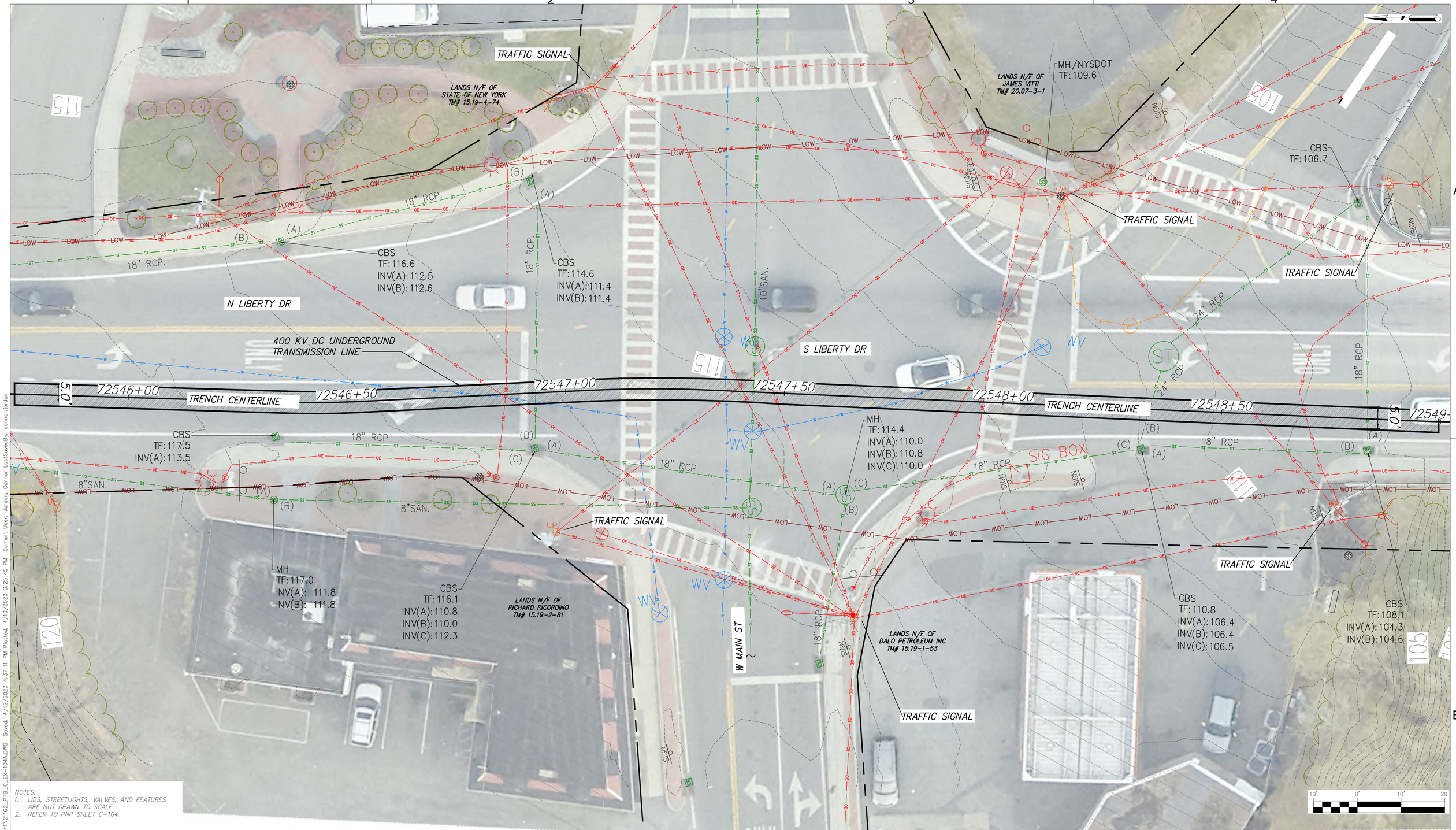

NOTES:
1. LIDS, STREETLIGHTS, VALVES, AND FEATURES ARE NOT DRAWN TO SCALE.
2. REFER TO PNP SHEET C-104.

CHPE Champlain Hudson Power Express

Kiewit

TETRA TECH

TETRA TECH ENGINEERING AND SURVEYING P.C.
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ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
C	04/14/2023	FINAL SUBMISSION	WJ	JL
B	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	MP	JL
A	10/21/2022	DOT PROGRESS SUBMISSION	MP	AR

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
INTERSECTION INSET EXHIBIT
N LIBERTY DR AND W MAIN ST

DRAWN BY: WJ | DESIGNED BY: AC | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. C

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-133**
DATE 04/14/2023
SH.NO. -- OF --

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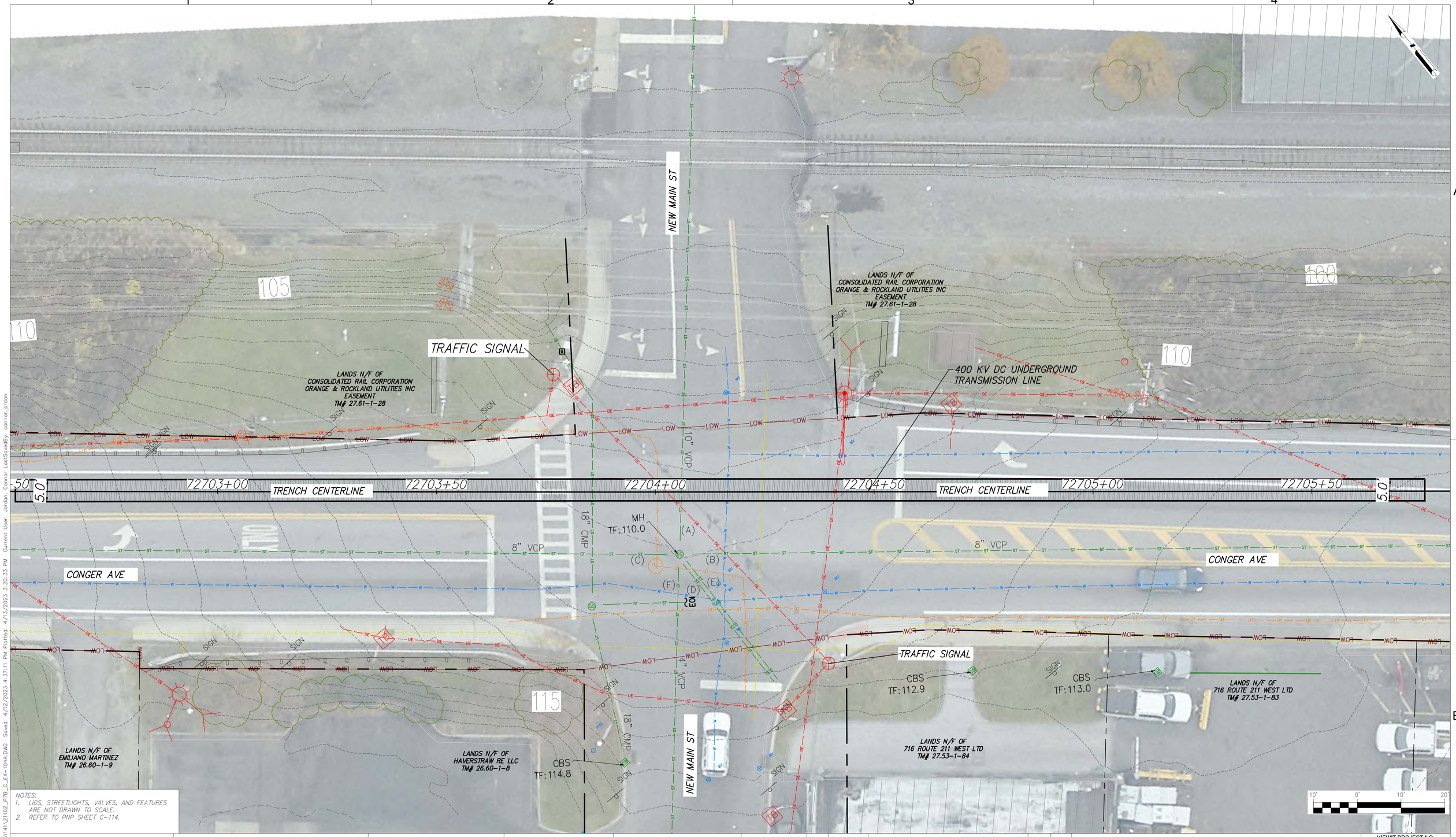

NOTES:
1. LIDS, STREETLIGHTS, VALVES, AND FEATURES ARE NOT DRAWN TO SCALE.
2. REFER TO PNP SHEET C-114.

CHPE Champlain Hudson Power Express

Kiewit

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ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
C	04/14/2023	FINAL SUBMISSION	WJ	JL
B	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	MP	JL
A	10/21/2022	DOT PROGRESS SUBMISSION	MP	AR

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
INTERSECTION INSET EXHIBIT
CONGER AVE AND NEW MAIN ST

DRAWN BY: WJ | DESIGNED BY: AC | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. C

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-134**
DATE 04/14/2023
SH.NO. -- OF --

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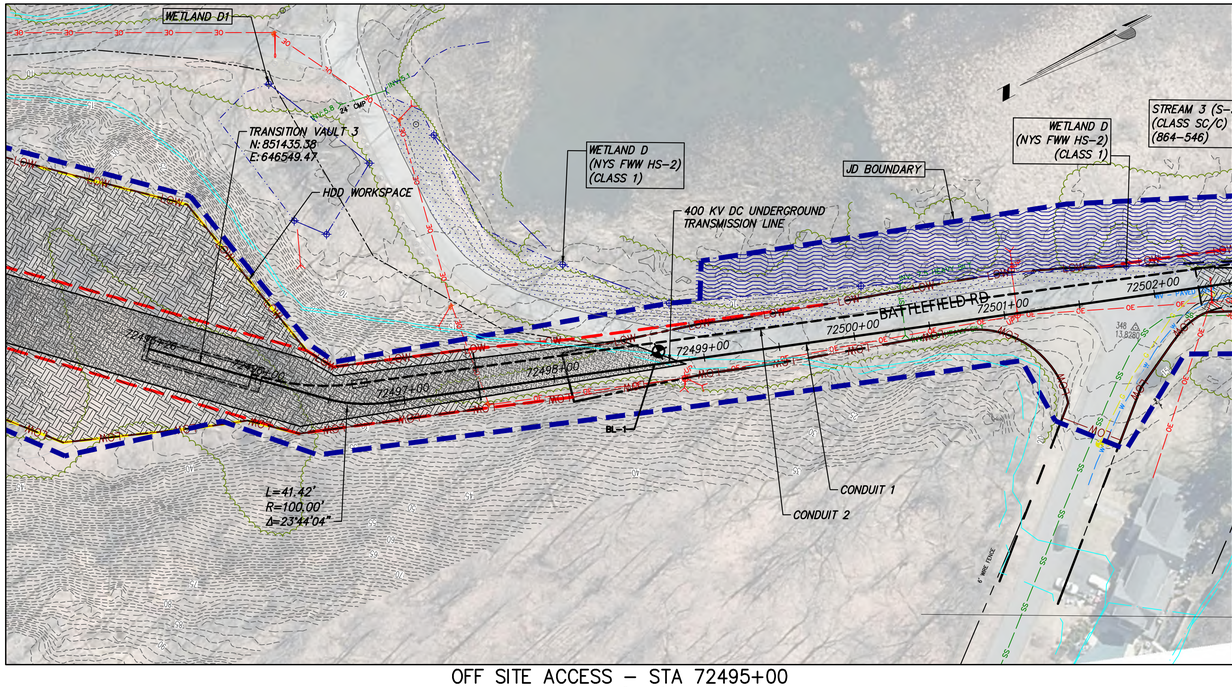
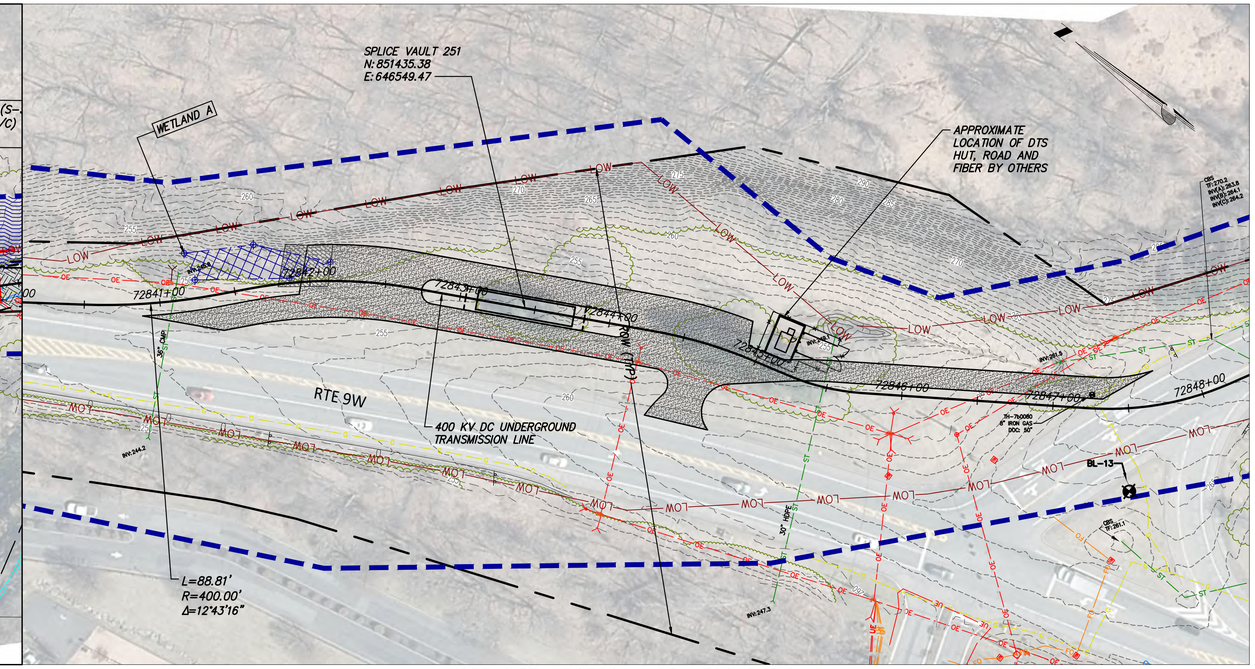


OFF SITE ACCESS – STA 72495+00
SCALE: 1" = 50'



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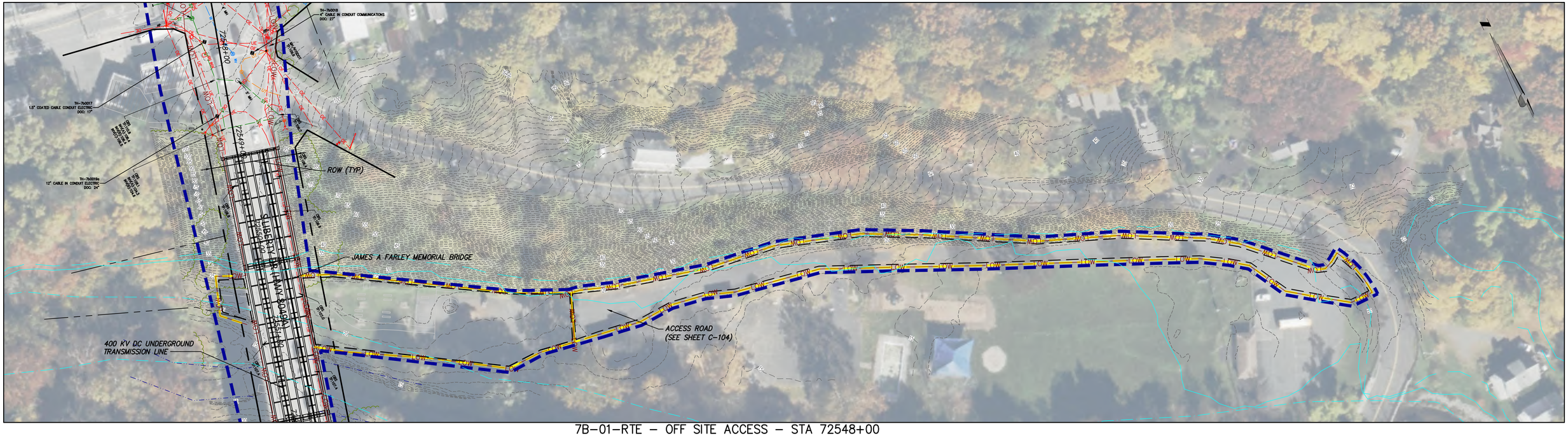
SCALE: 1" = 50'



7B-01-RTE – OFF SITE ACCESS – STA 72548+00
SCALE: 1" = 50'

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ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
G		C H C I H H		I
		C G C H I H H		I
F		C G C H I H H		I
		D C C G H H H		I
		C D H H G H G I		
		C D H H		

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
OFF SITE ACCESS ROADS
SHEET 1 OF 2

DRAWN BY: RB | DESIGNED BY: AC | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. F

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-201**
DATE 04/14/2023
SH.NO. -- OF --

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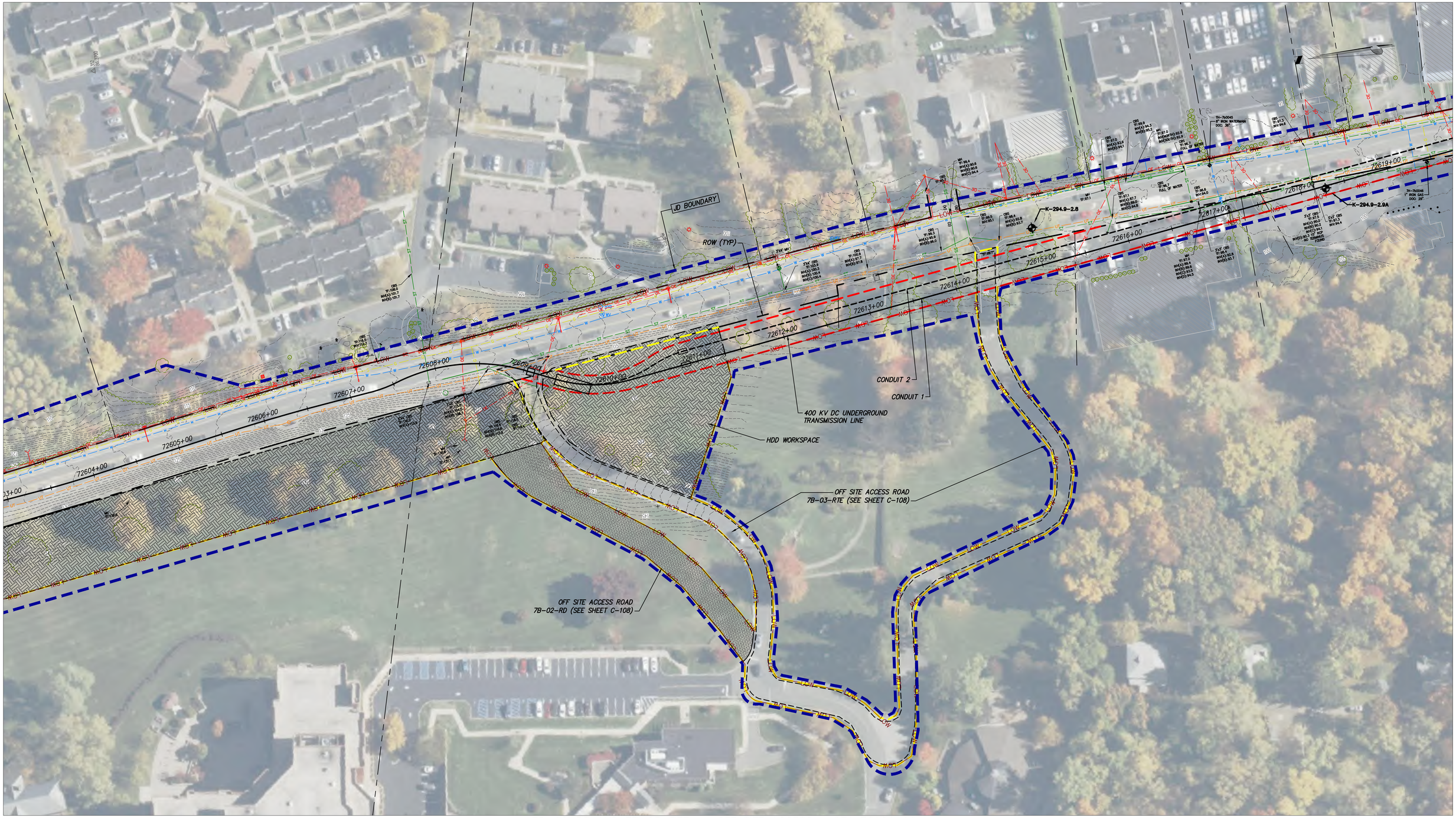

7B-02-RD AND 7B-03-RTE – OFF SITE ACCESS – STA 72604+00

SCALE: 1" = 50'

CHPE Champlain Hudson Power Express

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ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
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F	04/14/2023	FINAL SUBMISSION	RB	JL
E	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	RB	JL
D	11/16/2022	DRAFT FINAL SUBMISSION	RB	JL
C	05/20/2022	60% DESIGN SUBMISSION	RB	JL
B	03/23/2022	PRELIMINARY DESIGN DEVELOPMENT	BV	TK
A	02/18/2022	PRELIMINARY PROGRESS	BV	TK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
OFF SITE ACCESS ROADS
SHEET 2 OF 2

DRAWN BY: RB | DESIGNED BY: AC | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. F

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-202**
DATE 04/14/2023
SH.NO. -- OF --

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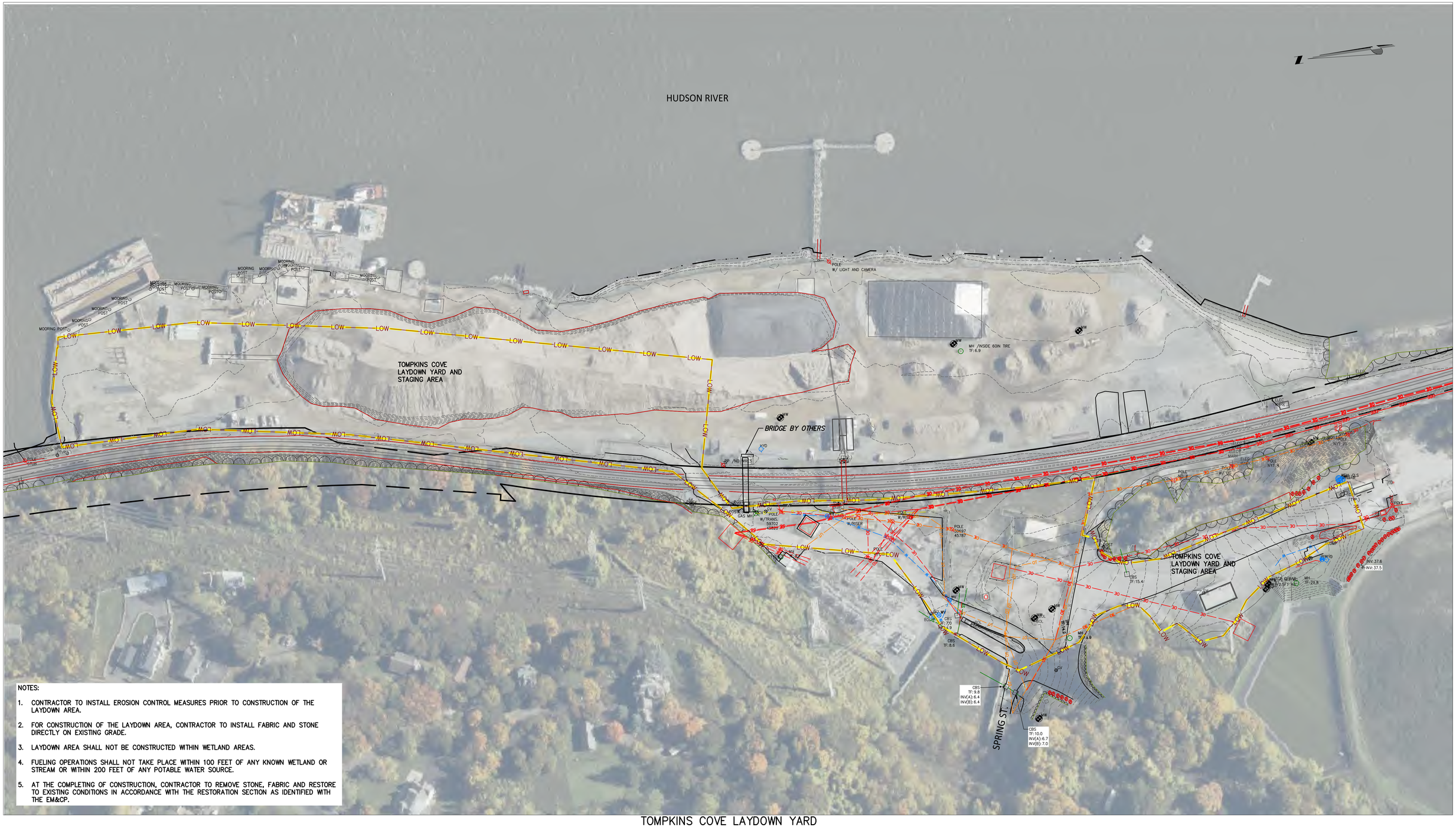

TOMPKINS COVE LAYDOWN YARD
SCALE: 1" = 80'

CHPE Champlain Hudson Power Express

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ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
		C H C I H H		I
		C G C H I H H		I
G		C G C H I H H		I
F		D C C G H H H		I
		C D H H G H G I		
		C D H H		

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

DRAWN BY: RB | DESIGNED BY: AC | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. F

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-203**
DATE 04/14/2023
SH.NO. -- OF --

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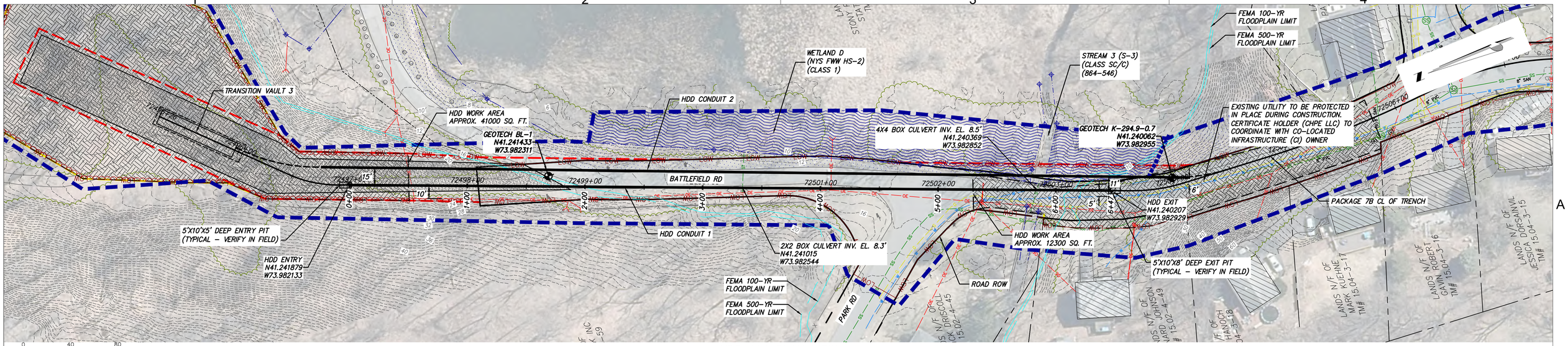
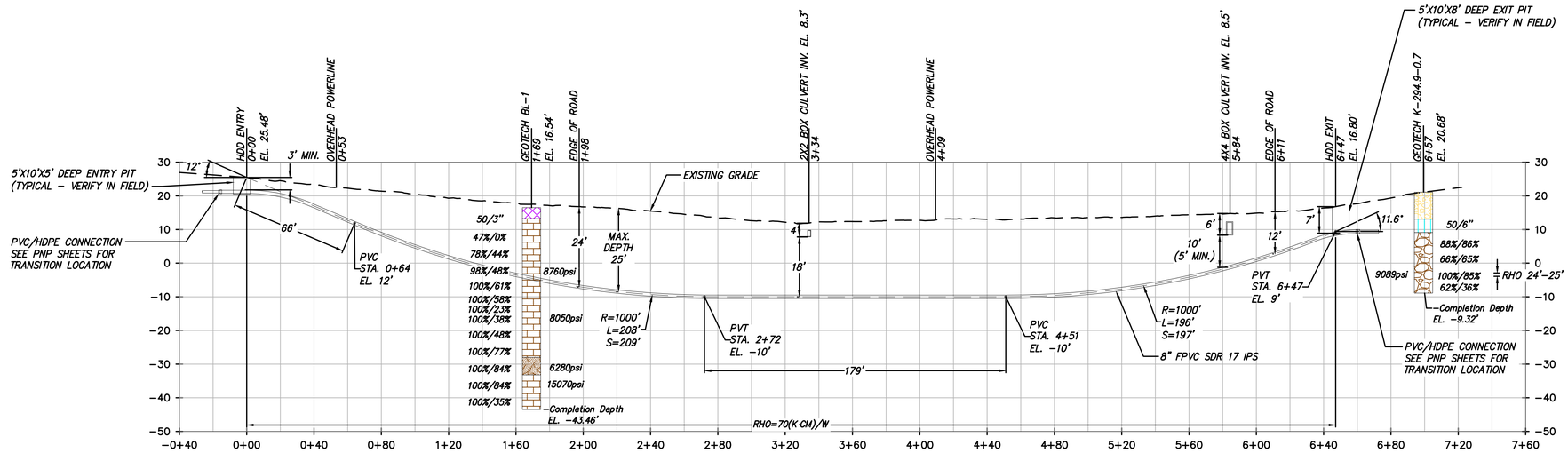


0 40 80
Scale in feet when printed on 22x34

HDD 124 PLAN VIEW
CONDUIT 1



HDD 124 PROFILE VIEW
CONDUIT 1

0 40 80
Scale in feet when printed on 22x34

DESIGN AND CONSTRUCTION NOTES:

1. INSTALLATION METHOD: HORIZONTAL DIRECTIONAL DRILL.
2. 10.750" HDPE MIN. W.T. 1.194" DR 9 IPS PIPE.
   3.500" HDPE MIN. W.T. 0.389" DR 9 IPS PIPE.
   HDD HORIZONTAL LENGTH (L): 647'
   HDD DESIGNED PIPE LENGTH (S): 651'
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.

BORING LOG STRIP LEGEND

B101
Blow Counts per 6" = 10-10-10
Recovery % / RQD % = 95%/50%
1000psi =UCS
2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration

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

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ISSUED FOR PERMITTING

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 124
UTILITY CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-324**

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

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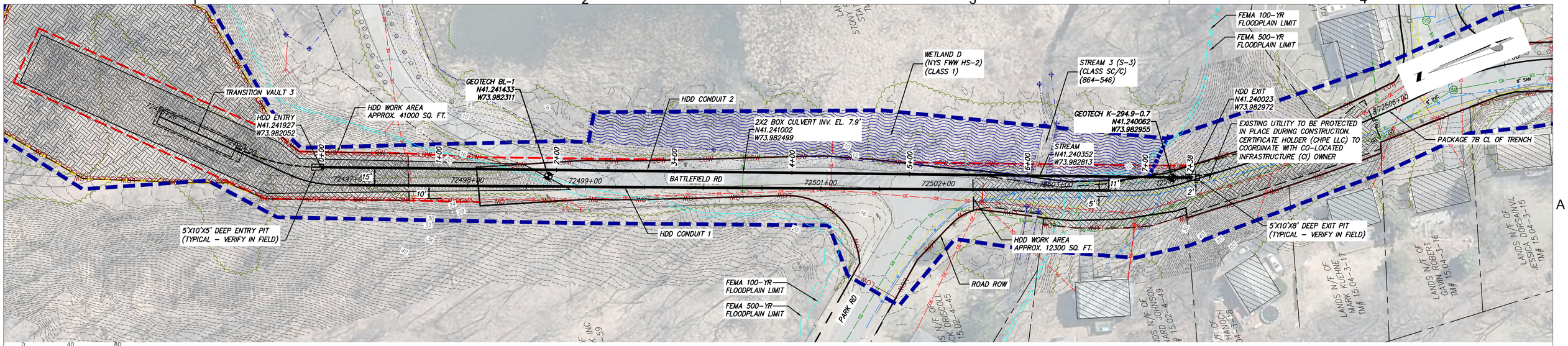
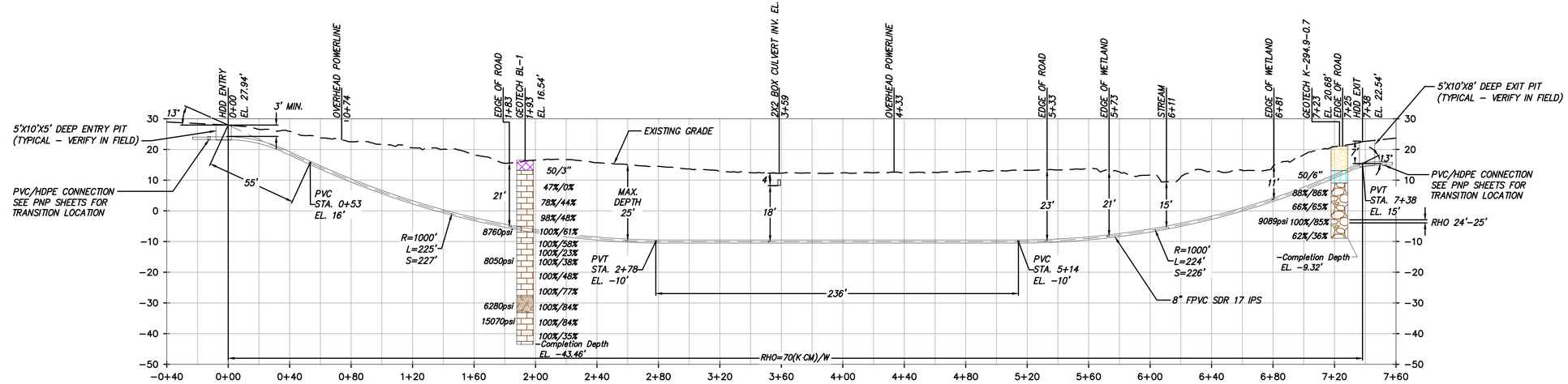


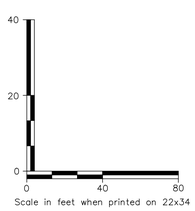
HDD 124 PLAN VIEW

CONDUIT 2



HDD 124 PROFILE VIEW

CONDUIT 2



DESIGN AND CONSTRUCTION NOTES:

1. INSTALLATION METHOD: HORIZONTAL DIRECTIONAL DRILL.
2. 10.750" HDPE MIN. W.T. 1.194" DR 9 IPS PIPE.
   3.500" HDPE MIN. W.T. 0.389" DR 9 IPS PIPE.
   HDD HORIZONTAL LENGTH (L): 738'
   HDD DESIGNED PIPE LENGTH (S): 743'
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:

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

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10 — 1000psi =UCS

Recovery % /RQD % = 95%/50%

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

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

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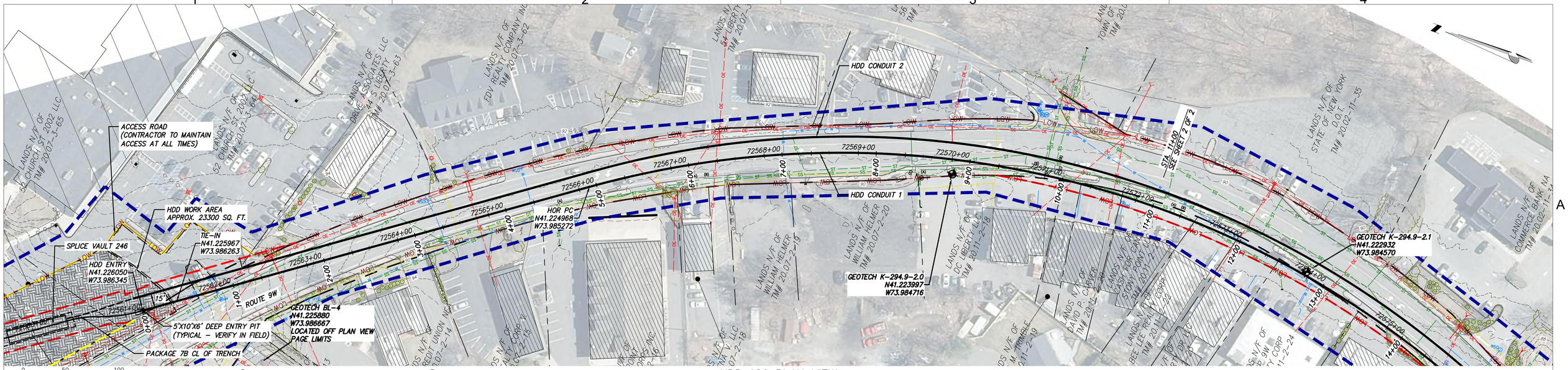
B	11/16/2022	DRAFT FINAL SUBMISSION	MRS	EJK
A	05/20/2022	60% DESIGN SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 124
UTILITY CROSSING - CONDUIT 2
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-324.2**

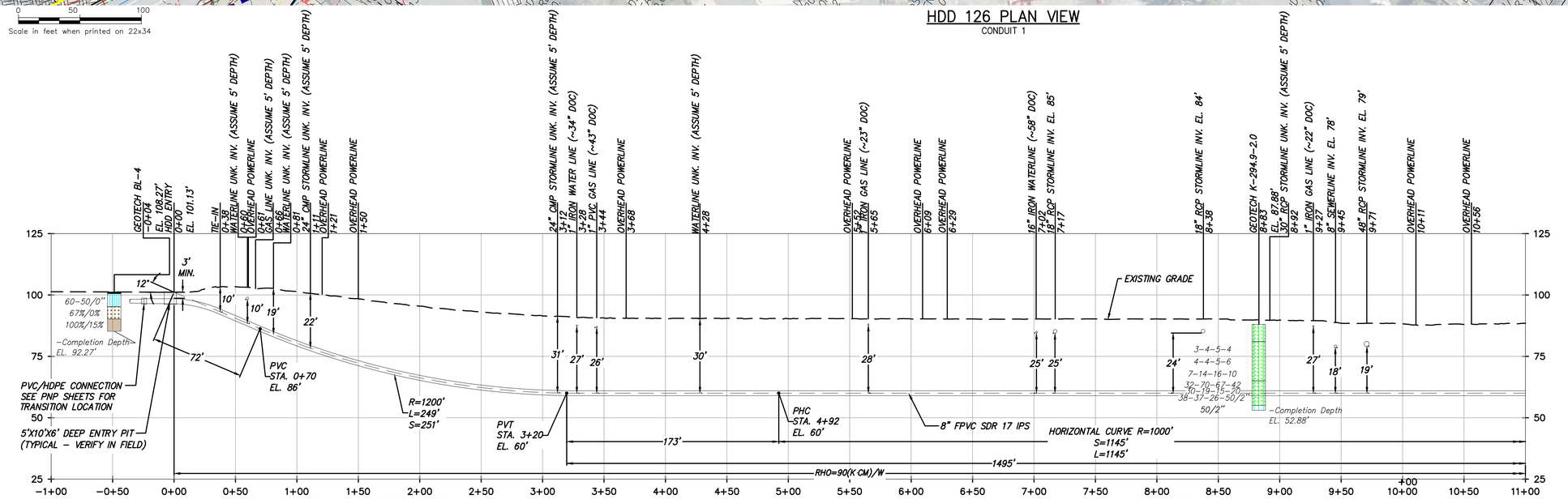
DRAWN BY: MRS | DESIGNED BY: AMC | APPROVED BY: EJK | SCALE AS SHOWN | REV. NO. D | DATE 04/14/2023 | SH.NO. OF

File: C:\PWWORKING\REI\DMS51141\21162_7B_C-324.2.DWG Saved: 4/13/2023 10:24:45 AM Plotted: 4/14/2023 11:43:20 AM Current User: Seidel, Michael LastSavedBy: MICHAEL.SEIDEL



HDD 126 PLAN VIEW

CONDUIT 1



HDD 126 PROFILE VIEW

CONDUIT 1

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):2145'
   HDD DESIGNED PIPE LENGTH (S): 2152'
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 5 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.
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BORING LOG STRIP LEGEND

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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
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CHPE Champlain Hudson Power Express

Kiewit

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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 126 PAGE 1 OF 2
UTILITY CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-326**

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

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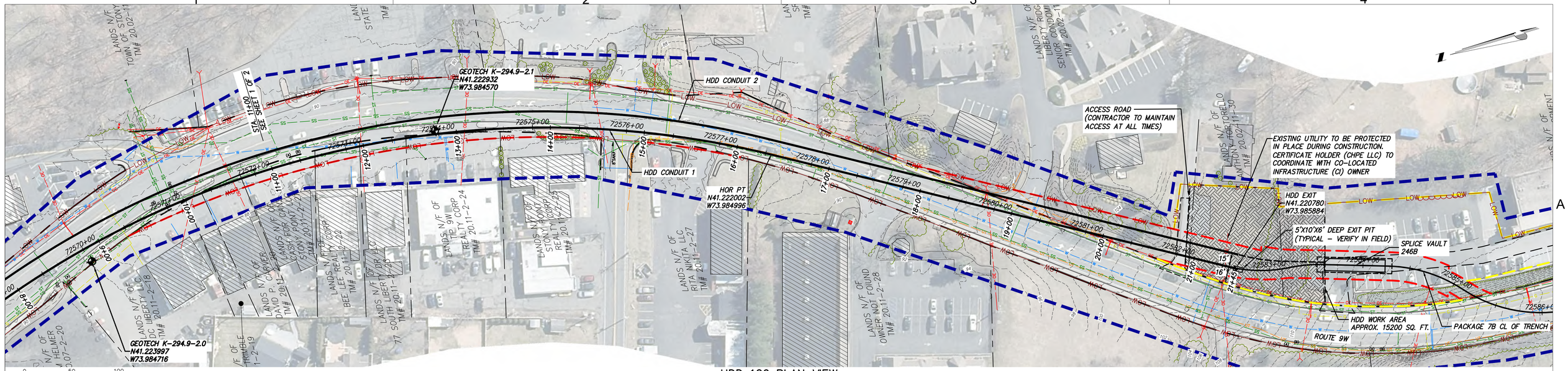
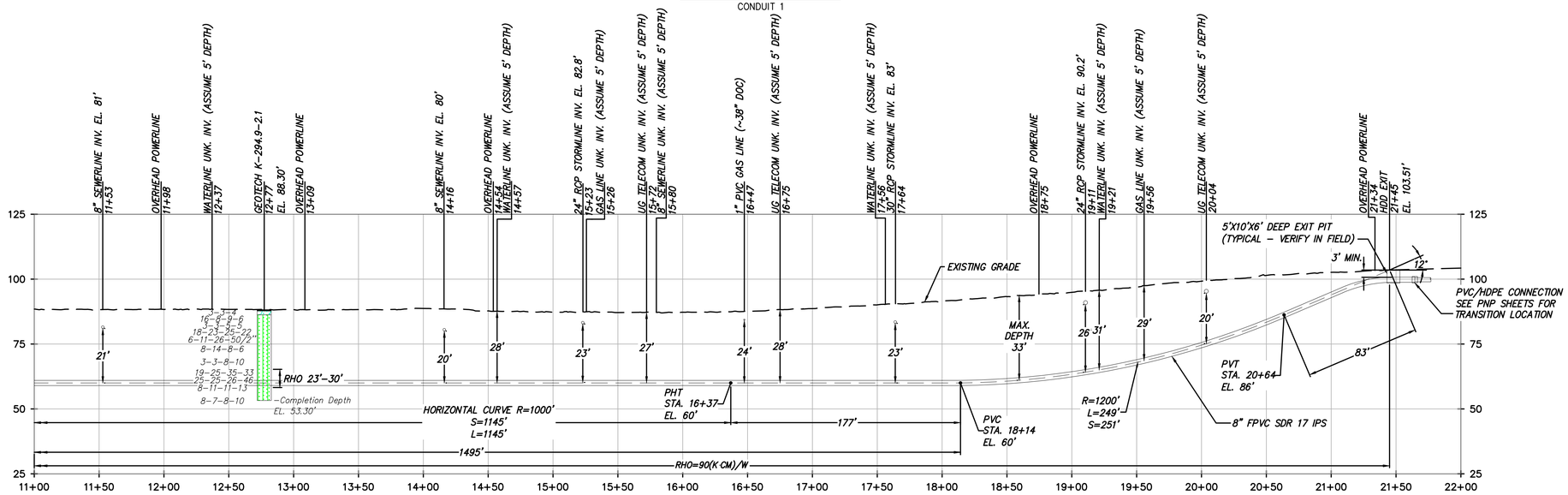


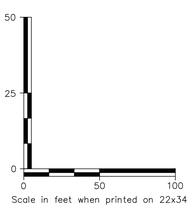
HDD 126 PLAN VIEW

CONDUIT 1



HDD 126 PROFILE VIEW

CONDUIT 1



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Legend

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	Bedrock	Bedrock
	Boulder	Boulder
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	CH-MH	SILTY Fat CLAY
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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 126 PAGE 2 OF 2
UTILITY CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-326**

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

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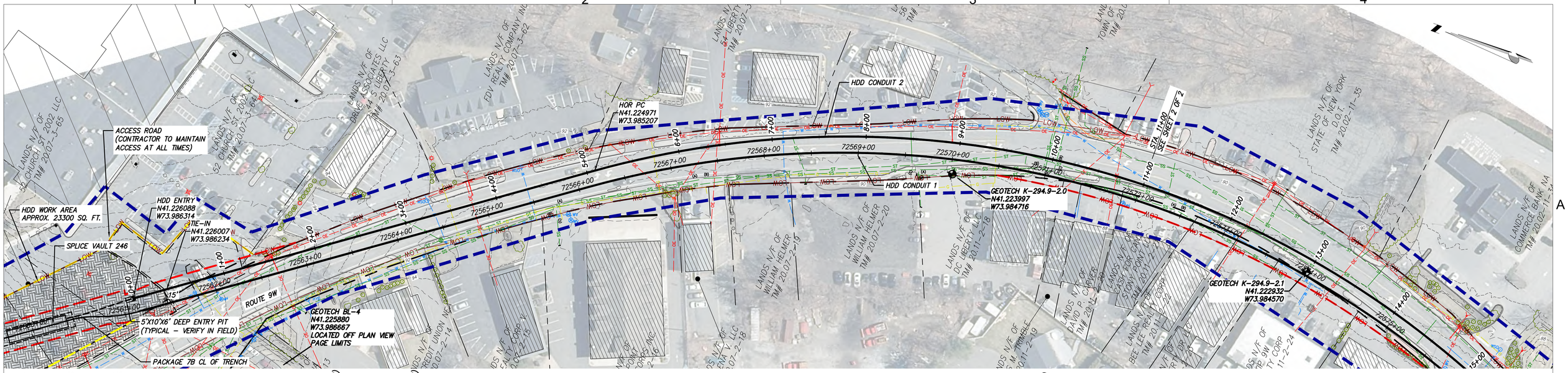
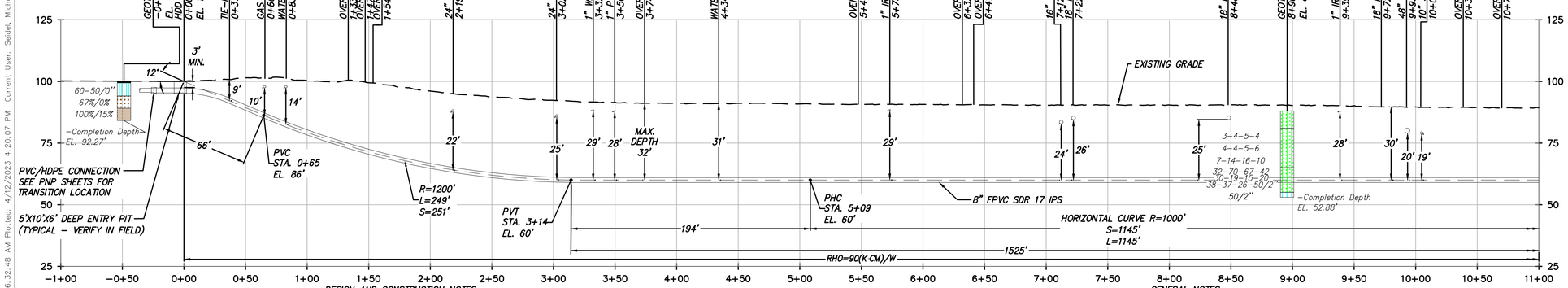


Scale in feet when printed on 22x34

HDD 126 PLAN VIEW

CONDUIT 2



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HDD 126 PROFILE VIEW

CONDUIT 2

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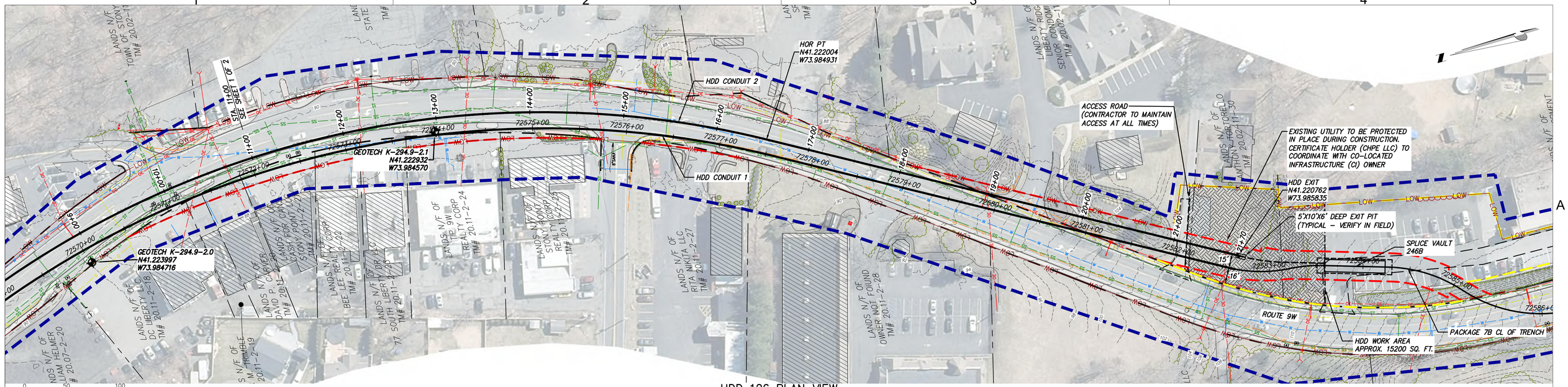
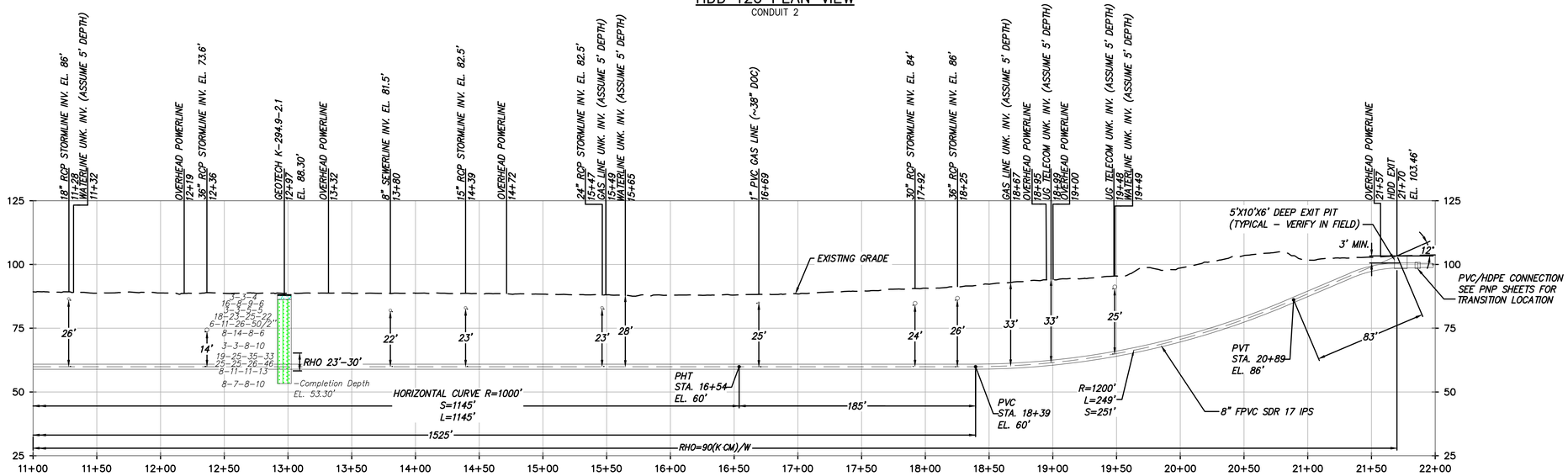


HDD 126 PLAN VIEW

CONDUIT 2



HDD 126 PROFILE VIEW

CONDUIT 2

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BORING LOG STRIP LEGEND

Blow Counts per 6" = 10-10-10 — Recovery % / RQD % = 35%/80% — 1000psi =UCS

2D strip logs shown at 50x exaggeration
3D strip logs have no exaggeration

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
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GW-GM	Well Graded GRAVEL with SILT
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MH	Elastic SILT
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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
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CHPE Champlain Hudson Power Express

Kiewit

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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 126 PAGE 2 OF 2
UTILITY CROSSING - CONDUIT 2
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-326.2**

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

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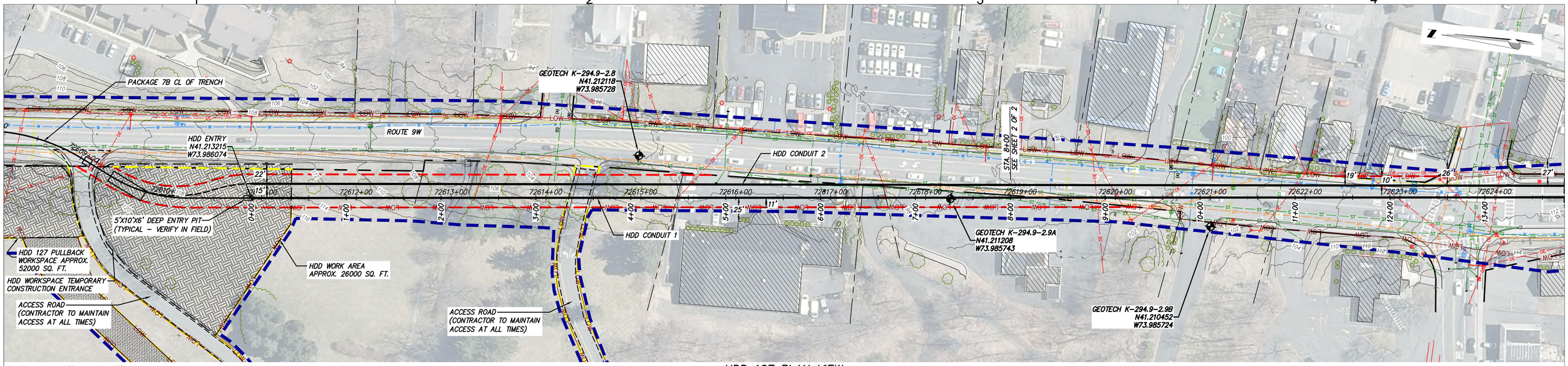

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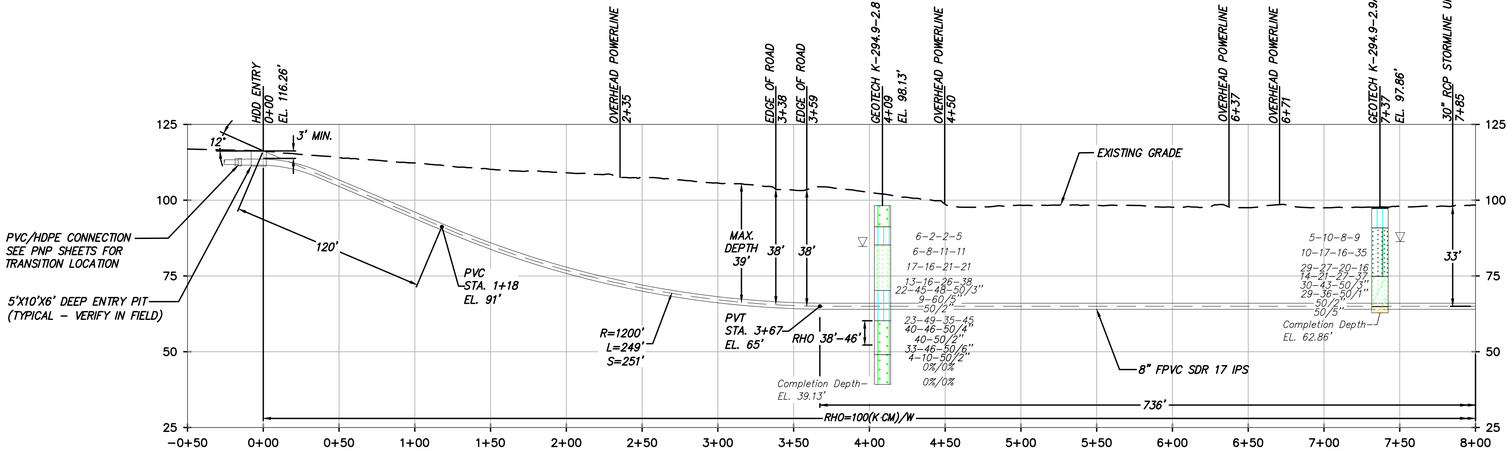
Scale in feet when printed on 22x34

HDD 127 PLAN VIEW

CONDUIT 1



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):1440'
   HDD DESIGNED PIPE LENGTH (S): 1448'
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.
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HDD 127 PROFILE VIEW

CONDUIT 1

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BORING LOG STRIP LEGEND

B101

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Recovery % /RQD % = 95%/50%
100blow =UCS

2D strip logs shown at 10x exaggeration
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PLAN AND PROFILE - HDD 127 PAGE 1 OF 2
UTILITY CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-327**

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

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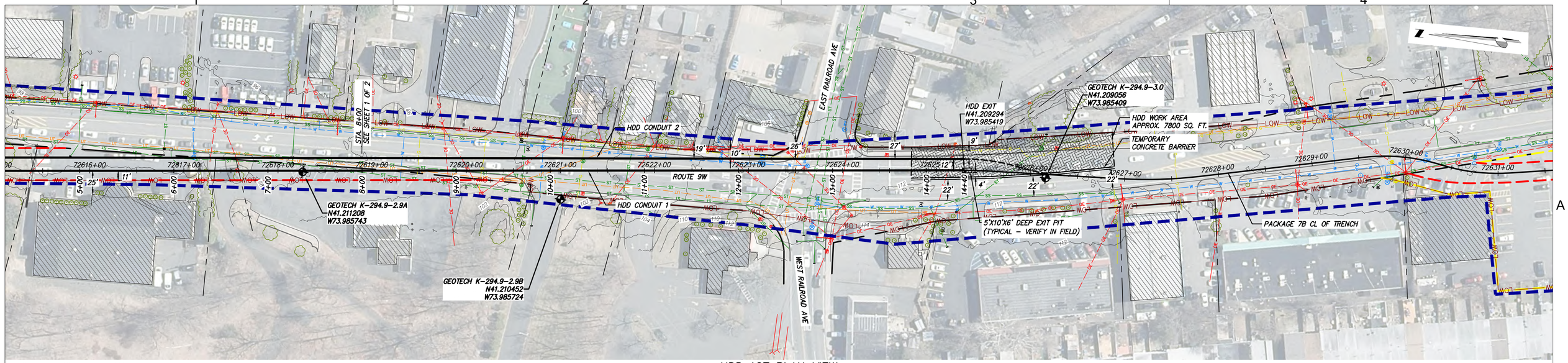

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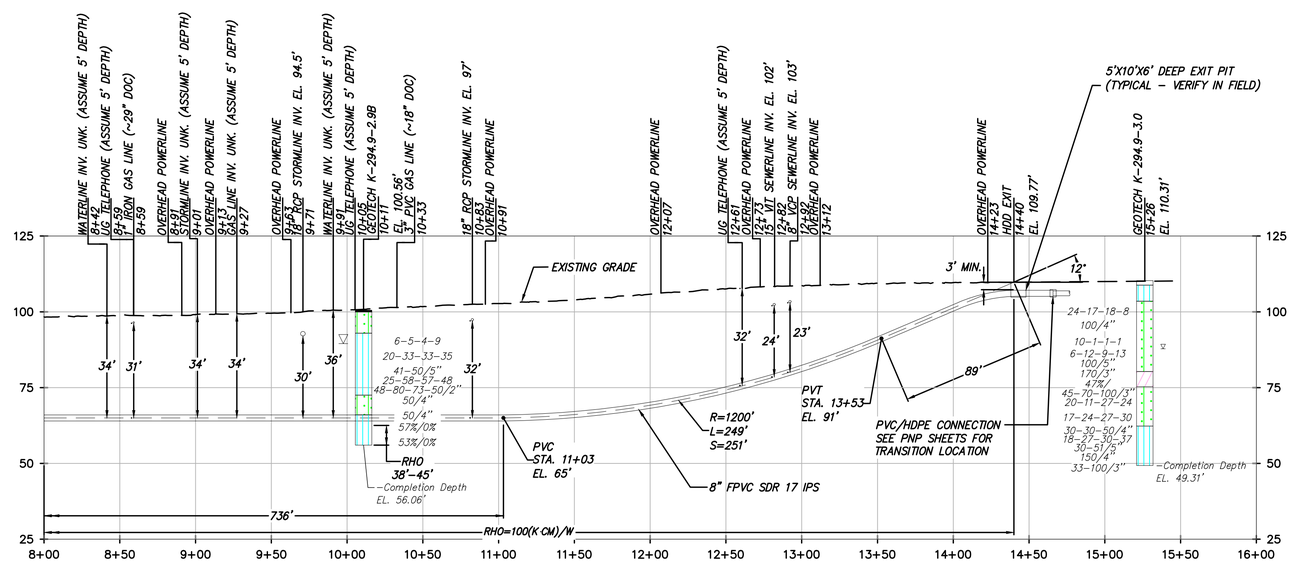
Scale in feet when printed on 22x34

HDD 127 PLAN VIEW

CONDUIT 1



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HDD 127 PROFILE VIEW

CONDUIT 1

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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 127 PAGE 2 OF 2
UTILITY CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-327**

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

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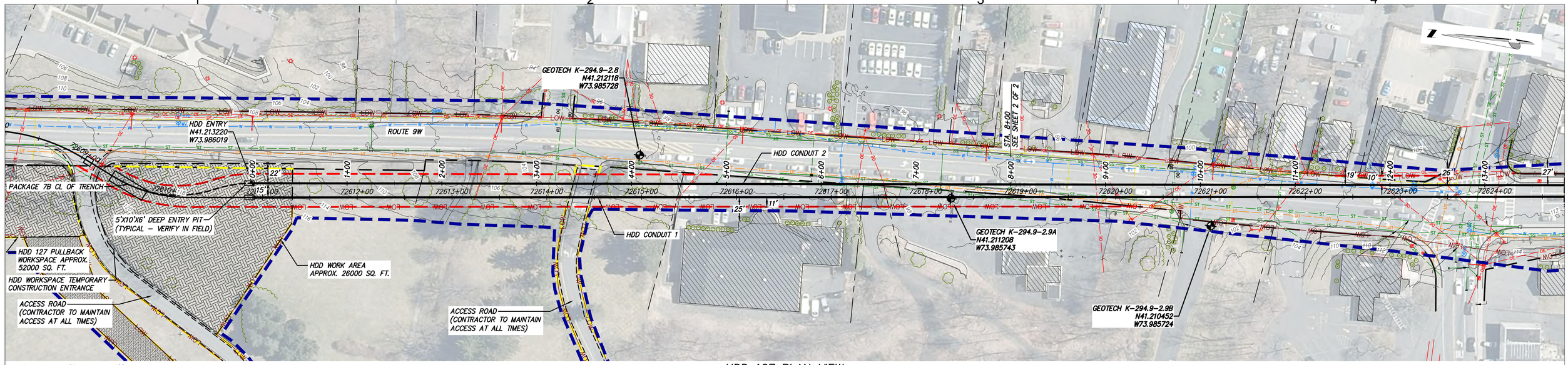
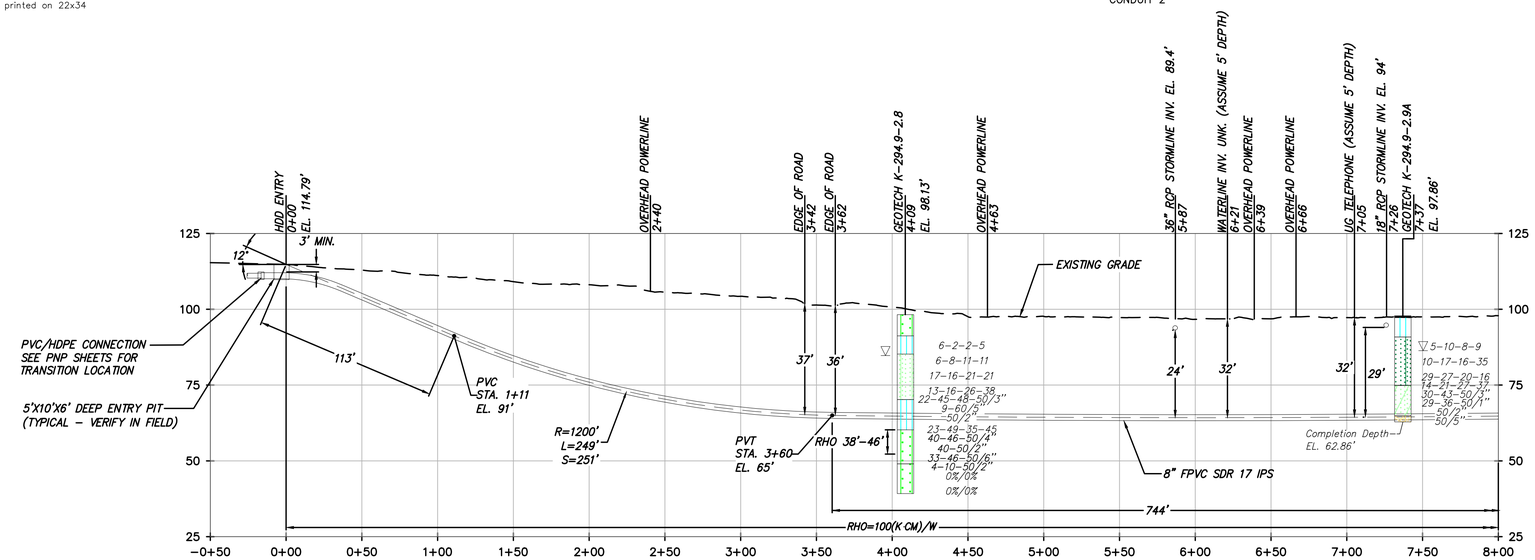


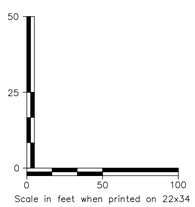
HDD 127 PLAN VIEW

CONDUIT 2



HDD 127 PROFILE VIEW

CONDUIT 2



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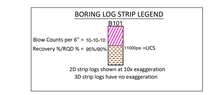

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UTILITY CROSSING - CONDUIT 2
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DRAWN BY: MRS | DESIGNED BY: AMC | APPROVED BY: EJK | SCALE AS SHOWN | REV. NO. D | DATE 04/14/2023 | SH.NO. OF

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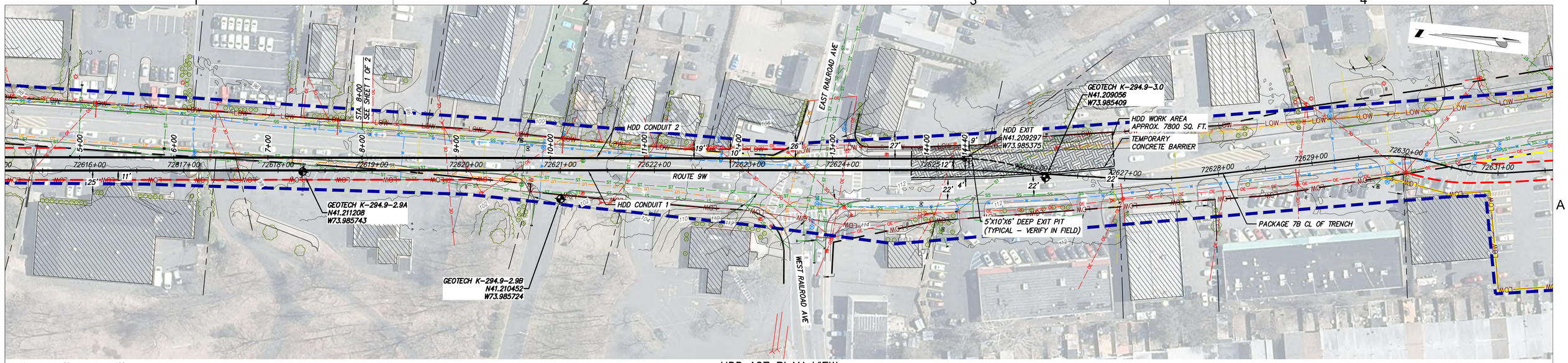
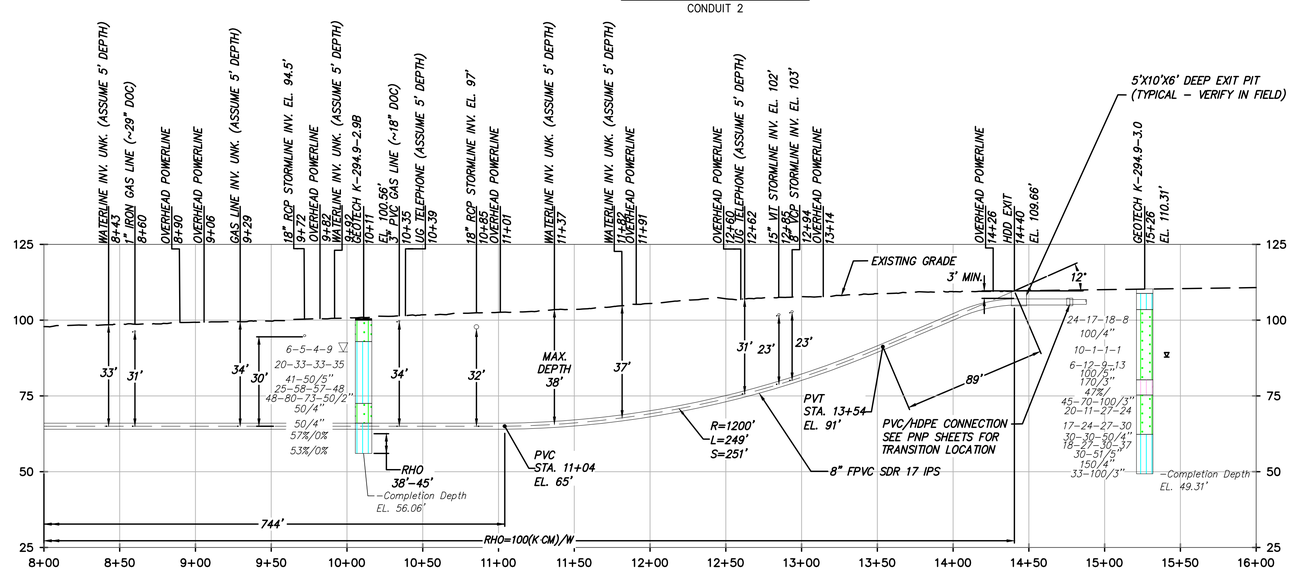


0 50 100
Scale in feet when printed on 22x34

HDD 127 PLAN VIEW

CONDUIT 2



HDD 127 PROFILE VIEW

CONDUIT 2

0 50 100
Scale in feet when printed on 22x34

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10
Recovery % /RQD % = 95%/50%
1100tsf = UCS

2D strip logs shown at 50x exaggeration
3D strip logs have no exaggeration

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

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):1440'
   HDD DESIGNED PIPE LENGTH (S): 1448'
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:

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CHPE Champlain Hudson Power Express

Kiewit

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ISSUED FOR PERMITTING

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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 127 PAGE 2 OF 2
UTILITY CROSSING - CONDUIT 2
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-327.2**

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

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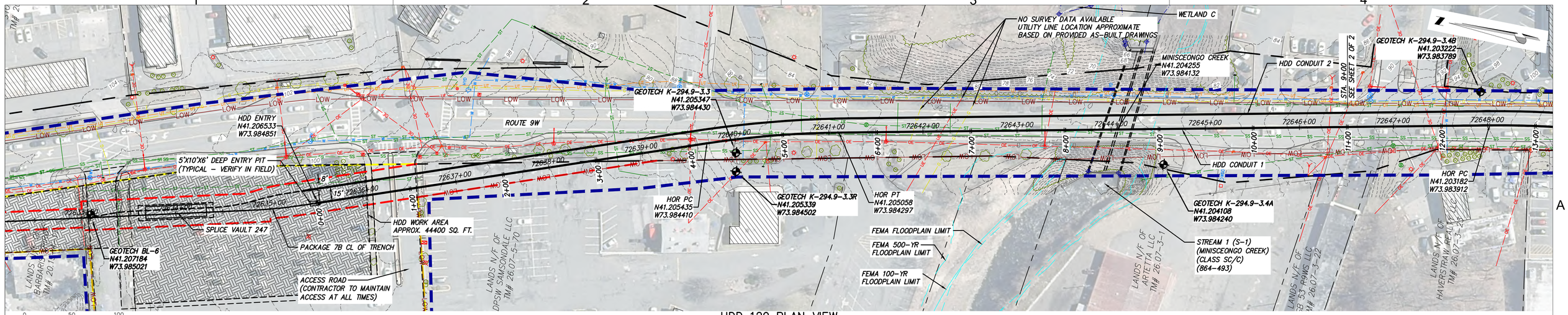
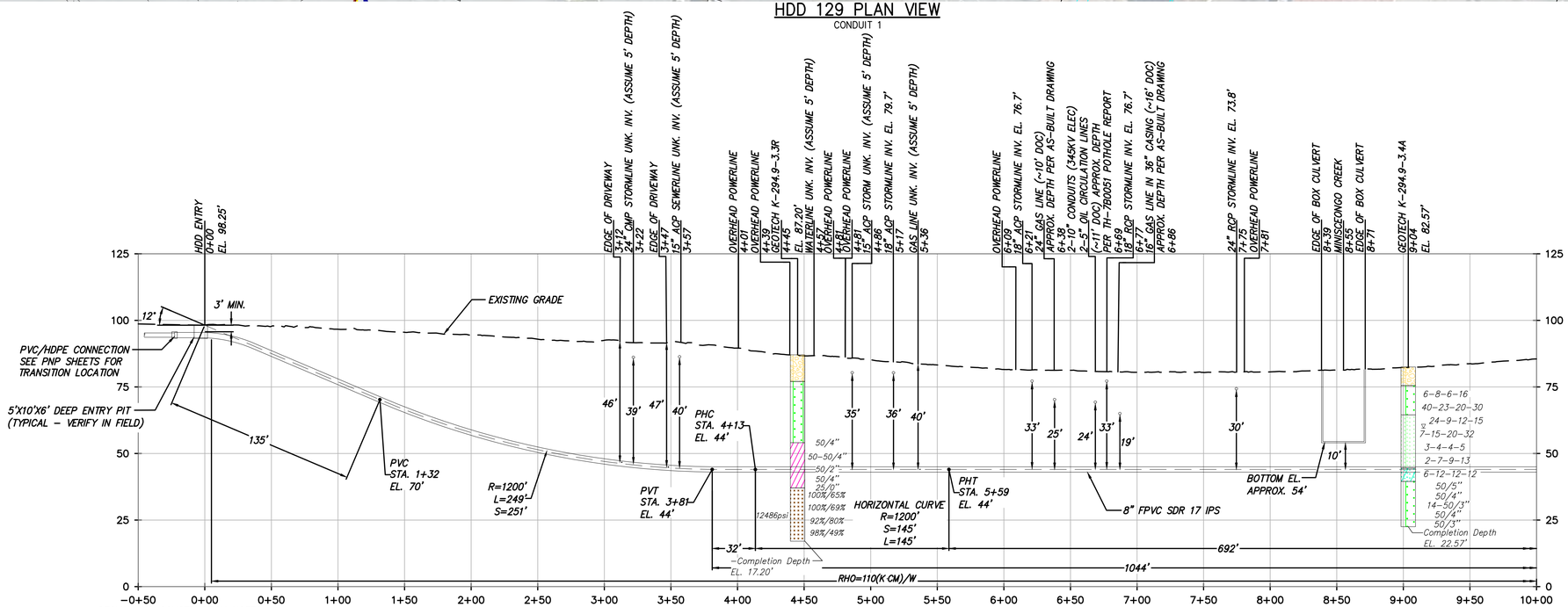


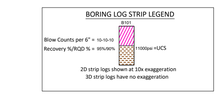
HDD 129 PLAN VIEW

CONDUIT 1



HDD 129 PROFILE VIEW

CONDUIT 1



Legend	
ASPHALT	Asphalt
Bedrock	Bedrock
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CL-ML	SILTY CLAY
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Fill	Fill
GC	CLAYEY GRAVEL
GC-GM	SILTY CLAYEY GRAVEL
GM	SILTY GRAVEL
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GW-GM	Well Graded GRAVEL with SILT
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USGS 702	Quartzite
USGS 705	Schist
USGS 705	Schist
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USGS 708	Gneiss
USGS 718	Granite 1
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Water	Water
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   HDD HORIZONTAL LENGTH (L):1865'
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6. PILOT HOLE HORIZONTAL ALIGNMENT SHALL REMAIN WITHIN 4 FT LEFT OR RIGHT OF THE DESIGNED HDD ALIGNMENT.
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D	04/14/2023	FINAL SUBMISSION	MRS	EJK
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A	05/20/2022	60% DESIGN SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 129 PAGE 1 OF 2
UTILITY CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-329**

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

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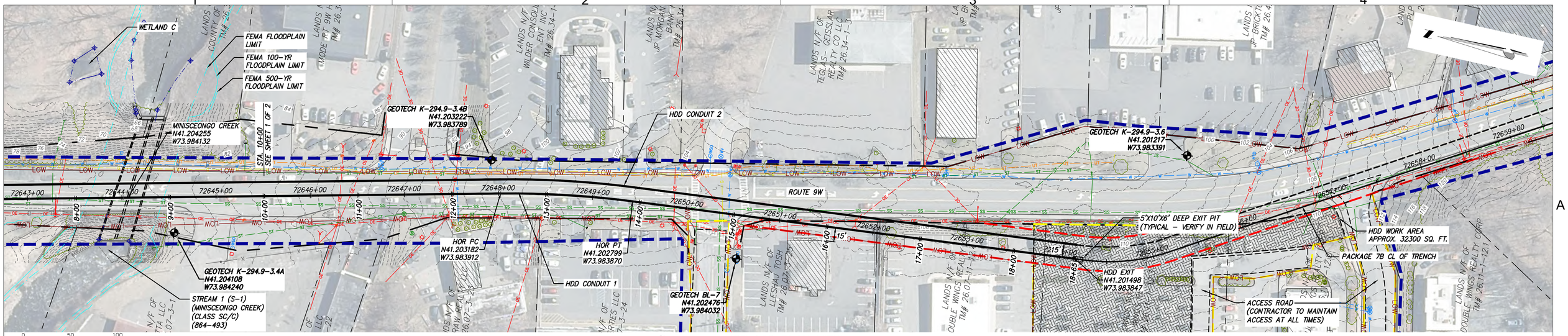
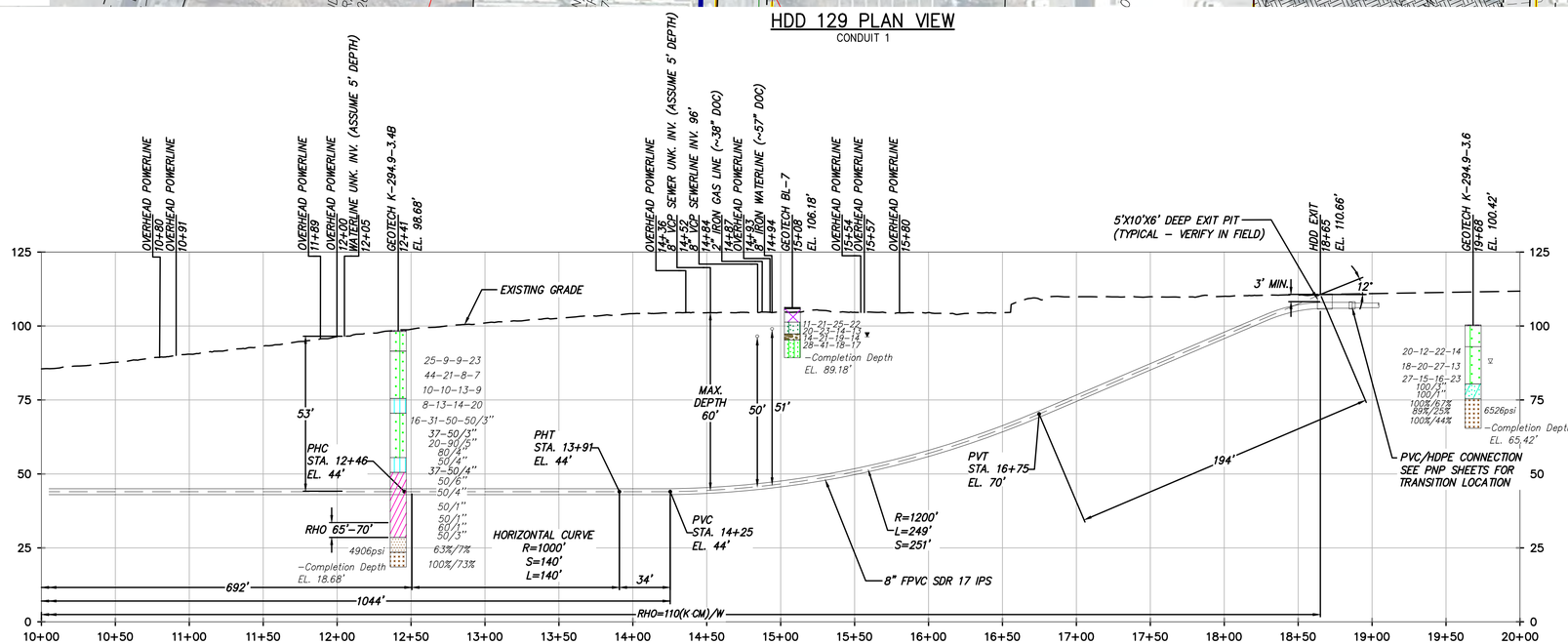


HDD 129 PLAN VIEW

CONDUIT 1



HDD 129 PROFILE VIEW

CONDUIT 1

DESIGN AND CONSTRUCTION NOTES:

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2. 8.625" FPVC MIN. W.T. 0.510" SDR 17 IPS PIPE.
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BORING LOG STRIP LEGEND

Blow Counts per 6" = 10-10-10
Recovery % / RQD % = 95%/80%
Strength
1000psi =UCS
2D strip logs shown at 50x exaggeration
3D strip logs have no exaggeration

Legend

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	Bedrock	Bedrock
	Boulder	Boulder
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Scale in feet when printed on 22x34

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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 129 PAGE 2 OF 2
UTILITY CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-329**

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

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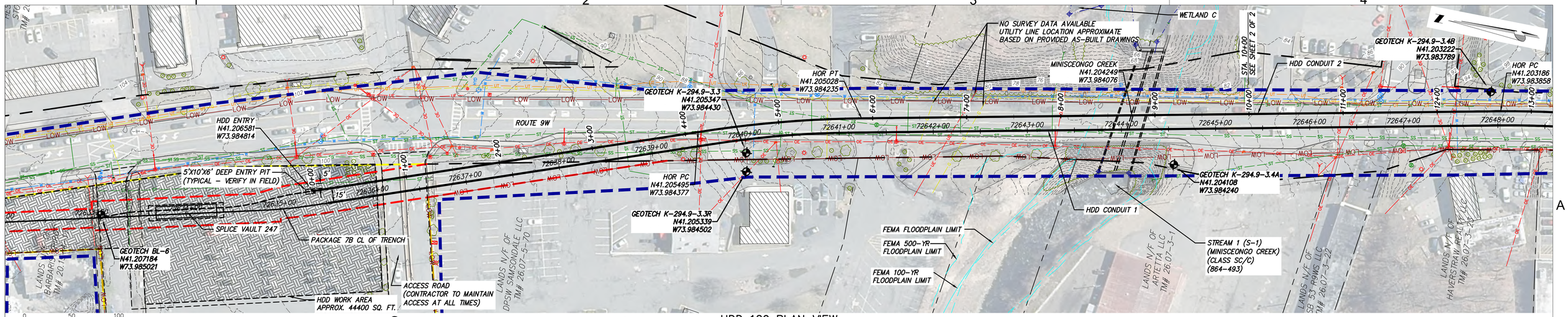
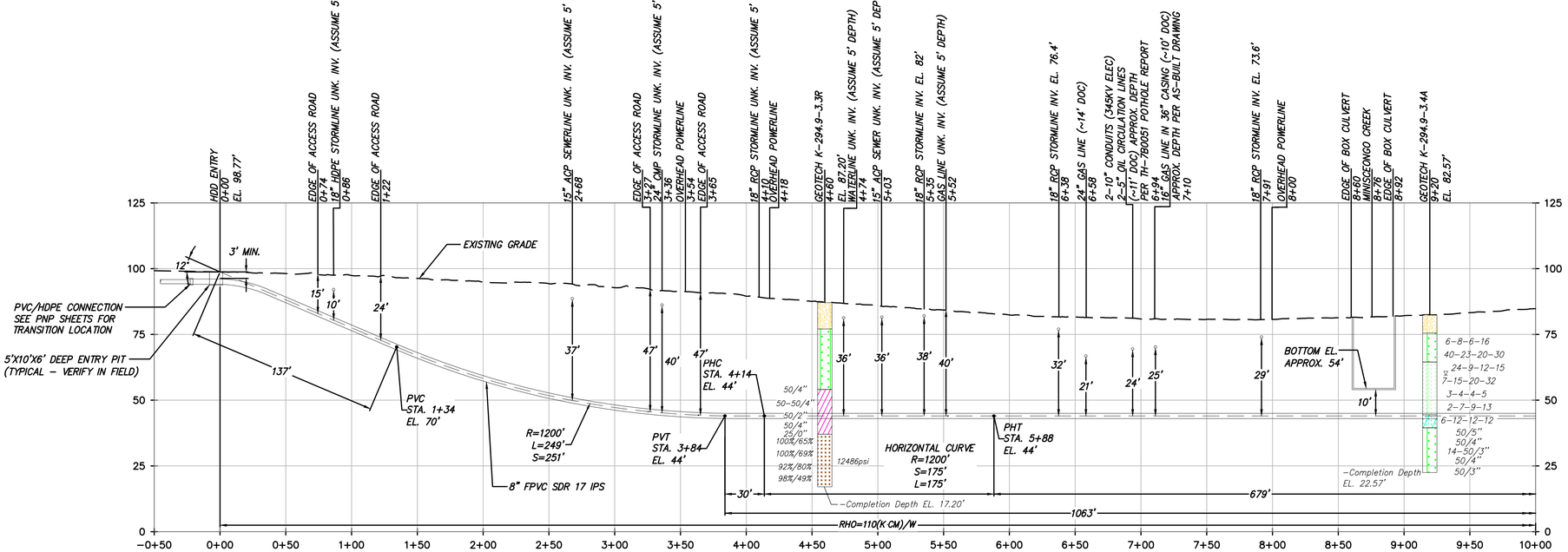


HDD 129 PLAN VIEW

CONDUIT 2



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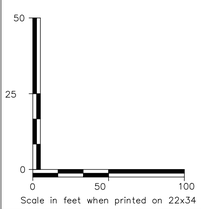
HDD 129 PROFILE VIEW

CONDUIT 2



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ISSUED FOR PERMITTING

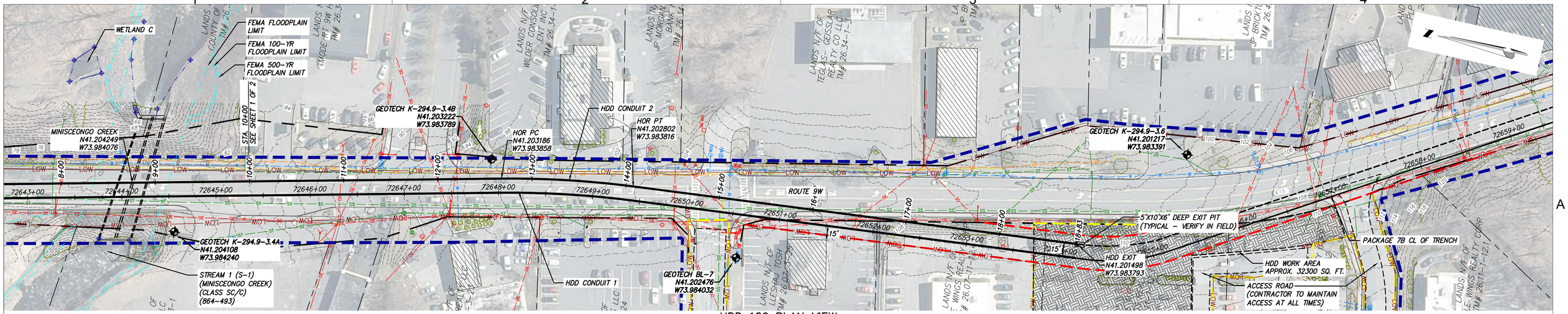
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
D	04/14/2023	FINAL SUBMISSION	MRS	EJK
C	03/01/2023	DRAFT FINAL REV 1 SUBMISSION	MRS	EJK
B	11/16/2022	DRAFT FINAL SUBMISSION	MRS	EJK
A	05/20/2022	60% DESIGN SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 129 PAGE 1 OF 2
UTILITY CROSSING - CONDUIT 2
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-329.2**

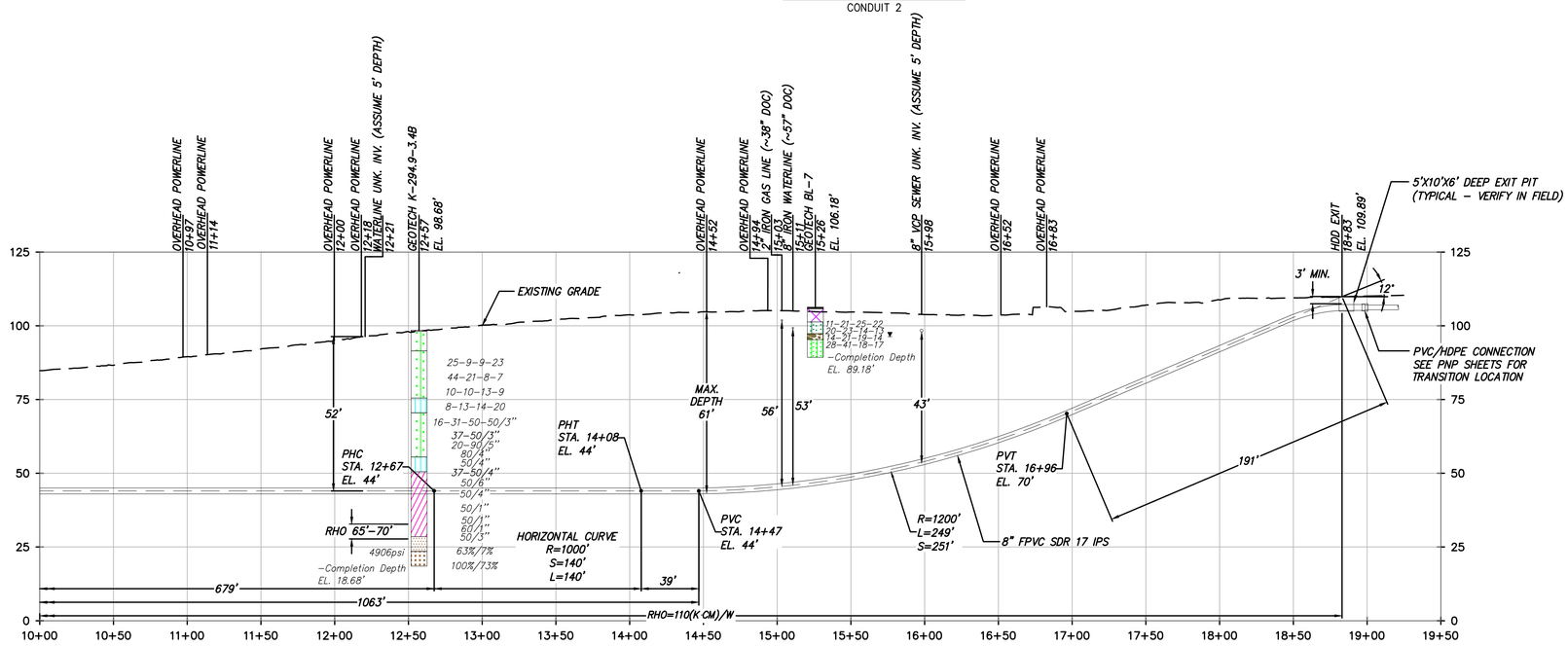
DRAWN BY: MRS | DESIGNED BY: AMC | APPROVED BY: EJK | SCALE AS SHOWN | REV. NO. D | DATE 04/14/2023 | SH.NO. | OF

File: C:\PWWORKING\REI\DMS51141\21162_7B_C-329.2.DWG Saved: 4/13/2023 10:20:04 AM Plotted: 4/14/2023 11:51:24 AM Current User: Seidel, Michael LastSavedBy: MICHAEL.SEIDEL



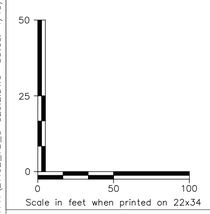
HDD 129 PLAN VIEW

CONDUIT 2



HDD 129 PROFILE VIEW

CONDUIT 2



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):1883'
   HDD DESIGNED PIPE LENGTH (S): 1894'
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 7 FT.
6. PILOT HOLE HORIZONTAL ALIGNMENT SHALL REMAIN WITHIN 4 FT LEFT OR RIGHT OF THE DESIGNED HDD ALIGNMENT.
7. PILOT HOLE VERTICAL ALIGNMENT SHALL REMAIN WITHIN 0 FT ABOVE AND 5 FT BELOW THE DESIGNED HDD PROFILE.
8. DRILL CONTRACTOR AND GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING.
9. 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.
10. 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.

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10
Recovery % / RQD % = 95%/50%
1000psi =UCS

2D strip logs shown at 50x exaggeration
3D strip logs have no exaggeration

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

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ISSUED FOR PERMITTING

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D	04/14/2023	FINAL SUBMISSION	MRS	EJK
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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 129 PAGE 2 OF 2
UTILITY CROSSING - CONDUIT 2
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-329.2**

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

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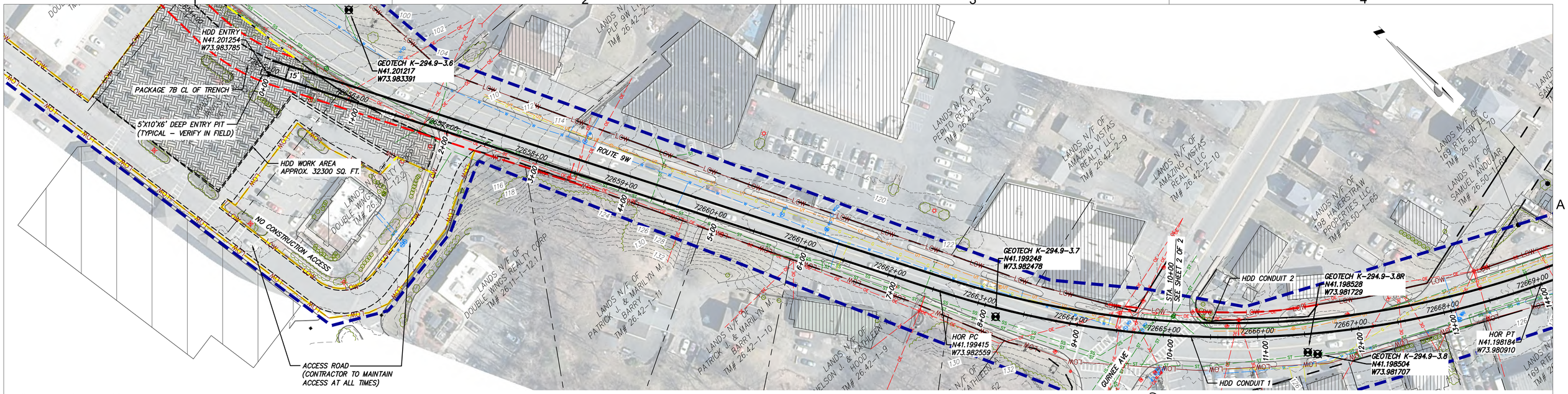
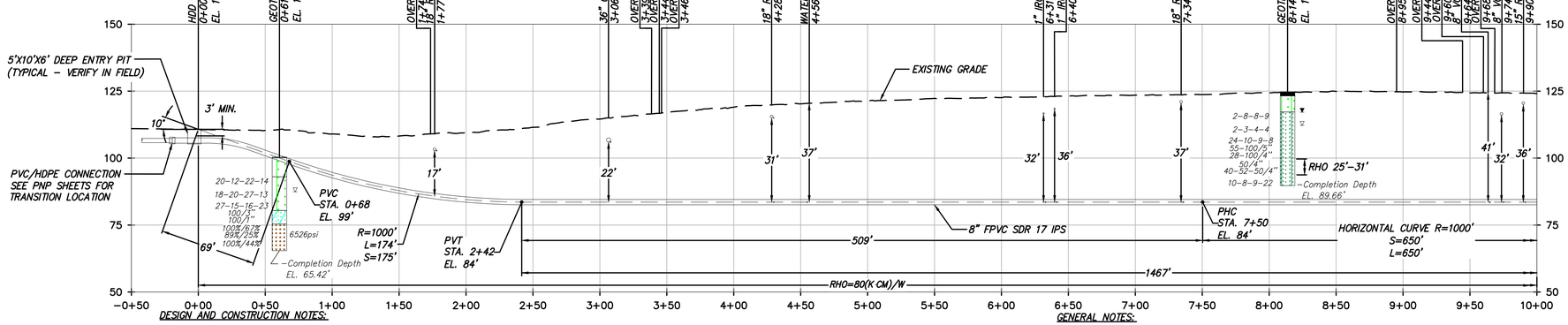


HDD 131 PLAN VIEW

CONDUIT 1



HDD 131 PROFILE VIEW

CONDUIT 1

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): 2036'
   HDD DESIGNED PIPE LENGTH (S): 2042'
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 5 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.

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BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery % / RQD % = 95%/50%

1000psi =UCS

2D strip logs shown at 50x exaggeration

3D strip logs have no exaggeration

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 when printed on 22x34

CHPE Champlain Hudson Power Express

Kiewit

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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 131 PAGE 1 0F 2
ROAD CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-331**

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

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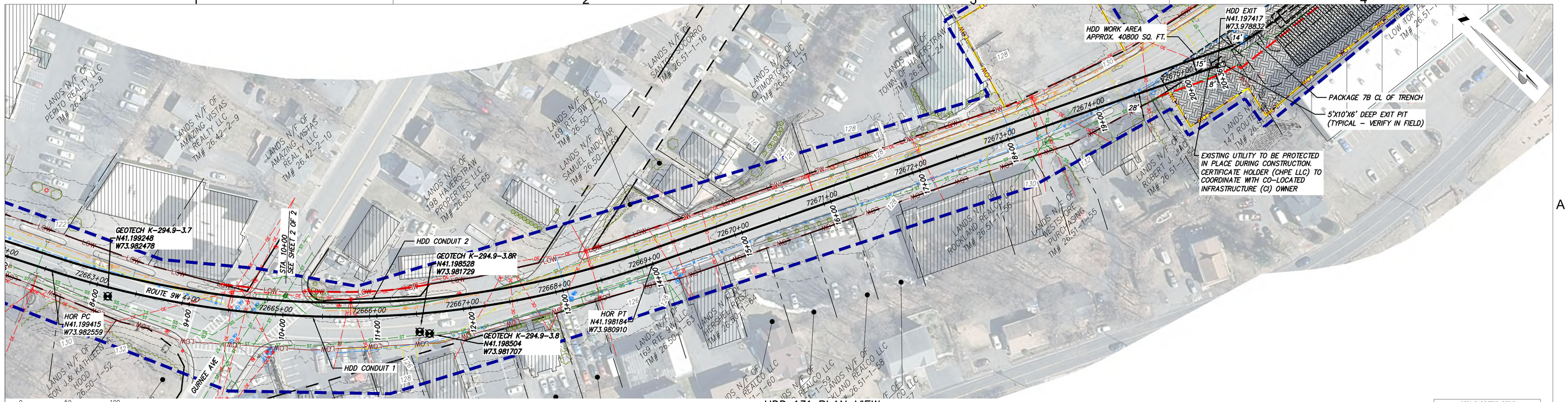
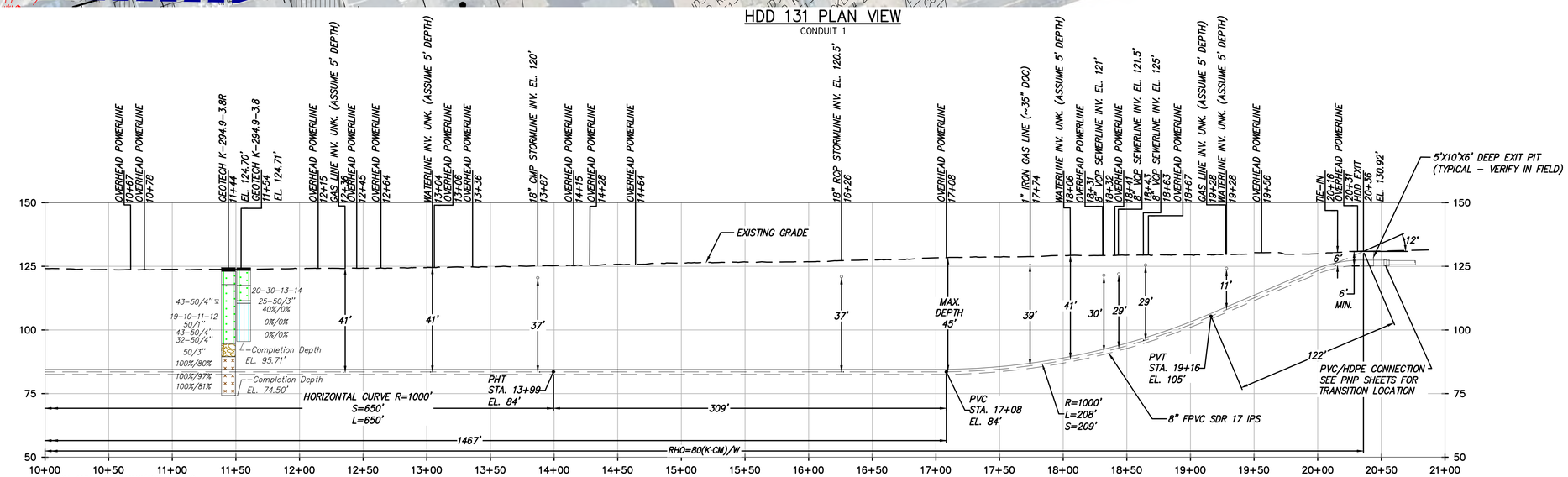


HDD 131 PLAN VIEW

CONDUIT 1



HDD 131 PROFILE VIEW

CONDUIT 1

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):2036'
   HDD DESIGNED PIPE LENGTH (S): 2042'
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 5 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:

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

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery % / RQD % = 95%/50%

1100Qu = UCS

2D strip logs shown at 50x exaggeration

3D strip logs have no exaggeration

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
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	GP-GC	Poorly Graded Gravel with CLAY
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	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

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A	05/20/2022	60% DESIGN SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 12 (PACKAGE 7B) - ROUTE 9W: ROCKLAND
PLAN AND PROFILE - HDD 131 PAGE 2 OF 2
ROAD CROSSING - CONDUIT 1
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162

TT PROJECT NO. 204-3701

DRAWING NO. **C-331**

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

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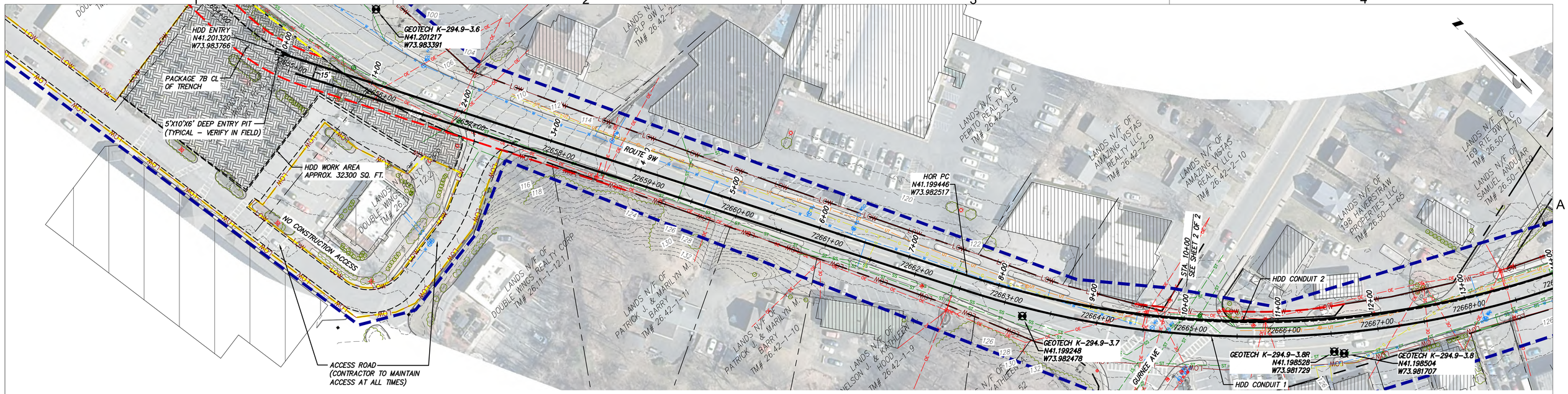
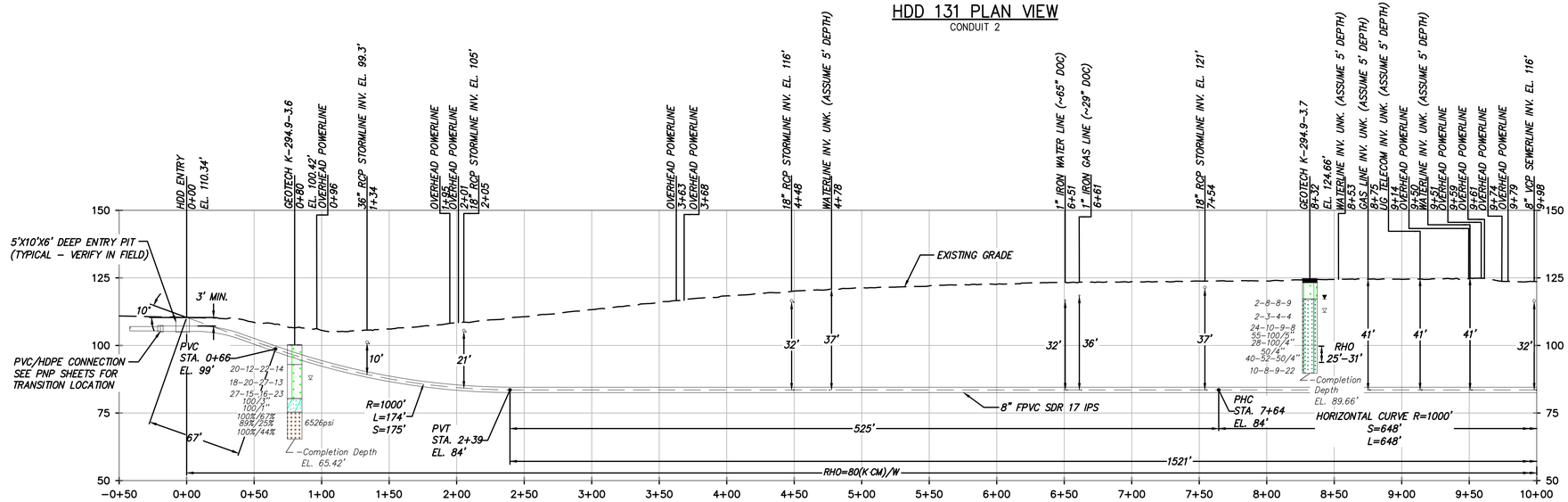


HDD 131 PLAN VIEW

CONDUIT 2



HDD 131 PROFILE VIEW

CONDUIT 2

0 50 100
Scale in feet when printed on 22x34

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):2050'
   HDD DESIGNED PIPE LENGTH (S): 2056'
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 5 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:

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BORING LOG STRIP LEGEND

Blow Counts per 6" = 10-10-10 — Blows
Recovery % /RQD % = 35%/80% — 110000psi =UCS
2D strip logs shown at 50x exaggeration
3D strip logs have no exaggeration

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

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ISSUED FOR PERMITTING

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 131 PAGE 1 OF 2
ROAD CROSSING - CONDUIT 2
ROCKLAND COUNTY, NY

KIEWIT PROJECT NO. 21162
TT PROJECT NO. 204-3701
DRAWING NO. **C-331.2**

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

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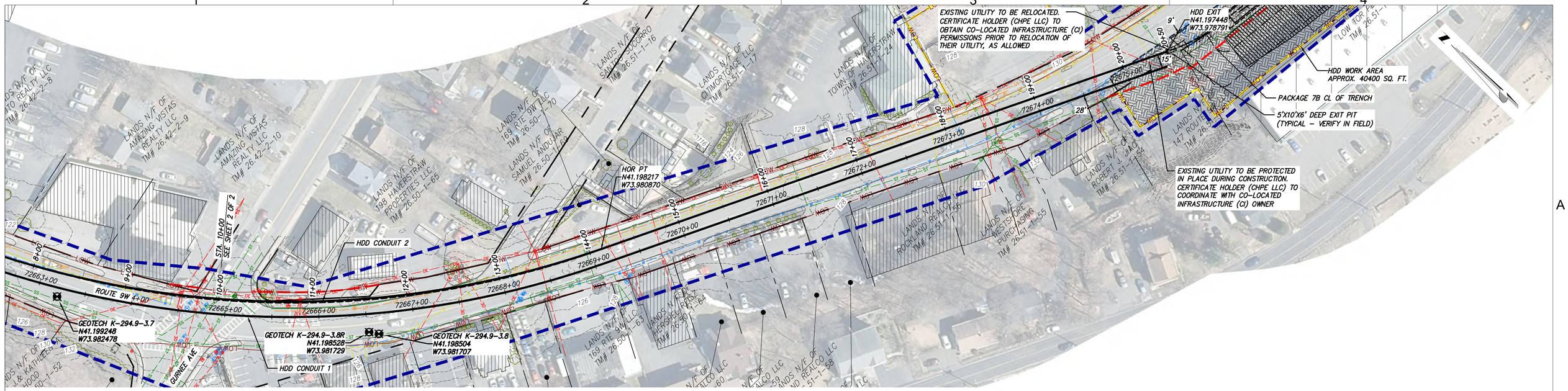
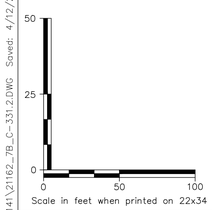
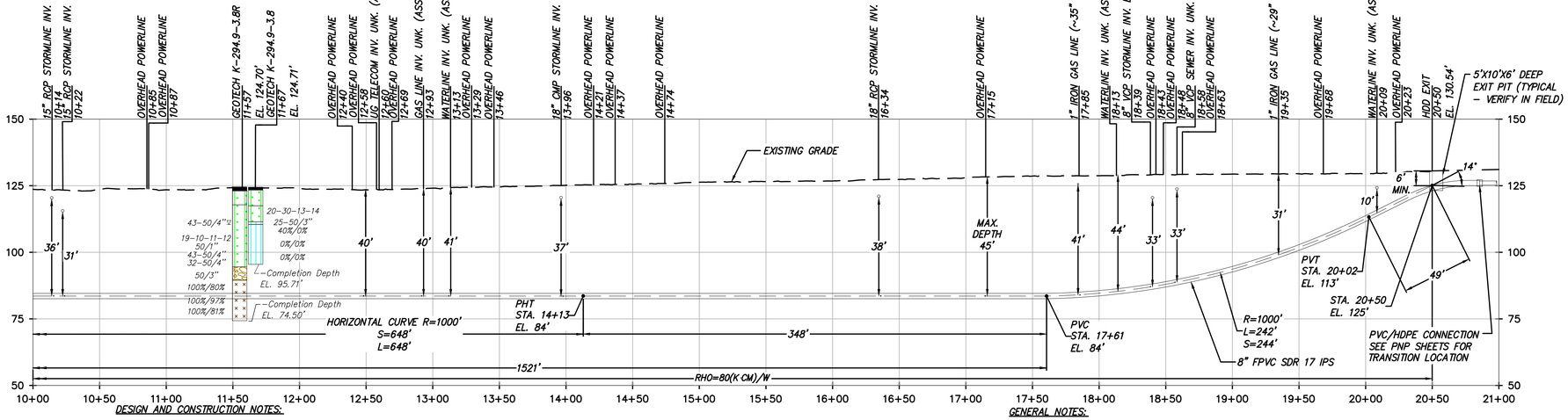


HDD 131 PLAN VIEW

CONDUIT 2





HDD 131 PROFILE VIEW

CONDUIT 2

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): 2050'
   HDD DESIGNED PIPE LENGTH (S): 2056'
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 5 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.

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