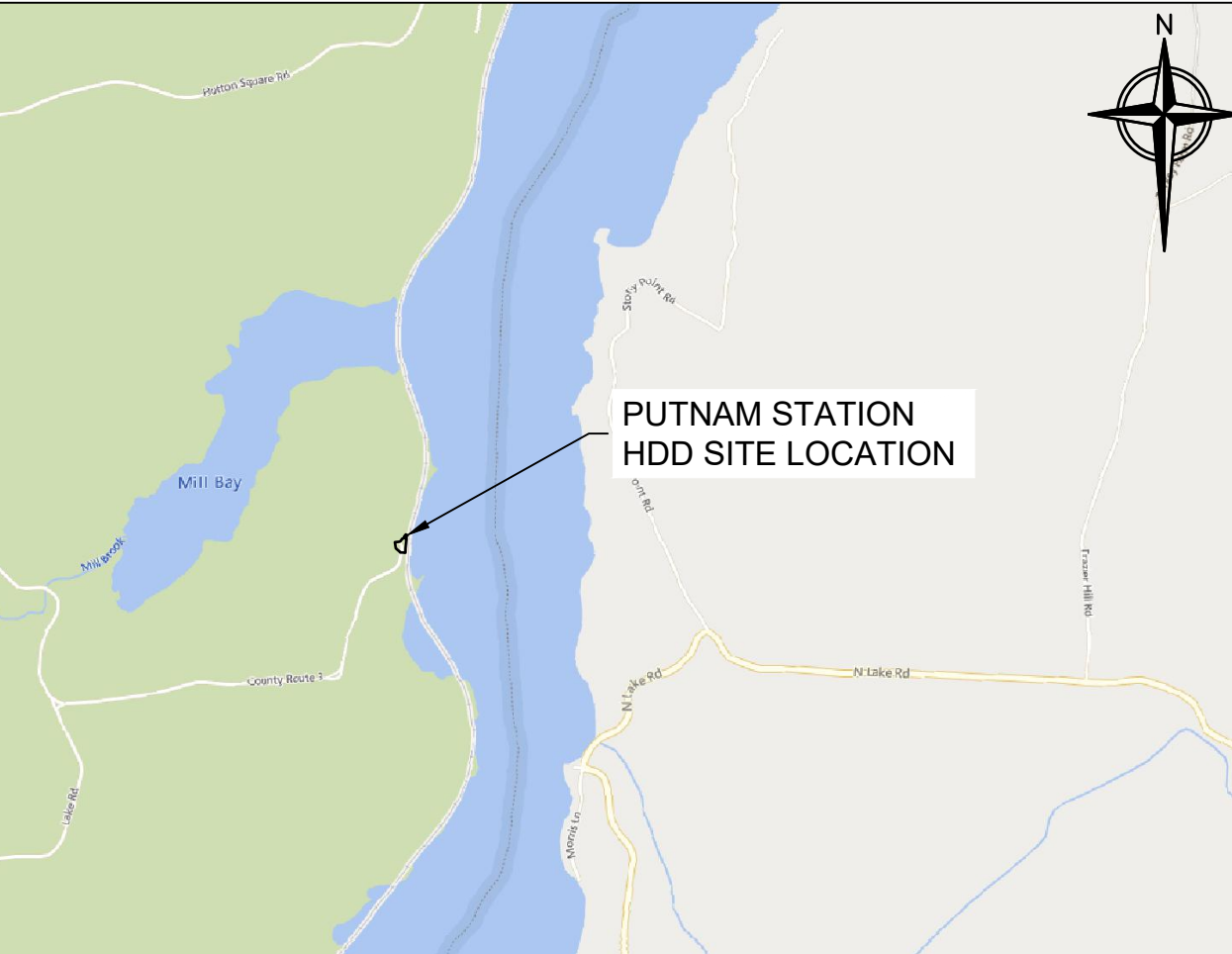


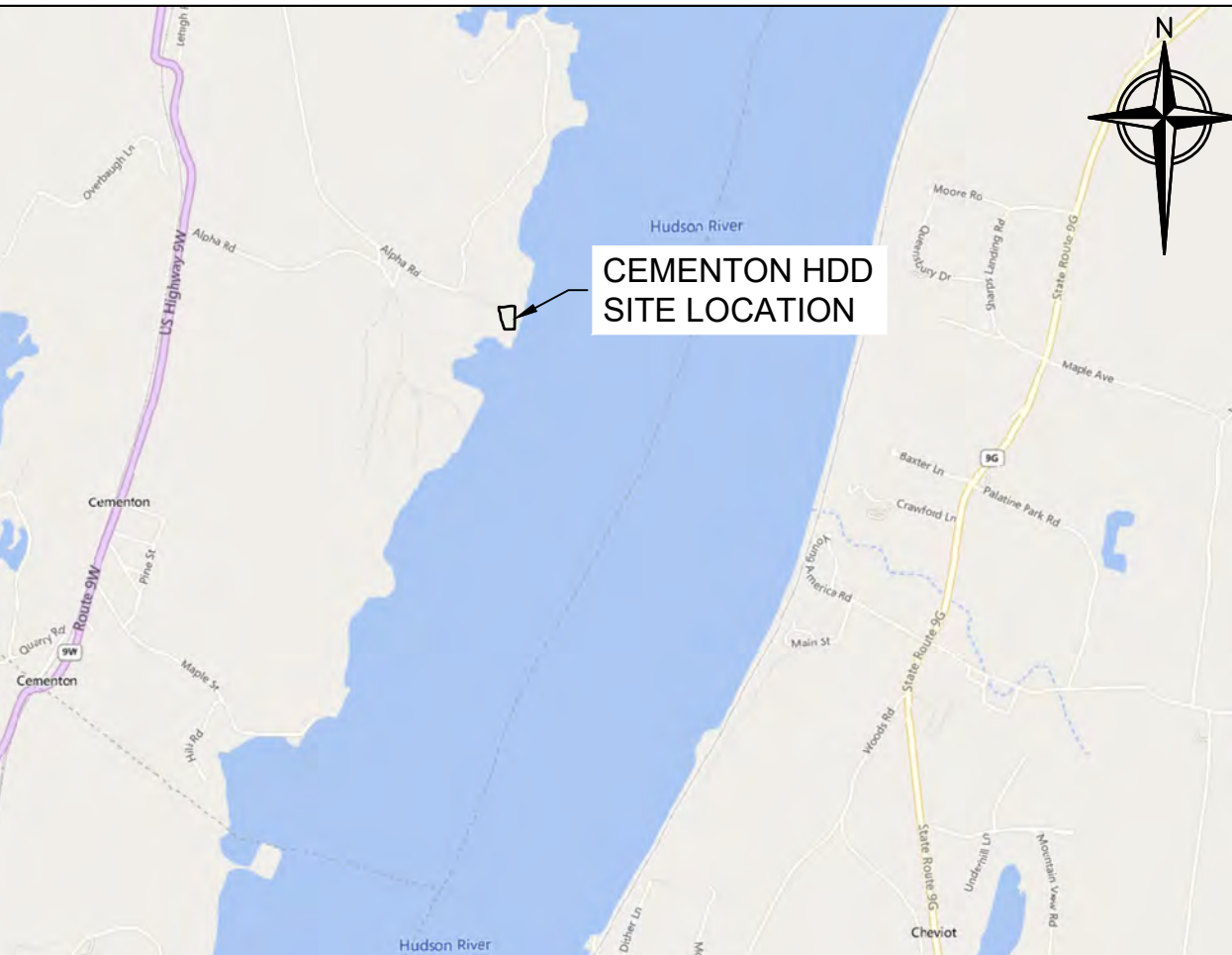


Appendix A: Plan and Profile Drawings

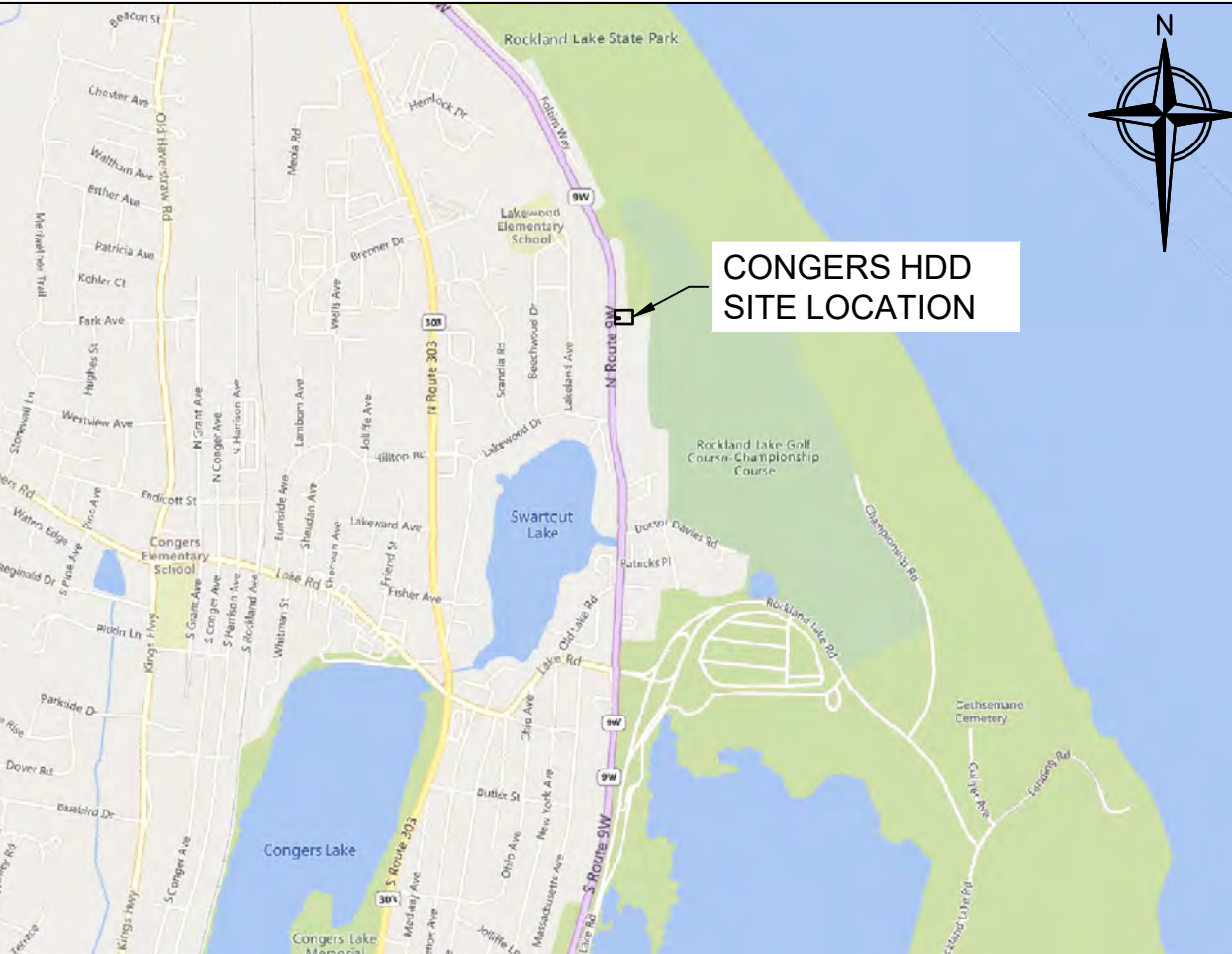
CHAMPLAIN HUDSON POWER EXPRESS PUTNAM STATION, CEMENTON, AND CONGERS HDD PLAN & PROFILE DRAWINGS



PUTNAM STATION, NEW YORK LOCATION MAP SCALE 1"=2000'



CEMENTON, NEW YORK LOCATION MAP SCALE 1"=2000'



CONGERS, NEW YORK LOCATION MAP SCALE 1"=2000'

PROPERTY OWNER TABLE

LOCATION	LANDS NOW OR FORMERLY OF	BOOK, PAGE NO.	TAX MAP ID NO.
PUTNAM STATION LAYDOWN AREA	TOWN OF PUTNAM	3114, 323	5.-2-4.6
PUTNAM STATION HDD	DELAWARE & HUDSON RAILWAY CO.	639, 168	9.-1-10
	ROBERT G. ST. ARMOUR	719, 336	13.-3-21.1
CEMENTON HDD	GLENS FALLS LEHIGH CEMENT CO.	923, 221	213.00-2-3
TOMKINS COVE LAYDOWN AREA	SOUTHERN ENERGY LOVETT, LLC	NA	10.04-2-7
CONGERS HDD	ISABELLA ROSE REALTY LLC	NA	44.12-2-44
	PALISADES INTERSTATE PARK COMMISSION	739, 1165	44.08-1-8
		741, 554	45.09-1-2
		741, 561	45.05-1-2
		NA	45.05-1-1

PREPARED FOR:
CALDWELL MARINE INTERNATIONAL
1333 CAMPUS PARKWAY
WALL, NEW JERSEY 07753

NOVEMBER 29, 2022
REVISED: FEBRUARY 22, 2023

PREPARED BY:



FIRM REGISTRATION NO.:
NY 0010187



PUTNAM LAYDOWN LOCATION MAP SCALE 1"=2000'



TOMKINS COVE LOCATION MAP SCALE 1"=2000'

DRAWING INDEX

SHEET NUMBER	DRAWING NUMBER	SHEET TITLE
1	-	COVER
2	N-1	NOTES & LEGEND
3	MPT-001	PUTNAM STATION MPT AND LAYDOWN AREA PLAN
4	HDD-002	PUTNAM STATION HDD 1 PLAN AND PROFILE
5	HDD-003	PUTNAM STATION HDD 2 PLAN AND PROFILE
6	MPT-004	PUTNAM STATION HDD MPT AND LAYOUT PLAN
7	HDD-005	PUTNAM STATION HDD EQUIPMENT LAYOUT PLAN
8	HDD-006	PUTNAM STATION RAILROAD CROSSING PLAN
9	HDD-007	TOMKINS COVE LAYDOWN AREA PLAN
10	HDD-008	CEMENTON HDD 1 PLAN AND PROFILE
11	HDD-009	CEMENTON HDD 2 PLAN AND PROFILE
12	MPT-010	CEMENTON HDD MPT AND ACCESS ROAD PLAN
13	HDD-011	CEMENTON HDD LAYOUT PLAN
14	HDD-012	CEMENTON HDD EQUIPMENT LAYOUT PLAN
15	HDD-013	CONGERS HDD 1 PLAN AND PROFILE
16	HDD-014	CONGERS HDD 2 PLAN AND PROFILE
17	MPT-015	CONGERS HDD MPT AND LAYOUT PLAN
18	HDD-016	CONGERS HDD EQUIPMENT LAYOUT PLAN
19	HDD-017	PUTNAM STATION & CEMENTON CONDUCTOR PIPE/GOAL POST/GRAVITY CELL INSTALLATION
20	HDD-018	CONGERS CONDUCTOR PIPE/GOAL POST/GRAVITY CELL INSTALLATION
21	HDD-019	CONGERS HDD BARGE ARRANGEMENT
22	HDD-020	CONGERS HDD BARGE ARRANGEMENT
23	HDD-021	DETAILS

FOR PERMITTING ONLY



02-22-2023

WE AREA 0-250 (24x36)

PROPOSED WORK NOTES:

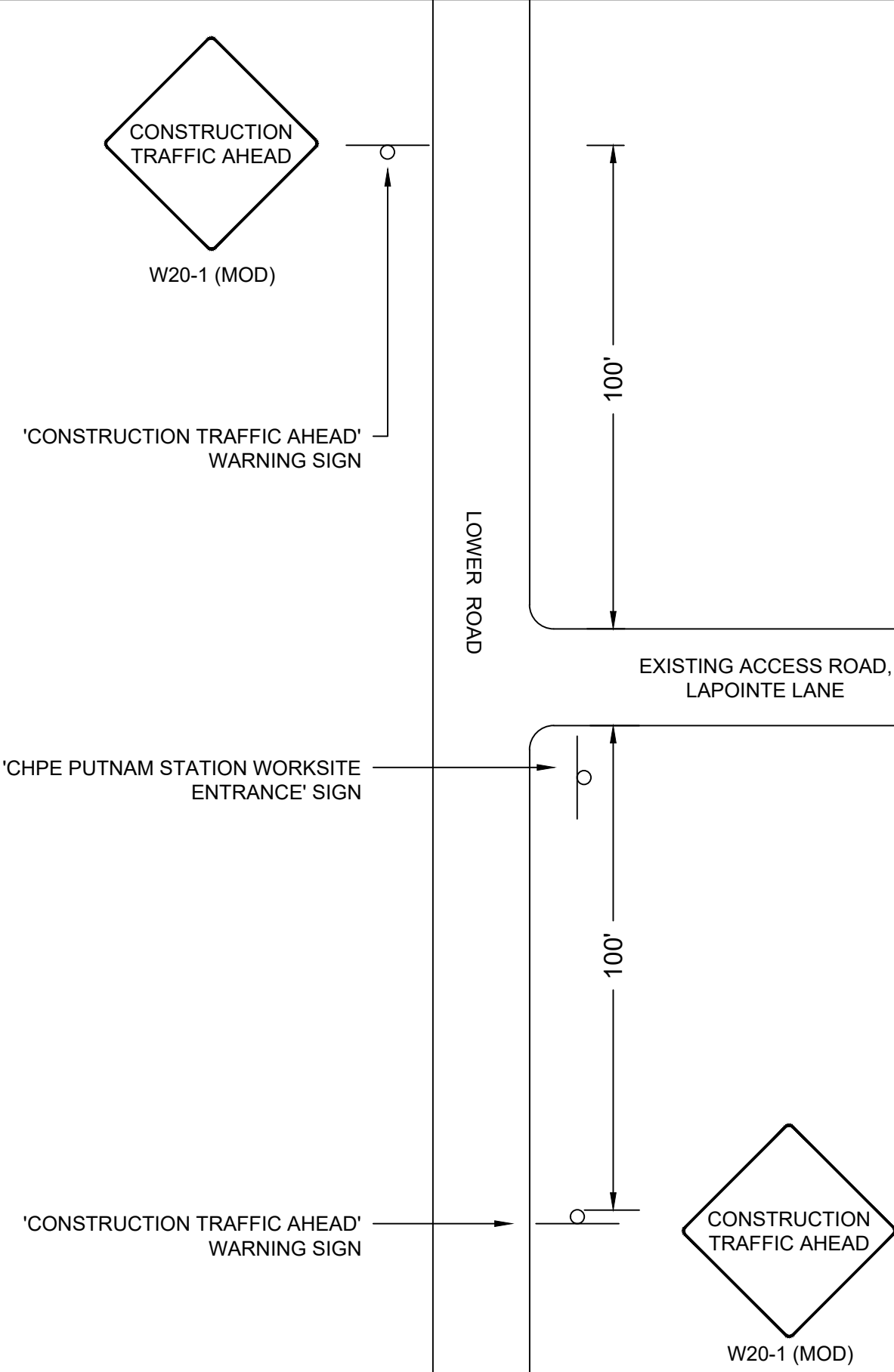
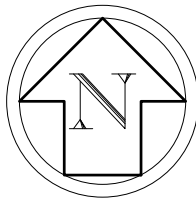
1. LAND DISTURBANCE IS NOT ANTICIPATED. TIMBER MATTING WITHIN GRASSED AREAS SHOULD BE USED WHEN SOFT OR POORLY DRAINED SOILS ARE PRESENT TO PREVENT EQUIPMENT RUTTING AND SEDIMENT TRACKING.
2. THE EXISTING ACCESS ROAD AND LAYDOWN AREA IS ANTICIPATED TO SUPPORT THE PIPE FUSING OPERATION IN IT'S CURRENT CONDITION. MINOR ACCESS SURFACE IMPROVEMENTS AND INSTALLATION OF ADDITIONAL EROSION CONTROLS WILL BE IMPLEMENTED AS NECESSARY TO PREVENT SEDIMENT-LADEN RUNOFF FROM FLOWING OUTSIDE OF THE LAYDOWN AREA.
3. MPT PLAN:

3.1. TEMPORARY 'CONSTRUCTION TRAFFIC AHEAD' WARNING SIGNS WILL BE INSTALLED 100-FEET FROM THE EXISTING ACCESS VIA LAPOINTE LANE TO THE TOWN OF PUTNAMS PROPERTY ON BOTH LOWER ROAD APPROACHES. FINAL SIGN TEXT AND LOCATIONS TO BE COORDINATED WITH AND APPROVED BY THE LAND OWNERS AND CERTIFICATE HOLDERS.




3.2. THE CONTRACTOR SHALL PROVIDE A FLAGGER DURING HEAVY EQUIPMENT DELIVERY TO THE LAYDOWN AREA IN ACCORDANCE WITH CHAPTER 6E, FLAGGER CONTROL, OF THE 2009 MUTCD, REVISION 3 DATED JULY 2022.

REFERENCE NOTES:

1. AERIAL PHOTOGRAPHY OBTAINED FROM THE NEW YORK GIS CLEARINGHOUSE, STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, DATED SEPTEMBER 2017.
2. PARCEL DATA OBTAINED FROM NEW YORK GIS CLEARINGHOUSE, DIGITAL MAPS DATABASE, NYS STATEWIDE 2021 PARCEL LAYER, PUBLISHED OCTOBER 2022.
3. LIMITS OF LAYDOWN AREA PROVIDED BY CALDWELL MARINE INC. IN SEPTEMBER 2022.
4. TRC PERFORMED A WETLAND AND WATERBODY PRESENCE/ABSENCE INSPECTION OF THE PROPOSED LAYDOWN AREA LIMITS ON OCTOBER 24, 2022. NO WETLANDS OR DEC REGULATED ADJACENT AREAS WERE FOUND TO BE PRESENT WITHIN THE LIMITS OF THE PROPOSED LAYDOWN AREA. THE LIMITS OF LAKE CHAMPLAIN WERE DELINEATED AS DEPICTED ON THIS SHEET.

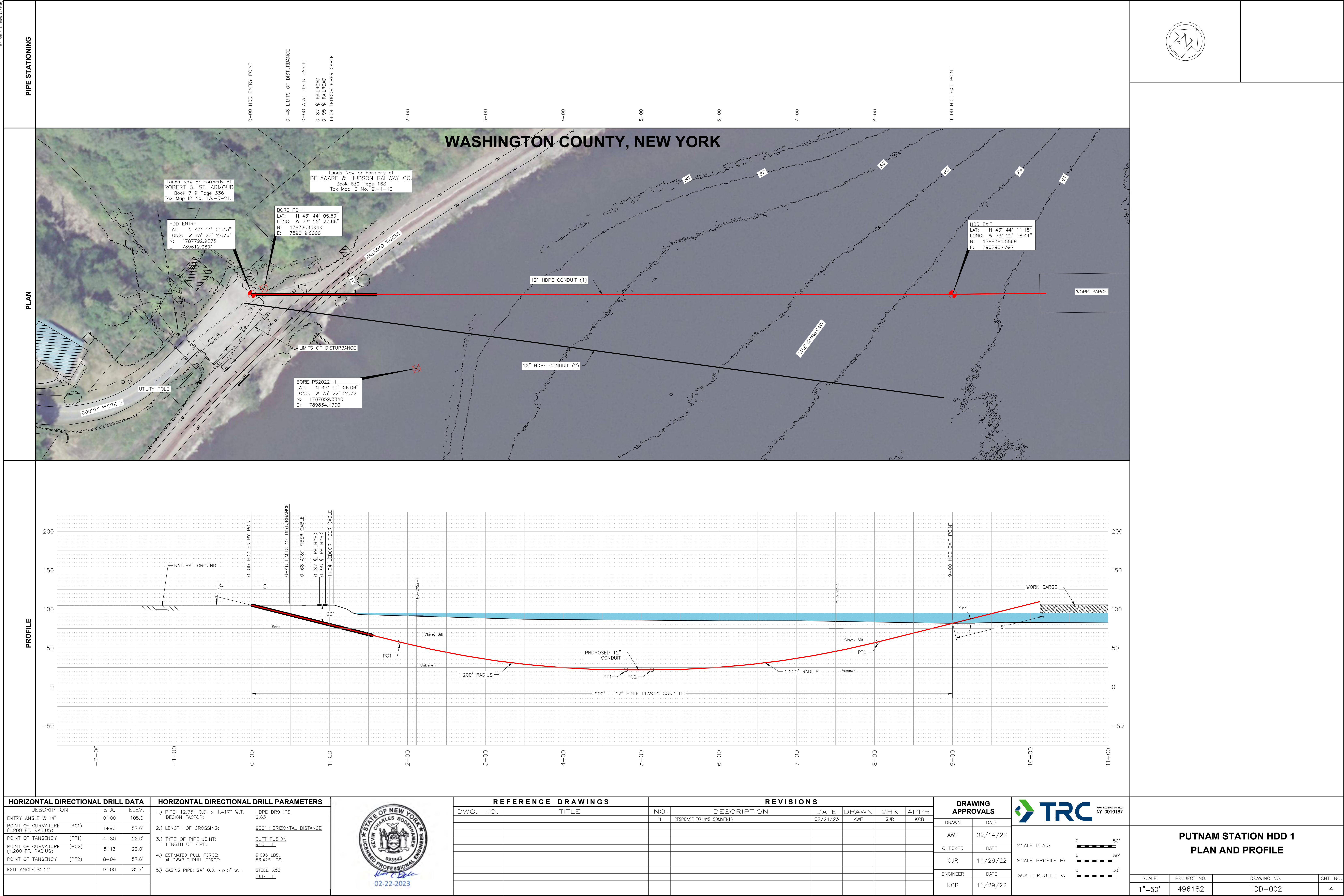


INSET VIEW- MPT PLAN SCHEMATIC
SCALE: NTS

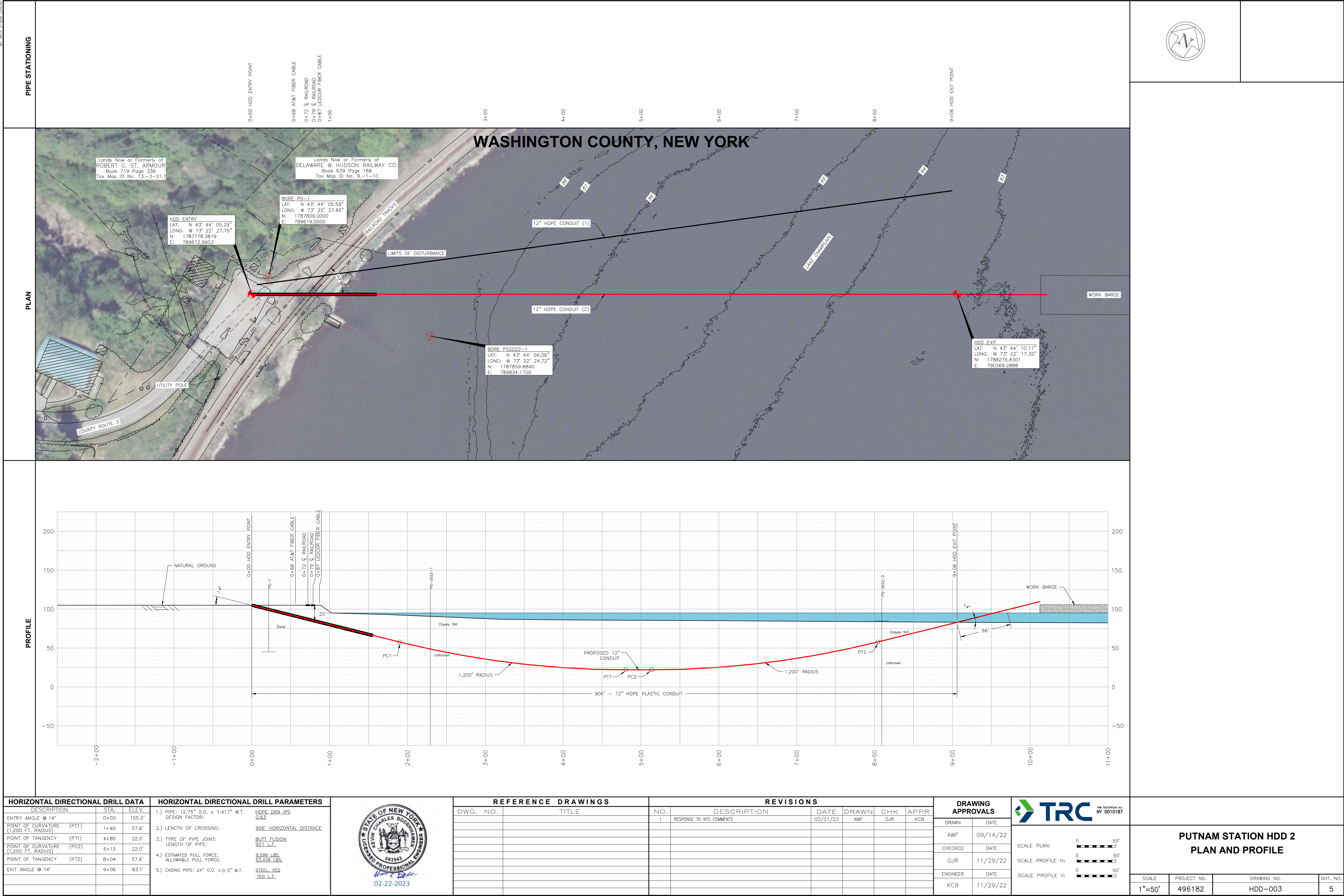
				REFERENCE DRAWINGS		REVISIONS							DRAWING APPROVALS		 SCALE PLAN: 	PUTNAM STATION MPT AND LAYDOWN AREA PLAN			
				DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR	DRAWN	DATE	SCALE					
						1	RESPONSE TO NYS COMMENTS	02/22/2023	MMO	GJR	KCB								



NY 496182 D-002 11/23

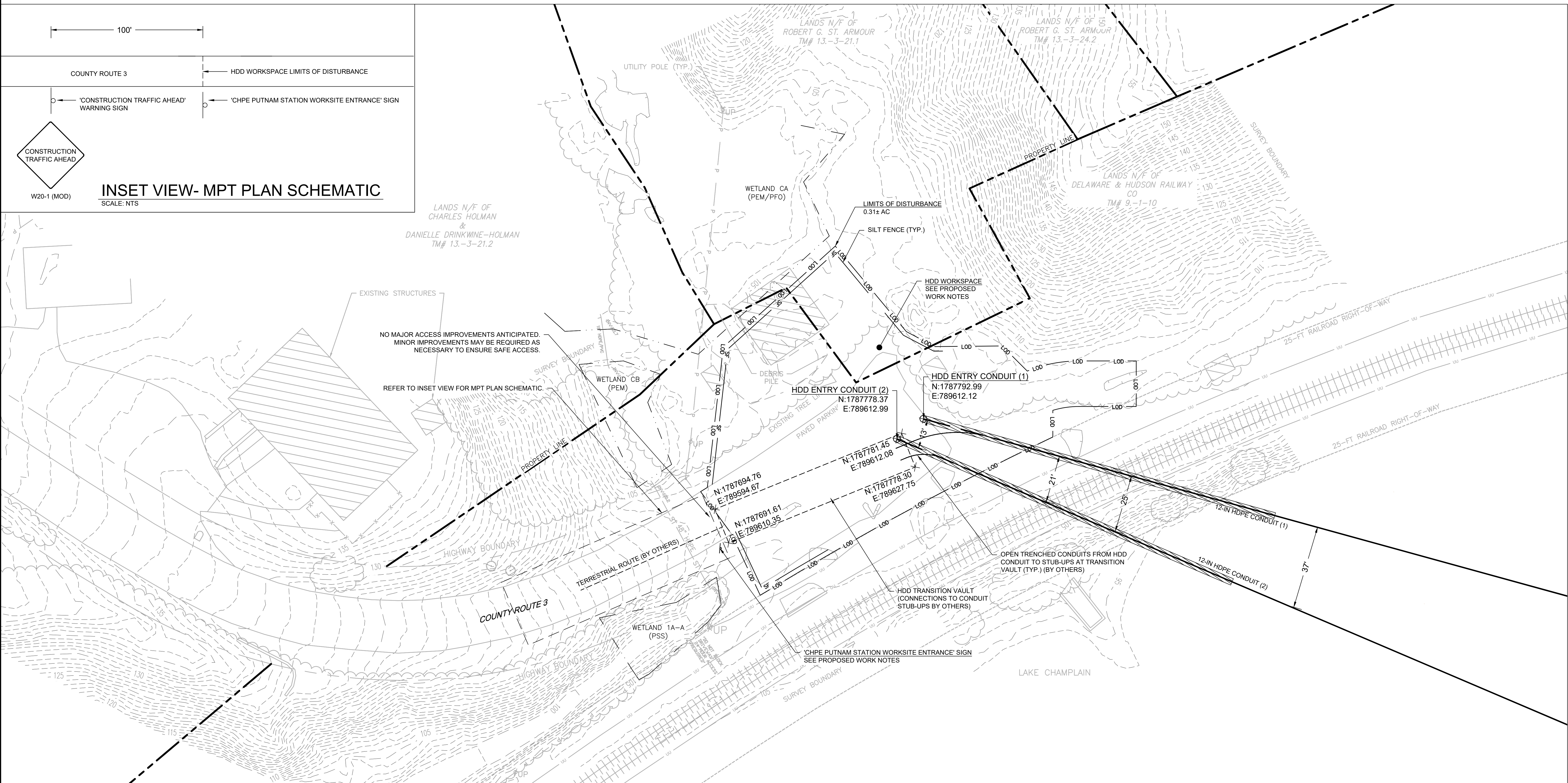


NY 2023-12-20 10:30 AM

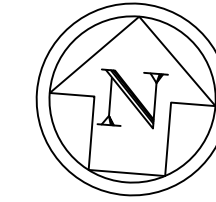


-
- 100'
- COUNTY ROUTE 3
- HDD WORKSPACE LIMITS OF DISTURBANCE
- 'CONSTRUCTION TRAFFIC AHEAD' WARNING SIGN
- 'CHPE PUTNAM STATION WORKSITE ENTRANCE' SIGN
- CONSTRUCTION TRAFFIC AHEAD
- W20-1 (MOD)
- INSET VIEW- MPT PLAN SCHEMATIC**
- SCALE: NTS

SCALE: NTS



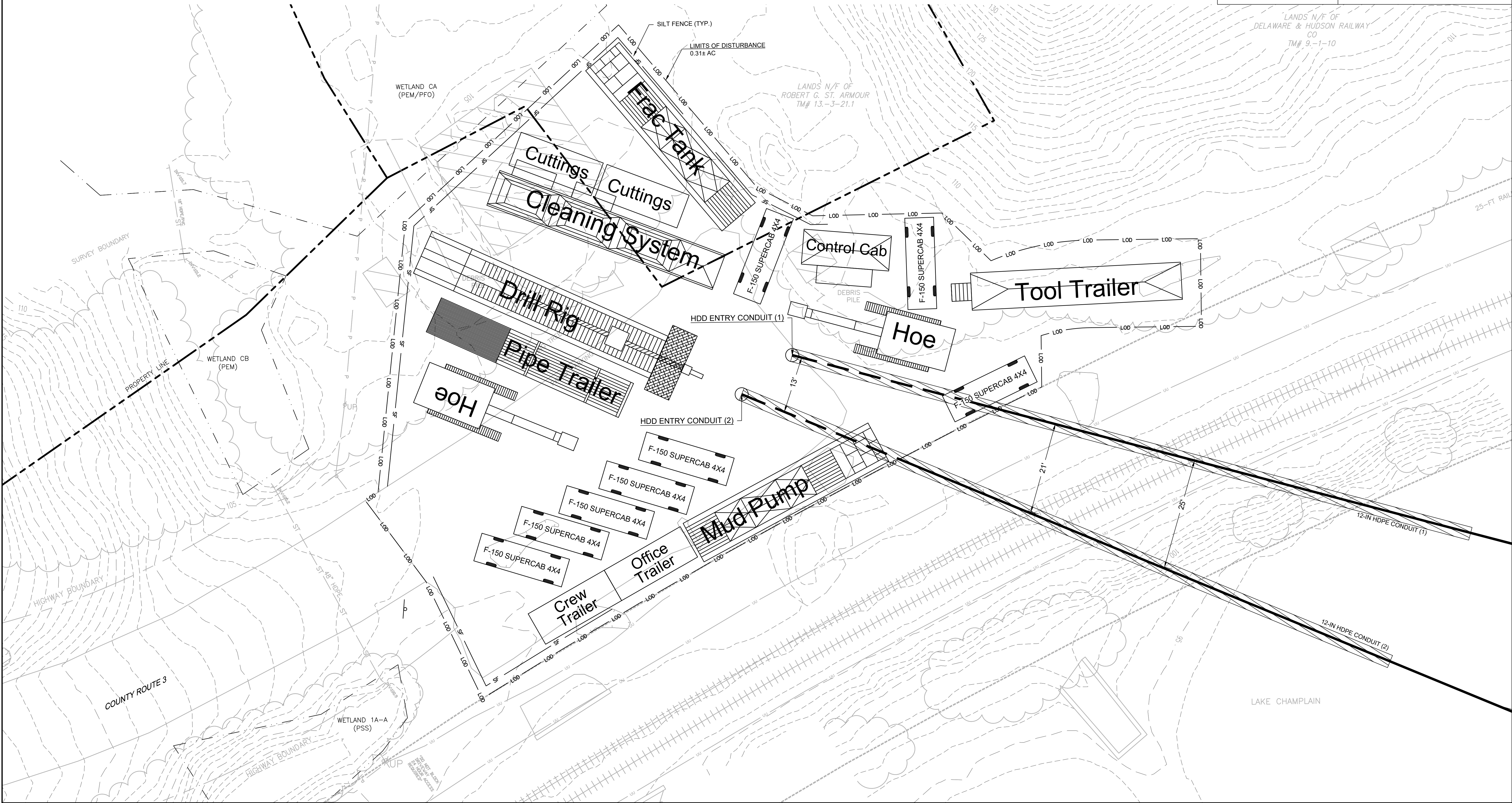
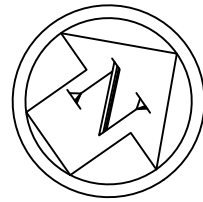
1. BASE PLAN REFERENCES A ROW, UTILITY & WETLAND SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC.
2. BASE PLAN HAS BEEN SUPPLEMENTED WITH INFORMATION PROVIDED BY CALDWELL MARINE, CLOUGH HARBOR ASSOCIATES AND NEW YORK GIS CLEARING HOUSE.




[illegible]

NY 0010187

REFERENCE NOTES:

1. BASE PLAN REFERENCES A ROW, UTILITY & WETLAND SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC.
2. BASE PLAN HAS BEEN SUPPLEMENTED WITH INFORMATION PROVIDED BY CALDWELL MARINE, CLOUGH HARBOR ASSOCIATES AND NEW YORK GIS CLEARING HOUSE.
3. HDD EQUIPMENT LAYOUT PROVIDED BY CALDWELL MARINE IN NOVEMBER 2022.



				REFERENCE DRAWINGS		REVISIONS						DRAWING APPROVALS		 <div>TRC</div> <div>SCALE PLAN: </div>	PUTNAM STATION HDD EQUIPMENT LAYOUT PLAN				
				DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR	DRAWN	DATE						
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													CHECKED						DATE
													GJR		11/7/2022				
													ENGINEER		DATE				
													KCB		11/29/2022				
															SCALE	PROJECT NO.	DRAWING NO.	SHT.NO.	
													1"=10'	496182	HDD-005	7			

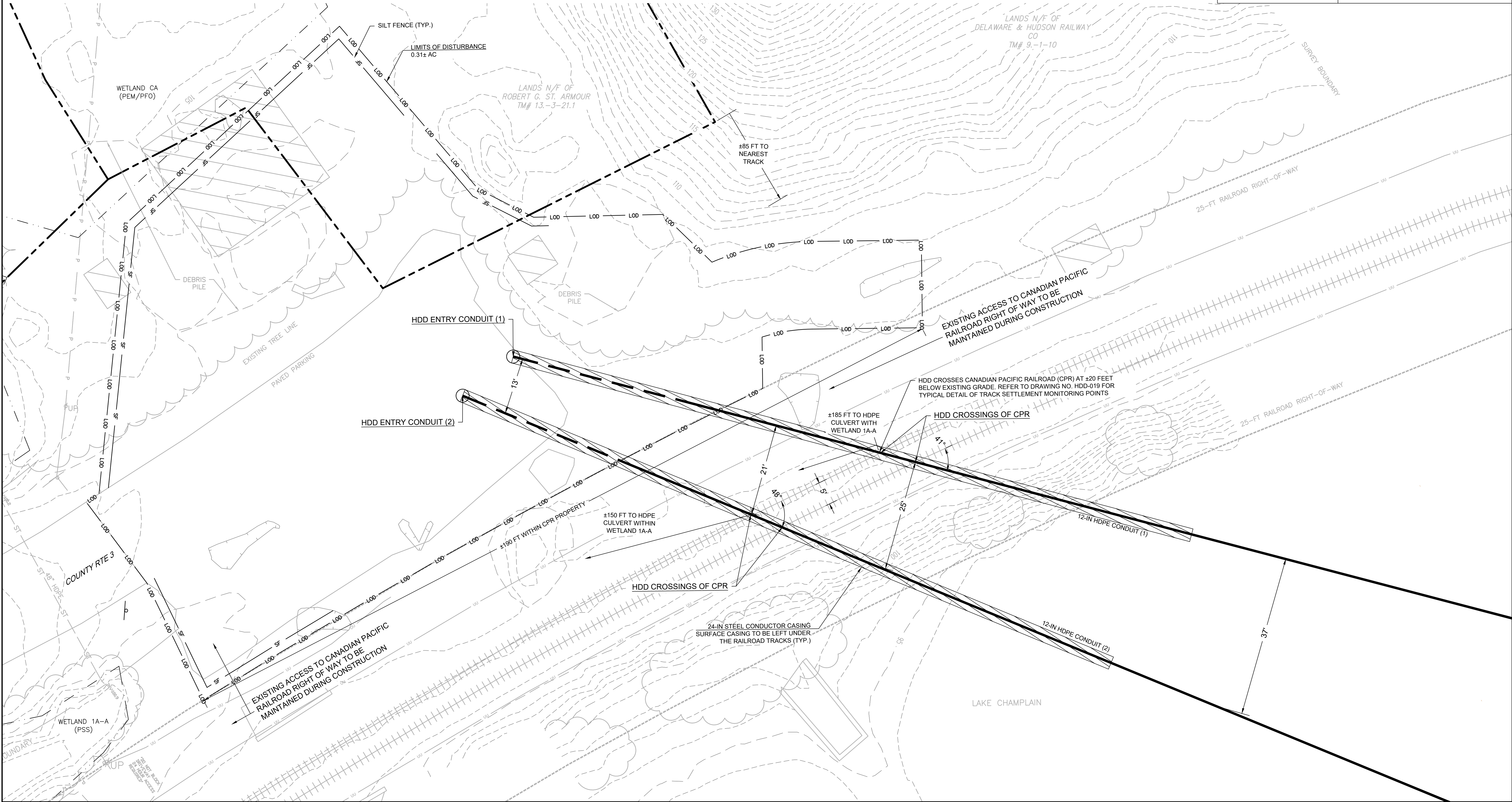
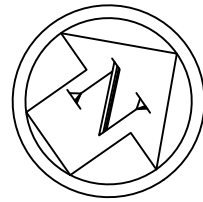



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NY 0010187.dwg

REFERENCE NOTES:

1. BASE PLAN REFERENCES A ROW, UTILITY & WETLAND SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC.
2. BASE PLAN HAS BEEN SUPPLEMENTED WITH INFORMATION PROVIDED BY CALDWELL MARINE, CLOUGH HARBOR ASSOCIATES AND NEW YORK GIS CLEARING HOUSE.



REFERENCE DRAWINGS				REVISIONS						DRAWING APPROVALS		SCALE PLAN: 	PUTNAM STATION HDD RAILROAD CROSSING PLAN			
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								ENGINEER	DATE							
								KCB	11/29/2022							



USER: D:\GNAME

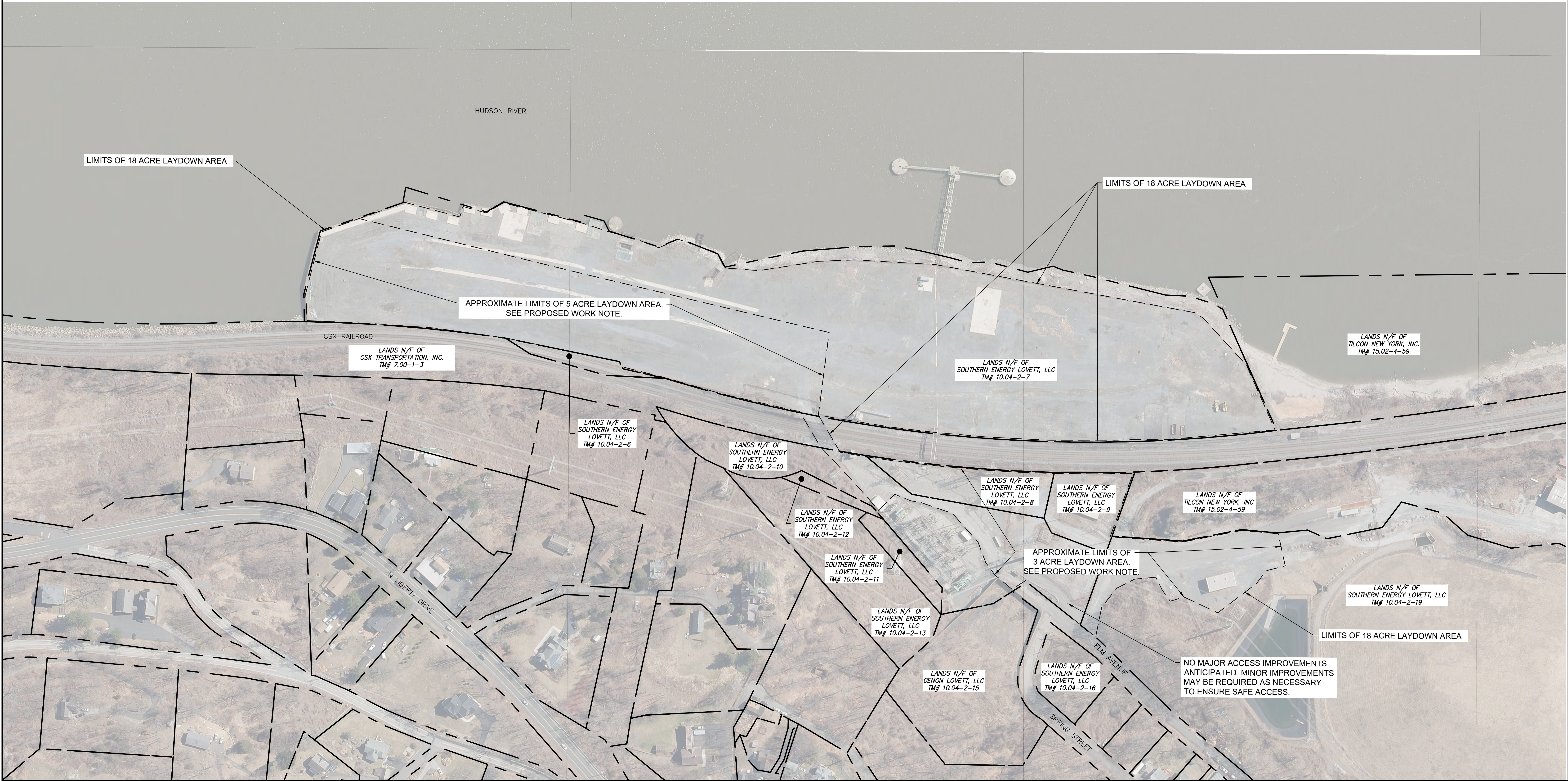
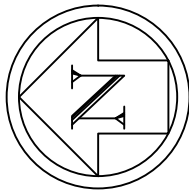
WE AREA: 0-250' (24x36)




PROPOSED WORK NOTE:

1. LAND DISTURBANCE IS NOT ANTICIPATED. 8 ACRES OF THE LARGER 18 ACRE LAYDOWN AREA IS ANTICIPATED TO BE USED TO SUPPORT TERRESTRIAL, SUBMARINE AND HDD CONSTRUCTION OPERATIONS. THE REMAINING 10 ACRES MAY POTENTIALLY BE USED TO SUPPORT THE CHPE PROJECT IF NEEDED.

REFERENCE NOTES:

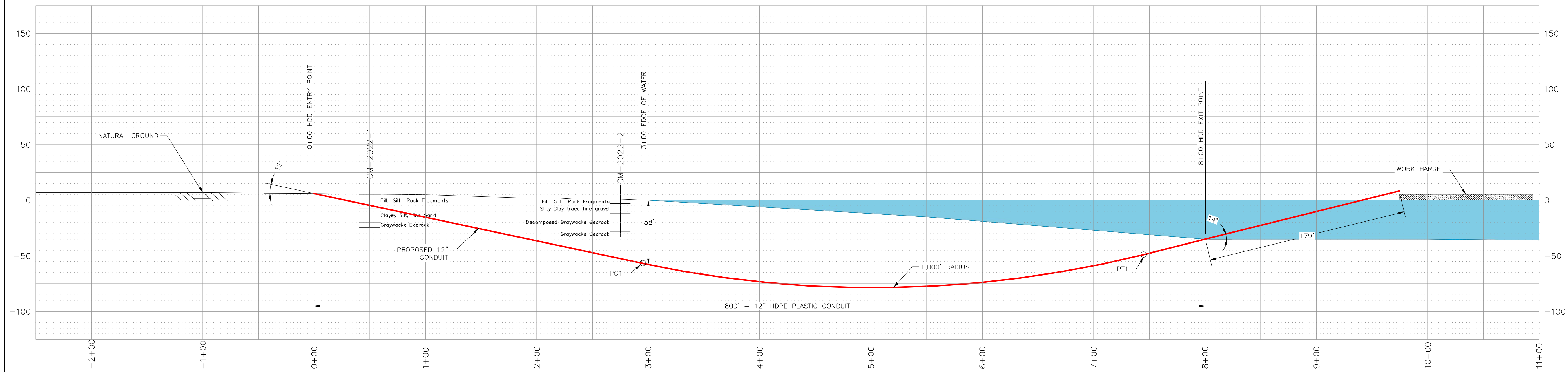
1. AERIAL PHOTOGRAPHY OBTAINED FROM THE NEW YORK GIS CLEARINGHOUSE, STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, DATED SEPTEMBER 2017.
2. PARCEL DATA OBTAINED FROM NEW YORK GIS CLEARINGHOUSE, DIGITAL MAPS DATABASE, NYS STATEWIDE 2021 PARCEL LAYER, PUBLISHED OCTOBER 2022.
3. LIMITS OF LAYDOWN AREA PROVIDED BY TRANSMISSION DEVELOPERS INC. IN SEPTEMBER 2022.



			 02-22-2023	REFERENCE DRAWINGS		REVISIONS						DRAWING APPROVALS		 NEW YORK REGISTER NO. 0010187 SCALE PLAN: 	TOMKINS COVE LAYDOWN AREA PLAN			
				DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR	DRAWN	DATE					
						1	RESPONSE TO NYS COMMENTS	02/22/2023	MMO	GJR	KCB							



USER: D:\WORK\NAME



DRAWING APPROVALS	
DRAWN	DATE
AWF	09/14/22
CHECKED	DATE
GJR	11/29/22
ENGINEER	DATE
KCB	11/29/22

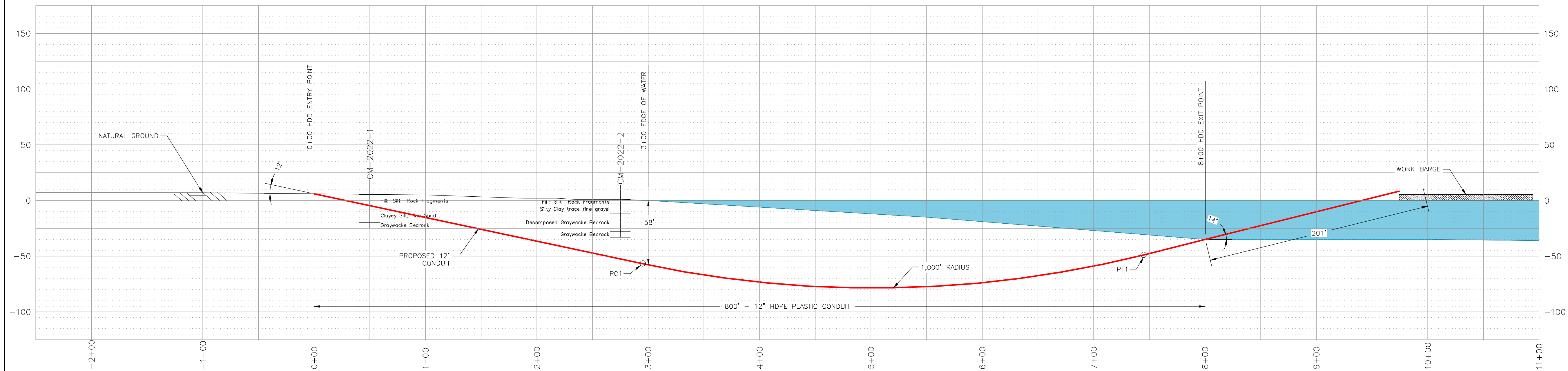


FIRM REGISTRATION NO.:
NY 0010187

<p align="center">CEMENTON HDD 1</p> <p align="center">PLAN AND PROFILE</p>			
SCALE	PROJECT NO.	DRAWING NO.	SHT. NO.
1"=50'	496182	HDD-008	10

PLAN

PROFILE



<p style="text-align: center;">CEMENTON HDD 2 PLAN AND PROFILE</p>			
SCALE	PROJECT NO.	DRAWING NO.	SHT. NO.
1"=50'	496182	HDD-009	11

NY DEC 16-2022 (24x36)

PROPOSED WORK NOTES:

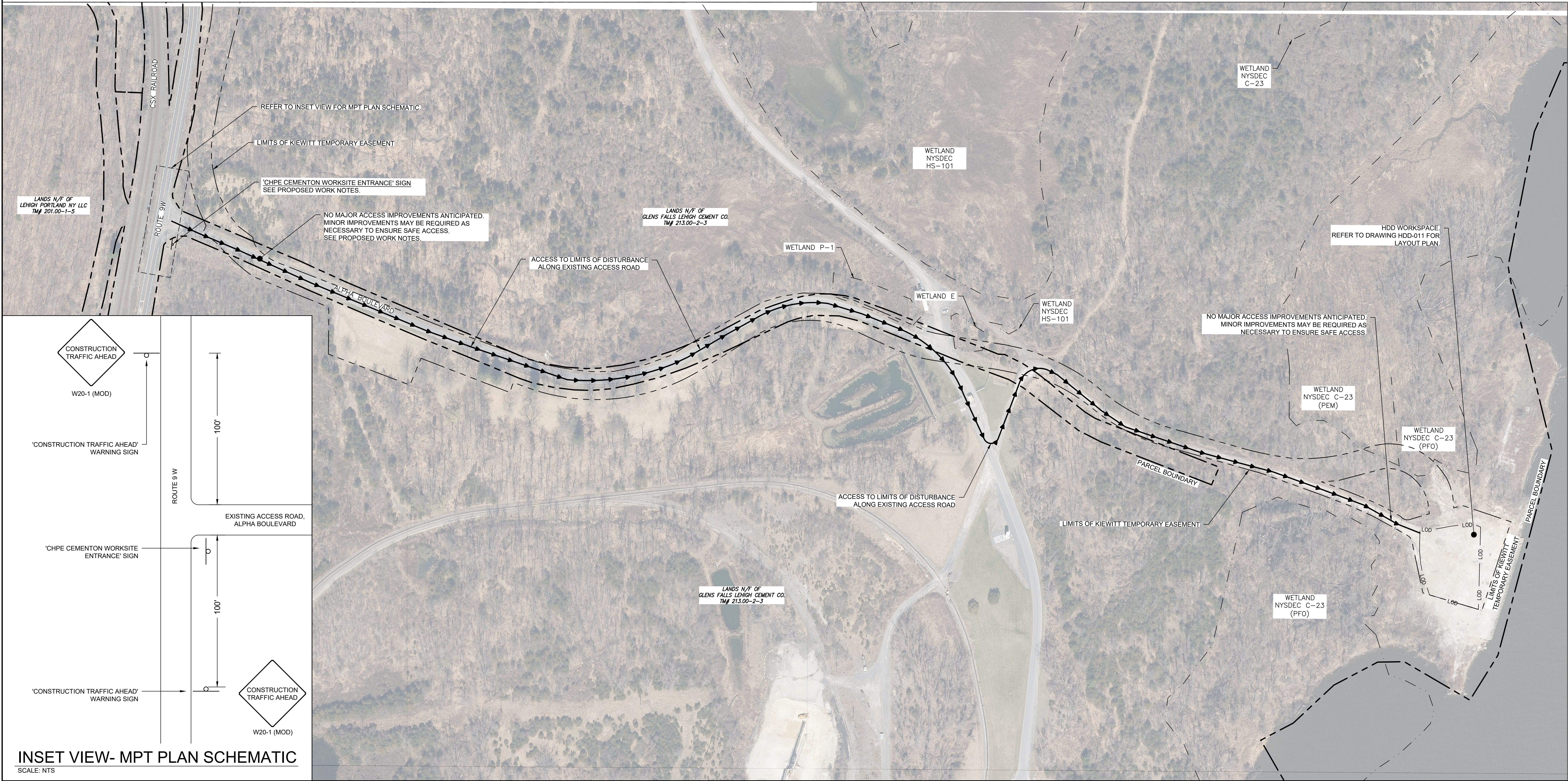
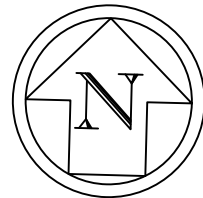
1. THE EXISTING ACCESS ROAD IS ANTICIPATED TO SUPPORT HDD CONSTRUCTION OPERATIONS IN IT'S CURRENT CONDITION. MINOR ACCESS SURFACE IMPROVEMENTS AND INSTALLATION OF ADDITIONAL EROSION CONTROLS WILL BE IMPLEMENTED AS NECESSARY TO PREVENT SEDIMENT-LADEN RUNOFF FROM FLOWING OUTSIDE OF THE LIMITS OF DISTURBANCE.
2. MPT PLAN:

2.1. TEMPORARY 'CONSTRUCTION TRAFFIC AHEAD' WARNING SIGNS WILL BE INSTALLED 100- FEET FROM THE EXISTING ACCESS VIA ALPHA BOULEVARD TO GLENS FALL LEHIGH CEMENT CO PROPERTY ON BOTH ROUTE 9W APPROACHES. FINAL SIGN TEXT AND LOCATIONS TO BE COORDINATED WITH AND APPROVED BY THE LAND OWNERS AND CERTIFICATE HOLDERS.

2.2. THE CONTRACTOR SHALL PROVIDE A FLAGGER DURING HEAVY EQUIPMENT DELIVERY TO THE HDD WORKSITE IN ACCORDANCE WITH CHAPTER 6E, FLAGGER CONTROL, OF THE 2009 NUTCD, REVISION 3 DATED JULY 2022.




REFERENCE NOTES:

1. AERIAL PHOTOGRAPHY OBTAINED FROM THE NEW YORK GIS CLEARINGHOUSE, STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, DATED SEPTEMBER 2017.
2. PARCEL DATA OBTAINED FROM NEW YORK GIS CLEARINGHOUSE, DIGITAL MAPS DATABASE, NYS STATEWIDE 2021 PARCEL LAYER, PUBLISHED OCTOBER 2022.
3. WETLANDS DELINEATED IN THE FIELD BY CHA AND SUPPLEMENTED WITH NYSDEC FRESHWATER WETLANDS GIS DATA.



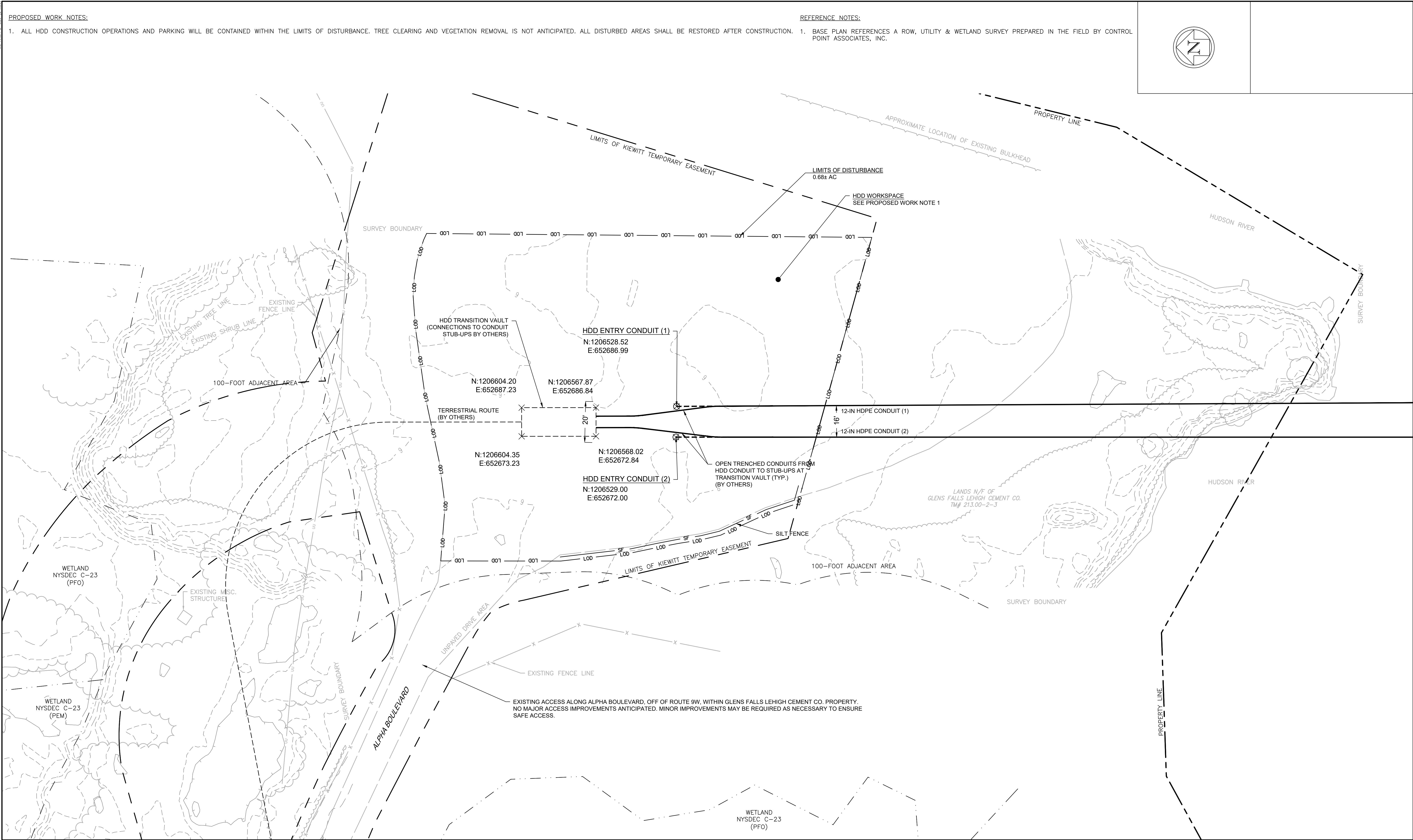
INSET VIEW- MPT PLAN SCHEMATIC




SCALE: NTS

						REFERENCE DRAWINGS		REVISIONS							DRAWING APPROVALS		 <div>NEW YORK STATE REGISTRATION NO.: NY 0010187</div> <div>SCALE PLAN: </div>		<div>CEMENTON HDD</div> <div>MPT AND ACCESS ROAD PLAN</div>								
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																ENGINEER			DATE								
																KCB			11/29/2022								

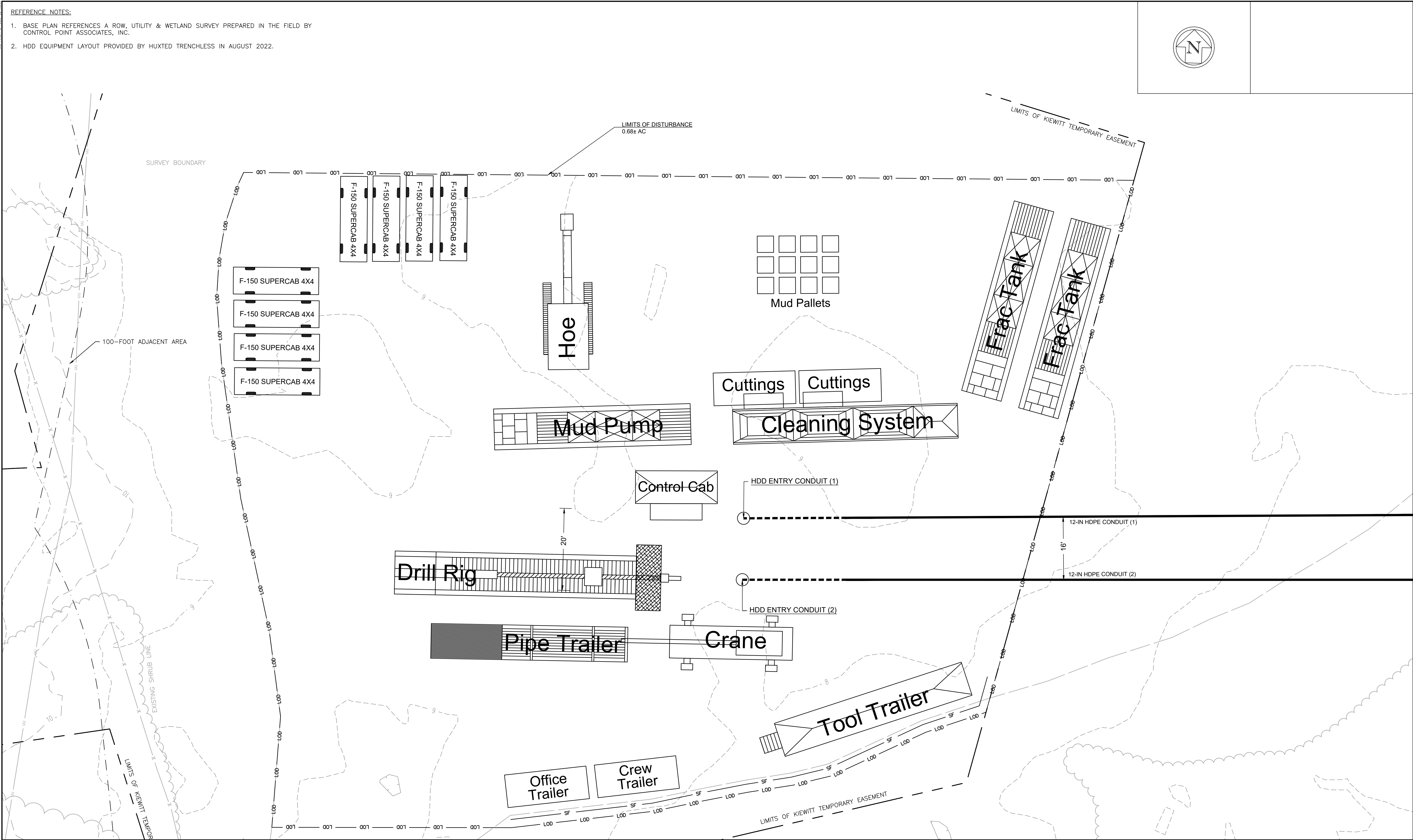





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DATE: 02-22-2023



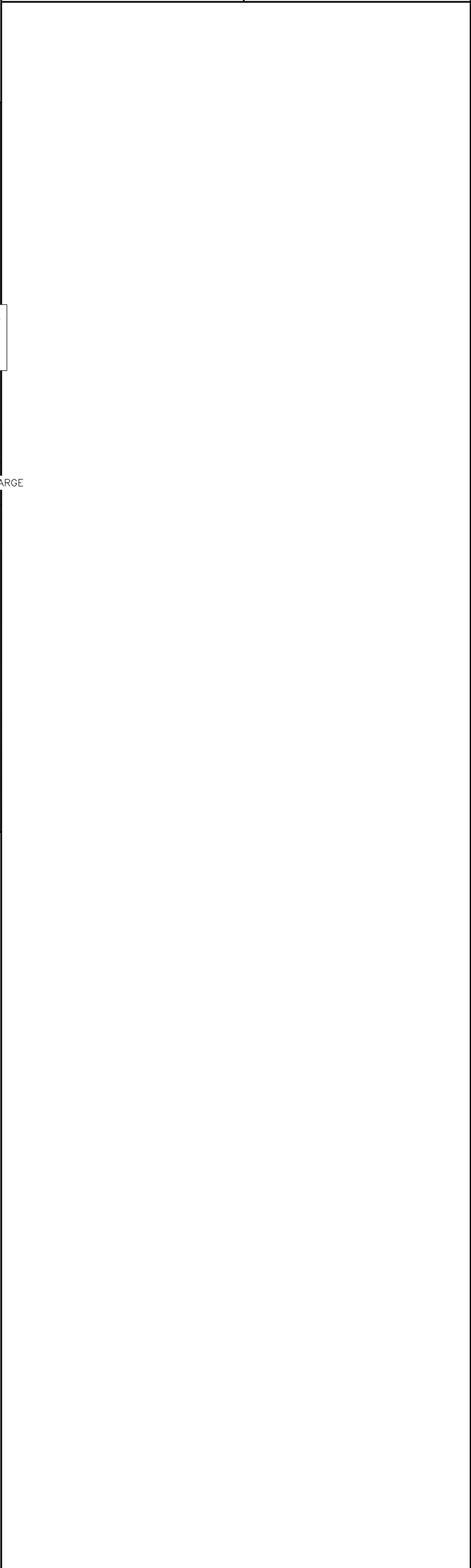
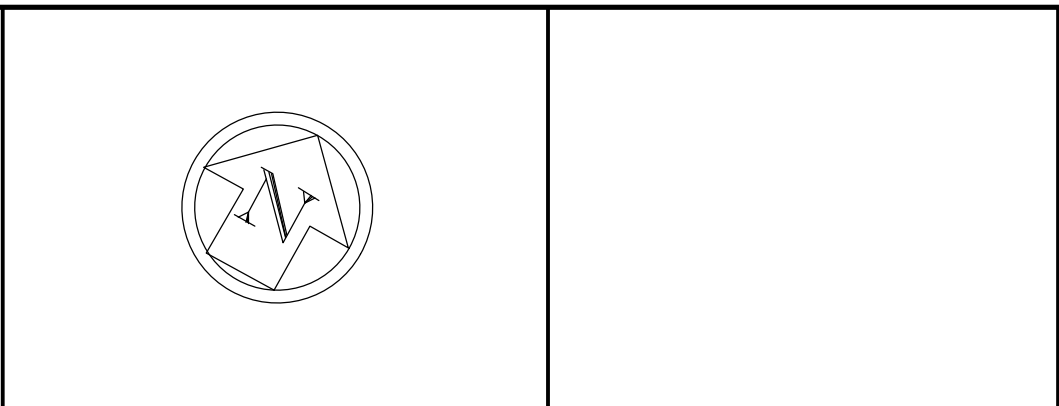
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					DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR	DRAWN	DATE							
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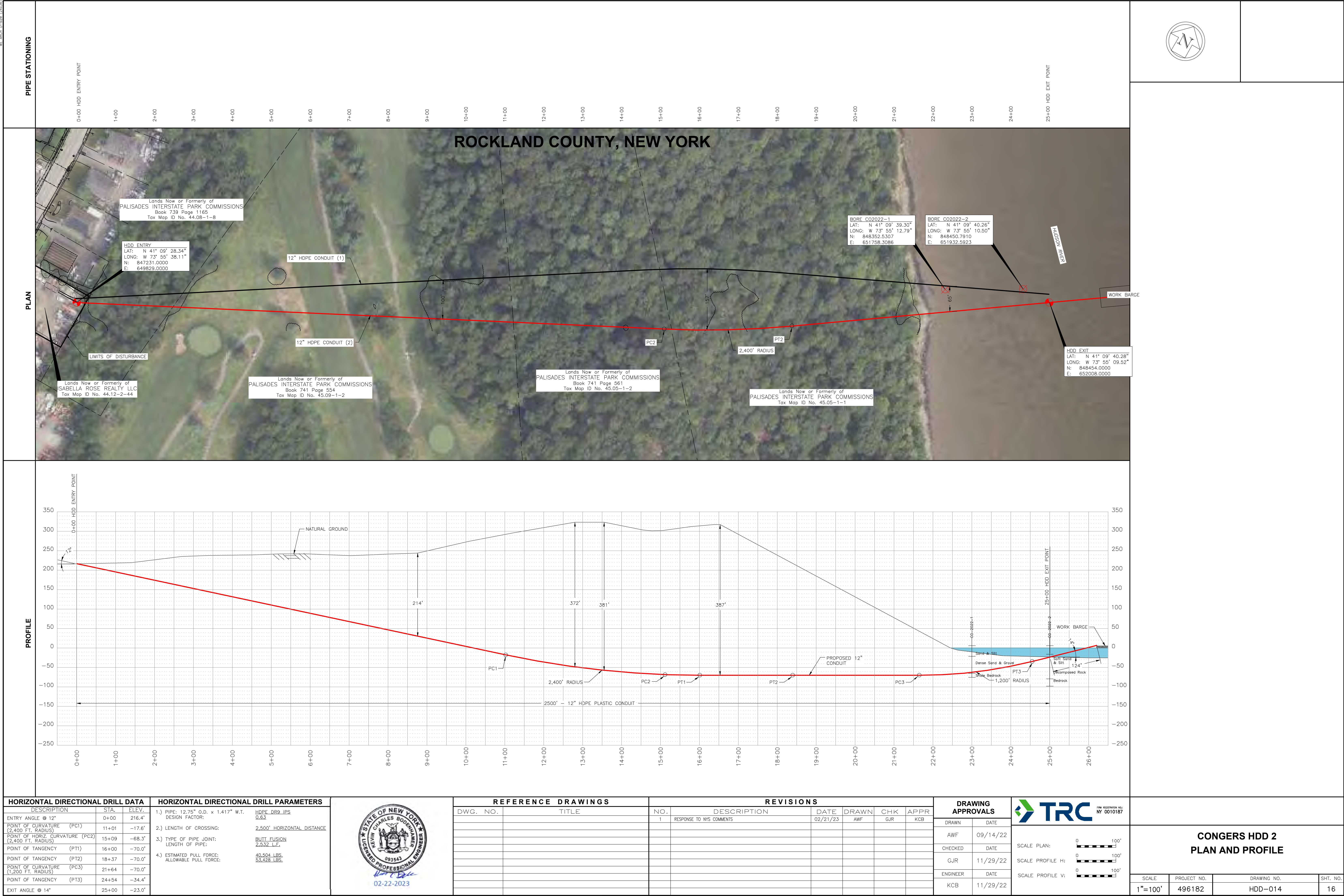
				REFERENCE DRAWINGS		REVISIONS						DRAWING APPROVALS		 <div>TRC</div> <div>SCALE PLAN: </div>	CEMENTON HDD EQUIPMENT LAYOUT PLAN					
				DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR	DRAWN	DATE							
						1	RESPONSE TO NYS COMMENTS	02/22/2023		MMO	GJR	KCB	MMO						11/1/2022	
													CHECKED						DATE	
													GJR						11/7/2022	
													ENGINEER		DATE					
													KCB		11/29/2022					
																	SCALE	PROJECT NO.	DRAWING NO.	SHT.NO.
																	1"=10'	496182	HDD-012	14





<h1 style="margin: 0;">CONGRERS HDD 1</h1> <h2 style="margin: 0;">PLAN AND PROFILE</h2>			
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1"=100'	496182	HDD-013	15

NY 2023-12-01 10:00 AM

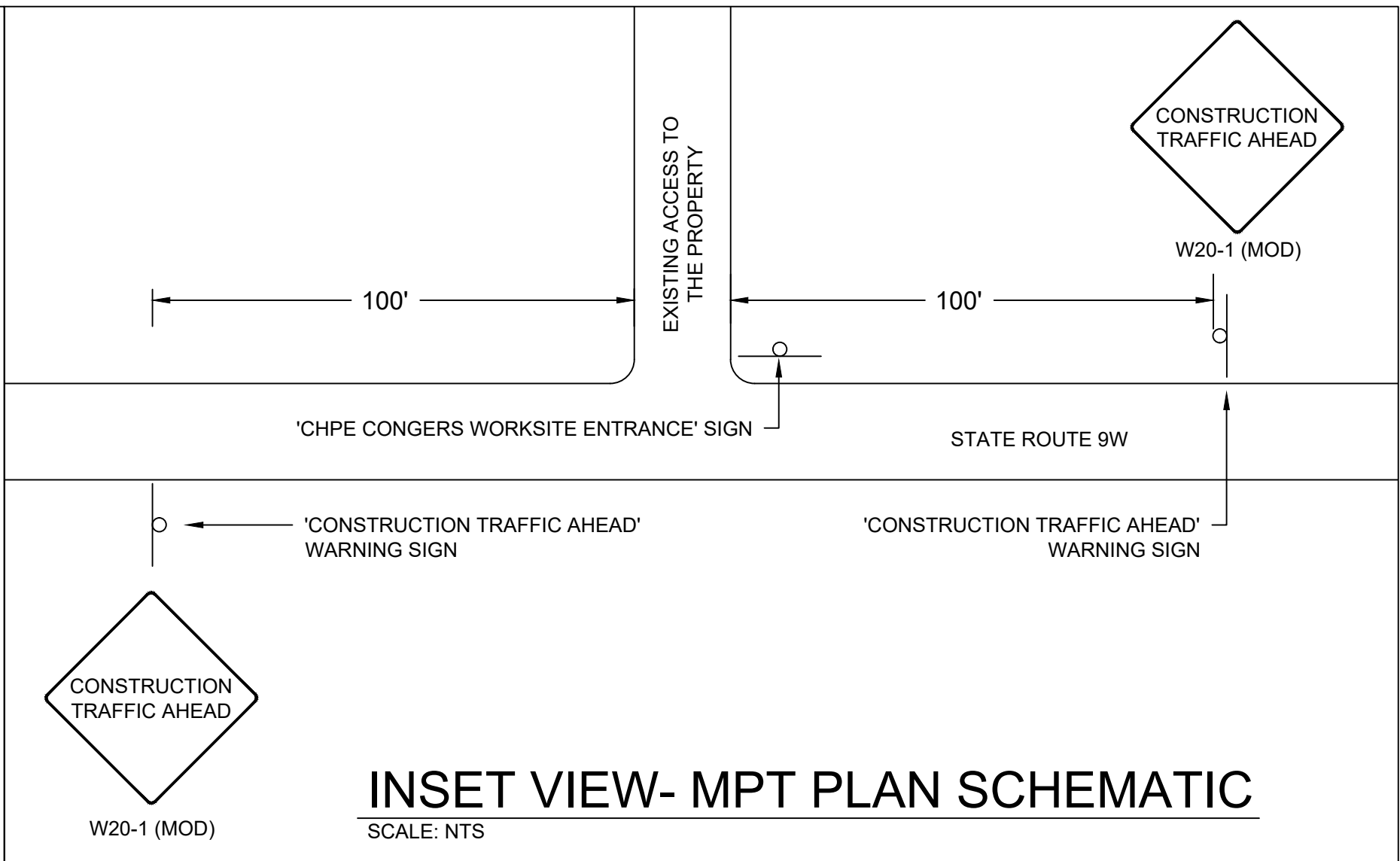
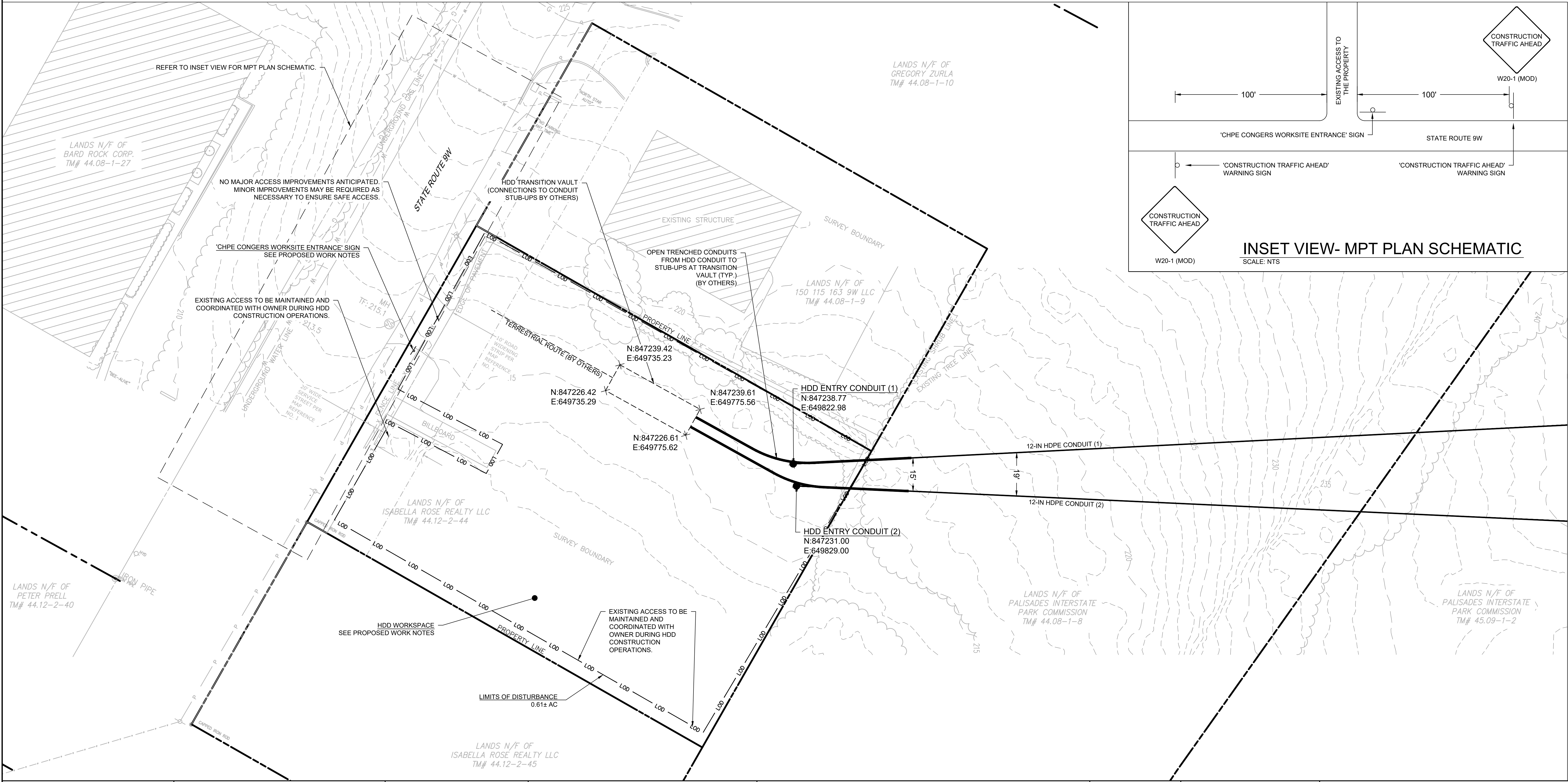
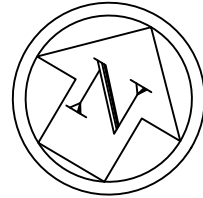





PROPOSED WORK NOTES:

1. ALL HDD CONSTRUCTION OPERATIONS, LAYDOWN, AND PARKING WILL BE CONTAINED WITHIN THE LIMITS OF DISTURBANCE. TREE CLEARING IS NOT ANTICIPATED. VEGETATION REMOVAL IS ANTICIPATED TO BE LIMITED TO PRUNING OF LIMBS AND TRIMMING OF UNDERGROWTH ALONG THE PERIMETER OF THE HDD WORKSPACE, NO HERBICIDE USE IS PERMITTED. ALL DISTURBED AREAS SHALL BE RESTORED AND RE-VEGETATED AFTER CONSTRUCTION.
2. THE EXISTING ACCESS TO THE PROPERTY SHALL SUPPORT HDD CONSTRUCTION OPERATIONS AND PREVENT SEDIMENT-LADEN RUNOFF TO FLOW OUTSIDE OF THE LIMITS OF DISTURBANCE. THE EXTENT OF THE TEMPORARY CONSTRUCTION AREA WILL BE COORDINATED WITH THE LAND OWNER, ISABELLA ROSE REALTY LLC.
3. MPT PLAN:
- 3.1. TEMPORARY 'CONSTRUCTION TRAFFIC AHEAD' WARNING SIGNS WILL BE INSTALLED IN THE SHOULDER OF ROUTE 9W 100--FEET FROM THE EXISTING ACCESS TO ISABELLA ROSE REALTY PROPERTY ON BOTH STATE ROUTE 9W APPROACHES. FINAL SIGN TEXT AND LOCATIONS TO BE COORDINATED WITH AND APPROVED BY THE LAND OWNERS AND CERTIFICATE HOLDERS.
- 3.2. THE CONTRACTOR SHALL PROVIDE A FLAGGER DURING HEAVY EQUIPMENT DELIVERY TO THE HDD WORKSITE IN ACCORDANCE WITH CHAPTER 6E, FLAGGER CONTROL, OF THE 2009 MUTCD, REVISION 3 DATED JULY 2022.

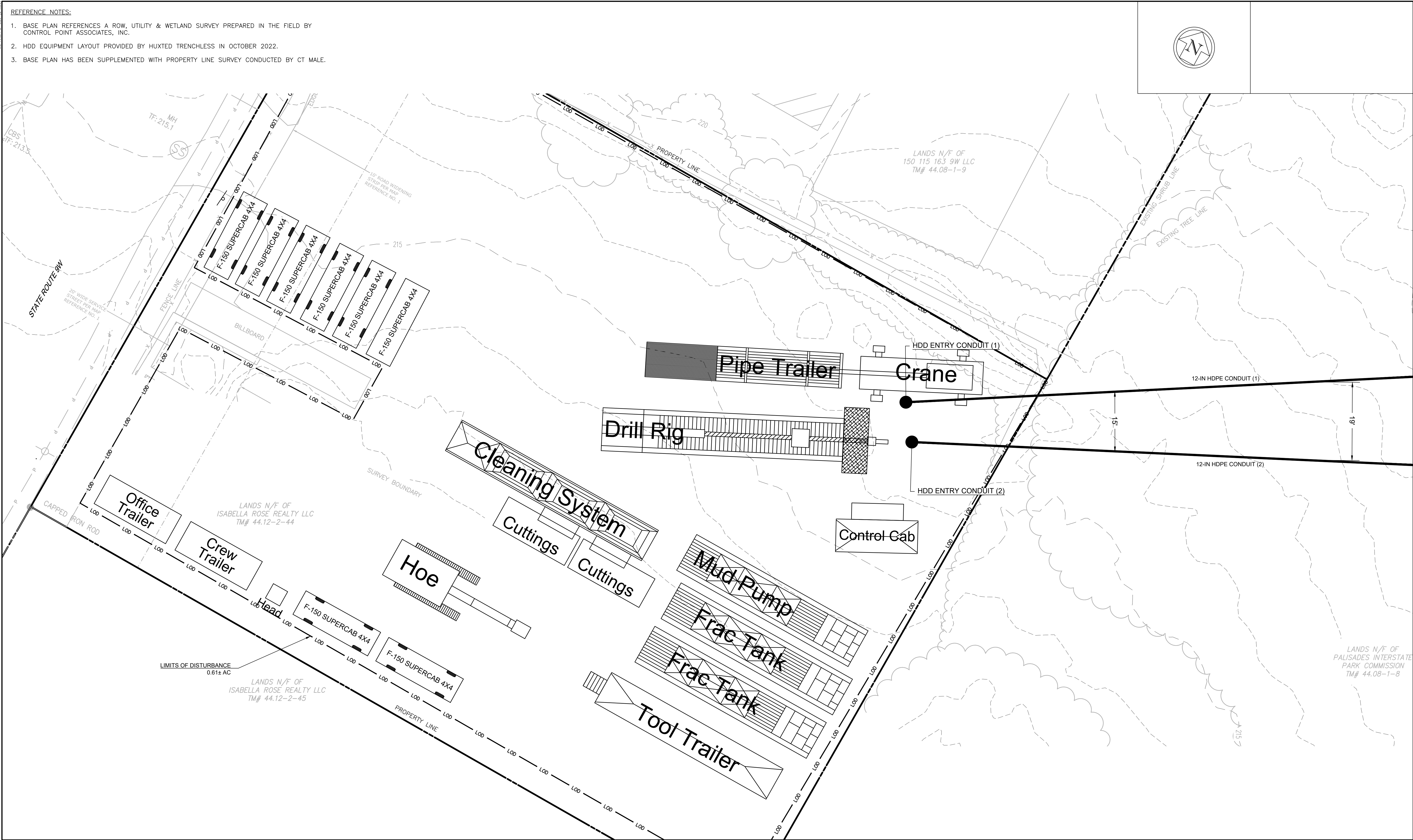
REFERENCE NOTES:




1. BASE PLAN REFERENCES A ROW, UTILITY & WETLAND SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC.
2. BASE PLAN HAS BEEN SUPPLEMENTED WITH INFORMATION PROVIDED BY CALDWELL MARINE INC AND NEW YORK GIS CLEARING HOUSE.
3. BASE PLAN HAS BEEN SUPPLEMENTED WITH PROPERTY LINE SURVEY CONDUCTED BY CT MALE.



				REFERENCE DRAWINGS		REVISIONS						DRAWING APPROVALS		 <div>NEW YORK REGISTER NO. NY 0010187</div> <div>SCALE PLAN: </div>	CONGERS HDD MPT AND LAYOUT PLAN						
					DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR.	DRAWN						DATE		
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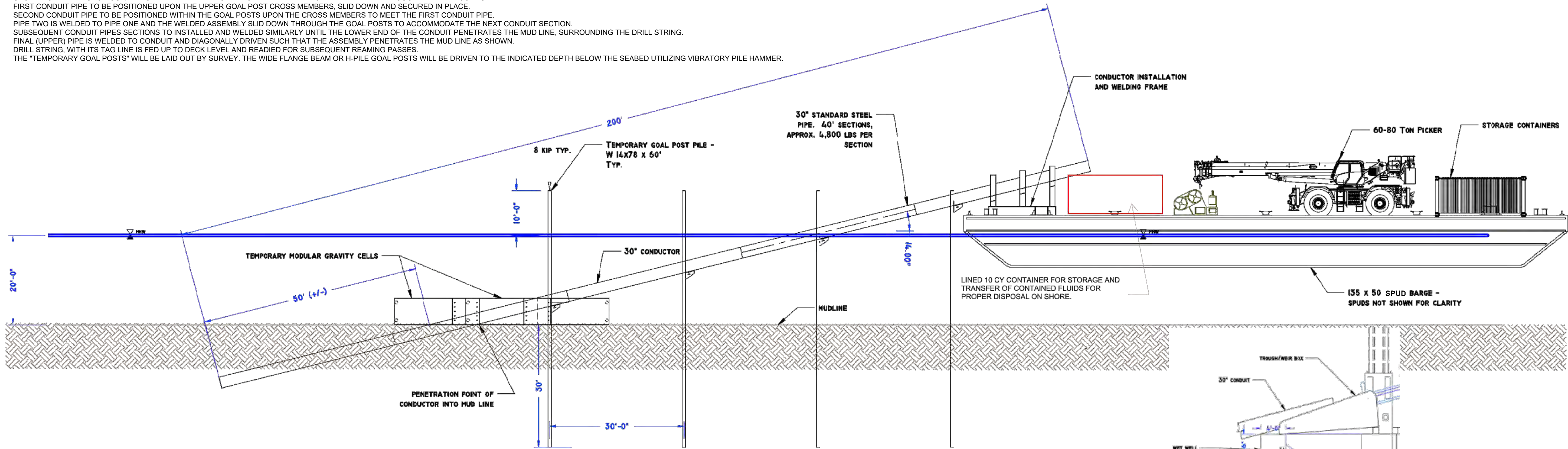




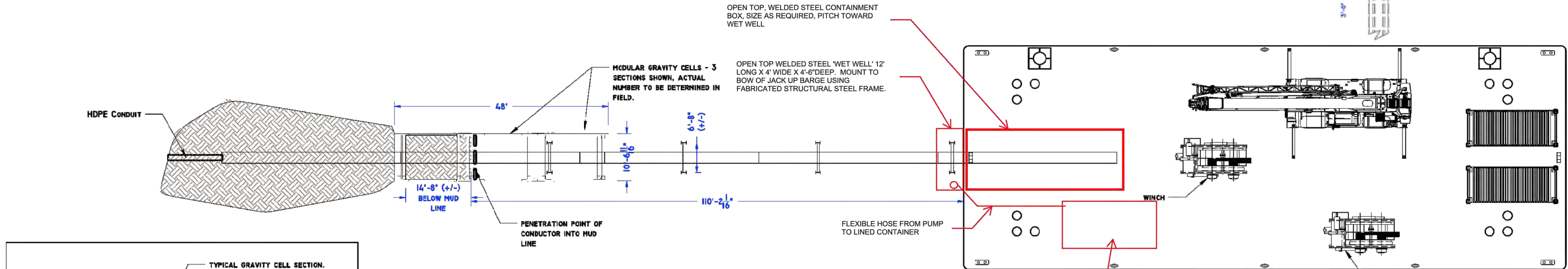
				REFERENCE DRAWINGS		REVISIONS						DRAWING APPROVALS		 <div>TRC</div> <div>SCALE PLAN: </div>	CONGERS HDD EQUIPMENT LAYOUT PLAN								
				DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR	DRAWN	DATE						SCALE	PROJECT NO.	DRAWING NO.	SHT.NO.	
						1	RESPONSE TO NYS COMMENTS	02/22/2023		MMO	GJR	KCB											

INSTALLATION NOTES:

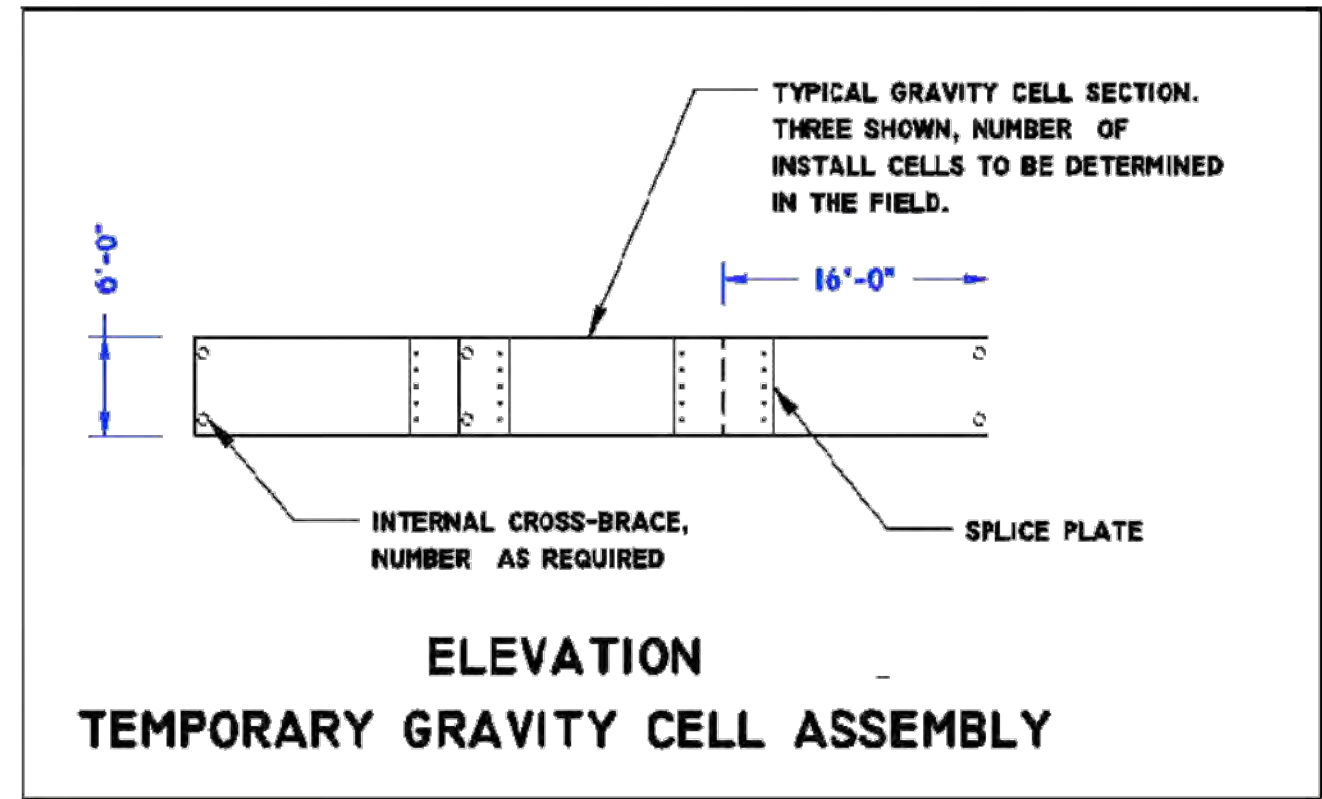
1. GRAVITY CELL TO BE PLACED AT MUD LINE TO ENCOMPASS PILOT HOLE PUNCH-OUT LOCATION.
2. PILOT HOLE TO BE DRILLED FROM SHORE TO IN-RIVER PUNCH-OUT LOCATION.
3. PIN PILES TO BE DRIVEN SIMULTANEOUS TO PILOT HOLE DRILLING OPERATION.
4. CONDUIT CROSS SUPPORTS TO BE INSTALLED AT EACH PILE BENT AT CORRECT ELEVATIONS TO ENSURE 14-DEGREE VERTICAL ANGLE.
5. UPON PILOT DRILL PUNCH-OUT, A TAG LINE WILL BE ATTACHED TO THE DRILL STRING AND THREADED THROUGH THE FIRST CONDUIT PIPE.
6. FIRST CONDUIT PIPE TO BE POSITIONED UPON THE UPPER GOAL POST CROSS MEMBERS, SLID DOWN AND SECURED IN PLACE.
7. SECOND CONDUIT PIPE TO BE POSITIONED WITHIN THE GOAL POSTS UPON THE CROSS MEMBERS TO MEET THE FIRST CONDUIT PIPE.
8. PIPE TWO IS WELDED TO PIPE ONE AND THE WELDED ASSEMBLY SLID DOWN THROUGH THE GOAL POSTS TO ACCOMMODATE THE NEXT CONDUIT SECTION.
9. SUBSEQUENT CONDUIT PIPES SECTIONS TO BE INSTALLED AND WELDED SIMILARLY UNTIL THE LOWER END OF THE CONDUIT PENETRATES THE MUD LINE, SURROUNDING THE DRILL STRING.
10. FINAL (UPPER) PIPE IS WELDED TO CONDUIT AND DIAGONALLY DRIVEN SUCH THAT THE ASSEMBLY PENETRATES THE MUD LINE AS SHOWN.
11. DRILL STRING, WITH ITS TAG LINE IS FED UP TO DECK LEVEL AND READIED FOR SUBSEQUENT REAMING PASSES.
12. THE "TEMPORARY GOAL POSTS" WILL BE LAID OUT BY SURVEY. THE WIDE FLANGE BEAM OR H-PILE GOAL POSTS WILL BE DRIVEN TO THE INDICATED DEPTH BELOW THE SEABED UTILIZING VIBRATORY PILE HAMMER.



PROFILE
30" CONDUCTOR PIPE AND SUPPORTS



PLAN VIEW
30" CONDUCTOR PIPE AND SUPPORTS



ELEVATION
TEMPORARY GRAVITY CELL ASSEMBLY

NOTE:

CONDUCTOR PIPE/GOAL POST/GRAVITY CELL INSTALLATION INFORMATION SHOWN HEREIN PROVIDED BY CALDWELL MARINE IN NOVEMBER 2022



REFERENCE DRAWINGS

DWG. NO.	TITLE
HDD-002	PUTNAM STATION 12" HDPE CONDUIT (1)
HDD-003	PUTNAM STATION 12" HDPE CONDUIT (2)
HDD-008	CEMENTON 12" HDPE CONDUIT (1)
HDD-009	CEMENTON 12" HDPE CONDUIT (2)

REVISIONS

NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR

DRAWING APPROVALS

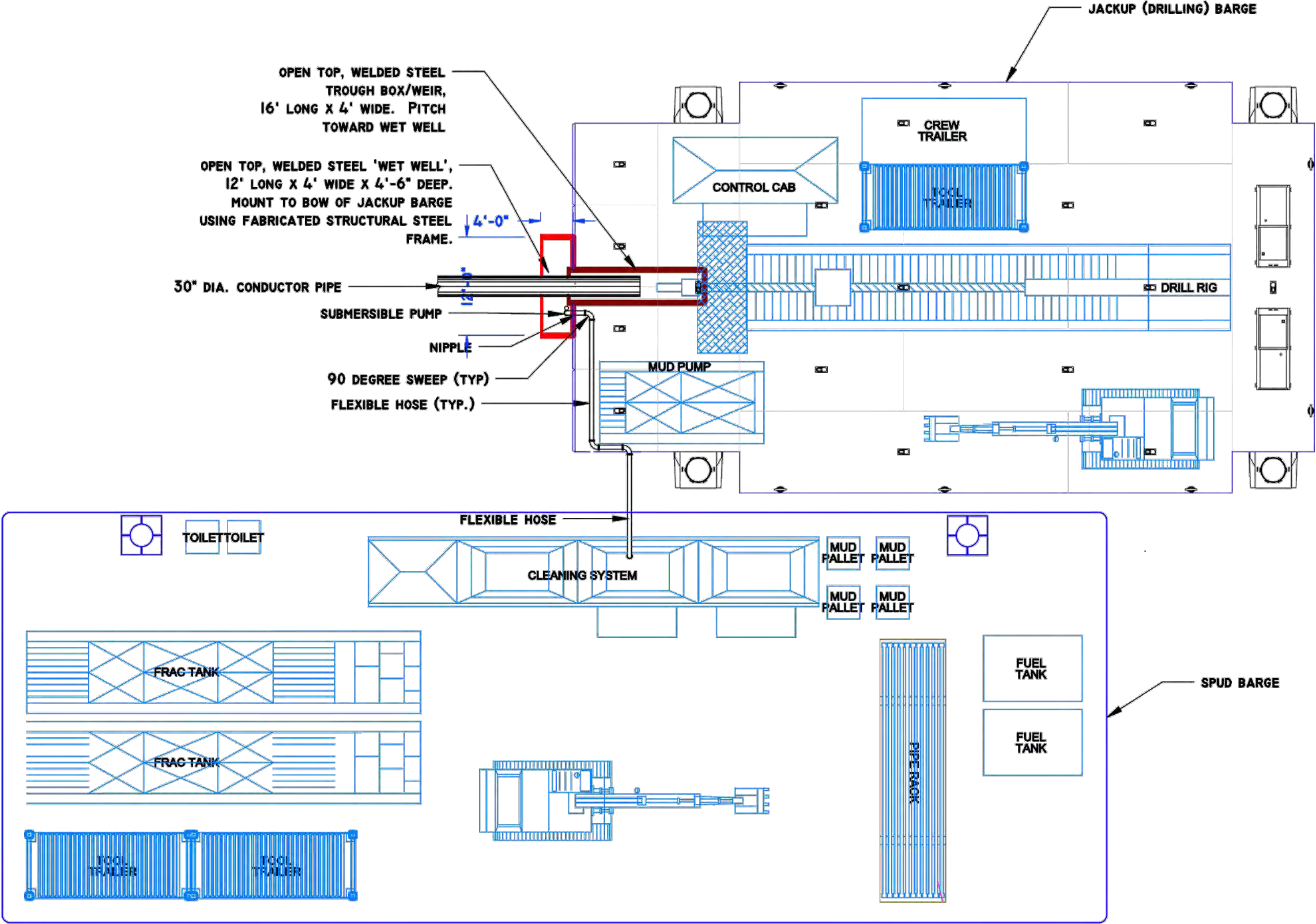
DRAWN	DATE
AWF	06/28/22
CHECKED	DATE
GJR	11/29/22
ENGINEER	DATE
KCB	11/29/22



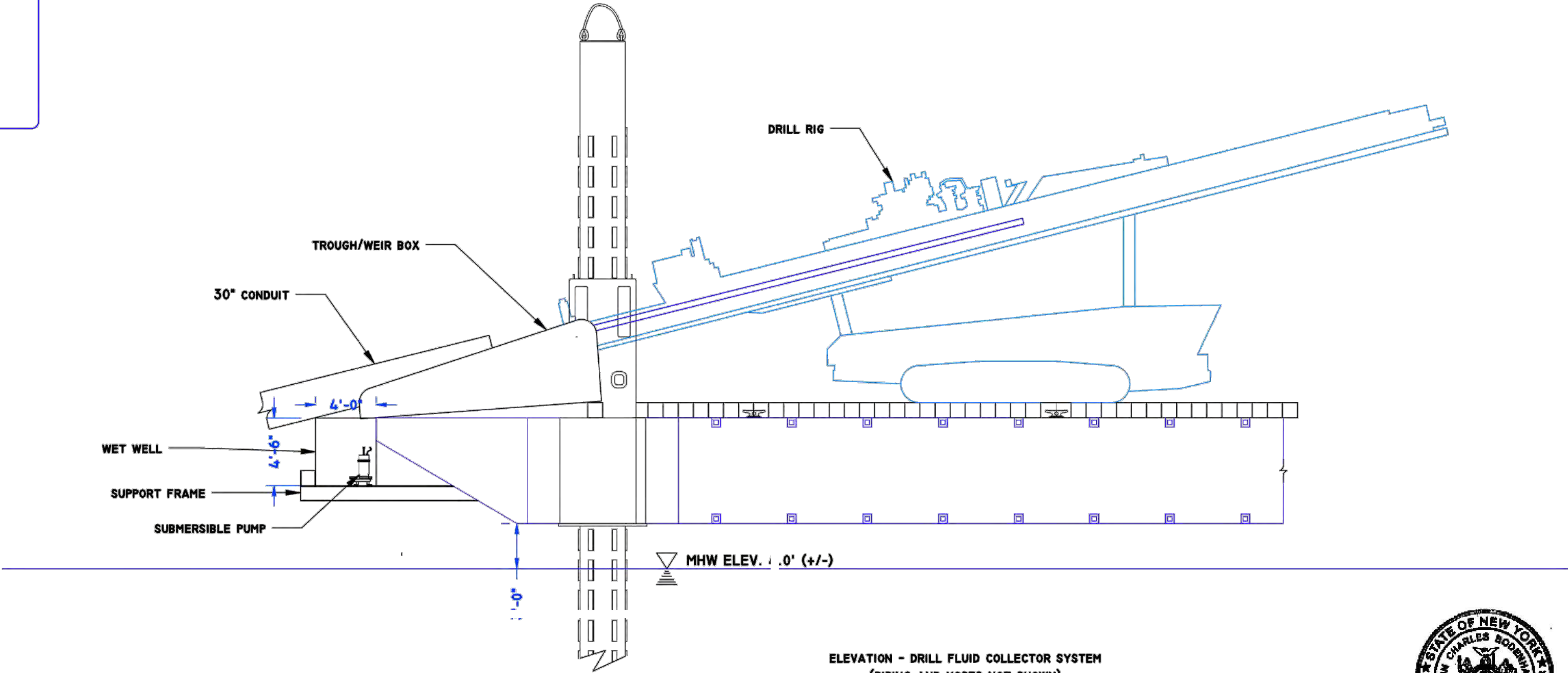
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SCALE PROFILE H: 0' N.T.S.
SCALE PROFILE V: 0' N.T.S.

PUTNAM STATION & CEMENTON
CONDUCTOR PIPE/GOAL POST/
GRAVITY CELL INSTALLATION

SCALE	PROJECT NO.	DRAWING NO.	SHT. NO.
N.T.S.	496182	HDD-017	19

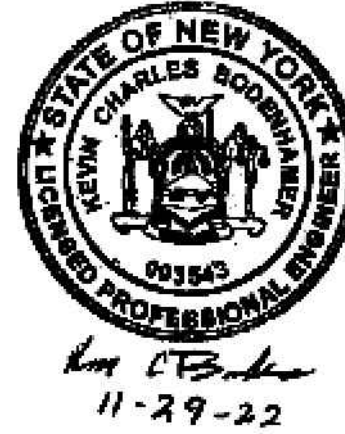



PLAN VIEW
DRILL FLUID COLLECTION SYSTEM
INSTALLED ON JACKUP DRILL BARGE



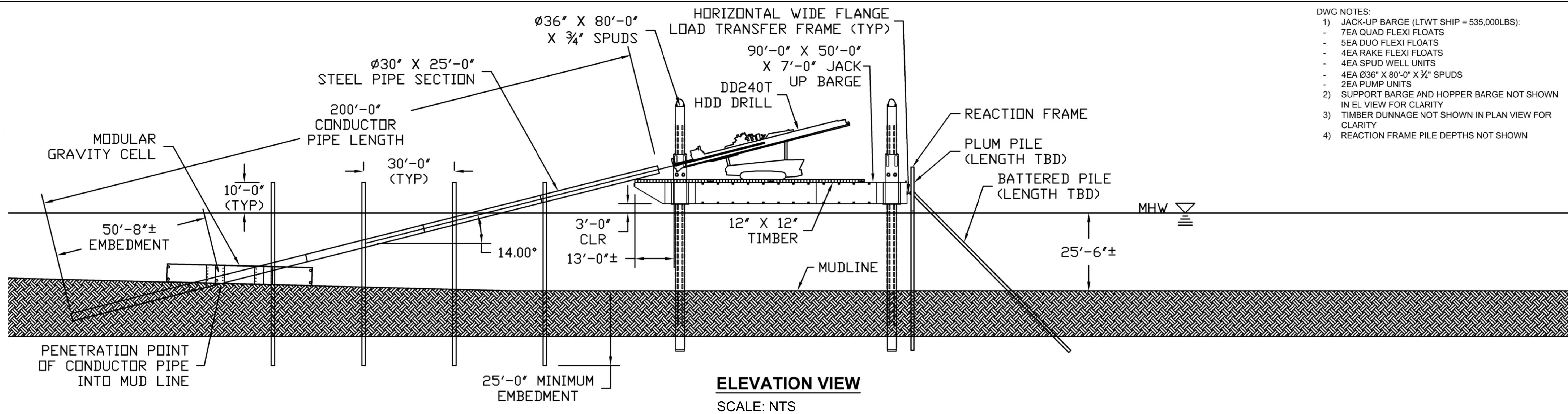
ELEVATION - DRILL FLUID COLLECTOR SYSTEM
(PIPING AND HOSES NOT SHOWN)
N.T.S.

NOTE:
CONDUCTOR PIPE/GOAL POST/GRAVITY CELL INSTALLATION INFORMATION
SHOWN HEREIN PROVIDED BY CALDWELL MARINE IN NOVEMBER 2022

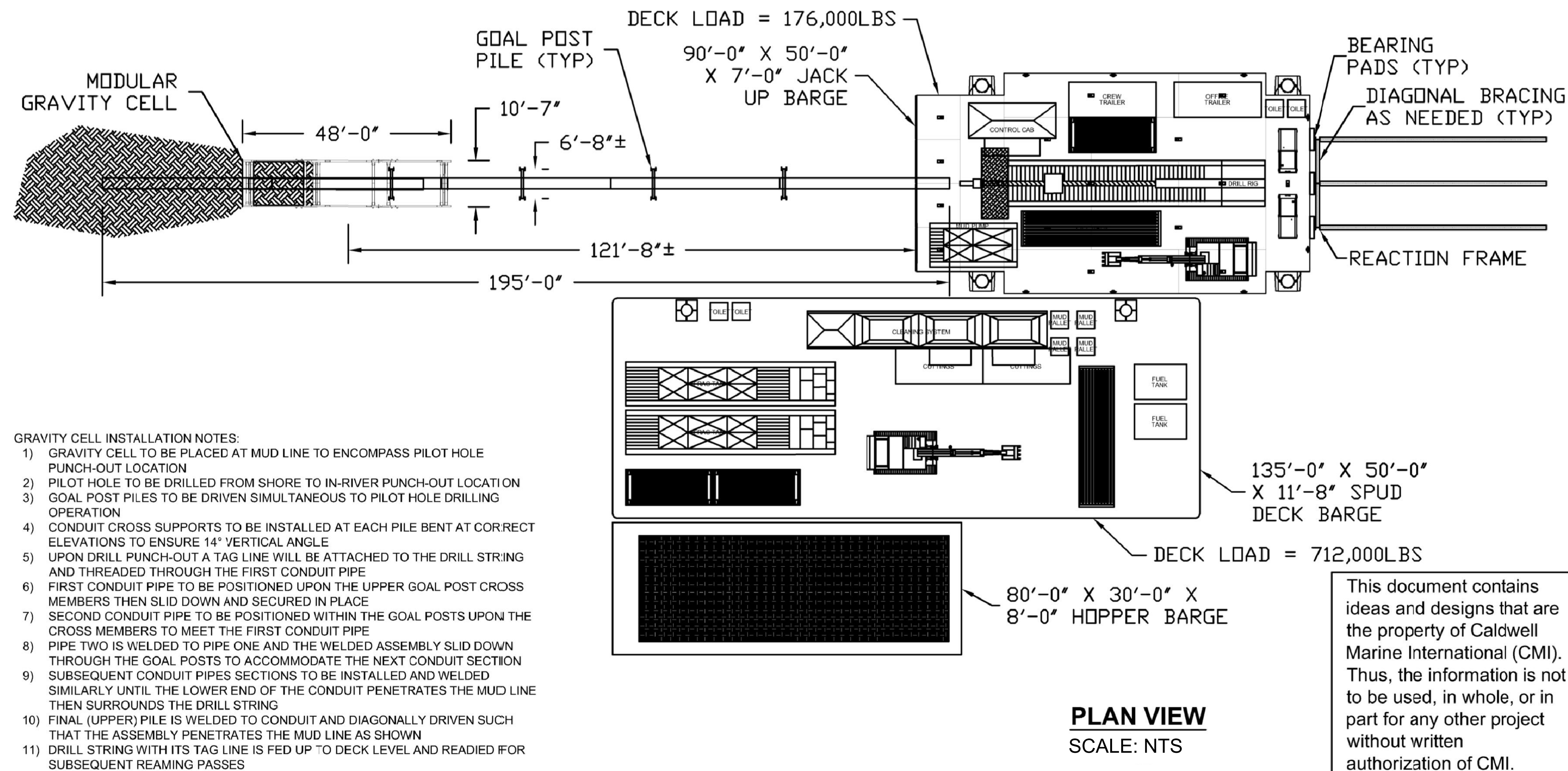


REFERENCE DRAWINGS			REVISIONS					DRAWING APPROVALS		 <div>SCALE PLAN: 0' = 1" N.T.S. SCALE PROFILE H: 0' = 1" N.T.S. SCALE PROFILE V: 0' = 1" N.T.S.</div>	CONGERS CONDUCTOR PIPE/GOAL POST/ GRAVITY CELL INSTALLATION			
DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR	DRAWN	DATE		SCALE	PROJECT NO.	DRAWING NO.	SHT. NO.
HDD-013	CONGERS HDD 1 PLAN AND PROFILE							AWF	06/28/22		N.T.S.	496182	HDD-018	20
HDD-014	CONGERS HDD 2 PLAN AND PROFILE							CHECKED	DATE					
								GJR	11/29/22					
								ENGINEER	DATE					
								KCB	11/29/22					

NY 0010187



- DWG NOTES:
- JACK-UP BARGE (LTWT SHIP = 535,000LBS):
 - 7EA QUAD FLEXI FLOATS
 - 5EA DUO FLEXI FLOATS
 - 4EA RAKE FLEXI FLOATS
 - 4EA SPUD WELL UNITS
 - 4EA Ø36" X 80'-0" X ¾" SPUDS
 - 2EA PUMP UNITS
 - SUPPORT BARGE AND HOPPER BARGE NOT SHOWN IN EL VIEW FOR CLARITY
 - TIMBER DUNNAGE NOT SHOWN IN PLAN VIEW FOR CLARITY
 - REACTION FRAME PILE DEPTHS NOT SHOWN



- GENERAL NOTES:
- DRILL RIG TO MAINTAIN A 14° DRILL ANGLE
 - CONGERS HDD LOCATION WILL BE DRILLED FROM BOTH LAND AND WATER SIDE
 - ANALYSIS TO BE PERFORMED ON LOAD TRANSFER BEAM AND REACTION FRAME WHERE BEAM SIZES AND DEPTHS WILL BE DETERMINED FOR A MAXIMUM OF A 100,000LB SAFE WORKING LOAD
 - GEOTECHNICAL ANALYSIS TO BE PERFORMED BY A N.Y.S. LICENSED ENGINEER TO DETERMINE ALL REACTION FRAME PLUMB AND BATTER PILE LENGTHS AND TO ENSURE STRUCTURAL CAPABILITIES UNDER THE STATED SAFE WORKING LOADS
 - BARGE STABILITY ANALYSIS AND DRAFT MARKS ARE NOT SHOWN
 - TIDE EL BETWEEN MHW AND MLW CAN DEVIATE UP TO A MAXIMUM OF 6'-0"
 - HOPPER BARGE TO BE TOWED ON AND OFF SITE TO EMPTY MATERIAL FROM INSIDE
- OPERATION SEQUENCE NOTES:
- SPUD BARGE (NOT SHOWN FOR CLARITY) TO INSTALL GRAVITY CELL AND CONDUCTOR PIPE AS PER "GRAVITY CELL INSTALLATION NOTES"
 - SPUD BARGE TO INSTALL REACTION FRAME
 - SPUD BARGE TO BE TOWED AWAY TO ALLOW JACK-UP BARGE TO BE TOWED INTO POSITION
 - JACK-UP BARGE TO BE JACKED UP TO REQUIRED EL DURING HIGH TIDE AND TO SIT OVERNIGHT
 - BEARING PADS TO BE INSTALLED BETWEEN JACK-UP BARGE LOAD TRANSFER FRAME AND REACTION FRAME TO ALLOW THRUST FORCE FROM DRILLING OPERATION (MAXIMUM 100,000LB) TO BE TRANSFERRED TO REACTION FRAME
 - SUPPORT BARGES TO BE TOWED INTO POSITION

- GRAVITY CELL INSTALLATION NOTES:
- GRAVITY CELL TO BE PLACED AT MUD LINE TO ENCOMPASS PILOT HOLE PUNCH-OUT LOCATION
 - PILOT HOLE TO BE DRILLED FROM SHORE TO IN-RIVER PUNCH-OUT LOCATION
 - GOAL POST PILES TO BE DRIVEN SIMULTANEOUS TO PILOT HOLE DRILLING OPERATION
 - CONDUIT CROSS SUPPORTS TO BE INSTALLED AT EACH PILE BENT AT CORRECT ELEVATIONS TO ENSURE 14° VERTICAL ANGLE
 - UPON DRILL PUNCH-OUT A TAG LINE WILL BE ATTACHED TO THE DRILL STRING AND THREADED THROUGH THE FIRST CONDUIT PIPE
 - FIRST CONDUIT PIPE TO BE POSITIONED UPON THE UPPER GOAL POST CROSS MEMBERS THEN SLID DOWN AND SECURED IN PLACE
 - SECOND CONDUIT PIPE TO BE POSITIONED WITHIN THE GOAL POSTS UPON THE CROSS MEMBERS TO MEET THE FIRST CONDUIT PIPE
 - PIPE TWO IS WELDED TO PIPE ONE AND THE WELDED ASSEMBLY SLID DOWN THROUGH THE GOAL POSTS TO ACCOMMODATE THE NEXT CONDUIT SECTION
 - SUBSEQUENT CONDUIT PIPES SECTIONS TO BE INSTALLED AND WELDED SIMILARLY UNTIL THE LOWER END OF THE CONDUIT PENETRATES THE MUD LINE THEN SURROUNDS THE DRILL STRING
 - FINAL (UPPER) PILE IS WELDED TO CONDUIT AND DIAGONALLY DRIVEN SUCH THAT THE ASSEMBLY PENETRATES THE MUD LINE AS SHOWN
 - DRILL STRING WITH ITS TAG LINE IS FED UP TO DECK LEVEL AND READY FOR SUBSEQUENT REAMING PASSES

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REFERENCE DRAWINGS

DWG. NO.	TITLE

REVISIONS

NO.	DESCRIPTION	DATE	DRAWN	CHK	APPR

DRAWING APPROVALS

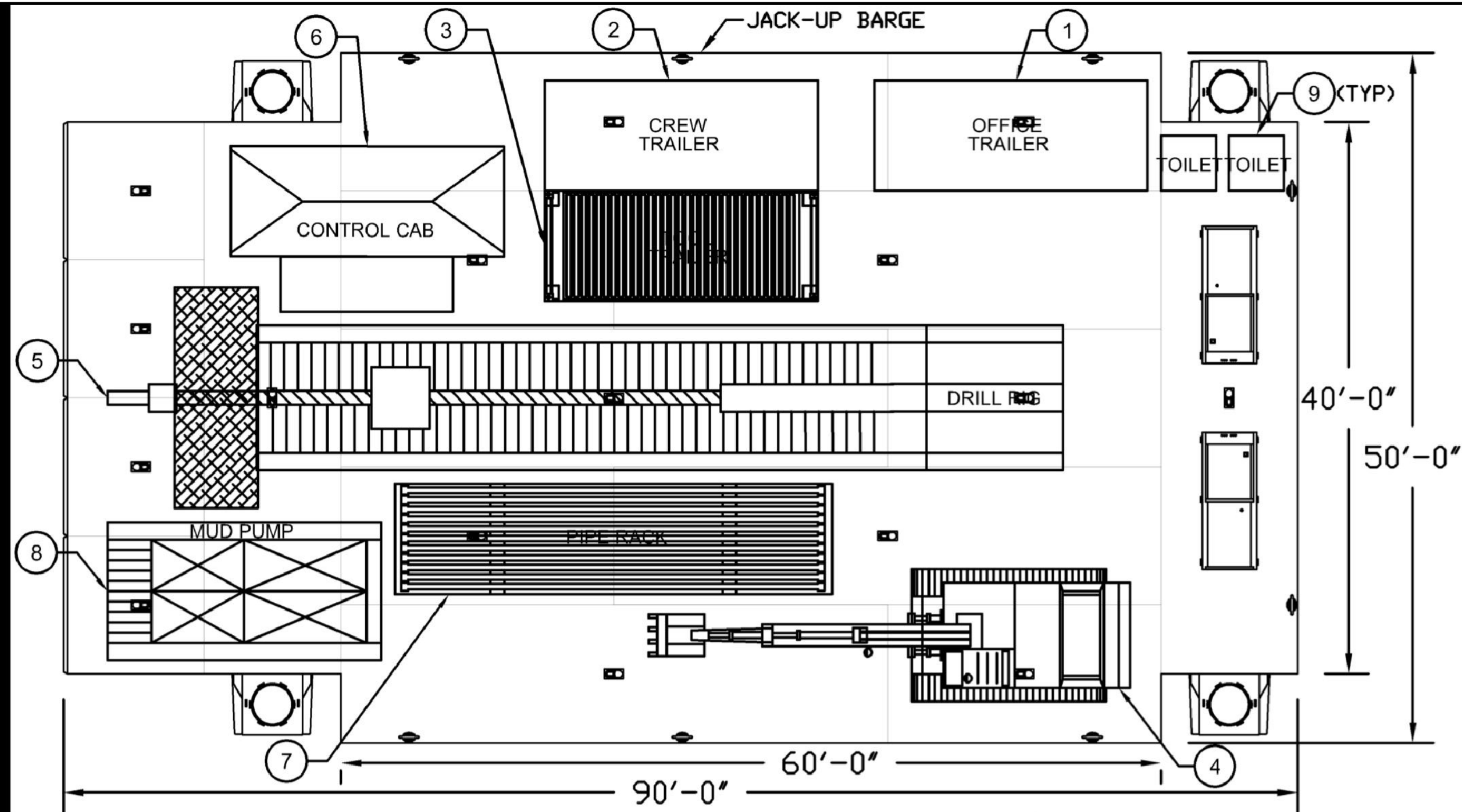
DRAWN	DATE
MMO	2/22/2023
CHECKED	DATE
GJR	2/22/2023
ENGINEER	DATE
KCB	2/22/2023



CONGERS HDD
BARGE ARRANGEMENT

SCALE	PROJECT NO.	DRAWING NO.	SHT. NO.
NTS	496182	HDD-019	21

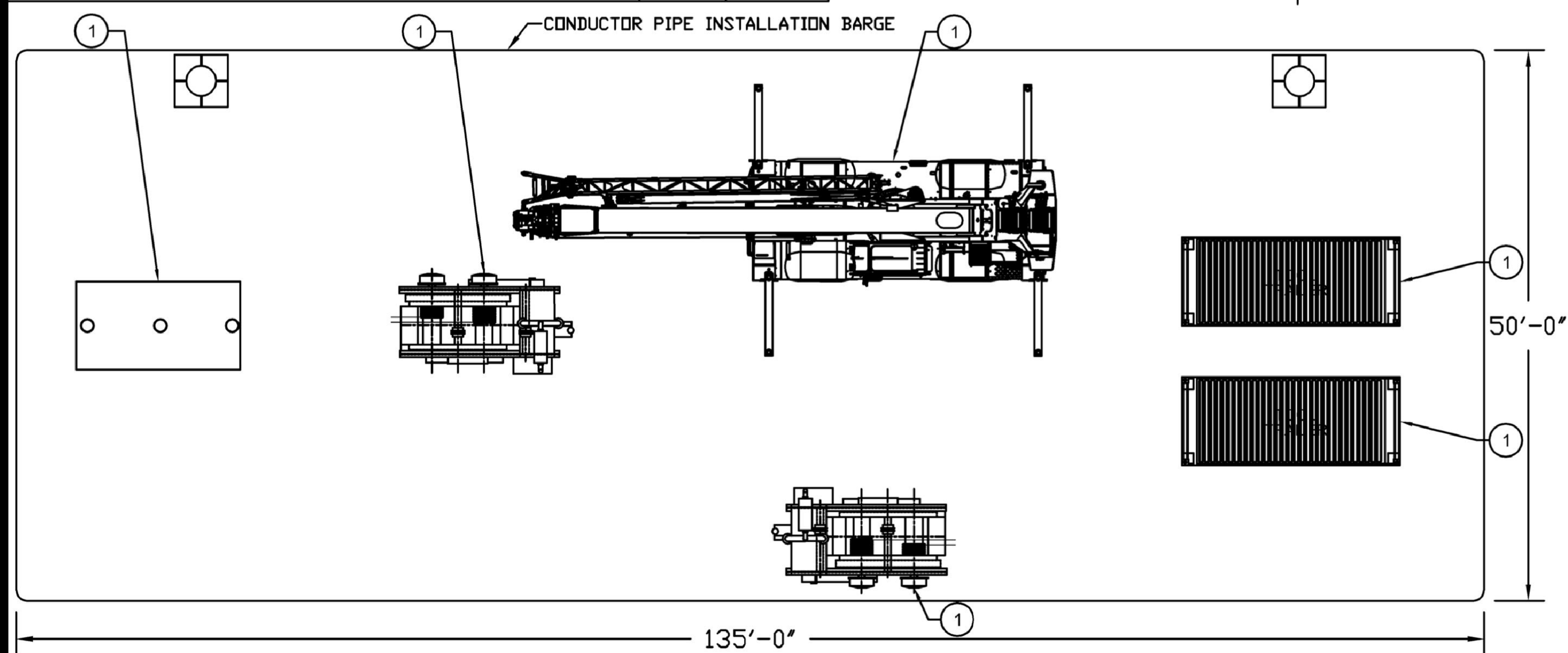
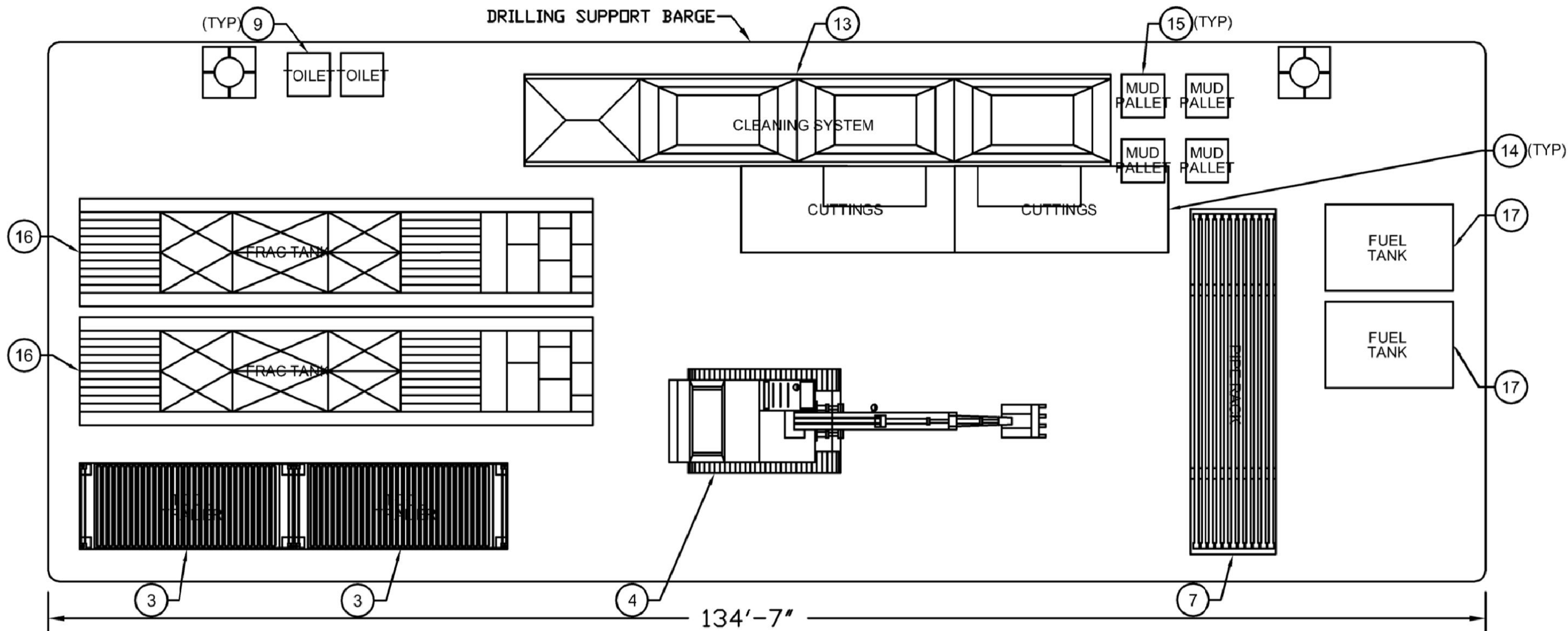
NY 0010187



JACK-UP BARGE COMPONENTS			
DESCRIPTION	QTY	UNIT WT.	TOTAL WT.
QUAD FLEXI FLDAT	7	33000	231000
DUD FLEXI FLDAT	5	18000	90000
RAKE FLEXI FLDAT	4	8400	33600
SPUD WELL UNITS	4	19100	76400
#36" X 80'-0" X 3/4" SPUDS	4	22600	90400
PUMP UNITS	2	6500	13000
MISCELLANEOUS	N/A	N/A	7500
TOTAL WEIGHT	534400		LBS
	2672		TON

BILL OF MATERIALS - JACK-UP BARGE				
ITEM #	DESCRIPTION	QTY	UNIT WEIGHT	TOTAL WEIGHT
1	20'-0" X 8'-0" CONNEX BOX - OFFICE TRAILER	1	10000	10000
2	20'-0" X 8'-0" CONNEX BOX - CREW TRAILER	1	10000	10000
3	20'-0" X 8'-0" CONNEX BOX - TOOL TRAILER	1	10000	10000
4	CAT 325 EXCAVATOR	1	70000	70000
5	DD240T DRILL RIG	1	70000	70000
6	DRILL RIG CONTROL CAB	1	6000	6000
7	DRILL RIG PIPE RACK	1	35000	35000
8	MUD PUMP	1	4000	4000
9	PORT-A-JOHN UNIT	2	300	600
TOTAL WEIGHT			176000	LBS
			88.00	TON

BILL OF MATERIALS - DRILLING SUPPORT BARGE				
ITEM #	DESCRIPTION	QTY	UNIT WEIGHT	TOTAL WEIGHT
3	20'-0" X 8'-0" CONNEX BOX - TOOL TRAILER	2	10000	20000
4	CAT 325 EXCAVATOR	1	70000	70000
7	DRILL RIG PIPE RACK	1	35000	35000
9	PORT-A-JOHN UNIT	2	300	600
13	DRILL RIG CLEANING SYSTEM	1	75000	75000
14	CUTTINGS BIN	2	15000	30000
15	MUD PALLET	4	14000	56000
16	FRAC TANK - 21,000 GAL	2	197500	395000
17	FUEL TANK - 1,000 GAL	2	15000	30000
TOTAL WEIGHT			711600	LBS
			355.80	TON



BILL OF MATERIALS - CONDUCTOR PIPE INSTALLATION BARGE				
ITEM #	DESCRIPTION	QTY	UNIT WEIGHT	TOTAL WEIGHT
3	20'-0" X 8'-0" CONNEX BOX - TOOL TRAILER	1	10000	10000
10	60-80 TON CARRY DECK CRANE	1	90,500	90500
11	CONDUCTOR PIPE INSTALLATION FRAME	1	12000	12000
12	RB90 AIR WINCH	2	53000	106000
TOTAL WEIGHT			218500	LBS
			109.25	TON

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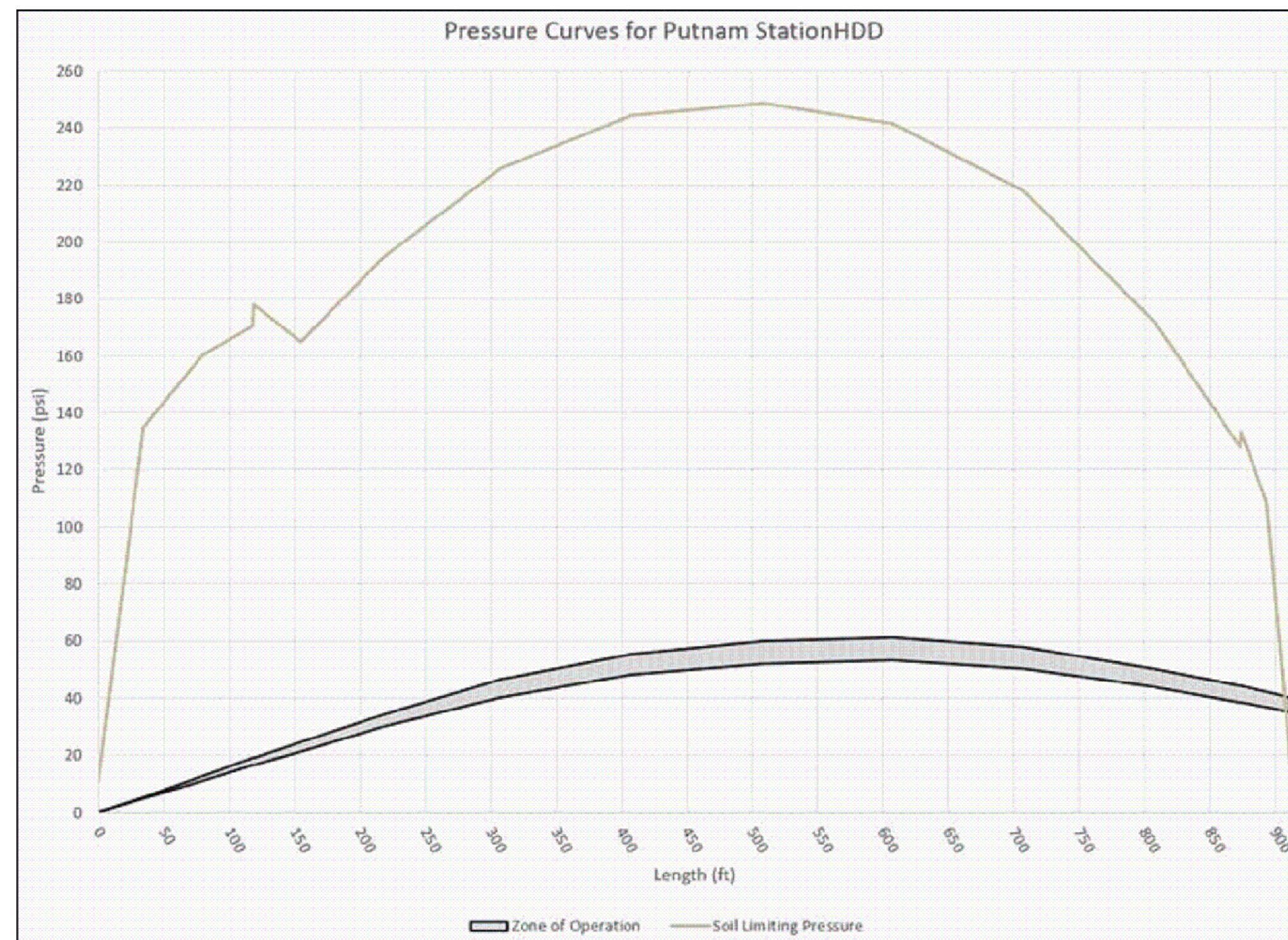


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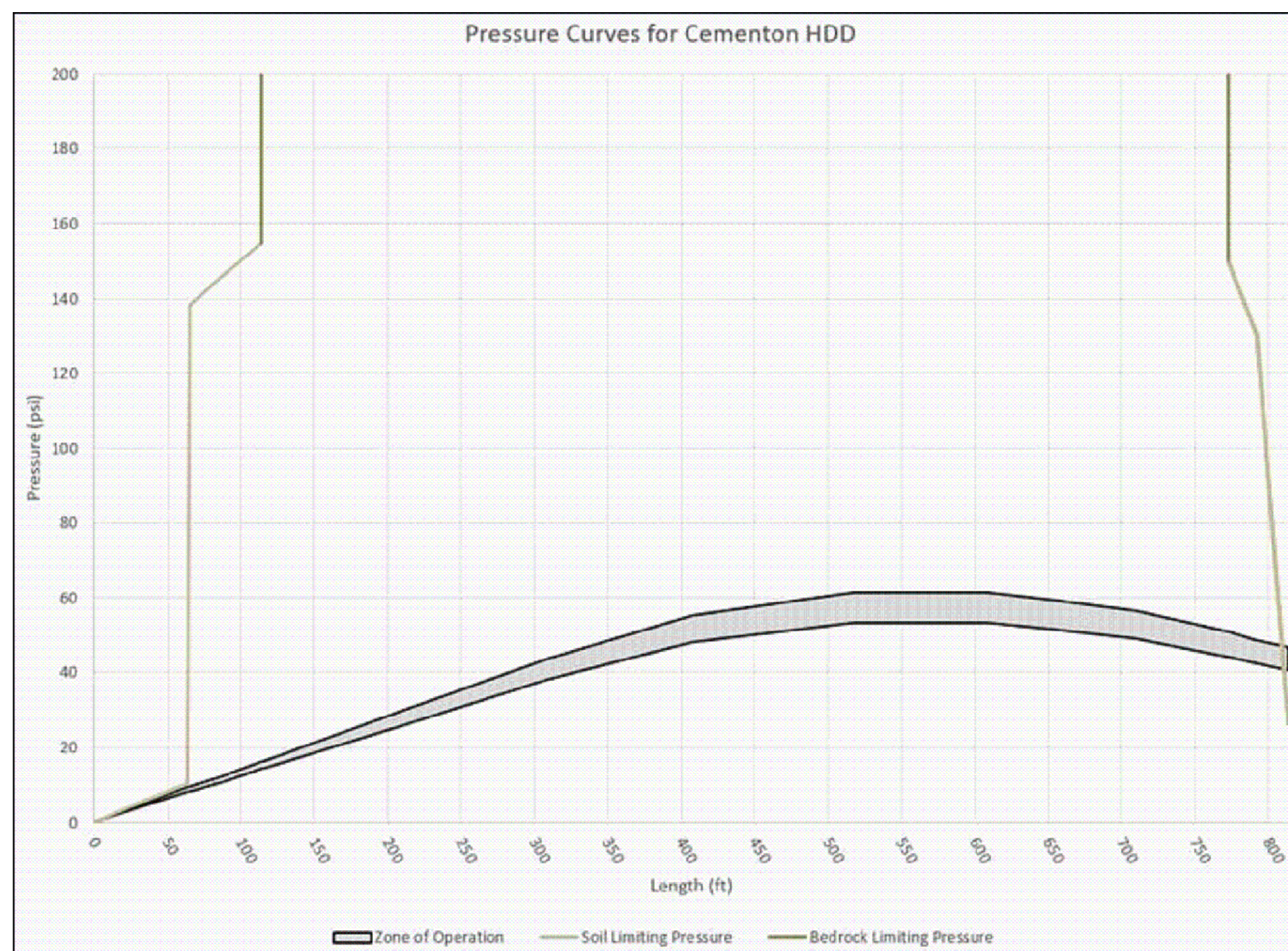
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DRAWN	DATE
MMO	2/22/2023
CHECKED	DATE
GJR	2/22/2023
ENGINEER	DATE
KCB	2/22/2023



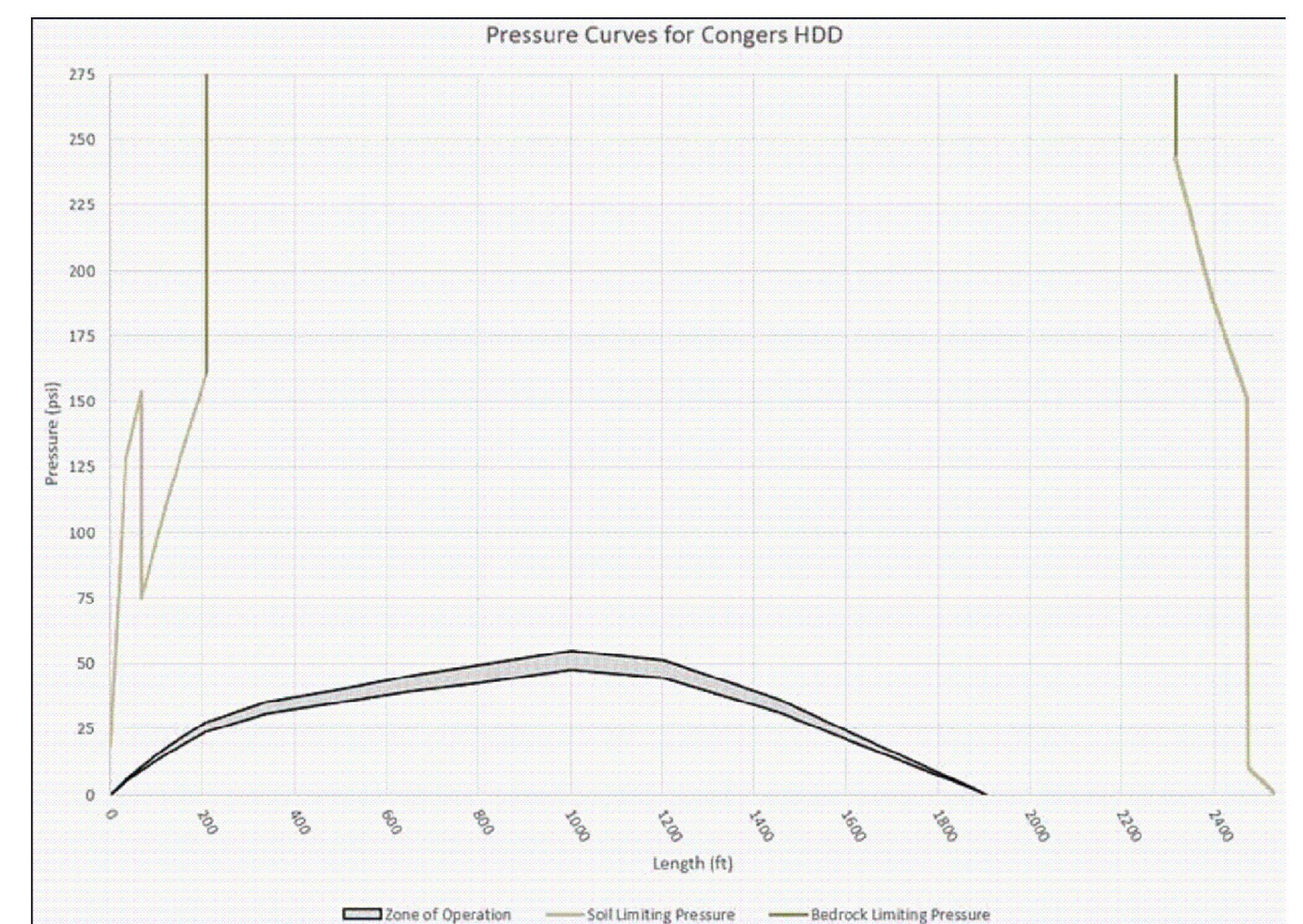
CONGERS HDD BARGE ARRANGEMENT			
SCALE	PROJECT NO.	DRAWING NO.	SHT. NO.
NTS	496182	HDD-020	22



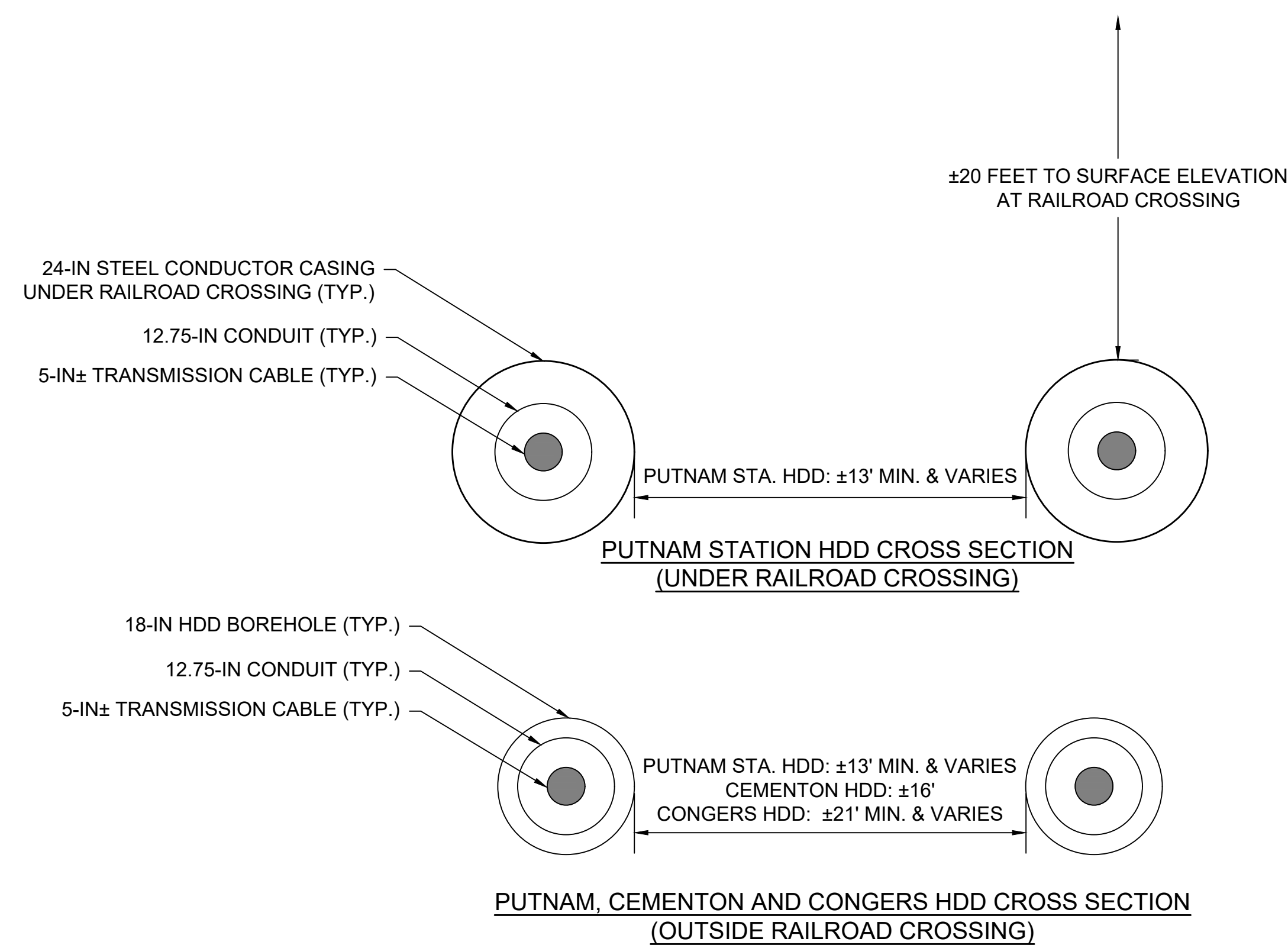
1 15 PUTNAM STATION HDD PRESSURE CURVE SCALE: NTS



2 CEMENTON HDD PRESSURE CURVE



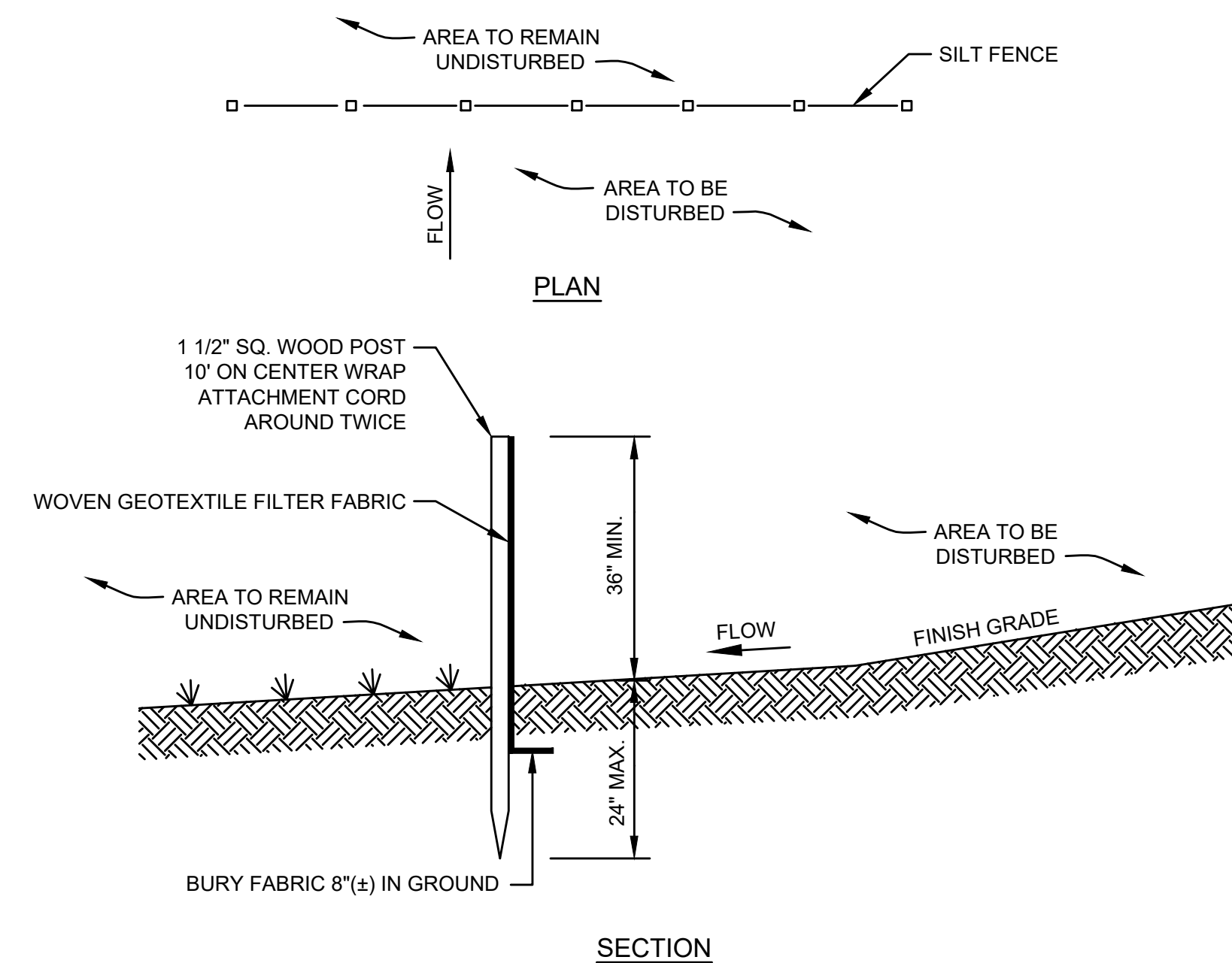
3 CONGERS HDD PRESSURE CURVE



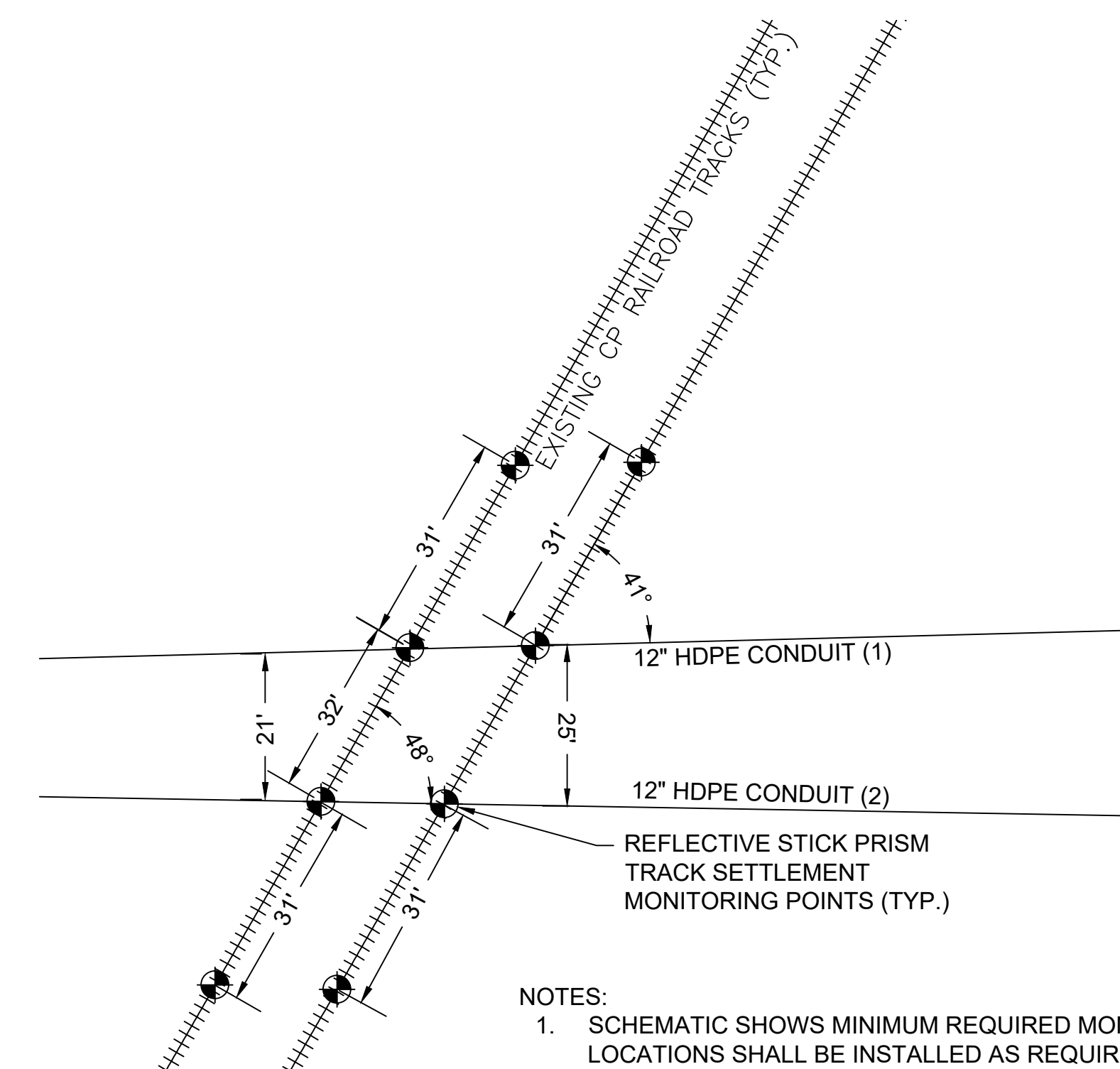
4
15

TYPICAL HDD CROSS SECTION

SCALE: NTS



5 TYPICAL SILT FENCE
15 SCALE: NTS



6 PUTNAM STATION HDD RAILROAD CROSSING MONITORING LOCATIONS SCHEMATIC
SCALE: NTS

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