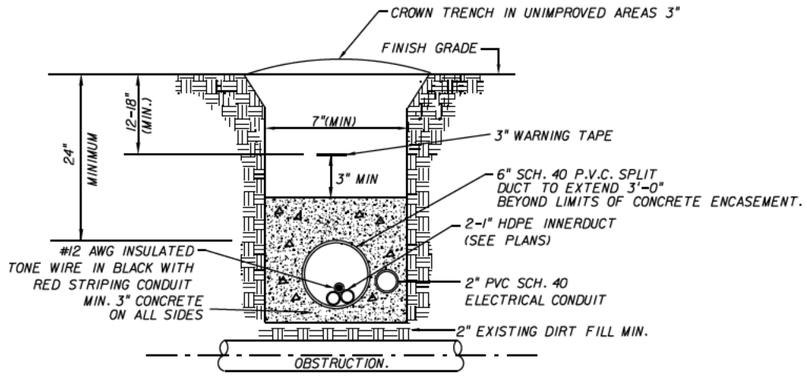


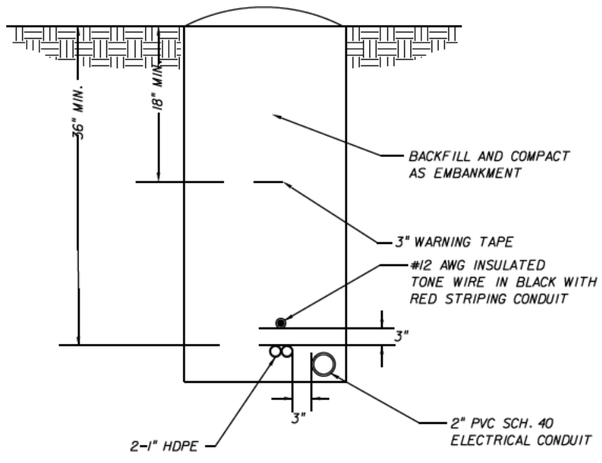
STANDARD CROSS SECTION OF PLOWED CONDUIT
N.T.S.



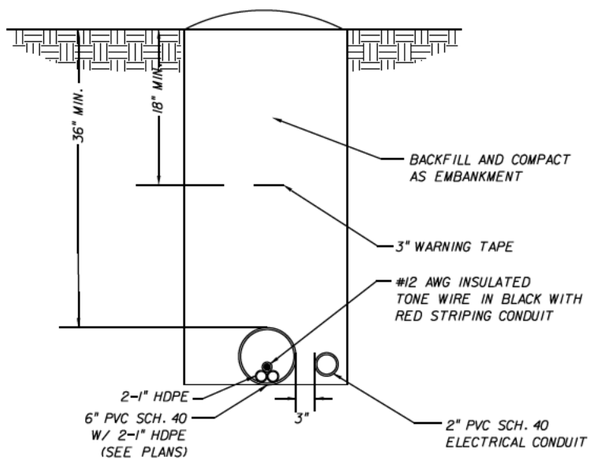
TYPICAL CROSSING WHERE OBSTRUCTION IS 35" TO 44" IN DEPTH.
N.T.S.

GENERAL NOTES:

1. TRAFFIC CONTROL FOR LONGITUDINAL INSTALLATION SHALL BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD INDEX SERIES 600.
2. A MINIMUM OF 2'- 0" SHALL BE MAINTAINED FROM EXISTING LANDSCAPE FEATURES. LANDSCAPE REPLACEMENT SHALL BE IN KIND AND SUBJECT TO THE APPROVAL OF THE OWNER.
3. REPLACEMENT OF FILL, BASE, SURFACE (ASPHALT), CURB AND DRAINAGE STRUCTURES WILL BE IN ACCORDANCE WITH ORANGE COUNTY UTILITY AND PUBLIC WORKS STANDARDS FOR COUNTY ROADS AND THE LATEST FDOT UTILITY ACCOMMODATION MANUAL.
4. CONSTRUCTION CORRIDOR SHALL BE RESTORED TO ORIGINAL OR IMPROVED CONDITION.
5. ALL TRENCH WIDTHS SHALL BE WIDE ENOUGH TO ACCOMMODATE MECHANICAL COMPACTION EQUIPMENT FOR PROPER COMPACTION IN ACCORDANCE WITH FDOT STANDARD SPECS.
6. ALL TRENCHES SHALL BE BACKFILLED & COMPACTED BY THE END OF EACH WORK DAY.
7. JOINT COUPLINGS WILL BE USED AS NECESSARY.
8. CONDUIT PATH WILL BE ROUTED TO AVOID ANY OBSTRUCTIONS SHOULD OBSTRUCTIONS BE ENCOUNTERED; THE FOLLOWING HIERARCHY WILL BE STRICTLY ADHERED TO:
   A. ROUTE CONDUIT AROUND OBSTRUCTION USING SWEEPING BENDS.
   B. IF A. CANNOT BE ACCOMPLISHED, CONDUIT ROUTING WILL BE MADE UNDER THE OBSTRUCTION.
   C. IF A OR B CANNOT BE ACCOMPLISHED, THEN CONCRETE ENCASEMENT OR BLACK STEEL PIPE SHALL BE ALLOWED PER ADJACENT.
9. ALL CONCRETE SHALL BE FDOT APPROVED CLASS I.



STANDARD CROSS SECTION OF OPEN TRENCH CONDUIT (NOT IN CASING)
N.T.S.



STANDARD CROSS SECTION OF OPEN TRENCH CONDUIT (IN CASING)
N.T.S.

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TRENCHING AND PLOWING DETAILS FIBER AND POWER

SHEET NO.
F0-45

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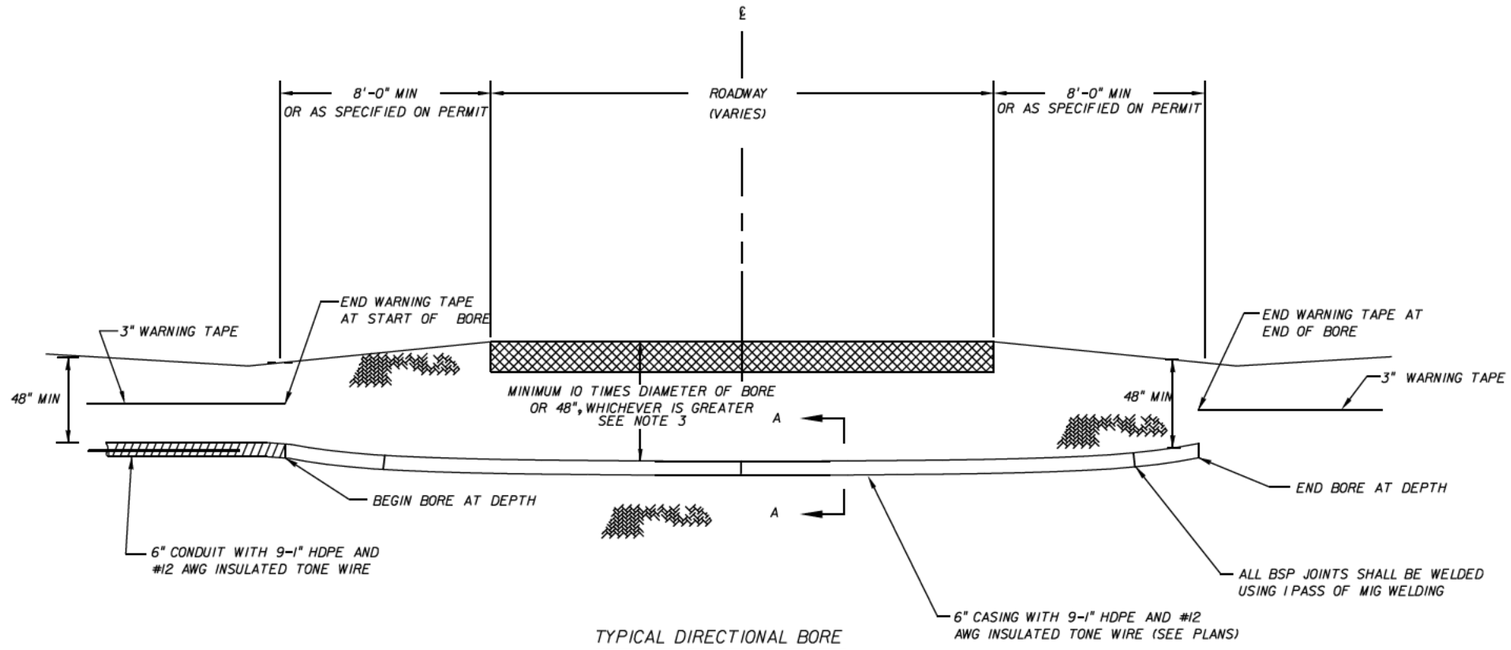
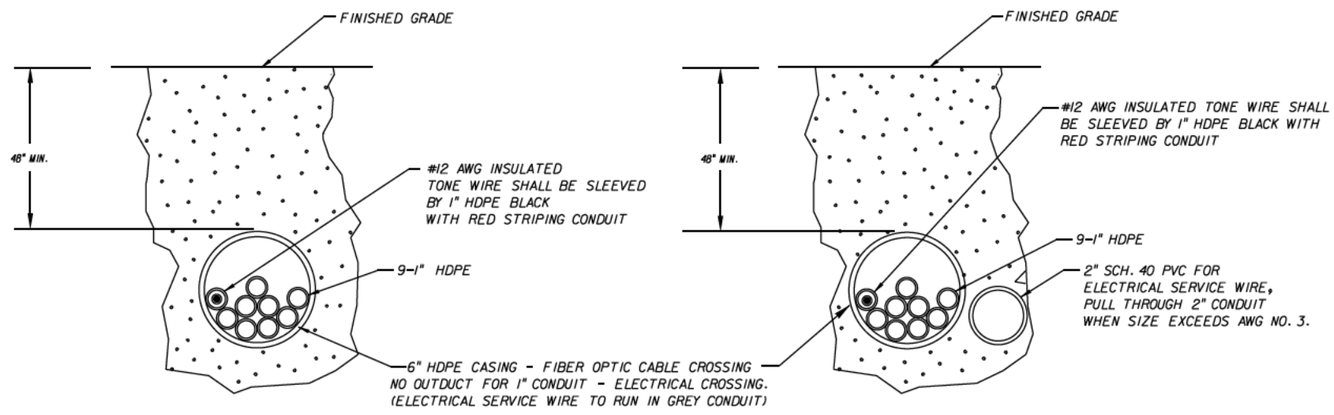


TYPICAL DIRECTIONAL BORE

N.T.S.



SECTION A-A

N.T.S.

GENERAL NOTES:

1. 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 12" MINIMUM SEPARATION.
2. ALL ENDS OF BORES SHALL BE SEALED WITH GROUT.
3. HORIZONTAL DEPTH SHALL BE IN ACCORDANCE WITH FDOT UTILITY ACCOMMODATION MANUAL SECTION 9.3 AND 12.3.
4. A SEPARATE BORE FOR 2" CONDUIT WILL BE REQUIRED WHEN ELECTRICAL SERVICE WIRE EXCEEDS AWG #3.

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DIRECTIONAL BORE DETAIL

SHEET NO. FO-46

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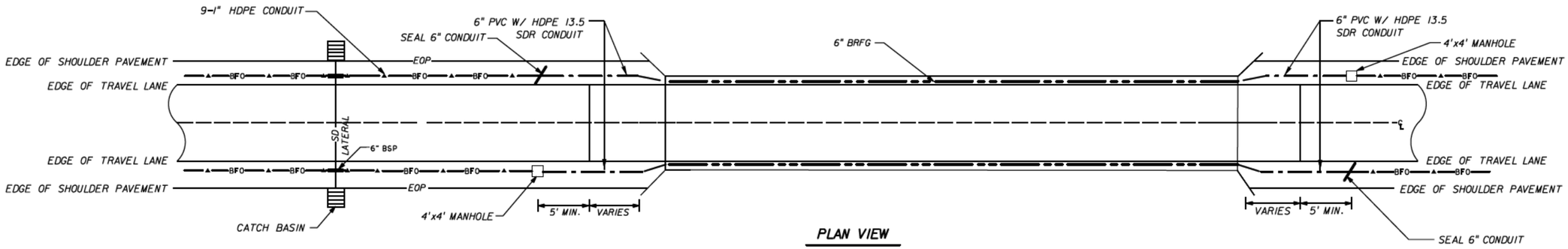
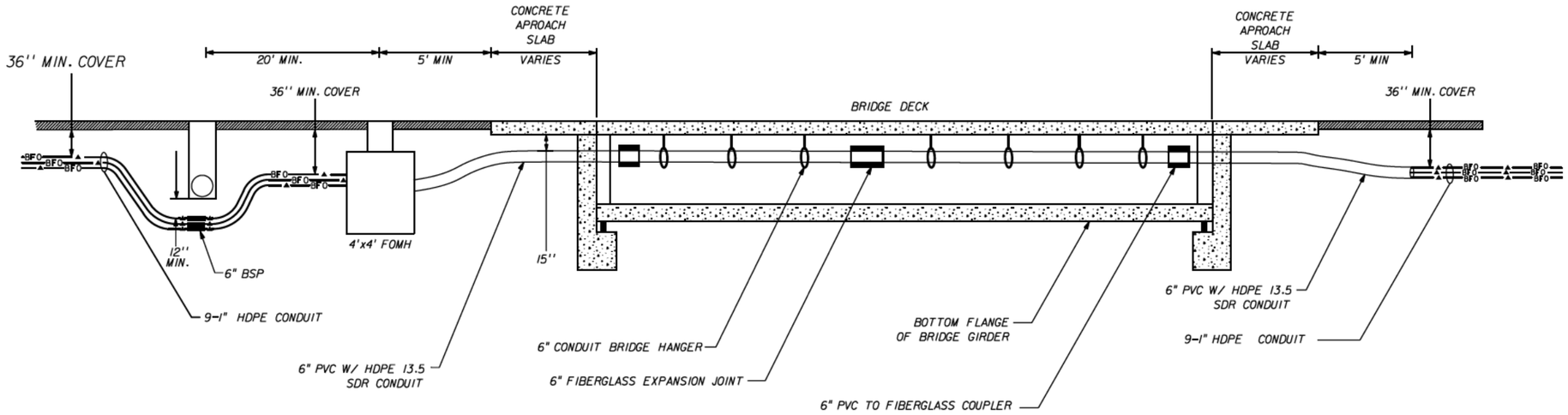


PLAN VIEW
NTS



PROFILE
NTS

NOTE:

1. THE CONTRACTOR MAY PRECAST THE 6" SCH. 40 PVC CONDUIT THROUGH END BENT END WALL.

REVISIONS					
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ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Andrew J. Lucyshyn, P.E. No. 54624

CENTRAL FLORIDA EXPRESSWAY AUTHORITY	
ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

TYPICAL BRIDGE APPROACH DETAIL

SHEET NO. F0-47

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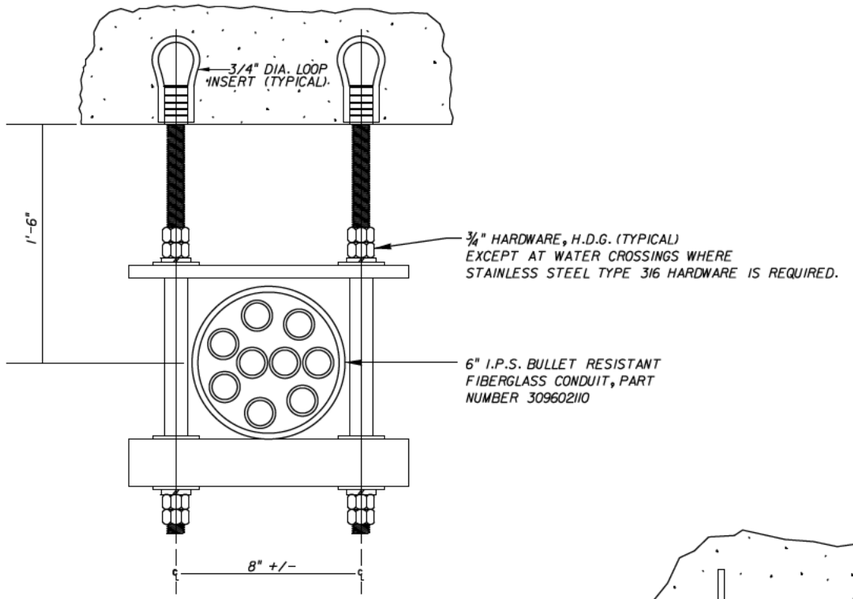
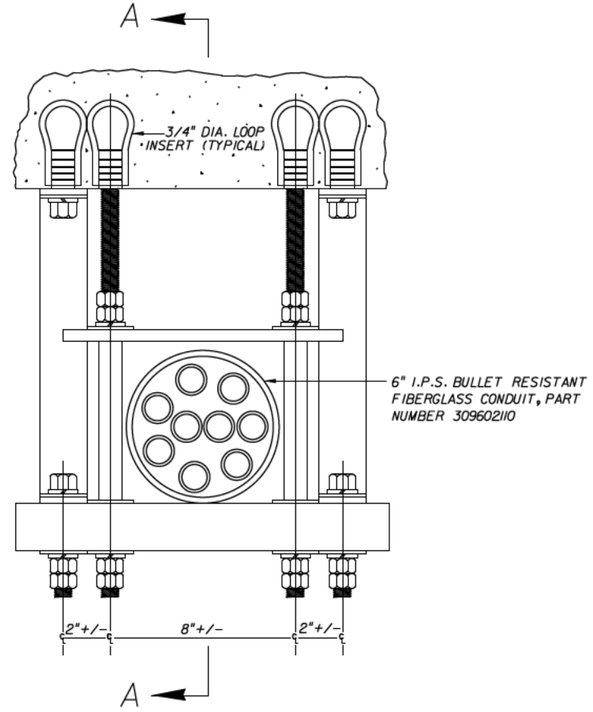
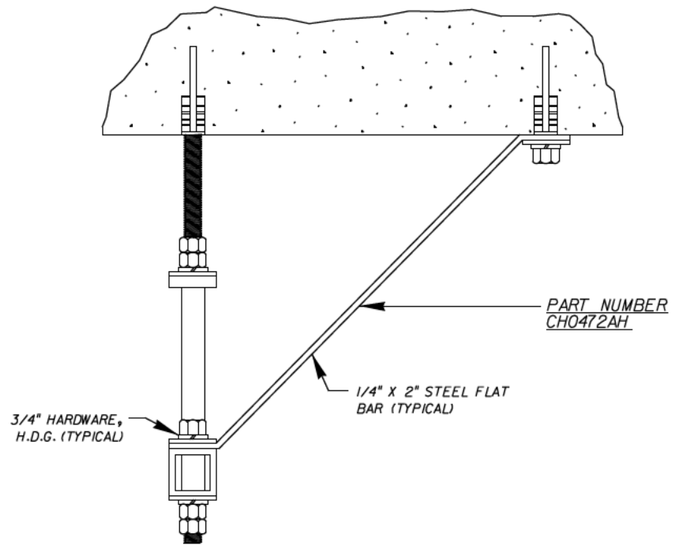
6" FIBERGLASS BRIDGE HANGERS



INTERMEDIATE SUPPORT HANGER
PART NUMBER CH0472AG



ANCHOR POINT SUPPORT HANGER
PART NUMBER CH0472AH
FRONT VIEW



SECTION A-A

NOTES:

1. THE FIBER OPTIC CABLE (FOC) SHALL BE 6" DIAMETER I.P.S. BULLET RESISTANT FIBERGLASS CONDUIT AS MANUFACTURED BY OPTI-COM MANUFACTURING NETWORK, INC. (OMNI), PART NUMBER 309602110 OR APPROVED EQUAL.
2. THE HANGER SUPPORT ASSEMBLIES SHALL BE OMNI PART NUMBER CH0472AG. THE HANGER ANCHOR ASSEMBLY SHALL BE OMNI PART NUMBER CH0472AH OR APPROVED EQUAL.
3. THE MAXIMUM HANGER SPACING SHALL NOT EXCEED 10'-0" AND THE ANCHORING HANGERS SHALL BE PLACED AT EVERY 120 FT. MAXIMUM, OR WITHIN 5 FT. OF A PIER OR ABUTMENT.
4. HANGER INSERTS SHALL BE 3/4" STAINLESS STEEL LOOP INSERTS, HAVING A SAFE WORKING LOAD OF 1.5 KIP TENSION AND 2.7 KIP SHEAR MINIMUM. AT CONTRACTORS OPTION, OTHER METHODS OF SECURING HANGERS TO DECK UNDERSIDE MAY BE ACCEPTABLE PROVIDED THAT CALCULATIONS FOR THE HANGER SYSTEM AND SHOP DRAWINGS SIGNED AND SEALED BY A FLORIDA PROFESSIONAL ENGINEER ARE SUBMITTED FOR APPROVAL BY THE ENGINEER OF RECORD.
5. THE INSTALLATION OF HANGER INSERTS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
   A. INSERT AND HANGER LAYOUT
   B. CATALOG CUTS FOR HANGER AND ANCHOR ASSEMBLIES.
7. INSERTS AND THREADED RODS ARE INCLUDED IN BRIDGE CONSTRUCTION. PAYMENT SHALL BE INCLUDED IN THE PRICE BID FOR SUPERSTRUCTURE CONCRETE FOR THE INDIVIDUAL BRIDGES. LOCATION OF INSERTS TO BE DETERMINED BY CONTRACTOR.

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BRIDGE HANGER DETAIL

SHEET NO. F0-48

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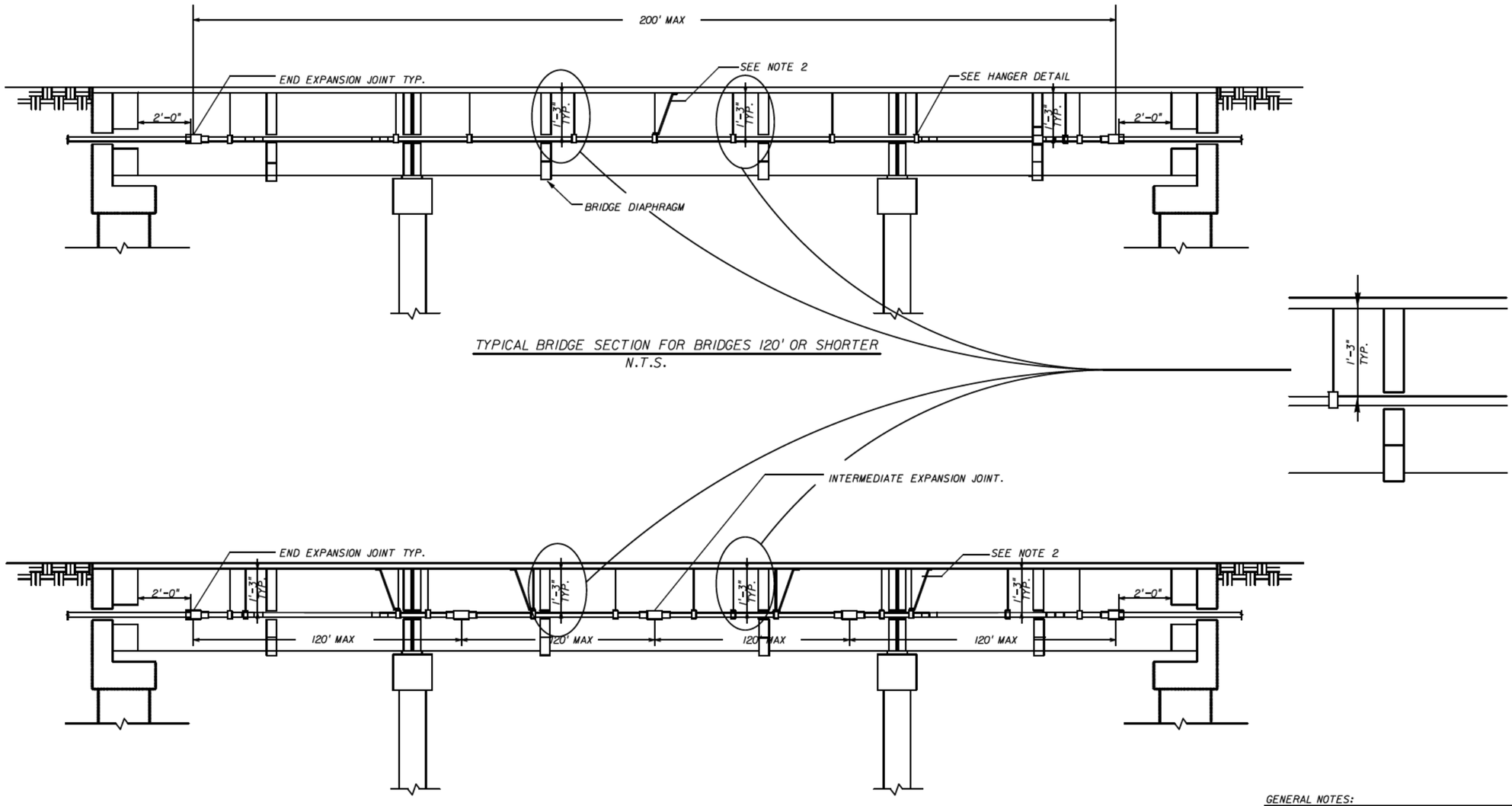

TYPICAL BRIDGE SECTION FOR BRIDGES 120' OR SHORTER
N.T.S.

TYPICAL BRIDGE SECTION FOR BRIDGES 200' OR LONGER
N.T.S.

GENERAL NOTES:

1. SPACING BETWEEN EXPANSION JOINTS SHALL BE NO GREATER THAN 120 FEET.
2. LATERAL MOVEMENT IS FIXED AT MID-SPAN BETWEEN EXPANSION JOINT BY USE OF HANGER BRACE.
3. ALL FIBERGLASS CONDUIT HANGERS WILL BE SPACED NO MORE THAN 10' ON CENTER.

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FIBERGLASS EXPANSION JOINT DETAIL

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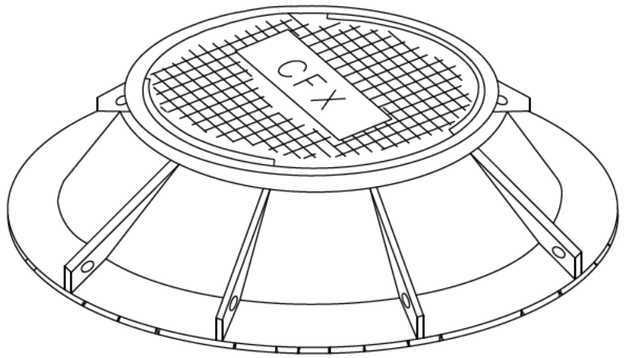
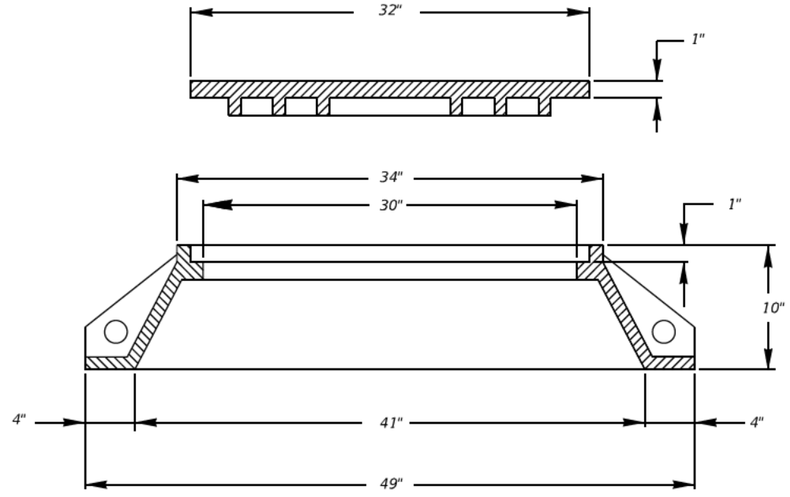


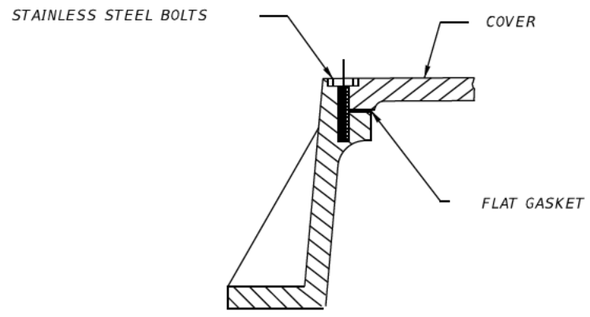
MANHOLE COVER
N.T.S.



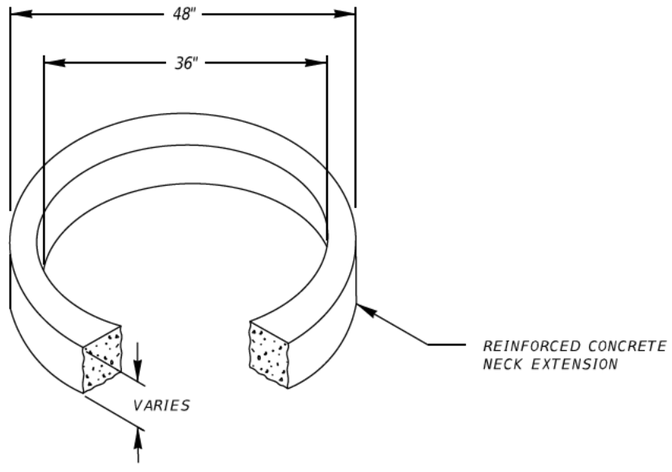
RING AND COVER DETAIL
N.T.S.

NOTES:

1. EACH COVER TO HAVE (4) PICK SLOTS FOR REMOVING.
2. "CFX" IN COVER.
3. ACCESS HOLE: 30".
4. PENTABOLTS
5. MANHOLE RING AND COVER SHALL CONFORM TO HS20 TRAFFIC RATED-HEAVY DUTY LOAD RATING.
6. ANCHOR RING TO MANHOLE TOP USING ½" GALVANIZED BOLTS.
7. MANHOLE RING AND COVER TO BE WATERTIGHT AND GROUNDED TO COMMON GROUND.
8. MATERIAL: ASTM-A48 CLASS 35B GRAY IRON.



BOLTED WATERTIGHT DETAIL
N.T.S.



TYPICAL NECK EXTENSION DETAIL
N.T.S.

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FIBER OPTIC MANHOLE COVER DETAILS

SHEET NO.
F0-50

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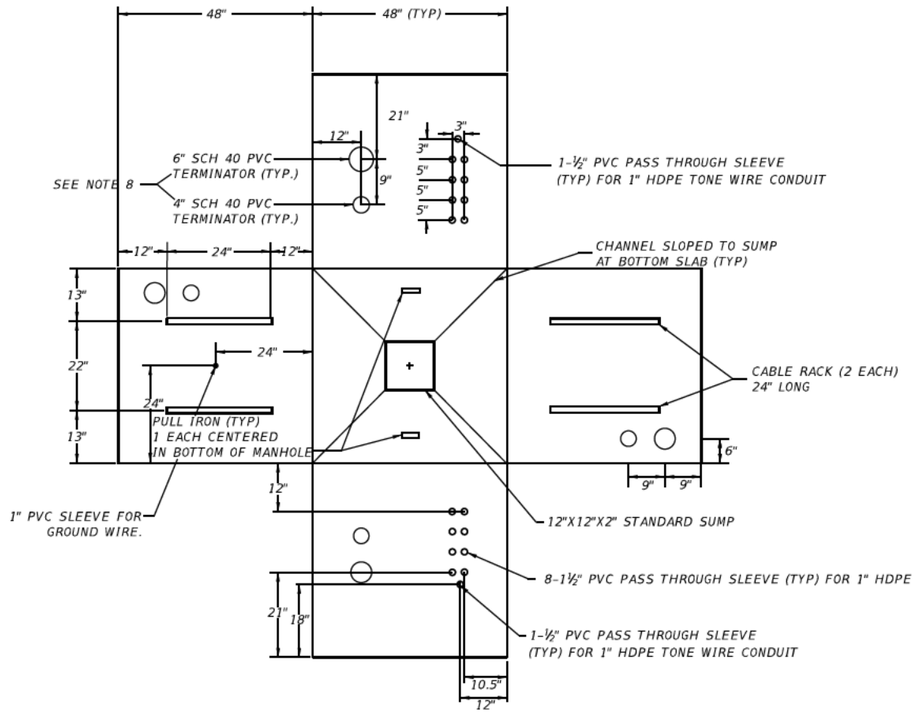
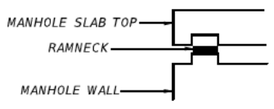


60" OD SQUARE MANHOLE



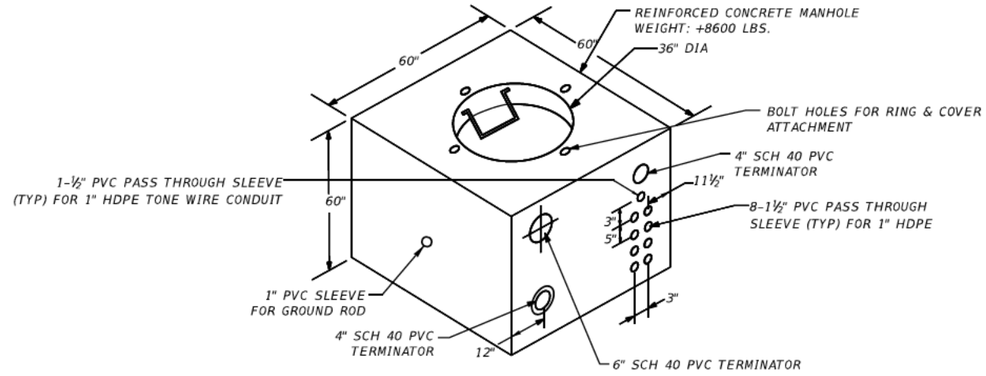
MANHOLE JOINT CONFIGURATION
N.T.S.

RING & COVER GENERAL NOTES

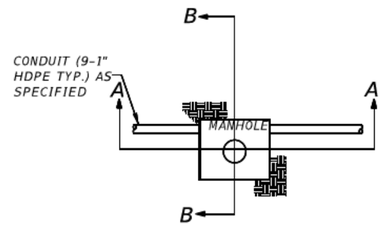
1. EACH COVER TO HAVE (4) PICK SLOTS FOR REMOVING.
2. "CFX" IN COVER.
3. ACCESS HOLE: 30".
4. PENTABOLTS
5. MANHOLE RING AND COVER SHALL CONFORM TO HS20 TRAFFIC RATED-HEAVY DUTY LOAD RATING.
6. ANCHOR RING TO MANHOLE TOP USING ½" GALVANIZED BOLTS.
7. MANHOLE RING AND COVER TO BE WATERTIGHT AND GROUNDED TO COMMON GROUND.
8. MATERIAL: ASTM-A48 CLASS 35B GRAY IRON.

NOTES:

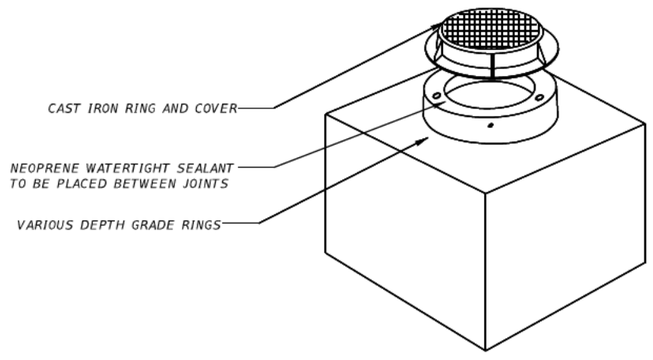
1. CONTRACTOR SHALL SUBMIT PRECAST CONCRETE MANHOLE AND RING WEIR CUT SHEETS AND CAPACITIES VERIFICATIONS FOR ENGINEER'S REVIEW AND APPROVAL
2. MANHOLE SHALL CONFORM TO HL93 FULL VEHICULAR LOADING.
3. ALL MANHOLES SHALL BE PROVIDED WITH AN INWESCO SERIES I-3600 OR EQUIVALENT LADDER THAT EXTENDS TO THE FLOOR.
4. ALL UNUSED ACCESS POINT SHALL BE EQUIPPED WITH COMPRESSION TYPE SNUG PLUGS.
5. ALL MANHOLES SHALL BE PLACED WITH COVER FLUSH WITH FINISHED GRADE ON PAVED SHOULDER. MANHOLE COVERS SHALL BE BOLTED IN PLACE.
6. GROUND RODS SHALL BE INSTALLED OUTSIDE OF MANHOLE AND #6 BARE WIRE SHALL BE BROUGHT INTO MANHOLE THROUGH THE 1" PVC SLEEVE ON SIDE OF MANHOLE.
7. ALL MANHOLES SHALL HAVE 12" OF ½" CRUSHED ROCK PLACED UNDER MANHOLES.
8. ALL MANHOLE PENETRATIONS SHALL BE SEALED TO PREVENT WATER INGRESS TO THE SATISFACTION OF THE ENGINEER.
9. MANHOLE WALL THICKNESS SHALL BE A MINIMUM OF 6".
10. RAMNECK SHALL BE USED TO SEAL ALL MANHOLE JOINTS.
11. CABLE RACKS SHALL BE INSTALLED USING ½" x 2½" GALVANIZED MACHINE BOLTS AND GALVANIZED ANCHORS CAST INTO THE WALLS.

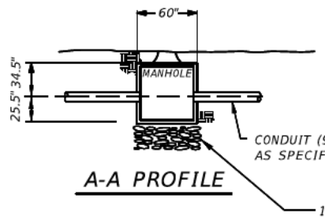


4'X4'X4' MANHOLE
6" WALLS, TOP AND FLOOR
48" HEADROOM



PLAN

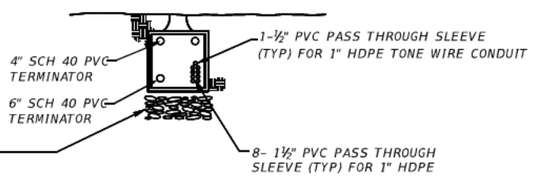




A-A PROFILE

TYPICAL MANHOLE

1. ALL MANHOLES SHALL HAVE 12" OF ¾" CRUSHED ROCK PLACED UNDER MANHOLES.



B-B PROFILE

REVISIONS					
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FIBER OPTIC MANHOLE DETAIL
4' X 4' X 4'

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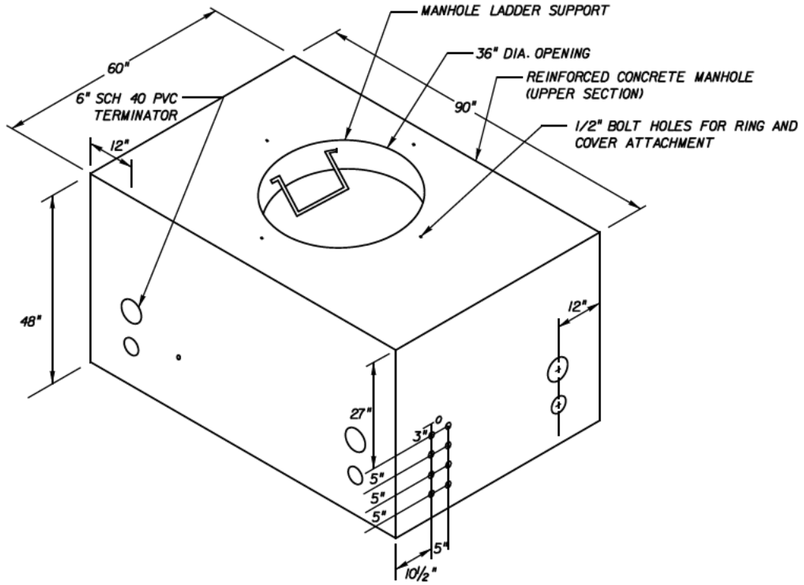
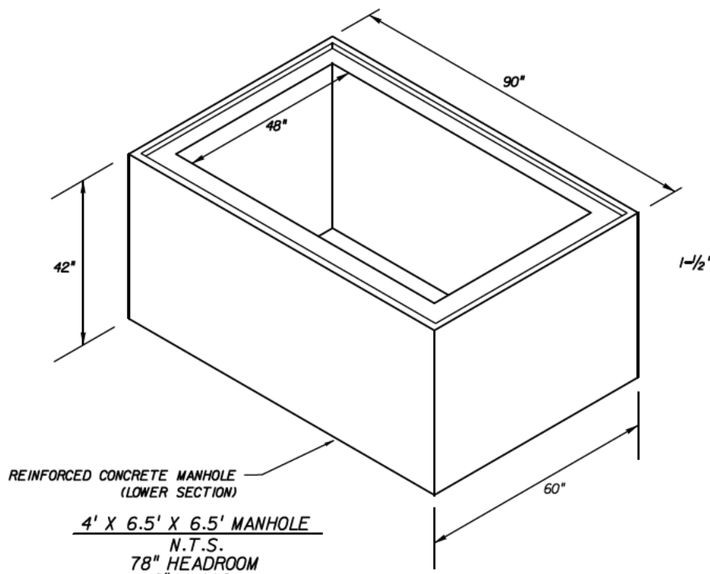
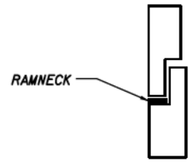




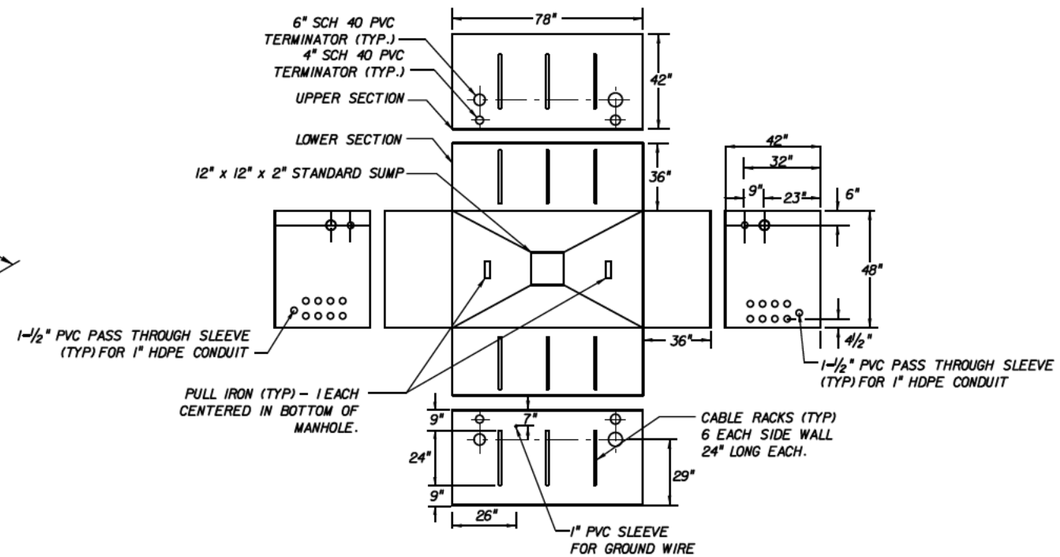
4' X 6.5' X 6.5' MANHOLE
N.T.S.
78" HEADROOM
6" WALLS



MANHOLE JOINT CONFIGURATION
N.T.S.

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT PRECAST CONCRETE MANHOLE AND RING WIRE CUT SHEETS AND CAPACITIES VERIFICATIONS FOR ENGINEER'S REVIEW AND APPROVAL.
2. MANHOLE SHALL CONFORM TO HL93 FULL VEHICULAR LOADING.
3. ALL MANHOLES SHALL BE PROVIDED WITH AN INWESCO SERIES I-3600 OR EQUIVALENT LADDER THAT EXTENDS TO THE FLOOR.
4. ALL UNUSED ACCESS POINT SHALL BE EQUIPPED WITH COMPRESSION TYPE SNUG PLUGS.
5. ALL MANHOLES SHALL BE PLACED WITH COVER FLUSH WITH FINISHED GRADE ON PAVED SHOULDER. MANHOLE COVERS SHALL BE BOLTED IN PLACE.
6. GROUND RODS SHALL BE INSTALLED OUTSIDE OF MANHOLE AND #6 BARE WIRE SHALL BE BROUGHT INTO MANHOLE THROUGH THE 1" PVC SLEEVE ON SIDE OF MANHOLE.
7. ALL MANHOLES SHALL HAVE 12" OF 1/2 " CRUSHED ROCK PLACED UNDER MANHOLES.
8. ALL MANHOLE PENETRATIONS SHALL BE SEALED TO PREVENT WATER INGRESS TO THE SATISFACTION OF THE ENGINEER.
9. MANHOLE WALL THICKNESS SHALL BE A MINIMUM OF 6".
10. RAMNECK SHALL BE USED TO SEAL ALL MANHOLE JOINTS.
11. CABLE RACKS SHALL BE INSTALLED USING 1/2 " x 2 1/2 " GALVANIZED MACHINE BOLTS AND GALVANIZED ANCHORS CAST INTO THE WALLS.



MANHOLE 4' L x 6.5' W x 6.5' H
2 SECTIONS
N.T.S.

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FIBER OPTIC MANHOLE DETAIL
4' X 6.5' X 6.5'

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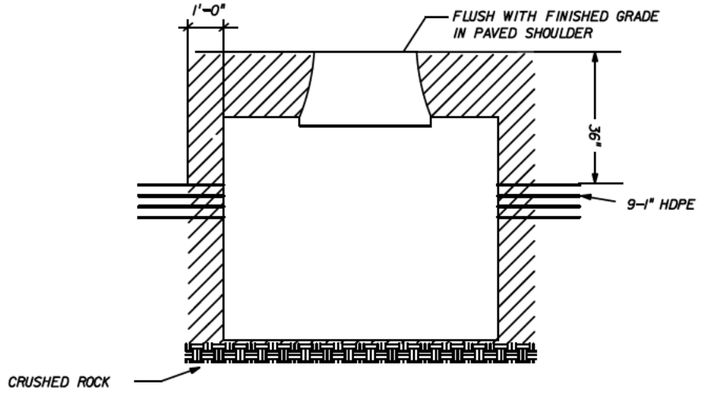
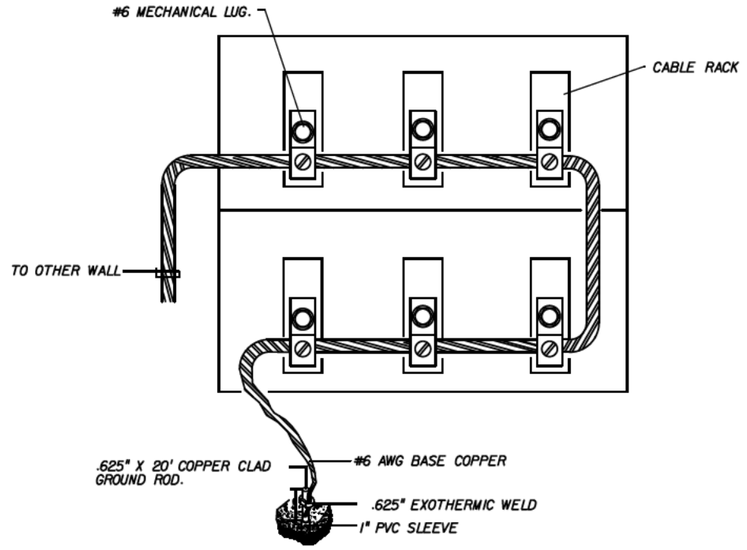
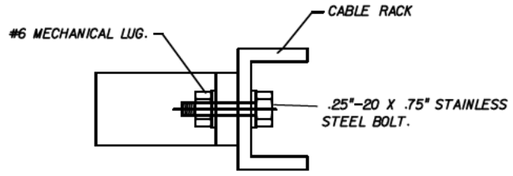


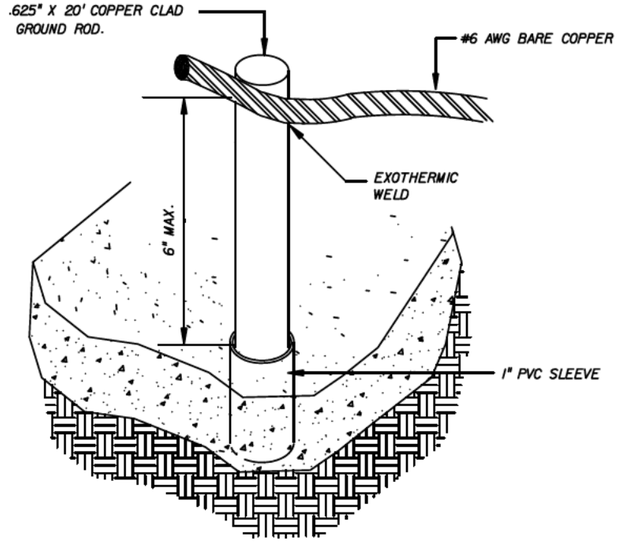
MANHOLE PROFILE
N.T.S.



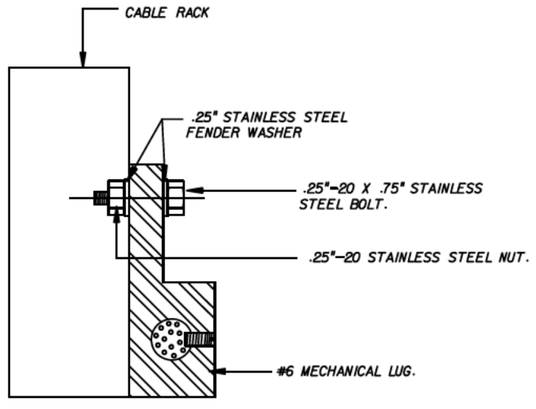
MANHOLE GROUNDING
TYPICAL WALL
N.T.S.



MECHANICAL LUG
PLAN VIEW
N.T.S.



GROUND ROD CLAMP
N.T.S.



MECHANICAL LUG
PROFILE VIEW
N.T.S.

ROADWAY AND TRAFFIC DESIGN
CALL FOR THE FOLLOWING GENERAL NOTES:

1. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHM. WHERE THE RESISTANCE IS NOT AS LOW AS 25 OHMS, TWO OR MORE GROUND RODS CONNECTED IN PARALLEL SHALL BE USED. CONTRACTOR SHALL HAVE NECESSARY TEST EQUIPMENT (CURRENT CALIBRATION CERTIFICATE REQUIRED) AT FINAL INSPECTION TO INSURE ACCEPTABILITY OF GROUNDING SYSTEM. TOTAL GROUNDING SYSTEM NOT TO EXCEED 10 OHMS.
2. ALL CONNECTIONS BETWEEN BARE COPPER GROUNDING WIRE AND GROUND ROD SHALL BE EXOTHERMIC WELD PER MANUFACTURER STANDARDS.
3. 20' COPPER CLAD GROUND ROD SHALL BE ACHIEVED BY BONDING 2-10' RODS BY EXOTHERMIC WELDING.

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FIBER OPTIC MANHOLE GROUNDING DETAILS

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FO-53

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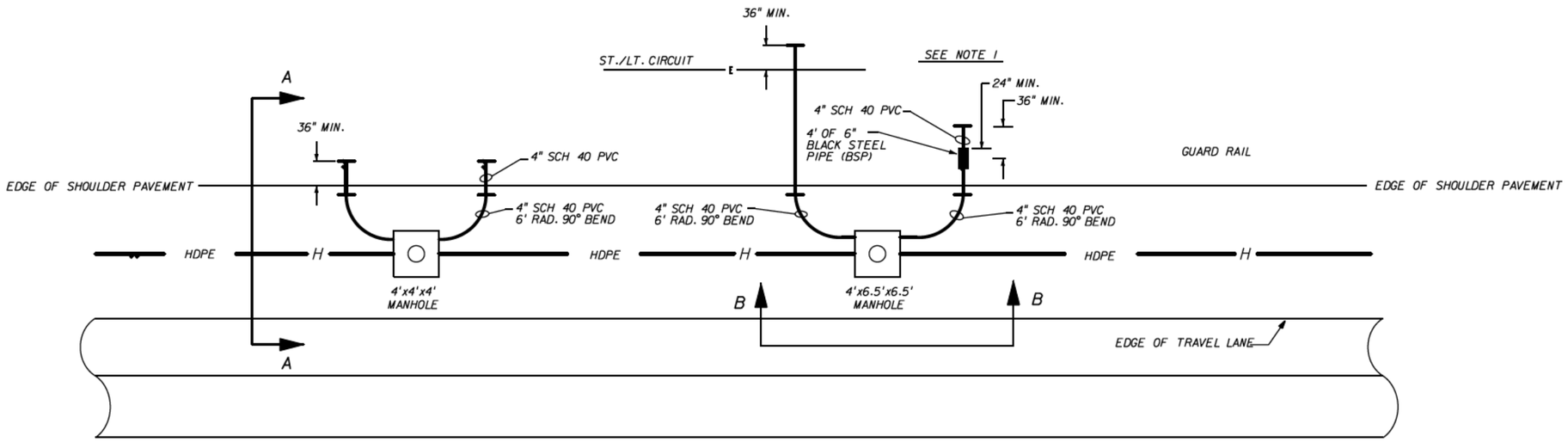
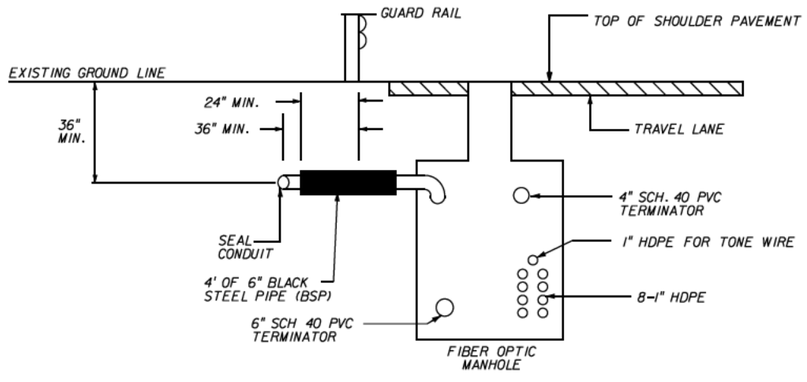
LATERAL CONDUIT FROM MANHOLE DETAIL



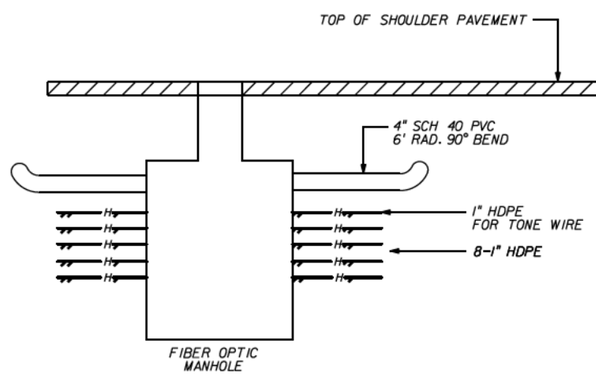
PLAN VIEW

N.T.S.



SECTION A-A

N.T.S.



SECTION B-B

N.T.S.

GENERAL NOTE

1. THE 4" LATERAL CONDUIT SHALL EXTEND A MINIMUM OF 36" BEHIND ANY ABOVE OR BELOW GROUND OBSTRUCTION.
2. 4" LATERAL CONDUIT SHALL BE EQUIPPED WITH 2-1" HDPE.
3. LATERAL CONDUITS SHALL BE SEALED IN MANHOLE AND AT END OF CONDUIT.
4. ALL MANHOLES INSTALLED UNDER THE PAVED SHOULDER REQUIRE 4" LATERAL CONDUIT AS SHOWN IN DETAILS ABOVE.
5. PAYMENT FOR THE 4" SCH. 40 PVC 90° SWEEP LATERAL CONDUIT & 6" BLACK STEEL PIPE SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE MANHOLE AND SHALL BE INCLUDED IN THE COST OF THE MANHOLES.

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FIBER OPTIC MANHOLE STUBOUT DETAIL

SHEET NO. F0-54

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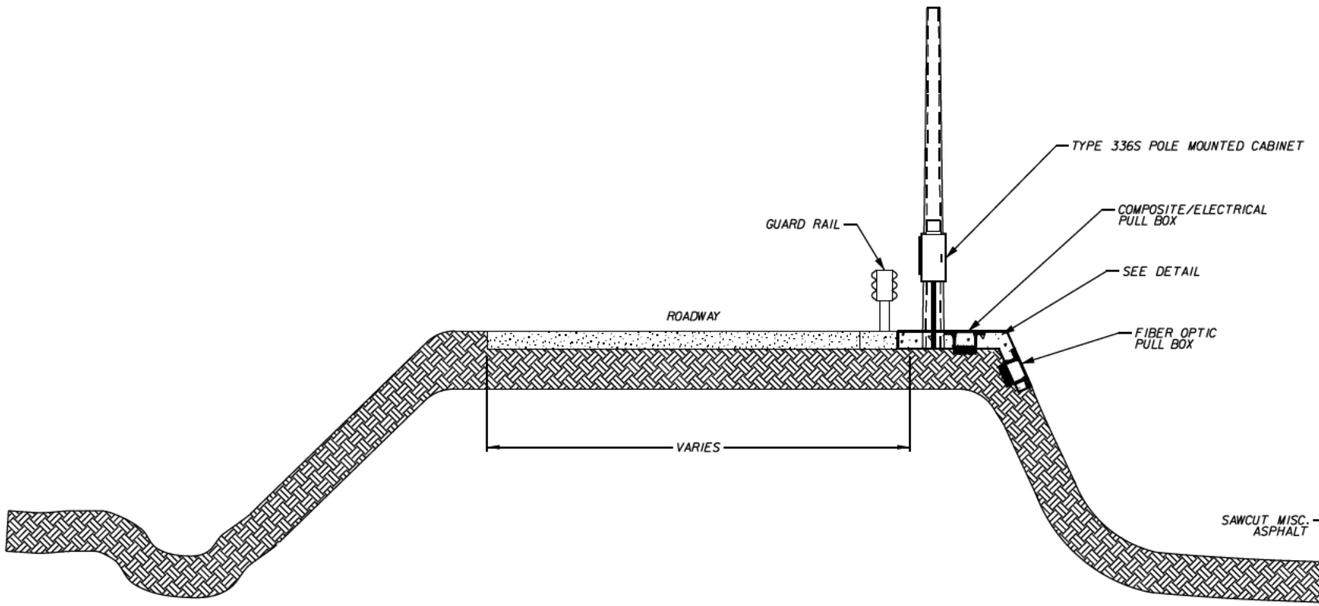
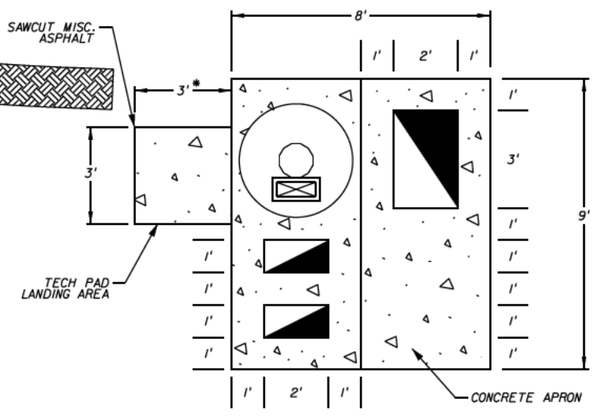
TYPICAL CONCRETE PAD DETAIL ON SLOPES
N.T.S.



DETAIL



NOTES:

1. NUMBER OF PULL BOXES AND CONFIGURATION TO BE PER PLANS. MINIMUM SPACING IS TO BE MAINTAINED AS SHOWN.
2. PULL BOX ON SLOPE MAY BE MOVED TO FLAT GRADE, BUT SLOPE PROTECTION IS TO REMAIN FOR EROSION CONTROL.
3. CONCRETE REINFORCEMENT TO BE PER INDEX 17500.

* VARIES: TO TIE INTO MISC. ASPHALT

REVISIONS					
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ATKINS
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CENTRAL FLORIDA EXPRESSWAY AUTHORITY	
ROAD NO.	PROJECT NO.
SR 429	429-203

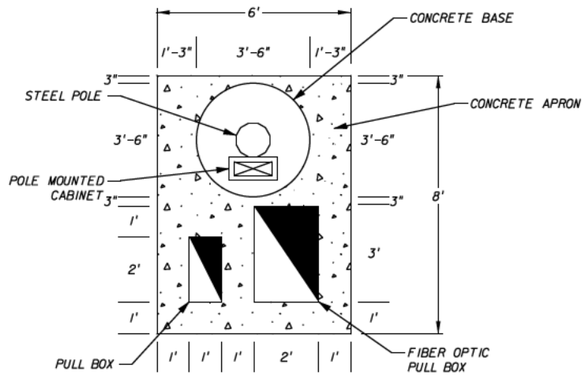
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

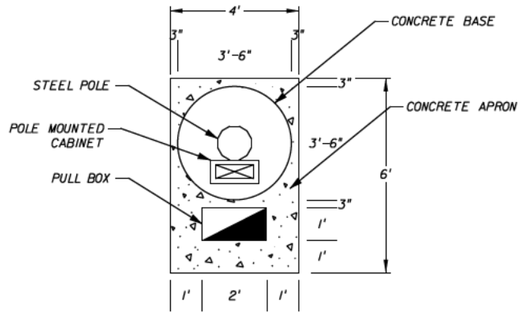
CONCRETE PAD DETAIL FOR SLOPES

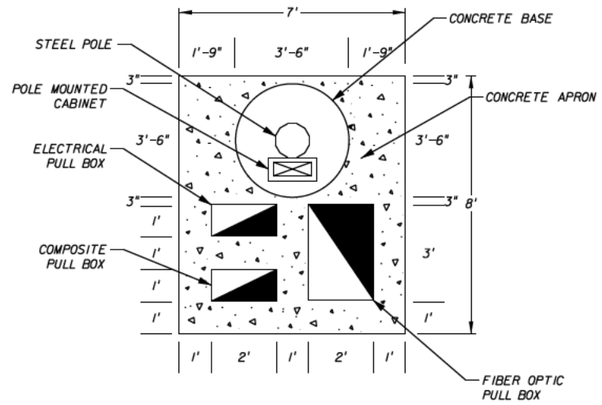
SHEET NO. F0-55

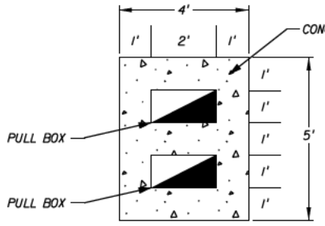
USER: lyfe6246 2/20/2015 2:57:25 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\ITS_E06_V04.dgn

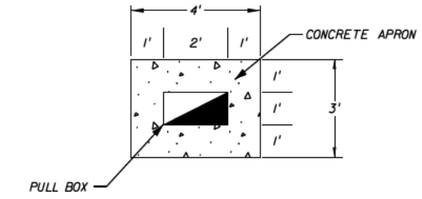
CONCRETE MOW PAD DETAILS
N.T.S.

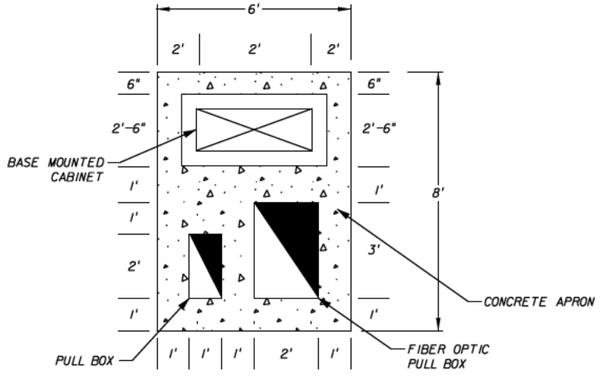


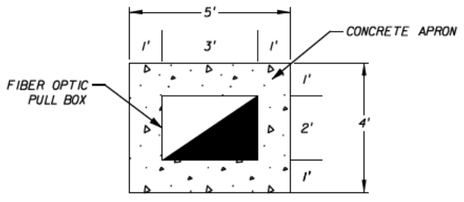












NOTE:
CONCRETE REINFORCEMENT TO BE PER INDEX 17500.

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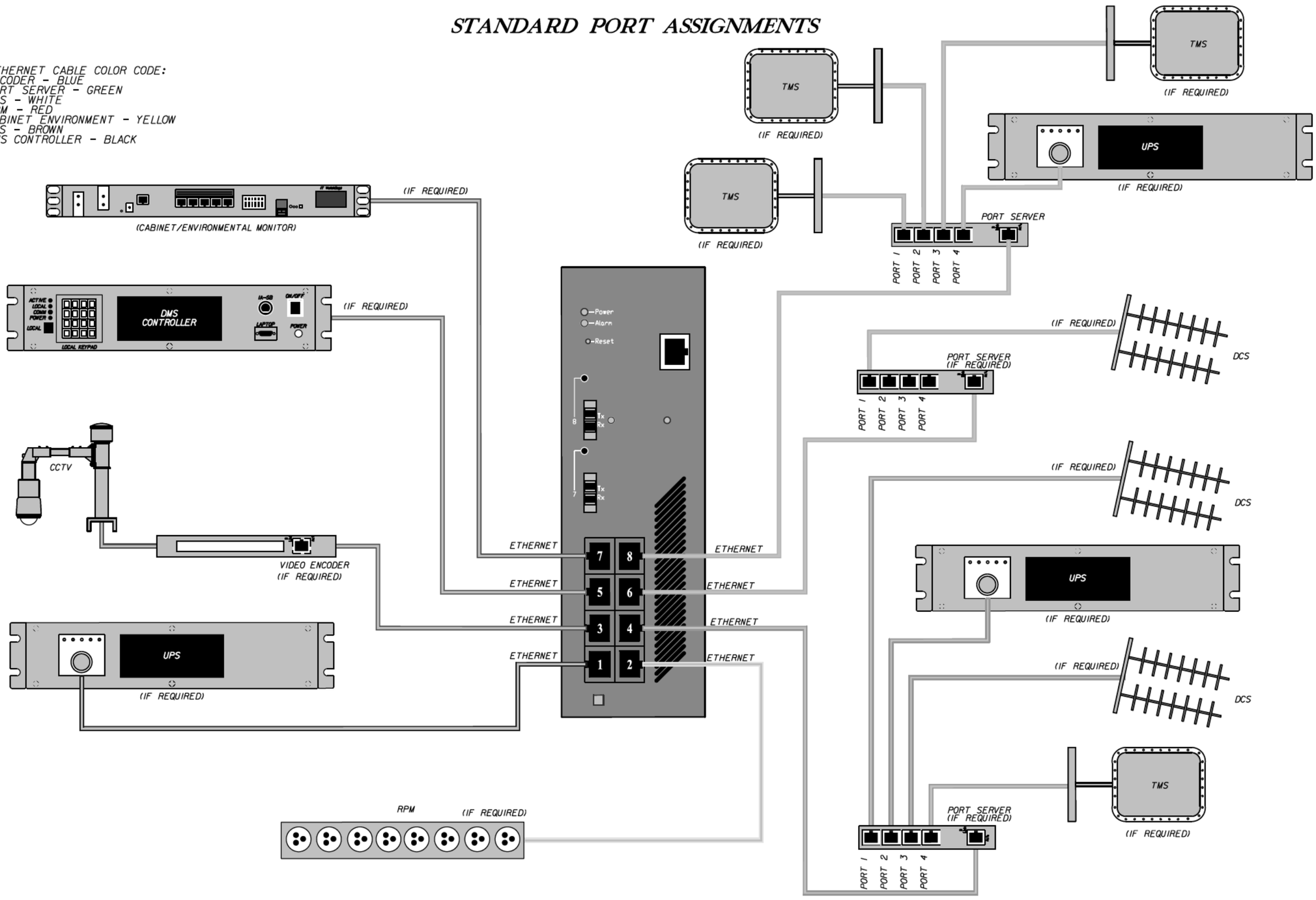
CONCRETE PULL BOX MOW PAD DETAILS

SHEET NO. F0-56

USER: lyfe6246 2/20/2015 2:57:25 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\ITS_E07_V04.dgn

STANDARD PORT ASSIGNMENTS

ETHERNET CABLE COLOR CODE:
ENCODER - BLUE
PORT SERVER - GREEN
UPS - WHITE
RPM - RED
CABINET ENVIRONMENT - YELLOW
DCS - BROWN
DMS CONTROLLER - BLACK



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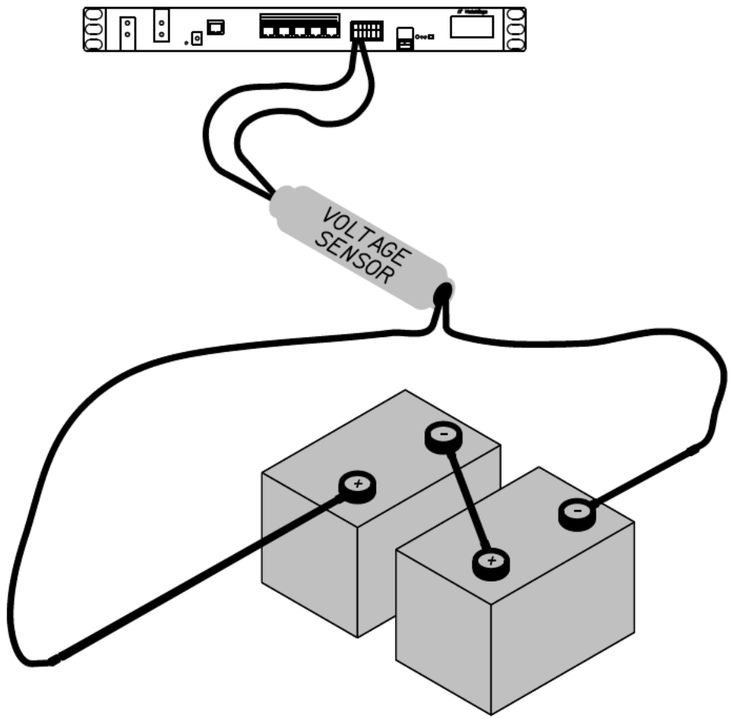
ETHERNET SWITCH DETAIL

SHEET NO. F0-57

USER: lyfe6246 2/20/2015 2:57:26 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\nwdtit01.dgn

ENVIRONMENTAL CABINET MONITOR CONNECTION DIAGRAM



ALPHA

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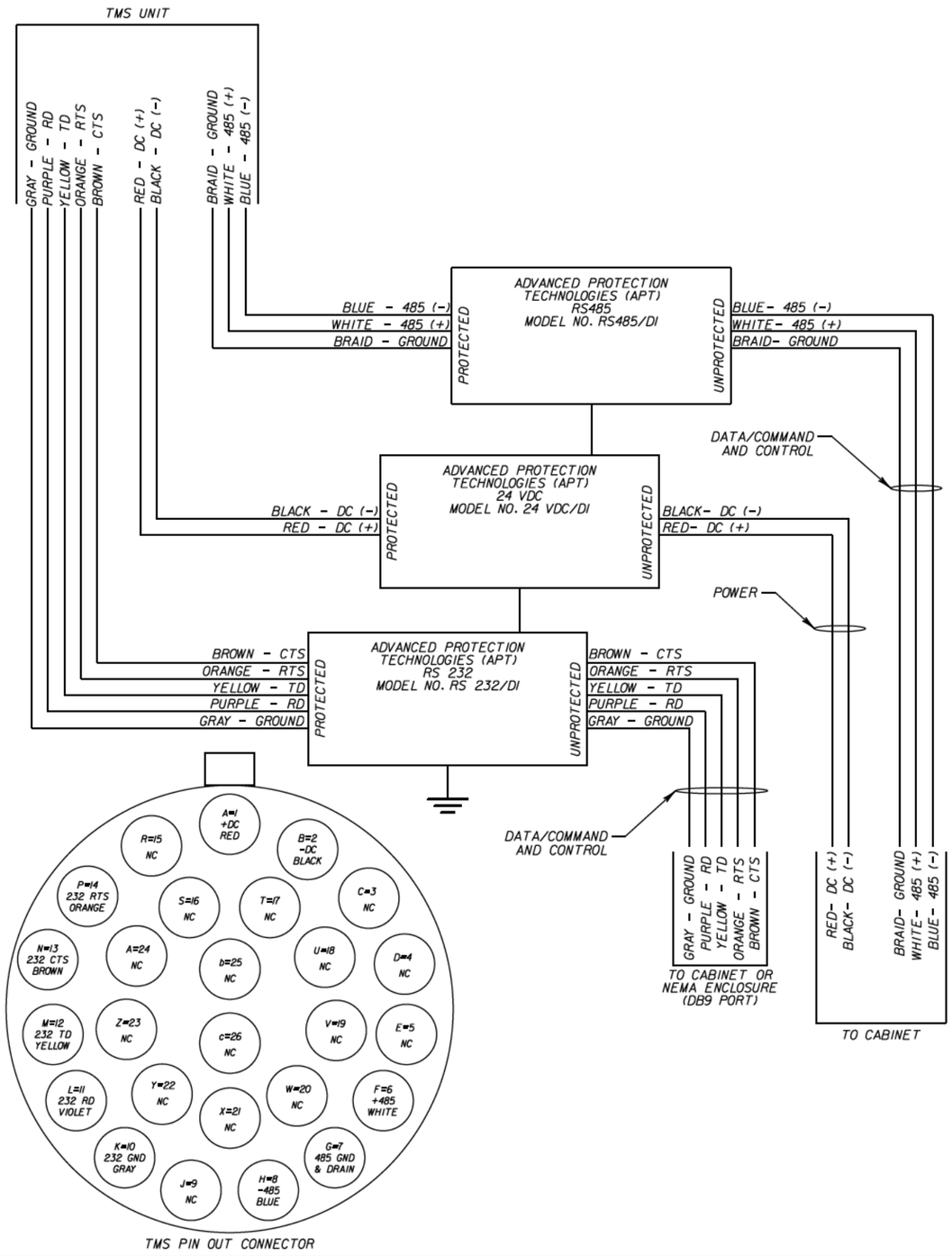
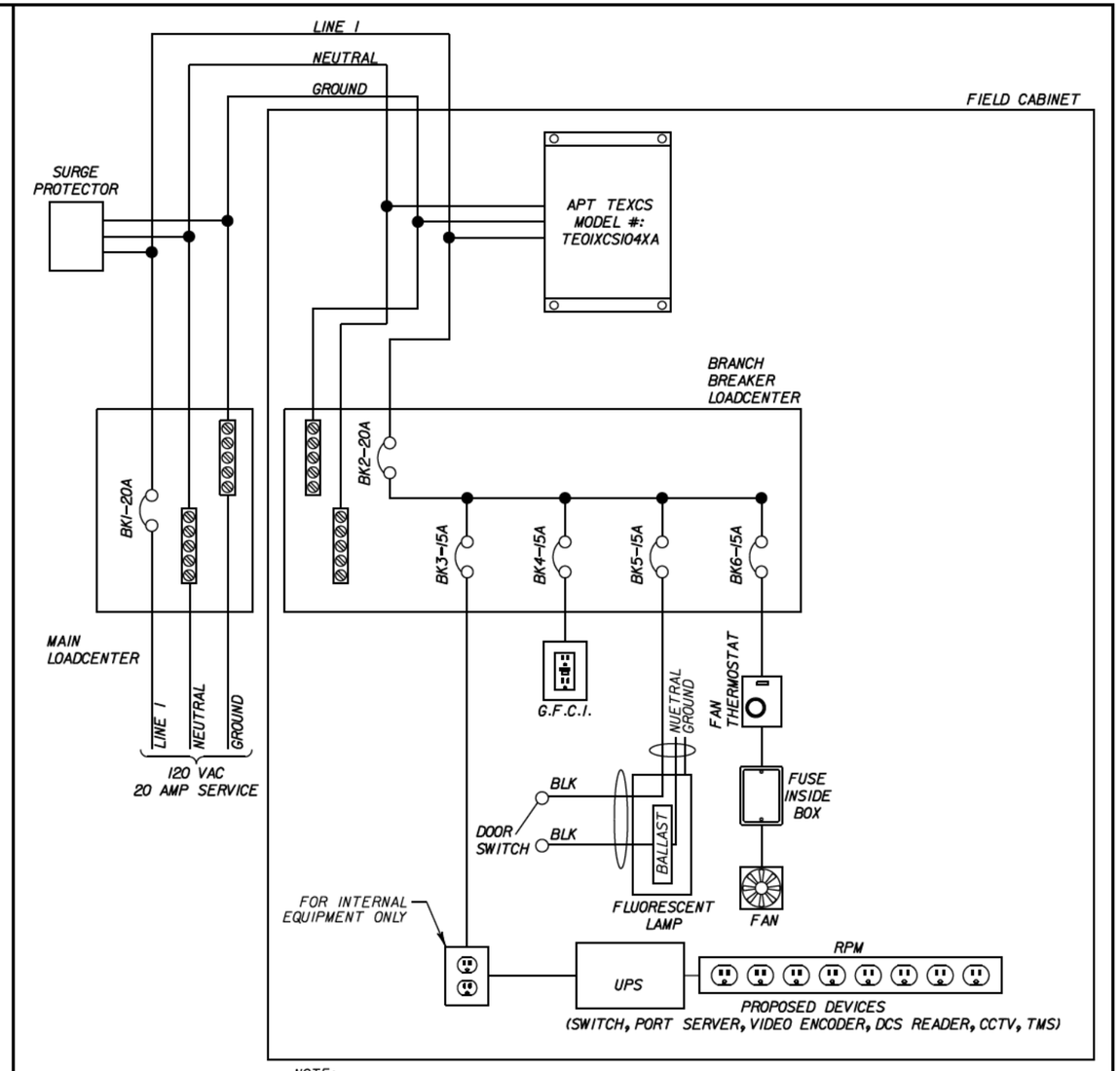
ENVIRONMENTAL CABINET MONITOR CONNECTION DIAGRAM

SHEET NO. F0-58

USER: lyfe6246 2/20/2015 2:57:27 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\NWDTIT02.dgn





NOTE:

1. NON-GFCI OUTLET IS TO BE USED FOR POWERING INTERNAL EQUIPMENT ONLY. THIS OUTLET SHALL BE LABELED BY THE CONTRACTOR "FOR INTERNAL EQUIPMENT ONLY".

2. ALL CABINETS (EXCEPT FOR TYPE III CABINETS) WHERE EQUIPMENT IS INSTALLED OR RETROFITTED UNDER THIS PROJECT SHALL BE UPGRADED TO THIS STANDARD.

3. THE CONTRACTOR SHALL INSPECT EXISTING WIRING IN ALL EXISTING CABINETS WHERE WORK IS PERFORMED. THE CONTRACTOR SHALL ENSURE EXISTING CABINET WIRING AND WORKMANSHIP COMPLIES WITH THE LATEST VERSIONS OF THE NEC, NESC, AND OTHER APPLICABLE STANDARDS. THE CONTRACTOR SHALL UPGRADE EXISTING WIRING AND WORKMANSHIP TO THE CURRENT STANDARDS IF NONCOMPLIANCE IS FOUND.

4. ALL BREAKERS AND BUS BARS FOR THE BRANCH BREAKER LOAD CENTER SHALL BE ENCLOSED BY A BREAKER BOX.

5. ALL UNITS SHALL BE LABELED AT BACK OF RPM ON RPM SOFTWARE.

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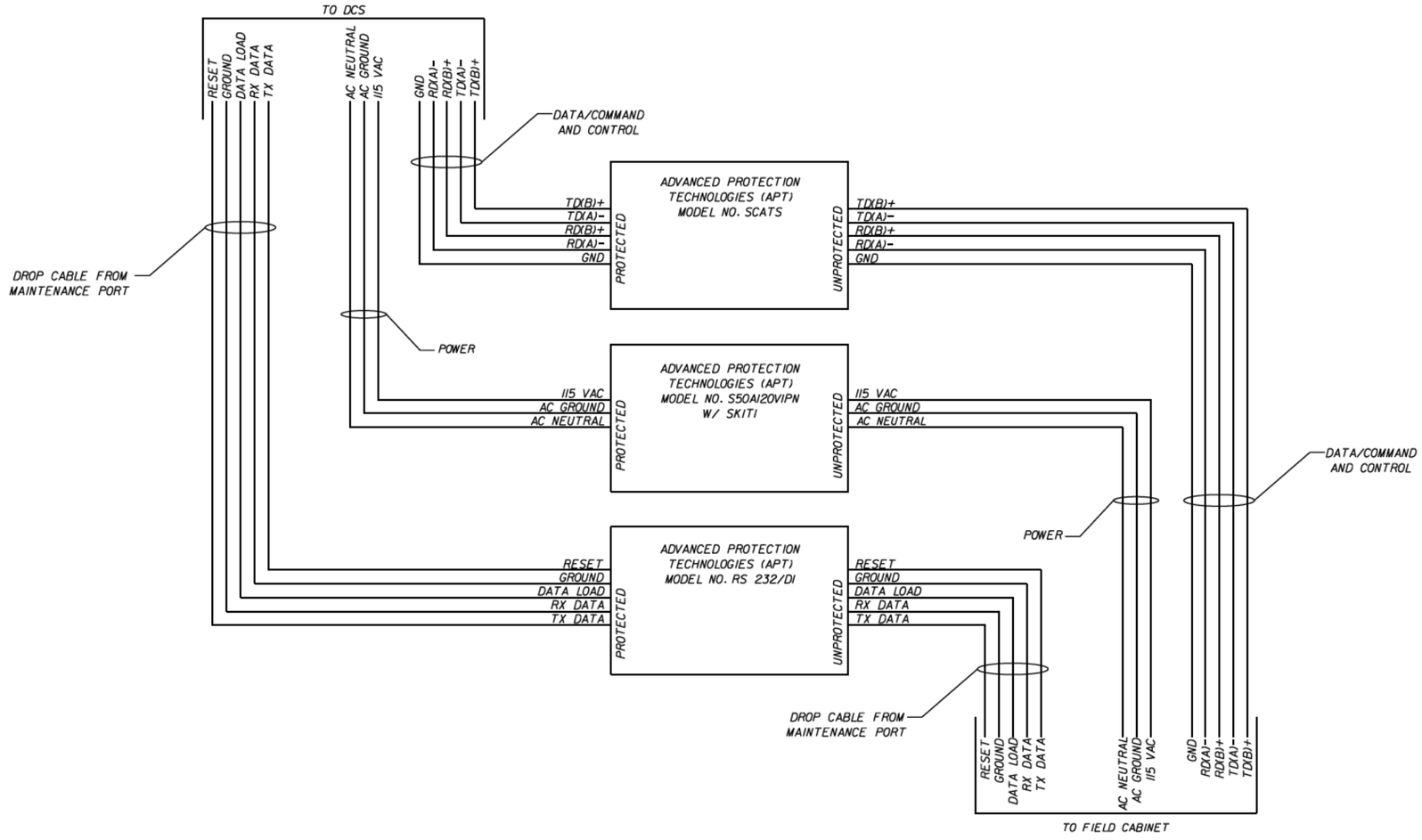
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

TMS TVSS WIRING DETAIL

SHEET NO. FO-59

USER: lyfe6246 2/20/2015 2:57:28 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\NWDTIT03.DGN

DCS RF READER MODULE CABINET WIRING DETAIL
N.T.S.



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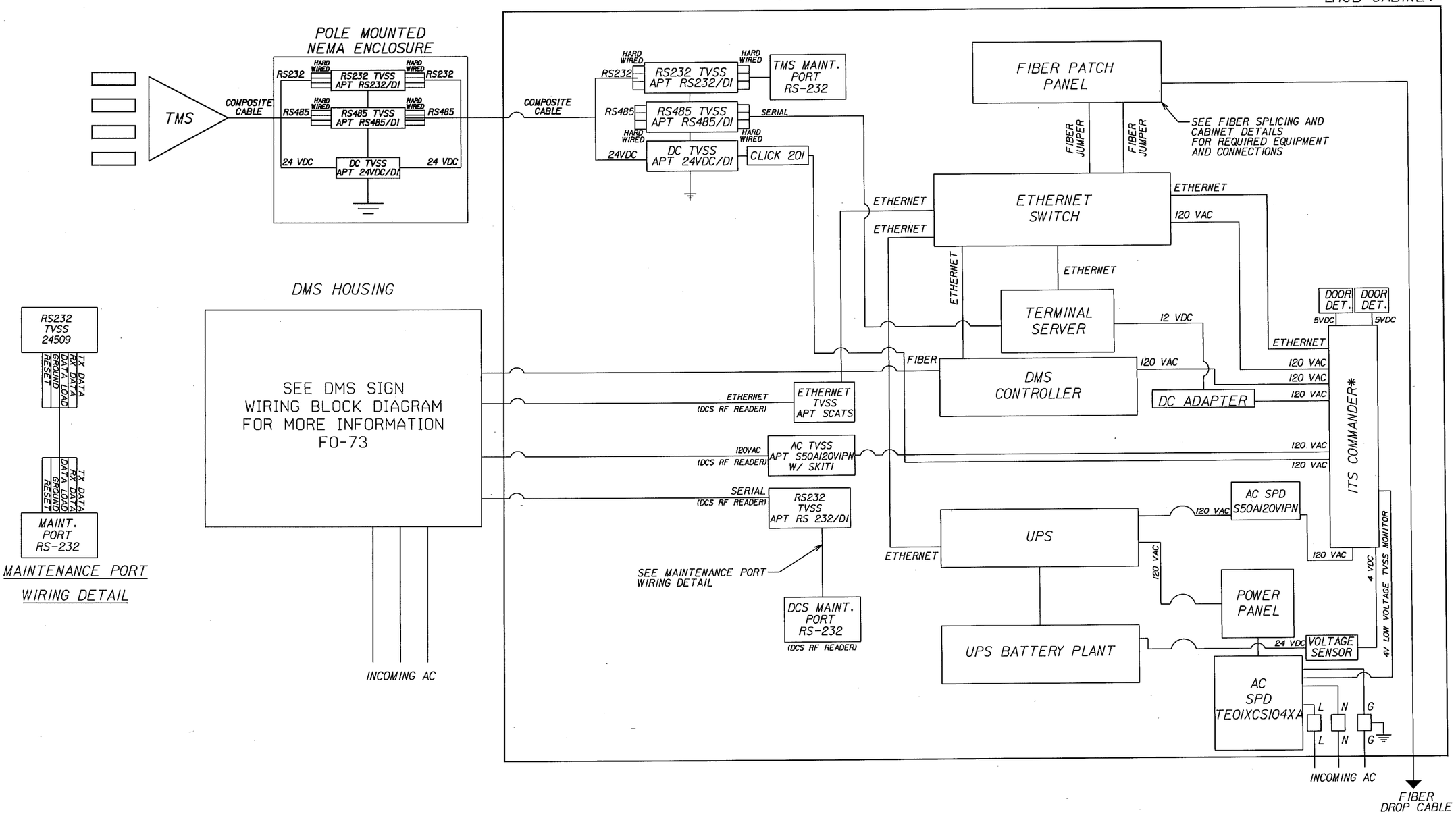
DCS RF READER MODULE CABINET WIRING DETAIL

SHEET NO.
F0-60

USER: lyfe6246 2/20/2015 2:57:29 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\ITS_F06_V04.DGN

PROPOSED DMS & DCS CONNECTION DIAGRAM

N.T.S.



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SR 429	429-203

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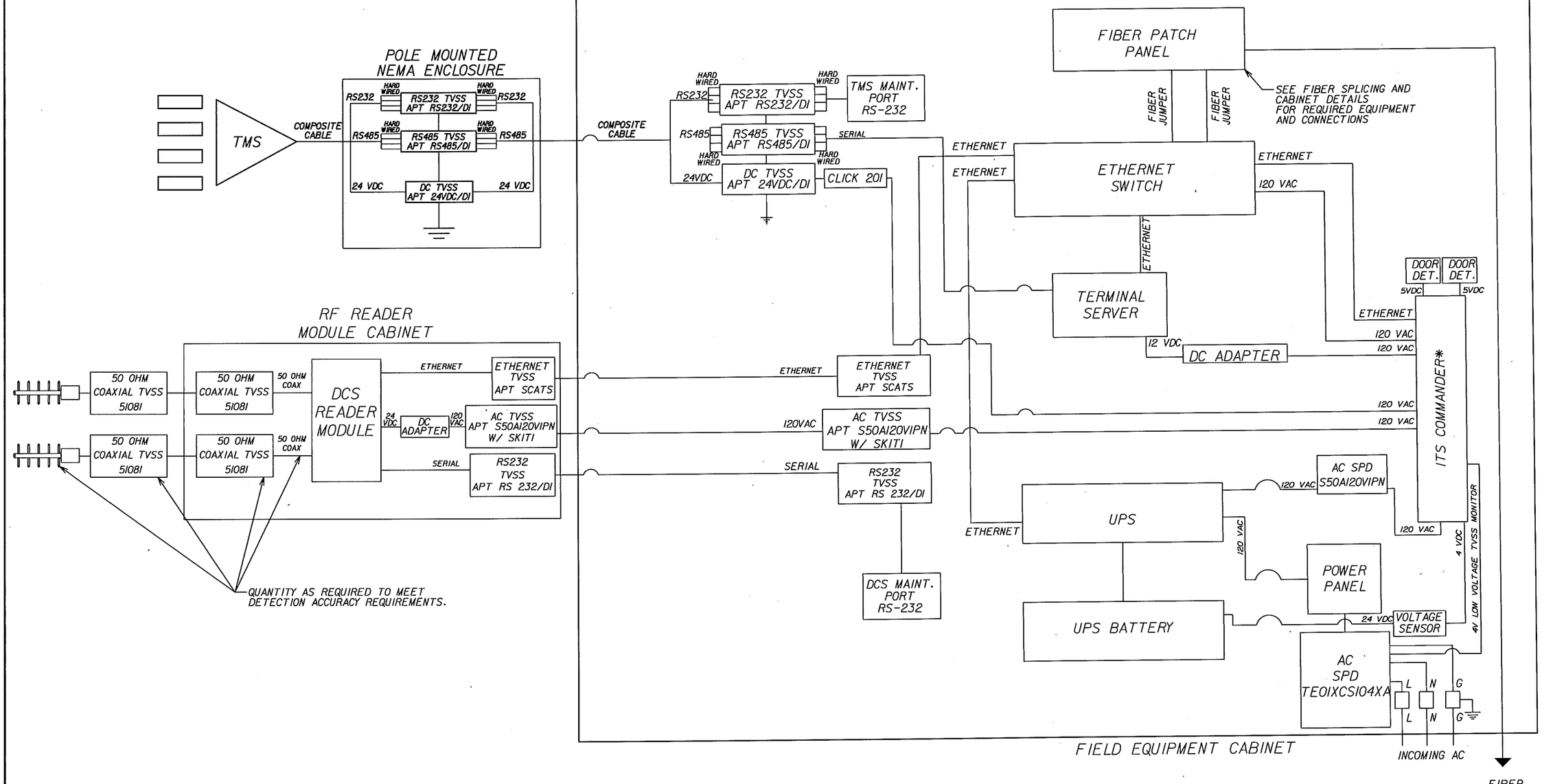
WIRING DIAGRAMS

SHEET NO. FO-61

USER: pate6444 6/8/2015 3:35:17 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\REV2\NWDTIT03_REV2_AFC.DGN

PROPOSED DCS & TMS CONNECTION DIAGRAM

N.T.S.



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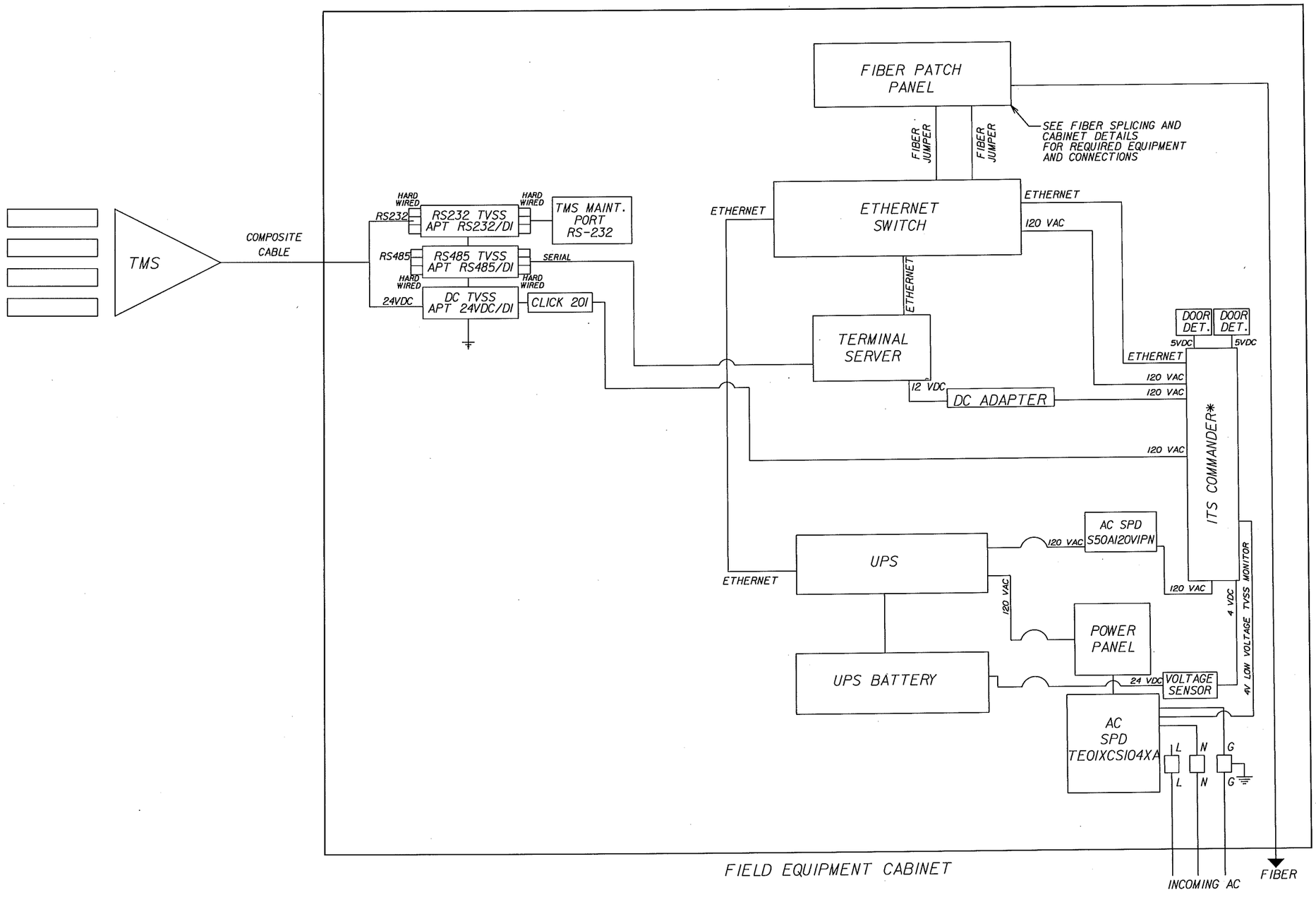
WIRING DIAGRAMS

SHEET NO. F0-62

USER: pate6444 6/8/2015 3:35:18 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\Its\REV2\NWDTIT03_REV2_AFC.DGN

PROPOSED TMS CONNECTION DIAGRAM

N.T.S.



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WIRING DIAGRAMS

SHEET NO. F0-63

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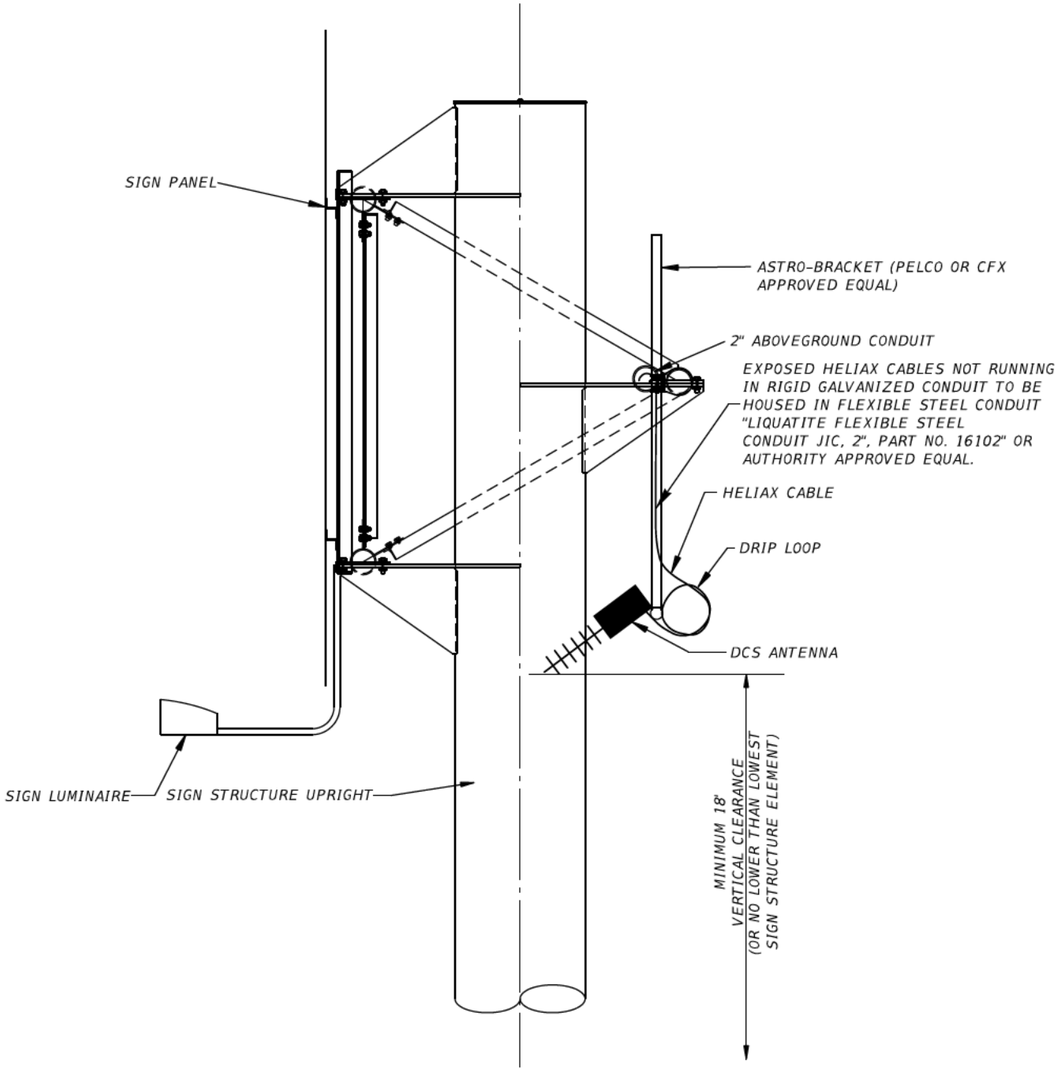


NOTES:

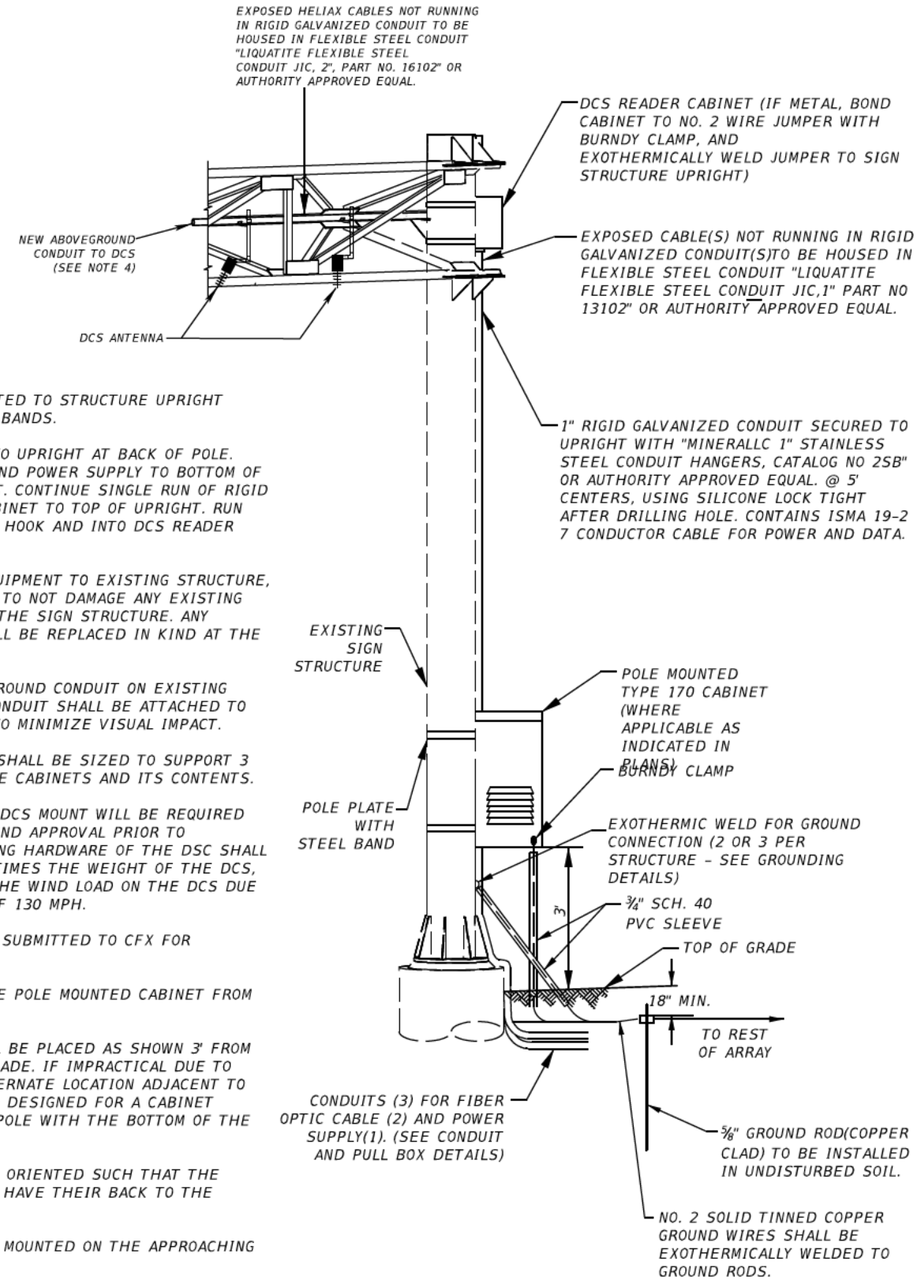
ANTENNA SHOWN MOUNTED TO BACK CORD, FRONT INSTALLATION MAY BE USED WHEN APPLICABLE.

SIGN STRUCTURE MOUNTED DCS (PROFILE)

N.T.S.

NOTES:

1. DCS CABINET TO BE MOUNTED TO STRUCTURE UPRIGHT WITH 2 STAINLESS STEEL BANDS.
2. BAND TYPE 170 CABINET TO UPRIGHT AT BACK OF POLE. RUN FIBER OPTIC CABLE AND POWER SUPPLY TO BOTTOM OF CABINET IN RIGID CONDUIT. CONTINUE SINGLE RUN OF RIGID CONDUIT FROM TOP OF CABINET TO TOP OF UPRIGHT. RUN CABLE INTO BOTTOM OF "J" HOOK AND INTO DCS READER CABINET.
3. WHEN INSTALLING DCS EQUIPMENT TO EXISTING STRUCTURE, CARE SHALL BE TAKEN AS TO NOT DAMAGE ANY EXISTING EQUIPMENT ATTACHED TO THE SIGN STRUCTURE. ANY DAMAGED EQUIPMENT SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
4. WHEN INSTALLING ABOVEGROUND CONDUIT ON EXISTING SIGN STRUCTURES, THE CONDUIT SHALL BE ATTACHED TO THE BACK TRUSS CHORD TO MINIMIZE VISUAL IMPACT.
5. STAINLESS STEEL BANDS SHALL BE SIZED TO SUPPORT 3 TIMES THE WEIGHT OF THE CABINETS AND ITS CONTENTS.
6. SHOP DRAWINGS FOR THE DCS MOUNT WILL BE REQUIRED FOR ENGINEER'S REVIEW AND APPROVAL PRIOR TO FABRICATION. THE MOUNTING HARDWARE OF THE DSC SHALL BE SIZED TO SUPPORT 3 TIMES THE WEIGHT OF THE DCS, AND TO RESIST 3 TIMES THE WIND LOAD ON THE DCS DUE TO DESIGN WIND SPEED OF 130 MPH.
7. ANTENNA COLOR SHALL BE SUBMITTED TO CFX FOR APPROVAL.
8. CONDUIT SHALL ENTER THE POLE MOUNTED CABINET FROM THE BOTTOM.
9. TYPE 170 CABINETS SHALL BE PLACED AS SHOWN 3' FROM BOTTOM OF CABINET TO GRADE. IF IMPRACTICAL DUE TO SITE GEOMETRICS, AN ALTERNATE LOCATION ADJACENT TO THE STRUCTURE SHALL BE DESIGNED FOR A CABINET PLACEMENT ON A TYPE II POLE WITH THE BOTTOM OF THE CABINET 3' FROM GRADE.
10. SLIDE OUT TRAY SHALL BE ORIENTED SUCH THAT THE TECHNICIAN SHALL NEVER HAVE THEIR BACK TO THE DIRECTION OF TRAVEL.
11. CABINET SHALL NEVER BE MOUNTED ON THE APPROACHING SIDE OF TRAFFIC.
12. IT IS THE INTENT OF THE ENGINEER TO PROVIDE A SAFE WORKING SPACE FOR THE FIELD TECHNICIANS.



SIGN STRUCTURE MOUNTED DCS

N.T.S.

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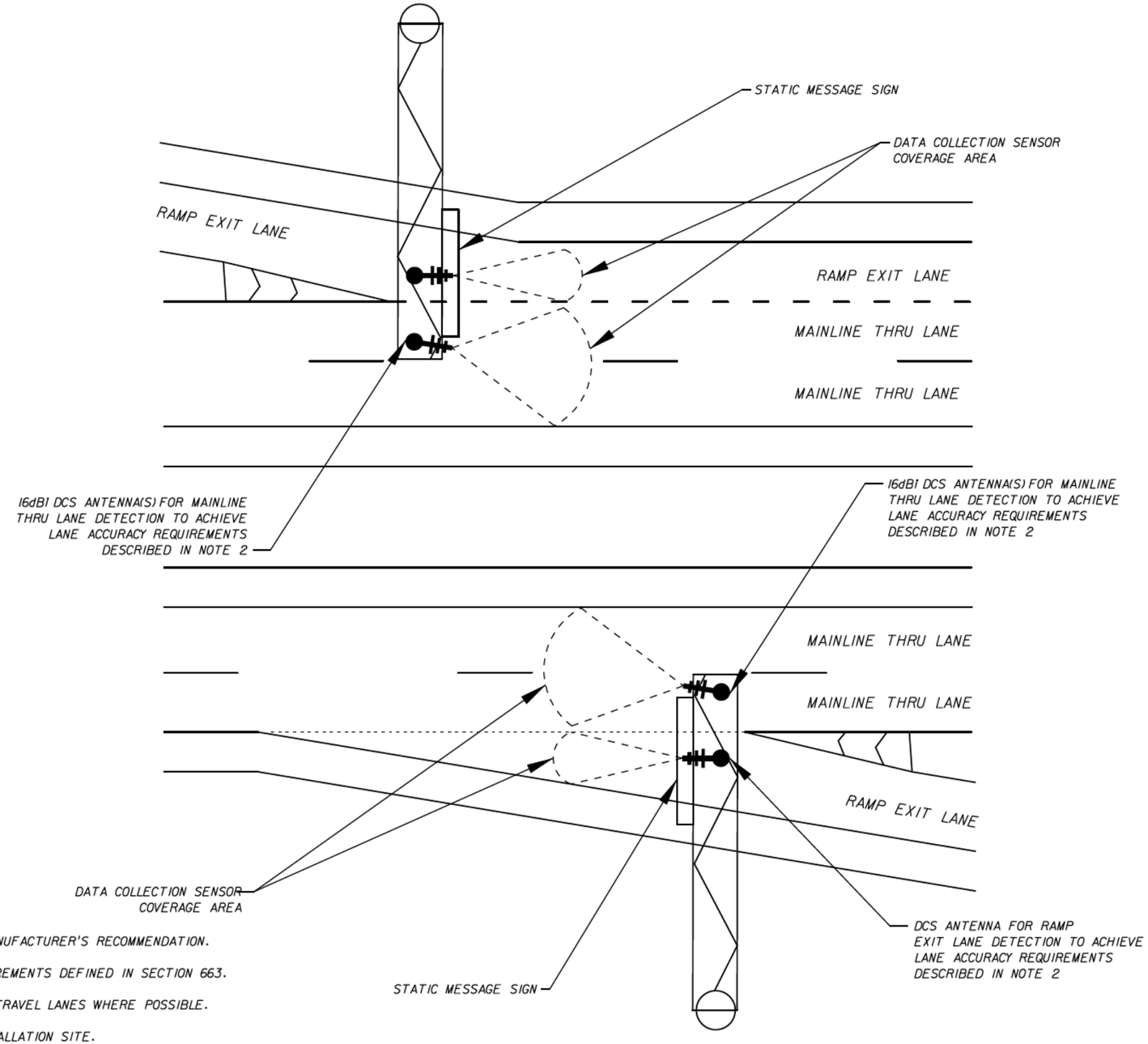
PROPOSED DCS SIGN STRUCTURE MOUNTING

SHEET NO. F0-64

USER: lyfe6246 2/20/2015 2:57:33 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\ITS_K01_V04.DGN

DCS COVERAGE AREA
N.T.S.



NOTES:

1. CONTRACTOR SHALL INSTALL DCS ANTENNAS PER MANUFACTURER'S RECOMMENDATION.
2. CONTRACTOR SHALL ACHIEVE LANE ACCURACY REQUIREMENTS DEFINED IN SECTION 663.
3. CONTRACTOR SHALL INSTALL ANTENNAS OVER THE TRAVEL LANES WHERE POSSIBLE.
4. NUMBER OF EXIT AND THRU LANES VARY PER INSTALLATION SITE.

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PROPOSED DCS COVERAGE AREA DETAIL

SHEET NO. F0-65

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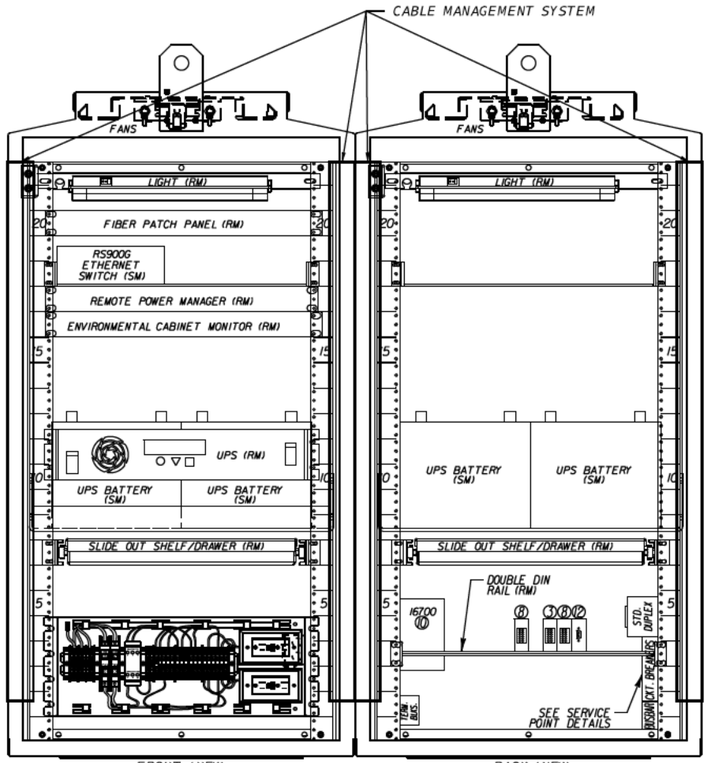
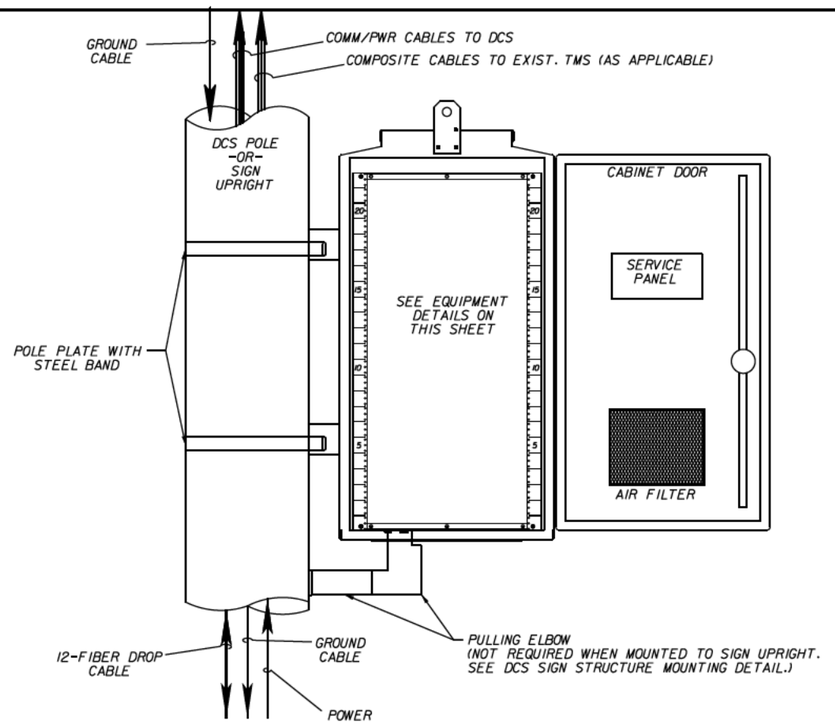


TYPE 336S CABINET

= DENOTES PANDUIT CABLE MANAGEMENT SYSTEM

EQUIPMENT DETAILS

NOT TO SCALE



TYPE I70 MODEL 336S DCS POLE MOUNTED CABINET DETAIL

NOT TO SCALE

NOTES:

1. THE CABINET SHALL PROVIDE FOR RACK MOUNTING AND SHELVING OF ALL EQUIPMENT.
2. CABINETS SHALL BE TYPE I70 MODEL 336S AND FABRICATED IN ACCORDANCE TO SECTION 676 OF THE FDOT MINIMUM SPECIFICATIONS FOR TRAFFIC CONTROL SIGNALS AND DEVICES.
3. (SM) = SHELF MOUNT, (RM) = RACK MOUNT
4. BUS RATING SHALL BE A MINIMUM OF THE FULL ELECTRICAL LOAD WHEN ALL CABINET AND EXTERNAL POLE MOUNTED DEVICES ARE ACTIVE.
5. CABINET TVSS MODELS SHALL BE AS FOLLOWS:
   - TVSS (1) - NOT USED
   - TVSS (2) - NOT USED
   - TVSS (3) - ADVANCED PROTECTION TECHNOLOGIES (APT) - APT RS232/DI
   - TVSS (4) - ADVANCED PROTECTION TECHNOLOGIES (APT) - S50AI20VIPN W/SKITI
   - TVSS (5) - NOT USED
   - TVSS (6) - NOT USED
   - TVSS (7) - NOT USED
   - TVSS (8) - ADVANCED PROTECTION TECHNOLOGIES (APT) - APT SCAT5
   - TVSS (9) - NOT USED
   - TVSS (10) - ADVANCED PROTECTION TECHNOLOGIES (APT) - S50AI20VIPN W/SKITI
   - TVSS (11) - ADVANCED PROTECTION TECHNOLOGIES (APT) - APT TE0IXCSI04XA
6. OTHER CABINET EQUIPMENT:
   - (12) - MAINTENANCE PORT (RS232)
   - (13) - NOT USED
7. PULLING ELBOW RADIUS SHALL BE GREATER THAN FIBER OPTIC CABLE MINIMUM BENDING RADIUS.
8. I9" DOUBLE DIN RAIL SHALL BE GROUNDED PER MANUFACTURER'S RECOMMENDATIONS.
9. REMOTE POWER MANAGER (RPM) SHALL PROVIDE EIGHT (8) INDEPENDENTLY REMOTE CONTROLLED OUTLETS AND SHALL BE FULLY COMPATABLE AND ITEROPERABLE WITH THE UPS UNIT THE POWER MANAGER IS INTEGRATED TO.
10. CONTRACTOR SHALL SUBMIT A CABINET LAYOUT/WIRING DIAGRAM FOR AUTHORITY APPROVAL.
11. FRONT FACE OF EQUIPMENT SHALL BE INSTALLED WITHIN THE CABINET FACING THE DIRECTIONAL OF TRAVEL.
12. THE DIN RAIL MOUNTED RS-232 CONNECTOR SHALL BE CLEARLY LABELED AS "DCS READER MAINTENANCE PORT - RS-232". SUGGESTED VENDOR/PART NUMBER FOR THE RS-232 CONNECTOR: B&B ELECTRONIC DB9 MTB OR AUTHORITY APPROVED EQUAL.
13. FOR DCS CO-LOCATED WITH CCTV OR TMS DEVICE, SEE CCTV CABINET DETAIL AND TMS CABINET DETAIL.

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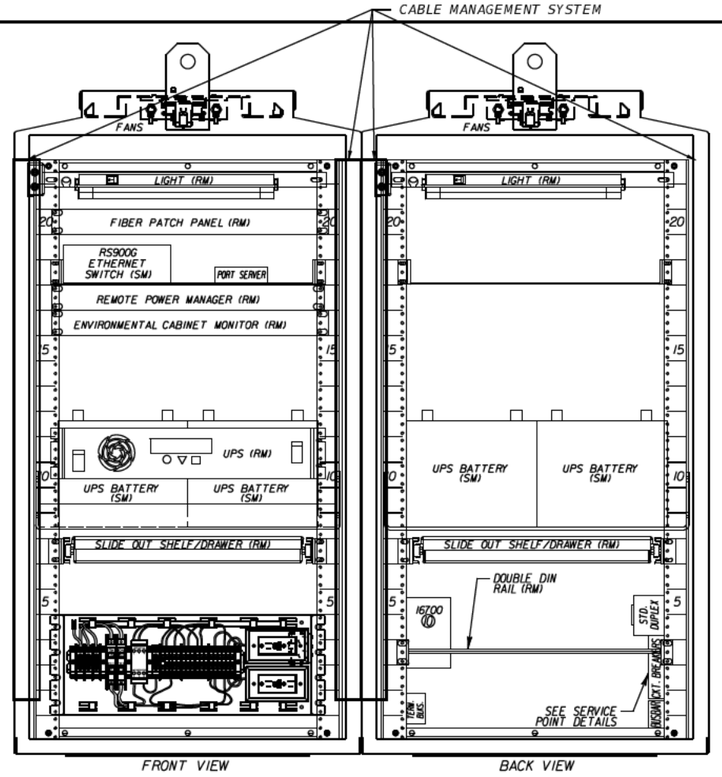
DCS CABINET DETAIL

SHEET NO. F0-66

USER: lyfe6246 2/20/2015 2:57:35 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\SGDTIT_DCS CABINET.dgn

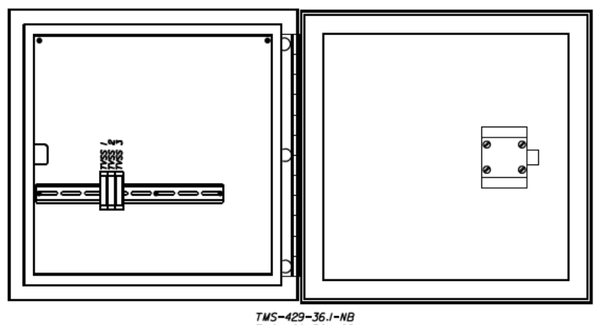


= DENOTES PANDUIT CABLE MANAGEMENT SYSTEM

TYPE 336S CABINET

EQUIPMENT DETAILS

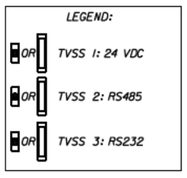
NOT TO SCALE

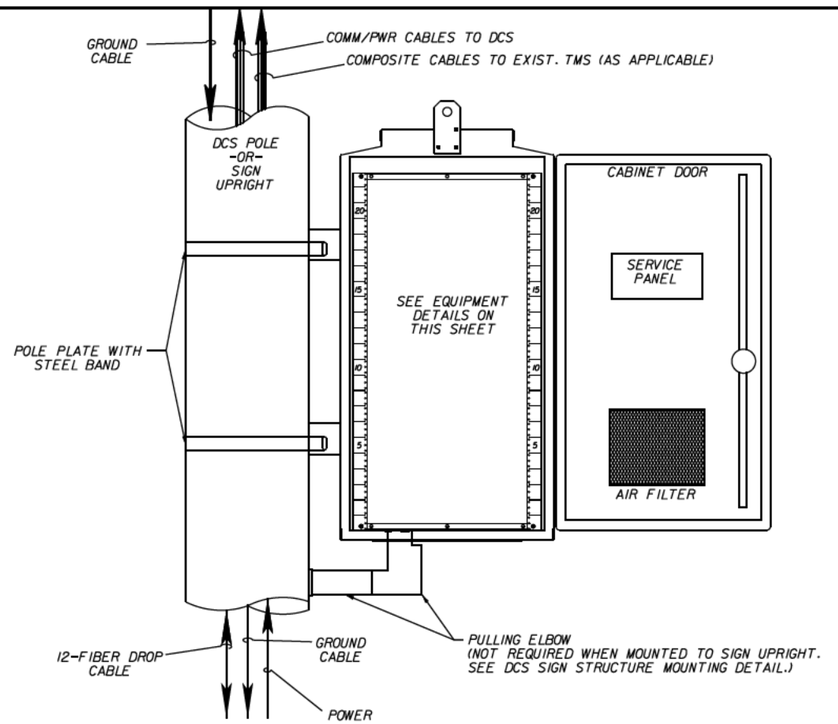


TMS-429-36.1-NB
TMS-429-36.1-SB
TMS-429-37.6-NB

1- TMS

NEMA ENCLOSURE





TYPE 170 MODEL 336S DCS POLE MOUNTED CABINET DETAIL

NOT TO SCALE

NOTES:

1. THE CABINET SHALL PROVIDE FOR RACK MOUNTING AND SHELVING OF ALL EQUIPMENT.
2. CABINETS SHALL BE TYPE 170 MODEL 336S AND FABRICATED IN ACCORDANCE TO SECTION 676 OF THE FDOT MINIMUM SPECIFICATIONS FOR TRAFFIC CONTROL SIGNALS AND DEVICES.
3. (SM) = SHELF MOUNT, (RM) = RACK MOUNT
4. BUS RATING SHALL BE A MINIMUM OF THE FULL ELECTRICAL LOAD WHEN ALL CABINET AND EXTERNAL POLE MOUNTED DEVICES ARE ACTIVE.
5. CABINET TVSS MODELS SHALL BE AS FOLLOWS:
   - TVSS (1) - NOT USED
   - TVSS (2) - NOT USED
   - TVSS (3) - NOT USED
   - TVSS (4) - ADVANCED PROTECTION TECHNOLOGIES (APT) - S50AI20VIPN W/SKITI
   - TVSS (5) - NOT USED
   - TVSS (6) - NOT USED
   - TVSS (7) - NOT USED
   - TVSS (8) - NOT USED
   - TVSS (9) - NOT USED
   - TVSS (10) - ADVANCED PROTECTION TECHNOLOGIES (APT) - S50AI20VIPN W/SKITI
   - TVSS (11) - ADVANCED PROTECTION TECHNOLOGIES (APT) - APT TE01XCSI04XA
6. OTHER CABINET EQUIPMENT:
   - (12) - NOT USED
   - (13) - NOT USED
7. PULLING ELBOW RADIUS SHALL BE GREATER THAN FIBER OPTIC CABLE MINIMUM BENDING RADIUS.
8. 19" DOUBLE DIN RAIL SHALL BE GROUNDED PER MANUFACTURER'S RECOMMENDATIONS.
9. REMOTE POWER MANAGER (RPM) SHALL PROVIDE EIGHT (8) INDEPENDENTLY REMOTE CONTROLLED OUTLETS AND SHALL BE FULLY COMPATABLE AND ITEROPERABLE WITH THE UPS UNIT THE POWER MANAGER IS INTEGRATED TO.
10. CONTRACTOR SHALL SUBMIT A CABINET LAYOUT/WIRING DIAGRAM FOR AUTHORITY APPROVAL.
11. FRONT FACE OF EQUIPMENT SHALL BE INSTALLED WITHIN THE CABINET FACING THE DIRECTIONAL OF TRAVEL.
12. THE DIN RAIL MOUNTED RS-232 CONNECTOR SHALL BE CLEARLY LABELED AS "DCS READER MAINTENANCE PORT - RS-232". SUGGESTED VENDOR/PART NUMBER FOR THE RS-232 CONNECTOR: B&B ELECTRONIC DB9 MTB OR AUTHORITY APPROVED EQUAL.

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ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

TMS CABINET DETAIL

SHEET NO.
F0-67

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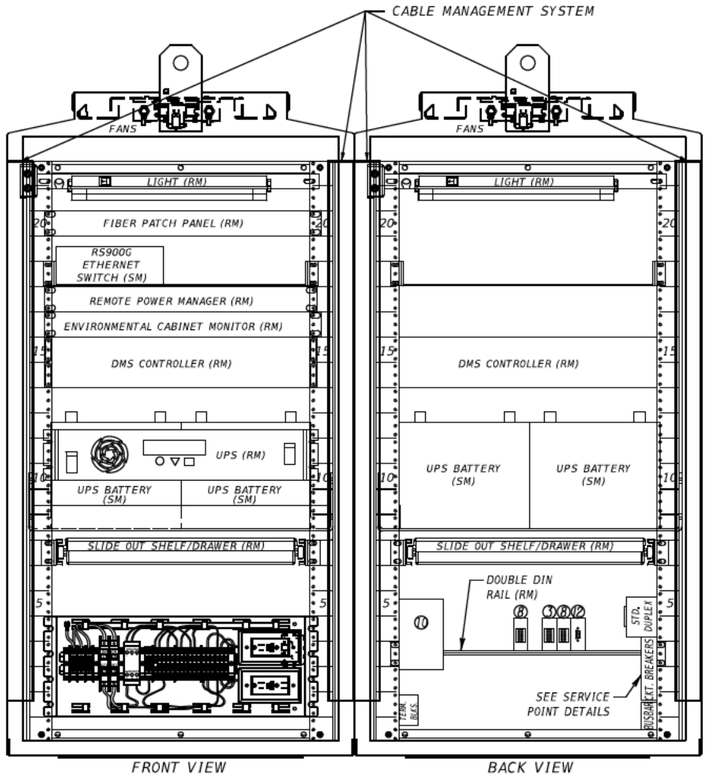


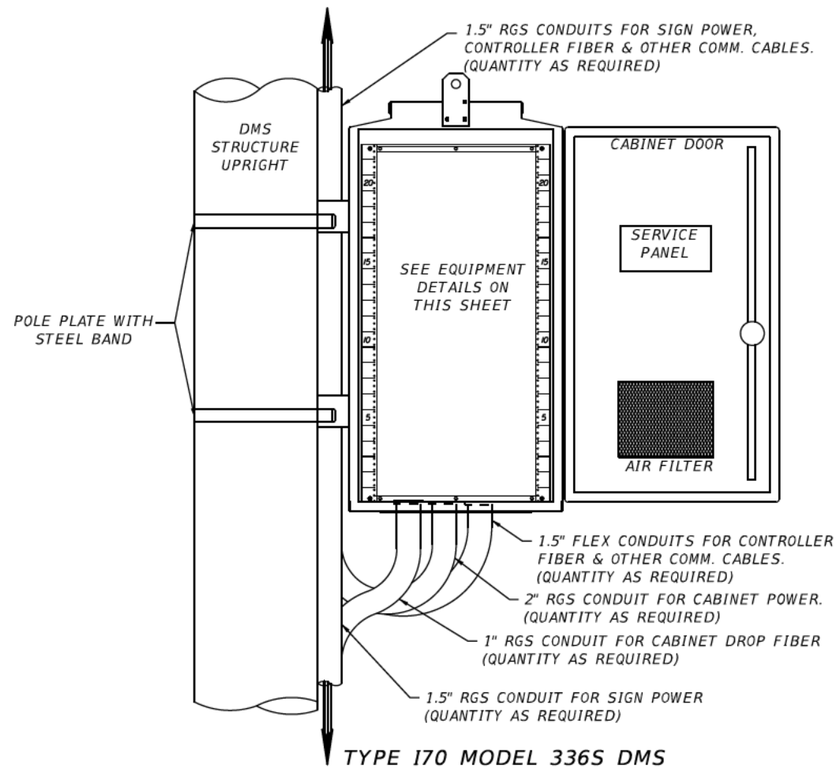
= DENOTES PANDUIT CABLE MANAGEMENT SYSTEM

DMS 429-36.INB
DMS 429-36.ISB

TYPE 336S CABINET

EQUIPMENT DETAILS

NOT TO SCALE



TYPE I70 MODEL 336S DMS POLE MOUNTED CABINET DETAIL

NOT TO SCALE

NOTES:

1. THE CABINET SHALL PROVIDE FOR RACK MOUNTING AND SHELVING OF ALL EQUIPMENT.
2. CABINETS SHALL BE TYPE 170 MODEL 336S AND FABRICATED IN ACCORDANCE TO SECTION 676 OF THE FDOT MINIMUM SPECIFICATIONS FOR TRAFFIC CONTROL SIGNALS AND DEVICES.
3. (SM) = SHELF MOUNT, (RM) = RACK MOUNT
4. BUS RATING SHALL BE A MINIMUM OF THE FULL ELECTRICAL LOAD WHEN ALL CABINET AND EXTERNAL POLE MOUNTED DEVICES ARE ACTIVE.
5. CABINET SPD MODELS SHALL BE AS FOLLOWS:
   SPD 1 - NOT USED
   SPD 2 - NOT USED
   SPD 3 - ADVANCED PROTECTION TECHNOLOGIES (APT) - APT RS232/D1
   SPD 4 - ADVANCED PROTECTION TECHNOLOGIES (APT) - S50A120V1PND W/SKIT1
   SPD 5 - NOT USED
   SPD 6 - NOT USED
   SPD 7 - NOT USED
   SPD 8 - ADVANCED PROTECTION TECHNOLOGIES (APT) - APT SCAT5
   SPD 9 - NOT USED
   SPD 10- ADVANCED PROTECTION TECHNOLOGIES (APT) - S50A120V1PND W/SKIT1
   SPD 11- ADVANCED PROTECTION TECHNOLOGIES (APT) - APT TE01XCS104XA
6. OTHER CABINET EQUIPMENT:
   12- MAINTENANCE PORT (RS232)
   13- NOT USED
7. FLEX CONDUIT RADIUS SHALL BE GREATER THAN FIBER OPTIC CABLE MINIMUM BENDING RADIUS.
8. 19" DOUBLE DIN RAIL SHALL BE GROUNDED PER MANUFACTURER'S RECOMMENDATIONS.
9. REMOTE POWER MANAGER (RPM) SHALL PROVIDE EIGHT (8) INDEPENDENTLY REMOTE CONTROLLED OUTLETS AND SHALL BE FULLY COMPARABLE AND INTEROPERABLE WITH THE UPS UNIT THE POWER MANAGER IS INTEGRATED TO.
10. CONTRACTOR SHALL SUBMIT A CABINET LAYOUT/WIRING DIAGRAM FOR AUTHORITY APPROVAL.
11. FRONT FACE OF EQUIPMENT SHALL BE INSTALLED WITHIN THE CABINET FACING THE DIRECTIONAL OF TRAVEL.
12. THE DIN RAIL MOUNTED RS-232 CONNECTOR SHALL BE CLEARLY LABELED AS "DCS READER MAINTENANCE PORT - RS-232". SUGGESTED VENDOR/PART NUMBER FOR THE RS-232 CONNECTOR: B&B ELECTRONIC DB9 MTB OR AUTHORITY APPROVED EQUAL.
13. TYPE 170 CABINETS SHALL BE PLACED AS SHOWN 3' FROM BOTTOM OF CABINET TO GRADE. IF IMPRACTICAL DUE TO SITE GEOMETRICS, AN ALTERNATE LOCATION ADJACENT TO THE STRUCTURE SHALL BE DESIGNED FOR A CABINET PLACEMENT ON A TYPE II POLE WITH THE BOTTOM OF THE CABINET 3' FROM GRADE.
14. SLIDE OUT TRAY SHALL BE ORIENTED SUCH THAT THE TECHNICIAN SHALL NEVER HAVE THEIR BACK TO THE DIRECTION OF TRAVEL.
15. CABINET SHALL NEVER BE MOUNTED ON THE APPROACHING SIDE OF TRAFFIC.
16. IT IS THE INTENT OF THE ENGINEER TO PROVIDE A SAFE WORKING SPACE FOR THE FIELD TECHNICIANS.
17. PANDUIT DIMENSIONS ARE AS FOLOWS:
    A. LEFT SIDE OF CABINET; 2" WIDE BY 1.5" DEEP
    B. RIDE SIDE OF CABINET - (LATCH SIDE); 2" WIDE BY 1" DEEP

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SR 429	429-203

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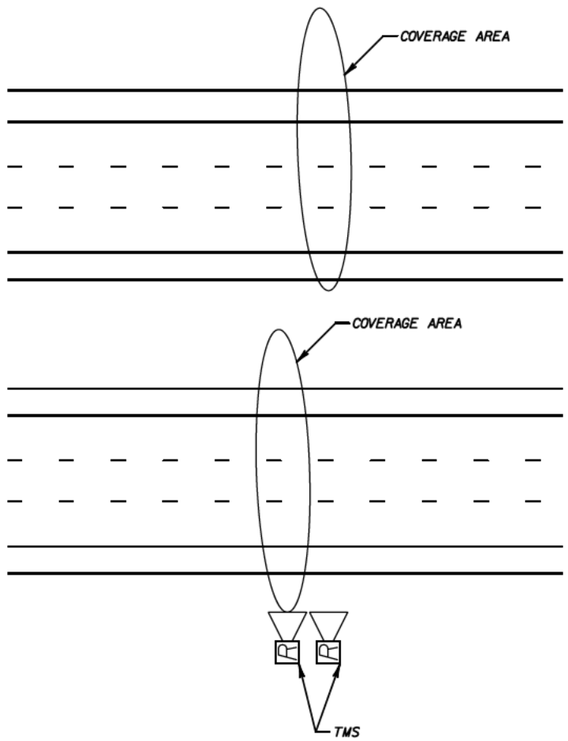
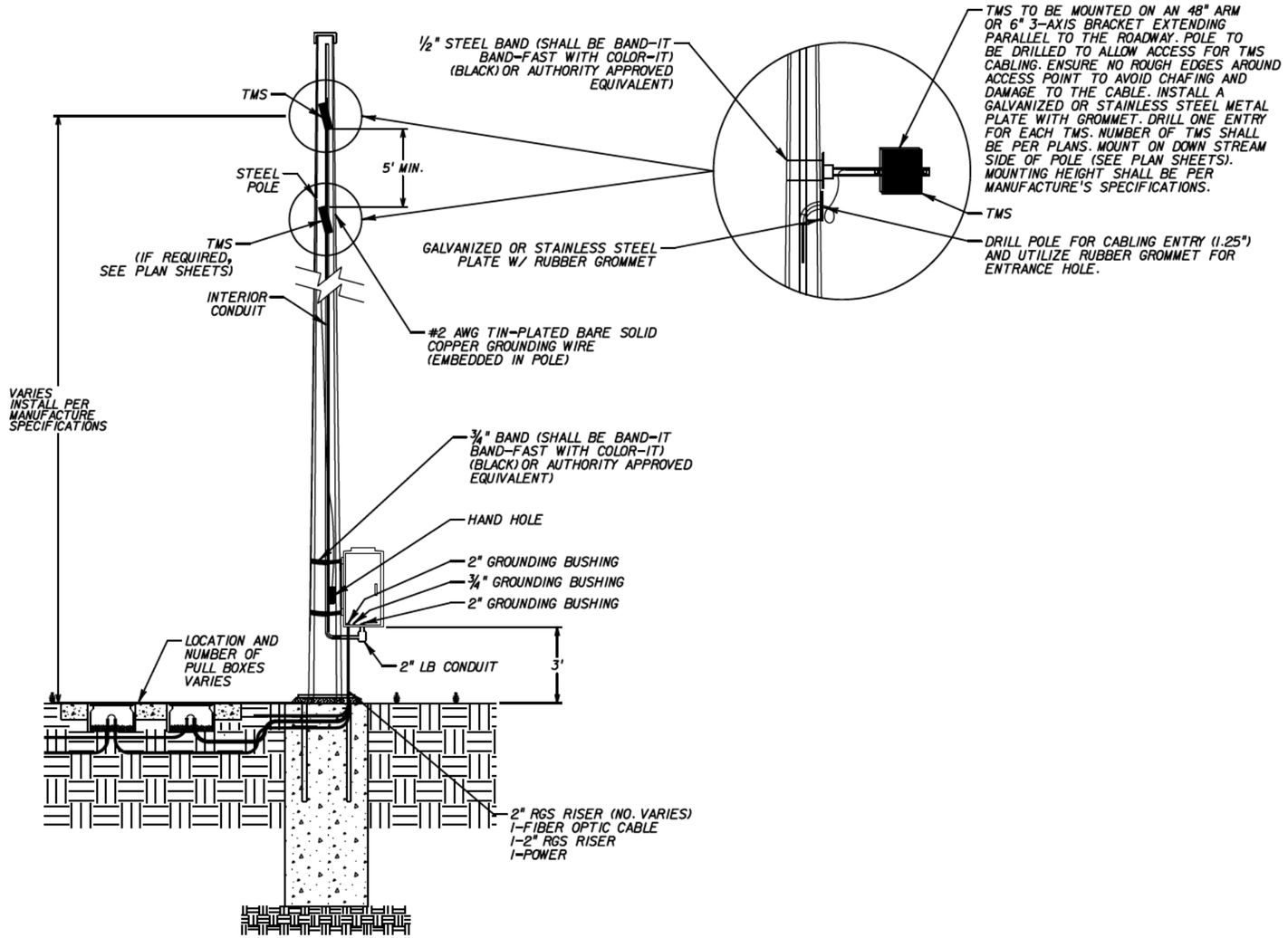
DMS CABINET DETAIL

SHEET NO. F0-68

TYPICAL 4 & 6 LANE DIVIDED HIGHWAY





NOTES:

1. POWER CABLE SHALL BE 120 VAC, SINGLE PHASE SERVICE.
2. POLE MOUNTED CABINET TO BE ORIENTED PER THE PLAN SHEETS.
3. SEE GROUNDING DETAILS FOR GROUNDING REQUIREMENTS.

TYPICAL TMS INSTALLATION DETAILS (12-SIDED STEEL POLE)

N.T.S.

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TMS INSTALLATION (12-SIDED STEEL POLE)

SHEET NO. F0-69

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ITS DEVICE CCTV/TMS	ROADWAY	PLAN SHEET	STATION NUMBER	ROADWAY SIDE	OFFSET	POLE LENGTH (FEET)	MANUFACTURER RECOMMENDED TMS MOUNTING HEIGHT(S)
CCTV 36.0	SR 429	F0-11	210+00	NB	7' FROM FRONT FACE OF GUARDRAIL TO POLE CENTER	50'	
TMS 36.1	SR 429	F0-12	316+08	NB	17' FROM EOTL TO POLE	30'	20'
CCTV/TMS 36.1	SR 429	F0-12	117+00	SB	17' FROM EOTL TO POLE	50'	20'
TMS 37.6	SR 429	F0-23	2295+88	NB	12' FROM EOTL TO POLE	40'	18', 38'

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SR 429	429-203

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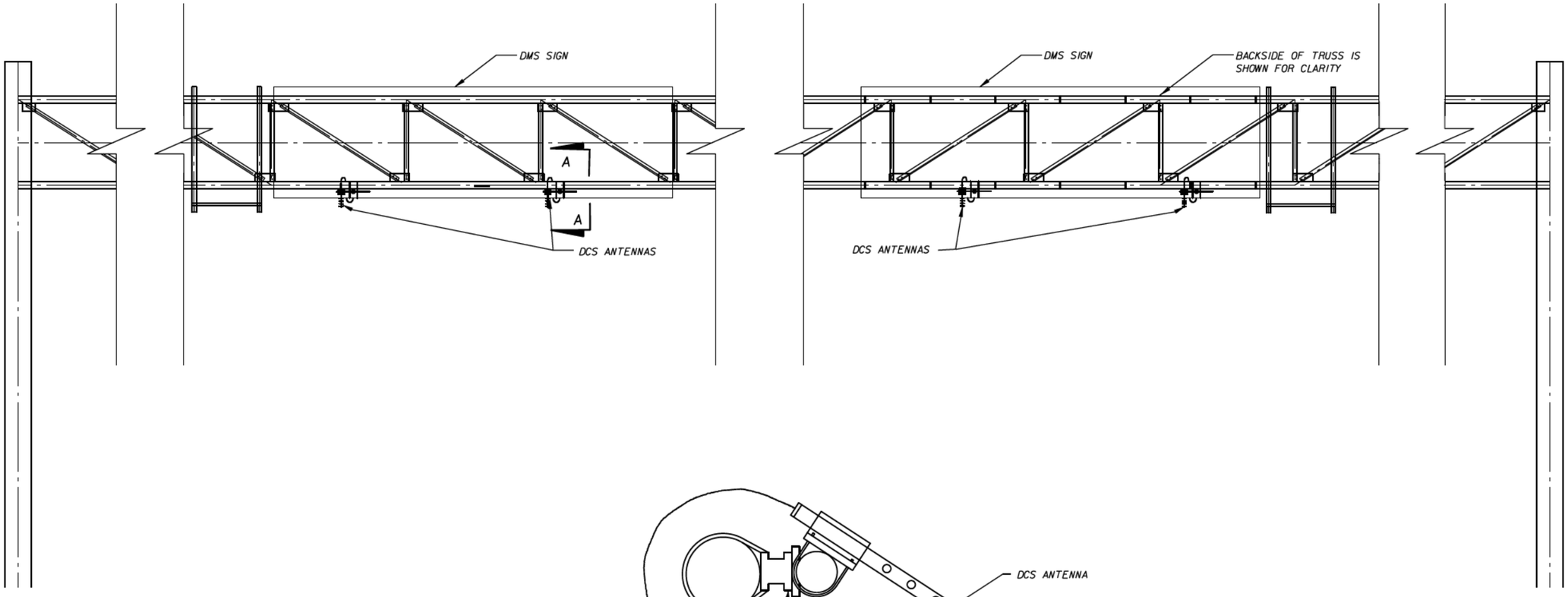
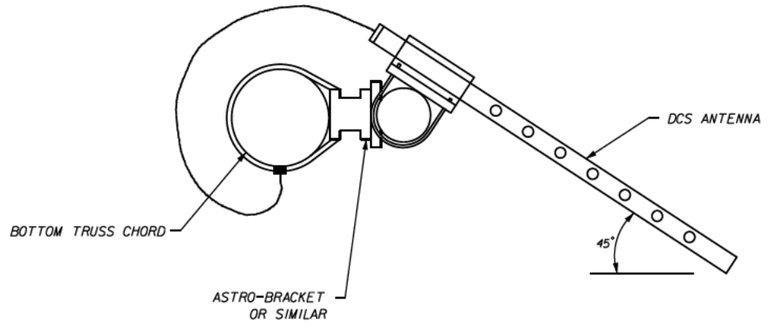
POLE DATA SHEET

SHEET NO. F0-70

USER: pate6444 6/8/2015 2:59:54 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\REV2\pldtit01_REV2_AFC.dgn

FULL SPAN BOX TRUSS DMS SIGN STRUCTURE DETAIL





SECTION A-A

NOTE: THE DCS SHALL BE MOUNTED OVER TRAVEL LANES. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER TO POSITION THE DCS TO MEET THE PERFORMANCE REQUIREMENTS OF SPECIFICATION 663.

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DCS ANTENNA ON DMS TRUSS DETAIL SHEET

SHEET NO. F0-71

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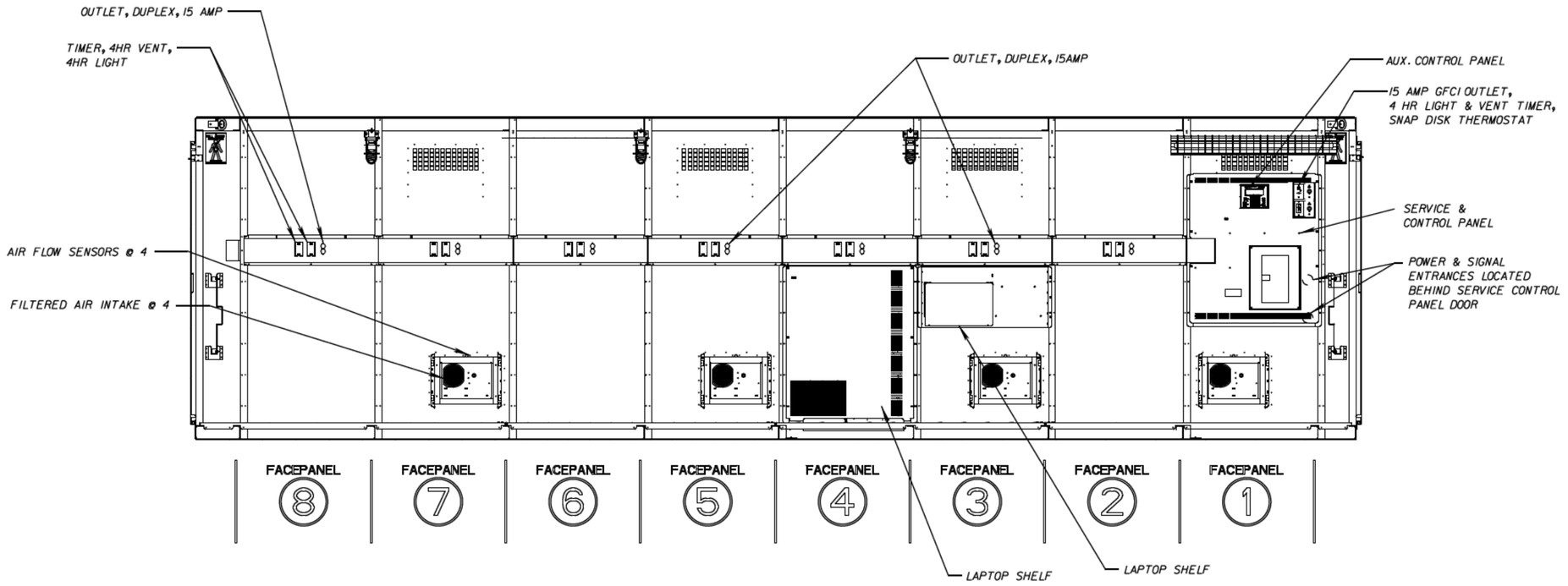

FRONT VIEW

NOTES

1. BACKPLATE TO BE INSTALLED BY MANUFACTURER.
2. CONTRACTOR TO REMOVE DCS COMPONENT BACKPLATE FROM DMS PRIOR TO DRILLING.
3. ETHERNET SWITCH SHALL BE PANEL MOUNT (IF AVAILABLE).
4. EQUIPMENT ON BACKPLATE TO BE INSTALLED BY CONTRACTOR. ALL EQUIPMENT TO BE MOUNTED ON THE BACKPLATE USING STAINLESS STEEL HARDWARE.
5. CONTRACTOR SHALL SUBMIT LAYOUT AND WIRING DIAGRAMS OF ALL CONTRACTOR-INSTALLED EQUIPMENT IN THE DMS ENCLOSURE FOR CFX APPROVAL.

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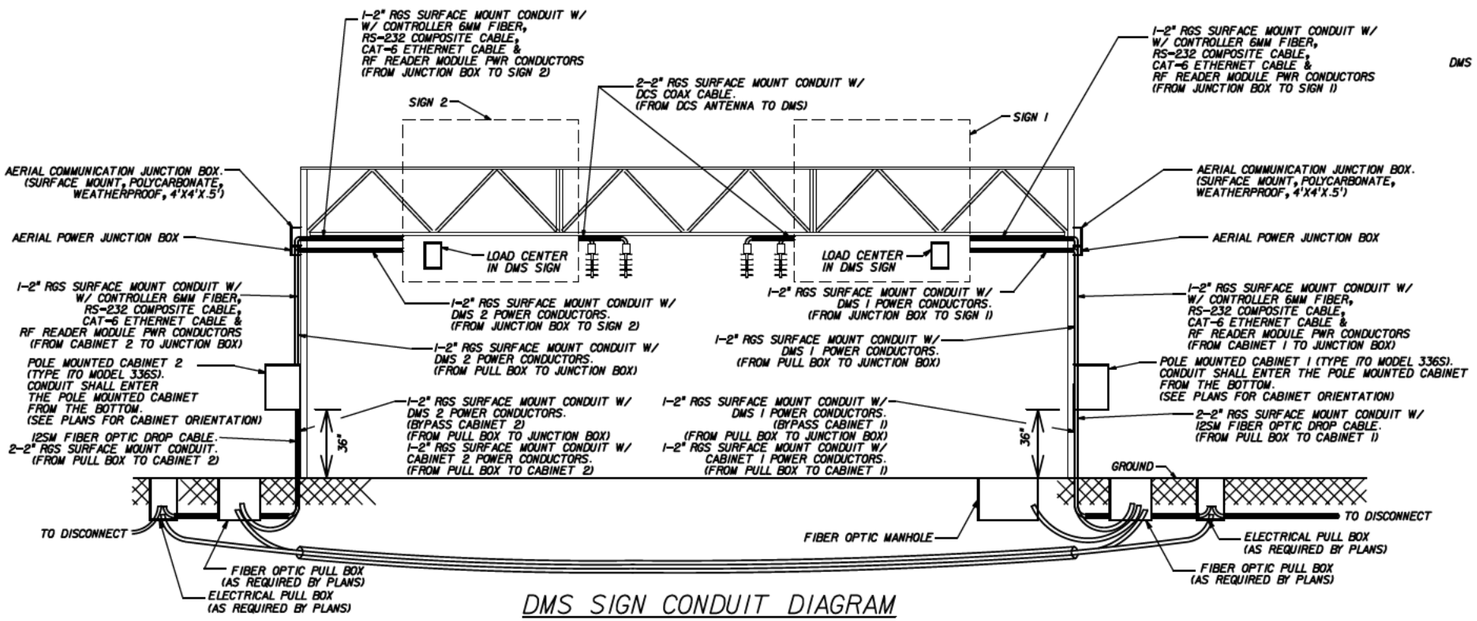
3-LINE DMS BACKWALL DETAIL SHEET

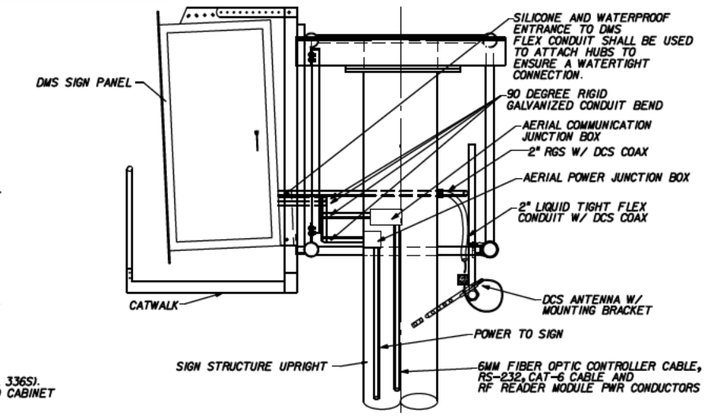
SHEET NO.
F0-72

USER: lyfe6246 2/20/2015 2:57:39 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\ITS_M04_V04.dgn

2 DMS SIGNS W/ 2 DCS WIRING DIAGRAM

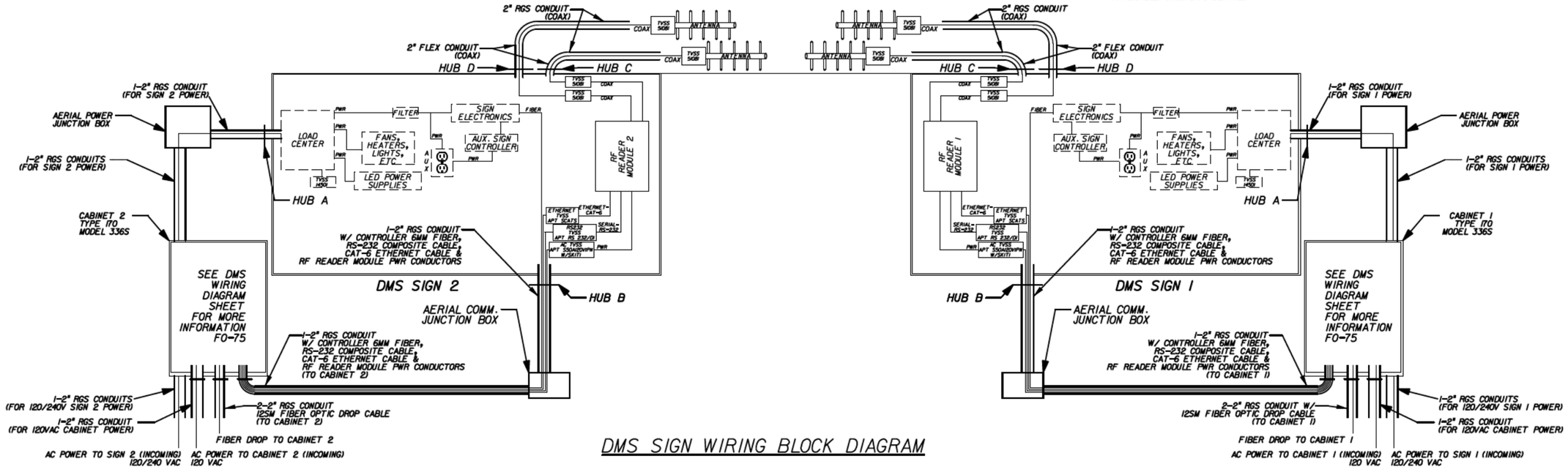


DMS SIGN CONDUIT DIAGRAM



SIGN STRUCTURE MOUNTED DMS (PROFILE)

NOTES:
1. THE TVSS MODEL NUMBERS THAT ARE SHOWN ARE APT PRODUCTS.
2. ALL TVSS ARE TO BE MOUNTED ON A DIN RAIL. DIN RAIL SHALL BE GROUNDED PER TVSS MANUFACTURER'S RECOMMENDATIONS.
3. PLAN REQUIREMENTS WILL VARY PER INSTALLATION. THE CONTRACTOR IS TO UTILIZE THIS DETAIL FOR CONSTRUCTION REQUIREMENTS BUT MUST BID EACH INSTALLATION AS REQUIRED BY THE PLAN SHEETS. NO ADDITIONAL COMPENSATION WILL BE GIVEN.
4. THE CONTRACTOR SHALL SUBMIT A DETAILED WIRE-BY-WIRE DIAGRAM FOR REVIEW AND APPROVAL BY THE AUTHORITY PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL FURNISH RF READER PER SPECIFICATION 663.
6. CONTRACTOR TO ATTACH THE RS-232 MAINTENANCE CABLE TO THE DB-9 RS-232 MAINTENANCE PORT ON THE RF READER MODULE.
7. CONDUIT SHALL BE SECURED TO SIGN STRUCTURE WITH "UNISTRUT" STAINLESS STEEL CONDUIT HANGARS AT 5' CENTERS (CATALOG NO. 2SB (1"), 4SB (2"), 5SB (2") OR AUTHORITY APPROVED EQUAL). USE SILICONE LOCK TIGHT AFTER DRILLING HOLE.
8. POLE MOUNTED CABINET GROUNDING SHALL BE PER DCS SIGN STRUCTURE MOUNTING DETAIL AND OTHER APPLICABLE GROUNDING DETAILS.



DMS SIGN WIRING BLOCK DIAGRAM

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SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

DCS AND 3 LINE DMS DEVICE CO-LCATION DETAIL

SHEET NO. F0-73

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GROUNDING NOTES:

1. GROUND RODS SHALL BE 5/8" COPPER CLAD AND SHALL BE A MINIMUM OF 20' LONG.

2. ALL EXOTHERMIC WELDS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.

3. 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 SOLID CONDUCTOR WIRE.

4. FOR STRUCTURAL POLES, FLAT-MOUNT VERTICAL WELD EQUIVALENT TO CADWELD TYPE VB, VS, OR VV SHALL BE USED , UNLESS OTHERWISE APPROVED BY THE AUTHORITY. IN ADDITION TO THE PREVIOUS REQUIREMENT, FOR H-FRAME PIPE SUPPORTS THE CONTRACTOR SHALL SELECT A MOLD SIZED TO THE PIPE.

5. ALL GROUNDING CONNECTIONS MADE BETWEEN THE STRUCTURE, GROUND RODS, CABINETS, POWER DISCONNECTS, AND ANY OTHER ITEM SHALL BE MADE USING #2 AWG SOLID CONDUCTOR TINNED BARE COPPER WIRE. THE CONNECTING WIRE SHALL BE BURIED PER N.E.C. AND SHALL BE ATTACHED TO GROUND RODS USING EXOTHERMIC WELDS.

6. THE STRUCTURE AND POWER DISCONNECT SHALL BE CONNECTED TO THE GROUNDING ARRAY. BASE-MOUNTED CABINETS WHICH SUPPORT ITS DEVICES ON THE STRUCTURE SHALL ALSO BE GROUNDED TO THE COMMON GROUNDING ARRAY IF THE CABINETS ARE WITHIN 60 FEET OF THE STRUCTURE.

7. THE DMS ENCLOSURE SHALL BE GROUNDED TO THE SIGN STRUCTURE WITH A GROUND STRAP PER MANUFACTURER'S RECOMMENDATIONS.

8. GROUND WIRE LEADS SHALL BE EXOTHERMICALLY WELDED TO THE STRUCTURAL POLES. WELD SHALL BE LOCATED ON THE SIDE OF THE STRUCTURAL POLE AT LEAST 1 FOOT ABOVE THE BOLT FLANGE. GRIND THROUGH GALVANIZED COATING TO EXPOSE BARE STEEL. ONCE BARE STEEL IS EXPOSED, WORK CALLED FOR IN THE REMAINDER OF THIS NOTE SHALL BE COMPLETED WITHOUT INTERRUPTION. HEAT BARE STEEL WITH TORCH FOR SEVERAL MINUTES AND MAKE WELD WHILE BARE STEEL IS WARM. AFTER WELD IS COMPLETE, COAT WELD AND ASSOCIATED STEEL WITH COLD GALVANIZING SPRAY WHILE WELD IS STILL WARM.

9. GROUND WIRE LEADS SHALL BE EXOTHERMICALLY WELDED TO THE H-FRAME OF THE ELECTRICAL SERVICE DISCONNECT. WELD SHALL BE LOCATED ON THE SIDE OF THE H-FRAME AT LEAST 1' ABOVE THE CONCRETE PAD. GRIND THROUGH GALVANIZED COATING TO EXPOSE BARE STEEL. HEAT BARE STEEL WITH TORCH FOR SEVERAL MINUTES AND MAKE WELD WHILE BARE STEEL IS WARM. AFTER WELD IS COMPLETE, COAT WELD AND ASSOCIATED STEEL WITH COLD GALVANIZING SPRAY WHILE WELD IS STILL WARM.

10. IF ELECTRICAL SERVICE DISCONNECT IS NOT MOUNTED TO A STEEL H-FRAME, GROUND WIRE LEADS SHALL BE BONDED WITH A BURNDY CLAMP TO THE ELECTRICAL SERVICE DISCONNECT. BOND SHALL BE LOCATED ON THE SIDE OF THE NEMA ENCLOSURE AND SHALL BE PROTECTED WITH NO-OX COMPOUND.

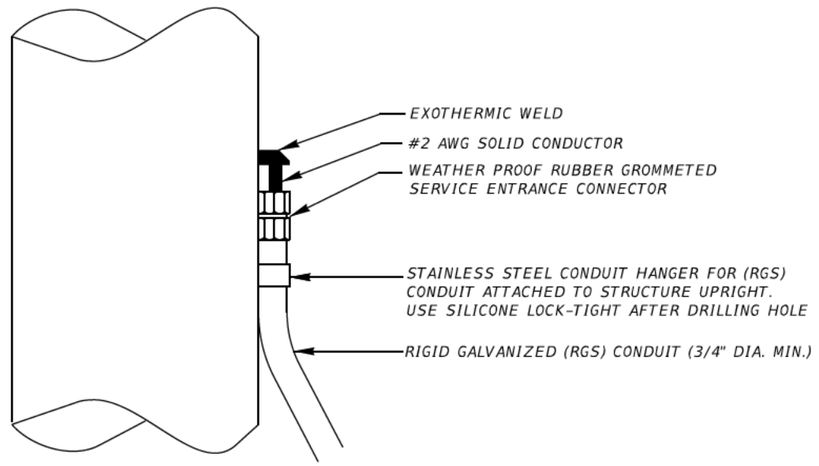
11. GROUND WIRE LEADS SHALL BE BONDED TO EQUIPMENT CABINETS WITH A BURNDY CLAMP. BOND SHALL BE LOCATED ON THE SIDE OF THE CABINET AND SHALL BE PROTECTED WITH NO-OX COMPOUND.

12. THE GROUNDING SYSTEM SHALL MEET THE REQUIREMENT OF 5 OHMS OR LESS AS MEASURED FROM THE SIGN STRUCTURE USING THE THREE-POINT GROUND MEASUREMENT TECHNIQUE. IF THE 5-OHM REQUIREMENT IS NOT MET, LONGER GROUND RODS MAY BE DRIVEN OR THE GROUNDING ARRAY MAY BE EXTENDED AT NO ADDITIONAL COST TO THE AUTHORITY UNTIL THE 5-OHM REQUIREMENT IS MET.

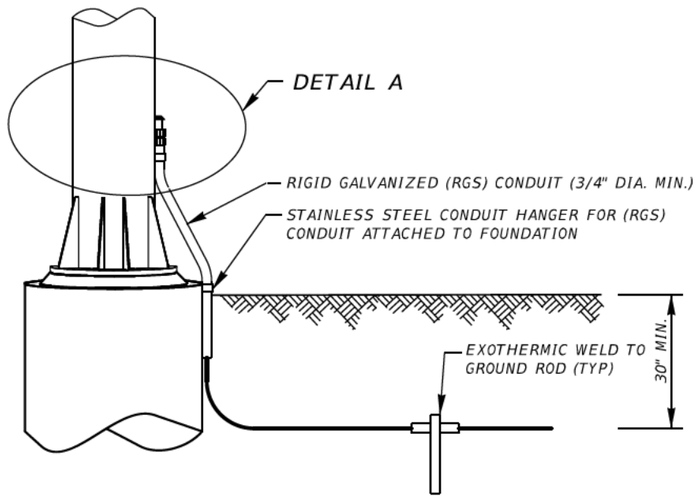
13. HALF-SPAN OR FULL-SPAN STRUCTURES SHALL BE EQUIPPED WITH COMPLETE GROUNDING ARRAYS ATTACHED TO BOTH UPRIGHTS.

14. IF EXISTING STRUCTURE IS PAINTED, CONTRACTOR SHALL PAINT CONDUIT AND WELD TO MATCH EXISTING COLOR. CAMERA POLES ARE PAINTED FLAT BLACK. SIGN STRUCTURES, IF PAINTED, SHALL BE PAINTED IN ACCORDANCE WITH CFX TECHNICAL SPECIFICATIONS SECTIONS 562 AND 975. THE COLOR OF THE SIGN STRUCTURE SHALL BE FEDERAL STANDARD 595B, COLOR NUMBER 26314 UNLESS OTHERWISE DIRECTED BY THE AUTHORITY.

15. GROUNDING CONDUCTOR SHALL BE BONDED AT TOP AND BOTTOM OF RIGID GALVANIZED CONDUIT PER N.E.S.C.



DETAIL A
NTS



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ROAD NO.	PROJECT NO.
SR 429	429-203

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ITS DEVICE GROUNDING

SHEET NO.
F0-74

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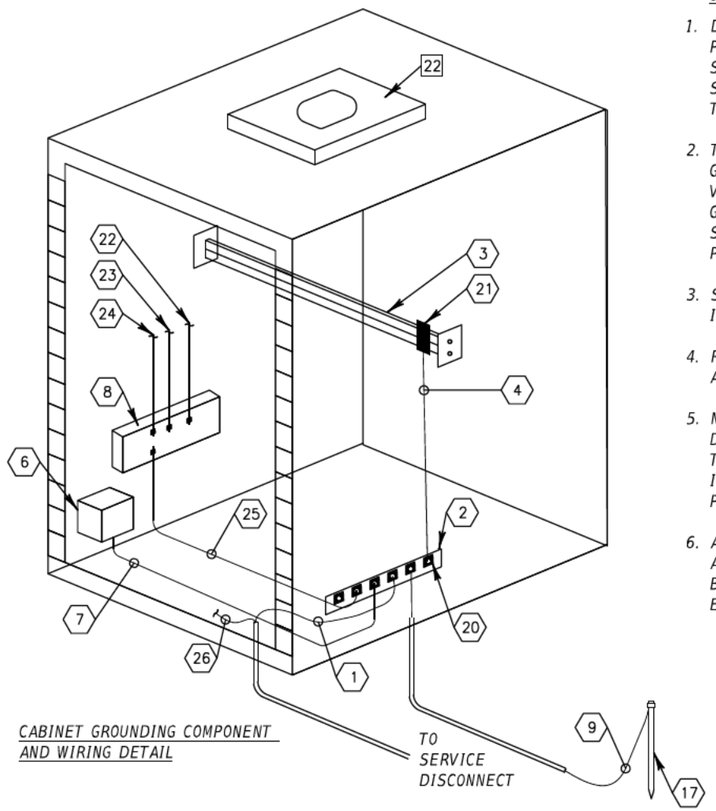


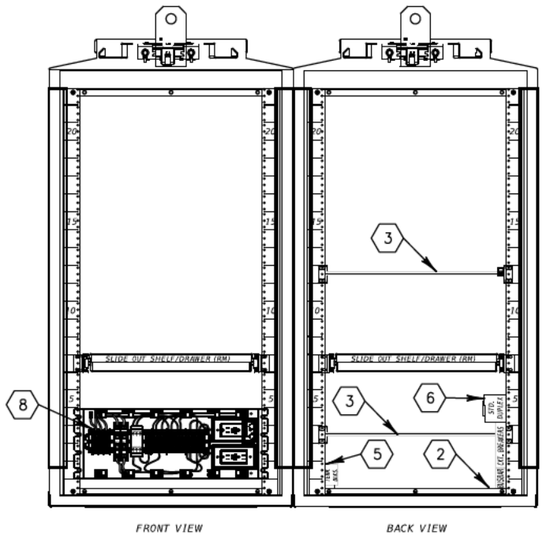
CABINET GROUNDING COMPONENT AND WIRING DETAIL

GENERAL NOTES

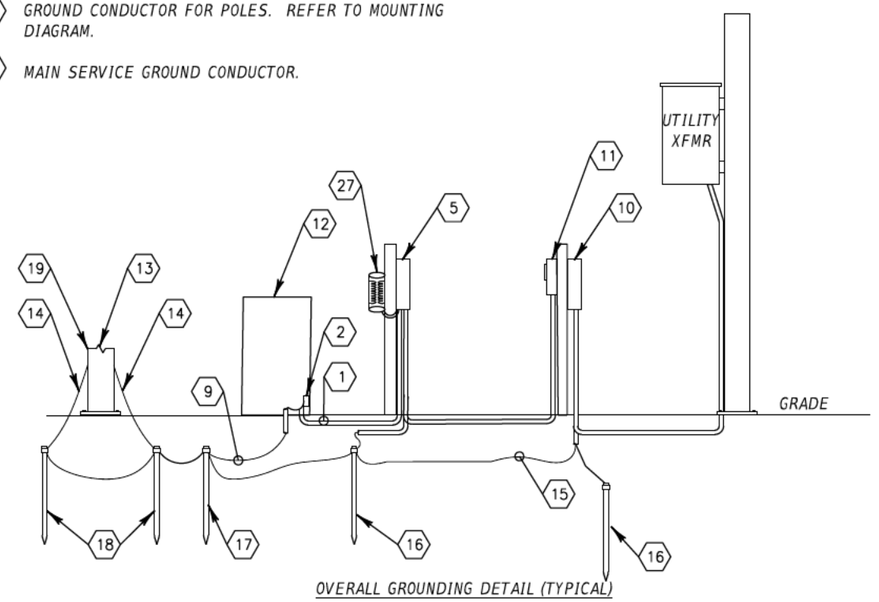
1. DESIGN INTENT OF THIS DRAWING IS TO PROVIDE AN OVERALL GROUNDING CONCEPT THAT SHOWS ALL GROUNDS FOR CABINETS, POLES, AND SERVICE ARE REQUIRED TO BE CONNECTED TOGETHER AS A COMMON GROUND.
2. THE CABINET IS TO HAVE A SINGLE POINT GROUND FOR ALL EQUIPMENT INTERCONNECTED VIA THE USE OF A MAIN GROUND BUS. THE GROUNDING COMPONENT AND WIRING DETAILS SHOWS THE INTERCONNECTION REQUIRED TO PERFORM A SINGLE POINT CONNECTION.
3. SYSTEM SHOWN IS TO CLARIFY AND MEET THE INTENT OF NEC ARTICLE 250.
4. REFER TO ADDITIONAL GROUNDING DETAILS J-1, AND J-3 THROUGH J-5.
5. NUMBER OF GROUND RODS WILL VARY DEPENDING ON SITE CONDITION. CONTRACTOR TO PROVIDE PROPER NUMBER OF GROUND RODS IN ORDER TO OBTAIN THE 5 OHM REQUIREMENT PER SPECIFICATION.
6. ALL EQUIPMENT AND STRUCTURES AT THE SITE ARE TO BE CONNECTED TO THE MAIN GROUND BUS IN THE CABINET PROVIDING A SINGLE EQUI-POTENTIAL GROUNDING SYSTEM.

KEYED NOTES

1. SERVICE GROUND #6 AWG CONDUCTOR FROM SERVICE MAIN DISCONNECT SWITCH.
2. MAIN GROUND BUS MOUNTED INSIDE OF CABINET.
3. CABINET DIN RAIL MOUNTED INSIDE WITH SURGE PROTECTION.
4. #10 STRANDED GROUND CONDUCTOR FROM DIN RAIL TO MAIN GROUND BUS.
5. DISCONNECT SWITCH OR ENCLOSED BREAKER FOR AC POWER TO CABINET.
6. SPD (SURGE SUPPRESSION DEVICE) FOR DIN RAIL.
7. SURGE SUPPRESSION GROUND WIRE.
8. GROUND TERMINAL BLOCK FOR ELECTRICAL OUTLETS, FANS, LIGHTS. COMMON GROUND TO BE CONNECTED TO MAIN GROUND BUS.
9. ADDITIONAL GROUND CONDUCTOR AND GROUND ROD MAY BE REQUIRED TO MEET THE SPECIFIED IMPEDANCE REQUIREMENTS.
10. MAIN SERVICE DISCONNECT SWITCH FOR AC POWER. THE SERVICE DISCONNECT IS REQUIRED TO HAVE A NEUTRAL TO GROUND BOND.
11. UTILITY METER. CONNECT GROUND TO COMMON SERVICE GROUND.
12. ITS CABINET 336/334
13. DMS STRUCTURE POLE, TMS, DCS AND/OR CCTV POLE.
14. GROUND CONDUCTOR FOR POLES. REFER TO MOUNTING DIAGRAM.
15. MAIN SERVICE GROUND CONDUCTOR.
16. SERVICE GROUND RODS.
17. ADDITIONAL GROUND RODS AT CABINET MAY BE REQUIRED AS PART OF A GROUNDING ARRAY PER FDOT SPECIFICATIONS. NUMBER OF GROUND RODS IS DICTATED BY 5 OHM REQUIREMENT IN SPECIFICATION.
18. ADDITIONAL GROUND RODS AT POLES MAY BE REQUIRED AS PART OF A GROUNDING ARRAY PER FDOT SPECIFICATIONS. NUMBER OF GROUND RODS IS DICTATED BY 5 OHM REQUIREMENT IN SPECIFICATION.
19. EXOTHERMIC WELD CONNECTION AT POLE TO GROUND CONDUCTOR.
20. GROUND CLAMP USED AT GROUND BUS.
21. GROUND CLAMP USED AT DIN RAIL.
22. FANS FOR CABINET CONNECTED TO MAIN GROUND BUS OR VIA GROUND TERMINAL BLOCK.
23. RECEPTACLE GROUND WIRE CONNECTION TO GROUND TERMINAL BLOCK.
24. LIGHTING FIXTURE GROUND WIRE CONNECTION TO GROUND TERMINAL BLOCK.
25. #6 GROUND CONDUCTOR FROM GROUND TERMINAL BLOCK TO MAIN GROUND BUS BAR.
26. TONE WIRE IS NOT TO BE CONNECTED TO ANY PART OF THE GROUNDING SYSTEM.
27. STEP UP/STEP DOWN TRANSFORMER ASSEMBLY



CABINET 336 EQUIPMENT LAYOUT



OVERALL GROUNDING DETAIL (TYPICAL)

REVISIONS					
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482 S. Keller Road, Orlando, FL 32810
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Andrew J. Lucyshyn, P.E. No. 54624

CENTRAL FLORIDA EXPRESSWAY AUTHORITY	
ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ITS DEVICE GROUNDING ARRAY (1 OF 4)

SHEET NO. F0-75

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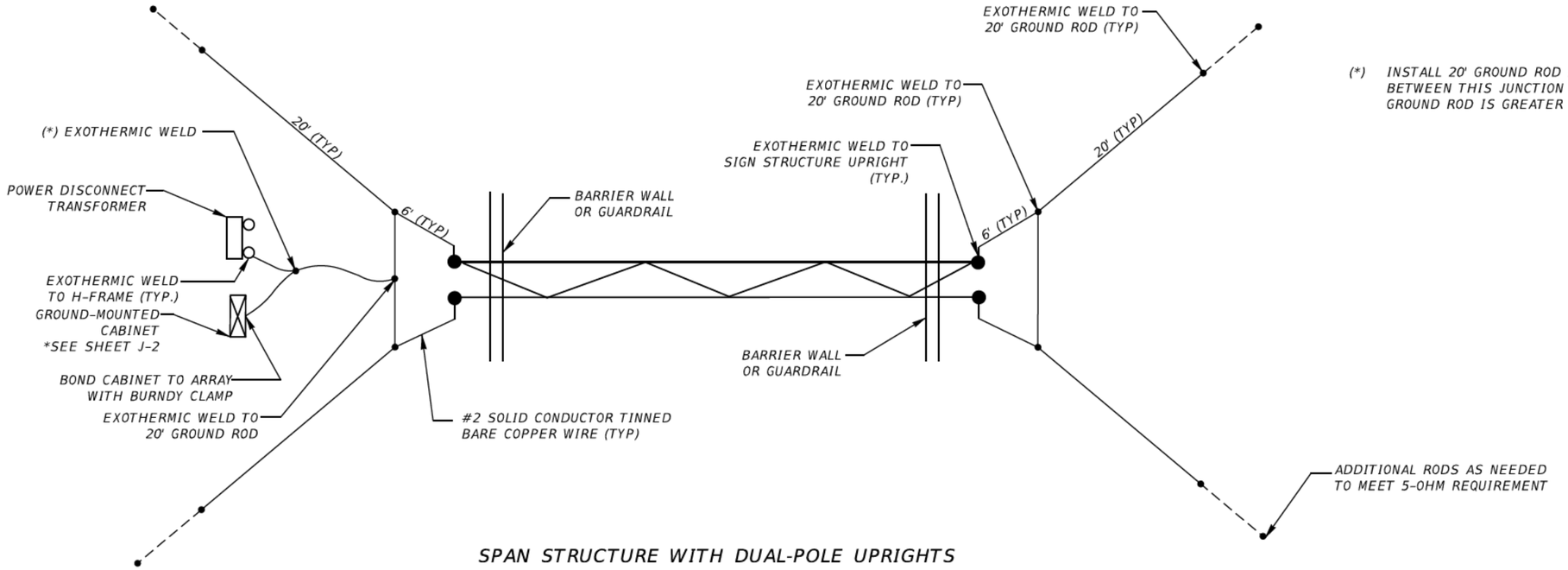
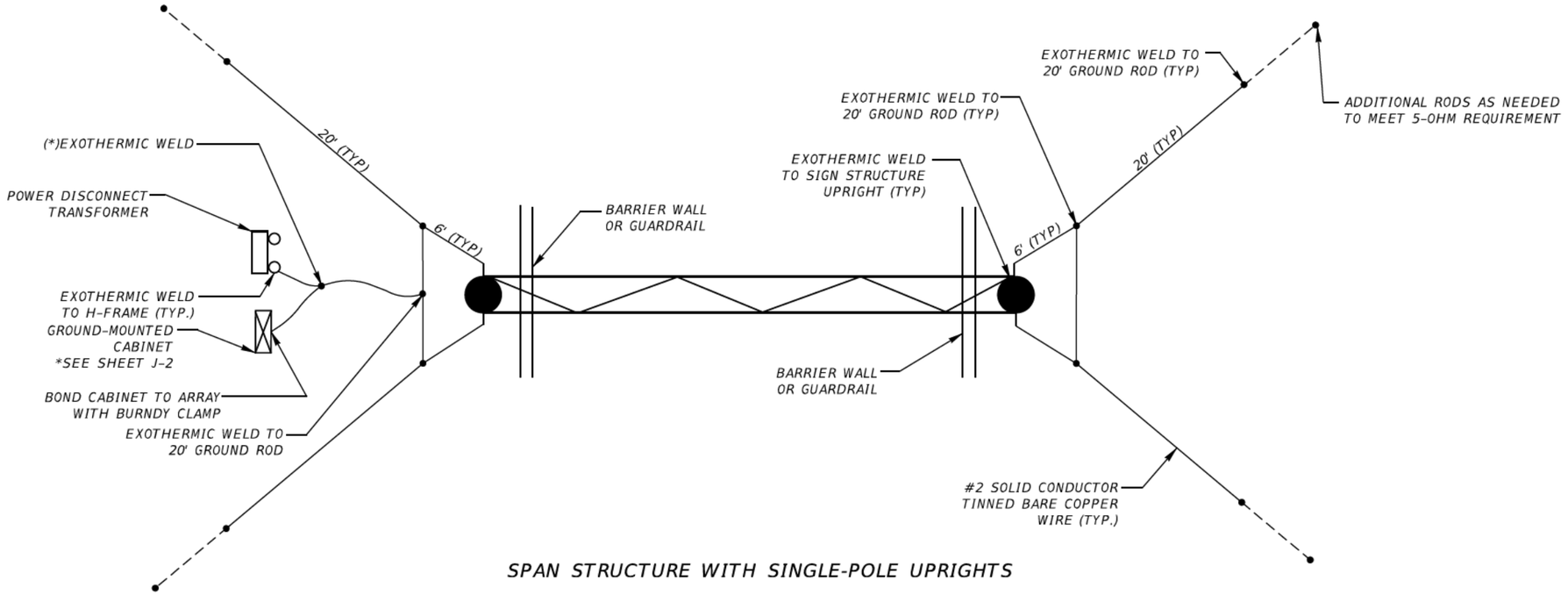


(*) INSTALL 20' GROUND ROD IF THE DISTANCE BETWEEN THIS JUNCTION AND THE ADJACENT GROUND ROD IS GREATER THAN 20 FEET.

SPAN STRUCTURE WITH DUAL-POLE UPRIGHTS



SPAN STRUCTURE WITH SINGLE-POLE UPRIGHTS

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ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ITS DEVICE GROUNDING ARRAY (2 OF 4)

SHEET NO. F0-76

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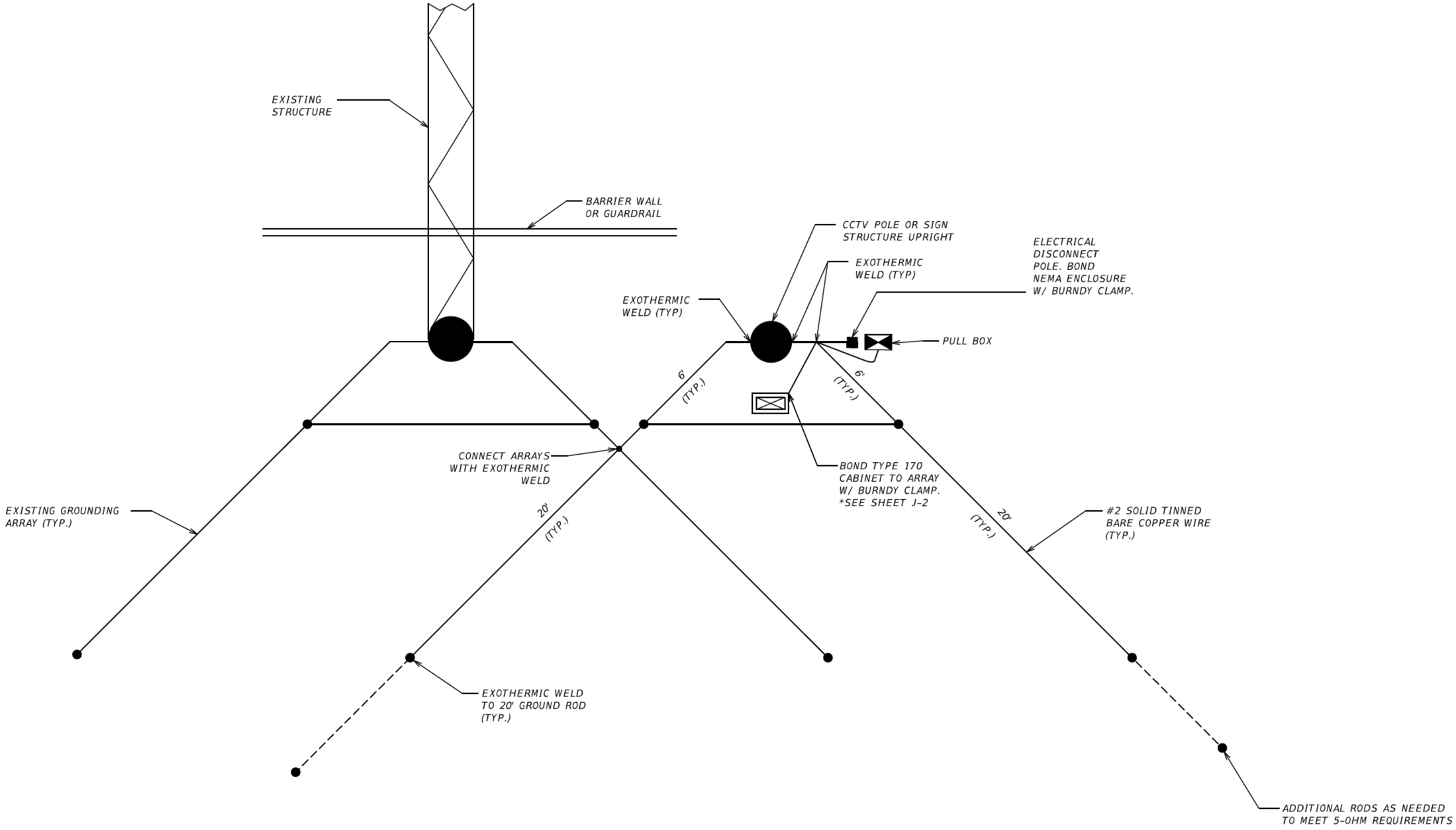

GROUNDING DETAIL IN PROXIMITY
TO EXISTING ITS SIGN STRUCTURE
N.T.S.

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ITS DEVICE GROUNDING ARRAY (3 OF 4)

SHEET NO.
F0-77

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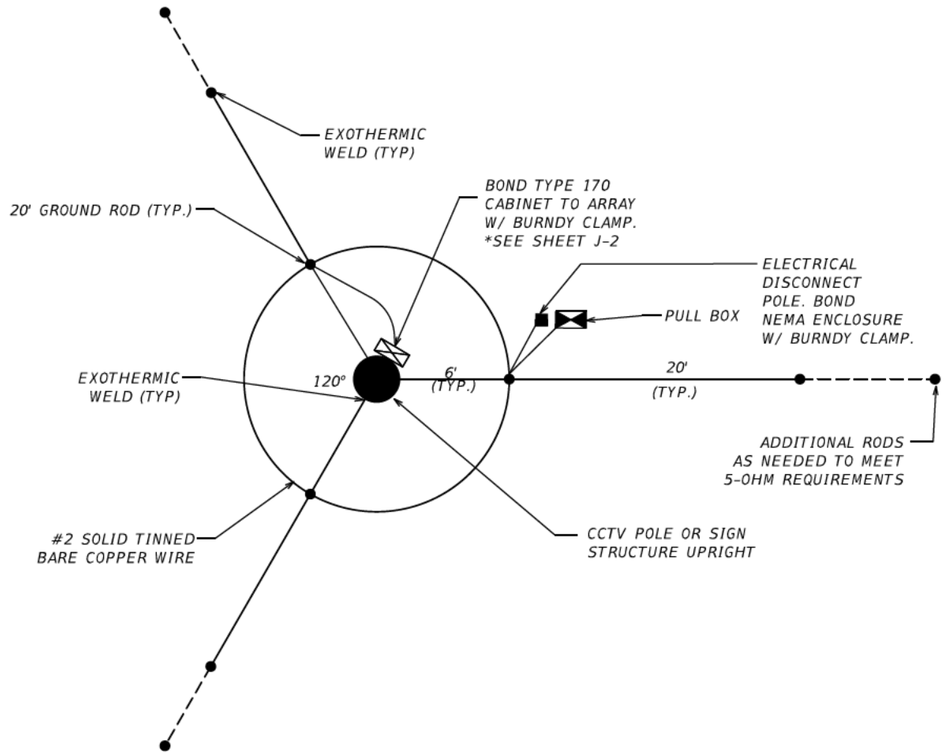
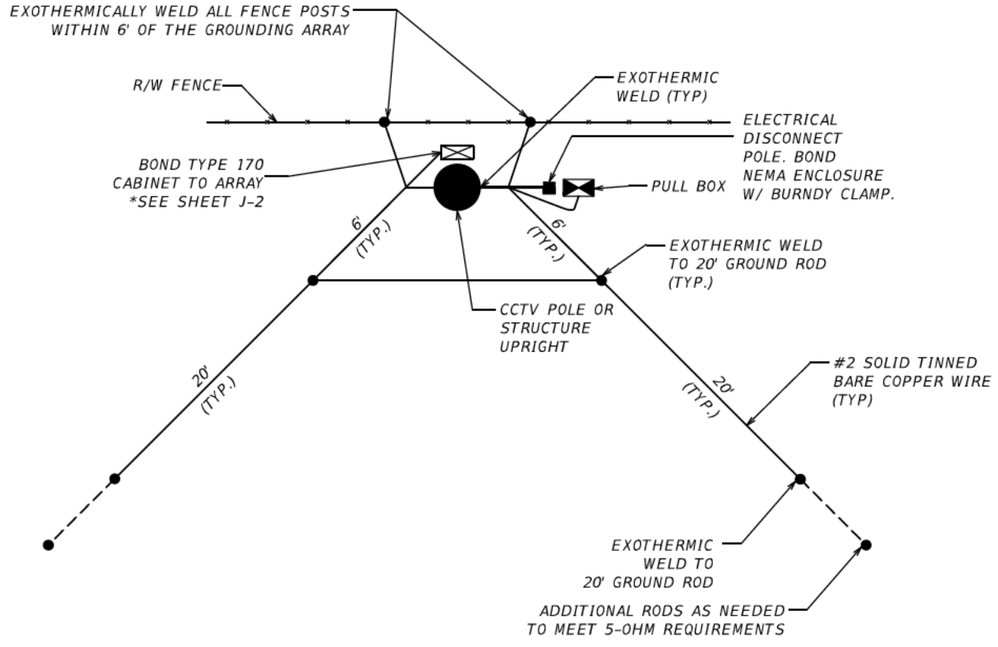
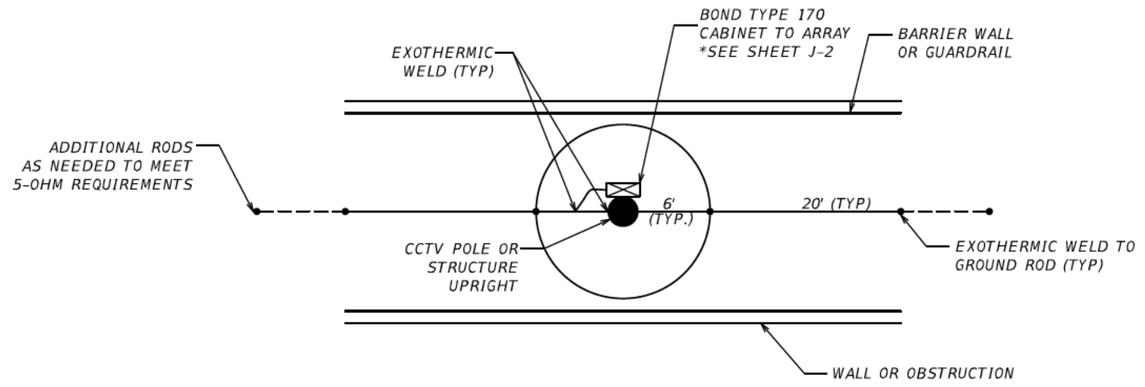


STANDARD GROUNDING ARRAY
N.T.S.



GROUNDING ARRAY - LIMITED R/W
N.T.S.



GROUNDING ARRAY - LIMITED R/W
N.T.S.

REVISIONS					
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SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ITS DEVICE GROUNDING ARRAY (4 OF 4)

SHEET NO.
F0-77A

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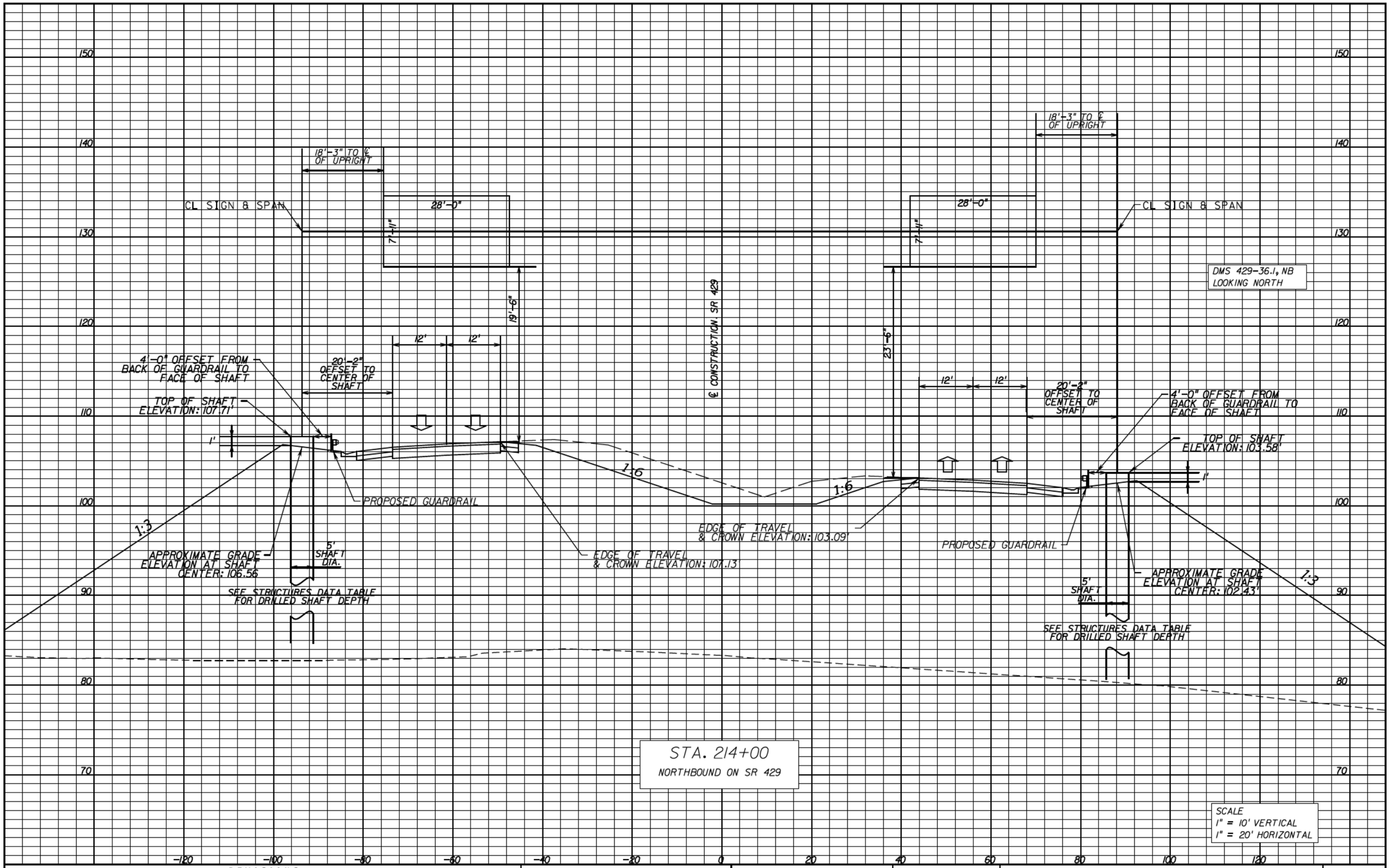

STA. 214+00
NORTHBOUND ON SR 429

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

REVISIONS					
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SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CROSS SECTION DMS

SHEET NO. F0-78

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KEYED NOTES:

1. PULL BOX.
2. METER SOCKET BY CONTRACTOR METER BY POWER COMPANY
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.
4A. COPPER CLAD GROUND ROD 5/8" DIA. 40' LONG
5A. TYPE 336S CABINET W/CIRCUIT BREAKER
5B. SERVICE PANELBOARD (TO INCLUDE BREAKERS PER PLANS)
5C. NEMA 3R ENCLOSURE
6. LIGHTNING ARRESTOR
7A. MAIN CIRCUIT BREAKER 100A, TWO POLE, 120/240 VAC.
7B. MAIN CIRCUIT BREAKER 200A, TWO POLE, 120/240 VAC.
7C. MAIN CIRCUIT BREAKER 100A, TWO POLE 240/480 VAC.
7D. MAIN CIRCUIT BREAKER 200A, TWO POLE 240/480 VAC.
7E. MAIN CIRCUIT BREAKER 100A, ONE POLE 480/GND VAC.
7F. MAIN CIRCUIT BREAKER 200A, ONE POLE 480/GND VAC.
8A. XFMR (5 KVA)
8B. XFMR (10 KVA), STEP-DOWN, 480 PRIMARY, 120 SECONDARY
8C. XFMR (15 KVA), STEP-DOWN 480 PRIMARY, 120 SECONDARY
8D. XFMR (115 KVA), STEP-DOWN, 480 PRIMARY, 120 SECONDARY
8E. XFMR (25 KVA)
9A. 15A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9B. 15A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9C. 20A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9D. 20A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9E. 25A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9F. 25A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9G. 30A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9H. 30A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9I. 35A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9J. 35A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9K. 40A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
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9N. 30A, 240/480VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
9O. 60A, 240/480VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
9P. 100A, 240/480VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
10A. 1" SCHEDULE 40 PVC CONDUIT
10B. 1.25" SCHEDULE 40 PVC CONDUIT
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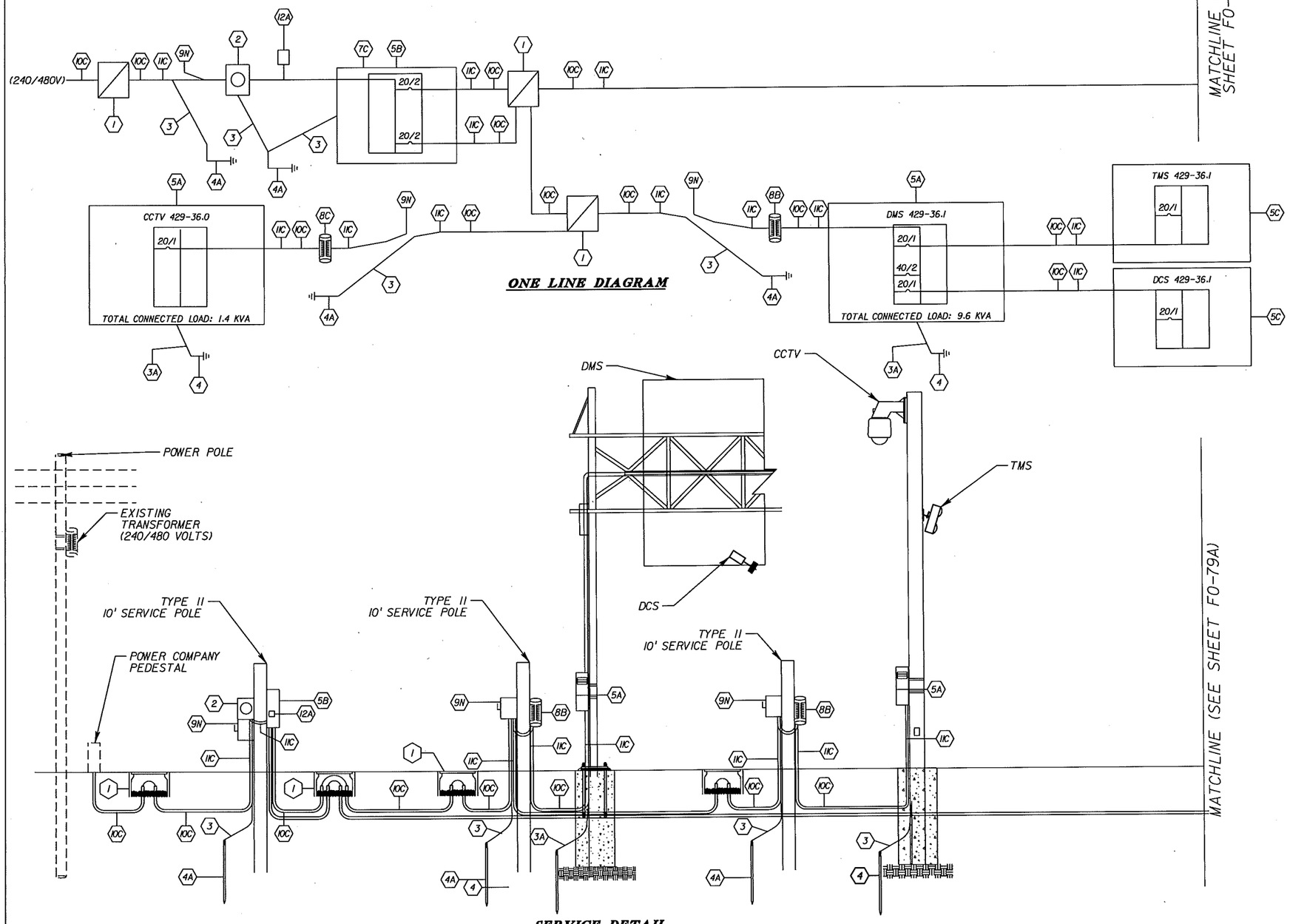
11C. 2" RIGID GALVANIZED STEEL CONDUIT
12A. 120/240VAC TVSS MODEL 11214
12B. 240/480VAC TVSS MODEL 11229

NOTES:
1. CONDUCTOR SIZE AND QUANTITY VARIES. SEE PLAN SHEETS.
2. FIBER CONDUIT & PULL BOXES NOT SHOWN FOR CLARITY.
3. POWER SERVICE DETAILS PROVIDED FOR ALL NEW POWER SERVICE LOCATIONS AND LOCATIONS REQUIRING NEW TRANSFORMERS.

POWER SERVICE DETAIL
LOAD CENTER "A"



SERVICE DETAIL

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Andrew J. Lucyshyn, P.E. No. 54624

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ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SERVICE POINT DETAILS

SHEET NO. F0-79

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KEYED NOTES:

1. PULL BOX.
2. METER SOCKET BY CONTRACTOR METER BY POWER COMPANY
3. #6 INSULATED COPPER GROUND WIRE IN 1/2" RIGID GALVANIZED STEEL OR BARE WIRE IF UNDERGROUND
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9E. 25A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9F. 25A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9G. 30A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
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9J. 35A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9K. 40A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9L. 20A, 120VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
9M. 15A, 240/480VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
9N. 30A, 240/480VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
9O. 60A, 240/480VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
9P. 100A, 240/480VAC, 3-WIRE NON-FUSED HEAVY DUTY NEMA 3R DISCONNECT.
10A. 1" SCHEDULE 40 PVC CONDUIT
10B. 1.25" SCHEDULE 40 PVC CONDUIT
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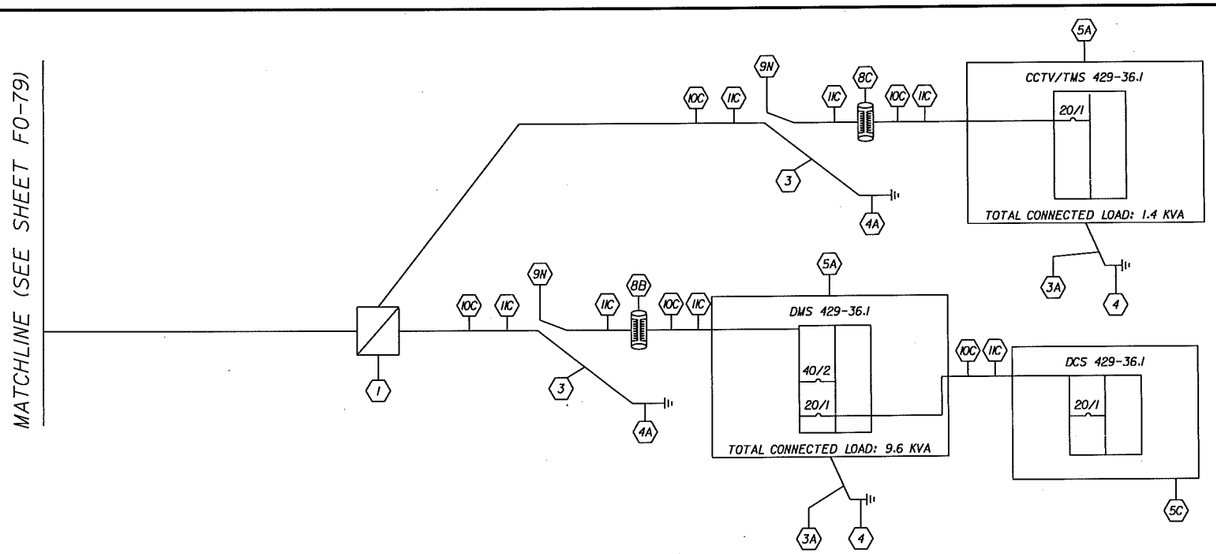

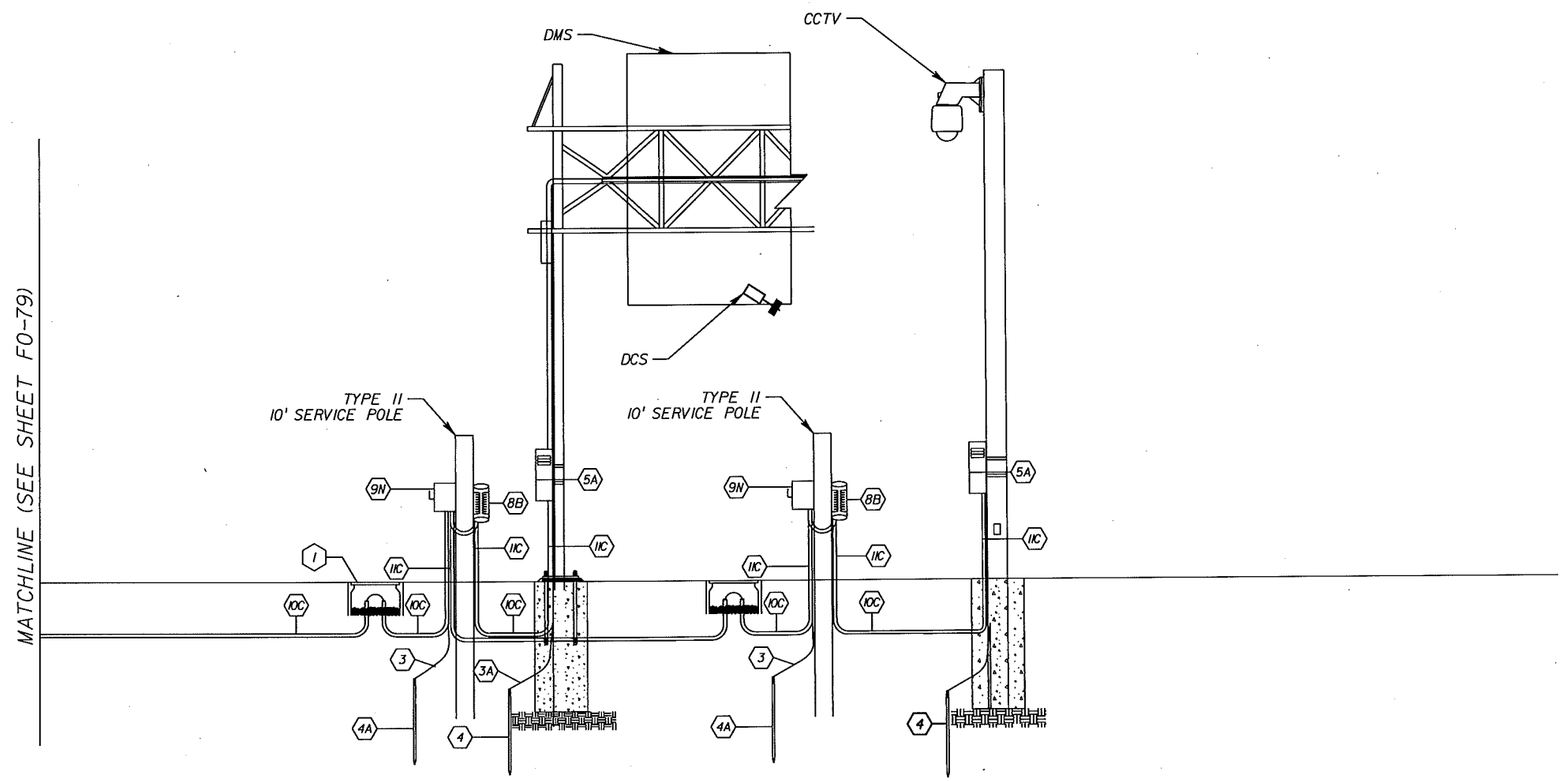

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ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SERVICE POINT DETAILS

SHEET NO. FO-79A

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POWER SERVICE DETAIL
LOAD CENTER "B"

KEYED NOTES:

1. PULL BOX.
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7F. MAIN CIRCUIT BREAKER 200A, ONE POLE 480/GND VAC.
8A. XFMR (5 KVA), STEP-DOWN, 480 PRIMARY, 120 SECONDARY
8B. XFMR (7.5 KVA)
8C. XFMR (10 KVA)
8D. XFMR (15 KVA)
8E. XFMR (25 KVA)
9A. 15A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9B. 15A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9C. 20A, 120VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
9D. 20A, 240/480VAC, CIRCUIT BREAKER IN NEMA 3R ENCLOSURE.
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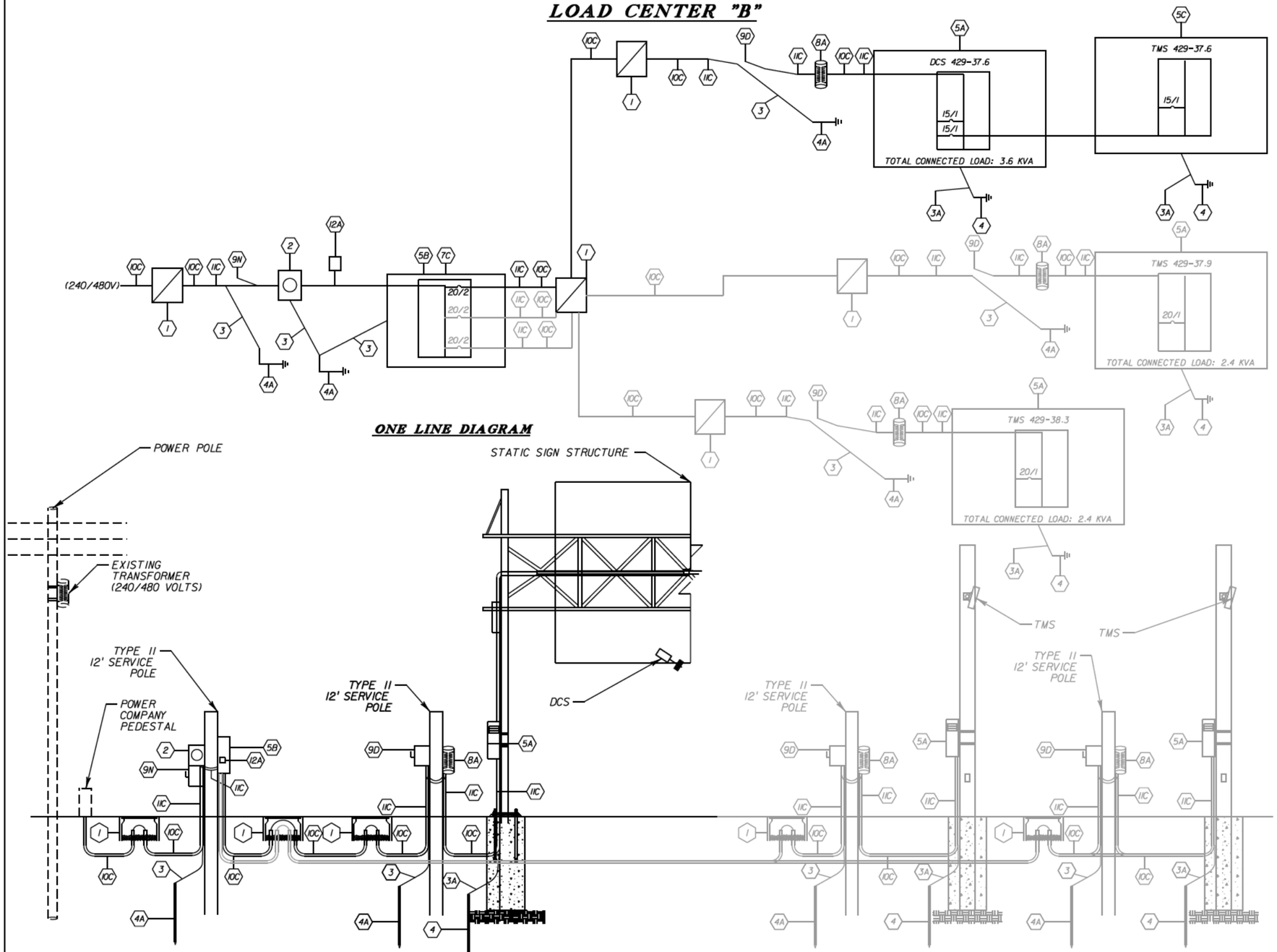

ONE LINE DIAGRAM

SERVICE DETAIL

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY	
ROAD NO.	PROJECT NO.
SR 429	429-203

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SERVICE POINT DETAILS

SHEET NO. F0-80

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TMS POLE & FOUNDATION GENERAL NOTES

1. DESIGN CRITERIA: Designed in accordance with the 6th Ed. (2012) AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", with current addenda. The Design Wind Speed of 130 mph is in conformance with the FDOT "Plans Preparation Manual" (current edition).

   New structures are designed not to exceed 1" deflection at TMS location in a 40 mph (3 second gust) wind.

   Foundation Design Parameters:

Soil Type:	Cohesionless (Fine Sand)
Soil Layer Thickness:	20 ft.
Soil Friction Angle:	30 degrees
Soil Weight (Assume Saturated):	50 pcf
Slope (V:H):	See Drilled Shaft table of variables on TMS POLE STRUCTURE DETAILS (3 of 3)

2. POLE SHAFT: All pole shafts shall be 12 sided or round with a minimum corner radius of 2" and a constant taper of 0.14 in/ft. All poles shall contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Longitudinal seam welds within 6" of pole to base plate shall be complete penetration welds.

3. HAND HOLES: See Details

4. CABLE SUPPORTS: Electrical Cable Guides and Parking Stand (Eyebolts): Top and bottom electrical cable guides shall be located within the pole aligned with each other. One cable guide shall be positioned 2" below the handhole and the other shall be positioned 1" directly below the top of tenon. A parking stand shall be positioned 21" below the top of the handhole.

5. TMS Structure Materials shall be as follows:

Poles	-> ASTM A1011 Grade 50 (Wall Thickness <1/4"), ASTM A572 Grade 50 (Wall Thickness ≥ 1/4")
Steel Plates & Pole Cap	-> ASTM A709 Grade 36 or ASTM A36
Weld Metal	-> E70XX
Bolts (except Anchor Bolts)	-> ASTM A325, Type 1
Anchor Bolts	-> ASTM F1554 Grade 55
Nuts for Anchor Bolts	-> ASTM A563 Grade A Heavy Hex
Washers for Anchor Bolts	-> ASTM F436 Type 1
Handhole Frame	-> ASTM A709 Grade 36 or ASTM A36
Handhole Cover	-> ASTM A1011 Grade 50, 55, 60 or 65 ksi
Stainless Steel Screws	-> AISI Type 316
Nut Covers	-> ASTM B26 (319-F)

6. All Steel Items shall be galvanized as follows:

All Nuts, Bolts and Washers	-> ASTM F2329 depending on size
All other steel items	-> ASTM A123

7. Reinforcing Steel shall be ASTM A615-96, Grade 60.

8. Concrete shall be Class IV (Drilled Shaft) with a minimum 28-day compressive strength of 4 ksi for all environmental classifications.

9. Grout shall have a minimum 3-day compressive strength of 5 ksi and shall meet the requirements of Section 934. Grout after pole is set and properly plumbed.

10. All welding shall conform to American Welding Society Structural Welding Code (Steel) ANSI/AWS D 1.1 (current edition).

11. Shop Drawings for each Structures type are required. Fabrication shall not begin until these shop drawings have been approved.

12. The foundation for the TMS Structure shall be constructed in accordance with Section 455 of the Specifications except that no payment for the foundation shall be made under Section 455. The cost of providing the foundation shall be included in the pay item for providing the complete TMS structure. Payment for any incidental items incurred in furnishing and installing this TMS Structure shall be included in the pay item for providing the complete TMS Structure.

13. Except for Anchor Bolts, all bolt hole diameters shall be equal to the bolt diameter plus 1/16", prior to galvanizing. Hole diameters for anchor bolts shall not exceed the bolt diameter plus 1/2".

14. The Structure must be assembled after galvanizing and prior to shipment to the site to assure fit up. It must be disassembled for shipping.

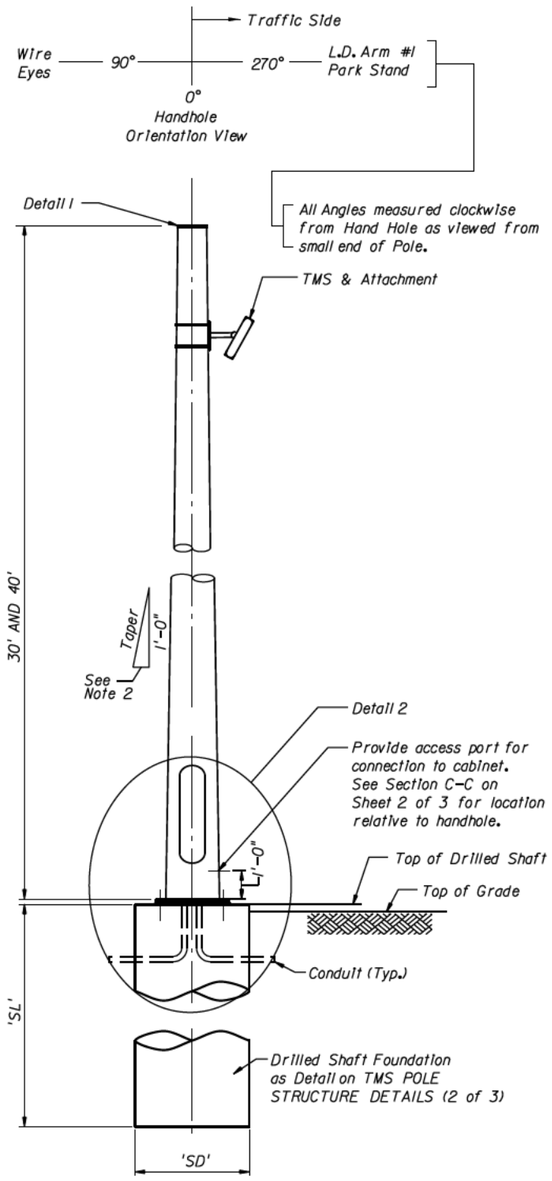
15. The structure shall be installed plumb.

16. The structure shall not be erected until the foundation concrete has been allowed to cure for a minimum of seven days.

17. Contractor shall take care not to damage existing conduit or F.O.N. cable and Tone wire. Any damage shall be replaced in kind at the contractors expense.

18. Pole shall be galvanized according to Specification 962 and powder coated flat black over galvanization by the manufacturer.

19. Contractor shall contact utility companies prior to foundation construction and field verify adjacent utilities prior to drilling.



ELEVATION

Notes:

1. For Details 1 and 2, See TMS POLE STRUCTURE DETAILS (2 of 3).
2. Cabinet and Attachment not shown for clarity. Refer to FDOT Index 17900, 2013 Edition for Details and Attachment.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

DRAWN BY:	DAB
CHECKED BY:	KTZ
DESIGNED BY:	DAB
CHECKED BY:	KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

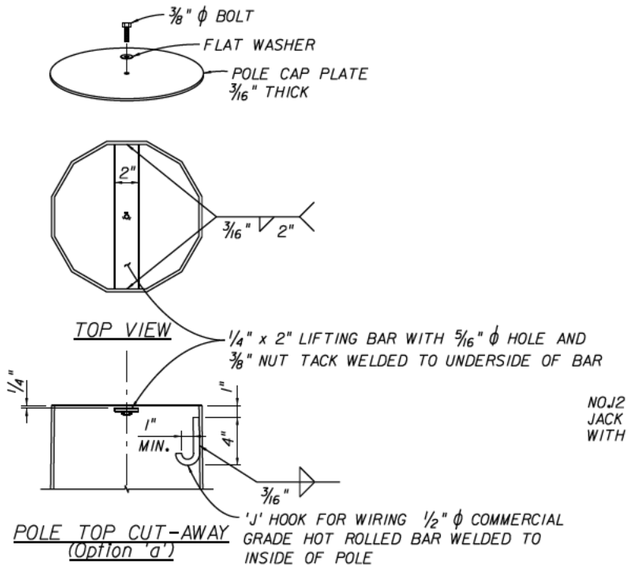
ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: TRAFFIC MONITORING STATION TMS POLE STRUCTURE DETAILS (1 OF 3)

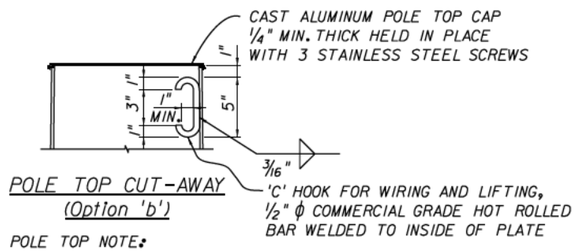
PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

REF. DWG. NO.

SHEET NO. FO-81



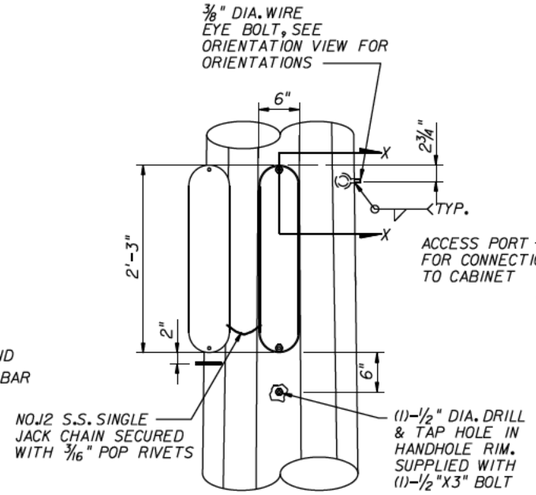
POLE TOP CUT-AWAY
(Option 'a')



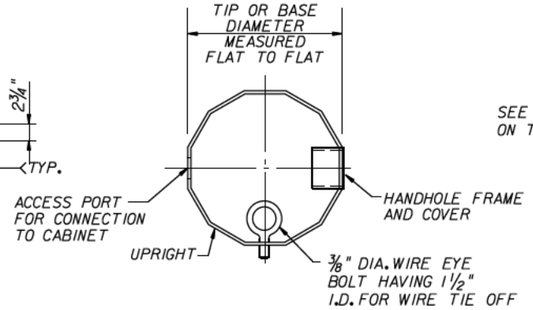
POLE TOP CUT-AWAY
(Option 'b')

POLE TOP NOTE:
ANY COMBINATION OF THE ABOVE TWO OPTIONS MAY BE USED, PROVIDED BOTH LIFTING AND WIRING IS ACCOMODATED.

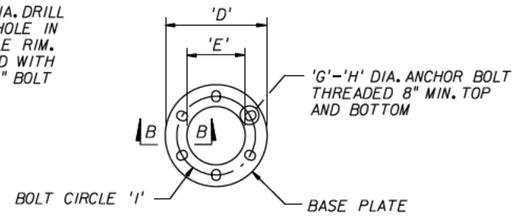
DETAIL 1



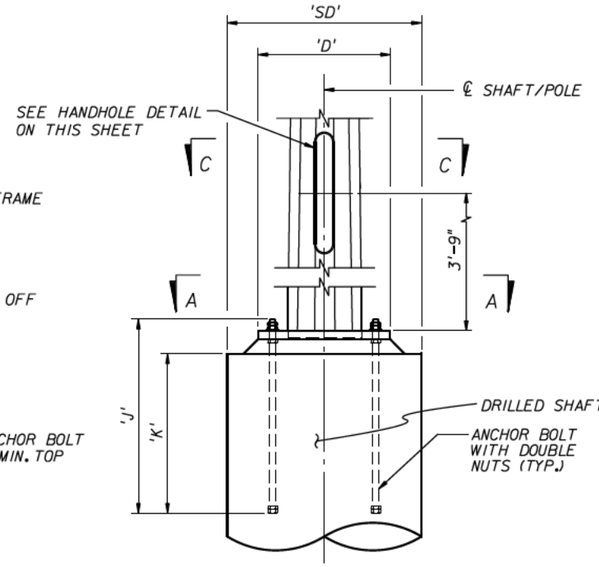
HANDHOLE DETAIL



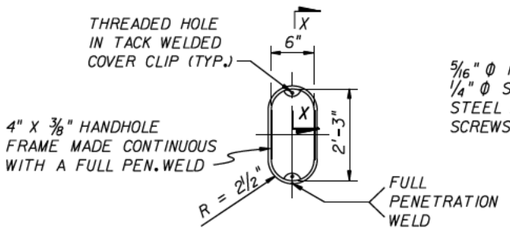
SECTION C-C



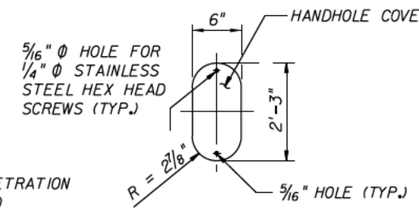
SECTION A-A



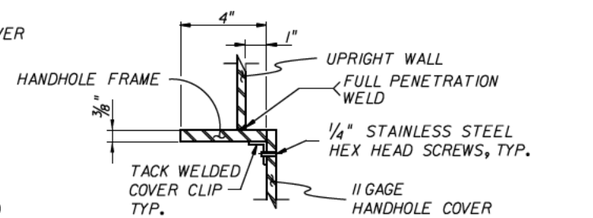
DETAIL 2



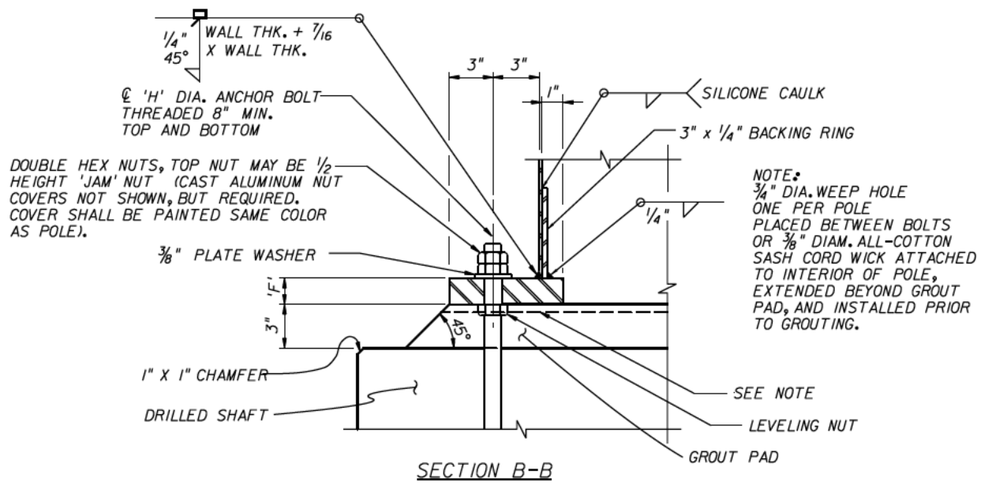
HANDHOLE FRAME



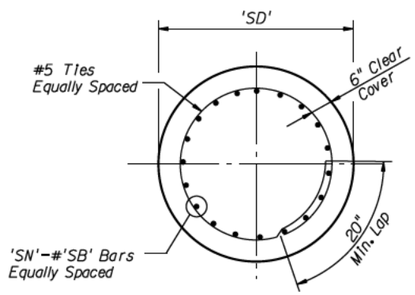
HANDHOLE COVER



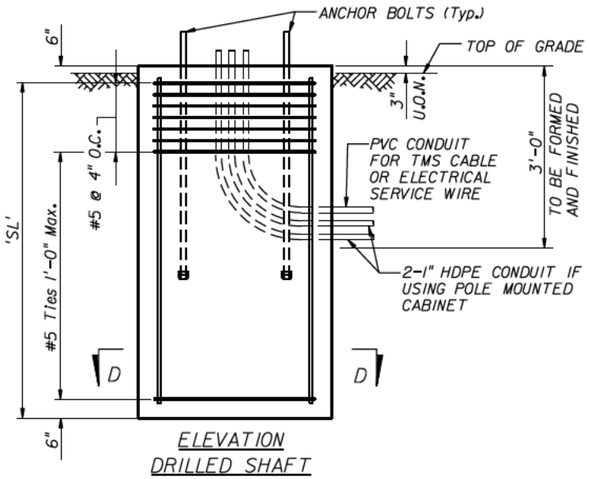
SECTION X-X



SECTION B-B



SECTION D-D



ELEVATION
DRILLED SHAFT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

DRAWN BY: DAB
CHECKED BY: KTZ
DESIGNED BY: DAB
CHECKED BY: KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: TRAFFIC MONITORING STATION
TMS POLE STRUCTURE DETAILS (2 OF 3)

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

REF. DWG. NO.

SHEET NO. F0-82

POLE VARIABLES

TMS / POLE DESCRIPTION	TUBE				BASE VARIABLES						
	LENGTH (FT.)	BASE DIAMETER (IN.)	TIP DIAMETER (IN.)	"C" THICK (IN.)	"D" OUTSIDE DIAMETER (IN.)	"E" INSIDE DIAMETER (IN.)	"F" PLATE THICKNESS (IN.)	"G" NUMBER OF ANCHOR BOLTS	"H" BOLT DIAMETER (IN.)	"I" BOLT CIRCLE DIAMETER (IN.)	"J" BOLT LENGTH (IN.)
30 FT POLE	30	12	7-3/4	0.2391	20	12	2.5	8	1.00	16	34
40 FT POLE	40	16	10-3/8	0.375	24	16	2.5	8	1.00	20	34

DRILLED SHAFT VARIABLES

TMS / POLE DESCRIPTION	"SL" SHAFT LENGTH (FT.)	"SD" SHAFT DIAMETER (FT.)	"SN" NUMBER OF BARS	"SB" BAR SIZE	"K" BOLT EMBEDMENT (IN.)	SLOPING GRADE (V: H)	REMARKS
30 FT POLE	10	3.5	9	11	27	1:2	USE ON SLOPES 1:2 OR FLATTER
40 FT POLE	12	3.5	9	11	27	1:2	USE ON SLOPES 1:2 OR FLATTER

NOTE:

1. WORK THIS SHEET WITH TMS POLE STRUCTURE DETAILS (1 OF 3) AND (2 OF 3).

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ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: TRAFFIC MONITOR STATION TMS POLE STRUCTURE DETAILS (3 OF 3)

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

REF. DWG. NO.

SHEET NO. FO-83

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BOX TRUSS SIGN STRUCTURE GENERAL NOTES

1) SIGN STRUCTURE MATERIALS SHALL BE AS FOLLOWS:

UPRIGHT, WEBS & CHORDS (STEEL PIPE)	-> API-5L-X42 (42 KSI YIELD) OR ASTM A500 GRADE B EXCEPT THAT THE HSS 10.00x0.625 CHORDS FOR DMS 429-32.3 SB SHALL BE API-5L-X46 (46 KSI YIELD) OR ASTM 500 GRADE C
WIDE FLANGE BEAMS	-> ASTM A992 (50 KSI YIELD)
STEEL PLATES	-> ASTM A709 GRADE 36
WELD METAL	-> E70XX
BOLTS (EXCEPT ANCHOR BOLTS OR AS NOTED)	-> ASTM A325 TYPE 1
ANCHOR BOLTS	-> ASTM F1554 GRADE 55
SPLICE BOLTS	-> ASTM A325 TYPE 1
NUTS FOR ANCHOR BOLTS	-> ASTM A563 GRADE A HEAVY HEX

NOTE - ALL BOLTS (EXCEPT ANCHOR BOLTS) SHALL HAVE SINGLE SELF-LOCKING NUTS. ANCHOR BOLTS SHALL HAVE DOUBLE NUTS.

2) REINFORCING STEEL SHALL BE ASTM A615, GRADE 60.

3) CONCRETE SHALL BE CLASS IV (DRILLED SHAFT) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4 KSI FOR ALL ENVIRONMENTAL CLASSIFICATIONS.

4) GROUT SHALL HAVE A MINIMUM 3-DAY COMPRESSIVE STRENGTH OF 5 KSI AND SHALL MEET THE REQUIREMENTS OF SECTION 934 USING THE PROCEDURES DETAILED WITHIN SECTION 649-6 OF THE 2007 STANDARD SPECIFICATION FOR RAOD AND BRIDGE CONSTRUCTION.

5) ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE (STEEL) ANSI/AWS D1. 1 (CURRENT EDITION).

6) ALL STEEL ITEMS SHALL BE GALVANIZED AS FOLLOWS:

ALL NUTS, BOLTS AND WASHERS	-> ASTM F2329
ALL OTHER STEEL ITEMS	-> ASTM A123

7) THE STRUCTURE MUST BE ASSEMBLED AFTER GALVANIZING AND PRIOR TO SHIPMENT TO THE SITE TO ASSURE FIT UP. IT MAY BE DISASSEMBLED FOR SHIPPING.

8) THE DESIGN WIND SPEED IS 130 MPH.

9) ALTERNATE DESIGNS FOR THIS STRUCTURE ARE NOT ALLOWED.

10) SHOP DRAWINGS FOR THIS STRUCTURE ARE REQUIRED AND FABRICATION SHALL NOT BEGIN UNTIL THESE SHOP DRAWINGS ARE APPROVED. SHOP DRAWINGS SHALL INCLUDE THE CONTRACTOR'S FIELD VERIFICATION OF ALL UPRIGHT HEIGHTS AND FOUNDATION ELEVATIONS NECESSARY TO INSURE MINIMUM VERTICAL CLEARANCES AS PER TRAFFIC PLANS. SHOP DRAWINGS SHALL ALSO INCLUDE ANCHOR BOLT ORIENTATION WITH RESPECT TO | TRUSS AND THE DIRECTION OF TRAFFIC.

11) FOR MISCELLANEOUS STRUCTURES THAT HAVE BEEN COMPLETED AND SCHEDULED FOR ACCEPTANCE, THE CONTRACTOR SHALL CONTACT DISTRICT FIVE STRUCTURES MAINTENANCE OFFICE AT (386)-740-3463 ONE MONTH PRIOR TO COMPLETION OF PROJECT TO SCHEDULE AN INSPECTION OF STRUCTURES INCLUDING: CABLE SIGNS, CANTILEVER SIGNS, TRUSS SIGNS, HIGH MAST LIGHT POLES, ITS, DMS AND TRAFFIC SIGNAL MAST ARMS.

12) THE FOUNDATION FOR THE SIGN STRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 455 OF THE SPECIFICATIONS EXCEPT THAT NO PAYMENT FOR THE FOUNDATION SHALL BE MADE UNDER SECTION 455. THE COST OF PROVIDING THE FOUNDATION SHALL BE INCLUDED IN THE PAY ITEM FOR PROVIDING THE COMPLETE SIGN STRUCTURE. PAYMENT FOR ANY INCIDENTAL ITEMS INCURRED IN FURNISHING AND INSTALLING THIS SIGN STRUCTURE SHALL BE INCLUDED IN THE PAY ITEM FOR PROVIDING THE COMPLETE SIGN STRUCTURE.

13) EXCEPT FOR ANCHOR BOLTS, ALL BOLT HOLE DIAMETERS SHALL BE EQUAL TO THE BOLT DIAMETER PLUS 1/16" UNLESS NOTED OTHERWISE, PRIOR TO GALVANIZING. HOLE DIAMETERS FOR ANCHOR BOLTS SHALL NOT EXCEED THE BOLT DIAMETER PLUS 1/2".

14) BOLT HOLES AND SLOTS SHALL BE DRILLED TO FINISHED SIZE OR THEY MAY BE PUNCHED TO FINISHED SIZE. PROVIDED THE DIAMETER OF THE PUNCHED HOLE IS AT LEAST TWICE THE THICKNESS OF THE METAL BEING PUNCHED. FLAME CUTTING OF BOLT HOLES AND SLOTS WILL NOT BE PERMITTED.

15) SEE ELEVATION DRAWING FOR SIZE AND LOCATION OF SIGN PANELS.

16) DMS 429-36.08 SHALL BE PROVIDED WITH A WALKWAY FROM EDGE OF PAVED SHOULDER TO 5" FROM EDGE OF THE DMS. WIDTH OF WALKWAY SHALL NOT BE LESS THAN THE DEPTH OF THE DMS. FRONTAL ACCESS TO THE DMS IS NOT ANTICIPATED. SAFETY FEATURES SHALL COMPLY WITH OSHA REQUIREMENTS.

17) PROVIDE A PARABOLIC CAMBER WITH THE MAXIMUM UPWARD DEFLECTION AS CALLED FOR ON THE CAMBER DIAGRAM. INDICATE ON THE SHOP DRAWINGS THE METHOD TO BE USED TO PROVIDE REQUIRED CAMBER. MEMBER DIMENSIONS MAY BE ALTERED SLIGHTLY TO PROVIDE CAMBER.

18) PRIOR TO ERECTION, THE AS BUILT LOCATION OF THE ANCHOR BOLTS SHALL BE SURVEYED AND THIS INFORMATION REPORTED TO THE ENGINEER.

19) ERECTION IS THE CONTRACTOR'S RESPONSIBILITY.

20) NATURAL SLURRY SHALL NOT BE RELIED UPON TO PREVENT CAVING OF SOILS AND MAINTAIN AN OPEN HOLE. IF MINERAL SLURRY, SECTION 455-15.8 IS USED, DESANDING EQUIPMENT IS REQUIRED. LAYERS OF VERY HARD MATERIALS SUCH AS CEMENTED SAND MAY BE ENCOUNTERED AT THIS SITE. SUCH MATERIAL MAY MAKE SHAFT EXCAVATIONS AND/OR TEMPORARY CASING INSTALLATION DIFFICULT. THE CONTRACTOR SHALL EXPECT TO ENCOUNTER THESE TYPE OF MATERIALS AT ALL SHAFT LOCATIONS AND SHALL USE SPECIALIZED EQUIPMENT AND/OR PROCEDURES AS NECESSARY TO FACILITATE SHAFT EXCAVATION AND/OR TEMPORARY CASING INSTALLATION. WHEN TEMPORARY CASING IS USED; THE CASING TIP SHALL BE REINFORCED AND CASING THICKNESS SHALL BE ADEQUATE TO PREVENT CASING DAMAGE/DEFORMATION DURING INSTALLATION THROUGH HARD LAYERS.

REVISIONS			
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ATKINS
482 S. Keller Road, Orlando, FL 32810
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Kenneth T. Zagers P.E. 58221

DRAWN BY:	DAB
CHECKED BY:	KTZ
DESIGNED BY:	DAB
CHECKED BY:	KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

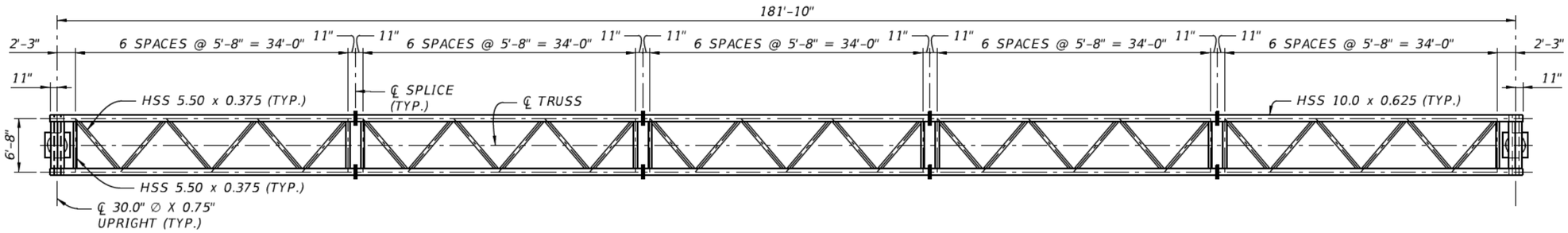
ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: BOX TRUSS SIGN STRUCTURE GENERAL NOTES

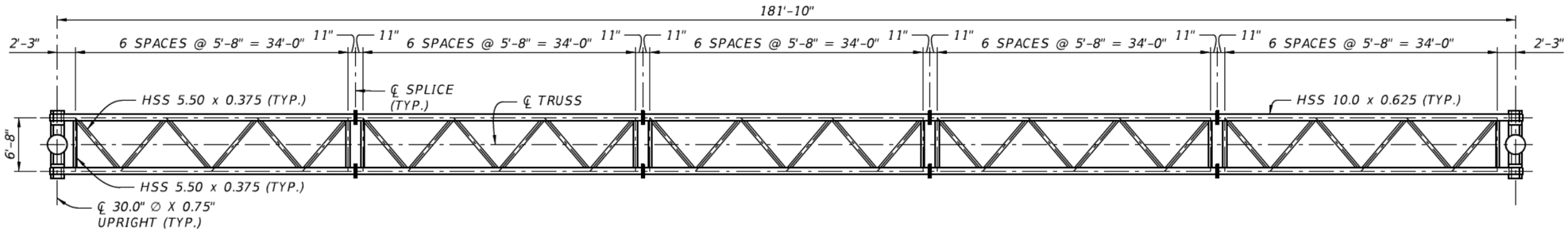
REF. DWG. NO.:

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

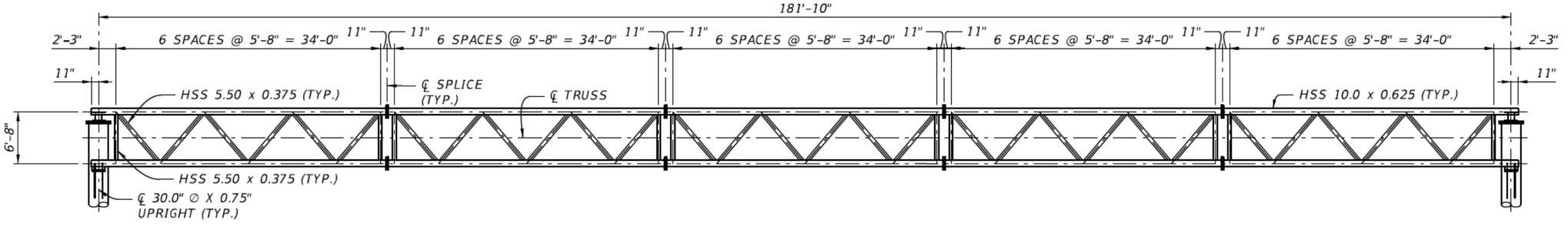
SHEET NO.: FO-84



TRUSS PLAN AT TOP CHORDS



TRUSS PLAN AT BOTTOM CHORDS



TRUSS ELEVATION - TYPICAL EACH SIDE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

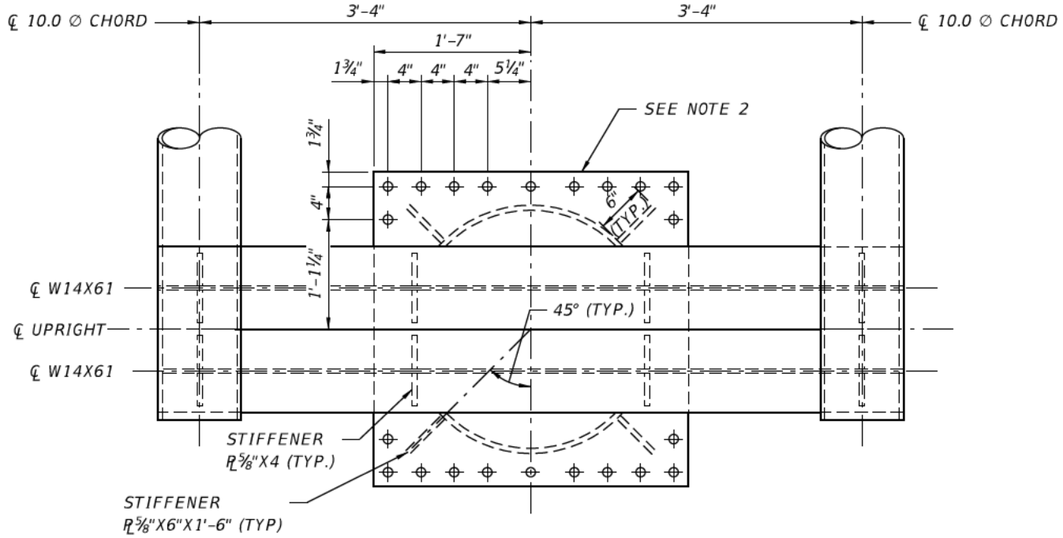
ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: TRUSS FRAMING DMS

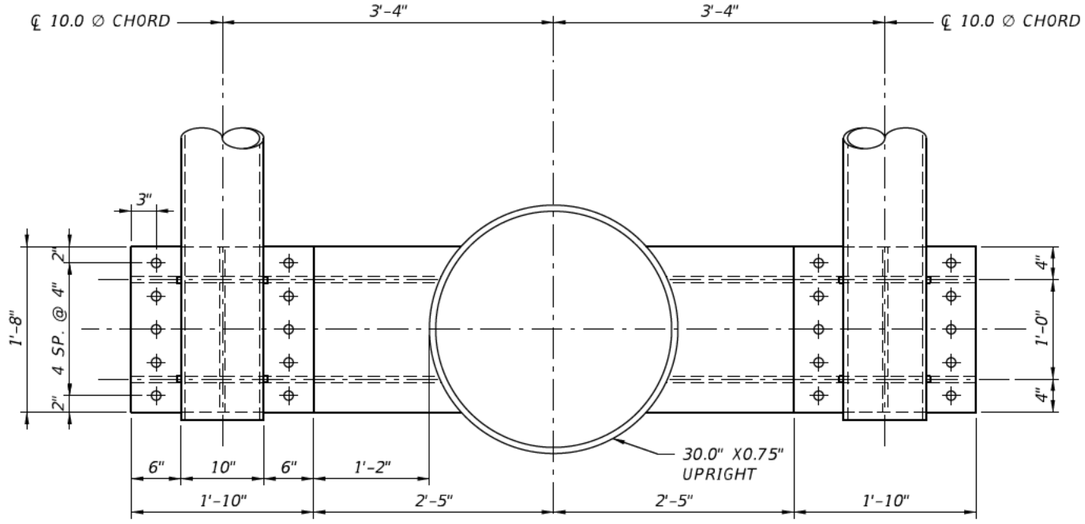
REF. DWG. NO.:

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

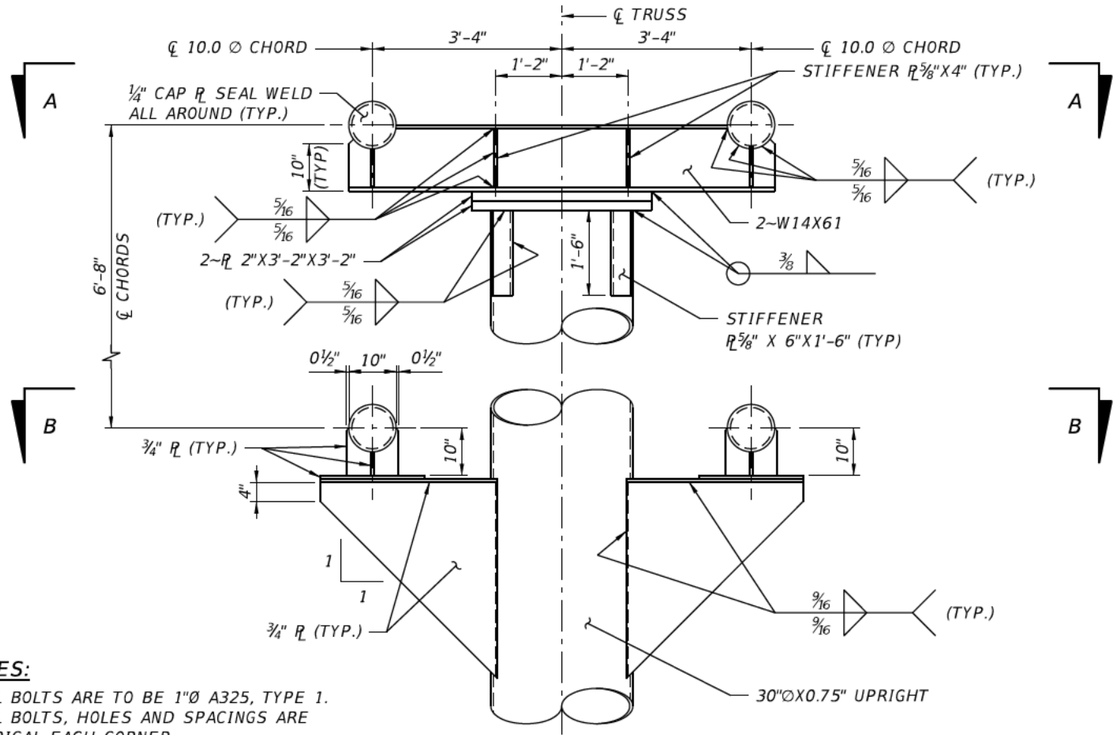
SHEET NO.: F0-85



TOP VIEW OF TOP CHORDS - SECTION A-A



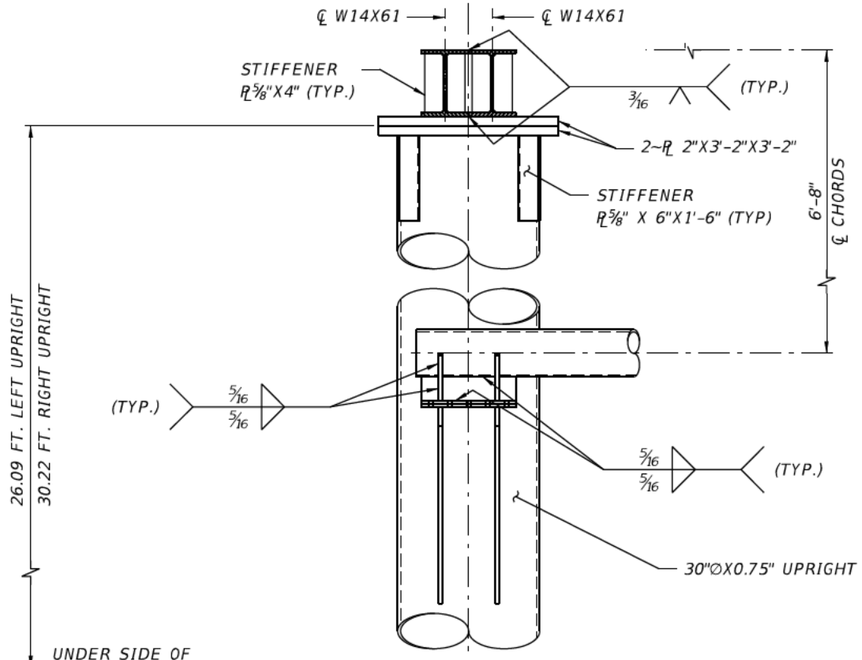
TOP VIEW OF BOTTOM CHORDS - SECTION B-B



NOTES:

1. ALL BOLTS ARE TO BE 1"Ø A325, TYPE 1.
2. ALL BOLTS, HOLES AND SPACINGS ARE TYPICAL EACH CORNER.
3. ALL HOLES FOR BOLTS ARE 1⅛"Ø.

ELEVATION
COLUMN TO CHORDS CONNECTION



PARTIAL ELEVATION DETAIL
COLUMN TO CHORDS CONNECTION

REVISIONS			
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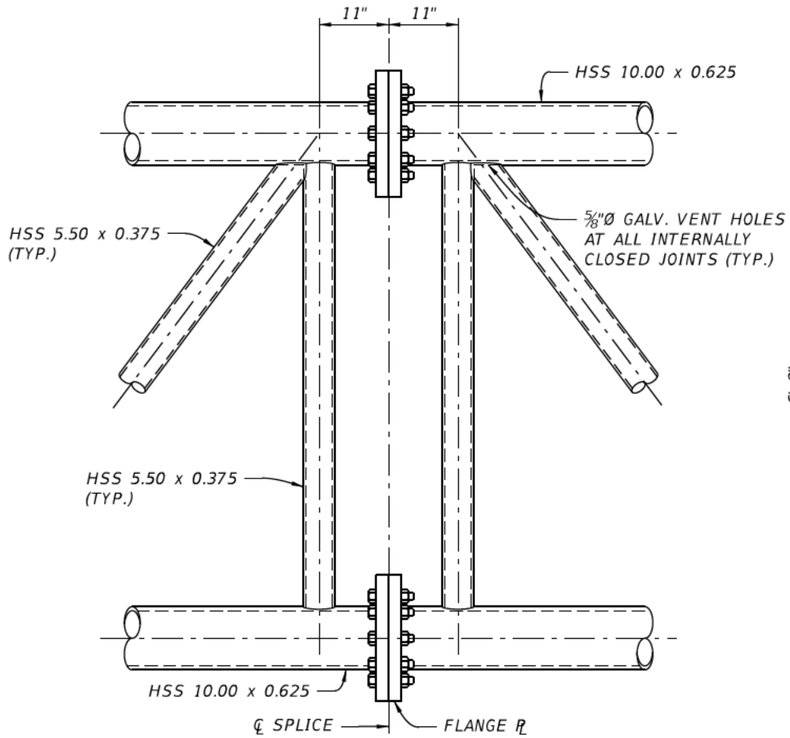
ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: TRUSS DETAILS (1 OF 3) DMS

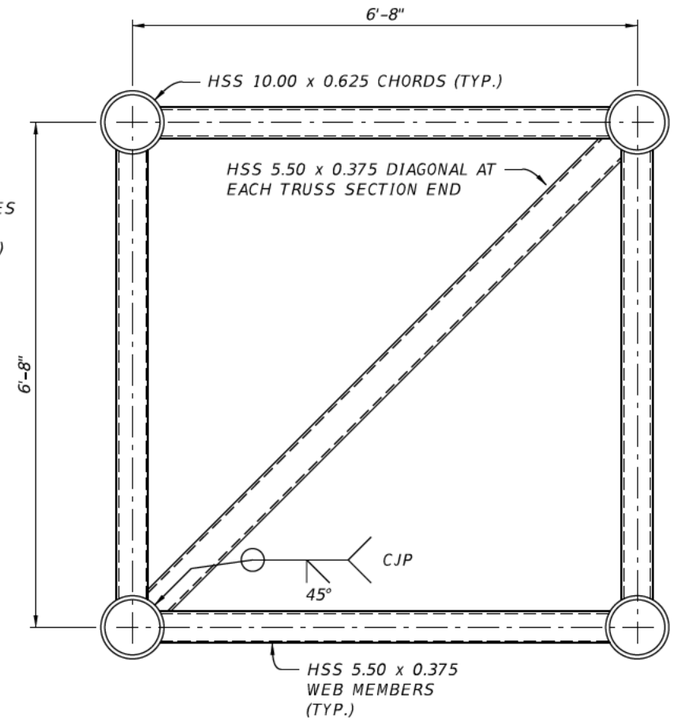
REF. DWG. NO.:

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

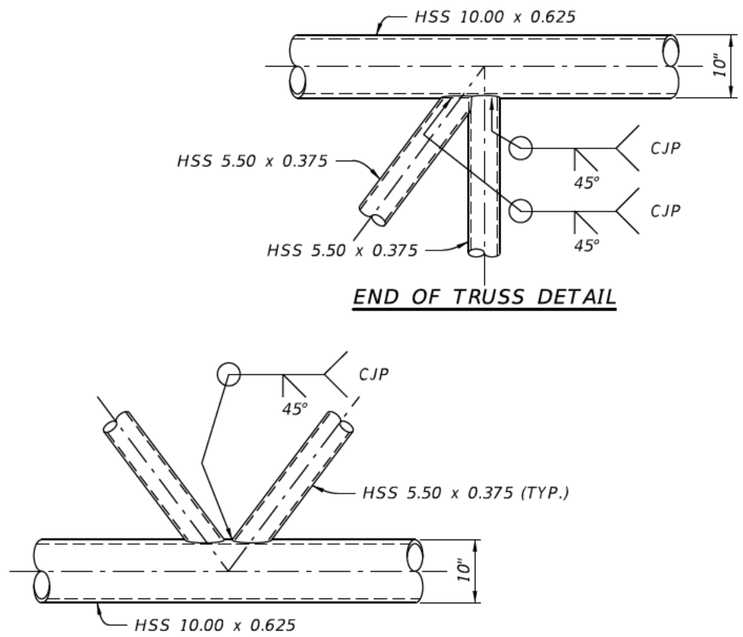
SHEET NO.: FO-86



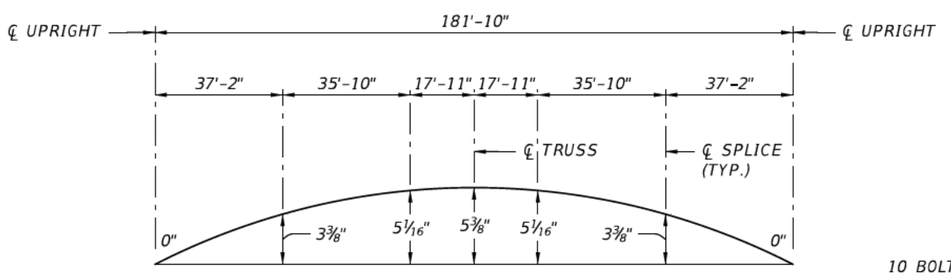
SPLICE DETAIL



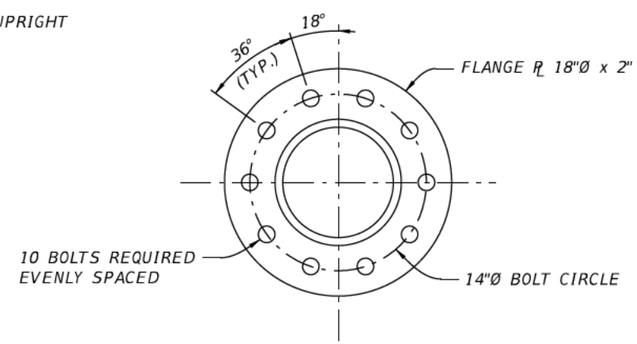
TRUSS SECTION



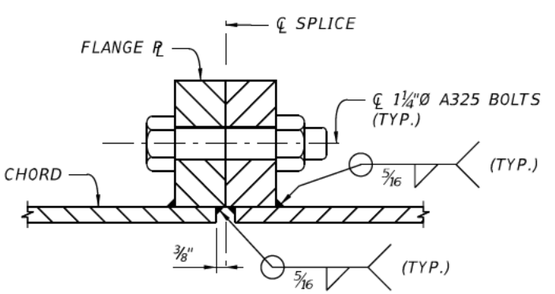
TYPICAL TRUSS DETAIL



CAMBER DIAGRAM



FLANGE DETAIL



FLANGE SECTION

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DATE	DESCRIPTION	DATE	DESCRIPTION

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DRAWN BY: DAB	CENTRAL FLORIDA EXPRESSWAY AUTHORITY	SHEET TITLE: TRUSS DETAILS (2 OF 3) DMS	REF. DWG. NO.
CHECKED BY: KTZ			
DESIGNED BY: DAB	ROAD NO. / PROJECT NO.	PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203	SHEET NO.
CHECKED BY: KTZ	SR 429 / 429-203		FO-87

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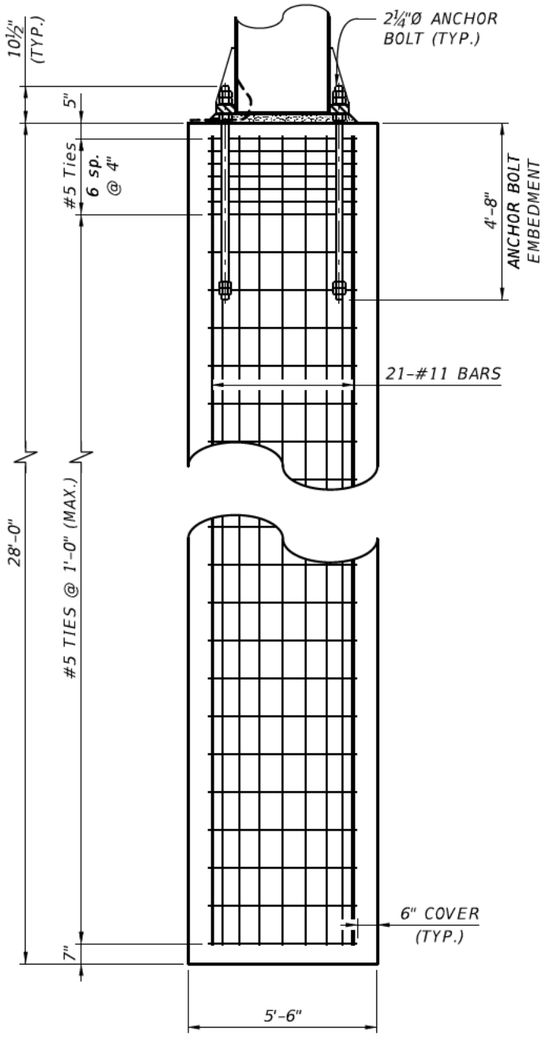
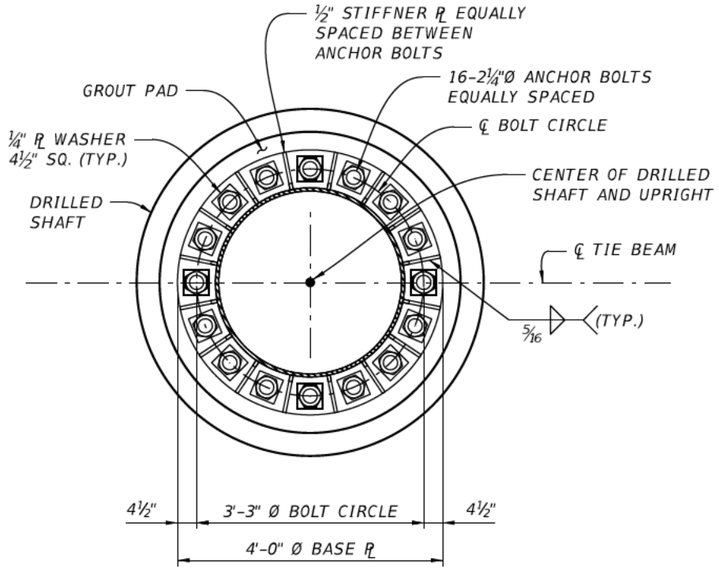
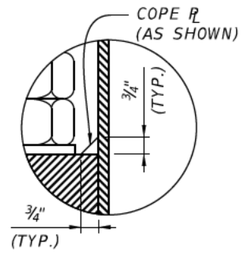


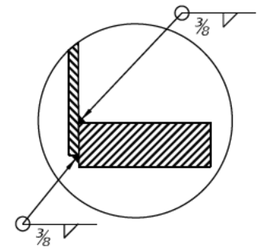
ELEVATION
DRILLED SHAFT



SECTION
UPRIGHT BASE

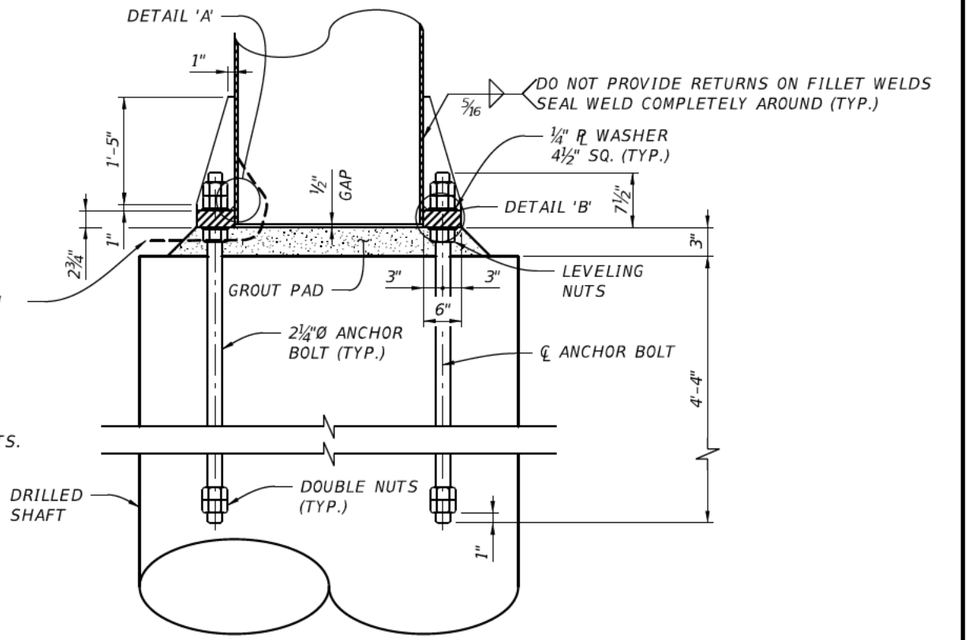


DETAIL 'A'

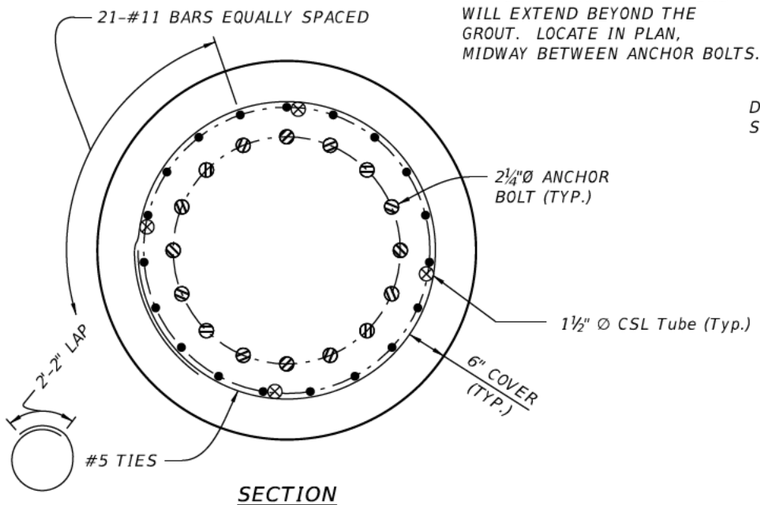


DETAIL 'B'

PROVIDE ⅜"Ø ALL COTTON SASH CORD AS WEEP HOLE WICK. PRIOR TO GROUTING, ATTACH CORD TO INTERIOR OF THE UPRIGHT SUCH THAT THE END WILL EXTEND BEYOND THE GROUT. LOCATE IN PLAN, MIDWAY BETWEEN ANCHOR BOLTS.



SECTION
UPRIGHT BASE



SECTION
DRILLED SHAFT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

DRAWN BY:	DAB
CHECKED BY:	KTZ
DESIGNED BY:	DAB
CHECKED BY:	KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: TRUSS DETAILS (3 OF 3) DMS

REF. DWG. NO.:

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

SHEET NO.: FO-88

$MODEL$ USER: biss6421 8/27/2014 2:11:57 PM \\susora1102\TC$\PROJECTS\00CEA\Wekiva_203_BSA\CADD\struct\BoxTrussSignStr05.dgn

DMS BOX SUPPORT AND CONNECTIONS NOTES

DESIGN SPECIFICATIONS:

FDOT Structure Design Guidelines January 2013
AISC Manual of Steel Construction LRFD 13th Edition
AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 6th Edition (2013).

DESIGN METHOD

All components designed by Allowable Stress Design Method (ASD).

Material Stresses: All allowable stresses are in accordance with the current edition of the AASHTO Bridge Design Standard Specifications for the materials shown in the plans.

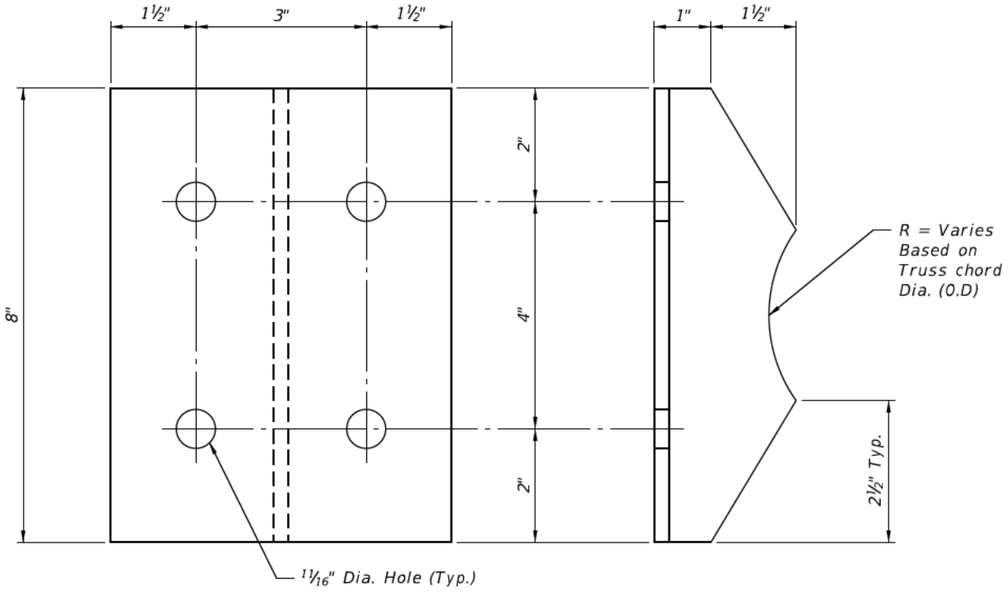
DESIGN LOADS

Dead Load = 3,500 LBS
Live Load = 50 PSF
Wind Load = Design Wind Speed = 130 mph

MATERIALS

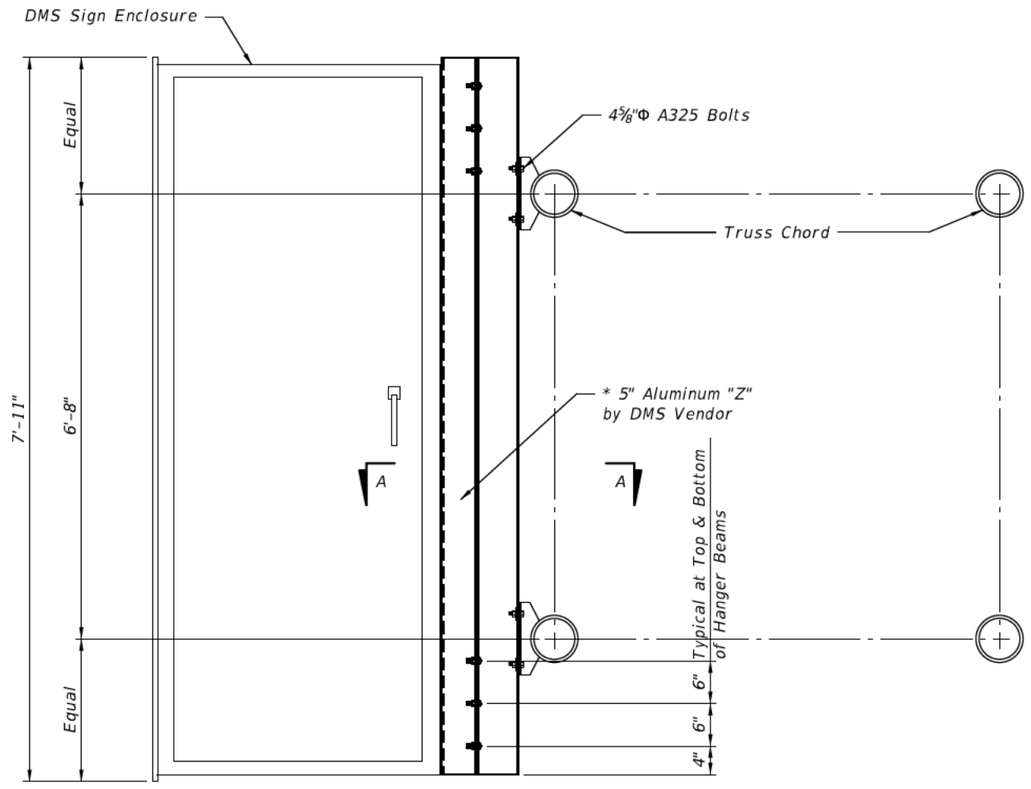
U-Bolts => ASTM A449
All Bolts shall have single self-locking nuts and washers.
All U-Bolts shall be hot-dipped galvanized as per ASTM F2329.

* DMS vendor to coordinate locations of the 'Z' member and W6x15 hanger to avoid conflict with truss gusset plates and members. Contractor shall submit shop drawings and design calculations signed and sealed by a Florida P.E. for review and approval. Shop drawings for DMS shall be coordinated with the truss shop drawings and submitted together with the truss shop drawings to Engineer of Record for review and approval prior to fabrication and installation.

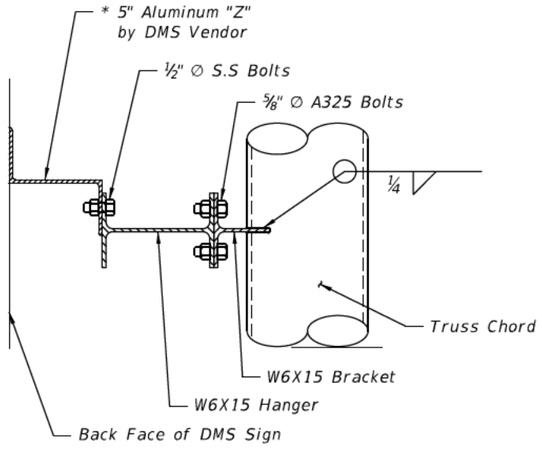


FRONT VIEW SIDE VIEW

W6X15 BRACKET DETAIL



SIDE VIEW



SECTION A-A

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

DRAWN BY:	DAB
CHECKED BY:	KTZ
DESIGNED BY:	DAB
CHECKED BY:	KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

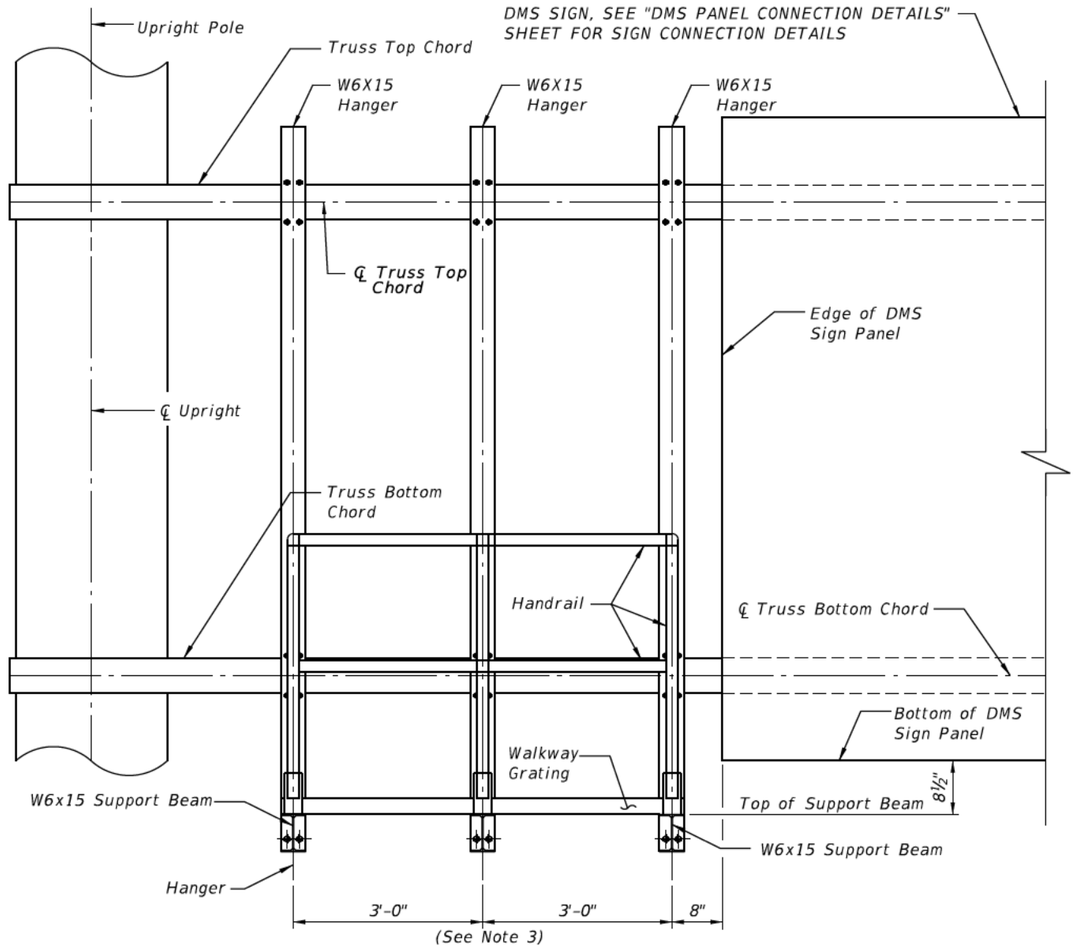
ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: DMS PANEL CONNECTION DETAILS

REF. DWG. NO.:

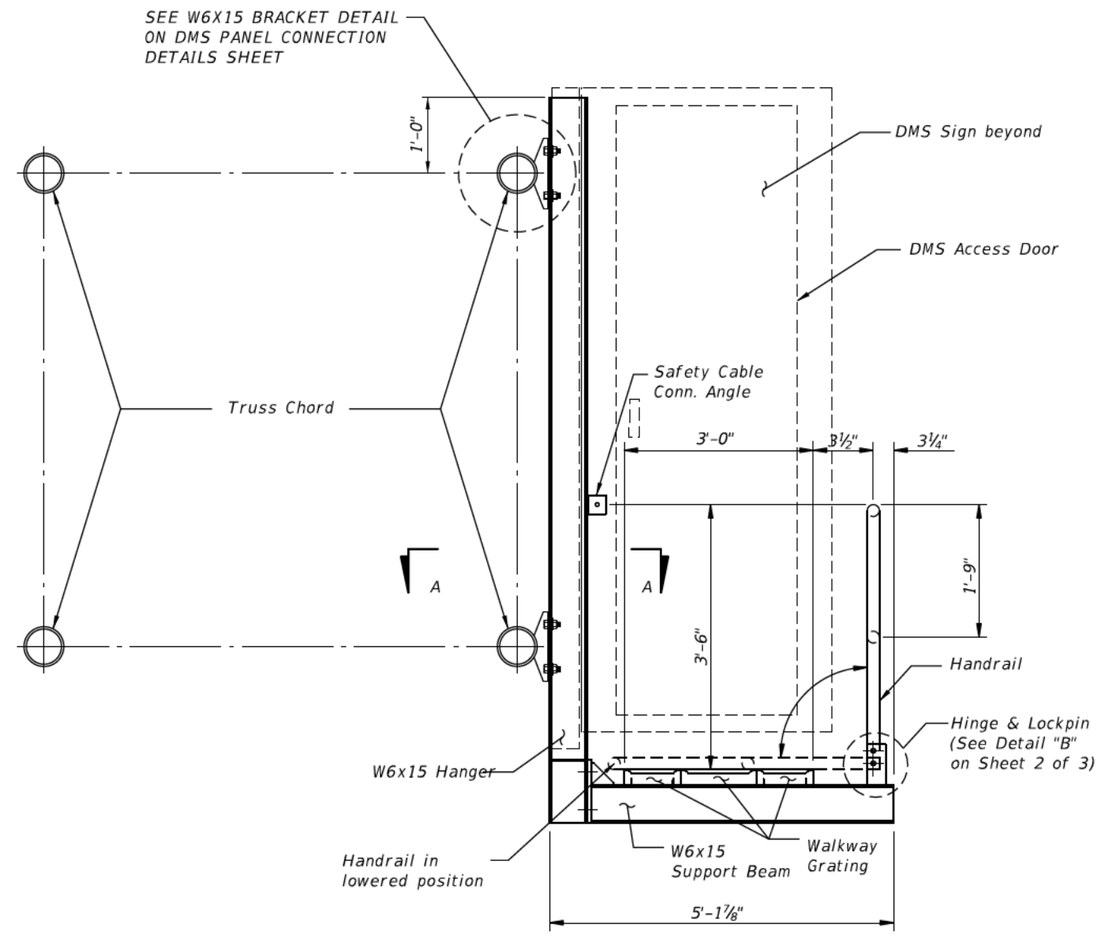
PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

SHEET NO.: F0-89



FRONT ELEVATION

(Truss Web Members not shown for clarity)



SIDE ELEVATION

(Truss Web Members not shown for clarity)

NOTES

1. Design Loads:
   Live Load (Walkway grating) 50 PSF
   Handrail 50 PLF
   Safety Cable 200 LBS – Concentrated load at midspan of associated attachment hardware
2. Materials: Materials for Walkway, Walkway Support, Railing and Steel Plates and Sections shall conform to ASTM A709 Grade 36 and Steel Pipe shall conform to ASTM A53 Grade B. U-Bolts shall conform to ASTM A325. Walkway Grating and Accessories shall meet the live load requirements listed in Note 2. The walkway grating shall be a minimum thickness of 14 gauge and shall be galvanized planks. Walkway shall have a slip resistant surface. Product shall be submitted to the Engineer for review and approval.
3. The maximum Hanger Spacing shall not exceed 5'-0".
4. Finish: All Steel shapes, Plates, and Pipes shall be hot-dipped galvanized after fabrication as per ASTM A123. Nuts, Bolts, U-Bolts and Washers shall be galvanized per ASTM F2329. Stainless Steel (S.S.) bolts shall conform to ASTM F593 Alloy Group I, Alloy 304.
5. Safety Cable shall be ⅜" galvanized steel, 7 x 19 strand core, wire rope. Safety cable shall be connected to eye bolt with S.S. thimble and S.S. wire rope clamps.
6. The contractor should be aware of the possibility of the steel gusset plates conflicting with the placement for the Walkway Hangers. The contractor shall coordinate the location of these Hangers with the Truss to avoid any conflicts with Truss. Shop Drawings for the Walkway assembly (including grating, handrail, etc.) shall be coordinated with the truss shop drawings and submitted together to the Engineer of Record for review and approval prior to fabrication & installation.
7. Payment for indicated assembly of walkway, handrail, safety cable, support members and connections shall be included in the cost of the sign structure.
8. Work this sheet with Access Walkway Details on sheets (2 of 3) and (3 of 3).
9. See Sheet DMS Panel Connection Details for Section A-A.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

DRAWN BY: DAB
CHECKED BY: KTZ
DESIGNED BY: DAB
CHECKED BY: KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

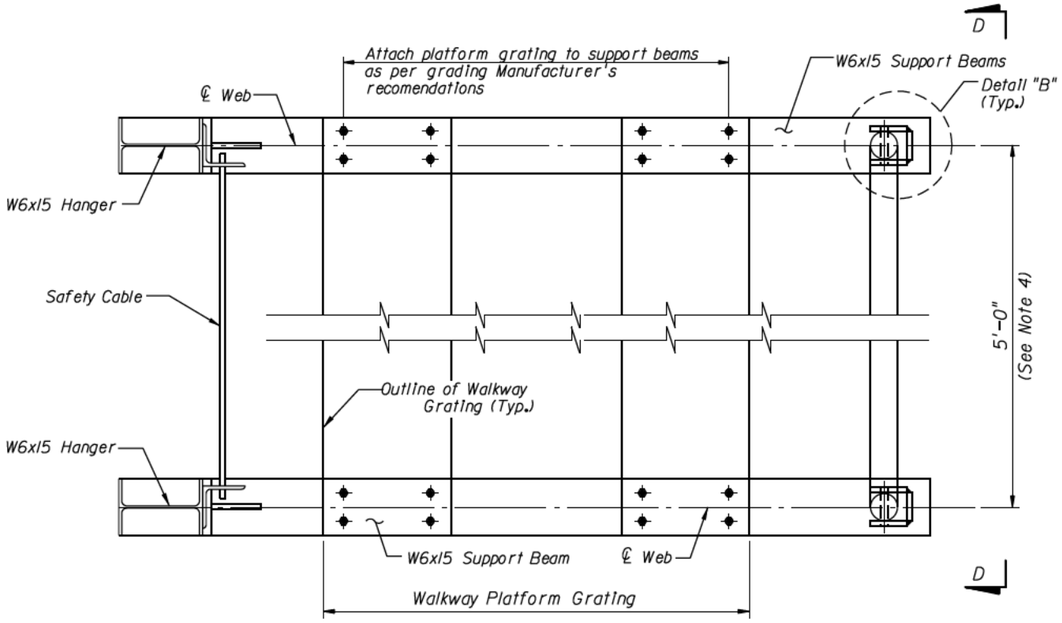
ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: STRUCTURE DETAILS
ACCESS WALKWAY DETAILS (1 OF 3)

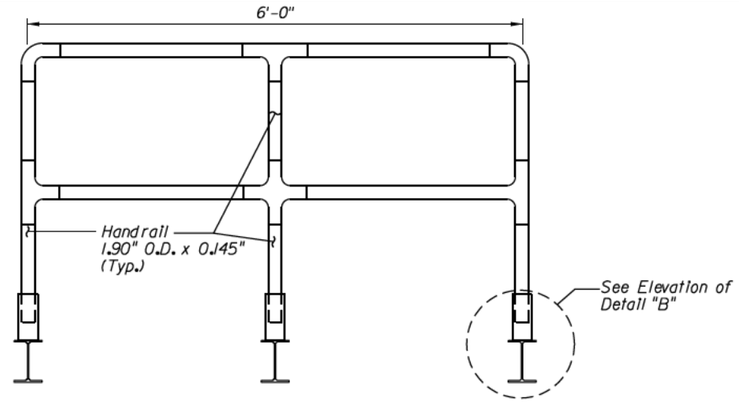
REF. DWG. NO.

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

SHEET NO. FO-90

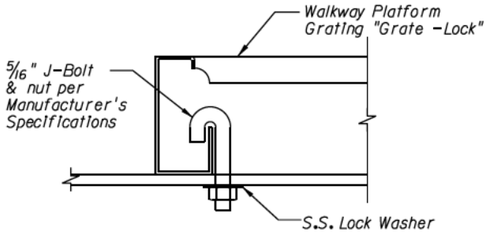


PLAN

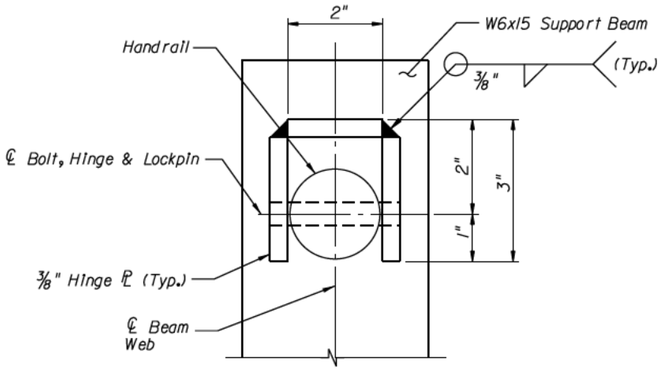


VIEW D-D

(Note: Walkway and other elements not shown for clarity)



DETAIL"A"



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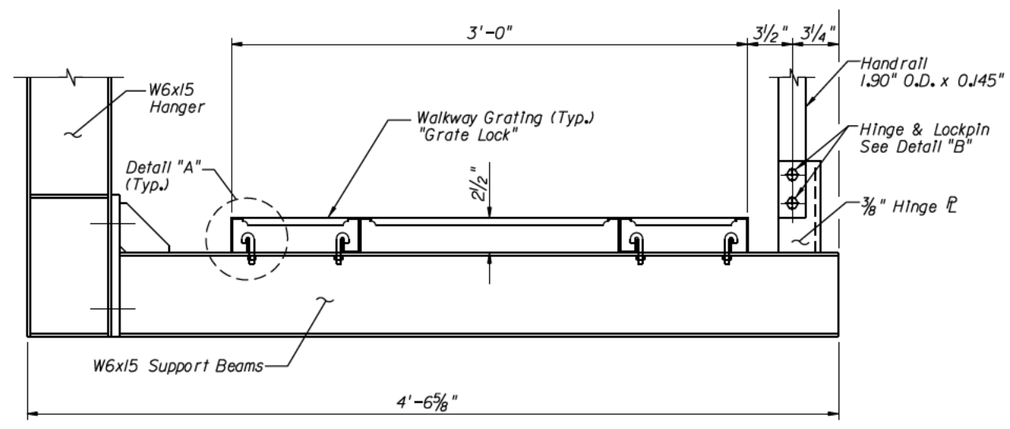
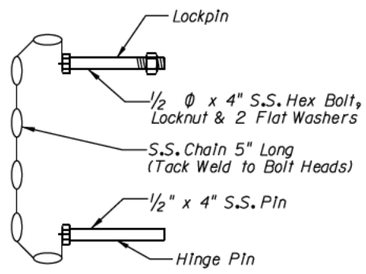
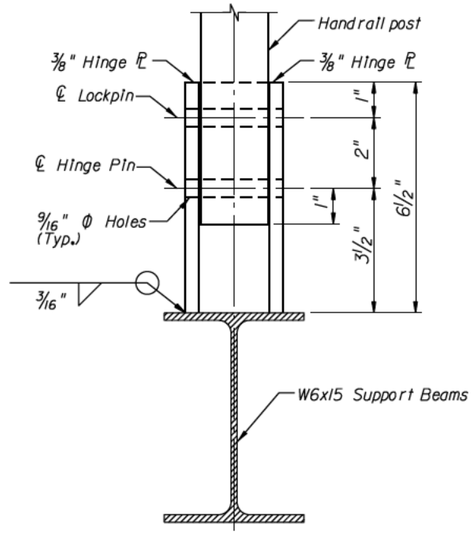


ELEVATION



HINGE PIN DETAIL



ELEVATION OF DETAIL "B"

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS

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DRAWN BY:	DAB
CHECKED BY:	KTZ
DESIGNED BY:	DAB
CHECKED BY:	KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

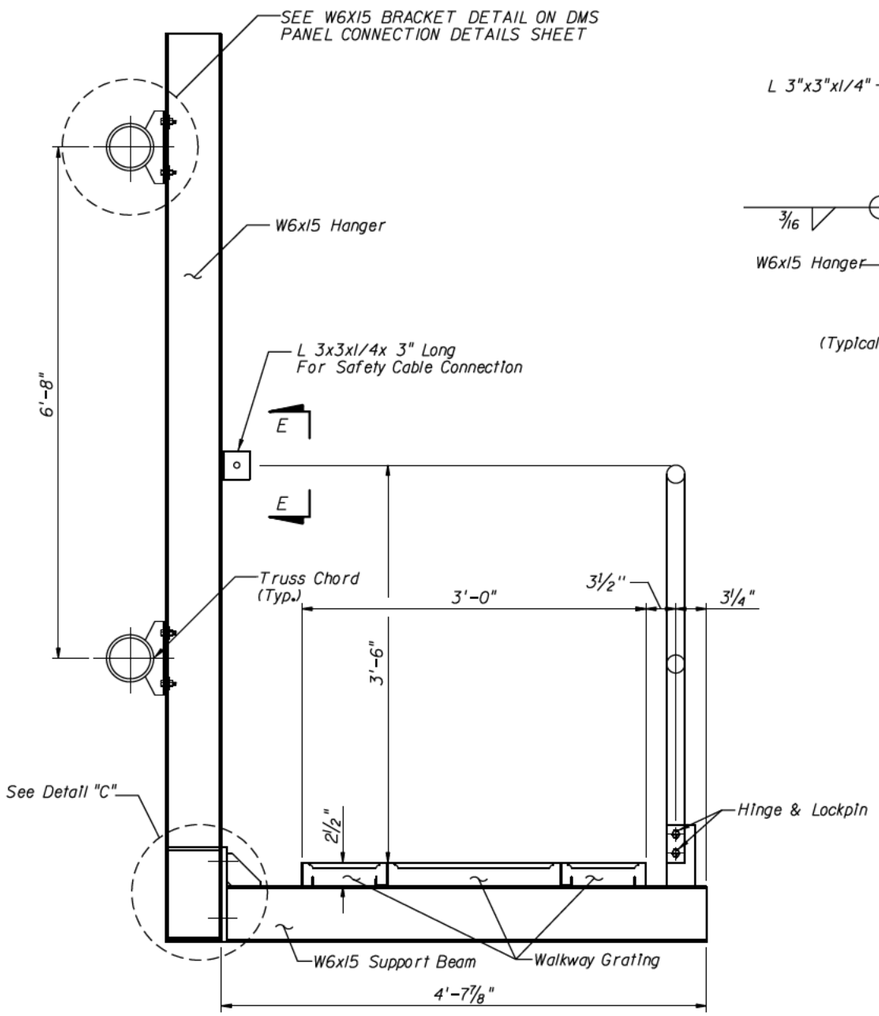
ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: STRUCTURE DETAILS
ACCESS WALKWAY DETAILS (2 OF 3)

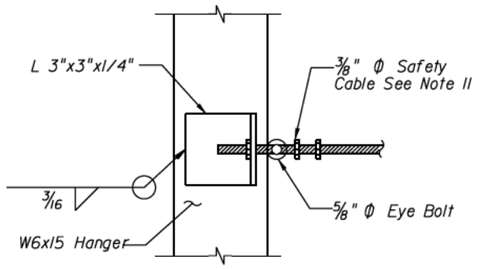
REF. DWG. NO.:

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

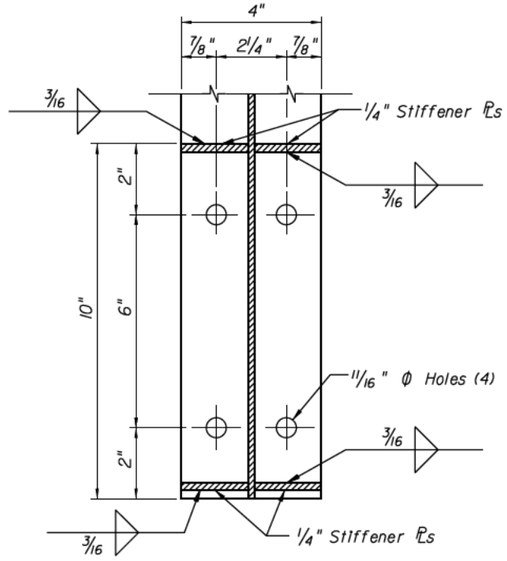
SHEET NO.: FO-91



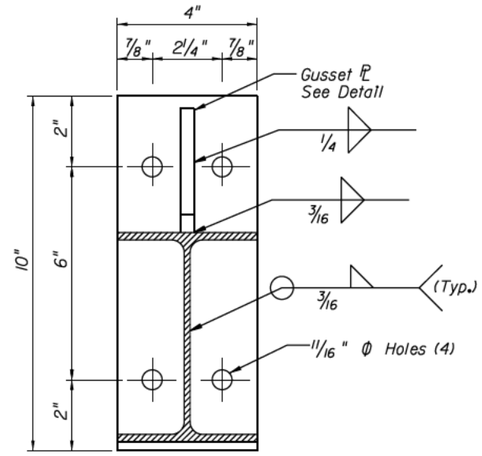
GENERAL DETAILS OF WALKWAY SUPPORT



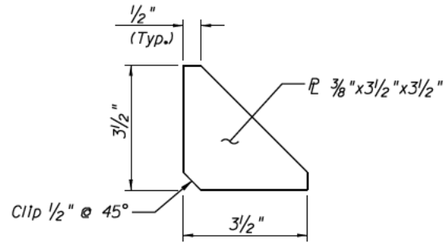
VIEW E-E
(Typical at Begin and End Hanger)



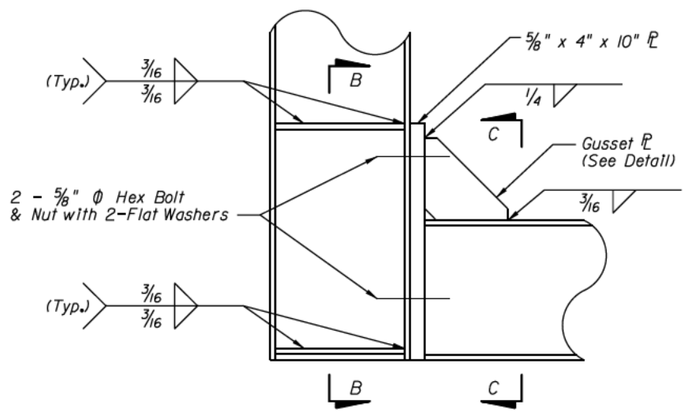
SECTION B-B



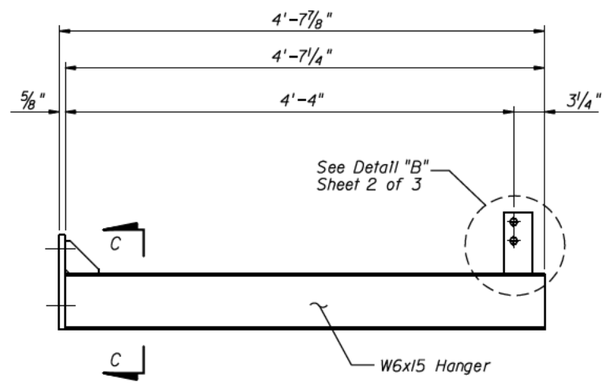
SECTION C-C



GUSSET PLATE DETAIL



DETAIL "C"



WALKWAY SUPPORT BEAMS

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

DRAWN BY:	DAB
CHECKED BY:	KTZ
DESIGNED BY:	DAB
CHECKED BY:	KTZ

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

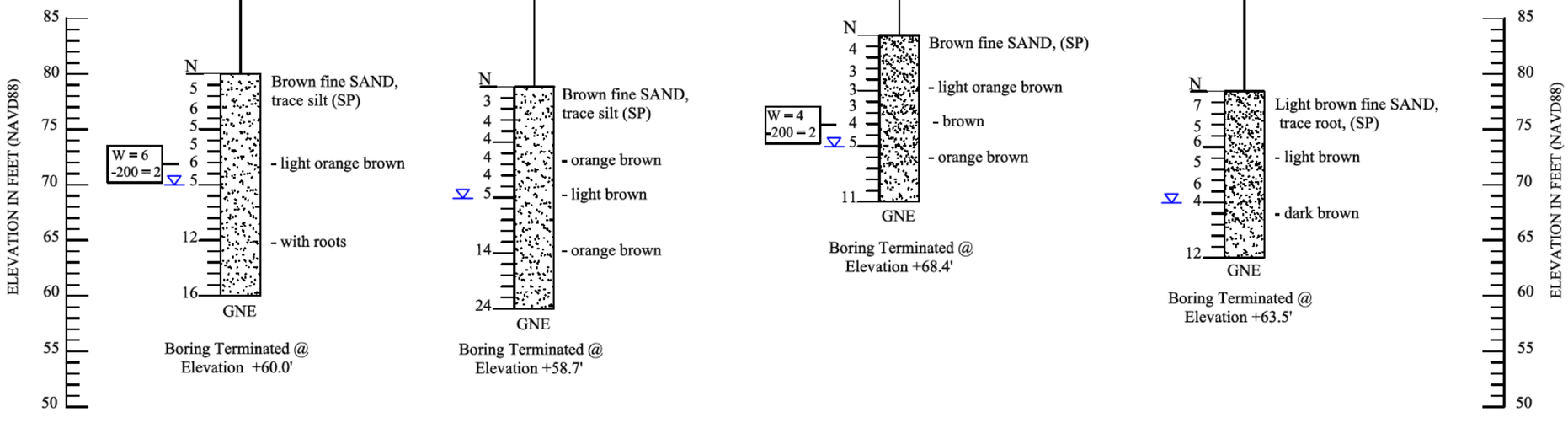
SHEET TITLE: STRUCTURE DETAILS ACCESS WALKWAY DETAILS (3 OF 3)

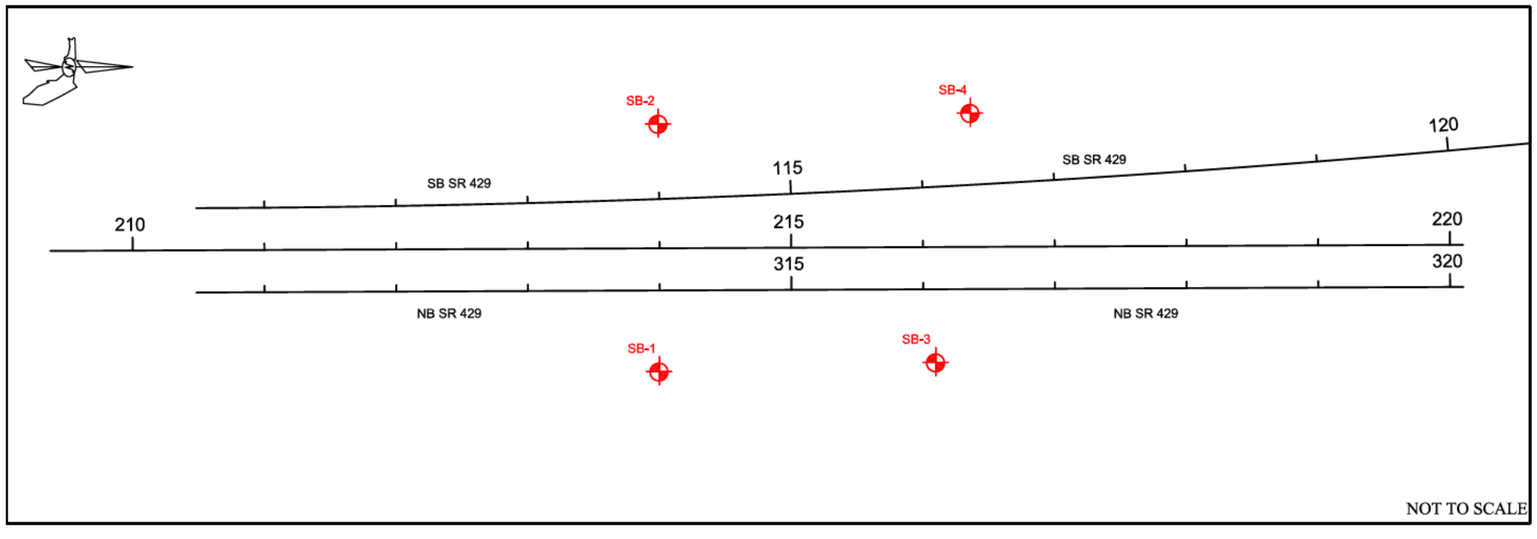
REF. DWG. NO.:

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

SHEET NO.: FO-92

	SB-1	SB-2	SB-3	SB-4
Boring No.:				
Structure Name:	DMS & DCS	TMS	DMS & DCS	TMS
Approx station, offset:	314+00, 61' RT	116+10, 55' LT	214+00, 95, LT	316+10, 55' RT
Baseline:	NB SR 429 CL	SB SR 429 CL	SR 429 CL	NB SR 429 CL
Elevation:	80.0'	78.7'	83.4'	78.5'
Date Drilled:	02/21/2014	02/21/2014	02/21/2014	02/21/2014
	NORTHING: 1598402.4' EASTING: 475716.4'	NORTHING: 1598612.4' EASTING: 475709.5'	NORTHING: 1598401.5' EASTING: 475528.1'	NORTHING: 1598638.4' EASTING: 475520.2'





QUADRANGLE: Apopka, FL.
SECTION: 24
TOWNSHIP: 20 SOUTH
RANGE: 27 EAST
Photo Issue 1960 (Photo Revised 1980)

LEGEND

- SAND
- SB-4 — Approximate Boring Location
- (SP) — Unified soil classification group symbol
- W = / -200 = — Natural Moisture Content (%) (FM 1-T265); Percent Passing No. 200 US Standard Sieve (%) (FM 1-T088)
- GNE — Groundwater not encountered within top 15 feet during time of field exploration
- Estimated seasonal high groundwater level

N — Standard Penetration Test Data

Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)
Spoon Inside Diameter 1 3/8 in.
Spoon Outside Diameter 2 in.
ASTM Standard Automatic Hammer
Drop 30 in.
Hammer Weight 140 lbs.
ASTM Standard Drop Safety Hammer (Rope-Cathead)
Drop 30 in.
Hammer Weight 140 lbs.

NOTES (Drop Safety Hammer)

1. Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
2. Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
3. Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

GRANULAR MATERIALS

RELATIVE DENSITY	Drop Safety Hammer SPT (BLOWS/FT.)	Automatic Hammer SPT (BLOWS/FT.)
Very loose	Less than 4	Less than 3
Loose	4-10	3-7
Medium Dense	10-30	7-21
Dense	30-50	21-35
Very Dense	Greater than 50	Greater than 35

SILTS AND CLAYS

CONSISTENCY	Drop Safety Hammer SPT (BLOWS/FT.)	Automatic Hammer SPT (BLOWS/FT.)
Very soft	Less than 2	Less than 1
Soft	2-4	1-3
Firm	4-8	3-6
Stiff	8-15	6-11
Very Stiff	15-30	11-21
Hard	Greater than 30	Greater than 21

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	MS	03-10-14
Checked by:	GNN	03-12-14
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:	GNN	

GODWIN N. NNADI, Ph.D., P.E.
FL REGISTRATION NO. 50637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214
NES CIVIL GEOTECHNICAL ENVIRONMENTAL CONSULTING ENGINEERING

EXPRESSWAY AUTHORITY

ORLANDO- ORANGE COUNTY EXPRESSWAY AUTHORITY

COUNTY	PROJECT NO.
ORANGE	429-203

SHEET TITLE:
REPORT OF SPT BORINGS FOR DEVICE STRUCTURES

PROJECT NAME:
SR 429 BRIDGE AT WEKIVA PARKWAY-SECTION 1B

SHEET NO.

SHEET 1

NES Project No. R12008

Z:\Roadways\GNadi\Wekiva Parkway\BSA_Section 1B\CAD

Boring No.:
Structure Name:
Approx station, offset:
Baseline:
Elevation:
Date Drilled:

DEVICE STRUCTURES

SB-10
OC-6
307+00, 84' LT
SR 429 CL
91.9'
02/24/2014
NORTHING: 1607552.6'
EASTING: 474420.5'

	N	
	3	Brown fine SAND with roots, trace silt, (SP)
	3	
	4	
	5	- light brown
	6	
02/24/14 ▽	14	- orange, trace clay
W = 43, -200 = 50	12	Orange sandy CLAY, (CH)
	9	Orange clayey SAND, (SC)

Boring Terminated @ Elevation +71.9'

SB-11
OC-5
307+40, 72' RT
SR 429 CL
93.0'
02/24/2014
NORTHING: 1607593.4'
EASTING: 474576.1'

	N	
	2	Brown fine SAND with roots, (SP)
	3	
	2	
	3	
	4	
02/24/14 ▽	7	- dark gray
	8	Brown CLAY, (CH)
	11	Orange clayey SAND, (SC)

Boring Terminated @ Elevation +73.0'

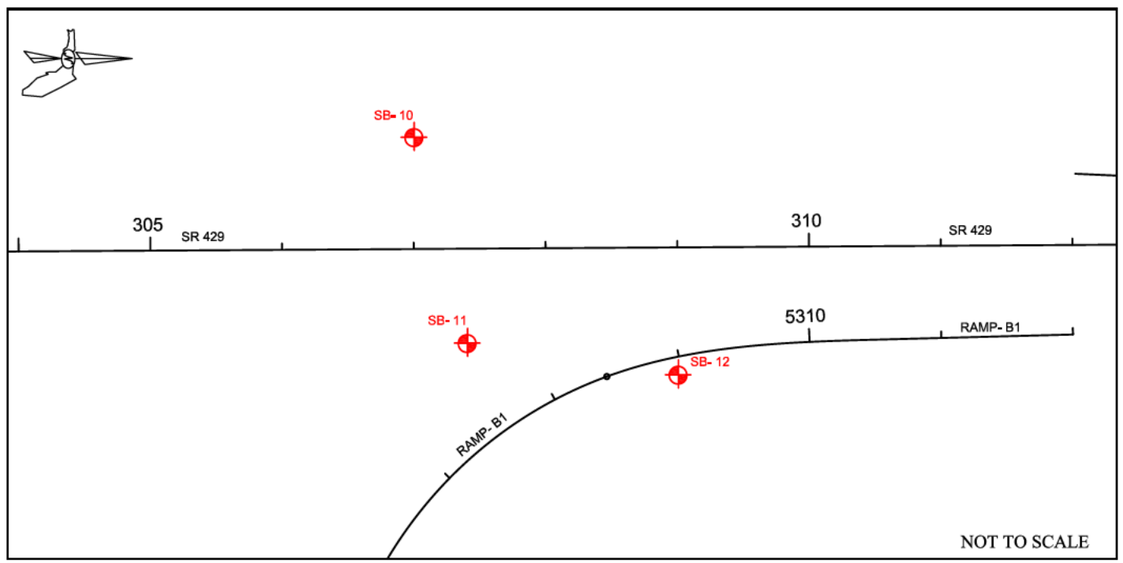
SIGN STRUCTURE

SB-12
TMS
309+00, 97' RT
NB SR 429 CL
102.4'
02/24/2014
NORTHING: 1607753.7'
EASTING: 474600.2'

	N	
	2	Brown fine SAND, trace silt, (SP)
	3	
	4	
	4	
	4	
	7	- light orange
02/24/14 ▽	12	- orange
W = 64, -200 = 98	7	Gray CLAY, (CH)
	6	Brown fine SAND, trace clay, (SP)

Boring Terminated @ Elevation +72.4'

ELEVATION IN FEET (NAVD88): 105, 100, 95, 90, 85, 80, 75, 70, 65, 60, 55



QUADRANGLE: Apopka, FL.
SECTION: 24
TOWNSHIP: 20 SOUTH
RANGE: 27 EAST
Photo Issue 1960 (Photo Revised 1980)

LEGEND

SAND | CLAY | SANDY CLAY

SB-4 ⊕ Approximate Boring Location

(SP) Unified soil classification group symbol

W = , -200 = Natural Moisture Content (%) (FM 1-T265); Percent Passing No. 200 US Standard Sieve (%) (FM 1-T088)

12/04/13 ▽ Groundwater level encountered on date shown

▽ Estimated seasonal high groundwater level

N — Standard Penetration Test Data

Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)
Spoon Inside Diameter 1 3/8 in.
Spoon Outside Diameter 2 in.
ASTM Standard Automatic Hammer
Drop 30 in.
Hammer Weight 140 lbs.
ASTM Standard Drop Safety Hammer (Rope-Cathead)
Drop 30 in.
Hammer Weight 140 lbs.

NOTES (Drop Safety Hammer)

1. Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
2. Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
3. Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

GRANULAR MATERIALS

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Very loose	Less than 4	Less than 3
Loose	4-10	3-7
Medium Dense	10-30	7-21
Dense	30-50	21-35
Very Dense	Greater than 50	Greater than 35

SILTS AND CLAYS

CONSISTENCY	Drop Safety Hammer SPT (BLOWS/FT.)	Automatic Hammer SPT (BLOWS/FT.)
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Soft	2-4	1-3
Firm	4-8	3-6
Stiff	8-15	6-11
Very Stiff	15-30	11-21
Hard	Greater than 30	Greater than 21

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	MS	03-10-14
Checked by:	GNN	03-12-14
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:	GNN	

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EXPRESSWAY AUTHORITY

ORLANDO- ORANGE COUNTY EXPRESSWAY AUTHORITY

COUNTY	PROJECT NO.
ORANGE	429-203

SHEET TITLE:
REPORT OF SPT BORINGS FOR DEVICE AND SIGN STRUCTURES

PROJECT NAME:
SR 429 BRIDGE AT WEKIVA PARKWAY-SECTION 1B

SHEET NO.

SHEET 4

NES Project No. R12008

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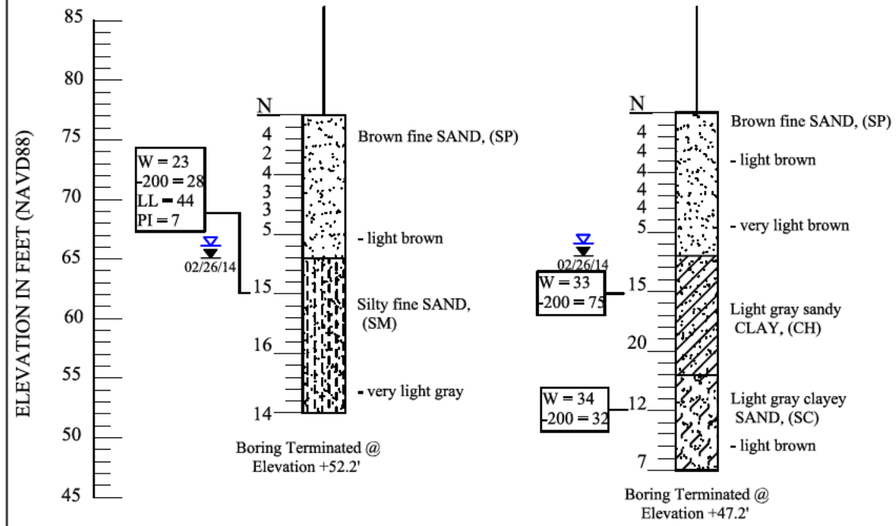
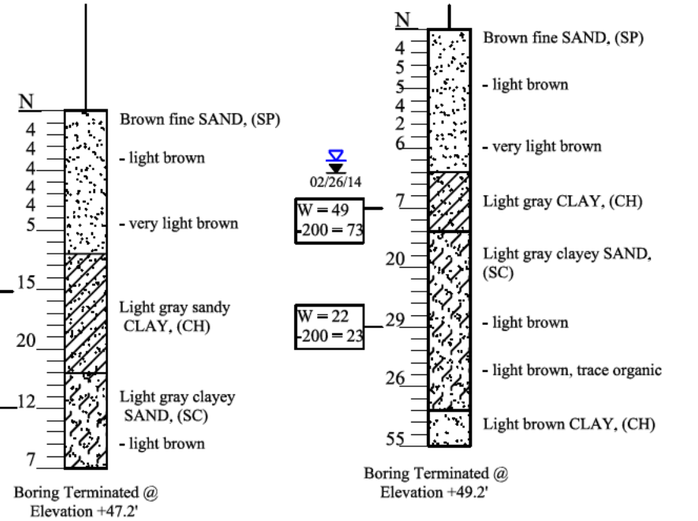
DEVICE STRUCTURES

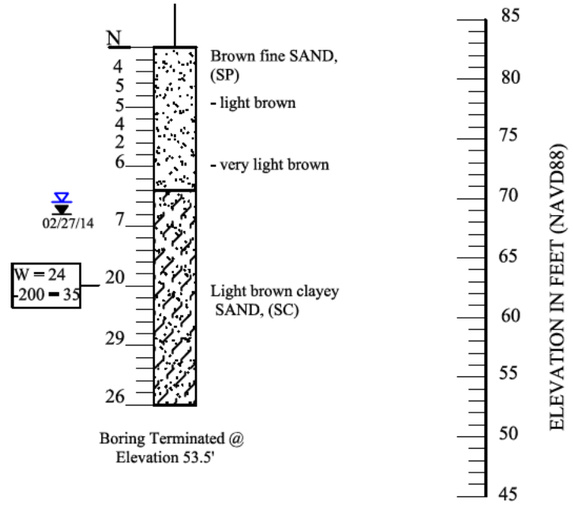
	SB-19	SB-20	SB-21
Boring No.:	SB-19	SB-20	SB-21
Structure Name:	TMS	TMS	DCS
Approx station, offset:	329+00, 97' RT	3290+00, 126' LT	331+20, 131' LT
Baseline:	NB SR 429 CL	RAMP B1 CL	SR 429 CL
Elevation:	77.2	77.2'	84.2'
Date Drilled:	02/26/2014	02/26/2014	02/26/2014
	NORTHING: 1609753.7'	**NORTHING: 1609767.1'**	**NORTHING: 1609972.2'**
	EASTING: 474587.7'	**EASTING: 474700.3'**	**EASTING: 474358.4'**

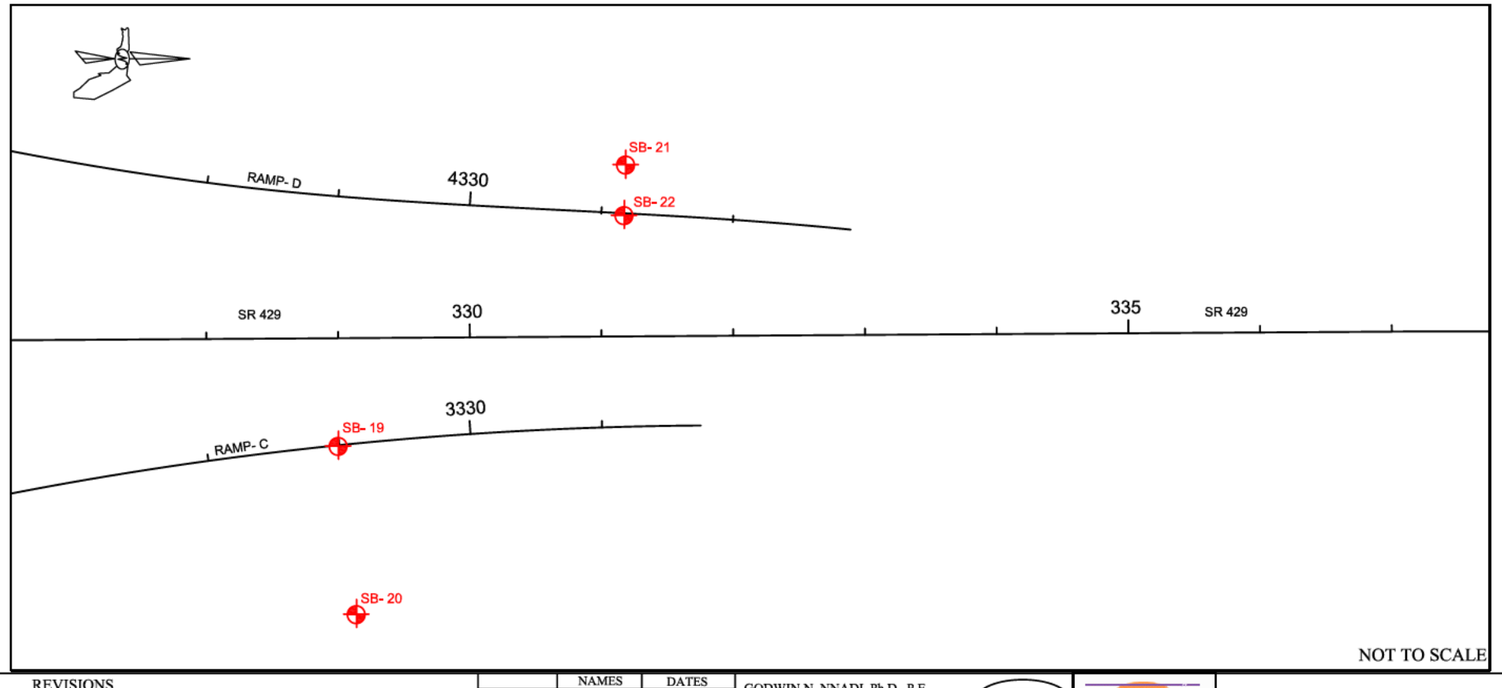




SIGN STRUCTURE

	SB-22
Boring No.:	SB-22
Structure Name:	OC-13
Approx station, offset:	331+18, 92' LT
Baseline:	SR 429 CL
Elevation:	83.5'
Date Drilled:	02/27/2014
	NORTHING: 1609970.5'
	EASTING: 474397.4'





QUADRANGLE: Apopka, FL.
SECTION: 24
TOWNSHIP: 20 SOUTH
RANGE: 27 EAST
Photo Issue 1960 (Photo Revised 1980)

LEGEND

SAND | SANDY CLAY | CLAYEY SAND | CLAY

SB-4 — Approximate Boring Location

(SP) — Unified soil classification group symbol

W = Natural Moisture Content (%) (FM 1-T265)
-200 = Percent Passing No. 200 US Standard Sieve (%) (FM 1-T088)
LL = Liquid Limit (%) (FM 1-T089)
PI = Plasticity Index (%) (FM 1-T090)

12/04/13 — Groundwater level encountered on date shown

Estimated seasonal high groundwater level

N — Standard Penetration Test Data

Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)
Spoon Inside Diameter 1 3/8 in.
Spoon Outside Diameter 2 in.
ASTM Standard Automatic Hammer
Drop 30 in.
Hammer Weight 140 lbs.
ASTM Standard Drop Safety Hammer (Rope-Cathead)
Drop 30 in.
Hammer Weight 140 lbs.

NOTES (Drop Safety Hammer)

1. Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
2. Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
3. Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

GRANULAR MATERIALS

RELATIVE DENSITY	Drop Safety Hammer SPT (BLOWS/FT.)	Automatic Hammer SPT (BLOWS/FT.)
Very loose	Less than 4	Less than 3
Loose	4-10	3-7
Medium Dense	10-30	7-21
Dense	30-50	21-35
Very Dense	Greater than 50	Greater than 35

SILTS AND CLAYS

CONSISTENCY	Drop Safety Hammer SPT (BLOWS/FT.)	Automatic Hammer SPT (BLOWS/FT.)
Very soft	Less than 2	Less than 1
Soft	2-4	1-3
Firm	4-8	3-6
Stiff	8-15	6-11
Very Stiff	15-30	11-21
Hard	Greater than 30	Greater than 21

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	MS	03-10-14
Checked by:	GNN	03-12-14
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:	GNN	

GODWIN N. NNADI, Ph.D., P.E.
FL REGISTRATION NO. 50637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214
NES CIVIL GEOTECHNICAL ENVIRONMENTAL CONSULTING ENGINEERING

EXPRESSWAY AUTHORITY

ORLANDO- ORANGE COUNTY EXPRESSWAY AUTHORITY

COUNTY	PROJECT NO.
ORANGE	429-203

SHEET TITLE:
REPORT OF SPT BORINGSFOR DEVICE AND SIGN STRUCTURES

PROJECT NAME:
SR 429 BRIDGE AT WEKIVA PARKWAY-SECTION 1B

SHEET NO.

NES Project No. R12008

SHEET 6

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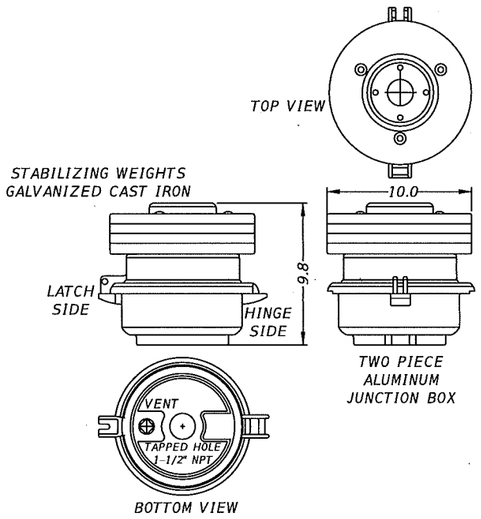
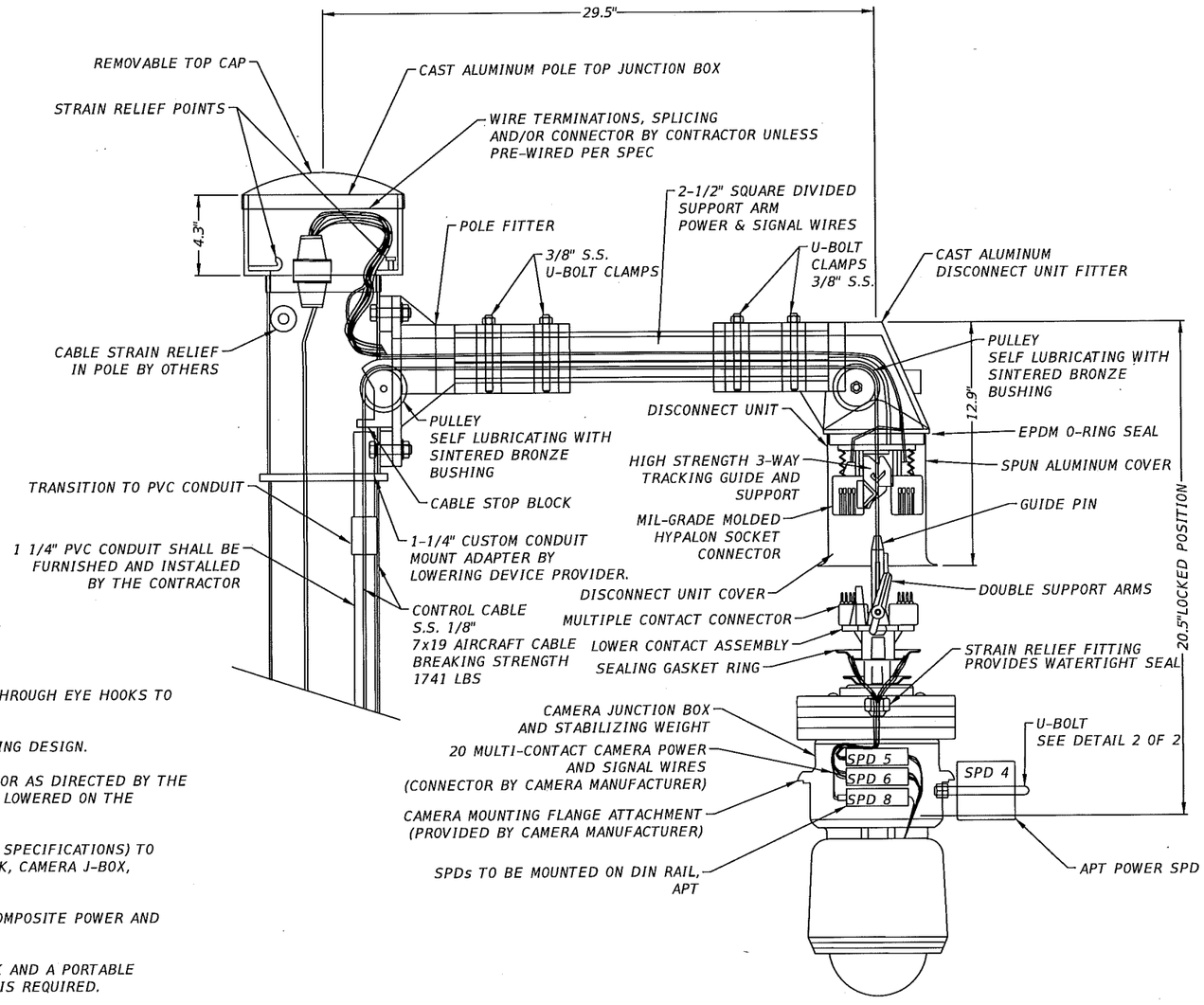


CAMERA JUNCTION BOX



NOTES:

1. INTERNAL CAMERA SUPPLY CABLES RUN THROUGH THE INSIDE OF THE POLE SHALL BE INSTALLED THROUGH EYE HOOKS TO PREVENT INTERFERENCE WITH LOWERING MECHANISM CABLE, UNLESS OTHERWISE NOTED.
2. CAMERA LOWERING DEVICE DETAILS ARE REPRESENTATIVE AND DO NOT REFLECT ACTUAL ENGINEERING DESIGN.
3. LOWERING ARM SHALL BE MOUNTED PERPENDICULAR TO THE ROADWAY OR AS SHOWN IN THE PLANS OR AS DIRECTED BY THE AUTHORITY. THE CCTV POLE SHALL BE POSITIONED SO THAT THE DOME ENCLOSURE CAN BE SAFELY LOWERED ON THE OPPOSITE SIDE OF THE HAND CRANK.
4. CAMERA LOWERING SYSTEM, [MG]2 INC. MODEL NOS. (DESIGNER TO ENTER MODEL # BASED OFF CFX SPECIFICATIONS) TO INCLUDE POLE TOP J-BOX, MOUNTING HARDWARE, LOWERING CABLE, MOLDED HYPALON CONTACT BLOCK, CAMERA J-BOX, HOUSING, CUSTOM 50 FT.
5. CAMERA LOWERING DEVICE TO BE SHIPPED READY FOR POLE ATTACHMENT TO INCLUDE 50 FT. OF COMPOSITE POWER AND SIGNAL CABLE PRE WIRED TO LOWERING DEVICE AT THE FACTORY.
6. [MG]2 INC. PART NO. LWR5-100 FOR THE PORTABLE LOWERING TOOL WITH BOTH MANUAL HAND CRANK AND A PORTABLE ELECTRIC DRILL MOTOR WITH CUSTOM CLUTCH ADAPTER. ONE LOWERING TOOL PER EVERY 10 POLES IS REQUIRED.
7. [MG]2 INC. PART NO. CLDMG2-ON SITE IS FOR ON SITE INSTALLATION/OPERATION INSTRUCTION AND CERTIFICATION. THIS ENSURES THE PRODUCT IS ASSEMBLED CORRECTLY AND MORE IMPORTANTLY ALL NECESSARY PERSONS ARE TRAINED IN THE PROPER SAFE OPERATION OF THE SYSTEM. PRIOR TO ERECTING THE FIRST POLE THE CONTRACTOR MUST CONTACT THE LOWERING DEVICE SUPPLIER AND SCHEDULE FOR A FACTORY REPRESENTATIVE TO BE ON SITE.
8. SPD DEVICES SHALL BE MANUFACTURED BY APT (ADVANCED PROTECTION TECHNOLOGIES). FOR SPD 4, SPD 5, SPD 6, AND SPD 8 ARE LISTED ON THE CAMERA JUNCTION BOX WIRING DETAIL.
9. DIN RAIL #21608 SHOULD BE ELECTRICALLY GROUNDED TO THE STABILIZING WEIGHT BY A #6 WIRE FROM THE END OF THE DIN RAIL TO A RING TERMINAL TO THE WEIGHT VIA SCREW.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Andrew J. Lucyshyn, P.E. No. 54624

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ROAD NO.	PROJECT NO.
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CCTV CAMERA LOWERING DEVICE DETAIL (1 OF 2)

SHEET NO. F0-96

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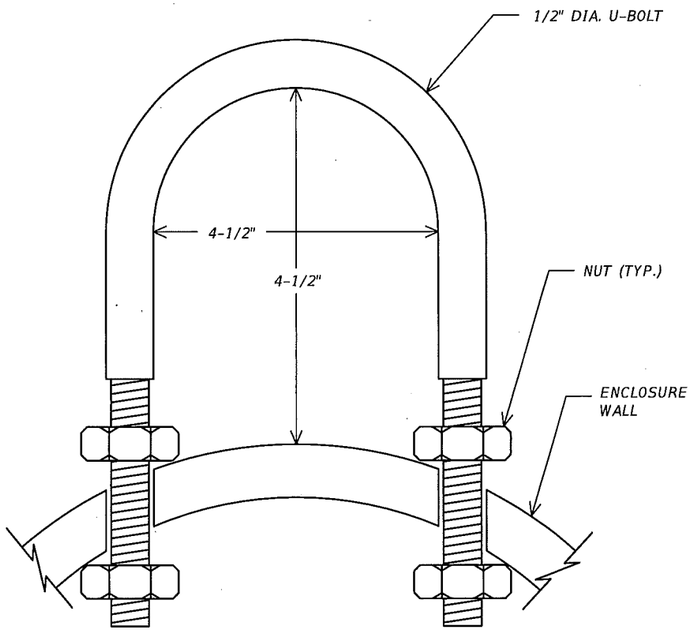
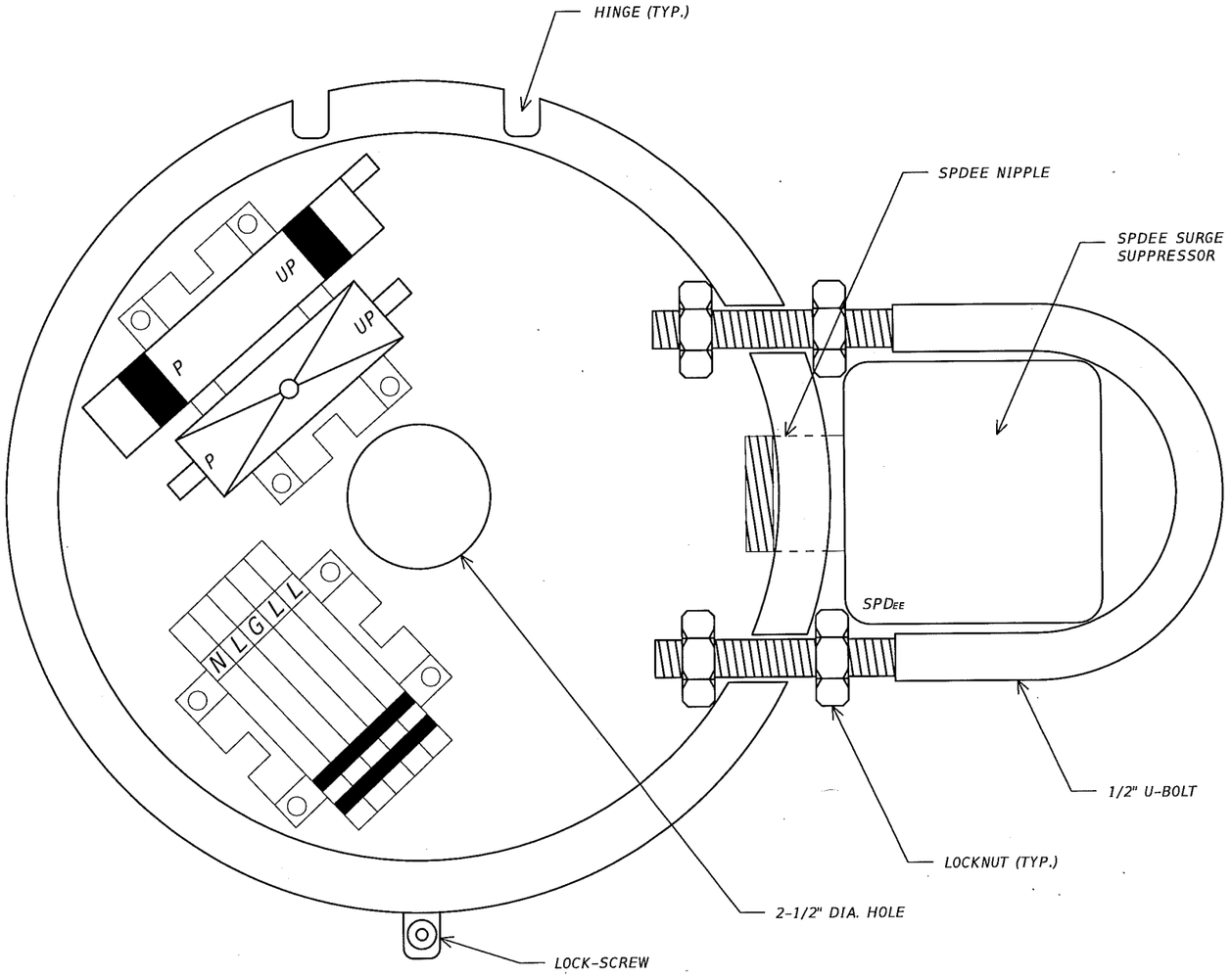
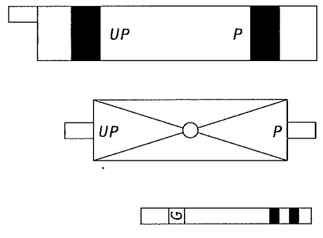


U-BOLT DETAIL
TOP VIEW
N.T.S.



LOWER PORTION OF ENCLOSURE
9-1/2" DIAMETER
TOP VIEW
N.T.S.

LEGEND



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ROAD NO.	PROJECT NO.
SR 429	429-203

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CCTV CAMERA LOWERING DEVICE DETAIL (2 OF 2)

SHEET NO.
F0-97

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CAMERA JUNCTION BOX WIRING DIAGRAM

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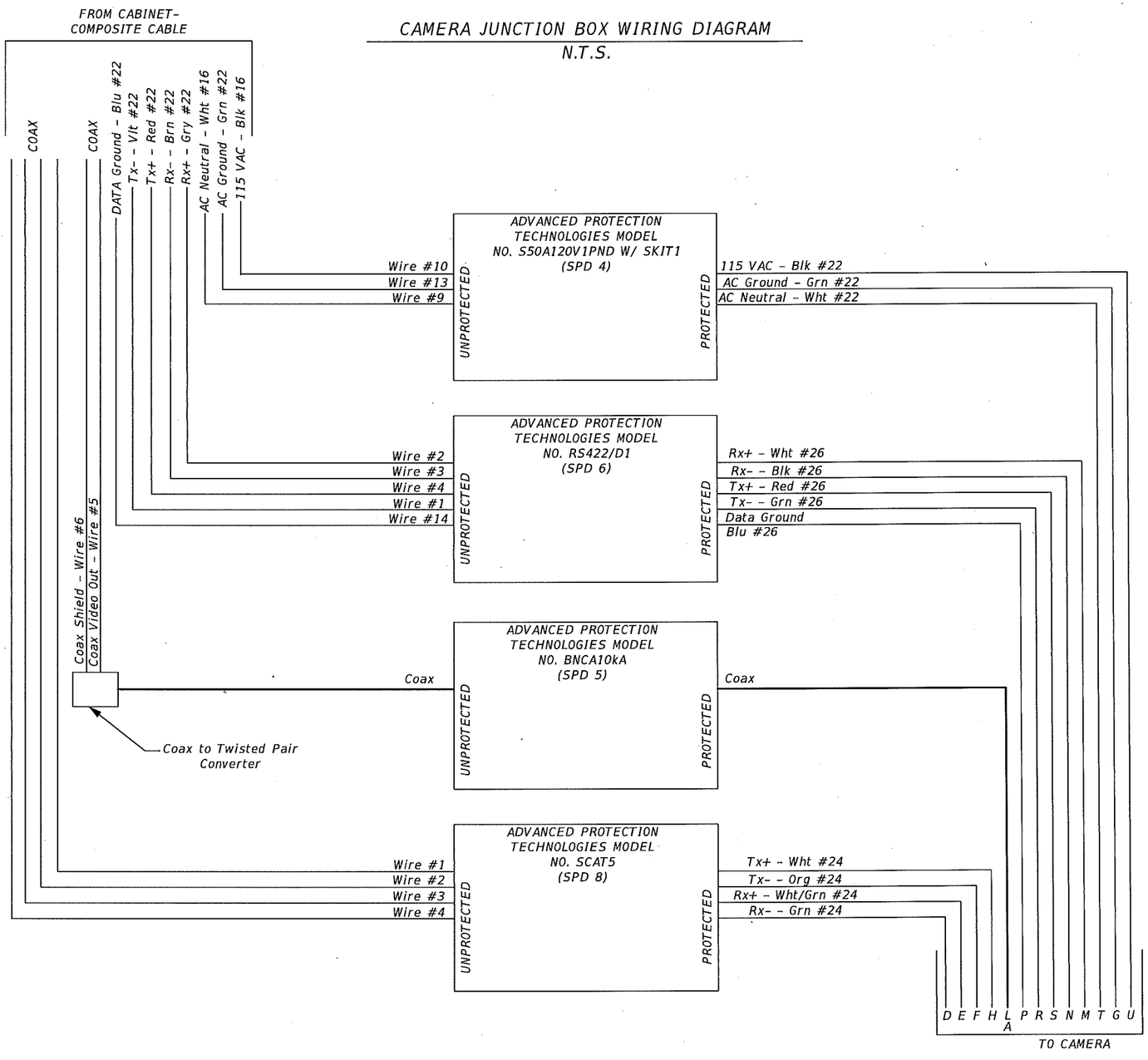

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CCTV CAMERA JUNCTION BOX WIRING DETAIL

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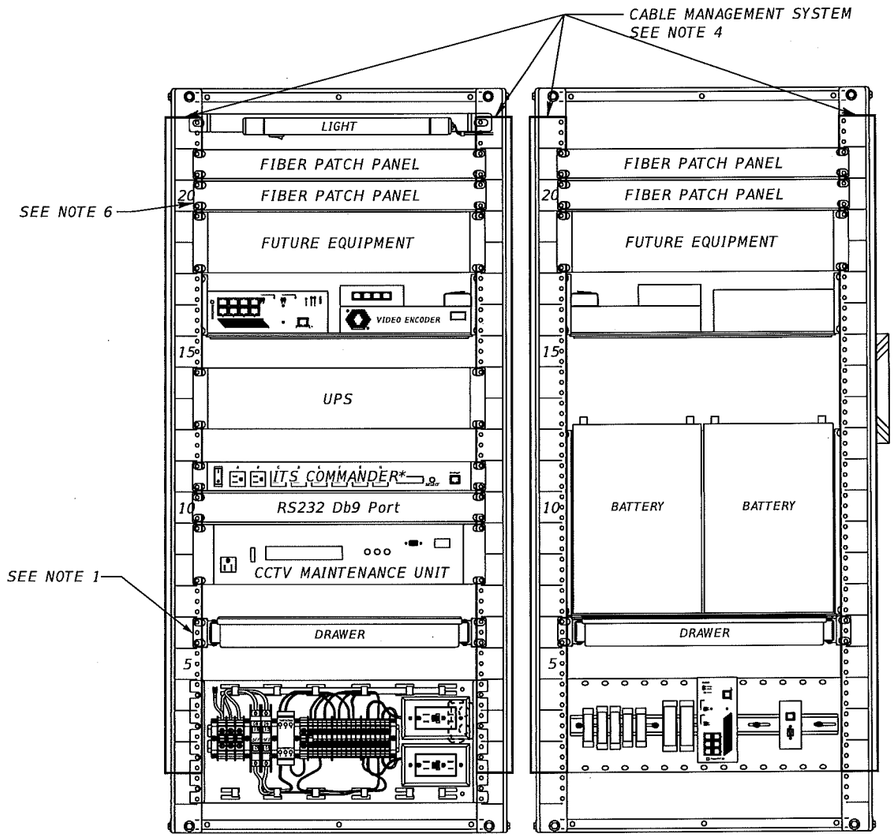

FRONT VIEW BACK VIEW

336S CABINET LAYOUT 2
(EXISTING WITH RECESSED POWER PANEL OR PROPOSED)

= DENOTES PANDUIT CABLE MANAGEMENT SYSTEM

* = REMOTE POWER MANAGER W/ ENVIRONMENTAL MONITOR

NOTES:

1. INTERNAL CABINET RACK ASSEMBLY SHALL BE ADJUSTED SO THAT THE PANDUIT CABLE MANAGEMENT SYSTEM IS NOT IN CONFLICT WITH THE CABINET INTERNAL DOOR LOCKING MECHANISM
2. THE CABINET SHALL PROVIDE FOR RACK MOUNTING AND SHELVING OF ALL EQUIPMENT.
3. CABINETS SHALL BE TYPE 170 MODEL 336S AND SHALL MEET CFX SPECIFICATION 668.
4. TYPE 170 CABINETS SHALL BE PLACED AS SHOWN 3' FROM BOTTOM OF CABINET TO GRADE. IF IMPRACTICAL DUE TO SITE GEOMETRICS, AN ALTERNATE LOCATION ADJACENT TO THE STRUCTURE SHALL BE DESIGNED FOR A CABINET PLACEMENT ON A TYPE II POLE WITH THE BOTTOM OF THE CABINET 3' FROM GRADE.
5. SLIDE OUT TRAY SHALL BE ORIENTED SUCH THAT THE TECHNICIAN SHALL NEVER HAVE THEIR BACK TO THE DIRECTION OF TRAVEL.
6. CABINET SHALL NEVER BE MOUNTED ON THE APPROACHING SIDE OF TRAFFIC.
7. IT IS THE INTENT OF THE ENGINEER TO PROVIDE A SAFE WORKING SPACE FOR THE FIELD TECHNICIANS.
8. PANDUIT DIMENSIONS ARE AS FOLOWS:
   A. LEFT SIDE OF CABINET; 2" WIDE BY 1.5" DEEP
   B. RIDE SIDE OF CABINET - (LATCH SIDE); 2" WIDE BY 1" DEEP

LEGEND:

- OR SPD 1: 24 VDC
- OR SPD 2: RS485
- OR SPD 3: RS232
- POWER STRIP
- RS900G
- PORT SERVER
- CLICK 201
- CLICK 202
- OR DB9 MAINT. PORT
- BATTERY VOLTAGE SENSOR
- DCS POWER SUPPLY OR SPDS
- OR ETHERNET SWITCH
- ITS COMMANDER

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CCTV CABINET DETAIL

SHEET NO. F0-99

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PROPOSED CCTV & TMS CONNECTION DIAGRAM

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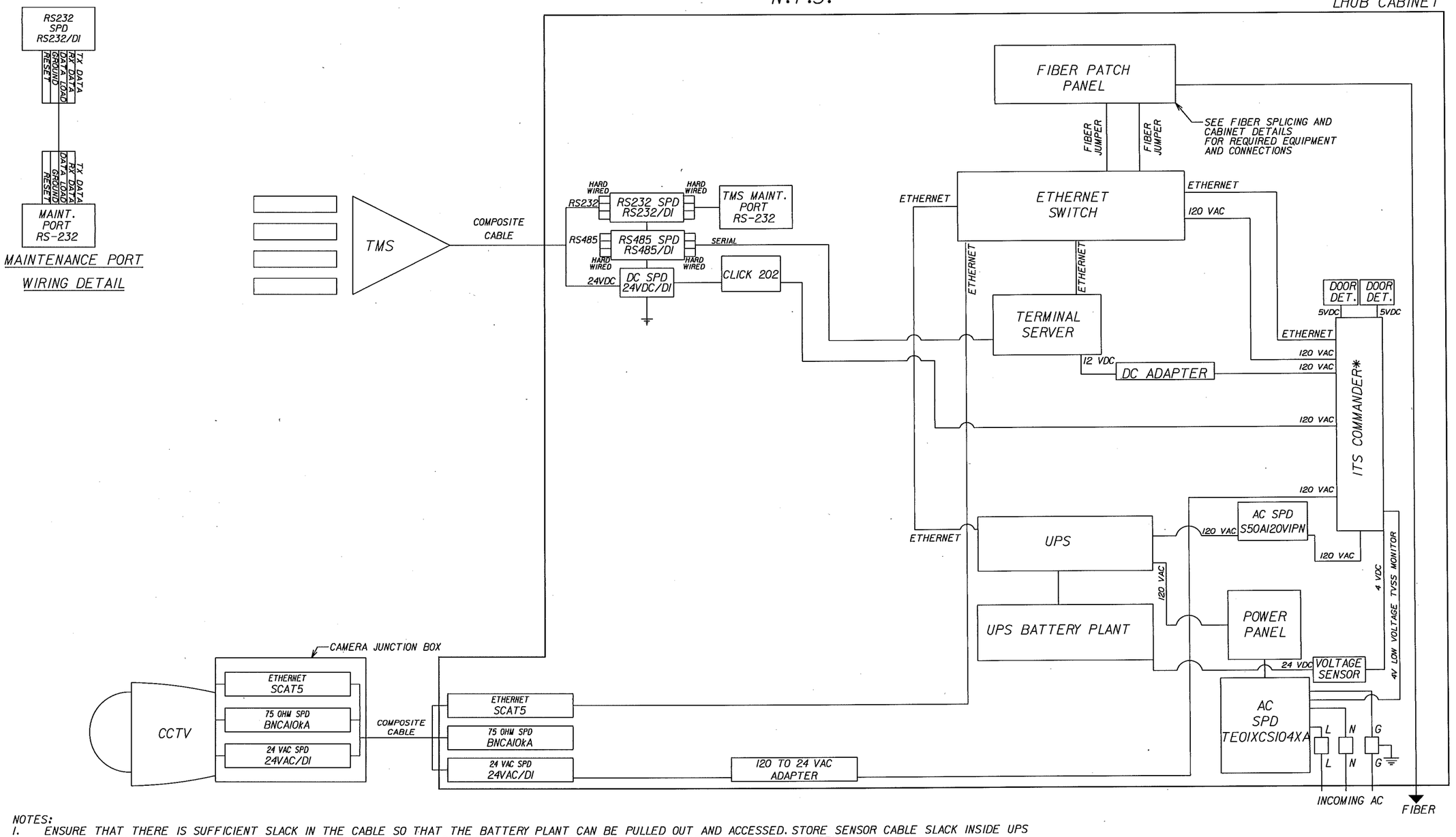

NOTES:

1. ENSURE THAT THERE IS SUFFICIENT SLACK IN THE CABLE SO THAT THE BATTERY PLANT CAN BE PULLED OUT AND ACCESSED. STORE SENSOR CABLE SLACK INSIDE UPS BATTERY TRAY. COST FOR UPS BATTERY PLANT CABLE SLACK SHALL BE INCIDENTAL TO THE CABINET/ ENVIRONMENTAL MONITOR PAY ITEM.
2. INSTALL DRY CONTACT AND WIRING CAPABLE OF REMOTE SNMP COMMUNICATIONS AS DIRECTED IN PLANS.

* = REMOTE POWER MANAGER W/ ENVIRONMENTAL MONITOR

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SR 429	429-203

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TYPICAL CCTV / TMS WIRING DIAGRAM

SHEET NO. F0-100

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PROPOSED CCTV CONNECTION DIAGRAM

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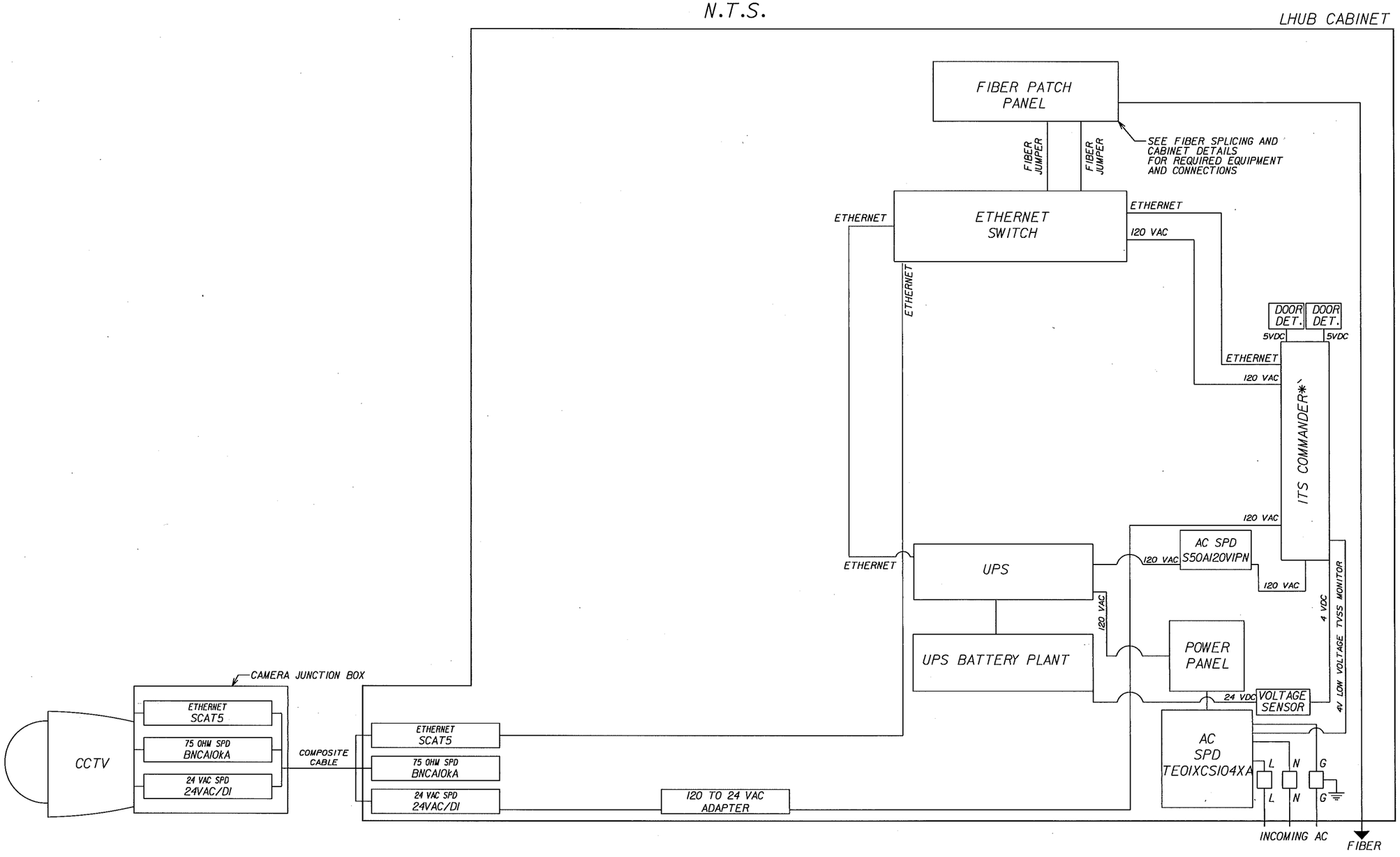

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2. INSTALL DRY CONTACT AND WIRING CAPABLE OF REMOTE SNMP COMMUNICATIONS AS DIRECTED IN PLANS.

* = REMOTE POWER MANAGER W/ ENVIRONMENTAL MONITOR

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Andrew J. Lucyshyn, P.E. No. 54624

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ROAD NO.	PROJECT NO.
SR 429	429-203

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TYPICAL CCTV WIRING DIAGRAM

SHEET NO. F0-101

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CCTV CAMERA POLE, LOWERING SYSTEM & FOUNDATION GENERAL NOTES

1. DESIGN CRITERIA: DESIGNED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" 6TH EDITION, 2013 WITH INTERIMS. THE DESIGN WIND SPEED OF 130 MPH IS IN CONFORMANCE WITH THE FDOT " PLANS PREPARATION MANUAL " AND "STRUCTURES MANUAL"(CURRENT EDITION).

   FOUNDATION DESIGN PARAMETERS:

SOIL TYPE:	COHESIONLESS (FINE SAND)
SOIL FRICTION ANGLE:	30 DEGREES
SOIL WEIGHT (ASSUME SATURATED):	50 PCF

2. POLE SHAFT: THE POLE SHAFT SHALL BE 12 SIDED WITH A MAXIMUM 3⅜" CORNER RADIUS, HAVE A CONSTANT LINEAR TAPER OF 0.14 IN/FT, AND CONTAIN ONLY ONE LONGITUDINAL SEAM WELD. CIRCUMFERENTIAL WELDED TUBE BUTT SPLICES AND LAMINATED TUBES ARE NOT PERMITTED. LONGITUDINAL SEAM WELDS WITHIN 6" OF COMPLETE PENETRATION POLE TO BASE PLATE WELDS SHALL BE COMPLETE PENETRATION WELDS.

3. HAND HOLES: SEE DETAILS

4. CABLE SUPPORTS: ELECTRICAL CABLE GUIDES AND PARKING STAND (EYEBOLTS): TOP AND BOTTOM ELECTRICAL CABLE GUIDES SHALL BE LOCATED WITHIN THE POLE ALIGNED WITH EACH OTHER. ONE CABLE GUIDE SHALL BE POSITIONED 2" BELOW THE HANDHOLE AND THE OTHER SHALL BE POSITIONED 1" DIRECTLY BELOW THE TOP OF TENON. A PARKING STAND SHALL BE

5. CCTV STRUCTURE MATERIALS SHALL BE AS FOLLOWS:

POLES	-> ASTM A1011 GRADE 50 (LESS THAN ¼"), ASTM A572 GRADE 50 (¼" AND OVER)
STEEL PLATES & POLE CAP	-> ASTM A709 GRADE 50 OR ASTM A36
WELD METAL	-> E70XX
BOLTS (EXCEPT ANCHOR BOLTS)	-> ASTM A325, TYPE 1
ANCHOR BOLTS	-> ASTM F1554 GRADE 55
NUTS FOR ANCHOR BOLTS	-> ASTM A563 GRADE A HEAVY HEX
WASHERS FOR ANCHOR BOLTS	-> ASTM F436 TYPE 1
HANDHOLE FRAME	-> ASTM A709 GRADE 36 OR ASTM A36
HANDHOLE COVER	-> ASTM A1011 GRADE 50, 55, 60 OR 65 KSI
STAINLESS STEEL SCREWS	-> AISI TYPE 316
NUT COVERS	-> ASTM B26 (319-F)

6. ALL STEEL ITEMS SHALL BE HOT DIP GALVANIZED AS FOLLOWS:

ALL NUTS, BOLTS AND WASHERS	-> ASTM F2329
ALL OTHER STEEL ITEMS	-> ASTM A123

7. REINFORCING STEEL SHALL BE ASTM A615-96, GRADE 60.

8. CONCRETE SHALL BE CLASS IV (DRILLED SHAFT) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4 KSI FOR ALL ENVIRONMENTAL CLASSIFICATIONS. CONTRACTOR MAY INCREASE DRILLED SHAFT DIAMETER AND MAINTAIN 6" MINIMUM CLEAR COVER AT NO COST TO THE AUTHORITY IF THE ANCHOR BOLT DESIGN REQUIRES.

9. GROUT SHALL HAVE A MINIMUM 3-DAY COMPRESSIVE STRENGTH OF 5 KSI AND SHALL MEET THE REQUIREMENTS OF SECTION 934. GROUT UNDER BASE PLATE AFTER POLE IS SET AND PROPERLY PLUMBED.

10. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE (STEEL) ANSI/AWS D1.1 (CURRENT EDITION).

11. SHOP DRAWINGS FOR THIS STRUCTURE ARE REQUIRED AND ARE TO INCLUDE POLE AND TENON DESIGN CALCULATIONS AND DETAIL DRAWINGS SIGNED AND SEALED BY A FLORIDA REGISTERED P.E. FABRICATION SHALL NOT BEGIN UNTIL THESE SHOP DRAWINGS ARE APPROVED.

12. THE FOUNDATION FOR THE CCTV STRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 455 OF THE SPECIFICATIONS EXCEPT THAT NO PAYMENT FOR THE FOUNDATION SHALL BE MADE UNDER SECTION 455. THE COST OF PROVIDING THE FOUNDATION SHALL BE INCLUDED IN THE PAY ITEM 686-105 ITS POLE (FURNISH & INSTALL 50 FT STEEL POLE WITH LOWERING DEVICE), THE PAY ITEMS SHALL ALSO INCLUDE ANY INCIDENTAL ITEMS INCURRED IN FURNISHING AND INSTALLING THIS CCTV STRUCTURE.

13. EXCEPT FOR ANCHOR BOLTS, ALL BOLT HOLE DIAMETERS SHALL BE EQUAL TO THE BOLT DIAMETER PLUS 1/16", PRIOR TO GALVANIZING. HOLE DIAMETERS FOR ANCHOR BOLTS SHALL NOT EXCEED THE BOLT DIAMETER PLUS ½".

14. THE STRUCTURE SHALL BE INSTALLED PLUMB.

15. THE STRUCTURE SHALL NOT BE ERECTED UNTIL THE FOUNDATION CONCRETE HAS BEEN ALLOWED TO CURE FOR A MINIMUM OF SEVEN DAYS OR CONCRETE HAS ACHIEVED 28 DAY COMPRESSIVE STRENGTH.

16. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING CONDUIT OR FON CABLE AND TONE WIRE. ANY DAMAGE SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

17. POLE SHALL BE GALVANIZED ACCORDING TO SPECIFICATION 962 AND POWDER COATED FLAT BLACK OVER GALVANIZATION BY THE MANUFACTURER.

18. CONTRACTOR SHALL CONTACT UTILITY COMPANIES PRIOR TO FOUNDATION CONSTRUCTION AND FIELD VERIFY ADJACENT UTILITIES PRIOR TO DRILLING.

19. 100% OF FULL-PENETRATION GROOVE WELDS AND A RANDOM 25% OF PARTIAL PENETRATION GROOVE SHALL BE INSPECTED. FULL PENETRATION GROOVE WELDS SHALL BE PERFORMED BY RADIOGRAPHY OR ULTRASONICS.

LOWERING DEVICE:

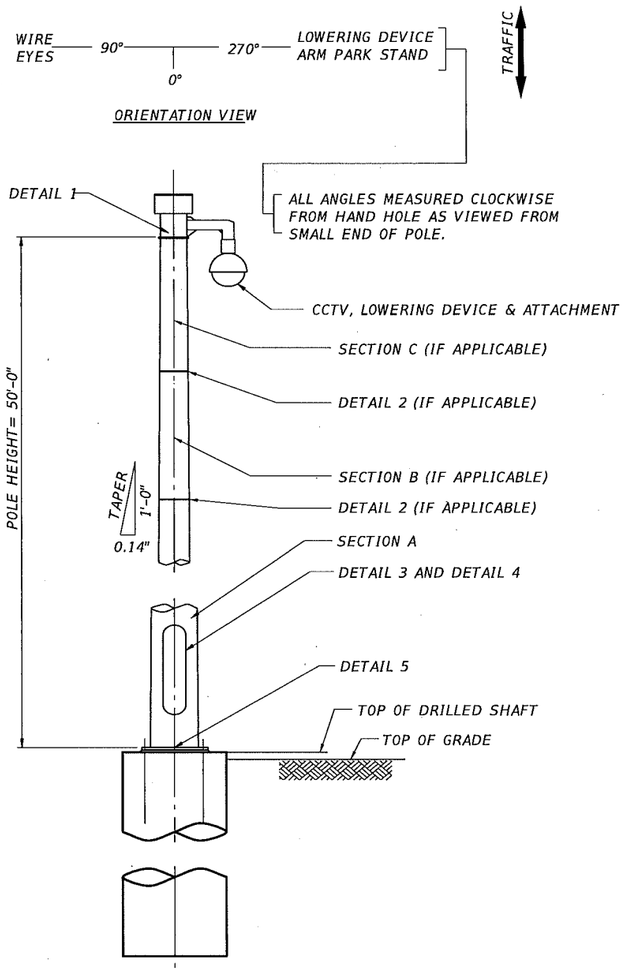
1. POLE TOP TENON: A TENON SHALL BE ATTACHED TO THE POLE TOP WITH MOUNTING HOLES AND SLOT AS REQUIRED FOR THE MOUNTING OF THE CAMERA-LOWERING SYSTEM. THE TENON SHALL BE OF DIMENSIONS NECESSARY TO FACILITATE CAMERA LOWERING DEVICE COMPONENT INSTALLATION. EACH SLOT SHALL BE PARALLEL TO THE POLE CENTERLINE FOR MOUNTING THE LOWERING DEVICE.

2. THE STRUCTURE MUST BE ASSEMBLED AFTER GALVANIZING AND PRIOR TO SHIPMENT TO THE SITE TO ASSURE FIT UP. IT MUST BE DISASSEMBLED FOR SHIPPING.

3. ALL CABLES SHALL BE SECURED IN A MANNER THAT PREVENTS THEM FROM INTERFERING WITH OR BEING DAMAGED BY THE LOWERING CABLE THAT MOVES WITHIN THE POLE.

4. SET ORIENTATION OF POLE SUCH THAT THE CAMERA LOWERING DEVICE ARM IS ORIENTED PERPENDICULAR TO THE ROADWAY OR AS DIRECTED BY THE ENGINEER. THE CCTV POLE SHALL BE POSITIONED SO THAT THE CAMERA CAN BE SAFELY LOWERED WITHOUT REQUIRING LANE CLOSURES

5. POLE SHALL INCLUDE LOWERING DEVICE WHICH INCLUDES TOP J-BOX, MOUNTING HARDWARE, LOWERING CABLE, CONTACT BLOCK, WATERPROOF ELECTRICAL CONNECTORS, CAMERA J-BOX, HOUSING AND STEEL POLE.



ELEVATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ATKINS
482 S. Keller Road, Orlando, FL 32810
Certificate of Authorization No. 24
Kenneth T. Zagers P.E. 58221

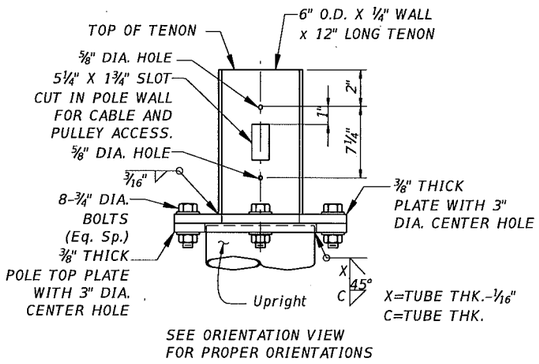
DRAWN BY:	CENTRAL FLORIDA EXPRESSWAY AUTHORITY		
CHECKED BY:			
DESIGNED BY:	ROAD NO.	PROJECT NO.	
CHECKED BY:	SR 429	429-203	

SHEET TITLE: CCTV STRUCTURES AND FOUNDATIONS (SHEET 1 OF 3)

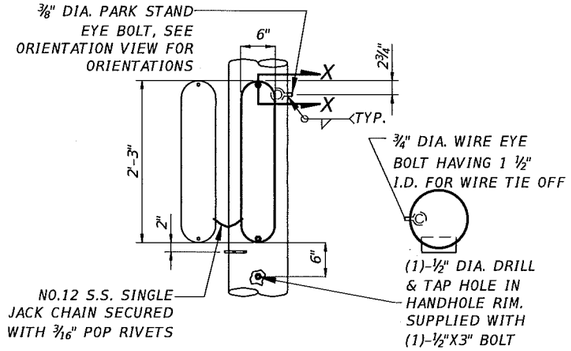
REF. DWG. NO.:

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

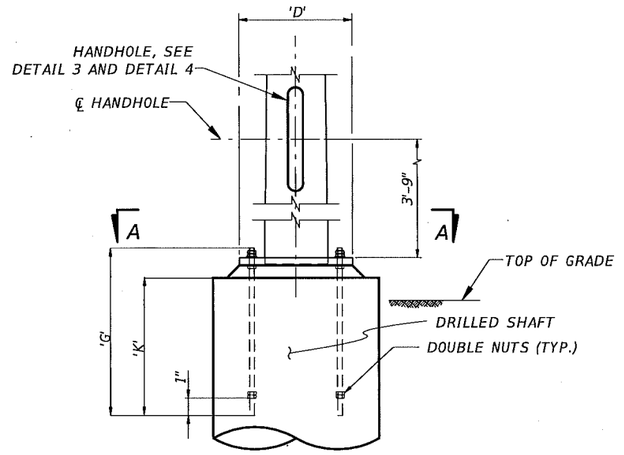
SHEET NO.: F0-102



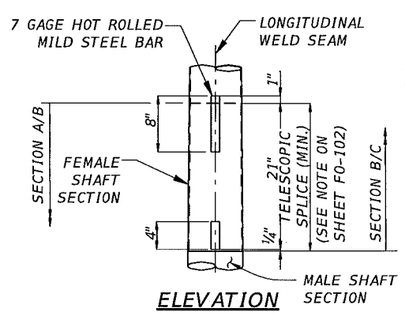
DETAIL 1 - POLE TENON



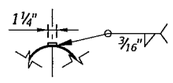
DETAIL 3 - HANDHOLE & EYE BOLT



DETAIL 5

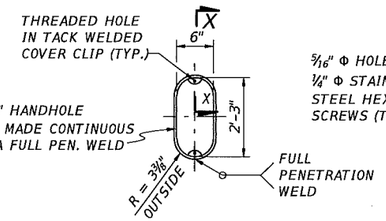


ELEVATION

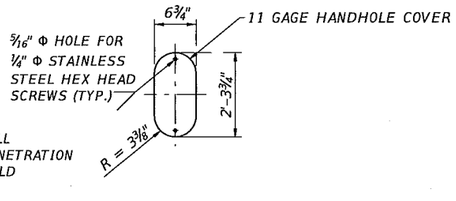


PLAN

DETAIL 2 - WELD REINFORCEMENT

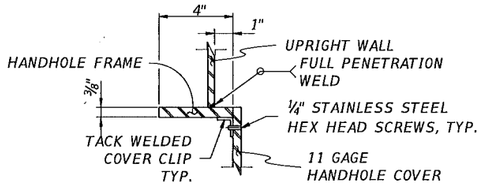


HANDHOLE FRAME

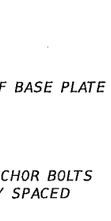


HANDHOLE COVER

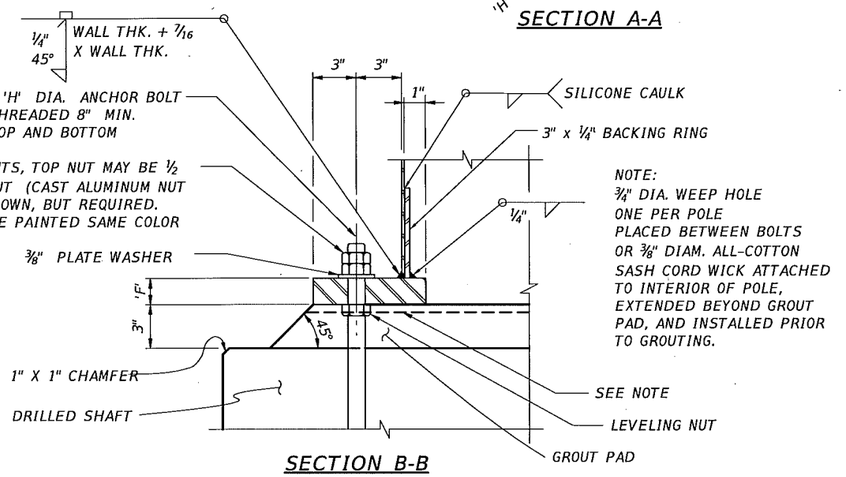
DETAIL 4 - HANDHOLE FRAME AND COVER



SECTION X-X



SECTION A-A



SECTION B-B

NOTE: DETAILS AND SECTIONS NOT TO SCALE.

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: CCTV STRUCTURES AND FOUNDATIONS (SHEET 2 OF 3)

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

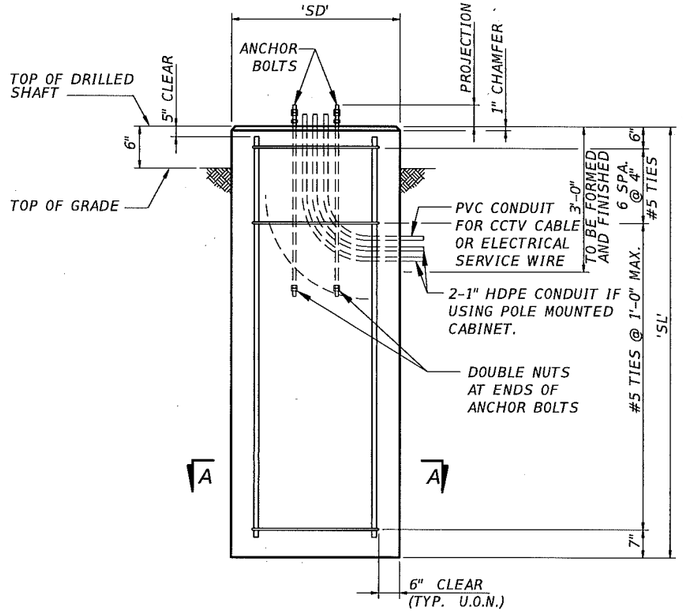
REF. DWG. NO.

SHEET NO. F0-103

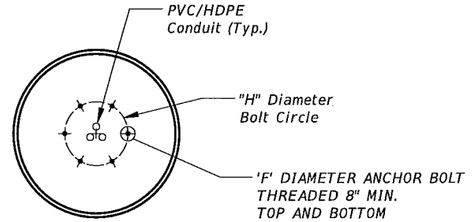
$MODEL$ USER: pate6444 6/8/2015 3:35:25 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\REV2\ITS_H06_V04_REV2_AFC.dgn

POLE VARIABLES

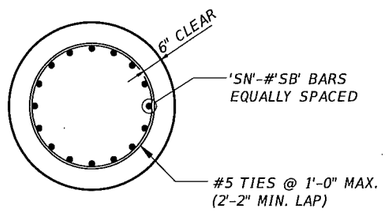
CCTV NO.	STATION	POLE HEIGHT	SECTION A TUBE				SECTION B TUBE				SECTION B TUBE				BASE PLATE						
			LENGTH	BASE DIAMETER	TIP DIAMETER	THICK	LENGTH	BASE DIAMETER	TIP DIAMETER	THICK	LENGTH	BASE DIAMETER	TIP DIAMETER	THICK	OUTSIDE DIAMETER	INSIDE DIAMETER	PLATE THICKNESS	NUMBER OF BOLTS	BOLT DIAMETER	BOLT CIRCLE DIAMETER	BOLT LENGTH
		(FT.)	(FT.)	(IN.)	(IN.)	C (IN.)	(FT.)	(IN.)	(IN.)	C (IN.)	(FT.)	(IN.)	(IN.)	C (IN.)	D (IN.)	(IN.)	E (IN.)	QUAN.	F (IN.)	H (IN.)	G (IN.)
CCTV 429-36.0	210+00	50	50.0	17	10	0.25	--	--	--	--	--	--	--	--	27	14.5	2.5	6	1.5	23	40
CCTV 429-36.1	217+00	50	50.0	17	10	0.25	--	--	--	--	--	--	--	--	27	14.5	2.5	6	1.5	23	40



ELEVATION



PLAN



SECTION A-A

DRILLED SHAFT VARIABLES

CCTV NO.	STATION	SHAFT LENGTH	SHAFT DIAMETER	BAR SIZE	NUMBER OF BARS	BOLT EMBEDMENT
		SL (FT.)	SD (FT.)	SB	SN	K (IN.)
CCTV 429-36.0	210+00	14	4.0	11	12	31
CCTV 429-36.1	217+00	14	4.0	11	12	31

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ROAD NO.	PROJECT NO.
SR 429	429-203

SHEET TITLE: CCTV STRUCTURES AND FOUNDATIONS (SHEET 2 OF 3)

REF. DWG. NO.

PROJECT NAME: SR 429 (WEKIVA PARKWAY) SECTION 203

SHEET NO. F0-104

$MODEL$ USER: pate6444 6/8/2015 3:35:26 PM T:\PROJECTS\00CEA\Wekiva_203_BSA\CADD\its\REV2\ITS_H07_V04_REV2_AFC.dgn