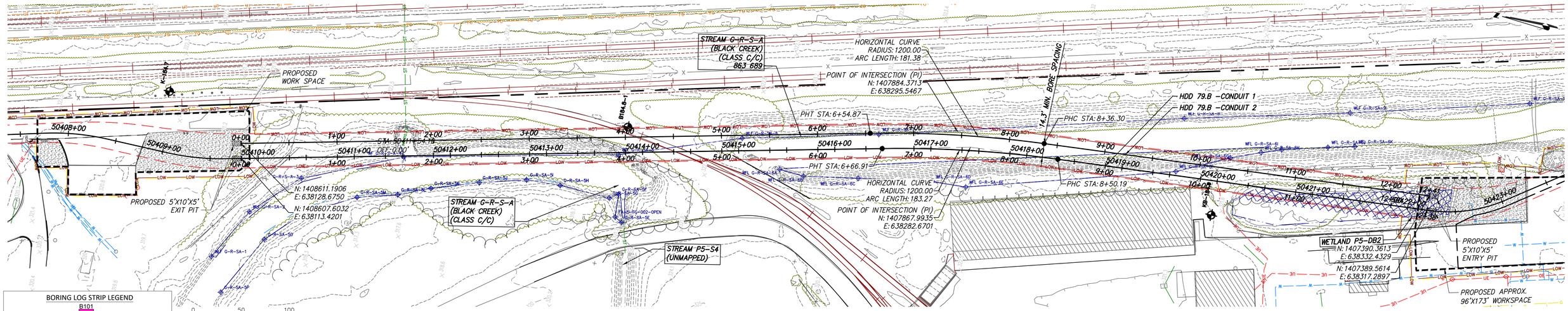


PROPOSED HDD 79B, CONDUIT 1 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

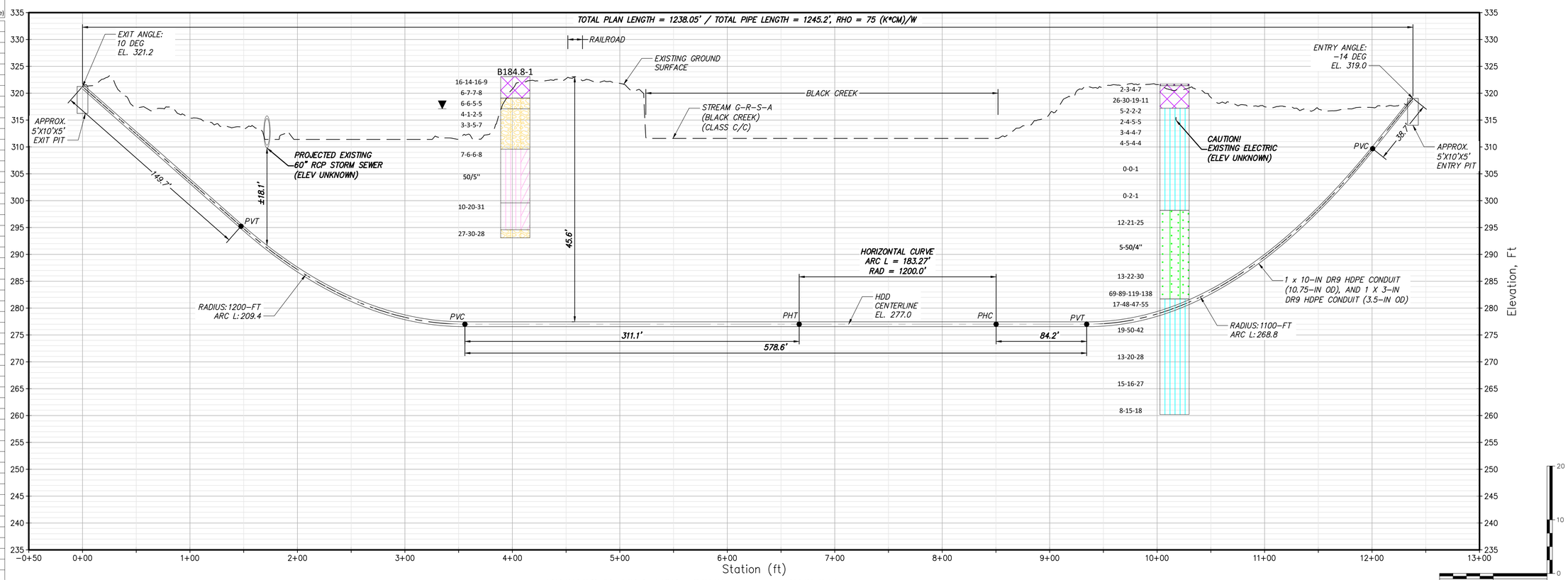
11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 79B, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 79B

BLACK CREEK CROSSING 1, CONDUIT 1

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD

SCALE: AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162

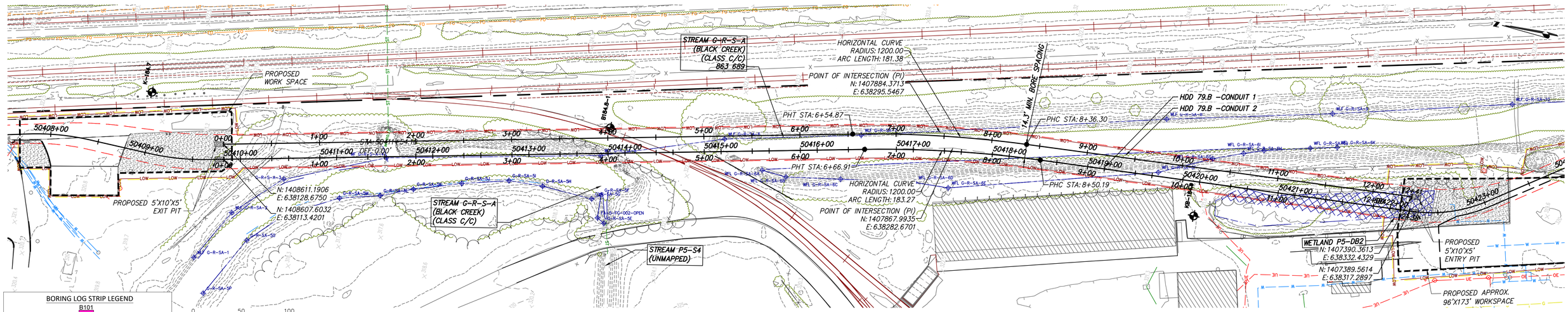
BRIERLEY PROJECT NO. 322004-000

DRAWING NO. **C-335**

DATE 06/09/2023

SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_335-342.DWG Saved: 5/16/2023 2:49:00 PM Plotted: 6/7/2023 9:13:31 PM Current User: Brian Connelly
LastSavedBy: bconnelly



PROPOSED HDD 79B, CONDUIT 2 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

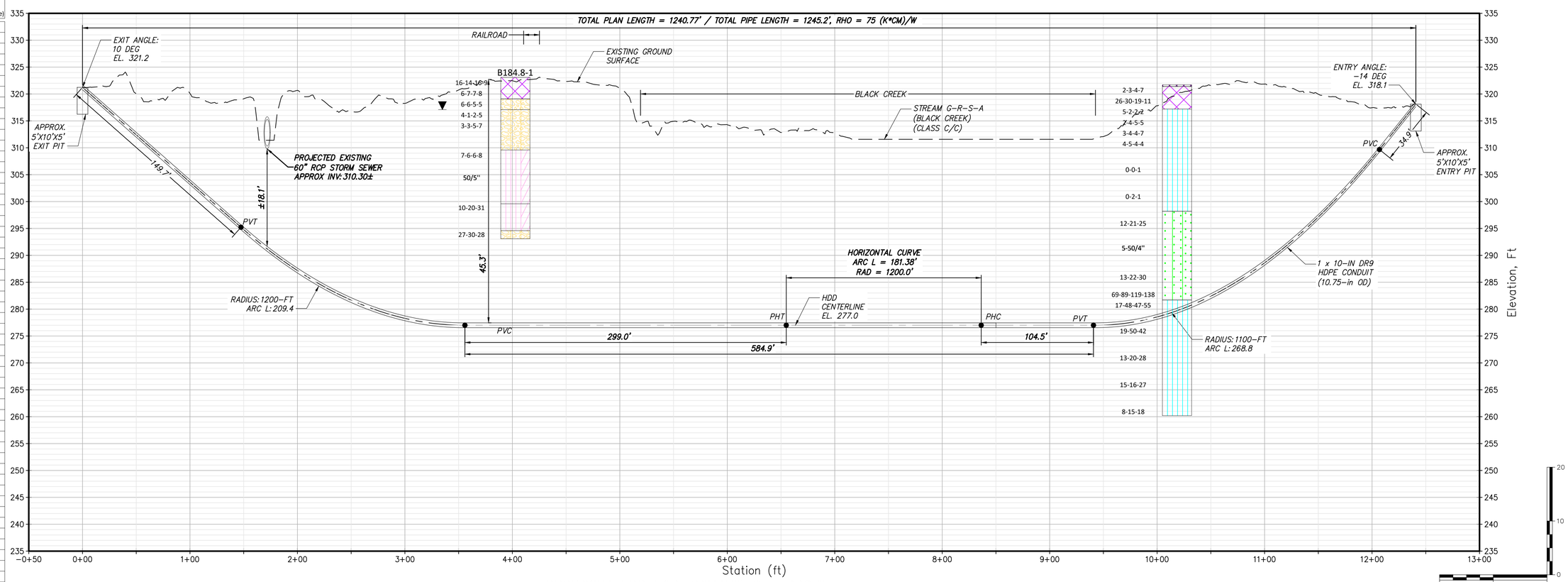
11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 79B, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023 STATE OF NEW YORK BRIAN C DORIKAR 080342 LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 79B

BLACK CREEK CROSSING 1, CONDUIT 2

SCHENECTADY COUNTY, NY

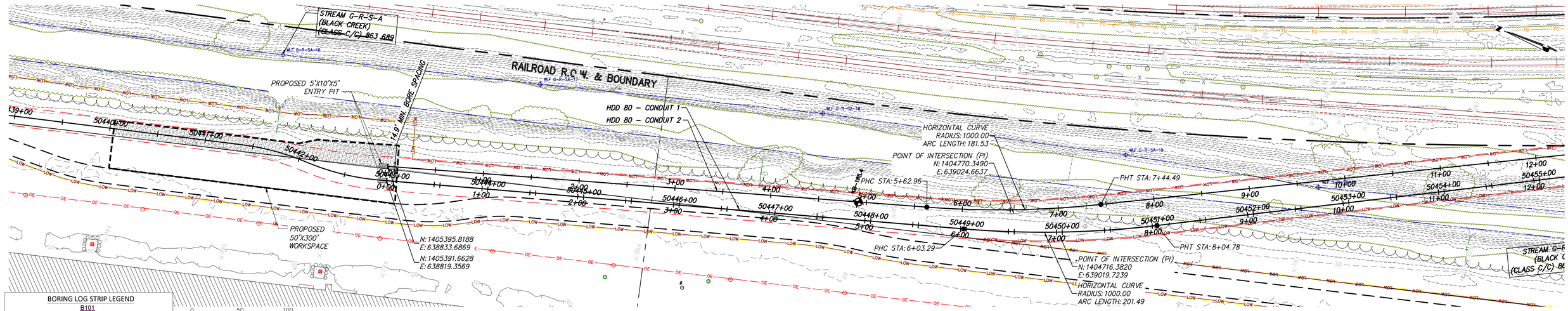
KIEWIT PROJECT NO. 21162

BRIERLEY PROJECT NO. 322004-000

DRAWING NO. **C-336**

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_335-342.DWG Saved: 5/16/2023 2:49:00 PM Plotted: 6/7/2023 9:16:31 PM Current User: Brian Connelly
LastSavedBy: bconnelly



PROPOSED HDD 80, CONDUIT 1 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

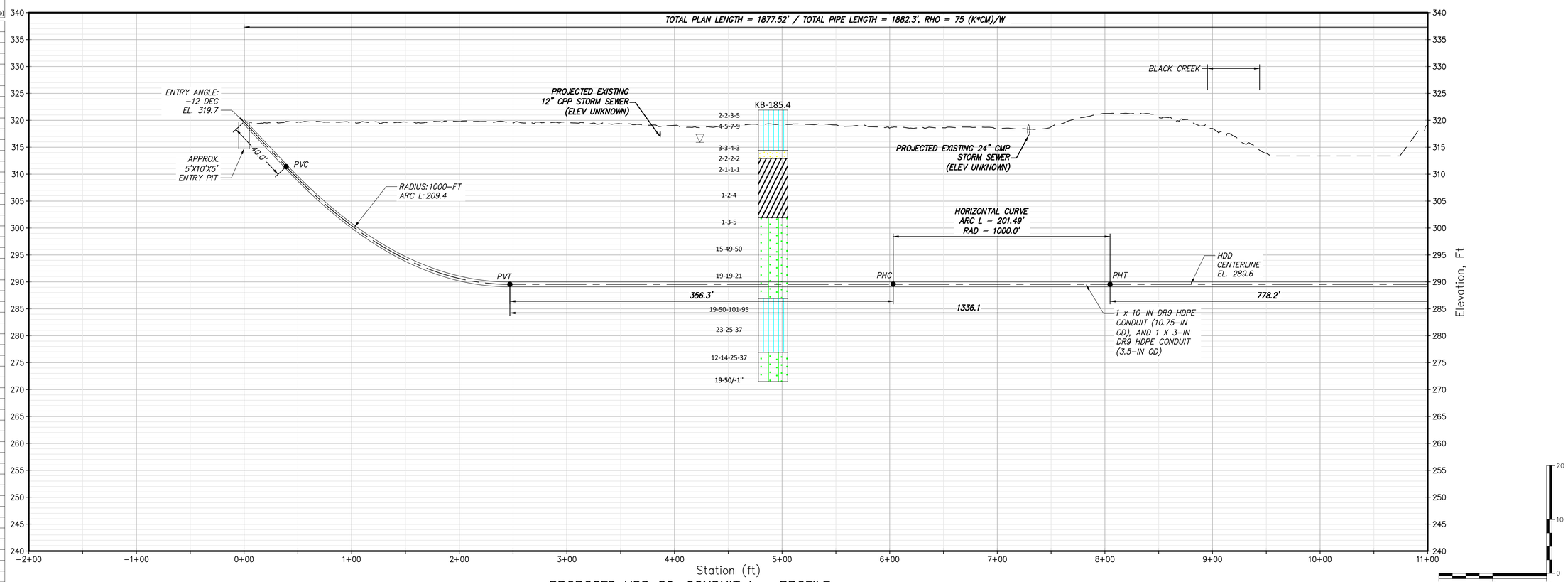
Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 80, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023

STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 80

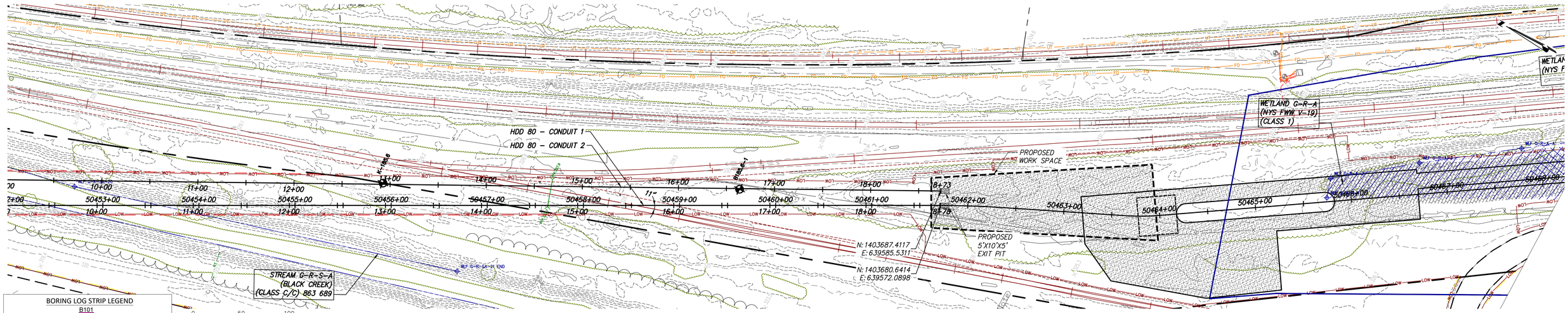
BLACK CREEK CROSSING 2, CONDUIT 1

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE: AS SHOWN | REV. NO. 0

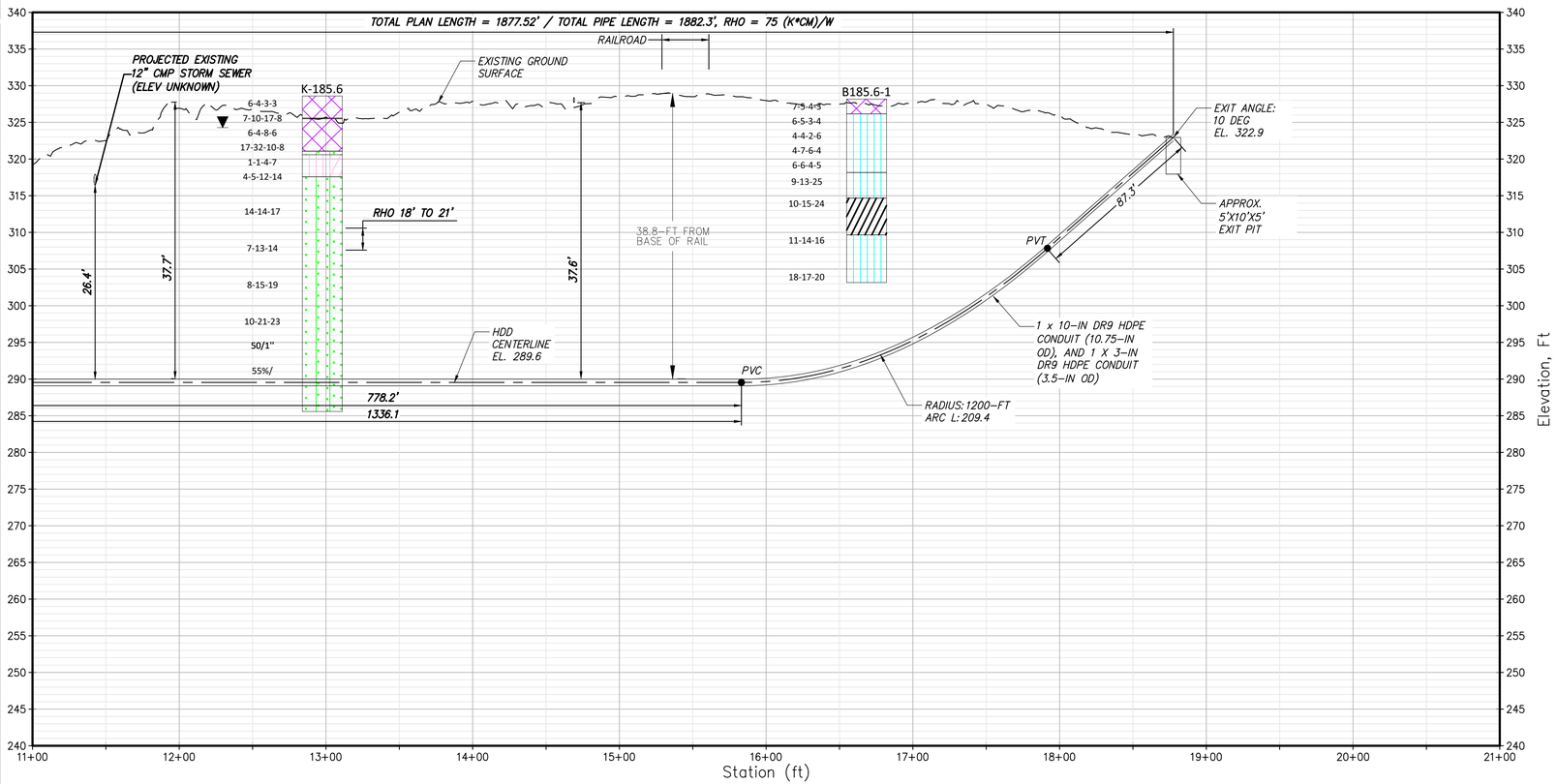
KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-337**
DATE 06/09/2023
SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_335-342.DWG Saved: 5/16/2023 2:49:00 PM Plotted: 6/7/2023 9:19:33 PM Current User: Brian Connelly
LastSavedBy: bconnelly



PROPOSED HDD 80, CONDUIT 1 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 80, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

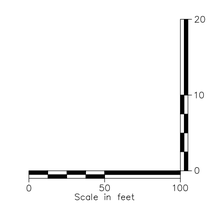
Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C. DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 80

BLACK CREEK CROSSING 2, CONDUIT 1

SCHENECTADY COUNTY, NY

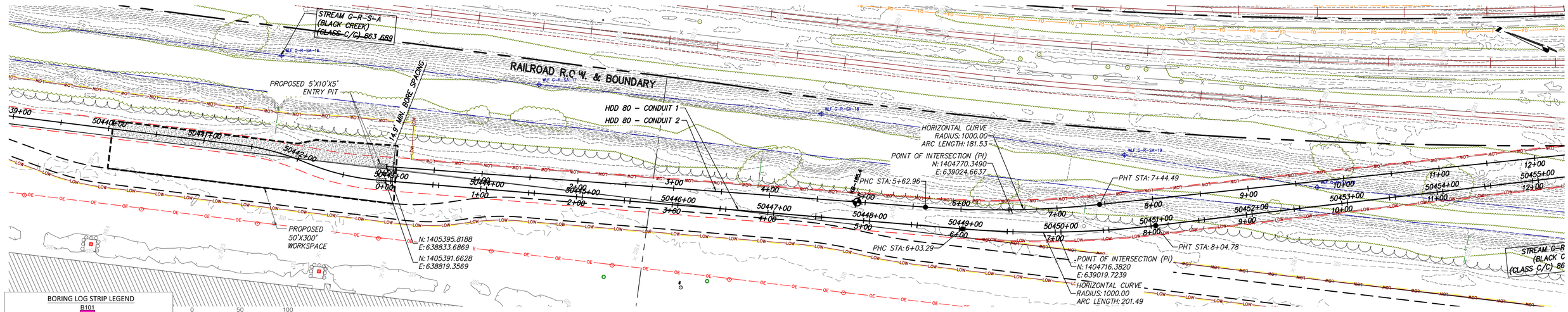
KIEWIT PROJECT NO. 21162

BRIERLEY PROJECT NO. 322004-000

DRAWING NO. **C-338**

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_335-342.DWG Saved: 5/16/2023 2:49:00 PM Plotted: 6/7/2023 9:22:45 PM Current User: Brian Connelly
LastSavedby: bconnelly



PROPOSED HDD 80, CONDUIT 2 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

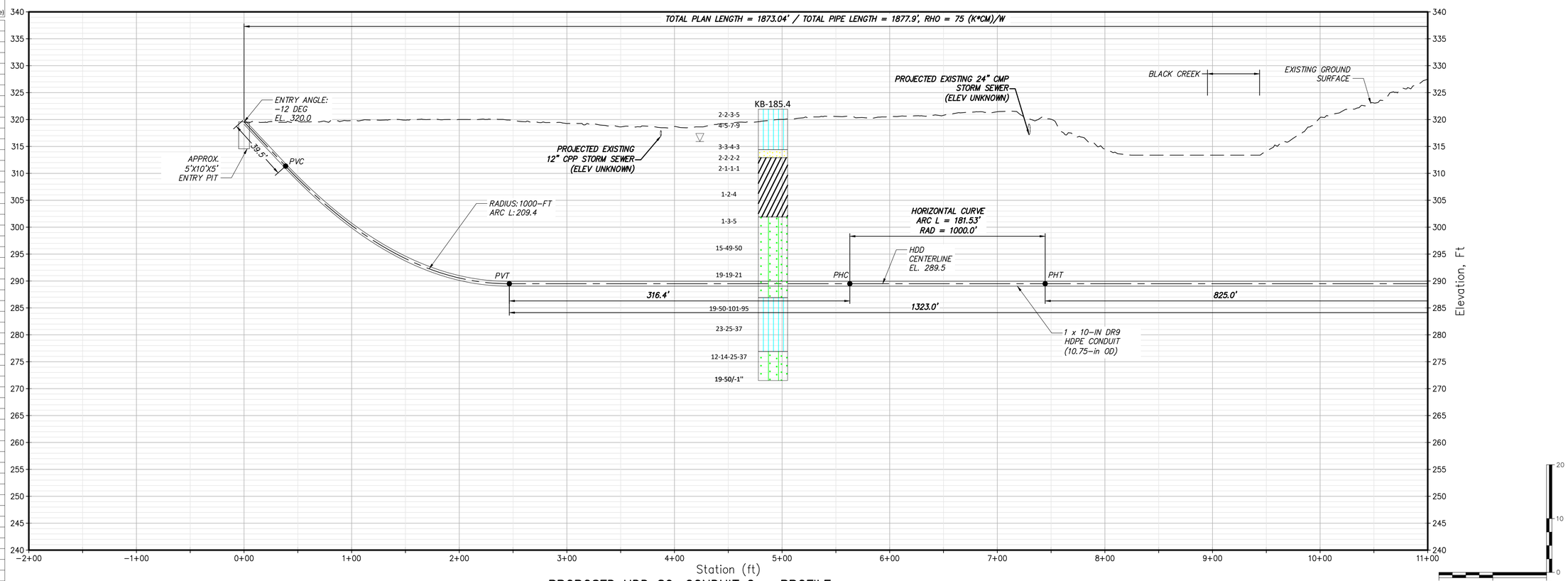
Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 80, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORMAN · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

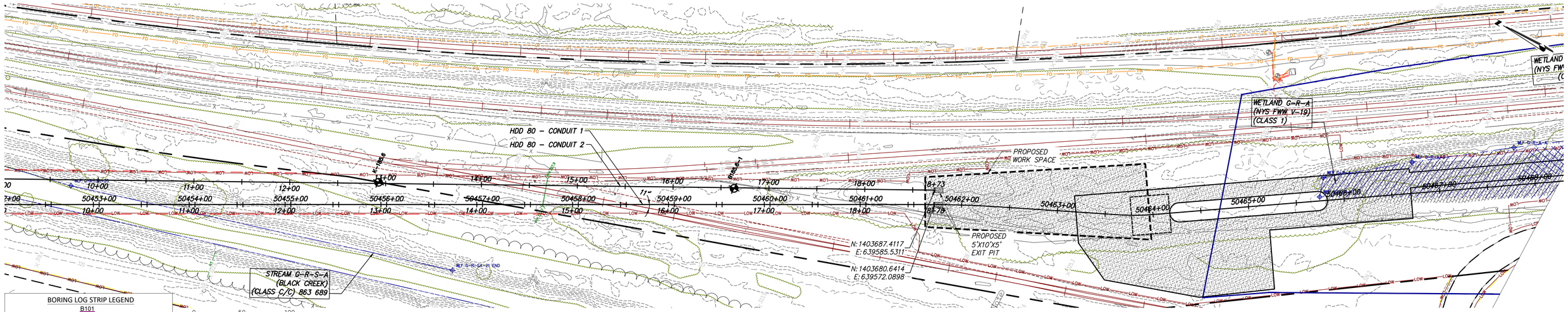
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM
PROPOSED PLAN AND PROFILE - HDD 80
BLACK CREEK CROSSING 2, CONDUIT 2
SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-339**
DATE 06/09/2023
SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_335-342.DWG Saved: 5/16/2023 2:49:00 PM Plotted: 6/7/2023 9:25:54 PM Current User: Brian Connelly
LastSavedBy: bconnelly



PROPOSED HDD 80, CONDUIT 2 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

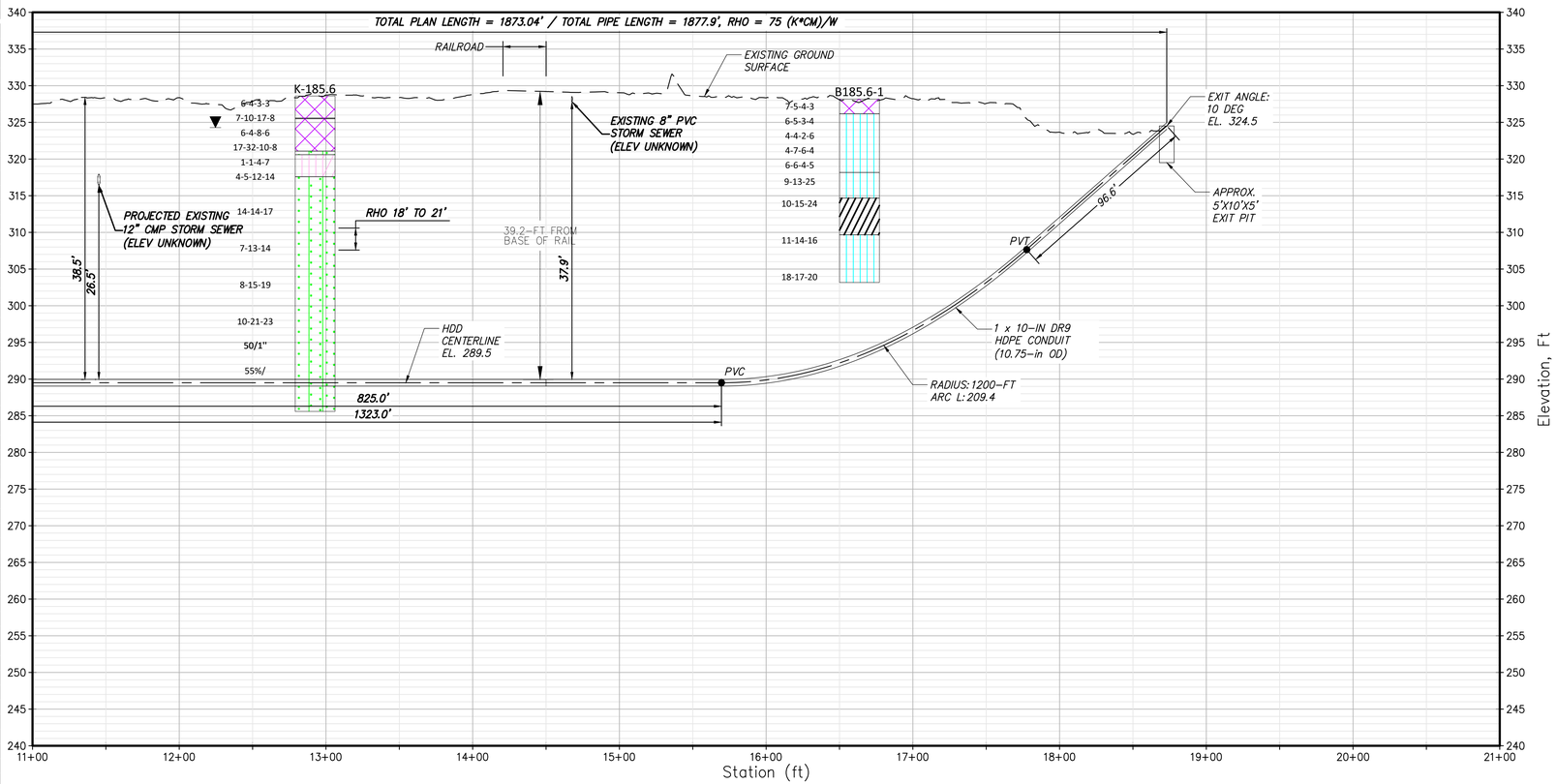
Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 80, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

Scale in feet

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023

STATE OF NEW YORK · BRIAN C. DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

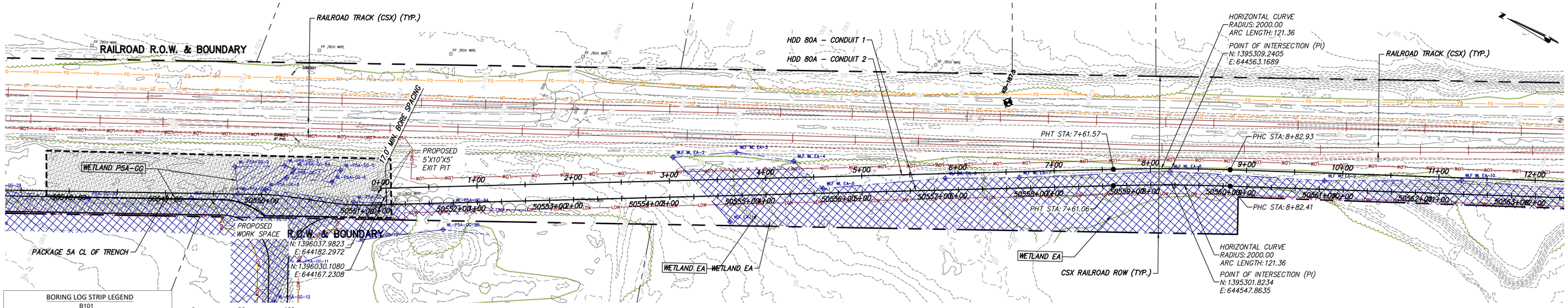
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM
PROPOSED PLAN AND PROFILE - HDD 80
BLACK CREEK CROSSING 2, CONDUIT 2
SCHENECTADY COUNTY, NY

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-340**

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_335-342.DWG Saved: 5/16/2023 2:49:00 PM Plotted: 6/7/2023 9:29:00 PM Current User: Brian Connelly
LastSavedBy: bconnelly



PROPOSED HDD 80A, CONDUIT 1 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

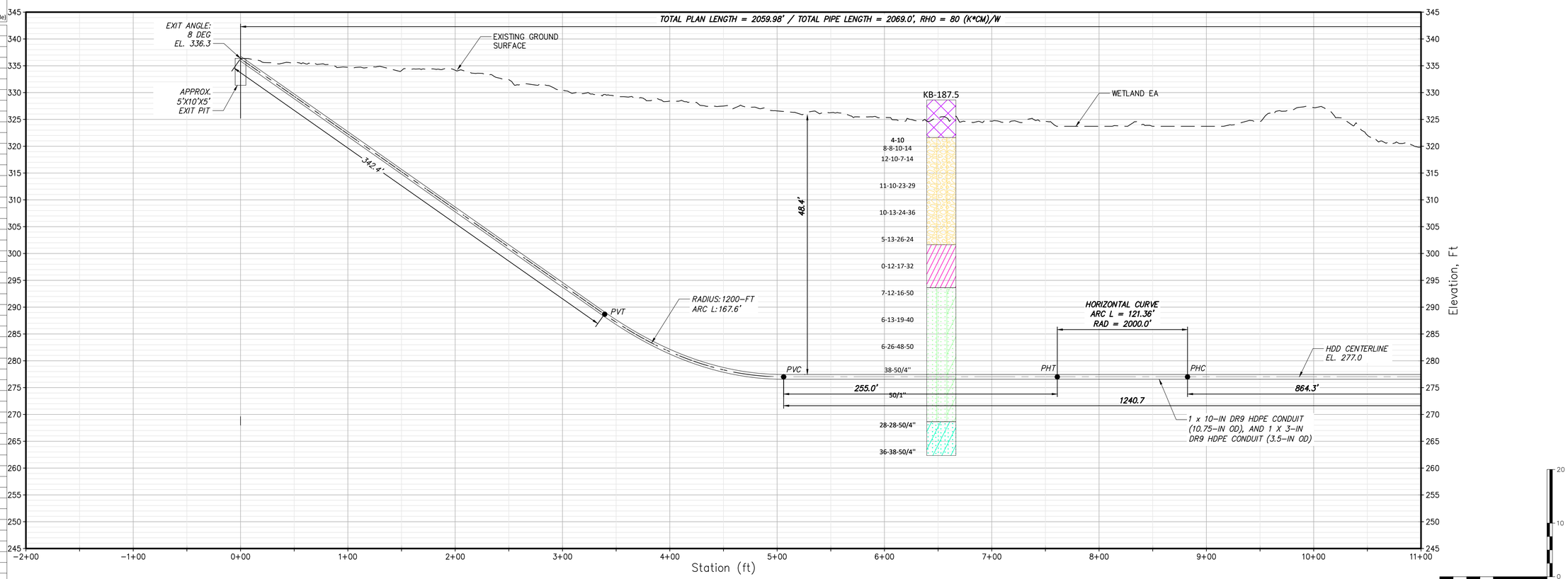
11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 80A, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 80A

WETLAND CROSSING, CONDUIT 1

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

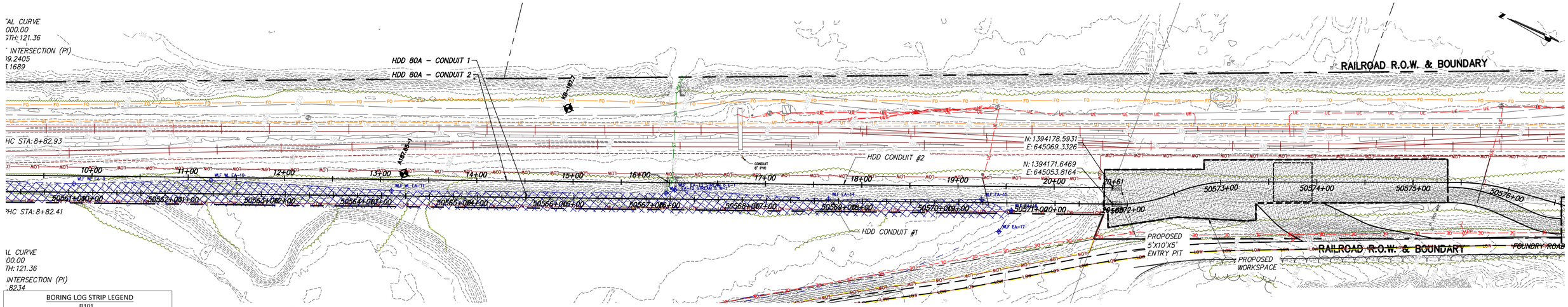
KIEWIT PROJECT NO. 21162

BRIERLEY PROJECT NO. 322004-000

DRAWING NO. **C-341**

DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:32:00 PM Current User: Brian Connelly
LastSavedBy: nstrater



PROPOSED HDD 80A, CONDUIT 1 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

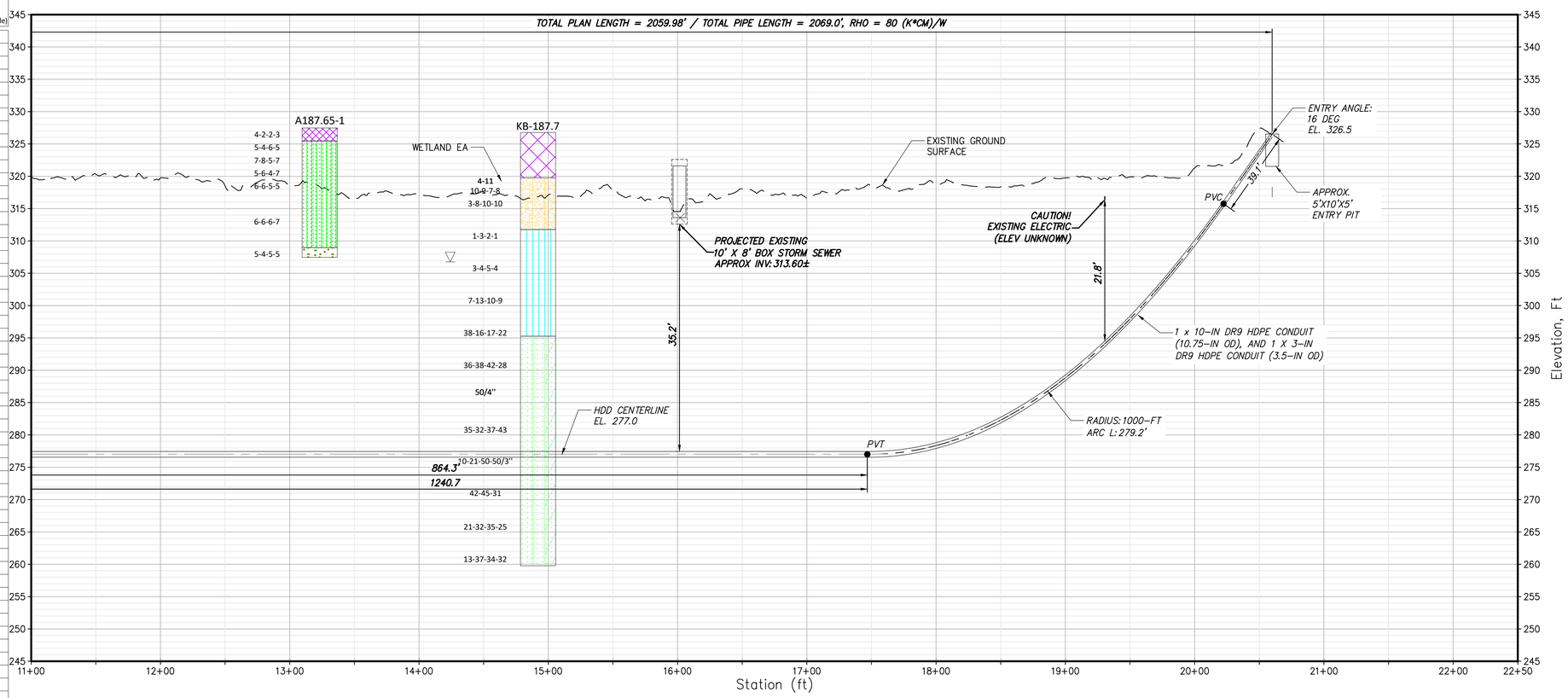
2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 80A, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

0 50 100
Scale in feet

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

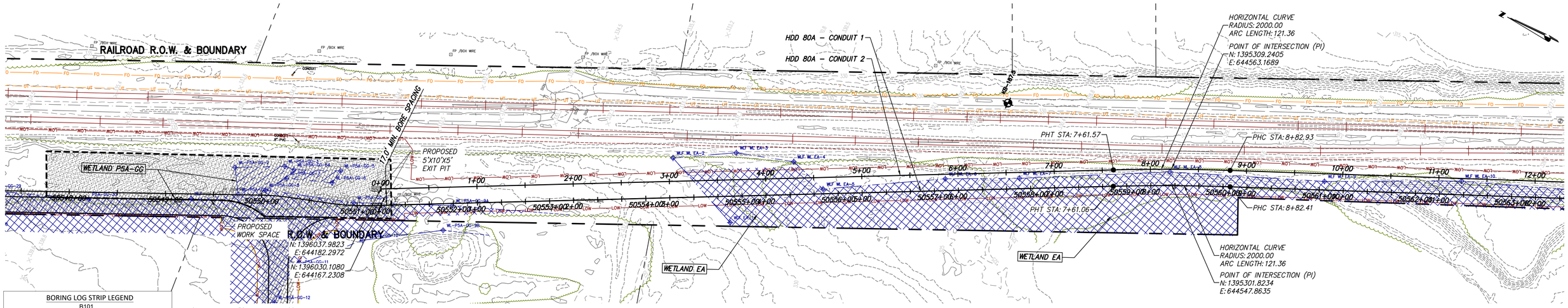
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 80A
WETLAND CROSSING, CONDUIT 1
SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO.	21162
BRIERLEY PROJECT NO.	322004-000
DRAWING NO.	C-342
DATE	06/09/2023
SH.NO.	XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:33:54 PM Current User: Brian Connelly
LastSavedBy: nstrater



PROPOSED HDD 80A, CONDUIT 2 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

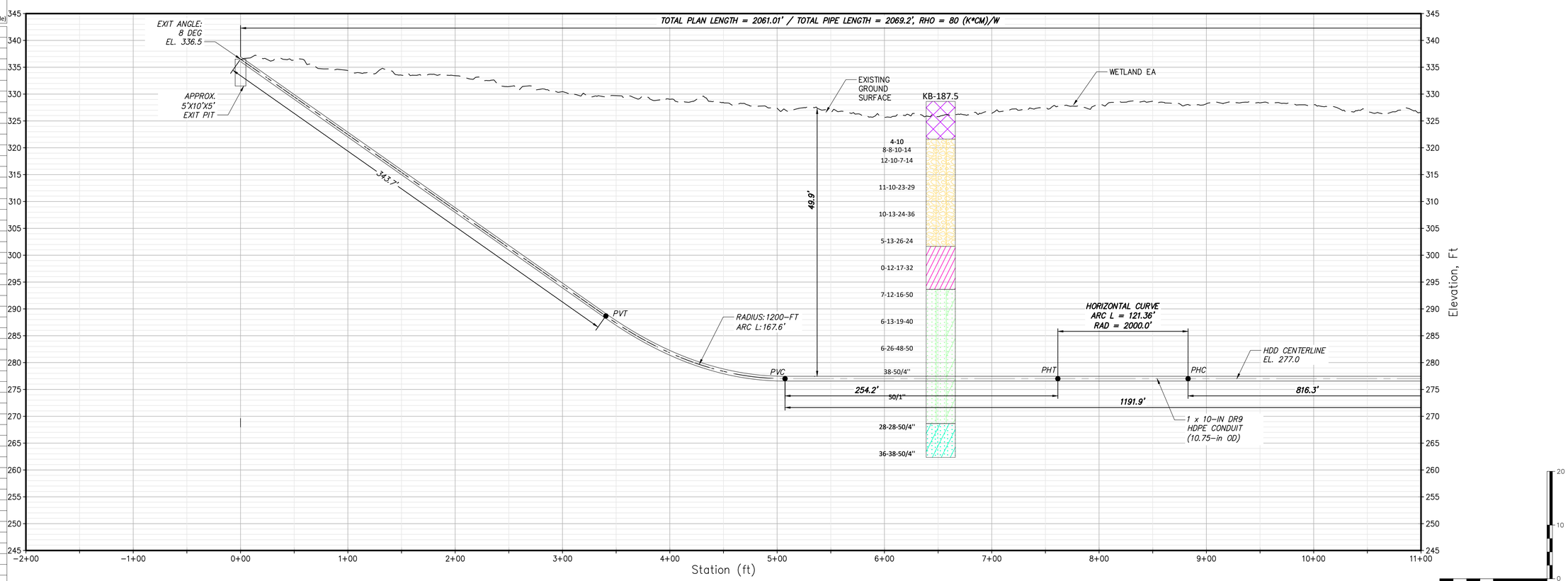
2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 80A, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 80A

WETLAND CROSSING, CONDUIT 2

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162

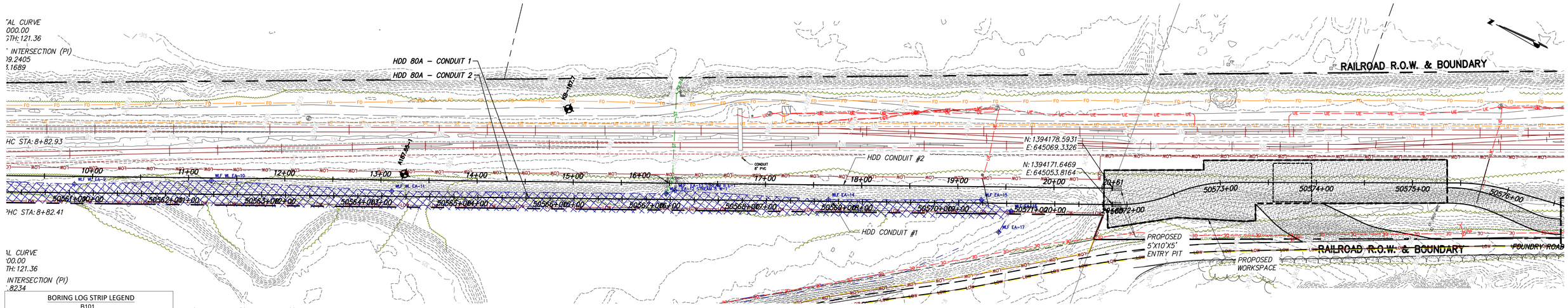
BRIERLEY PROJECT NO. 322004-000

DRAWING NO. **C-343**

DATE 06/09/2023

SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:35:49 PM Current User: Brian Connelly
LastSavedBy: natrater



PROPOSED HDD 80A, CONDUIT 2 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

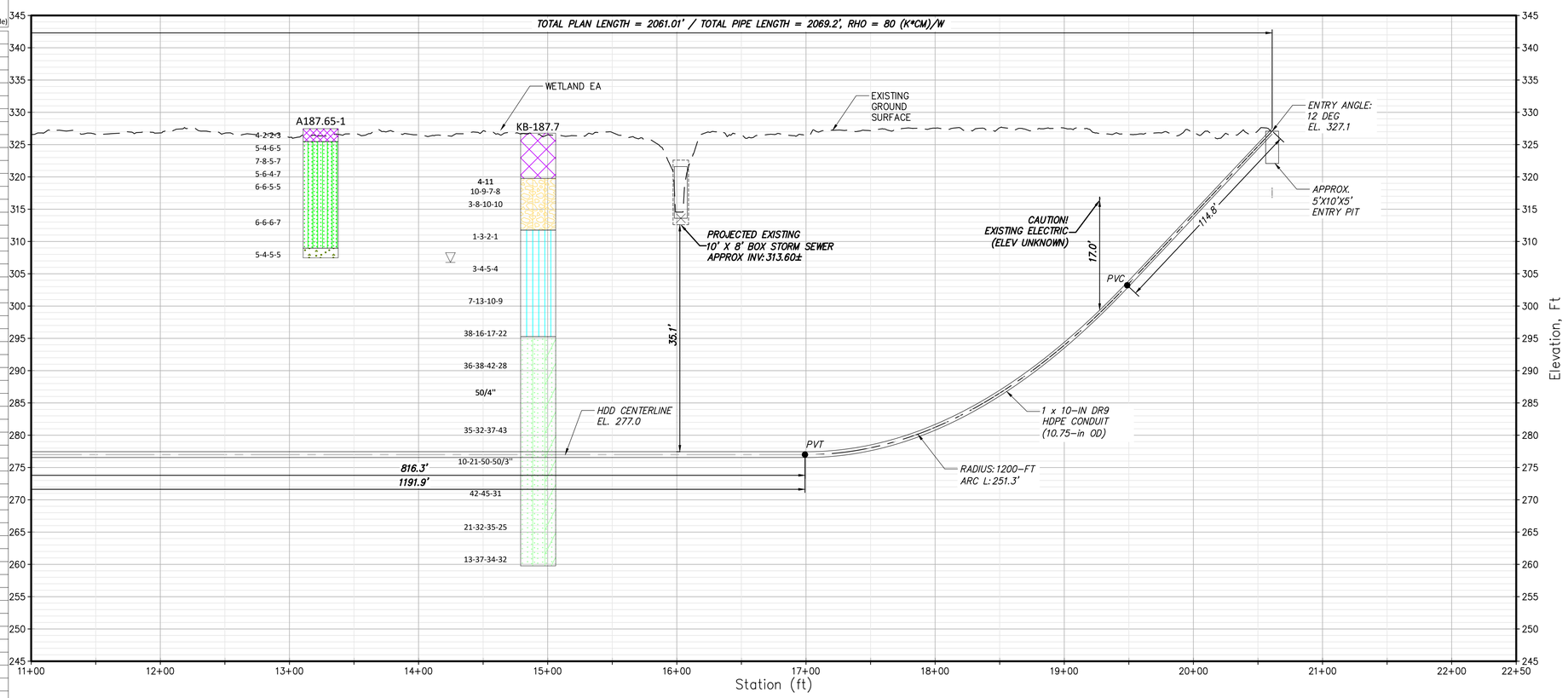
11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 80A, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

0 50 100
Scale in feet

0 10 20

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 80A

WETLAND CROSSING, CONDUIT 2

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162

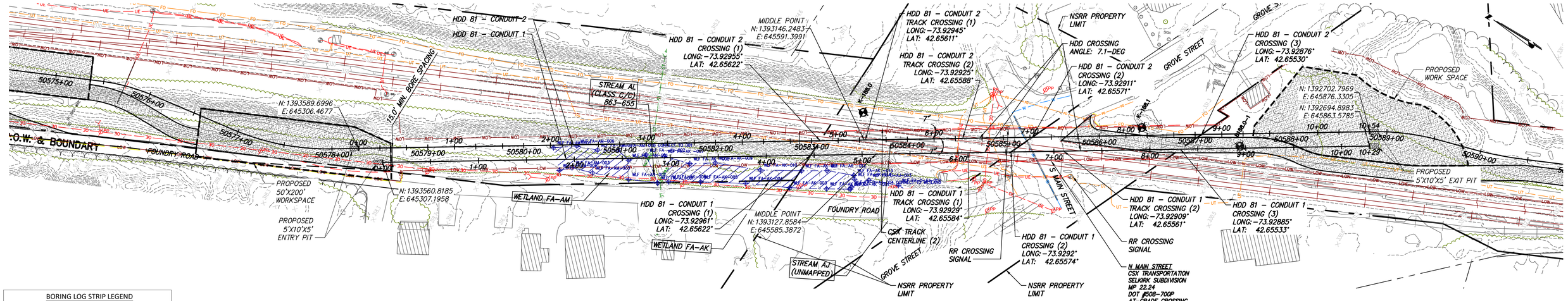
BRIERLEY PROJECT NO. 322004-000

DRAWING NO. **C-344**

DATE 06/09/2023

SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:37:44 PM Current User: Brian Connelly
LastSavedBy: natrater



PROPOSED HDD 81, CONDUIT 1 – PLAN

SCALE: 1" = 50'

0 50 100
Scale in feet

BORING LOG STRIP LEGEND

B101

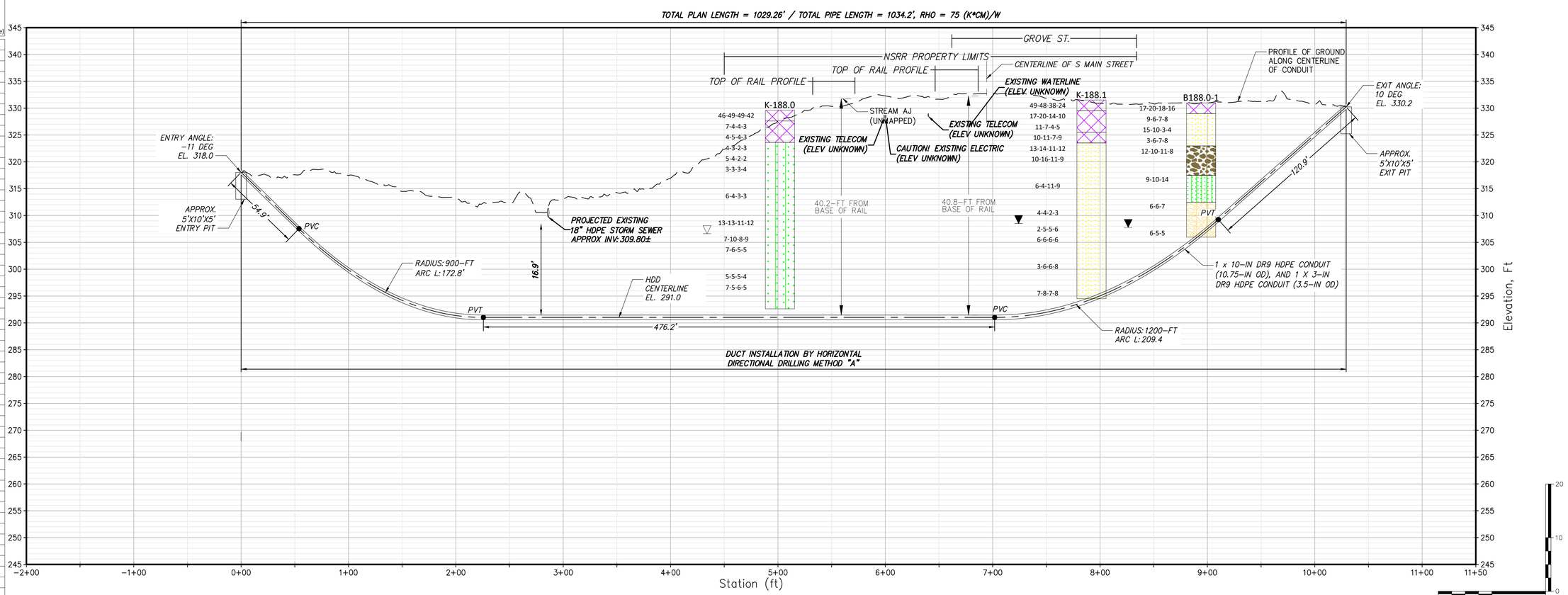
Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 81, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023

STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

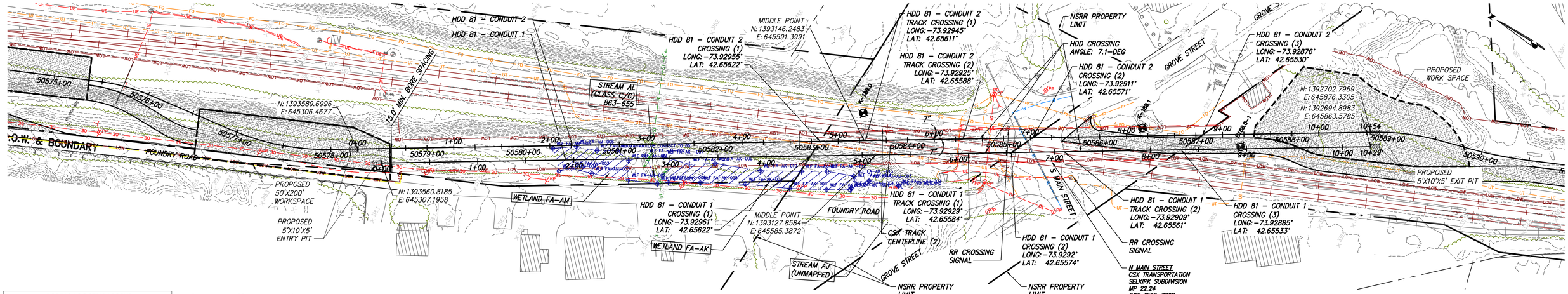
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM
PROPOSED PLAN AND PROFILE - HDD 81
CSX RAILROAD CROSSING, CONDUIT 1
SCHENECTADY COUNTY, NY

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-345**

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:39:33 PM Current User: Brian Connelly
LastSavedBy: nstrater



PROPOSED HDD 81, CONDUIT 2 – PLAN

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

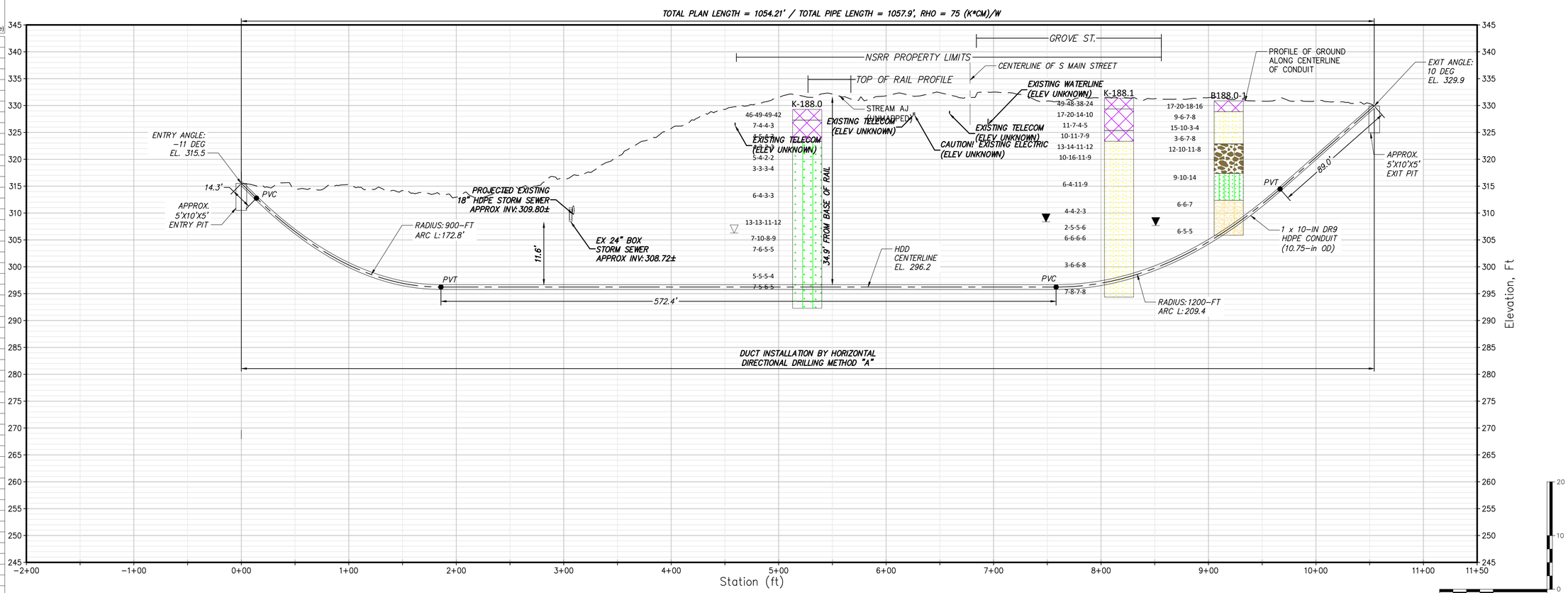
Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 81, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 81

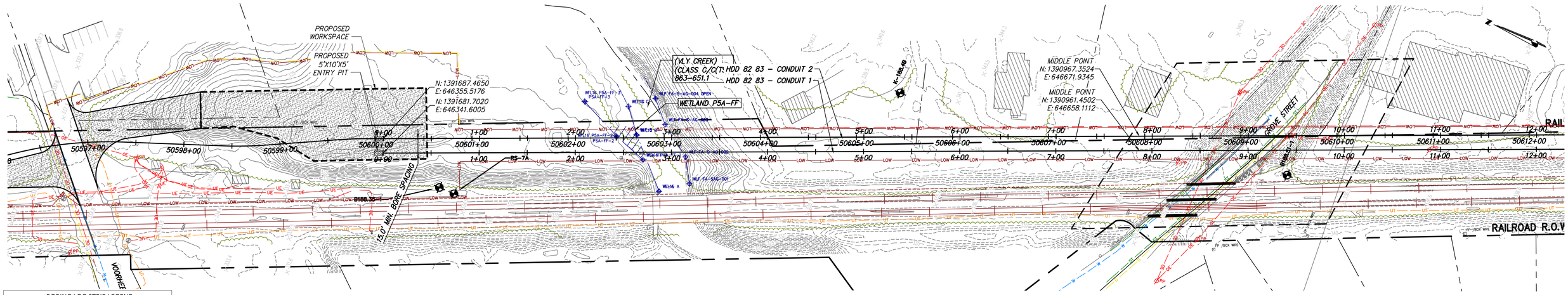
CSX RAILROAD CROSSING, CONDUIT 2

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-346**
DATE 06/09/2023
SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:41:24 PM Current User: Brian Connelly
LastSavedBy: natrater



PROPOSED HDD 82, 83, CONDUIT 1 – PLAN

SCALE: 1" = 50'

0 50 100
Scale in feet

BORING LOG STRIP LEGEND

B101

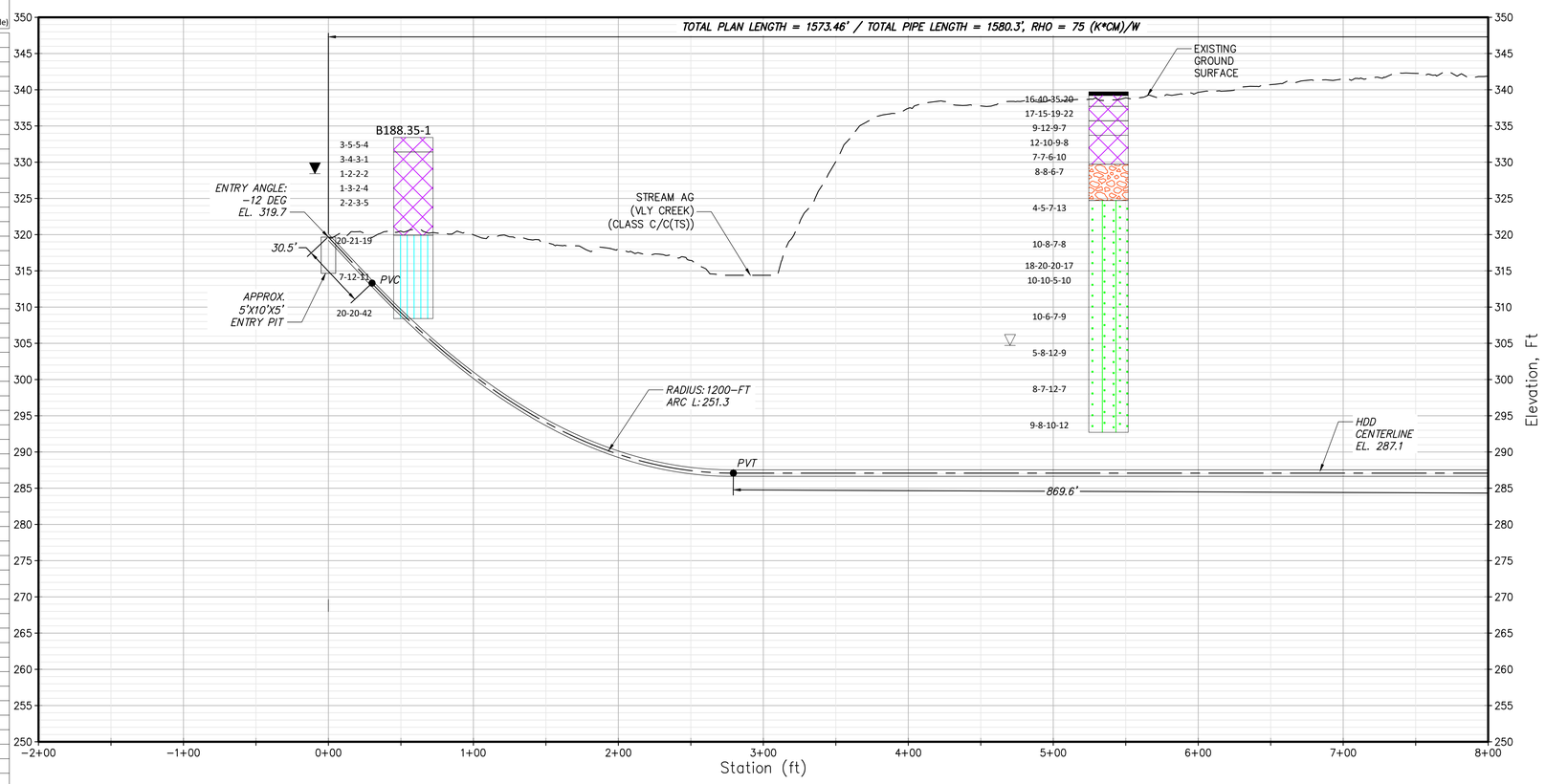
Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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



PROPOSED HDD 82, 83, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

0 50 100
Scale in feet

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080542 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

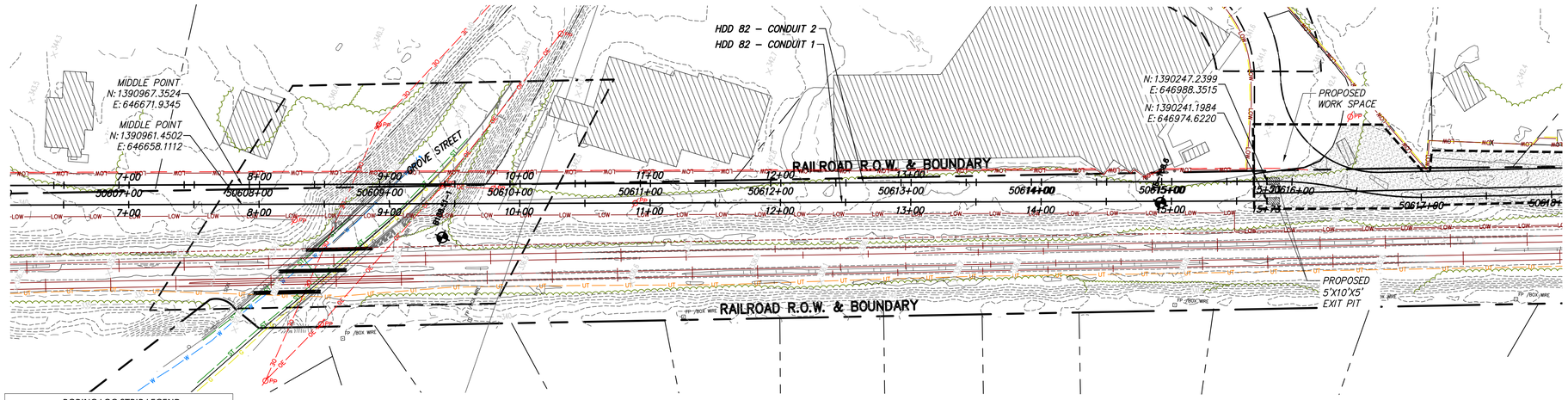
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM
PROPOSED PLAN AND PROFILE - HDD 82 83
VLY CREEK/ GROVE STREET CROSSING, CONDUIT 1
SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-347**
DATE 06/09/2023
SH.NO. XX OF 189

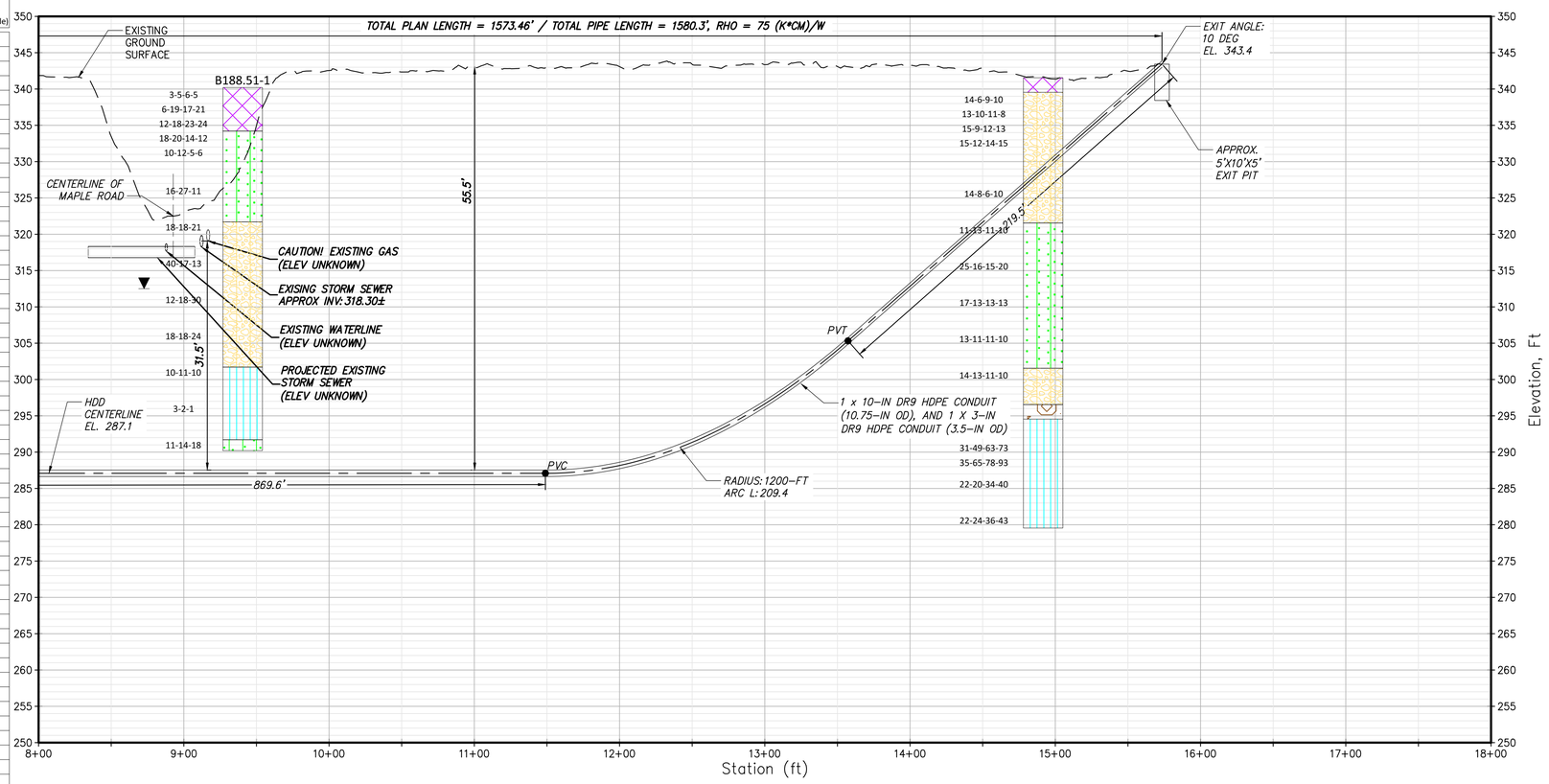
File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:43:14 PM Current User: Brian Connelly
LastSavedBy: natrater



0 50 100
Scale in feet

PROPOSED HDD 82, 83, CONDUIT 1 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 82, 83, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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

0 50 100
Scale in feet

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

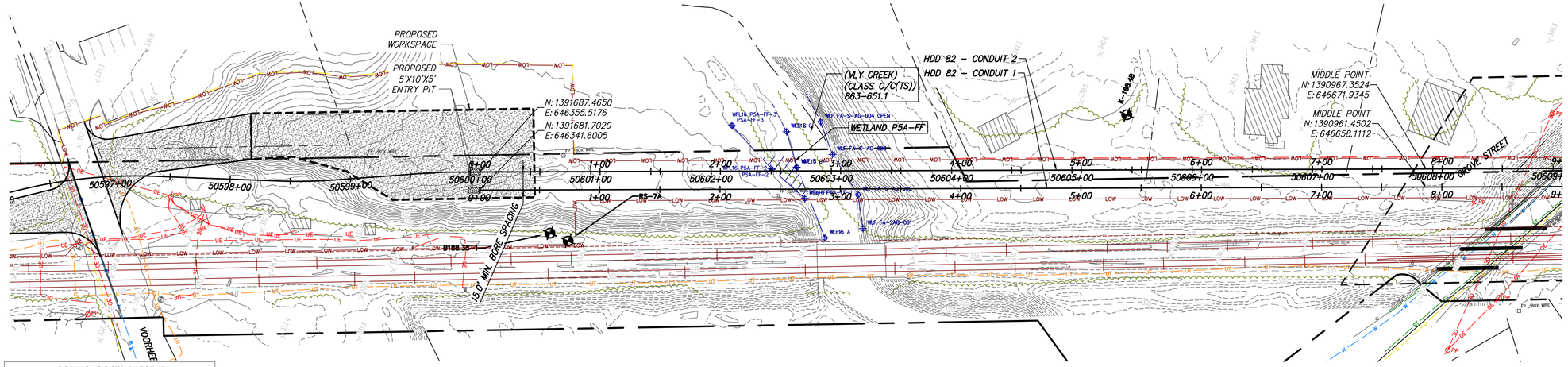
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM
PROPOSED PLAN AND PROFILE - HDD 82 83
VLY CREEK/ GROVE STREET CROSSING, CONDUIT 1
SCHENECTADY COUNTY, NY

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-348**

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:45:08 PM Current User: Brian Connelly
LastSavedBy: nstrater



BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

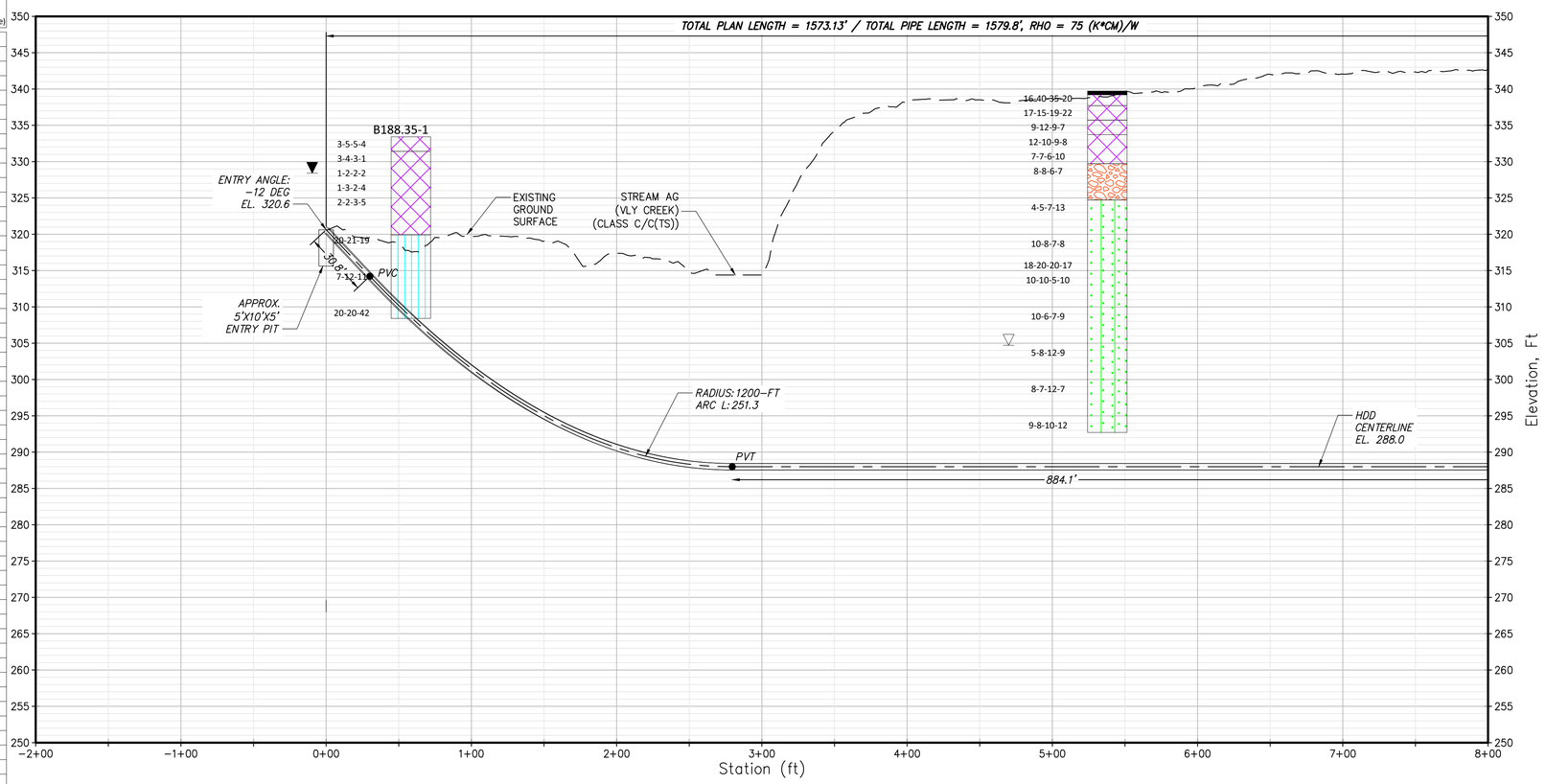
Legend

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 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	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

0 50 100
Scale in feet

PROPOSED HDD 82 83, CONDUIT 2 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 82 83, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

0 50 100
Scale in feet

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

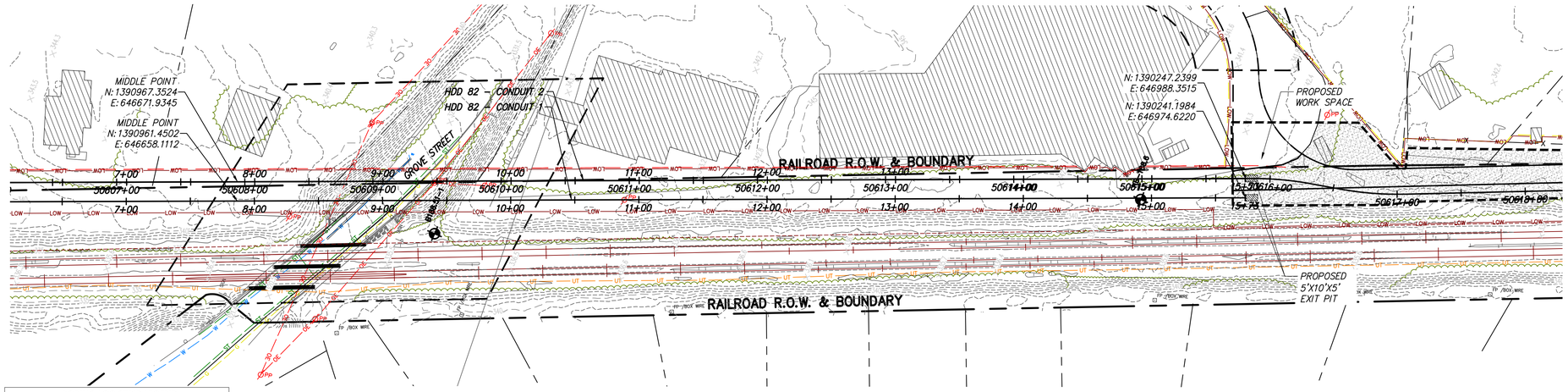
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM
PROPOSED PLAN AND PROFILE - HDD 82 83
VLY CREEK/GROVE CREEK CROSSING, CONDUIT 2
SCHENECTADY COUNTY, NY

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-349**

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

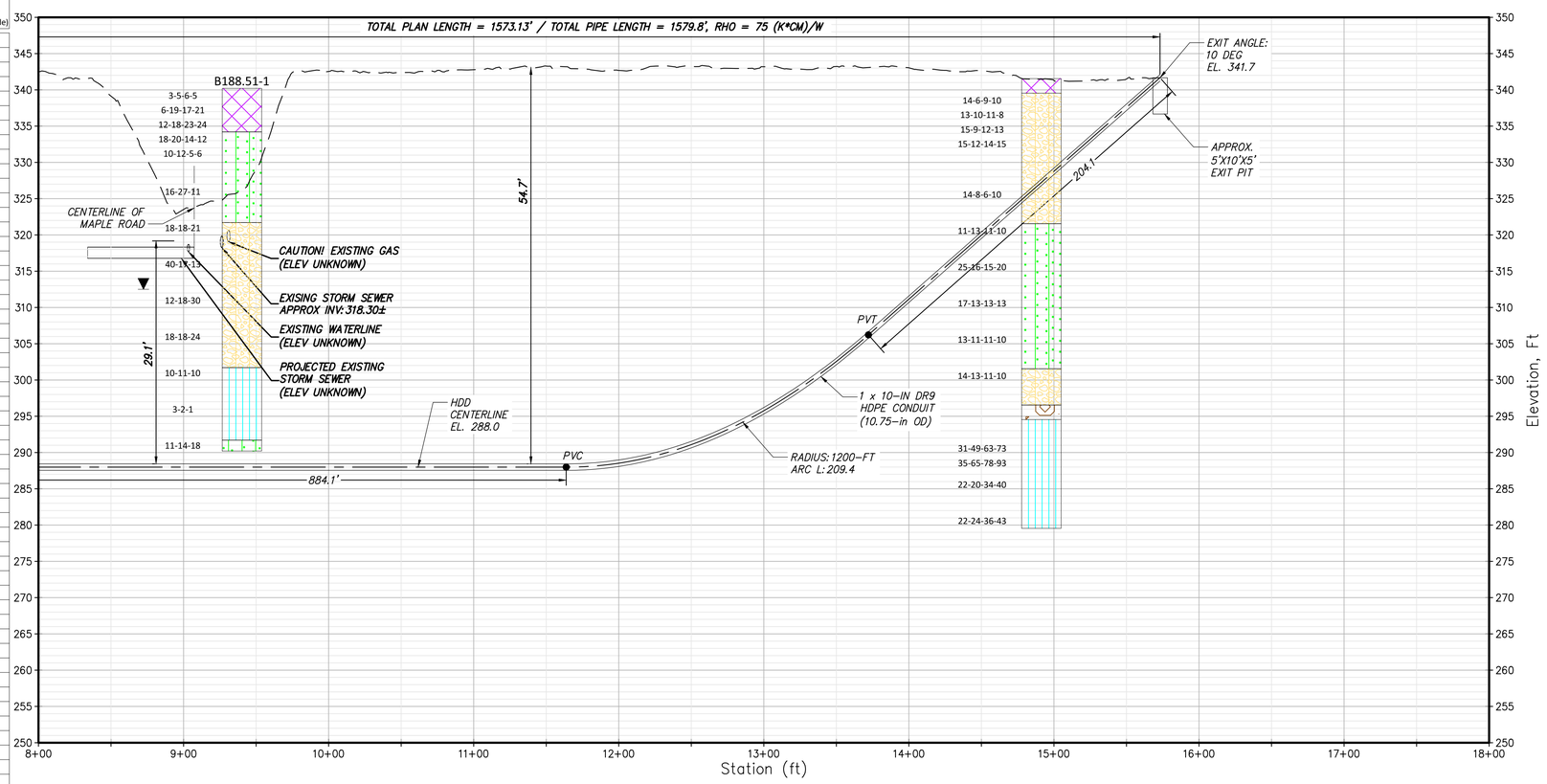
File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:46:49 PM Current User: Brian Connelly
LastSavedBy: nstrater



0 50 100
Scale in feet

PROPOSED HDD 82 83, CONDUIT 2 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 82 83, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration
Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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

0 50 100
Scale in feet

20
10
0

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023

STATE OF NEW YORK · BRIAN C. DORWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

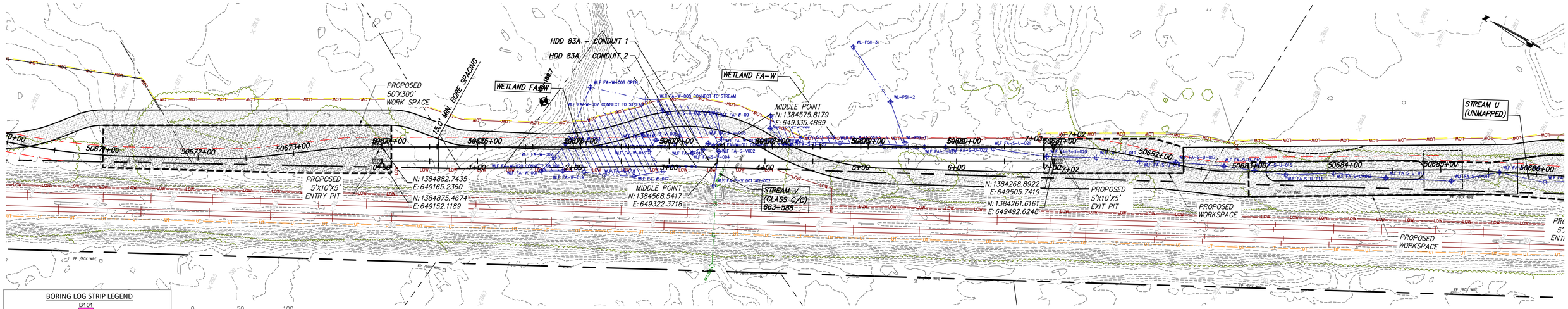
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM
PROPOSED PLAN AND PROFILE - HDD 82 83
VLY CREEK/ GROVE STREET CROSSING, CONDUIT 2
SCHENECTADY COUNTY, NY

KIEWIT PROJECT NO. 21162
BRIERLEY PROJECT NO. 322004-000
DRAWING NO. **C-350**

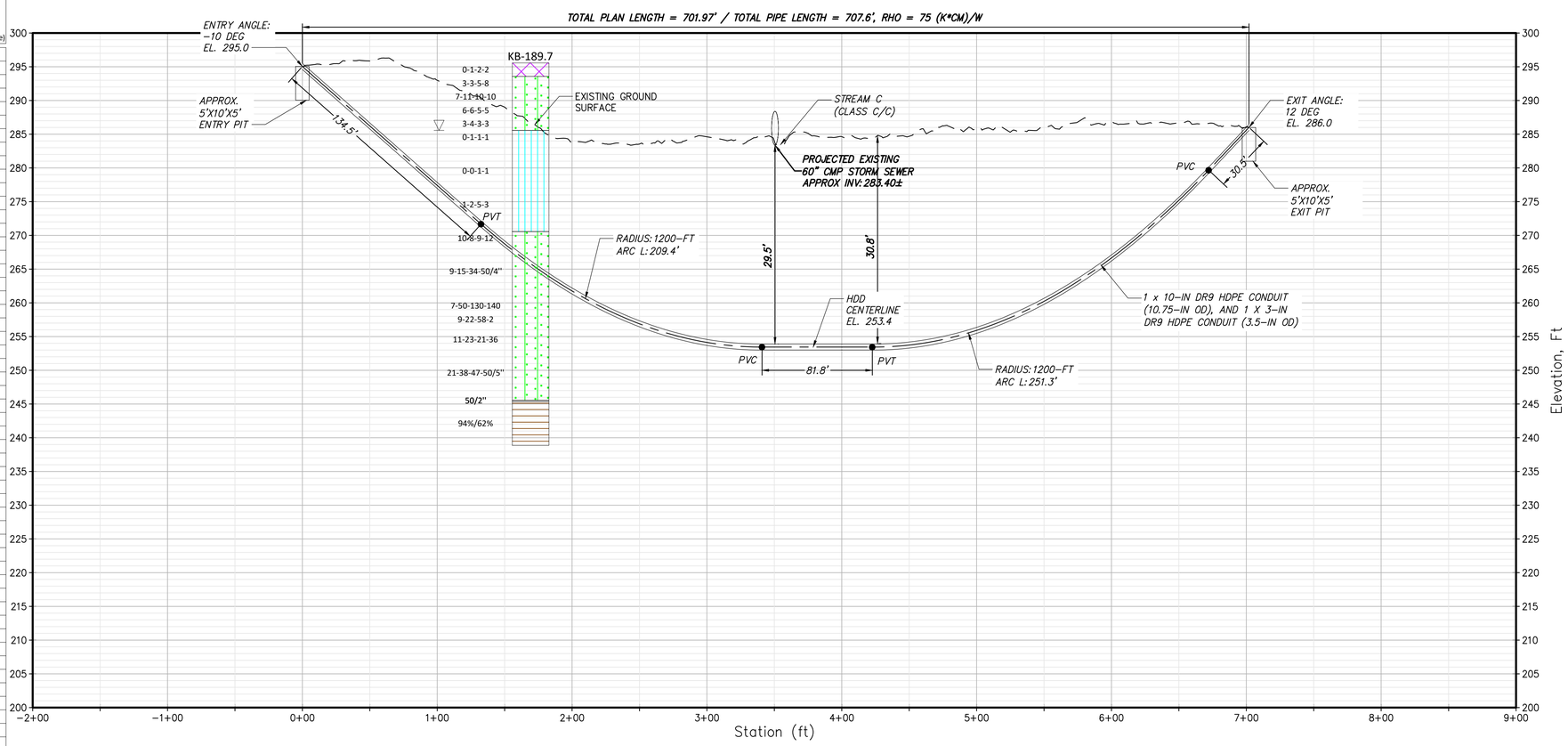
DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_343-352.DWG Saved: 6/5/2023 9:09:41 PM Plotted: 6/7/2023 9:48:43 PM Current User: Brian Connelly
LastSavedBy: natrater



PROPOSED HDD 83A, CONDUIT 1 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 83A, CONDUIT 1 – PROFILE

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023 STATE OF NEW YORK BRIAN C DORWART 080342 LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 83A

WETLAND FA CROSSING, CONDUIT 1

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE: AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162

BRIERLEY PROJECT NO. 322004-000

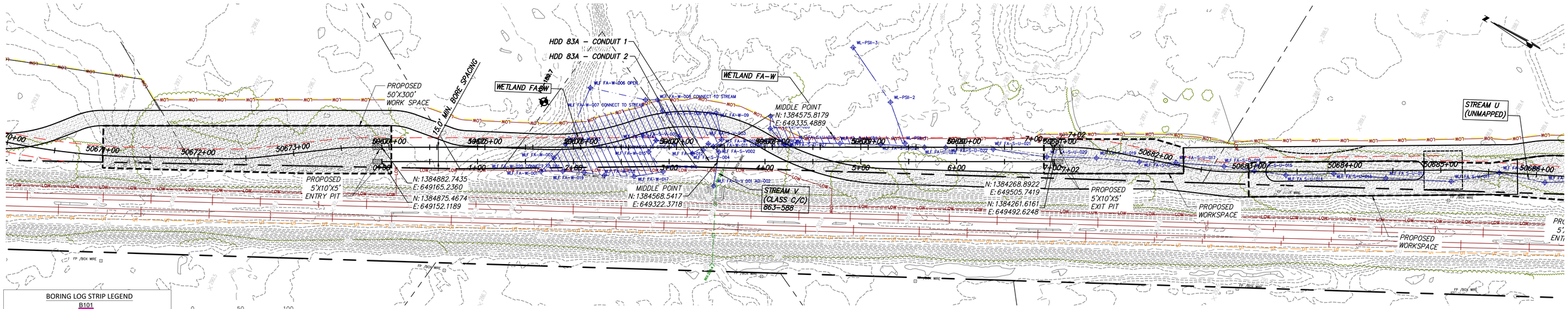
DRAWING NO. **C-351**

DATE 06/09/2023

SH.NO. XX OF 189

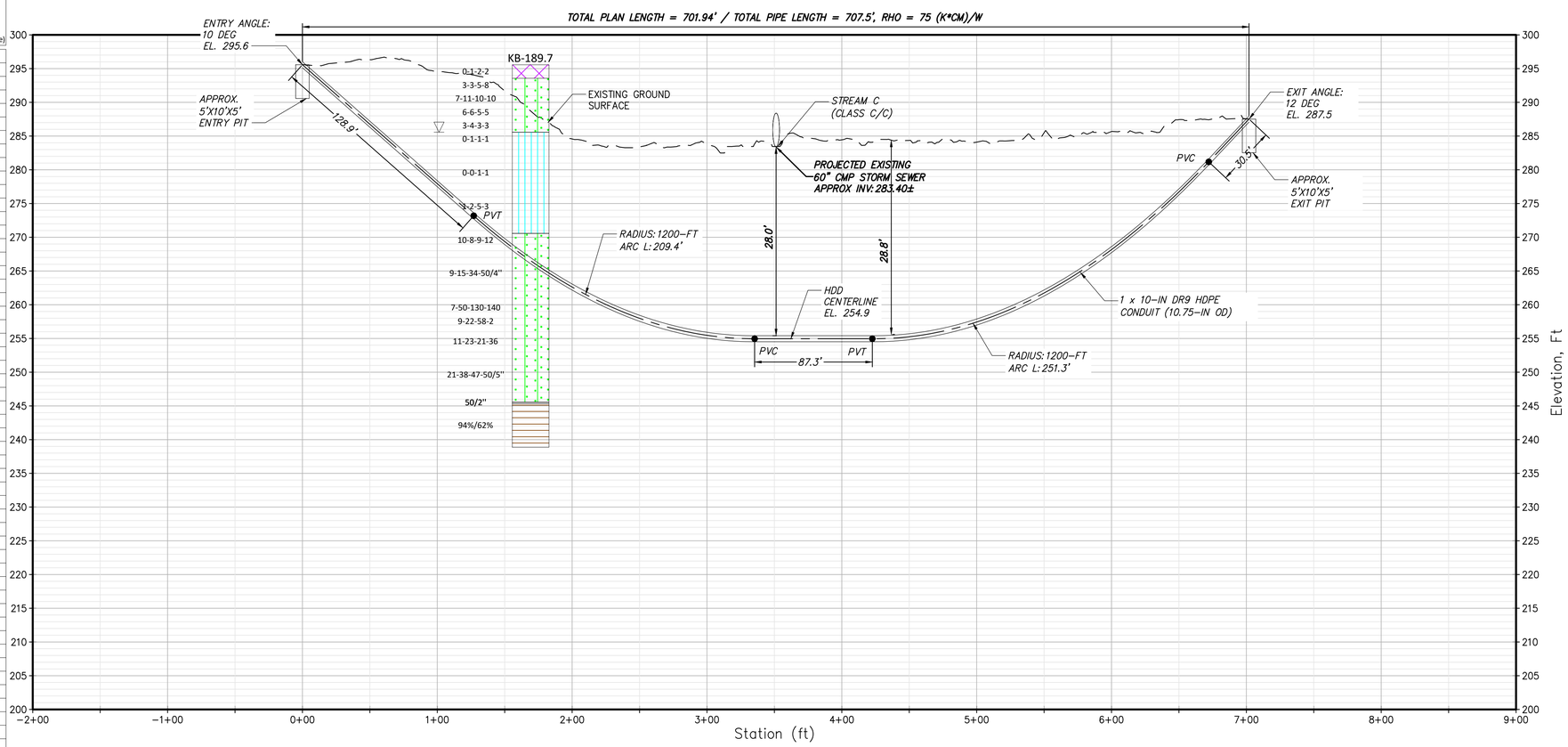
File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_353-358.DWG Saved: 6/7/2023 8:58:46 PM Plotted: 6/7/2023 9:51:21 PM Current User: Brian Connelly

LastSavedBy: bconnelly



PROPOSED HDD 83A, CONDUIT 2 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 83A, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C. DORIWART · 080342 · LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 83A

WETLAND FA CROSSING, CONDUIT 1

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD | SCALE AS SHOWN | REV. NO. 0

KIEWIT PROJECT NO. 21162

BRIERLEY PROJECT NO. 322004-000

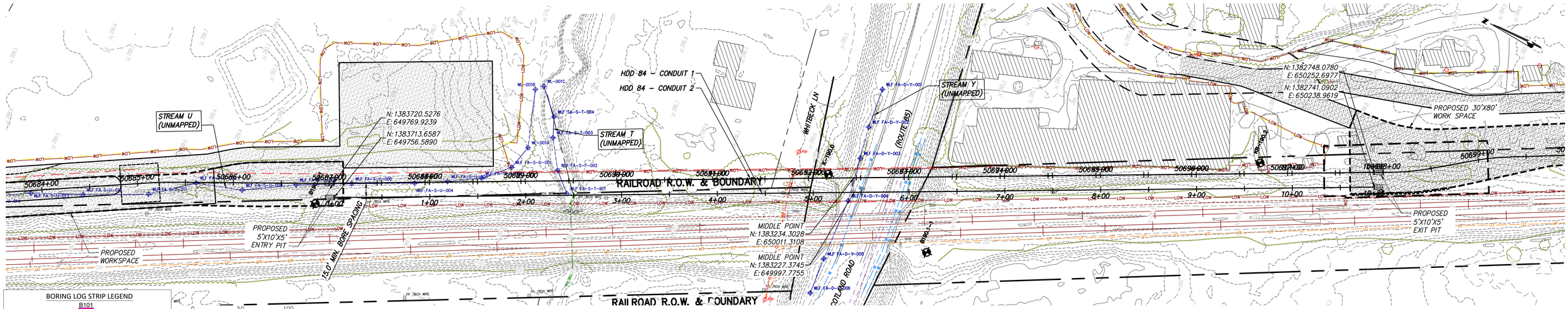
DRAWING NO. **C-352**

DATE 06/09/2023

SH.NO. XX OF 189

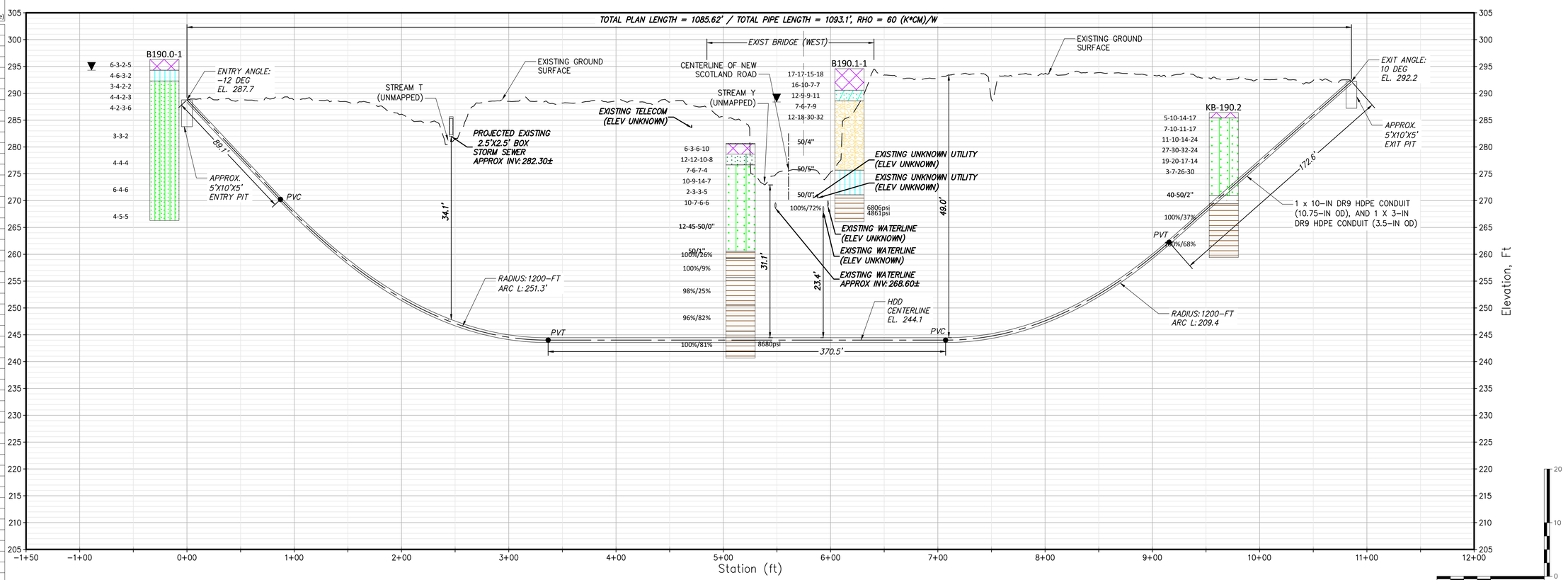
File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_353-358.DWG Saved: 6/7/2023 8:58:46 PM Plotted: 6/7/2023 9:53:05 PM Current User: Brian Connelly

LastSavedBy: bconnelly



PROPOSED HDD 84, CONDUIT 1 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 84, CONUIT 1 – PROFILE

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023 STATE OF NEW YORK BRIAN C DORIAN 080342 LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 84

NEW SCOTLAND ROAD CROSSING, CONDUIT 1

SCHENECTADY COUNTY, NY

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BD

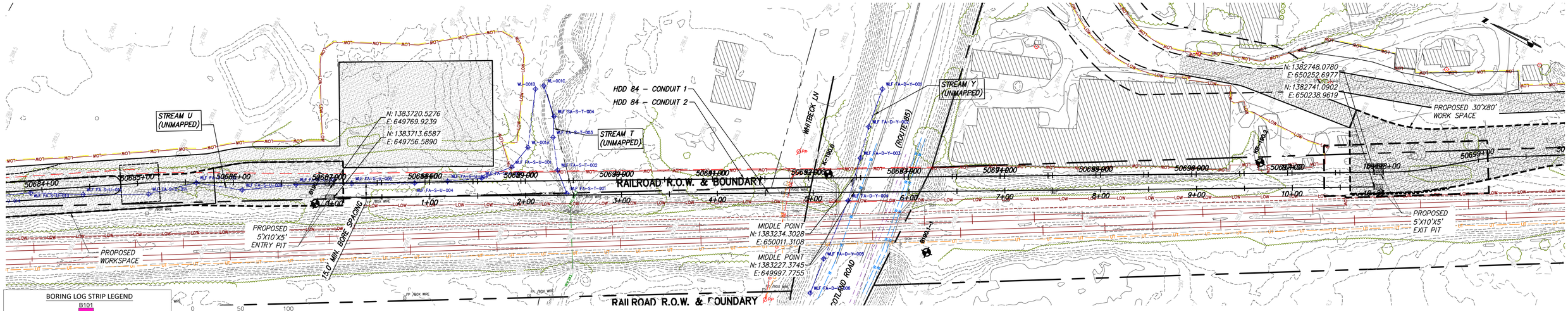
SCALE: AS SHOWN | REV. NO. 0 | DATE: 06/09/2023 | SH.NO. XX OF 189

KIEWIT PROJECT NO. 21162

BRIERLEY PROJECT NO. 322004-000

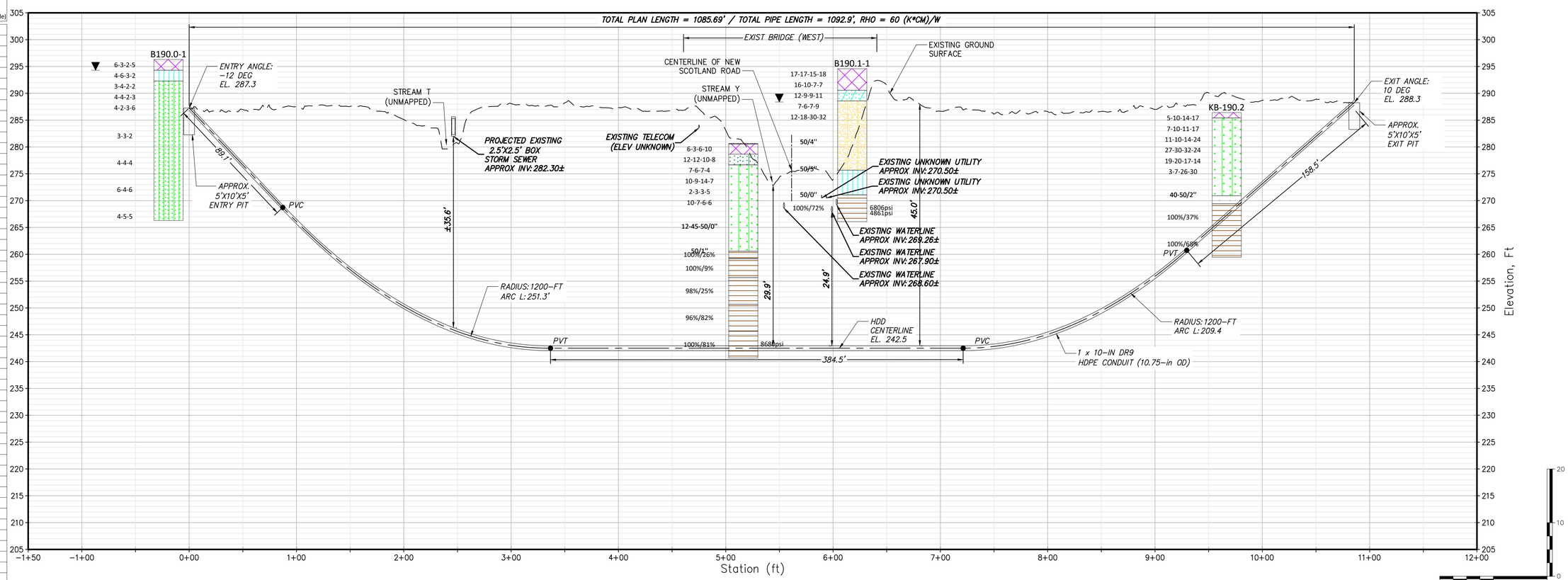
DRAWING NO. **C-353**

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_353-358.DWG Saved: 6/7/2023 8:58:46 PM Plotted: 6/7/2023 9:54:54 PM Current User: Brian Connelly
LastSavedBy: bconnelly



PROPOSED HDD 84, CONDUIT 2 – PLAN

SCALE: 1" = 50'



PROPOSED HDD 84, CONDUIT 2 – PROFILE

SCALE: 1" = 50'

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

11000psi =UCS

2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

Boring ground elevations are from survey data and topo maps (or approximated from Google Earth when topo or survey aren't available)

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 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	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

CHPE Champlain Hudson Power Express

Kiewit

BRIERLEY ASSOCIATES
Creating Space Underground
26 Smith Pl, Ste 2, Cambridge, MA 02138
PHONE: 617.714.5784

6/8/2023
STATE OF NEW YORK · BRIAN C DORWARD · LICENSED PROFESSIONAL ENGINEER · 080342

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	NS	BD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM TO BETHLEHEM

PROPOSED PLAN AND PROFILE - HDD 84

NEW SCOTLAND ROAD CROSSING, CONDUIT 2

SCHENECTADY COUNTY, NY

KIEWIT PROJECT NO. 21162

BRIERLEY PROJECT NO. 322004-000

DRAWING NO. **C-354**

DRAWN BY: BC | DESIGNED BY: NS | APPROVED BY: BDW | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. XX OF 189

File: C:\USERS\BCONNELLY\DC\ACCDOCS\BRIERLEY ASSOCIATES\322004-000 CHAMPLAIN HUDSON POWER EXPRESS\PROJECT FILES\40 DESIGN ENG\PACKAGE 5\5A_BA-HDD CIVIL SHEETS\CHPE_5A_C_353-358.DWG Saved: 6/7/2023 8:58:46 PM Plotted: 6/7/2023 9:56:43 PM Current User: Brian Connelly
LastSavedBy: bconnelly