

Tualatin Valley Water District



HDR



**Emery & Sons
Construction, Inc.**



WE ARE ALL IN THIS TOGETHER

How great communication between the contractor, engineer, and owner helps build a successful project



Presented by:
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Joelle Bennett, HDR

TOPICS

1. Thompson Road Project 24-inch Transmission Suction Line
2. Lessons learned: *What went well*
3. Lessons learned: *What we learned*
4. Conclusions



Arin Atiyeh

Emery & Sons Construction

- Senior project manager
- 25-years experience

Joelle Bennett

HDR

- Project engineer
- 10-years experience

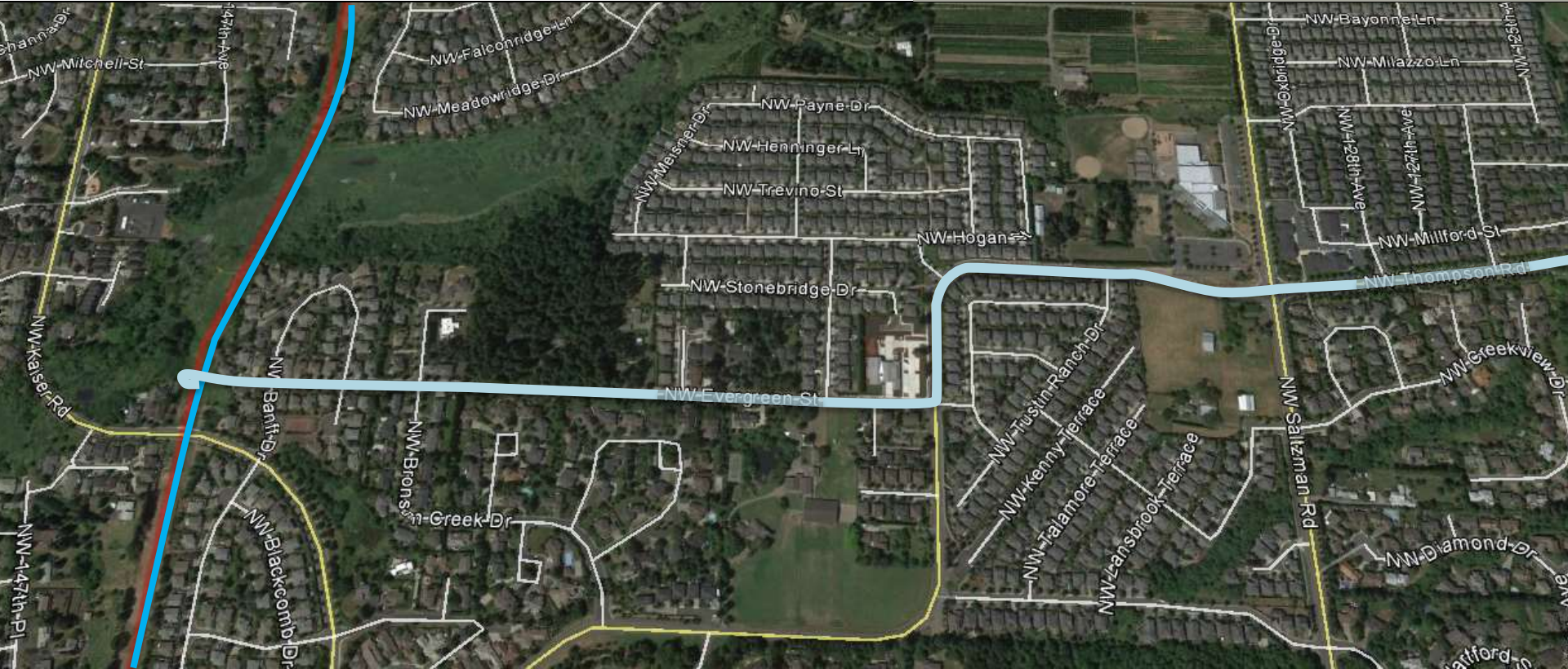


01 THOMPSON ROAD PROJECT 24-INCH TRANSMISSION SUCTION LINE

SETTING

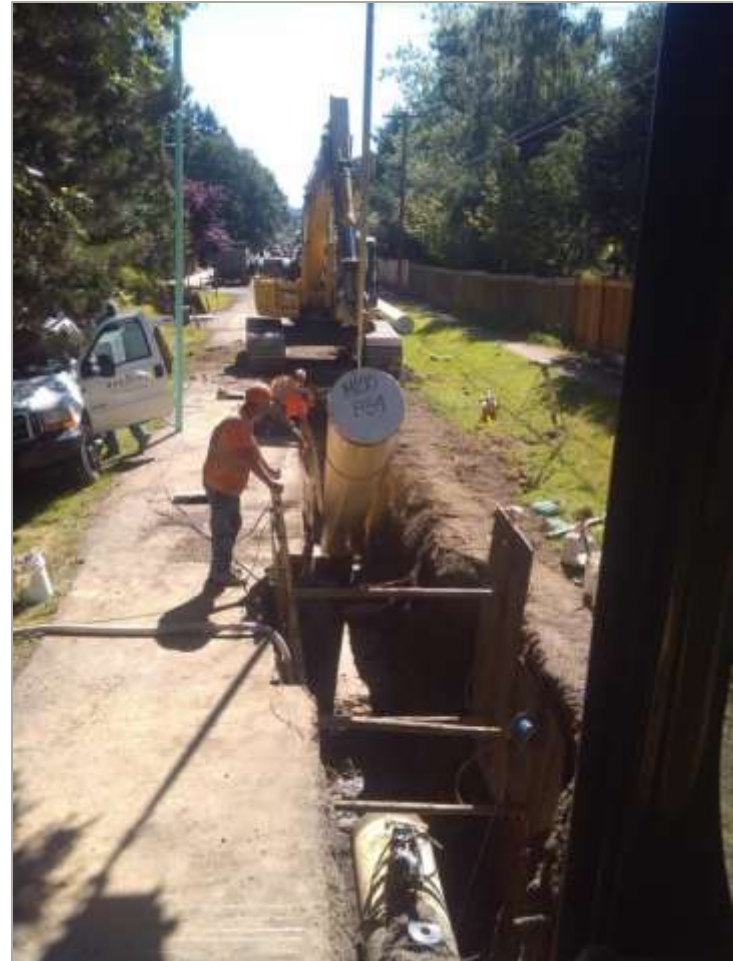
- Construction: 2013
- West of Portland, Oregon
- People (TVWD, Emery, HDR)

Project Area



PROJECT

- Nearly a mile of 24-inch welded steel pipe
- 160-ft 36-inch augured bore
- Cement mortar lining
- Polyurethane coating
- Manufactured by NW Pipe
- Hot tap of 48-inch PCCP
- Standard water line appurtenances
- Pavement restoration and overlays



PROJECT CHALLENGES

- BPA power transmission lines
- NW Natural transmission line
- Kinder Morgan liquid petroleum line
- Complicated pipe geometry at hot tap
- Wetlands and cultural resources
- Neighborhoods
- Busy intersection and school
- Weather
- Underground utilities



02 LESSONS LEARNED: *WHAT WENT WELL*

Communication and Relationships



Acknowledge ~~STUFF~~ (change) happens



Utilities



Station	Item	Depth Shown on Plans	Notes
49+98	42" Water Main	7'	Under Bore
50+69	42" Water Main	6'	Under Bore
50+83	16" NW Nat Gas X-ing	4'	Under Bore
51+05	8" KM Petroleum X-ing	4'	Under Bore
51+98	Gas Svc Crossing	3'	Under Bore
52+15 Approx.	Com Line		Not shown on plans
52+38	6" DI Water Crossing	4'	DI, 235.59 I.E.
52+84 Approx.	1" Water Service		Not shown on plans
52+64	Sewer Crossing	11'	Verified Between MH's
52+69	15" Storm Crossing	6'	Verified Between MH's
52+75	8" Sewer Crossing	12'	Verified in MH's, 229.9 I.E.
52+95	Sewer Lateral		/
53+21	Com & Power		7 paint marks, 6 found
53+33 Approx.	Com Line		Not shown on plans
53+66	Water Main Crossing		DI
53+92 Approx.	1" Water Service		Not shown on plans, 6" 3034
53+97	12" Storm Crossing	4'	Verified at CB
54+13	Sewer Lateral		Located on 12-26-12, 6" 3034
54+21	Rain Drain		Not shown on plans
54+41	Telephone Crossing	3'	No Locates
54+42	1" Water Service	3'	COP
54+62	Sewer Lateral	8'	3034
55+02	Telephone Crossing	2'	/
55+34	Sewer Lateral	8'	Located on 12-26-12
55+63	1" Water Service	3'	COP

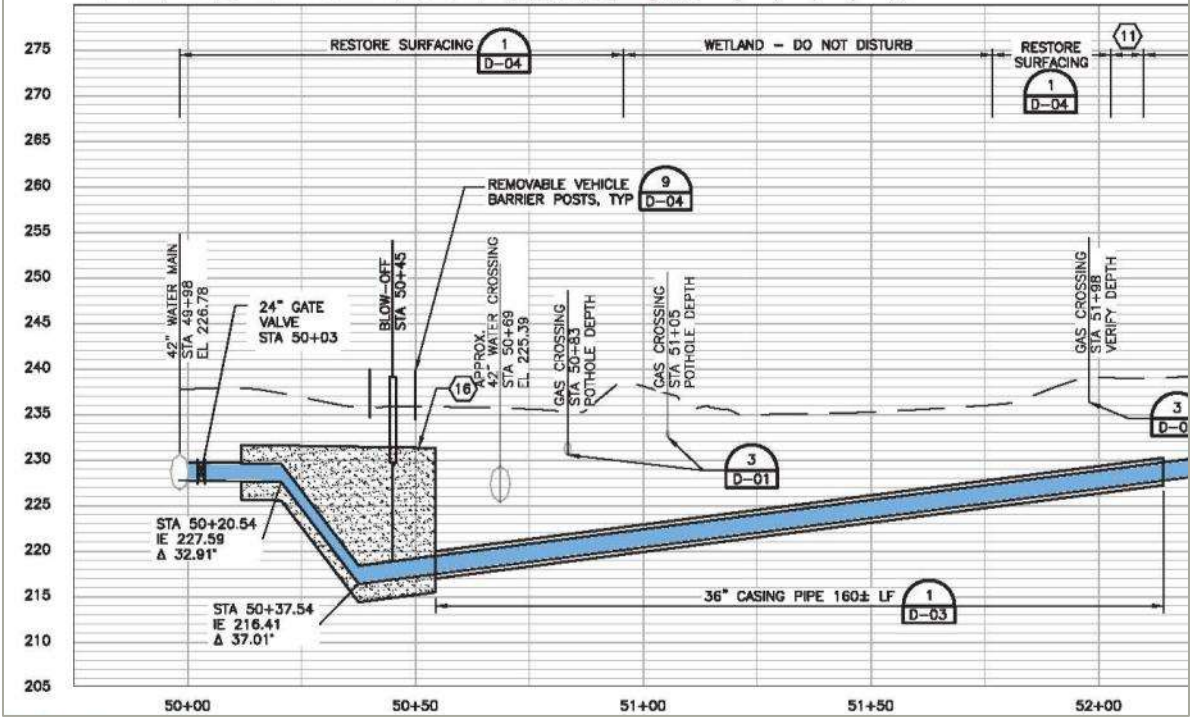
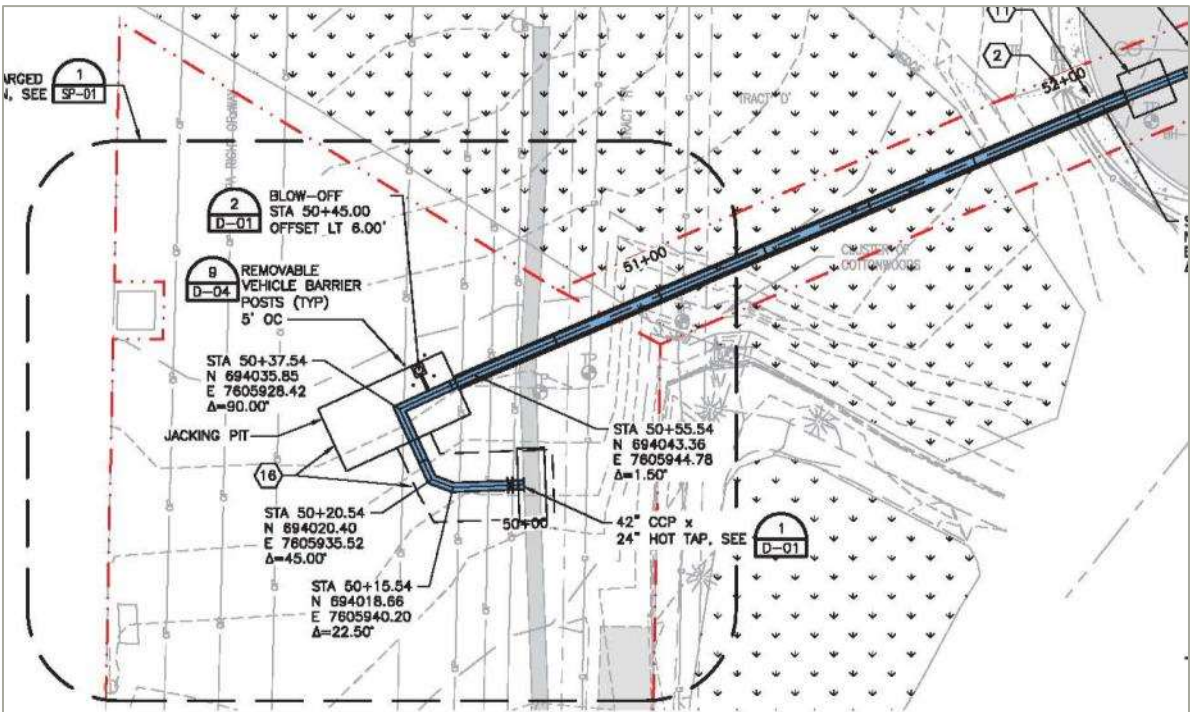
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75+41	Comm		Not Shown on Plans
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Hot Tap



3D Geometry



Urgency – know when to use it



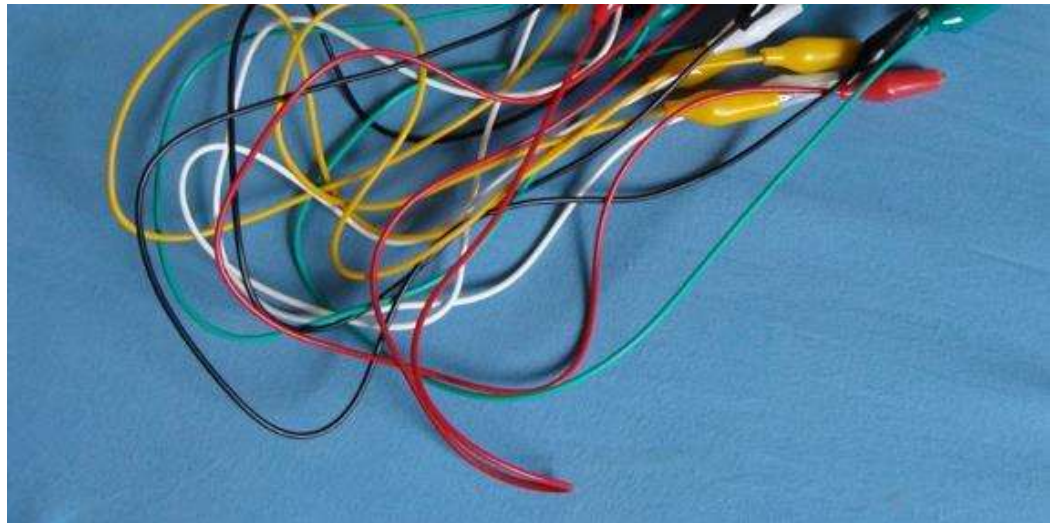
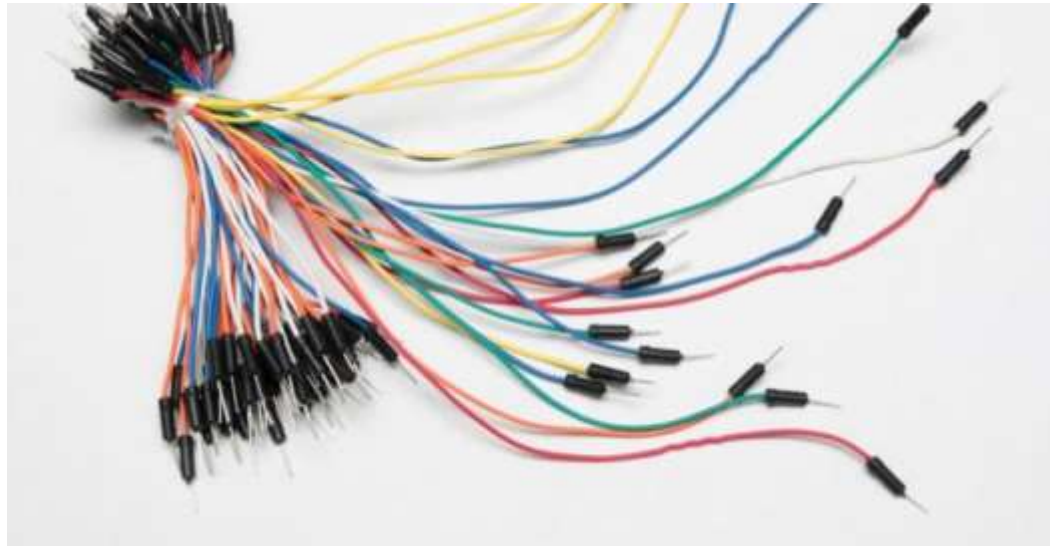
03

**LESSONS LEARNED:
*WHAT WE LEARNED***

Inspections – who pays?



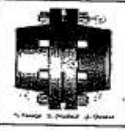

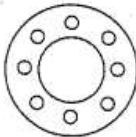
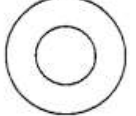
Voodoo science Cathodic Protection



Insulating gaskets...

Gasket Specification

Please fill out the appropriate sections of the following form in order for **manufacture your gasket correctly.**
 NOTE: If both Section A and B are completely filled out, only fill out the dimensions in section C which have an asterisk. If section B is not completed, then all dimensions in section C need to be filled out.

SECTION A Type of Connection Needed  Flange Connection <input type="checkbox"/> _____ Flange ID  Valve Connection <input type="checkbox"/> _____ Valve ID		Type of Gasket Needed  Type E <input type="checkbox"/> Full Face  Type F <input type="checkbox"/> Raised Face		Type of Material Needed Note: Check one type of material for each item. Gasket: Phenolic <input type="checkbox"/> Neoprene Coated Phenolic <input type="checkbox"/> G10 <input type="checkbox"/> Other: _____ Seal: Nitrile <input type="checkbox"/> Viton <input type="checkbox"/> Teflon <input type="checkbox"/> EPDM <input type="checkbox"/> Note: Only G10 gasket material with EPDM or Teflon seals are NSF61 approved. Sleeve: Micarta <input type="checkbox"/> Integral <input type="checkbox"/> G10 <input type="checkbox"/> Mylar <input type="checkbox"/> Washer: Micarta <input type="checkbox"/> G10 <input type="checkbox"/> Steel <input type="checkbox"/> Stainless Steel <input type="checkbox"/> Other: _____ Other: _____ Quantity of seals: _____ Quantity of washers: _____	
SECTION B Flange Spec Needed ANSI <input type="checkbox"/> MSSP-44 <input type="checkbox"/> DIN <input type="checkbox"/> AS <input type="checkbox"/> API <input type="checkbox"/> AWWA <input type="checkbox"/> JIS <input type="checkbox"/> BS <input type="checkbox"/>		Nominal Size _____ Pressure Rating _____			



Just specify both flange thicknesses for sleeve to fit properly

_____	BH
_____	BS
_____	SHO
_____	SL

Signature: _____





04 CONCLUSIONS

