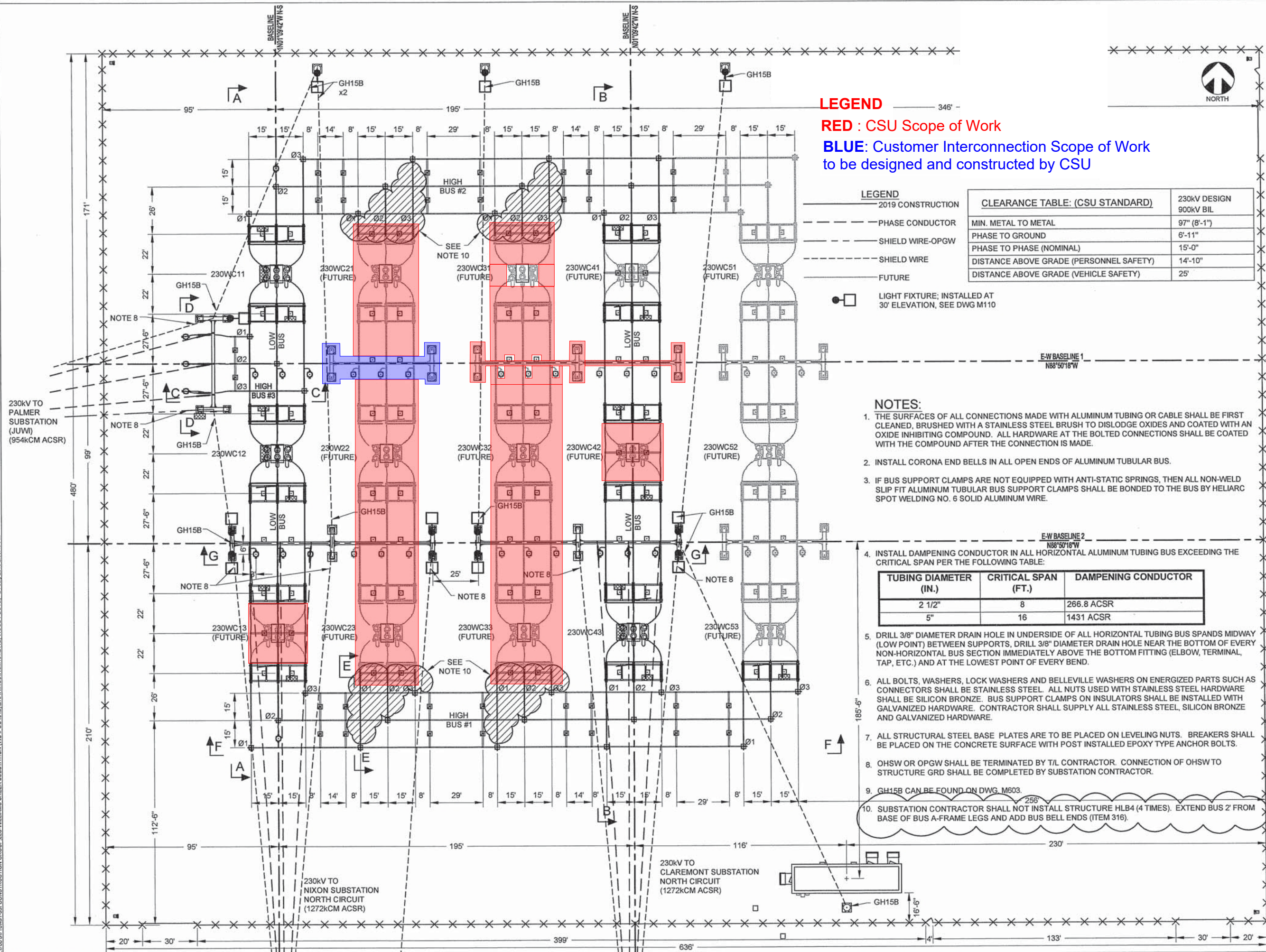


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LEGEND
RED : CSU Scope of Work
BLUE: Customer Interconnection Scope of Work to be designed and constructed by CSU

LEGEND

- 2019 CONSTRUCTION
- PHASE CONDUCTOR
- SHIELD WIRE-OPGW
- SHIELD WIRE
- FUTURE
- LIGHT FIXTURE; INSTALLED AT 30' ELEVATION, SEE DWG M110

CLEARANCE TABLE: (CSU STANDARD)		230kV DESIGN 900kV BIL
MIN. METAL TO METAL		97" (8'-1")
PHASE TO GROUND		6'-11"
PHASE TO PHASE (NOMINAL)		15'-0"
DISTANCE ABOVE GRADE (PERSONNEL SAFETY)		14'-10"
DISTANCE ABOVE GRADE (VEHICLE SAFETY)		25'

- NOTES:**
- THE SURFACES OF ALL CONNECTIONS MADE WITH ALUMINUM TUBING OR CABLE SHALL BE FIRST CLEANED, BRUSHED WITH A STAINLESS STEEL BRUSH TO DISLODGE OXIDES AND COATED WITH AN OXIDE INHIBITING COMPOUND. ALL HARDWARE AT THE BOLTED CONNECTIONS SHALL BE COATED WITH THE COMPOUND AFTER THE CONNECTION IS MADE.
 - INSTALL CORONA END BELLS IN ALL OPEN ENDS OF ALUMINUM TUBULAR BUS.
 - IF BUS SUPPORT CLAMPS ARE NOT EQUIPPED WITH ANTI-STATIC SPRINGS, THEN ALL NON-WELD SLIP FIT ALUMINUM TUBULAR BUS SUPPORT CLAMPS SHALL BE BONDED TO THE BUS BY HELIARC SPOT WELDING NO. 6 SOLID ALUMINUM WIRE.

4. INSTALL DAMPENING CONDUCTOR IN ALL HORIZONTAL ALUMINUM TUBING BUS EXCEEDING THE CRITICAL SPAN PER THE FOLLOWING TABLE:

TUBING DIAMETER (IN.)	CRITICAL SPAN (FT.)	DAMPENING CONDUCTOR
2 1/2"	8	266.8 ACSR
5"	16	1431 ACSR

- DRILL 3/8" DIAMETER DRAIN HOLE IN UNDERSIDE OF ALL HORIZONTAL TUBING BUS SPANDS MIDWAY (LOW POINT) BETWEEN SUPPORTS. DRILL 3/8" DIAMETER DRAIN HOLE NEAR THE BOTTOM OF EVERY NON-HORIZONTAL BUS SECTION IMMEDIATELY ABOVE THE BOTTOM FITTING (ELBOW, TERMINAL, TAP, ETC.) AND AT THE LOWEST POINT OF EVERY BEND.
- ALL BOLTS, WASHERS, LOCK WASHERS AND BELLEVILLE WASHERS ON ENERGIZED PARTS SUCH AS CONNECTORS SHALL BE STAINLESS STEEL. ALL NUTS USED WITH STAINLESS STEEL HARDWARE SHALL BE SILICON BRONZE. BUS SUPPORT CLAMPS ON INSULATORS SHALL BE INSTALLED WITH GALVANIZED HARDWARE. CONTRACTOR SHALL SUPPLY ALL STAINLESS STEEL, SILICON BRONZE AND GALVANIZED HARDWARE.
- ALL STRUCTURAL STEEL BASE PLATES ARE TO BE PLACED ON LEVELING NUTS. BREAKERS SHALL BE PLACED ON THE CONCRETE SURFACE WITH POST INSTALLED EPOXY TYPE ANCHOR BOLTS.
- OHSW OR OPGW SHALL BE TERMINATED BY T/L CONTRACTOR. CONNECTION OF OHSW TO STRUCTURE GRD SHALL BE COMPLETED BY SUBSTATION CONTRACTOR.
- GH15B CAN BE FOUND ON DWG. M603.
- SUBSTATION CONTRACTOR SHALL NOT INSTALL STRUCTURE HLB4 (4 TIMES). EXTEND BUS 2' FROM BASE OF BUS A-FRAME LEGS AND ADD BUS BELL ENDS (ITEM 316).

SCALE		REVISION	
1" = 50' @ 11x17	JMB	WB JMB	BY CK
ENGR: JMB	DATE: 10/2/18	REVISION PER CLIENT REVIEW	DATE
DRAWN BY: TJW	CH'KD: JMB	UPDATE OHSW LABELS	DATE
		UPDATE PER CLIENT REVIEW	DATE
		RELEASE FOR BID	DATE
		4/4/19	WB JMB
		3/22/19	WB JMB
		3/15/19	WB JMB
		3/8/19	WB JMB
			BY CK

COLORADO SPRINGS UTILITIES
 ENERGY ACQUISITION & PLANNING GROUP
 SUBSTATION & TRANSMISSION ENGINEERING
 WILLIAMS CREEK SUBSTATION
 GENERAL ARRANGEMENT
 WCM101