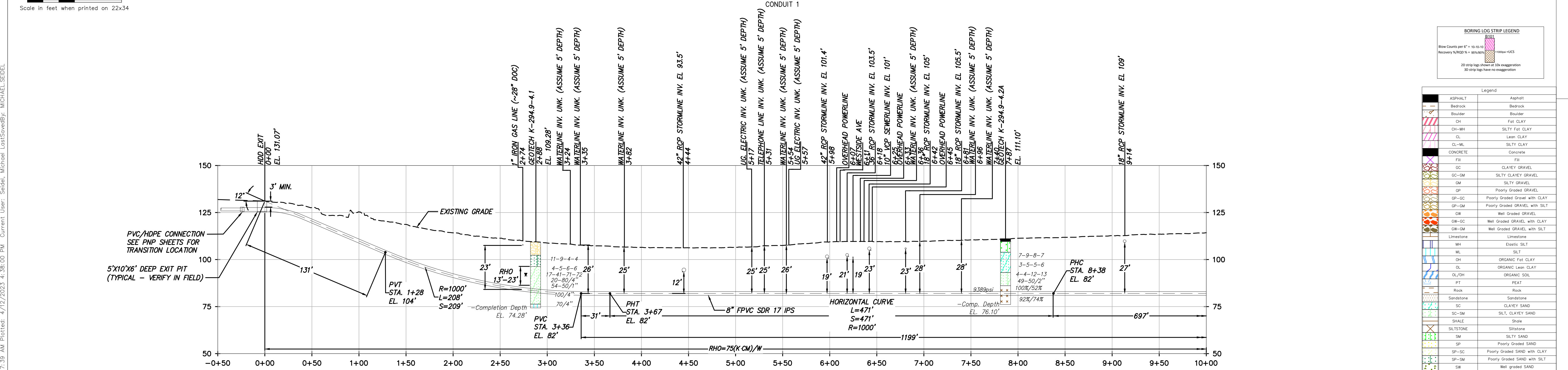


HDD 132 PLAN VIEW



DESIGN AND CONSTRUCTION NOTES:

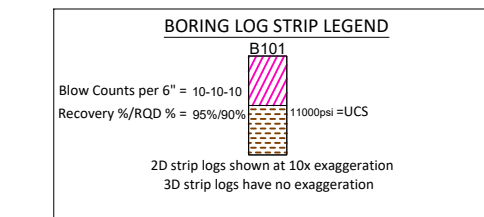
1. INSTALLATION METHOD: HORIZONTAL DIRECTIONAL DRILL.
2. 8.625" FPVC MIN. W.T. 0.510" SDR 17 IPS PIPE.
3.500" HDPE MIN. W.T. 0.389" DR 9 IPS PIPE.
HDD HORIZONTAL LENGTH (L): 1808'
HDD DESIGNED PIPE LENGTH (S): 1815'
3. THE MINIMUM THREE JOINT (APPROX. 100 FT) COMBINED CURVE (VERTICAL + HORIZONTAL) RADIUS SHALL NOT BE LESS THAN 800 FT.
4. THE MINIMUM SEPARATION DISTANCE FROM EXISTING SUBSURFACE UTILITIES SHALL NOT BE LESS THAN 10 FT.
5. AS-BUILT HORIZONTAL SEPARATION BETWEEN CASING 1 AND CASING 2 SHALL BE GREATER THAN 5 FT.
6. PILOT HOLE HORIZONTAL ALIGNMENT SHALL REMAIN WITHIN 3 FT LEFT OR RIGHT OF THE DESIGNED HDD ALIGNMENT.
7. DRILL CONTRACTOR AND GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING.
8. SPT N-VALUES SHOWN ON THIS DRAWING ARE NOT CORRECTED FOR SAMPLER SIZE OR HAMMER ENERGY. REFERENCE BORING LOGS AND GEOTECHNICAL REPORTS FOR ADDITIONAL SOIL INFORMATION.
9. DRILL CONTRACTOR SHALL UTILIZE BUOYANCY CONTROL MEASURES (INTERNAL WATER USED FOR BALLAST) DURING PULLBACK FOR ALL BUNDLED CASINGS.

GENERAL NOTES:

1. ALL BURIED LINE DEPTHS ARE APPROXIMATE. PRIOR TO ANY EXCAVATION OR EXPLORATORY BORING, CONTRACTOR MUST CONTACT 811 AND ABIDE BY ALL STATE EXCAVATION REQUIREMENTS.
2. TETRA TECH ENGINEERING AND SURVEYING P.C. IS NOT RESPONSIBLE FOR LOCATION OF FOREIGN UTILITIES IN THIS DRAWING. THE INFORMATION SHOWN HEREON IS FURNISHED WITHOUT LIABILITY ON THE PART OF TETRA TECH ENGINEERING AND SURVEYING P.C. OR ANY DAMAGES RESULTING FROM ERRORS OR OMISSIONS THEREIN.
3. ALL COORDINATES ARE IN NEW YORK STATE PLANE, NAD83, EAST ZONE, US FOOT.

HDD 132 PROFILE VIEW

CONDUIT 1



Legend	
ASPHALT	Asphalt
Bedrock	Bedrock
Boulder	Boulder
CH	Fat CLAY
CH-MH	SILTY Fat CLAY
CL	Lean CLAY
CL-ML	SILTY CLAY
CONCRETE	Concrete
FBI	FBI
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-GM	SILT, CLAYEY SAND
SHALE	Shale
SILTSTONE	Siltstone
SW	SILTY SAND
GP	Poorly Graded SAND
GP-SC	Poorly Graded SAND with CLAY
GP-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	Subgravel
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



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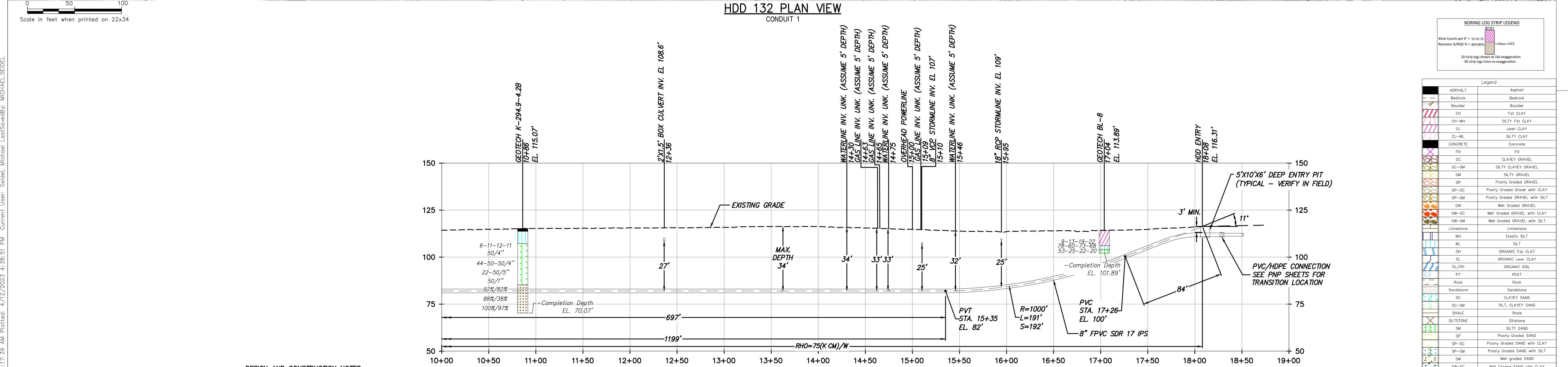
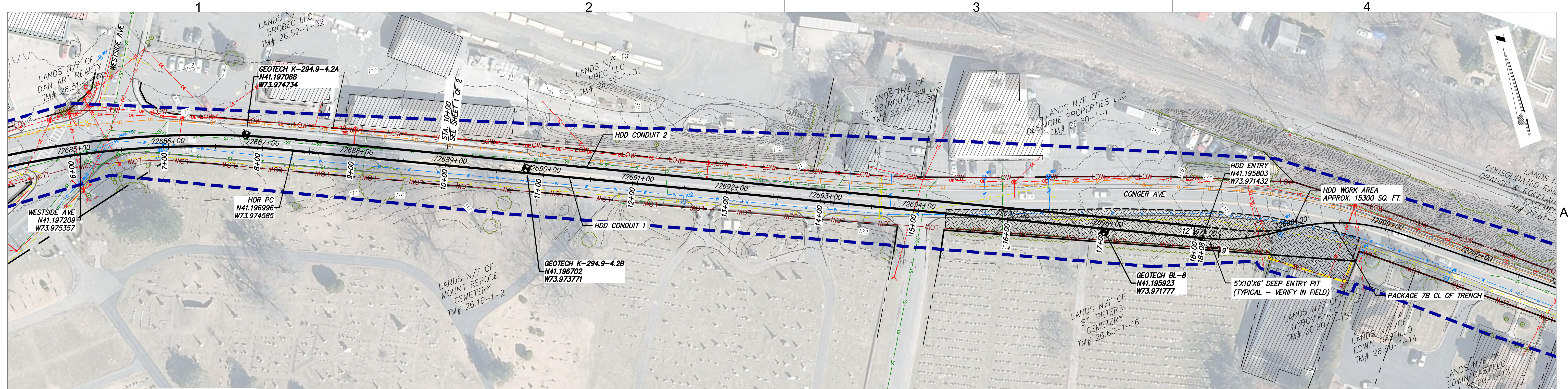
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
D	04/14/2023	FINAL SUBMISSION	MRS	EJK
C	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	MRS	EJK
B	11/16/2022	DRAFT FINAL SUBMISSION	MRS	EJK
A	05/20/2022	60% DESIGN SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND

PLAN AND PROFILE - HDD 132 PAGE 1 OF 2
WESTSIDE AVENUE CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE	AS SHOWN	DATE
MRS	AMC	EJK	REV. NO.	D	04/14/2023

KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	C-332
DATE	04/14/2023
SH.NO.	OF



DESIGN AND CONSTRUCTION NOTES:

1. INSTALLATION METHOD: HORIZONTAL DIRECTIONAL DRILL.
2. 8.625" FPVC MIN. W.T. 0.510" SDR 17 IPS PIPE.
3.500" HDPE MIN. W.T. 0.389" DR 9 IPS PIPE.
HDD HORIZONTAL LENGTH (L): 1808'
HDD DESIGNED PIPE LENGTH (S): 1815'
3. THE MINIMUM THREE JOINT (APPROX. 100 FT) COMBINED CURVE (VERTICAL + HORIZONTAL) RADIUS SHALL NOT BE LESS THAN 800 FT.
4. THE MINIMUM SEPARATION DISTANCE FROM EXISTING SUBSURFACE UTILITIES SHALL NOT BE LESS THAN 10 FT.
5. AS-BUILT HORIZONTAL SEPARATION BETWEEN CASING 1 AND CASING 2 SHALL BE GREATER THAN 5 FT.
6. PILOT HOLE HORIZONTAL ALIGNMENT SHALL REMAIN WITHIN 3 FT LEFT OR RIGHT OF THE DESIGNED HDD ALIGNMENT.
7. DRILL CONTRACTOR AND GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING.
8. SPT N-VALUES SHOWN ON THIS DRAWING ARE NOT CORRECTED FOR SAMPLER SIZE OR HAMMER ENERGY. REFERENCE BORING LOGS AND GEOTECHNICAL REPORTS FOR ADDITIONAL SOIL INFORMATION.
9. DRILL CONTRACTOR SHALL UTILIZE BUOYANCY CONTROL MEASURES (INTERNAL WATER USED FOR BALLAST) DURING PULLBACK FOR ALL BUNDLED CASINGS.

GENERAL NOTES:

1. ALL BURIED LINE DEPTHS ARE APPROXIMATE. PRIOR TO ANY EXCAVATION OR EXPLORATORY BORING, CONTRACTOR MUST CONTACT 811 AND ABIDE BY ALL STATE EXCAVATION REQUIREMENTS.
2. TETRA TECH ENGINEERING AND SURVEYING P.C. IS NOT RESPONSIBLE FOR LOCATION OF FOREIGN UTILITIES IN THIS DRAWING. THE INFORMATION SHOWN HEREON IS FURNISHED WITHOUT LIABILITY ON THE PART OF TETRA TECH ENGINEERING AND SURVEYING P.C. OR ANY DAMAGES RESULTING FROM ERRORS OR OMISSIONS THEREIN.
3. ALL COORDINATES ARE IN NEW YORK STATE PLANE, NAD83, EAST ZONE, US FOOT.

Champlain Hudson Power Express

Kiewit

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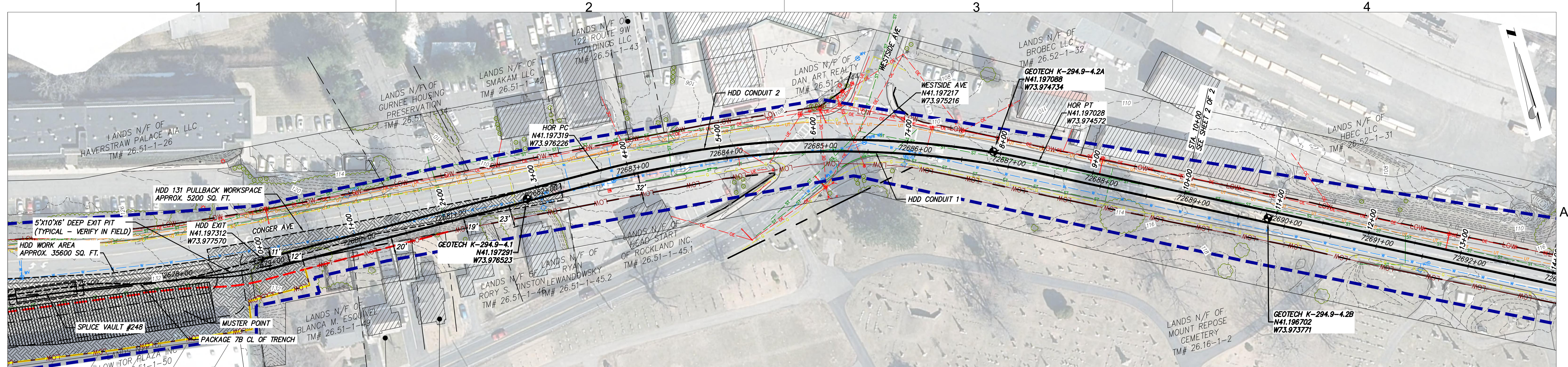
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
D	04/14/2023	FINAL SUBMISSION	MRS	EJK
C	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	MRS	EJK
B	11/16/2022	DRAFT FINAL SUBMISSION	MRS	EJK
A	05/20/2022	60% DESIGN SUBMISSION	MRS	EJK

**CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND**

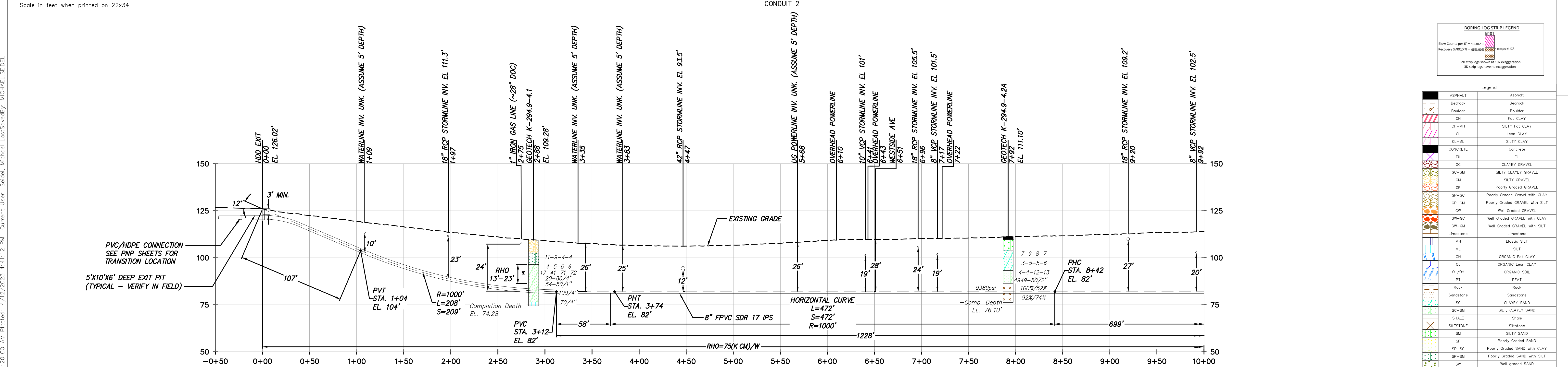
PLAN AND PROFILE - HDD 132 PAGE 2 OF 2
WESTSIDE AVENUE CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE	AS SHOWN	DATE
MRS	AMC	EJK	REV. NO.	D	04/14/2023

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-332**



HDD 132 PLAN VIEW



HDD 132 PROFILE VIEW

DESIGN AND CONSTRUCTION NOTES:

1. INSTALLATION METHOD: HORIZONTAL DIRECTIONAL DRILL.
2. 8.625" FPVC MIN. W.T. 0.510" SDR 17 IPS PIPE.
3. 3.500" HDPE MIN. W.T. 0.389" DR 9 IPS PIPE.
4. HDD HORIZONTAL LENGTH (L): 1815'
5. HDD DESIGNED PIPE LENGTH (S): 1822'
6. THE MINIMUM THREE JOINT (APPROX. 100 FT) COMBINED CURVE (VERTICAL + HORIZONTAL) RADIUS SHALL NOT BE LESS THAN 800 FT.
7. THE MINIMUM SEPARATION DISTANCE FROM EXISTING SUBSURFACE UTILITIES SHALL NOT BE LESS THAN 10 FT.
8. AS-BUILT HORIZONTAL SEPARATION BETWEEN CASING 1 AND CASING 2 SHALL BE GREATER THAN 5 FT.
9. PILOT HOLE HORIZONTAL ALIGNMENT SHALL REMAIN WITHIN 3 FT LEFT OR RIGHT OF THE DESIGNED HDD ALIGNMENT.
10. DRILL CONTRACTOR AND GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING.
11. SPT N-VALUES SHOWN ON THIS DRAWING ARE NOT CORRECTED FOR SAMPLER SIZE OR HAMMER ENERGY. REFERENCE BORING LOGS AND GEOTECHNICAL REPORTS FOR ADDITIONAL SOIL INFORMATION.
12. DRILL CONTRACTOR SHALL UTILIZE BUOYANCY CONTROL MEASURES (INTERNAL WATER USED FOR BALLAST) DURING PULLBACK FOR ALL BUNDLED CASINGS.

GENERAL NOTES:

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3. ALL COORDINATES ARE IN NEW YORK STATE PLANE, NAD83, EAST ZONE, US FOOT.

Champlain Hudson Power Express

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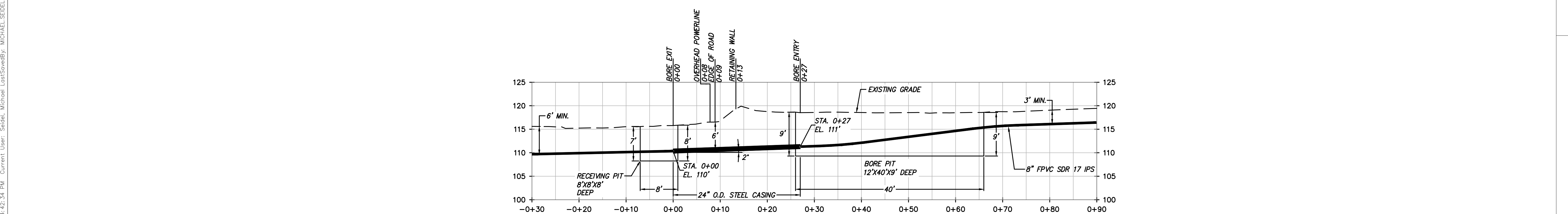
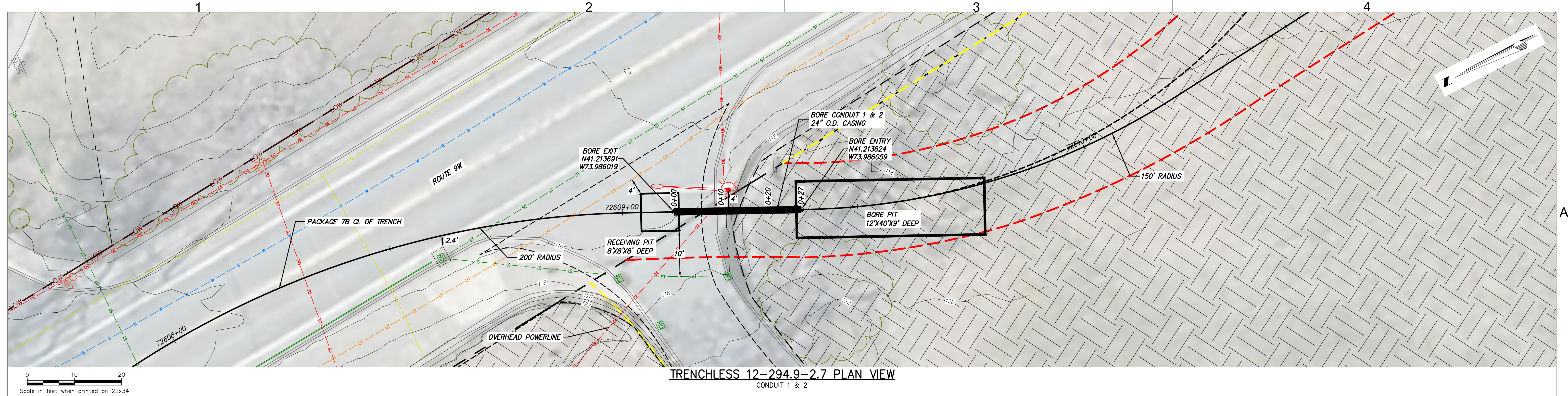
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
D	04/14/2023	FINAL SUBMISSION	MRS	EJK
C	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	MRS	EJK
B	11/16/2022	DRAFT FINAL SUBMISSION	MRS	EJK
A	05/20/2022	60% DESIGN SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND


PLAN AND PROFILE - HDD 132 PAGE 1 OF 2
WESTSIDE AVENUE CROSSING - CONDUIT 2
ROCKLAND COUNTY, NY

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE	AS SHOWN	DATE
MRS	AMC	EJK	REV. NO.	D	04/14/2023


KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. C-332.2




- DESIGN AND CONSTRUCTION:**
1. INSTALLATION METHOD: AUGER BORE.
 2. 8.625" PVC MIN. W.T. 0.322" SCH 40 IPS PIPE.
3.500" HDPE MIN. W.T. 0.389" DR 9 IPS PIPE.
INSTALLED IN WELDED STEEL CASING (24" O.D. 0.375" WT. GRADE B)
BORE HORIZONTAL LENGTH: 27'
BORE DESIGNED PIPE LENGTH: 27'
 3. OVER-CUT BY THE CUTTING HEAD SHALL NOT EXCEED THE OUTSIDE DIAMETER OF THE CASING BY MORE THAN 1/2 INCH.
 4. ANNULAR SPACE BETWEEN THE CASING AND BORE HOLE SHALL BE GROUTED IF VOIDS SHOULD DEVELOP OR IF THE BORED HOLE DIAMETER IS GREATER THAN THE CASING OUTSIDE DIAMETER BY MORE THAN 1 INCH.
 5. STEEL CASING WILL BE FILLED WITH GROUT PER PROJECT SPECIFICATIONS.
 6. CASING ENDS SHALL BE SEALED BEFORE BEING BACKFILLED, USING APPROVED CASING END SEALS.
 7. THE MINIMUM SEPARATION DISTANCE FROM EXISTING SUBSURFACE UTILITIES SHALL NOT BE LESS THAN 2 FT.
 8. NO GEOTECHNICAL DATA OR REPORTS WERE AVAILABLE AT THE TIME OF DESIGN. NO OTHER GEOTECHNICAL INFORMATION WAS REFERENCED IN THE PREPARATION OF THIS DESIGN.
- NOTES:**
1. ALL BURIED LINE DEPTHS ARE APPROXIMATE. PRIOR TO ANY EXCAVATION OR EXPLORATORY BORING, CONTRACTOR MUST CONTACT 811 AND ABIDE BY ALL STATE EXCAVATION REQUIREMENTS.
 2. TETRA TECH ENGINEERING AND SURVEYING P.C. IS NOT RESPONSIBLE FOR LOCATION OF FOREIGN UTILITIES IN THIS DRAWING. THE INFORMATION SHOWN HEREON IS FURNISHED WITHOUT LIABILITY ON THE PART OF TETRA TECH ENGINEERING AND SURVEYING P.C. OR ANY DAMAGES RESULTING FROM ERRORS OR OMISSIONS THEREIN.
 3. ALL COORDINATES ARE IN NEW YORK STATE PLANE, NAD83, EAST ZONE, US FOOT.



CHPE
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Power Express



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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
B	04/14/2023	FINAL SUBMISSION	MRS	EJK
A	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - TRENCHLESS 12-294.9-2.7
HISTORIC WALL CROSSING - CONDUIT 1 & 2
ROCKLAND COUNTY, NY

DRAWN BY: MRS	DESIGNED BY:AMC	APPROVED BY: EJK	SCALE REV. NO.	AS SHOWN
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KIEWIT PROJECT NO. 21162	TT PROJECT NO. 204-3701	DRAWING NO. C-350
DATE SH.NO.	04/14/2023 OF	

