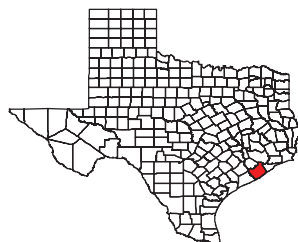




- Project Location
- Workspace



Brazoria County, Texas



wood.



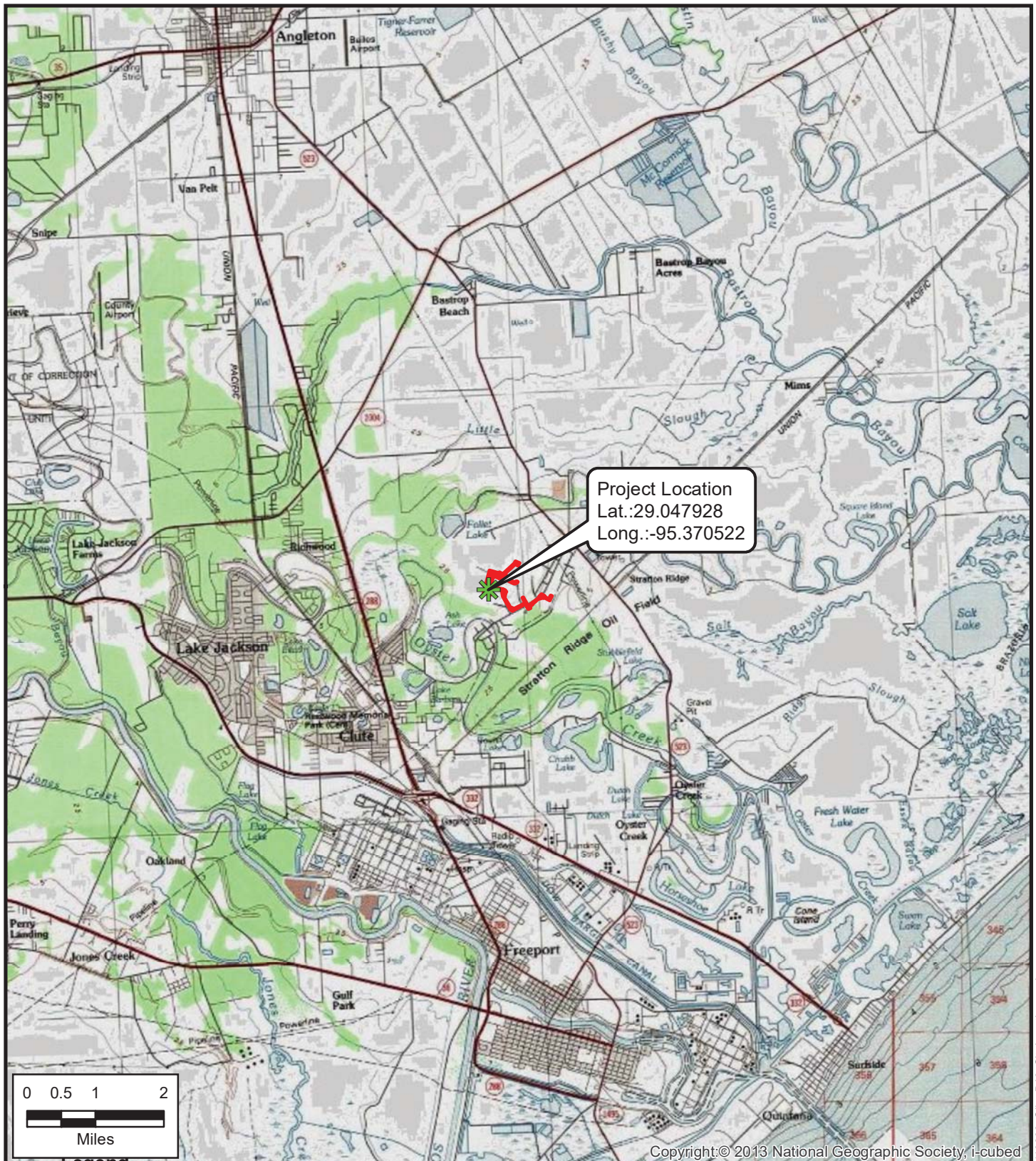
Blue Cube Operations LLC
A wholly owned subsidiary of Olin Corporation

Olin Blue Cube Operations
BW-46 Well Development Project
Project Aerial Location Map

Date: 02/16/2018

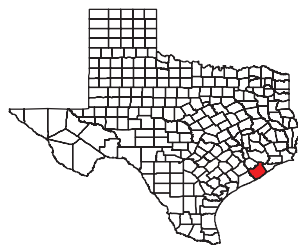
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Project Location

Workspace



Brazoria County, Texas



wood.

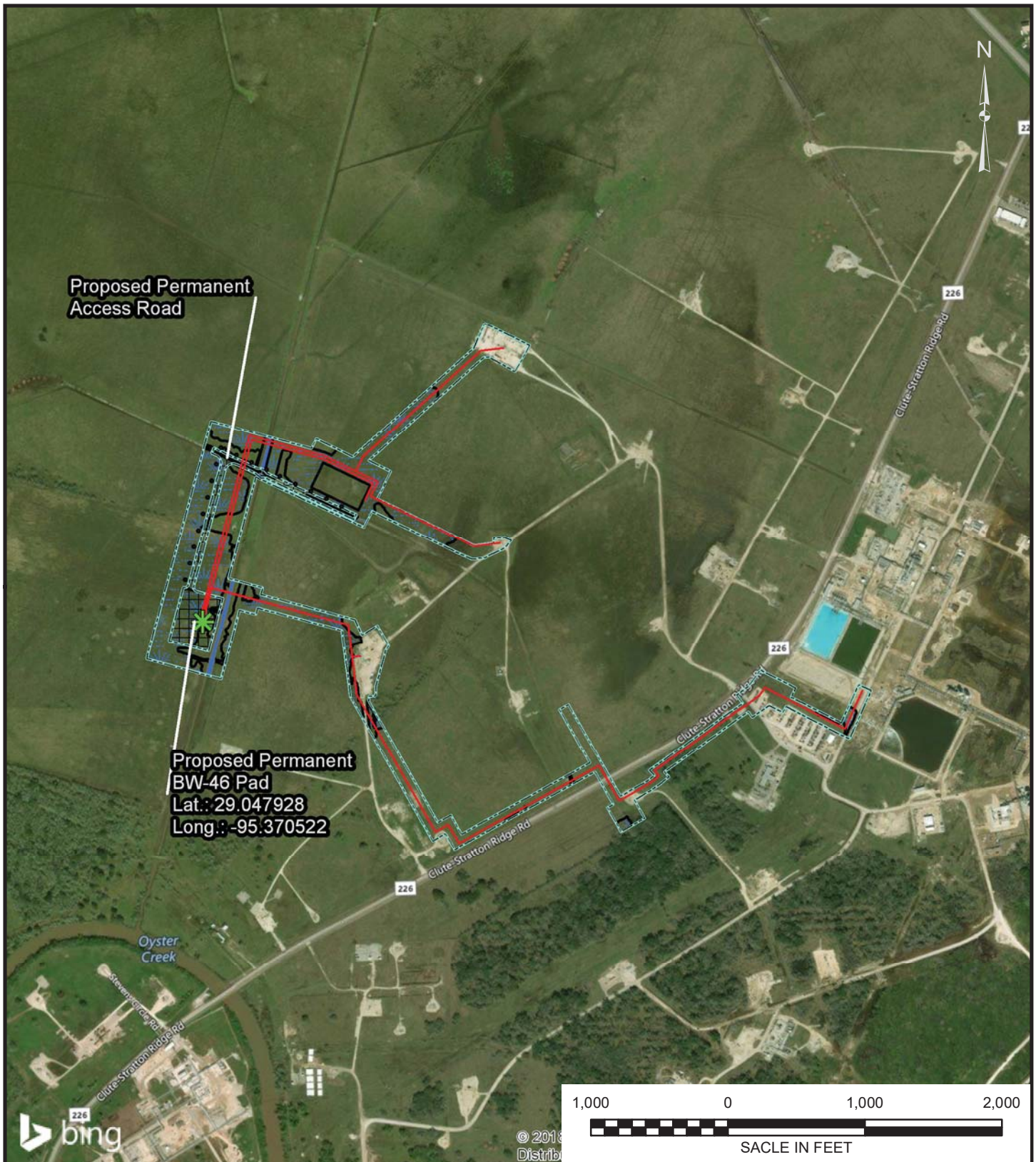


Blue Cube Operations LLC
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Olin Blue Cube Operations
BW-46 Well Development Project
Project TOPO Location Map

Date:02/16/2018

Project #:110600



Legend

- Proposed Perm Power Poles

- Proposed Pipelines

Workspace

- Permanent

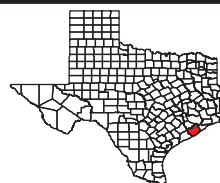
- TWS

Brazoria County, Texas

Impacted Wetland Type

- Herbaceous (PEM) Wetland

- Other Waters



wood.

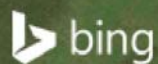
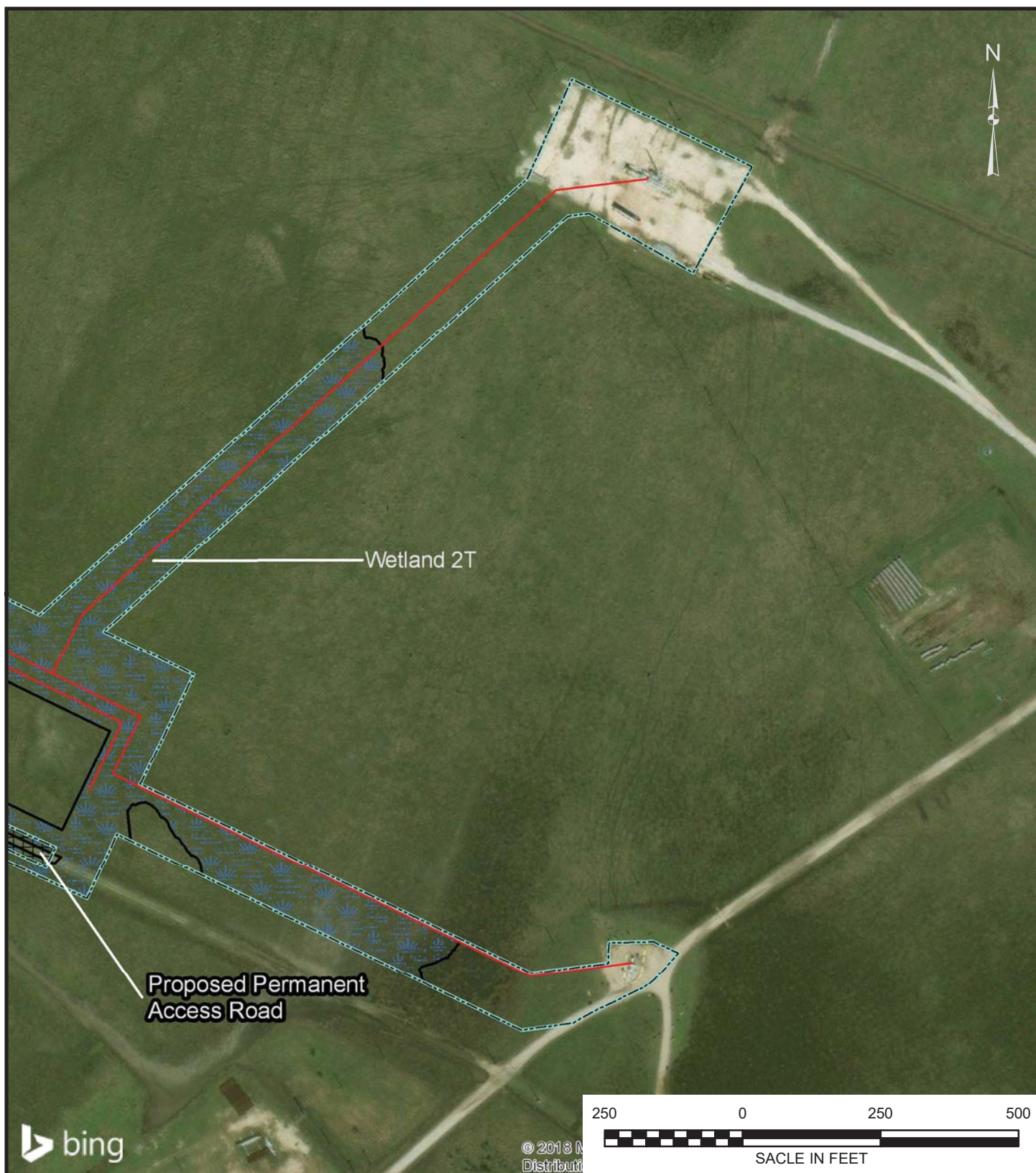


Blue Cube Operations LLC
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Olin Blue Cube Operations
BW-46 Well Development Project
Overview Wetland Impact Map

Date: 02/16/2018

Project #: 110600



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Distribut

Legend

- Proposed Perm Power Poles

— Proposed Pipelines

Workspace

Permanent

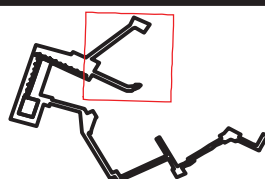
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Brazoria County, Texas

Impacted Wetland Type

Herbaceous (PEM) Wetland

Other Waters



wood.

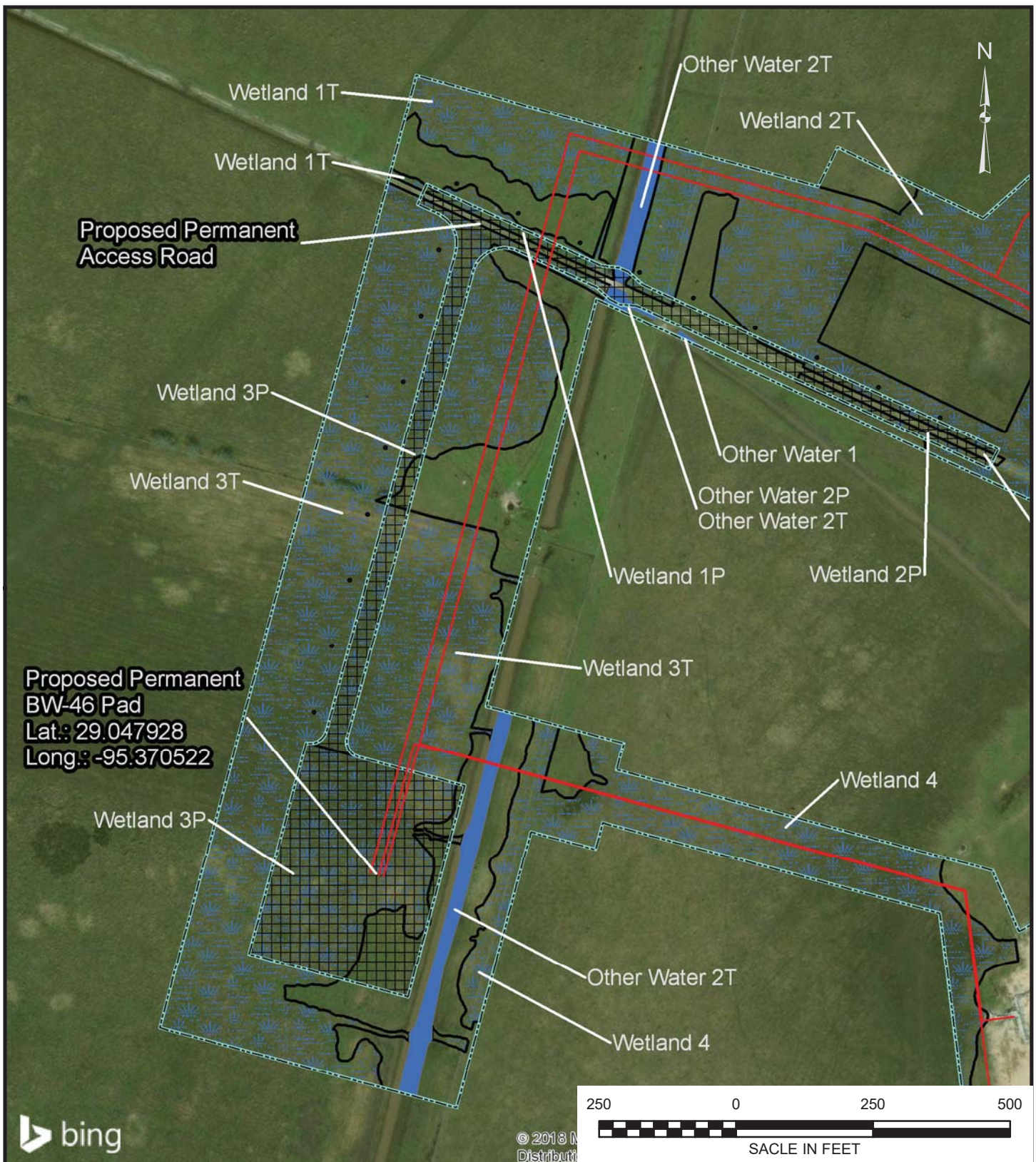


Blue Cube Operations LLC
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Olin Blue Cube Operations
BW-46 Well Development Project
Wetland Impact Maps

Date: 02/16/2018

Project #: 110600



Legend

- Proposed Perm Power Poles

- Proposed Pipelines

Workspace

- Permanent

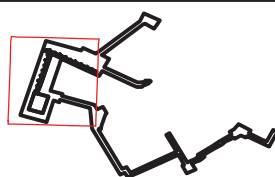
- TWS

Brazoria County, Texas

Impacted Wetland Type

- Herbaceous (PEM) Wetland

- Other Waters



wood.



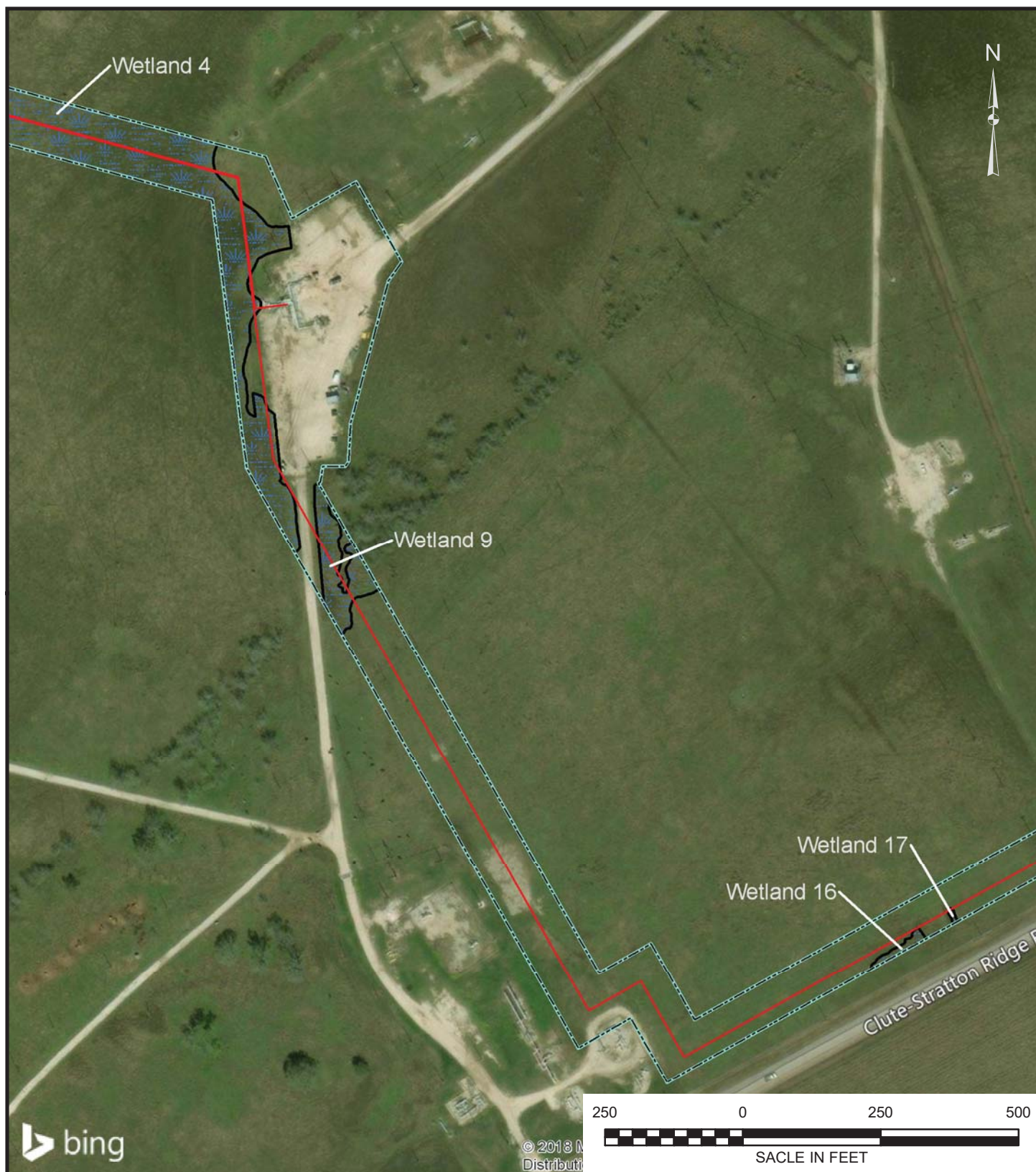
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A wholly owned subsidiary of Olin Corporation

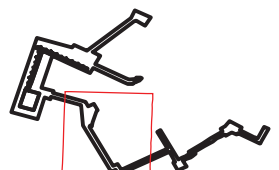
Olin Blue Cube Operations
BW-46 Well Development Project
Wetland Impact Maps

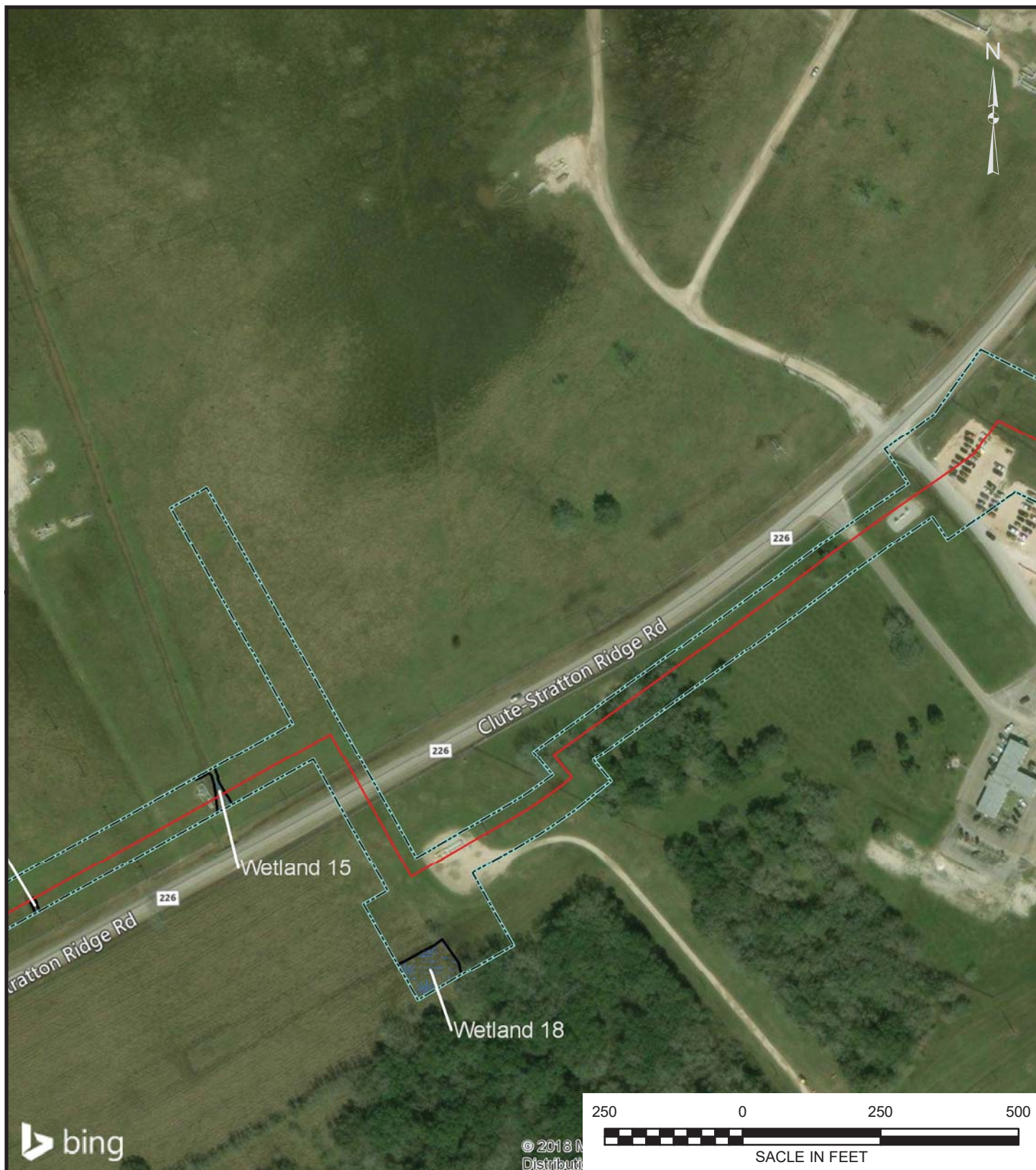
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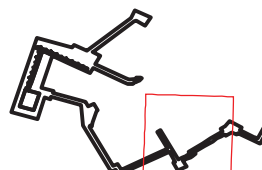
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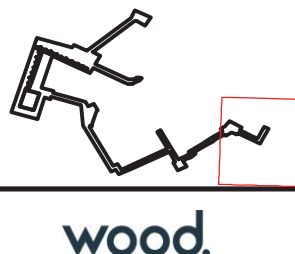


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<p>Workspace</p> <p>Permanent</p> <p>TWS</p> <p>Brazoria County, Texas</p>	<p>Legend</p> <p>• Proposed Perm Power Poles</p> <p>— Proposed Pipelines</p> <p>Impacted Wetland Type</p> <p>Herbaceous (PEM) Wetland</p> <p>Other Waters</p>	 <p>wood.</p>	<p>olin</p> <p>Blue Cube Operations LLC</p> <p>A wholly owned subsidiary of Olin Corporation</p> <p>Olin Blue Cube Operations</p> <p>BW-46 Well Development Project</p> <p>Wetland Impact Maps</p> <p>Date: 02/16/2018</p> <p>Project #: 110600</p>
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<p>Legend</p> <ul style="list-style-type: none"> Proposed Perm Power Poles Proposed Pipelines Workspace Permanent TWS Brazoria County, Texas <p>Impacted Wetland Type</p> <ul style="list-style-type: none"> Herbaceous (PEM) Wetland Other Waters 		<p>olin Blue Cube Operations LLC A wholly owned subsidiary of Olin Corporation</p> <p>Olin Blue Cube Operations BW-46 Well Development Project Wetland Impact Maps</p> <p>Date: 02/16/2018 Project #: 110600</p>
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SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	

PROFILE
N.T.S.

NOTES:

- PIPE TO BE STRAIGHT FOR A MINIMUM DISTANCE OF 15' BEYOND THE TOP OF EACH BANK.
- TOP OF PIPE TO BE MAINTAINED 5' BELOW WATERCOURSE INVERT.
- NORMAL FLOW OF DRAINAGE NOT TO BE OBSTRUCTED DURING PIPELINE CONSTRUCTION OPERATIONS.
- AT MINOR CREEKS OR DRAINS NOT EXCEEDING A DEPTH OF 3', CONTRACTOR MAY TRANSITION TRENCH & LAY UNBENT TO MEET THE REQUIRED COVER.

	BY	DATE	BLUE CUBE OPERATIONS LLC				<p>WOOD GROUP USA, INC. TEXAS REGISTERED ENGINEERING FIRM F-2999 PROJECT NO: 110600</p>
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL DRAIN & CREEK CROSSING BRAZORIA COUNTY, TEXAS				
CHKD	RP	01/31/18					
APPD	AT	01/31/18					
			REV DATE		SCALE	NTS	A4-9901-110600
							SHEET: 1 OF 1

FILE: R:\Projects\0001\DOWN\110607-PROPOSAL_BW46\TYPICAL\110600-9901.dwg PLOT DATE: 1/31/2018 BY: MCCULLOUGH, WESLEY (WG MUSTANG)

\$TIME \$DATE \$PERSON \$FILENAME

\$INSTRUCTIONS

STATUS

VER.

SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	

TYPICAL BORED CROSSINGS CONTROL DETAILS

	BY	DATE	BLUE CUBE OPERATIONS LLC			 WOOD GROUP USA, INC. <small>TEXAS REGISTERED ENGINEERING FIRM F-2999</small> <small>PROJECT NO: 110600</small>	
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL BORE CROSSING CONTROL DETAILS BRAZORIA COUNTY, TEXAS				
CHKD	RP	01/31/18					
APPD	AT	01/31/18					
			REV DATE		SCALE	NTS	A4-9902-110600
							SHEET: 1 OF 1

\$TIME

\$DATE

\$PERSON

\$FILENAME

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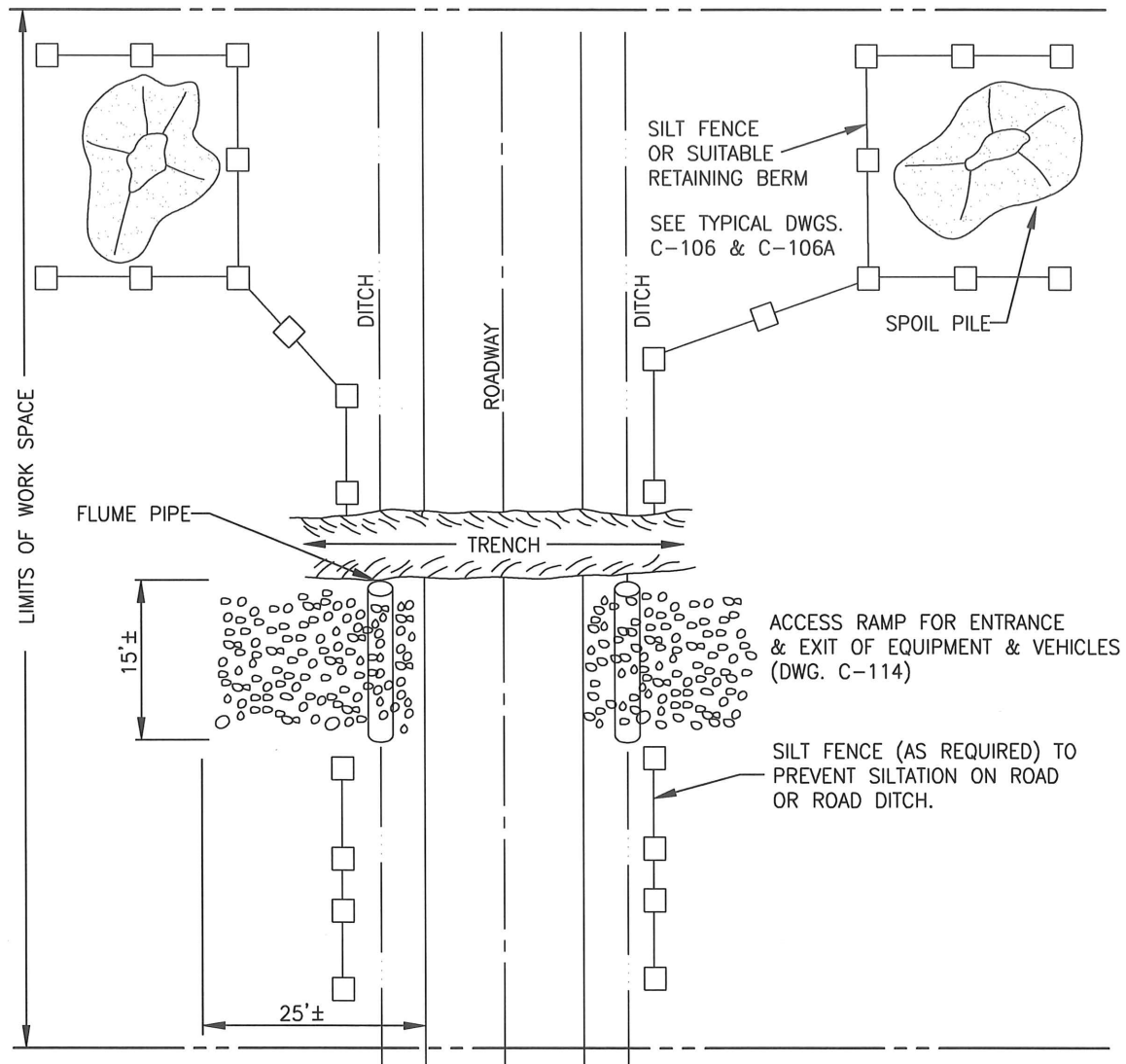
\$INSTRUCTIONS

STATUS


VER.

SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	

TYPICAL OPEN CUT ROAD CROSSING DETAILS



FILE: R:\Projects\0001\DOWN\110607-PROPOSAL_BW46\TYPICAL\110600-9903.dwg PLOT DATE: 1/31/2018 BY: MCCULLOUGH, WESLEY (WG MUSTANG)

	BY	DATE	BLUE CUBE OPERATIONS LLC				 <div>WOOD GROUP USA, INC. TEXAS REGISTERED ENGINEERING FIRM F-2999 PROJECT NO: 110600</div>
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL OPEN CUT ROAD CROSSING DETAILS BRAZORIA COUNTY, TEXAS				
CHKD	RP	01/31/18					
APPD	AT	01/31/18					
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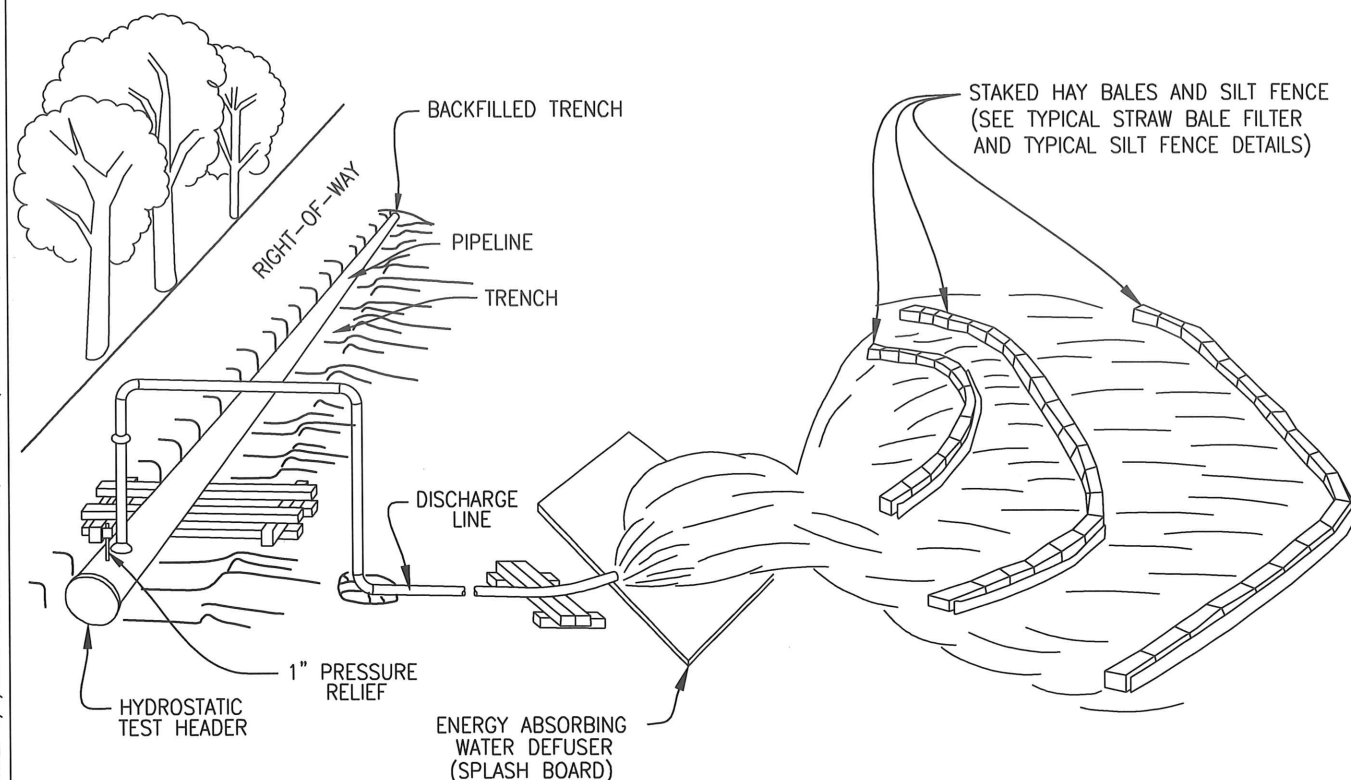
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\$PERSON

\$DATE

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SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	



TYPICAL HYDROSTATIC TEST DEWATERING USING HAY BALES AND SILT FENCE
N.T.S.

NOTES:

1. PRESSURE IS RELEASED INITIALLY THROUGH 1" PRESSURE RELIEF. WATER IS THEN RELEASED THROUGH DISCHARGE LINE TO COMPANY APPROVED METHOD OF DISSIPATION WATER.
2. COMPANY MAY ALSO APPROVE OTHER METHODS OF DISSIPATING WATER.
3. THIS METHOD MAY ALSO BE INITIATED WHEN PUMPING WATER FORM DITCH.

	BY	DATE	BLUE CUBE OPERATIONS LLC				 <div>WOOD GROUP USA, INC. TEXAS REGISTERED ENGINEERING FIRM F-2999 PROJECT NO: 110600</div>
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL HYDROSTATIC TEST DEWATERING USING HAY BALES AND SILT FENCE				
CHKD	RP	01/31/18					
APPD	AT	01/31/18					
			REV DATE		SCALE	NTS	A4-9904-110600
							SHEET: 1 OF 1

\$INSTRUCTIONS

STATUS

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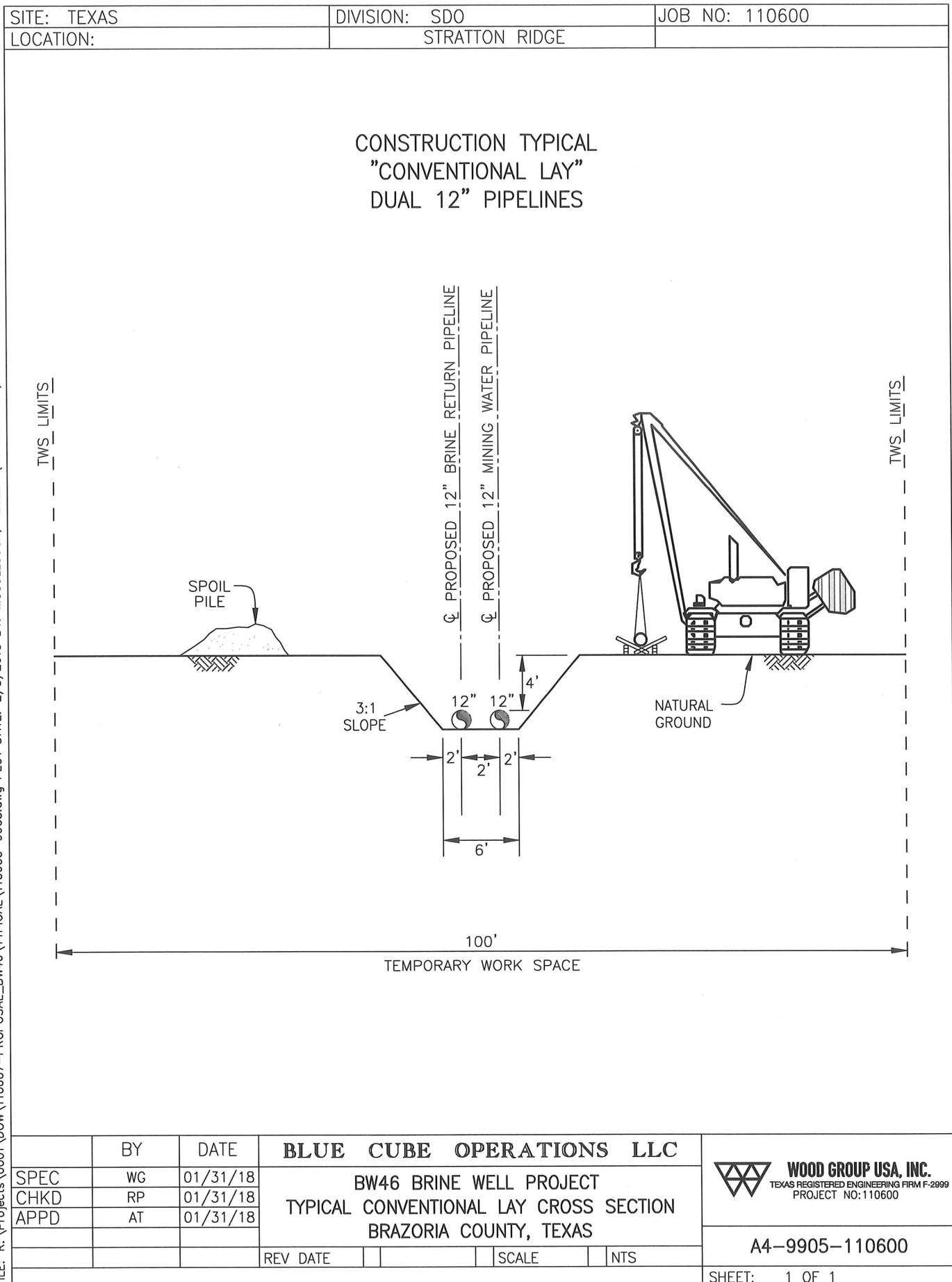
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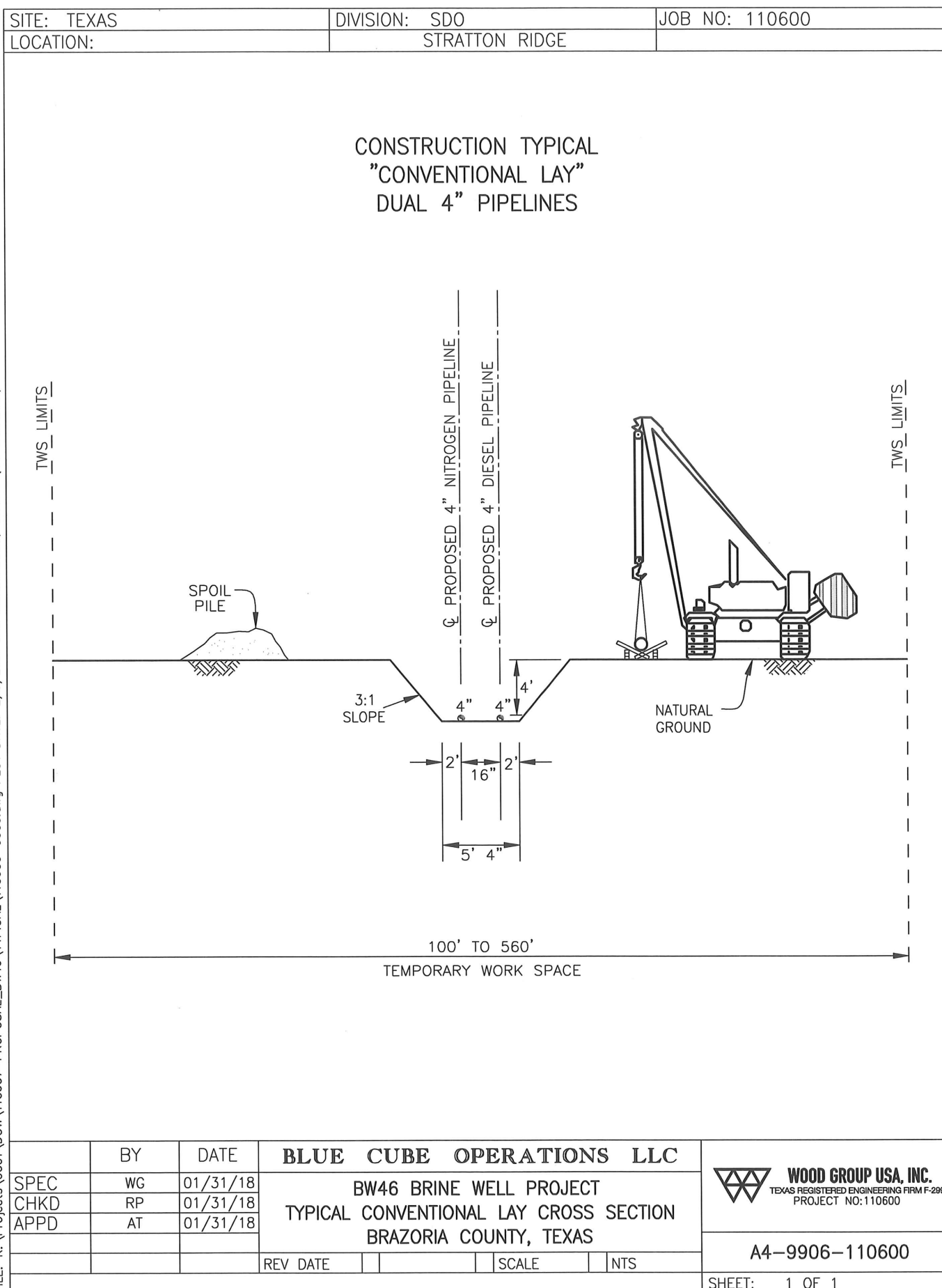
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STATUS

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\$TIME

\$DATE

\$PERSON

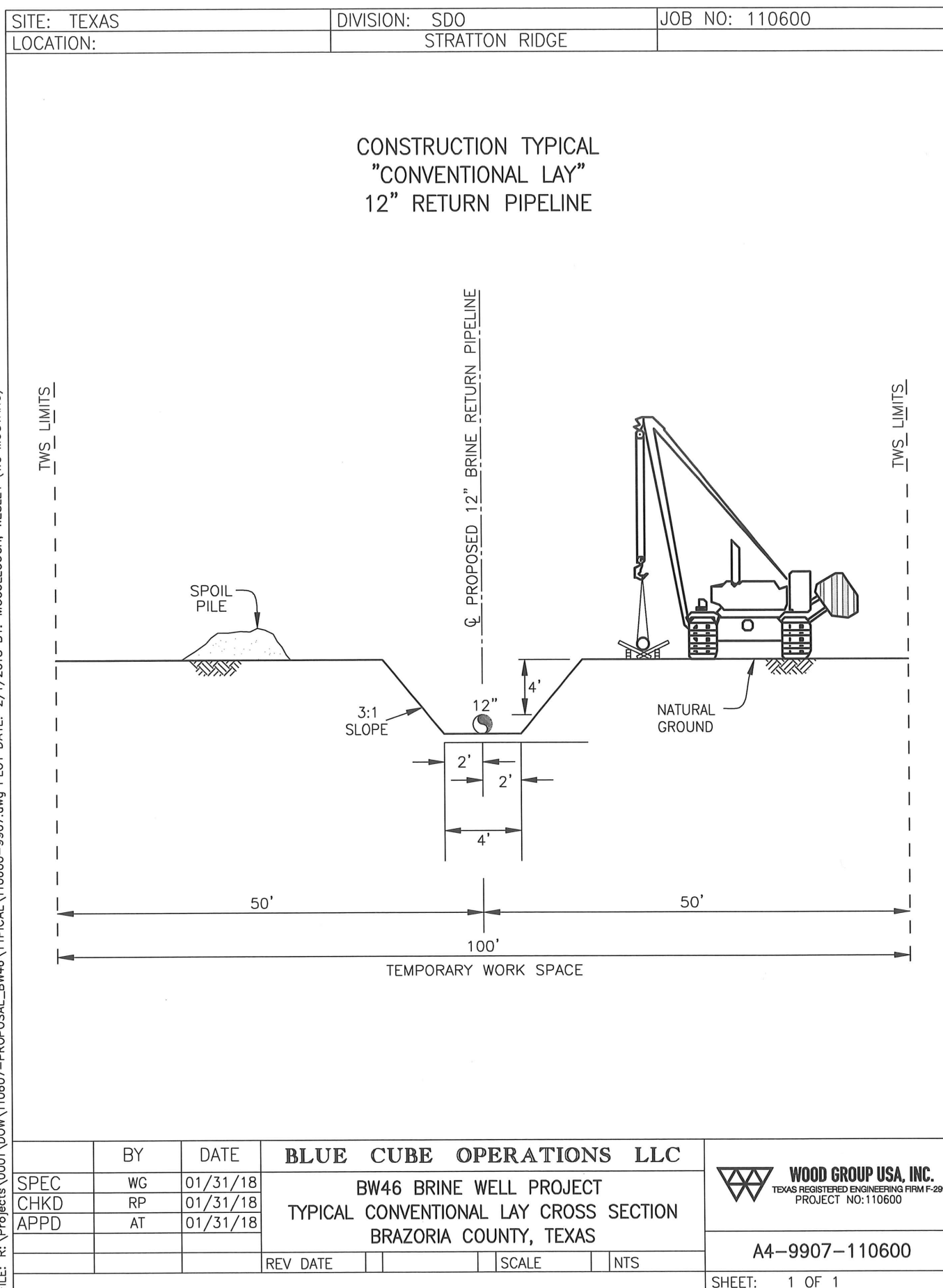
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STATUS

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\$TIME

\$DATE

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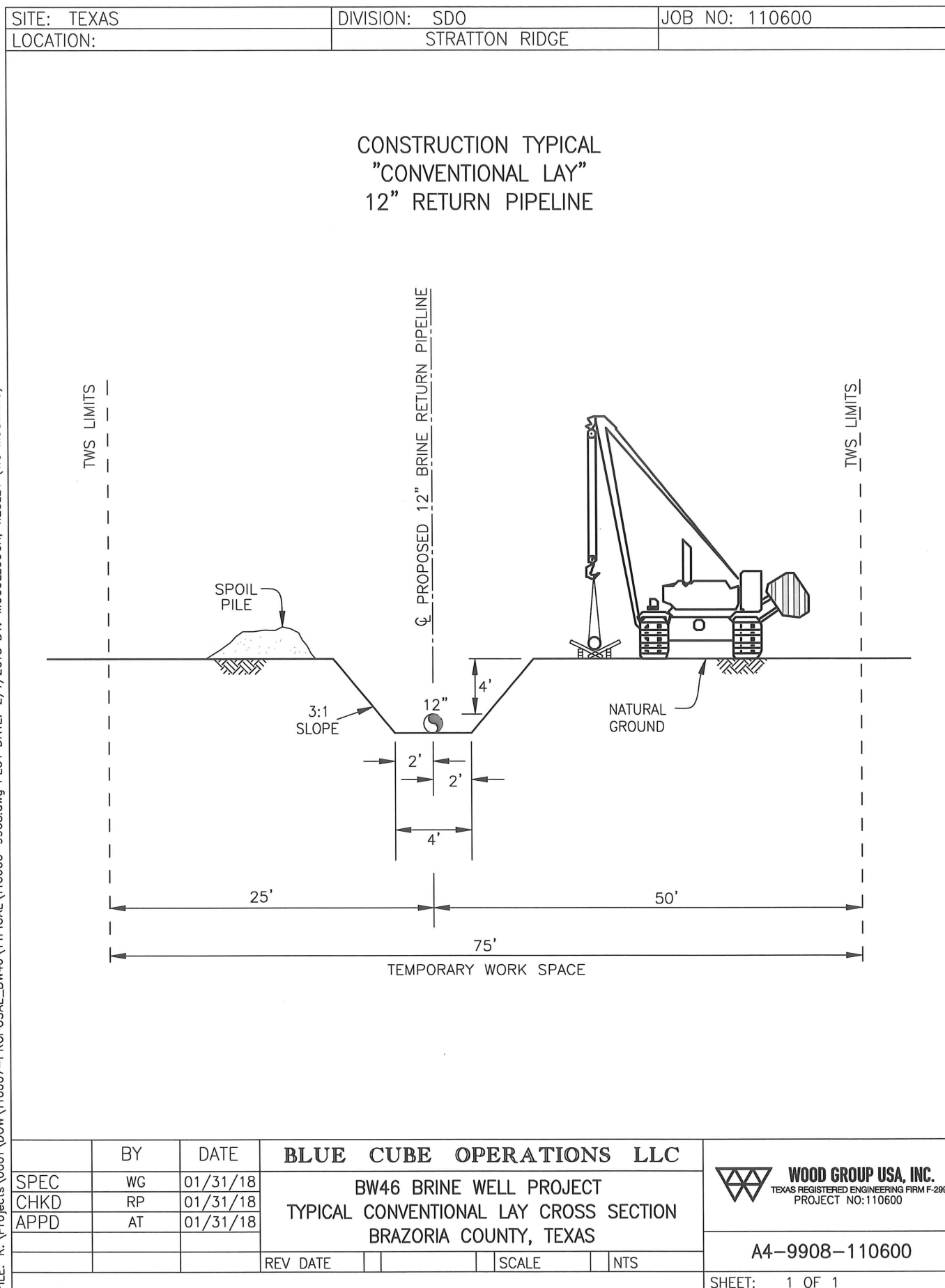
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\$PERSON

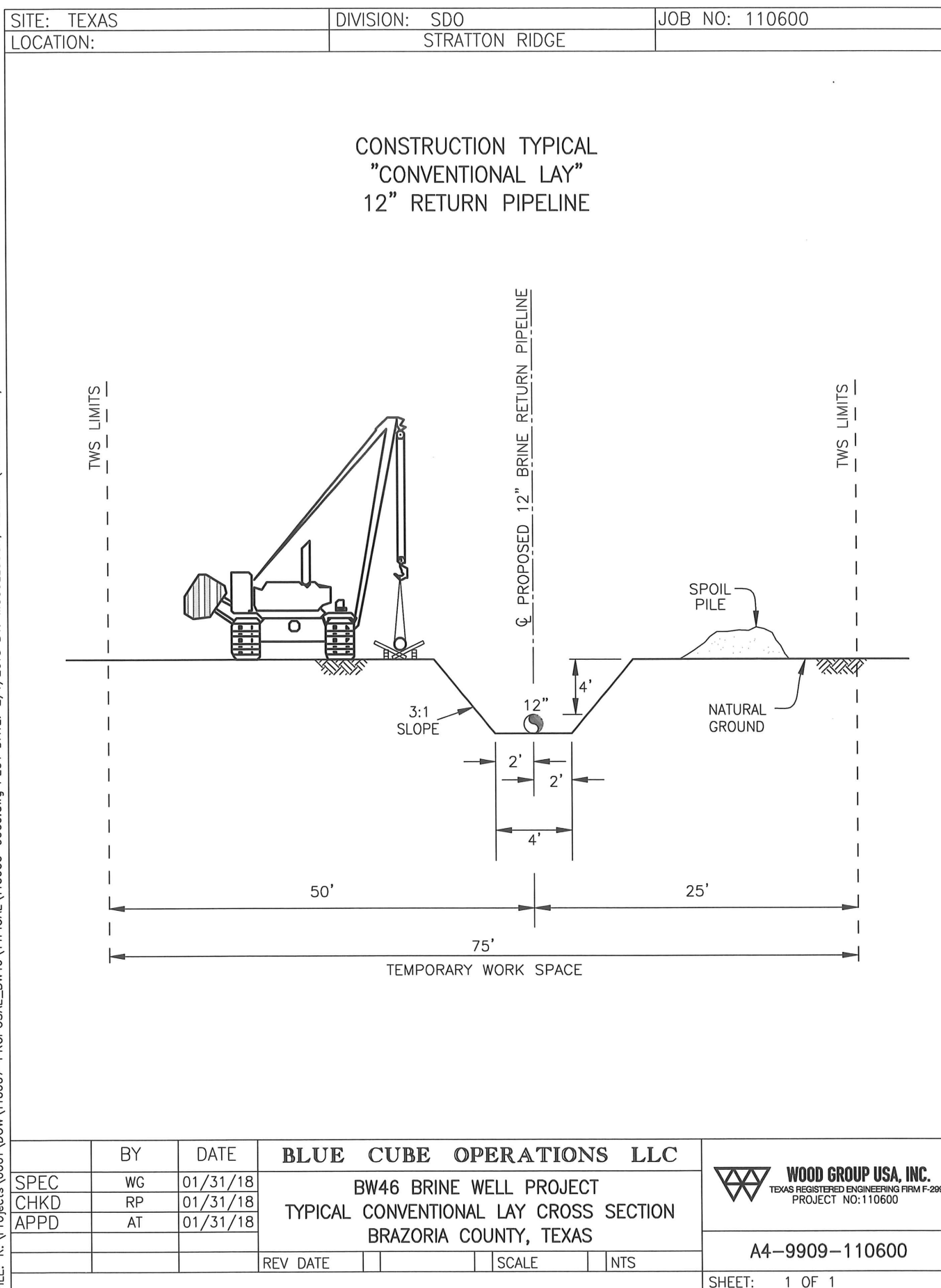
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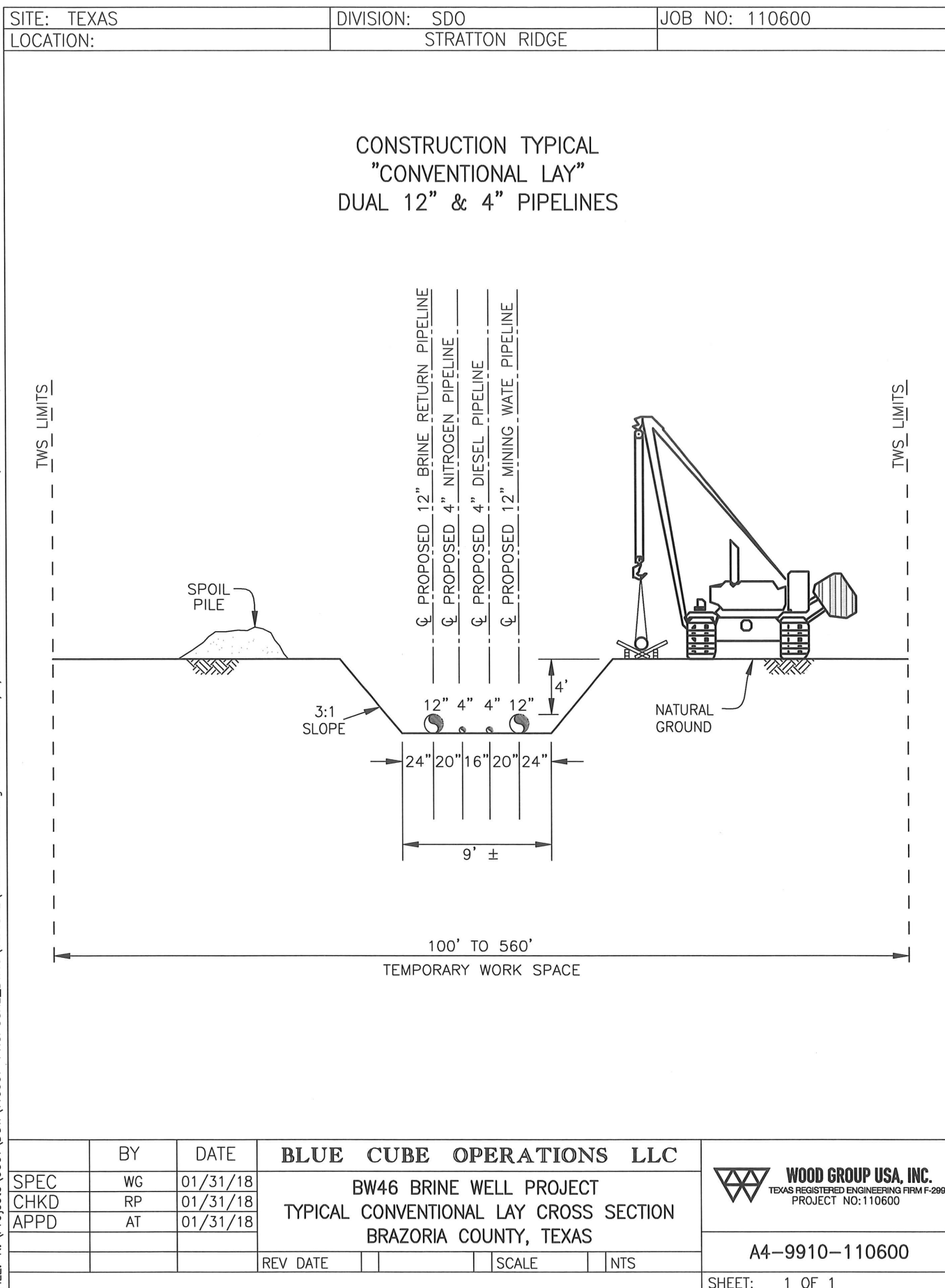
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\$TIME \$DATE \$PERSON \$FILENAME

\$INSTRUCTIONS

STATUS

VER.

SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	

CONSTRUCTION TYPICAL
"CONVENTIONAL LAY"
TEMPORARY DUAL 12" PIPELINES

100' TO 560'
TEMPORARY WORK SPACE

	BY	DATE	BLUE CUBE OPERATIONS LLC			
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL CONVENTIONAL LAY FOR TEMPORARY PIPELINES			
CHKD	RP	01/31/18				
APPD	AT	01/31/18				
			REV DATE		SCALE	NTS

WOOD GROUP USA, INC.
TEXAS REGISTERED ENGINEERING FIRM F-2999
 PROJECT NO: 110600

A4-9911-110600	SHEET: 1 OF 1
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\$TIME

\$DATE

\$PERSON

\$FILENAME

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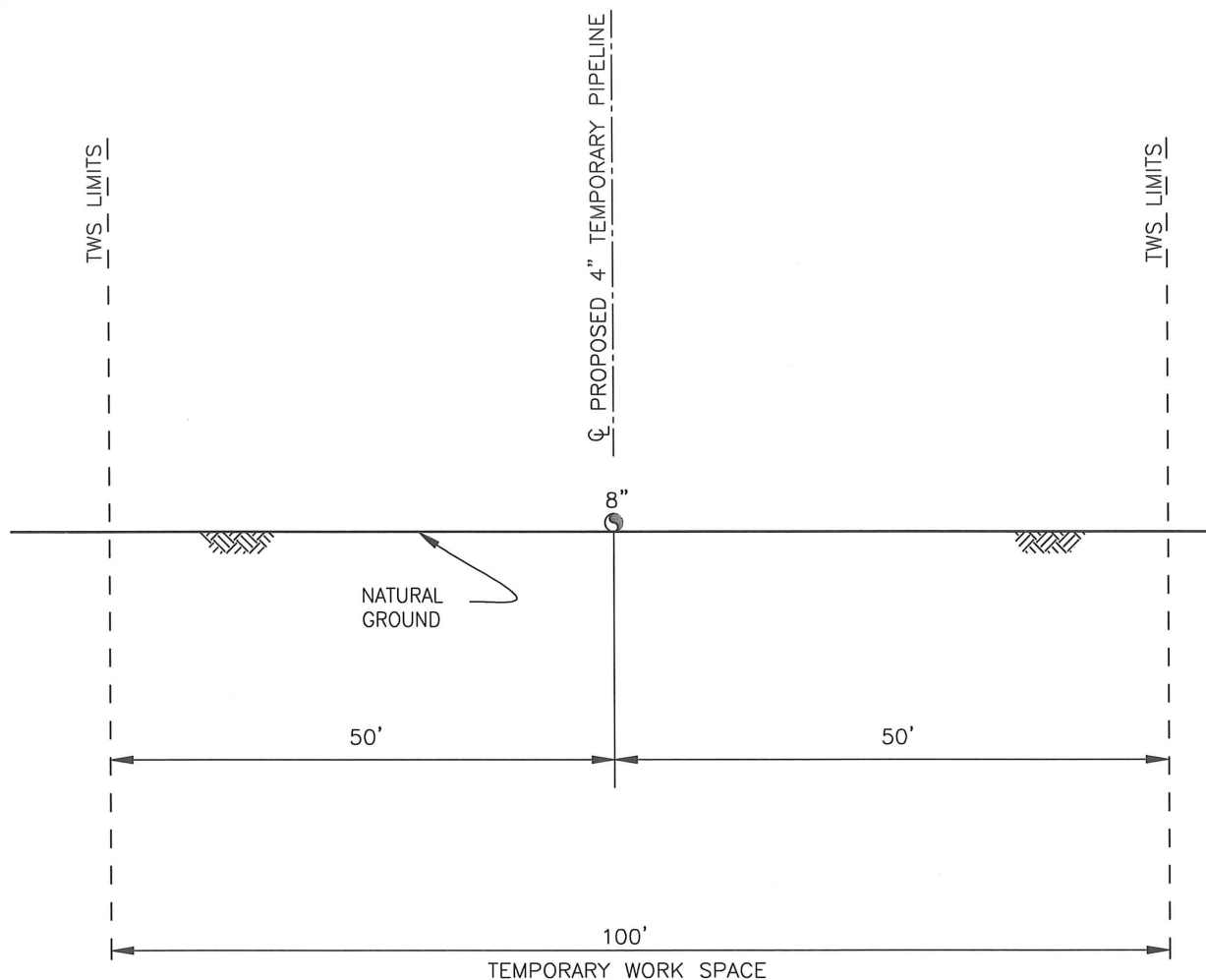
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STATUS


VER.

SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	

CONSTRUCTION TYPICAL
"CONVENTIONAL LAY"
TEMPORARY ABOVE GROUND 8" PIPELINE



FILE: R:\Projects\0001\BOW\110607-PROPOSAL-BW46\TYPICAL\110600-9912.dwg PLOT DATE: 2/5/2018 BY: MCCULLOUGH, WESLEY (WG MUSTANG)

	BY	DATE	BLUE CUBE OPERATIONS LLC				 WOOD GROUP USA, INC. TEXAS REGISTERED ENGINEERING FIRM F-2999 PROJECT NO: 110600
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL CONVENTIONAL LAY FOR TEMPORARY PIPELINES				
CHKD	RP	01/31/18					
APPD	AT	01/31/18					
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SHEET: 1 OF 1							

INSTRUCTIONS

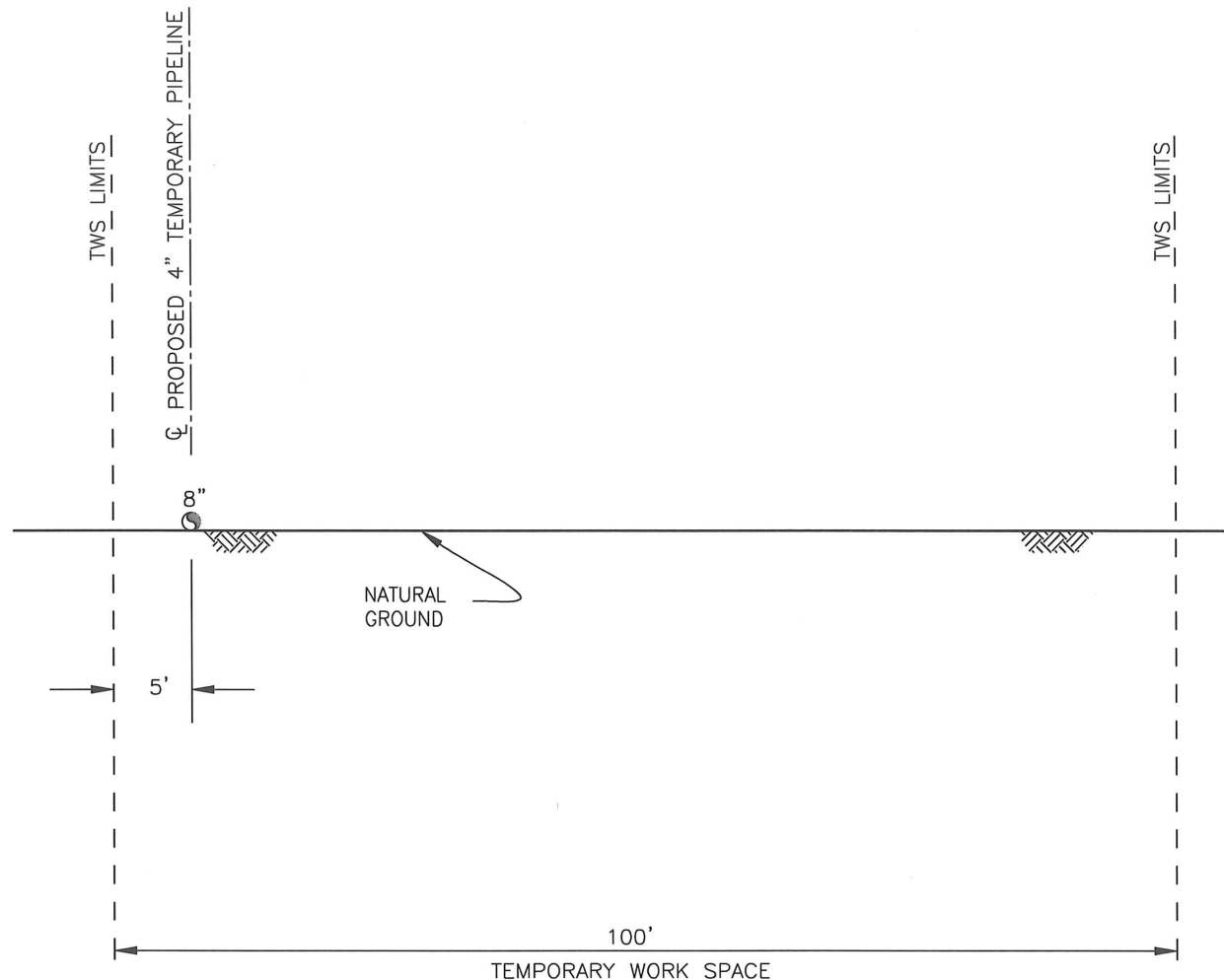
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\$TIME
\$DATE
\$PERSON
\$FILENAME

SITE: TEXAS		DIVISION: SDO		JOB NO: 110600	
LOCATION:		STRATTON RIDGE			

CONSTRUCTION TYPICAL
"CONVENTIONAL LAY"
TEMPORARY ABOVE GROUND 8" PIPELINE



100'
TEMPORARY WORK SPACE

	BY	DATE	BLUE CUBE OPERATIONS LLC			 WOOD GROUP USA, INC. TEXAS REGISTERED ENGINEERING FIRM F-2999 PROJECT NO: 110600	
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL CONVENTIONAL LAY FOR TEMPORARY PIPELINE				
CHKD	RP	01/31/18					
APPD	AT	01/31/18					
			REV DATE		SCALE	NTS	A4-9913-110600
SHEET: 1 OF 1							

\$TIME
\$DATE
\$PERSON
\$FILENAME

FILE: R:\Projects\0001\DOWN\110607-PROPOSAL_BW46\TYPICAL\110600-9913.dwg PLOT DATE: 2/5/2018 BY: MCCULLOUGH, WESLEY (WG MUSTANG)

\$INSTRUCTIONS

STATUS

VER.

SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	

PLAN VIEW
N.T.S.

NOTES:

- METHOD APPLIES TO WATERBODIES WHERE DOWNSTREAM SILTATION MUST BE AVOIDED. FLUMES ARE GENERALLY NOT RECOMMENDED FOR USE ON WATERBODIES WITH A BROAD UNCONFINED CHANNEL, PERMEABLE SUBSTRATE, EXCESSIVE DISCHARGE, OR WHERE A SIGNIFICANT AMOUNT OF BED OR BANK ALTERATION IS REQUIRED TO INSTALL FLUMES OR DIKES.
- SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
- COMPLETE ALL WATERCOURSE ACTIVITIES AS EXPEDIENTLY AS POSSIBLE.
- NO REFUELING OF MOBILE EQUIPMENT OR CONCRETE COATING ACTIVITIES WITHIN 100 FEET OF WATERBODY.
- INSTALL TEMPORARY VEHICLE CROSSING.
- IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA.
- IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL A MINIMUM OF 10 FEET FROM THE WATER'S EDGE WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE SPECIFIC CROSSING PLANS.
- LEAVE HARD PLUGS AT THE STREAM BANK EDGE UNTIL JUST PRIOR TO PIPE INSTALLATION.
- SIZE FLUME TO HANDLE 150% ANTICIPATED FLOWS. INSTALL FLUME IN WATERCOURSE AND MAINTAIN CORRECT ALIGNMENT UNTIL REMOVED.
- CONSTRUCT UPSTREAM DIKE FOLLOWED BY DOWNSTREAM DIKE. INSTALL A FLANGE ON UPSTREAM END OF FLUME AND SEAL TO SUBSTRATE WITH SANDBAGS AND POLYETHYLENE LINER WHERE NECESSARY TO ENSURE A WATERTIGHT BARRIER. "KEY" DIKES INTO BANKS OR CONSTRUCT SECONDARY DIKE, IF NECESSARY.
- PUMP STREAM CHANNEL BETWEEN DIKES, IF NECESSARY. DISCHARGE WATER THROUGH A DEWATERING STRUCTURE AND ONTO A STABLE WELL VEGETATED AREA TO PREVENT EROSION AND SEDIMENTATION. NO HEAVILY SILT-LADEN WATER MAY BE DISCHARGED IN THE STREAM.
- CONSTRUCT SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERCOURSE. CONSTRUCTED SEDIMENT BARRIERS SHALL EXTEND ALONG THE SIDES OF THE STOCKPILES, THE ENDS OF DIKES, AND ACROSS THE ENTIRE CONSTRUCTION R.O.W. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
- COMPLETE PREFABRICATION OF IN-STREAM PIPE SECTION AND WEIGHT PIPE AS NECESSARY PRIOR TO COMMENCEMENT OF IN-STREAM ACTIVITY.
- TRENCH THROUGH WATERCOURSE. INSTALL TEMPORARY (SOFT) PLUGS, IF NECESSARY, TO CONTROL WATER FLOW AND TRENCH SLOUGHING.
- MAINTAIN STREAM FLOW, IF PRESENT, THROUGH FLUME THROUGHOUT CROSSING CONSTRUCTION.
- LOWER-IN PIPE, INSTALL TRENCH PLUG AND BACKFILL IMMEDIATELY.
- RESTORE WATERCOURSE CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
- RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION. STABILIZE WATERBODY BANKS AND INSTALL TEMPORARY SEDIMENT BARRIERS WITHIN 24 HOURS OF COMPLETING THE CROSSING.

	BY	DATE	BLUE CUBE OPERATIONS LLC			
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL OPEN CUT – DRY FLUME BRAZORIA COUNTY, TEXAS			
CHKD	RP	01/31/18				
APPD	AT	01/31/18				
			REV DATE		SCALE	NTS

WOOD GROUP USA, INC.
TEXAS REGISTERED ENGINEERING FIRM F-2999
PROJECT NO: 110600

A4-9914-110600	
SHEET: 1 OF 1	

FILE: R:\Projects\0001\DOWN\110607-PROPOSAL_BW46\TYPICAL\110600-9914.dwg PLOT DATE: 2/5/2018 BY: MCCULLOUGH, WESLEY (WG MUSTANG)

\$INSTRUCTIONS

STATUS

VER.

\$TIME \$DATE \$PERSON \$FILENAME

SITE: TEXAS	DIVISION: SDO	JOB NO: 110600
LOCATION:	STRATTON RIDGE	

APPROXIMATELY 200'

APPROXIMATELY 300'

WATERBODY

APPROXIMATELY 200'

APPROXIMATELY 300'

A - DRILL RIG
B - DRILLER'S CONSOLE
C - DRILL PIPE
D - CRANE
E - PARTS VAN
F - MUD CLEANING UNIT
G - MUD MIXING TANK
H - MUD PUMPS
I - MUD PIT
J - FRAC TANKS
K - DRILLING MUD (PALLETES)
L - PARKING
M - OFFICE TRAILER
N - CONTAINMENT BERM

A - EXIT PIT
B - LIFT EQUIPMENT
C - WELDING AREA
D - MUD PIT
E - MUD CLEANING
F - GENERATOR
G - FRAC TANKS
H - CONTAINMENT BERM

PLAN

PROFILE

NOTES:

1. SET UP DRILLING EQUIPMENT A MINIMUM OF 100 FEET FROM THE EDGE OF THE WATERCOURSE. DO NOT CLEAR OR GRADE WITHIN THE 100 FOOT ZONE.
2. ENSURE THAT ONLY BENTONITE BASED DRILLING MUD IS USED. DO NOT ALLOW THE USE OF ANY ADDITIVES TO THE DRILLING MUD WITHOUT THE APPROVAL OF APPROPRIATE REGULATORY AUTHORITIES AND CLIENT'S REPRESENTATIVE.
3. INSTALL SUITABLE DRILLING MUD TANKS OR SUMPS TO PREVENT CONTAMINATION OF WATERCOURSE.
4. INSTALL BERMS DOWNSLOPE FROM THE DRILL ENTRY AND ANTICIPATED EXIT POINTS TO CONTAIN ANY RELEASE OF DRILLING MUD.
5. DISPOSE OF DRILLING MUD IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AUTHORITY REQUIREMENTS.

	BY	DATE	BLUE CUBE OPERATIONS LLC	WOOD GROUP USA, INC. <small>TEXAS REGISTERED ENGINEERING FIRM F-2999</small>		
SPEC	WG	01/31/18	BW46 BRINE WELL PROJECT TYPICAL HDD AT WATER CROSSING BRAZORIA COUNTY, TEXAS	PROJECT NO: 110600		
CHKD	RP	01/31/18				
APPD	AT	01/31/18				
			REV DATE	SCALE	NTS	A4-9915-110600
SHEET: 1 OF 1						

FILE: R:\Projects\0001\DOWN\110607-PROPOSAL_BW46\TYPICAL\110600-9915.dwg PLOT DATE: 2/5/2018 BY: MCCULLOUGH, WESLEY (WG MUSTANG)

\$INSTRUCTIONS

STATUS

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\$TIME
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\$PERSON