



TRACK VI-D=HDD: CASE STUDIES & CROSS BORES

World-Record Direct Pipe Installation in South Texas

Speaker: Maureen Carlin Ph.D.



Wednesday, January 30th, 2019





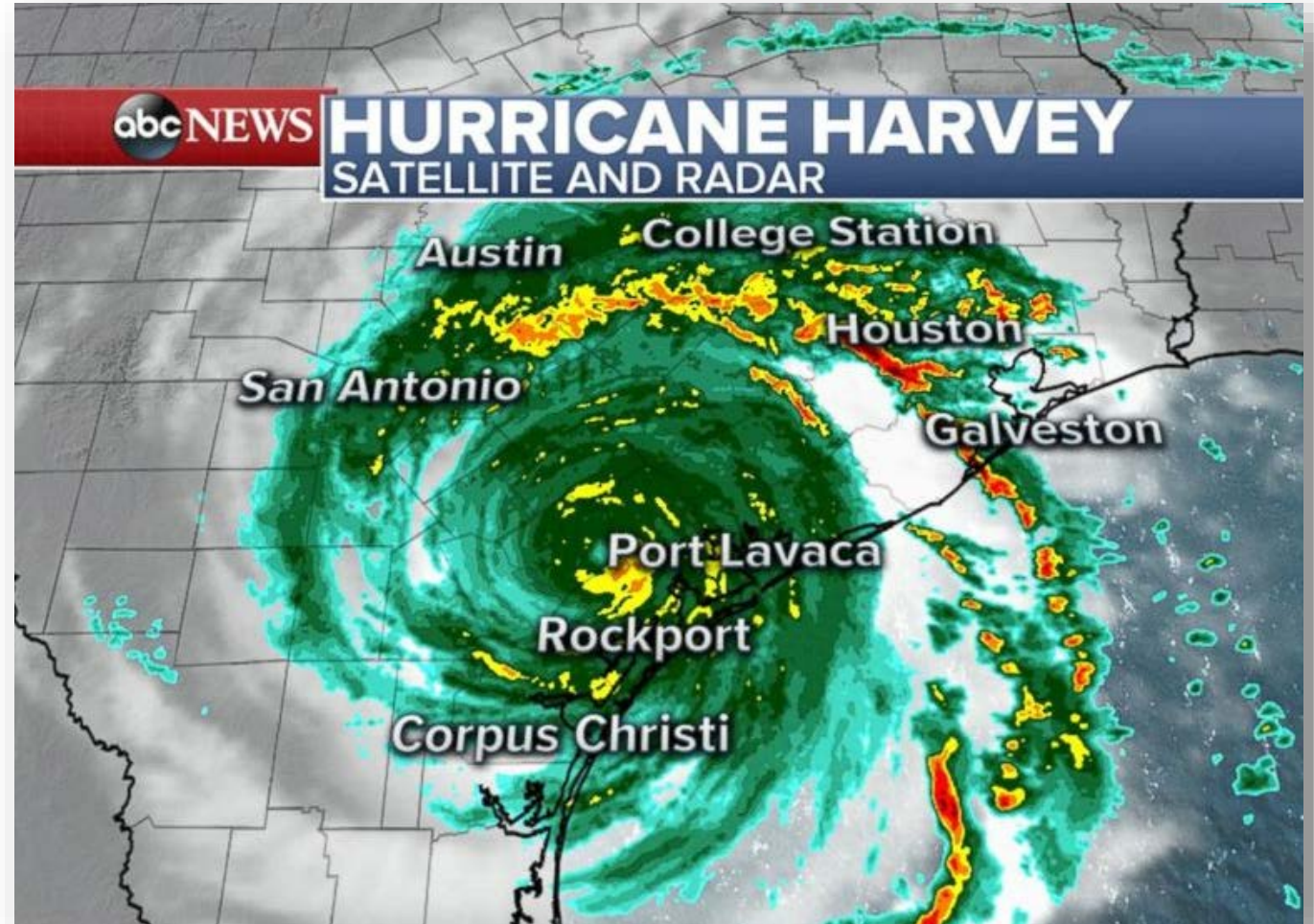
- Safety Moment
- Overview of Direct Pipe
- Case Study Overview
- Design and Engineering
- Project Safety
- Tunneling Operations
- Project Challenges
- Results and Conclusions
- Questions and Answers

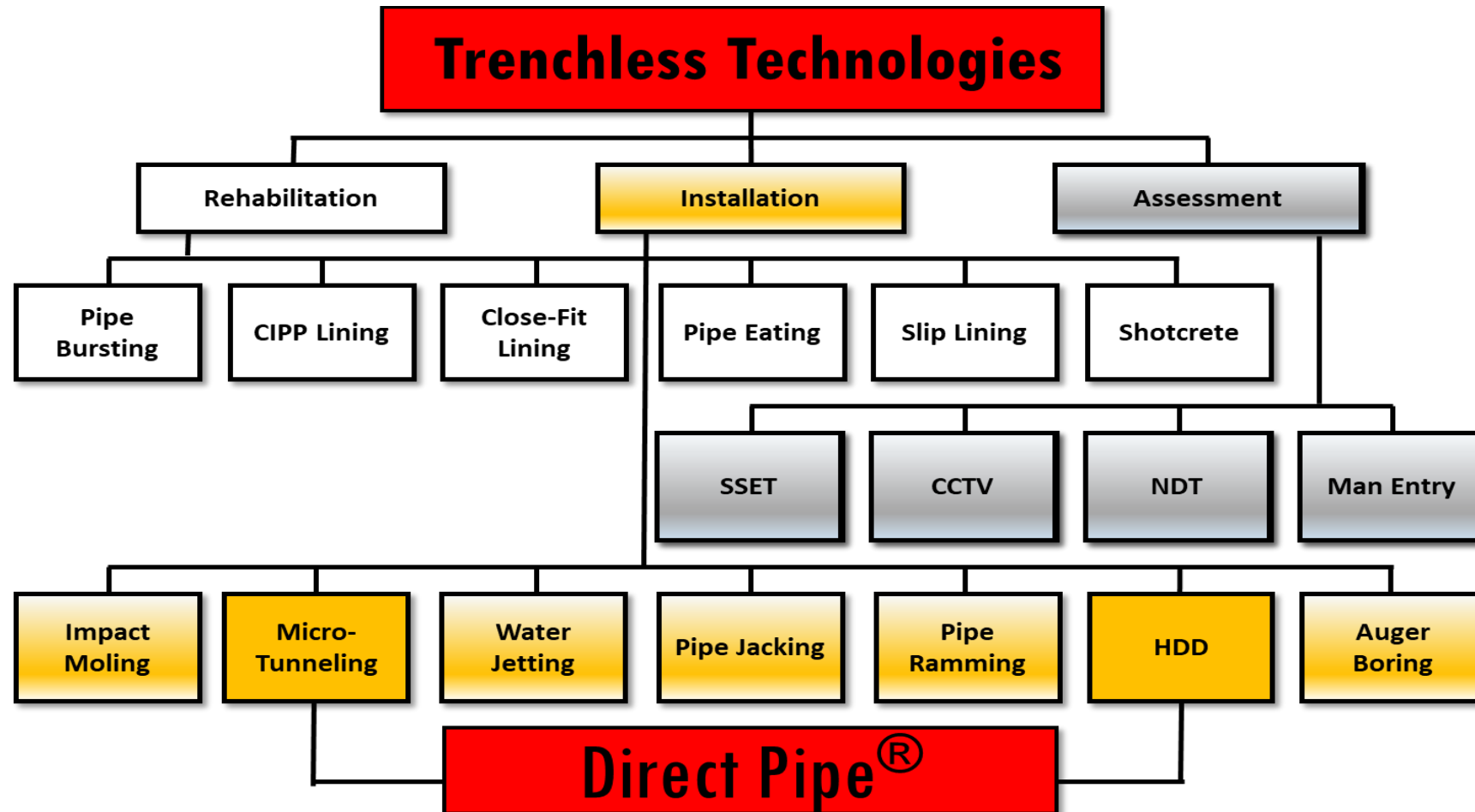


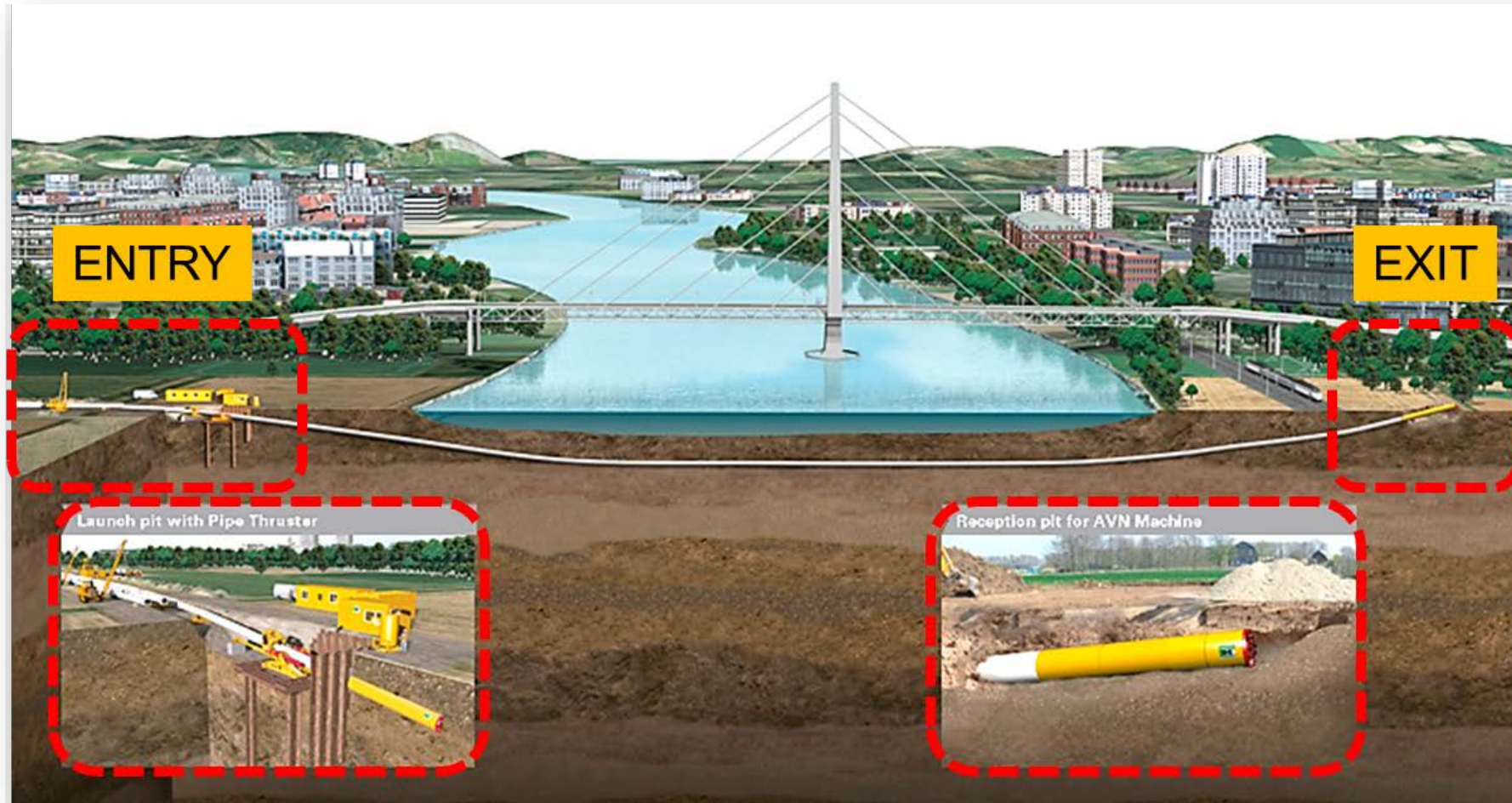


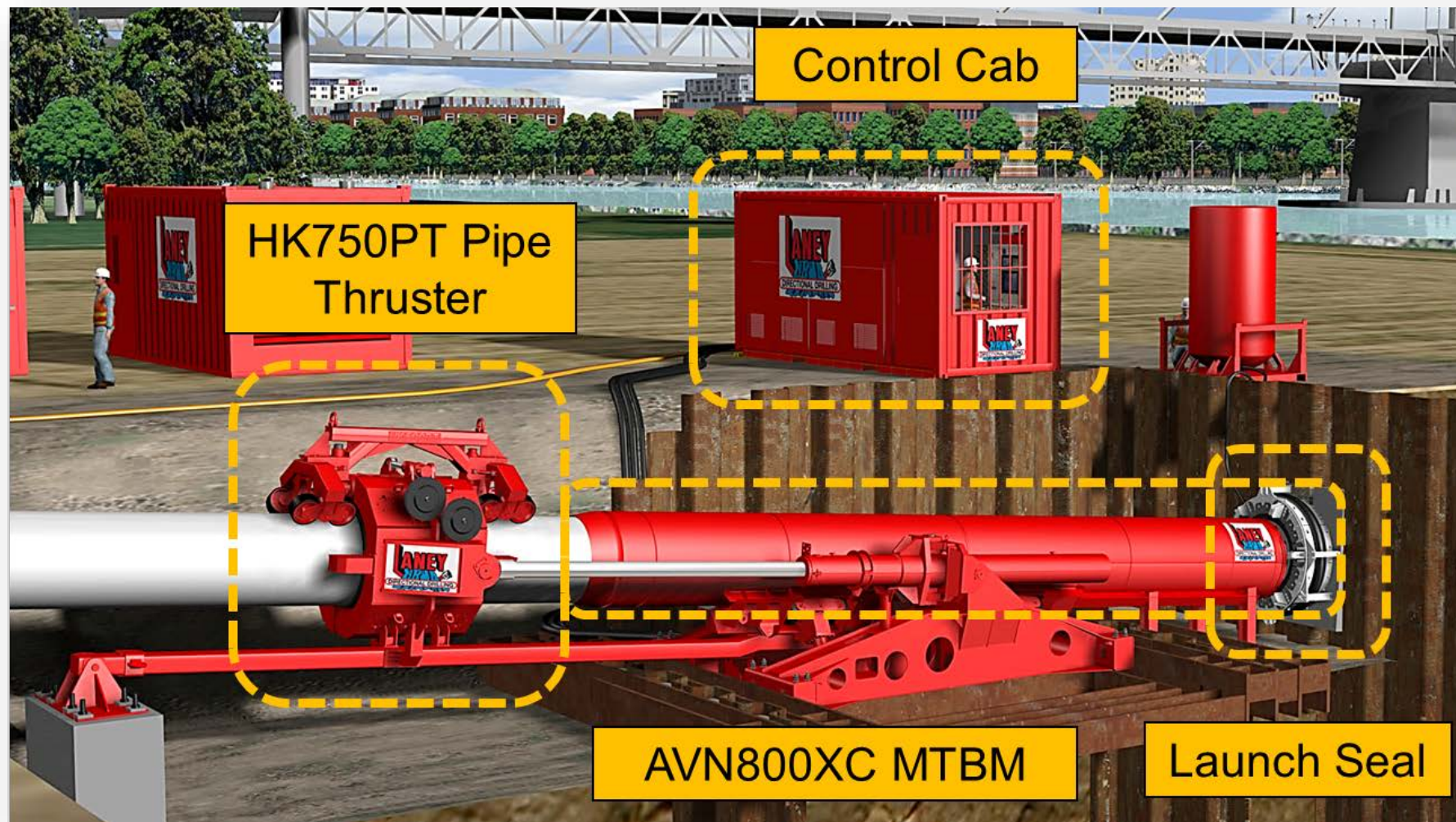
HURRICANE AWARENESS

- Particularly Important to The Valley Crossing Project.
- Eye of Storm Directly Hit Jobsite and Delayed Mobilization.
- Resulted in Reduced Supplies, Logistical Challenges, and Reduced Housing.



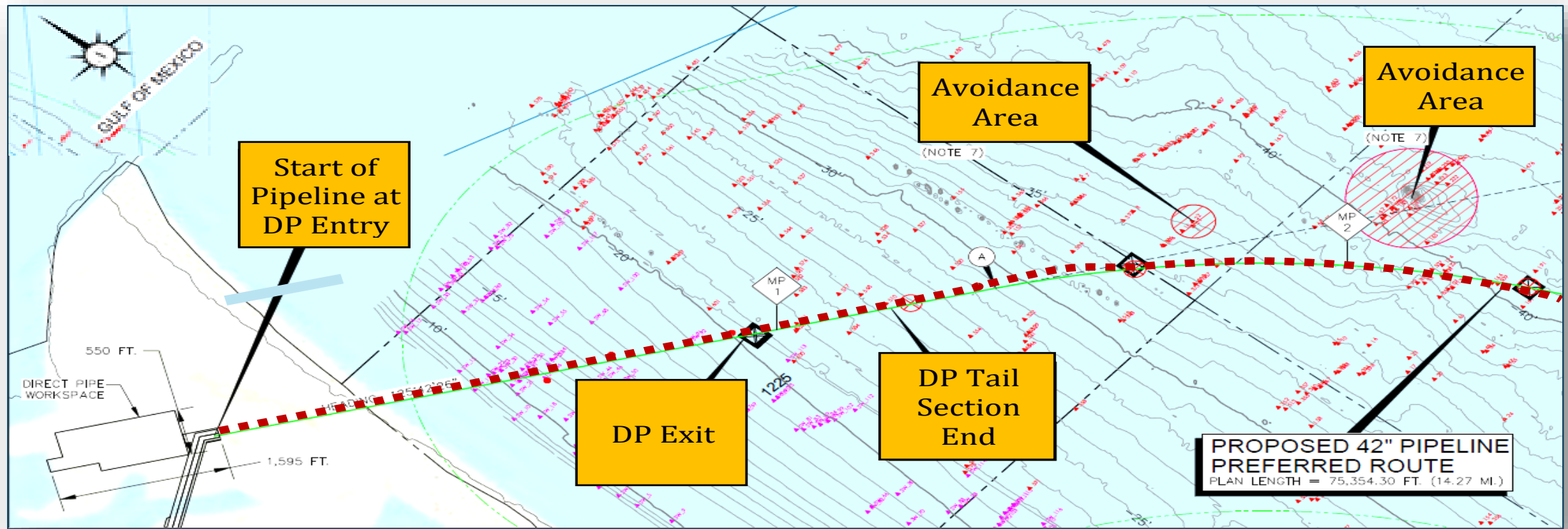




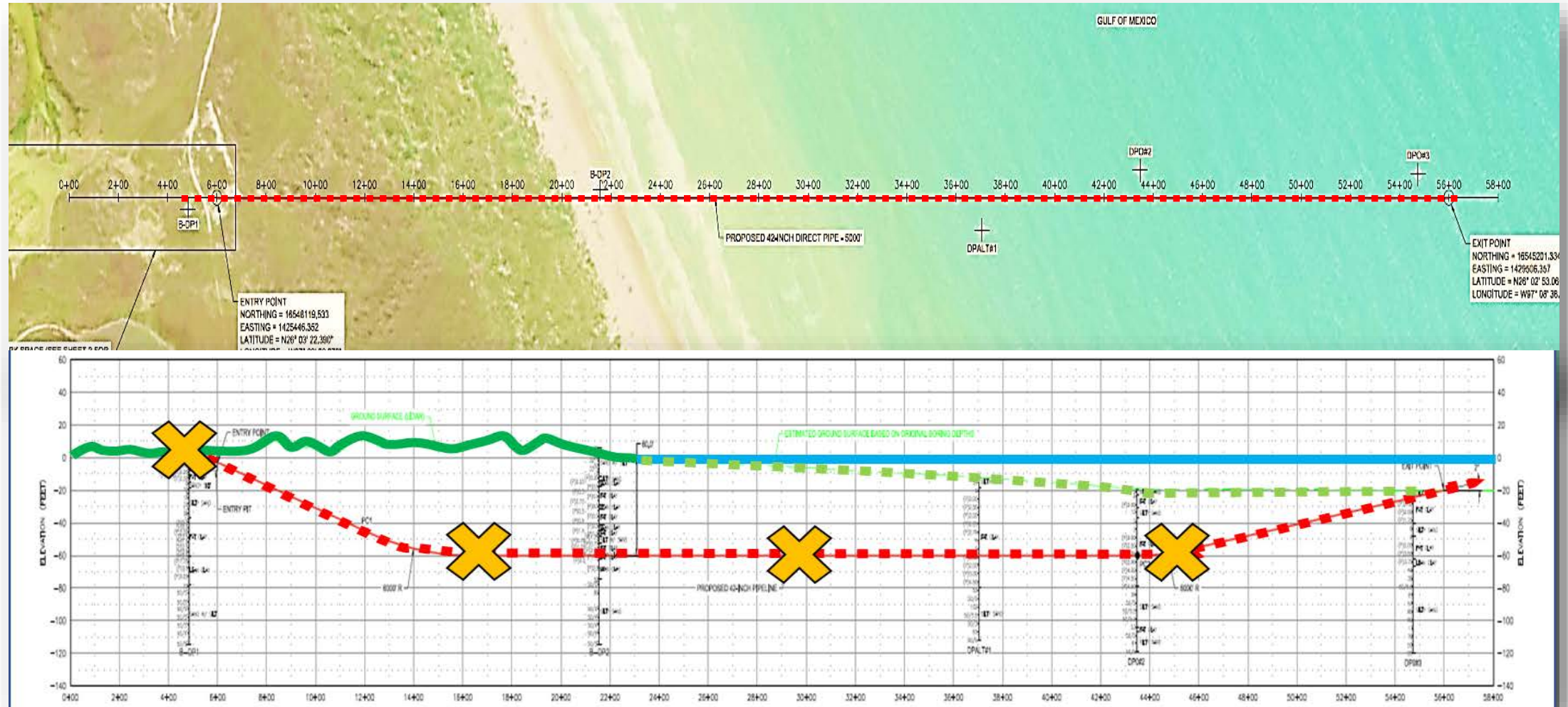




- Direct Pipe® Shore Approach | Cameron County, Texas
- 155 Miles | 48" & 42" Diameter | Steel | Natural Gas









PARAMETER	DESCRIPTION
Installation Length	4,900-Feet + 1,340-Feet
Pipe O.D.	42.00-Inches
Wall Thickness	1.250-Inches
Pipe Grade	70,000 PSI
Pipe Coating	FBE & ARO

Anticipated Thrust Loads

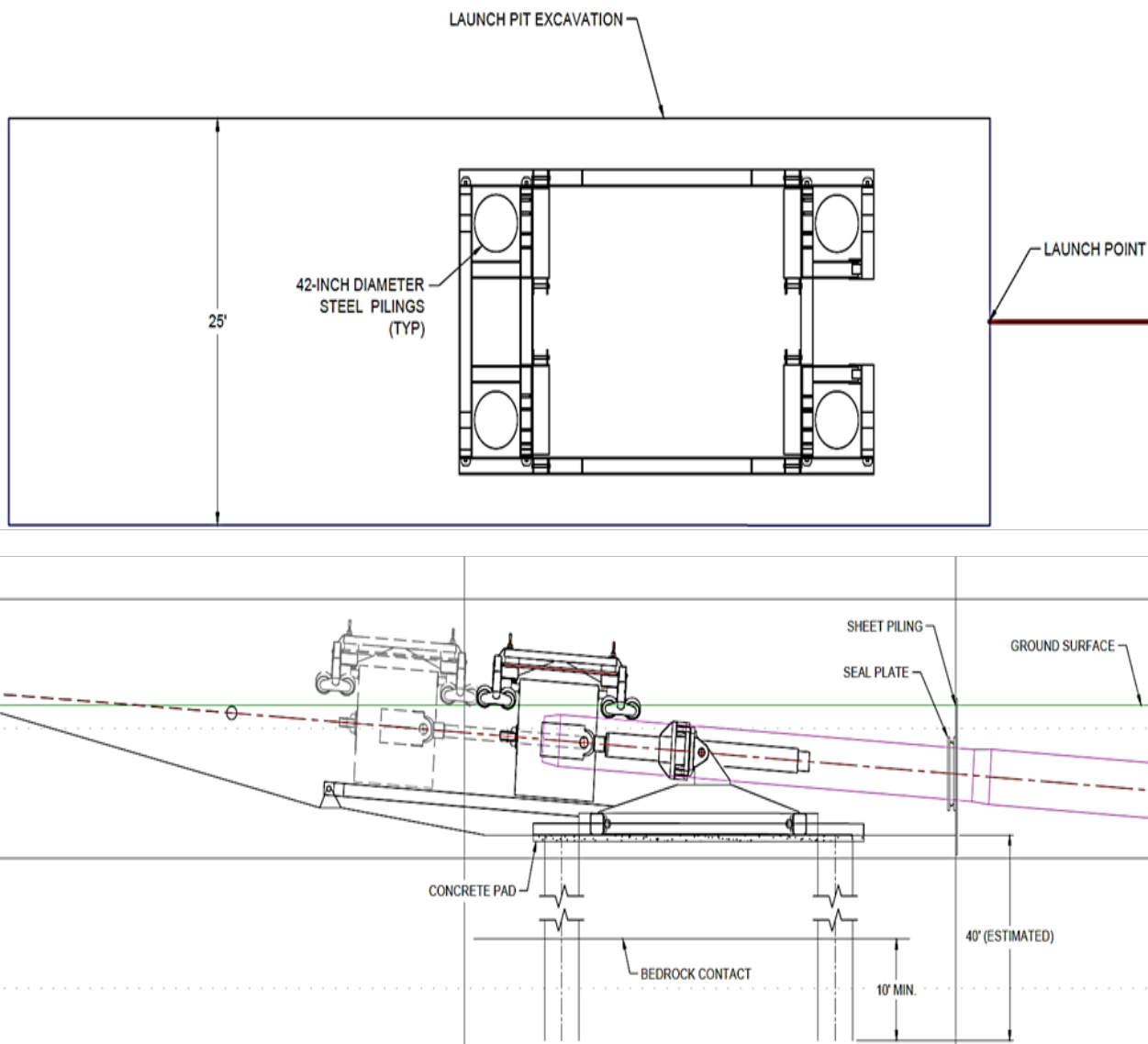
550,000 – 850,000 lbs



THE UNDERGROUND UTILITIES EVENT

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FOUNDATION





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SITE OVERVIEW

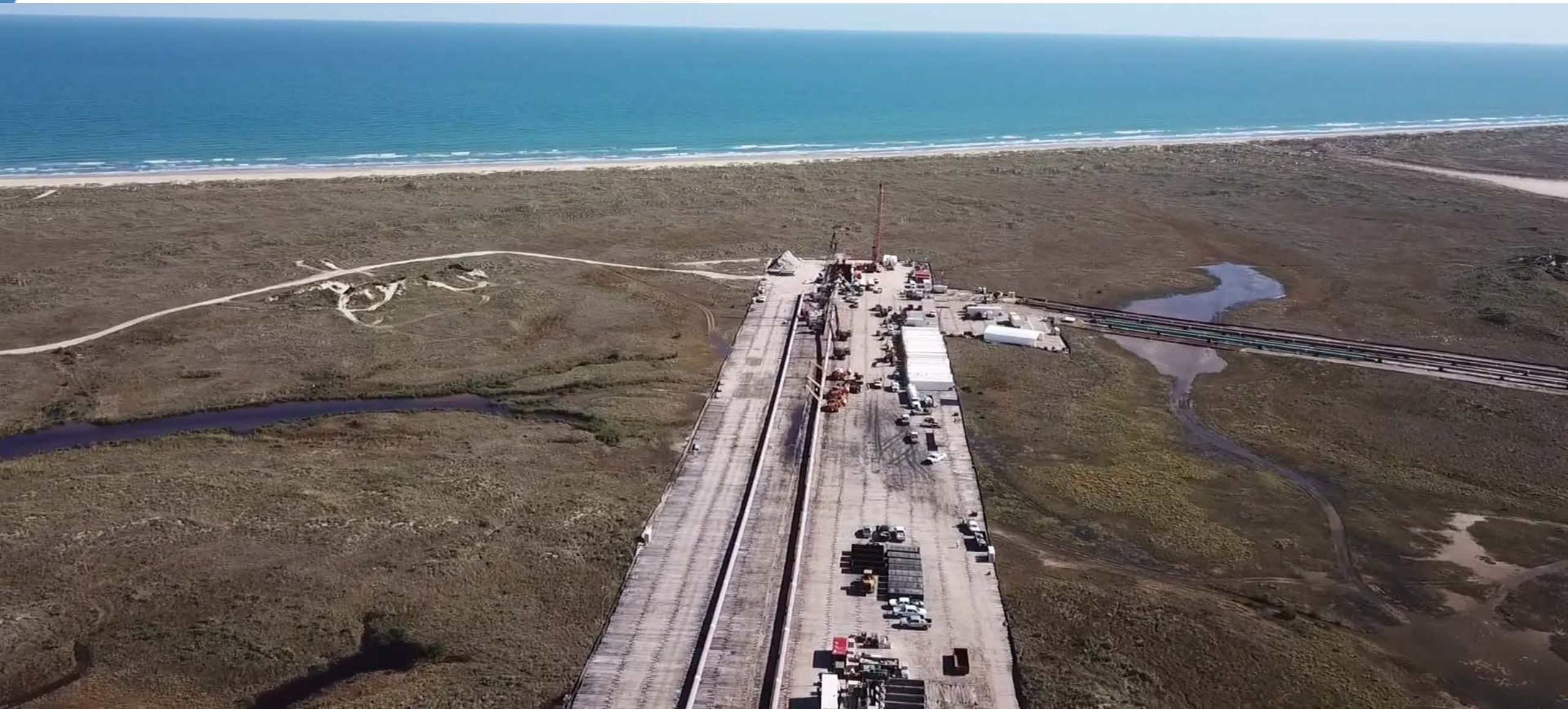




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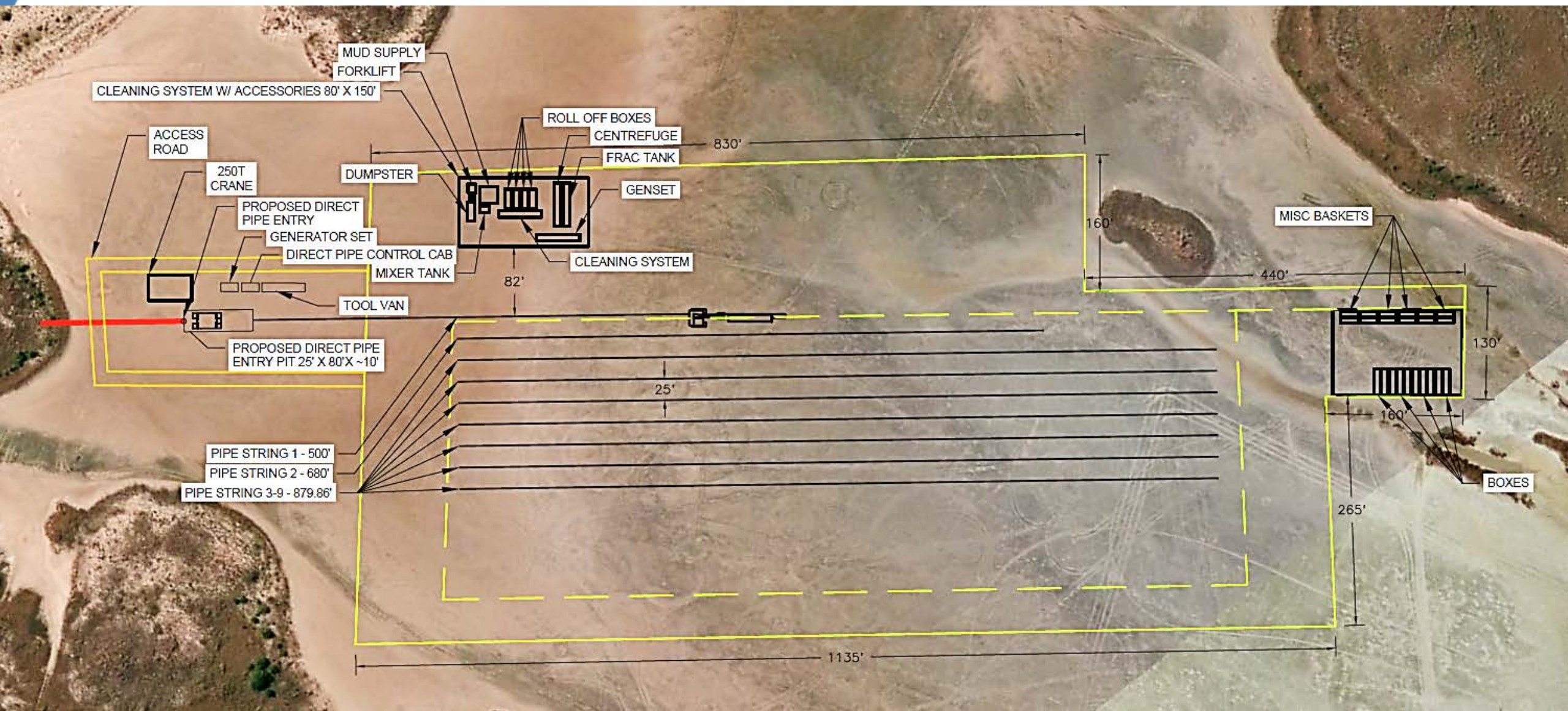




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STRING LAYOUT





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PROJECT SET-UP





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TUNNELING OPERATIONS

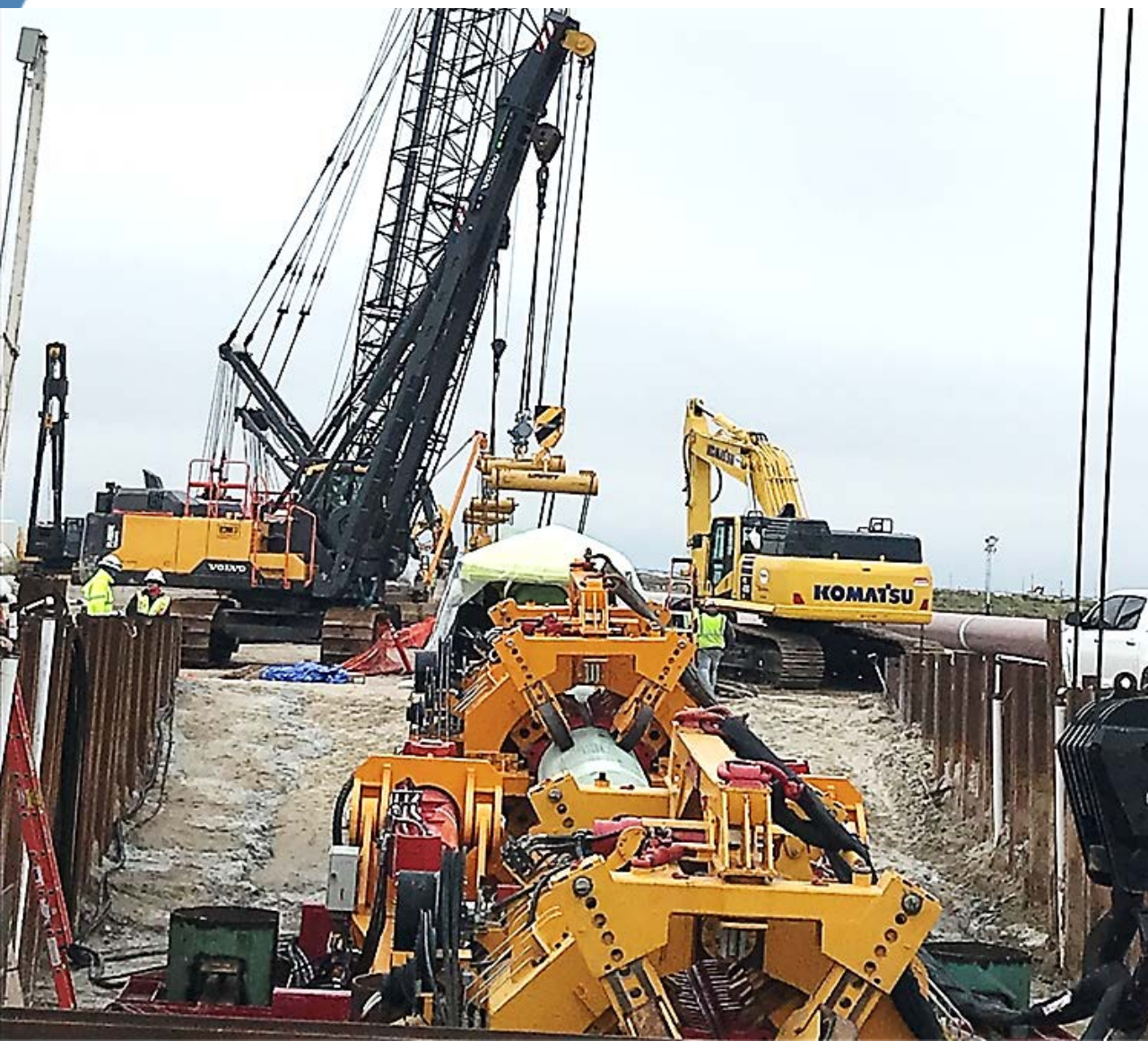




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TUNNELLING OPERATIONS





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MTBM RETRIEVAL





- Safety - Confined Entries
- Logistics - Hurricane Harvey
- Technology & Equipment - Equipment Size Increase Through R&D
- Uncertainty - Significantly Longer than Previously Achieved





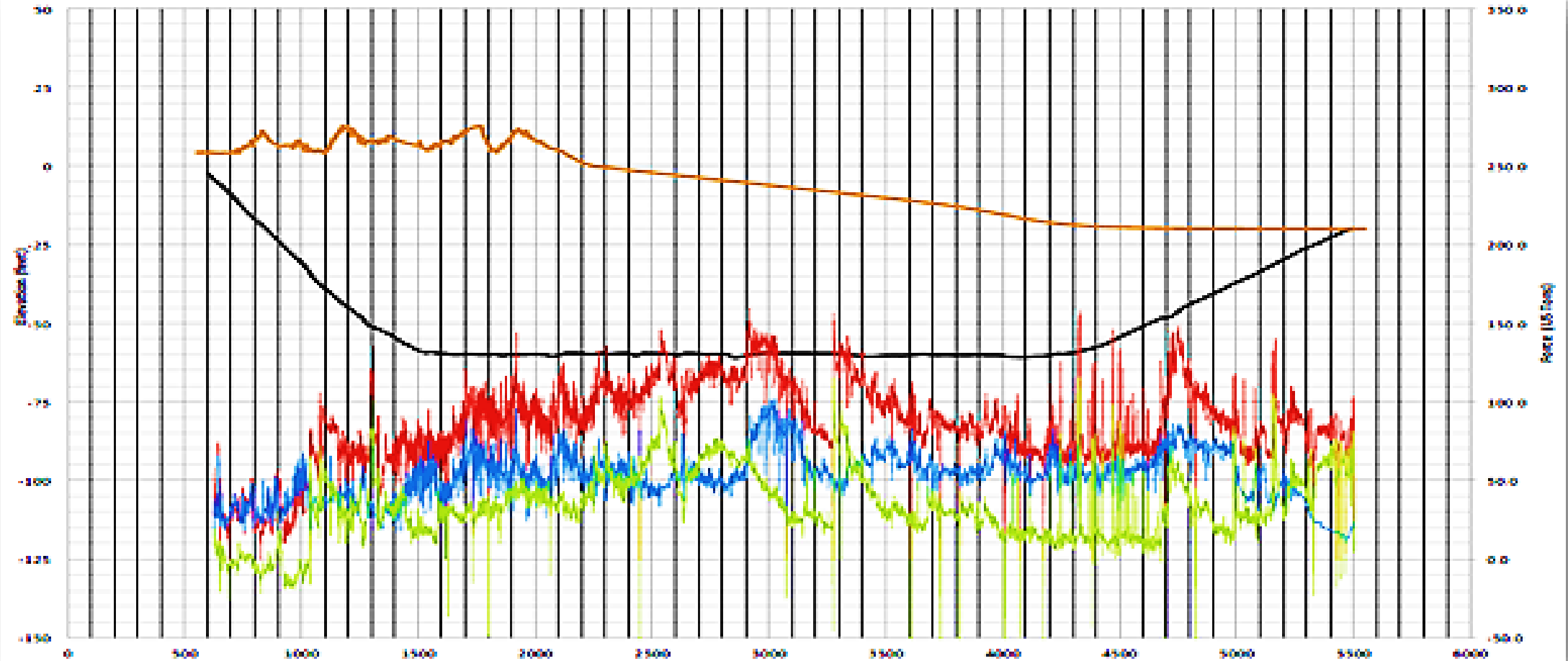
ONSITE ACTIVITY	PLANNED SHIFTS	ACTUAL SHIFTS
MOBILIZATION/FOUNDATION/THRUSTER SETUP/EQUIPMENT SETUP	40.00	37.00
MTBM ASSEMBLY / LAUNCH SEAL / UMBILICAL INSTALLATION	12.00	23.00
TUNNELLING OPERATIONS/MID WELDS/SURVEY	44.00	36.00
THRUST OUT TO BARGE/LIFT MTBM/ADDITIONAL TRUST	7.00	7.00
UMBILICAL REMOVAL & STORAGE/RIG DOWN/DEMOB	23.00	16.00
WEATHER / CONTINGENCY	3.00	0.00
TOTAL SHIFTS	129.00	119.00

The total shifts required for was 119 over 101 days.



- Laney performed (9) confined entries scenarios.
- All were made safely with no communication breakdowns.
- Most importantly, there was zero lost time due to injury.

ENTRY	SCENARIO	REASON FOR ENTRY	DATE
1	Unplanned	Repair Leak	11/23/17
2	Unplanned	Repair Internals	11/24/17
3	Planned	Disconnect Internals	11/25/17
4	Planned	Connect Sections	11/26/17
5	Planned	Connect Sections	11/26/17
6	Planned	Verify Connections/Inspect Equipment	11/26/17
7	Unplanned	Equipment Repair	11/29/17
8	Unplanned	Equipment Repair	12/01/17
9	Planned	Disconnect Equipment	12/02/17





SPECIAL THANKS – TEAM EFFORT

- Laney Engineers, Project Managers, Onsite Superintendents and Crews, Logistic Experts, Payroll and Accounting Professionals, Estimators and Procurement Specialists, Fluid Design Engineers, Surveyors, Confined Entry Crews and PowerPoint Gurus.





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