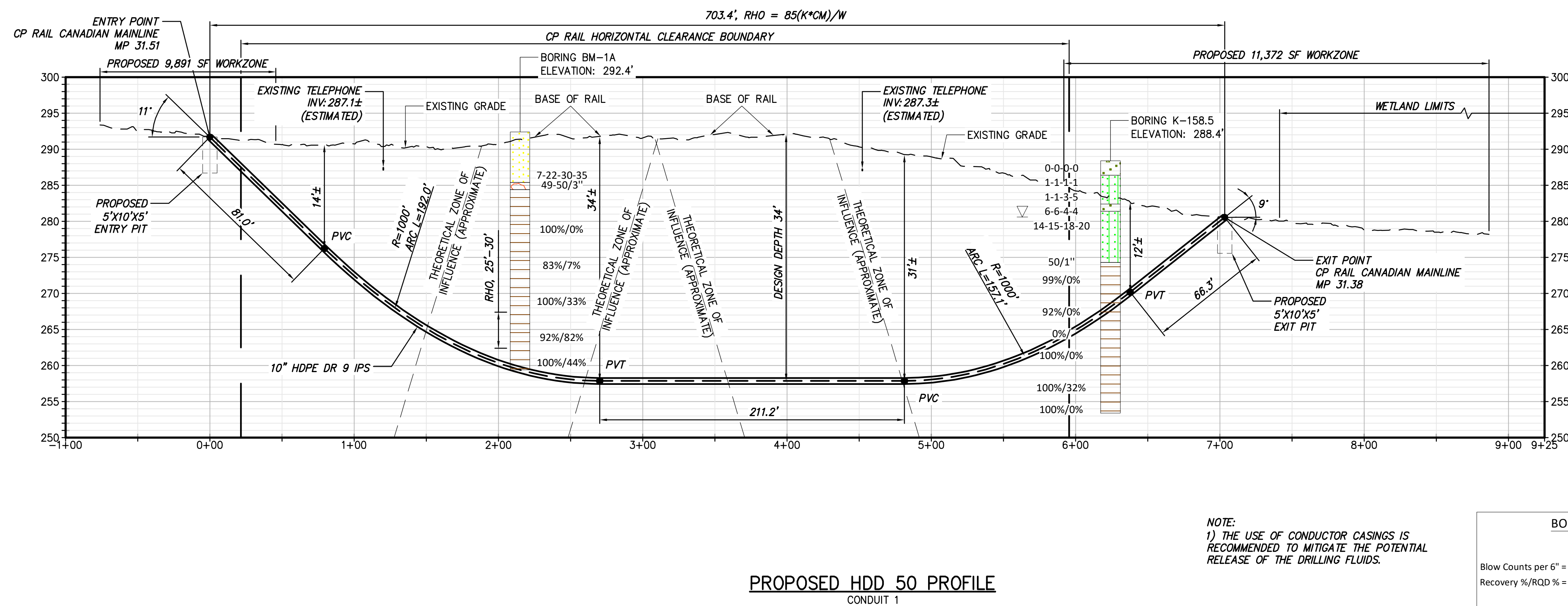
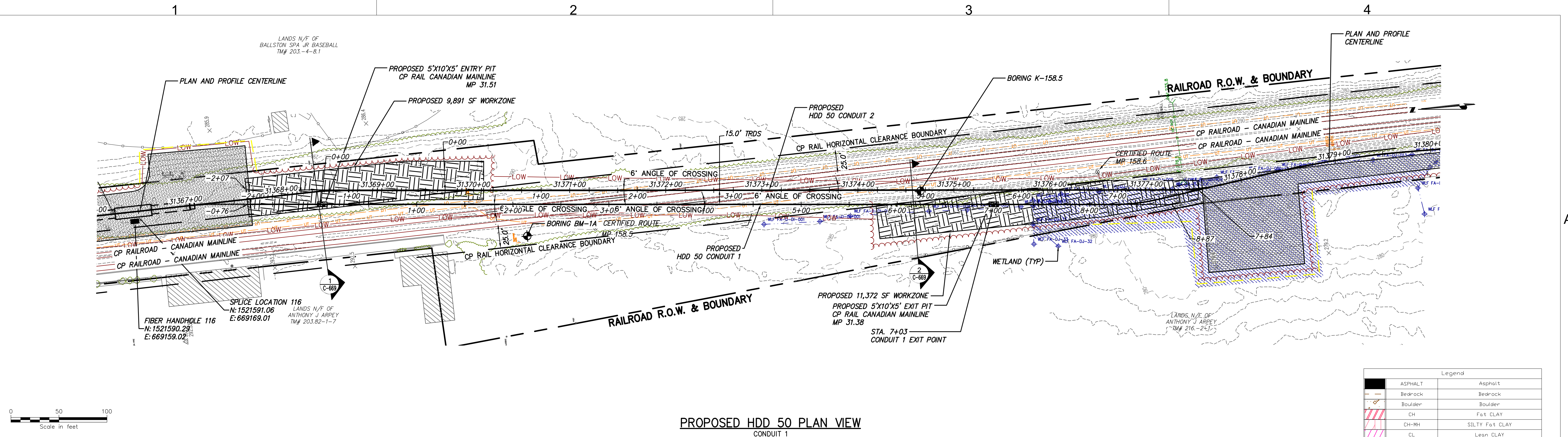
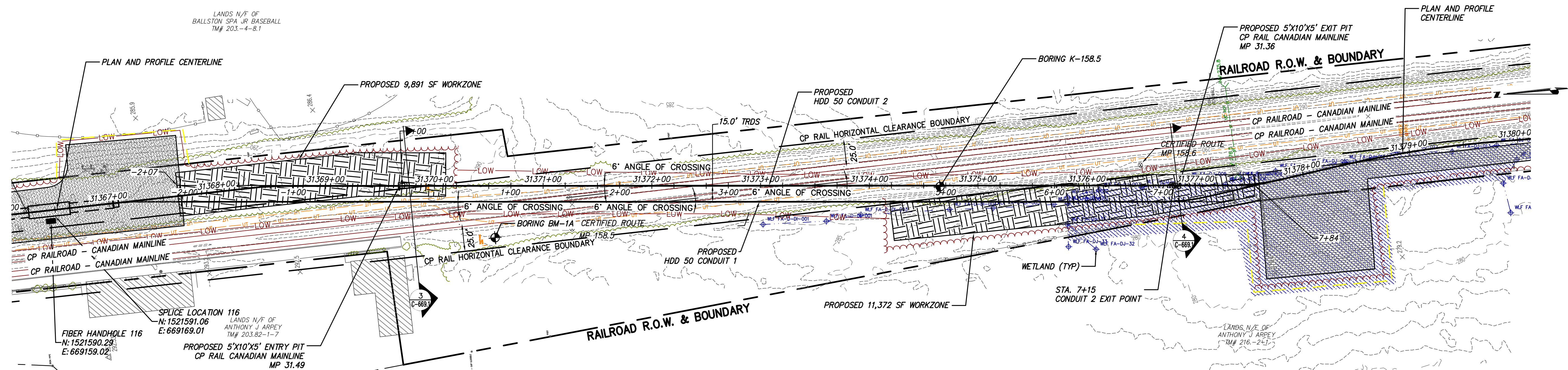
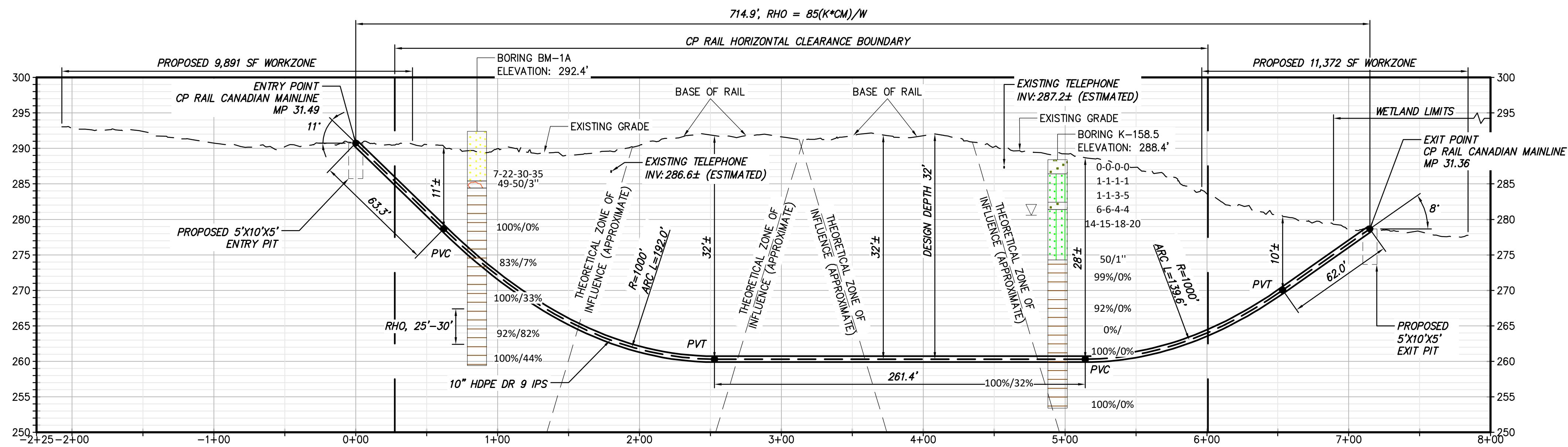




Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	FILL	FILL
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
	DH	ORGANIC Fat CLAY
	DL	ORGANIC Lean CLAY
	DL/DH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgrade/ackle
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
	USGS 708	Gneiss
	USGS 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table	Water Table during drilling
	Delayed Water	Water Table after drilling



PROPOSED HDD 50 PLAN VIEW
CONDUIT 2



PROPOSED HDD 50 PROFILE

Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SDIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
	USGS 708	Gneiss
	USGS 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table	Water Table during drilling
	Delayed Water Table	Water Table after drilling

NOTE:
1) THE USE OF CONDUCTOR CASINGS IS
RECOMMENDED TO MITIGATE THE POTENTIAL
RELEASE OF THE DRILLING FLUIDS.

BORING LOG STRIP LEGEND

Blow Counts per 6" = 10-10-10
Recovery %/RQD % = 95%/90%

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration

Appendix F

Proposed Soil Properties for CHPE Segments 4 & 5 – Package 3 HDDs

Proposed Soil Properties for CHPE Segments 4 & 5 – Package 3 HDDs

Soil Type	N	Wet unit wgt, pcf	Dry unit wgt, pcf	Bouyant unit wgt, pcf	Φ , °	Undrained Shear strength, su, psf	Maximum Shear Modulus, psi*
Loose Sand	4-10	115	105	53	30	---	200
Med. Dense Sand	10-30	125	110	63	34	---	500
V Soft to Soft clay	0-4	100	70	38	---	450	200
Med Stiff Clay (approx. 40 feet deep)	4-8	110	80	48	---	800	300
Stiff Clay (approx. 80 ft deep)	8-16	120	100	58	---	1200	400
Loose Silt	4-10	100	80	38	28	---	50
Med Dense Silt	10-30	110	90	48	32	---	100
Rock Fill/Highly Weather Rock	>50	140	120	80	37	---	1000
Jointed Rock Mass – Shale	---	170	160	110	37	3000 psi	2000 psi

- where BoreAid default values are less than these shear moduli, can use the default values, but may tend to be overly conservative.

