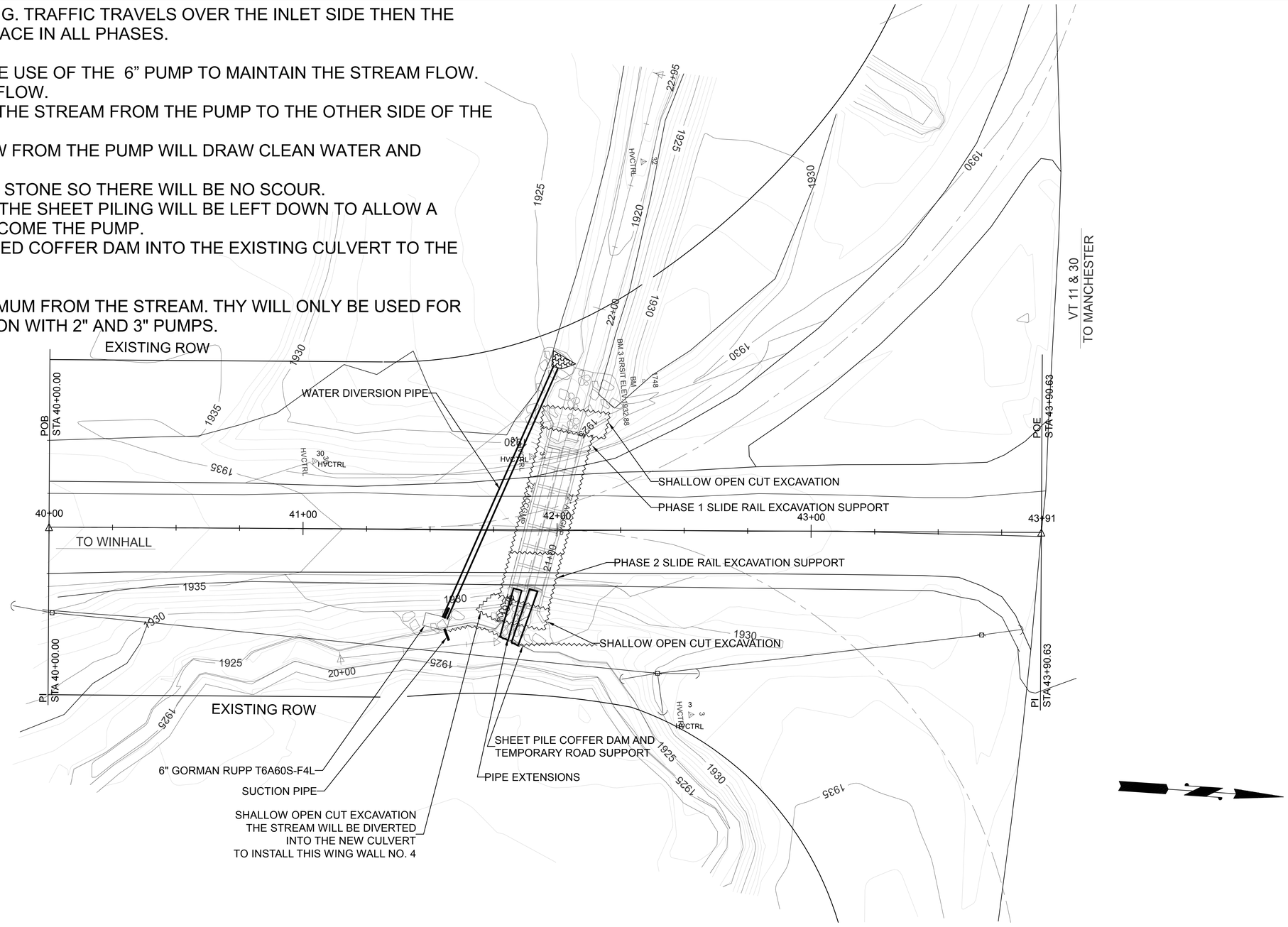
SEE TRAFFIC CONTROL PLANS FOR PHASING. TRAFFIC TRAVELS OVER THE INLET SIDE THEN THE OUTLET SIDE. ALL EPSC ITEM REMAIN IN PLACE IN ALL PHASES.

SEE THE STREAM DIVERSION PLAN FOR THE USE OF THE 6" PUMP TO MAINTAIN THE STREAM FLOW.
THE 6" PUMP WILL HANDLE THE 25cfs OHW FLOW.
THE PIPE LAID ACROSS THE ROAD CARIES THE STREAM FROM THE PUMP TO THE OTHER SIDE OF THE ROAD.
BY BUILDING AN ADAQUATE POND TO DRAW FROM THE PUMP WILL DRAW CLEAN WATER AND DISCHARGE CLEAN WATER.
THE CLEAN WATER WILL DISCHARGE ONTO STONE SO THERE WILL BE NO SCOUR.
AT THE INLET OF THE EXISTING CULVERTS THE SHEET PILING WILL BE LEFT DOWN TO ALLOW A RELIEF FOR THE STREAM SHOULD IT OVERCOME THE PUMP.
THE STREAM WILL FLOW OVER THE LOWERED COFFER DAM INTO THE EXISTING CULVERT TO THE NEW CULVERT AND BACK TO THE STREAM.

THE FILTER BAGS WILL BE PLACED 50' MINIMUM FROM THE STREAM. THY WILL ONLY BE USED FOR LOCALIZED PUMPING FROM THE EXCAVATION WITH 2" AND 3" PUMPS.



BRIDGE 52 STREAM DIVERSION PLAN
SCALE 1" = 20'-0"

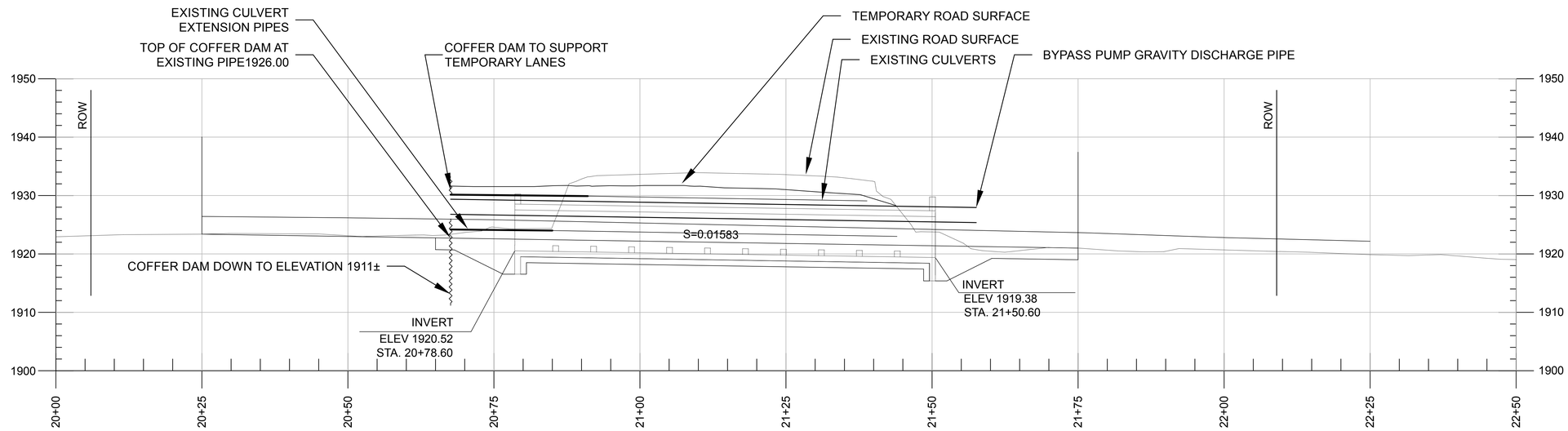
STATE OF VERMONT
RONALD K. BELL
No. 6994
REGISTERED
PROFESSIONAL ENGINEER

Ronald K. Bell

REV. NO.	DATE:
1	05/11/15

RENAUD BROS. INC.
283 FT. BRIDGEMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX (802) 257-7308

SHEET NAME:	BRIDGE 52 STREAM DIVERSION PLAN
PROJECT NAME:	WINHALL
PROJECT NO:	STP CULV (31)
DRAWN BY: CE	CHK'D BY:
DATE:	04/21/2015
SHEET NO.	1 OF 4



STREAM PROFILE

0 10 20

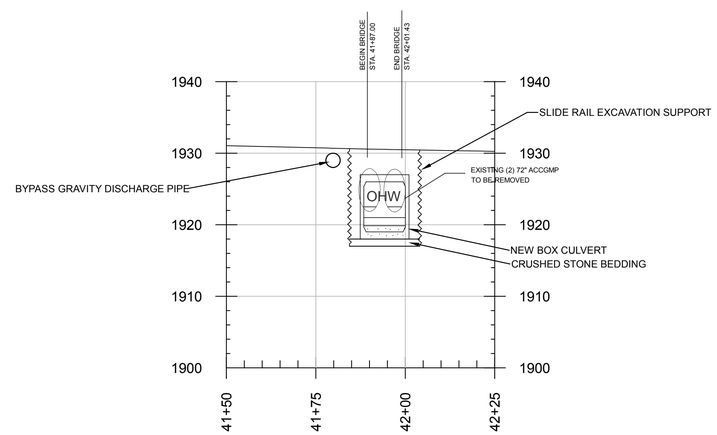
SCALE

SEQUENCE OF OPERATION:

1. INSTALL PUMP DISCHARGE PIPE ACROSS ROUTE 30 AND SET UP BYPASS PUMP
2. INSTALL SHEET PILE COFFERDAM AND EXISTING CULVERT PIPE EXTENSIONS
3. INSTALL ROADWAY SUPORT GRAVELS

NOTES:

THE INTENT OF THE STREAM DIVERSION IS TO UTILIZE THE EXISTING CULVERTS DURING THE CULVERT INSTALLATION. THE COFFER DAM WILL BUILD A WATER LEVEL ENOUGH FOR THE PUMP SUCTION TO ADAQUATLY DRAW FROM. THE SHEETS DRIVEN LOWER IN FRONT OF THE EXISTING CULVERTS IS TO ALLOW A RELIEF FOR THE STREAM TO FLOOD IF THE PUMP SHOULD BE OVER COME DURING A STORM EVENT. IF THE WATER SHOULD OVER TOP THE COFFER DAM IT WILL FLOW DOWN THE EXISTING CULVERT AS IT NORMALLY WOULD. WHEN WE HAVE SECTIONS OF THE NEW BOX INSTALLED THE EXISTING CULVERTS WILL BE MADE TO EXTEND INTO THE NEW CULVERT SO THE STREAM CAN CONTINUE ITS FLOW UNINTERUPTED.



STREAM BYPASS SECTION

HORIZONTAL SCALE: 1' = 20' VERTICAL SCALE: 1" = 10'

REV. NO.	DATE:
1	05/11/15

BRENAUD BROS. INC.
283 FT. BRIDGEMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX.(802) 257-7308

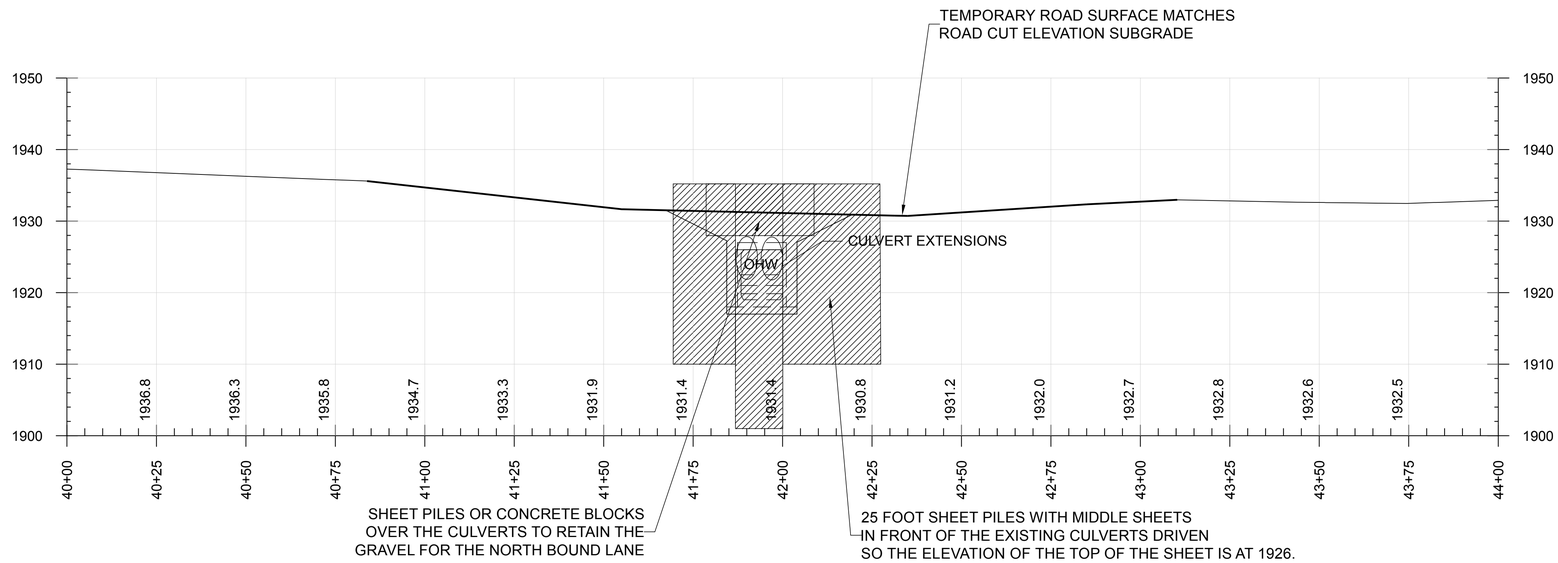
SHEET NAME: BR 52 STREAM DIVERSION PROFILE AND SECTION

PROJECT NAME: WINHALL

PROJECT NO: STP CULV (31)

DRAWN BY: CE | CHK'D BY: | DATE: 04/08/2015

SHEET NO. 2 OF 4



BRIDGE 52 STREAM DIVERSION COFFER DAM ELEVATION

HORIZONTAL SCALE 1" = 20'-0" VERTICAL SCALE 1" = 10'-0"

REV. NO.	DATE:

BRENAUD BROS. INC.
283 FT. BRIDGEMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX (802) 257-7308

SHEET NAME: BRIDGE 52 STREAM DIVERSION PLAN

PROJECT NAME: WINHALL

PROJECT NO: STP CULV (31)

DRAWN BY: CE

CHK'D BY:

DATE: 04/21/2015

SHEET NO. 3 OF 4

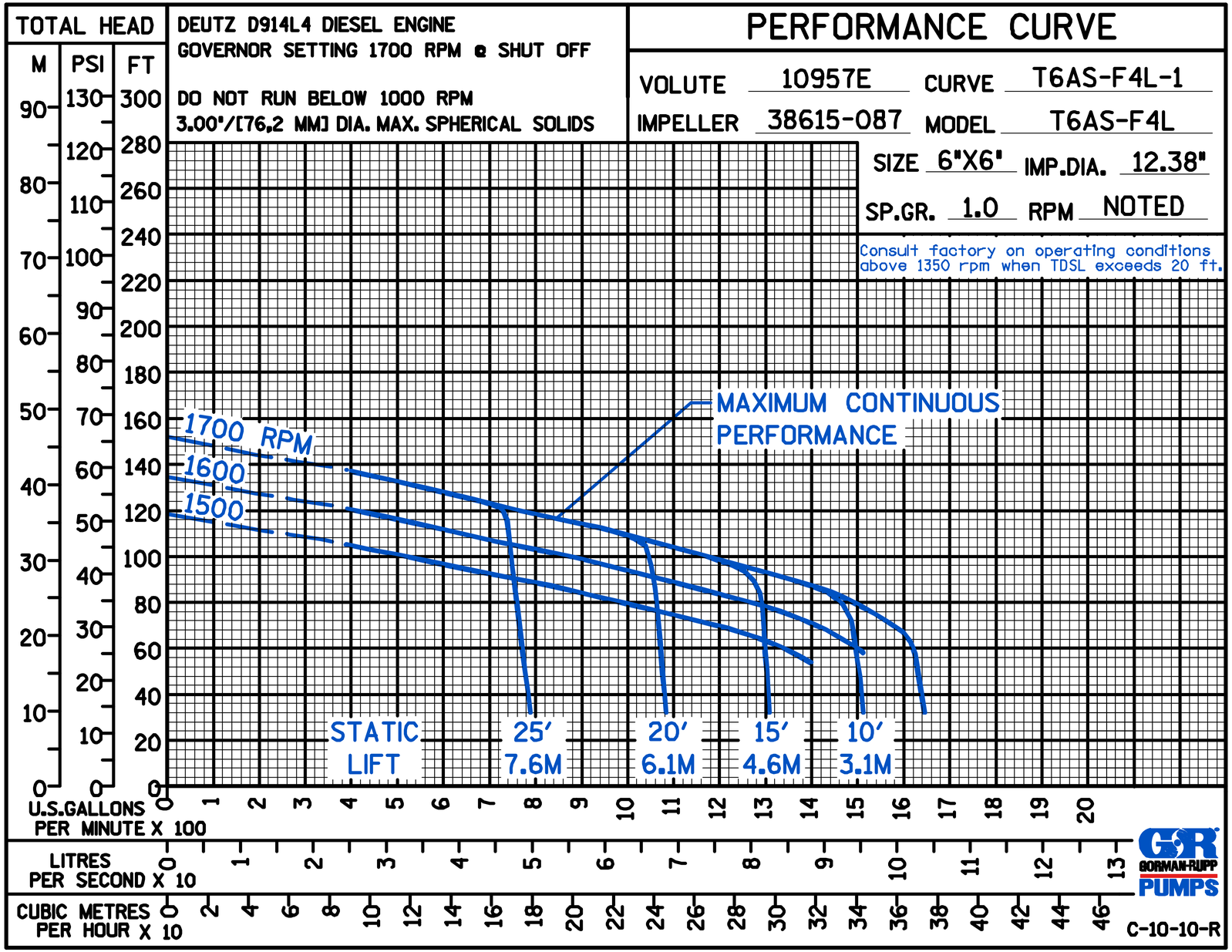
PERFORMANCE CURVE

DEUTZ D914L4 DIESEL ENGINE
GOVERNOR SETTING 1700 RPM @ SHUT OFF

DO NOT RUN BELOW 1000 RPM
3.00"/[76,2 MM] DIA. MAX. SPHERICAL SOLIDS

VOLUTE 10957E CURVE T6AS-F4L-1
IMPELLER 38615-087 MODEL T6AS-F4L
SIZE 6"X6" IMP.DIA. 12.38"
SP.GR. 1.0 RPM NOTED

Consult factory on operating conditions above 1350 rpm when TDSL exceeds 20 ft.



Specification Data | Sec. 45 | PAGE 1590 NOVEMBER 2012

ACDEU

Diesel Engine Driven

Self Priming Centrifugal Pump w/Autostart

Model T6A60S-F4L

Size 6" x 6"

70 MT

Super T SERIES VARIOUS PATENTS APPLY

CERTIFIED PERFORMANCE

Total Head P.S.I.	Total Head Feet	Capacity of Pump in U.S. Gallons per Minute (GPM) at Continuous Performance			
59.4	137	410	410	410	410
52.0	120	730	750	750	750
43.4	100	750	1050	1170	1170
34.7	80	760	1060	1290	1470
26.0	60	770	1070	1300	1500
17.4	40	780	1080	1310	1510
Suction Lift		25'	20'	15'	10'

PUMP SPECIFICATIONS

Size: 6" x 6" (152 mm x 152 mm) NPT - Female.
Casing: Gray Iron 30. Maximum Operating Pressure 99 psi (683 kPa).*
Semi-Open Type, Two Vane Impeller: Ductile Iron 65-45-12. Handles 3" (76,2 mm) Diameter Spherical Solids.
Impeller Shaft: Stainless Steel 17-4 PH.
Replaceable Wear Plate: Carbon Steel 1015.
Removable Adjustable Cover Plate: Gray Iron 30; 60.5 lbs. (27 kg).
Flap Valve: Neoprene w/Steel Reinforcement.
Drive Flange: Gray Iron 30.
Seal Plate: Gray Iron 30.
Shaft Sleeve: Alloy Steel 4130.
Seal: Cartridge Type, Mechanical, Oil-Lubricated, Double Floating, Self-Aligning. Silicon Carbide Rotating and Stationary Faces. Stainless Steel 316 Stationary Seat. Fluorocarbon Elastomers (DuPont Viton® or Equivalent). Stainless Steel 18-8 Cage and Spring. Maximum Temperature of Liquid Pumped 160°F (71°C).*
Bearing Housing: Gray Iron 30.
Radial Bearing: Open Single Row Ball.
Thrust Bearing: Open Double Row Ball.
Bearing and Seal Cavity Lubrication: SAE 30 Non-Detergent Oil.
Flanges: Gray Iron 30.
Gaskets: Buna-N, Compressed Synthetic Fibers, PTFE, Vegetable Fiber, Cork, and Rubber.
O-Rings: Buna-N.
Hardware: Standard Plated Steel.
Brass Pressure Relief Valve.
Bearing and Seal Cavity Oil Level Sight Gauges.
Standard Equipment: Hoisting Bail. 90° Discharge Elbow. Strainer. Single Ball Type Float Switch.**
***50 Ft. (15 m) Standard Length; Dual Switches and Alternate Cable Lengths Available From the Factory.*
Optional Equipment: Battery. G-R Hard Iron Impeller and Seal Plate. Hardened Steel Wear Plate. High Speed (55 MPH/89 KM/H) Single Axle Pneumatic-Tired Wheel Kit w/DOT-Approved Lights and Electric Brakes. Tandem Axle Over-the-Road Trailer (Meets DOT Requirements) Available w/Either Electric or Hydraulic Surge Brakes, Running Lights, Jack Stands and Safety Cables/Chains. EPS w/Submersible Transducer Liquid Level Sensor (50 Ft.[15 M] Cable Standard, Alternate Lengths Available).
**Consult Factory for Applications Exceeding Maximum Pressure and/or Temperature Indicated.*

WARNING!
Do not use in explosive atmosphere or for pumping volatile flammable liquids.

ENGINE SPECIFICATIONS

Model: Deutz D914L4.
Type: Four Cylinder, Four Cycle, Air Cooled Diesel Engine.
Displacement 263.2 Cu. In. (4,3 Liters).
Governor: Mechanical.
Lubrication: Forced Circulation.
Air Cleaner: Oil Bath.
Oil Reservoir: 13.7 U.S. Qts. (13 Liters) Dry; 12.7 U.S. Qts. (12 Liters) Refill.
Fuel Tank: 88 U.S. Gallons (333 Liters).
Full Load Operating Time: 31.5 Hrs.
Starter: 12Volt Electric.
Standard Features: High Oil Temperature, Low Oil Pressure, V-belt, Alternator and Start Failure Safety Shut Down Switches/Indicators. Fuel Level Gauge. Throttle Control. Autostart Instrument Panel Includes: Temperature Gauge, Oil Pressure Gauge, Ammeter, Hourmeter, Tachometer, Manual/Stop/Auto Key Switch, 15 Amp Fuse, Audible Startup Warning Delay. Muffler w/Guard and Weather Cap.

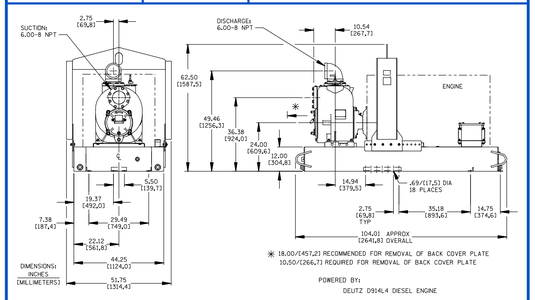
DEUTZ PUBLISHED PERFORMANCE:
Maximum Gross Continuous B.H.P.
73.7 (55 kW) @ 2300 RPM

GORMAN-RUPP PUMPS
THE GORMAN-RUPP COMPANY ● MANSFIELD, OHIO
GORMAN-RUPP OF CANADA LIMITED ● ST. THOMAS, ONTARIO, CANADA
www.grpumps.com
Specifications Subject to Change Without Notice
Printed in U.S.A.

Specification Data
SECTION 45, PAGE 1590

APPROXIMATE DIMENSIONS and WEIGHTS

	SKID BASE	2-WHEEL
NET WEIGHT:	3055 LBS. (1386 KG.)	3565 LBS. (1617 KG.)
SHIPPING WEIGHT:	3290 LBS. (1492 KG.)	3565 LBS. (1617 KG.)
EXPORT CRATE SIZE:	273 CU. FT. (7,7 CU. M.)	



GORMAN-RUPP PUMPS
THE GORMAN-RUPP COMPANY ● MANSFIELD, OHIO
GORMAN-RUPP OF CANADA LIMITED ● ST. THOMAS, ONTARIO, CANADA
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REV. NO.	DATE:

BRENAUD BROS. INC.
283 FT. BRIDGEMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX: (802) 257-7308

SHEET NAME: BRIDGE 52 STREAM DIVERSION PLAN
PROJECT NAME: WINHALL
PROJECT NO: STP CULV (31)
DRAWN BY: CE
CHK'D BY:
DATE: 05/11/2015
SHEET NO. 4 OF 4

From: McIntosh, Mindon (Buffalo) [mindon.mcintosh@aecom.com]
Sent: Monday-May 04-2015 3-36 PM
To: cezequelle@gmail.com; renaudbr@sover.net
Cc: ron.lemaire@state.vt.us; acentofranchi@eivtech.com
Subject: FW: Winhall STP CULV(31) Water Diversion Plan Submittal

Mindon C. McIntosh
NICET IV
NETTCP Soils & Aggregates
ACI
D #518.688.0015 C #518.930.8094
mindon.mcintosh@aecom.com

AECOM
3 Corporate Drive
Suite 203
Clifton Park, NY 12065

www.aecom.com

From: Lemaire, Ron [Ron.Lemaire@state.vt.us]
Sent: Friday, May 01, 2015 2:34 PM
To: McIntosh, Mindon (Buffalo); acentofranchi@eivtech.com
Subject: FW: Winhall STP CULV(31) Water Diversion Plan Submittal

From: Jacqueline Dagesse [mailto:jdagesse@eivtech.com]
Sent: Wednesday, April 29, 2015 7:20 PM
To: Lemaire, Ron
Cc: Farley, William; Mackintosh, Mark
Subject: Winhall STP CULV(31) Water Diversion Plan Submittal

Hi Ron,

We completed a cursory review of the Winhall STP CULV (31) Water Diversion Plan and have the following comments:

- Renaud Brothers mentions using a 6" pump for dewatering. What size event would this pump be able to handle?
- Where are they dewatering to? Using a filter bag? What is the backup plan?
- The plansheets that they provide need to have resource information, stationing and north arrow.
- We need a more detailed description of what they plan to do.

Jacquie

--

EIV Technical Services
www.eivtech.com
55 Leroy Rd., Suite 15
Williston, VT 05495
off: 802.497.3653

Charlie Ezequelle

From: McIntosh, Mindon (Buffalo) [mindon.mcintosh@aecom.com]
Sent: Thursday-May 21-2015 11-55 AM
To: Charlie Ezequelle; dcrenaud@sover.net
Subject: FW: Water Diversion Submittal/Meeting

ATTN: Roger Farnsworth
Charlie Ezequelle

For the water diversion submittal there are a few things that need to be done before a meeting can be held. First the plans will need the plans stamped before they are sent to the designers (refer to the special provision #51). Once the plans are stamped and have been accepted by the designers a field meeting can be held. We don't want to hold the field meeting before this in case things need to be changed.

Thank you

Mindon

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