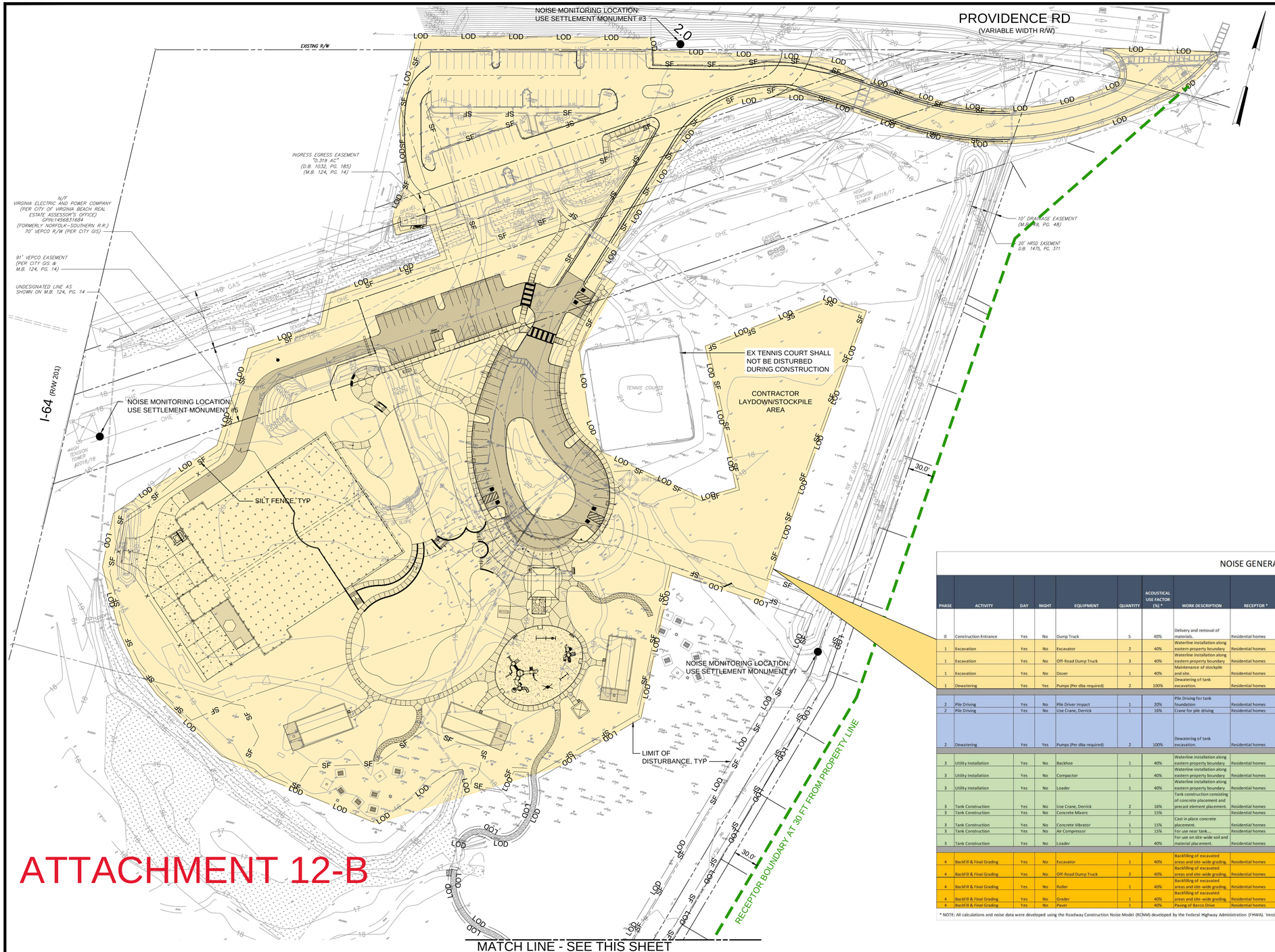
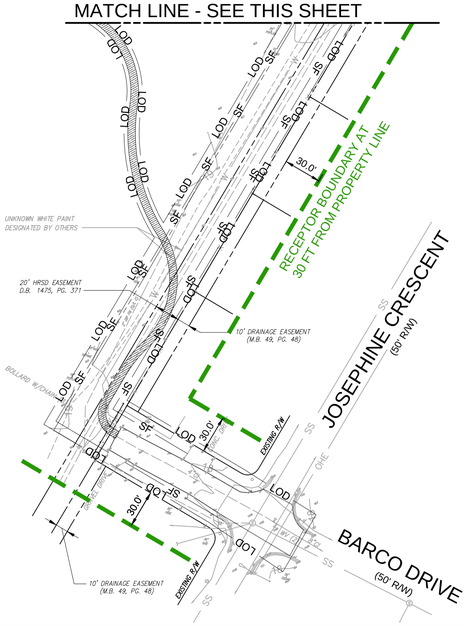


NOISE MONITORING NOTES:

1. CONTRACTOR SHALL MONITOR AND DOCUMENT BASELINE NOISE LEVELS AT THREE (3) OR MORE LOCATIONS NEAR THE IDENTIFIED RECEPTOR LOCATIONS DURING NON-WORKING PERIODS.
2. CONTRACTOR SHALL MONITOR AND DOCUMENT NOISE LEVELS AT THE SAME RECEPTOR LOCATIONS DURING THE PEAK ACTIVITY PERIOD.
3. CONTRACTOR SHALL USE A TYPE 2 / CLASS 2 SOUND LEVEL METER THAT MEETS OR EXCEEDS IEC 61672.



NOISE GENERATION AND IMPACTS

PHASE	ACTIVITY	DAY	NIGHT	EQUIPMENT	QUANTITY	ACOUSTICAL USE FACTOR (%) *	WORK DESCRIPTION	RECEPTOR *	DISTANCE TO RECEPTOR (ft)	COMBINED CALCULATED (dBA) * Lmax	COMBINED CALCULATED (dBA) * L10	LIMITS (dBA) (Day) * Lmax	LIMITS (dBA) (Day) * L10	LIMITS (dBA) (Night) * Lmax	LIMITS (dBA) (Night) * L10	SHIELDING (Dba) *	COMBINED CALCULATED EXCEEDANCE (dBA) * Day	COMBINED CALCULATED EXCEEDANCE (dBA) * Night	NOTES / ACTIONS
0	Construction Entrance	Yes	No	Dump Truck	5	40%	Delivery and removal of materials.	Residential homes	30	77.9	76.9	85	75	80	35	3	1.9	N/A	Exceedance is minimal. Receptor is the residential property that fronts Providence Road, therefore anticipated Daytime Baseline is likely to be at or exceeding the calcuated noise level.
1	Excavation	Yes	No	Excavator	2	40%	Waterline installation along eastern property boundary	Residential homes	300										
1	Excavation	Yes	No	Off-Road Dump Truck	3	40%	Waterline installation along eastern property boundary	Residential homes	135	77.9	78.6	85	75	80	35	3.0	3.6	N/A	No actions required
1	Excavation	Yes	No	Dozer	1	40%	Maintenance of stockpile and site.	Residential homes	135										
1	Dewatering	Yes	Yes	Pumps (Per dba required)	2	100%	Dewatering of tank excavation.	Residential homes	500										
2	Pile Driving	Yes	No	Pile Driver Impact	1	20%	Pile Driving for tank foundation	Residential homes	530	77.8	73.8	85	75	80	35	3	No Exceedance		
2	Pile Driving	Yes	No	Use Crane, Derrick	1	16%	Crane for pile driving	Residential homes	480									N/A	No actions required
2	Dewatering	Yes	Yes	Pumps (Per dba required)	2	100%	Dewatering of tank excavation.	Residential homes	500	57.9	57.9	85	75	80	35	3.0	No Exceedance	22.9	Exceedance is minimal. Consider application of an Acoustic Shadow/Barrier such as straw bails or other. Combine with receptor perimeter monitoring.
3	Utility Installation	Yes	No	Backhoe	1	40%	Waterline installation along eastern property boundary	Residential homes	30	79.0	78.0	85	75	80	35	3.0	3.0	N/A	
3	Utility Installation	Yes	No	Compactor	1	40%	Waterline installation along eastern property boundary	Residential homes	30	84.7	80.7	85	75	80	35	3.0	5.7	N/A	
3	Utility Installation	Yes	No	Loader	1	40%	Waterline installation along eastern property boundary	Residential homes	30	80.5	79.6	85	75	80	35	3.0	4.6	N/A	Exceedance is minimal. Possible additional shielding will occur via existing vegetation and stockpile storage area. Install receptor perimeter monitoring and potential remediation of proximity related equipment.
3	Tank Construction	Yes	No	Use Crane, Derrick	2	16%	Tank construction consisting of concrete placement and precast element placement.	Residential homes	480										
3	Tank Construction	Yes	No	Concrete Mixers	2	15%		Residential homes	480										
3	Tank Construction	Yes	No	Concrete Vibrator	1	15%	Cast in place concrete placement.	Residential homes	480	60.4	61.4	85	75	80	35	3.0	No Exceedance	N/A	
3	Tank Construction	Yes	No	Air Compressor	1	15%	For use near tank...	Residential homes	480										
3	Tank Construction	Yes	No	Loader	1	40%	For use on site-wide soil and material placement.	Residential homes	480										
4	Backfill & Final Grading	Yes	No	Excavator	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135										
4	Backfill & Final Grading	Yes	No	Off-Road Dump Truck	2	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135	69.1	71.7	85	75	80	35	3.0	No Exceedance	N/A	No actions required
4	Backfill & Final Grading	Yes	No	Roller	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Grader	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Paver	1	40%	Paving of Barco Drive	Residential homes	40	76.2	76.1	85	75	80	35	3.0	1.1	N/A	Exceedance is minimal. No actions required.

* NOTE: All calculations and noise data were developed using the Roadway Construction Noise Model (RCNM) developed by the Federal Highway Administration (FHWA). Version 1.1, 12/08/2008

SCALE: 1" = 60'

60 30 0 60'

ATTACHMENT 12-B

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	T. McPHERSON
DESIGNED BY:	T. McPHERSON / C. LINK
DRAWN BY:	M. BRANDT
CHECKED BY:	T. McPHERSON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

Hazen
HAZEN AND SAWYER
4500 MAIN STREET, SUITE 500
VIRGINIA BEACH, VIRGINIA 23462
PHONE: 757 497-0490

CROWDER CONSTRUCTION COMPANY
1111 BURMA DRIVE
APEX, NORTH CAROLINA 27539
PHONE: 800-849-5449

City of Virginia Beach

HRSD

PROVIDENCE ROAD OFF-LINE
STORAGE FACILITY AND WOODSTOCK
PARK IMPROVEMENTS

PRECONSTRUCTION ASSESSMENT
AND DAMAGE MITIGATION PLAN
NOISE GENERATION AND IMPACTS
PHASE 1
EXCAVATION AND DEWATERING

DATE: FEBRUARY 2020
HAZEN NO.: 31419-000
FIGURE NO. 1.1

File: O:\31419-HRD\31419-00\CAD_BIM\MISC\PRECONST FIGURES\PRECONSTRUCTION FIGURES Saved by GSANTURYAN Save date: 10/15/2019 5:13 PM
PLOT DATE: 10/15/2019 5:21 PM BY: GSANTURYAN

PROVIDENCE RD
(VARIABLE WIDTH R/W)

EXISTING R/W

INGRESS EGRESS EASEMENT "0.319 AC." (D.B. 1032, PG. 185) (M.B. 124, PG. 14)

N/F VIRGINIA ELECTRIC AND POWER COMPANY (PER CITY OF VIRGINIA BEACH REAL ESTATE ASSESSOR'S OFFICE) GPIN:1456831684 (FORMERLY NORFOLK-SOUTHERN R.R.) 70' VEPCO R/W (PER CITY GIS)

91' VEPCO EASEMENT (PER CITY GIS & M.B. 124, PG. 14)

UNDESIGNATED LINE AS SHOWN ON M.B. 124, PG. 14

I-64 (R/W 203)

HIGH TENSION TOWER #2018/18

HIGH TENSION TOWER #2018/17

10' DRAINAGE EASEMENT (M.B. 49, PG. 48)

20' HRSD EASEMENT D.B. 1475, PG. 371

EX TENNIS COURT SHALL NOT BE DISTURBED DURING CONSTRUCTION

CONTRACTOR LAYDOWN/STOCKPILE AREA

TENNIS COURTS

SILT FENCE, TYP

LIMIT OF DISTURBANCE, TYP

30.0'

RECEPTOR BOUNDARY AT 30 FT FROM PROPERTY LINE

MATCH LINE - SEE THIS SHEET

NOISE MONITORING NOTES:

1. CONTRACTOR SHALL MONITOR AND DOCUMENT BASELINE NOISE LEVELS AT THREE (3) OR MORE LOCATIONS NEAR THE IDENTIFIED RECEPTOR LOCATIONS DURING NON-WORKING PERIODS.
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3. CONTRACTOR SHALL USE A TYPE 2 / CLASS 2 SOUND LEVEL METER THAT MEETS OR EXCEEDS IEC 61672.

MATCH LINE - SEE THIS SHEET

UNKNOWN WHITE PAINT DESIGNATED BY OTHERS

BOLLARD W/CHAIN

RECEPTOR BOUNDARY AT 30 FT FROM PROPERTY LINE

JOSEPHINE CRESCENT
(50' R/W)

BARCO DRIVE
(50' R/W)

NOISE GENERATION AND IMPACTS

PHASE	ACTIVITY	DAY	NIGHT	EQUIPMENT	QUANTITY	ACOUSTICAL USE FACTOR (%) *	WORK DESCRIPTION	RECEPTOR *	DISTANCE TO RECEPTOR (ft)	COMBINED CALCULATED (dBA) * Lmax	COMBINED CALCULATED (dBA) * L10	LIMITS (dBA) [Day] * Lmax	LIMITS (dBA) [Day] * L10	LIMITS (dBA) [Night] * Lmax	LIMITS (dBA) [Night] * L10	SHIELDING (Dba) *	COMBINED CALCULATED EXCEEDANCE (dBA) * Day	COMBINED CALCULATED EXCEEDANCE (dBA) * Night	NOTES / ACTIONS
0	Construction Entrance	Yes	No	Dump Truck	5	40%	Delivery and removal of materials.	Residential homes	30	77.9	76.9	85	75	80	35	3	1.9	N/A	Exceedance is minimal. Receptor is the residential property that fronts Providence Road, therefore anticipated Daytime Baseline is likely to be at or exceeding the calcuated noise level.
1	Excavation	Yes	No	Excavator	2	40%	Waterline installation along eastern property boundary	Residential homes	300	77.9	78.6	85	75	80	35	3.0	3.6	N/A	No actions required
1	Excavation	Yes	No	Off-Road Dump Truck	3	40%	Waterline installation along eastern property boundary	Residential homes	135										
1	Excavation	Yes	No	Dozer	1	40%	Maintenance of stockpile and site.	Residential homes	135										
1	Dewatering	Yes	Yes	Pumps (Per dba required)	2	100%	Dewatering of tank excavation.	Residential homes	500										
2	Pile Driving	Yes	No	Pile Driver Impact	1	20%	Pile Driving for tank foundation	Residential homes	530	77.8	73.8	85	75	80	35	3	No Exceedance	N/A	No actions required
2	Pile Driving	Yes	No	Use Crane, Derrick	1	16%	Crane for pile driving	Residential homes	480										
2	Dewatering	Yes	Yes	Pumps (Per dba required)	2	100%	Dewatering of tank excavation.	Residential homes	500	57.9	57.9	85	75	80	35	3.0	No Exceedance	22.9	Exceedance is minimal. Consider application of an Acoustic Shadow/Barrier such as straw bails or other. Combine with receptor perimeter monitoring.
3	Utility Installation	Yes	No	Backhoe	1	40%	Waterline installation along eastern property boundary	Residential homes	30	79.0	78.0	85	75	80	35	3.0	3.0	N/A	Exceedance is minimal. Possible additional shielding will occur via existing vegetation and stockpile storage area. Install receptor perimeter monitoring and potential remediation of proximity related equipment.
3	Utility Installation	Yes	No	Compactor	1	40%	Waterline installation along eastern property boundary	Residential homes	30	84.7	80.7	85	75	80	35	3.0	5.7	N/A	
3	Utility Installation	Yes	No	Loader	1	40%	Waterline installation along eastern property boundary	Residential homes	30	80.5	79.6	85	75	80	35	3.0	4.6	N/A	
3	Tank Construction	Yes	No	Use Crane, Derrick	2	16%	Tank construction consisting of concrete placement and precast element placement.	Residential homes	480	60.4	61.4	85	75	80	35	3.0	No Exceedance	N/A	
3	Tank Construction	Yes	No	Concrete Mixers	2	15%		Residential homes	480										
3	Tank Construction	Yes	No	Concrete Vibrator	1	15%	Cast in place concrete placement.	Residential homes	480										
3	Tank Construction	Yes	No	Air Compressor	1	15%	For use near tank....	Residential homes	480										
3	Tank Construction	Yes	No	Loader	1	40%	For use on site-wide soil and material placement.	Residential homes	480										
4	Backfill & Final Grading	Yes	No	Excavator	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135	69.1	71.7	85	75	80	35	3.0	No Exceedance	N/A	No actions required
4	Backfill & Final Grading	Yes	No	Off-Road Dump Truck	2	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135										
4	Backfill & Final Grading	Yes	No	Roller	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Grader	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Paver	1	40%	Paving of Barco Drive	Residential homes	40	76.2	76.1	85	75	80	35	3.0	1.1	N/A	Exceedance is minimal. No actions required.

* NOTE: All calculations and noise data were developed using the Roadway Construction Noise Model (RCNM) developed by the Federal Highway Administration (FHWA). Version 1.1, 12/08/2008

SCALE: 1" = 60'

60 30 0 60'

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER: T. McPHERSON
DESIGNED BY: T. McPHERSON / C. LINK
DRAWN BY: M. BRANDT
CHECKED BY: T. McPHERSON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

Hazen
HAZEN AND SAWYER
4500 MAIN STREET, SUITE 500
VIRGINIA BEACH, VIRGINIA 23462
PHONE: 757 497-0490

CROWDER CONSTRUCTION COMPANY SINCE 1642
CROWDER CONSTRUCTION COMPANY
1111 BURMA DRIVE
APEX, NORTH CAROLINA 27539
PHONE: 800-849-5449

City of Virginia Beach

HRSD

PROVIDENCE ROAD OFF-LINE STORAGE FACILITY AND WOODSTOCK PARK IMPROVEMENTS

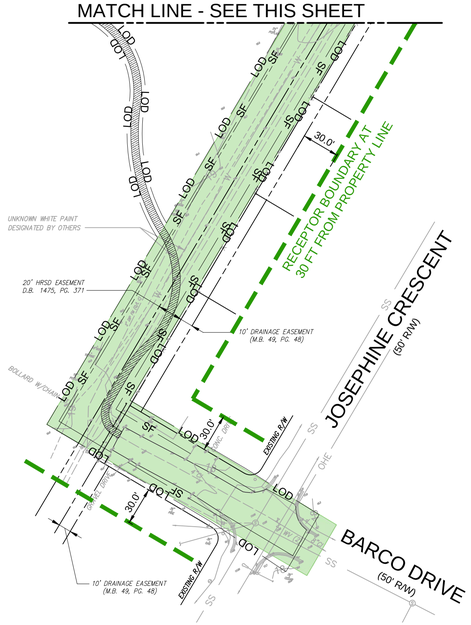
PRECONSTRUCTION ASSESSMENT AND DAMAGE MITIGATION PLAN NOISE GENERATION AND IMPACTS PHASE 2 PILE DRIVING

DATE: FEBRUARY 2020
HAZEN NO.: 31419-000
FIGURE NO.
1.2

File: O:\31419-HRD\31419-000\CAD_BIM\MISC\PRECONST FIGURES\PRECONSTRUCTION FIGURES Saved by GSANTURYAN Save date: 10/15/2019 5:13 PM
PLOT DATE: 10/15/2019 5:22 PM BY: GSANTURYAN

NOISE MONITORING NOTES:

1. CONTRACTOR SHALL MONITOR AND DOCUMENT BASELINE NOISE LEVELS AT THREE (3) OR MORE LOCATIONS NEAR THE IDENTIFIED RECEPTOR LOCATIONS DURING NON-WORKING PERIODS.
2. CONTRACTOR SHALL MONITOR AND DOCUMENT NOISE LEVELS AT THE SAME RECEPTOR LOCATIONS DURING THE PEAK ACTIVITY PERIOD.
3. CONTRACTOR SHALL USE A TYPE 2 / CLASS 2 SOUND LEVEL METER THAT MEETS OR EXCEEDS IEC 61672.



NOISE GENERATION AND IMPACTS

PHASE	ACTIVITY	DAY	NIGHT	EQUIPMENT	QUANTITY	ACOUSTICAL USE FACTOR (%) *	WORK DESCRIPTION	RECEPTOR *	DISTANCE TO RECEPTOR (ft)	COMBINED CALCULATED (dbA) * Lmax	COMBINED CALCULATED (dbA) * L10	LIMITS (dBA) [Day] * Lmax	LIMITS (dBA) [Day] * L10	LIMITS (dBA) [Night] * Lmax	LIMITS (dBA) [Night] * L10	SHIELDING (Dba) *	COMBINED CALCULATED EXCEEDANCE (dBA) * Day	COMBINED CALCULATED EXCEEDANCE (dBA) * Night	NOTES / ACTIONS
0	Construction Entrance	Yes	No	Dump Truck	5	40%	Delivery and removal of materials.	Residential homes	30	77.9	76.9	85	75	80	35	3	1.9	N/A	Exceedance is minimal. Receptor is the residential property that fronts Providence Road, therefore anticipated Daytime Baseline is likely to be at or exceeding the calcuated noise level.
1	Excavation	Yes	No	Excavator	2	40%	Waterline installation along eastern property boundary	Residential homes	300	77.9	78.6	85	75	80	35	3.0	3.6	N/A	No actions required
1	Excavation	Yes	No	Off-Road Dump Truck	3	40%	Waterline installation along eastern property boundary	Residential homes	135										
1	Excavation	Yes	No	Dozer	1	40%	Maintenance of stockpile and site.	Residential homes	135										
1	Dewatering	Yes	Yes	Pumps (Per dba required)	2	100%	Dewatering of tank excavation.	Residential homes	500										
2	Pile Driving	Yes	No	Pile Driver Impact	1	20%	Pile Driving for tank foundation	Residential homes	530	77.8	73.8	85	75	80	35	3	No Exceedance	N/A	No actions required
2	Pile Driving	Yes	No	Use Crane, Derrick	1	16%	Crane for pile driving	Residential homes	480										
2	Dewatering	Yes	Yes	Pumps (Per dba required)	2	100%	Dewatering of tank excavation.	Residential homes	500	57.9	57.9	85	75	80	35	3.0	No Exceedance	22.9	Exceedance is minimal. Consider application of an Acoustic Shadow/Barrier such as straw bails or other. Combine with receptor perimeter monitoring.
3	Utility Installation	Yes	No	Backhoe	1	40%	Waterline installation along eastern property boundary	Residential homes	30	79.0	78.0	85	75	80	35	3.0	3.0	N/A	Exceedance is minimal. Possible additional shielding will occur via existing vegetation and stockpile storage area. Install receptor perimeter monitoring and potential remediation of proximity related equipment.
3	Utility Installation	Yes	No	Compactor	1	40%	Waterline installation along eastern property boundary	Residential homes	30	84.7	80.7	85	75	80	35	3.0	5.7	N/A	
3	Utility Installation	Yes	No	Loader	1	40%	Waterline installation along eastern property boundary	Residential homes	30	80.5	79.6	85	75	80	35	3.0	4.6	N/A	
3	Tank Construction	Yes	No	Use Crane, Derrick	2	16%	Tank construction consisting of concrete placement and precast element placement.	Residential homes	480	60.4	61.4	85	75	80	35	3.0	No Exceedance	N/A	
3	Tank Construction	Yes	No	Concrete Mixers	2	15%		Residential homes	480										
3	Tank Construction	Yes	No	Concrete Vibrator	1	15%	Cast in place concrete placement.	Residential homes	480										
3	Tank Construction	Yes	No	Air Compressor	1	15%	For use near tank....	Residential homes	480										
3	Tank Construction	Yes	No	Loader	1	40%	For use on site-wide soil and material placement.	Residential homes	480										
4	Backfill & Final Grading	Yes	No	Excavator	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135	69.1	71.7	85	75	80	35	3.0	No Exceedance	N/A	No actions required
4	Backfill & Final Grading	Yes	No	Off-Road Dump Truck	2	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135										
4	Backfill & Final Grading	Yes	No	Roller	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Grader	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Paver	1	40%	Paving of Barco Drive	Residential homes	40	76.2	76.1	85	75	80	35	3.0	1.1	N/A	Exceedance is minimal. No actions required.

* NOTE: All calculations and noise data were developed using the Roadway Construction Noise Model (RCNM) developed by the Federal Highway Administration (FHWA). Version 1.1, 12/08/2008

SCALE: 1" = 60'

60 30 0 60'

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER: T. McPHERSON
DESIGNED BY: T. McPHERSON / C. LINK
DRAWN BY: M. BRANDT
CHECKED BY: T. McPHERSON
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PHONE: 757 497-0490

CROWDER CONSTRUCTION COMPANY
1111 BURMA DRIVE
APEX, NORTH CAROLINA 27539
PHONE: 800-849-5449

City of Virginia Beach

HRSD

PROVIDENCE ROAD OFF-LINE STORAGE FACILITY AND WOODSTOCK PARK IMPROVEMENTS

PRECONSTRUCTION ASSESSMENT AND DAMAGE MITIGATION PLAN
NOISE GENERATION AND IMPACTS
PHASE 3
UTILITY AND TANK CONSTRUCTION

DATE: FEBRUARY 2020
HAZEN NO.: 31419-000
FIGURE NO.
1.3

File: O:\31419-HRO\31419-000\CAD_BIM\MISC\PRECONST FIGURES\PRECONSTRUCTION FIGURES Saved by CGANTURYAN Save date: 10/15/2019 5:13 PM
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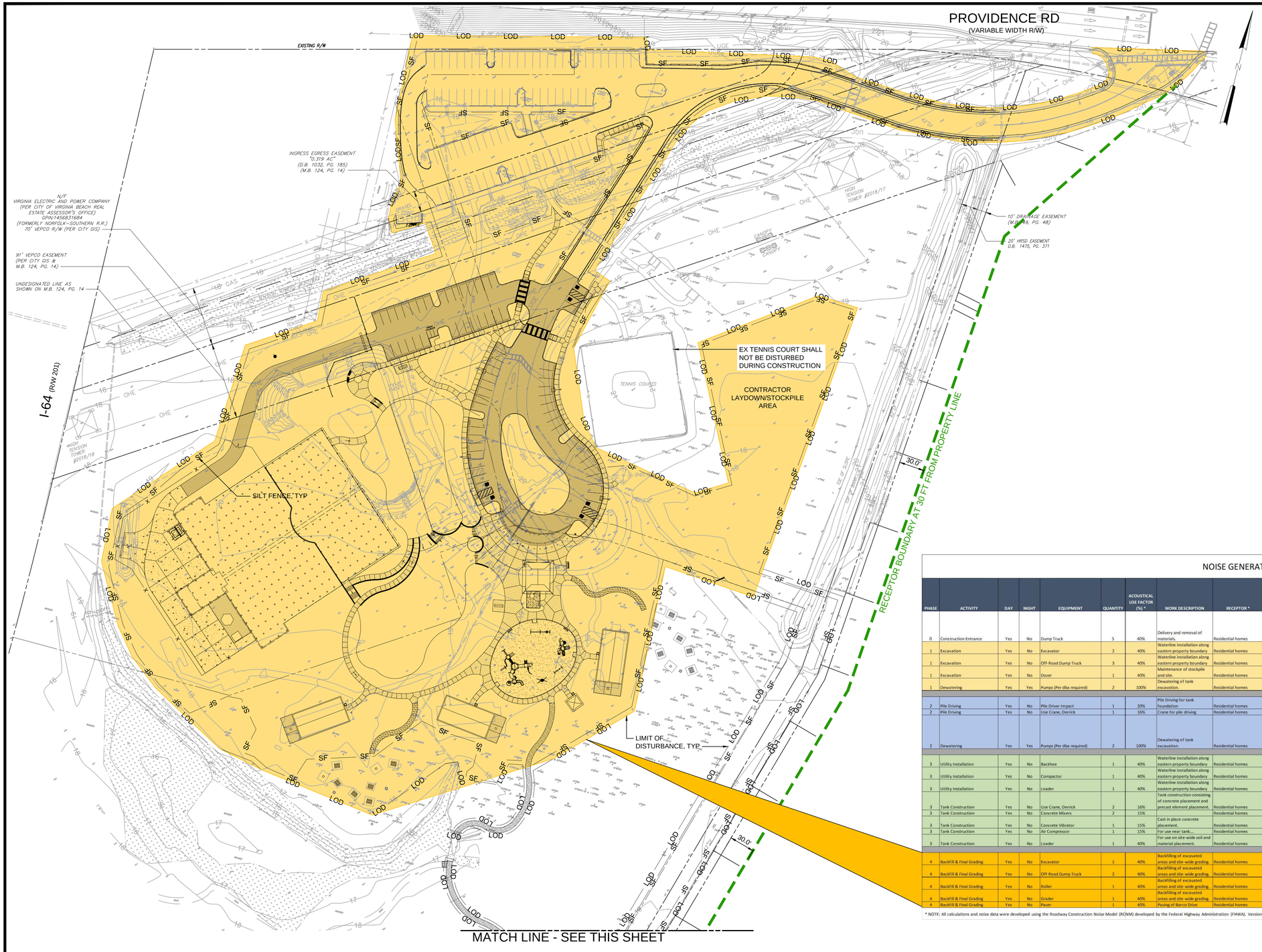

NOISE MONITORING NOTES:

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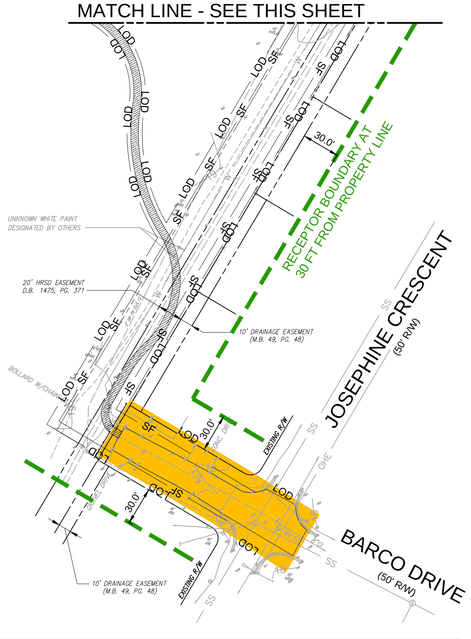

NOISE GENERATION AND IMPACTS

PHASE	ACTIVITY	DAY	NIGHT	EQUIPMENT	QUANTITY	ACOUSTICAL USE FACTOR (%) *	WORK DESCRIPTION	RECEPTOR *	DISTANCE TO RECEPTOR (ft)	COMBINED CALCULATED (dBA) * Lmax	COMBINED CALCULATED (dBA) * L10	LIMITS (dBA) (Day) * Lmax	LIMITS (dBA) (Day) * L10	LIMITS (dBA) (Night) * Lmax	LIMITS (dBA) (Night) * L10	SHIELDING (Dba) *	COMBINED CALCULATED EXCEEDANCE (dBA) * Day	COMBINED CALCULATED EXCEEDANCE (dBA) * Night	NOTES / ACTIONS
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1	Excavation	Yes	No	Dozer	1	40%	Maintenance of stockpile and site.	Residential homes	135										
1	Dewatering	Yes	Yes	Pumps (Per dba required)	2	100%	Dewatering of tank excavation.	Residential homes	500										
2	Pile Driving	Yes	No	Pile Driver Impact	1	20%	Pile Driving for tank foundation	Residential homes	530	77.8	73.8	85	75	80	35	3	No Exceedance	N/A	No actions required
2	Pile Driving	Yes	No	Use Crane, Derrick	1	16%	Crane for pile driving	Residential homes	480										
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3	Utility Installation	Yes	No	Loader	1	40%	Waterline installation along eastern property boundary	Residential homes	30	80.5	79.6	85	75	80	35	3.0	4.6	N/A	
3	Tank Construction	Yes	No	Use Crane, Derrick	2	16%	Tank construction consisting of concrete placement and precast element placement.	Residential homes	480	60.4	61.4	85	75	80	35	3.0	No Exceedance	N/A	
3	Tank Construction	Yes	No	Concrete Mixers	2	15%		Residential homes	480										
3	Tank Construction	Yes	No	Concrete Vibrator	1	15%	Cast in place concrete placement.	Residential homes	480										
3	Tank Construction	Yes	No	Air Compressor	1	15%	For use near tank....	Residential homes	480										
3	Tank Construction	Yes	No	Loader	1	40%	For use on site-wide soil and material placement.	Residential homes	480										
4	Backfill & Final Grading	Yes	No	Excavator	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135	69.1	71.7	85	75	80	35	3.0	No Exceedance	N/A	No actions required
4	Backfill & Final Grading	Yes	No	Off-Road Dump Truck	2	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	135										
4	Backfill & Final Grading	Yes	No	Roller	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Grader	1	40%	Backfilling of excavated areas and site-wide grading.	Residential homes	250										
4	Backfill & Final Grading	Yes	No	Paver	1	40%	Paving of Barco Drive	Residential homes	40	76.2	76.1	85	75	80	35	3.0	1.1	N/A	Exceedance is minimal. No actions required.

* NOTE: All calculations and noise data were developed using the Roadway Construction Noise Model (RCNM) developed by the Federal Highway Administration (FHWA). Version 1.1, 12/08/2008

SCALE: 1" = 60'

60 30 0 60'

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER: T. McPHERSON
DESIGNED BY: T. McPHERSON / C. LINK
DRAWN BY: M. BRANDT
CHECKED BY: T. McPHERSON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

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City of Virginia Beach

HRSD

PROVIDENCE ROAD OFF-LINE STORAGE FACILITY AND WOODSTOCK PARK IMPROVEMENTS

PRECONSTRUCTION ASSESSMENT AND DAMAGE MITIGATION PLAN
NOISE GENERATION AND IMPACTS
PHASE 4
BACKFILL & FINAL GRADING

DATE: FEBRUARY 2020
HAZEN NO.: 31419-000
FIGURE NO. 1.4

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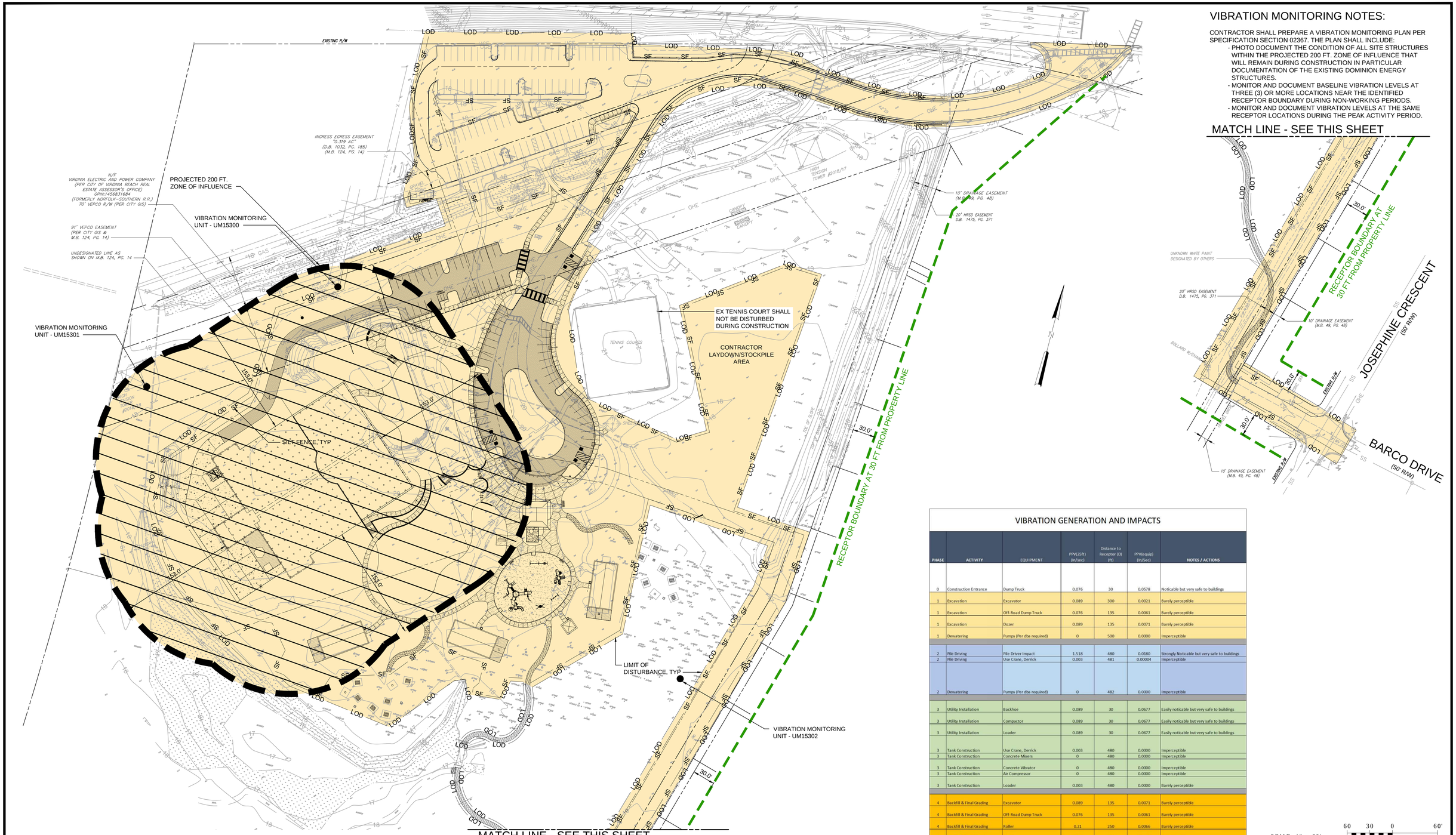
VIBRATION MONITORING NOTES:

CONTRACTOR SHALL PREPARE A VIBRATION MONITORING PLAN PER SPECIFICATION SECTION 02367. THE PLAN SHALL INCLUDE:

- PHOTO DOCUMENT THE CONDITION OF ALL SITE STRUCTURES WITHIN THE PROJECTED 200 FT. ZONE OF INFLUENCE THAT WILL REMAIN DURING CONSTRUCTION IN PARTICULAR DOCUMENTATION OF THE EXISTING DOMINION ENERGY STRUCTURES.
- MONITOR AND DOCUMENT BASELINE VIBRATION LEVELS AT THREE (3) OR MORE LOCATIONS NEAR THE IDENTIFIED RECEPTOR BOUNDARY DURING NON-WORKING PERIODS.
- MONITOR AND DOCUMENT VIBRATION LEVELS AT THE SAME RECEPTOR LOCATIONS DURING THE PEAK ACTIVITY PERIOD.



VIBRATION GENERATION AND IMPACTS

PHASE	ACTIVITY	EQUIPMENT	PPV(25ft) (in/sec)	Distance to Receptor (D) (ft)	PPV(equip) (in/Sec)	NOTES / ACTIONS
0	Construction Entrance	Dump Truck	0.076	30	0.0578	Noticable but very safe to buildings
1	Excavation	Excavator	0.089	300	0.0021	Barely perceptible
1	Excavation	Off-Road Dump Truck	0.076	135	0.0061	Barely perceptible
1	Excavation	Dozer	0.089	135	0.0071	Barely perceptible
1	Dewatering	Pumps (Per dba required)	0	500	0.0000	Imperceptible
2	Pile Driving	Pile Driver Impact	1.518	480	0.0180	Strongly Noticable but very safe to buildings
2	Pile Driving	Use Crane, Derrick	0.003	481	0.00004	Imperceptible
2	Dewatering	Pumps (Per dba required)	0	482	0.0000	Imperceptible
3	Utility Installation	Backhoe	0.089	30	0.0677	Easily noticable but very safe to buildings
3	Utility Installation	Compactor	0.089	30	0.0677	Easily noticable but very safe to buildings
3	Utility Installation	Loader	0.089	30	0.0677	Easily noticable but very safe to buildings
3	Tank Construction	Use Crane, Derrick	0.003	480	0.0000	Imperceptible
3	Tank Construction	Concrete Mixers	0	480	0.0000	Imperceptible
3	Tank Construction	Concrete Vibrator	0	480	0.0000	Imperceptible
3	Tank Construction	Air Compressor	0	480	0.0000	Imperceptible
3	Tank Construction	Loader	0.003	480	0.0000	Barely perceptible
4	Backfill & Final Grading	Excavator	0.089	135	0.0071	Barely perceptible
4	Backfill & Final Grading	Off-Road Dump Truck	0.076	135	0.0061	Barely perceptible
4	Backfill & Final Grading	Roller	0.21	250	0.0066	Barely perceptible
4	Backfill & Final Grading	Grader	0.003	250	0.0001	Imperceptible
4	Backfill & Final Grading	Paver	0.003	40	0.0015	Imperceptible

SCALE: 1" = 60'

60 30 0 60'

REV	ISSUED FOR	DATE	BY

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PROVIDENCE ROAD OFF-LINE STORAGE FACILITY AND WOODSTOCK PARK IMPROVEMENTS

PRECONSTRUCTION ASSESSMENT AND DAMAGE MITIGATION PLAN VIBRATION IMPACTS

DATE: FEBRUARY 2020
HAZEN NO.: 31419-000
FIGURE NO. 2

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