

**From:** JasonKean@lowerchurchillproject.ca [mailto:JasonKean@lowerchurchillproject.ca]  
**Sent:** Tuesday, October 29, 2013 6:00 AM  
**To:** Ducey, BJ <BDucey@QuantaServices.com>  
**Cc:** LanceClarke@lowerchurchillproject.ca  
**Subject:** Estimate Framework

BJ,  
Attached are a copy of the estimating framework used today.

I will take a closer look at it over the next day or two to ensure it adequately captures all elements.

Regards,

Jason

**Jason R. Kean, P. Eng., MBA, PMP**  
Deputy General Project Manager  
PROJECT DELIVERY TEAM  
Lower Churchill Project  
t. 709 737-1321 c. 709 727-9129 f. 709 754-0787  
e. [JasonKean@lowerchurchillproject.ca](mailto:JasonKean@lowerchurchillproject.ca)  
w. [musktratfalls.nalcoreenergy.com](http://musktratfalls.nalcoreenergy.com)

You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

# Open Book Estimate Development Model

28-October-2013

Boundless Energy



Confidential and Commercially Sensitive



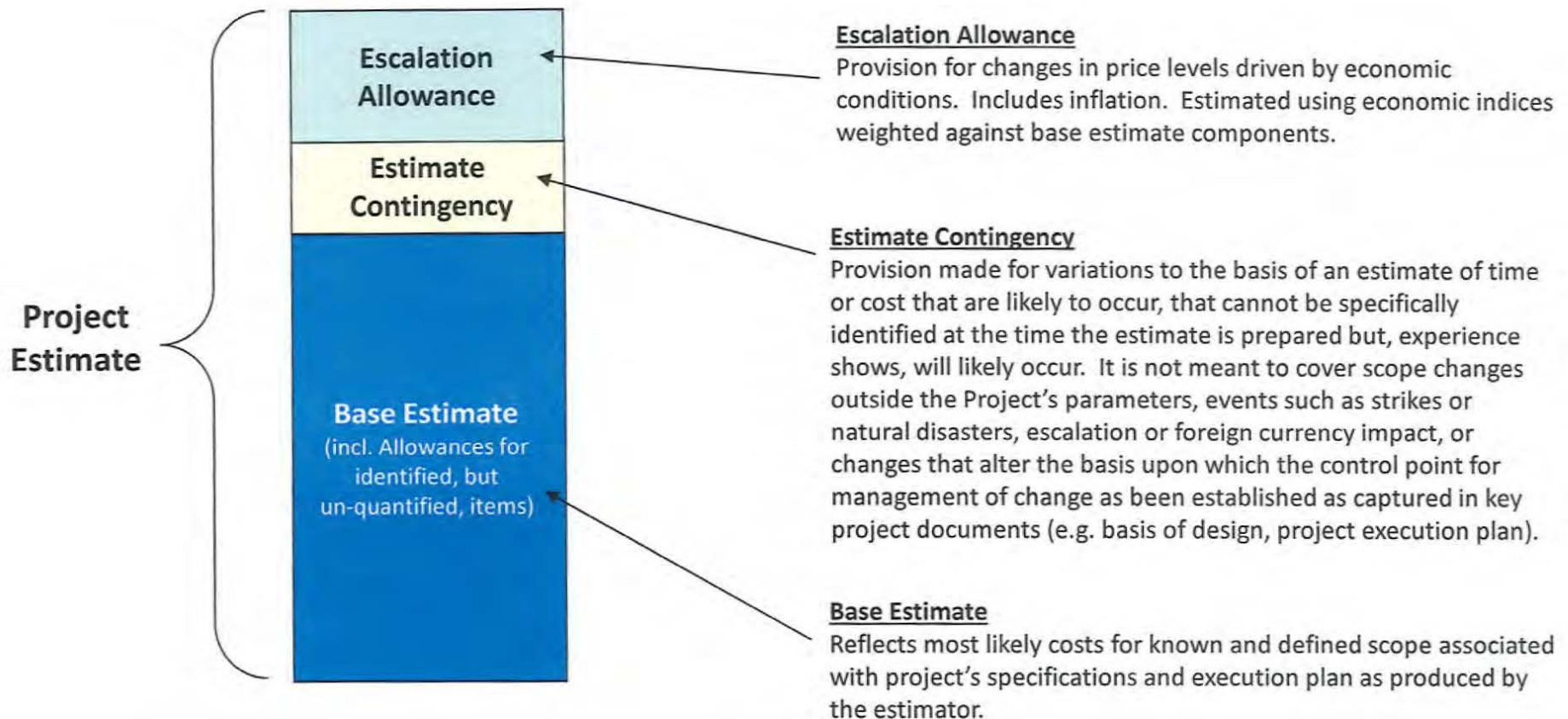
# Purpose

- Leverage Nalcor's estimating framework as a collaboration model to develop an open book estimate for the HVdc TL.

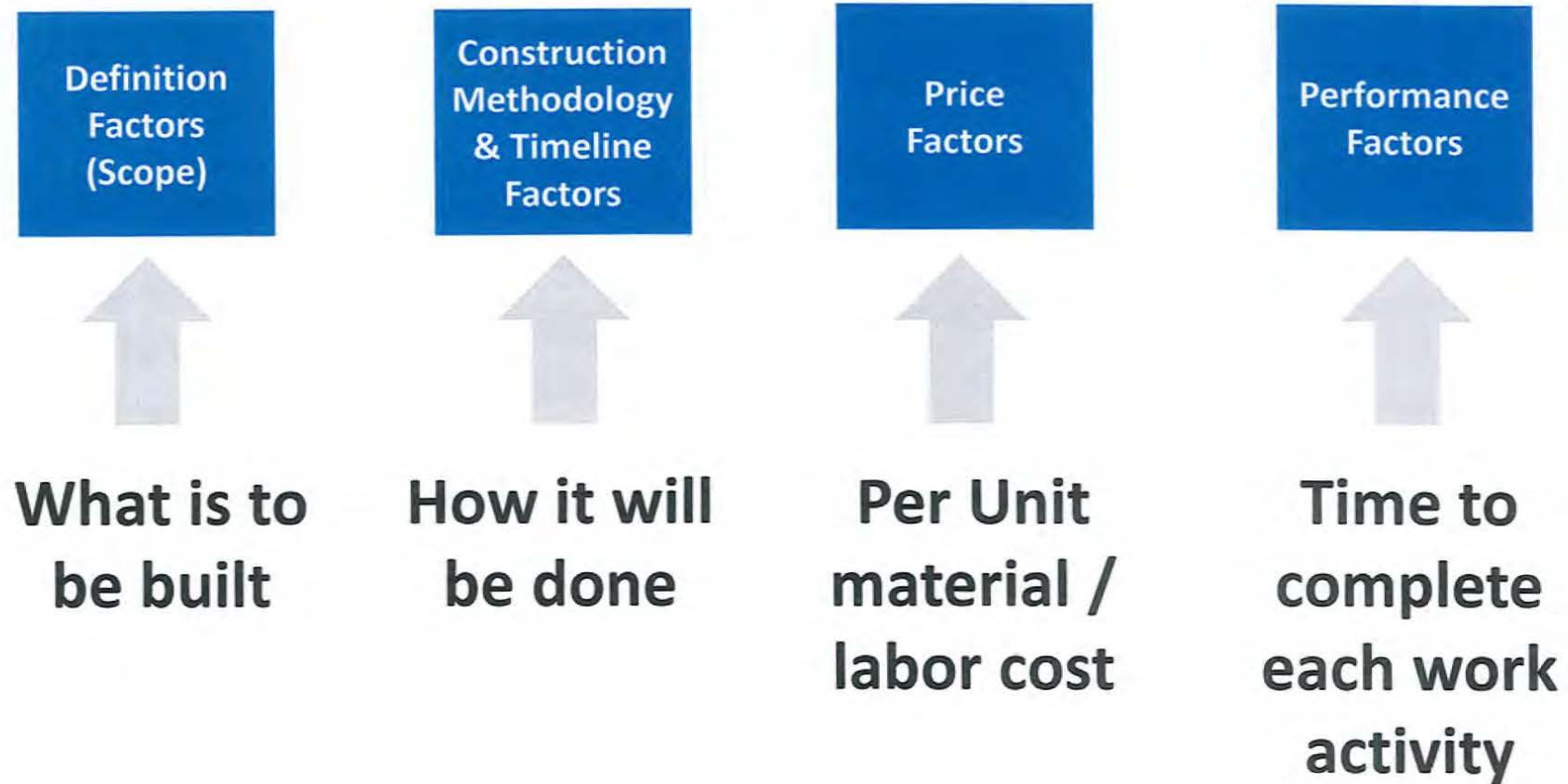
# Nalcor's Estimating Approach

- Adopt industry recommended practice
  - Association for Advancement of Cost Engineering (AACE) International
- Focus on key cost drivers
- Fully engage project team
- Understand and apply lessons learnt from other projects
- Gather external and independent input

# Cost Estimate Components



# The Estimators Consider 4 Elements





# Each Element has Extensive Information Set



**From:** Project Solutions [mailto:project.solutions@nf.sympatico.ca]  
**Sent:** Sunday, January 15, 2017 6:54 PM  
**To:** Ducey, BJ <BDucey@QuantaServices.com>  
**Cc:** Jason Kean <project.solutions@nf.sympatico.ca>  
**Subject:** Re: Farewell and Thank-you  
**Importance:** High

Thanks for the note BJ.

Likewise, I've enjoyed our time interfacing together. We've had a few rough patches, but we've always managed to work our way through. Fundamentally no matter how rough it has been, I've always concluded that my recommendation to work with Quanta - Valard was the correct one. I walk away from the Project concluding the same and having confidence that the Project will get done. Please pass on my regards to Duke, Barkley and Vic and thank them for their ongoing commitment.

Coffee sounds like a great idea. Just drop me a line advising when you plan to be in St. John's and we'll coordinate our schedules (mind is pretty flexible at present!)

Yes we do plan to take a few weeks and enjoy some warmer temperatures as well as contemplate the "what's next?" question.

Regards,

Jason

**Jason R. Kean, P. Eng., MBA, PMP**  
Principal Consultant  
Project Solutions Inc.

Email: [project.solutions@nf.sympatico.ca](mailto:project.solutions@nf.sympatico.ca)

Tel.: (709) 727-9129

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On Jan 12, 2017, at 12:48 AM, Ducey, BJ <[BDucey@QuantaServices.com](mailto:BDucey@QuantaServices.com)> wrote:

Jason,

Thank you for the email and Best of Luck as you transition away from Project. I have always appreciated the time we worked together and respected the tremendous pride you had in the Lower Churchill Project.

I hope in the near future we can grab a cup of coffee on one of my trips to St. John's and catch up.

With your new found free time, I hope you and your wife are able to enjoy a great vacation before your next work opportunity.

Best Regards,

B.J. Ducey  
713 335-6320 (Office)  
713 557-2554 (Mobile)  
[bducey@quantaservices.com](mailto:bducey@quantaservices.com)

**From:** [JasonKean@lowerchurchillproject.ca](mailto:JasonKean@lowerchurchillproject.ca) [<mailto:JasonKean@lowerchurchillproject.ca>]

**Sent:** Tuesday, January 10, 2017 5:06 PM

**To:** [LCP\\_Project\\_Delivery\\_Team@nlh.nf.ca](mailto:LCP_Project_Delivery_Team@nlh.nf.ca)

**Cc:** [Executive LT & Senior LT@nlh.nf.ca](mailto:Executive_LT_Senior_LT@nlh.nf.ca); [KTucker@nlh.nl.ca](mailto:KTucker@nlh.nl.ca)

**Subject:** Farewell and Thank-you

**Importance:** High

As many of you have likely heard, after nearly 10 years I have decided it is time to bid you all, and the Project, farewell. Having the honor to work with you to bring this mega-project from concept through to reality (and near completion), through its ups and downs, has professionally been very fulfilling; having the opportunity to create and share the LCMC Project Delivery Organization has been inspiring; while having an organization which readily steps up to the challenge of a "Nobody Gets Hurt" safety culture that cares deeply about the well being of each of its 5,000+ workers is heart-warming. Yes, indeed it's been a great ride!



As I depart I am reminded of the one of the unique characteristics of mega-projects – while they are large and complex, they are very fragile. Pull together as 'One-Team' and get this one over the line, thereby ensuring a strong future for all Newfoundlanders and Labradorians.

Thank you for the support and commitment you have demonstrated to the Project over the years.

Should you wish to reach me, I can usually be reached on my cell phone (709) 727-9129, otherwise drop me an email at [project.solutions@nf.sympatico.ca](mailto:project.solutions@nf.sympatico.ca)

Until we meet again,

Jason

**Jason R. Kean, P.Eng MBA PMP**  
PM - Overland Transmission Lines (Consultant)  
PROJECT DELIVERY TEAM  
Lower Churchill Project  
t. 709 737-1321 f. 709 737-1985  
e. [JasonKean@lowerchurchillproject.ca](mailto:JasonKean@lowerchurchillproject.ca)  
w. [muskratfalls.nalcorenergy.com](http://muskratfalls.nalcorenergy.com)

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## May 4, 2017 Settlement Meeting Presentation Materials

### Lower Churchill Project

Contract Between Island Link Limited Partnership and Valard Construction LP

Newfoundland and Labrador, Canada



McLean & Armstrong LLP

Privileged & Confidential



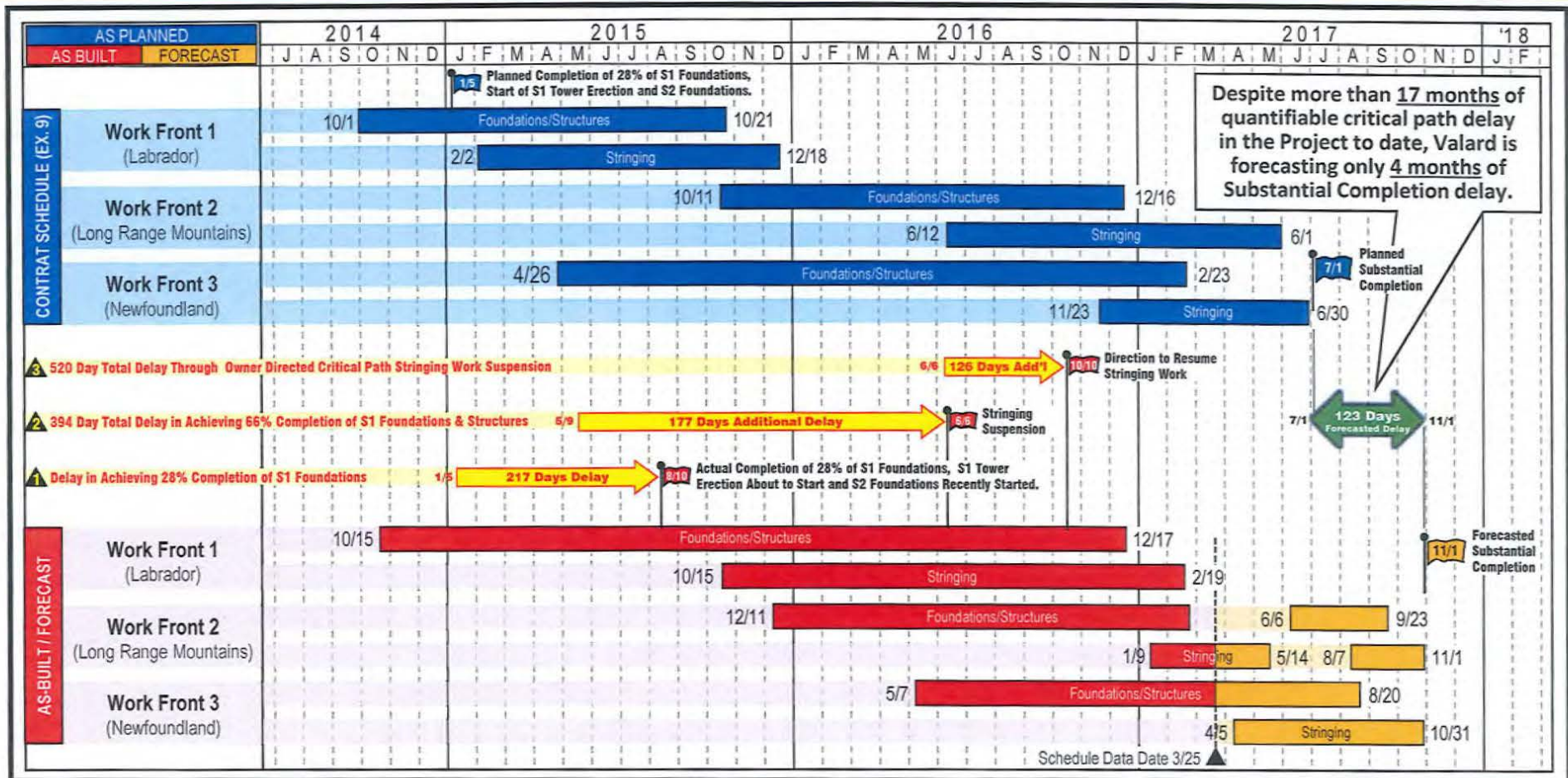
## Topics of Discussion

SLIDE 2

- **Schedule Summary:**
  - ✓ Overview of Project Delays
  - ✓ Critical Path Through Work Front 1
- **Delay & Impact Causation:**
  - ✓ Summary of Impacts Identified
  - ✓ ROW Clearing and Access Road Construction Delays
  - ✓ Access Road Deficiencies
  - ✓ Geo-Program / Foundation Selection Process
- **Cost Impacts:**
  - ✓ Time Related General Conditions
  - ✓ Other Costs:
    - Mechanics
    - Survey
    - Camp Space Impact Costs
- **Conclusions**

# Summary Schedule Comparison

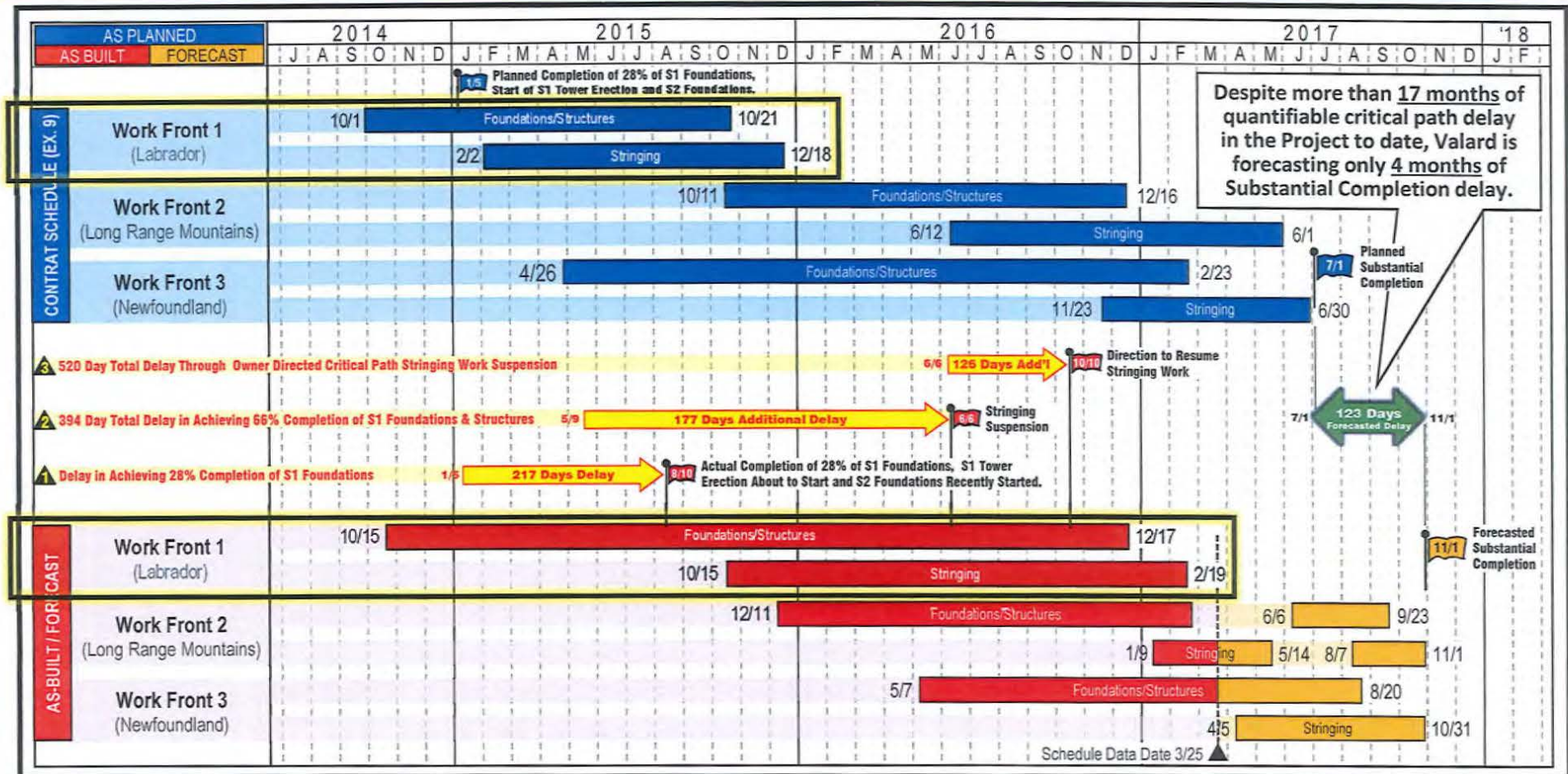
SLIDE 3





# Summary Schedule Comparison

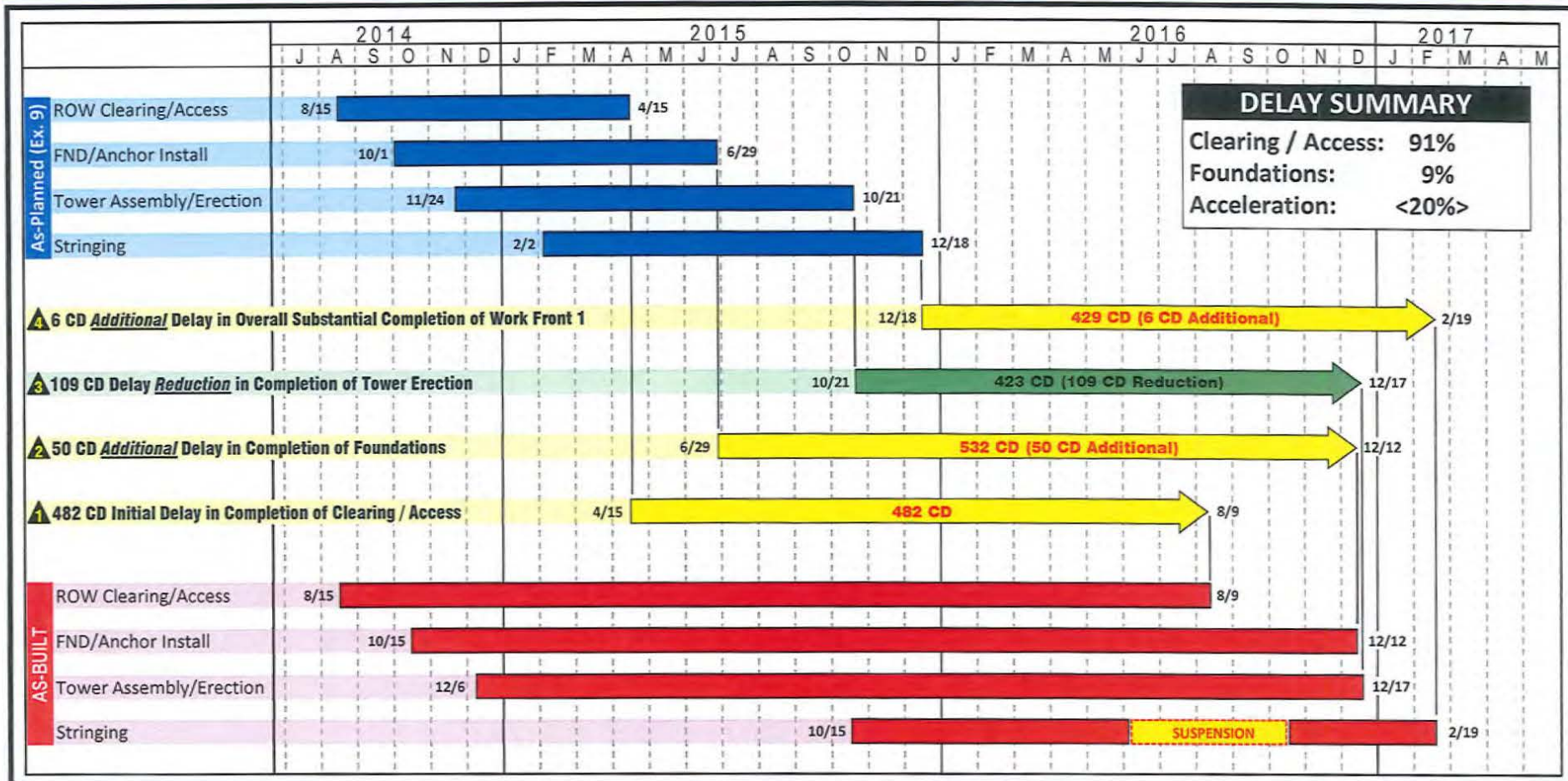
SLIDE 4

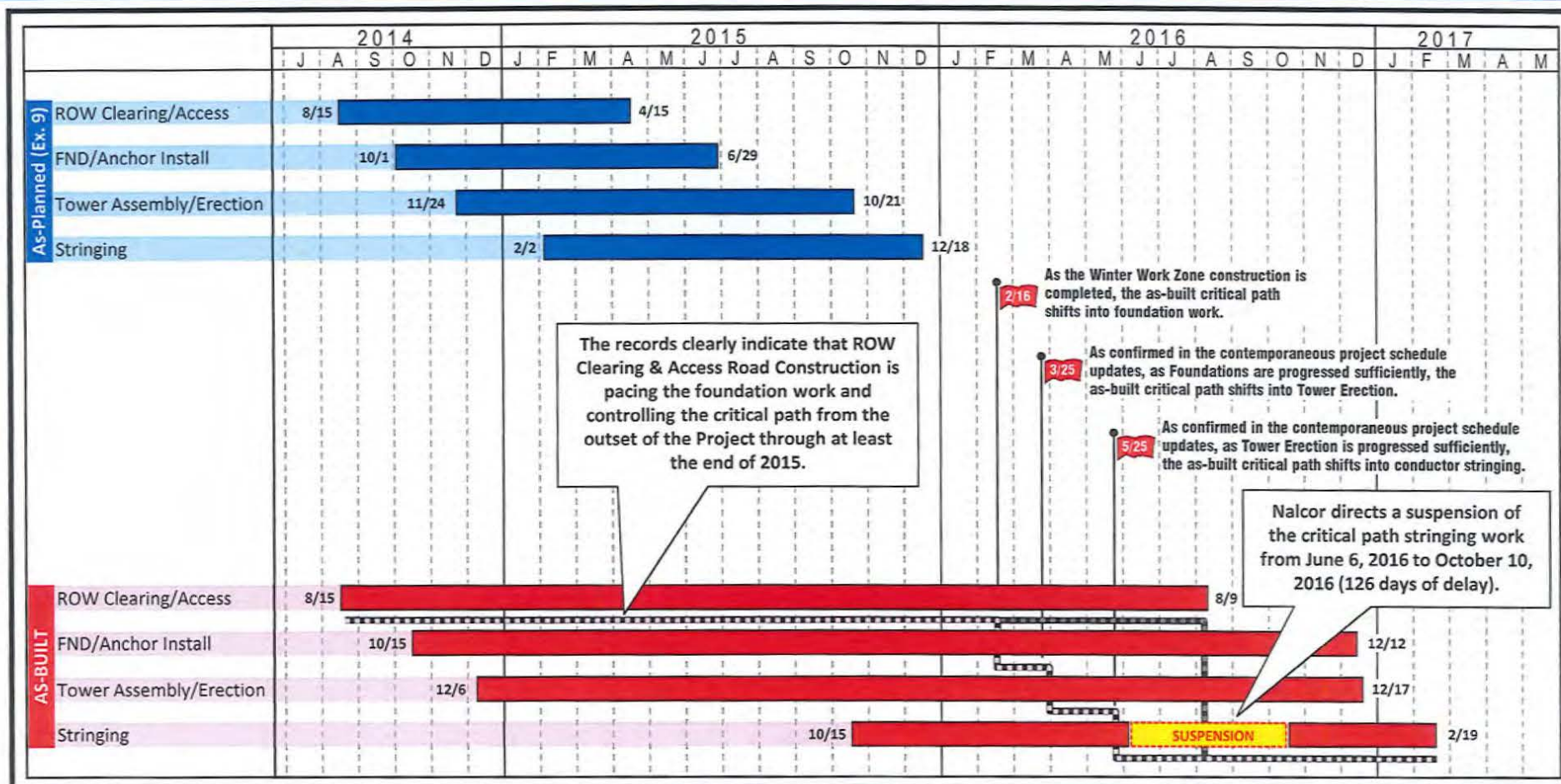




# Work Front 1 – As-Planned vs. As-Built Schedule Comparison

SLIDE 5

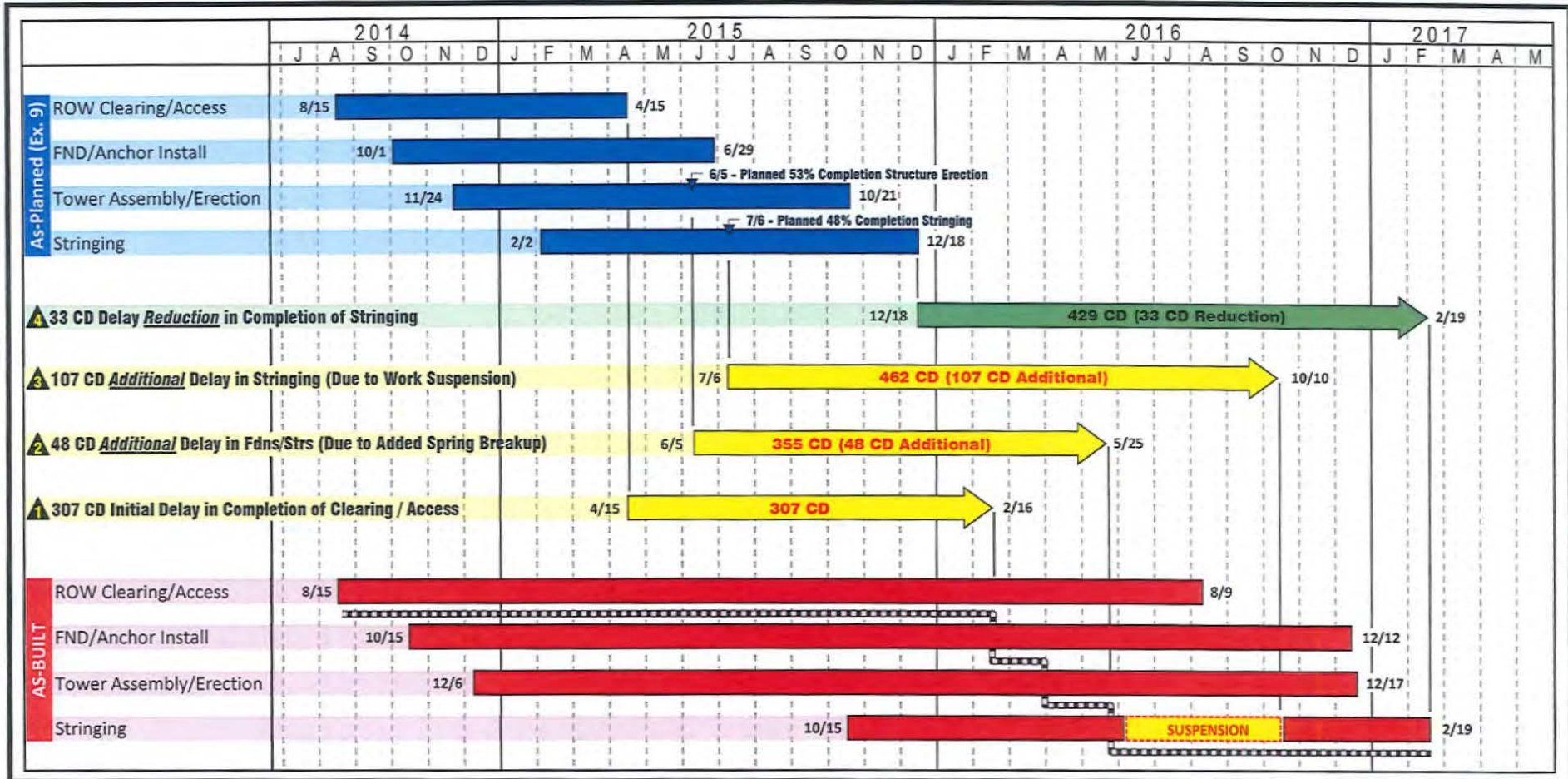






# Work Front 1 – As-Planned vs. As-Built Schedule Comparison

SLIDE 7



## Topics of Discussion

SLIDE 8

- **Schedule Summary:**
  - ✓ Overview of Project Delays
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- **Cost Impacts:**
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    - Camp Space Impact Costs
- **Conclusions**



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## Work Front 1 – Impacts and Delays Noted in Valard Monthly Reports to Nalcor

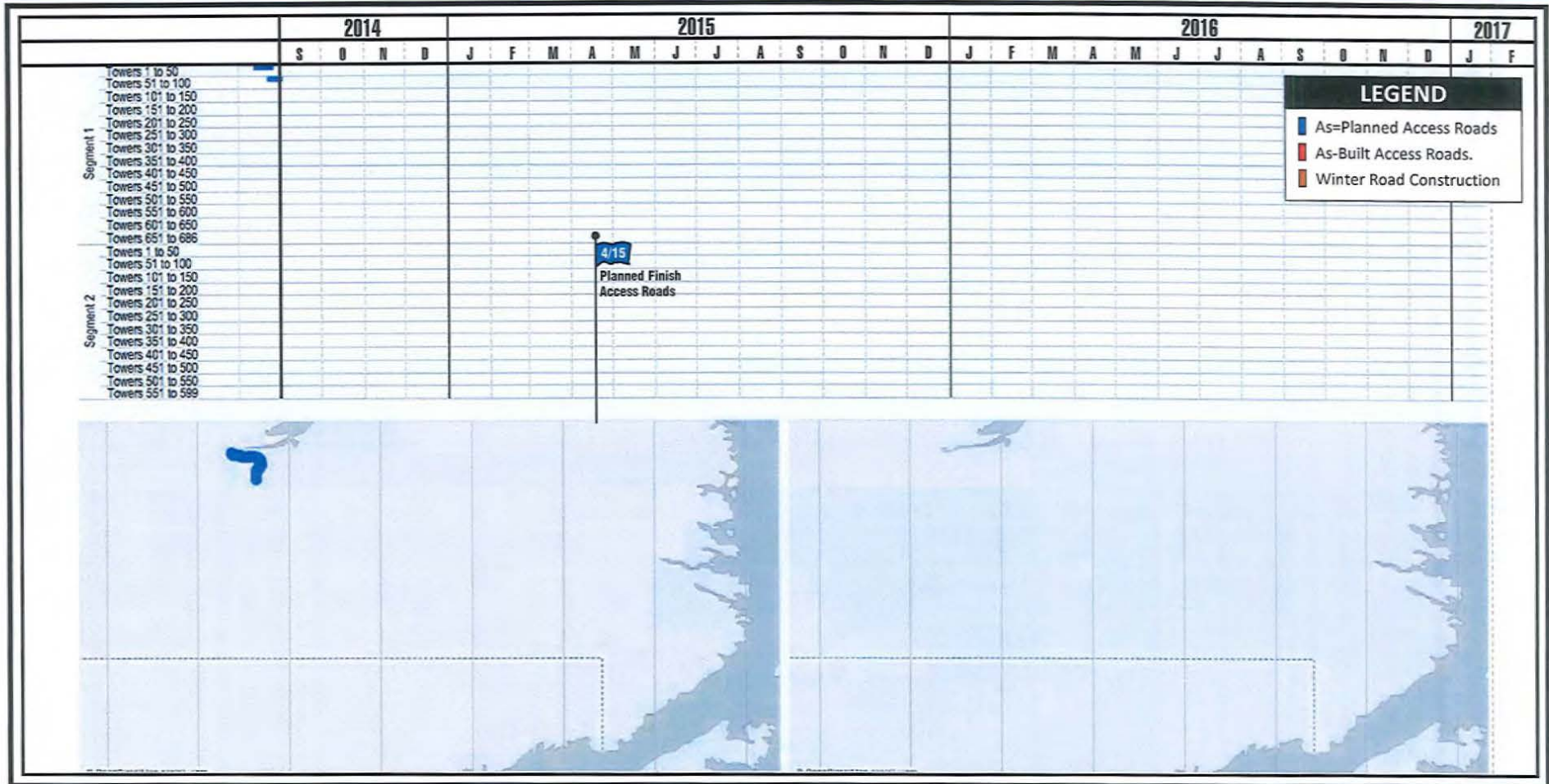
SLIDE 9

|  | 2014 |   |   | 2015 |   |   |   |   |   |   |   |   |   |   |   | 2016 |   |   |   |   |   |   |   |   |   |   |   | 2017 |   |
|--|------|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|
|  | O    | N | D | J    | F | M | A | M | J | J | A | S | O | N | D | J    | F | M | A | M | J | J | A | S | O | N | D | J    | F |
| <b>ROW/Access Construction Delays</b><br>(Valard crews catching ROW / Road crews, moves, out-of-sequence work)   | X    | X | X | X    | X | X | X | X | X | X | X | X | X | X | X | X    | X | X | X | X | X |   |   |   |   |   |   |      |   |
| <b>Road Ballasting Delays</b><br>(Valard crews waiting on completion of road repairs / ballasting work)          |      |   |   |      |   | X | X | X | X | X | X | X | X | X | X |      |   |   |   |   |   |   |   |   |   |   |   |      |   |
| <b>Camp Accommodation Shortage</b><br>(delayed ROW & access road construction caused shortages in camps)         |      |   |   |      |   | X | X | X | X | X | X | X | X | X | X | X    | X |   |   |   |   |   |   |   |   |   |   |      |   |
| <b>Foundation Selection Impacts</b><br>(Impacts from lack of Geo-Program, uncertainty & changes in fdn. types)   | X    | X | X | X    | X | X | X | X | X | X | X | X | X | X | X | X    | X | X | X | X | X |   |   |   |   |   |   |      |   |
| <b>Foundation Settlement Issues</b><br>(selection of un-suitable foundation types, dispute over modeling method) |      |   |   |      |   |   |   |   |   | X | X | X | X | X | X | X    | X | X | X | X | X | X | X | X | X | X | X | X    | X |
| <b>Material Availability Impacts</b><br>(ongoing shortages in material supply for both foundations & structures) | X    | X | X | X    | X | X | X | X | X | X | X | X | X | X | X | X    | X | X | X | X | X | X | X | X | X | X | X | X    | X |
| <b>Conductor Issue Impacts</b><br>(Nalcor directed 4-month suspension of stringing work)                         |      |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   | X | X | X | X | X |   |   |      |   |

PRELIMINARY WORK PRODUCT - PREPARED FOR SETTLEMENT

# ROW Harvesting & Mulching, Access Road & Bridge Construction - Work Front 1

SLIDE 10



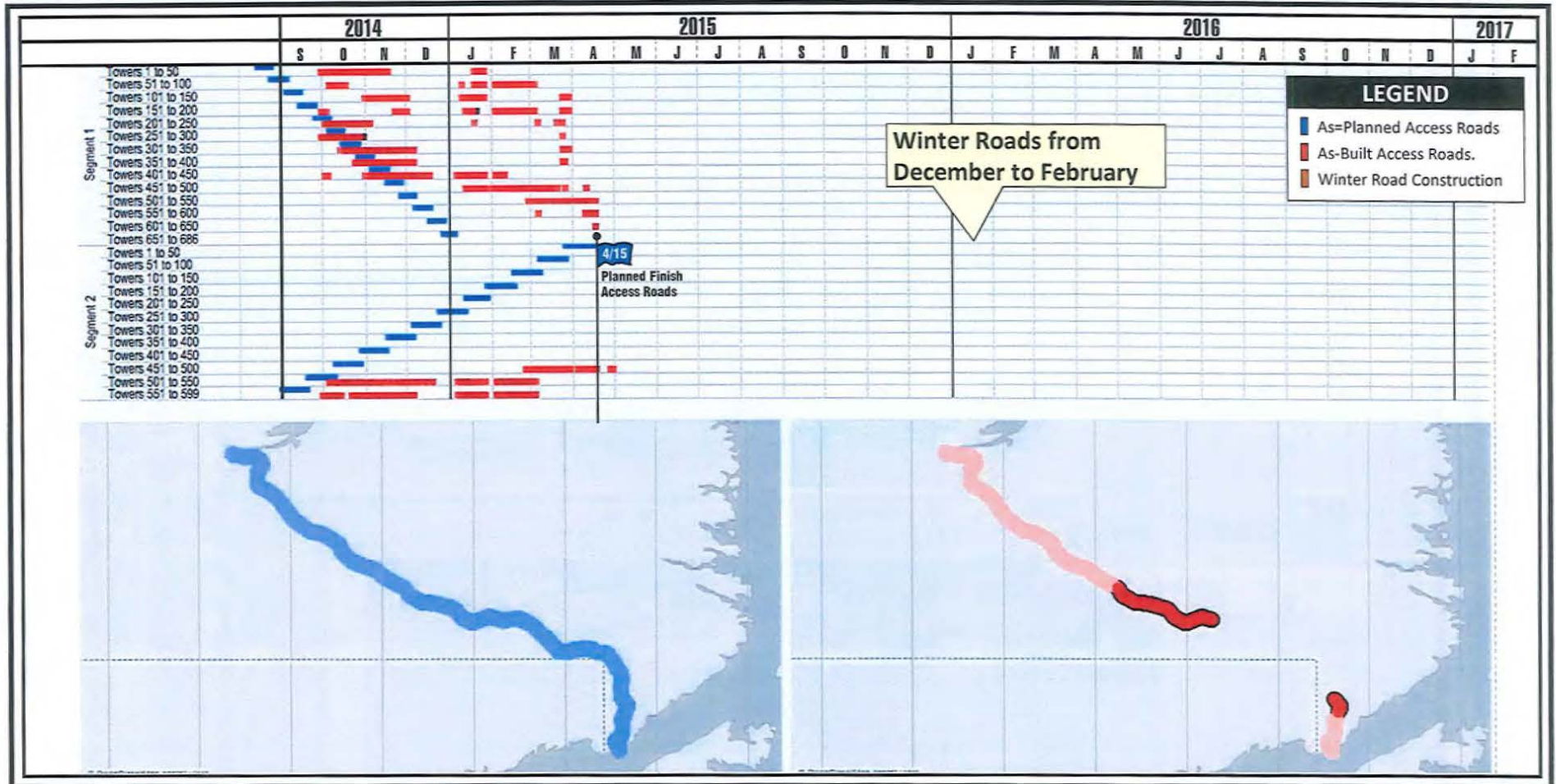






PRELIMINARY WORK PRODUCT - PREPARED FOR SETTLEMENT  
ROW Harvesting & Mulching, Access Road & Bridge Construction - Work Front 1

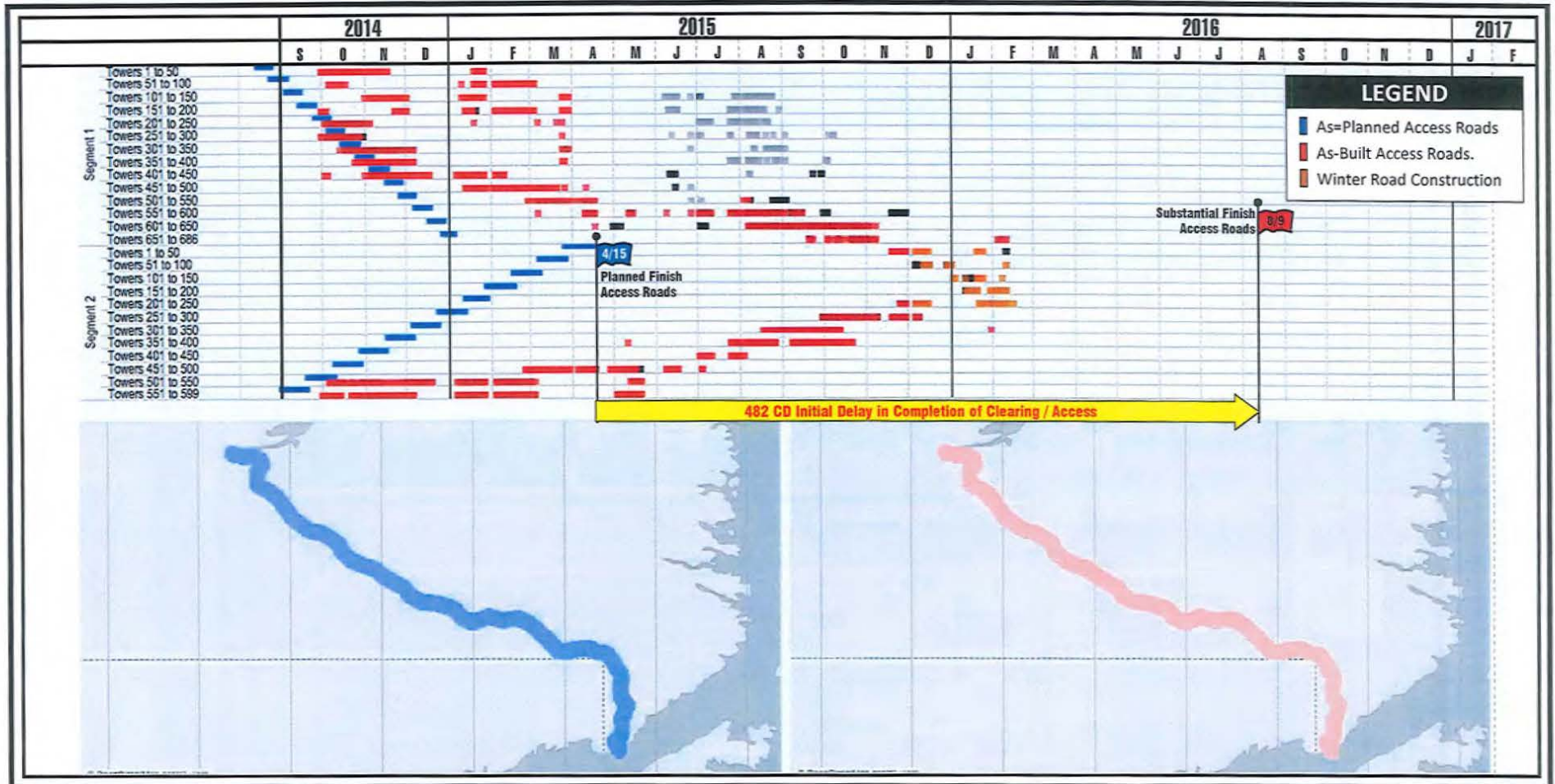
SLIDE 12



PRELIMINARY WORK PRODUCT - PREPARED FOR SETTLEMENT

## ROW Harvesting & Mulching, Access Road & Bridge Construction - Work Front 1

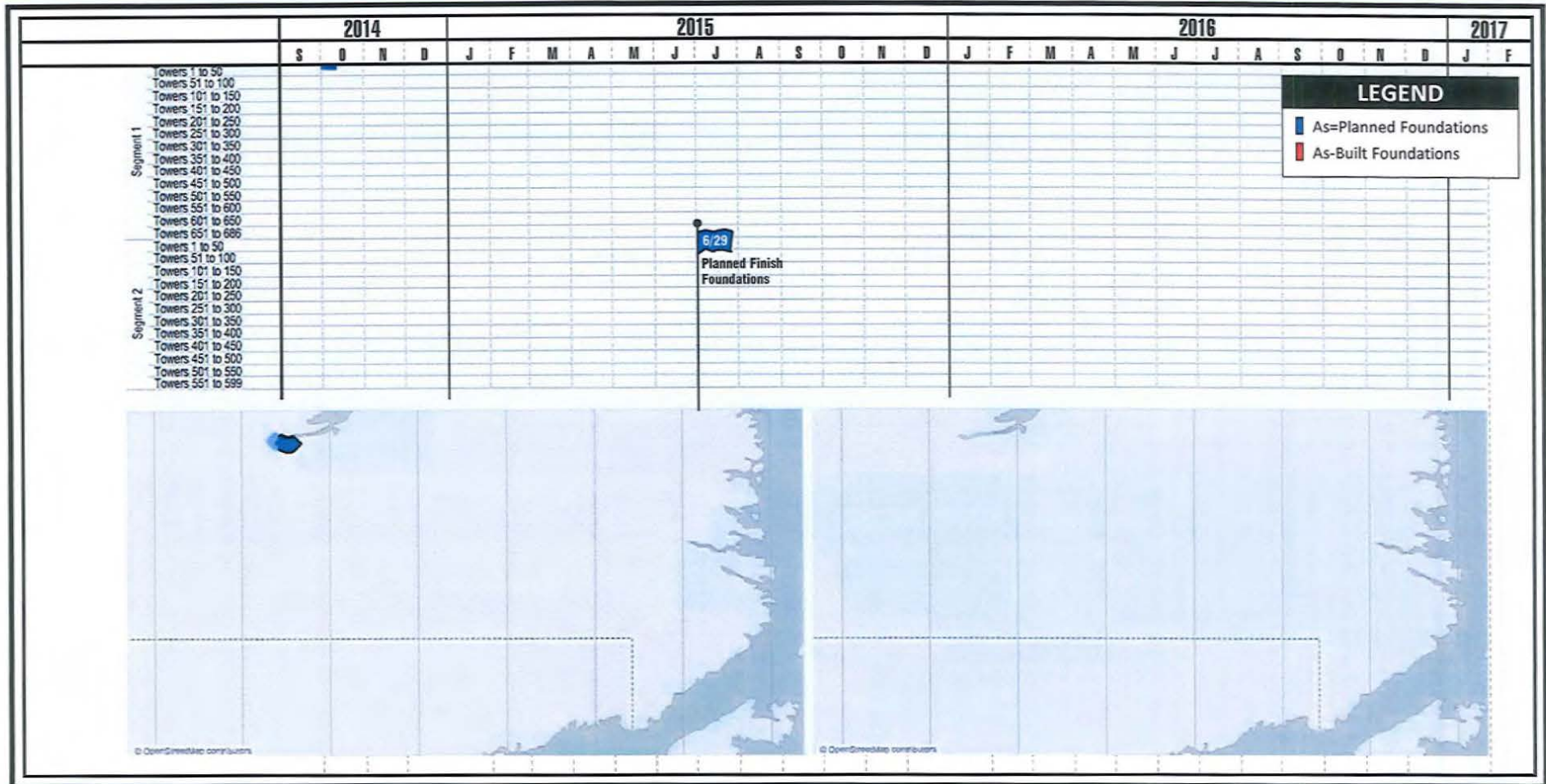
SLIDE 13





# Foundations – Work Front 1

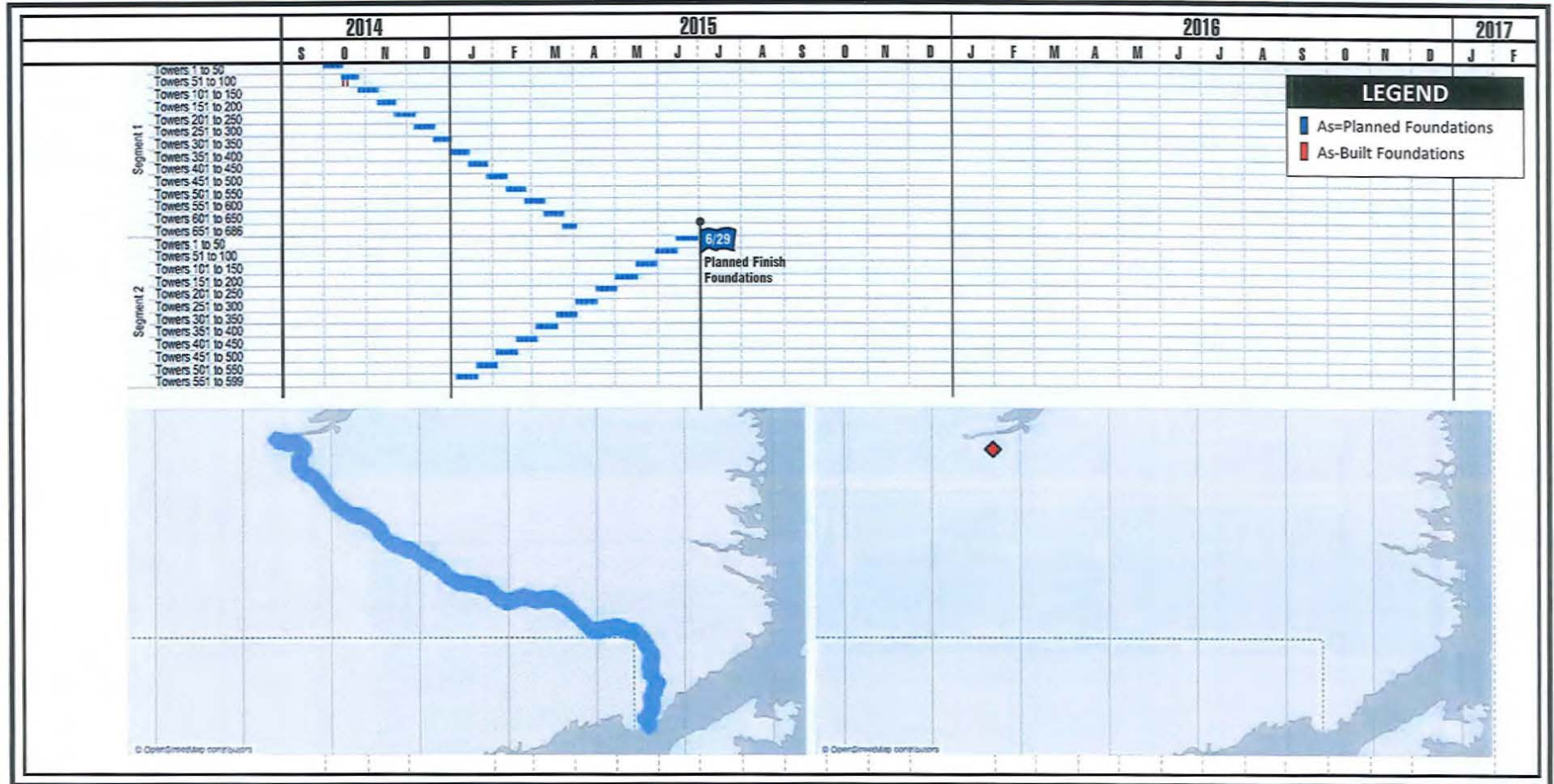
SLIDE 14





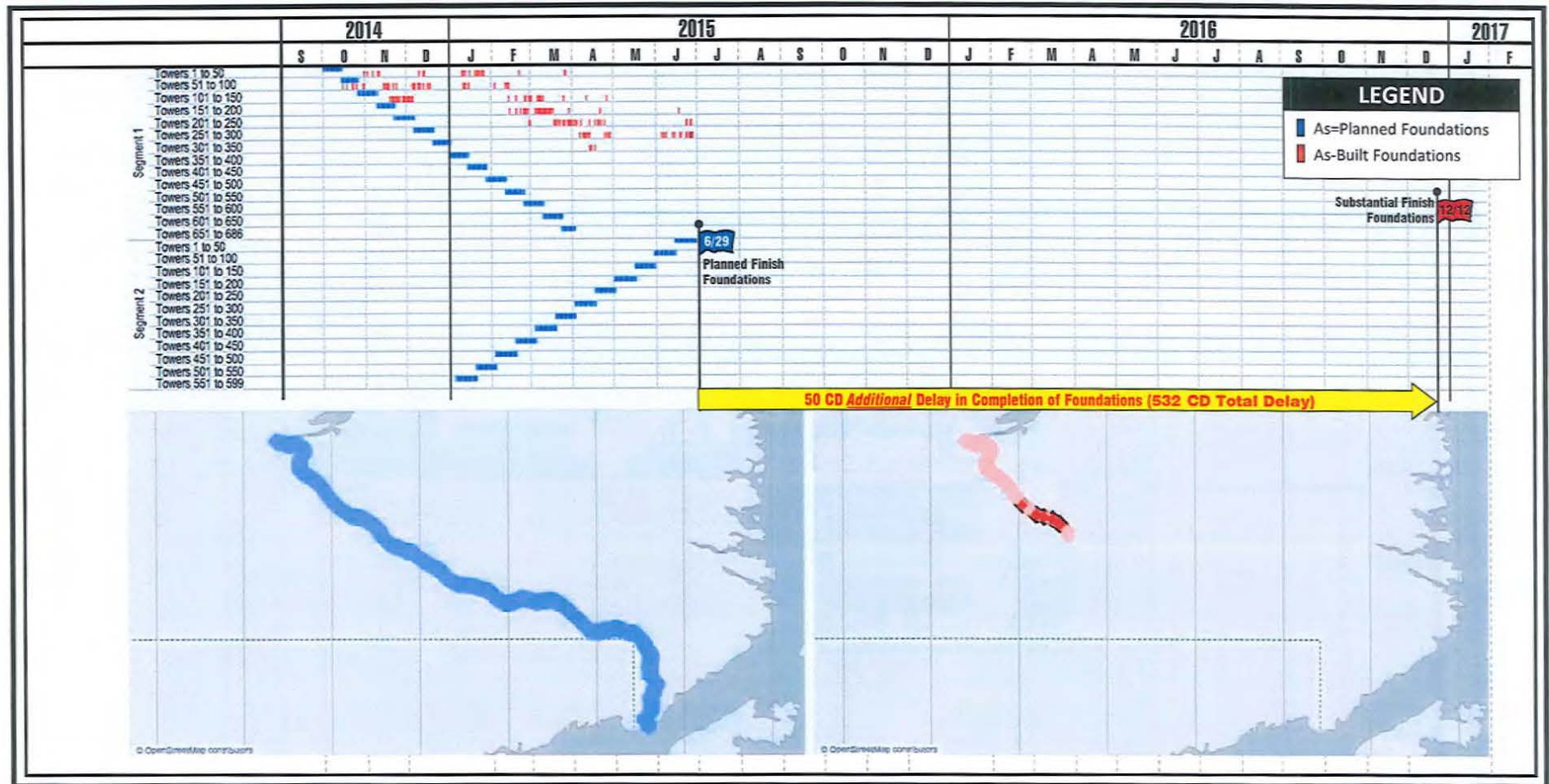
# Foundations – Work Front 1

SLIDE 15



# Foundations – Work Front 1

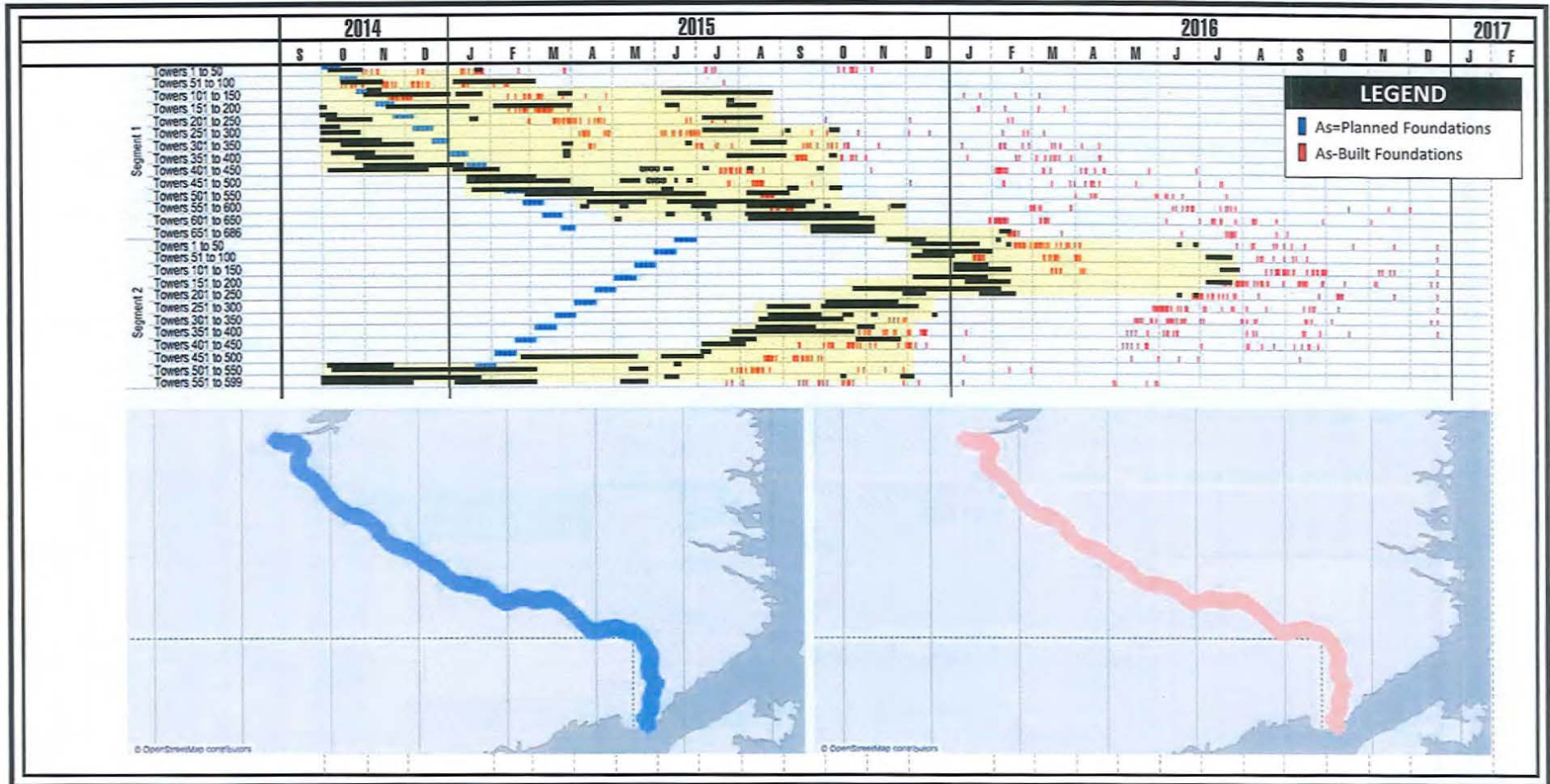
SLIDE 16





# Foundations – Work Front 1

SLIDE 17





## ROW Harvesting & Mulching, Access Road & Bridge Construction - Work Front 1

Slide 18

**While the original Contract contemplated that Valard would manage ROW clearing and access work (Part B of Contract), it was never afforded the opportunity to do so:**

- Valard was not able to manage as Nalcor overrode Valard decisions; did not communicate financial terms of roadbuilding contracts; and directed contractors without Valard involvement.
  - ✓ Valard did not have any control (no authority under the contracts of roadbuilding subcontractors) and they would not take direction from Valard.
  - ✓ Despite making numerous requests, Valard was not provided detailed insight into the costs of the Nalcor roadbuilding subcontractors and could not manage the costs without this knowledge.
  - ✓ Nalcor decided (unilaterally) not to cap the road with crushed stone in many places which did not meet the all season “fit for purpose” standard.
  - ✓ When Valard raised road capping issue, Nalcor management took the position that Valard was in charge of the road, but when the Valard tried to have capping completed, roads widened, further access built and more road maintenance Nalcor refused.
  - ✓ Given the situation, delays in real time decision field making lead to compounding delays.
  - ✓ Nalcor arbitrarily elected to move resources from Labrador to get started on work fronts 2 and 3, which in turn further delayed the completion of access in Labrador.
- Valard’s Part B role was terminated early in 2016.

# ROW Harvesting & Mulching, Access Road & Bridge Construction - Work Front 1

SLIDE 19

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Page 2 of 3

Page 3 of 3

Construction Management  
Nalcor Energy  
250 Torbay Road, Suite 2  
St. John's, NL  
A1A 4E1 Canada



MAIL TYPE: LCP-CM-EMAIL-049508  
REFERENCE NUMBER: LCP-CM-EMAIL-049508

CT0327-011 HVdc Clearing and Access - Blocks 7 Access: Production Rates

From: Ross Beckwith - Nalcor Energy  
To: Brian Bugden - C&T Enterprises Ltd  
Mr Bruce Moores - C&T Enterprises Ltd  
Mr Gaus Trimm - C&T Enterprises Ltd  
Dean Sjodin - Valard Construction  
Cc: Mr Jason Kean - Nalcor Energy  
Ken Sparkes - Nalcor Energy  
Mike Tuff - Nalcor Energy

Sent: Thursday, July 16, 2015

Message  
Gentlemen

Thank you for participating in a phone meeting yesterday afternoon (15th). The following summarizes our discussions. Please forward to Terry Belben, Sheldon Spencer, Dave Ofukany, and others as required.

## Participants

C&T: Terry Belben  
Brian Bugden  
Bruce Moores  
Gaus Trimm

Company: Ross Beckwith  
Jason Kean  
Ken Sparkes  
Mike Tuff

Valard: Dean Sjodin  
Sheldon Spencer

## Safety

It was noted that the emission blasting program was resulting in more efficient rock production and easier handling. It was noted that road capping facilitated personnel transportation.

## Background

Company has awarded HVdc transmission line right-of-way (ROW) clearing and access road construction in Blocks 4 through 7 in Labrador to C&T and to Johnson's Construction Limited (JCL). JCL is working north to south from Block 4. C&T is working south to north from #7. The two work fronts will meet in Block #6. Oversight for all such work is by a joint Company / Valard team that includes Dean Sjodin, Sheldon Spencer, and Dave Ofukany from Valard.

The C&T contract was awarded in August 2014 with a target completion date of April 30, 2015. It was subsequently agreed that the scope would increase as required to advance the northern work front as far as required to meet JCL's southern work front (Indian Pond and beyond).

Accordingly, a Change Order was issued in April 2015 to defer the target completion date to September 30 and to increase the estimated contract value. In addition to the increased scope, the increased contract value was required because production in Block 6 was not meeting the expectations of the parties. A weekly call was effected April 21 as an effort to address low production rates.

Company met with C&T on May 15 to address various outstanding commercial issues.

In the May 15 meeting, Company agreed to consider a proposal from C&T to implement a revised equipment compensation scheme based on core resources. The premise was that lower rates were warranted based on the increased contract value. C&T submitted such a proposal by e-mail earlier today (July 15).

Progress improvement relative to the Indian Pond target was also addressed in the May 15 meeting at which time a target rate of 600m per day was identified - 200m for day shifts and 200m for night shifts. Pursuant to that meeting, emission blasting, crushing for road capping, and night shifts were implemented by June 10.

g Sunday morning (19th) to further assess efficiencies (prove production (such as a second forwarder for materials). It will be determined at that time if the bad capping.

ent rates: deferred; to be discussed offline.

costs: deferred; to be discussed offline.

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Gaus Trimm

Company: Ross Beckwith  
Jason Kean  
Ken Sparkes  
Mike Tuff

Valard: Dean Sjodin  
Sheldon Spencer

- optimize accommodations and reporting points to minimize travel time
- explore subcontract opportunities with Springdale or others as applicable

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# ROW Harvesting & Mulching, Access Road & Bridge Construction - Work Front 1

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Page 2 of 3

Page 3 of 3

Construction Management  
Nalcor Energy  
250 Torbay Road, Suite 2  
St. John's, NL  
A1A 4E1 Canada



MAA, TYPE  
Email  
CT0327-0

From  
To

Cc:

Sent:

Message  
Content

Thank you for  
Terry (Dobson)

The C&T contract was awarded in August 2014 with a target completion date of April 30, 2015. It was subsequently agreed that the scope would increase as required to advance the northern work front as far as required to meet JCL's southern work front (Indian Pond and beyond). Accordingly, a Change Order was issued in April 2015 to defer the target completion date to September 30 and to increase the estimated contract value. In addition to the increased scope, the increased contract value was required because production in Block 6 was not meeting the expectations of the parties. A weekly call was effected April 21 in an effort to address low production rates. Company met with C&T on May 15 to address various outstanding commercial issues.

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Progress improvement relative to the Indian Pond target was also addressed in the May 15 meeting. At that time a target rate of 600m per day was identified – 350m for day shifts and 250m for night shifts. Pursuant to that meeting, crushing for road capping, and night shifts were implemented by June 10.

**Pursuant to Exhibit 9 to Valard's Contract, all clearing and access road construction was to be completed by April 15, 2015.**

**This communication clearly indicates that Nalcor was the party directing the clearing and access road contractors (i.e., commercial terms, work scope, logistics, production requirements and schedule requirements).**

**While Nalcor issued a change order in April 2015 granting a 5-month time extension for the predecessor clearing and access road construction, no schedule relief was provided to Valard for its follow-on construction work.**

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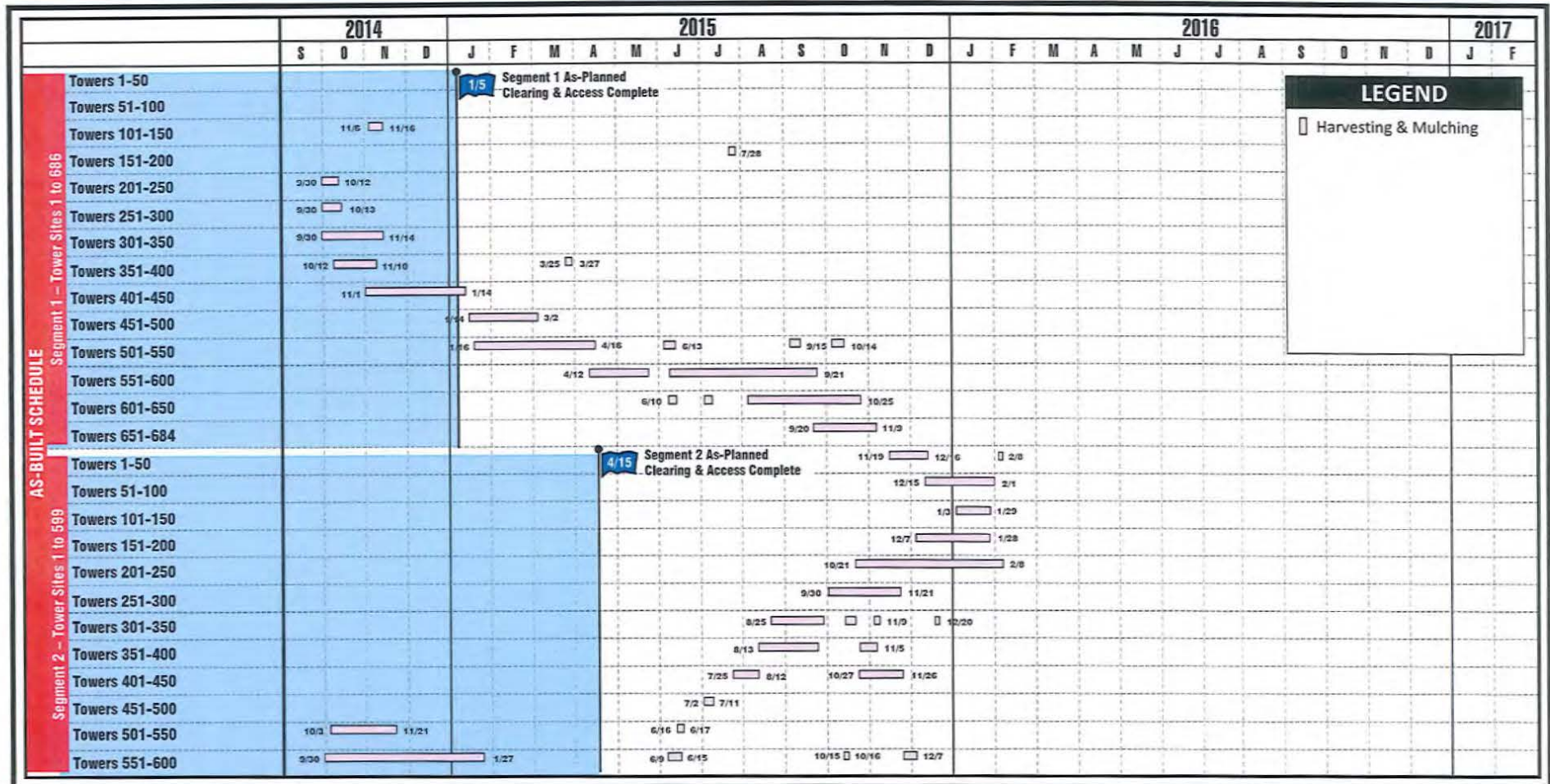


## Topics of Discussion

Slide 21

- **Schedule Summary:**
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## ROW Harvesting & Mulching - Work Front 1

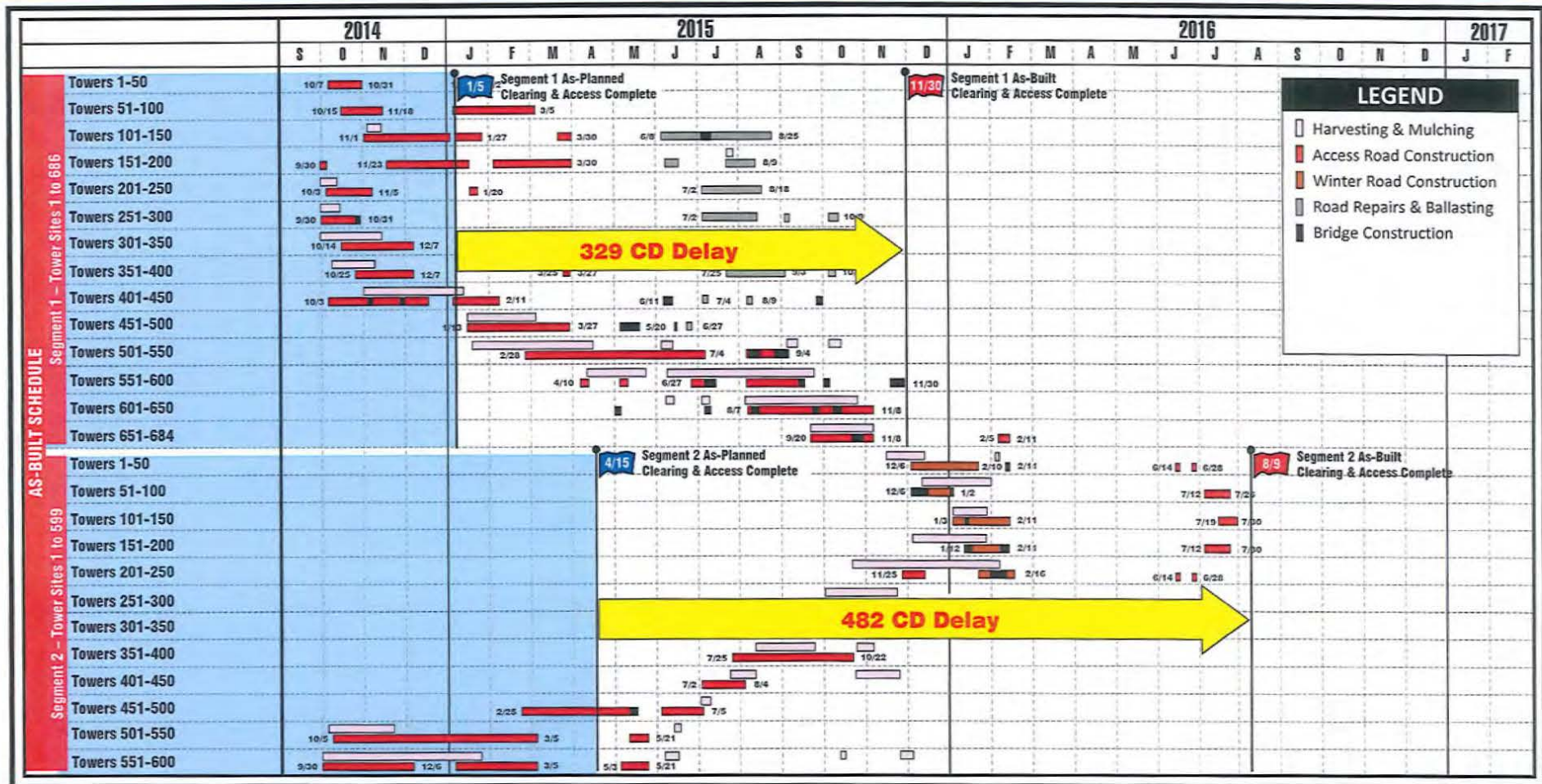




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# ROW Harvesting & Mulching, Access Road & Bridge Construction - Work Front 1

SLIDE 23

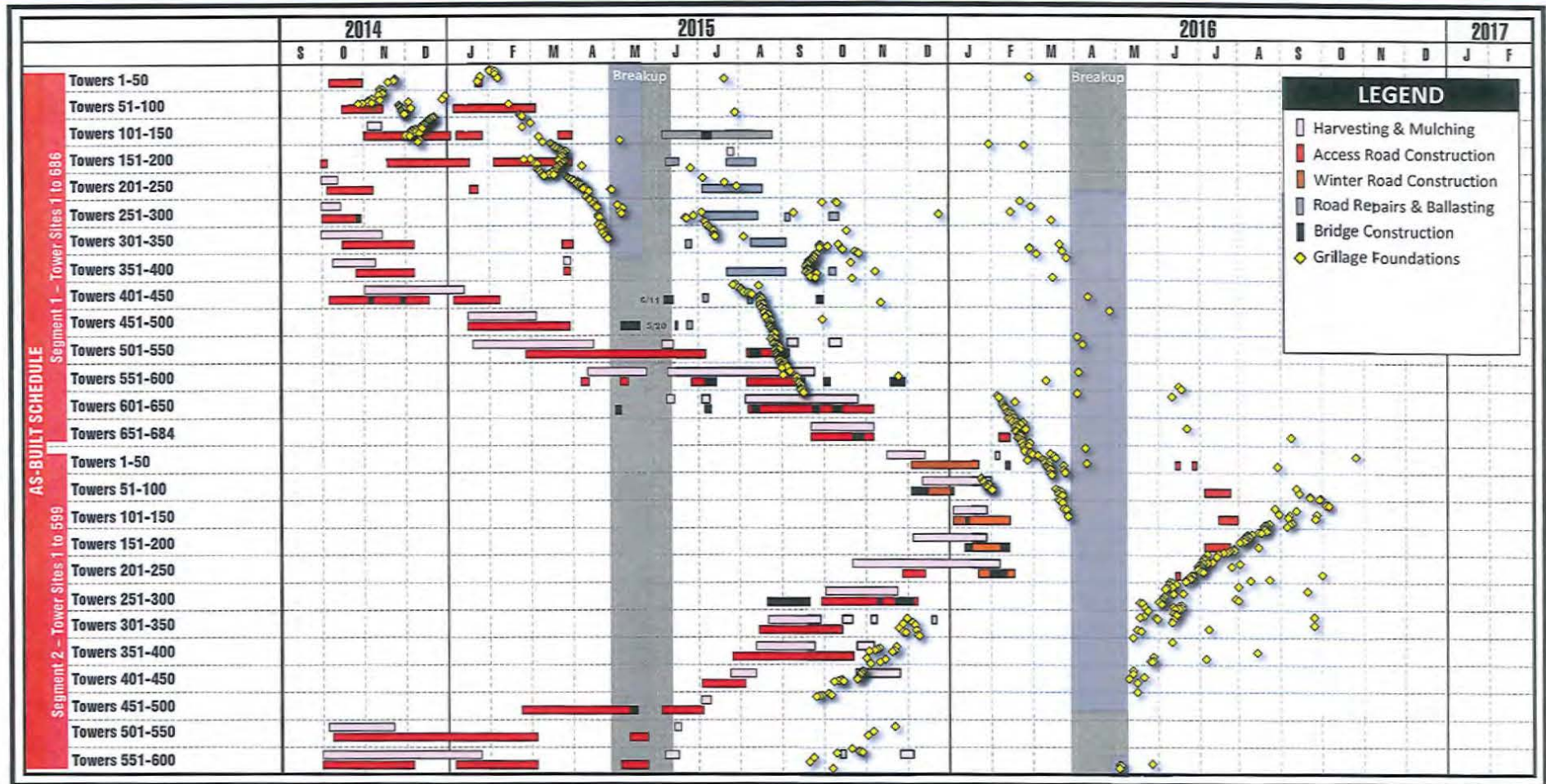




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# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 24

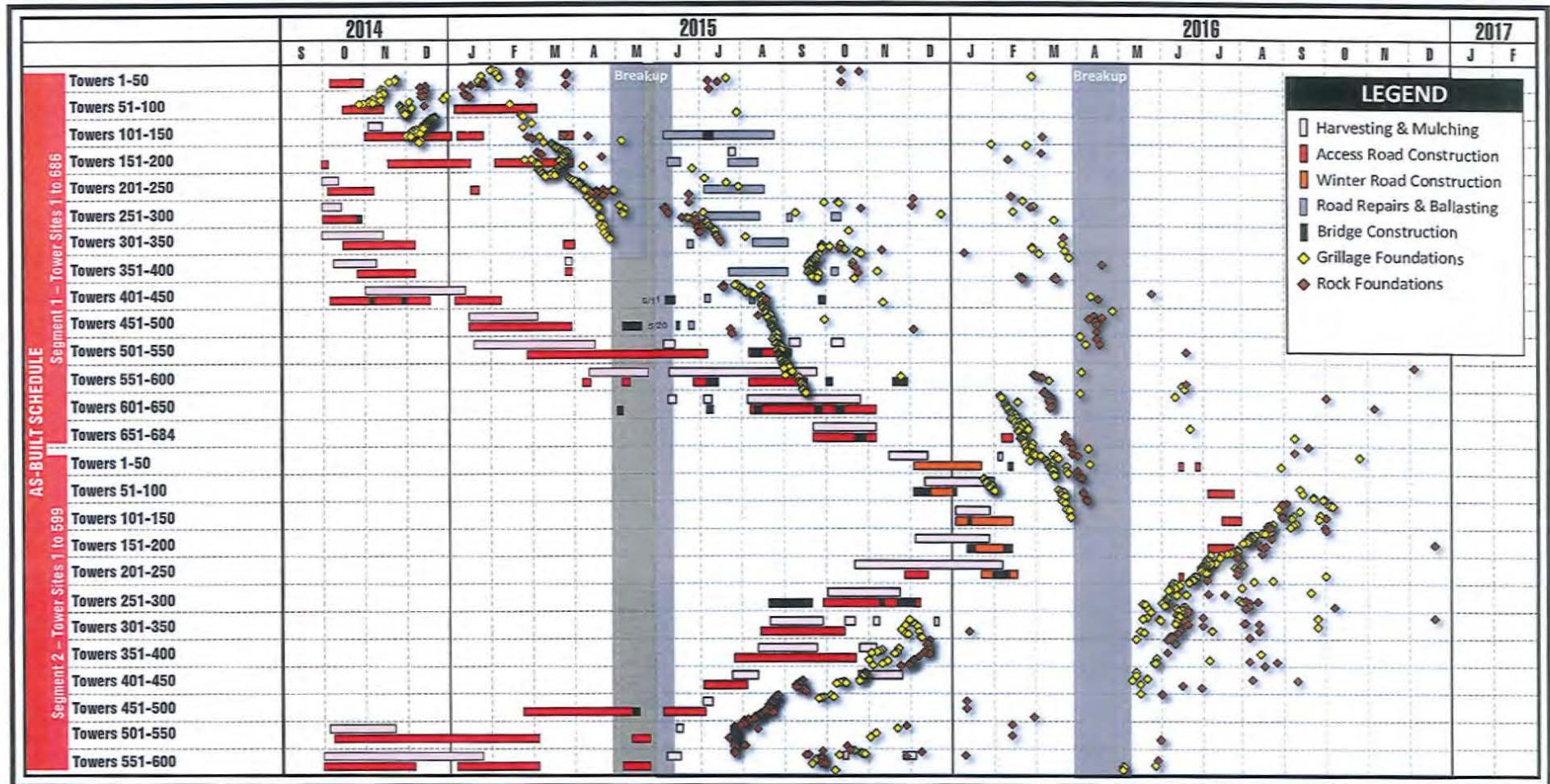




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# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 25

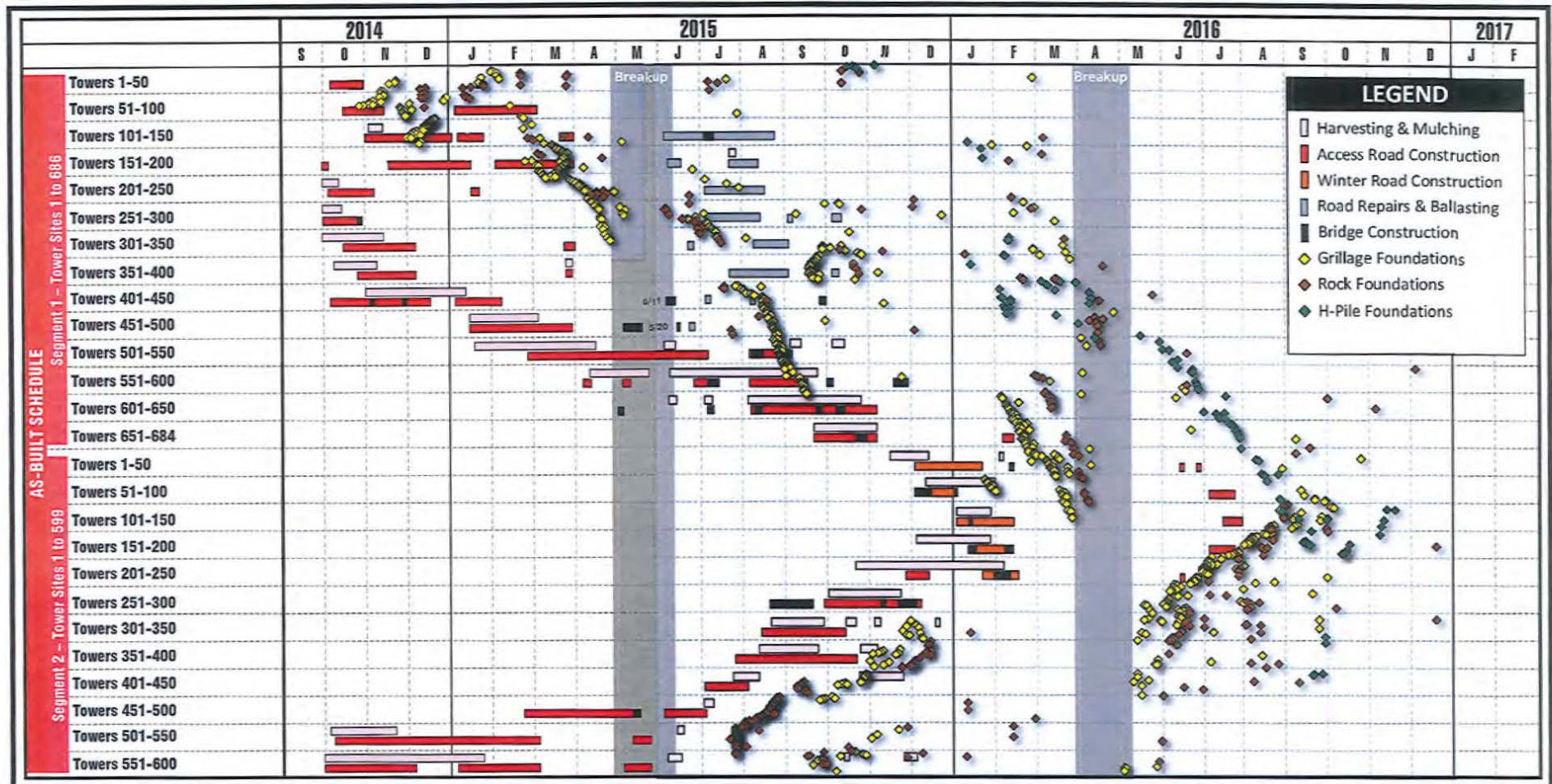




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# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 26

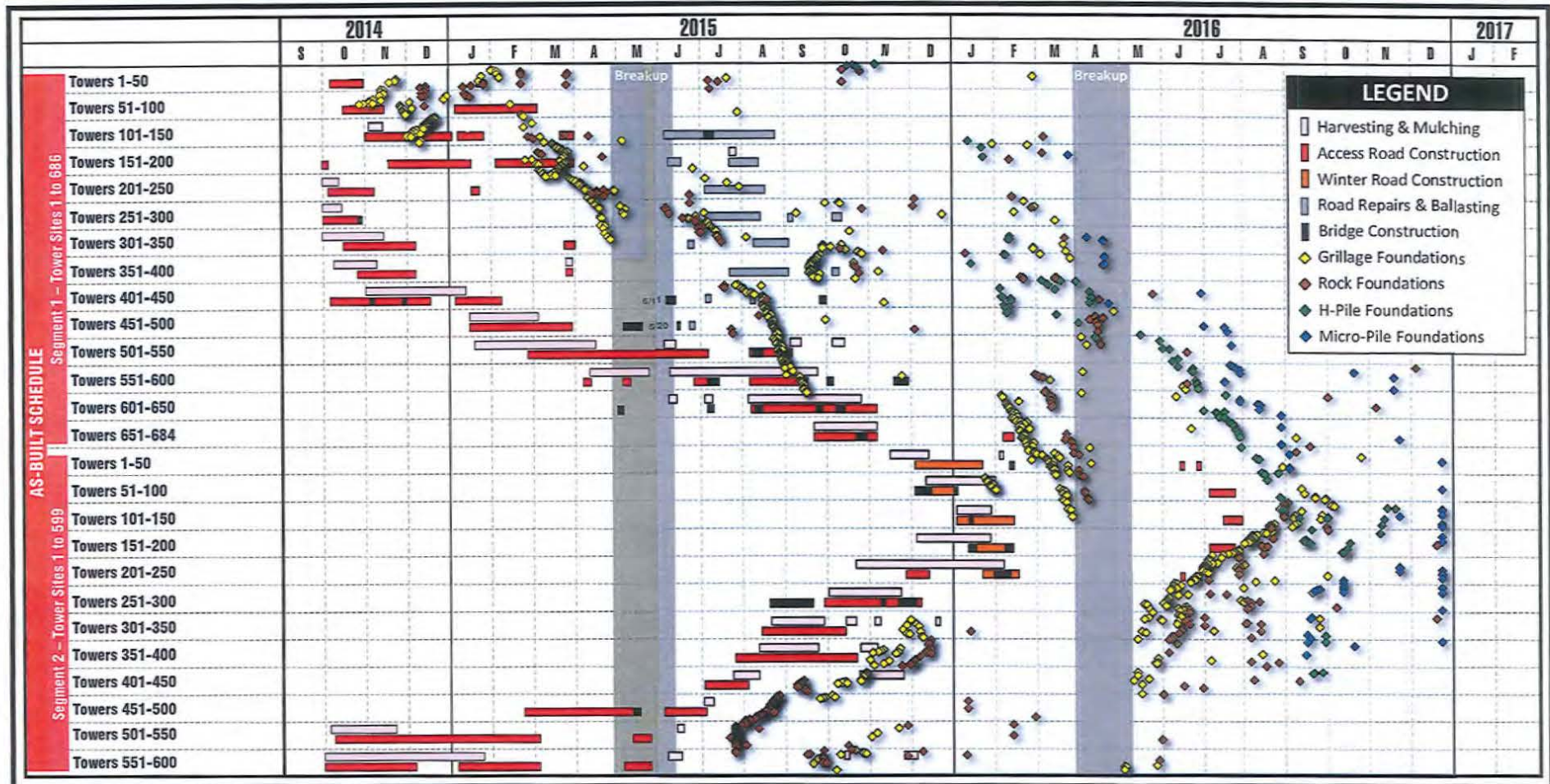




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# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 27

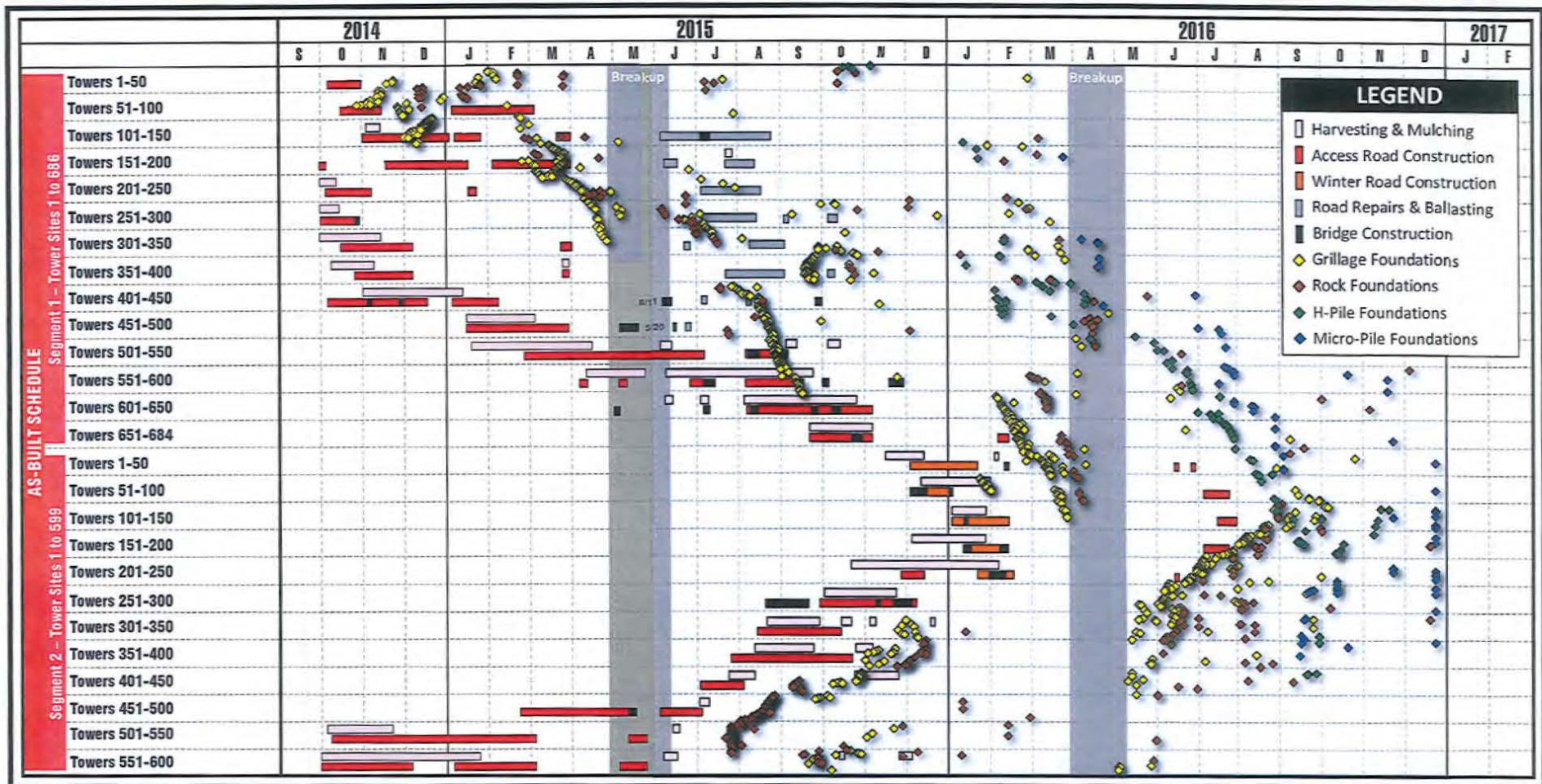




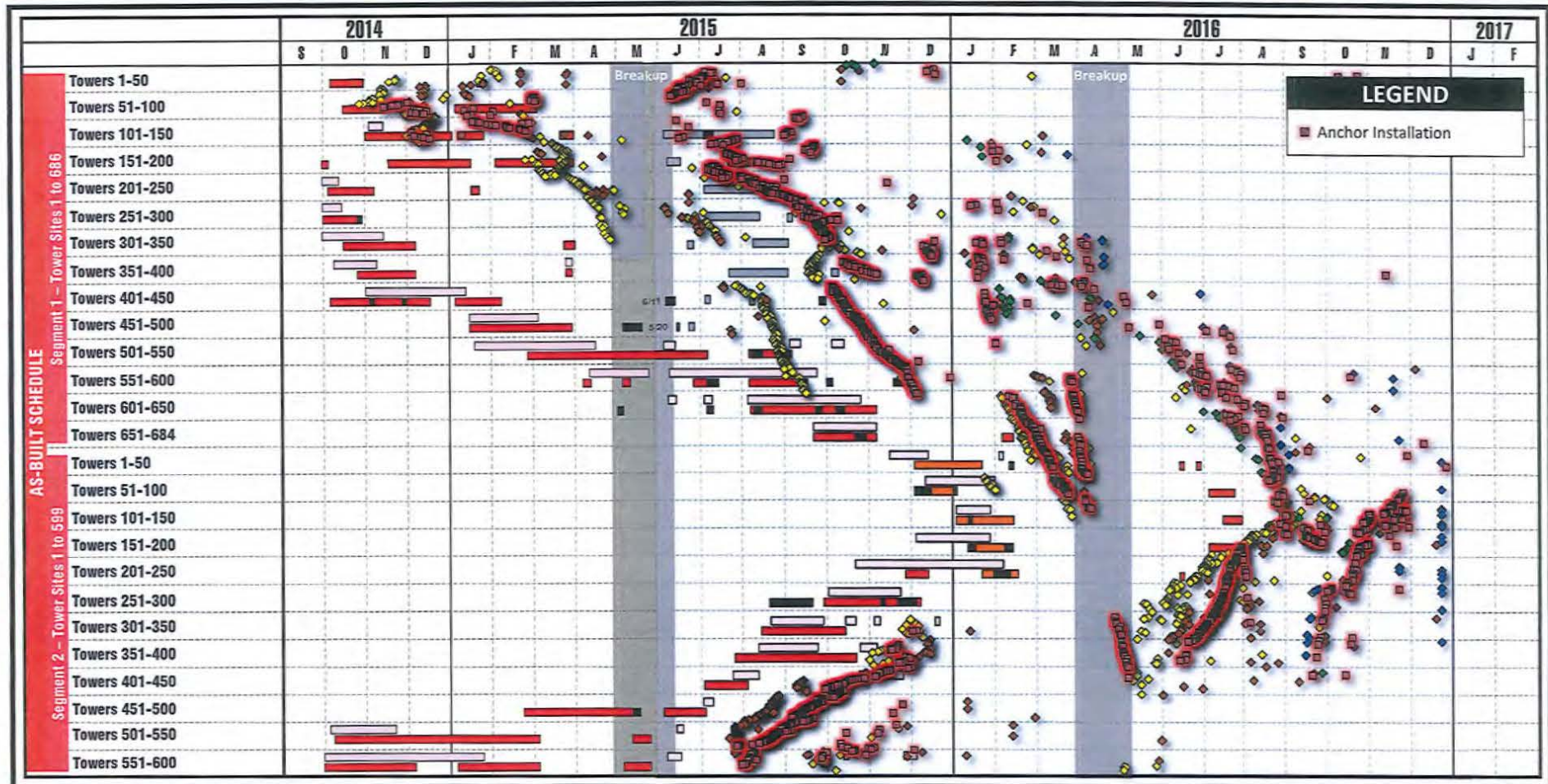
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## ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 28





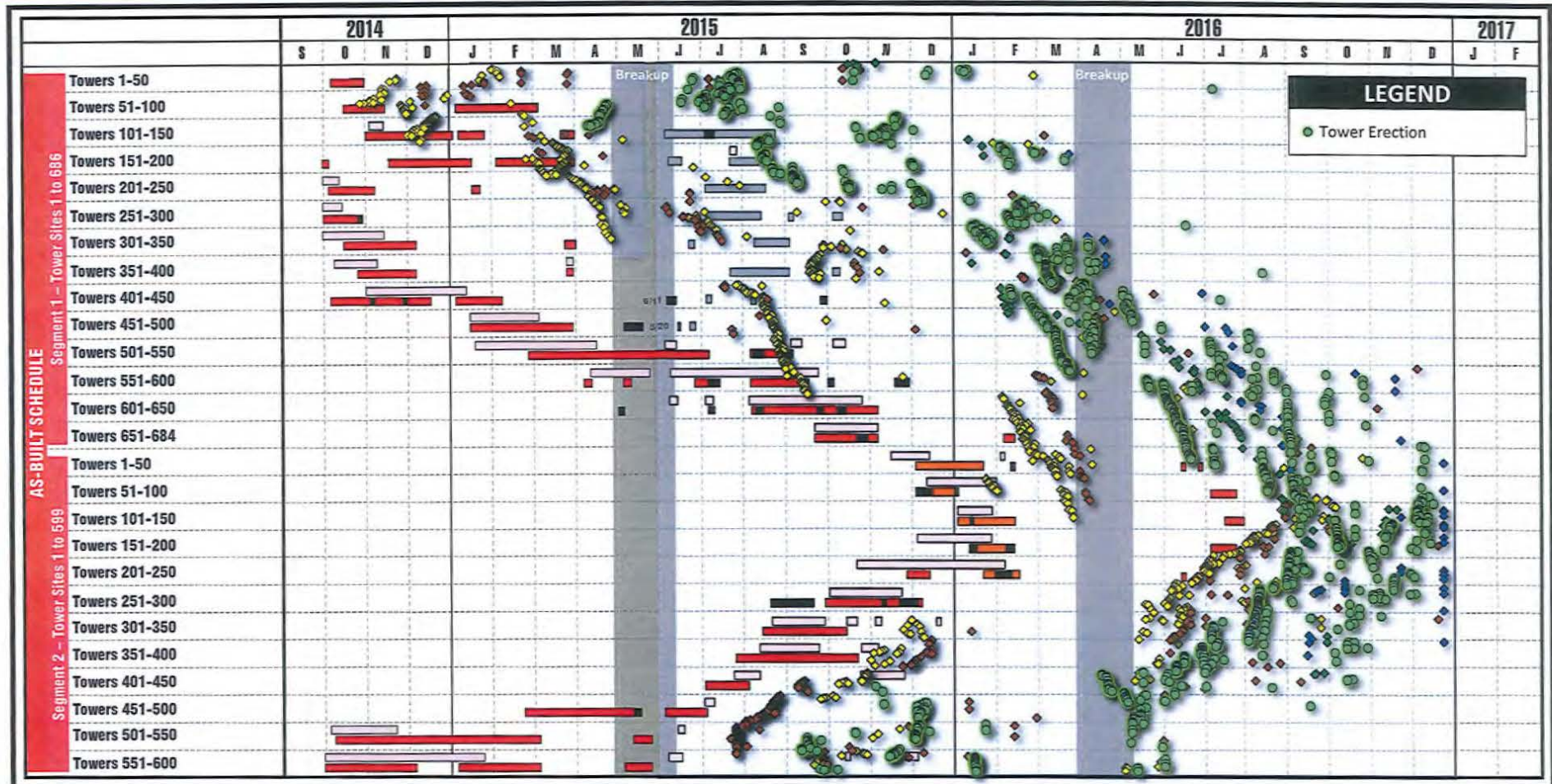




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Towers) – WF1

SIDE 30

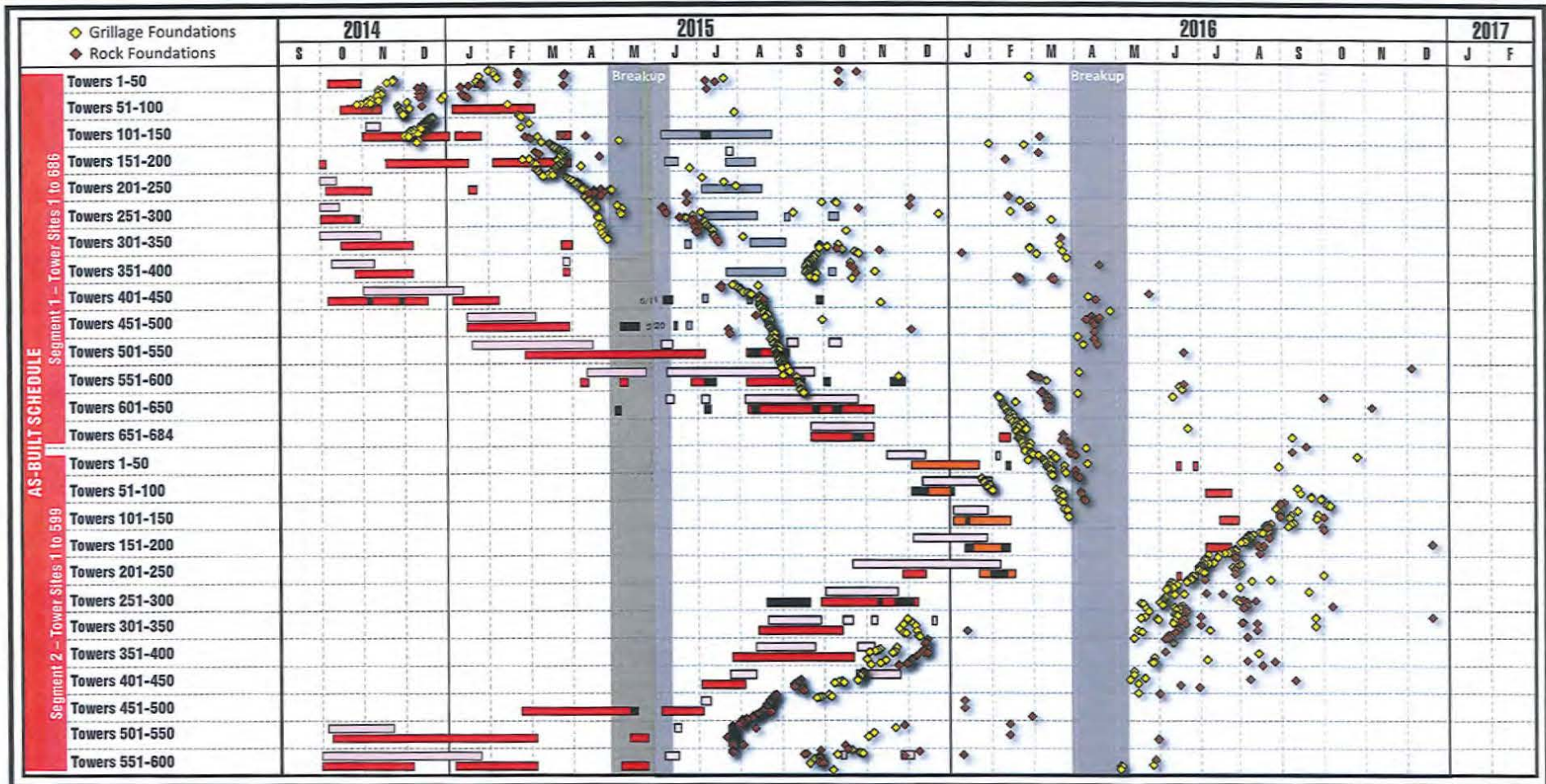




PRELIMINARY & CONFIDENTIAL WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 31

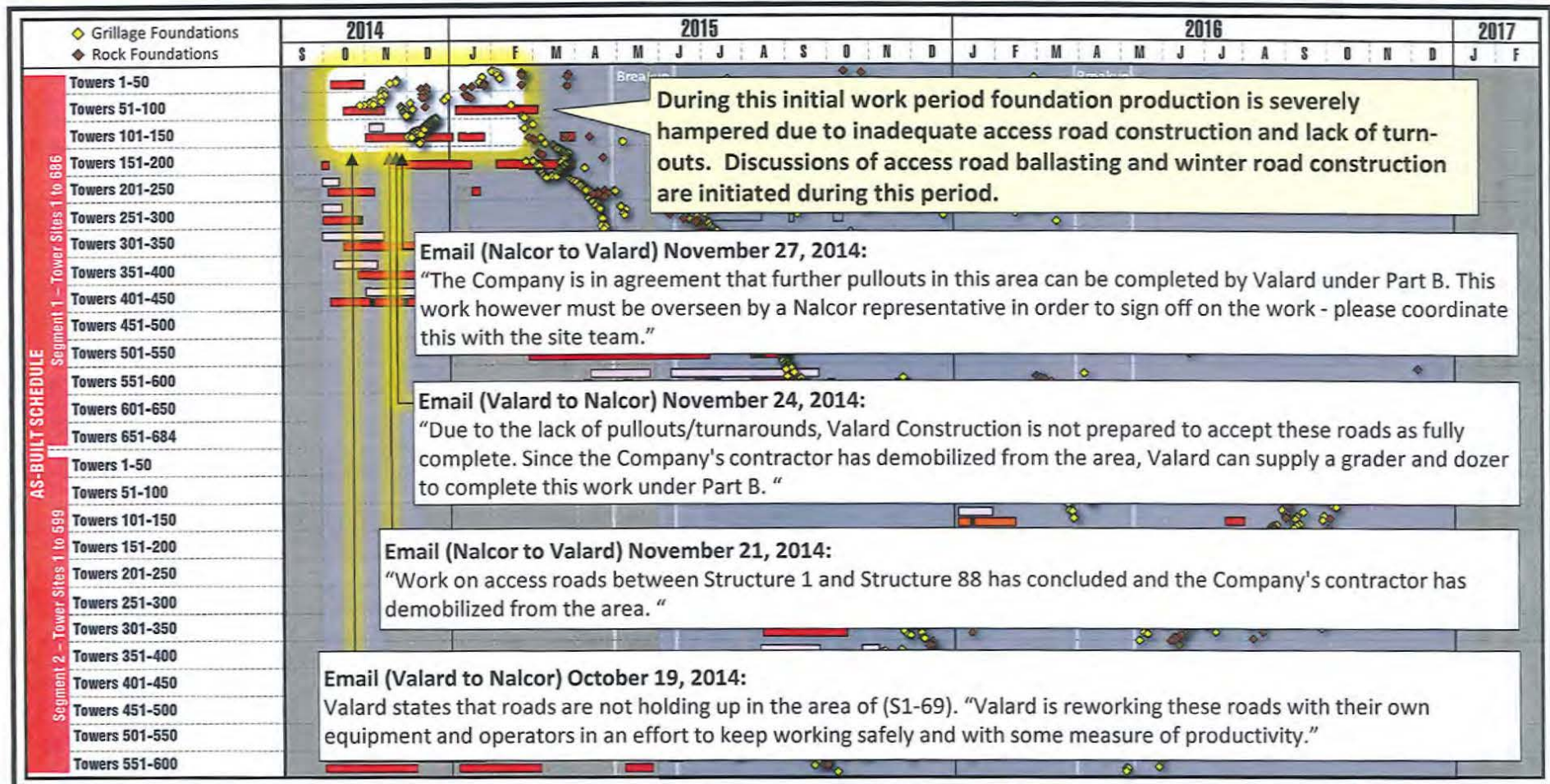




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

Slide 32





PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

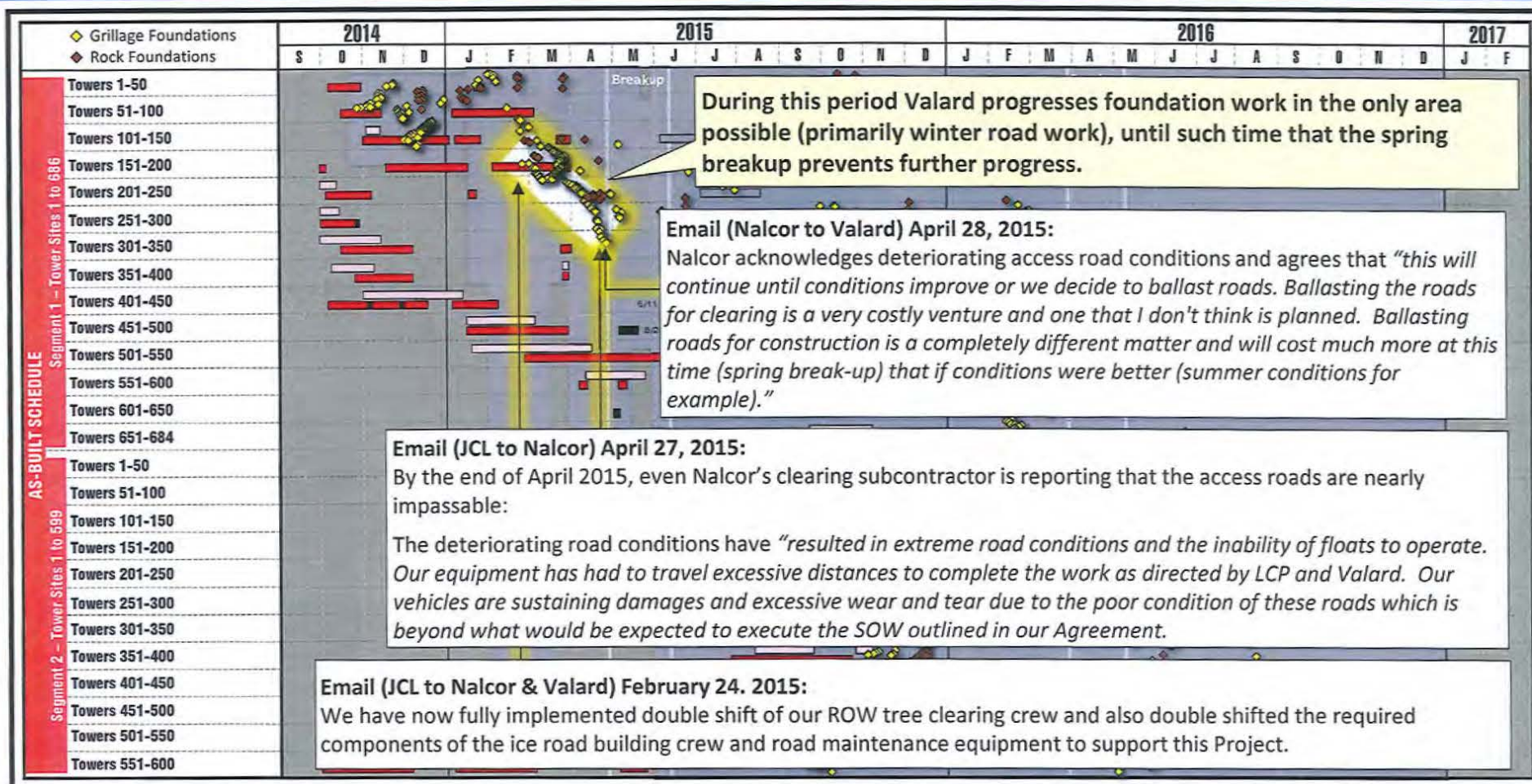
SLIDE 33



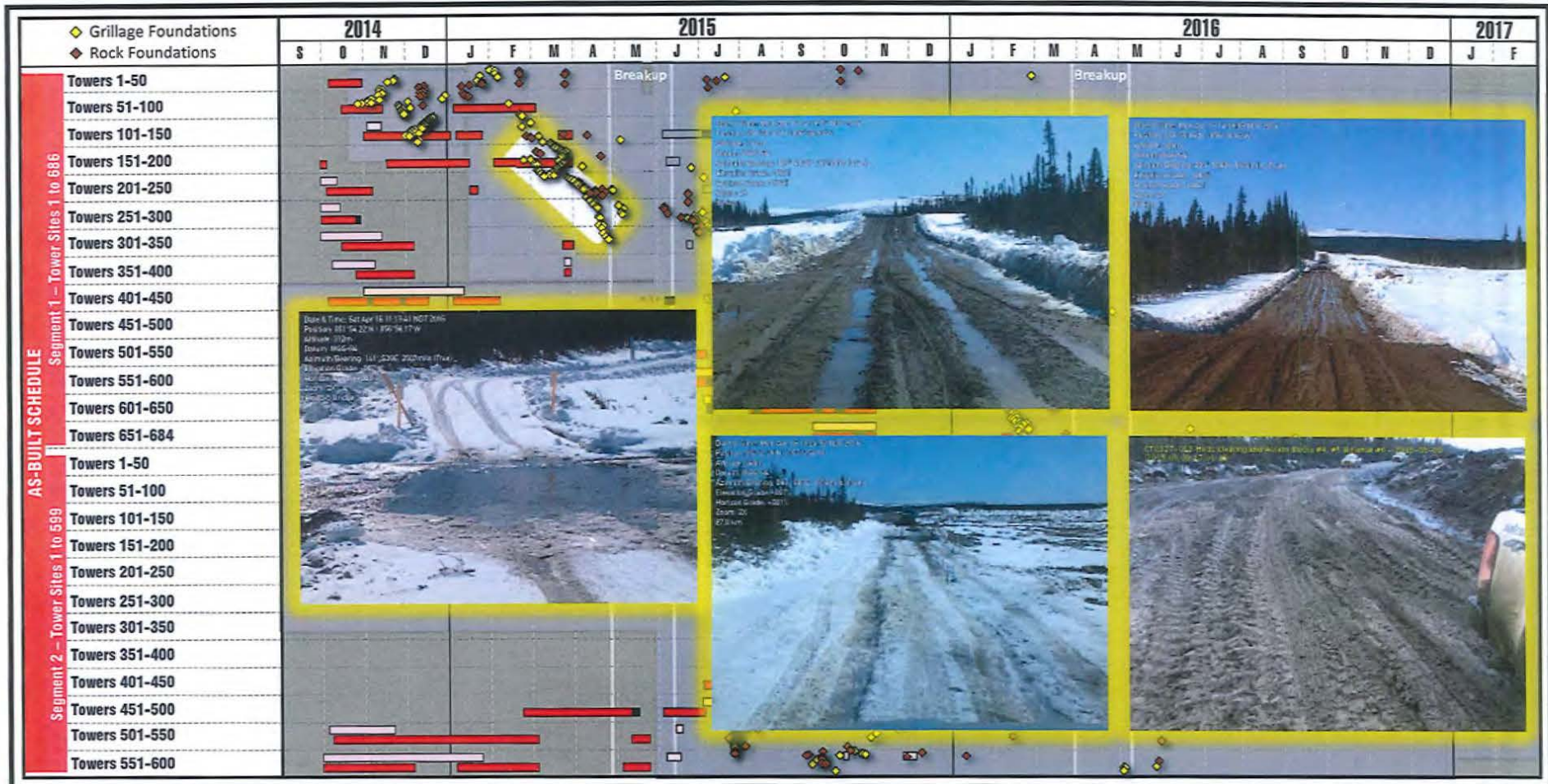


# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 34





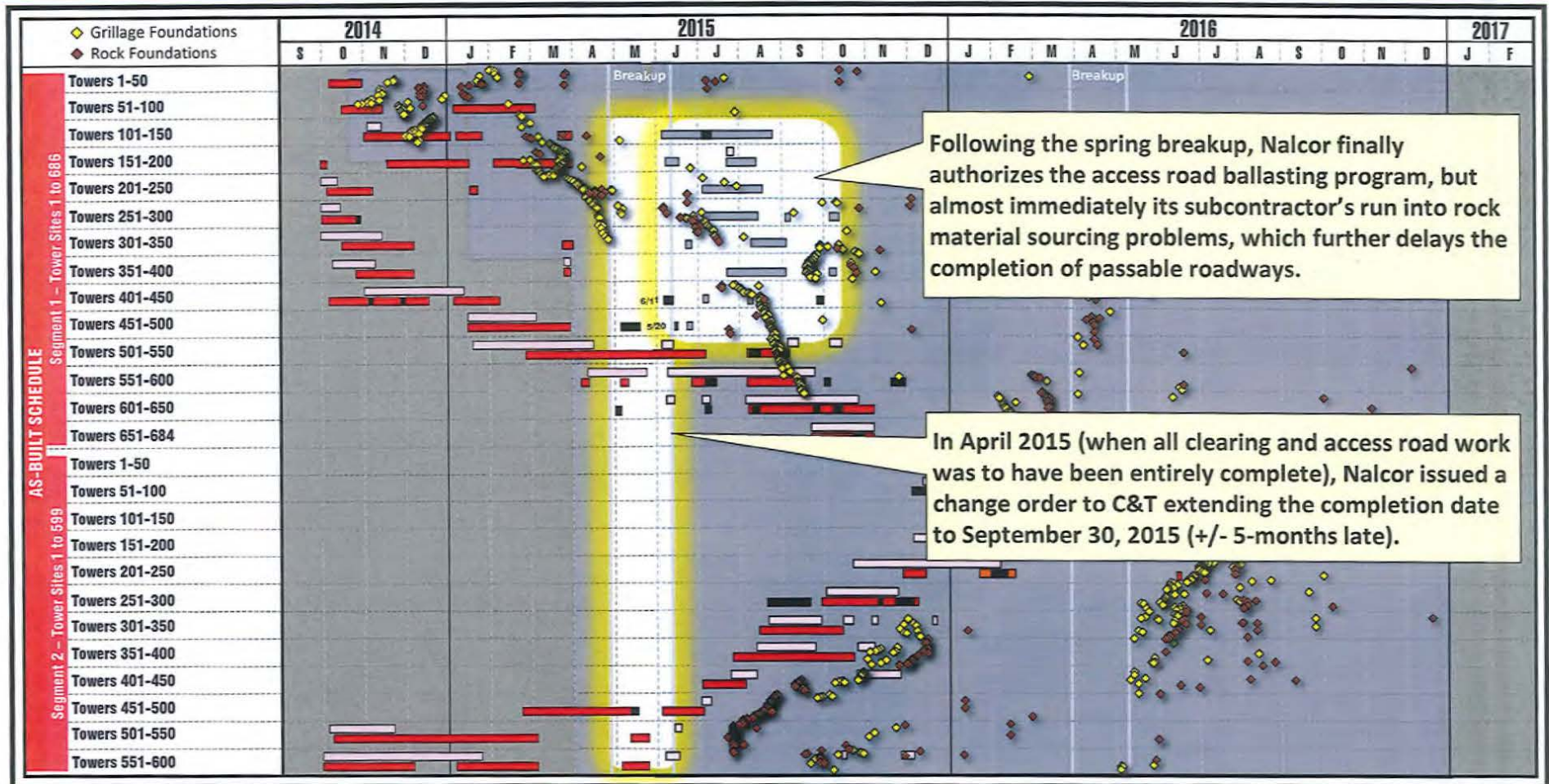




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

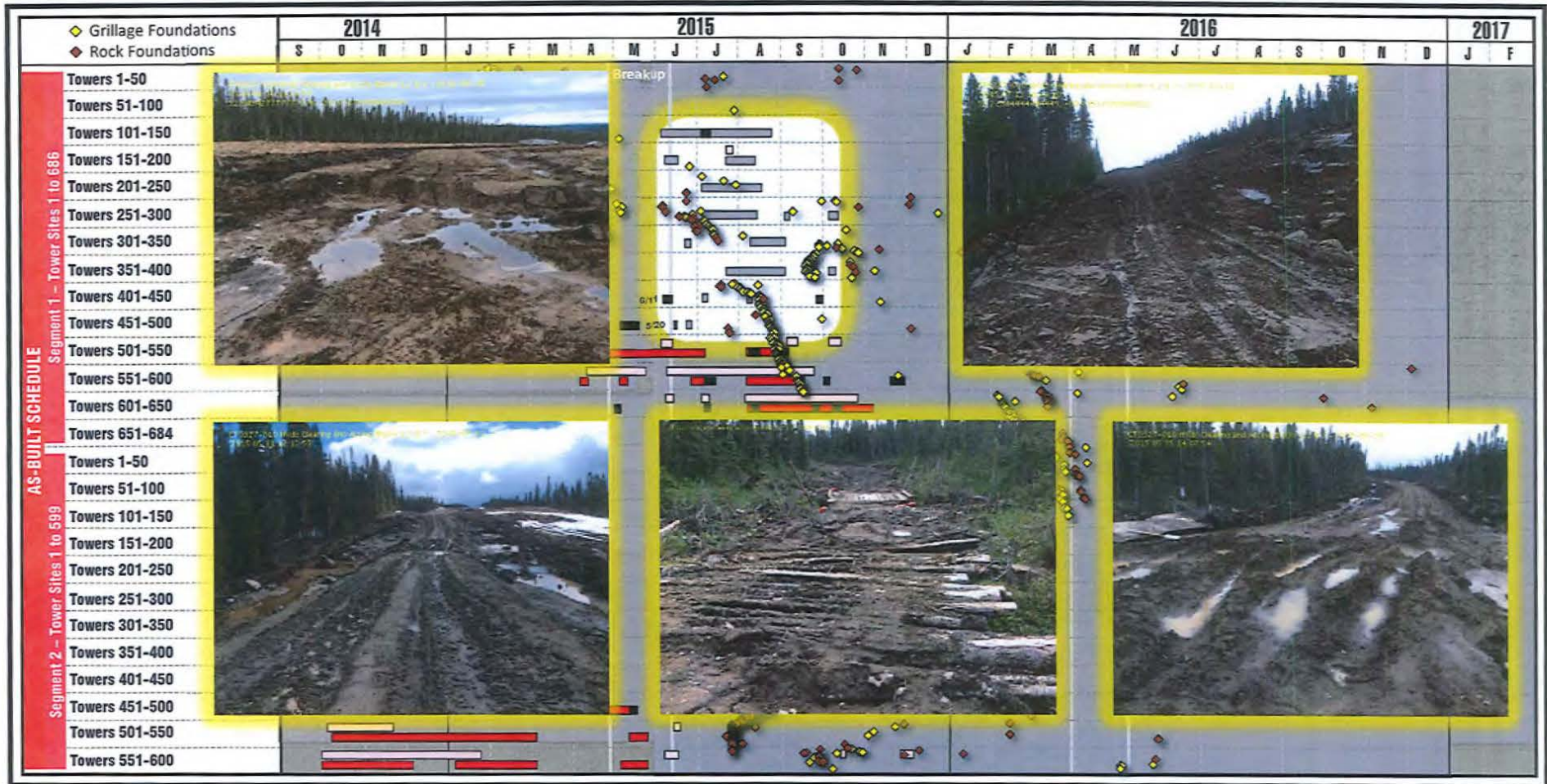
SLIDE 36





PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE  
ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 37





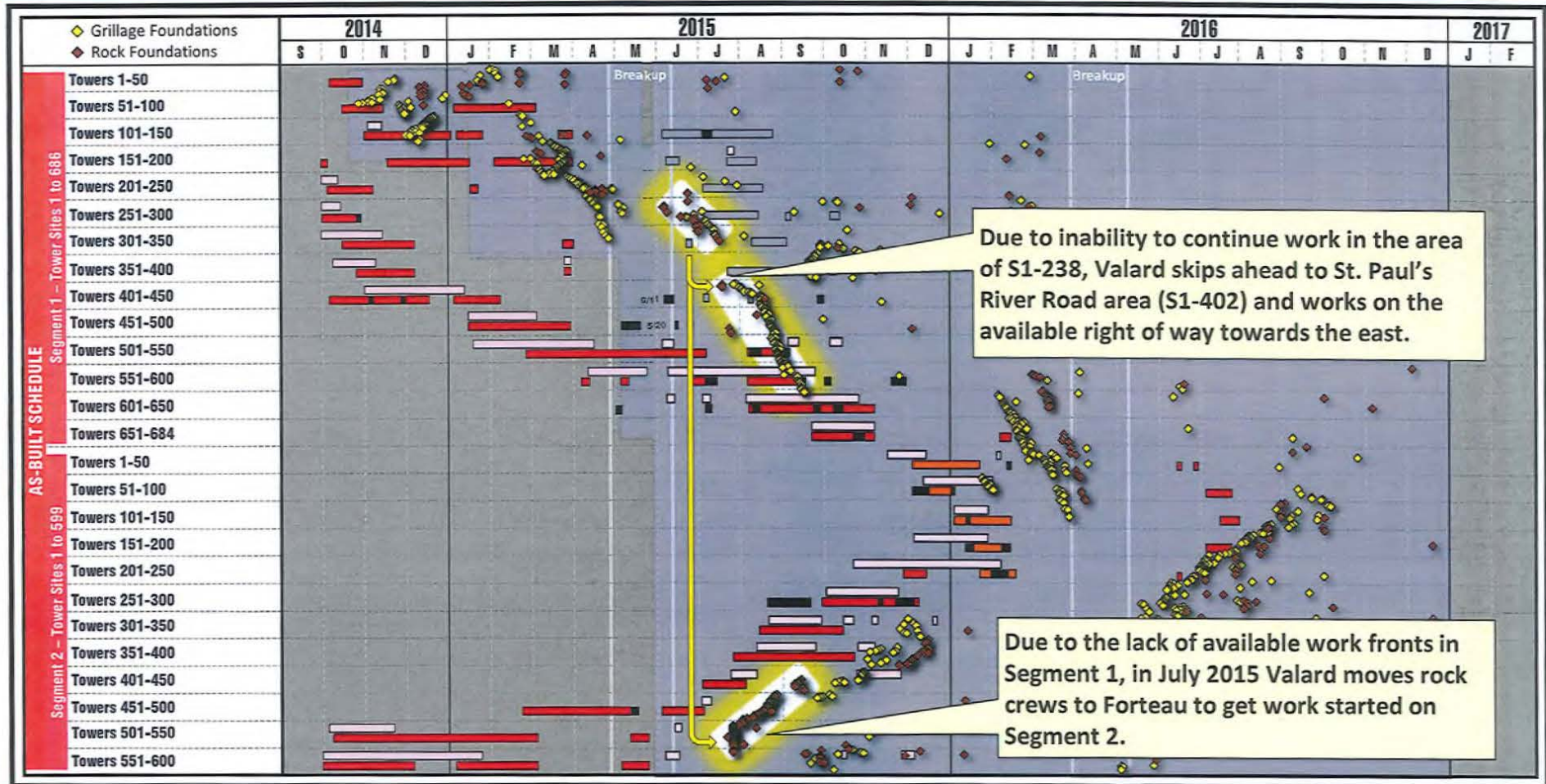




PRELIMINARY & CONFIDENTIAL WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 39

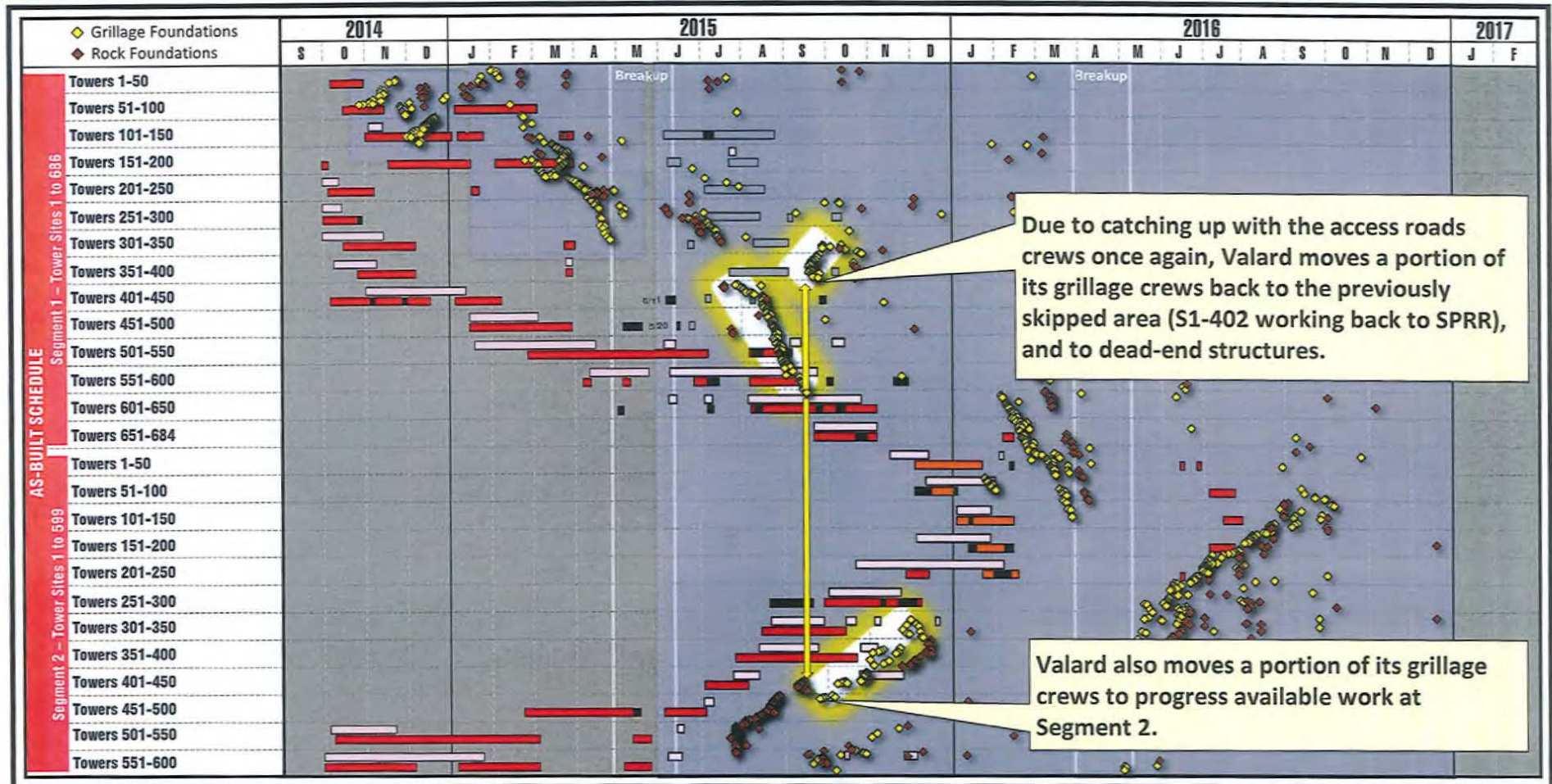




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 40

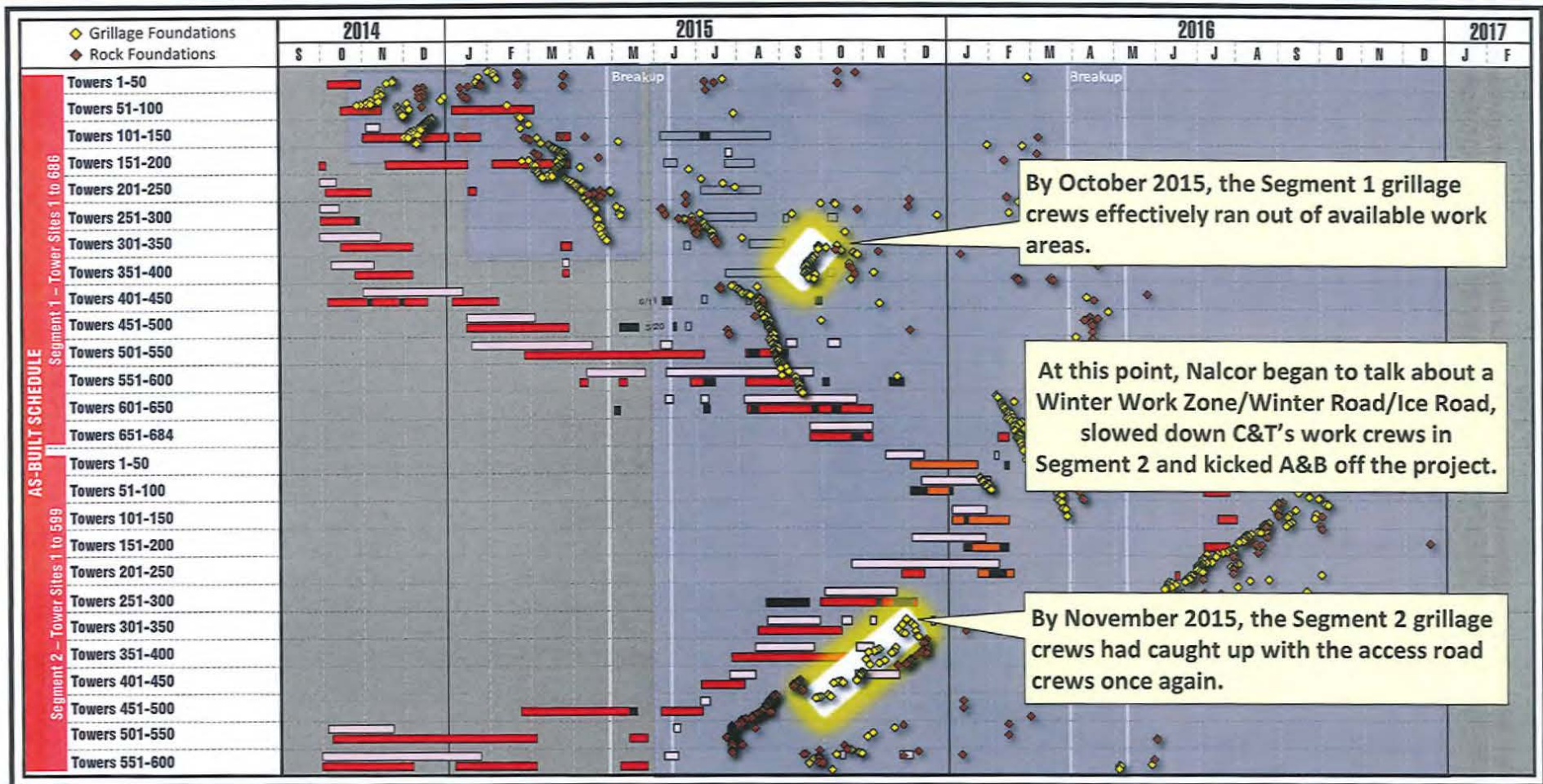




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 41



## Work Front 1 – Winter Work Zone

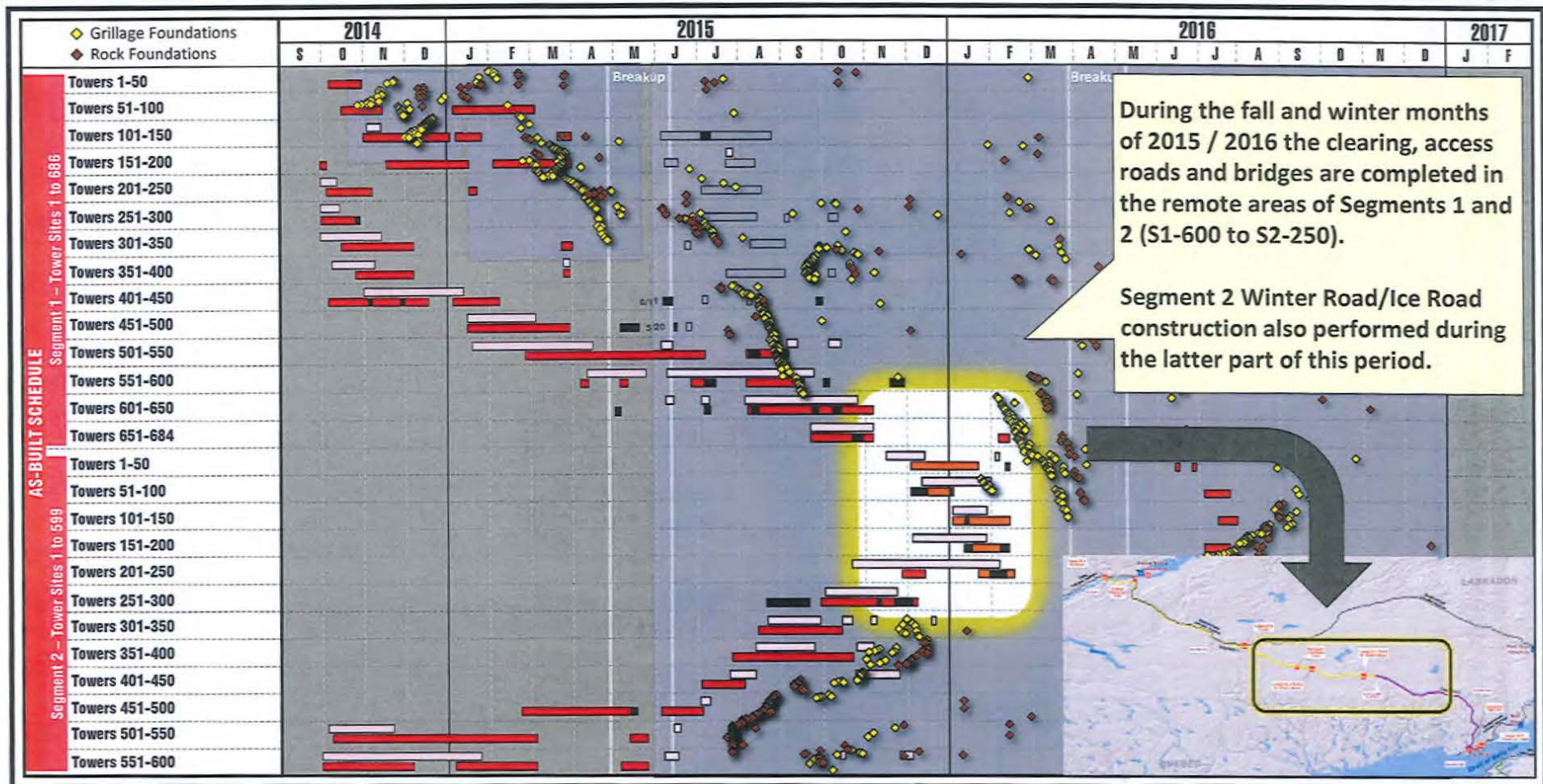
Slide 42

- In December 2015, Valard advised Nalcor that it would **NOT** be able to complete all of the work in the winter work zone prior to the spring breakup.
- To take full advantage of the plan for a winter work zone, Valard advised Nalcor that **ALL** of the following assumptions would need to be met:
  - ✓ Adequate winter access is completed by no later than January 29, 2016.
  - ✓ A Geo-Program to allow advanced foundation selection is implemented.
  - ✓ There is an adequate supply of class A, B, and 6-inch minus material available.
  - ✓ There is a full suite of materials available at the Muskrat Falls Laydown Yard to completed each activity.
  - ✓ There is timely delivery of materials from the Muskrat Falls Yard to worksites and laydown yards on the line.
  - ✓ Weather (i.e. wind, snow fall, etc.) is adequate for construction.
  - ✓ Winter access roads and shoo-fly accesses are maintained to an adequate standard (i.e. graded, sanded, etc.).
- While Nalcor expended significant efforts, none of the assumptions above were fully achieved. In particular, Valard's progress was significantly impacted by:
  - ✓ Winter Road Construction: Valard's progress was impacted almost immediately by the winter road construction progress and the overall completion of the winter road work went well into February 2016.
  - ✓ The Geo-Program was inundated with a variety of problems.



# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 43

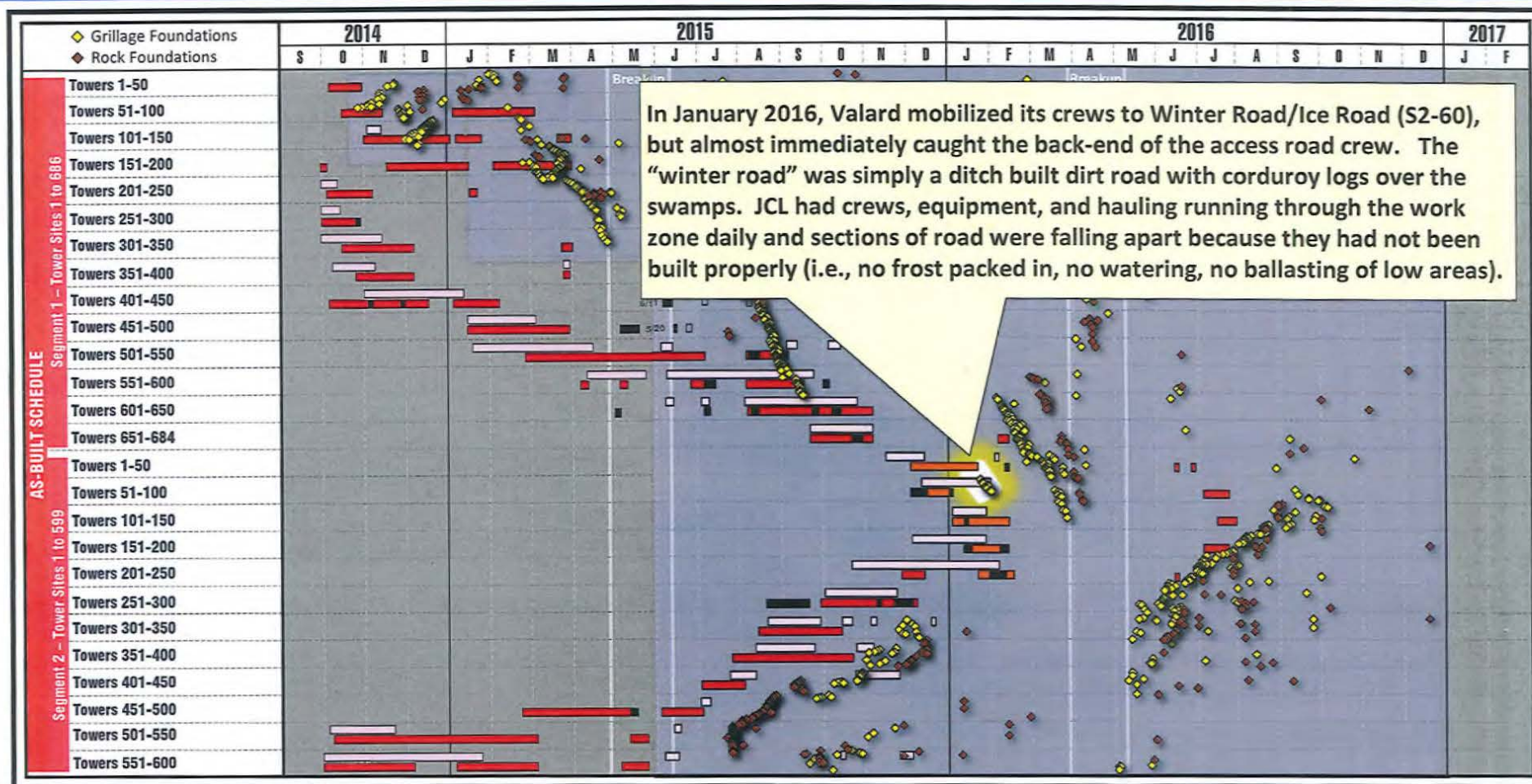




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 44

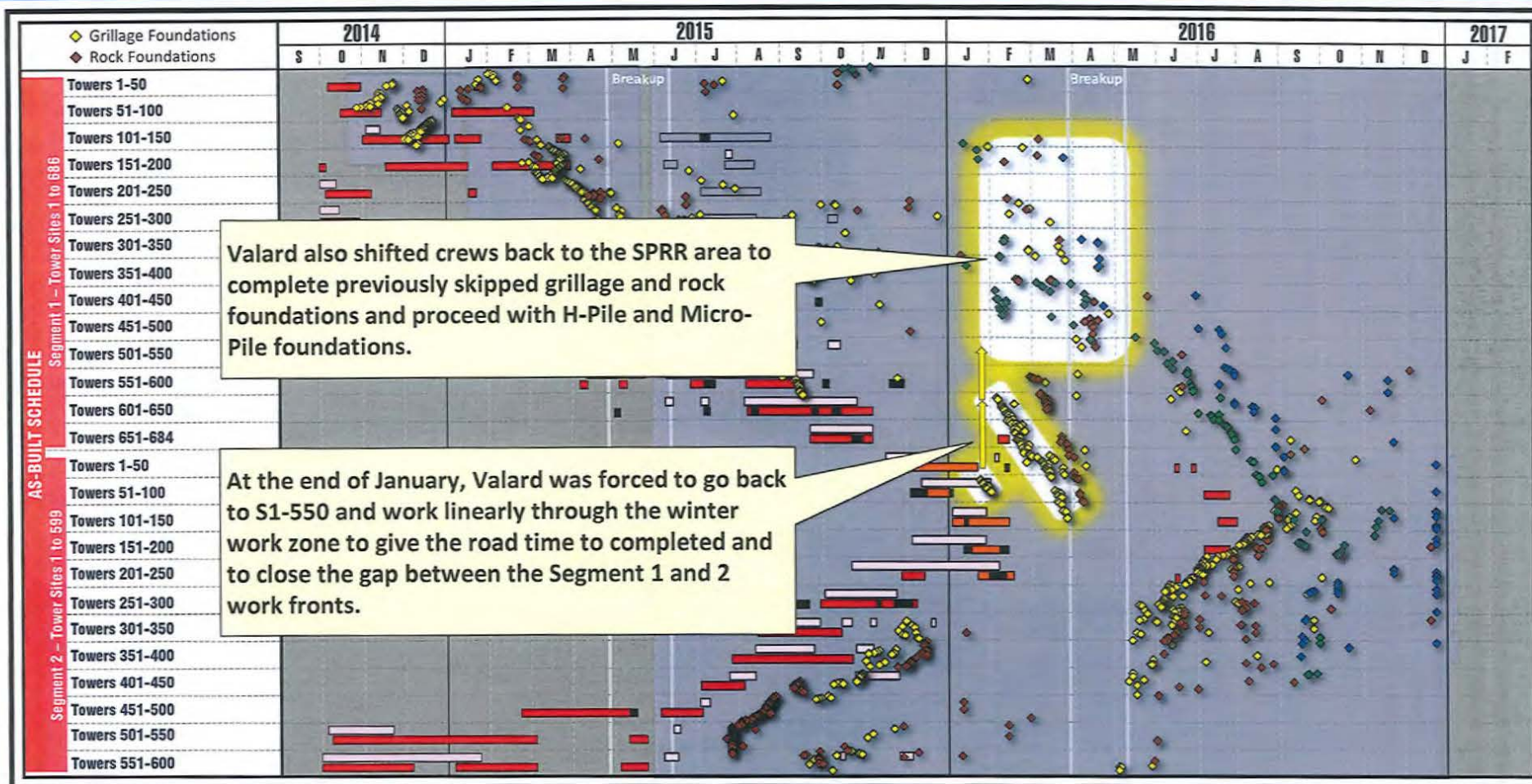




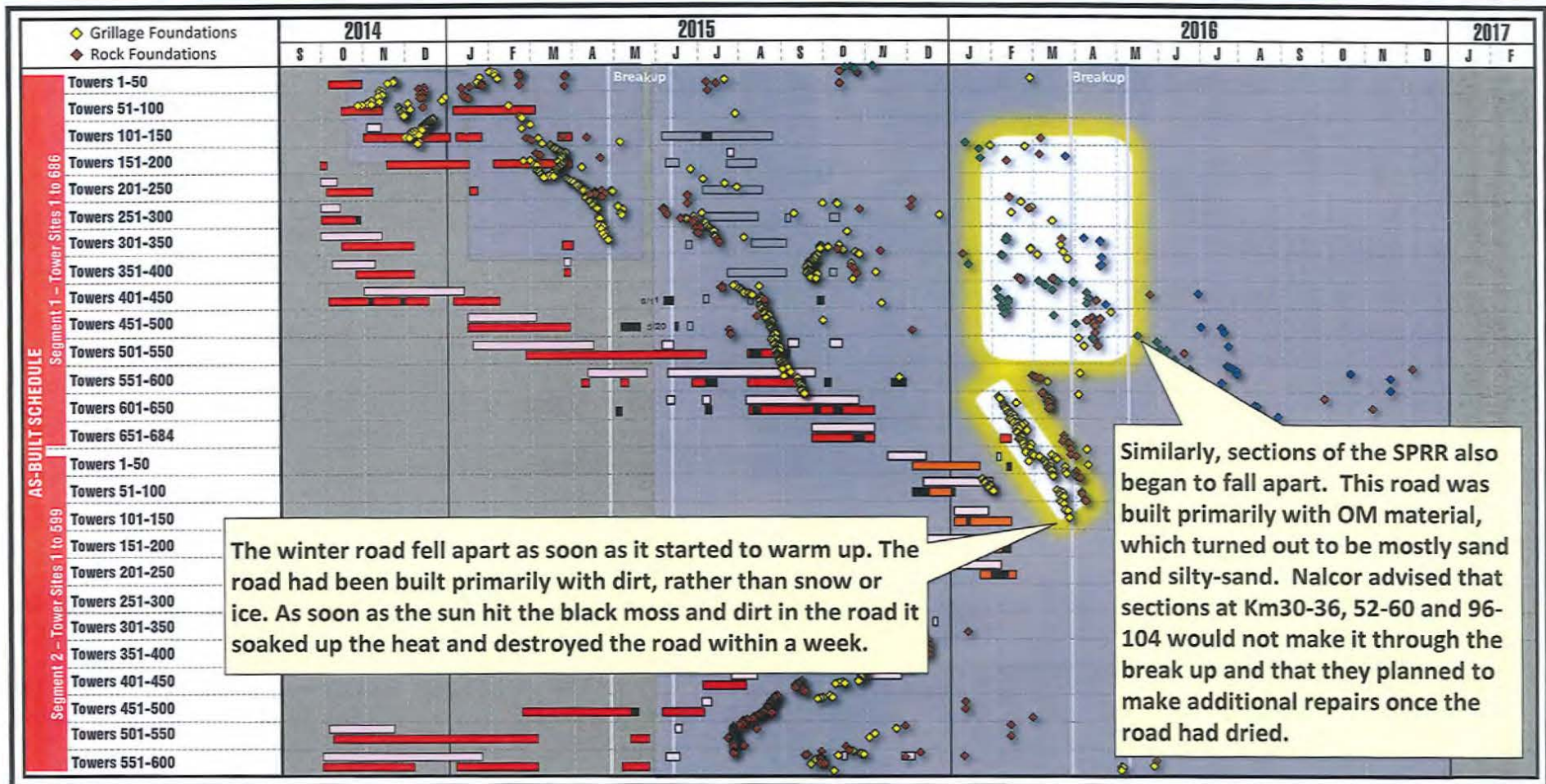
PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 45







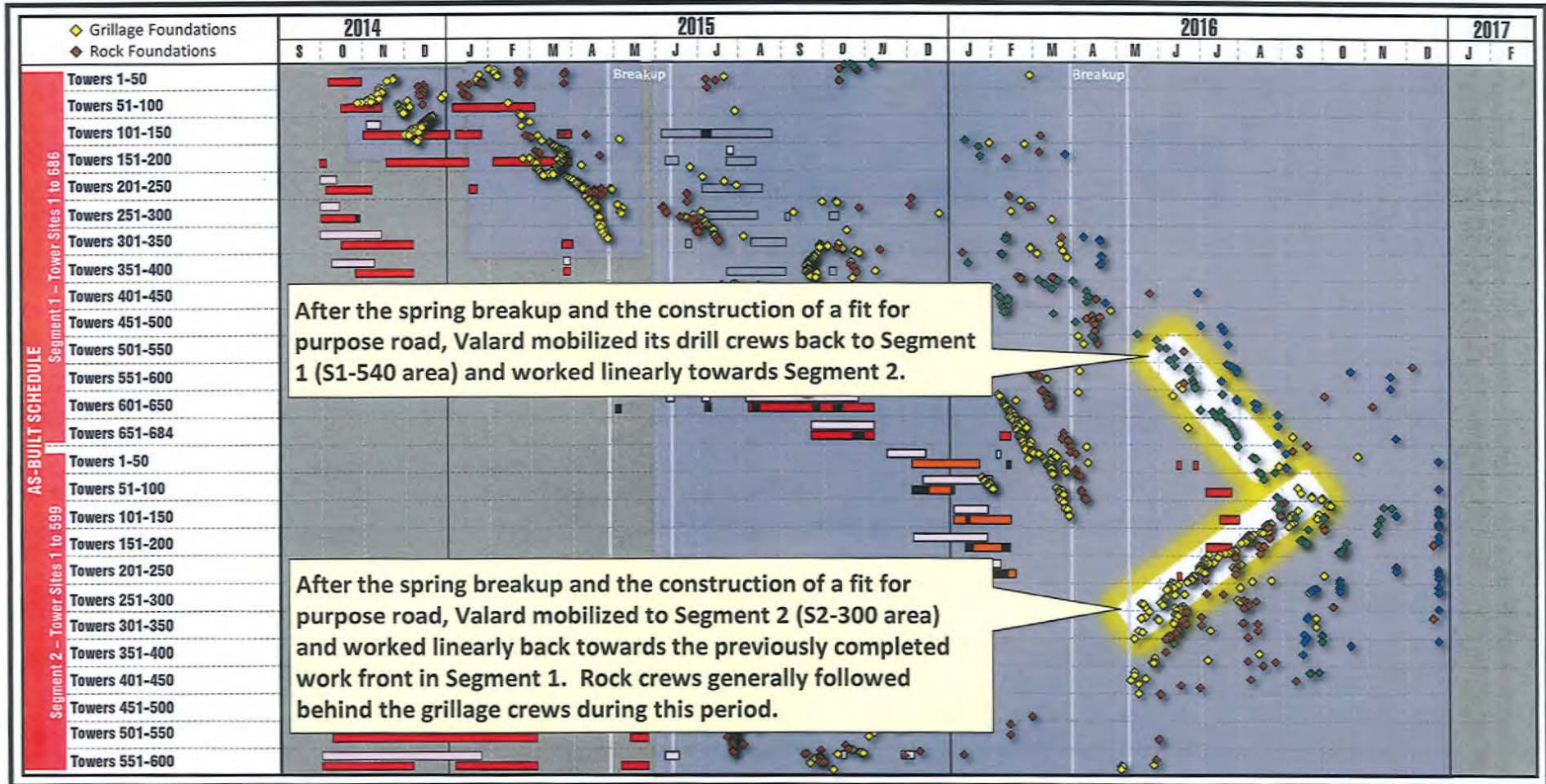






# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 48

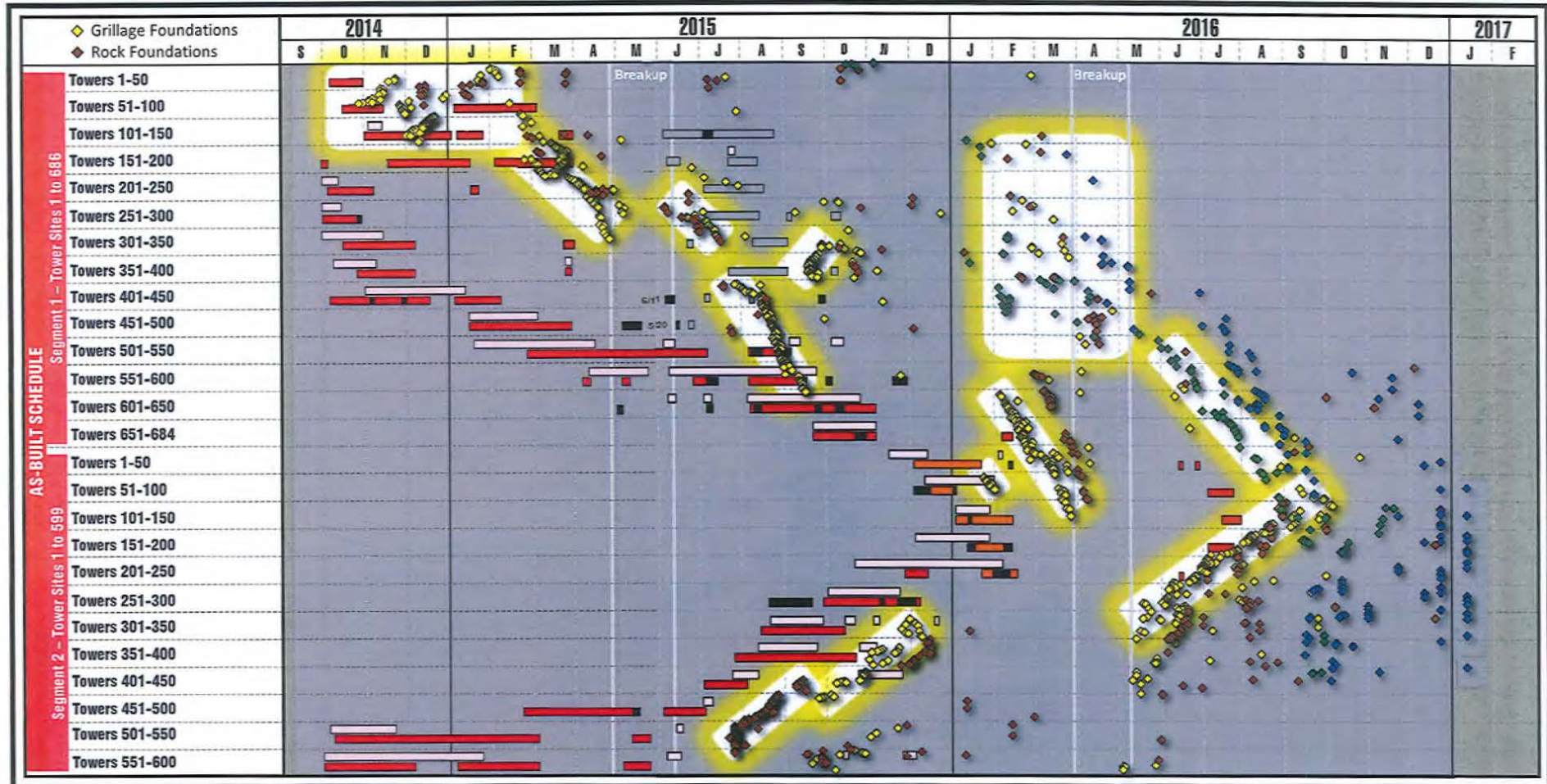




PRELIMINARY & CONFIDENTIAL WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 49



## Topics of Discussion

SLIDE 50

- **Schedule Summary:**
  - ✓ Overview of Project Delays
  - ✓ Critical Path Through Work Front 1
- **Delay & Impact Causation:**
  - ✓ Summary of Impacts Identified
  - ✓ ROW Clearing and Access Road Construction Delays
  - ✓ Access Road Deficiencies
  - ✓ Geo-Program / Foundation Selection Process
- **Cost Impacts:**
  - ✓ Time Related General Conditions
  - ✓ Other Costs:
    - Mechanics
    - Survey
    - Camp Space Impact Costs
- **Conclusions**



PRELIMINARY & CONFIDENTIAL – WORKING DRAFT  
ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

Slide 51

- **Not only were the access roads constructed much later than planned, but significant access road deficiencies have persisted throughout construction.**
- **Access Road Deficiencies:**
  - ✓ Inconsistent capping.
  - ✓ Turnarounds not provided or inadequate.
  - ✓ Access not maintained (i.e. graded).
  - ✓ A lack of ditches & culverts (wash outs & access road damage).
  - ✓ Narrow and steep accesses.
- **Impacts of the Issue:**
  - ✓ Introduced unsafe conditions and adverse environmental impacts to the Project.
  - ✓ Limited (and slowed) safe travel on the ROW (particularly for heavy equipment).
  - ✓ Tractor Trailers unable to be used for hauling equipment and material (Rock trucks used at times).
  - ✓ Reduced productivity (impacted Valard's schedule and Project Milestones).
  - ✓ Increased operational costs (Substantial negative cost implications to Valard).

PRELIMINARY & CONFIDENTIAL WITHOUT PREJUDICE

## Access Expectations - Agreement, Section 2.5 PART B: ROW Clearing and Access Works

SLIDE 52

- **At a minimum access was expected to be generally completed to the Class 'C' standard** (i.e. normal-use accesses)
  - ✓ Class 'B' access standard was expected for major accesses (i.e. high-use accesses – St. Paul's River Road)
  - ✓ Class 'D' access standard was expected for minor accesses (i.e. low-use accesses)

***The access parameters are included in the table below***

| Standard  | Class B     | Class C     | Class D    |
|---|-------------|-------------|------------|
| Cleared Right of Way  | 25 m        | 20 m        | 20 m       |
| Grubbed Right of Way (as required)  | 23 m        | 18 m        | 15 m       |
| Road Width – shoulder to shoulder   | 7.5 m       | 5.5 m       | 5.0 m      |
| Granular Topping Depth – average compacted (subject to Engineer's Approval) | 100 mm      | 100 mm      | ----       |
| Granular Topping Width (subject to Engineer's Approval)                     | 6.5 m       | 5.0 m       | ----       |
| Maximum degree of horizontal curve  | 20          | 30          | 30         |
| Maximum sustained grade   | 8%          | 10%         | 12%        |
| Maximum short pitch grade   | 12%         | 15%         | 18%        |
| Minimum horizontal site distance  | 120 m       | 90 m        | 50 m       |
| Minimum depth of ditch  | 0.6 m       | 0.6 m       | 0.3 m      |
| Maximum depth of ditch  | 1.2 m       | 1.2 m       | 1.2 m      |
| Cross slope (as directed by Engineer)                                       | 12 cm crown | 10 cm crown | 8 cm crown |
| Fill Slope:   |             |             |            |
| Rock or Till  | 1:1         | 1:1         | 1:1        |
| Clay  | 1.5:1       | 1.5:1       | 1.5:1      |
| Silt  | 2.5:1       | 1.5:1       | 1.5:1      |
| Cut Slope:  |             |             |            |
| Rock  | 1:4         | 1:4         | 1:4        |
| Silt  | 1.5:1       | 1.5:1       | 1.5:1      |
| Other   | 1:1         | 1:1         | 1:1        |



PRELIMINARY & CONSULTATION - WILLOWY PROPOSAL

Access Expectations - Agreement, Section 2.5 PART B: ROW Clearing and Access Works

SLIDE 53

- **Accesses shall be constructed to a standard that can be maintained**
  - ✓ Maintenance includes: snow clearing, sanding, grading, culvert repair, capping, etc.
  - ✓ Access shall be maintained to a reasonable level as to not generate excessive wear and tear of the Parties light and heavy equipment
- **Accesses shall allow for the safe day to day transport of crews**
  - ✓ Safe travel speeds
- **Accesses shall allow for safe and expedient evacuation of work crews (in case of medical emergency)**
- **Accesses shall allow for the safe and expedient access to address environmental concerns (in case of environmental emergency)**
- **Access shall contain pullouts every 300-500 meters, and;**
  - ✓ Be 20 to 40 meters in length providing for a total width, including road width, of 8 to 10 meters
- **All accesses shall contain a reasonable number of turnarounds suitable for tractor trailer and low-beds**
- **Unless otherwise agreed between the Parties, linear ROW access shall be provided at all times**
  - ✓ i.e., water crossings, culverts, snow bridges, etc. shall be utilized as to not impede linear construction progression

PRELIMINARY &amp; CONFIDENTIAL - WITHOUT PREJUDICE

## Inconsistent Capping

SLIDE 54





# PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## Turnarounds Not Provided or Inadequate

SLIDE 55

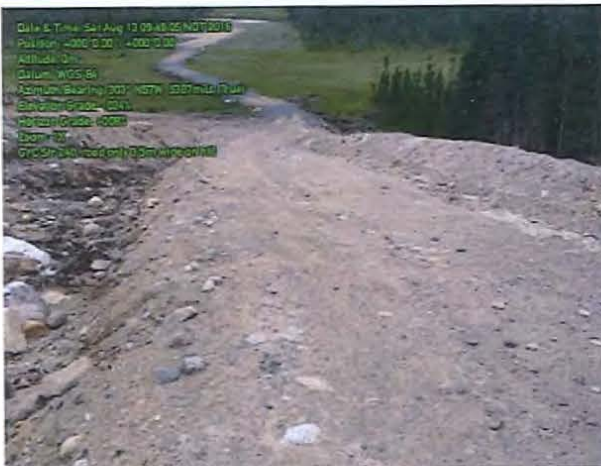




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

# Access Not Maintained (i.e. graded)

SLIDE 56

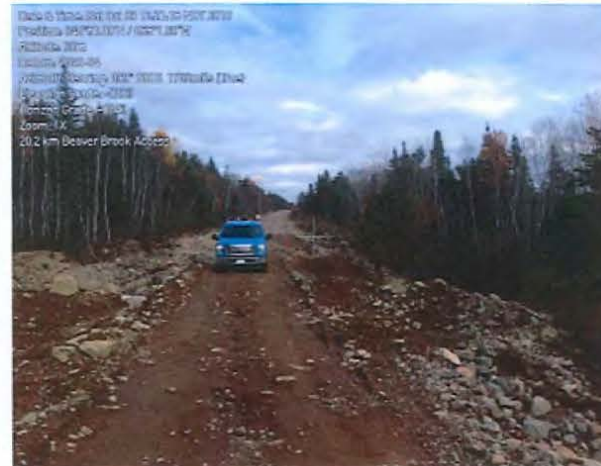




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## Lack of Ditches & Culverts (wash outs & access road damage)

SLIDE 57

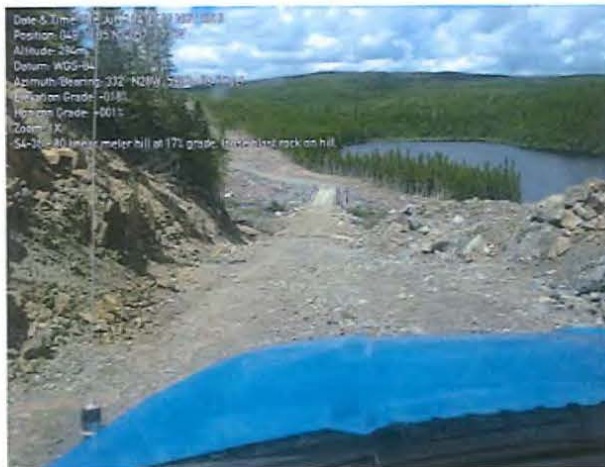




PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## Narrow and Steep Accesses

SLIDE 58





PRELIMINARY & CONSULTANT WORK PRODUCT  
ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

Slide 59

- **Not only were the access roads constructed much later than planned, but significant access road deficiencies have persisted throughout construction.**
- **Access Road Deficiencies:**
  - ✓ Inconsistent capping.
  - ✓ Turnarounds not provided or inadequate.
  - ✓ Access not maintained (i.e. graded).
  - ✓ A lack of ditches & culverts (wash outs & access road damage).
  - ✓ Narrow and steep accesses.
- **Impacts of the Issue:**
  - ✓ Introduced unsafe conditions and adverse environmental impacts to the Project.
  - ✓ Limited (and slowed) safe travel on the ROW (particularly for heavy equipment).
  - ✓ Tractor Trailers unable to be used for hauling equipment and material (Rock trucks used at times).
  - ✓ Reduced productivity (impacted Valard's schedule and Project Milestones).
  - ✓ Increased operational costs (Substantial negative cost implications to Valard).

## Topics of Discussion

SLIDE 60

- **Schedule Summary:**
  - ✓ Overview of Project Delays
  - ✓ Critical Path Through Work Front 1
- **Delay & Impact Causation:**
  - ✓ Summary of Impacts Identified
  - ✓ ROW Clearing and Access Road Construction Delays
  - ✓ Access Road Deficiencies
  - ✓ Geo-Program / Foundation Selection Process
- **Cost Impacts:**
  - ✓ Time Related General Conditions
  - ✓ Other Costs:
    - Mechanics
    - Survey
    - Camp Space Impact Costs
- **Conclusions**



## Geo-Program

SLIDE 61

### **Impacts associated with foundation selection and the failure to implement a full Geo-Program:**

- Full geotechnical analysis not performed prior to bid and contract award.
- Nalcor initially performed only a desktop study for foundation type selection.
- Nalcor provided foundation quantities by type for Valard bid estimate pricing.
- We now know that the desktop study directed the wrong foundation type more than 60% of the time.
- As field work progressed at Work Front 1, Nalcor was reluctant to implement a full “Geo-Program.”
- As field work progressed, foundation settlement issues arose at tower foundations that were not part of the Geo-Program.
- Foundations that were not part of the Geo-Program were extensively modified in the field (i.e., over-excavation, use of blast rock and base materials, change in usage of culverts, etc.).
- The lack of a proactive Geo-Program resulted in significant delays in production and rework on Work Front 1.
- Nalcor has elected to implement a full proactive Geo-Program for all foundations in Newfoundland.

## Geo-Program

Slide 62

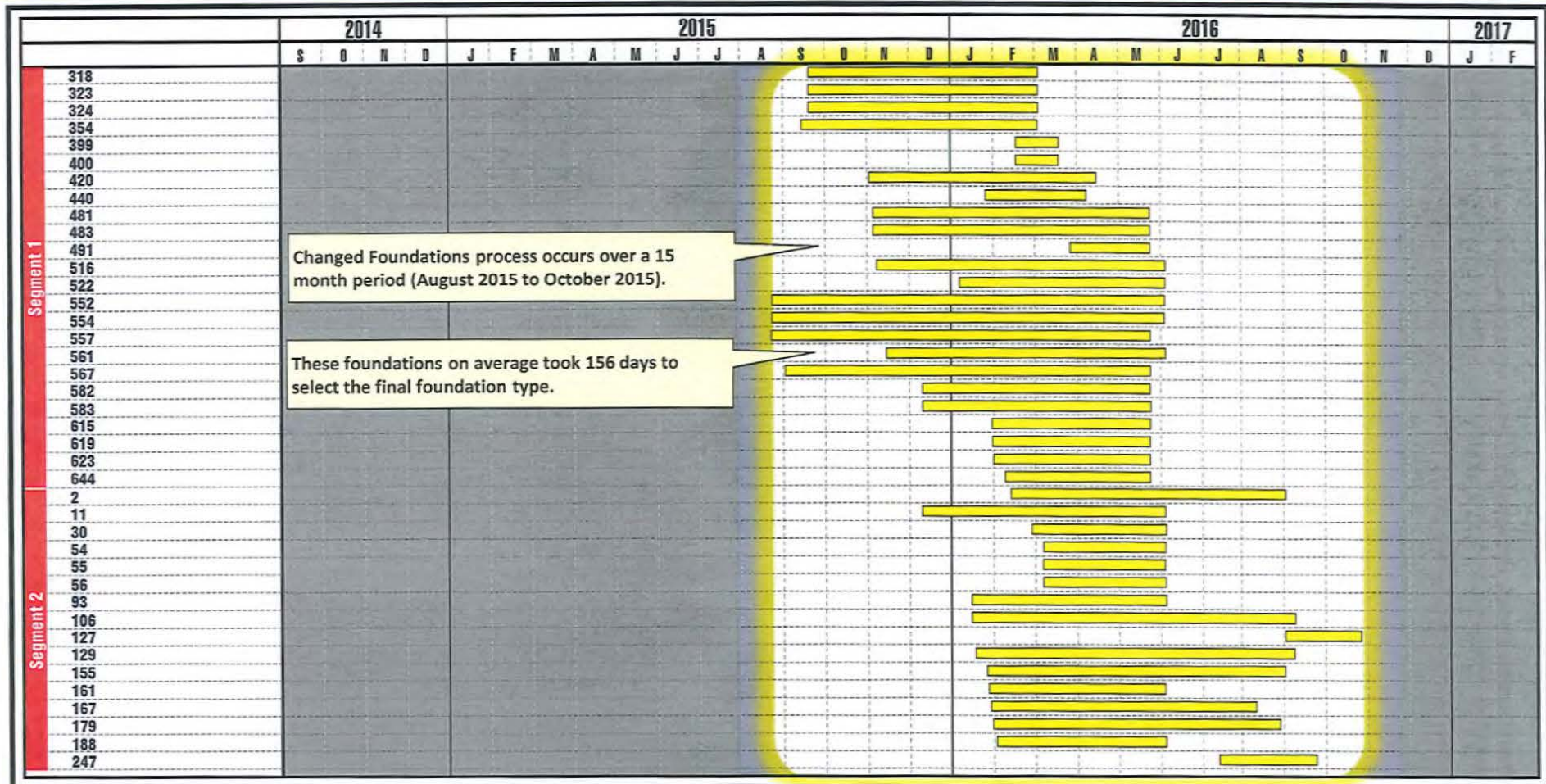
### Results of Nalcor's Limited Geo-Program:

- Nalcor eventually authorized a limited Geo-Program for only 15% of the foundations (191 foundations) on Work Front 1.
- Foundation selection should have been performed well in advance of foundation field work.
- The average time required for a full Geo-Program review to select a foundation type was 111 days.
- 126 of the foundation investigations took more than 60 days to complete.
- Because the Geo-Program was being performed concurrently with foundation construction, further delay and disruption occurred in the field.
- The majority of the foundations that went through the Geo-Program were changed to alternate type foundations (H-Pile / Micropile).
- For 40 of the foundations that went through the Geo-Program, Nalcor's initial foundation type selection eventually changed.
- The Geo-Program for these 40 foundations occurred over a 15 month period (August 2015 to October 2016).



# Geo-Program Changed Foundations

SLIDE 63

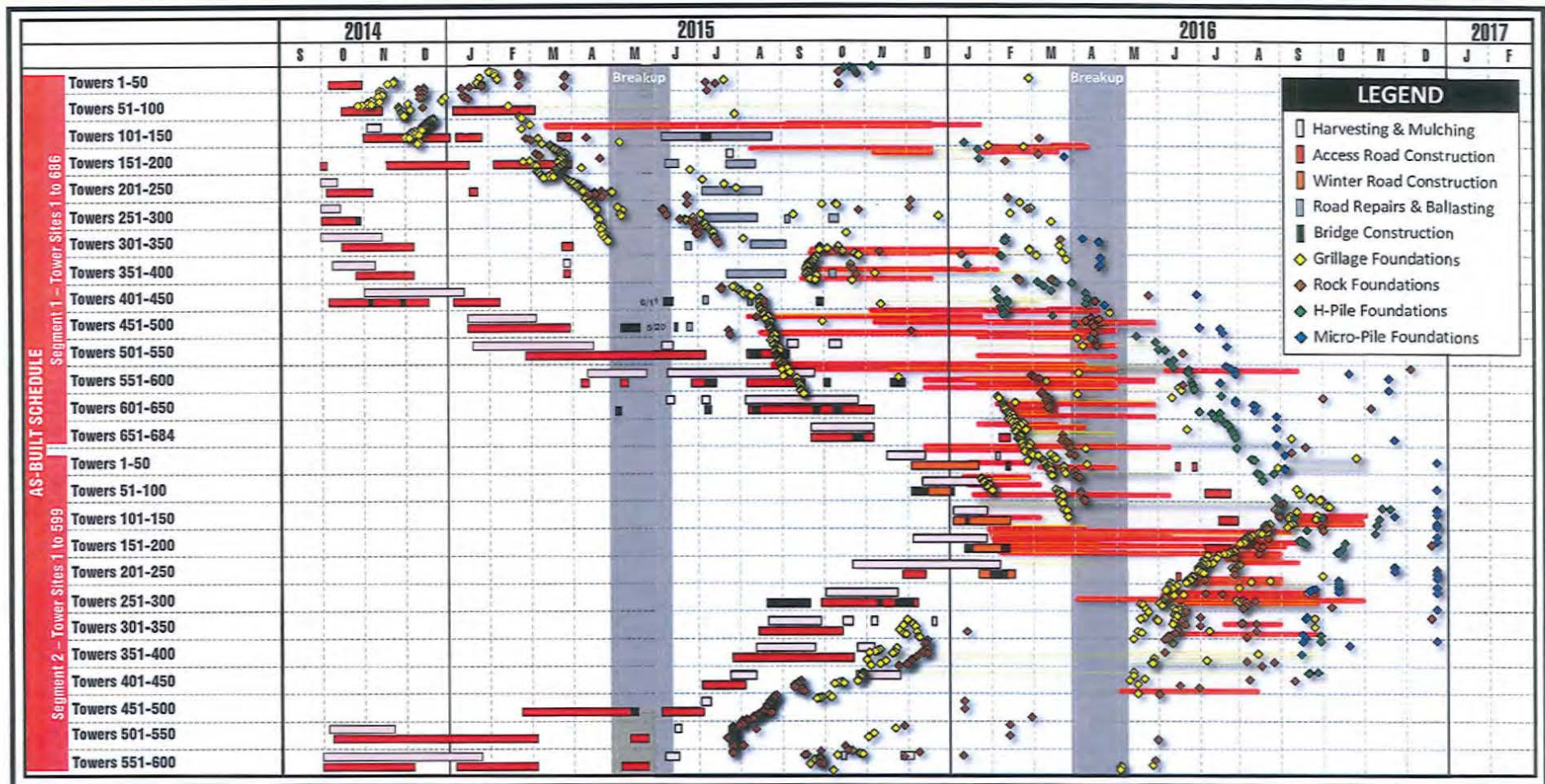




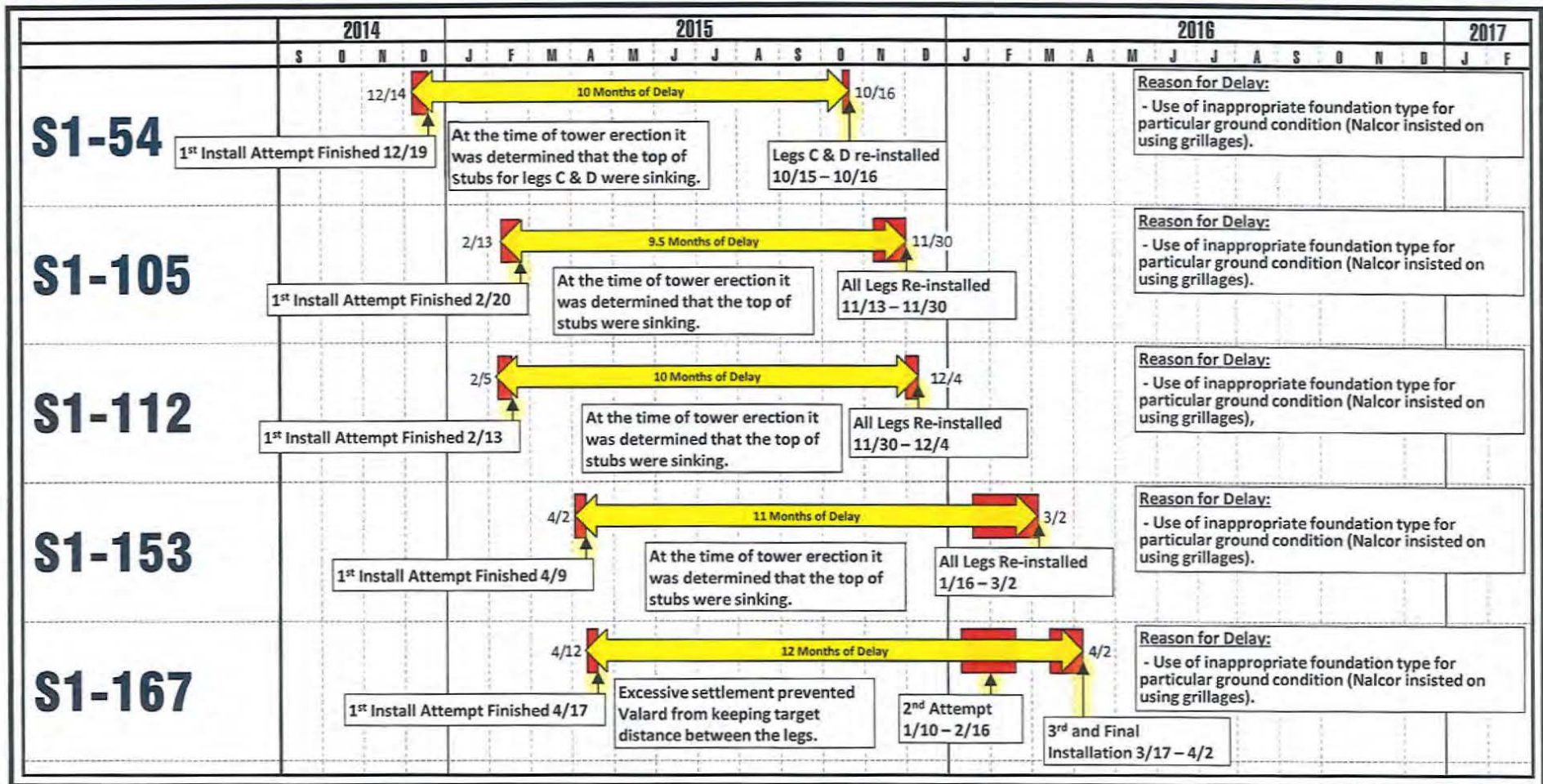
PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 64







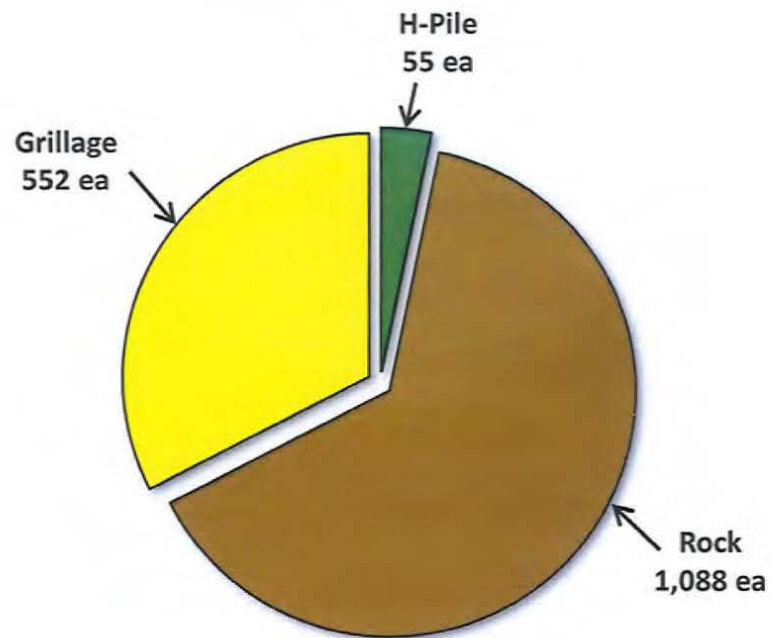
PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## Work Front 1 – Foundation Type Changes

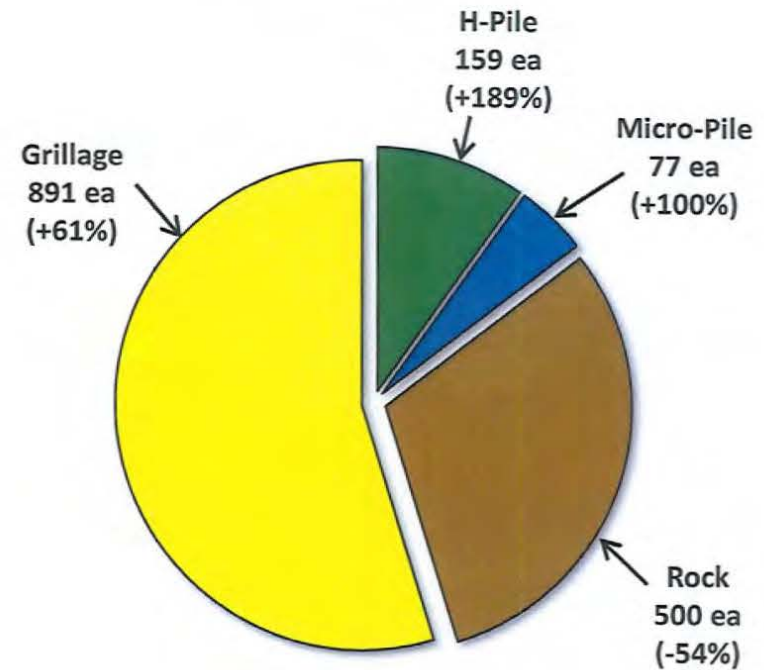
SLIDE 66

The substantial changes in foundation types (estimated vs. actual), coupled with the lack of a proactive Geo-Program prevented any ability to implement long term planning and gain efficiencies through proper resource staging.

### ESTIMATED



### ACTUAL



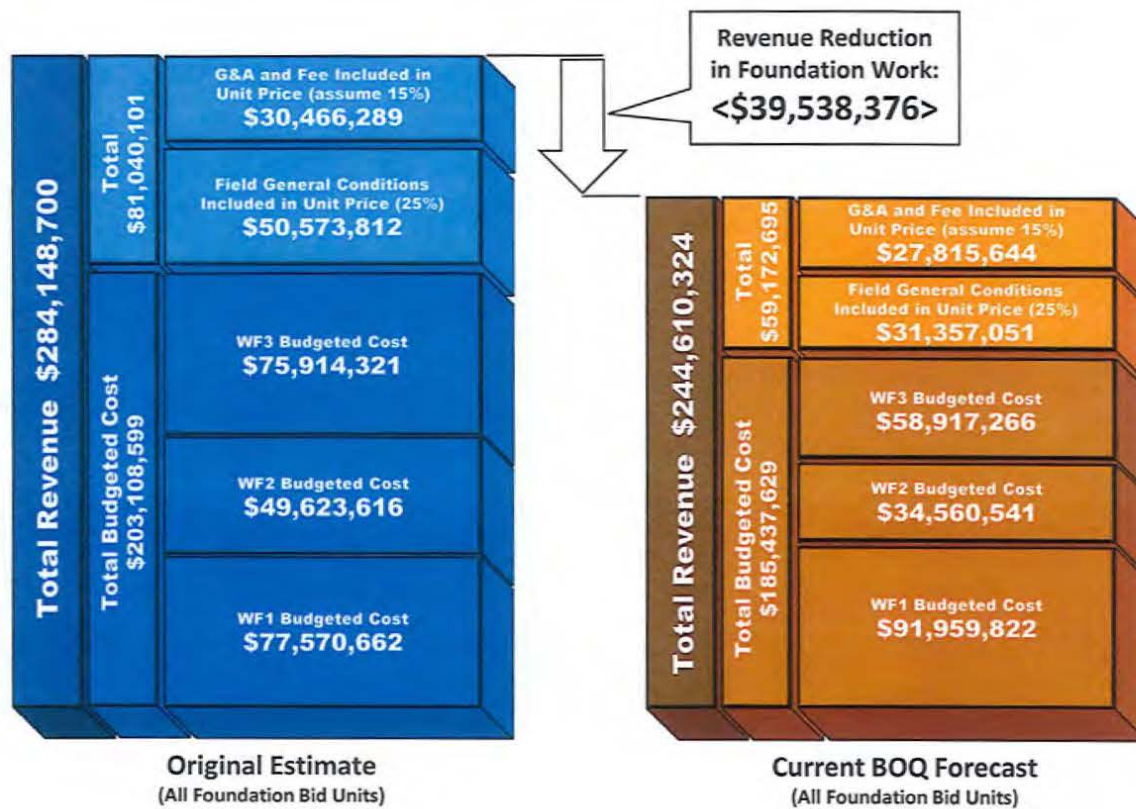


PRELIMINARY & CONFIDENTIAL - WITHOUT PREJUDICE

## All Work Fronts – Foundation Type Changes

SLIDE 67

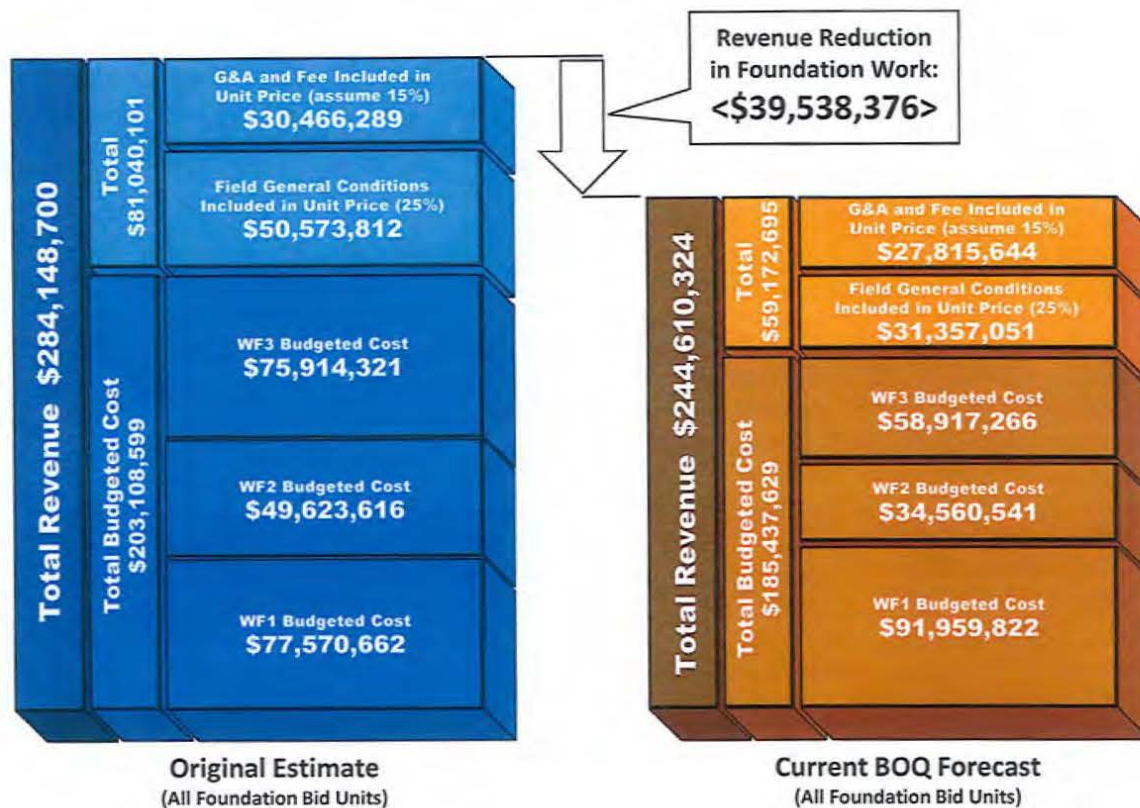
The extensive changes in foundation types have resulted in substantial financial losses to Valard:



## All Work Fronts – Foundation Type Changes

SLIDE 68

The extensive changes in foundation types have resulted in substantial financial losses to Valard:



Because this is a unit price project, Valard's estimate spread its field general conditions and fee amounts among the various unit price bid items.

Substantial reductions and/or changes in actual unit price payments can have an adverse impact on Valard's overall financial position.

### Exhibit 1, Attachment 2:

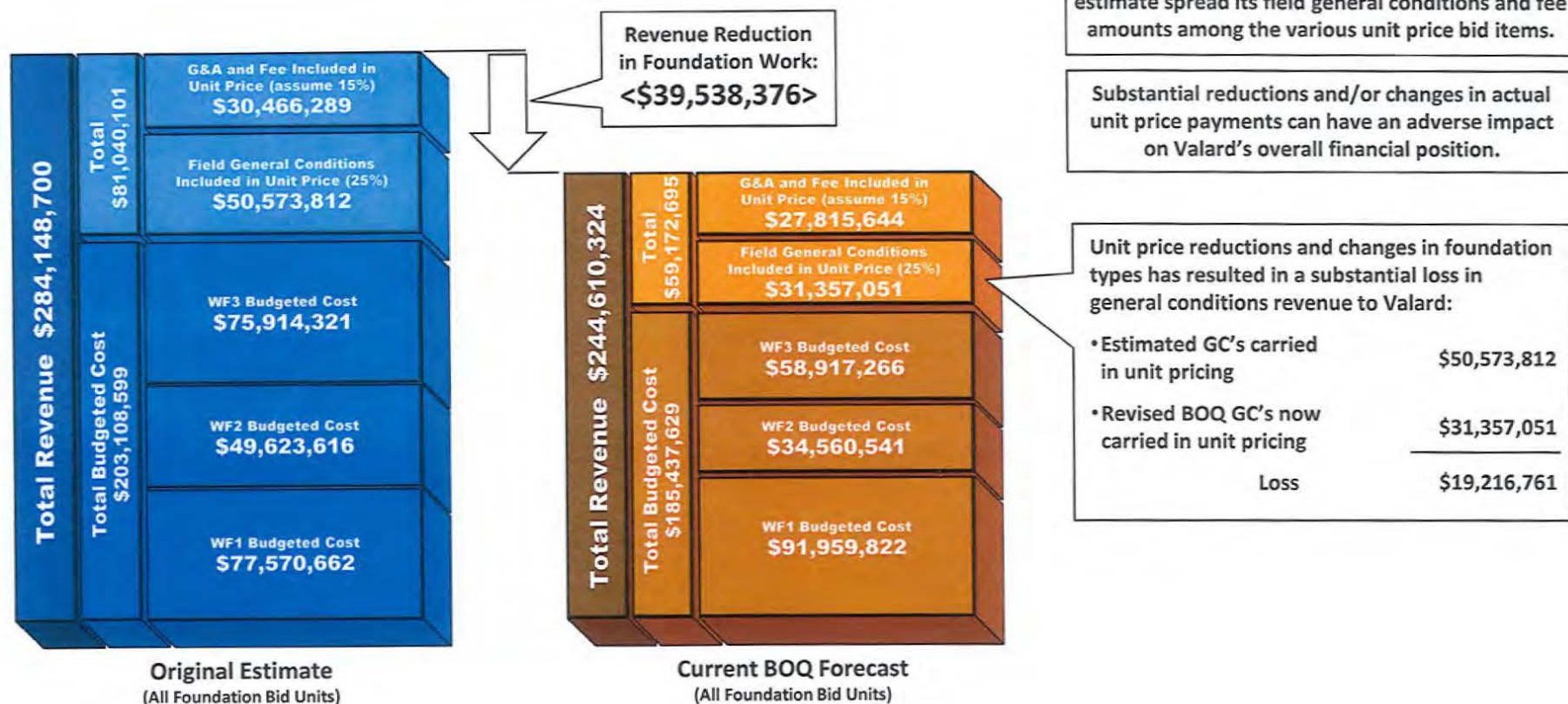
The Contract Price shall include all items that are not expressly stated in Appendix A – Schedule of Price Breakdown, but that are required for the performance of the Work. These items include, but are not limited to, indirect costs, travel, tools, operating costs, consumables, costs associated with quality assurance, quality control, environmental compliance, environmental ground truthing, permitting, re-sequencing of the Work due to environmental constraints, logistics, material management, health and safety compliance, medical services, management oversight, meetings, reporting, scheduling, monitoring, auditing, Site access, security, surveying, staking, transportation, accommodations, labour relations, commissioning, start-up, insurance, costs associated with all types of summer and winter weather conditions (including severe summer and winter conditions), or anything else required to complete the Work.



## All Work Fronts – Foundation Type Changes

SLIDE 69

The extensive changes in foundation types have resulted in substantial financial losses to Valard:



## All Work Fronts – Foundation Type Changes

Slide 70

The extensive changes in foundation types have resulted in substantial financial losses to Valard:

### Foundation Quantities (All Work Fronts):

|            | Estimate | Revised<br>BOQ | Percentage Change |
|------------|----------|----------------|-------------------|
| • Rock     | 2,952    | 1,260          | 42%               |
| • Grillage | 1,474    | 2,486          | 169%              |
| • Piles    | 142      | 379            | 267%              |

#### Example Using Average Units

1,012 Rock Foundations are changed to Grillage Foundations:

|                            |             |
|----------------------------|-------------|
| GC Incl. in Rock Units     | \$11,081    |
| GC Incl. in Grillage Units | -\$5,651    |
| Delta                      | \$5,430     |
| Units Changed to Grillage  | 1,012       |
| GC Lost                    | \$5,495,160 |

|                     | Contract Revenue<br>(Overall Average per Unit) | Estimated Cost of<br>Work<br>(Overall Average per Unit) | Estimated G&A<br>and Fee (15%)<br>(Overall Average per Unit) | Estimated General<br>Conditions<br>(Overall Average per Unit) |
|---------------------|--|---|--|---|
| Rock Foundation     | \$36,218                                       | \$21,858  | \$3,279  | \$11,081  |
| Grillage Foundation | \$19,113                                       | \$11,707  | \$1,756  | \$5,651   |
| H-Pile Foundation   | \$186,651                                      | \$154,502   | \$23,175   | \$8,974   |





## All Work Fronts – Foundation Type Changes

SLIDE 71

The extensive changes in foundation types have resulted in substantial financial losses to Valard:

| Work Front                           | Revenue Variance      |
|--------------------------------------|-----------------------|
| WF1 Guy Wires                        | \$4,206,895           |
| WF2 Guy Wires                        | (\$3,616,346)         |
| WF3 Guy Wires                        | (\$5,804,067)         |
| <b>Subtotal Guy Wires</b>            | <b>(\$5,213,518)</b>  |
| WF1 Grillage Foundations             | \$6,031,529           |
| WF2 Grillage Foundations             | \$1,923,381           |
| WF3 Grillage Foundations             | \$7,263,761           |
| <b>Subtotal Grillage Foundations</b> | <b>\$15,218,671</b>   |
| WF1 Rock Foundations                 | (\$20,333,047)        |
| WF2 Rock Foundations                 | (\$7,962,059)         |
| WF3 Rock Foundations                 | (\$30,574,988)        |
| <b>Subtotal Rock Foundations</b>     | <b>(\$58,870,094)</b> |
| WF1 Pile Foundations                 | \$30,181,120          |
| WF2 Pile Foundations                 | (\$3,493,188)         |
| WF2 Pile Foundations                 | \$14,096,507          |
| <b>Subtotal Pile Foundations</b>     | <b>\$40,784,439</b>   |
| WF1 Earthwork                        | (\$10,236,956)        |
| WF2 Earthwork                        | (\$7,197,877)         |
| WF3 Earthwork                        | (\$14,023,041)        |
| <b>Subtotal - Earthwork</b>          | <b>(\$31,457,874)</b> |
| <b>Grand Totals</b>                  | <b>(\$39,538,376)</b> |

## All Work Fronts – Foundation Type Changes

SUDL 72

The extensive changes in foundation types have resulted in substantial financial losses to Valard:

| Work Front                           | Revenue Variance      | Estimated Direct Cost Variance |
|--------------------------------------|-----------------------|--------------------------------|
| WF1 Guy Wires                        | \$4,206,895           | \$3,705,745                    |
| WF2 Guy Wires                        | (\$3,616,346)         | (\$3,161,364)                  |
| WF3 Guy Wires                        | (\$5,804,067)         | (\$5,037,737)                  |
| <b>Subtotal Guy Wires</b>            | <b>(\$5,213,518)</b>  | <b>(\$4,493,355)</b>           |
| WF1 Grillage Foundations             | \$6,031,529           | \$3,595,497                    |
| WF2 Grillage Foundations             | \$1,923,381           | \$1,283,132                    |
| WF3 Grillage Foundations             | \$7,263,761           | \$4,261,502                    |
| <b>Subtotal Grillage Foundations</b> | <b>\$15,218,671</b>   | <b>\$9,140,131</b>             |
| WF1 Rock Foundations                 | (\$20,333,047)        | (\$11,972,435)                 |
| WF2 Rock Foundations                 | (\$7,962,059)         | (\$5,178,192)                  |
| WF3 Rock Foundations                 | (\$30,574,988)        | (\$18,031,548)                 |
| <b>Subtotal Rock Foundations</b>     | <b>(\$58,870,094)</b> | <b>(\$35,182,174)</b>          |
| WF1 Pile Foundations                 | \$30,181,120          | \$25,233,670                   |
| WF2 Pile Foundations                 | (\$3,493,188)         | (\$2,800,713)                  |
| WF2 Pile Foundations                 | \$14,096,507          | \$11,418,796                   |
| <b>Subtotal Pile Foundations</b>     | <b>\$40,784,439</b>   | <b>\$33,851,753</b>            |
| WF1 Earthwork                        | (\$10,236,956)        | (\$6,173,318)                  |
| WF2 Earthwork                        | (\$7,197,877)         | (\$5,205,938)                  |
| WF3 Earthwork                        | (\$14,023,041)        | (\$9,608,068)                  |
| <b>Subtotal - Earthwork</b>          | <b>(\$31,457,874)</b> | <b>(\$20,987,324)</b>          |
| <b>Grand Totals</b>                  | <b>(\$39,538,376)</b> | <b>(\$17,670,970)</b>          |



## All Work Fronts – Foundation Type Changes

SLIDE 73

The extensive changes in foundation types have resulted in substantial financial losses to Valard:

| Work Front                           | Revenue Variance      | Estimated Direct Cost Variance | Indirect Costs & Markups Variance |
|--------------------------------------|-----------------------|--------------------------------|-----------------------------------|
| WF1 Guy Wires                        | \$4,206,895           | \$3,705,745                    | \$501,149                         |
| WF2 Guy Wires                        | (\$3,616,346)         | (\$3,161,364)                  | (\$454,982)                       |
| WF3 Guy Wires                        | (\$5,804,067)         | (\$5,037,737)                  | (\$766,330)                       |
| <b>Subtotal Guy Wires</b>            | <b>(\$5,213,518)</b>  | <b>(\$4,493,355)</b>           | <b>(\$720,163)</b>                |
| WF1 Grillage Foundations             | \$6,031,529           | \$3,595,497                    | \$2,436,032                       |
| WF2 Grillage Foundations             | \$1,923,381           | \$1,283,132                    | \$640,249                         |
| WF3 Grillage Foundations             | \$7,263,761           | \$4,261,502                    | \$3,002,259                       |
| <b>Subtotal Grillage Foundations</b> | <b>\$15,218,671</b>   | <b>\$9,140,131</b>             | <b>\$6,078,540</b>                |
| WF1 Rock Foundations                 | (\$20,333,047)        | (\$11,972,435)                 | (\$8,360,612)                     |
| WF2 Rock Foundations                 | (\$7,962,059)         | (\$5,178,192)                  | (\$2,783,867)                     |
| WF3 Rock Foundations                 | (\$30,574,988)        | (\$18,031,548)                 | (\$12,543,440)                    |
| <b>Subtotal Rock Foundations</b>     | <b>(\$58,870,094)</b> | <b>(\$35,182,174)</b>          | <b>(\$23,687,920)</b>             |
| WF1 Pile Foundations                 | \$30,181,120          | \$25,233,670                   | \$4,947,449                       |
| WF2 Pile Foundations                 | (\$3,493,188)         | (\$2,800,713)                  | (\$692,474)                       |
| WF2 Pile Foundations                 | \$14,096,507          | \$11,418,796                   | \$2,677,712                       |
| <b>Subtotal Pile Foundations</b>     | <b>\$40,784,439</b>   | <b>\$33,851,753</b>            | <b>\$6,932,686</b>                |
| WF1 Earthwork                        | (\$10,236,956)        | (\$6,173,318)                  | (\$4,063,638)                     |
| WF2 Earthwork                        | (\$7,197,877)         | (\$5,205,938)                  | (\$1,991,939)                     |
| WF3 Earthwork                        | (\$14,023,041)        | (\$9,608,068)                  | (\$4,414,973)                     |
| <b>Subtotal - Earthwork</b>          | <b>(\$31,457,874)</b> | <b>(\$20,987,324)</b>          | <b>(\$10,470,550)</b>             |
| <b>Grand Totals</b>                  | <b>(\$39,538,376)</b> | <b>(\$17,670,970)</b>          | <b>(\$21,867,406)</b>             |

## All Work Fronts – Foundation Type Changes

Slide 74

The extensive changes in foundation types have resulted in substantial financial losses to Valard:

| Work Front                           | Revenue Variance      | Estimated Direct Cost Variance | Indirect Costs & Markups Variance | G&A and Fee (15%) Variance | Field General Conditions Variance |
|--------------------------------------|-----------------------|--------------------------------|-----------------------------------|----------------------------|-----------------------------------|
| WF1 Guy Wires                        | \$4,206,895           | \$3,705,745                    | \$501,149                         | \$555,862                  | (\$54,713)                        |
| WF2 Guy Wires                        | (\$3,616,346)         | (\$3,161,364)                  | (\$454,982)                       | (\$474,205)                | \$19,223                          |
| WF3 Guy Wires                        | (\$5,804,067)         | (\$5,037,737)                  | (\$766,330)                       | (\$755,660)                | (\$10,670)                        |
| <b>Subtotal Guy Wires</b>            | <b>(\$5,213,518)</b>  | <b>(\$4,493,355)</b>           | <b>(\$720,163)</b>                | <b>(\$674,003)</b>         | <b>(\$46,159)</b>                 |
| WF1 Grillage Foundations             | \$6,031,529           | \$3,595,497                    | \$2,436,032                       | \$539,325                  | \$1,896,708                       |
| WF2 Grillage Foundations             | \$1,923,381           | \$1,283,132                    | \$640,249                         | \$192,470                  | \$447,779                         |
| WF3 Grillage Foundations             | \$7,263,761           | \$4,261,502                    | \$3,002,259                       | \$639,225                  | \$2,363,034                       |
| <b>Subtotal Grillage Foundations</b> | <b>\$15,218,671</b>   | <b>\$9,140,131</b>             | <b>\$6,078,540</b>                | <b>\$1,371,020</b>         | <b>\$4,707,520</b>                |
| WF1 Rock Foundations                 | (\$20,333,047)        | (\$11,972,435)                 | (\$8,360,612)                     | (\$1,795,865)              | (\$6,564,747)                     |
| WF2 Rock Foundations                 | (\$7,962,059)         | (\$5,178,192)                  | (\$2,783,867)                     | (\$776,729)                | (\$2,007,139)                     |
| WF3 Rock Foundations                 | (\$30,574,988)        | (\$18,031,548)                 | (\$12,543,440)                    | (\$2,704,732)              | (\$9,838,708)                     |
| <b>Subtotal Rock Foundations</b>     | <b>(\$58,870,094)</b> | <b>(\$35,182,174)</b>          | <b>(\$23,687,920)</b>             | <b>(\$5,277,326)</b>       | <b>(\$18,410,594)</b>             |
| WF1 Pile Foundations                 | \$30,181,120          | \$25,233,670                   | \$4,947,449                       | \$3,785,051                | \$1,162,399                       |
| WF2 Pile Foundations                 | (\$3,493,188)         | (\$2,800,713)                  | (\$692,474)                       | (\$420,107)                | (\$272,368)                       |
| WF3 Pile Foundations                 | \$14,096,507          | \$11,418,796                   | \$2,677,712                       | \$1,712,819                | \$964,893                         |
| <b>Subtotal Pile Foundations</b>     | <b>\$40,784,439</b>   | <b>\$33,851,753</b>            | <b>\$6,932,686</b>                | <b>\$5,077,763</b>         | <b>\$1,854,924</b>                |
| WF1 Earthwork                        | (\$10,236,956)        | (\$6,173,318)                  | (\$4,063,638)                     | (\$925,998)                | (\$3,137,640)                     |
| WF2 Earthwork                        | (\$7,197,877)         | (\$5,205,938)                  | (\$1,991,939)                     | (\$780,891)                | (\$1,211,048)                     |
| WF3 Earthwork                        | (\$14,023,041)        | (\$9,608,068)                  | (\$4,414,973)                     | (\$1,441,210)              | (\$2,973,763)                     |
| <b>Subtotal - Earthwork</b>          | <b>(\$31,457,874)</b> | <b>(\$20,987,324)</b>          | <b>(\$10,470,550)</b>             | <b>(\$3,148,099)</b>       | <b>(\$7,322,451)</b>              |
| <b>Grand Totals</b>                  | <b>(\$39,538,376)</b> | <b>(\$17,670,970)</b>          | <b>(\$21,867,406)</b>             | <b>(\$2,650,645)</b>       | <b>(\$19,216,761)</b>             |



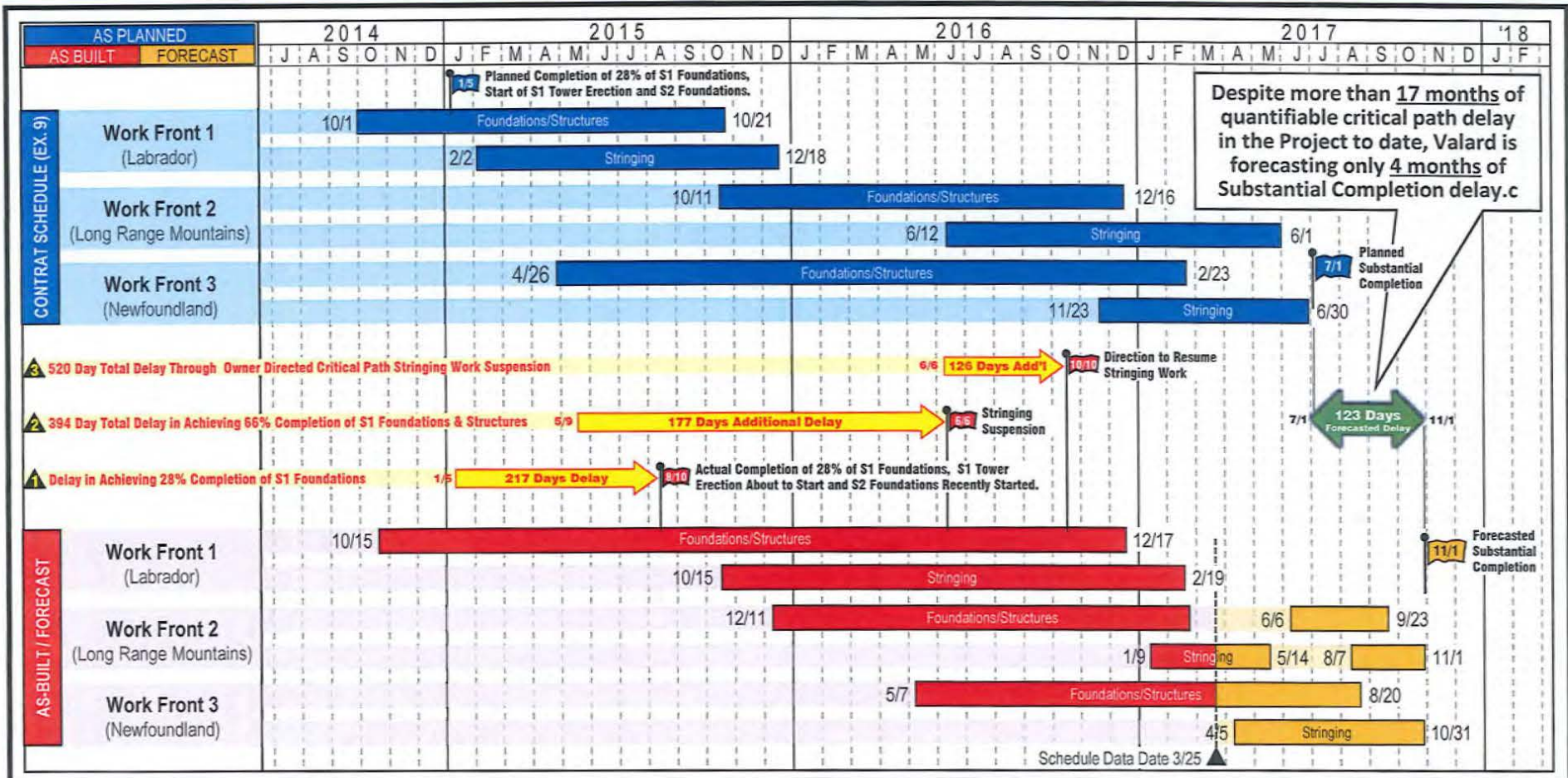
## Topics of Discussion

SLIDE 75

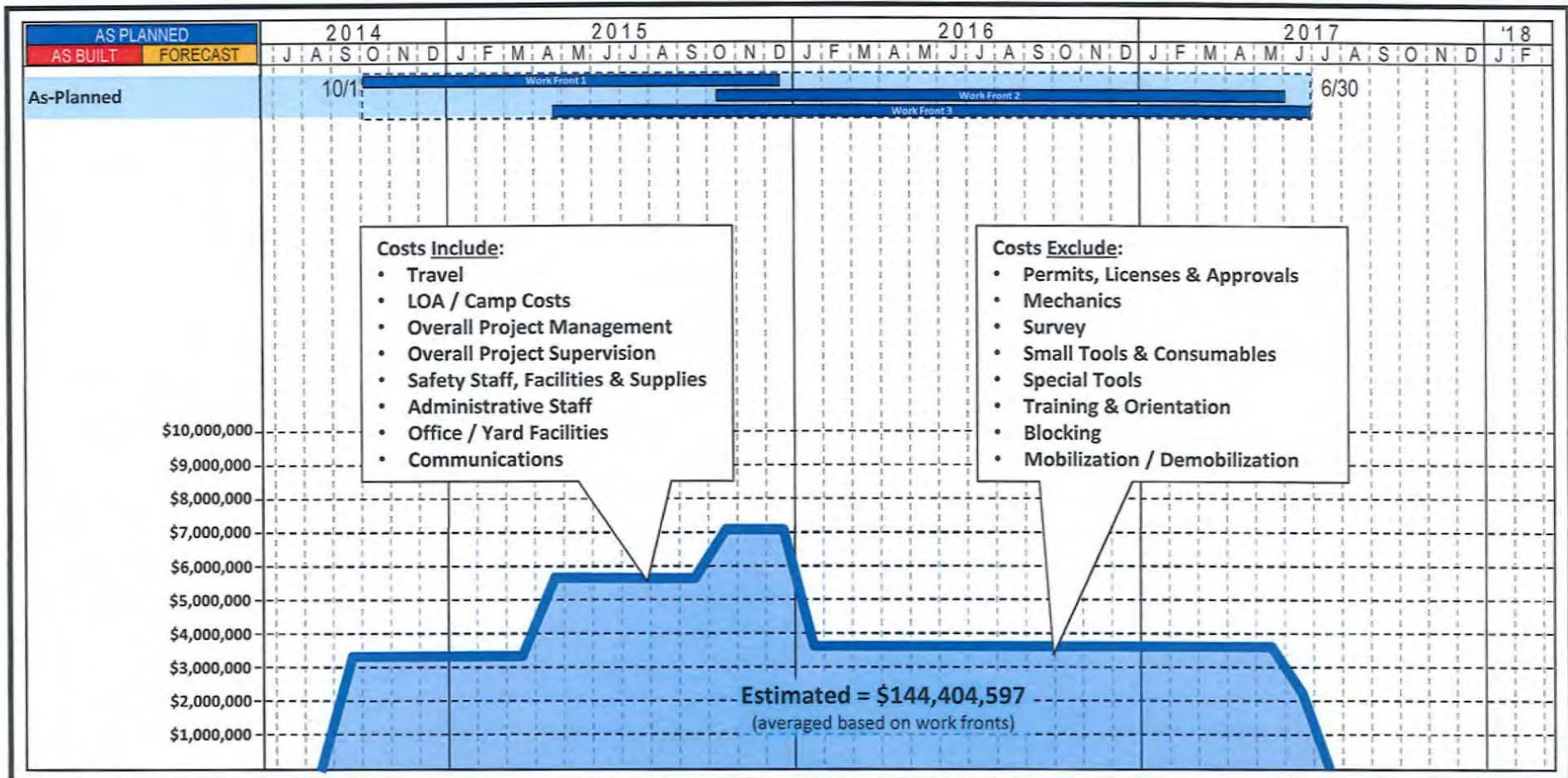
- **Schedule Summary:**
  - ✓ Overview of Project Delays
  - ✓ Critical Path Through Work Front 1
- **Delay & Impact Causation:**
  - ✓ Summary of Impacts Identified
  - ✓ ROW Clearing and Access Road Construction Delays
  - ✓ Access Road Deficiencies
  - ✓ Geo-Program / Foundation Selection Process
- **Cost Impacts:**
  - ✓ Time Related General Conditions
  - ✓ Other Costs:
    - Mechanics
    - Survey
    - Camp Space Impact Costs
- **Conclusions**

# Summary Schedule Comparison

SLIDE 76

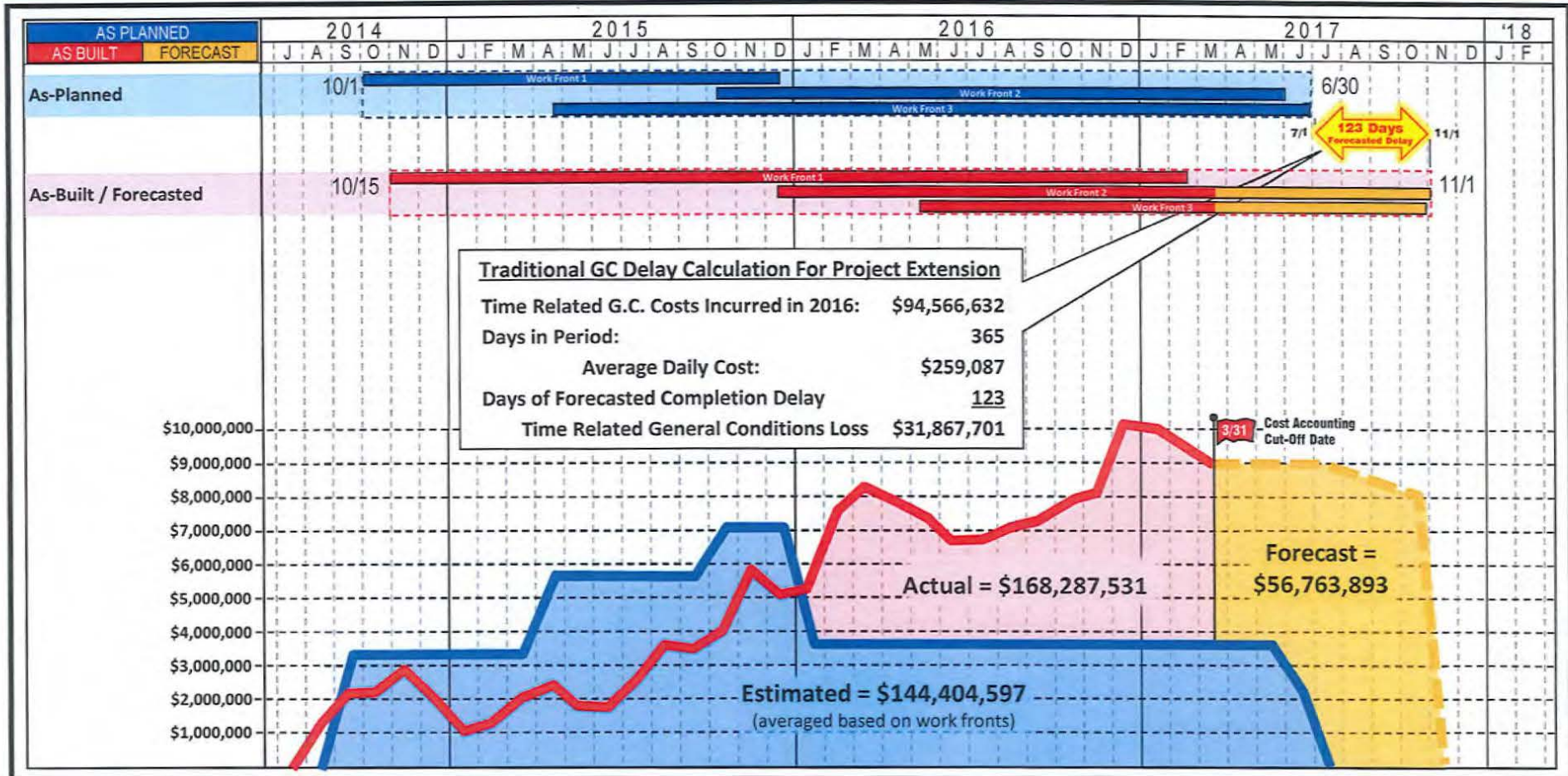






# Time Related Field General Conditions Costs

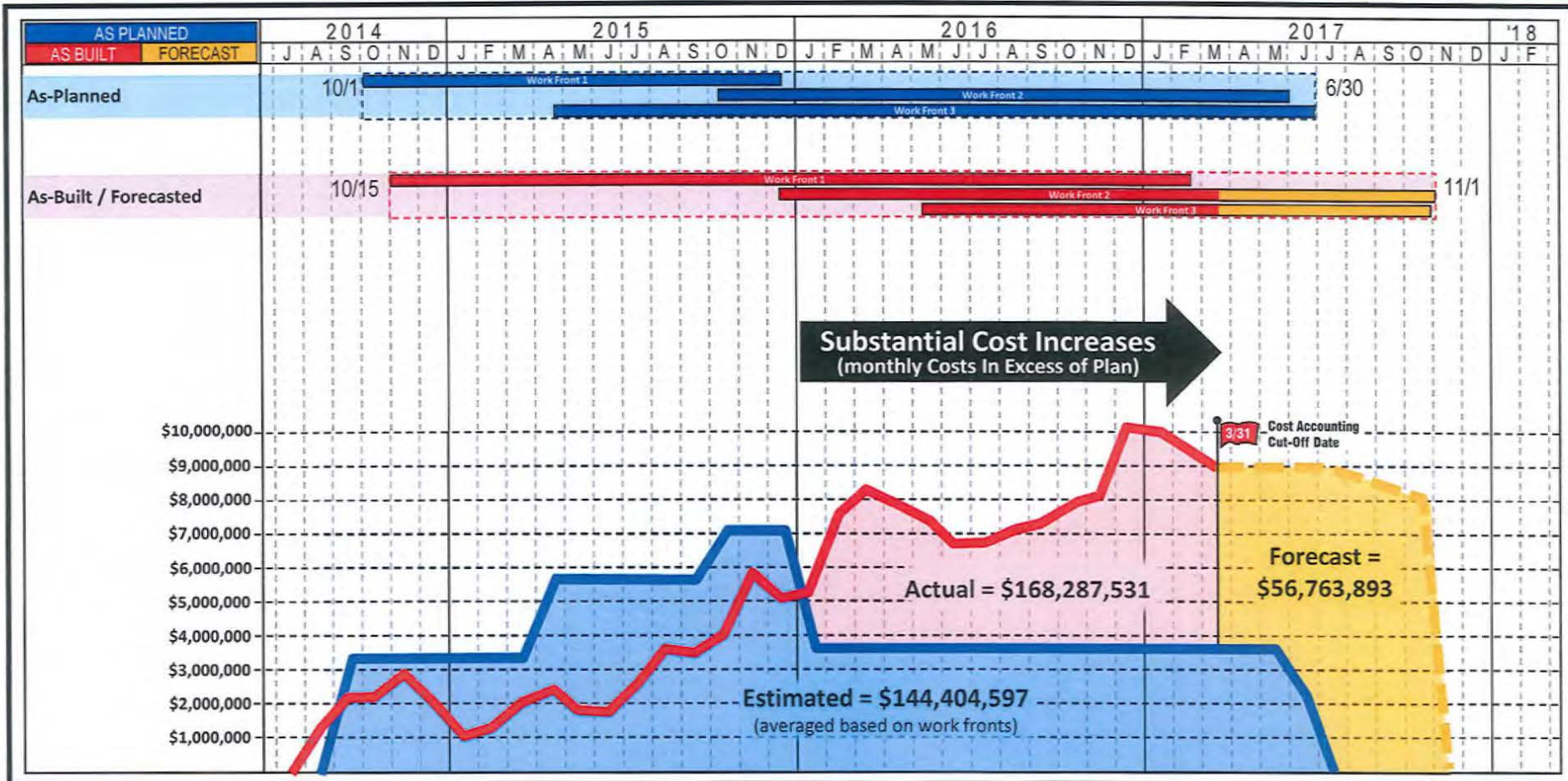
SLIDE 78





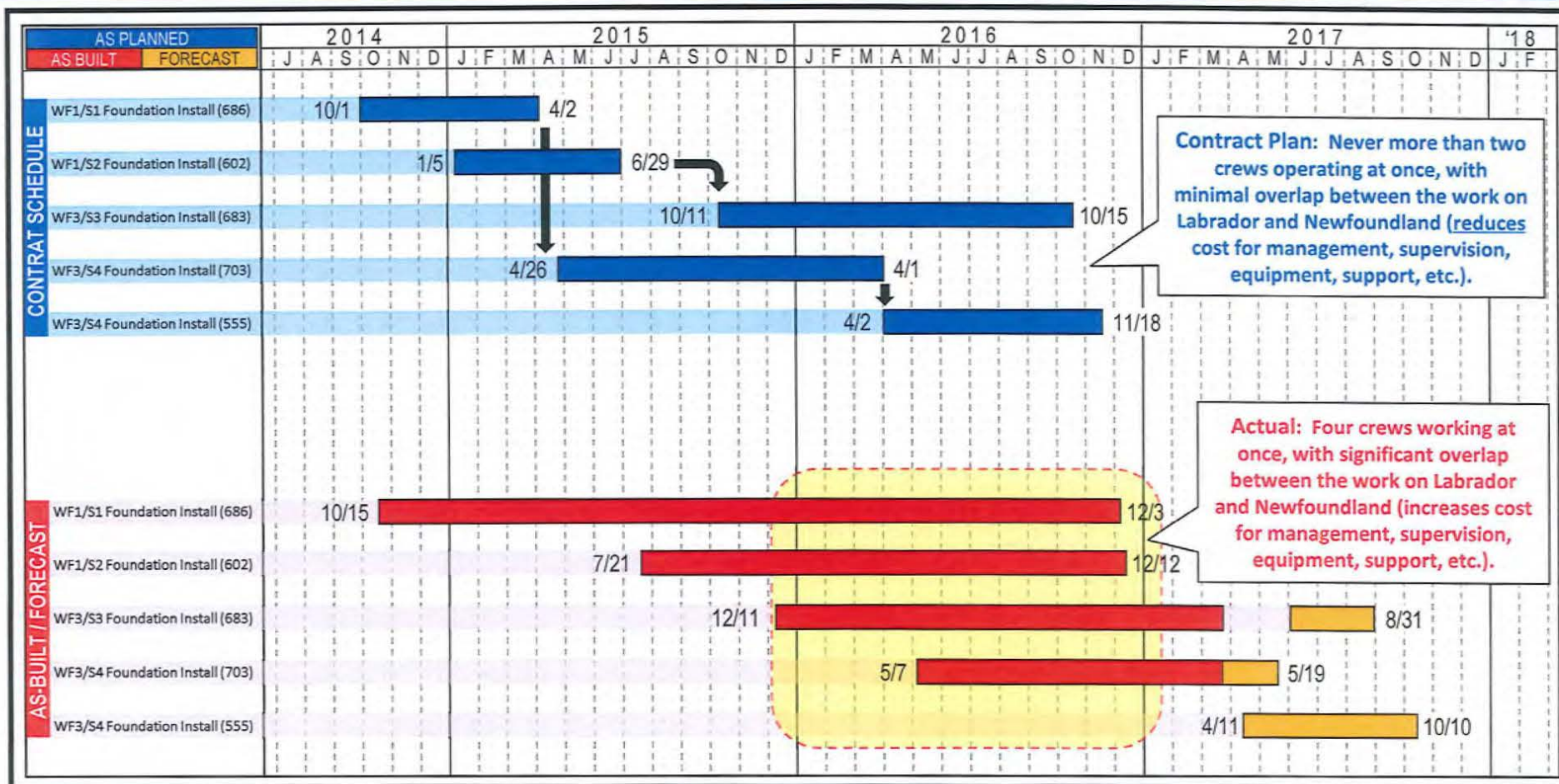
# Time Related Field General Conditions Costs

SLIDE 79



# Time Related Field General Conditions Costs (Crew & Logistical Impacts)

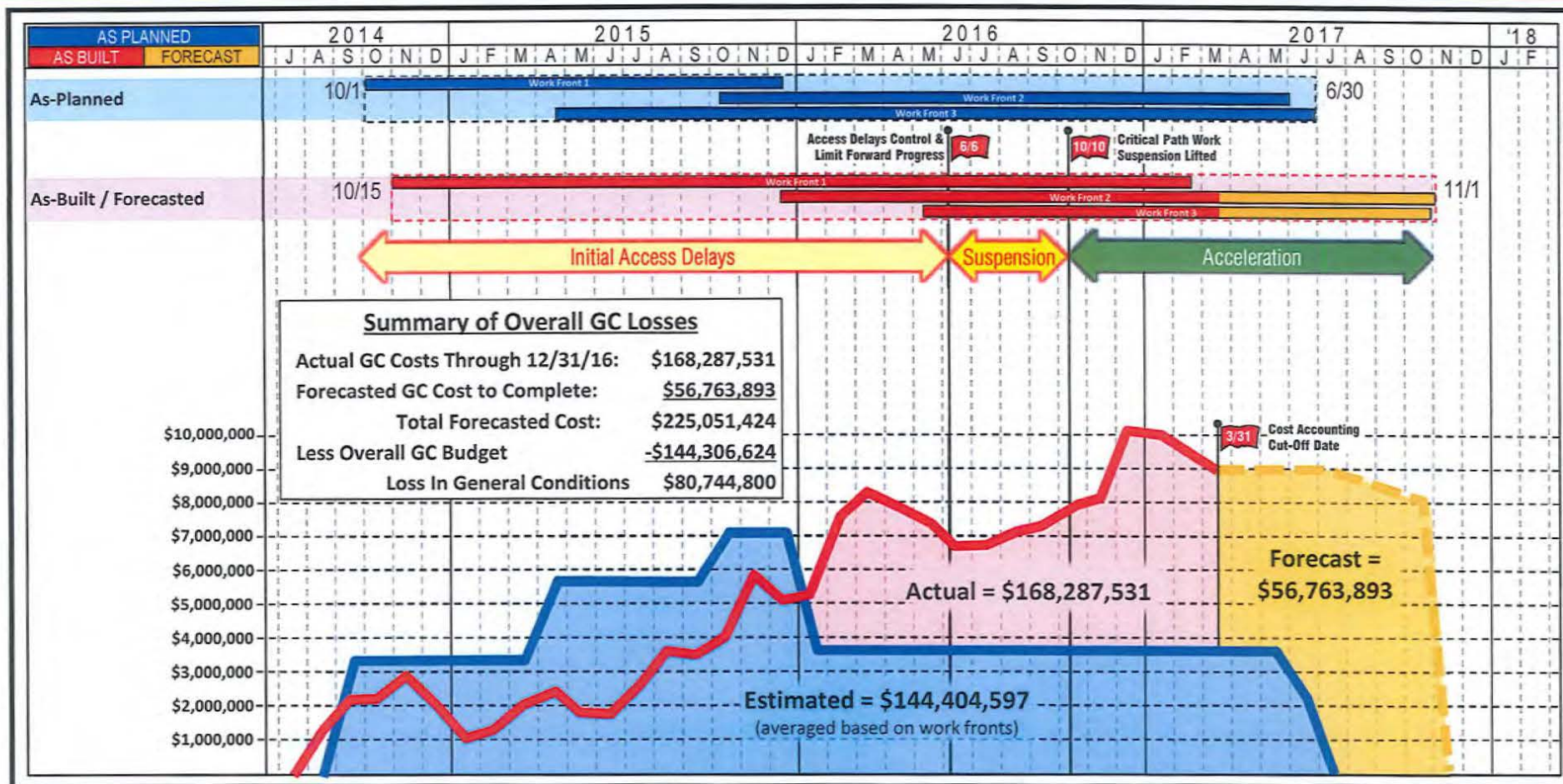
SLIDE 80





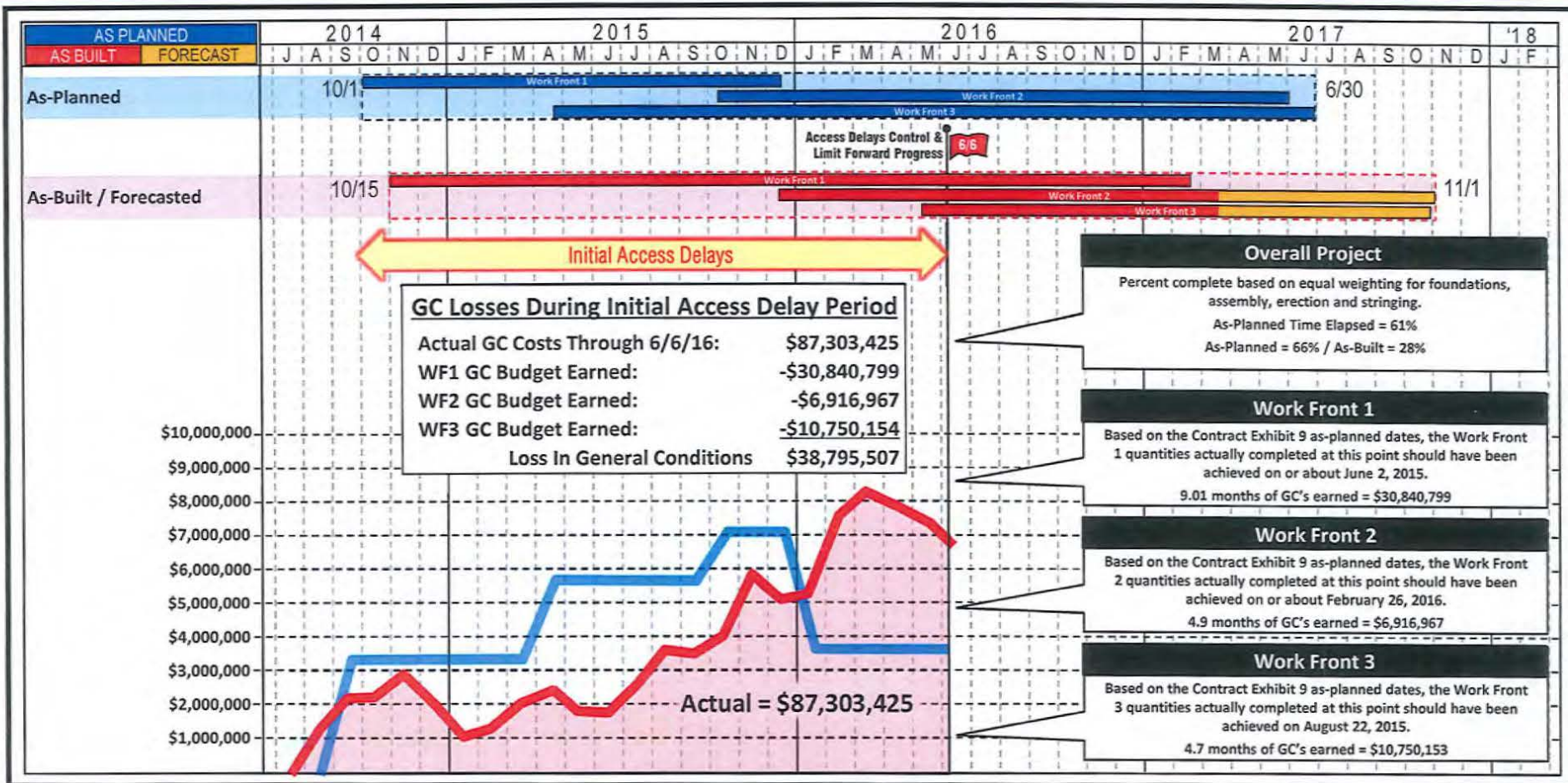
# Time Related Field General Conditions Costs

SLIDE 81



# Time Related Field General Conditions Costs

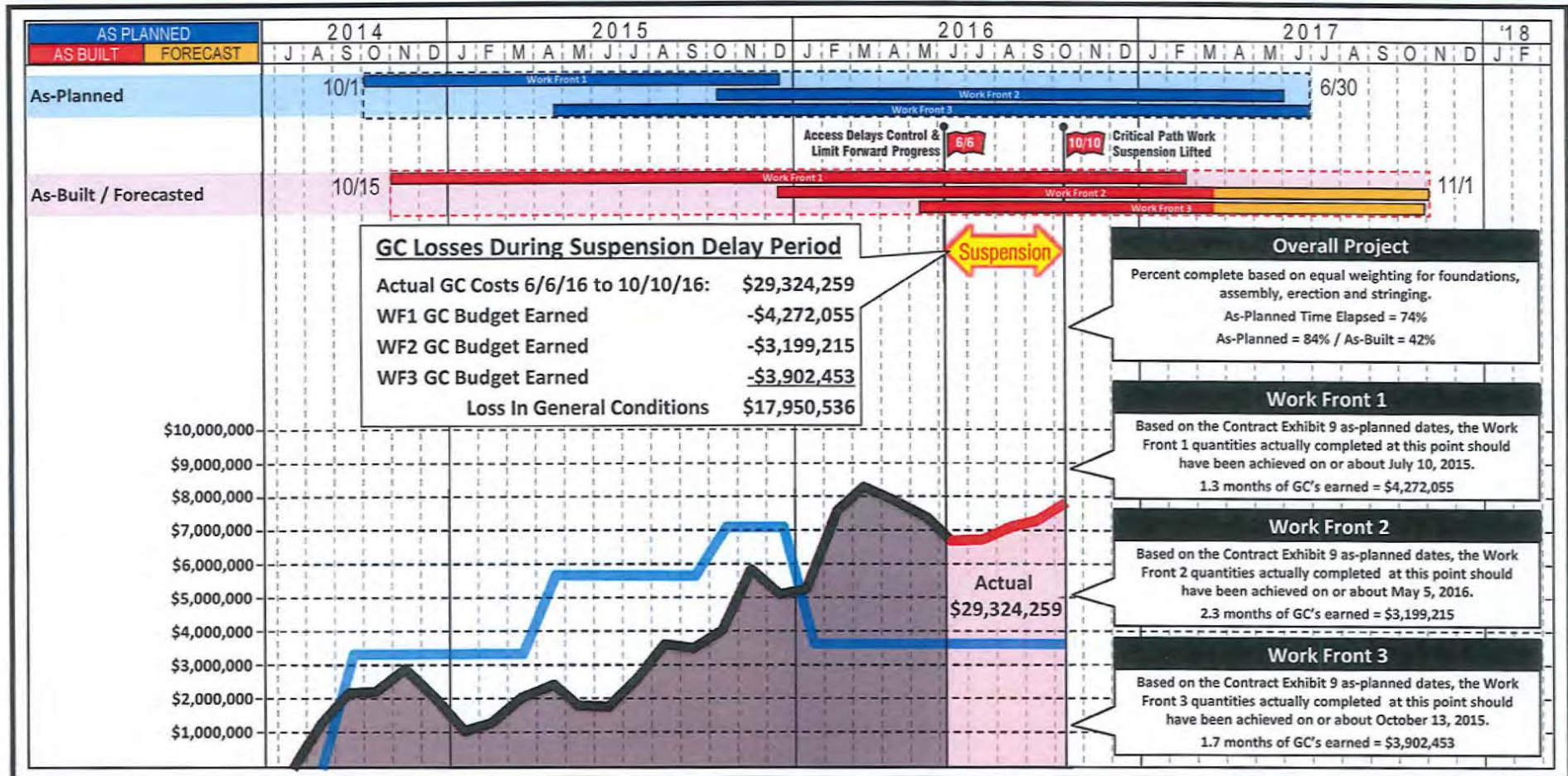
Slide 82





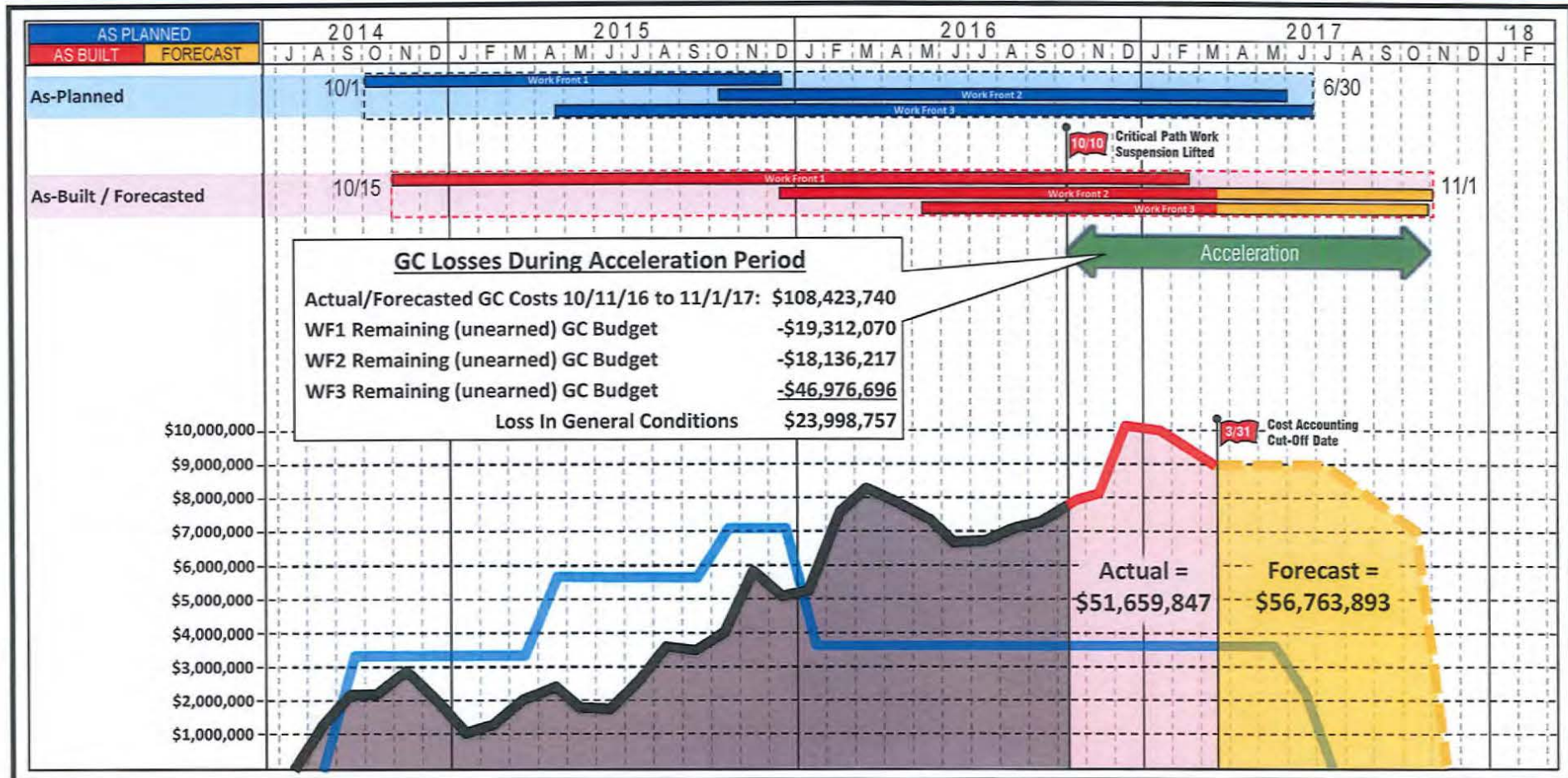
# Time Related Field General Conditions Costs

SLIDE 83



# Time Related Field General Conditions Costs

SLIDE 84

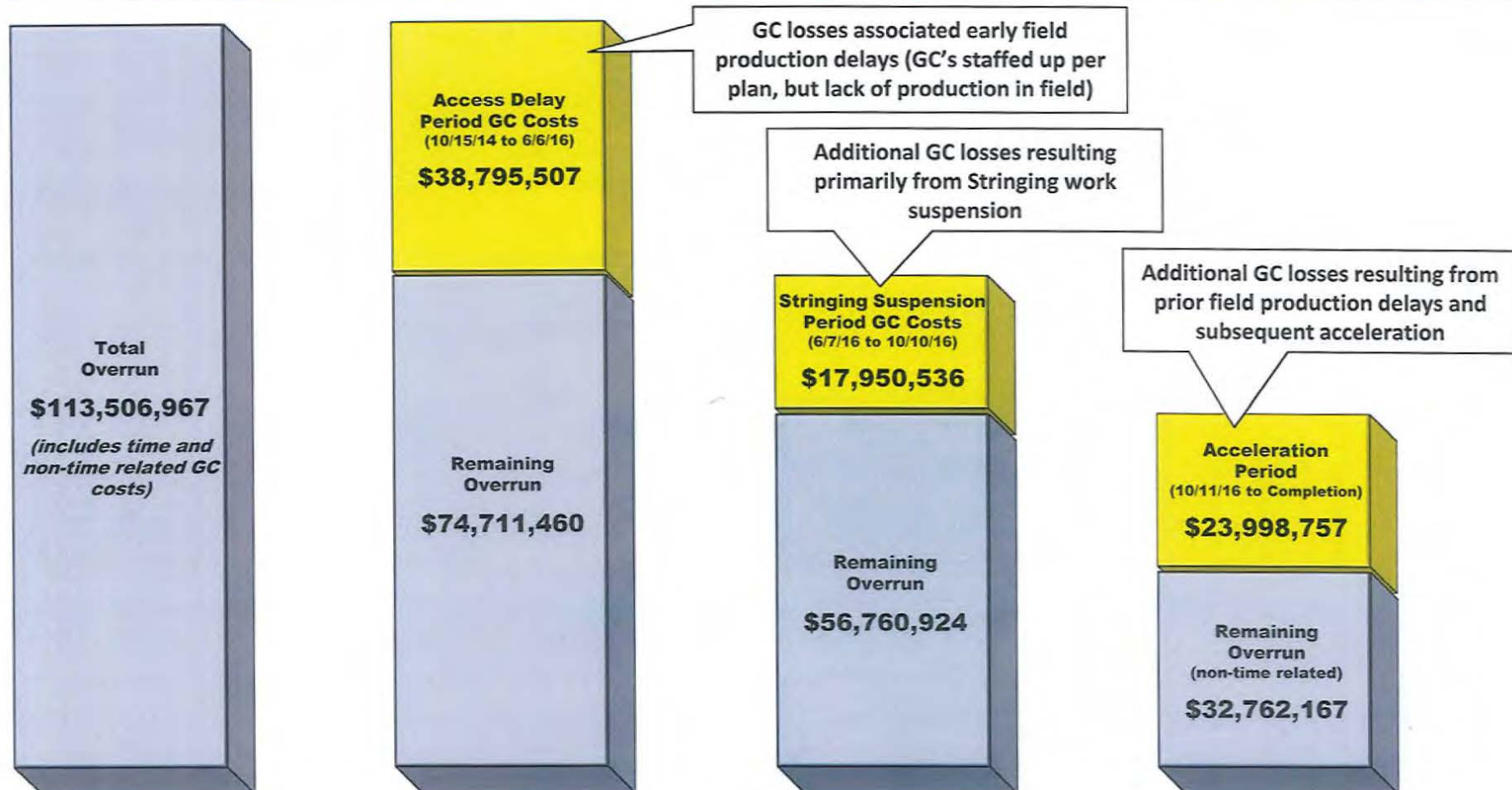




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## Breakdown of Field General Conditions Loss

SLIDE 85



## Topics of Discussion

Slide 86

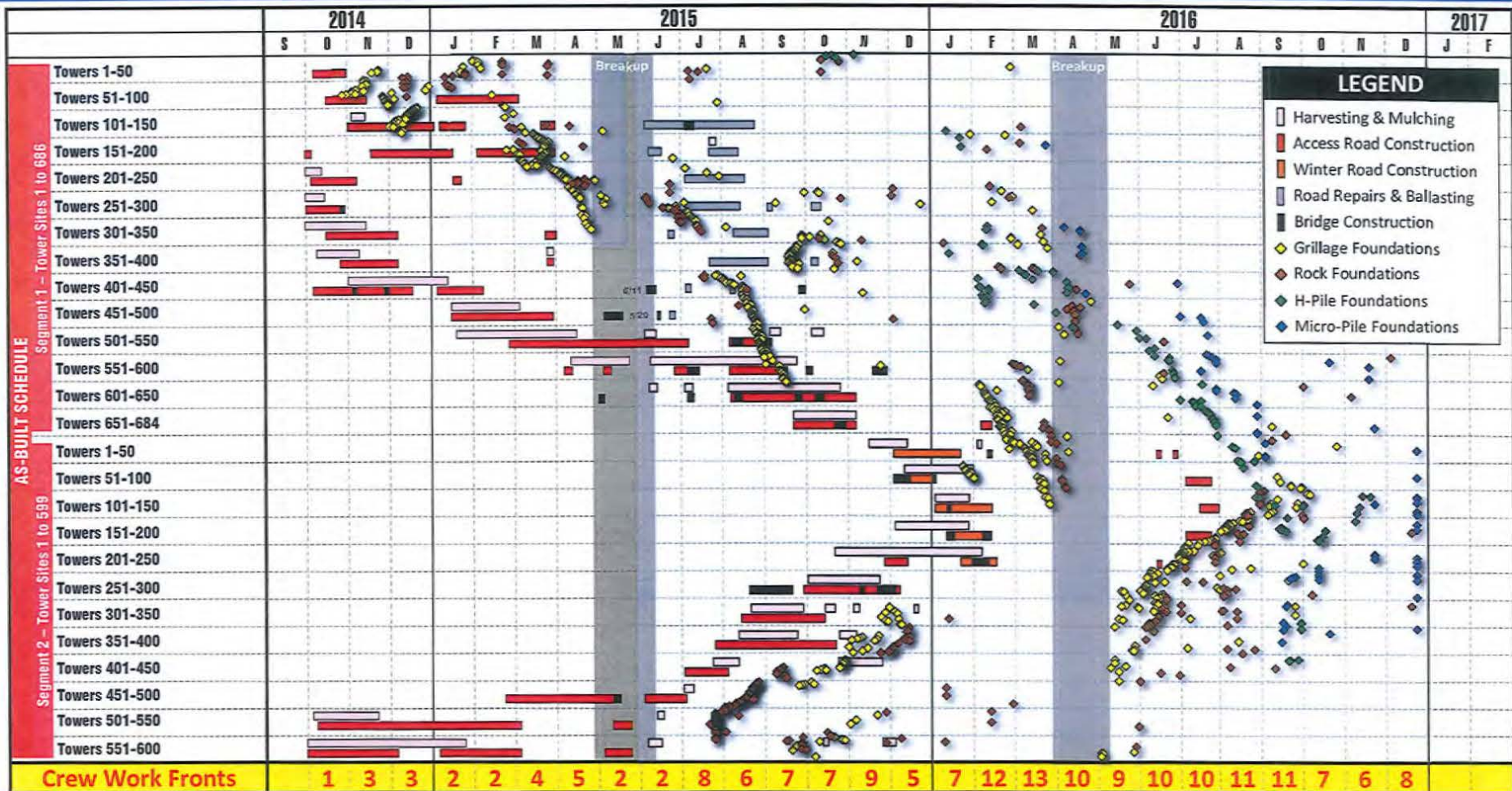
- **Schedule Summary:**
  - ✓ Overview of Project Delays
  - ✓ Critical Path Through Work Front 1
- **Delay & Impact Causation:**
  - ✓ Summary of Impacts Identified
  - ✓ ROW Clearing and Access Road Construction Delays
  - ✓ Access Road Deficiencies
  - ✓ Geo-Program / Foundation Selection Process
- **Cost Impacts:**
  - ✓ Time Related General Conditions
  - ✓ Other Costs:
    - Mechanics
    - Survey
    - Camp Space Impact Costs
- **Conclusions**



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# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 87

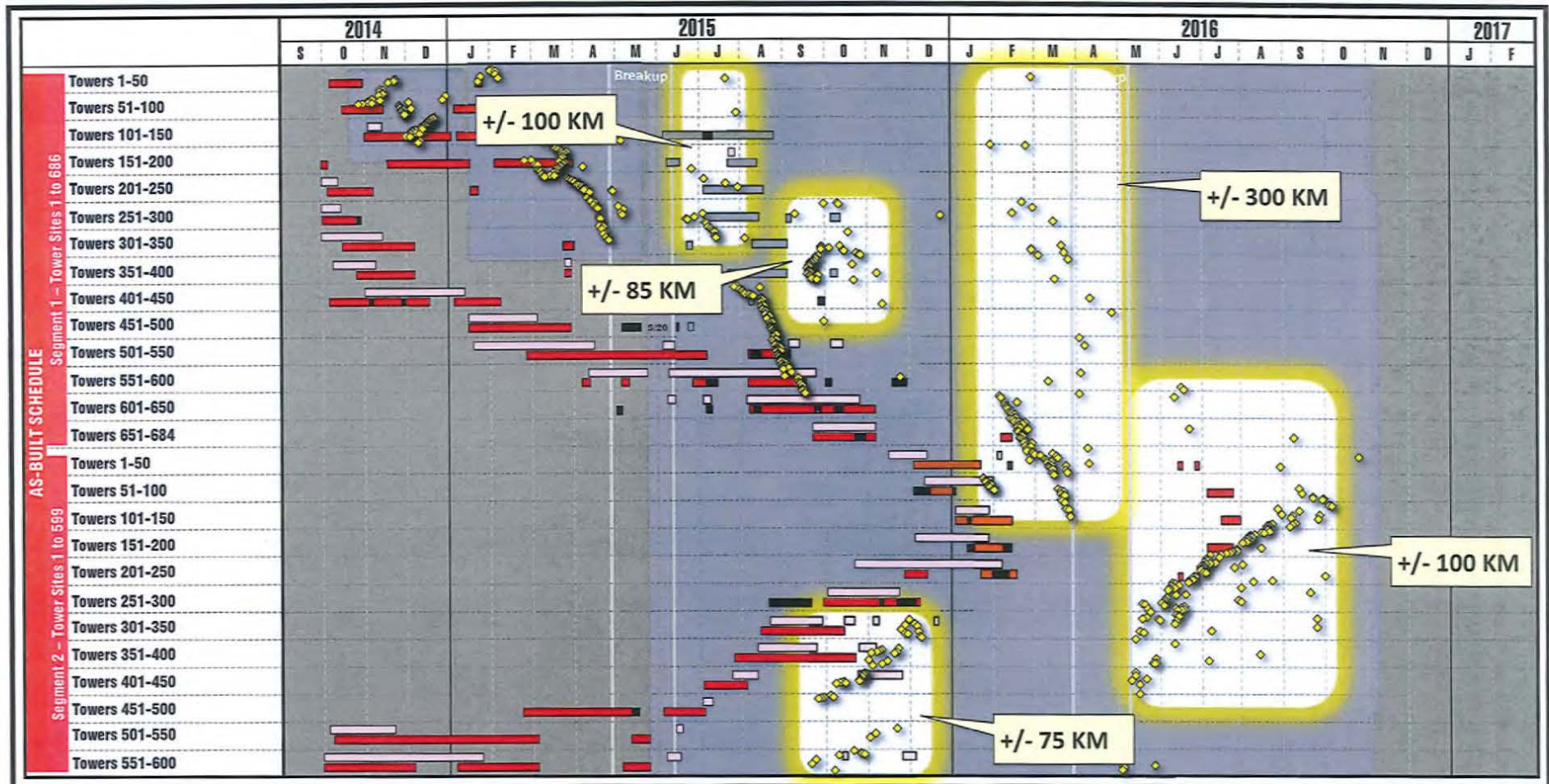




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# ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

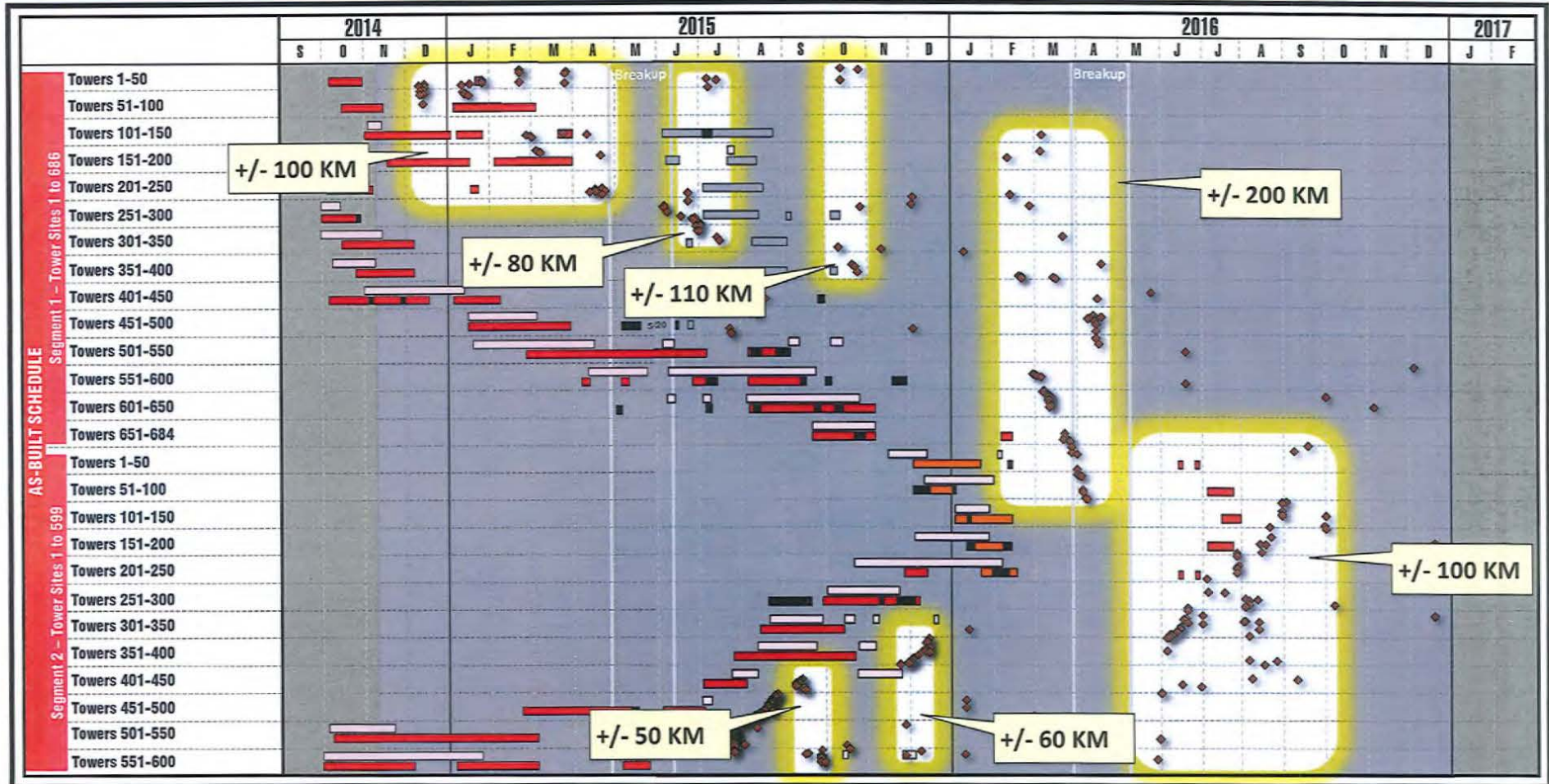
SLIDE 88





ROW Harvesting & Mulching, Access Road & Bridge Construction (with Foundations) – WF1

SLIDE 89

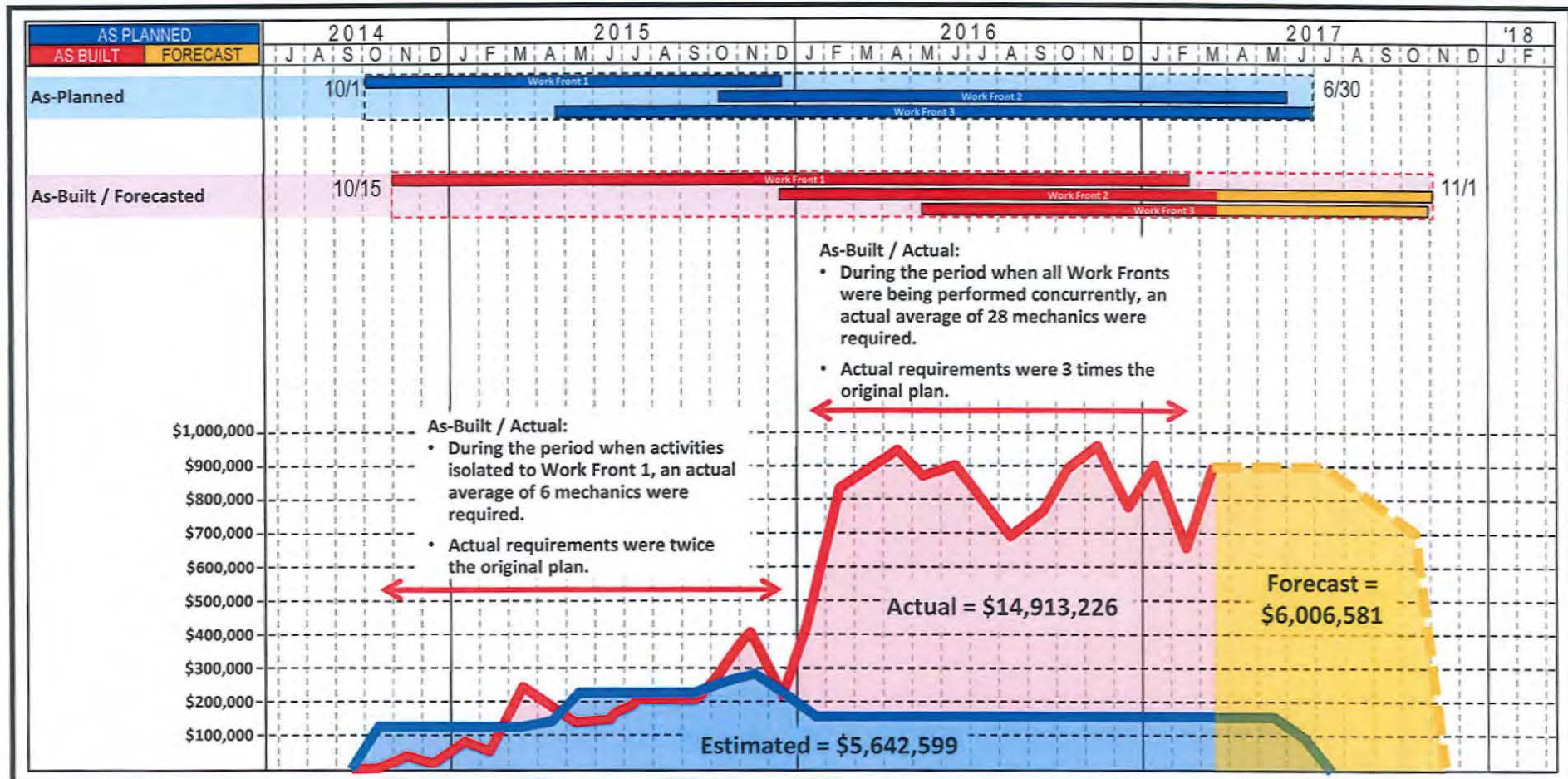






# Mechanic Costs

SLIDE 91



## Mechanic Costs

Slide 92

- **Work Front 1:**

- ✓ **Delay Costs:**

|   |                    |
|---|--------------------|
| Actual average daily costs (October 2014 to December 2015)  | \$5,828.35         |
| Overall delay days (December 18, 2015 to February 19, 2017) | <u>429</u>         |
| <b>Delay Costs</b>  | <b>\$2,500,362</b> |

- ✓ **Increased Performance Costs** (due to out-of-sequence work):

|   |                     |
|---|---------------------|
| Actual Costs Incurred (October 2014 to December 2015) | \$2,546,990         |
| Estimated Costs                                       | <u>-\$1,864,952</u> |
| <b>Increased Performance Costs</b>                    | <b>\$682,038</b>    |

- **Work Fronts 2 & 3:**

- ✓ **Increased Performance Costs** (due to acceleration):

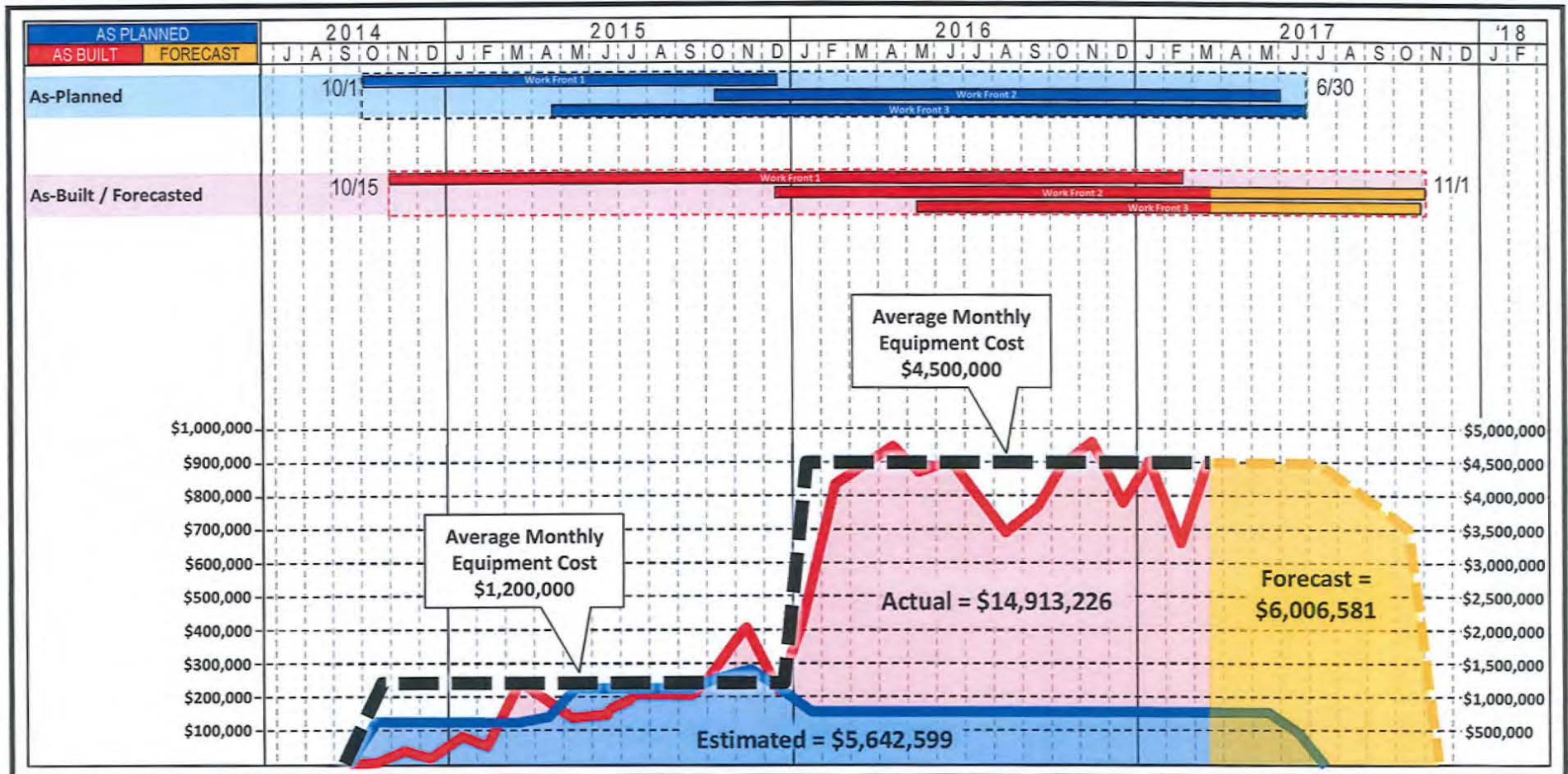
|   |                     |
|---|---------------------|
| Actual Costs Incurred (actual costs after DEC 2015, less WF1 delay costs above) | \$9,865,873         |
| Forecasted Costs (based on trailing 6-months)                                   | +\$6,006,581        |
| Estimated Costs   | <u>-\$3,777,647</u> |
| <b>Increased Performance Costs</b>  | <b>\$12,094,807</b> |

*Majority of cost overrun occurs in acceleration period (staffing substantially increased for work in Newfoundland to mitigate prior delays and accelerate completion)*



# Mechanic Costs

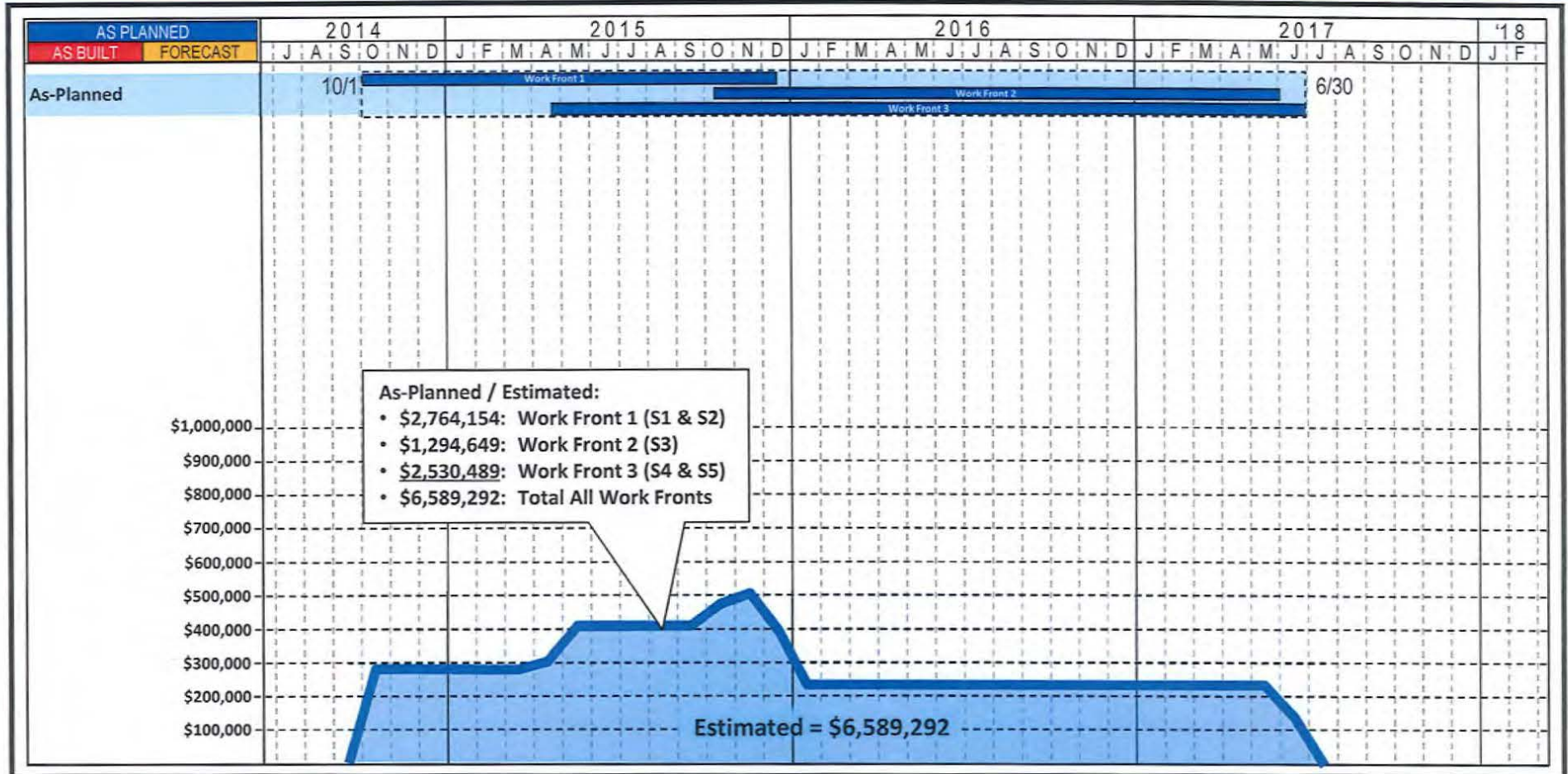
SLIDE 93



# Survey Costs

Slide 94

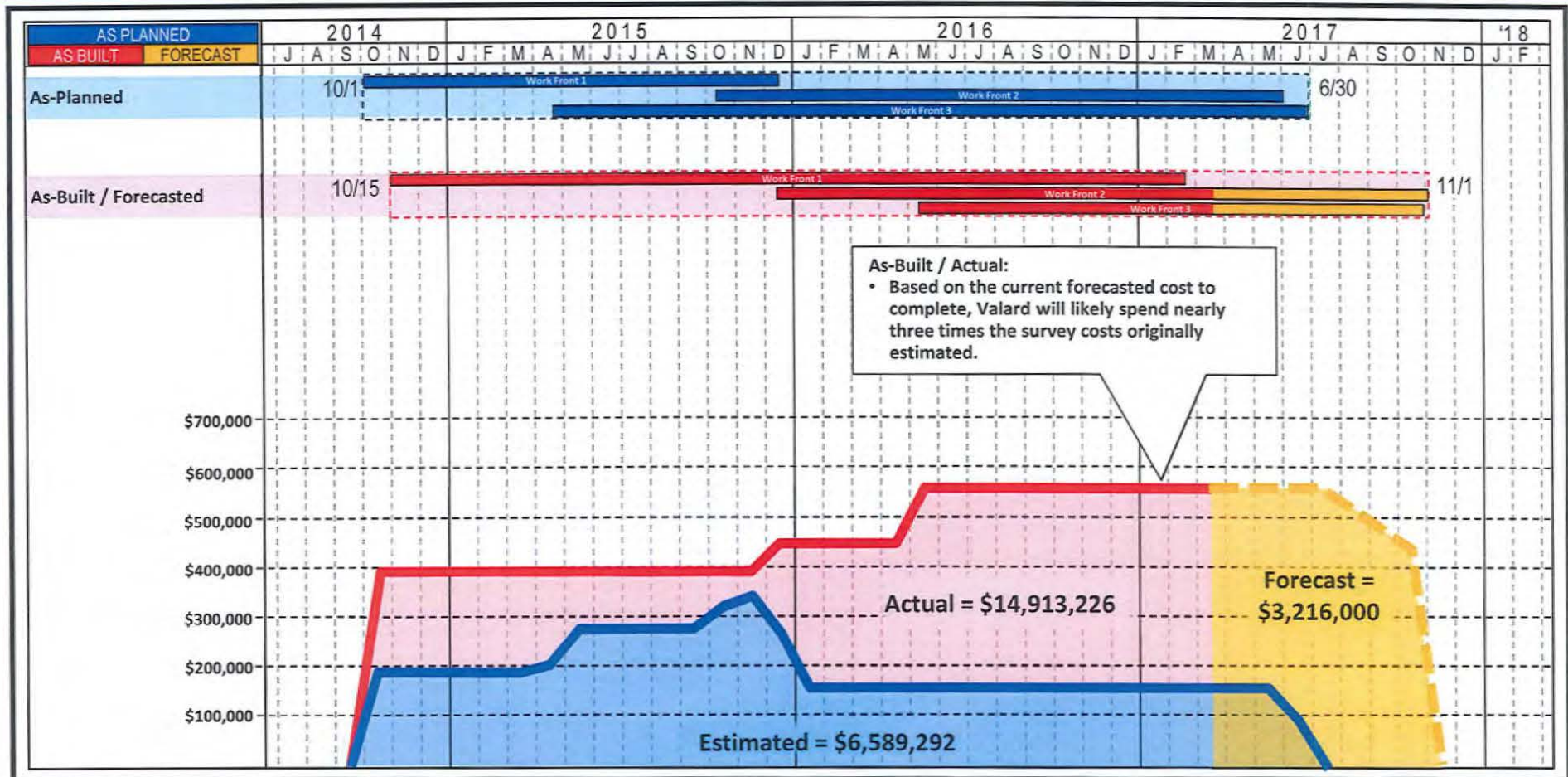
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## Survey Costs

SLIDE 95



## Survey Costs

SLIDE 96

- **Work Front 1:**

- ✓ **Delay Costs:**

|  |                    |
|--|--------------------|
| Actual average daily costs (October 2014 to December 2015) | \$13,498           |
| Overall delay days (October 21, 2015 to December 17, 2016) | <u>423</u>         |
| <b>Delay Costs</b>   | <b>\$5,709,654</b> |

- ✓ **Increased Performance Costs** (due to out-of-sequence work):

|   |                     |
|---|---------------------|
| Actual Costs Incurred (October 2014 to December 2015) | \$5,898,620         |
| Estimated Costs                                       | <u>-\$2,764,154</u> |
| <b>Increased Performance Costs</b>                    | <b>\$3,134,466</b>  |

- **Work Fronts 2 & 3:**

- ✓ **Increased Performance Costs** (due to acceleration):

|   |                     |
|---|---------------------|
| Actual costs incurred (actual costs after DEC 2015, less WF1 delay costs above) | \$2,530,882         |
| Forecasted costs (based on trailing 6-months)                                   | +\$3,216,000        |
| Estimated costs   | <u>-\$3,825,137</u> |
| <b>Increased Performance Costs</b>  | <b>\$1,921,745</b>  |

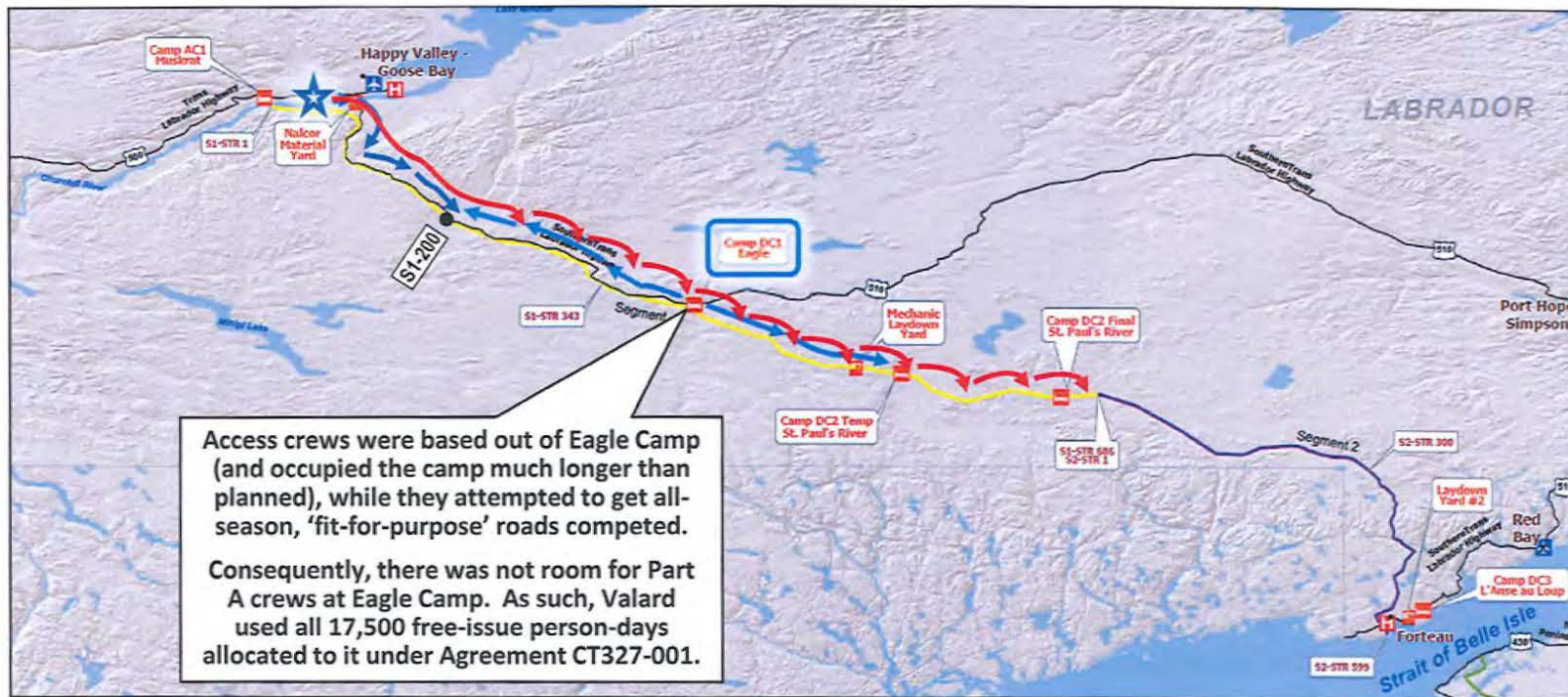
*Majority of cost overrun occurs in delay period (survey work in Labrador much more costly due to access road delays, scattered nature of work & tower location changes).*



## Work Front 1 – Camp Space Impacts

Slide 97

- With the exception of the construction of the first 70 km of transmission line extending from Muskrat Falls heading south, Valard was responsible for camp facilities (for Valard's work scope and for Nalcor's other contractors)
- For Part A of the work, Nalcor agreed to free-issue up to 17,500 person-days of accommodations at its Muskrat Falls Complex to enable the Work to be completed.



## Work Front 1 – Camp Space Impacts

Slide 98

- **LOA Camp Cost Dispute:**

- ✓ Due to the delays in ROW and access road construction, Valard requested an additional 5,151 free-issue camp days at Nalcor's Muskrat Falls Camp.
- ✓ Nalcor rejected this request and now apparently seeks to backcharge Valard for an additional 5,845 free-issue camp days at its Muskrat Falls Camp (\$1,461,250).
- ✓ Valard has an independent claim disputing this backcharge.

- **Added Direct Costs:**

- ✓ Valard incurred additional direct costs associated with longer travel times from the Muskrat Camp to worksites located south of S1-200.
- ✓ Approximately 93% of the foundations completed after the point in time that Valard exceeded the original free-issue camp day allowance (April 2015) were further south than S1-200 (51% of these foundations were further south than Eagle DC1 camp - extending as far south as the end of Segment 1).
- ✓ The added travel time from the Muskrat camp to S1-200 is conservatively estimated to be 1-hour each way.
- ✓ Assuming 93% of the workers staying at the Muskrat camp were working beyond S1-200, Valard estimates these workers incurred added travel time totaling 1-hour each way daily.
- ✓ Based on an average foundation craftsmen rate of \$121.71, the unanticipated costs associated with the added travel time totals \$1,323,195.



## Topics of Discussion

SLIDE 99

- **Schedule Summary:**
  - ✓ Overview of Project Delays
  - ✓ Critical Path Through Work Front 1
- **Delay & Impact Causation:**
  - ✓ Summary of Impacts Identified
  - ✓ ROW Clearing and Access Road Construction Delays
  - ✓ Access Road Deficiencies
  - ✓ Geo-Program / Foundation Selection Process
- **Cost Impacts:**
  - ✓ Time Related General Conditions
  - ✓ Other Costs:
    - Mechanics
    - Survey
    - Camp Space Impact Costs
- **Conclusions**

## Conclusions

Slide 100

- The vast majority of the delay on the Project to date was incurred in Work Front 1 and is attributable to the delayed predecessor clearing and access road construction:
  - ✓ 307 days of delay in completion of clearing and access road construction;
  - ✓ 48 days additional delay in critical path foundation work due to added spring breakup;
  - ✓ 107 days additional delay due to critical path stringing work suspension;
  - ✓ 33 day *delay reduction* in completion of critical path stringing work; and,
  - ✓ 306 day further *delay reduction* in completion of Work Fronts 2 and 3.
- Valard was not able to manage the clearing and access road construction as Nalcor overrode Valard decisions; did not communicate financial terms of roadbuilding contracts; and directed contractors without Valard involvement.
- Not only were the access roads constructed much later than planned, but significant access road deficiencies have persisted throughout construction.
- The extensive changes in foundation types have resulted in substantial financial losses to Valard.
- The stand-alone costs associated with the forecasted delay in overall project completion totals \$31,867,701.
- Our detailed analysis of the time-related field general conditions losses indicates that \$56,716,043 of the loss is attributable to delay, and \$23,998,757 is attributable to subsequent acceleration efforts.
- Additional losses totaling \$15,277,207 have been identified in costs associated with Mechanics.
- Additional losses totaling \$10,765,865 have been identified in costs associated with Survey.
- Additional losses totaling \$1,323,195 have been identified in costs associated with Camp occupancy impacts.



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## May 4, 2017 Settlement Meeting Presentation Materials

### Lower Churchill Project

Contract Between Island Link Limited Partnership and Valard Construction LP  
Newfoundland and Labrador, Canada



McLean & Armstrong LLP

Privileged & Confidential



**Laura Dickeson**

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**Subject:** CT0327001 Amending Agreement Number 1 - Interim Payment #1  
**Attachments:** CT0327 Amending Agreement No 1 - Interim Payment #1.pdf

**From:** [RosannTaylor@lowerchurchillproject.ca](mailto:RosannTaylor@lowerchurchillproject.ca) <[RosannTaylor@lowerchurchillproject.ca](mailto:RosannTaylor@lowerchurchillproject.ca)>

**Sent:** Thursday, June 29, 2017 5:12 AM

**To:** BJ Ducey <[BDucey@QuantaServices.com](mailto:BDucey@QuantaServices.com)>; Chris Armstrong <[chrisarmstrong@mcleanarmstrong.com](mailto:chrisarmstrong@mcleanarmstrong.com)>; Pandiak, Joe <[JPandiak@valard.com](mailto:JPandiak@valard.com)>

**Cc:** [PeteJWhelan@lowerchurchillproject.ca](mailto:PeteJWhelan@lowerchurchillproject.ca); Aidan J. Meade <[aidan.meade@mcinnescooper.com](mailto:aidan.meade@mcinnescooper.com)>; [GregFleming@lowerchurchillproject.ca](mailto:GregFleming@lowerchurchillproject.ca)

**Subject:** CT0327001 Amending Agreement Number 1 - Interim Payment #1

Good morning gentlemen:

Please find attached the fully executed Amending Agreement Number 1 for your records.

**Rosann Taylor**

Senior Contracts Coordinator

PROJECT DELIVERY TEAM

Lower Churchill Project

t. 7097786666

e. [RosannTaylor@lowerchurchillproject.ca](mailto:RosannTaylor@lowerchurchillproject.ca)

w. [nalcenergy.com](http://nalcenergy.com)



**AMENDING AGREEMENT NUMBER 1**

**THIS** Amending Agreement #1 is made as of the 27th day of June, 2017.

**BETWEEN:**

**LABRADOR-ISLAND LINK LIMITED PARTNERSHIP**, a limited partnership formed pursuant to the laws of the Province of Newfoundland and Labrador, Canada, represented by its general partner, Labrador-Island Link General Partner Corporation (hereinafter referred to as "**Company**");

- and -

**VALARD CONSTRUCTION LP**, a limited partnership formed under the laws of the Province of Alberta, represented by its general partner, Valard Construction 2008 Ltd. (hereinafter referred to as "**Contractor**").

**WHEREAS** an Agreement Number CT0327 entitled Civil Works Agreement – Construction of 350kV HVdc Transmission Line (hereinafter called the "CT0327") dated 8 August 2014, was entered into between Company and Contractor;

**AND WHEREAS** Company has considered the value of cable installation work performed to date and is prepared to provide an advance payment for such work;

**NOW THEREFORE THIS AMENDING AGREEMENT #1 WITNESSES** that, in consideration of the premises and mutual covenants and agreements hereinafter set forth and contained, the Parties agree as follows:

1. Company shall pay Contractor an advance lump sum payment in the amount of Forty Million Canadian Dollars (\$40,000,000 CDN) (the "Advance Amount") on or before June 30, 2017. Contractor shall issue to Company an invoice on or before June 29, 2017 for the Advance Amount.
2. Company shall recover all of the Advance Amount from Payment Certificates in equal amounts of Ten Million Canadian Dollars (\$10,000,000 CDN) commencing with the Payment Certificate for the month on August, 2017, and continuing for each month thereafter until all of the Advance Amount is fully repaid.
3. Contractor shall be in default, and immediately repay all of the Advance Amount (or the outstanding balance thereof, as the case may be) to Company, upon any of the following events:
  - (a) Contractor's failure to repay the Advance Amount in accordance with paragraph 2;



- (b) any of the events described in Articles 24.1(e), (f), (g), (i), (j), (k) and (l) of CT0327.
4. Notwithstanding the provisions in Articles 24.2 and 24.3 of CT0327, Contractor shall have no right to rectify or cure any default under paragraph 3, and Company shall have the right to give Notice of the default immediately or at any time after the default to Contractor and any guarantor or surety, and the right, at Company's election, to exercise any or all of the following remedies at any time without further notice:
- (a) terminate, in whole or in part, the rights or obligations of Contractor under CT0327 and this Amending Agreement #1;
- (b) call upon and receive payment from the securities provided by Contractor in accordance with Article 7 of CT0327.
5. In the event Company exercises the remedies in paragraphs 4(a) and (b), such exercise shall be deemed to be a termination of CT0327 for the purposes of Article 24.13 of CT0327.
6. For greater certainty, during the currency of this Amending Agreement #1, Article 24 of CT0327 is amended by the addition of the default provisions in paragraphs 3 to 5 inclusive but otherwise remains unchanged and of full force and effect. In the event of any inconsistency between paragraphs 3 to 5 inclusive and Article 24 of CT0327, the provisions of paragraphs 3 to 5 shall prevail.
7. This Amending Agreement #1 shall be effective from the date hereof and, unless subsequently amended.
8. Unless otherwise defined, all capitalized terms and expressions used herein shall have the meaning respectively ascribed thereto in CT0327. Unless otherwise stated, references to a paragraph number are references to that numbered paragraph in this Amending Agreement #1.
9. This Amending Agreement #1 is supplementary to CT0327 and is read with and construed in accordance with CT0327, as the case may be, as if this Amending Agreement #1 and CT0327, as amended, constitute one (1) agreement.
10. Except as this Amending Agreement #1 otherwise provides, CT0327 is in all respects ratified and confirmed and all terms, provisions and covenants thereof shall remain in full force and effect.
11. This Amending Agreement #1 shall be binding upon and enure to the benefit of each of the Parties and their respective successors and assigns.




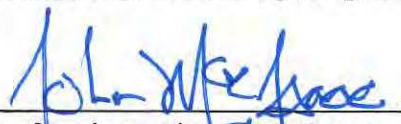
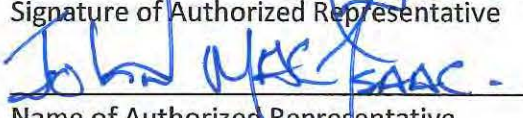


12. Notwithstanding execution of this Amending Agreement #1 by the Parties, this Amending Agreement #1 shall be subject to and conditional upon all written consents from parties to the LCP financing agreements that are required by the terms of those agreements.
13. This Amending Agreement #1 may be executed in any number of counterparts and any Party may transmit by facsimile or email in portable document format to the other Party a copy of this Amending Agreement #1 executed by that Party, the receipt of which shall have the same force and effect as if the original thereof had in fact been delivered at the same time. Any original, facsimile copy, portable document format or photocopy of this Amending Agreement #1 bearing one or more signatures on behalf of a Party shall be admissible against that Party in any legal proceeding as evidence of the execution and delivery of this Amending Agreement #1 by that Party and without the requirement to produce an executed original of this Amending Agreement #1.
14. Each person signing this Amending Agreement #1 as an authorized representative of a Party hereby represents and warrants that he or she is duly authorized to sign this Amending Agreement #1 for that Party and that this Amending Agreement #1, upon having been so executed, shall be binding on that Party in accordance with its terms.


**IN WITNESS WHEREOF** the Parties hereto have executed and delivered this Amending Agreement #1 as of the day and year first above written.

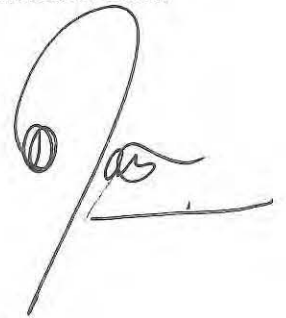
**For and on behalf of Labrador-Island Link Limited Partnership, represented by its general partner Labrador-Island Link General Partner Corporation**

  
 Signature of Authorized Representative  
 James Meaney  
 Name of Authorized Representative

  
 Signature of Authorized Representative  
  
 Name of Authorized Representative

**For and on behalf of Valard Construction LP, by its general partner Valard Construction 2008 Ltd.**

  
 Signature of Authorized Representative  
 R. Buchanan, CFO.  
 Name of Authorized Representative



Execution Page to an Amending Agreement #1 between Labrador-Island Link Limited Partnership and Valard Construction LP dated as of June 27, 2017.



**AMENDING AGREEMENT NUMBER 2**

**THIS** Amending Agreement is made as of the 30<sup>th</sup> day of June, 2017.

**BETWEEN:**

**LABRADOR-ISLAND LINK LIMITED PARTNERSHIP**, a limited partnership formed pursuant to the laws of the Province of Newfoundland and Labrador, Canada, represented by its general partner, Labrador-Island Link General Partner Corporation (hereinafter referred to as "**Company**");

- and -

**VALARD CONSTRUCTION LP**, a limited partnership formed under the laws of the Province of Alberta, represented by its general partner, Valard Construction 2008 Ltd. (hereinafter referred to as "**Contractor**").

**WHEREAS** an Agreement Number CT0327 entitled Civil Works Agreement – Construction of 350kV HVdc Transmission Line (hereinafter called the "CT0327") dated 8 August 2014, was entered into between Company and Contractor;

**AND WHEREAS** the Parties have resolved various commercial and technical issues that have arisen between them during the performance of CT0327;

**AND WHEREAS** the Parties wish to amend CT0327 as hereinafter set forth in this Amending Agreement #2;

**NOW THEREFORE THIS AMENDING AGREEMENT WITNESSES** that, in consideration of the premises and mutual covenants and agreements hereinafter set forth and contained, the Parties hereto agree as follows:

**Contract Price**

1. Subject to any Change Order issued after June 30, 2017, the Contract Price for CT0327 is One Billion, Seventy-Eight Million Dollars (\$1,078,000,000) (the "Contract Price"), inclusive of all direct and in-direct costs of performing the Work, plus applicable value added taxes. All payments to Contractor made by Company for invoices issued by Contractor in accordance with the terms and conditions of CT0327 up to and including June 30, 2017, form part of and are included in the Contract Price. Company shall pay the balance of the Contract Price as described in paragraphs 3 to 5 inclusive.



2. Article 1.2(x) of CT0327 is deleted in its entirety and replaced with the following:
  - (x) **"Contract Price"** means the sum of money specified in the Agreement, as the same may be adjusted from time to time by agreement between the Parties or in accordance with the terms of the Agreement, being the consideration for the satisfactory performance of the Work by Contractor in accordance with the Agreement and as specified in Amending Agreement #2.
3. For greater certainty, the Contract Price set out in paragraph 1 includes:
  - (a) compensation to Contractor for Part A of the Work as that Part is described in Exhibit 1- Scope of Work ("Scope of Work ") and for Part B of the Work as is further described in the Scope of Work as amended in this Amending Agreement #2;
  - (b) the lump sum payments described in paragraph 5 below;
  - (c) fuel cost escalation up to Final Completion;
  - (d) labour cost escalation up to Final Completion;
  - (e) compensation of \$26,627,188 for re-stringing during the replacement of defective cable;
  - (f) compensation of \$9,000,000 for stringing suspension costs during the period of June 3, 2016 to September 20, 2016, inclusive, as validated by Company under Payment Certificate CT0327001-0054;
  - (g) all Claims, Changes, Change Orders, costs and expenses, whether known or unknown arising from Contractor's performance of the Work prior to and including June 30, 2017, which are or could be the subject of Change Requests and Change Orders;
  - (h) all back charges for costs which Company has or could have incurred, whether known or unknown, prior to and including June 30, 2017; and
  - (i) costs incurred by Contractor for any time lost by Contractor due to and/or associated with materials missing from Company free issued materials up to Final Completion.
4. Commencing on July 1, 2017, the remaining balance of the Work shall be paid on a progress payment and Payment Milestone basis as described in Attachment A to this Amending Agreement #2.
5. In addition to the progress payments and Payment Milestones, Contractor shall issue an invoice to Company for the following lump sum amounts and Company shall pay Contractor the lump sum amounts in accordance with the dates shown below:
  - (a) Forty Million (\$40,000,000) on or before June 30, 2017, in accordance with the terms of Amending Agreement #1; and
  - (b) Forty Million (\$40,000,000) on or before July 31, 2017.

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6. All invoicing and payment procedures set out in Article 12 shall apply to progress payments and Payment Milestones under this Amending Agreement #2.
7. Notwithstanding the amendment to the Contract Price in paragraph 1:
  - (a) Contractor shall not be required to increase the value of the performance security provided by Contractor prior to June 30, 2017 in satisfaction of Article 7 of CT0327; and
  - (b) Company shall not be required to increase the value of the insurance obtained by Company that is in place as of June 30, 2017, in satisfaction of Article 20 of CT0327.

#### **Ground Conditions**

8. Articles 23.1 and 23.6 are deleted and replaced as follows:
  - 23.1 If, during the course of the Work, Contractor encounters geological or geotechnical conditions materially different from conditions experienced prior to July 1, 2017, including ground water, which it believes may impact upon its ability to complete the Work by the dates specified in Exhibit 9 – Schedule, Contractor shall immediately provide notice in writing to Engineer, which notice shall contain such information as is reasonably available to Contractor at that time relating to the nature of the unforeseen geological or geotechnical conditions.
  - 23.6 To the extent geological or geotechnical conditions encountered after June 30, 2017 materially differ from conditions experienced prior to July 1, 2017, this may constitute a Change, and the provisions of Article 14 shall apply.
9. Except for conditions or circumstances that are materially different from those experienced by Contractor prior to July 1, 2017 Contractor shall be responsible for all costs and any delays to the performance of the Work associated with:
  - (a) geotechnical investigations;
  - (b) dewatering;
  - (c) abandoned foundation sites;
  - (d) over excavation at foundations sites;
  - (e) backfill;
  - (f) watercourse diversions;
  - (g) advanced test pitting;
  - (h) rock removal and site preparation;
  - (i) Amec costs for foundation selection;
  - (j) Survey re-staking costs; and
  - (k) Tower box clearing and grubbing and debris management.

#### **Substantial and Final Completion**

10. Subparagraph (f) is deleted from Article 25.1 and subparagraph (j) is added to Article 25.6 as follows:

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- (j) Contractor has removed all Contractor's Item's, Contractor's Personnel, supplies, equipment, materials, rubbish, and temporary facilities, except those reasonably required for completion of outstanding Punch List items, from the Worksite so that the Worksite is neat, clean and safe.
11. As the Work progresses Engineer shall prepare a list of Defects each one of which must be rectified, to the standard that satisfies the Technical Requirements, so that the Work is ready for use for its intended purpose; such list shall be known as "Punch List A". For greater certainty, Contractor shall rectify all items on Punch List A to achieve Substantial Completion.
12. Subparagraph (c) deleted from Article 25.1 and replaced with the following:
- (c) Engineer has prepared and delivered an updated Punch List to Contractor, which includes any items not necessary for the Work to be used for its intended purposes, with respect to which Engineer has notified Contractor are incomplete or have Defects, such list shall be known as "Punch List B" and all references to "Punch List" in Articles 25.4 and 25.6 shall be deemed to be a reference to Punch List B;
13. Contractor shall commit sufficient resources for the timely rectification of all Punch List A and Punch List B items. Contractor shall submit to Engineer a schedule showing the activities and resources required to rectify Punch List A items by the Substantial Completion Milestone date. Within ten (10) Business Days after the date for Substantial Completion shown on the Substantial Completion Certificate Contractor shall submit to Engineer a schedule for showing the activities and resources required to rectify Punch List B items.
14. Company and Contractor shall, whenever possible, jointly perform sag tests.
15. Within seven (7) days following completion of stringing on the final division for the Work, in accordance with the terms of CT0327, Company shall deliver to Contractor the final Punch List A after completing any tests, checks or studies on the Work that may be necessary to ensure the Work is ready for use for its intended purpose. If Company delays the completion of such tests, checks and studies beyond the expiry of such seven (7) day period, and such failure impacts Contractor's ability to achieve Substantial Completion by the scheduled Substantial Completion date, then Contractor shall be entitled to an extension of time to achieve Substantial Completion equal to the length of the delay in excess of such expiry, but not to any additional compensation.

#### Gantries

16. Notwithstanding the terms of Article 25.1(a) and for greater certainty, Contractor shall not be required to tie into gantries at the following sites ("gantry locations") to achieve Substantial Completion:
- (a) Muskrat Fall

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- (b) Shoal Cove
  - (c) Forteau Point
  - (d) Soldiers Pond
17. Company shall have the option to issue a Change Order to remove gantry tie in from Contractor's scope of Work at any one or more of the gantry locations. The provisions of Article 14.12 shall apply to any such reduction in the scope of Work.
18. If Company requires Contractor to perform Work to tie in at any one or more gantry locations, then Company shall pay Contractor the reasonable mobilization and demobilization costs for such work in accordance with Article 14.

**Amendments to Exhibit 1 – Scope of Work**

19. Exhibit 1 – Scope of Work, Section 2.5 Part B: ROW Clearing and Access Works is amended by the deletion of the following sections in their entirety:
- (a) 2.5.1 (Work Includes), with the exception of the last 5 bullet points;
  - (b) 2.5.5 (Access and Clearing Plan);
  - (c) 2.5.8 (ROW Clearing), including subsections 2.5.8.1, 2.5.8.2, 2.5.8.3, 2.5.8.4, and 2.5.8.5;
  - (d) 2.5.9 (Access Road Construction), including subsections 2.5.9.1, 2.5.9.2, and 2.5.9.3;
  - (e) 2.5.18 (Special Requirements), including subsections 2.5.18.1, 2.5.18.2, 2.5.18.3, and 2.5.18.4, but not including 2.5.18.5 (which is revised pursuant to paragraph 21 below); and
  - (f) 2.5.19 (Rehabilitation and Reclamation), including 2.5.19.2 and 2.5.19.3, but not including 2.5.19.1.
20. Exhibit 1 – Scope of Work, Section 2.5.10 Road Maintenance is deleted in its entirety and replaced with the following:
- To allow for the safe transport and evacuation of work crews, and as may be required to address environmental concerns, Contractor shall maintain constructed roads in a fit-for-purpose condition, as determined by Contractor at its sole discretion but in compliance with any Applicable Laws, during the execution of the Work. Road clearing may include snow clearing, sanding, grading, culvert repair, capping, etc., with the need varying depending on the time of year and the nature of the road construction material and traffic requirements.
21. Exhibit 1 – Scope of Work, Section 2.5.18.5 Existing Trails and Roads is deleted in its entirety and replaced with the following:

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Existing trails, roads or cut-lines will be used whenever possible, and the development of new access will be minimized, to the extent practical, to avoid disturbance to riparian vegetation and, where practical, access roads and trails will be located to avoid riparian shoreline.

Contractor shall repair at its expense any terrain disturbance to existing snowmobile or ski trails resulting from Contractor's activities, to Company's Approval. All displaced signs on, and damage to, roads not constructed by the LCP shall be restored.

22. Notwithstanding anything to the contrary in the Exhibit 1 – Scope of Work, the responsibility for rehabilitation and/or reclamation referenced in the Scope of Work document ILK-SN-CD-76200-TL-SP-0012-01 is allocated as follows:
- (a) Contractor shall be responsible for Part A work; and
  - (b) Company shall be responsible for Part B work.

#### **Amendments to Exhibit 2 - Compensation**

23. Except for any Changes to the Scope of Work after June 30, 2017, the following portions of Exhibit 2 are not applicable:
- (a) Appendix A - Schedule of Price Breakdown;
  - (b) Attachment 1 – Basis of Payment; and
  - (c) Appendix C – Attachment 1.

#### **Amendments to Exhibit 9 - Schedule**

24. Exhibit 9 in CT0327 is deleted in its entirety and replaced with the Schedule attached to this Amending Agreement #2 as Attachment B.

#### **Liquidated Damages**

25. Section 10 of Exhibit 2 of CT0327 is deleted in its entirety and replaced by the following:

If Contractor fails to achieve Substantial Completion of the Work in accordance with Article 25.1 of the Agreement by 11:59 pm (Newfoundland time) on November 15, 2017, Contractor shall pay Company liquidated damages as follows:

- (a) If Contractor achieves Substantial Completion, on or before 11:59 pm (Newfoundland time) on December 15, 2017, no liquidated damages will apply;
- (b) If Contractor achieves Substantial Completion after December 15, 2017, Contractor shall pay Company Two Million Dollars (\$2,000,000.00) per day for each day, including any part thereof, of the delay in achieving Substantial Completion for a maximum of thirty (30) days;



- (c) No liquidated damages will accrue during the period December 22, 2017 through December 28, 2017, inclusive, and those days shall not be included in the calculation of the thirty (30) day maximum set out in sub-paragraph (b) above; and
  - (d) December 15, 2017 is the Milestone for the purposes of Article 26.1, subject to an extension of time in accordance with the terms and conditions of CT0327.
26. The last sentence of Article 26.1 of CT0327 is deleted and replaced by the following:
- Contractor's limit of liability for liquidated damages payable by Contractor to Company pursuant to this Article 26.1 shall be a maximum of Sixty Million Dollars (\$60,000,000.00). Subject to Company's rights of termination of this Agreement in accordance with **Article 24**, liquidated damages represent Company's sole and exclusive remedy for delay by Contractor in achieving Substantial Completion beyond December 15, 2017.
- Access and Clearing (Part B)**
27. Commencing on July 1, 2017, and continuing to Substantial Completion, Contractor shall assume all responsibility of Contractor and Engineer and perform the work described in Section 2.5 in Document ILK-SN-CD-6200-TL-SP-0012-01 in Exhibit 1 ("Part B") for access to any location at which Contractor performs Work.
28. Section 11 of Exhibit 2 to the Agreement is deleted in its entirety and replaced with the following:
- 11.0 Right of Way Clearing and Access**
- 11.1 Compensation for Performing the Work for Part B is included in the Contract Price set out in paragraph 1 of Amending Agreement Number 2.
29. Contractor shall be solely responsible to retain any Subcontractor to provide services for road maintenance as Contractor may require.
30. Until the scheduled Substantial Completion date, Company shall make available, at the locations identified in Attachment F to this Amending Agreement #2, to Contractor free of charge the ROW Assets listed in Attachment F. Contractor shall be responsible to transport any such assets it requires, at its own cost, from such locations to the Work areas at Site.
31. Notwithstanding Article 27.5 of CT0327, Contractor shall assume the risk of and undertake the care and control of access to any location at which Contractor performs Work until Substantial Completion is achieved in accordance with Article 25 of CT0327. Upon Substantial Completion being achieved, Company shall accept all Part B access roads on an "as is" basis and assume all risks, care and control of such roads. Notwithstanding the

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foregoing, Contractor shall be responsible for any road maintenance necessary for access to any location for Contractor to rectify Punch List B items.

32. Company is responsible to obtain and administer all public and private permits directly related to the ROW Clearing and Access Work to be completed under the Road Maintenance Contracts. Company will provide copies of all public and private permits that are directly related to the ROW Clearing and Access Work.
33. In the event Company incurs costs for road maintenance requested by Contractor after June 30, 2017, and prior to Contractor's retention of road maintenance services contemplated by paragraph 29 of this Amending Agreement #2, Company is entitled to recover any such costs from Contractor by deducting the costs from Contractor's invoices.

#### **Materials Management**

34. Contractor shall follow the materials management process set out in Attachment C, which process is supplemental to and not in replacement of the provisions of Section 2.4.8 of the Scope of Work document ILK-SN-CD-6200-TL-SP-0012-01 in Exhibit 1 ("Section 2.4.8") of CT0327.
35. Provided Contractor delivers the notices and lists specified in Section 2.4.8 that lattice tower steel materials are missing, mis-manufactured, or damaged, if the missing, mis-manufactured or damaged lattice tower steel materials results in a delay of more than four (4) days to the critical path on the schedule for the performance of the Work then Contractor shall be entitled to an extension of time to achieve Substantial Completion equal to the length of the delay in excess of four (4) days but not to any additional compensation. Notwithstanding the foregoing, Contractor is not entitled to an extension of time if Contractor loses materials following delivery from Company and is delayed in the performance of the Work as a result of such loss.
36. In all cases where there are missing or damaged materials, Contractor shall take steps to mitigate the impact on the schedule for the performance of the Work. If Contractor performs work on mis-manufactured materials then such work shall be at Contractor's cost.
37. Following the return of surplus material to the marshalling yards in Labrador and island of Newfoundland as required by Section 2.4.8, Company and Contractor shall perform an accounting of materials installed and materials returned against materials delivered by Company to Contractor, and Company shall not have any claim against Contractor for any shortfall in materials returned by Contractor to Company.

#### **Confirmation of Work Practices**

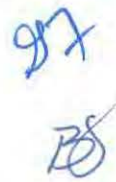
38. Company and Contractor agree to follow Work practices used prior to July 1, 2017 provided Engineer is consulted on and consents to any deviation from the Technical Requirements.

**Ground Settlement**

39. Prior to August 31, 2017, Company and Contractor shall identify all locations in Labrador where settlement of tower foundations or of backfill over or adjacent to tower foundations has occurred that may affect tower structural integrity. Contractor shall perform Work necessary to rectify tower structural integrity issues, with any change to foundation type to be Accepted by Engineer.
40. The costs for the work to rectify tower structural integrity issues at the locations identified pursuant to paragraph 39, shall be determined on a reimbursable cost basis using the prices and rates in Exhibit 2 (where applicable), and Company shall pay Contractor fifty percent (50%) of such costs as full compensation for the work performed.
41. Contractor shall issue a Change Request for each location identified pursuant to paragraph 39, where Work is to be performed as a result of settlement of tower foundations or of backfill over or adjacent to tower foundations, complete with an estimate of cost and schedule to perform the repair work. Company shall issue a Change Order for the repair work.
42. Contractor shall perform the repair work due to ground settlement at all locations identified pursuant to paragraph 39 prior to Substantial Completion. Prior to the performance of such repair work, Company and Contractor shall work with each other on a timely basis to determine the repair method to be employed. If a micro pile is required to replace an existing foundation, then Contractor shall make best efforts to carry out such work prior to Substantial Completion.

**Mutual Release and Waiver of Claims**

43. Except for Claims Company may have for Defects in the Work, each Party hereto irrevocably and unconditionally releases and forever discharges the other Party and its Affiliates and each of their respective directors, officers, employees, agents, representatives, insurers, consultants, successors and assigns (collectively, the "Releasees") from any and all manner of actions, causes of action, claims, demands, costs, damages, expenses, losses, liabilities and obligations, whether express, implied or otherwise, known or unknown or ought to have known, which a Party now has or may hereafter have against a Releasee respecting or arising out of the performance or non-performance, up to and including the date of this Amending Agreement #2 of a Party's obligations under CT0327 including, without limiting the generality of the foregoing, claims arising from or relating to:
  - (a) Change Requests;
  - (b) Extensions of time;
  - (c) Extras;
  - (d) Back charges;
  - (e) Damages for delay;
  - (f) Liquidated damages; and
  - (g) Claims regarding strand protrusion on conductor cables.





44. Except for any Claim that Company may have regarding strand protrusion on conductor cables, a Party will not make any claim or take any proceedings against any individual, partnership, corporation, insurer, financing entity or any other incorporated or unincorporated entity or association (each a "Third Party") for any act or omission known to the Party up to and including the date of this Amending Agreement #2 relating to CT0327 which Third Party might claim contribution, indemnity or other relief from or against a Releasee under any provisions of any statute, at law or otherwise regarding the subject matter of this Release.

#### General

45. This Amending Agreement #2 supersedes Amending Agreement #1.
46. This Amending Agreement #2 shall be effective from the date hereof and, unless subsequently amended, shall remain in full force and effect from such date.
47. Unless otherwise defined, all capitalized terms and expressions used herein shall have the meaning respectively ascribed thereto in CT0327. Unless otherwise stated, references to a paragraph number are references to that numbered paragraph in this Amending Agreement #2.
48. This Amending Agreement #2 includes Attachment A through F, inclusive.
49. This Amending Agreement #2 is supplementary to CT0327 and is read with and construed in accordance with CT0327, as the case may be, as if this Amending Agreement #2 and CT0327, as amended, constitute one (1) agreement.
50. In the event of any conflict between the provisions of this Amending Agreement #2 and CT0327, the provisions of this Amending Agreement #2 shall prevail.
51. Except as this Amending Agreement #2 otherwise provides, CT0327 is in all respects ratified and confirmed and all terms, provisions and covenants thereof shall remain in full force and effect.
52. This Amending Agreement #2 shall be binding upon and enure to the benefit of each of the parties hereto and their respective successors and assigns.
53. Notwithstanding execution of this Amending Agreement #2 by the Parties, this Amending Agreement #2 shall be subject to and conditional upon all written consents from parties to the LCP financing agreements that are required by the terms of those agreements.

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IN WITNESS WHEREOF the Parties hereto have executed and delivered this Amending Agreement #2 as of the day and year first above written.

**LABRADOR-ISLAND LINK LIMITED  
PARTNERSHIP**

Per: John McEwen  
Title: Elk Power Supply

Per: John Fleming  
Title: Project Director - Transmission Link

**VALARD CONSTRUCTION LP**

Per: [Signature]  
Title: Vice President

Execution Page to an Amending Agreement between Labrador-Island Link Limited Partnership and Valard Construction LP dated as of the 30<sup>th</sup> day of June, 2017.

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**ATTACHMENT A****Progress Payments and Payment Milestones****Balance of Contract Price as of July 1, 2017**

As of July 1, 2017 the balance of the Contract Price available for progress payments and Payment Milestones to complete the Work is as follows:

|                                      |                  |
|--------------------------------------|------------------|
| Total Contract Price                 | \$ 1,078,000,000 |
| Less amounts paid to date            | (\$ 588,910,762) |
| Less the June 2017 invoice           | (\$ 49,556,933)  |
| Less June and July lump sum payments | (\$ 80,000,000)  |
| Balance of Contract Price            | \$ 359,532,305   |

The balance of the Contract Price payable to Contractor for Work performed from July 1, 2017 to Final Completion shall be apportioned between progress payments and Payment Milestones as follows:

|  |               |
|--|---------------|
| Total progress payments for stringing:                   | \$258,000,000 |
| Total progress payments for quality documentation:       | \$ 70,000,000 |
| Payment Milestone at Substantial Completion:             | \$ 10,000,000 |
| Payment Milestones from Substantial to Final Completion: | \$ 21,532,305 |
| Balance of Contract Price                                | \$359,532,305 |

Contractor shall issue a separate Payment Certificate for each progress payment for stringing, for each progress payment for quality documentation and for each Payment Milestone, all in accordance with the procedures and requirements of Article 12.

**Progress Payments**

Company shall pay Contractor monthly for the progress achieved by Contractor as follows:

1. For each of the 1393 towers of stringing installed in compliance with the Technical Requirements, complete with foundations, towers, OPGW and all associated components and equipment, during the monthly payment period (but excluding quality documentation) :

\$ 185,211.77 per each of the 1393 tower structures.

The number of tower structures for payment in a payment period will be confirmed by the signatures of authorized representatives of both Company and Contractor on a Monthly Conductor Stringing Completion Acknowledgement Form a sample of which is attached hereto as Attachment D.

2. For that percentage of 8,200 quality documents, as required by and in compliance with the Technical Requirements, submitted to Company during the monthly payment period:

An amount based on the percentage of quality documents submitted in the month as a proportion of the balance of the quality documentation outstanding as of June 30, 2017 (e.g. x% multiplied by \$70,000,000).

A monthly progress report to track submission of quality documents as verified by Company project controls in the form attached in Attachment E will form the basis for determining the percentage submitted.

#### **Payment Milestones**

Payment of the ten million dollars (\$10,000,000) amount for the Substantial Completion Payment Milestone shall be made as a single lump sum upon completion of the requirements to satisfy Articles 25.1(a), (b), (c), (d), (e), (g) and (h).

Payment of the amounts following Substantial Completion, each of which is a Payment Milestone, shall be as follows:

- (a) Four million dollars (\$4,000,000) upon completion of twenty-five percent (25%) of the Punch List items complied in accordance with Article 25.1(c);
- (b) Four million dollars (\$4,000,000) upon completion of fifty percent (50%) of the Punch List items complied in accordance with Article 25.1(c);
- (c) Four million dollars (\$4,000,000) upon completion of seventy-five percent (75%) of Punch List items complied in accordance with Article 25.1(c);
- (d) Four million dollars (\$4,000,000) upon completion of one hundred percent (100%) of Punch List items complied in accordance with Article 25.1(c);
- (e) Five million five hundred thirty-two thousand three hundred five dollars (\$5,532,305) upon completion of all of the requirements set out in Articles 25.1(f) and 25.6 of the Agreement.

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**ATTACHMENT B**  
**Exhibit 9 - Schedule**

|    | <u>Milestone</u>       | <u>Completion Date</u> |
|----|------------------------|------------------------|
| 1. | Substantial Completion | 15 November 2017       |
| 2. | Final Completion       | 15 August 2018         |

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**ATTACHMENT C****Materials Management Process**

The process below is adhered to by Valard Field Crews when assessing steel bundles for completeness in the field at the structure location.

- Trailers to haul steel bundles are delivered/supplied by Valard to be loaded by LCMC Marshalling Yard Crew.
- LCMC provides trucks and drivers to deliver trailers to predetermined location.
- Trailers are then picked up by Valard's Material Hauling Crew from trailer drop site.
- Material is hauled to appropriate structure on ROW. Steel bundle count is confirmed (by Valard) with bill of lading.
- Material (still bundled) is dropped at structure.
- Valard Assembly Crews arrive to structure and break the bands on the bundles.
- Steel is shaken out and an inventory is taken against the BOQ's on the tower drawings.
- If missing materials are identified the following takes place:
  - > If the assembly foreman identifies the missing piece as critical (ie. Tower cannot be built or erected without this missing piece) a missing material form is completed and Valard QC is immediately informed. Valard QC confirms with LCMC QC and both parties sign the missing material sheet as well as a deficiency report. Valard Material Manager then immediately informs the LCMC yard and a piece is rushed over. This prevents the assembly team from having to re-mobilize to another structure.
  - > If the missing component is not identified as critical, Valard's Assembly Foreman fills out a missing materials form which is provided to Valard QC after the tower is complete to identify that the part is missing.
- Valard QC confirms that the steel is in fact not installed on the tower and then generates their own missing steel form as well as a deficiency report.
- Valard QC / LCMC QC meet within 24hours in the field and Valard provides the missing steel form to LCMC QC who then independently confirm the steel is missing, and sign the Valard missing materials sheet as well as the deficiency report.

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- > Note: The LCMC field QC signature is an additional step put in place by LCMC as of Dec, 2016.
- Missing steel is then ordered within 5 days of LCMC QA/QC signing the missing steel/deficiency report.
- Once the missing steel is available Valard QC field crews have to return to the structure to install the missing component.

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[Signature]

## ATTACHMENT D

## Stringing Completion Form

## Monthly Conductor Stringing Completion Acknowledgement Form

**Purpose:**

The purpose of this document is to have formal sign off by both parties (Valard, LCMC)

Acknowledging/Confirming the structure range(s) in which Stringing of Conductor has been completed during the monthly billing cycle. The document will be completed at the field level by both parties and forwarded to the Valard MFDC Site Office.

**Definition of "Completed Stringing of Conductor"**

The Stringing of Conductor shall be considered Complete with respect to progress invoicing when the Conductor and OPGW for a structure range has been "pulled" and "clipped in".

**Structure Range(s) in which Conductor Stringing has been Completed.**

1. Segment # \_\_\_\_\_ Structure # \_\_\_\_\_ to Segment # \_\_\_\_\_ Structure # \_\_\_\_\_
2. Segment # \_\_\_\_\_ Structure # \_\_\_\_\_ to Segment # \_\_\_\_\_ Structure # \_\_\_\_\_
3. Segment # \_\_\_\_\_ Structure # \_\_\_\_\_ to Segment # \_\_\_\_\_ Structure # \_\_\_\_\_

I hereby confirm that under the definition of "Completed Stringing of Conductor", that the structure range(s) listed above meet the criteria to be considered Complete with respect to progress invoicing as outlined on this Acknowledgement Form

\_\_\_\_\_  
Valard Field Confirmation Date

\_\_\_\_\_  
LCMC Field Confirmation Date

Conductor Stringing Complete Sign Off Form Rev 1, 2017

Agreement CT0327 Amendment No. 2

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D



## ATTACHMENT E

## Quality Documentation Monthly Progress Report

FOR THE MONTH OF:

|              | Total  | Achieved To Date | % Achieved To Date | Remaining | % Remaining |
|--------------|--------|------------------|--------------------|-----------|-------------|
| Foundations  | 3,223  | 2,847            | 88.33%             | 376       | 11.67%      |
| Guy Anchors  | 2,841  | 2,151            | 75.71%             | 690       | 24.29%      |
| Assembly     | 3,223  | 2,635            | 81.76%             | 588       | 18.24%      |
| Erection     | 3,223  | 2,007            | 62.27%             | 1,216     | 37.73%      |
| Stringing:   |        |                  |                    |           |             |
| Conductor    | 3,223  | 1,661            | 51.54%             | 1,562     | 48.46%      |
| Electrode    | 1,282  | 1,190            | 92.82%             | 92        | 7.18%       |
| OPGW         | 3,223  | 1,574            | 48.84%             | 1,649     | 51.16%      |
| Counterpoise | 3,223  | 1,196            | 37.11%             | 2,027     | 62.89%      |
| Totals       | 23,461 | 15,261           | 65.05%             | 8,200     | 34.95%      |

Final Approval of a Contractor submitted quality document is signified when the Company Quality personnel tag all the supporting QC documents in Aconex as either "For Acknowledgement" and/or "Approved with Conditions".

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## ATTACHMENT F

## ROW Assets and Locations

## 1. Labrador

## Km 57 SPRR:

| Item             | Size      | Length | Total |
|------------------|-----------|--------|-------|
| Culvert          | 450mm     | 6 m    | 10    |
| Culvert          | 600mm     | 6 m    | 4     |
| Culvert          | 800 mm    | 9m     | 1     |
| Culvert          | 1000 mm   | 6      | 2     |
| Blizzard Bridges | 2 pc each | 20 ft  | 8     |

## Km 49 &amp; 58 Heli Pad:

|            |         |     |   |
|------------|---------|-----|---|
| Swamp Mats | wide 7" | 14" | 8 |
|------------|---------|-----|---|

## Km 109 Laydown ( 2 km South of DC 2):

| Item             | Size            | Length | Total |
|------------------|-----------------|--------|-------|
| Culvert          | 450 mm          | 6m     | 2     |
| Culvert          | 450 mm          | 9m     | 1     |
| Culvert          | 600 mm          | 6 m    | 4     |
| Culvert          | 600 mm          | 9m     | 2     |
| Culvert          | 800 mm          | 9m     | 4     |
| Culvert          | 1000 mm         | 6 m    | 4     |
| Blizzard Bridges | 2 pc per bridge | 20 ft  | 2     |
| Timber mats      | 8 ft wide       | 14 ft  | 7     |
| Silt Fence       | 3 ft wide       | bundle | 20    |

| Bridge item         | Name    | Condition | Quantity | Comments                         |
|---------------------|---------|-----------|----------|----------------------------------|
| Panel Super         | MC 411  |           | 5        |                                  |
| Panel Super         | MC 411  | Damaged   | 2        | One has a piece broken in two.   |
| Panel High Shear    | MC 412  |           | 2        |                                  |
| Transom Timber Deck | MCC 454 |           | 4        |                                  |
| Timber Deck Module  |         |           | 5        | 3 are at eagle in N end of camp. |
| Base Plate          | MCC236  |           | 3        |                                  |
| End Post Male       | MCC317  |           | 1        |                                  |
| Raker               | MCC 458 |           | 1        |                                  |
| Raker               | MCC 458 | Damaged   | 1        |                                  |
| Frame Vertical      | MC 312  |           | 1        |                                  |

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|                           |            |         |    |                                  |
|---------------------------|------------|---------|----|----------------------------------|
| Sway Brace                | MCC 134    |         | 6  |                                  |
| Sway Brace                | MCC 134    | Damaged | 4  |                                  |
| Brace Vertical            | MCC 222    | Damaged | 3  |                                  |
| Chord Reinforcement Heavy | MC 304     |         | 1  |                                  |
| Compression Chord         | MC 398     |         | 2  |                                  |
| Plain Stringer            | MC 446     | Damaged | 12 | Some damaged from snow clearing. |
| Tie Beam                  | MC 329     |         | 3  |                                  |
| Fixed Bearing Pad         | MCC 19 236 |         | 2  |                                  |
| Top Chord Bracing Plate   | MCC 2025   |         | 4  |                                  |

## 2. Island of Newfoundland

- Geotextile - 10 rolls (Green Bay Logging sawmill yard (which is off TCH approx. 2 km west of Goodyears Cove access))
- 20' Wooden Bridges - 10 (Atlantic Industries Yard in Deer Lake)
- 30' Girder Bridge - 2 (Atlantic Industries Yard in Deer Lake )
- Culverts 450 - 10 (LRM on site, J1 yard in Clarenville and Terra Nova Laydown at km 18 on ROW)
- Culverts 600 - 20 (J 1 Yard in Clarenville)
- Culverts 800 - 6 (Green Bay Logging sawmill yard)
- Culverts 1000 - 4 (Terra Nova Laydown - km 18 on DC line)
- Various Mabey Components (AIL yard in Deer Lake )

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B5

**Laura Dickeson**

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**From:** RosannTaylor@lowerchurchillproject.ca  
**Sent:** Thursday, November 23, 2017 5:25 AM  
**To:** Ducey, BJ; Chris Armstrong; Pandiak, Joe; Gray, Adam; Adam Squires  
**Cc:** PeteJWhelan@lowerchurchillproject.ca; denes.bajzak@bajzaklaw.com;  
StephenFollett@lowerchurchillproject.ca; SnehalParmar@lowerchurchillproject.ca;  
johnwalsh@lowerchurchillproject.ca  
**Subject:** CT0319 Executed Amending Agreement #1 - CONFIDENTIAL  
**Attachments:** CT0319 Executed Amending Agreement #1.pdf  
  
**Categories:** Profiled

Please find attached fully executed Amending Agreement for your records.

**Rosann Taylor**  
Senior Contracts Coordinator  
PROJECT DELIVERY TEAM  
Lower Churchill Project  
t. 7097786666  
e. [RosannTaylor@lowerchurchillproject.ca](mailto:RosannTaylor@lowerchurchillproject.ca)  
w. [nalcenergy.com](http://nalcenergy.com)

You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?



**AMENDING AGREEMENT NUMBER 1**

**THIS** Amending Agreement is made as of the 17<sup>th</sup> day of November, 2017.

**BETWEEN:**

**LABRADOR TRANSMISSION CORPORATION**, a body corporate constituted pursuant to the *Corporations Act*, RSNL 1990, c. C-36, as amended, and having its head office at the City of St. John's, Province of Newfoundland and Labrador, Canada (hereinafter referred to as "**Company**");

- and -

**VALARD CONSTRUCTION LP**, a limited partnership formed pursuant to the laws of the Province of Alberta, Canada, represented by its general partner Valard Construction 2008 Ltd., (hereinafter referred to as "**Contractor**").

**WHEREAS** an Agreement Number CT0319 entitled Construction of 315kV HVac Transmission Line (MF to CF) (hereinafter called the "CT0319") dated 17 December 2013, was entered into between Company and Contractor;

**AND WHEREAS** the Parties have resolved various commercial and technical issues that have arisen between them during the performance of CT0319;

**AND WHEREAS** the Parties wish to amend CT0319 as hereinafter set forth in this Amending Agreement;

**NOW THEREFORE THIS AMENDING AGREEMENT WITNESSES** that, in consideration of the premises and mutual covenants and agreements hereinafter set forth and contained, the Parties hereto agree as follows:

**Contract Price**

1. Subject to any Change Order issued after November 17, 2017, the Contract Price for CT0319 is Two Hundred Seventy Million Dollars (\$270,000,000) (the "Contract Price"), inclusive of all direct and in-direct costs of performing the Work, plus applicable value added taxes. All payments to Contractor made by Company for invoices issued by Contractor in accordance with the terms and conditions of CT0319 up to and including November 17, 2017, form part of and are included in the Contract Price. Company shall pay the balance of the Contract Price as described in paragraph 4.
2. Article 1.2(x) of CT0319 is deleted in its entirety and replaced with the following:
  - (x) "**Contract Price**" means the sum of money specified in the Agreement, as the same may be adjusted from time to time by agreement between the Parties or in accordance with the terms of the Agreement, being the

consideration for the satisfactory performance of the Work by Contractor in accordance with the Agreement and as specified in Amending Agreement Number 1.

3. For greater certainty, the Contract Price set out in paragraph 1 includes:
- (a) compensation to Contractor for the Work as described in Exhibit 1- Scope of Work of CT0319, as amended in this Amending Agreement;
  - (b) compensation for the Work described in Change Order No. 043 (water course diversion) and Change Order No. 054 (slope stabilization), as identified in paragraph 20;
  - (c) compensation for the corrections and Work described in paragraphs 16 to 19 inclusive;
  - (d) compensation for the Punch List Work;
  - (e) all Claims, Changes, Change Orders, costs and expenses, whether known or unknown, arising from Contractor's performance of the Work prior to and including November 17, 2017, which are or could be the subject of Change Requests and Change Orders; and
  - (f) all back charges for costs which Company has or could have incurred, whether known or unknown, prior to and including November 17, 2017.
4. The remaining balance of the Contract Price shall be paid in accordance with Attachment A to this Amending Agreement. All invoicing and payment procedures set out in Article 12 of CT0319 shall apply to such payments.
5. Notwithstanding the amendment to the Contract Price in paragraph 1, Company shall not be required to increase the value of the insurance obtained by Company that is in place as of November 17, 2017, in satisfaction of Article 20 of CT0319.

#### **Final Completion**

6. The scheduled date for Final Completion is hereby stated to be November 20, 2017, and Contractor shall achieve Final Completion on or before such date.
7. For the purposes of CT0319, the Punch List shall be as stated in Attachment B to this Amending Agreement and shall be performed by Contractor to the satisfaction of Engineer by July 31, 2018.
8. For the purposes of Final Completion referenced in paragraph 6:
- (a) Article 25.6(a) is hereby deleted.
  - (b) As further requirements of such Final Completion, and in addition to Articles 25.6(b) to (i) inclusive:



- (i) Contractor shall remove all Contractor's Items, Contractor's Personnel, supplies, equipment, materials, rubbish and temporary facilities from the Worksite so that the Worksite is neat, clean and safe; and
- (ii) Contractor shall assign to Company all representations, warranties, guarantees and obligations which Contractor received from Subcontractors, manufacturers or suppliers.

9. Article 25.7 of CT0319 is deleted in its entirety and replaced with the following:

25.7 When Contractor believes the requirements of Final Completion have been satisfied, Contractor shall request by Notice a Final Completion Certificate. Such Notice shall contain a declaration by Contractor that all the requirements of Final Completion have been met, except those items described in paragraphs (a) to (c) inclusive below. If all requirements of **Article 25.6** have been met to the satisfaction of Engineer, except:

- (a) the requirement of **Article 25.6(f)**, which shall be performed by Contractor to the satisfaction of Engineer by July 31, 2018;
- (b) the requirements of **Articles 25.6(d)** and **(e)**; and
- (c) the Work described in Change Order No. 043 (water course diversion) and Change Order No. 054 (slope stabilization), as identified in paragraph 20, which shall be performed by Contractor to the satisfaction of Engineer by July 31, 2018;

the date of Final Completion shall be the later of (i) the date specified in Contractor's request, and (ii) the date when the requirements of **Article 25.6** (except those items described in paragraphs (a) to (c) inclusive above) are met to the satisfaction of Engineer. Promptly after such date of Final Completion, Company shall issue a Final Completion Certificate to Contractor, which states the date of Final Completion.

10. Article 25.10 of CT0319 is deleted in its entirety and replaced with the following:

25.10 Within thirty-five (35) days following issuance of a Final Completion Certificate, Company shall pay the balance of the Contract Price for the Work less:

- (a) the amount of two million Dollars (\$2,000,000), to be withheld until the items described in Articles 25.7(a) to (c) inclusive are performed by Contractor to the satisfaction of Engineer;
- (b) an amount to satisfy any liens registered against the property of Company arising out of Contractor Group's performance of the Work;
- (c) any amount Company is entitled to set off against payment to Contractor;
- (d) any amount payable to Company pursuant to the provisions of this Agreement; and

- (e) any amounts required or permitted to be withheld by Company by Applicable Laws or this Agreement.

#### Warranty and Performance Security

- 11. Article 7.1 of CT0319 is deleted in its entirety and replaced with the following:

7.1 Contractor shall deliver to Company on or before the Effective Date, a letter of credit issued by a bank listed in Schedule 1 to the *Bank Act*, S.C. 1991, c.46 as security for the proper performance of Contractor's obligations under this Agreement in the form and with the content specified in Exhibit 14 - Performance Security, the value and duration of which shall be:

- (a) equal to fifteen million Canadian dollars (\$15,000,000 CDN) until a Final Completion Certificate has been issued pursuant to Article 25.7; and thereafter
- (b) equal to seven and a half million Canadian dollars (\$7,500,000 CDN) during the warranty period set out in Article 17.1(a); and thereafter
- (c) equal to two million Canadian dollars (\$2,000,000 CDN) during the warranty period set out in Article 17.1(b).

Company and Contractor each agree that, upon the request of the other, it will do all such acts and execute all such further documents and certificates and the like as may be necessary or desirable to effect the purpose of this Article 7.1.

- 12. For clarification purposes, the provision of the extended letter of credit of two million Canadian dollars (\$2,000,000 CDN) as referenced in paragraph 11 shall be at no cost to Company.

- 13. Article 17.1 of CT0319 is deleted in its entirety and replaced with the following:

17.1 Contractor agrees that:

- (a) for a period of three (3) years following the date of Final Completion shown on the Final Completion Certificate, it shall at its own expense promptly:
  - (i) correct any Work which is not in accordance with this Agreement;
  - (ii) rectify and make good or cause to be rectified and made good all Defects in the Work which are detected and discovered; and
  - (iii) have available at the Worksites or at a proximate location to the Worksites all necessary equipment, spare parts and labour to comply with the foregoing obligations of this Article 17.1(a); and



- (b) for a further period of three (3) years following the expiry of the warranty period stated in **Article 17.1(a)**, it shall at its own expense promptly:
    - (i) correct any Work relating to the foundations, as such foundations are described in the Final Construction Drawings identified in Exhibit 15 – List of Final Foundation Construction Drawings, (the “**Foundation Work**”) which is not in accordance with this Agreement;
    - (ii) rectify and make good or cause to be rectified and made good all Defects in the Foundation Work which are detected and discovered, and all Defects in the other Work which are caused in whole or in part by such Defects in the Foundation Work; and
    - (iii) have available at the Worksites or at a proximate location to the Worksites all necessary equipment, spare parts and labour to comply with the foregoing obligations of this **Article 17.1(b)**.
  - 14. Exhibit 15 - List of Final Foundation Construction Drawings, as attached as Attachment D to this Amending Agreement, is hereby incorporated into CT0319 and shall form and be read and construed as an integral part of CT0319.
  - 15. Article 17.2 of CT0319 is deleted in its entirety and replaced with the following:
    - 17.2 Contractor shall provide to Company a products and workmanship warranty on any products, materials, and equipment incorporated into the Work to remain in effect during the warranty period stated in **Article 17.1(a)**. For a further period of three (3) years following the expiry of the warranty period stated in **Article 17.1(a)**, Contractor shall provide to Company a products and workmanship warranty on any products, materials, and equipment incorporated into the Foundation Work. Such warranties shall provide for replacement of the component parts of such products or equipment or replacement of materials and shall cover incidental direct costs incurred by Company arising out of Defects in or failure of the warranted product, materials, or equipment.
- OPGW**
- 16. In addition and without prejudice to the Warranty, Contractor shall promptly correct at no cost to Company any Work relating to the OPGW which has been identified by the Non-Conformance Report No. 264, and which Company requires within the warranty period stated in Article 17.1(a) to be so corrected, and such correction shall be to the satisfaction of Company. Such correction work shall be considered to be Warranty Work.

**Welding**

17. In addition to the welding deficiencies relating to the foundations as identified by the Non-Conformance Report No. 50, the Parties will use their best efforts to agree on a plan by February 1, 2018 for further welding inspections to be performed jointly by Company and Contractor in 2018 in order to identify any other such welding deficiencies. Each Party shall be responsible for its own costs associated with such inspections. Prior to such inspections, Contractor shall revise Contractor's alternate foundation drawings as identified in Attachment C to this Amending Agreement, and such revisions shall be subject to Engineer's Acceptance.
18. In addition and without prejudice to the Warranty, Contractor shall promptly correct at no cost to Company any Work relating to welding deficiencies referenced in paragraph 17, consistent with the Technical Requirements of CT0319. Such correction work shall be considered to be Warranty Work and the warranty periods stated in Article 17.1(a) and (b) shall apply to such correction work.

**Foundations**

19. Company accepts all strength and air characteristics for all foundations which have been cored up to and including the date of this Amending Agreement. Company, at its sole discretion and cost, may perform additional concrete strength testing on the foundations related to the Work. In addition and without prejudice to the Warranty, if Company discovers through such testing during either of the warranty periods stated in Article 17.1 that any foundation concrete has a strength specification of less than 20mpa cored, Contractor shall promptly correct at no cost to Company any such foundation concrete deficiency. If any new concrete is used to rectify such deficiency, such new concrete shall achieve a strength specification of equal or greater than 30mpa fresh, and as otherwise in accordance with the Technical Requirements of CT0319. Such correction work shall be considered to be Warranty Work and the warranty periods stated in Article 17.1(a) and (b) shall apply to such correction work.

**Change Order Work**

20. Contractor shall perform the Work described in Change Order No. 043 (water course diversion) and Change Order No. 054 (slope stabilization) prior to July 31, 2018.

**Access Road Reclamation**

21. Notwithstanding anything to the contrary in Exhibit 1 – Scope of Work, Contractor shall not be responsible to perform any further removal of access roads, bridges and/or culverts related to the Work.

**Mutual Release and Waiver of Claims**

22. Except for Claims Company may have regarding OPGW, welding and/or foundations (as referenced in paragraphs 16 to 19 inclusive), and any Warranty claim regarding guy wire



tensioning, and/or for Defects in the Work, each Party hereto irrevocably and unconditionally releases and forever discharges the other Party and its Affiliates and each of their respective directors, officers, employees, agents, representatives, insurers, consultants, successors and assigns (collectively, the "Releasees") from any and all manner of actions, causes of action, claims, demands, costs, damages, expenses, losses, liabilities and obligations, whether express, implied or otherwise, known or unknown or ought to have known, which a Party now has or may hereafter have against a Releasee respecting or arising out of the performance or non-performance, up to and including the date of this Amending Agreement, of a Party's obligations under CT0319 including, without limiting the generality of the foregoing, claims arising from or relating to:

- (a) Change Requests;
- (b) extensions of time;
- (c) extras;
- (d) backcharges;
- (e) damages for delay; and
- (f) liquidated damages.

23. Except for Claims Company may have regarding OPGW, welding and/or foundations (as referenced in paragraphs 16 to 19 inclusive), and any Warranty claim regarding guy wire tensioning, and/or for Defects in the Work, a Party will not make any claim or take any proceedings against any individual, partnership, corporation, insurer, financing entity or any other incorporated or unincorporated entity or association (each a "Third Party") for any act or omission known to the Party, up to and including the date of this Amending Agreement, relating to CT0319 which Third Party might claim contribution, indemnity or other relief from or against a Releasee under any provisions of any statute, at law or otherwise.

**General**

24. This Amending Agreement shall be effective from the date hereof and, unless subsequently amended, shall remain in full force and effect from such date.
25. Unless otherwise defined, all capitalized terms and expressions used herein shall have the meaning respectively ascribed thereto in CT0319. Unless otherwise stated, references to a paragraph number are references to that numbered paragraph in this Amending Agreement.
26. This Amending Agreement includes Attachments A to E inclusive.
27. This Amending Agreement is supplementary to CT0319 and is read with and construed in accordance with CT0319, as the case may be, as if this Amending Agreement and CT0319, as amended, constitute one (1) agreement.
28. In the event of any conflict between the provisions of this Amending Agreement and CT0319, the provisions of this Amending Agreement shall prevail.



29. Except as this Amending Agreement otherwise provides, CT0319 is in all respects ratified and confirmed and all terms, provisions and covenants thereof shall remain in full force and effect.
30. This Amending Agreement shall be binding upon and enure to the benefit of each of the Parties and their respective successors and assigns.
31. Notwithstanding execution of this Amending Agreement by the Parties, this Amending Agreement shall be subject to and conditional upon all written consents from parties to the LCP financing agreements that are required by the terms of those agreements.
32. This Amending Agreement may be executed in any number of counterparts and any Party may transmit by facsimile or email in portable document format to the other Party a copy of this Amending Agreement executed by that Party, the receipt of which shall have the same force and effect as if the original thereof had in fact been delivered at the same time. Any original, facsimile copy, portable document format or photocopy of this Amending Agreement bearing one or more signatures on behalf of a Party shall be admissible against that Party in any legal proceeding as evidence of the execution and delivery of this Amending Agreement by that Party and without the requirement to produce an executed original of the Amending Agreement.
33. Each person signing this Amending Agreement as an authorized representative of a Party hereby represents and warrants that he or she is duly authorized to sign this Amending Agreement for that Party and that this Amending Agreement will, upon having been so executed, be binding on that Party in accordance with its terms.

IN WITNESS WHEREOF the Parties hereto have executed and delivered this Amending Agreement as of the day and year first above written.

For and on behalf of Labrador Transmission Corporation

Signature of Authorized Representative

Derrick Sturge  
Name of Authorized Representative  
CFO, Nalcor

Signature of Authorized Representative

John MacLean  
Name of Authorized Representative

For and on behalf of Valard Construction LP, by its general partner Valard Construction 2008 Ltd.

Signature of Authorized Representative

Gerald A. Duca Jr.  
Name of Authorized Representative

H. Stanley Marshall  
President & CEO  
Nalcor

Execution Page to an Amending Agreement between Labrador Transmission Corporation and Valard Construction LP dated as of the 17th day of November, 2017.

Agreement CT0319 Amendment No. 1



**ATTACHMENT A****Payment Milestones****Balance of Contract Price as of November 17, 2017**

As of November 17, 2017 the balance of the Contract Price available for Payment Milestones to complete the Work is as follows:

|                           |                            |
|---------------------------|----------------------------|
| Total Contract Price      | \$ 270,000,000.00          |
| Less amounts paid to date | <u>(\$ 243,322,049.23)</u> |
| Balance of Contract Price | \$ 26,677,950.77           |

The balance of the Contract Price payable to Contractor for Work performed from November 17, 2017 until:

- (a) the requirement of Article 25.6(f) of the Agreement has been met to the satisfaction of Engineer; (b) the requirements of Articles 25.6(d) and (e) have been met to the satisfaction of Engineer; and
- (c) the Work described in Change Order No. 043 (water course diversion) and Change Order No. 054 (slope stabilization) has been performed to the satisfaction of Engineer;

shall be as follows:

- (i) 35 days following issuance of a Final Completion Certificate: \$ 24,677,950.77
- (ii) Items (a) to (c) inclusive above have been met: \$ 2,000,000

Contractor shall issue a separate Payment Certificate for each of items (a) to (c) inclusive, all in accordance with the procedures and requirements of Article 12 of the Agreement.

**ATTACHMENT B**

**Punch List**

A handwritten signature or set of initials, possibly "B" or "D", is located in the bottom right corner of the page.



| Tower / Structure | Punch Number | Punch Description   | Punch Category | Required Action   | Status    |
|-------------------|--------------|---|----------------|---|-----------|
| L3101-010         | PL-101509    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | Reclamation has not been completed.   | Accepted  |
| L3101-091         | PL-101844    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | Severe erosion, to be addressed. Efforts to date not adequately addressing erosion.   | Accepted  |
| L3101-447         | PL-102259    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | Site cleanup required. Although reported Complete, erosion has occurred around base of tower requiring further mitigation.  | Accepted  |
| L3101-463         | PL-107110    | 5.12: Is the Optical Ground Wire (OPGW) loop secured and in its hanger at the splice box?   | B              | Fibre chafing on structure webbing. Secure OPGW loop to eliminate chafing.  | Accepted  |
| L3101-484         | PL-102342    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | Site cleanup required. Although reported Complete, erosion occurring inside base of tower requiring further mitigation.   | Accepted  |
| L3102-010         | PL-101513    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | Reclamation has not been completed  | Accepted  |
| L3102-033         | PL-112219    | NCR MFA-VA-SD-6140-TL-Q10-0332-01.  | B              | Correct items associated with third party climbing inspections as per NCR.  | Accepted  |
| L3102-070         | PL-101860    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | Erosion damage to be addressed. Efforts to date not adequately addressing erosion so additional work required.  | Accepted  |
| L3102-091         | PL-101866    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | Severe erosion, to be addressed. Efforts to date not adequately addressing erosion.   | Accepted  |
| L3102-114         | PL-100522    | 6.1: Has site cleanup, grading and mounding (as appropriate) been completed?  | B              | A lot of run off and build up of material around site. Large revive opened up due to run off. Erosion control efforts have been compromised. More remediation required. | Accepted  |
| L3102-196         | PL-112220    | NCR MFA-VA-SD-6140-TL-Q10-0333-01.  | B              | Climb structure, produce report, and address any structural issues.   | Accepted  |
| L3102-509         | PL-107109    | 4.4: Are all structure members installed correctly and undamaged (no bent steel or visible corrosion)?                                | B              | Replace damaged member (3A CB415) as per image provided.  | Completed |
| AR-50             | PL-110448    | 3.5: Hydrocarbon/contaminant staining removed and properly disposed of?   | B              | Will have to be removed.  | Accepted  |
| AR-50             | PL-110449    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering? | B              | Will have to be completed.  | Accepted  |

| Tower / Structure | Punch Number | Punch Description  | Punch Category | Required Action  | Status   |
|-------------------|--------------|--|----------------|--|----------|
| AT-140            | PL-110507    | 3.1: All construction related waste/debris removed from site and properly disposed of?   | B              | Will have to be removed.   | Accepted |
| AT-140            | PL-110508    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering?  | B              | Will have to be completed.   | Accepted |
| AT-152            | PL-110510    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering?  | B              | Will have to be completed.   | Accepted |
| AT-7              | PL-110241    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering?  | B              | Access is open to public from highway . Barricades will need to be set up .  | Accepted |
| AT-76             | PL-110502    | 3.1: All construction related waste/debris removed from site and properly disposed of?   | B              | Will have to be removed.   | Accepted |
| AT-76             | PL-110503    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering?  | B              | Will have to be completed.   | Accepted |
| Bus 4 Str 1       | PL-114895    | 3.7: Access trails/roads have all cross drainage culverts removed/ditched to establish suitable drainage, with specific attention paid to the intersection with Provincial Roadways. | B              | 4 cross drain culverts noted in 8 span structure. One access point off TLH, one access point off CFLCO service road, 2 more in RoW road network. | Accepted |
| Camp AC1          | PL-112421    | 1.1 Have all wells associated with the project been decommissioned as per the Water Resources Management Division Guidelines for Sealing Groundwater Wells?                          | B              | Well to be decommissioned.   | Accepted |
| Camp AC2          | PL-110228    | 3.5: Hydrocarbon/contaminant staining removed and properly disposed of?  | B              | Staining east end of camp area . Will have to be removed.  | Accepted |
| Camp AC2          | PL-110230    | 2.7: No staining or odor present where fueling and/or storage of hazardous material took place?  | B              | Staining east end of camp area . Contaminated ground will have to be removed.  | Accepted |
| Camp AC2          | PL-110231    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage?   | B              | Grubbings piles left west end of camp .  | Accepted |
| Camp AC2          | PL-110234    | 1.5: All sewage treatment infrastructure has been emptied, decommissioned and removed from the laydown area?   | B              | Sewer line pipes left in place . Will have to be removed.  | Accepted |
| Camp AC2          | PL-110237    | 1.11: All pumps and associated infrastructure for water withdrawal have been removed from the laydown area?  | B              | Water line left in ground . Will have to be removed.   | Accepted |
| Camp AC3-B        | PL-110291    | 1.15: All buildings and associated infrastructure (water lines, electrical conduit, foundations, etc.) have been removed and/or disposed of from laydown area?                       | B              | Office trailers , electrical conduit wiring and signs left on site . Will have to be removed.  | Accepted |



| Tower / Structure | Punch Number | Punch Description  | Punch Category | Required Action   | Status   |
|-------------------|--------------|--|----------------|---|----------|
| Diver Brook       | PL-110505    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering?                    | B              | Will have to be completed.  | Accepted |
| Diver Brook       | PL-110506    | 3.13: All compacted surfaces have been roughened, to encourage water penetration and vegetation re-growth?   | B              | Will have to be completed.  | Accepted |
| HWY-187           | PL-110445    | 3.1: All construction related waste/debris removed from site and properly disposed of?   | B              | Rig mat left on site. Will have to be removed.                                | Accepted |
| HWY-187           | PL-110446    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering?                    | B              | Will have to be completed.  | Accepted |
| L3101-004         | PL-106874    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Silt fence associated with crossing still here                                | Accepted |
| L3101-004         | PL-106880    | 1.1: All pit and quarry slopes graded to slopes less than 20 deg or to the slope existing prior to quarrying.  | B              | Slope ditch.  | Accepted |
| L3101-004         | PL-106882    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Remove bridge, this is a post removal punch list item, some rip rap available | Accepted |
| L3101-005         | PL-106865    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.   | B              | Establish drainage at borrow site.  | Accepted |
| L3101-006         | PL-106899    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Some materials, rig mats and splintered lumber ubiquitous in structure box.   | Accepted |
| L3101-009         | PL-106969    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Some dunnage and spare bolts in row and at towers.                            | Accepted |
| L3101-010         | PL-106946    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Serious erosion issues and sedimentation require addressing.                  | Accepted |
| L3101-014         | PL-106954    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Some dunnage left near structures.  | Accepted |
| L3101-014         | PL-106957    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Some construction materials nearby in large grubbed Laydown                   | Accepted |
| L3101-014         | PL-106958    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction material in grubbing piles                                       | Accepted |

| Tower / Structure | Punch Number | Punch Description  | Punch Category | Required Action   | Status    |
|-------------------|--------------|--|----------------|---|-----------|
| L3101-027         | PL-100312    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Required to access to the existing 138 kV transmission line. 450 mm culvert, silt fence, sandbags, and 1.5 m of road fill still in stream channel. Channel is >2 m high and steep.  | Accepted  |
| L3101-027         | PL-100314    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Required to access the existing 138 kV transmission line. 25 m downchain of tower. 450 mm culvert and silt fence still in place. 2 m of road material on crossing. Silt fence in the channel and not effective. Sand eroded into channel. | Accepted  |
| L3101-033         | PL-100308    | 1.1: All pit and quarry slopes graded to slopes less than 20 deg or to the slope existing prior to quarrying.  | B              | Remediate sloping   | Accepted  |
| L3101-073         | PL-106633    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Remove wood waste at Str L1-73 and close to watercourse . East side .   | Accepted  |
| L3101-073         | PL-106634    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Bank stabilization to stop sediment from entering watercourse . Sediment source is road material and exposed material from road material .  | Accepted  |
| L3101-084         | PL-106649    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.   | B              | Need drainage established .   | Accepted  |
| L3101-090         | PL-106673    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Need drainage established .   | Accepted  |
| L3101-091         | PL-106674    | 2.9: Areas adversely affected by the project restored to a state that resembles local natural conditions.  | B              | Banks east of stream require stabilization to prevent sediment entering stream . Large area east of stream consists of clay uphill from stream . Sediment is entering stream from hill runoff .   | Accepted  |
| L3101-099         | PL-109651    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Rig mat bridge and culverts removed from stream but left on access Road . Will have to be removed.  | Accepted  |
| L3101-114         | PL-107179    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Need banks stabilized next to Str to prevent erosion . Sediment running down to highway .   | Accepted  |
| L3101-117         | PL-101186    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Broken culvert and pallet left at mouth of access road. To be removed.  | Completed |
| L3101-126         | PL-101184    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Several loads of fill in the area. Likely for backfill around the foundation. To be spread.   | Completed |
| L3101-141         | PL-106748    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Pcs of rigmat , plywood , waste wood , steel left on ROW .  | Accepted  |



| Tower / Structure | Punch Number | Punch Description  | Punch Category | Required Action  | Status   |
|-------------------|--------------|--|----------------|--|----------|
| L3101-141         | PL-106763    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Need protective measures put in place to prevent sediment entering stream downhill from disturbed area at Str 142 .                                  | Accepted |
| L3101-142         | PL-106762    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Plastic delineator and crate of tower hardware on site . Will have to be removed .   | Accepted |
| L3101-142         | PL-106767    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Erosion west of Str .  | Accepted |
| L3101-146         | PL-106785    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Pc of culvert left on ROW to be removed .  | Accepted |
| L3101-162         | PL-106848    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.   | B              | Need drainage established . Small borrow pit .   | Accepted |
| L3101-215         | PL-109640    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.   | Accepted |
| L3101-224         | PL-109642    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.   | Accepted |
| L3101-227         | PL-109648    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.   | Accepted |
| L3101-227         | PL-109650    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Bridge section left by access road.  | Accepted |
| L3101-232         | PL-109632    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Pc of culvert left on ROW access Road west of Str . Will have to be removed.   | Accepted |
| L3101-235         | PL-109636    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Disturbed area north west side of Str depositing sediment into stream . Will require remediation.  | Accepted |
| L3101-235         | PL-109638    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Delineator and silt fence left northwest side of Str .   | Accepted |
| L3101-274         | PL-102017    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Stream diverted around tower. IWC-87. SILT FENCE needs To be removed/remediated.   | Accepted |
| L3101-299         | PL-102033    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.   | B              | Base of borrow pit is solid rock. Water is pooling. <30 cm deep. Requested some of access road be pushed into pit to help refill and allow drainage. | Accepted |
| L3101-308         | PL-109590    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal  | Accepted |
| L3101-309         | PL-109593    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.   | Accepted |
| L3101-316         | PL-106990    | 1.1: All pit and quarry slopes graded to slopes less than 20 deg or to the slope existing prior to quarrying.  | B              | Quarry slopes need to be pulled down from tree line .  | Accepted |

| Tower / Structure | Punch Number | Punch Description  | Punch Category | Required Action   | Status   |
|-------------------|--------------|--|----------------|---|----------|
| L3101-339         | PL-107034    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Grubbing pile left . Need to be spread .  | Accepted |
| L3101-339         | PL-107038    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Plastic debris need to be picked up   | Accepted |
| L3101-344         | PL-109596    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Waste requires removal.   | Accepted |
| L3101-346         | PL-109580    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.  | Accepted |
| L3101-347         | PL-109589    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.  | Accepted |
| L3101-348         | PL-109478    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.  | Accepted |
| L3101-349         | PL-109479    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Waste requires removal.   | Accepted |
| L3101-350         | PL-109473    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Waste requires removal  | Accepted |
| L3101-351         | PL-109485    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Waste requires removal.   | Accepted |
| L3101-352         | PL-109482    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Waste requires removal.   | Accepted |
| L3101-353         | PL-109484    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Garbage requires removal.   | Accepted |
| L3101-354         | PL-109494    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Waste on access road requires removal.  | Accepted |
| L3101-355         | PL-109491    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.  | Accepted |
| L3101-357         | PL-109507    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.  | Accepted |
| L3101-359         | PL-109502    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Rig mats requires removal.  | Accepted |
| L3101-360         | PL-109509    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Road is eroding into stream. Requires mitigation.   | Accepted |
| L3101-386         | PL-108634    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Road built next to south edge of small pond between Str's. Road material pushed into pond . Will require remediation. | Accepted |



| Tower / Structure | Punch Number | Punch Description  | Punch Category | Required Action   | Status   |
|-------------------|--------------|--|----------------|---|----------|
| L3101-388         | PL-108642    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.   | B              | Disturbed area next to small pond closet to Str L1-388 causing sediment to enter pond . Area will require remediation . | Accepted |
| L3101-401         | PL-109538    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Silt fence requires removal.  | Accepted |
| L3101-405         | PL-109532    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan.        | B              | Silt fence requires removal.  | Accepted |
| L3101-409         | PL-107403    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Remove garbage.   | Accepted |
| L3101-412         | PL-109544    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Waste requires removal. Wood.   | Accepted |
| L3101-423         | PL-107464    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.   | B              | Drainage needs to be established. Borrow off of ROW.  | Accepted |
| L3101-431         | PL-107456    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Remove timber blocking.   | Accepted |
| L3101-431         | PL-107461    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Remove construction timber waste.   | Accepted |
| L3101-434         | PL-107471    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Ditch is eroding soil into pond . Mitigation measures are required.   | Accepted |
| L3101-436         | PL-107476    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction timbers need removal .   | Accepted |
| L3101-437         | PL-107493    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal. By 3102-434.   | Accepted |
| L3101-437         | PL-107501    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Soil eroding into stream. No mitigation measures taken.   | Accepted |
| L3101-437         | PL-107508    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Rig mat requires removal.   | Accepted |
| L3101-440         | PL-107509    | 2.7: The bed, banks and floodplains of watercourses affected by the project adequately protected from erosion by seeding, sodding or placing of rip-rap. | B              | Banks inside structure box eroding toward river. Not in stream yet  | Accepted |
| L3101-441         | PL-107513    | 3.1: All construction related waste/debris removed from site and properly disposed of.   | B              | Construction waste requires removal.  | Accepted |

| Tower / Structure | Punch Number | Punch Description   | Punch Category | Required Action  | Status   |
|-------------------|--------------|---|----------------|--|----------|
| I3101-441         | PL-107514    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.  | B              | Grading required to stop soil eroding into waterbody. By I3101 441.                              | Accepted |
| I3101-443         | PL-107482    | 2.9: Areas adversely affected by the project restored to a state that resembles local natural conditions.   | B              | Soil eroding into stream.  | Accepted |
| I3101-443         | PL-107483    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan. | B              | Silt fence left in .   | Accepted |
| I3101-450         | PL-103107    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan. | B              | Silt fencing remains in place along field identified watercourse AWC-L1-449_L1-450.              | Accepted |
| I3101-459         | PL-103115    | 2.5: Stream channel restored to natural grade and dimensions.   | B              |  | Accepted |
| I3101-463         | PL-107520    | 3.1: All construction related waste/debris removed from site and properly disposed of.  | B              | Scrap culvert left on ROW . Will have to be removed .  | Accepted |
| I3101-466         | PL-107518    | 3.1: All construction related waste/debris removed from site and properly disposed of.  | B              | Rig mats left around Str box .   | Accepted |
| I3101-469         | PL-109554    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan. | B              | Silt fence requires removal.   | Accepted |
| I3101-473         | PL-103117    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan. | B              | See section 2.1.   | Accepted |
| I3101-491         | PL-101181    | 3.1: All construction related waste/debris removed from site and properly disposed of.  | B              | Broken rig mat left at access road and ROW. To be removed.                                       | Accepted |
| I3101-494         | PL-109564    | 2.9: Areas adversely affected by the project restored to a state that resembles local natural conditions.   | B              | Stream bed requires restoration.   | Accepted |
| I3101-503         | PL-109569    | 3.1: All construction related waste/debris removed from site and properly disposed of.  | B              | Construction waste requires removal.   | Accepted |
| I3101-505         | PL-109566    | 2.5: Stream channel restored to natural grade and dimensions.   | B              | Stream bed not restored. Filter fabric to be removed and channel to be widened to natural width. | Accepted |
| I3101-505         | PL-109568    | 2.3: All waste, silt fencing, filter fabric, wood debris, damaged culverts, etc. removed from site and disposed as per the Waste Management Plan. | B              | Remove silt fence / geotextile   | Accepted |
| I3101-512         | PL-107489    | 3.1: All construction related waste/debris removed from site and properly disposed of.  | B              | Garbage from project on line .I3102-509  | Accepted |
| I3101-512         | PL-107492    | 2.5: Stream channel restored to natural grade and dimensions.   | B              | Stream channel has been rutted up. Needs restored to natural drainage.                           | Accepted |



| Tower / Structure | Punch Number | Punch Description   | Punch Category | Required Action   | Status    |
|-------------------|--------------|---|----------------|---|-----------|
| L3101-517         | PL-109721    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.  | B              | Drainage requires to be established .                                       | Accepted  |
| L3101-521         | PL-108898    | 3.1: All construction related waste/debris removed from site and properly disposed of.  | B              | Rig matting left . Requires removal.  | Accepted  |
| L3101-537         | PL-107384    | 3.3: Disturbed areas, grubbing piles, regraded to control erosion and establish suitable drainage.                                    | B              | Watercourse , small non nts. Has eroded soil in structure box.              | Accepted  |
| L3101-579         | PL-109891    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.  | B              | Borrow pit , need drainage established.                                     | Accepted  |
| L3101-600         | PL-107248    | 3.1: All construction related waste/debris removed from site and properly disposed of.  | B              | Construction sign left on ROW . Would have picked up but very soft ground . | Accepted  |
| L3101-610         | PL-107211    | 1.3: Drainage established to prevent standing or ponding of water in any part of the quarry.  | B              | Need drainage established.  | Accepted  |
| TLH KM 297        | PL-110512    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering? | B              | Will have to be completed.  | Accepted  |
| VAL-58            | PL-110451    | 3.1: All construction related waste/debris removed from site and properly disposed of?  | B              | Will have to be removed.  | Completed |
| VAL-58            | PL-110452    | 3.11: All access trails/roads have been barricaded (large swale, berm, boulders, ect.) at the entrance to deter public from entering? | B              | Will have to be completed.  | Accepted  |

ATTACHMENT C

List of Alternate Foundation Drawings Drawings

A handwritten signature or mark, possibly initials, located in the bottom right corner of the page.



## 315 kV HVac Weld Drawings List

|                               |   |
|-------------------------------|---|
| MFA-VA-SD-6140-TL-D99-0002-01 | DRIVEN PILE GENERAL NOTES                                   |
| MFA-VA-SD-6140-TL-D99-0003-01 | DRIVEN PILE-NO BEDROCK TYPE A-4 AND B-4                     |
| MFA-VA-SD-6140-TL-D99-0004-01 | DRIVEN PILE-BEDROCK TYPE A-4 AND B-4                        |
| MFA-VA-SD-6140-TL-D99-0005-01 | DRIVEN PILE- NO BEDROCK TYPE C-4                            |
| MFA-VA-SD-6140-TL-D99-0006-01 | DRIVEN PILE - WITH BEDROCK TYPE C-4                         |
| MFA-VA-SD-6140-TL-D99-0007-01 | DRIVEN PILE- NO BEDROCK TYPE D-4                            |
| MFA-VA-SD-6140-TL-D99-0008-01 | DRIVEN PILE- WITH BEDROCK TYPE D-4                          |
| MFA-VA-SD-6140-TL-D99-0009-01 | DRIVEN PILE- NO BEDROCK TYPE E-4                            |
| MFA-VA-SD-6140-TL-D99-0010-01 | DRIVEN PILE - WITH BEDROCK TYPE E-4                         |
| MFA-VA-SD-6140-TL-D99-0011-01 | DRIVEN PILE- NO BEDROCK TYPE AA-6                           |
| MFA-VA-SD-6140-TL-D99-0012-01 | DRIVEN PILE - WITH BEDROCK TYPE AA-6                        |
| MFA-VA-SD-6140-TL-D99-0013-01 | DRIVEN PILE- NO BEDROCK TYPE EE-6                           |
| MFA-VA-SD-6140-TL-D99-0014-01 | DRIVEN PILE-WITH BEDROCK TYPE EE-6                          |
| MFA-VA-SD-6140-TL-D99-0017-01 | MICROPILE GENERAL NOTES (BEDROCK @ 6M Max)                  |
| MFA-VA-SD-6140-TL-D99-0018-01 | MICROPILE TOWER STRUCTURES A-4 & B-4 (BEDROCK @ 6M Max)     |
| MFA-VA-SD-6140-TL-D99-0019-01 | MICROPILE TOWER STRUCTURE C-4 (BEDROCK @ 6M Max)            |
| MFA-VA-SD-6140-TL-D99-0020-01 | MICROPILE TOWER STRUCTURE D-4 (BEDROCK @ 6M Max)            |
| MFA-VA-SD-6140-TL-D99-0021-01 | MICROPILE TOWER STRUCTURE E-4 (BEDROCK @ 6M Max)            |
| MFA-VA-SD-6140-TL-D99-0022-01 | MICROPILE TOWER STRUCTURE AA-6 (BEDROCK @ 6M Max)           |
| MFA-VA-SD-6140-TL-D99-0023-01 | MICROPILE TOWER STRUCTURE EE-6 (BEDROCK @ 6M Max)           |
| MFA-VA-SD-6140-TL-D99-0024-01 | DETAILS AND SCHEDULE  |
| MFA-VA-SD-6140-TL-D99-0036-01 | DRIVEN PILE-NO BEDROCK TYPE A-4 AND B-4 POOR SOIL CONDITION |
| MFA-VA-SD-6140-TL-D99-0037-01 | DRIVEN PILE-BEDROCK TYPE A-4 AND B-4 POOR SOIL CONDITION    |
| MFA-VA-SD-6140-TL-D99-0038-01 | DRIVEN PILE- NO BEDROCK TYPE C-4 POOR SOIL CONDITION        |
| MFA-VA-SD-6140-TL-D99-0039-01 | DRIVEN PILE - WITH BEDROCK TYPE C-4 POOR SOIL CONDITION     |
| MFA-VA-SD-6140-TL-D99-0040-01 | DRIVEN PILE- NO BEDROCK TYPE D-4 POOR SOIL CONDITION        |

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| MFA-VA-SD-6140-TL-D99-0041-01 | DRIVEN PILE- WITH BEDROCK TYPE D-4 (GENERIC) POOR SOIL CONDITION |
| MFA-VA-SD-6140-TL-D99-0042-01 | DRIVEN PILE- NO BEDROCK TYPE E-4 POOR SOIL CONDITION             |
| MFA-VA-SD-6140-TL-D99-0043-01 | DRIVEN PILE - WITH BEDROCK TYPE E-4 POOR SOIL CONDITION          |
| MFA-VA-SD-6140-TL-D99-0044-01 | DRIVEN PILE- NO BEDROCK TYPE AA-6 POOR SOIL CONDITION            |
| MFA-VA-SD-6140-TL-D99-0045-01 | DRIVEN PILE - WITH BEDROCK TYPE AA-6 POOR SOIL CONDITION         |
| MFA-VA-SD-6140-TL-D99-0046-01 | DRIVEN PILE- NO BEDROCK TYPE EE-6 POOR SOIL CONDITION            |
| MFA-VA-SD-6140-TL-D99-0047-01 | DRIVEN PILE - WITH BEDROCK TYPE EE-6 POOR SOIL CONDITION         |
| MFA-VA-SD-6140-TL-D99-0048-01 | Decision Tree Table Page 1 of 1                                  |
| MFA-VA-SD-6140-TL-D99-0050-01 | Driven Pile With Bedrock Type D-4 At Tower L2-84                 |
| MFA-VA-SD-6140-TL-D99-0052-01 | Driven Pile with Bedrock at Tower L2-191                         |
| MFA-VA-SD-6140-TL-D99-0053-01 | Driven Pile - Tower L2-248 Leg A Pile Cap Stiffeners             |
| MFA-VA-SD-6140-TL-D99-0054-01 | Driven Pile - Tower L2-248 Leg B Pile Cap Stiffeners             |
| MFA-VA-SD-6140-TL-D99-0055-01 | Driven Pile - Tower L2-248 Leg C Pile Cap Stiffeners             |
| MFA-VA-SD-6140-TL-D99-0056-01 | Driven Pile - Tower L2-248 Leg D Pile Cap Stiffeners             |





A handwritten signature or set of initials, possibly "AD", written in dark ink.

ATTACHMENT D

Exhibit 15 – List of Final Foundation Construction Drawings

A handwritten signature or set of initials, possibly "FB", is located in the bottom right corner of the page.



## Exhibit 15 – List of Final Foundation Construction Drawings

## 315 kV HVac Foundations Drawings List

|                              |   |
|------------------------------|---|
| MFA-SN-CD-6140-TL-DD-0006-01 | 315 kV HVac Lines Steel Foundation Type A -1 250 kPa Soil Design and Details                          |
| MFA-SN-CD-6140-TL-DD-0008-01 | 315kV HVac Lines Steel Foundation Type B-1 250 kPa Soil Design and Details                            |
| MFA-SN-CD-6140-TL-DD-0010-01 | Lower Churchill Project - 315 kV HVac Lines Steel Foundation Type D-1 250 kPa Soil Design and Details |
| MFA-SN-CD-6140-TL-DD-0011-01 | Lower Churchill Project - 315 kV HVac Lines Steel Foundation Type E-1 250 kPa Soil Design and Details |
| MFA-SN-CD-6140-TL-DD-0054-01 | 315 kV HVac Lines Steel Foundation Type A-2 100 kPa Soil Design and Details Sheet 1 of 2              |
| MFA-SN-CD-6140-TL-DD-0054-02 | 315 kV HVac Lines Steel foundation Type A-2 100 kPa Soil Design and Details Sheet 2 of 2              |
| MFA-SN-CD-6140-TL-DD-0055-01 | 315 kV HVac Line Steel Foundation Type B-2 100 kPa Soil Design and Details Sheet 1 of 2               |
| MFA-SN-CD-6140-TL-DD-0055-02 | 315 kV HVac Lines Steel Foundation Type B-2 100 kPa Soil Design and Details Sheet 2 of 2              |
| MFA-SN-CD-6140-TL-DD-0056-01 | Lower Churchill Project - 315 kV HVac Lines Steel Foundation Type C-1 250 kPa Soil Design and Details |
| MFA-SN-CD-6140-TL-DD-0057-01 | 315 kV HVac Lines Steel Foundation Type C-2 100 kPa Soil Design and Details Sheet 1 of 3              |
| MFA-SN-CD-6140-TL-DD-0057-02 | 315 kV HVac Lines Steel Foundation Type C-2 100 kPa Soil Design and Details Sheet 2 of 3              |
| MFA-SN-CD-6140-TL-DD-0057-03 | 315 kV HVac Lines Steel Foundation Type C-2 100 kPa Soil Design and Details Sheet 3 of 3              |
| MFA-SN-CD-6140-TL-DD-0058-01 | 315 kV HVac Lines Steel Foundation Type D-2 100 kPa Soil Design and Details Sheet 1 of 3              |
| MFA-SN-CD-6140-TL-DD-0058-02 | 315 kV HVac Lines Steel Foundation Type D-2 100 kPa Soil Design and Details Sheet 2 of 3              |
| MFA-SN-CD-6140-TL-DD-0058-03 | 315 kV HVac Lines Steel Foundation Type D-2 100 kPa Soil Design and Details Sheet 3 of 3              |
| MFA-SN-CD-6140-TL-DD-0059-01 | 315 kV HVac Lines Steel Foundation Type E-2 100 kPa Soil Design and Details Sheet 1 of 3              |
| MFA-SN-CD-6140-TL-DD-0059-02 | 315 kV HVac Lines Steel Foundation Type E-2 100 kPa Soil Design and Details Sheet 2 of 3              |
| MFA-SN-CD-6140-TL-DD-0059-03 | 315 kV HVac Lines Steel Foundation Type E-2 100 kPa Soil Design and Details Sheet 3 of 3              |
| MFA-SN-CD-6140-TL-DD-0064-01 | 315 kV HVac Lines Rock Foundation Type A-3 and B-3 Design and Details                                 |
| MFA-SN-CD-6140-TL-DD-0066-01 | 315 kV HVac Line Rock Foundation Type C-3 Design and Details - Sheet 1 of 4                           |
| MFA-SN-CD-6140-TL-DD-0066-02 | 315 kV HVac Lines Rock Foundation Type C-3 Design and Details - Sheet 2 of 4                          |
| MFA-SN-CD-6140-TL-DD-0066-03 | 315 kV HVac Line Rock Foundation Type C-3 Design and Details - Sheet 3 of 4                           |



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|------------------------------|--|
| MFA-SN-CD-6140-TL-DD-0066-04 | 315 kV HVac Lines Rock Foundation Type C-3 Design and Details - Sheet 4 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0068-01 | 315 kV HVac Lines Rock Foundation Type D-3 Design and Details - Sheet 1 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0068-02 | 315 kV HVac Lines Rock Foundation Type D-3 Design and Details - Sheet 2 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0068-03 | 315 kV HVac Lines Rock Foundation Type D-3 Design and Details - Sheet 3 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0068-04 | 315 kV HVac Lines Rock Foundation Type D-3 Design and Details - Sheet 4 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0070-01 | 315 kV HVac Lines Rock Foundation Type E-3 Design and Details - Sheet 1 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0070-02 | 315 kV HVac Lines Rock Foundation Type E-3 Design and Details - Sheet 2 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0070-03 | 315 kV HVac Lines Rock Foundation Type E-3 Design and Details - Sheet 3 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0070-04 | 315 kV HVac Lines Rock Foundation Type E-3 Design and Details - Sheet 4 of 4                                   |
| MFA-SN-CD-6140-TL-DD-0097-01 | 315 kV HVac LINES SURFACE ROCK FOUNDATION TYPE A-3 AND B-3 DESIGN AND DETAILS                                  |
| MFA-SN-CD-6140-TL-DD-0140-01 | 315 kV HVac LINES DRIVEN PILE FOUNDATION TYPE A-4 AND B-4 CONCEPTUAL DESIGN                                    |
| MFA-SN-CD-6140-TL-DD-0154-01 | 315 kV HVac LINES DRIVEN PILE FOUNDATION TYPE C-4 CONCEPTUAL DESIGN  |
| MFA-SN-CD-6140-TL-DD-0154-03 | 315 kV HVac Lines Driven Pile Foundation Type C-4 Conceptual Design Sheet 3 of 3                               |
| MFA-SN-CD-6140-TL-DD-0155-01 | 315 kV HVac LINES DRIVEN PILE FOUNDATION TYPE D-4 CONCEPTUAL DESIGN Sheet 1 of 3                               |
| MFA-SN-CD-6140-TL-DD-0155-03 | 315 kV HVac Lines Driven Pile Foundation Type D-4 Conceptual Design Sheet 3 of 3                               |
| MFA-SN-CD-6140-TL-DD-0156-01 | 315 kV HVac LINES DRIVEN PILE FOUNDATION TYPE E-4 CONCEPTUAL DESIGN Sheet 1 of 3                               |
| MFA-SN-CD-6140-TL-DD-0156-03 | 315 kV HVac Lines Driven Pile Foundation Type E-4 Conceptual Design Sheet 3 of 3                               |
| MFA-SN-CD-6140-TL-DD-0157-01 | 315 kV HVac Lines Surface Rock Foundation Type C-3 Design and Details  |
| MFA-SN-CD-6140-TL-DD-0161-01 | 315 kV HVac Lines Surface Rock Foundation Type D-3 Design and Detail   |
| MFA-SN-CD-6140-TL-DD-0162-01 | 315 kV HVac Lines Surface Rock Foundation Type E-3 Design and Details  |
| MFA-SN-CD-6140-TL-DD-0163-01 | 315 kV HVac Lines Double Circuit Tower Type AA Driven Pile Foundation Type AA-6 Conceptual Design Sheet 1 of 2 |
| MFA-SN-CD-6140-TL-DD-0163-02 | 315 kV HVac Lines Double Circuit Tower Type AA Driven Pile Foundation Type AA-6 Conceptual Design Sheet 2 of 2 |
| MFA-SN-CD-6140-TL-DD-0164-01 | 315 kV HVac Lines Double Circuit Tower Type EE Driven Pile Foundation Type EE-6 Conceptual Design              |
| MFA-SN-CD-6140-TL-DD-0164-02 | 315 kV HVac Lines Double Circuit Tower Type EE Driven Pile Foundation Type EE-6 Conceptual Design Sheet 2 of 2 |
| MFA-SN-CD-6140-TL-DD-0165-01 | 315/138 kV HVac Lines Double Circuit Rock Foundation Type AA-7 Design and Details                              |



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| MFA-SN-CD-6140-TL-DD-0168-01  | 315/138 kV HVac Lines Double Circuit Rock Foundation Type EE-7 Design and Details                               |
| MFA-SN-CD-6140-TL-DD-0174-01  | 315 kV HVac LINES BOG FOUNDATION TYPE 5 FOR TOWER TYPE A AND B CONCEPTUAL DESIGN                                |
| MFA-SN-CD-6140-TL-DD-0175-01  | 315 kV HVac LINES BOG FOUNDATION TYPE 5 FOR TOWER TYPE C, D AND E CONCEPTUAL DESIGN                             |
| MFA-SN-CD-6140-TL-DD-0183-01  | 315/138 kV HVac LINES 100 kPa SPREAD FOOTING FOUNDATION FOR THE DOUBLE CIRCUIT TOWER TYPE AA DESIGN AND DETAILS |
| MFA-SN-CD-6140-TL-DD-0184-01  | 315/138 kV HVac LINES SPREAD FOOTING FOUNDATION FOR THE DOUBLE CIRCUIT TOWER TYPE EE DESIGN AND DETAILS         |
| MFA-VA-SD-6140-TL-D99-0002-01 | DRIVEN PILE GENERAL NOTES   |
| MFA-VA-SD-6140-TL-D99-0003-01 | DRIVEN PILE-NO BEDROCK TYPE A-4 AND B-4   |
| MFA-VA-SD-6140-TL-D99-0004-01 | DRIVEN PILE-BEDROCK TYPE A-4 AND B-4  |
| MFA-VA-SD-6140-TL-D99-0005-01 | DRIVEN PILE- NO BEDROCK TYPE C-4  |
| MFA-VA-SD-6140-TL-D99-0006-01 | DRIVEN PILE - WITH BEDROCK TYPE C-4   |
| MFA-VA-SD-6140-TL-D99-0007-01 | DRIVEN PILE- NO BEDROCK TYPE D-4  |
| MFA-VA-SD-6140-TL-D99-0008-01 | DRIVEN PILE- WITH BEDROCK TYPE D-4  |
| MFA-VA-SD-6140-TL-D99-0009-01 | DRIVEN PILE- NO BEDROCK TYPE E-4  |
| MFA-VA-SD-6140-TL-D99-0010-01 | DRIVEN PILE - WITH BEDROCK TYPE E-4   |
| MFA-VA-SD-6140-TL-D99-0011-01 | DRIVEN PILE- NO BEDROCK TYPE AA-6   |
| MFA-VA-SD-6140-TL-D99-0012-01 | DRIVEN PILE - WITH BEDROCK TYPE AA-6  |
| MFA-VA-SD-6140-TL-D99-0013-01 | DRIVEN PILE- NO BEDROCK TYPE EE-6   |
| MFA-VA-SD-6140-TL-D99-0014-01 | DRIVEN PILE-WITH BEDROCK TYPE EE-6  |
| MFA-VA-SD-6140-TL-D99-0017-01 | MICROPILE GENERAL NOTES (BEDROCK @ 6M Max)  |
| MFA-VA-SD-6140-TL-D99-0018-01 | MICROPILE TOWER STRUCTURES A-4 & B-4 (BEDROCK @ 6M Max)   |
| MFA-VA-SD-6140-TL-D99-0019-01 | MICROPILE TOWER STRUCTURE C-4 (BEDROCK @ 6M Max)  |
| MFA-VA-SD-6140-TL-D99-0020-01 | MICROPILE TOWER STRUCTURE D-4 (BEDROCK @ 6M Max)  |
| MFA-VA-SD-6140-TL-D99-0021-01 | MICROPILE TOWER STRUCTURE E-4 (BEDROCK @ 6M Max)  |
| MFA-VA-SD-6140-TL-D99-0022-01 | MICROPILE TOWER STRUCTURE AA-6 (BEDROCK @ 6M Max)   |
| MFA-VA-SD-6140-TL-D99-0023-01 | MICROPILE TOWER STRUCTURE EE-6 (BEDROCK @ 6M Max)   |
| MFA-VA-SD-6140-TL-D99-0024-01 | DETAILS AND SCHEDULE  |
| MFA-VA-SD-6140-TL-D99-0036-01 | DRIVEN PILE-NO BEDROCK TYPE A-4 AND B-4 POOR SOIL CONDITION   |

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| MFA-VA-SD-6140-TL-D99-0037-01 | DRIVEN PILE-BEDROCK TYPE A-4 AND B-4 POOR SOIL CONDITION         |
| MFA-VA-SD-6140-TL-D99-0038-01 | DRIVEN PILE- NO BEDROCK TYPE C-4 POOR SOIL CONDITION             |
| MFA-VA-SD-6140-TL-D99-0039-01 | DRIVEN PILE - WITH BEDROCK TYPE C-4 POOR SOIL CONDITION          |
| MFA-VA-SD-6140-TL-D99-0040-01 | DRIVEN PILE- NO BEDROCK TYPE D-4 POOR SOIL CONDITION             |
| MFA-VA-SD-6140-TL-D99-0041-01 | DRIVEN PILE- WITH BEDROCK TYPE D-4 (GENERIC) POOR SOIL CONDITION |
| MFA-VA-SD-6140-TL-D99-0042-01 | DRIVEN PILE- NO BEDROCK TYPE E-4 POOR SOIL CONDITION             |
| MFA-VA-SD-6140-TL-D99-0043-01 | DRIVEN PILE - WITH BEDROCK TYPE E-4 POOR SOIL CONDITION          |
| MFA-VA-SD-6140-TL-D99-0044-01 | DRIVEN PILE- NO BEDROCK TYPE AA-6 POOR SOIL CONDITION            |
| MFA-VA-SD-6140-TL-D99-0045-01 | DRIVEN PILE - WITH BEDROCK TYPE AA-6 POOR SOIL CONDITION         |
| MFA-VA-SD-6140-TL-D99-0046-01 | DRIVEN PILE- NO BEDROCK TYPE EE-6 POOR SOIL CONDITION            |
| MFA-VA-SD-6140-TL-D99-0047-01 | DRIVEN PILE - WITH BEDROCK TYPE EE-6 POOR SOIL CONDITION         |
| MFA-VA-SD-6140-TL-D99-0048-01 | Decision Tree Table Page 1 of 1                                  |
| MFA-VA-SD-6140-TL-D99-0050-01 | Driven Pile With Bedrock Type D-4 At Tower L2-84                 |
| MFA-VA-SD-6140-TL-D99-0052-01 | Driven Pile with Bedrock at Tower L2-191                         |
| MFA-VA-SD-6140-TL-D99-0053-01 | Driven Pile - Tower L2-248 Leg A Pile Cap Stiffeners             |
| MFA-VA-SD-6140-TL-D99-0054-01 | Driven Pile - Tower L2-248 Leg B Pile Cap Stiffeners             |
| MFA-VA-SD-6140-TL-D99-0055-01 | Driven Pile - Tower L2-248 Leg C Pile Cap Stiffeners             |
| MFA-VA-SD-6140-TL-D99-0056-01 | Driven Pile - Tower L2-248 Leg D Pile Cap Stiffeners             |
| MFA-VA-SD-6140-TL-D99-0057-01 | Rock Foundation With Added Grillage A-3(AG) and B-3(AG)          |
| MFA-VA-SD-6140-TL-D99-0058-01 | Encased Concrete Rock Foundation A-3(ECR) and B-3(ECR)           |
| MFA-VA-SD-6140-TL-D99-0059-01 | Encased Concrete Rock Foundation D-3(ECR)                        |
| MFA-VA-SD-6140-TL-D99-0064-01 | 315 kV HVac Line L1-142 Micropile Detail                         |
| MFA-VA-SD-6140-TL-D99-0065-01 | 315 kV HVac Line L1-142 Steel Pile Cap Detail                    |
| MFA-VA-SD-6140-TL-D99-0066-01 | 315 kV HVac Line L1-142 Steel Pile Cap Connection Details        |
| MFA-VA-SD-6140-TL-D99-0067-01 | 315 kV HVac Line L1-142 Foundation Schedule                      |

