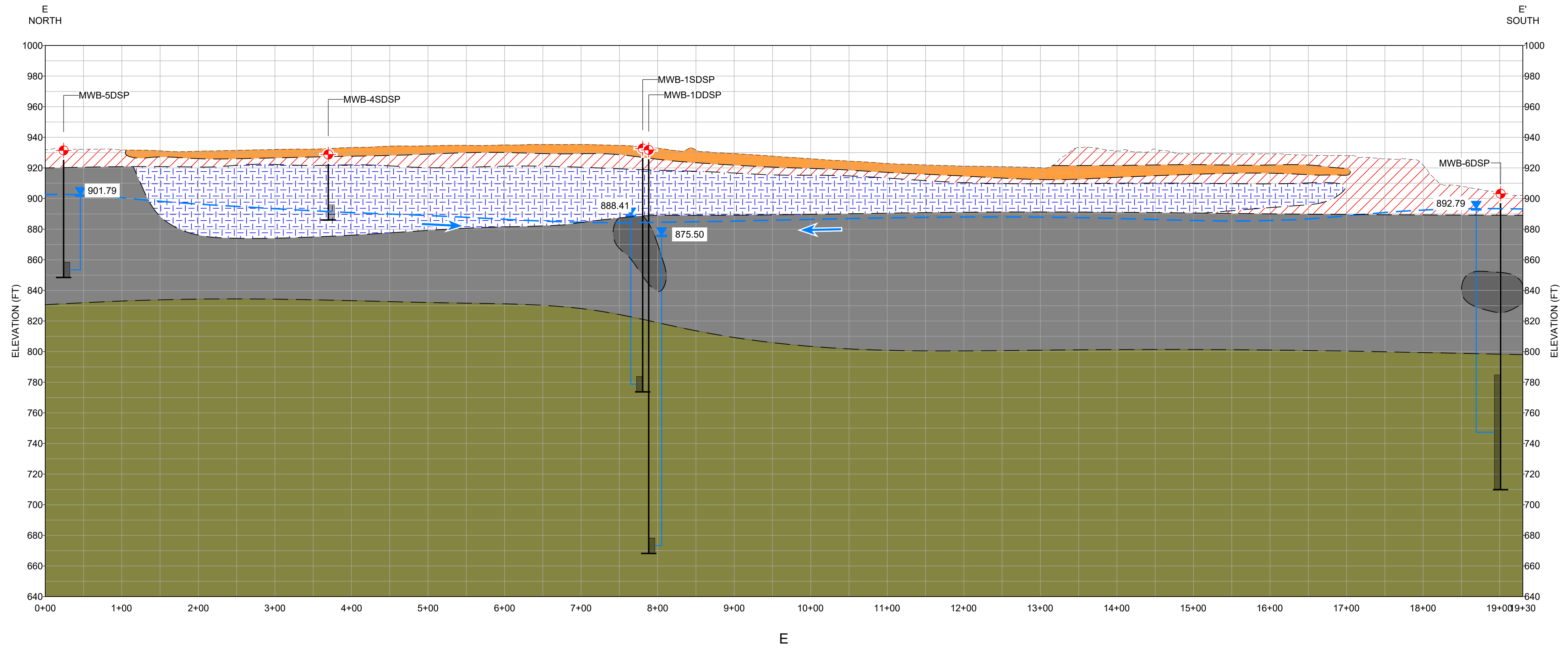


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**LEGEND**

- EXISTING GROUND PROFILE
- INFERRED GEOLOGIC CONTACT
- INFERRED GROUNDWATER SURFACE
- ▼ WATER LEVEL MEASURED AUGUST 26, 2019 IN FEET NAVD88
- CONCEPTUAL GROUNDWATER FLOW DIRECTION
- ▲ GOLDBER PIEZOMETER (EXISTING)
- ▲ GOLDBER PIEZOMETER (NO LONGER EXISTING)
- ◆ BEDROCK GROUNDWATER MONITORING WELL
- ◆ 2017 INTERCEPTOR TRENCH EXTENSION BOREHOLE
- ◆ 2016 INTERCEPTOR TRENCH EXTENSION BOREHOLE
- EXPLORATORY BOREHOLE (BACKFILLED)
- PUSH PROBE
- CAP (CLAYEY SILT)
- ▨ FILL (NON-CKD)
- ▨ FILL (WITH CKD)
- QVT
- COAL
- SHALE
- SANDY SILT
- SANDSTONE
- SILTY CLAYSTONE
- SILTSTONE
- SHALE / SILTSTONE
- BEDROCK

**NOTE(S)**

1. PIEZOMETER / MONITORING WELL ELEVATIONS BASED ON SURVEY DATE AND MAY NOT MATCH SURFACE PROFILE FROM KING COUNTY 2016 LIDAR.
2. GEOLOGIC UNITS INFERRED AND PROJECTED ONTO CROSS SECTION LINE.
3. MWB-4SDSP WATER LEVEL NOT INCLUDED BECAUSE IT IS INSTALLED IN A SHALLOW PERCHED AQUIFER.
4. CROSS SECTION OF FILL (WITH CKD) AND CAP (CLAYEY SILT) PROJECTED ONTO PROFILE LINE E-E' FOR CLARITY.

**REFERENCE(S)**

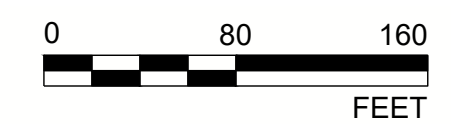
BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.

CLIENT  
**HOLCIM**

CONSULTANT



YYYY-MM-DD	2021-06-17
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	JX
APPROVED	GZ



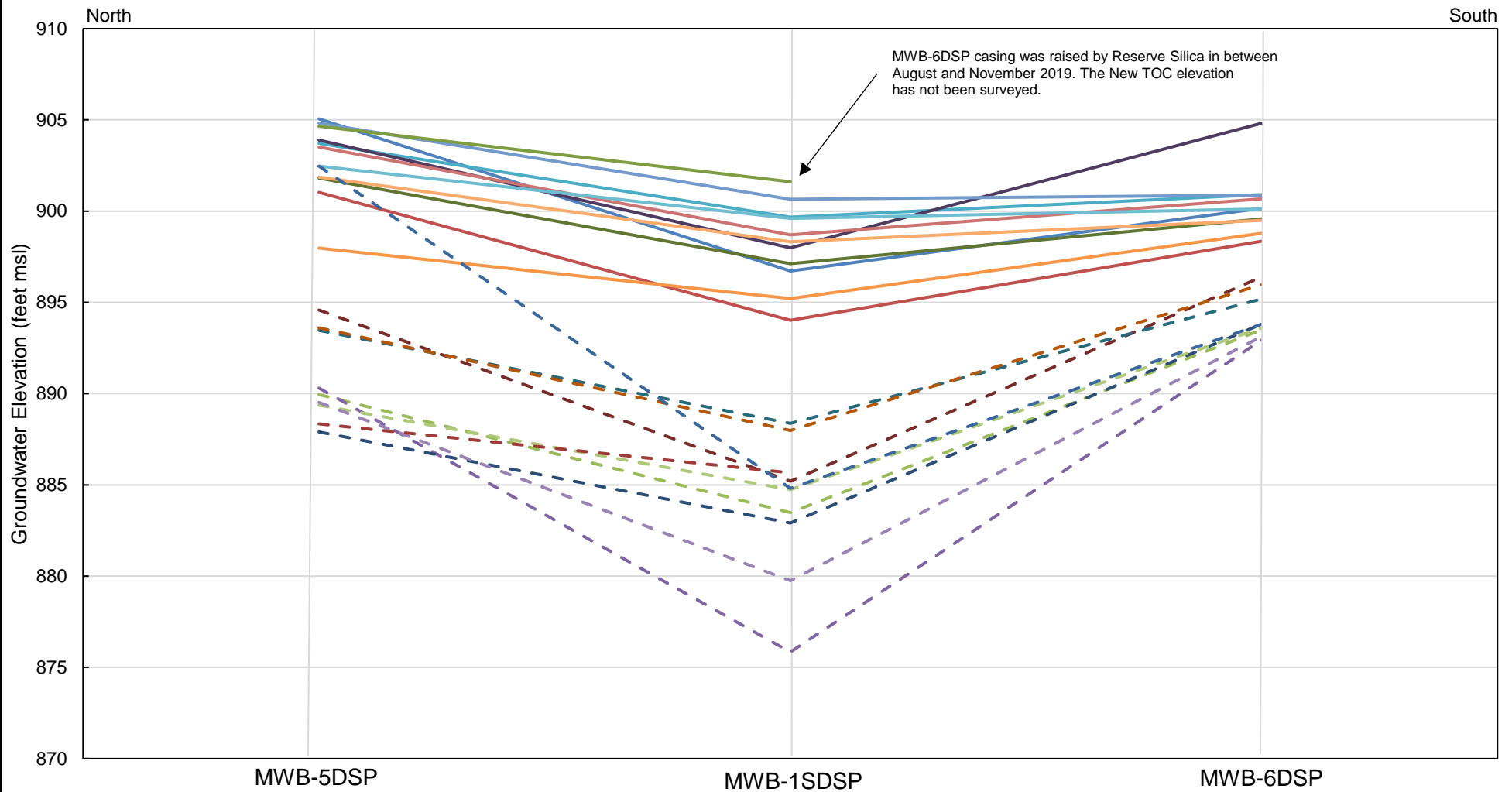
PROJECT  
**RI WORK PLAN 2021  
RAVENSDALE, WA**

TITLE  
**CONCEPTUAL CROSS SECTION E-E'**

PROJECT NO.	PHASE	REV.
152030402	004	0

FIGURE  
**5-1**

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



Note: Groundwater elevations shown in the time series chart in wells MWB-5DSP and MWB-6DSP are corrected with a downward gradient observed in well pair MWB-1SDSP and MWB-1DDSP based upon screen elevations.

LEGEND

- |           |           |           |
|-----------|-----------|-----------|
| 10-Feb-15 | 4-May-15  | 4-Aug-15  |
| 4-Nov-15  | 8-Feb-16  | 2-May-16  |
| 22-Aug-16 | 1-Nov-16  | 31-Jan-17 |
| 30-May-17 | 16-Aug-17 | 9-Nov-17  |
| 28-Feb-18 | 1-May-18  | 22-Aug-18 |
| 6-Nov-18  | 11-Mar-19 | 8-May-19  |
| 27-Aug-19 | 13-Nov-19 | 14-Feb-20 |

CLIENT  
HOLCIM

CONSULTANT



PROJECT  
RI WORK PLAN 2021  
RAVENSDALE, WASHINGTON

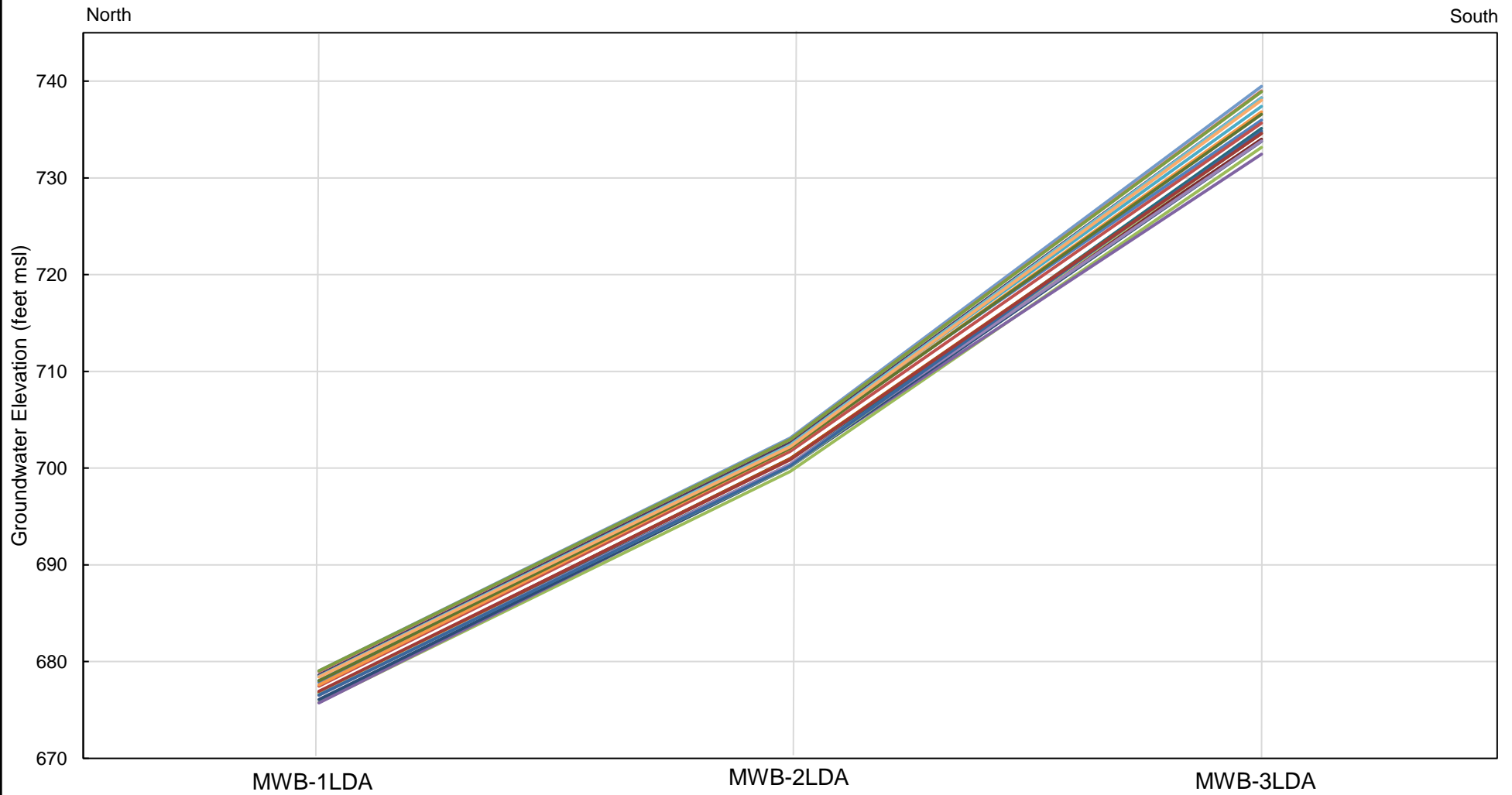
TITLE  
**DSP HISTORICAL GROUNDWATER ELEVATIONS**

PROJECT NO.  
152030402

PHASE  
004

REV.  
0

FIGURE  
5-2



LEGEND

- |           |           |           |           |
|-----------|-----------|-----------|-----------|
| 10-Feb-15 | 4-May-15  | 4-Aug-15  | 4-Nov-15  |
| 8-Feb-16  | 2-May-16  | 22-Aug-16 | 1-Nov-16  |
| 31-Jan-17 | 30-May-17 | 16-Aug-17 | 9-Nov-17  |
| 28-Feb-18 | 1-May-18  | 22-Aug-18 | 6-Nov-18  |
| 11-Mar-19 | 8-May-19  | 27-Aug-19 | 13-Nov-19 |
| 14-Feb-20 |           |           |           |

CLIENT  
HOLCIM

CONSULTANT



PROJECT  
RI WORK PLAN 2021  
RAVENSDALE, WASHINGTON

TITLE  
**LDA HISTORICAL GROUNDWATER ELEVATIONS**

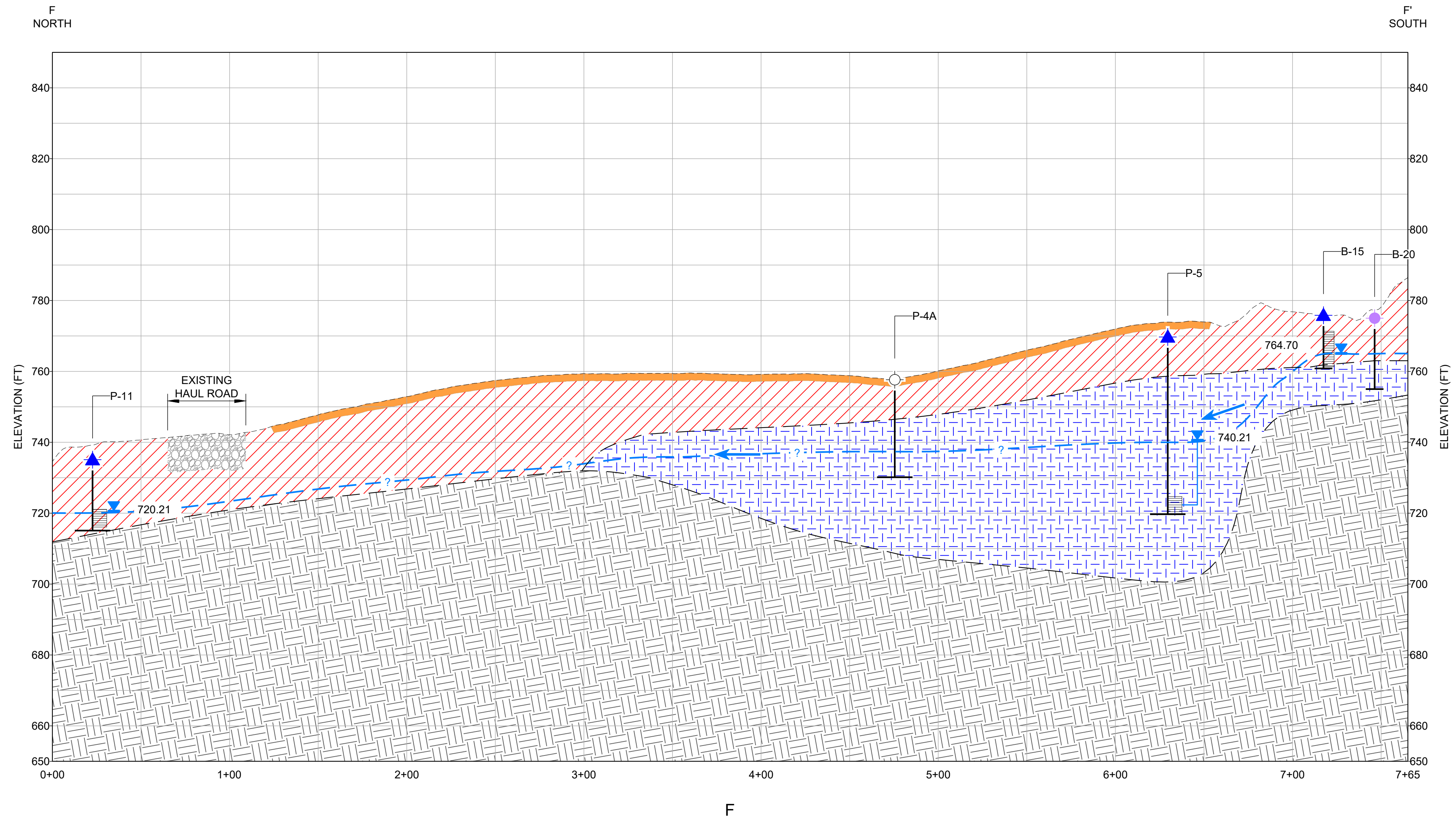
PROJECT NO.  
152030402

PHASE  
004

REV.  
0

FIGURE  
**5-3**

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**LEGEND**

-----	EXISTING GROUND PROFILE	◆	2017 INTERCEPTOR TRENCH EXTENSION BOREHOLE	■	COAL	■	SILTSTONE
---	INFERRED GEOLOGIC CONTACT	◆	2016 INTERCEPTOR TRENCH EXTENSION BOREHOLE	■	SHALE	■	SHALE / SILTSTONE
---	INFERRED GROUNDWATER SURFACE	○	EXPLORATORY BOREHOLE (BACKFILLED)	■	SANDY SILT	■	BEDROCK
▼	WATER LEVEL MEASURED AUGUST 26, 2019 IN FEET NAVD88	●	PUSH PROBE	■	SANDSTONE	■	SAND AND GRAVEL, CONTAINS VARIABLE AMOUNTS OF SILT, MIXED WITH SLAG FRAGMENTS
→	CONCEPTUAL GROUNDWATER FLOW DIRECTION	■	CAP (CLAYEY SILT)	■	SILTY CLAYSTONE		
▲	GOLDER PIEZOMETER (EXISTING)	■	FILL (NON-CKD)				
▲	GOLDER PIEZOMETER (NO LONGER EXISTING)	■	FILL (WITH CKD)				
◆	BEDROCK GROUNDWATER MONITORING WELL	■	QVT				

**NOTE(S)**  
 1. PIEZOMETER / MONITORING WELL ELEVATIONS BASED ON SURVEY DATE AND MAY NOT MATCH SURFACE PROFILE FROM KING COUNTY 2016 LIDAR.  
 2. GEOLOGIC UNITS INFERRED AND PROJECTED ONTO CROSS SECTION LINE.

**REFERENCE(S)**

BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.

CLIENT  
**HOLCIM**

CONSULTANT



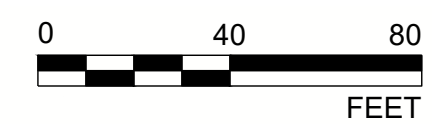
YYYY-MM-DD	2021-06-17
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	JX
APPROVED	GZ

PROJECT  
**RI WORK PLAN 2021  
 RAVENSDALE, WA**

TITLE  
**CONCEPTUAL CROSS SECTION F-F'**

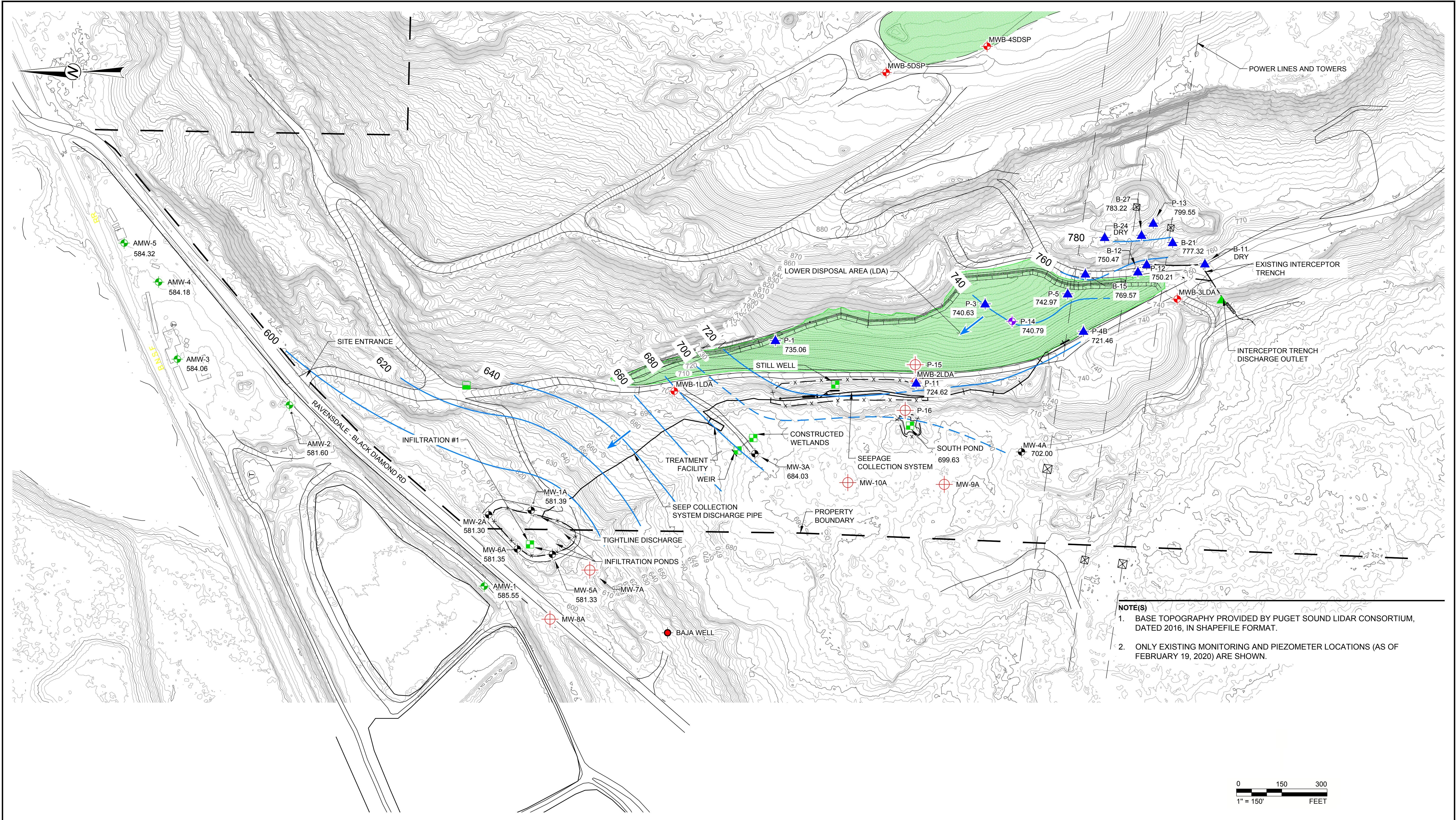
PROJECT NO.	PHASE	REV.
152030402	004	0

FIGURE  
**5-4**

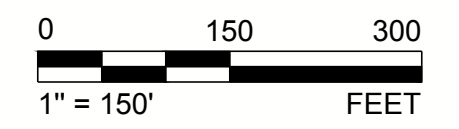


1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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- NOTE(S)**
1. BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.
  2. ONLY EXISTING MONITORING AND PIEZOMETER LOCATIONS (AS OF FEBRUARY 19, 2020) ARE SHOWN.



LEGEND			
	COVER AREA		BAJA WELL
	MW-1A		P-15
	MWB-1DDSP		P-1
	P-14		LDA SURFACE WATER SAMPLING LOCATION
	AMW-1		DSP BEDROCK SAMPLING LOCATION (PORTAL)
	ALLUVIAL MONITORING WELL		INTERCEPTOR TRENCH SAMPLING LOCATION
	PROPOSED WELL		FENCE LINE
	GOLDER PIEZOMETER		
	LDA SURFACE WATER SAMPLING LOCATION		
	DSP BEDROCK SAMPLING LOCATION (PORTAL)		

CLIENT  
**HOLCIM**

CONSULTANT



YYYY-MM-DD	2021-06-17
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	GZ
APPROVED	GZ

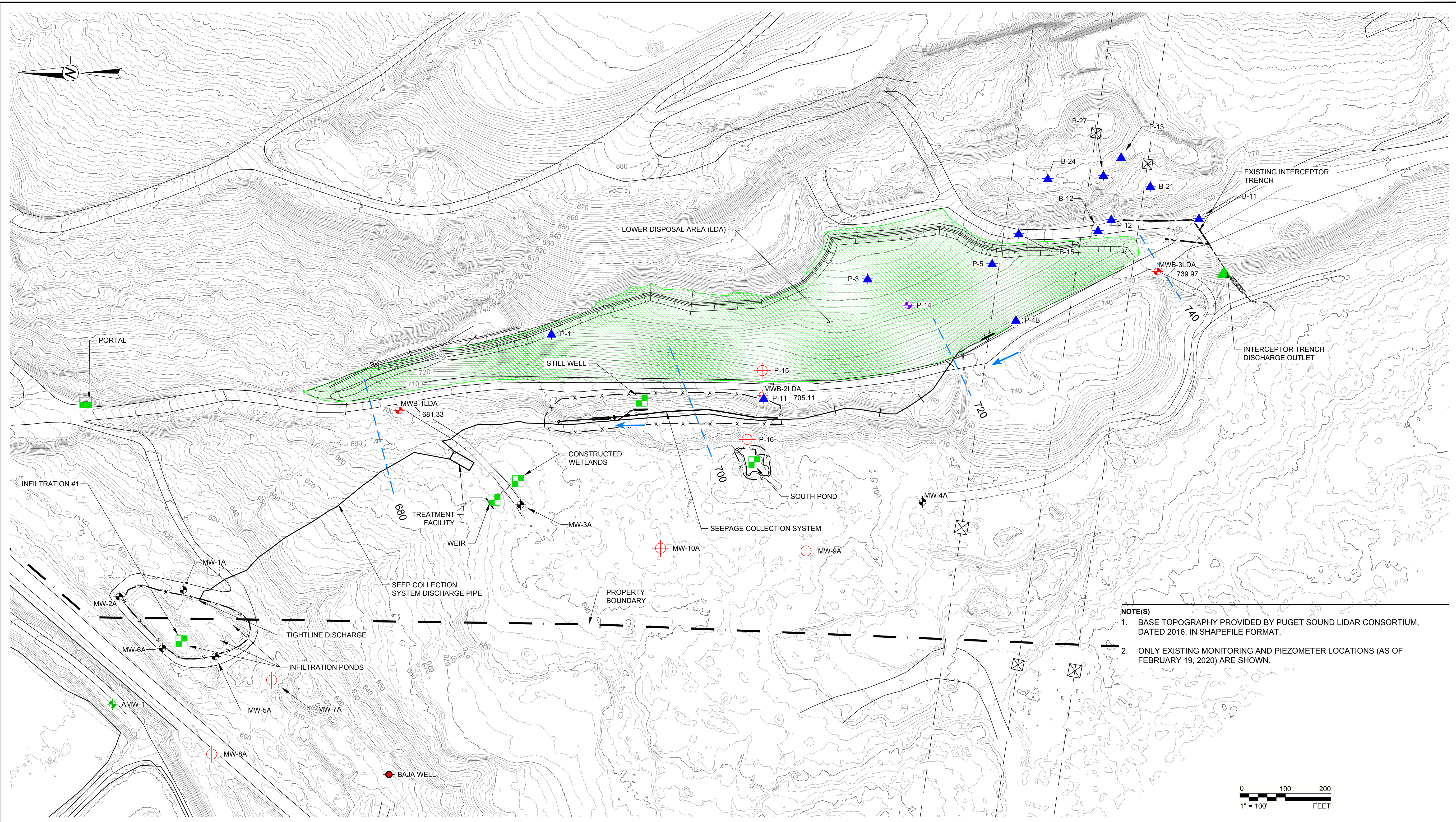
PROJECT  
**RI WORK PLAN 2021  
RAVENSDALE, WA**

TITLE  
**CONCEPTUAL SHALLOW GROUNDWATER CONTOUR MAP**

PROJECT NO.	PHASE	REV.	FIGURE
152030402	004	0	5-5

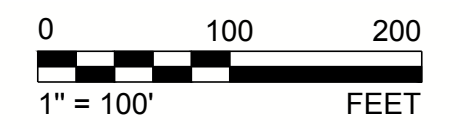
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS/D

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**NOTE(S)**

1. BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.
2. ONLY EXISTING MONITORING AND PIEZOMETER LOCATIONS (AS OF FEBRUARY 19, 2020) ARE SHOWN.



LEGEND	
	COVER AREA
	ALLUVIAL MONITORING WELL
	BEDROCK MONITORING WELL
	LDA MONITORING WELL
	PLANT SITE MONITORING WELLS
	BAJA WELL
	P-1
	LDA SURFACE WATER SAMPLING LOCATION
	DSP BEDROCK SAMPLING LOCATION (PORTAL)
	INTERCEPTOR TRENCH SAMPLING LOCATION
	PRIVATE WELL
	GOLDER PIEZOMETER
	FENCE LINE

CLIENT  
**HOLCIM**

CONSULTANT



YYYY-MM-DD	2021-06-17
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	JX
APPROVED	GZ

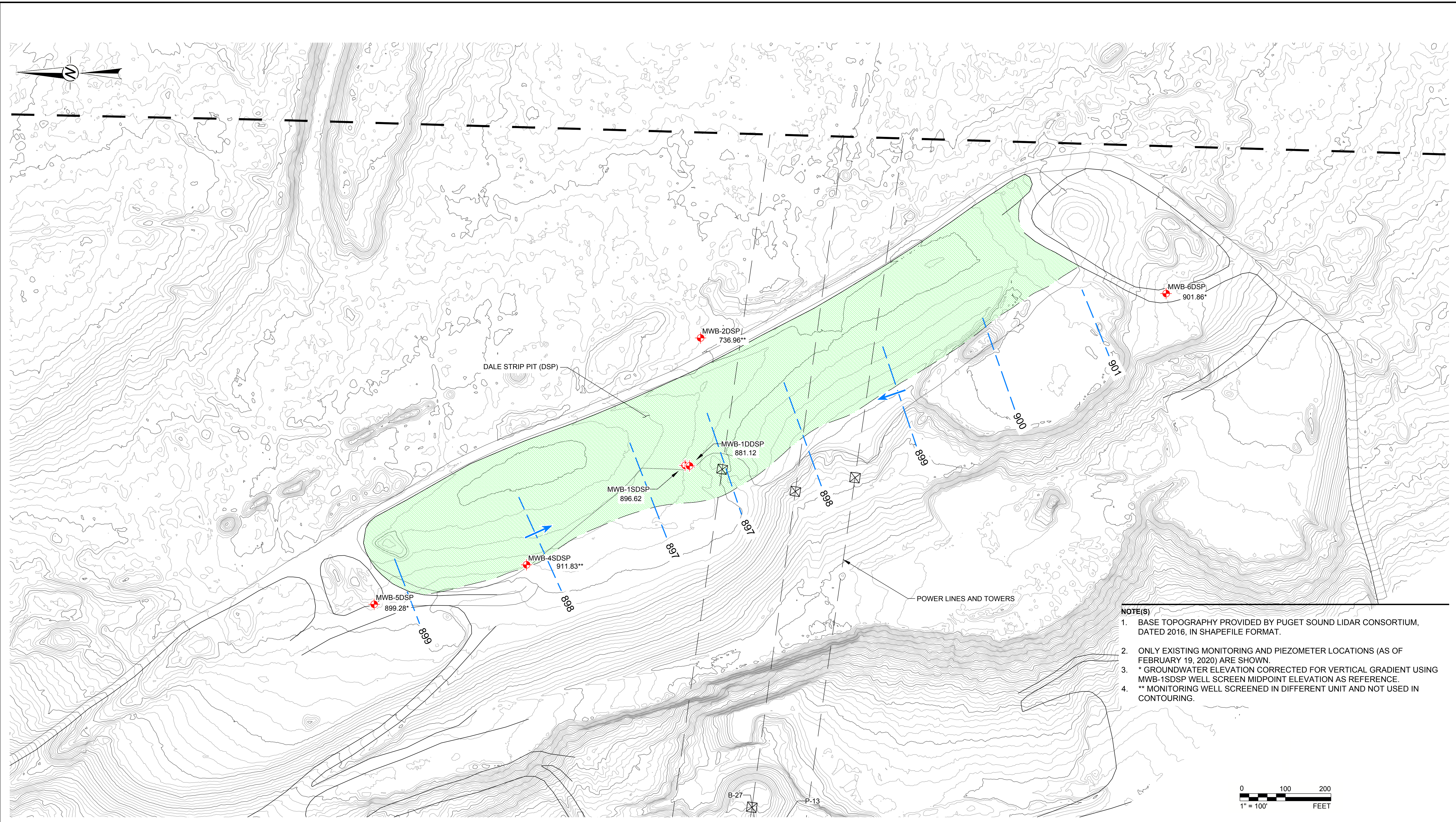
PROJECT  
**RI WORK PLAN 2021  
RAVENSDALE, WA**

TITLE  
**CONCEPTUAL LDA BEDROCK GROUNDWATER CONTOUR MAP**

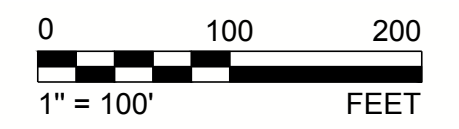
PROJECT NO.	PHASE	REV.	FIGURE
152030402	004	0	5-6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS/D

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- NOTE(S)**
1. BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.
  2. ONLY EXISTING MONITORING AND PIEZOMETER LOCATIONS (AS OF FEBRUARY 19, 2020) ARE SHOWN.
  3. \* GROUNDWATER ELEVATION CORRECTED FOR VERTICAL GRADIENT USING MWB-1SDSP WELL SCREEN MIDPOINT ELEVATION AS REFERENCE.
  4. \*\* MONITORING WELL SCREENED IN DIFFERENT UNIT AND NOT USED IN CONTOURING.



LEGEND	
	COVER AREA
	ALLUVIAL MONITORING WELL
	BEDROCK MONITORING WELL
	LDA MONITORING WELL
	PLANT SITE MONITORING WELLS
	GOLDER PIEZOMETER
	LDA SURFACE WATER SAMPLING LOCATION
	DSP BEDROCK SAMPLING LOCATION (PORTAL)
	INTERCEPTOR TRENCH SAMPLING LOCATION
	FENCE LINE

CLIENT  
**HOLCIM**

CONSULTANT



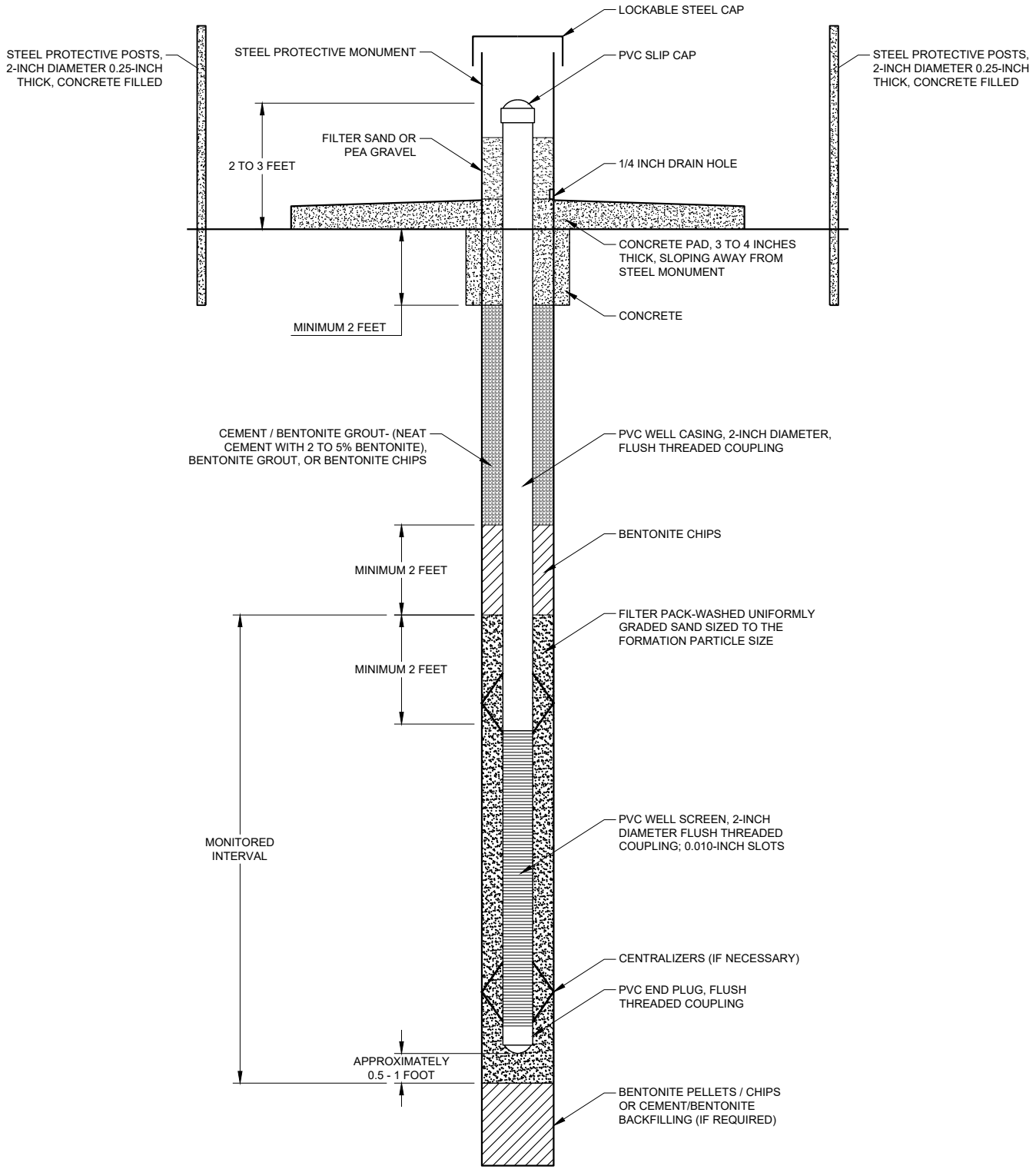
YYYY-MM-DD	2021-06-17
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	JX
APPROVED	GZ

PROJECT  
**RI WORK PLAN 2021  
RAVENSDALE, WA**

TITLE  
**CONCEPTUAL DSP BEDROCK GROUNDWATER CONTOUR MAP**

PROJECT NO. 152030402	PHASE 004	REV. 0	FIGURE 5-7
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS/D 11



**NOTE**

- 1. MONITORING WELL IS NOT TO SCALE.

CLIENT  
HOLCIM

PROJECT  
RI WORK PLAN 2021  
RAVENSDALE, WA

CONSULTANT

YYYY-MM-DD 2021-06-17

DESIGNED JX

PREPARED REDMOND

REVIEWED JX

APPROVED GZ

TITLE

**TYPICAL MONITORING WELL INSTALLATION**

PROJECT NO.  
152030402

PHASE  
004

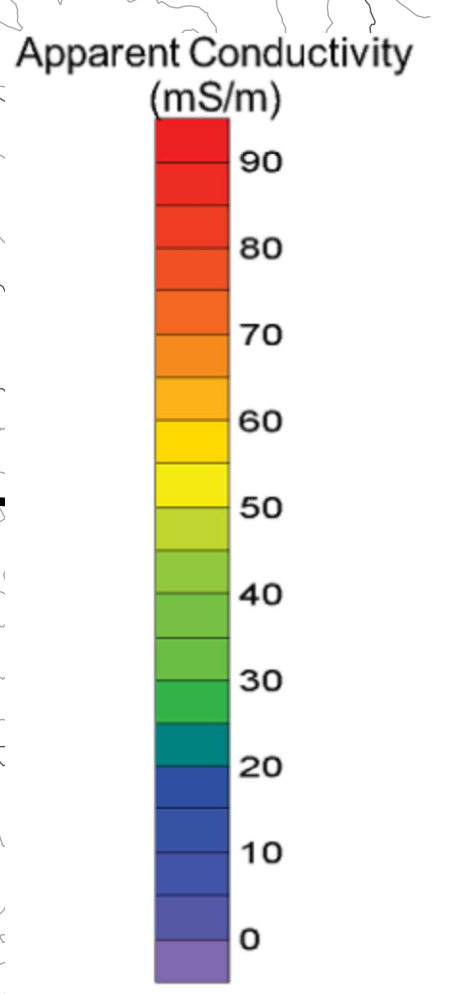
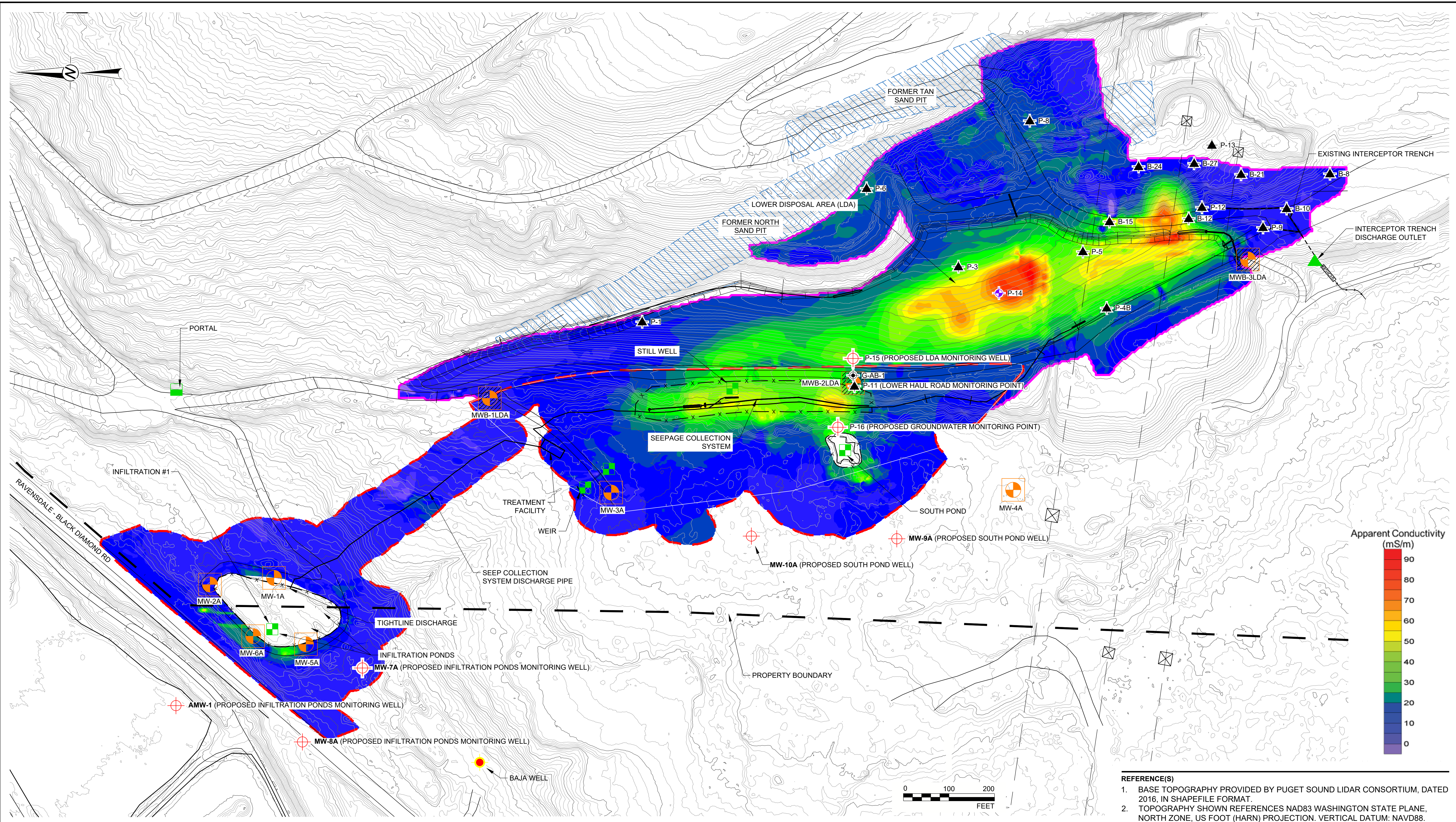
REV.  
0

FIGURE  
6-1





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- REFERENCE(S)**
1. BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.
  2. TOPOGRAPHY SHOWN REFERENCES NAD83 WASHINGTON STATE PLANE, NORTH ZONE, US FOOT (HARN) PROJECTION. VERTICAL DATUM: NAVD88.

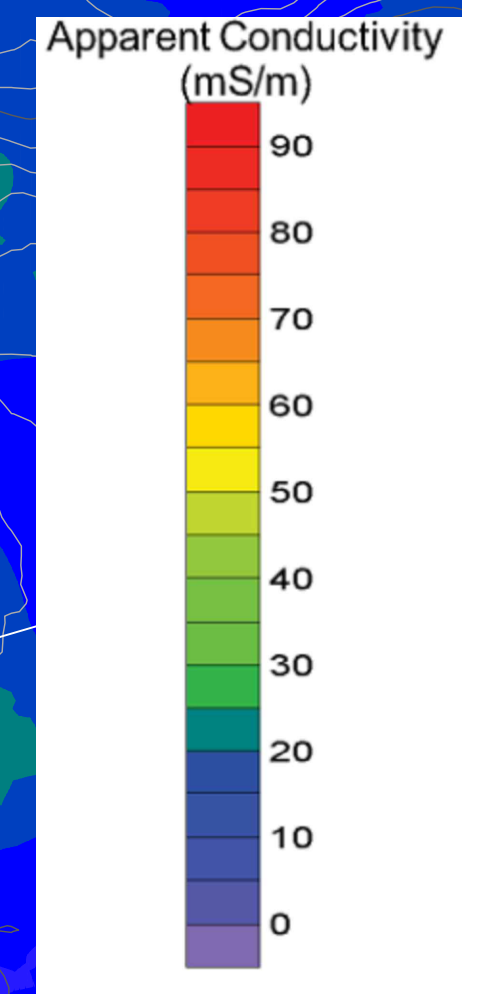
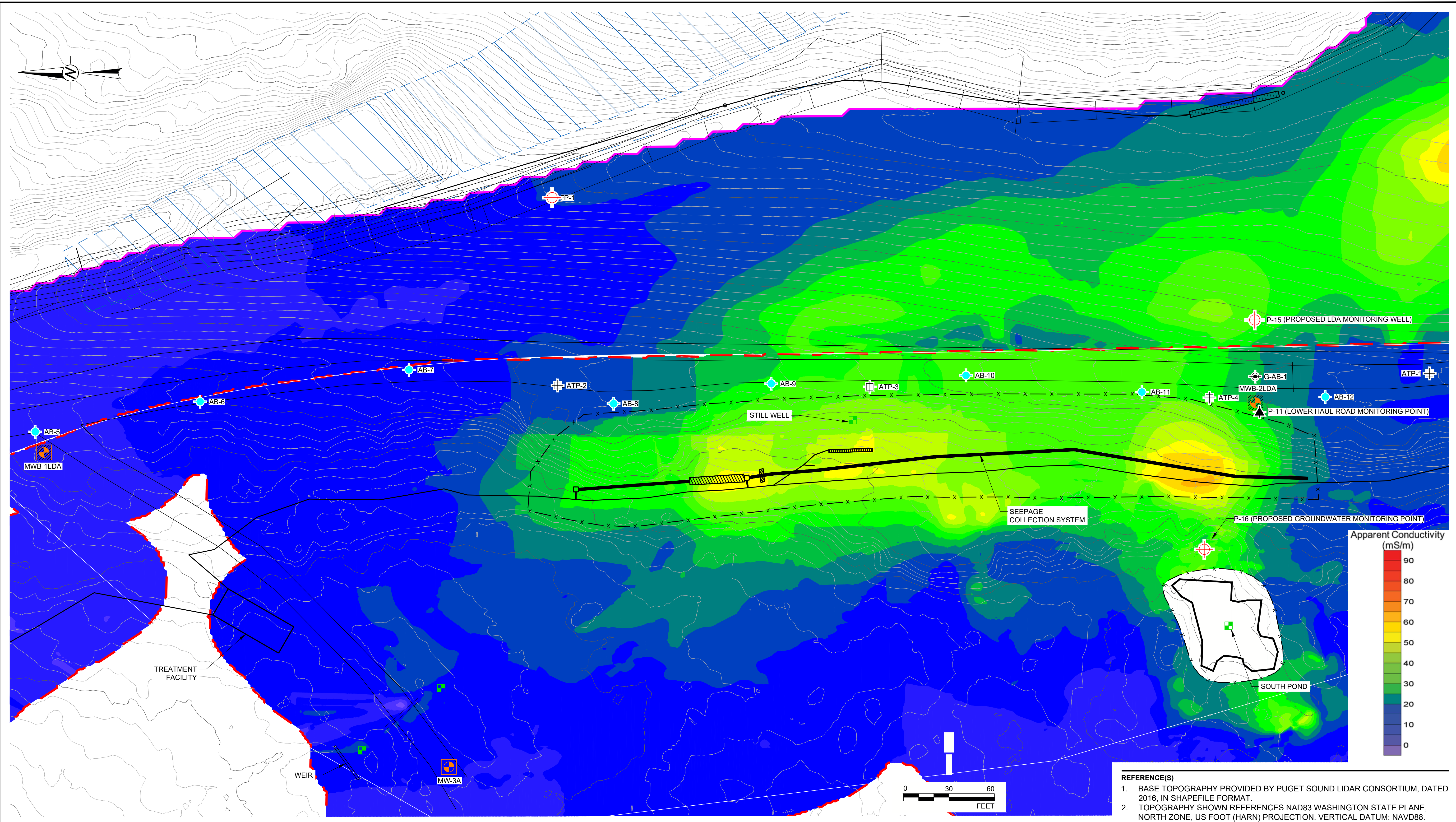
LEGEND	
	APPROXIMATE 2019 GEOPHYSICS SURVEY EXTENTS
	APPROXIMATE 2010 GEOPHYSICS SURVEY EXTENTS
	MW-1A ALLUVIAL MONITORING WELL
	MWB-1DDSP BEDROCK MONITORING WELL
	MWB-2DSP BEDROCK MONITORING WELL (NOTE 4)
	LDA SURFACE WATER SAMPLING LOCATION
	DSP BEDROCK SAMPLING LOCATION (PORTAL)
	INTERCEPTOR TRENCH SAMPLING LOCATION
	FENCE LINE
	PROPOSED MONITORING WELL
	PRIVATE WELL
	P-14 LDA MONITORING WELL
	P-1 GOLDER PIEZOMETER - NO PROPOSED SAMPLING
	G-AB-1 PROPOSED SOIL BORING

CLIENT	HOLCIM
CONSULTANT	
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	JX
APPROVED	GZ
DATE	2021-06-17

PROJECT		
RI WORK PLAN 2021		
RAVENSDALE, WA		
TITLE		
PROPOSED RI BOREHOLES AND MONITORING WELLS		
(OVERLYING 2010 AND 2019 GEOPHYSICS SURVEYS)		
PROJECT NO.	PHASE	REV.
152030402	004	0
		FIGURE
		6-2

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3S10

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LEGEND			
	APPROXIMATE 2019 GEOPHYSICS SURVEY EXTENTS		LDA SURFACE WATER SAMPLING LOCATION
	APPROXIMATE 2010 GEOPHYSICS SURVEY EXTENTS		DSP BEDROCK SAMPLING LOCATION (PORTAL)
	MW-1A ALLUVIAL MONITORING WELL		INTERCEPTOR TRENCH SAMPLING LOCATION
	MWB-1DDSP BEDROCK MONITORING WELL		FENCE LINE
	MWB-2DSP BEDROCK MONITORING WELL (NOTE 4)		PROPOSED MONITORING WELL
			PRIVATE WELL
	P-14 LDA MONITORING WELL		P-1 GOLDER PIEZOMETER - NO PROPOSED SAMPLING
	AB-5 LOWER HAUL ROAD BORING LOCATION - ASPECT 2017		ATP-1 LOWER HAUL ROAD TEST PIT LOCATION - ASPECT 2018
	G-AB-1 PROPOSED SOIL BORING		

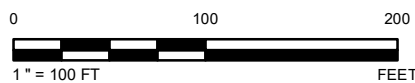
CLIENT	HOLCIM
CONSULTANT	GOLDER
DATE	2021-06-17
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	JX
APPROVED	GZ

REFERENCE(S)			
1. BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.			
2. TOPOGRAPHY SHOWN REFERENCES NAD83 WASHINGTON STATE PLANE, NORTH ZONE, US FOOT (HARN) PROJECTION. VERTICAL DATUM: NAVD88.			
PROJECT			
RI WORK PLAN 2021			
RAVENSDALE, WA			
TITLE			
PROPOSED LDA RI BOREHOLES AND MONITORING WELLS			
(OVERLYING 2010 AND 2019 GEOPHYSICS SURVEYS)			
PROJECT NO.	PHASE	REV.	FIGURE
152030402	004	0	6-3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



- LEGEND**
- Sampling Location
  - Decision Unit
  - Treatment Tank
  - South Pond
  - Site Boundary
  - Parcel



CLIENT  
HOLCIM

CONSULTANT



YYYY-MM-DD	2021-06-17
DESIGNED	TL
PREPARED	TL
REVIEWED	JX
APPROVED	GZ

**REFERENCE(S)**

1. GOLDR (DECISION UNITS, SAMPLING LOCATIONS, TREATMENT TANK)
  2. ASPECT CONSULTING (SITE BOUNDARY, PARCEL)
  3. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FT US
  4. MAP SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY
- SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

PROJECT  
RI WORK PLAN 2021  
RAVENSDALE, WA

TITLE  
**PROPOSED DECISION UNITS AND SAMPLING LOCATIONS**

PROJECT NO.	PHASE	REV.	FIGURE
152030402	004	0	6-4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSIB 11 in