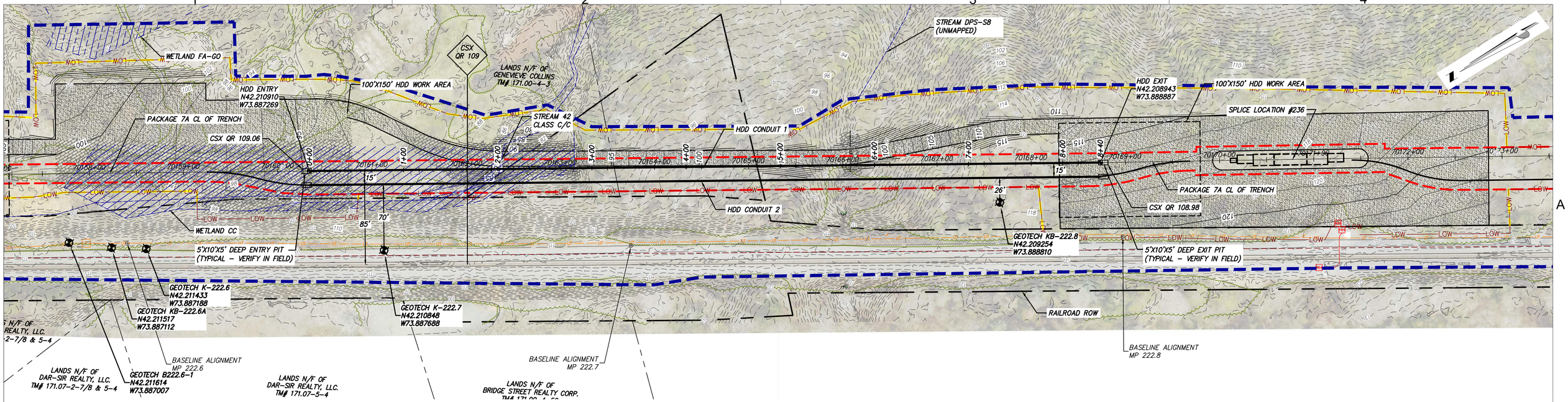
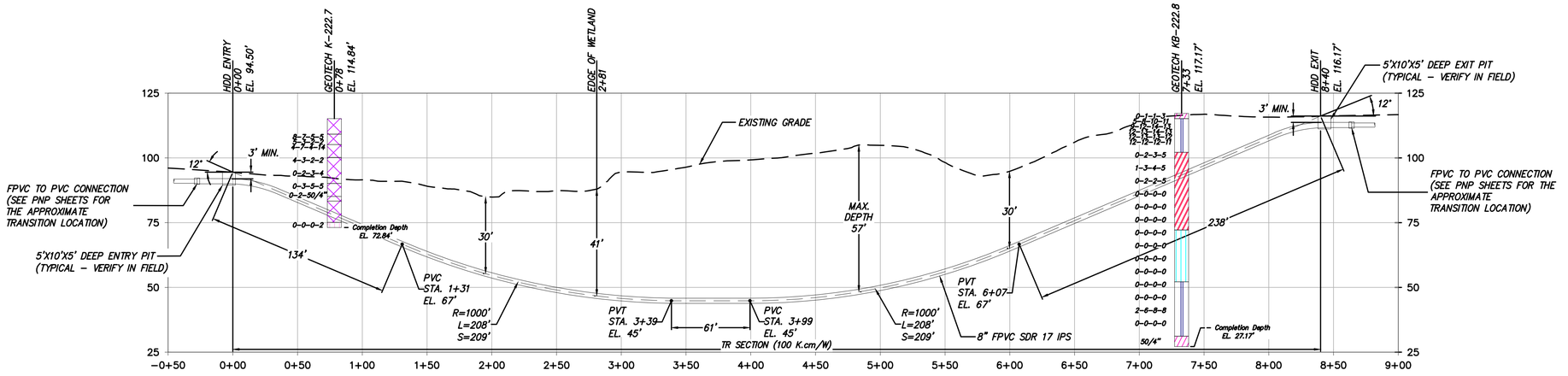


HDD 119 PLAN VIEW
CONDUIT 1



0 25 50
0 50 100
Scale in feet when printed on 22x34

HDD 119 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): 840'
   HDD DESIGNED PIPE LENGTH (S): 851'
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. DRILL CONTRACTOR AND/OR GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING.
6. 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.
7. 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. CONTRACTOR MUST CONTACT CSX WHENEVER ON RR ROW.
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%/90%
11000psi =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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(A NEW YORK PROFESSIONAL CORPORATION)

STATE OF NEW YORK · EDWARD J. KELLY · LICENSED PROFESSIONAL ENGINEER · 094981

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/19/2023	ISSUED FOR CONSTRUCTION SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 119
WETLAND CROSSING - CONDUIT 1
GREENE COUNTY, NY

KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	C-319

DRAWN BY: MRS | DESIGNED BY: AMC | APPROVED BY: EJK | SCALE AS SHOWN | REV. NO. 0 | DATE 06/19/2023 | SH.NO. OF

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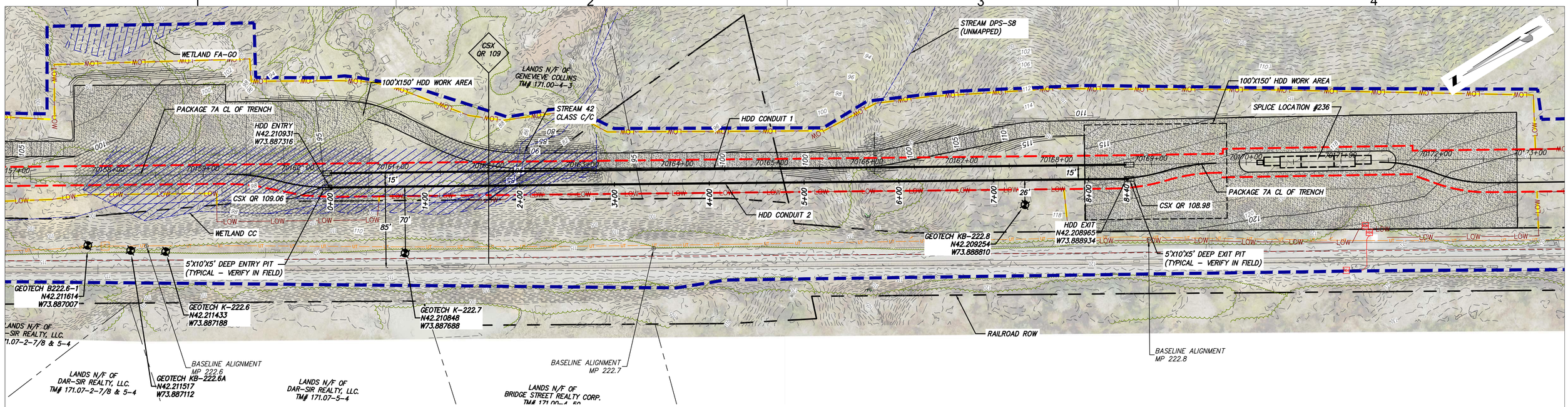
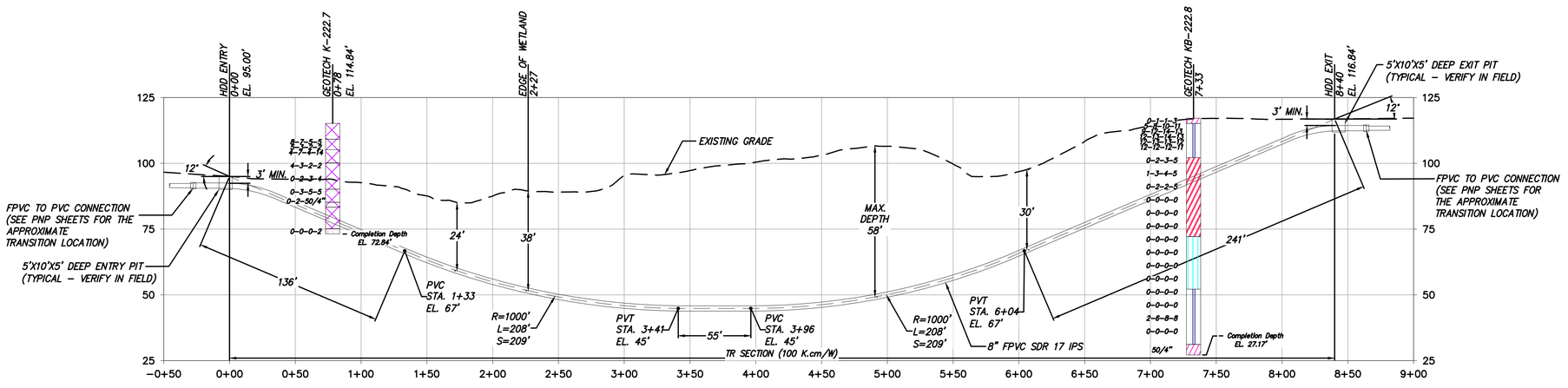


HDD 119 PLAN VIEW
CONDUIT 2



0 25 50
0 50 100
Scale in feet when printed on 22x34

HDD 119 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): 840'
   HDD DESIGNED PIPE LENGTH (S): 851'
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. DRILL CONTRACTOR AND/OR GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING.
6. 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.
7. 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
Recovery %/RQD % = 95%/90%
f1000psi =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
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SP–SC	Poorly Graded SAND with CLAY
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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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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/19/2023	ISSUED FOR CONSTRUCTION SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 119.2
WETLAND CROSSING - CONDUIT 2
GREENE COUNTY, NY

KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	**C-319.2**

DRAWN BY: MRS | DESIGNED BY: AMC | APPROVED BY: EJK | SCALE AS SHOWN | DATE 06/19/2023 | REV. NO. 0 | SH.NO. OF

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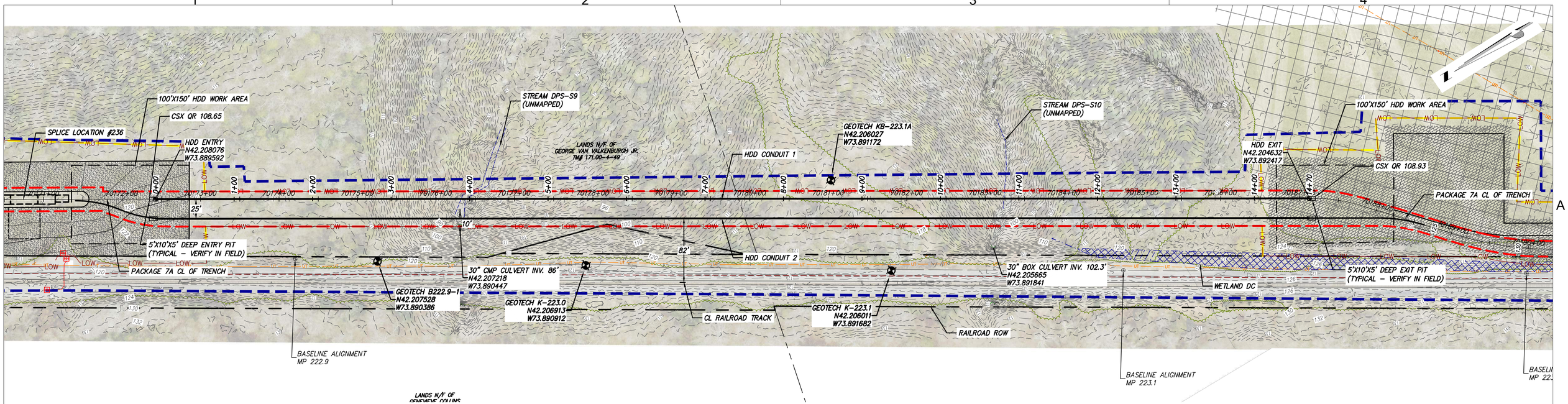
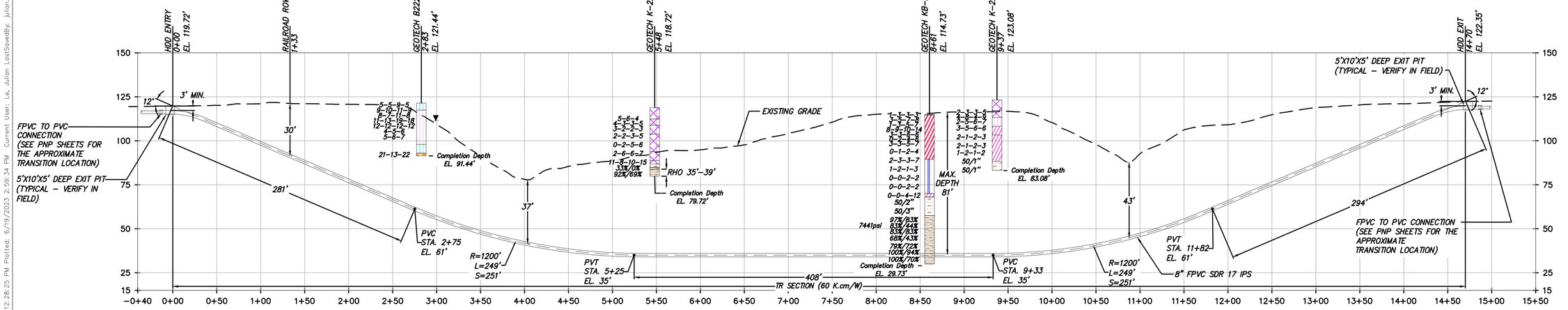
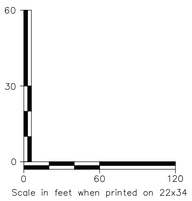


HDD 120 PLAN VIEW
CONDUIT 1





HDD 120 PROFILE VIEW
CONDUIT 1

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

Legend	
ASPHALT	Asphalt
Bedrock	Bedrock
Boulder	Boulder
CH	Fat CLAY
CH–MH	SILTY Fat CLAY
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CL–ML	SILTY CLAY
CONCRETE	Concrete
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OL	ORGANIC Lean CLAY
OL/OH	ORGANIC SOIL
PT	PEAT
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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):1470'
   HDD DESIGNED PIPE LENGTH (S): 1486'
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 15 FT.
6. DRILL CONTRACTOR AND/OR GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING..
7. 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.
8. 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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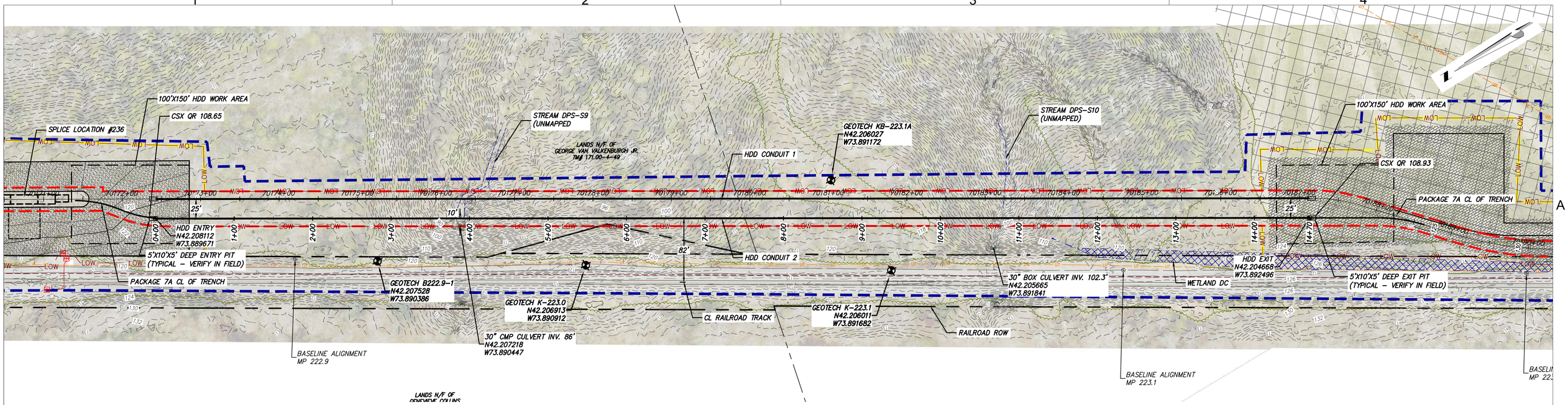
STATE OF NEW YORK · EDWARD J. KELLY · 094981 · LICENSED PROFESSIONAL ENGINEER

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/19/2023	ISSUED FOR CONSTRUCTION SUBMISSION	MRS	EJK

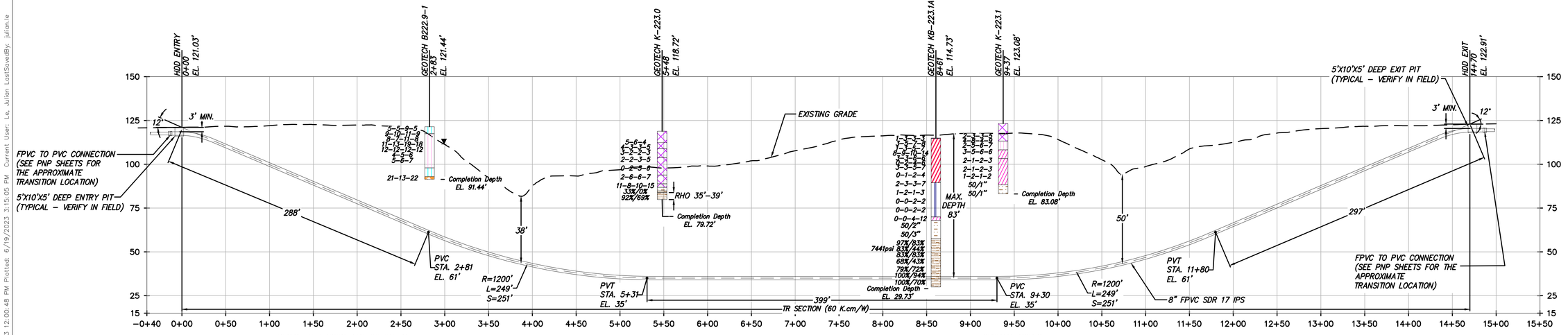
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 120
RAILROAD CULVERT CROSSING - CONDUIT 1
GREENE COUNTY, NY

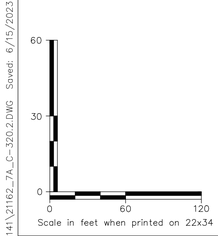
KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	**C-320**

DRAWN BY: MRS | DESIGNED BY: AMC | APPROVED BY: EJK | SCALE: AS SHOWN | DATE: 06/19/2023 | REV. NO. 0 | SH.NO. | OF



HDD 120 PLAN VIEW
CONDUIT 2





HDD 120 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.
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   HDD HORIZONTAL LENGTH (L):1470'
   HDD DESIGNED PIPE LENGTH (S): 1487'
3. THE MINIMUM THREE JOINT (APPROX. 100 FT) COMBINED CURVE (VERTICAL + HORIZONTAL) RADIUS SHALL NOT BE LESS THAN 800 FT.
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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

Legend	
ASPHALT	Asphalt
Bedrock	Bedrock
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CH	Fat CLAY
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CONCRETE	Concrete
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SW-SM	Well Graded SAND with SILT
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USGS 654	Subgraywacke
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USGS 702	Quartzite
USGS 705	Schist
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USGS 708	Gneiss
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CHPE Champlain Hudson Power Express

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/19/2023	ISSUED FOR CONSTRUCTION SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 120
RAILROAD CULVERT CROSSING - CONDUIT 2
GREENE COUNTY, NY

KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	**C-320.2**

DRAWN BY: MRS | DESIGNED BY:AMC | APPROVED BY: EJK | SCALE AS SHOWN | DATE 06/19/2023 | REV. NO. 0 | SH.NO. OF

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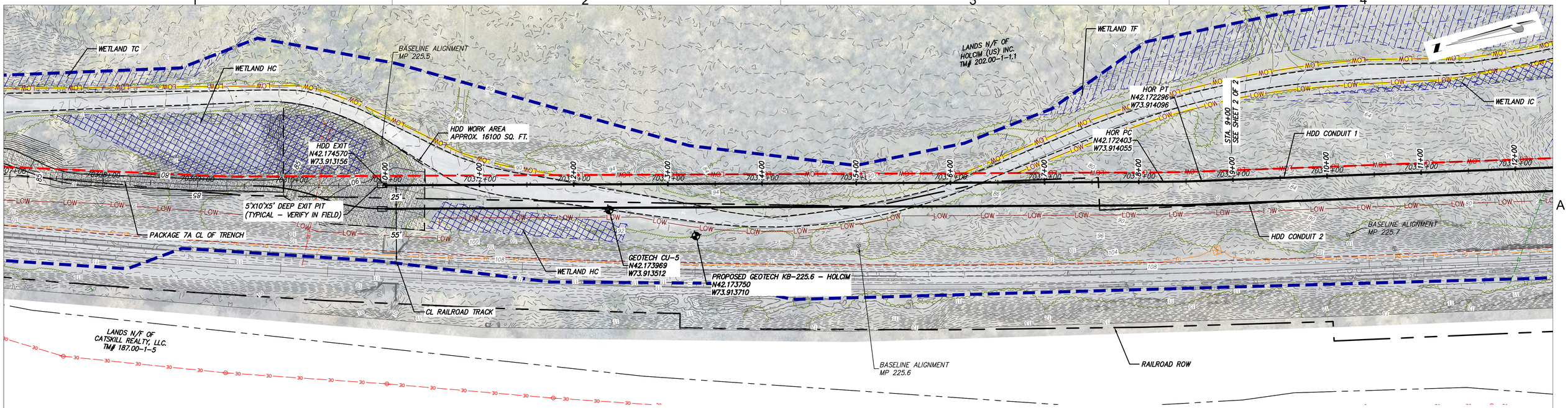
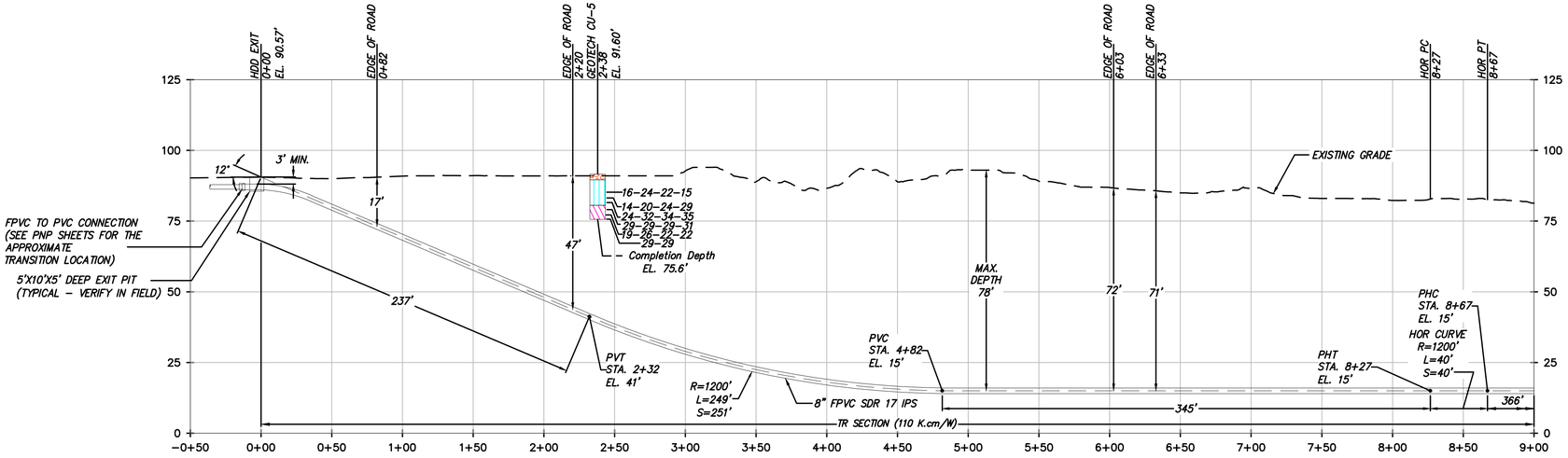


HDD 121 PLAN VIEW
CONDUIT 1



50
25
0
0
50
100
Scale in feet when printed on 22x34

HDD 121 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.
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   HDD HORIZONTAL LENGTH (L):1740'
   HDD DESIGNED PIPE LENGTH (S): 1755'
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 15 FT.
6. DRILL CONTRACTOR AND/OR GEOTECHNICAL ENGINEER TO DETERMINE LENGTH OF TEMPORARY SURFACE/CONDUCTOR CASING.
7. 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.
8. DRILL CONTRACTOR SHALL UTILIZE BUOYANCY CONTROL MEASURES (INTERNAL WATER USED FOR BALLAST) DURING PULLBACK FOR ALL BUNDLED CASINGS.

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

BORING LOG STRIP LEGEND
Blow Counts per 6" = 10-10-10
Recovery %/RQD % = 95%/90%
RQD
11000psi =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
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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	SILTY, CLAYEY SAND
SHALE	Shale
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SP-SC	Poorly Graded SAND with CLAY
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USGS 601	Gravel or Conglomerate 1
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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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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/19/2023	ISSUED FOR CONSTRUCTION SUBMISSION	MRS	EJK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 121 PAGE 1
WETLAND CROSSING - CONDUIT 1
GREENE COUNTY, NY

KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	C-321

DRAWN BY: MRS | DESIGNED BY:AMC | APPROVED BY: EJK | SCALE AS SHOWN | DATE 06/19/2023 | REV. NO. 0 | SH.NO. OF

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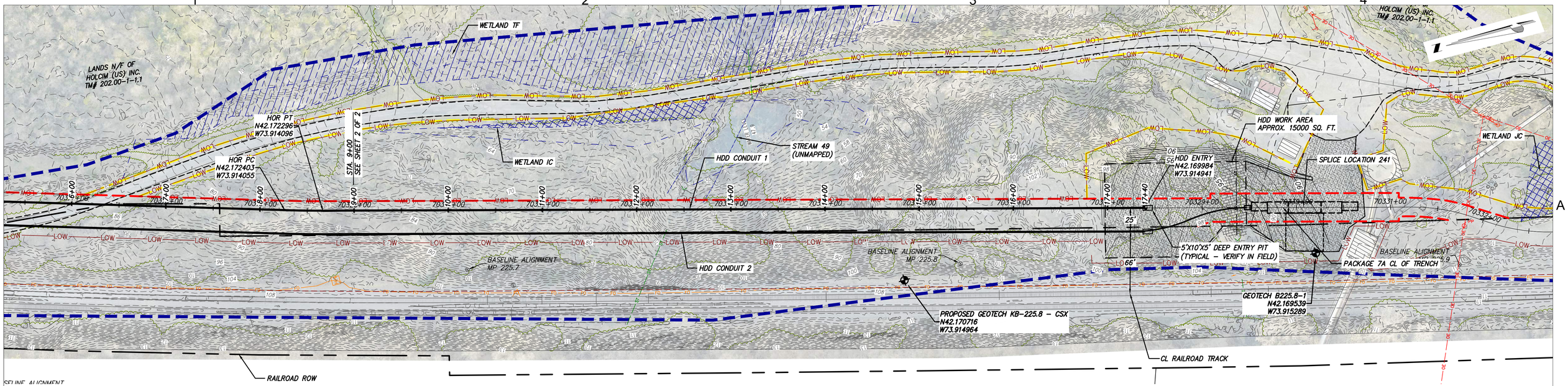

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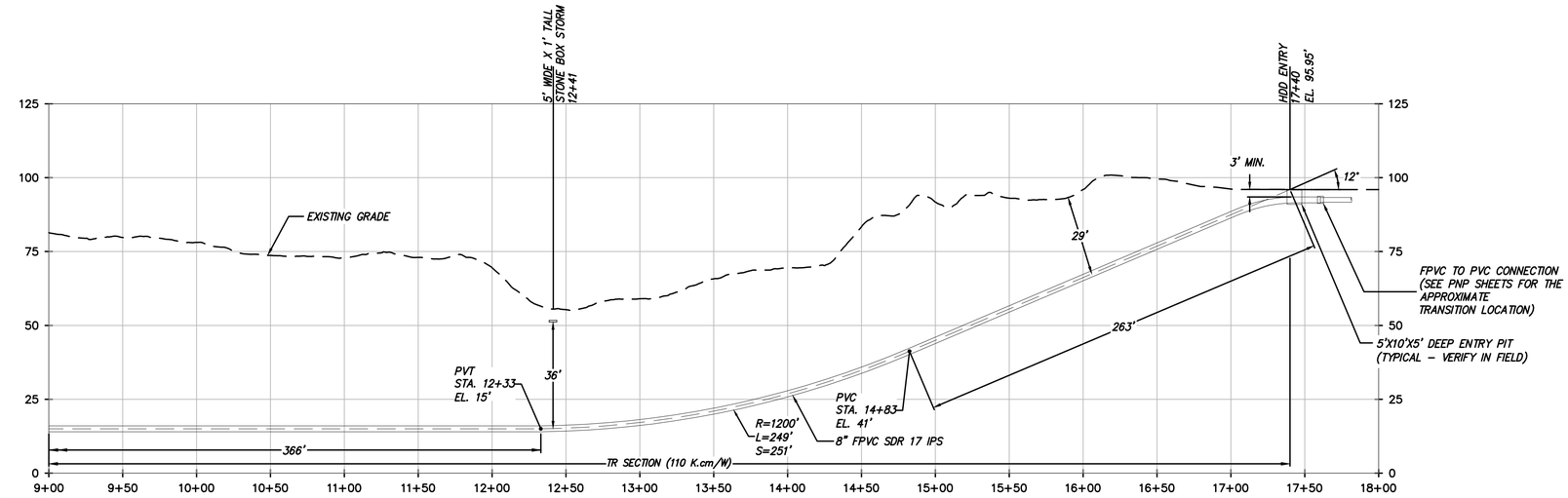
Scale in feet when printed on 22x34

HDD 121 PLAN VIEW
CONDUIT 1



0 25 50
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Scale in feet when printed on 22x34

HDD 121 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):1740'
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2D strip logs shown at 10x exaggeration
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Bedrock	Bedrock
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USGS 702	Quartzite
USGS 705	Schist
USGS 705	Schist
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CHPE Champlain Hudson Power Express

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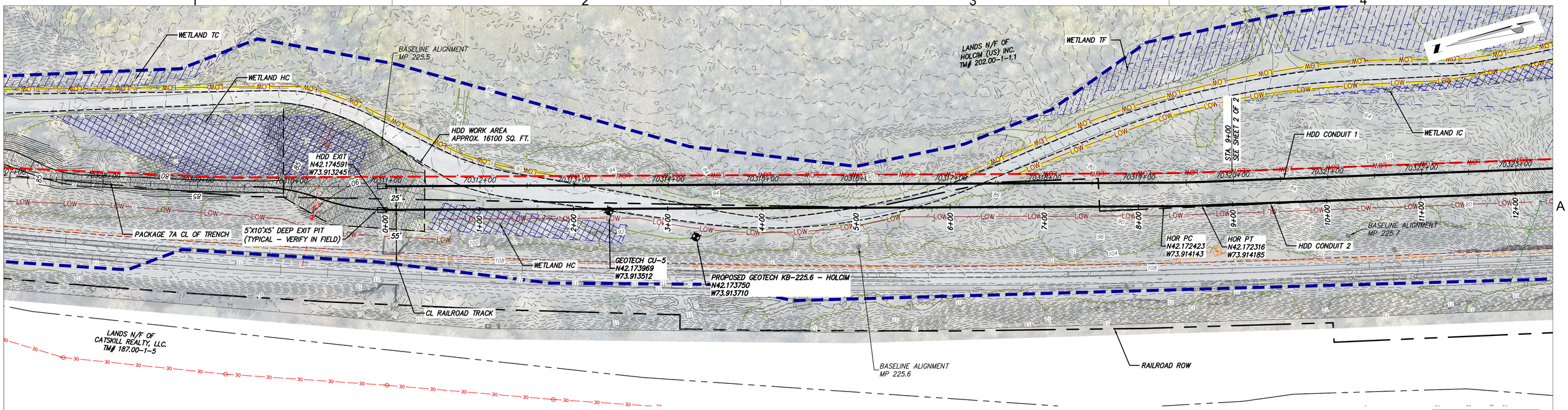
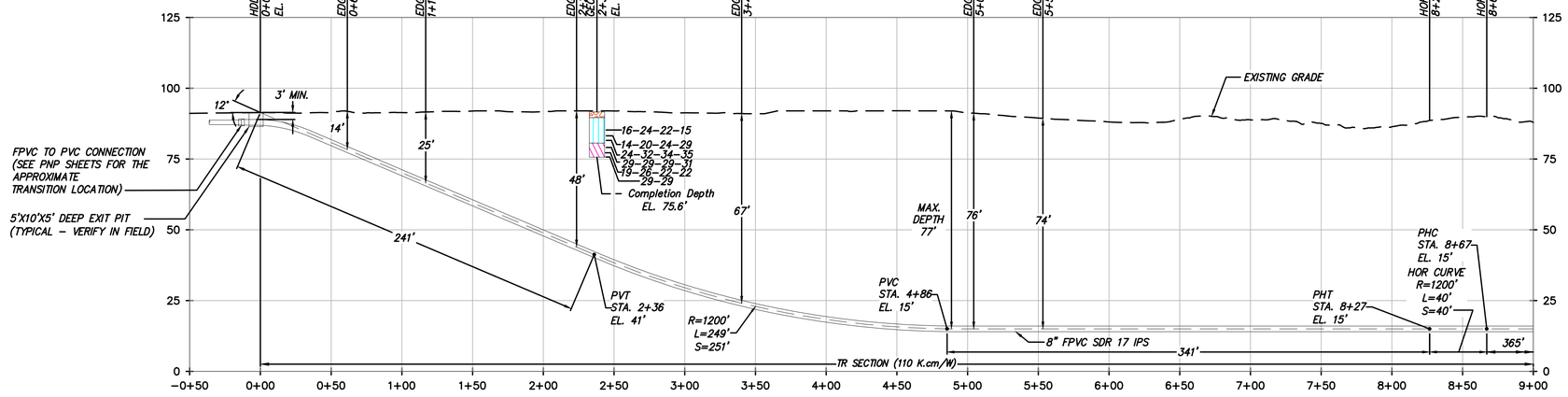
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 121 PAGE 2
WETLAND CROSSING - CONDUIT 1
GREENE COUNTY, NY

KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	C-321

DRAWN BY: MRS | DESIGNED BY:AMC | APPROVED BY: EJK | SCALE AS SHOWN | DATE 06/19/2023 | REV. NO. 0 | SH.NO. OF



HDD 121 PLAN VIEW
CONDUIT 2



HDD 121 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):1740'
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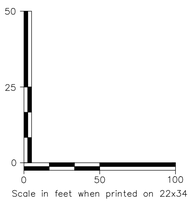

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Kiewit

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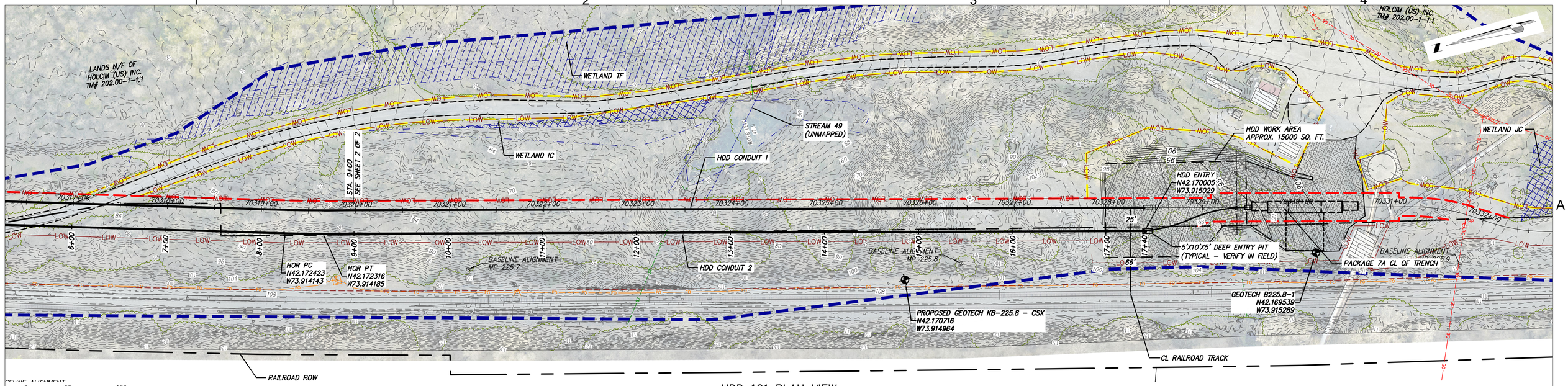
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 121 PAGE 1
WETLAND CROSSING - CONDUIT 2
GREENE COUNTY, NY

KIEWIT PROJECT NO.
21162
TT PROJECT NO.
204-3701
DRAWING NO.
C-321.2

DRAWN BY: MRS | DESIGNED BY: AMC | APPROVED BY: EJK | SCALE AS SHOWN | DATE 06/19/2023 | REV. NO. 0 | SH.NO. OF



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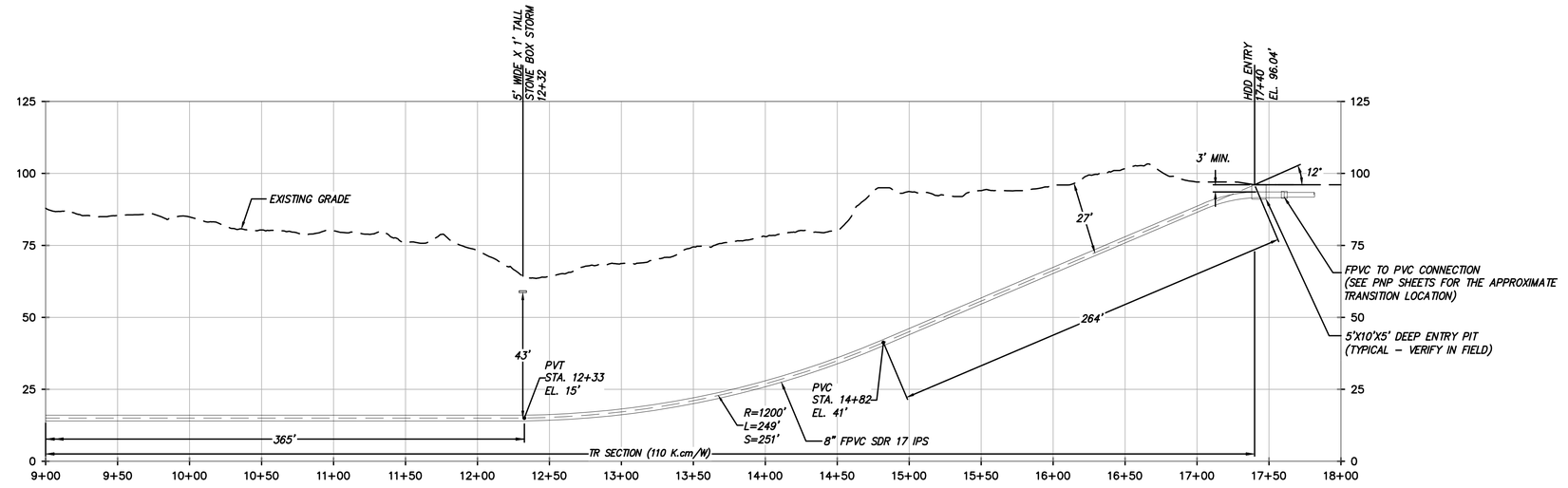
Scale in feet when printed on 22x34

HDD 121 PLAN VIEW
CONDUIT 2



0 25 50
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HDD 121 PROFILE VIEW
CONDUIT 2

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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
PLAN AND PROFILE - HDD 121 PAGE 2
WETLAND CROSSING - CONDUIT 2
GREENE COUNTY, NY

KIEWIT PROJECT NO.	21162
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File: C:\PWWORKING\RE\DM55114\21162_7A_C-321.2.DWG Saved: 6/19/2023 3:49:09 PM Plotted: 6/19/2023 5:02:29 PM Current User: Le, Julian LastSavedBy: julian.le