



Project ID: 40339-1	Engineer: Ellen Ross / Jaylyn McCook	Date 09/24/2021
Project Name: Whiting Main Extension	J.O. #: M6198169	Version Version 0

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<<Whiting Main Extension>>

Tie-In Plan: Cover Sheet

No tie-in is to be made without a Written Tie-in Plan

1. The purpose of this plan is to address the requirements of tapping (GS 1680.010), pressure testing (GS 1500.010), purging (GS 1690.010), and abandonment (GS 1740.010) when performing tie-in planning and execution.
2. All persons performing any tie-in/bypass/abandonment operation (“tie-in”) shall review the entire Tie-in Plan.
3. When any clarification or alteration is required, contact Engineering as far in advance of the tie-in as possible.
4. Engineering must re-review the Tie-in Plan prior to the start of the process when the temperature is at or below the minimum temperature listed in the execution steps during any portion of the tie-in.
5. All persons performing tie-in operations shall have valid Operator Qualifications (OQ) for the actions they will perform. OQ shall be valid through the entire tie-in process and documented in the Company’s system of record for the Project.
6. The person overseeing and controlling execution of the tie-in process is referred to as the “Person in Charge”. The Person in Charge is responsible for verifying each step is complete, documenting completion on the Tie-in Plan and authorizing movement to the next step.
7. Throughout all Tie-in planning, preparation and execution, all persons shall follow proper procedures, Gas Standards, and safety precautions. These include but are not limited to the following Emergency Shutdown Plan, Tie-in Plan, and checklists attached below:
 - o Tie-in Planning – Engineering
 - o Tie-in Preparation – Construction / Field Operations
 - o Tie-in Execution Briefing – Construction / Field Operations

Emergency Shutdown Plan for this tie-in:

The project Emergency Shutdown Plan shall be used in the event of an emergency or hazardous situation during execution of the Tie-in plan. This is a supplement to the Emergency Manual and Gas Standard series GS 1150.

Contact your Leader and the Project Engineer, **Jaylyn McCook** at phone number **(219)-713-7323**, immediately in the event of an emergency.

A decision to shut down mains shall be based on protection of life and property, followed by maintaining gas service to customers.

Emergency Isolation Valve(s) and Alternate Points of isolation have been identified, documented on the Project’s Emergency Isolation Valve Form, and included with this document.



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Project's Emergency Shutdown Plan

Ops Center: _____

<<SYSTEM NUMBER>> (<< HP / MP / IP / LP >>) **SEGMENT ISOLATION VALVES**

Total Quantity of Isolation Valves: 0

Field Personnel to verify & record that each valve is Operational per **GS 1760.010**, and verify Accessibility immediately before tie-in.

Ref #	Valve # and location (or Alternate Point Description)	Size	Type (ST/PL)	Year Installed	Facility ID / AKA	Critical? (Y/N)	Operational (Y/N)
1	In case of Emergency Squeeze 2" Plastic main west of point <u>1</u> to stop flow of gas	2"	PL				
2							
3							
4							
5							

Closing these valves will isolate the following area(s): <<No Customers will be affected >>

DISCLAIMER: THE ISOLATION OF THIS AREA DOES NOT GUARANTEE CONTINUOUS FLOW DOWNSTREAM OF THE ISOLATED AREA

<<Copy and complete this page for each system. Thought should be given to having a separate shutdown plan for any additional systems that are in close proximity to the tie-in.
This paragraph should be deleted>>

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Checklist: Tie-in Planning – Engineering

The checkbox indicates the Field Engineering representative reviewed the appropriate information and took the appropriate actions.

<input checked="" type="checkbox"/>	Tie-in Planning – Engineering																									
<input type="checkbox"/>	a. Determine if tie-in(s) affect systems monitored by Gas Control, and add notification of Gas Control to the applicable tie-in scenario(s) (GS 1680.010, GS 1740.010).																									
<input type="checkbox"/>	b. Determine necessity of, size, length and temperature limitations for a bypass (GS 1680.010).																									
<input type="checkbox"/>	c. Determine if pressure changes are expected from moving customers from one system to another.																									
<input type="checkbox"/>	d. Determine if scope of job requires odorant checks and pipeline conditioning (GS 1670.040).																									
<input type="checkbox"/>	e. Project drawings updated to show tie-in locations and designs, including required materials (permanent and temporary bypass) on the bill of materials.																									
<input type="checkbox"/>	f. Determine downstream M&R and customer stations supplied by the project’s pipeline section. Ensure proper equipment is installed to prevent pipeline debris from entering regulator equipment (e.g. strainers). Plan for equipment installations and monitoring at downstream stations as needed. <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 15%;"><u>PSID/ Premise ID/ Asset IP</u></th> <th style="width: 30%;"><u>Customer Name / Station Name or Number</u></th> <th style="width: 30%;"><u>Customer Address/ Site Address</u></th> <th style="width: 25%;"><u>Responsible M&R Personnel</u></th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>PSID/ Premise ID/ Asset IP</u>	<u>Customer Name / Station Name or Number</u>	<u>Customer Address/ Site Address</u>	<u>Responsible M&R Personnel</u>																					
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<input checked="" type="checkbox"/>	g. Identify regulator station(s) potentially requiring monitoring during tie-in: <ul style="list-style-type: none"> i. Identify regulator station(s) requiring locating buried “control lines” (“control lines” also refer to regulator control, electrical/communication, remote monitoring (e.g., ERX), and/or odorant lines) prior to tie-in (GS 1100.040). ii. Identify regulator stations within 25 feet of tie-in excavation work, unless all control lines are confirmed to be completely above ground (ON 15-05). iii. Trace all lines planned for abandonment to confirm appropriate action taken for any existing control lines or service lines. iv. Identify upstream and/or downstream stations impacted by tie-in (GS 1680.010). v. Identify regulator stations or commercial/industrial customers upstream that may be impacted by purging operations (GS 1690.010). vi. Ensure impacted station isometric drawings are current and included in the project drawings. vii. Record identified stations below: <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 20%;"><u>Station ID</u></th> <th style="width: 20%;"><u>Station Impacted</u></th> <th style="width: 20%;"><u>Control Lines Impacted</u></th> <th style="width: 20%;"><u>Monitoring Required</u></th> <th style="width: 20%;"><u>Comments</u></th> </tr> </thead> <tbody> <tr> <td>47135-1</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> <td> </td> </tr> <tr> <td> </td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td> </td> </tr> <tr> <td> </td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td> </td> </tr> <tr> <td> </td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td> </td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 5px;">*If any stations are identified as impacted, the M&R leader will need to be added to the Advanced Briefing</p>	<u>Station ID</u>	<u>Station Impacted</u>	<u>Control Lines Impacted</u>	<u>Monitoring Required</u>	<u>Comments</u>	47135-1	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
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Tie-In Plan: Execution Steps

(To be completed prior to the Tie-in Advance Briefing with modifications or additions as needed during construction)

Advance Briefing: This briefing shall be conducted by Engineering.

Note: Additional stakeholders can be added to the Advance Briefing. It is expected that all relevant stakeholders to the project have been consulted prior to the Advance Briefing.

Tie-in and Emergency Shutdown Plan Reviewed by:

Required	Title (or designee)	Name	Signature (or describe alternate confirmation)	Date
<input checked="" type="checkbox"/>	Engineer	Ellen Ross	<i>Ellen Ross</i>	10/11/21
<input checked="" type="checkbox"/>	Engineering Leader(or designee)	Jaylyn McCook	<i>Jaylyn McCook</i>	10/12/21
<input checked="" type="checkbox"/>	Construction or Field Operations Leader			
<input type="checkbox"/>	M&R Leader(if applicable)			
<input type="checkbox"/>				

Checklist: Tie-in Preparation – Construction / Field Operations

<input checked="" type="checkbox"/>	Tie-in Planning – Construction / Field Operations (Check the appropriate box for each item)
<input type="checkbox"/>	a. Review job order package for completeness, accuracy and any system restrictions that must be considered prior to construction that could alter Tie-In Plans and Procedures.
<input type="checkbox"/>	b. When required, locate control lines at regulator stations identified as impacted by Engineering. Verify that the Isometric Sketch at each engineering-identified station contains control line measurements; notify engineering if sketch is incomplete, incorrect, or <u>older than one calendar year</u> . Work with Engineering to update station documentation (and Infrastructure Records) accordingly.
<input type="checkbox"/>	c. Locate valve(s) identified for Emergency Shutdown, and verify that valve(s) are accessible and operable prior to Tie-in.
<input type="checkbox"/>	d. Notify customers who will have service temporarily interrupted to review job expectations (if applicable).
<input type="checkbox"/>	e. Visually expose and verify systems and configurations match the Tie-in plan. Investigate and address inconsistencies.
<input type="checkbox"/>	f. Verify that any downstream strainers recommended by Field Engineering have been installed
<input type="checkbox"/>	g. Verify pressure and contents of pipeline(s) (GS 1680.010).
<input type="checkbox"/>	h. Inspect pipe condition to determine suitability for tapping (GS 1680.010).
<input type="checkbox"/>	i. Unless otherwise noted, verified that mainline has been evaluated to check for mechanical couplings. Safe Embedment distance obtained via calculation found in GS 2220.020: _____, or contact Field Engineering Circle the method used to complete the verification per GS 2220.020 <ul style="list-style-type: none"> • Dig back and strip to ensure no mechanical couplings • Camera Verification • Anchoring/Blocking
<input type="checkbox"/>	j. Verify acceptable pressure test on all pipelines and bypasses that will contain gas prior to introduction of gas (GS 1500.010).



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<input checked="" type="checkbox"/>	Tie-in Planning – Construction / Field Operations (Check the appropriate box for each item)
<input type="checkbox"/>	k. Discuss acceptable responses to identified AOCs with personnel assigned to monitor pressures.

Checklist: Pre-Construction Review – Construction / Field Operations

<input checked="" type="checkbox"/>	Pre-Construction Review – Construction/Field Operations (Check the box once each item is completed)
<input type="checkbox"/>	a. Review the Operator Qualification(s). All persons performing Tie-in operations shall have valid Operator Qualifications (OQ) for the actions they will perform. OQ shall be valid through the entire Tie-in process and documented in the Company's system of record for the Project (e.g., WMSdocs, Maximo).
<input type="checkbox"/>	b. Designate individuals responsible for various aspects of the operation (e.g., make assignments for monitoring pressure at various locations during tie-in operation, make assignments to execute emergency shutdown plan if necessary).
<input type="checkbox"/>	c. Discuss potential Abnormal Operating Conditions (AOCs) that could occur during tie-in and purging operations, including over- or under-pressurization. Discuss acceptable responses to identified AOCs with personnel assigned to monitor pressures. Reminder to communicate and resolve any AOCs prior to continuing further Tie-in operations.
<input type="checkbox"/>	d. Reminder of Stop Work Authority.
<input type="checkbox"/>	e. Verify that tapping equipment is rated equal to or greater than the operating pressure.
<input type="checkbox"/>	f. Review expected system status and configuration, based on Company records and the Tie-in Plan <ul style="list-style-type: none"> • Verify tie-in designs are compatible with what is found in the tie-in excavation. Address inconsistencies before continuing • Update Tie-In plans with field verified information. Thoroughly review tie-in plan details with all personnel involved to ensure understanding of the procedure steps and individual roles and responsibilities.
<input type="checkbox"/>	g. Review system MAOPs and acceptable pressure ranges expected to be encountered at system monitoring locations.
<input type="checkbox"/>	h. Perform tie-in in accordance with Tie-In Plan and applicable procedures. <ul style="list-style-type: none"> • Reminder that modifications to the Tie-in plan shall be approved by an Engineer, a Field Operations Leader/Supervisor, a Construction Front Line Leader/Supervisor, or a qualified designee. • Changes shall be documented, and list those parties involved in determining them. • Any changes or adjustments to the tie-in plan shall be communicated with the Engineer and the personnel performing the tasks and documented that the discussion of changes took place.
<input type="checkbox"/>	i. For tie-in work occurring at a POD or District pressure regulating station, confirm that the Gas Control Clearance Coordination Center (CCC) has been notified at 866-948-1026 (ON 20-13). Clearance Ticket #: _____
<input type="checkbox"/>	In addition, for tie-in work occurring at a station with SCADA equipment, confirm that the applicable Gas Control has been notified. For Columbia Gas: 1-800-921-2165 For NIPSCO: 219-853-5612 These notifications, if applicable, are required upon arrival to the site, prior to leaving the site, and for any change in scope of work when performing work at a station.



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Project-Specific Tie-in / Purge / Abandonment Steps

NOTE: TIE-IN STEPS MAY BE MODIFIED OR DELETED BASED ON ENGINEERING JUDGEMENT DURING TIE-IN PLAN DESIGN.

#4 – Plastic High Volume Tapping Tee (HVTT)

Tie-in Design Parameters (To be filled out by Engineering prior to Advance Briefing)			
System Number(s) involved	59000552	Tie-in Site Identifiers	1, 2, 3 and GA
MAOP(s)	60	Expected Pressure Range(s)	30-60
Feed into tie-in site	Two-Way Feed	Bypass(es) Needed	No Bypass Needed
M&R Needed during Tie-in?	No	Minimum Temperature Required for Tie-in	20°F
Weather Conditions for Day(s) of Tie-in (To be filled out by Field Personnel on Day of Tie-In)			
Temperature High		Temperature Low	
Special Weather Considerations			

- Person in charge and contractor/crew leader have determined the number of crew members required to perform tie-in and have conducted the Execution Briefing which includes the review of: tie-in planning checklist, pre-construction review, Emergency Shutdown plan, and tie-in/ abandonment plan on the day of the tie-in with all attendees. **If the tie-in takes multiple days to complete, the Execution Briefing shall be repeated each day. It shall also be repeated when there is a change in personnel involved with the tie-in.**

Title	Name (printed)	Signature (verification the step is complete)	Employee/Contractor ID	Date
Crew Member Attendees		Responsibility		

- Person in charge has reviewed the weather report for the day(s) of the tie-in. Temperatures and conditions are acceptable based on the conditions given by engineering.

Initials (verification that the step is complete)



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3. If applicable, Regulator Control/ Sensing Lines within the scope of the project have been verified and discussed with engineering and local operations. Plans to protect or change over Regulator Control/ Sensing Line are in place. (refer to ON 20-07 and ON 20-09).

Initials (verification that the step is complete)

4. Gas Control (Columbia 1-800-921-2165, NIPSCO 1-219-853-5612) has been notified of the work to be performed. This notification shall include: (Delete if Tie-in is not monitored affect Gas Control/SCADA).
- point of contact for the crew performing the tie-in activity
 - list of the points monitored by Gas Control that could be impacted by the work
 - proposed start and end times of the tie-in activity, and
 - the MAOP of pipeline and expected range of pressures during Tie-in operations.

Initials (verification the step is complete)

5. Installed gauge(s), verified content and monitored main line pressure at point indicated on site specific sketch. (refer to GS 1680.010).

Initials (verification that the step is complete)		
Gauge	Expected Press. Range	Actual Pressure
GA	30-60	
Station Premise / Name	Expected Press. Range	Actual Pressure
47135-1		

6. Qualified M&R Personnel monitored Regulator Station(s). Gauges were actively watched and personnel were ready to take immediate action. Monitoring to continue until the tie-in gauges were removed after the tie-ins are complete. (refer to GS 1754.010).

Initials (verification that the step is complete)		
Gauge	Expected Press. Range	Actual Pressure
GA	30-60	
Station Premise / Name	Expected Press. Range	Actual Pressure
47135-1		



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Initials (verification that the step is complete)		

7. Tied in new main with existing gas main using electrofusion coupling at point 2. (existing 2" Plastic main has been installed but not gased up)

Initials (verification that the step is complete)		
Gauge	Expected Press. Range	Actual Pressure
GA	30-60	
Station Premise / Name	Expected Press. Range	Actual Pressure
47135-1		

8. HVTT has been tapped at point 1.

Initials (verification that the step is complete)		

9. Slowly brought HVTT cutter to top at point 1. Purged at point 3, as indicated on site specific sketch and filled with gas. Air is purged out of new main and 95% gas is achieved with CGI unit.

Initials (verification that the step is complete)		
Gauge	Expected Press. Range	Actual Pressure
GA	30-60	
Station Premise / Name	Expected Press. Range	Actual Pressure
47135-1		



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10. Completed HVTT.

Initials (verification that the step is complete)

11. Gauges left in place and monitored following the completion of the tie-in for a minimum of 30 minutes. (refer to GS 1680.010).

Initials (verification that the step is complete)		
Gauge	Expected Press. Range	Actual Pressure
GA	30-60	
Station Premise / Name	Expected Press. Range	Actual Pressure
47135-1		

12. Removed all gauges at monitoring points

Initials (verification that the step is complete)

13. Soap tested all required fitting, test point, gauge monitoring, and purge locations. (refer to GS 1500.010).

14. If applicable, tested for PCBs, and secure materials when required. (refer to HSE 4400.070 and GS 1440.010)

15. If applicable, Abandoned transmission line, distribution main, and service line valves and their associated valve boxes have been abandoned in accordance with ON 19-12 or GS 1740.010 (e.g., abandoned valve, valve box and lid physically removed; valve abandoned in place and valve box and lid physically removed; valve abandoned in place and valve box lid physically removed and valve box filled with concrete).

Initials (verification that the step is complete)

16. If applicable, monitored, addressed, and documented Odorant levels. (refer to GS 1670.020 and GS 1670.040).

17. Gas Control (Columbia 1-800-921-2165, NIPSCO 1-219-853-5612) has been notified that the work is complete. (Delete if Tie-in is not monitored by Gas Control/SCADA).

Initials (verification that the step is complete)



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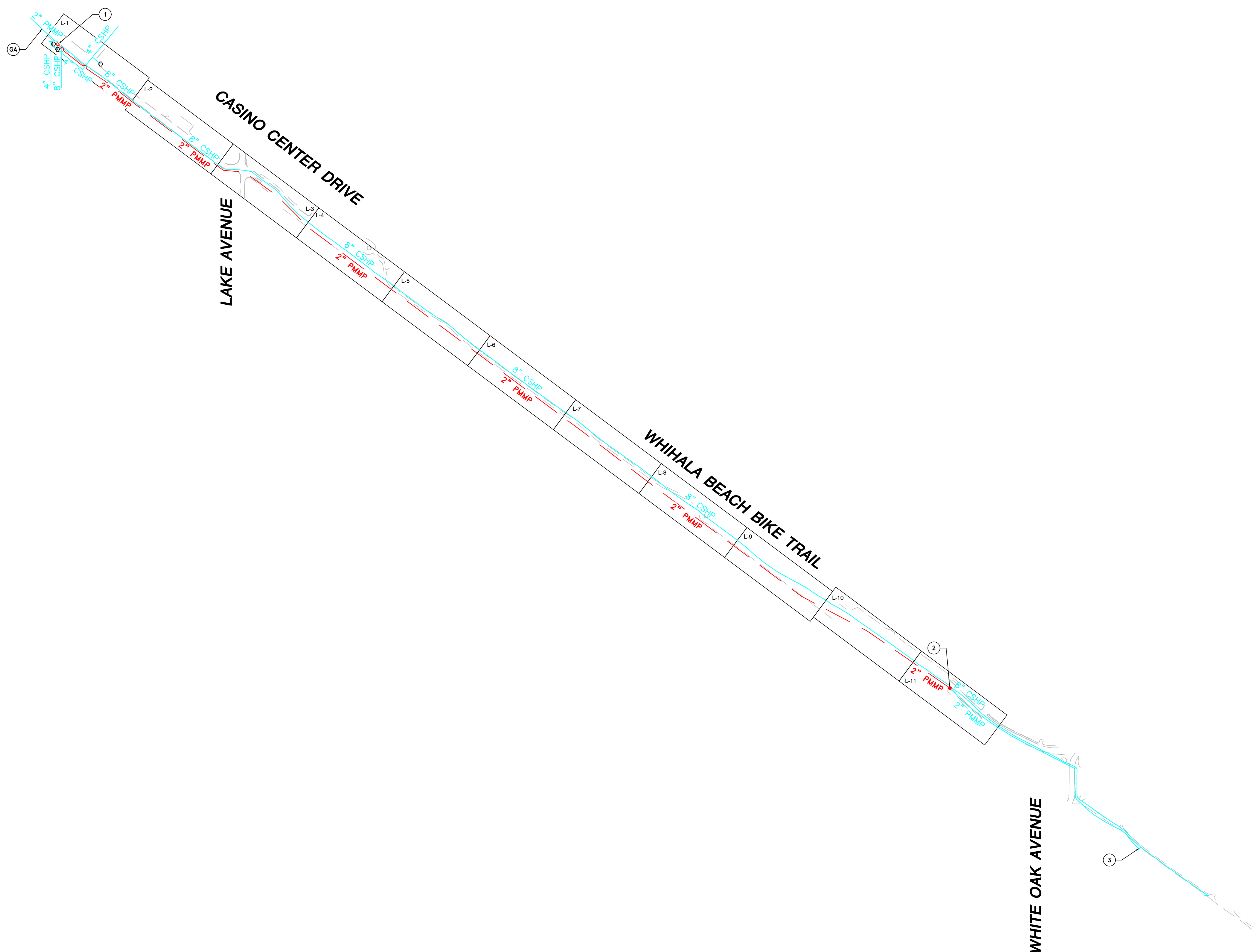
18. Tie-in process has been completed.

Company Representative

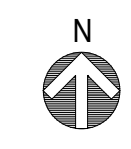
(Signature) (Printed Name) ID Number (Date)

Crew Foreman

(Signature) (Printed Name) ID Number (Date)



Know what's below.
Call before you dig.



**ISSUED FOR
CONSTRUCTION**

REVISIONS

REV. #	DATE	DESCRIPTION
1		

DESIGNED BY	ZOE ABDALLATIF	09/21/2021	630-473-3611
DRAWN BY	DANIEL WILLIAMS	08/10/2021	630-473-3576
CHECKED BY	ELLEN ROSS	09/22/2021	630-432-6236
AS-BUILT BY	----	----	----
	NAME	DATE	PHONE #

SITE NAME:
INST# WO40339-1
ABAN# WO70339-1
PROJECT ID# M6199169
 WHIHALA BEACH MAIN EXTENSION
 WHITING, INDIANA

DRAWING TITLE:
**OVERVIEW AND PRESSURE
 TESTING SHEET**

DRAWING NO:
TIE-IN