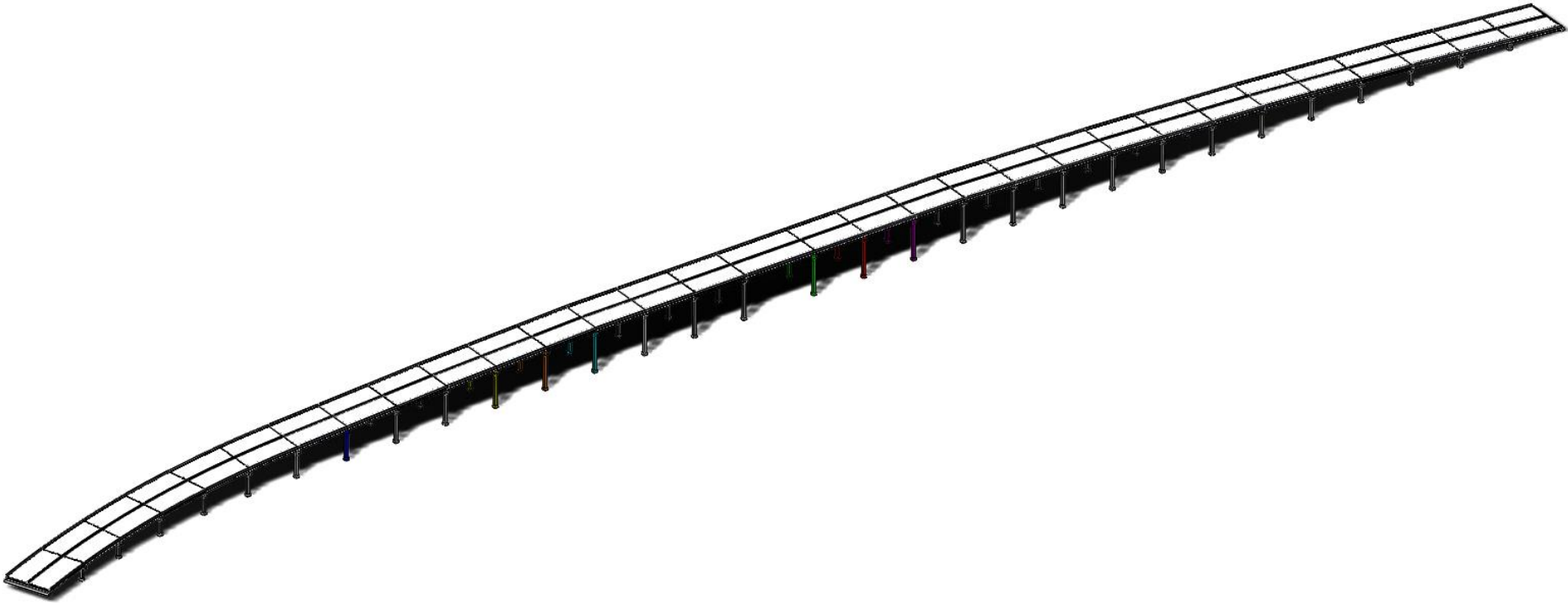


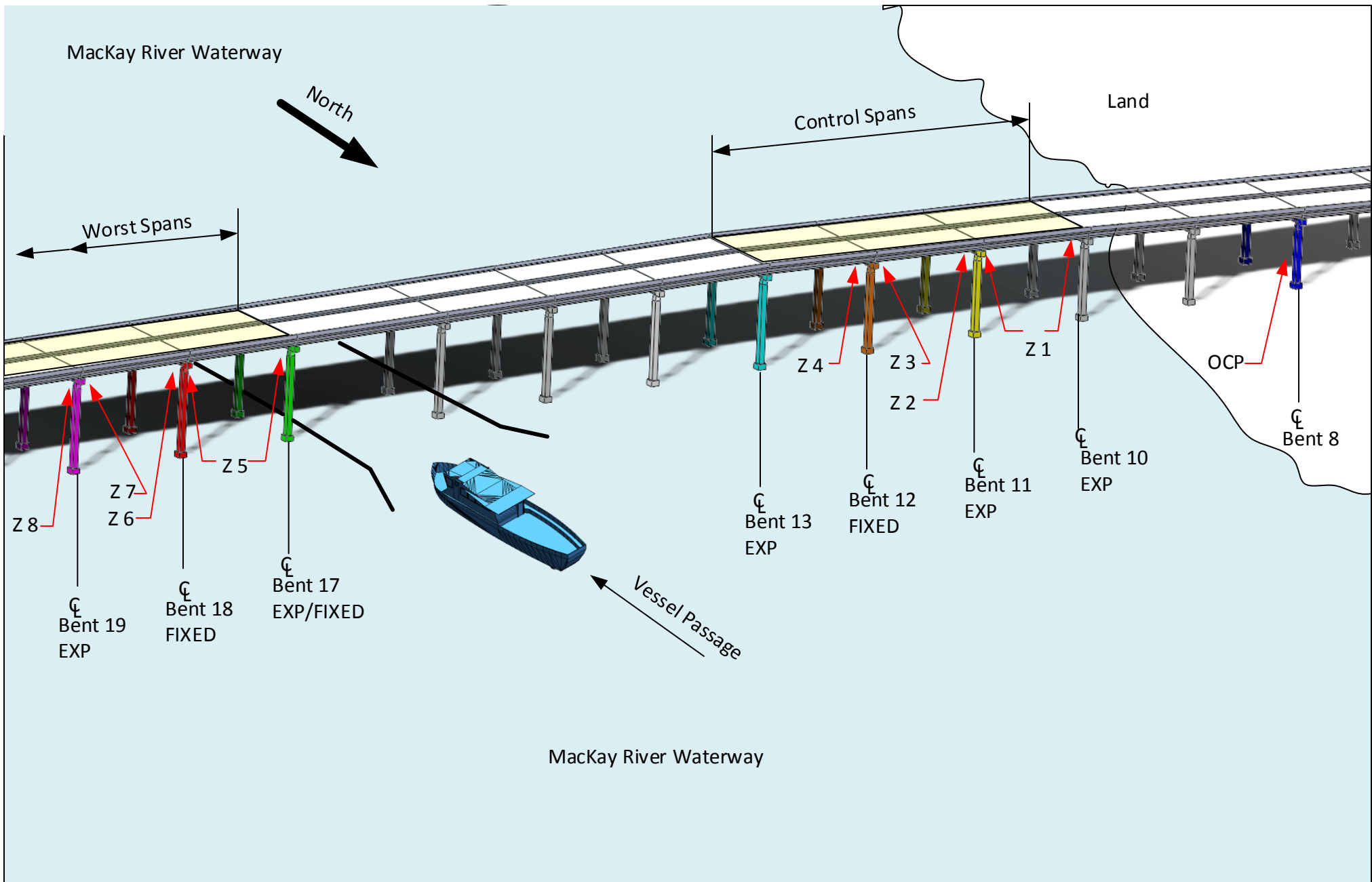
# Mackay River Torras Causeway Installation Instructions

BRIDGE ADDRESS

1 MACKAY RIVER UNIT NUMBER 2200







**LEGEND**

Z = ZONE

OCP = OPTICAL CONTROL PANEL

**BRIDGE ADDRESS**

1 MACKAY RIVER UNIT NUMBER 2200



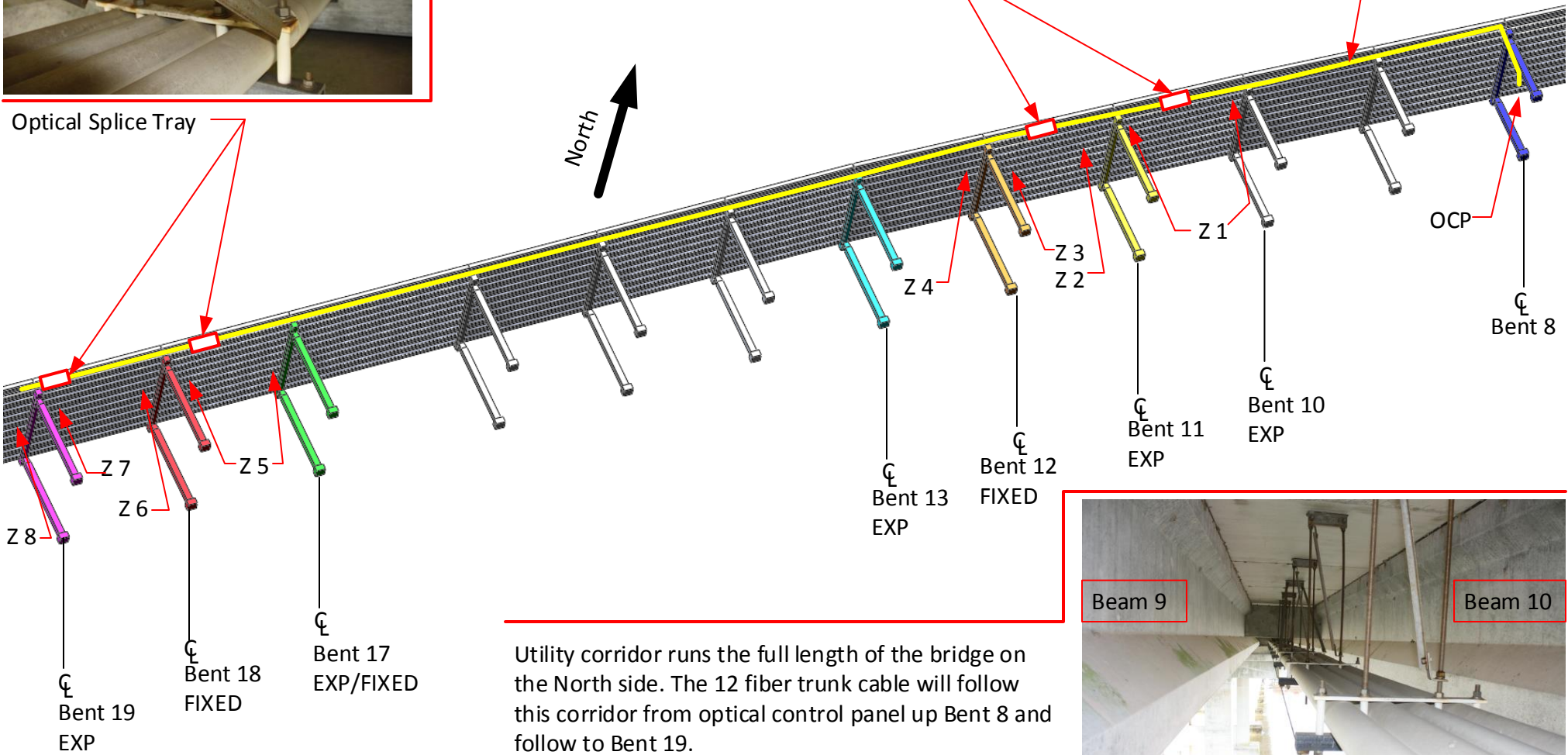
Utility corridor runs the full length of the bridge on the North side. The 12 fiber trunk cable will follow this corridor from optical control panel up Bent 8 and follow to Bent 19.

Optical Splice Tray



Optical Splice Tray

12 Fiber Optical Trunk Cable





Utility corridor runs the full length of the bridge on the North side. The 12 fiber trunk cable will follow this corridor from optical control panel up Bent 8 and follow to Bent 19.

**LEGEND**

Z = ZONE

OCP = OPTICAL CONTROL PANEL

 = Approx. 1032 feet 12 fiber trunk cable

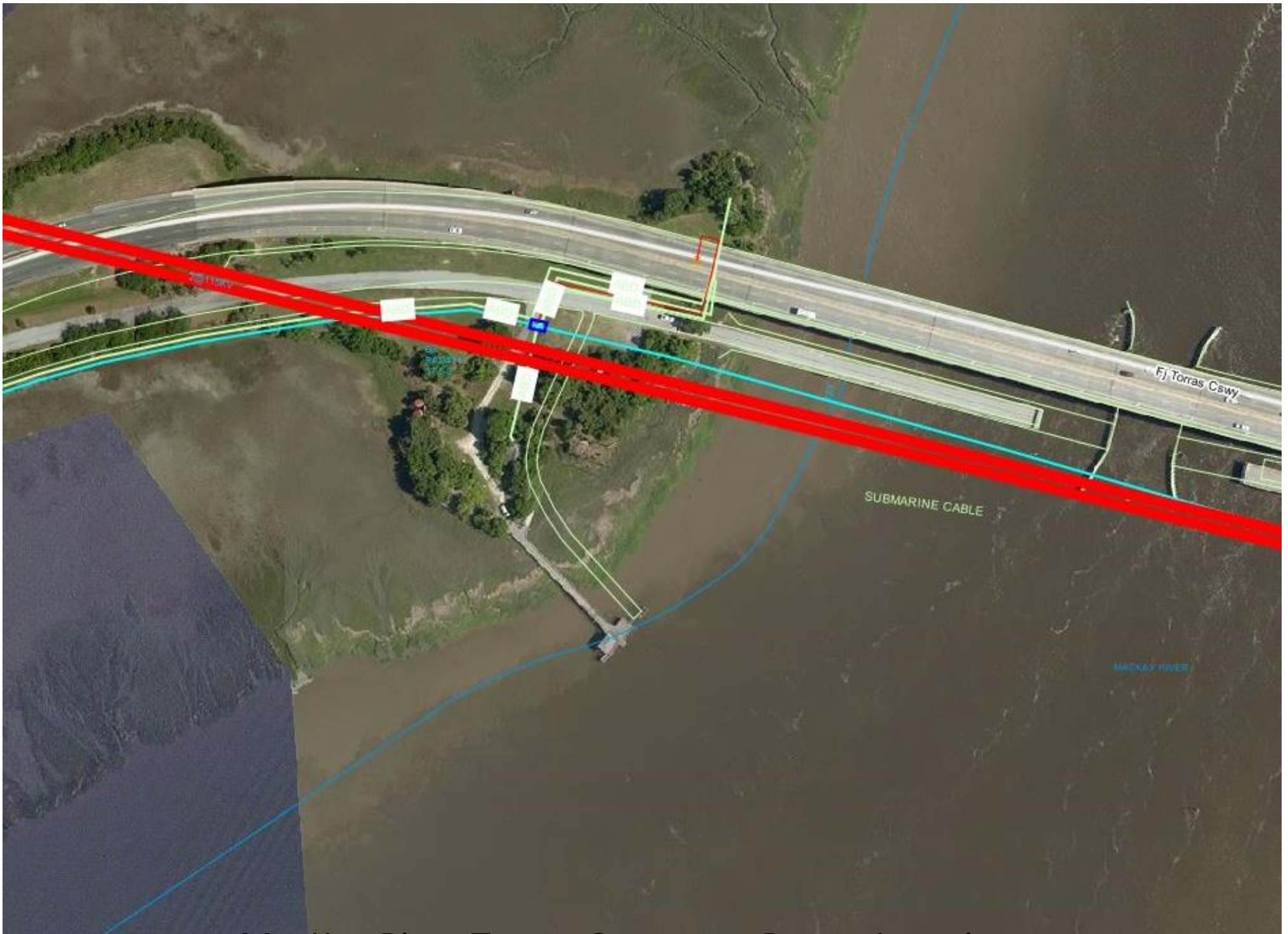
 = Optical Splice Tray

**BRIDGE ADDRESS**

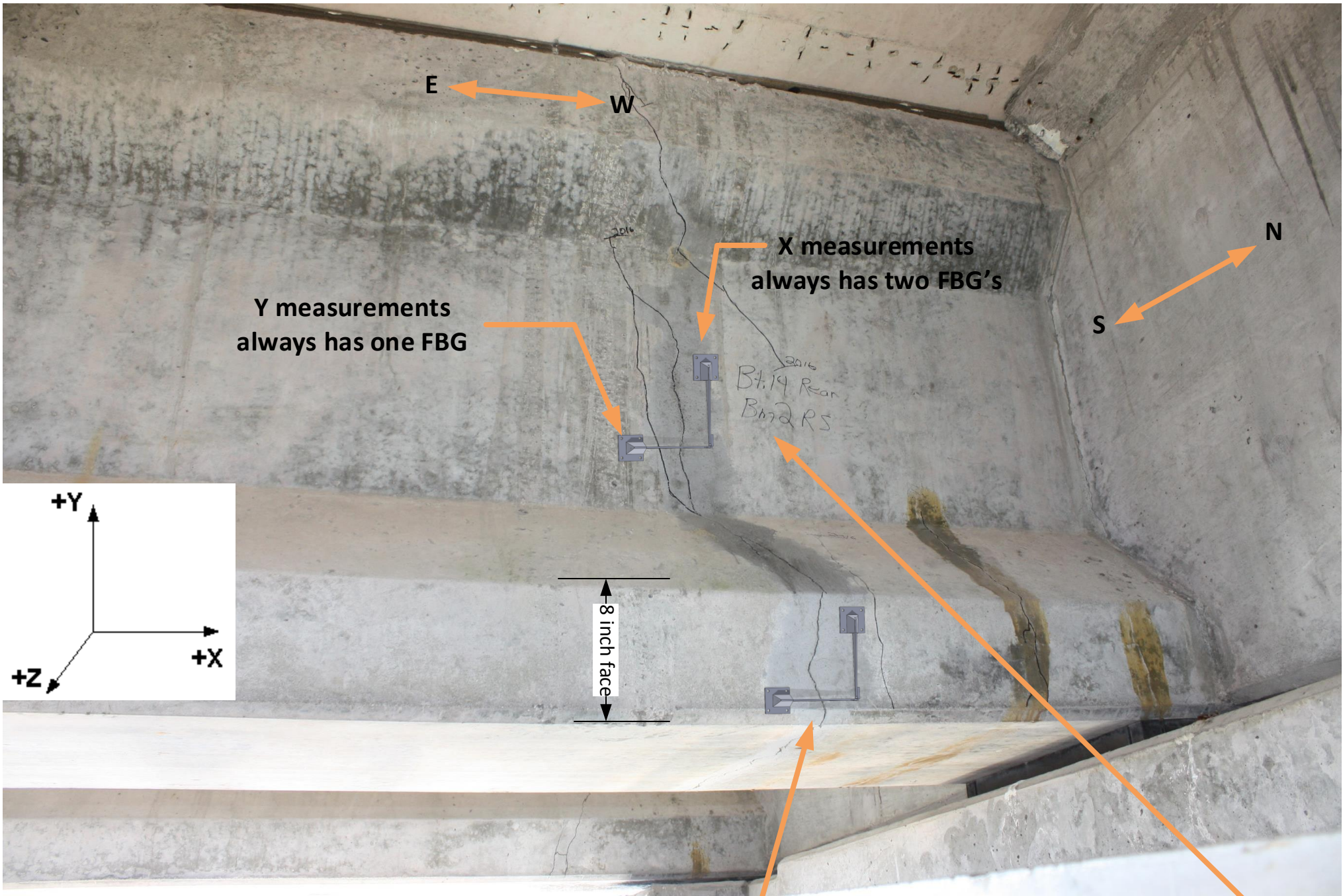
1 MACKAY RIVER UNIT NUMBER 2200



**Optical Control Panel Location**



Mackay River Torras Causeway Power Location

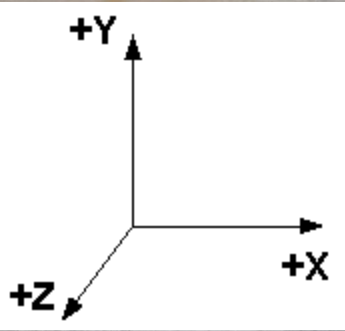


Y measurements  
always has one FBG

X measurements  
always has two FBG's

B7.19 Rear  
B7.2 RS

8 inch face



Moment Locations

Shear locations



BENT 26 FWD  
BEAM 8 RT SIDE

HL

W

E

S

N

West and East Tiltmeter

North and South Tiltmeter



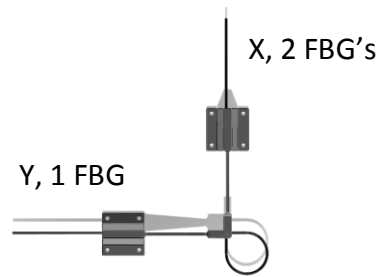



**OS3610 Strain Sensor**


Channel 1	Channel 3	Channel 5	Channel 7
1. Strain Sensor: Str-1 1562, 1566	24. Moment Sensor: M-9x 1512, 1516	46. Tilt Meter: Tlt-2-NS 1574.1, 1579.2	81. Moment Sensor: M-25x 1512, 1516
2. Moment Sensor: M-1x 1512, 1516	25. Moment Sensor: M-9y 1520	47. Tilt Meter: Tlt-2-WE 1580.1, 1585.2	82. Moment Sensor: M-25y 1520
3. Moment Sensor: M-1y 1520	26. Moment Sensor: M-10x 1524, 1528	48. Strain Sensor: Str-2 1562, 1566	83. Moment Sensor: M-26x 1524, 1528
4. Moment Sensor: M-2x 1524, 1528	27. Moment Sensor: M-10y 1532	49. Moment Sensor: M-17x 1512, 1516	84. Moment Sensor: M-26y 1532
5. Moment Sensor: M-2y 1532	28. Shear Sensor: S-10x 1536, 1540	50. Moment Sensor: M-17y 1520	85. Shear Sensor: S-26x 1536, 1540
6. Shear Sensor: S-2x 1536, 1540	29. Shear Sensor: S-10y 1544	60. Moment Sensor: M-18x 1524, 1528	86. Shear Sensor: S-26y 1544
7. Shear Sensor: S-2y 1544	30. Moment Sensor: M-11x 1548, 1552	61. Moment Sensor: M-18y 1532	87. Moment Sensor: M-27x 1548, 1552
8. Moment Sensor: M-3x 1548, 1552	31. Moment Sensor: M-11y 1556	62. Shear Sensor: S-18x 1536, 1540	88. Moment Sensor: M-27y 1556
9. Moment Sensor: M-3y 1556	32. Moment Sensor: M-12x 1560, 1564	63. Shear Sensor: S-18y 1544	89. Moment Sensor: M-28x 1560, 1564
	33. Moment Sensor: M-12y 1568	64. Moment Sensor: M-19x 1548, 1552	90. Moment Sensor: M-28y 1568
Channel 2	34. Tilt Meter: Tlt-1-NS 1574.1, 1579.2	65. Moment Sensor: M-19y 1556	91. Shear Sensor: S-28x 1572, 1576
10. Moment Sensor: M-4x 1572, 1576	35. Tilt Meter: Tlt-1-WE 1580.1, 1585.2		92. Shear Sensor: S-28y 1580
11. Moment Sensor: M-4y 1580		Channel 6	
12. Absolute Temperature: T-1 1584	Channel 4	66. Moment Sensor: M-20x 1572, 1576	Channel 8
13. Absolute Temperature: T-2 1588	36. Moment Sensor: M-13x 1512, 1516	67. Moment Sensor: M-20y 1580	93. Moment Sensor: M-29x 1512, 1516
14. Moment Sensor: M-5x 1512, 1516	37. Moment Sensor: M-13y 1520	68. Absolute Temperature: T-3 1584	94. Moment Sensor: M-29y 1520
15. Moment Sensor: M-5y 1520	38. Moment Sensor: M-14x 1524, 1528	69. Absolute Temperature: T-4 1588	96. Moment Sensor: M-30x 1524, 1528
16. Moment Sensor: M-6x 1524, 1528	39. Moment Sensor: M-14y 1532	70. Moment Sensor: M-21x 1512, 1516	97. Moment Sensor: M-30y 1532
17. Moment Sensor: M-6y 1532	40. Shear Sensor: S-14x 1536, 1540	72. Moment Sensor: M-21y 1520	98. Shear Sensor: S-30x 1536, 1540
18. Shear Sensor: S-6x 1536, 1540	41. Shear Sensor: S-14y 1544	73. Moment Sensor: M-22x 1524, 1528	99. Shear Sensor: S-30y 1544
19. Shear Sensor: S-6y 1544	42. Moment Sensor: M-15x 1548, 1552	74. Moment Sensor: M-22y 1532	100. Moment Sensor: M-31x 1548, 1552
20. Moment Sensor: M-7x 1548, 1552	43. Moment Sensor: M-15y 1556	75. Shear Sensor: S-22x 1536, 1540	101. Moment Sensor: M-31y 1556
21. Moment Sensor: M-7y 1556	44. Moment Sensor: M-16x 1560, 1564	76. Shear Sensor: S-22y 1544	102. Moment Sensor: M-32x 1560, 1564
22. Moment Sensor: M-8x 1560, 1564	45. Moment Sensor: M-16y 1568	77. Moment Sensor: M-23x 1548, 1552	103. Moment Sensor: M-32y 1568
23. Moment Sensor: M-8y 1568		78. Moment Sensor: M-23y 1556	104. Shear Sensor: S-32x 1572,1576
		79. Moment Sensor: M-24x 1560, 1564	105. Shear Sensor: S-32y 1580
		80. Moment Sensor: M-24y 1568	

## Sensor Name and FBG Listings Grouping By Bent Centerline

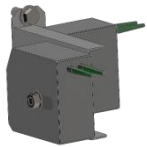
## Symbols Legend



 = Moment (M)

 = Shear (S)

Dual Axis Crack Sensor Used for Moment and Shear Measurements CEL LCM330-1




FBG Korea FBG-T1-310

 = Tiltmeter (TLT)

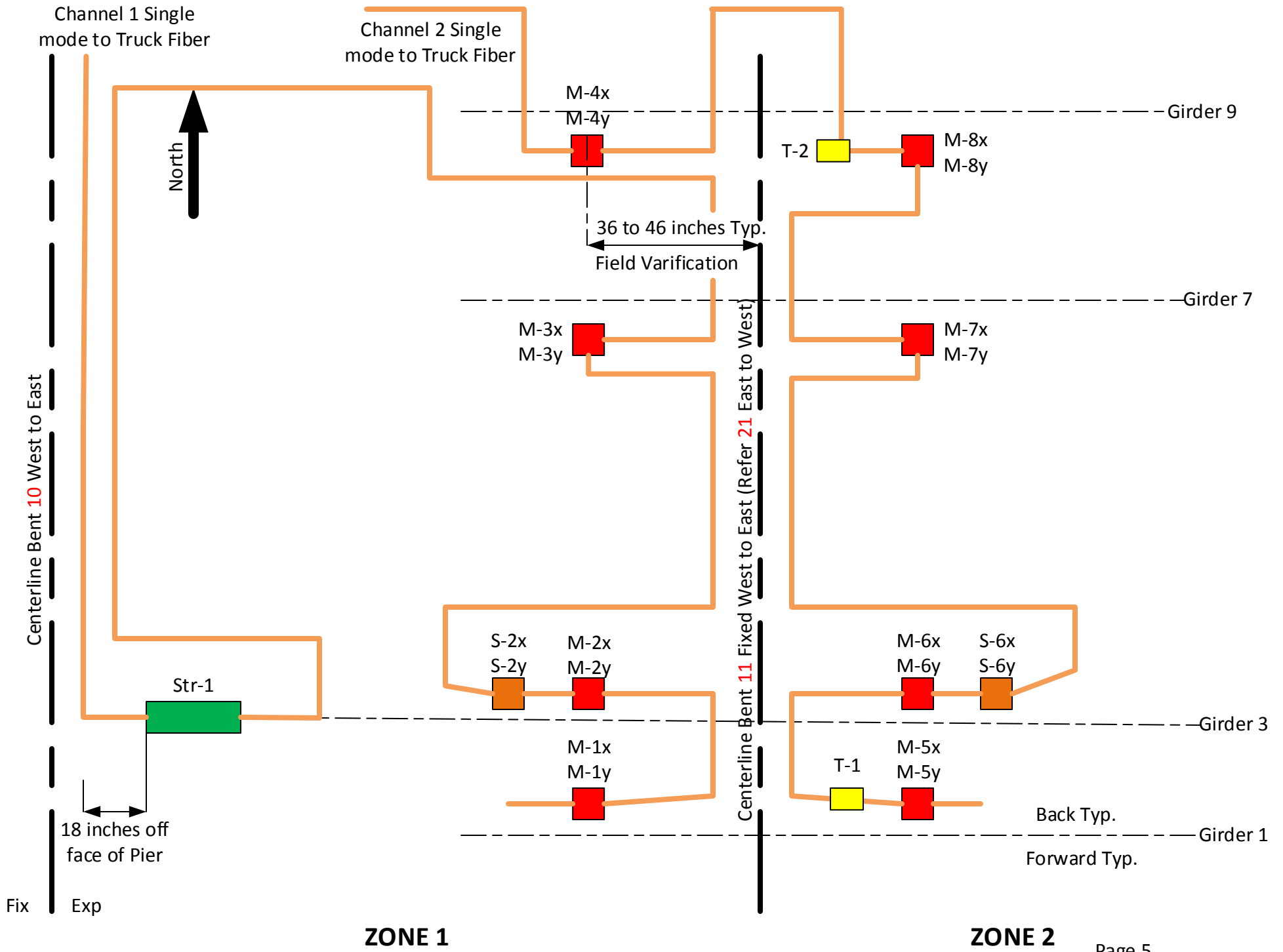


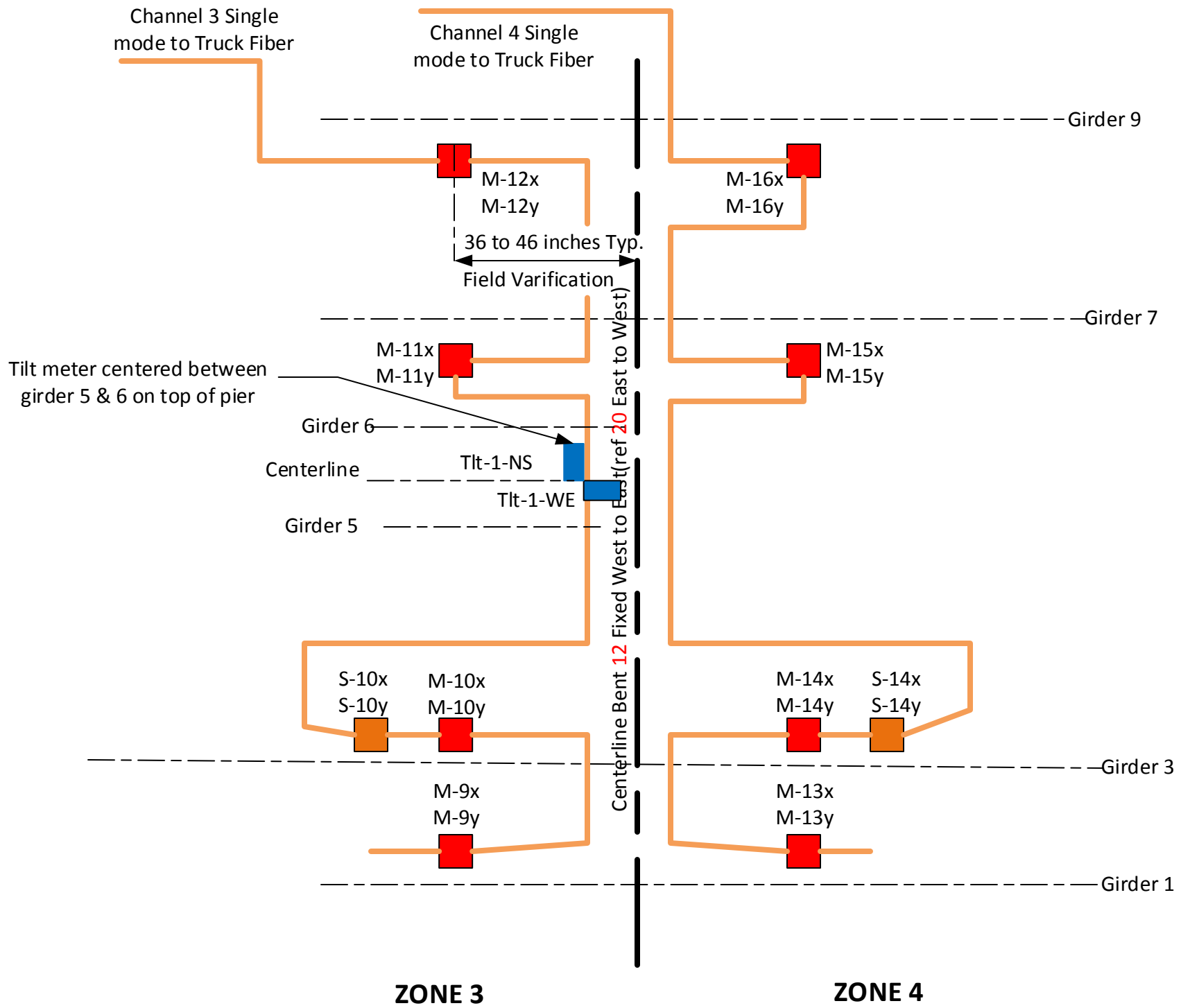
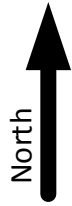
MOI OS3610

 = Strain Sensor (Str)



 = Absolute Temperature Sensor (T)





Channel 5 Single mode to Truck Fiber

Channel 6 Single mode to Truck Fiber

Centerline Bent 17



Girder 9

M-20x  
M-20y

36 to 46 inches Typ.  
Field Varification

T-4  
M-24x  
M-24y

Girder 7

M-19x  
M-19y

M-23x  
M-23y

Girder 6

Centerline

Tilt-2-NS

Tilt-2-WE

Girder 5

Tilt meter centered between girder 5 & 6 on top of pier

Centerline Bent 18 Fixed West to East

S-18x  
S-18y

M-18x  
M-18y

M-22x  
M-22y

S-22x  
S-22y

Girder 3

Str-2

M-17x  
M-17y

T-3  
M-21x  
M-21y

Girder 1

18 inches off face of Pier

Fix Exp

ZONE 5

ZONE 6

