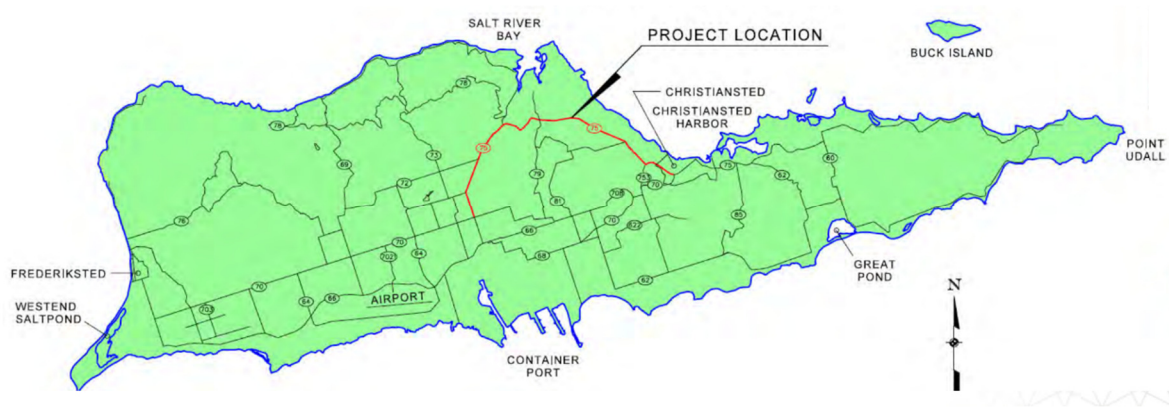


# **VIRGIN ISLANDS DEPARTMENT OF PUBLIC WORKS**

## **COASTAL CONSISTENCY DETERMINATION REQUEST**

**NORTHSIDE ROAD (HIGHWAY 75) AND QUEEN STREET (HIGHWAY 75) IMPROVEMENTS AND FEEDER  
FROM CONTENTMENT ROAD TO NORTH OF CENTERLINE ROAD  
ST. CROIX, U.S. VIRGIN ISLANDS**



**PREPARED FOR**

**COASTAL ZONE MANAGEMENT  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
U.S. ARMY CORPS OF ENGINEERS**

**PREPARED BY**

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**DECEMBER 2022**

## **INTRODUCTION**

The Virgin Islands Department of Public Works (VIDPW) is proposing to make improvements to Northside Roadway (Highway 75), Queen Street (Highway 75) and to install underground existing electrical service, replace existing pole mounted transformers with pad-mounted transformer and remove existing overhead lines in four adjacent neighborhoods: Mon Bijou-Glynn, Morning Star, Richmond-Princesse and Contentment-Richmond.

The Northside Roadway (Queen Street) improvements will include improvements to 6.5 miles of roadway including 3 signalized intersections converted to roundabouts between Contentment Road and Centerline Road. The design documents include improvements to paved shoulders, traffic flow and safety, underground electrical distribution, drainage to prevent roadway flooding, signage and pavement markings, roadway lighting, ADA improvements, and transit/bus stop improvements. The proposed roadway improvements will enhance traffic flow and make the roadways safer for drivers and pedestrians.

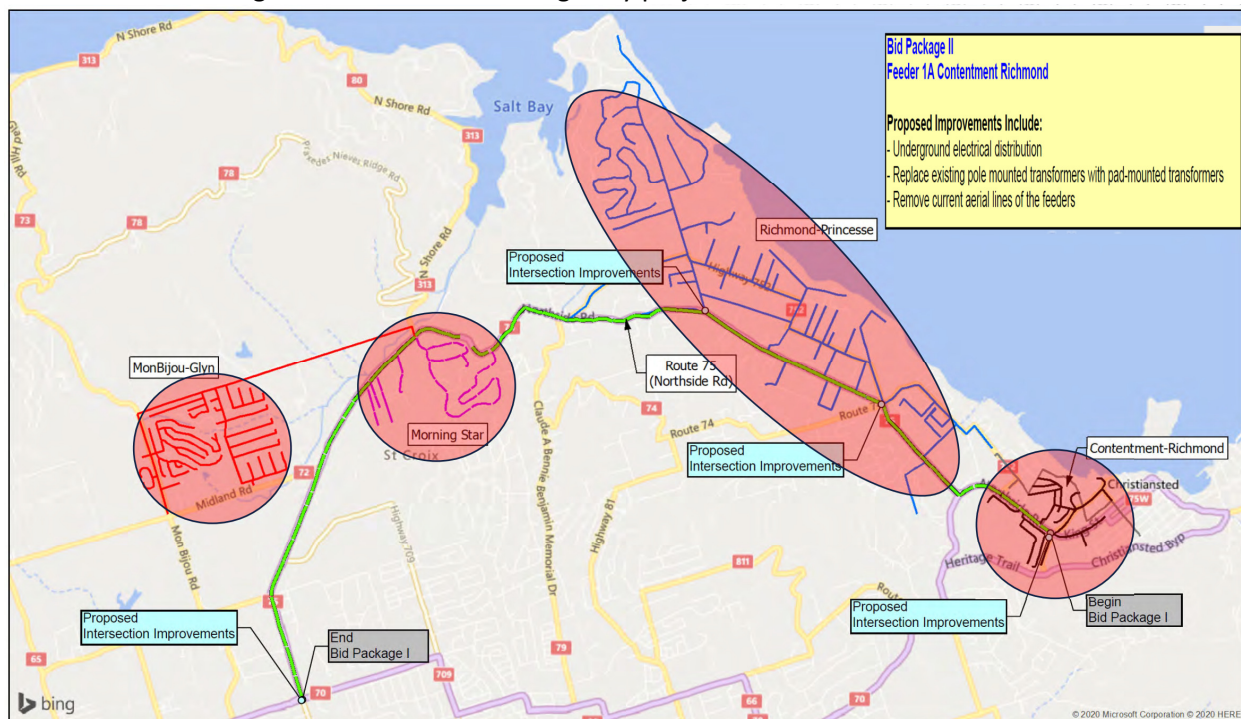
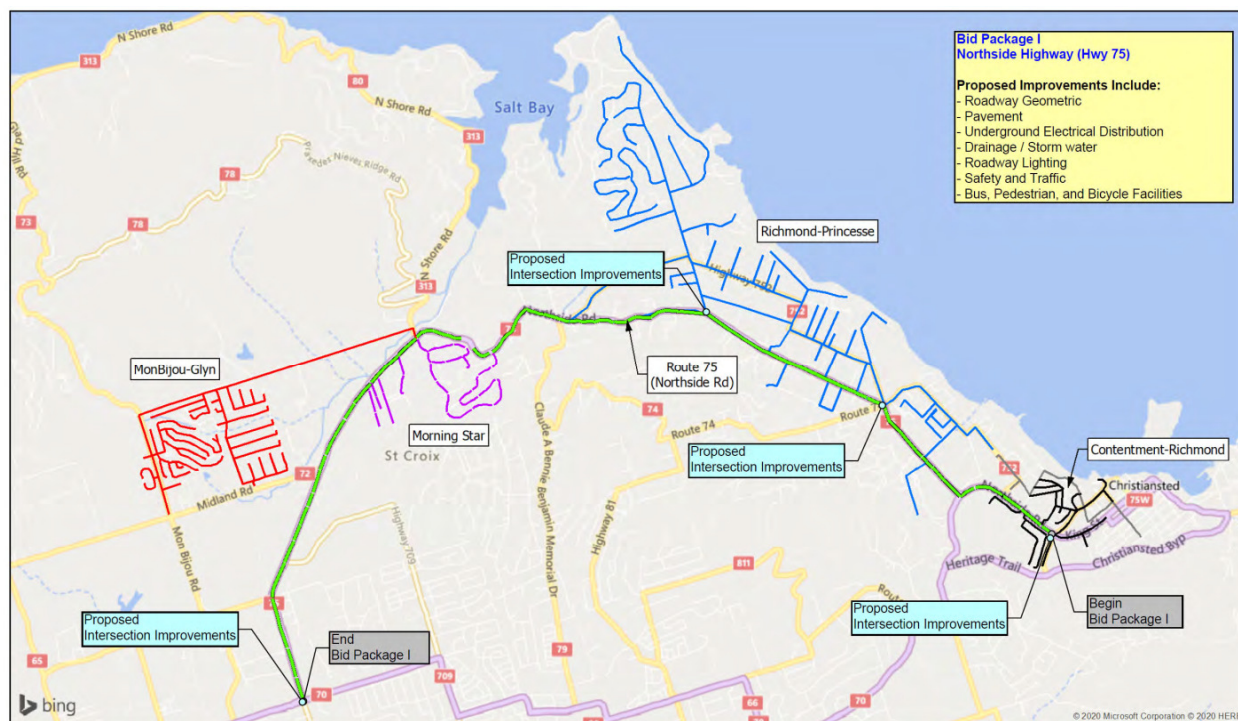
VIDPW also is proposing to place existing electrical service underground in four neighborhoods serviced by the Virgin Islands Water and Power Authority's (VIWAPA). The four neighborhoods include Mon Bijou-Glynn, Morning Star, Richmond-Princesse and Contentment-Richmond. Electrical distribution will be moved underground, and the existing pole mounted transformers will be replaced with pad mounted transformers, poles will be topped off where needed, and the existing overhead lines will be removed. This will make the area more resilient against future storms and provide more reliant power to these neighborhoods.

## **PROJECT LOCATION**

The roadway project is located on the north shore of St. Croix west of the town of Christiansted. The project will extend from the intersection of Northside Highway and Contentment Road (Latitude 17.742091°N, Longitude -64.710496°W) and Northside Highway and Queen Mary Highway (Centerline Road, Highway 70)(Latitude 17.728515°N, Longitude -64.773790°W).

The underground electrical project includes four adjacent neighborhoods west of the town of Christiansted, Contentment-Richmond (Latitude 17.745495°N, Longitude -64.711033°W), Richmond-Princesse spanning from Latitude 17.746743°N, Longitude -64.719283°W to Latitude 17.778360°N, Longitude -64.747830°W, Morning Star (Latitude 17.755142°N, Longitude -64.761988°W) and Mon Bijou- Glynn (Latitude 17.750309°N, Longitude -64.781413°W).





The roadway improvements are entirely outside the first-tier jurisdiction of Coastal Zone Management (CZM), some of the underground electrical distribution is within the CZM first tier jurisdiction.



Figure 3. The relationship of the project to the Coastal Zone Management Jurisdiction. Areas within first tier jurisdiction are in color.

## PROJECT DESCRIPTION

The project has two components, improvements to Highway 75 and the placement of electrical service underground in four neighborhoods.

## ROADWAY IMPROVEMENTS

Highway 75 Roadway Improvements include roadway geometry improvements, paved shoulders, improved intersections with turn lanes, underground electrical distribution, drainage improvements, better signage and pavement markings, better signalization and lighting, ADA improvements and improved transit/ bus stops.





Figure 4. The Northside Roadway passes through areas that are Rural, Urban and a combination of both.

## Existing Conditions

Beginning at Queen Mary Highway the area is a mixture of Rural and Urban. This is one of the areas of large trees along the roadway, many within proximity of the road.

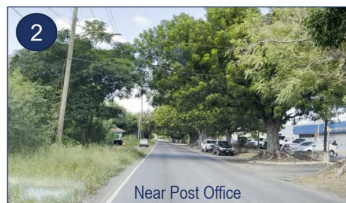
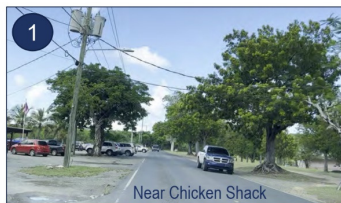






Figure 5. Map of trees in proximity of the roadway.



Figure 6. Map of trees in proximity of the roadway.

**Proposed Improvement**

CONST NORTHSIDE HIGHWAY (USVI ROUTE 75)

EXIST R/W

24.00'

24.00'

EXIST R/W

RECONSTRUCTION

MILLING & RESURFACING

RECONSTRUCTION

VARIES SOD

2'

5'

2'

12'

12'

8'

2'

SIDEWALK

C&G

TRAVEL WAY

TRAVEL WAY

SHOULDER

SHLDR. UNPAVED SHLDR.

2.0%

2.0%

2.0%

2.0%

4.0%

2.0%

2:1

2:1

MATCH EXIST GROUND

MATCH EXIST GROUND

Note that the sideways is proposed on the west side of the roadway to avoid the Heritage trees

## Existing Conditions

The aerial map shows a route through Windsor, Ontario, with numbered points 1, 2, 3, and 4. The photographs show:

- 1. Approaching Midland Road
- 2. Approaching Northshore Road
- 3. Morningstar Hill Area
- 4. Approaching Hwy 751

There are long stretches of this segment which do not have large trees in close proximity to the roadway.





Figure 7. Map of trees in proximity of the roadway.

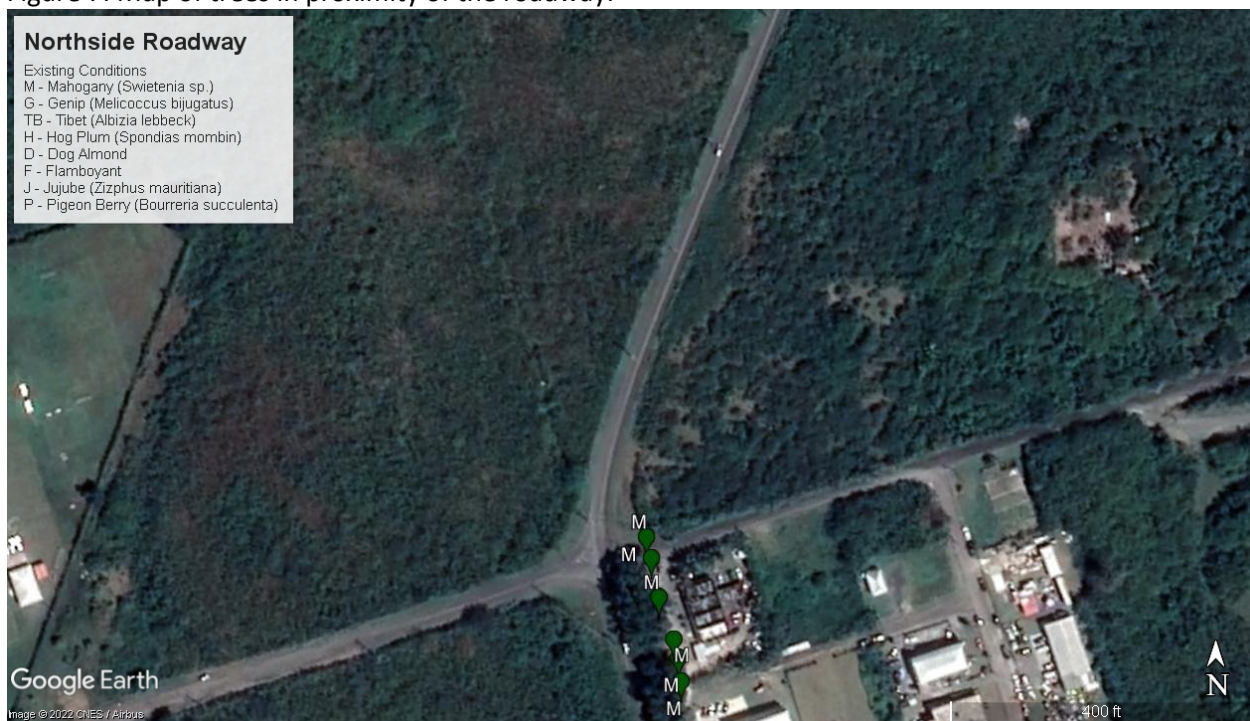


Figure 8. Map of trees in proximity of the roadway.



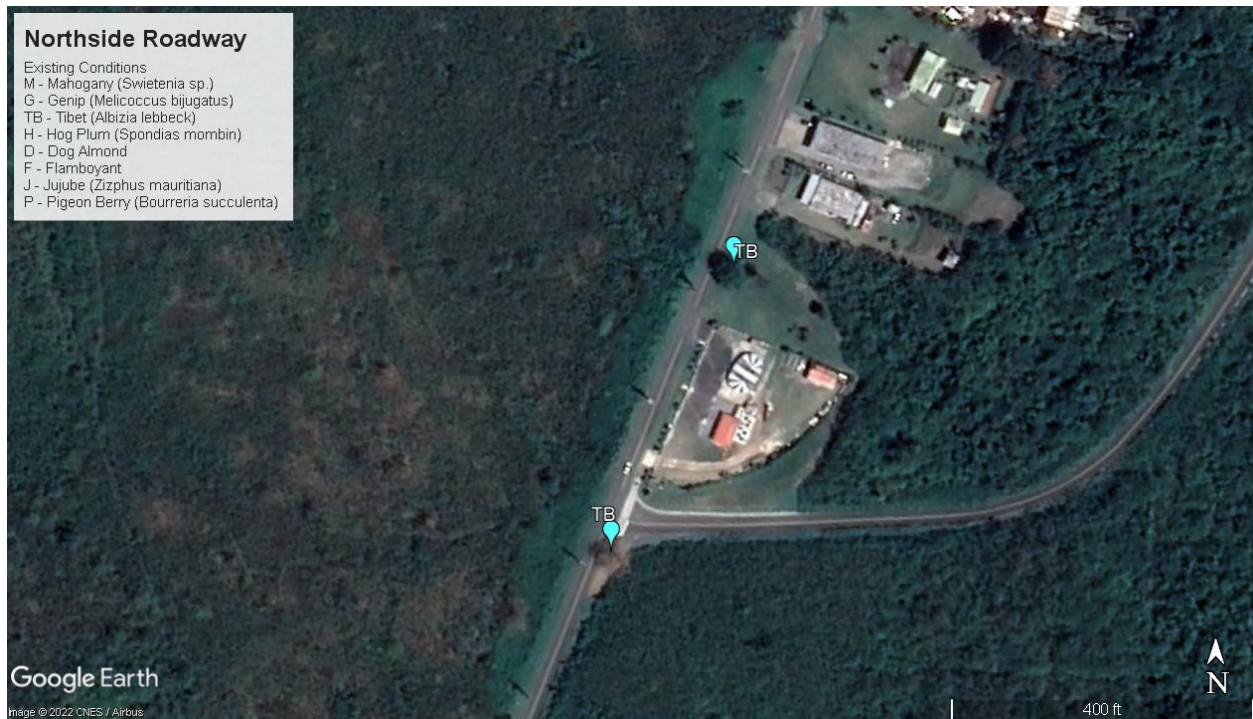


Figure 9. Map of trees in proximity to the roadway.



Figure 10. Map of trees in proximity to the roadway.





Figure 11. Map of trees in proximity to the roadway.

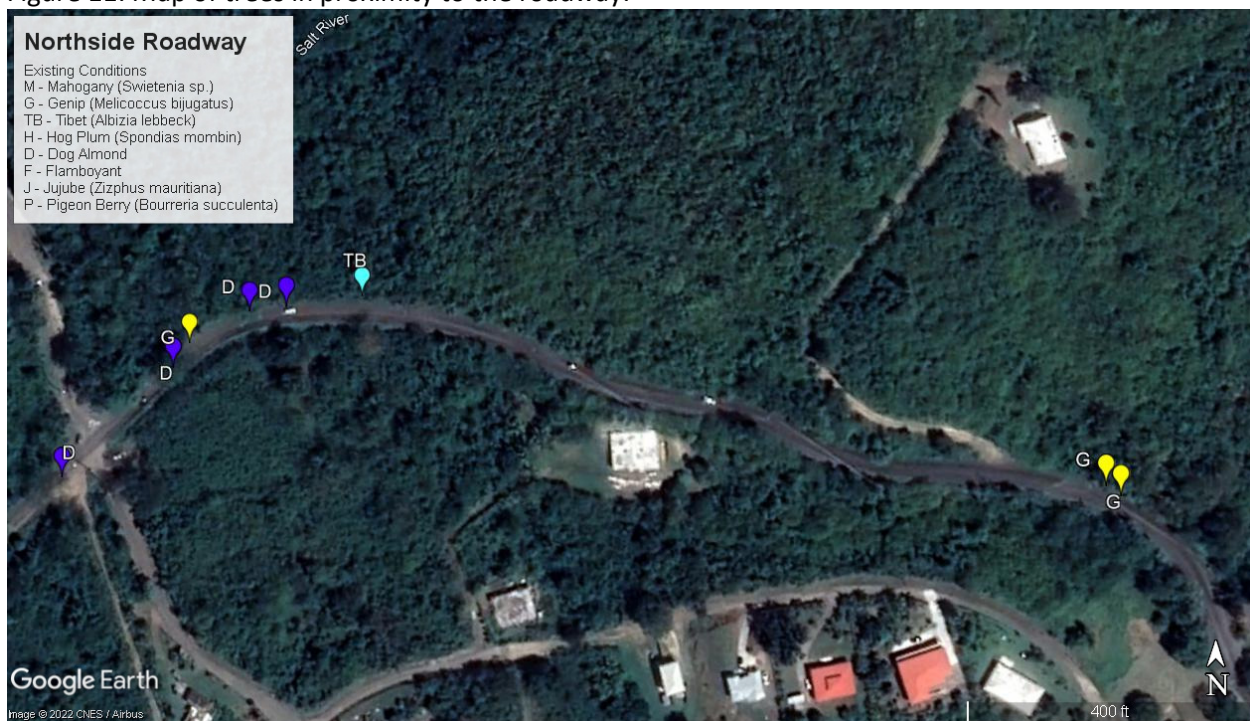


Figure 12. Map of trees in proximity to the roadway.





Figure 13. Map of trees in proximity to the roadway.



Figure 14. Map of trees in proximity to the roadway.



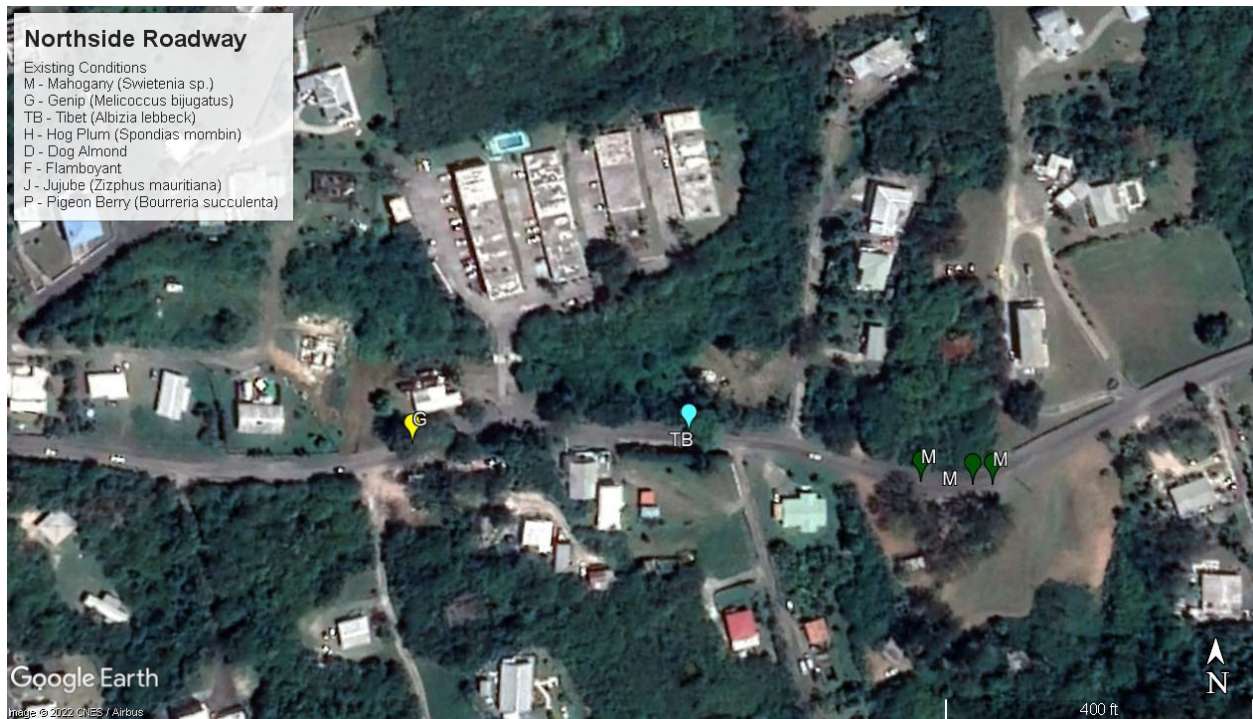


Figure 15. Map of trees in proximity to the roadway.



Figure 16. Map of trees in proximity to the roadway.



## Existing Conditions and Proposed Improvements

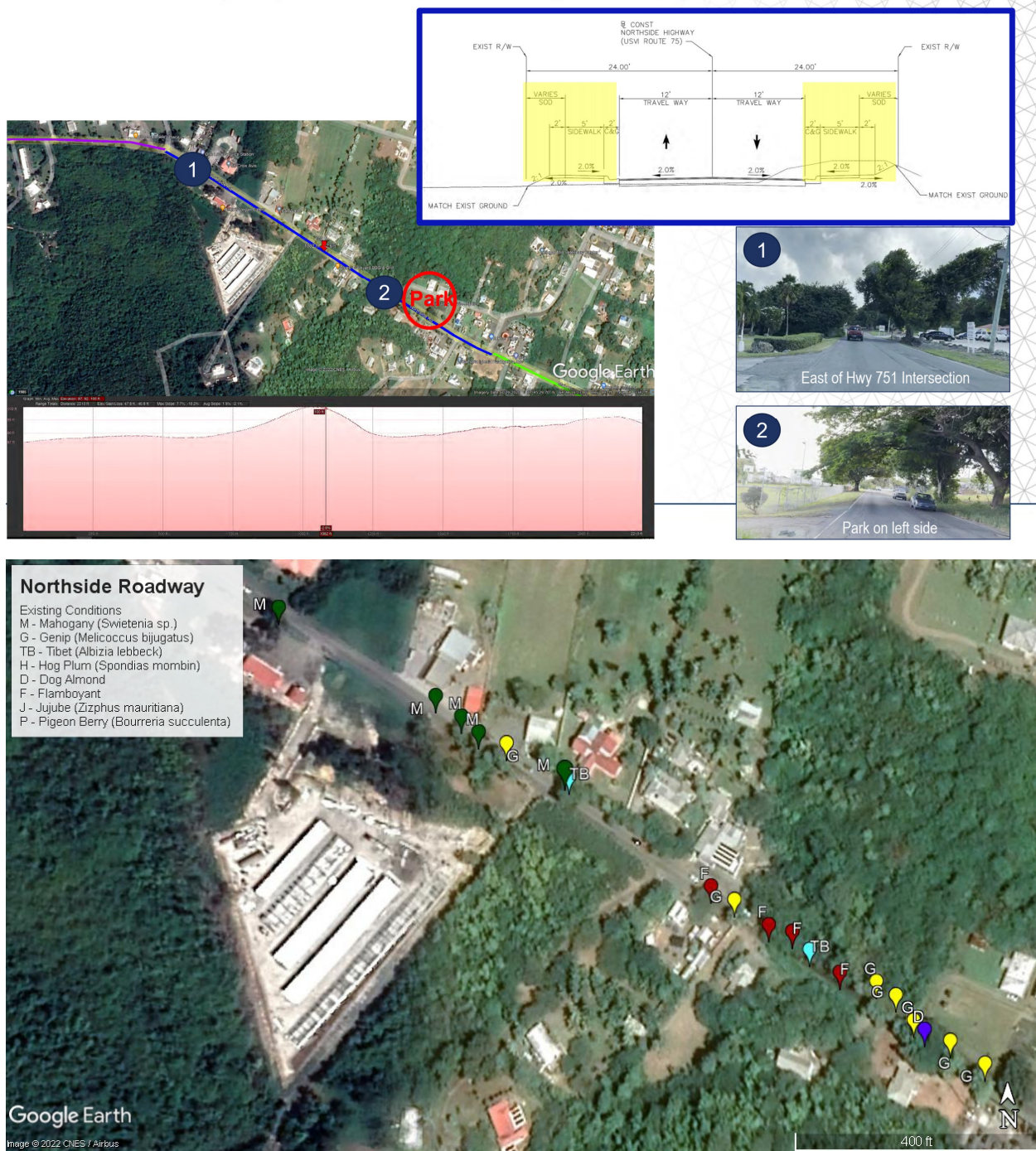


Figure 17. Map of trees in proximity to the roadway.





### Existing Conditions and Proposed Improvements







Figure 19. Map of trees in proximity to the roadway.

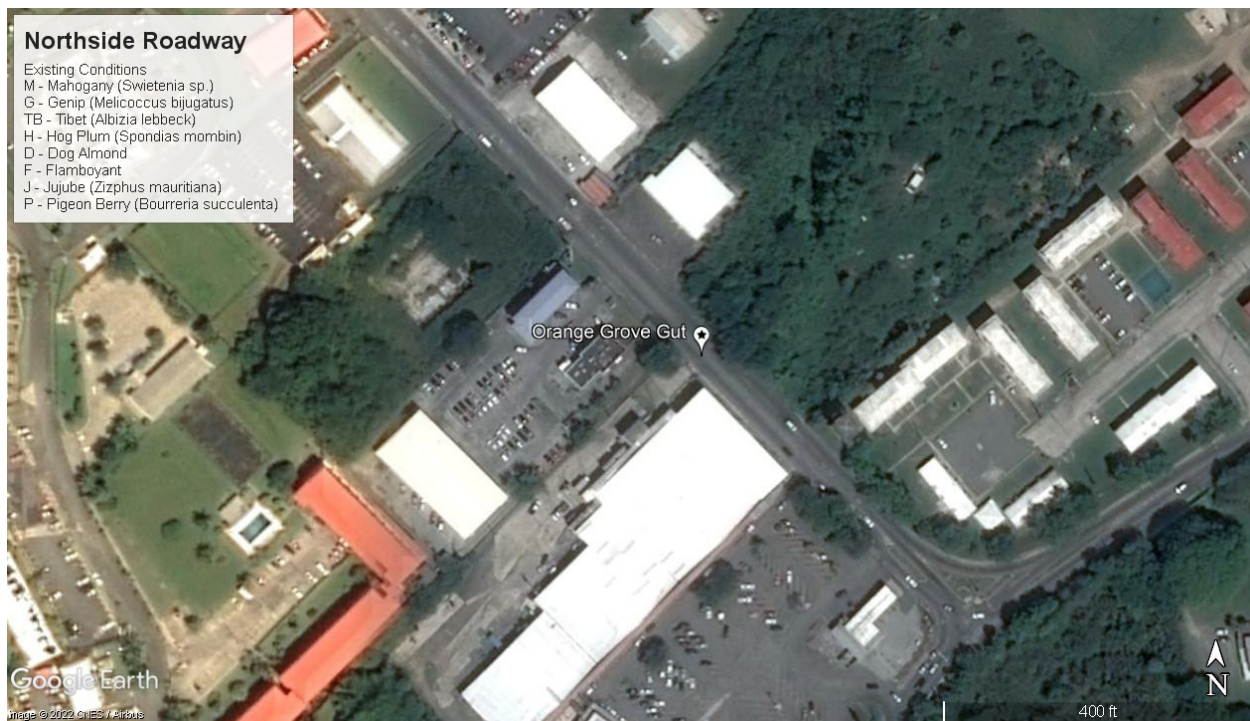


Figure 20. Map of trees in proximity to the roadway.









### Existing Conditions and Proposed Improvements

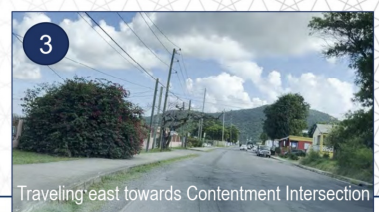
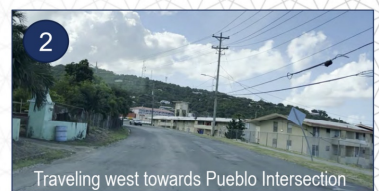
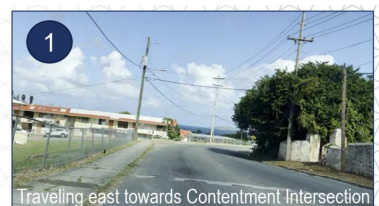






Figure 23. Map of trees in proximity to the roadway and features.

## Existing Conditions and Proposed Improvements

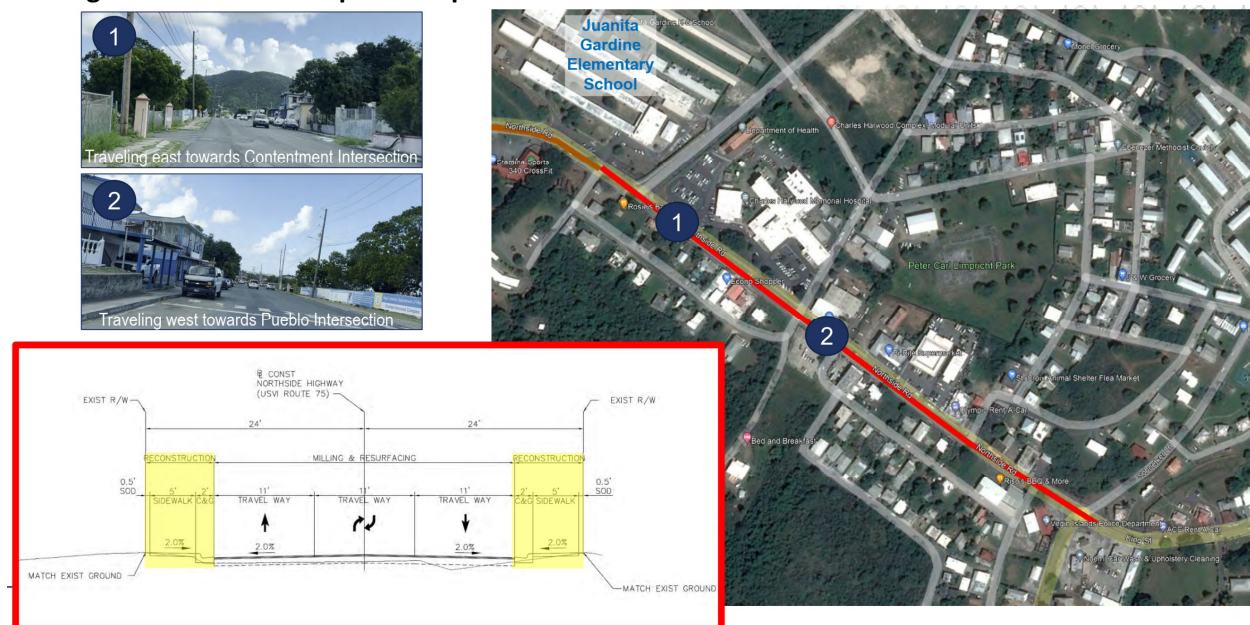






Figure 24. Map of trees in proximity to the roadway.



Figure 25. Map of trees in proximity to the roadway.

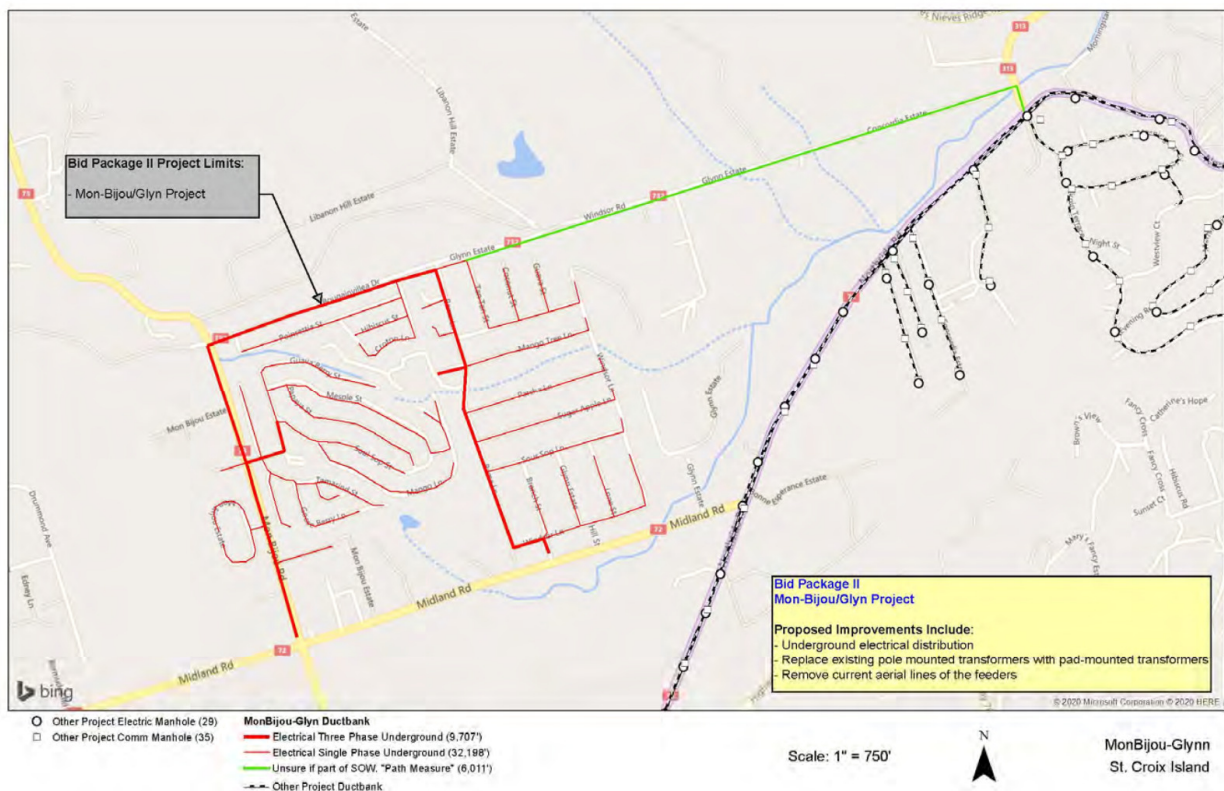
The existing roadway includes several cross culverts as well as closed drainage systems within urban areas. There are areas of known flooding along Northside Road. There are several Federal Emergency Management Agency (FEMA) designated Special Flood Hazard Area's (SFHA) located within the project limits. They are Contentment Gut, Orange Grove Gut, Salt River, and an unnamed floodplain at the west end of the project.

FEMA Flood Insurance Rate Map (FIRM) numbers 7800000069G, 7800000070G, 7800000071G, and 7800000080G show two SFHA designations along the proposed alignment, a Zone 'A' and Zone 'AE'. Flood Zone maps are found in Drainage, Flooding and Erosion Control and Coastal Flooding on page 29.

## UNDERGROUND PROJECT

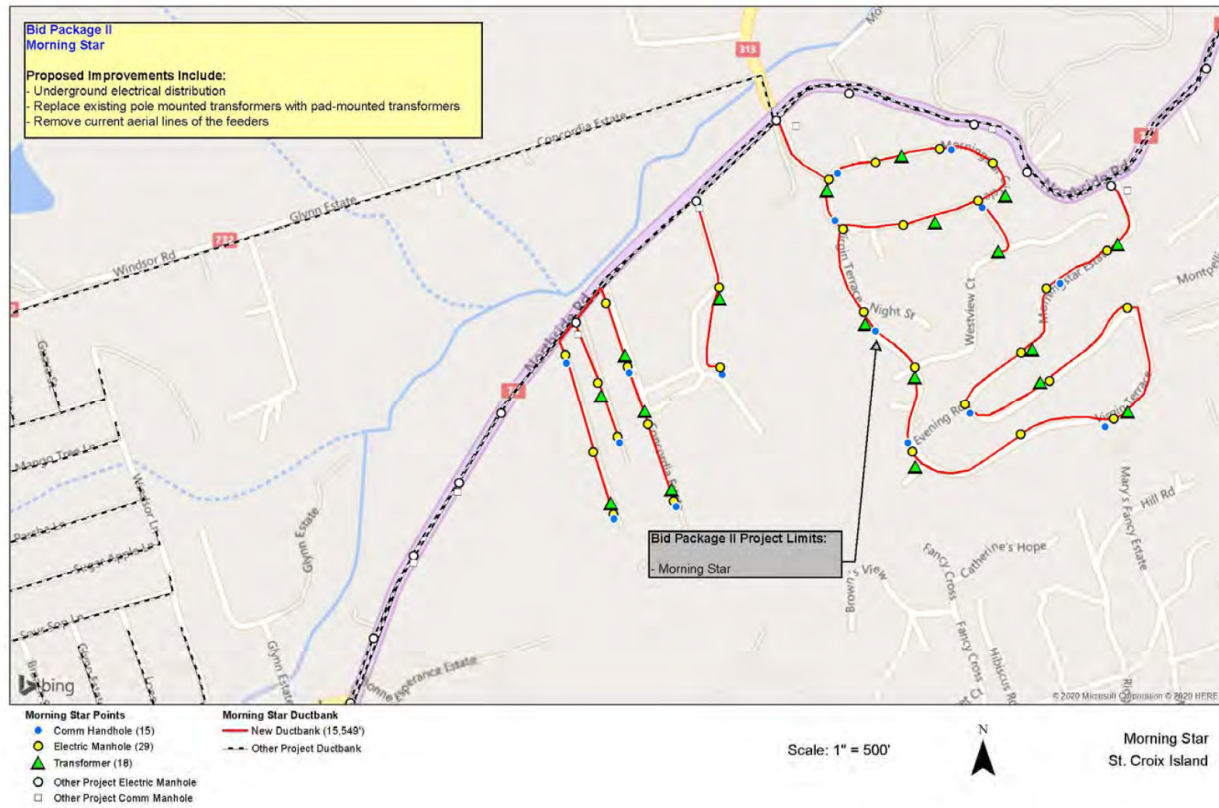
Undergrounding the electrical service in the four neighborhoods includes placing electrical distribution underground, replacing pole mounted transformers, poles will be topped off where needed, and the existing overhead lines will be removed. This will make the area more resilient against future storms and provide more reliant power to these neighborhoods.

### Mon-Bijou and Glynn

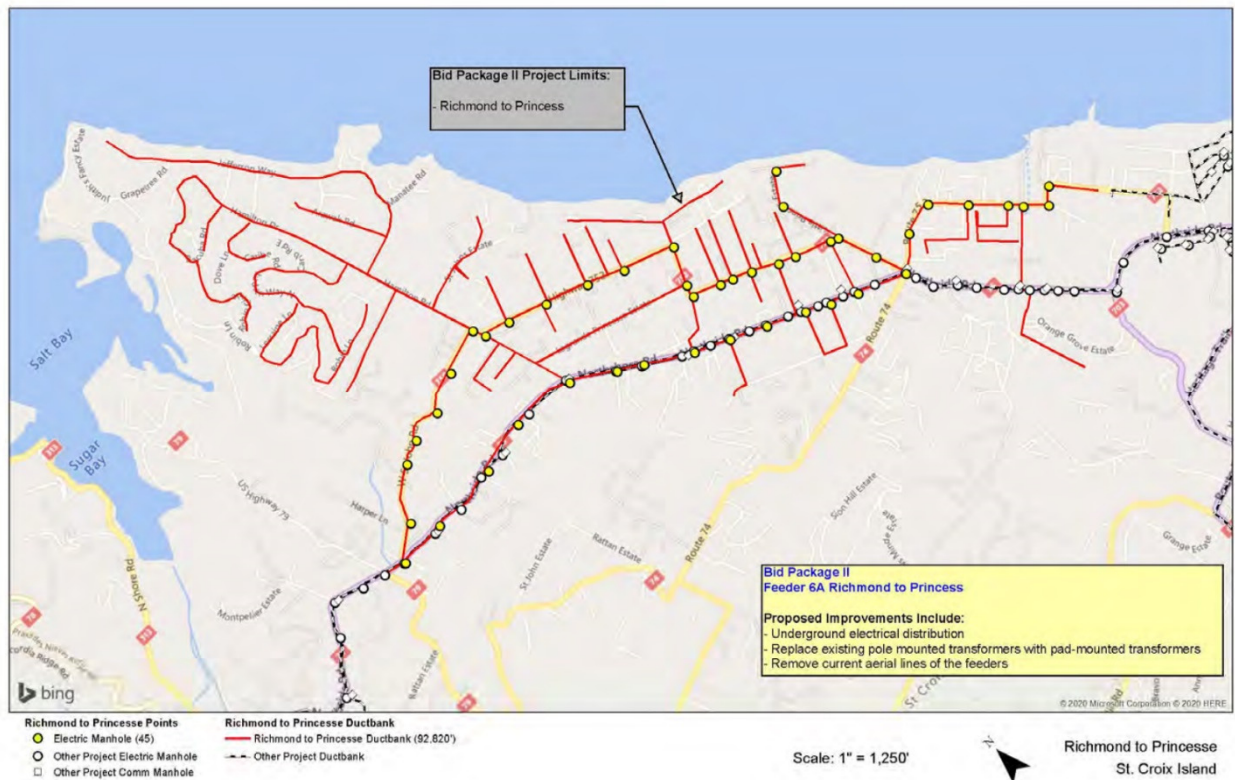




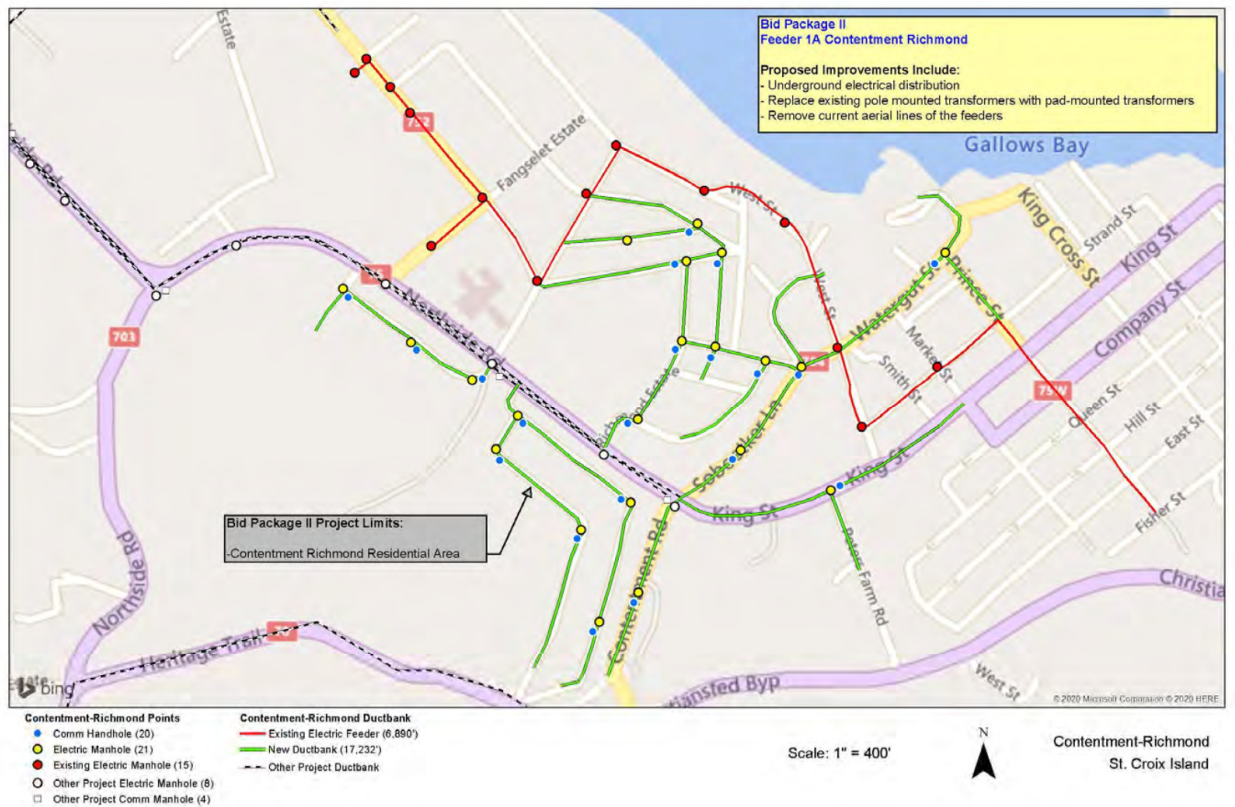
## Morning Star



## Richmond to Princesse



## Contentment and Richmond



The installation of the electrical underground project in many areas will be working on very narrow streets and the project will be designed and constructed to minimize disruption to residents. Monitoring and inspections will be included in the design specifications to ensure that roadways are properly repaired once installation is complete.

## **ENVIRONMENTAL IMPACTS**

### **Climate/Weather**

The project addresses issues created by runoff as the result of rainfall, especially significant rainfalls associated with tropical storms and hurricanes. The intention of the design is not only to address the issues faced today but the changing weather patterns of climate change.

#### *Prevailing Winds*

The Virgin Islands lie in the "Easterlies" or "Trade Winds" which traverse the southern part of the "Bermuda High" pressure area, thus the predominant winds are usually from the east northeast and east (IRF, 1977). These trade winds vary seasonally and are broadly divided into 4 seasonal modes: 1) December to February; 2) March to May; 3) June to August; and 4) September to November. Below are the characteristics of these modes as taken from Marine Environments of the Virgin Islands Technical Supplement No. 1 (IRF, 1977).

#### *December – February*

During the winter the trade winds reach a maximum and blow with great regularity from the east northeast. Wind speeds range from eleven to twenty-one knots about sixty percent of the time in January. This is a period when the Bermuda High is intensified with only nominal compensation pressure changes in the Equatorial Trough. The trade winds during this period are interrupted by "Northerners" or "Christmas Winds" which blow more than twenty knots from a northerly direction in gust from one to three days. Such outbreaks average about thirty each year. They are created by strengthening of high-pressure cells over the North American continent, which, in turn, allows weak cold fronts to move, southeastward over the entire Caribbean region. These storms are accompanied by intermittent rains and by clouds and low visibility for mariners.

#### *March – May*

During the spring, the trade winds are reduced in speed and blow mainly from the east. Winds exceed twenty knots only thirteen percent of the time in April. The change in speed and direction is the result of a decrease of the Equatorial Trough.

#### *June – August*

Trade winds reach a secondary maximum during this period and blow predominantly from the

east to east southeast. Speeds exceed twenty knots twenty-three percent of the time during July. The trend for increasing winds results from the strengthening of the Bermuda High and concurrent lowering of the pressure in the Equatorial Trough. Trade winds during this period are interrupted by occasional hurricanes.

### *September – November*

During the fall, winds blow mainly from the east or southeast and speeds reach an annual minimum. Only seven percent of the winds exceed twenty knots in October. The low speeds result from a decrease in the Equatorial Trough. During this period, especially during late August through mid-October, the normal trade wind regime is often broken down by easterly waves, tropical storms, and hurricanes.

### *Storm and Hurricanes*

There are numerous disturbances during the year, especially squalls and thunderstorms. These occur most frequently during the summer, lasting only a few hours and causing no pronounced change in the trade winds.

A tropical cyclone whose winds exceed 74 miles per hour is termed a hurricane in the northern hemisphere, and significantly affects the area. These hurricanes occur most frequently between August and mid-October with their peak activity occurring in September. The annual probability of a cyclone is one in sixteen years.

### *Climate*

The average annual rainfall on St. Croix is approximately 40 inches, ranging from 30 inches toward the eastern end of the islands to more than 50 inches at the higher elevations to the west. The project area lies in an area that receives approximately 40 inches of rainfall a year. The roadway lies in an area within several very large watersheds.

Rainfall usually occurs in brief, intense showers of less than a few tenths of an inch and major rainfall events are associated with weather systems (USGS 1998). The Virgin Islands have no sharply defined wet season. The wettest period generally is from September to November, and the driest period is from January to June (USGS 1998).

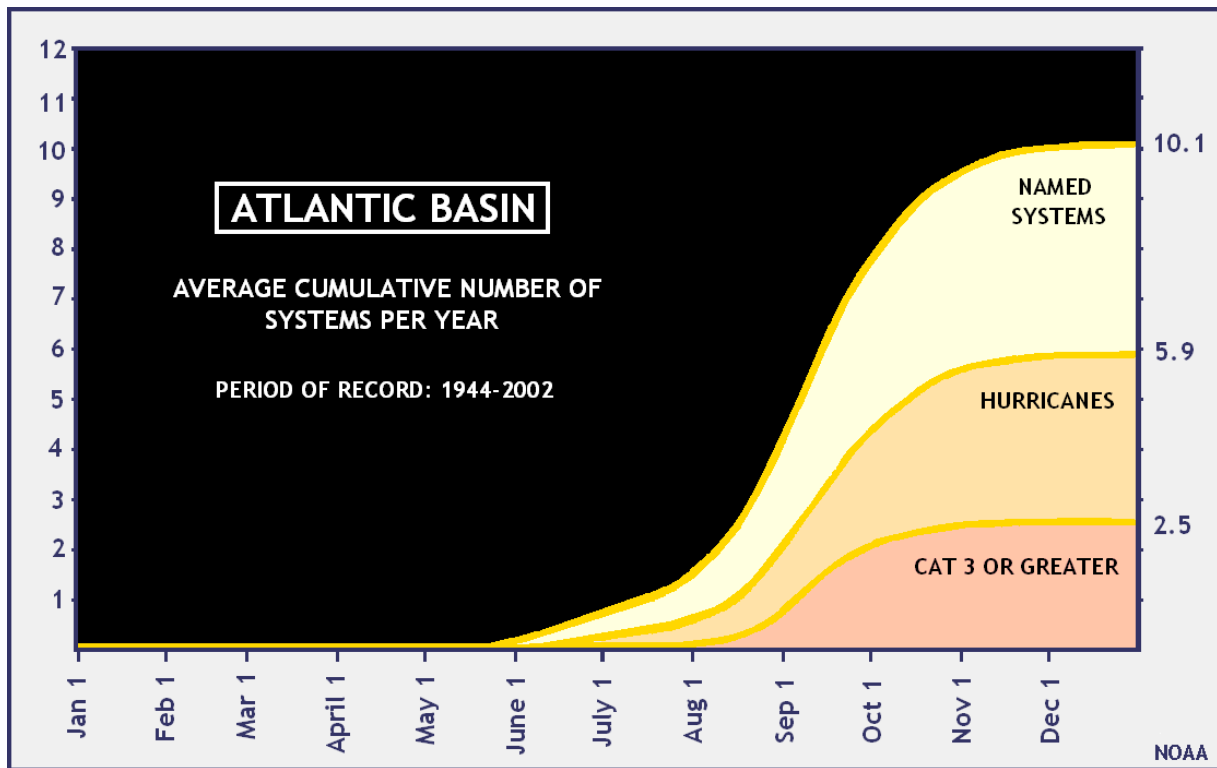


Figure 26. Tropical Cyclone Frequencies in the Atlantic (National Weather Service).

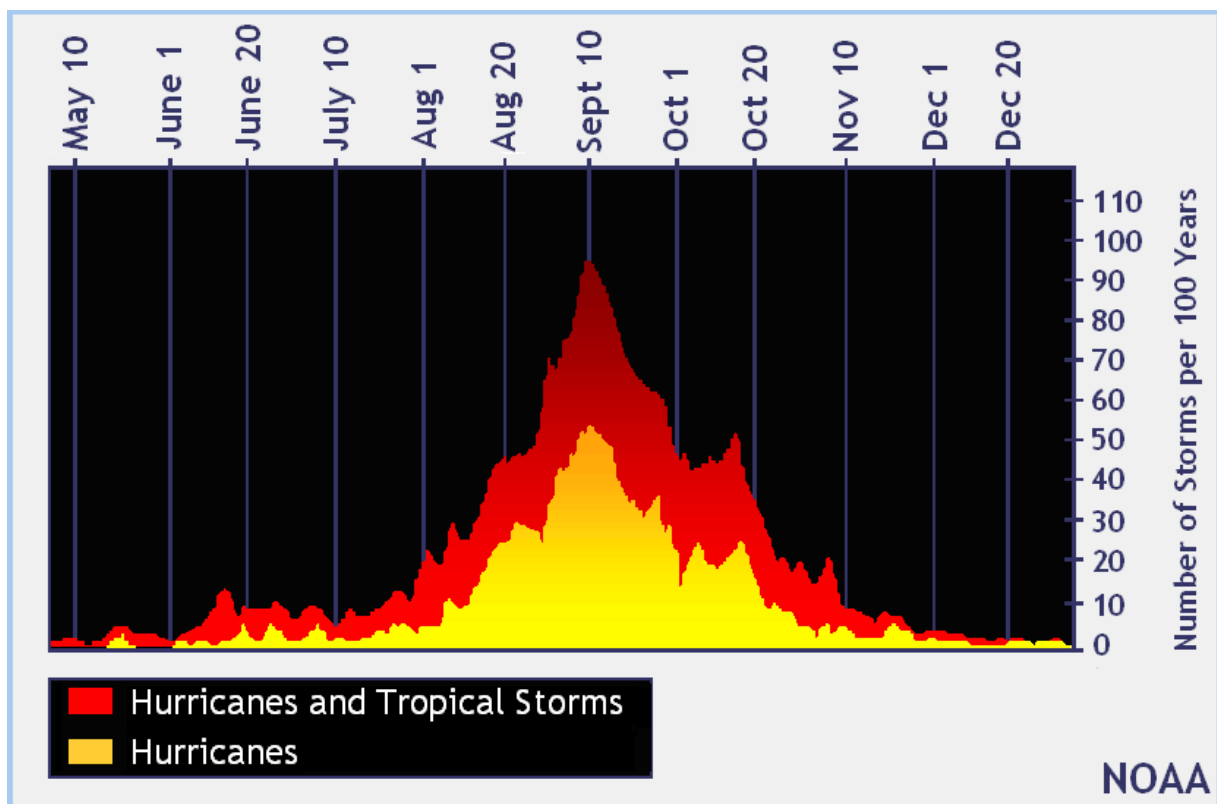


Figure 27. Tropical Storm and Hurricane Occurrences in the Atlantic (National Weather Service)

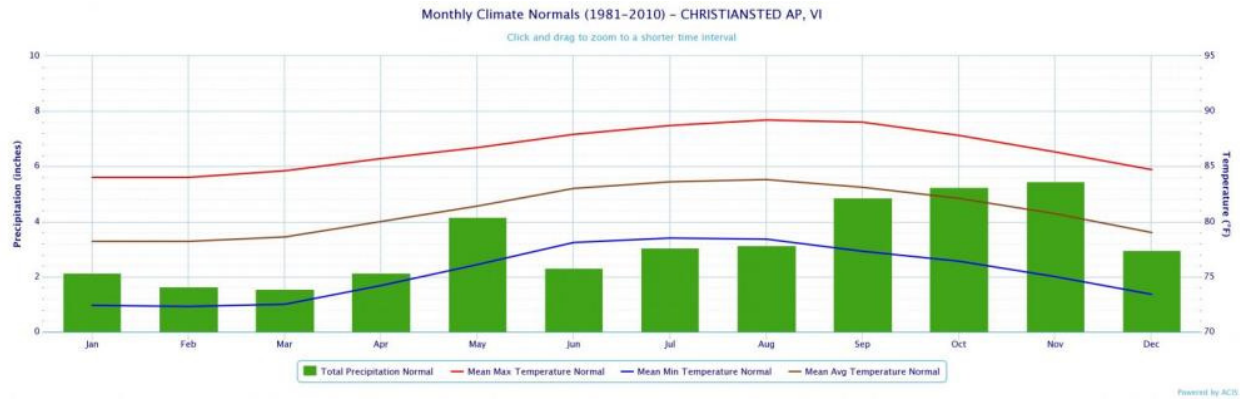


Figure 28. Climate Normals Christiansted St. Croix  
<https://noaa.maps.arcgis.com/home/webmap/viewer>

### Landform Geology, Soils and Historic Land Use

Both project components are within areas that have developed and heavily impacted by man's use. The road and electrical underground areas have been graded and top soil removed and elevations impacted through grading from their natural state.

Highway 75 has been a main route of transportation since historic times. The roadway is shown on the 1954 USGS aeriels.





Figure 29. USGS 1954 Aerial – The orange arrow indicates the eastern end of the project area.



Figure 30. USGS 1954 Aerial – The orange arrows indicate the start and end of the project west of Christiansted and in the Salt River area.



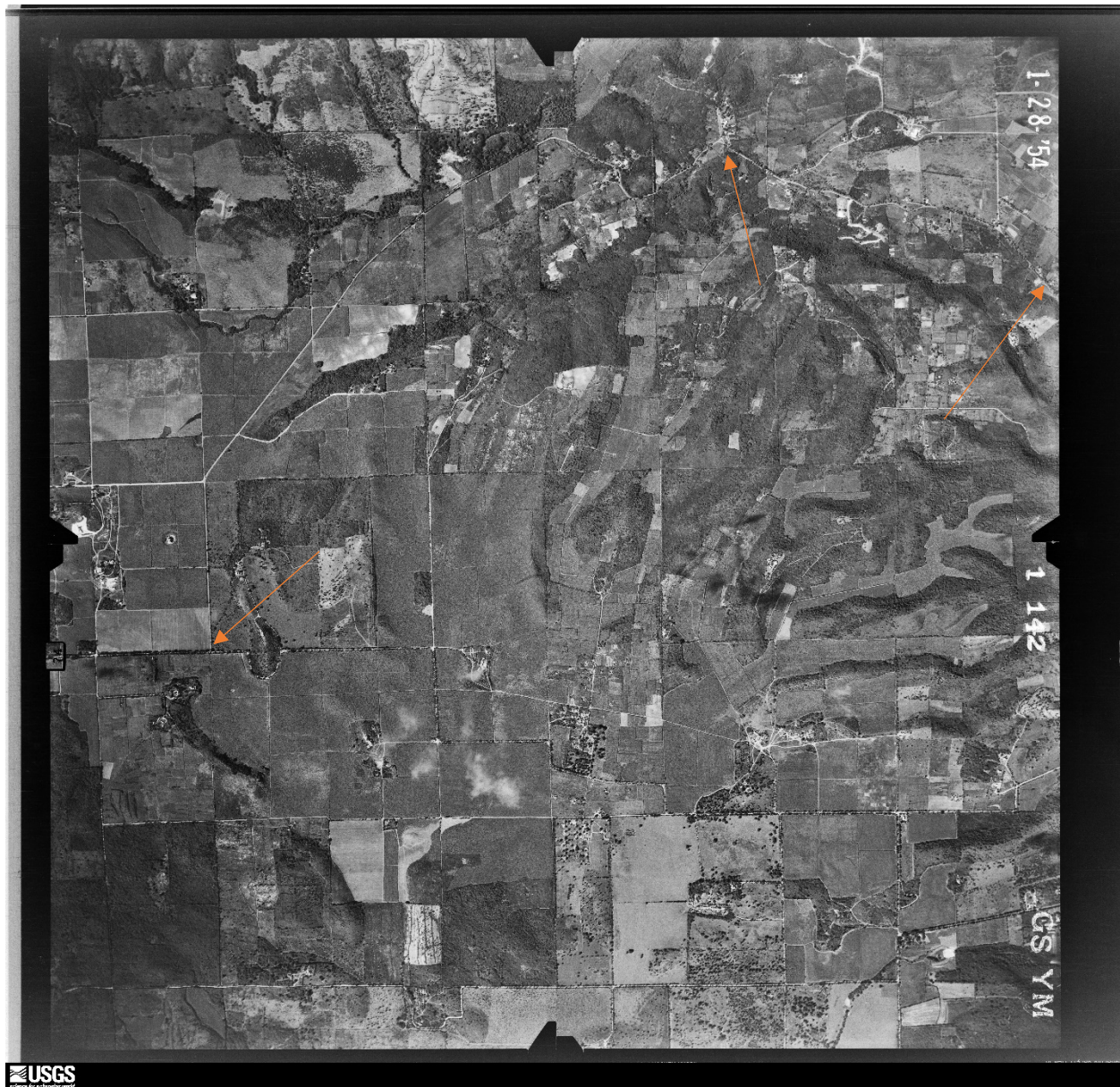


Figure 31. USGS 1954 Aerial – The orange arrows indicate the project route through the Salt River area and to the projects western end.

Northside Road passes through five soil types throughout its length, Arawak gravelly loam, 5 to 12 percent slopes, very stony, Arawak gravelly loam, 12 to 20 percent slopes, very stony, Glynn gravelly loam, 2 to 5 percent slopes, Sion clay, 2 to 5 percent slopes and Urban land.

Arawak gravelly loam 5 to 12 percent slopes is found in areas with 42 to 45 inches of rainfall, on no prime farmland and found in low hills and footslopes. It is 10 to 20 inches to paralithic bedrock and is well drained. Arawak gravelly loam, 12 to percent slopes, very stony is found in areas with 41 to 45 inches, is found on hillsides, summits, shoulders, and back slopes. It also is 10 to 20 inches to paralithic bedrock and is well drained.



Glynn gravelly loam, 2 to 5 percent slopes is found in areas of 40 to 46 inches of rainfall and is prime farm land if irrigated. It is found on alluvial fans and footslopes. It is formed by weathered volcanic residuum. Its more than 80 inches to a restrictive feature and the soil is well drained. Glynn gravelly loam, 5 to 12 percent slopes is found in areas that have between 41 and 47 inches of rainfall annually and otherwise is similar to the areas with 2 to 5 percent slopes.

Sion clay, 2 to 5 percent slopes is found in areas of 42 to 44 inches of rainfall and is found on valley floors and toeslopes. It is more than 80 inches to restrictive features and is well drained. It is derived from alkaline marine deposits and is prime farmland if irrigated.

Urban land is not prime farmland and has been highly altered by man.

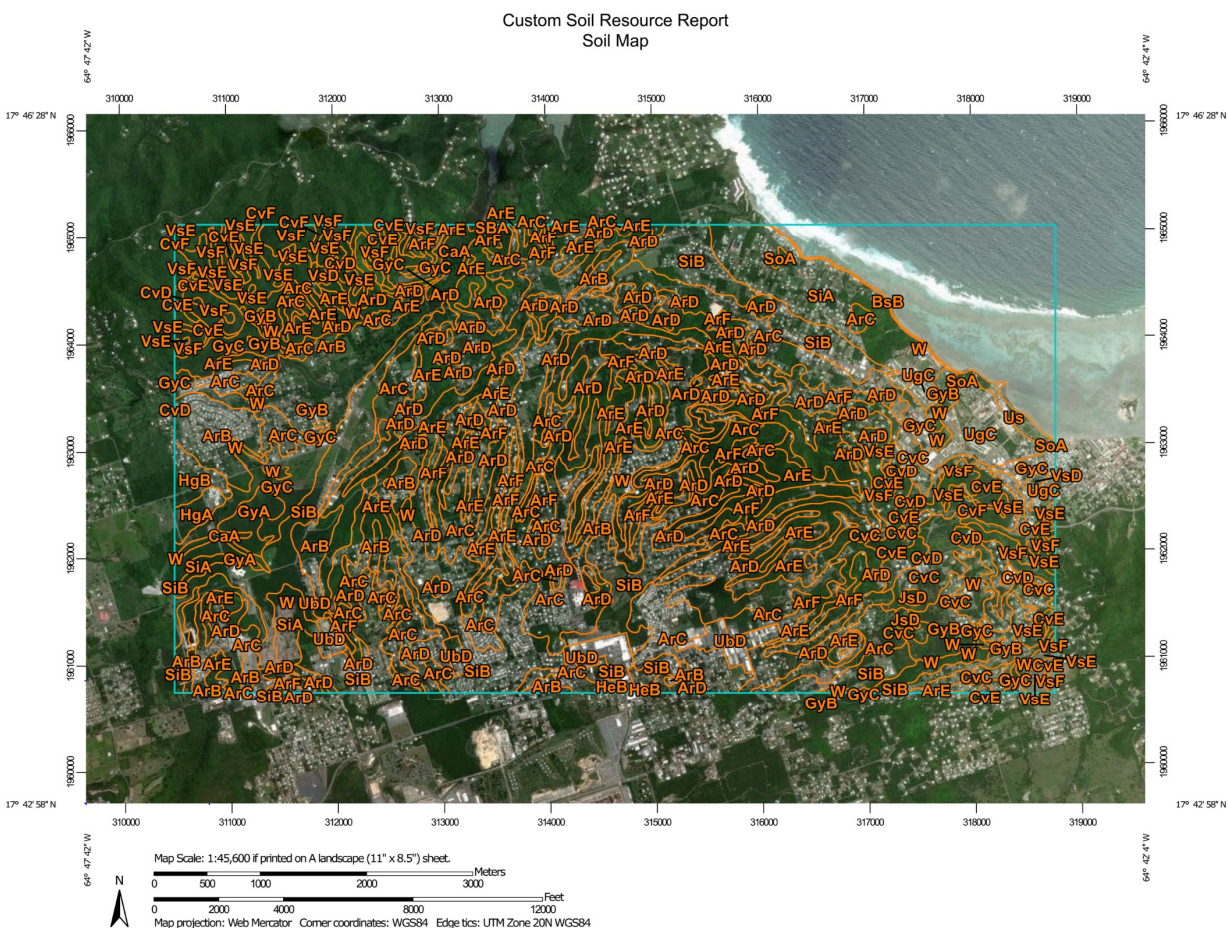


Figure 32. USGS Custom Soil Survey Map Northside Road

The underground electrical project encompasses Arawak gravelly loam, 5 to 12 percent slopes, very stony, Cramer-Victory complex, 2 to 12 percent slopes, very stony, Cramer-Victory complex, 12 to 20 percent slopes, very stony, Cramer-Victory complex, 20 to 40 percent slopes, very stony, Glynn gravelly loam, 2 to 5 percent slopes, Solitude gravelly fine sandy loam, 0 to 2 percent slopes, frequently flooded, Urban land-Glynn complex, 0 to 12 percent slopes, Ustorthents, Victory-Southgate complex, 12 to 20 percent slopes, very stony

Awawak gravelly loam, and Glynn gravelly loam are described above. Cramer-Victory complex, 2 to 12 percent slopes, very stony is found on mountain slopes and hills, and where rainfall is between 40 and 47 inches annually. It is 10 to 20 inches to paralithic bedrock and 15 to 36 inches to lithic bedrock. These soils are well drained and are not prime farmland. Cramer-Victory complex 12 to 20 percent slopes is found in areas of 40 to 48 inches of rainfall and on mountain slopes and hills, the soil is also well drained and not prime farmland.

Cramer-Victory complex, 20 to 40 percent slopes, very stony is found in areas of 40 to 51 inches of rainfall a year and are similar to the soils which are not as steep.

Sion clay, 0 to 2 percent slopes is found on valley floors and toeslopes, it is found in areas of 41 to 44 inches of rainfall. It is prime farmland if irrigated and restrictive features are more than 80 inches deep.

Solitude gravelly fine sandy loam, 0 to 2 percent slopes, frequently flooded is found in areas of 39 to 45 inches of rainfall annually and is often a tidal flat, salt marsh, it is found on toeslopes. It is not prime farmland and poorly drained.

Urban land-Glynn complex, 0 to 12 percent slopes is found in areas of 41 to 42 inches of rainfall and is not prime farmland.

Ustorthents is found in areas of 39 to 43 inches of rainfall, and restrictive features are more than 80 inches deep.

Victory-Southgate complex, 2 to 12 percent slopes, very stony is found in areas with 40 to 52 inches of rainfall annually. This soil is found on hillslopes, summits, shoulders and backslopes. It is 20 to 40 inches to paralithic bedrock and 40 to 60 inches to lithic bedrock. This is not prime farmland. Victory-Southgate complex, 12 to 20 percent slopes, very stony is found in areas of 40 to 51 inches of rainfall but otherwise is similar to the 2 to 12 percent slope soil.

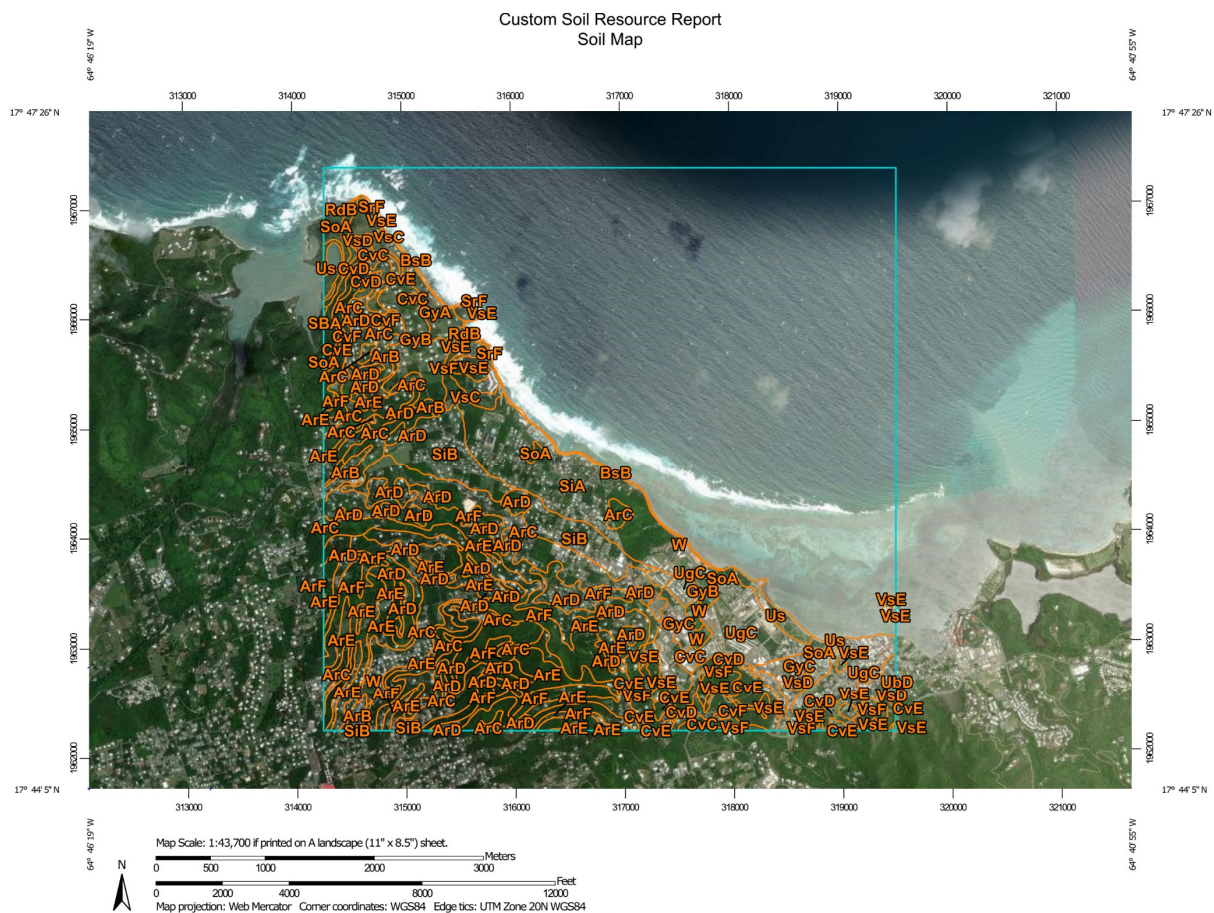
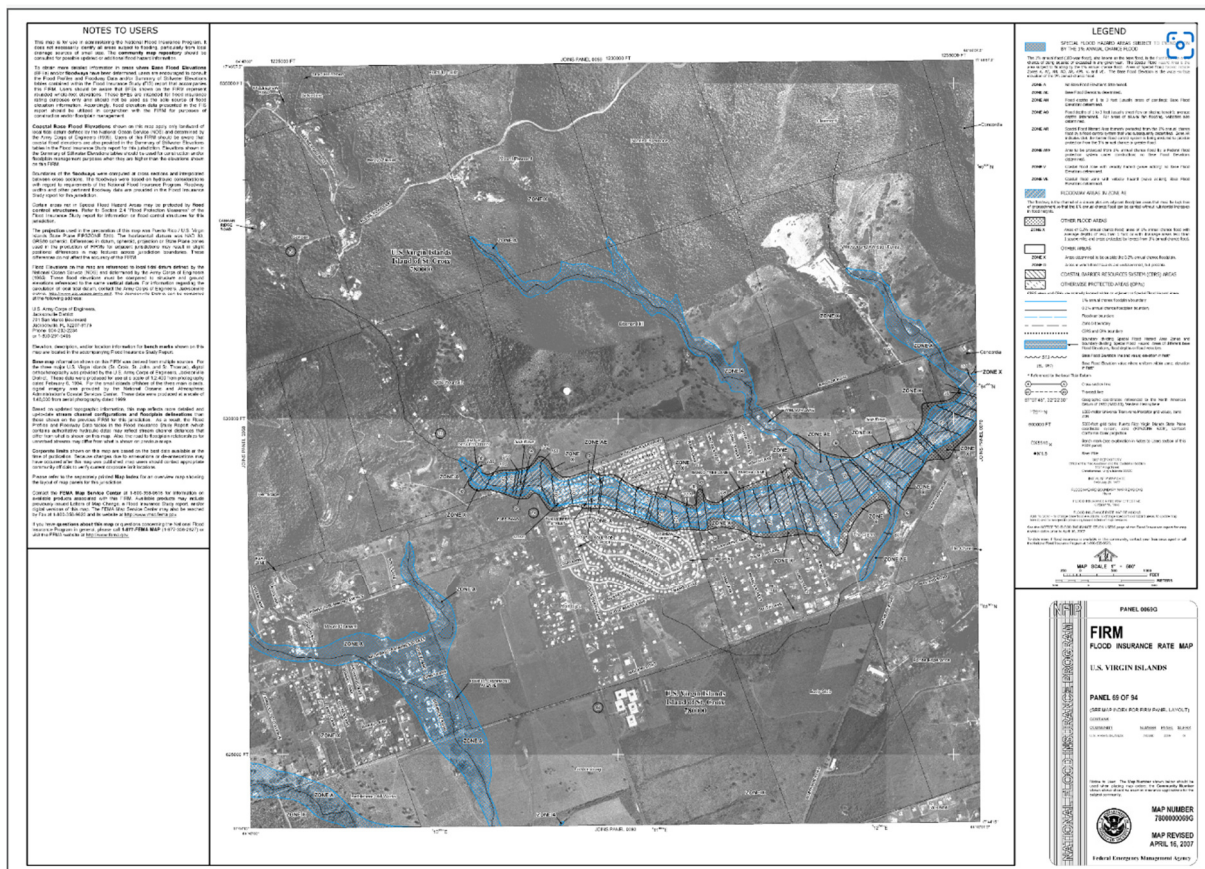


Figure 33. USGS Custom Soil Survey Map Northside Road









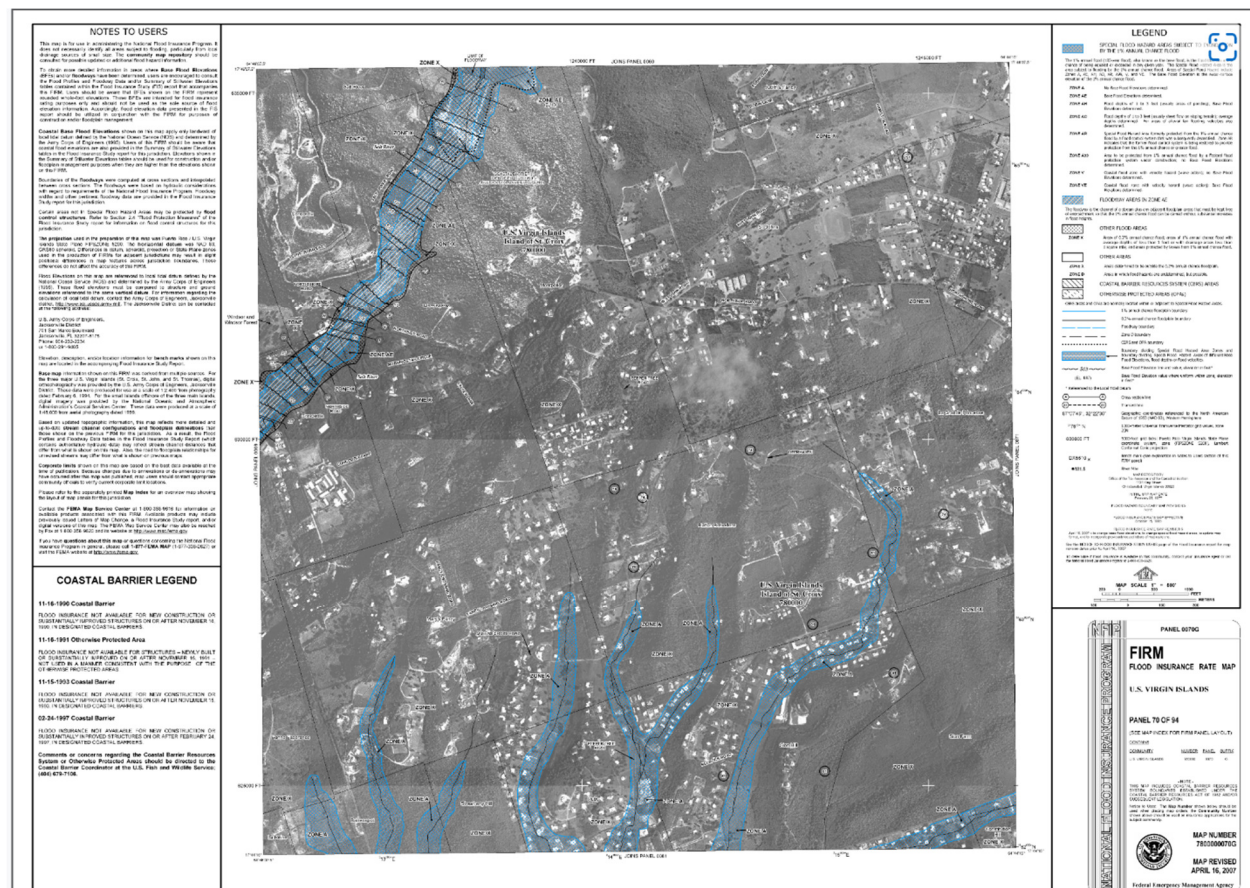


Figure 36. FEMA FIRM 70 of 94.

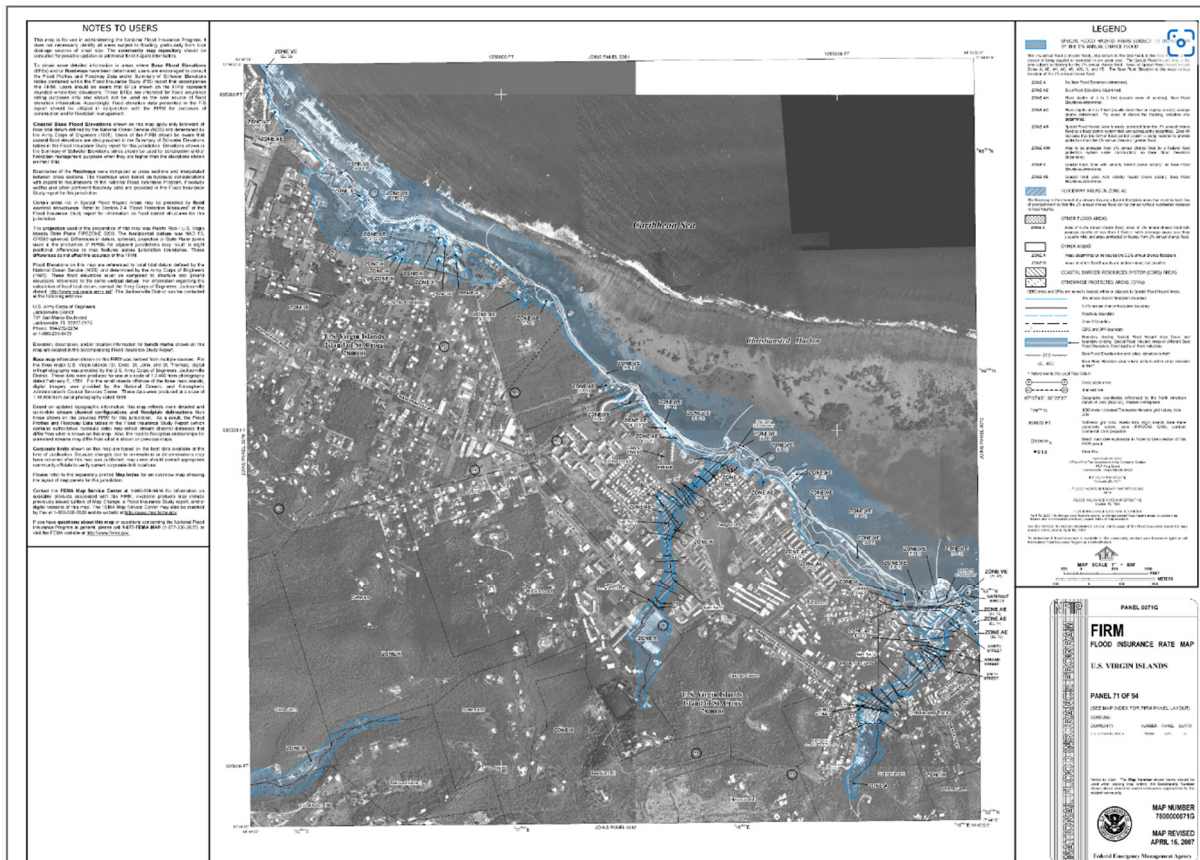


Figure 37. FEMA FIRM 71 of 94.

A Stormwater Pollution Prevention Plan will be developed for the project and coverage under the General Territory Pollutant Discharge Elimination System (TPDES) Permit will be sought.

## Drainage Patterns

Offsite flows approach Northside Highway from central higher elevation points on the island through natural drainage courses. Offsite flows are often collected within roadside ditches where they are directed to roadway culvert crossings along the western and central portions of the project. In the eastern end of the project, flows originate in the higher elevations in natural drainage ways and then continue through urban areas to the crossing of Northside Highway. There are large stretches of the roadway where no cross culverts exist, and flows cross in a sheet flow condition.

## Peak Flow Calculation

Design peak flows were estimated using HEC-HMS. The contributing watersheds were delineated within ARCGIS utilizing topography maps of the island. The topography available includes more detailed topography surveyed for the roadway improvement project as well as less detailed LIDAR data that covers the entire island. The LIDAR data was used for the delineation in the upper portions of the watershed.

Rainfall amounts vary significantly across the island with higher rates in the higher elevations. NOAA 14 rainfall data is available for the island. A data point was chosen that is near the center of the project. This point has a rainfall amount of 19.4 inches for the 100-year, 24-hour storm event.

The SCS Curve Number loss method was used to estimate the surface runoff. The method estimates precipitation excess as a function of cumulative precipitation, soil cover, land use and antecedent moisture. The method assigns curve numbers (CN) to soils based on their watershed characteristics.

Natural Resources Conservation Service (NRCS) soil surveys are available for the island to provide soil data information. The soil data includes soil unit types with soil characteristics including the Hydrologic Soils Group (HSG). A summary of the HSG is given in Table 1. A cover description of “Woods” in good condition was chosen for the land use. This cover has a CN of 70 for HSG type C and 77 for HSG type D.

**Table 1: Soils Parameters**

Soil ID	Hydrologic Soils Group	Texture
ArB	D	Gravelly loam
ArC	D	Gravelly loam
ArD	D	Gravelly loam
ArE	D	Gravelly loam
ArF	D	Gravelly loam
CvC	D	Very Gravelly Loam
CvD	D	Very Gravelly Loam
CvE	D	Very Gravelly Loam
GyB	C	Gravelly loam
GyC	C	Gravelly loam
SiB	C	Clay
UgC	C	Very Gravelly Loam
VsE	C	Very Gravelly Loam
VsF	C	Very Gravelly Loam

The Soil Conservation Service (SCS) Unit Hydrograph method was used for the dimensionless hydrograph. The method requires the input of a lag time which is defined as the time difference between the center of mass of rainfall excess and the peak of the unit hydrograph. The lag time is equal to:

$$t_{lag} = 0.6t_c$$

where  $t_c$  is the time of concentration

Time of concentration can be estimated as:

$$t_c = t_{sheet} + t_{shallow} + t_{channel}$$

where  $t_{sheet}$  is the sum of travel time in sheet flow segments,  $t_{shallow}$  is sum of travel time in

shallow flow areas such as streets, gutters, or shallow rills, and  $t_{\text{channel}}$  is the sum of travel time in channel segments.

**Table 2 gives a summary of the offsite flows for the 25-year and 50-year storm events.**

<b>Watershed ID</b>	<b>25-Year Flow (cfs)</b>	<b>50-Year Flow (cfs)</b>	<b>Watershed ID</b>	<b>25-Year Flow (cfs)</b>	<b>50-Year Flow (cfs)</b>
WS 0	52	60	WS 16	22	26
WS 1	39	45	WS 17	74	85
WS 2	52	60	WS 18	15	17
WS 3	186	213	WS 19	28	32
WS 4	44	50	WS 20	95	110
WS 5	56	64	WS 21	99	114
WS 6	217	249	WS 22	13	15
WS 7	173	200	WS 23	16	18
WS 8	158	184	WS 24	27	31
WS 9	220	253	WS 25	29	33
WS 10	74	86	WS 26	21	24
WS 11	62	72	WS 27	59	68
WS 12	188	216	WS 28	64	75
WS 13	190	218	WS 29	33	38
WS 14	106	122	WS 30	63	73
WS 15	39	44			

Existing culverts were analyzed to see if they had capacity to convey the estimated offsite flows. The existing culverts are all circular pipes. Culverts that can't convey offsite flows or that are not compatible with the proposed roadway improvements were either extended or upsized.

Proposed culverts were sized to convey the 50-year discharge at a headwater elevation generally equal to or less than the headwater elevation determined for the existing culvert hydraulic analysis. The maximum allowable headwater was set at (HW/D) not to exceed 1.5. Manning roughness coefficients of 0.012 was used for concrete culverts.

An entrance loss coefficient of 0.50 was used for pipe culverts with end-sections or headwalls. Table 3 lists the existing culverts as well as the proposed culvert upgrades or extensions where the



existing culvert size is sufficiently sized. Culverts were also added at locations where known flooding conditions occur due to ponding adjacent to the roadway. The hydraulic output for the existing and proposed condition analyses can be made available upon request.

**Table 3: Culvert Inventory**

Culvert ID	Station	Existing Size (in)	Proposed Sized (in)
WS 0	203+25	36	36
WS 1	219+77	36	36
WS 2	142+25	24	36
WS 3	271+57	N/A	2-48
WS 4	284+77	N/A	36
WS 5	318+32	N/A	2-30
WS 8	194+65	36	2-48
WS 9	222+17	24	2-54
WS 18	295+09	N/A	24
WS 19	327+79	N/A	30
WS 23	215+13	36	36
WS 24	245+71	36	36

### **Drainage Inlet Design**

Existing closed storm drain systems are located at the eastern end of the project at low points and intersections. Intersections with storm drain systems include the Five Corners intersection, Pueblo intersection, and Contentment Gut intersection. Existing inlets are grated inlets.

Proposed inlets will be placed at key locations including but not limited to sumps, upstream of superelevation crossovers, at major intersections, at locations where known flooding occurs and where spread criteria is not met. Inlets will be designed using FlowMaster.

Proposed roadway inlets for this project will be designed for the 10-year peak discharge. Curb opening inlets with wings will be used for the new curb and gutter sections. The existing inlets are grated inlets with no curb opening. Curb opening inlets are being proposed because they are more efficient and do not clog as easy as grated inlets do.

### **Storm Drain Design**

StormCAD version V8i will be used to size the new storm drains for the onsite drainage systems. The HEC-22 head loss method will be applied. The storm drain hydraulic systems will be designed for the 10-

year peak discharge while following the criteria from Chapter 7 of Reference 1. Excerpts from the 30% plans have been included with this report that show the existing and proposed closed storm drain systems.

### **Maintenance Considerations**

Culverts will be designed with trash racks to prevent debris from getting clogged in the barrel. Trash racks will be sloped so flows will push floating debris to the top portion of the culvert entrance to allow easier passage of storm water through the lower portion of the culvert opening. Storm drain systems will be designed to encourage sediment and silt to be passed through pipes to the outlet. Pipe slopes will be steepened to the extent possible to achieve a “cleansing” velocity for low flow events. In addition, curb opening inlets will be used in conjunction with grated inlets to improve the hydraulic performance and are less prone to clog as compared to merely a grated inlet by itself.

The construction of Northside Highway will result in several drainage improvements. These include:

- Cross culverts for offsite flows.
- Roadway curb opening inlet
- Closed storm drain systems in urban areas where curb and gutter are proposed

The project will not be altering any water flows and will be replacing and upsizing drainage features along the corridor to add resiliency and increase life expectancy of the roadway.



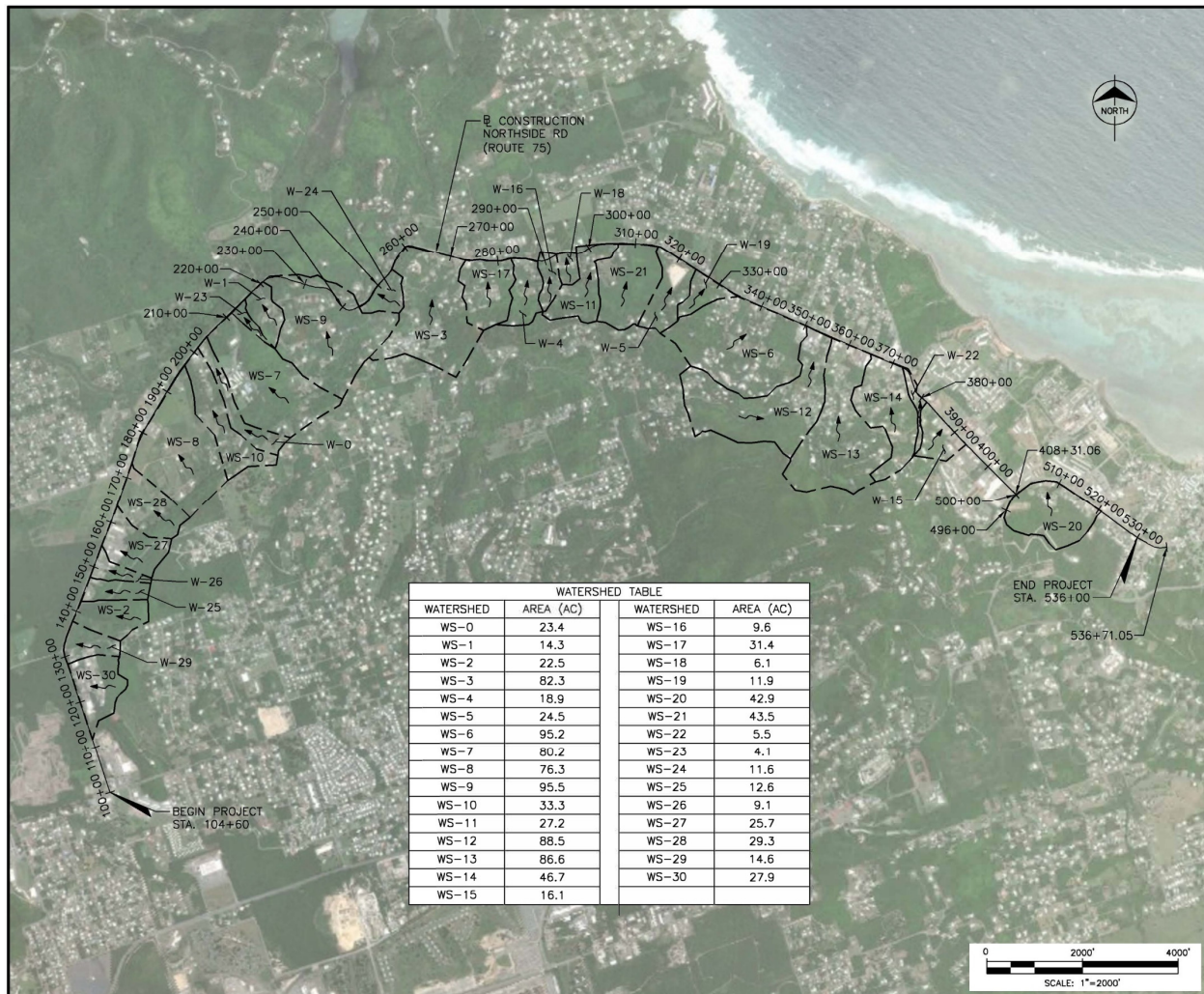


Figure 38. Drainage Map

### Erosion Control

During construction silt fencing, inlet protection and sediment traps and check dams will be utilized to protect against sedimentation. Stockpiles will be protected by silt fencing and covered when necessary and not placed in drainage area. Best Management Practices following “Stormwater Management Pacific and Caribbean Islands”. Once work is complete soils will be stabilized by pavement, concrete, and placement of rubble rip rap. Planting of native grasses will be used to stabilize soils which are disturbed and will not be paved or concreted.

### Fresh Water Resources

The proposed project will have no impact on freshwater resources as it will only be impacting area which are previously disturbed and developed.

## **Oceanography**

The application is for improvements of Northside Roadway and the placement of existing aerial electrical transmission lines underground. The project will not be affected by oceanographic processes, nor will it affect them. If proper sedimentation and erosion is implemented and properly maintained the project should have no impact on marine water quality.

## **Marine Resources**

The application is for improvements of Northside Roadway and the placement of existing overhead electrical transmission lines underground. The project will not be affected by benthic habitats, nor will it affect them. If proper sedimentation and erosion protection is implemented and properly maintained the project should have no impact on marine resources.

## **Terrestrial Resources**

There are large trees scattered along Northside Roadway, many of these trees are from historic times and these trees are an important part of Virgin Culture and Heritage. Most of these trees are protected by The Virgin Islands Community and Heritage Tree Law (Act 8149). Many of these trees were planted to provide shade to the roadway. The trees which are found along the roadway include mahoganies (*Swietenia mahogani* and *S. macrophylla*), tamarinds (*Tamarindus indica*), genips (*Melicoccus bijugatus*), tibets (*Albizia lebbek*), flamboyants (*Delonix regia*), turpentine (*Bursera simaruba*), saman (*Samanea saman*), dog almonds (*Andira inermis*), seagrapes (*Cocoloba uvifera*), kapok (*Ceiba pentandra*), white manjack (*Cordia alba*), and mango (*Mangifera indica*). Many of these trees are 200 years old and many bear the damage of not only recent hurricanes but the hurricanes of the past, damage from powerline work and damage from car accidents. Many of the roadside areas are developed and kept as lawns, pastures or are paved in some cases right up around the trees. Other areas are less developed and despite periodic mowing are colonized by Sansevieria (*Dracaena trifasciata*), tantan (*Leucaena leucocephala*), guinea grass (*Panicum maximum*), sage (*Lantana* spp.), crotons (*Croton* sp), guinea grass (*Panicum maximum*), tantan, sage (*Lantana* spp.), crotons (*Croton* sp) and sapling trees, primarily genip.



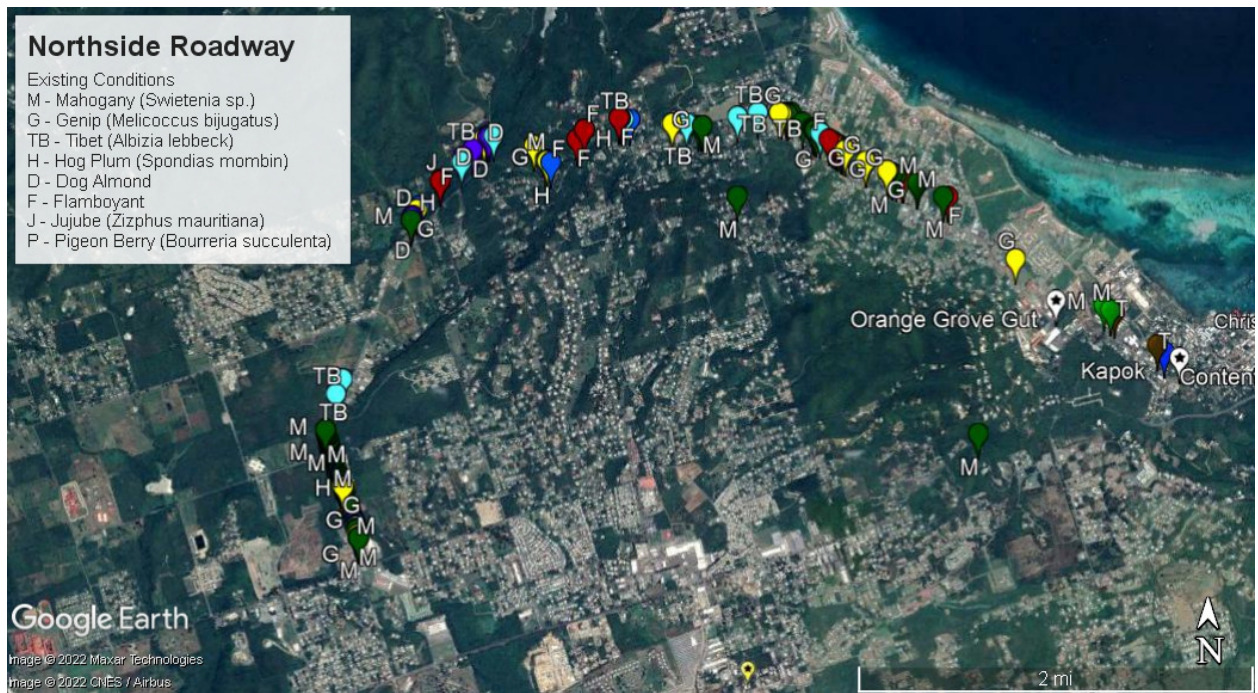


Figure 39. Tree location map

Latitude	Longitude	Tree Types	DBH	Notes	17.75825	64.76398	Dog Almond (Andira inermis)	2ft
17.74252	64.71169	Kapok ( <i>Ceiba pentandra</i> )	7ft		17.75827	64.76382	Dog Almond (Andira inermis)	5ft
17.74302	64.71223	Tamarind (Tamarindus indica)	3ft		17.75831	64.76349	Tibet ( <i>Albizia lebbek</i> )	4ft
17.7454	64.71559	Tamarind (Tamarindus indica)	5ft		17.75812	64.76424	Genip (Melicoccus bijugatus)	3ft
17.74585	64.71559	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.75802	64.76431	Dog Almond (Andira inermis)	2ft
17.74591	64.71642	Mahogany ( <i>Swietenia sp.</i> )	2ft		17.75757	64.76479	Dog Almond (Andira inermis)	3ft
17.7493	64.72327	Genip (Melicoccus bijugatus)	8ft	Clump of three (3)	17.75731	64.76513	Dog Almond (Andira inermis)	4ft
17.75388	64.72841	Flamboyant (Royal poinciana)	6ft		17.75676	64.76589	Dog Almond (Andira inermis)	3ft
17.7539	64.72876	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.7564	64.76596	Tibet ( <i>Albizia lebbek</i> )	4ft
17.75486	64.73077	Mahogany ( <i>Swietenia sp.</i> )	4ft		17.75504	64.76757	Jujube ( <i>Ziziphus mauritiana</i> )	3ft
17.75486	64.73078	Mahogany ( <i>Swietenia sp.</i> )	4 1/2ft		17.755	64.76762	Flamboyant (Royal poinciana)	2ft
17.7553	64.73183	Genip (Melicoccus bijugatus)	6ft		17.75457	64.76797	Genip (Melicoccus bijugatus)	2ft
17.755351	64.73195	Flamboyant (Royal poinciana)	3ft		17.75441	64.76817	Tibet ( <i>Albizia lebbek</i> )	2ft
17.7554	64.73241	Mahogany ( <i>Swietenia sp.</i> )	2 1/2ft		17.7531	64.76923	Hog Plum ( <i>Spondias mombin</i> )	2ft
17.75552	64.73268	Mahogany ( <i>Swietenia sp.</i> )	2ft		17.75286	64.76942	Genip (Melicoccus bijugatus)	2ft
17.7556	64.73275	Genip (Melicoccus bijugatus)	3ft		17.75242	64.76973	Dog Almond (Andira inermis)	4ft
17.75563	64.73282	Genip (Melicoccus bijugatus)	3ft		17.75231	64.76982	Dog Almond (Andira inermis)	3ft
17.75569	64.73301	Mahogany ( <i>Swietenia sp.</i> )	5ft		17.75211	64.76985	Mahogany ( <i>Swietenia sp.</i> )	7ft
17.75577	64.7331	Genip (Melicoccus bijugatus)	4ft		17.74043	64.77507	Tibet ( <i>Albizia lebbek</i> )	2ft
17.75642	64.7347	Genip (Melicoccus bijugatus)	3ft		17.73935	64.77556	Tibet ( <i>Albizia lebbek</i> )	3ft
17.75645	64.73477	Genip (Melicoccus bijugatus)	4ft		17.73673	64.77636	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.7568	64.73527	Genip (Melicoccus bijugatus)	2ft		17.73665	64.77634	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75722	64.73613	Mahogany ( <i>Swietenia sp.</i> )	3 1/2ft		17.73657	64.72634	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75727	64.73634	Genip (Melicoccus bijugatus)	3ft		17.7365	64.77631	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75737	64.7365	Genip (Melicoccus bijugatus)	3ft		17.73634	64.77625	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75742	64.73662	Dog Almond (Andira inermis)	3ft		17.73627	64.77623	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75744	64.73664	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.73618	64.77622	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.75746	64.73667	Genip (Melicoccus bijugatus)	4ft		17.73548	64.77612	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75751	64.7367	Pigeon Berry ( <i>Bourreria succulenta</i> )	2ft		17.73594	64.77612	Mahogany ( <i>Swietenia sp.</i> )	4ft
17.75757	64.73675	Genip (Melicoccus bijugatus)	5ft		17.73583	64.77611	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75763	64.73684	Genip (Melicoccus bijugatus)	2ft		17.73572	64.77608	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75767	64.73701	Flamboyant (Royal poinciana)	3ft		17.73563	64.77607	Mahogany ( <i>Swietenia sp.</i> )	5ft
17.75777	64.73715	Tibet ( <i>Albizia lebbek</i> )	2ft		17.73533	64.77595	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.75785	64.73723	Flamboyant (Royal poinciana)	2ft		17.73542	64.77599	Hog Plum ( <i>Spondias mombin</i> )	2ft
17.75788	64.73734	Flamboyant (Royal poinciana)	3ft		17.7353	64.77596	Hog Plum ( <i>Spondias mombin</i> )	2ft
17.75799	64.7375	Genip (Melicoccus bijugatus)	3ft		17.73505	64.77593	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75805	64.73761	Flamboyant (Royal poinciana)	3ft		17.73491	64.77588	Hog Plum ( <i>Spondias mombin</i> )	2ft
17.75853	64.73827	Tibet ( <i>Albizia lebbek</i> )	2ft		17.73473	64.77579	Mahogany ( <i>Swietenia sp.</i> )	4ft
17.75855	64.73829	Mahogany ( <i>Swietenia sp.</i> )	2ft		17.73457	64.77578	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75867	64.73844	Pigeon Berry ( <i>Bourreria succulenta</i> )	2ft		17.73446	64.77575	Mahogany ( <i>Swietenia sp.</i> )	4ft
17.75868	64.73856	Genip (Melicoccus bijugatus)	3ft		17.73428	64.77571	Mahogany ( <i>Swietenia sp.</i> )	5ft
17.75873	64.73869	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.73402	64.77556	Hog Plum ( <i>Spondias mombin</i> )	3ft
17.7588	64.73877	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.7338	64.77551	Mahogany ( <i>Swietenia sp.</i> )	4ft
17.75889	64.73889	Mahogany ( <i>Swietenia sp.</i> )	4ft		17.73361	64.7755	Jujube ( <i>Ziziphus mauritiana</i> )	4ft
17.75928	64.73962	Mahogany ( <i>Swietenia sp.</i> )	4ft		17.73353	64.77543	Mahogany ( <i>Swietenia sp.</i> )	4ft
17.76003	64.74057	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.73339	64.77543	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.76001	64.74092	Flamboyant (Royal poinciana)	2ft		17.73332	64.77536	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.75989	64.74078	Mahogany ( <i>Swietenia sp.</i> )	2ft		17.73323	64.77528	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75993	64.74088	Mahogany ( <i>Swietenia sp.</i> )	2ft		17.7331	64.77531	Mahogany ( <i>Swietenia sp.</i> )	4ft
17.75996	64.74124	Genip (Melicoccus bijugatus)	3ft		17.733	64.77525	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.76001	64.74145	Genip (Melicoccus bijugatus)	2ft		17.73282	64.77516	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.76009	64.74199	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.73268	64.77515	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.76	64.7431	Tibet ( <i>Albizia lebbek</i> )	2ft		17.73262	64.77505	Genip (Melicoccus bijugatus)	4ft
17.75969	64.74467	Tibet ( <i>Albizia lebbek</i> )	2ft		17.73255	64.775	Genip (Melicoccus bijugatus)	3ft
17.75964	64.74476	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.73234	64.77494	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.759	64.74738	Mahogany ( <i>Swietenia sp.</i> )	2ft		17.73226	64.77492	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75901	64.74767	Mahogany ( <i>Swietenia sp.</i> )	3ft		17.73217	64.77485	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.759	64.74746	Mahogany ( <i>Swietenia sp.</i> )	2ft		17.73202	64.7749	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75919	64.7486	Tibet ( <i>Albizia lebbek</i> )	3ft		17.73173	64.7748	Pigeon Berry ( <i>Bourreria succulenta</i> )	2ft
17.75915	64.74971	Genip (Melicoccus bijugatus)	5ft		17.7311	64.77454	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.75944	64.75296	Hog Plum ( <i>Spondias mombin</i> )	3ft		17.73094	64.77448	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.75947	64.75344	Tibet ( <i>Albizia lebbek</i> )	3ft		17.73086	64.77448	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.75953	64.7537	Flamboyant (Royal poinciana)	4ft		17.73056	64.77437	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.75955	64.75381	Flamboyant (Royal poinciana)	4ft		17.73025	64.77425	Mahogany ( <i>Swietenia sp.</i> )	2ft
17.75996	64.75505	Tibet ( <i>Albizia lebbek</i> )	2ft		17.7302	64.77425	Mahogany ( <i>Swietenia sp.</i> )	3ft
17.76003	64.75527	Hog Plum ( <i>Spondias mombin</i> )	3ft		17.73012	64.77422	Dog Almond (Andira inermis)	2ft
17.75997	64.75529	Tamarind (Tamarindus indica)	3ft		17.72998	64.77416	Hog Plum ( <i>Spondias mombin</i> )	3ft
17.75867	64.75646	Flamboyant (Royal poinciana)	2ft		17.72993	64.77409	Hog Plum ( <i>Spondias mombin</i> )	2ft
17.75798	64.75704	Flamboyant (Royal poinciana)	3ft		17.72985	64.77412	Hog Plum ( <i>Spondias mombin</i> )	2ft
17.75628	64.75904	Hog Plum ( <i>Spondias mombin</i> )	2ft		17.7298	64.77414	Flamboyant (Royal poinciana)	2ft
17.75639	64.75934	Genip (Melicoccus bijugatus)	2ft		17.72971	64.7741	Hog Plum ( <i>Spondias mombin</i> )	2ft
17.75649	64.75946	Mahogany ( <i>Swietenia sp.</i> )	6ft		17.72967	64.7741	Hog Plum ( <i>Spondias mombin</i> )	3ft
17.75757	64.76041	Genip (Melicoccus bijugatus)	3ft		17.72963	64.77402	Genip (Melicoccus bijugatus)	5ft
17.75753	64.76035	Genip (Melicoccus bijugatus)	2ft		17.72953	64.774	Hog Plum ( <i>Spondias mombin</i> )	3ft
17.75741	64.76012	Tamarind (Tamarindus indica)	2ft		17.72943	64.77399	Mahogany ( <i>Swietenia sp.</i> )	5ft
					17.72939	64.77398	Mahogany ( <i>Swietenia sp.</i> )	6ft
					17.72904	64.7739	Genip (Melicoccus bijugatus)	3ft
					17.72885	64.77388	Mahogany ( <i>Swietenia sp.</i> )	3ft
					17.72879	64.77383	Mahogany ( <i>Swietenia sp.</i> )	4ft
					17.7306	64.77454	Tibet ( <i>Albizia lebbek</i> )	4ft





Tree shaped by powerline pruning.

Near the western terminus of Northside Road, the eastern side of the roadway has large mahoganies which are close to the roadside and the tree roots often come right up to the edge of the roadway. To protect these trees, the sidewalk will be placed on the western side of the roadway. There is a flamboyant, amid the mahoganies. This area is maintained as mown grass. The western side does not have trees close to the road in this area and the area is developed as the fish and farmers markets and there is a popular local restaurant with a large open parking area which does have one large tree in the parking area the sidewalk should go around.



Mahoganies on eastern side of Northshore Roadway.



Large tree in Chicken Shack parking lot.

Approaching the Kingshill Post Office there is an occasional tree on the western side of the roadway, where possible the sidewalk should go on the western side of these trees away from the roadway.



Approaching the Kingshill post office.



Kingshill Post Office has both mahoganies and dog almonds close to the roadway on the eastern side.



The eastern side of the roadway has larger trees while the western side has been maintained as mown grass.

The large mahoganies and other trees continue along the roadway on the eastern side of the road until Buelah Road or Sunset Road to east at which time both sides of the road have been altered for pasture and there are no large trees.





As the road turns to the northeast the areas immediately alongside the roadway have been maintained as mown grass and large trees are not on the roadside.



These areas have sufficient areas for work on both sides of the roadway without impacting large trees.



There is an occasional large tree near the roadway on the southern side of the road, but there is sufficient room for roadway improvements.

Approaching the Salt River area large trees are present on the north side of the roadway and in this area the sidewalk should be placed on the southern side of the roadway to protect these trees.



A few mahoganies along the northern side of the roadway.

Approaching Good Hope/County Day School the roadsides are heavily forested but most of the trees are set back far enough from the roadway that the improvements should not affect them.

From the school entrance towards the Salt Rive intersection there are drainage ditches along the side of the roadway which often have standing water and water often damages the pavement. The trees are close to the roadway on the northern side, making the southern side the preferable location for sidewalks. Drainage improvements will be made in this area.



There are large saman trees which stretch across the roadway in the Salt River area, most of these are well back from the roadway. The drainage ditch is visible on the southern side of the roadway.





There are several samans which are however close to the roadway and will need to be protected.

Roadway improvements have been identified in this area to raise the road profile to eliminate existing low points and drainage improvements to mitigate water collection in the intersection area. The drainage way here has bed and bank features and a direct nexus to Water of the U.S. and there for improvements and the crossing will require a Nationwide Permit from the U.S. Army Corps of Engineers.



Salt River intersection, large saman trees can be seen on the northern side of the roadway, and there are culverts which are heavily silted in.

Climbing Morning Star Hill most of the larger trees are set back from the roadway and will not be impacted by roadway activities. There are many white manjack along the roadside.



Large saman set off the roadway.

To the east of Morning Star hill the vegetation often closes in around the roadway, most of the larger trees are set back from the roadway which most of the vegetation along the roadside are saplings, many genips.



The vegetation at time form walls along the roadside partially because of the way the vegetation is trimmed with a side armed mower.

Moving to east the number of mahoganies along the roadside increases and some of near the roadway.



Two mahoganies bracket the roadway (17.759983°N, -64.755223°)





Approaching the Highway 79 intersection there are several large trees, on the southern side of the roadway in the church yard (mahogany and flamboyant).



There is a large dog almond which spans across the roadway at the intersection of 75 and 79. There is a large drainage way which flows through this area, it will also require a Nationwide permit for the drainage improvement and crossing.





The Highway 75 and 79 intersections have a large amount of drainage coming through the area.



There are flamboyant trees on the northern side of the roadway.



In some areas of the roadway the trees have been cut to create tunnels through the vegetation.



There is a large gut which is immediately off the roadside at Latitude 17.759288°N, Longitude - 64.749086W. There is a large box culvert crossing going into an apartment complex.





Moving towards Judith Fancy there is often dense roadside vegetation, but these are smaller trees most saplings or secondary growth species. The large trees are set farther back from the roadside except for one large mahogany on the south side of the roadway.



Coconuts are common entering Princesse area and during the 1980s prior to Hurricane Hugo lined the roadway, few remain.



Large mahoganies are found scattered along the roadside in the Princesse area.



The large trees from a canopy over the roadway.

Many are set back from the roadway, but some are within 5ft of the pavement edge. Genips are common in this area.



There are areas where the sidewalk will need to pass

on the outside of the trees since they span the roadway on either side.



There are mahoganies on the southside of the

roadway in La Grande Princesse which are damaged by trimming for powerlines and hurricanes. These are right off the sidewalk.





(17.755611°N, -64.732626°).

There are small drainages along the roadway



Within the Little Princess area most trees are far enough back from the road that they will not be impacted.



In front of the water laboratory there are two large mahogany and a huge seagrape tree. The mahoganies are damaging the existing sidewalk.



There is a large mahogany right next to the existing sidewalk on the northern side of the roadway.



In Little Princess there are some flamboyant and mahoganies immediately adjacent to the sidewalk.



Along the route just east of Little Princess there are some larger trees but all are set back from roadway.





The Golden Rock drainage is a highly defined (and altered) drainage way which will require U.S. Army Corps of Engineers permitting.



The Golden Rock Shopping Center has a variety of trees within their landscape planted to provide shade to parked cars, these are right along the roadway.



East of the Golden Rock intersection the area is densely forested but the larger trees are all set back from the roadway.



East of the Golden Rock intersection, on the southeast side of the road is a historic wall and larger trees set back from the roadway.



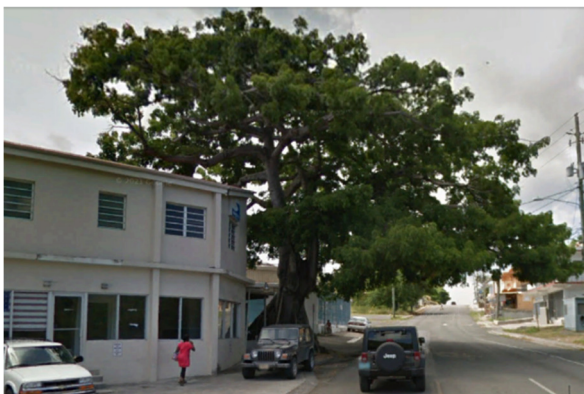
There is a flamboyant near the entrance of Juanita Gardine Elementary School, which is high damaged by trimming for the electrical lines and \mahoganies on the south side of the roadway damaging the existing sidewalk.



Charles Harwood Memorial Hospital has beautiful mahoganies well inside the property away from any potential roadway improvement impacts.



The Richmond area is highly urbanized with sidewalks on either side of the roadway.



One of the most iconic trees just to the west of Bassin Triangle. This Kapok or silk cotton tree has managed to survive despite having concrete right up to its roots. Kapoks have a very shallow root system, and this tree has reached into roadside drainageway.





Contentment drainageway has been channelize at the Highway 75 crossing.

### **IMPACT OF NORTHSIDE ROADWAY IMPROVEMENTS AND PLACEMENT OF LINES UNDERGROUND**

There are large heritage trees scattered along the roadside and their locations have been considered with the improvements. Heritage trees and other large trees have been avoided to the greatest extent possible. The project will result in the loss of some trees and some secondary growth vegetation and sapling trees, this is an unavoidable impact and to mitigate for this loss replacement trees will be planted the appropriate distance from the roadway in area owned by the U.S. Virgin Islands. Removal or trimming of any Heritage Trees will require a permit from the Department of Agriculture.

The undergrown project will occur in the roadway and in areas which are maintained as lawns. There will be no impact to the native flora or fauna from the underground project.

### **Wetlands**

The Northside Highway and electrical underground project will not impact wetlands along their routes. There are several crossing and drainage improvements which will require permit from the U.S. Army Corps of Engineers for ephemeral stream crossings which have direct nexus to waters of the U.S.

### **Rare and Endangered Species**

No endangered, or threatened, species or endangered species habitat exist within proposed project areas. According to the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) project tool no endangered species, critical habitat or migratory birds are expected to occur in the proposed project area except for sea turtle species.

There is an endangered ground lizard, *Ameiva polops*, on the island of St. Croix, but this lizard is only found on Protestant Cay and Ruth Cay. There are also three endangered plant species on St. Croix – i.e., *Agave eggersiana*, *Buxus vahlii* and *Catesbaea melanocarpa* – but they primarily occur in exposed, dry areas. There are three known populations of *B. vahlii* on St. Croix and all are well removed from the proposed project site. There is one known population of *C. melanocarpa* on St. Croix and it is also located outside the proposed project site.

Neither the endangered ground lizard nor any of the endangered plants species are found within the proposed project footprint.

**Air Quality**

All of St. Croix is designated Class II by the Environmental Protection Agency, in compliance with National Ambient Air Quality Standards. In Class II air quality regions open burning, visible air contaminants, particulate matter emissions, volatile petroleum products, sulfur compounds and internal combustion engine exhaust are all regulated (Virgin Islands Code Rules and Regulations). Heavy equipment will be used during project construction and will create combustion engine exhaust. Upon project completion, air quality will return to pre-construction conditions.



## **IMPACT ON MAN'S ENVIRONMENT**

### **Land and Water Use Plans**

The improvement of the roadway and placement of utilities underground is in accordance with the laws and regulations of the U.S. Virgin Islands.

### **Visual Impacts**

The roadway improvements and placement of the utilities underground will be a positive impact on of St. Croix's landscape.

### **Social Impacts and Economic Impacts**

The roadway improvements will have both a positive social and economic impact to Virgin Islanders by improving the safety of the roadways for drivers and pedestrians. Due to poor lighting numerous people are hit by vehicles at night and due to poor roadway markings and signage there are accidents and pedestrians are high by vehicles. Poor lines of site cause accidents and the lack of turn lanes cause traffic to build up.

The placement of utilities underground makes the territory more resilient after major storms and allow for the rapid return of power to residents.

### **Historical and Archaeological Resources**

Cocosol International Inc., (CocoSol), performed a Phase I A&B Cultural Resources Survey (Survey) for the proposed Northside Highway Improvements Project. The Survey was performed on behalf of Stanley Consultants Inc., the prime contractor to the Government of the Virgin Islands: Department of Public Works (DPW) for project design.

The field survey and review of the site database resulted in the identification of both precolonial and colonial cultural resources that are within the APE of the duct bank alignments. These include the ruins of domestic structures, plantation buildings, cemeteries, and precolonial sites of record. We recommend that archaeological monitoring be performed for the earth change activities required for those duct bank alignments.

Because of environmental considerations parts of the coastal areas of the Richmond-Princess sub project are considered to have the potential to contain archaeological contexts buried beneath the existing roadways. Archaeological monitoring of earth change activities for parts of the Richmond-Princess sub-project is recommended.

The MonBijou-Glynn component contains precolonial resources of record near the proposed duct bank alignments that are likely associated with tributary streams of Salt River which pass wholly or in part through the MonBijou- Glynn sub project. Archaeological monitoring is recommended for the entirety of the Mon-Bijou-Glynn subdivision and for two areas along Windsor Road where a precolonial site's polygon borders the existing roadway and along the Estate Concordia plantation ruins.

The Virgin Islands State Historic Preservation Office (VISHPO) agreed with the mitigation procedures for the protection and preservation of historic and archaeological resources that may be identified within the limits of the Northside Road Improvement Project in St. Croix, Virgin Islands as outlined by the Archaeological consultant, CocoSol International Inc in the Phase I A and B report dated July 22, 2022, and the Addendum A report dated August 26, 2022, based on review modifications requested by the VISHPO.

The VISPHPO concurrence letter is attached herewith.

### **Waste Disposal and Accidental Spills**

Equipment will be kept in good operational condition during the proposed project and will not be fueled on site. Any excess excavated material and debris will be collected, taken off-site and properly disposed of.

### **ALTERNATIVE ANALYSIS**

The project is limited to existing roadways and locations. Alternative locations are not a feasible option due to property ownership, buildings, and topography.

The alternatives are related to changes in design.

### **No Build**

The roadway improvements and the placement of utilities underground could not be done, and conditions would remain the same and the roadways would continue to deteriorate, and existing safety and flooding issues would continue. Existing overhead electrical distribution would continue to be subject to impact by storm winds.

### **Designs**

#### **Intersections**

Traditional signalized intersections versus roundabouts configurations were both considered.

#### **Bike Paths**

Location of bike paths were evaluated to provide the safest routes for motorist and bicyclist. Bike paths will not be placed in urban congested corridors. Instead, they will be placed on adjacent side streets to provide continuity.

#### **Shoulders**

Paved roadway shoulders will be expanded where possible to support emergency needs.

### **CONSTRUCTION CONSIDERATIONS**

Department of Public Works (DPW) recognizes the potential challenges and inconveniences that the construction phase could cause to the existing surrounding communities. It is the objective of DPW to implement measures that would minimize and/or avoid negative impacts to the existing adjacent communities along the Northside Highway corridor. Even though the DPW cannot dictate construction means and methods to the contractor, the final construction documents will set forth several requirements that the contractor shall comply with to proactively address potential adverse impacts to the existing surrounding communities during construction. These requirements will allow DPW to establish a protocol and hold the contractor accountable through the life cycle of the construction phase.



## **Pre-Construction Requirements**

Prior to construction, the contractor shall submit documents to the DPW for review and acceptance. The following documents listed, but not limited, include:

- Construction Mobilization Plan
- Storm Water Pollution Prevention Plan (SWPPP)
- Construction Staging Plan
- Construction Operations and Maintenance (O&M) Plan
- Construction Safety Plan
- Anticipated Construction Schedule
- Construction Phasing Plan
- Shop Drawing Review Plan
- Request For Information (RFI) Plan
- Quality Control Plan
- Construction Demobilization Plan
- Punch List Plan
- Construction As-builts Plan

## **During Construction Requirements**

During construction the contractor shall resubmit all plans listed above for review and acceptance if there are any changes. The contractor will be responsible for ensuring that the erosion control measures, as specified in the construction documents, are always installed properly during construction. The contractor shall provide all testing results to the client to confirm proper contracting measures and materials for compliance. The contractor shall submit weekly progress reports and attend bi-weekly progress meetings with the client and stakeholders. The contractor shall take all measures to minimize construction activity impacts to the communities and residents. Additionally, DPW will assign a construction engineering inspection team which will assist in ensuring that established requirements and protocols are being met by the contractor.

## **Post-Construction Requirements**

After contracted construction is complete, but before demobilization, the contract shall restore all disturbed areas to their preconstruction condition. These areas will be part of the final punch list and completed to the client's satisfaction prior to final acceptance and final payment. Construction as-builts shall be provided to the client for review and approval. Any as-built client comments shall be resolved prior to final acceptance and final payment.

## **EXISTING UTILITY REPLACEMENT CONSIDERATIONS**

In alignment with the planning of existing utility infrastructure upgrades, the Department of Public Works (DPW) is collaborating with local utility agencies to replace the existing water and sewer utilities within the project limits. This will be facilitated with a "one-dig" approach, allowing the utilities to be installed prior to completing horizontal and vertical geometric improvements, drainage improvements, and/or final roadway pavement section. This approach will provide multiple advantages which includes a resilient all-inclusive design, reduction in overall construction cost, reduction of

adverse impacts to the residents during the construction phase, and reduction of impacts to local/adjacent businesses.

Furthermore, DPW will work in partnership with Water and Power Authority (WAPA) to install new transmission lines, distribution lines , service lines, and additional water features within the project limits under a FEMA Public Assistance Grant (166438 XMWPF03 Replacement for St. Croix Water Distribution System). Prior to construction flow monitoring, hydraulic modeling, and a comprehensive phasing plan will be developed to minimize community and business impacts.

Additionally, DPW will work in partnership with Waste Management Authority (WMA) to install new sewer lines, manholes, and additional sewer features within the project limits under a FEMA Public Assistance Grant (XMUGN07 STX Pump Station Repairs and Wastewater Treatment Plant). Prior to construction flow monitoring, hydraulic modeling, and a comprehensive phasing plan will be developed to minimize community and business impacts.

Addressing the much-needed water and sewer existing utilities replacement design in conjunction with the other roadway infrastructure improvements will allow the design team to be able to constantly seek opportunities to streamline the design and avoid potential utility conflicts.

## **COASTAL CONSISTENCY**

The proposed Northside Road improvements and placement of utilities underground in four neighborhoods will have a negligible potential of impacting environmental resources, or ambient water quality during construction if stringent sedimentation and erosion control is implemented and maintained. Necessary sedimentation and erosion control measures will be implemented during earthwork to ensure that no environmental impacts occur. The proposed project occurs only within previously altered areas. Archeological monitoring will be recommended as part of the construction services to minimize disturbance of historical preservation sites identified in the archeological report. Project activities will stop if historic remains or resources are encountered, and SHPO will be contacted to determine the best course of action.

The Coastal Zone Management Act of 1972 requires that federal actions, within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water), or natural resource of the coastal zone be consistent with the enforceable policies of a state's federally approved coastal management program. The proposed Northside Road improvements and placement of utilities underground in four neighborhoods, as proposed, will be undertaken in a manner consistent to the maximum extent practicable with the enforceable policies of the U.S. Virgin Islands' Coastal Zone Management (CZM) Program. This federal consistency determination demonstrates the Northside Road improvements and placement of utilities underground in four neighborhoods projects' compliance with the U.S. Virgin Islands' CZM Program.

The following policies are set forth in the U.S. Virgin Islands Code Title 12, Conservation Chapter 21, Virgin Islands Coastal Zone Management [V.I. Code tit. 12, § 903(b)]. The proposed Northside Road Improvements and placement of utilities underground in four neighborhoods projects meets each of the basic goals of the USVI for its coastal zone. Additional details are as follows:



**USVI Code Title Twelve Conservation, Chapter 21 § 903 (b)**

**(1) Protect, maintain, preserve and, where feasible, enhance and restore, the overall quality of the environment in the coastal zone, the natural and man-made resources therein, and the scenic and historic resources of the coastal zone for the benefit of residents of and visitors of the United States Virgin Islands.**

- The proposed Northside Road improvements and placement of utilities underground in four neighborhoods projects are designed to be within a currently disturb area. The projects will have minimal impact on natural resources, archeological resources, and will enhance experience of Virgin Islanders who drive Northside Road and live in Mon Bijou-Glynn, Morning Star, Richmond-Princesse and Contentment-Richmond.

**(2) Promote economic development and growth in the coastal zone and consider the need for development of greater than territorial concern by managing: (1) the impacts of human activity and (2) the use and development of renewable and nonrenewable resources to maintain and enhance the long-term productivity of the coastal environment.**

- The proposed project promotes the economic development and growth in the coastal zone by providing a safer roadway for residents and visitors, it will protect property, allow for better access during flooding events and will minimize repairs need in future catastrophic weather events. The placement of utilities underground will improve the quality of life for residents in Mon Bijou-Glynn, Morning Star, Richmond-Princesse and Contentment-Richmond and allow them to have power more quickly after storms.

**(3) Assure priority for coastal-dependent development over other development in the coastal zone by reserving areas suitable for commercial uses including hotels and related facilities, industrial uses including port and marine facilities, and recreation uses.**

- The proposed project involves the improvement of the roadway and will provide better access for commercial uses such as hotels and related facilities. The placement of utilities underground provides more reliable power for commercial and residential uses.

**(4) Assure the orderly, balanced utilization and conservation of the resources of the coastal zone, taking into account the social and economic needs of the residents of the United States Virgin Islands.**

- The roadway improvements have been designed to minimize impact to resources. A will protect critical infrastructure and, therefore, will meet and protect the economic and social needs of the St. Croix residents. The placement of utilities underground provides more reliable power for commercial and residential uses.

**5) Preserve, protect, and maintain the trust lands and other submerged and filled lands of the United States Virgin Islands to promote the general welfare of the people of the United States Virgin Islands.**

- The proposed projects will not impact trust lands or other submerged or filled lands of the U.S. Virgin Islands.

**(6) Preserve what has been a tradition and protect what has become a right of the public by ensuring that the public, individually and collectively, has and shall continue to have the right to use and enjoy the shorelines and to maximize public access to and along the shorelines consistent with constitutionally protected rights of private property owners.**

- The proposed projects will in no way affect public access to, or use of, the shoreline.
- 

**(7) Promote and provide affordable and diverse public recreational opportunities in the coastal zone for all residents of the United States Virgin Islands through acquisition, development and restoration of areas consistent with sound resource conservation principles.**

- The proposed projects will not affect public recreational opportunities in the coastal zone.

**(8) Conserve ecologically significant resource areas for their contribution to marine productivity and value as wildlife habitats, and preserve the function and integrity of reefs, marine meadows, salt ponds, mangroves, and other significant natural areas.**

- The project will have minimal impact on natural resources and will implement best management practices (BMPs) to minimize areas of disturbance, thereby protecting adjacent habitats.

**(9) Maintain or increase coastal water quality through control of erosion, sedimentation, runoff, siltation, and sewage discharge.**

- As necessary, the project will implement sedimentation and erosion control BMPs to prevent loss of sediment from the project area during construction.

The proposed Northside Road Improvements project and placement of underground utilities in Mon Bijou-Glynn, Morning Star, Richmond-Princesse and Contentment-Richmond, as designed, will maintain coastal water quality through control of erosion, sedimentation, runoff, and siltation, protect island resource and benefit Virgin Islanders providing a safer roadway and a more resilient power source for Mon Bijou-Glynn, Morning Star, Richmond-Princesse and Contentment-Richmond. It is, therefore, consistent with the policy set forth in the U.S. Virgin Islands Code Title 12, Conservation Chapter 21, Virgin Islands Coastal Zone Management [V.I. Code tit. 12, § 903(b)].



**ATTACHMENT A**

**PHASE I (A&B) CULTURAL RESOURCES SURVEY**

**PHASE I (A&B) CULTURAL RESOURCES SURVEY  
FOR THE PROPOSED  
NORTHSIDE IMPROVEMENTS PROJECT  
ST. CROIX U.S. VIRGIN ISLANDS**

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**July 20, 2022**

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## EXECUTIVE SUMMARY

Cocosol International Inc., (CocoSol), performed a Phase I A&B Cultural Resources Survey (*Survey*) for the proposed Northside Highway Improvements Project. The *Survey* was performed on behalf of Stanley Consultants Inc., the prime contractor to the Government of the Virgin Islands: Department of Public Works (DPW) for project design.

The project will include the trenching of approximately 53 miles of existing roadways to install duct banks, and improvements to three intersections. For management purposes the DPW divided the project into 5 sub-projects, identified as follows.

- Northside Highway (the main artery)
- Contentment – Richmond
- Richmond – Princesse
- Morning Star
- MonBijou - Glynn

The Northside Highway Improvements Project alignments will pass through parts of the Christiansted Historic District, commercial zones along Northside Highway, coastal neighborhoods, tourism destinations, rural areas, and planned subdivisions.

Because of the earth change activities required to install the duct banks, the project is required to comply with Title 29, Chapter 17, Section 959, of the Virgin Islands Code. Additionally, because the project is wholly or partly funded by the federal government, the project is required to comply with Section 106 of the National Historic Preservation Act of 1966, as amended.

The *Survey* included a review of the site data base maintained by the Department of Planning and Natural Resources: Virgin Islands State Historic Preservation Office (VISHPO) to identify cultural resources of record that may be adversely affected by the proposed undertaking. Additionally, pertinent literature and cartographic sources were consulted to assess the potential for the presence of constructed features that may also be affected. For strictly management purposes, we limited the Area of Potential Effects (APE) to 25 meters on each side of the road alignments.

Project alignments within the rights of way that were not hard surfaced, cut from the side slopes of hills or otherwise obviously disturbed were shovel tested to assess the potential for the presence of subsurface archaeological contexts. No potential significant resources were identified by the shovel testing activities. With a few exceptions, the artifacts recovered from the shovel tests were modern and largely consisted of highly fragmented glass, plastic, nuts and bolts, barbed wire, and cloth. The exceptions consisted of isolated finds of hand built coarse earthenware, pearlware, whiteware and olive-green glass.

The field survey and review of the site data base resulted in the identification of both precolonial and colonial cultural resources that are within the APE of the duct bank alignments. These include the ruins of domestic structures, plantation buildings, cemeteries, and precolonial sites of record. We recommend that archaeological monitoring be performed for the earth change activities required for those duct bank alignments.



Because of environmental considerations parts of the coastal areas of the Richmond-Princess sub project are considered to have the potential to contain archaeological contexts buried beneath the existing roadways. Archaeological monitoring of earth change activities for parts of the Richmond- Princess sub-project is recommended.

The MonBijou-Glynn component contains precolonial resources of record in close proximity to the proposed duct bank alignments that are likely associated with tributary streams of Salt River which pass wholly or in part through the MonBijou- Glynn sub project. Archaeological monitoring is recommended for the entirety of the Mon-Bijou-Glynn subdivision and for two areas along Windsor Road where a precolonial site's polygon borders the existing roadway and along the Estate Concordia plantation ruins.

## **1.0 INTRODUCTION**

Cocosol International Inc., (CocoSol), performed a Phase I A&B Cultural Resources Survey (*Survey*) for the proposed Northside Highway Improvements Project for St. Croix, USVI. The *Survey* was performed under a subcontract agreement with Stanley Consultants Inc., (Stanley), the prime contractor for project design for the Government of the Virgin Islands: Department Property and Procurement.

The Northside Highway is a six-mile, major route that passes through the town of Christiansted on the island of St. Croix, extending from Estate Contentment to Queen Mary Highway at the La Reine Intersection. The Northside Highway (Route 75) duct bank alignment would serve as the main artery to supply energy to four neighborhoods. For management reasons, the project is divided into 5 smaller projects as enumerated below and shown in Figure 1

1. Northside Highway (the main artery)
2. Contentment – Richmond
3. Richmond – Princess
4. Morning Star
5. MonBijou - Glynn

The proposed Northside Highway Improvements Project will include the installation of duct banks along approximately 53 miles of existing roads. The project will also include intersection improvements at three locations along Northside Highway. We understand that the design for the improvements is being prepared and we are unaware if said improvements will need to extend beyond the existing right of way.

### **1.1. Regulatory Framework**

Because of the earth change activities required to develop this project, primarily the trenching of existing roadways, the project is required to comply with Title 29, Chapter 17, Section 959, of the Virgin Islands Code, also known as the Virgin Islands Antiquities and Cultural Properties Act. Because the project is wholly or partly funded by the federal government, the project is required to comply with Section 106 of the National Historic Preservation Act of 1966, as amended.

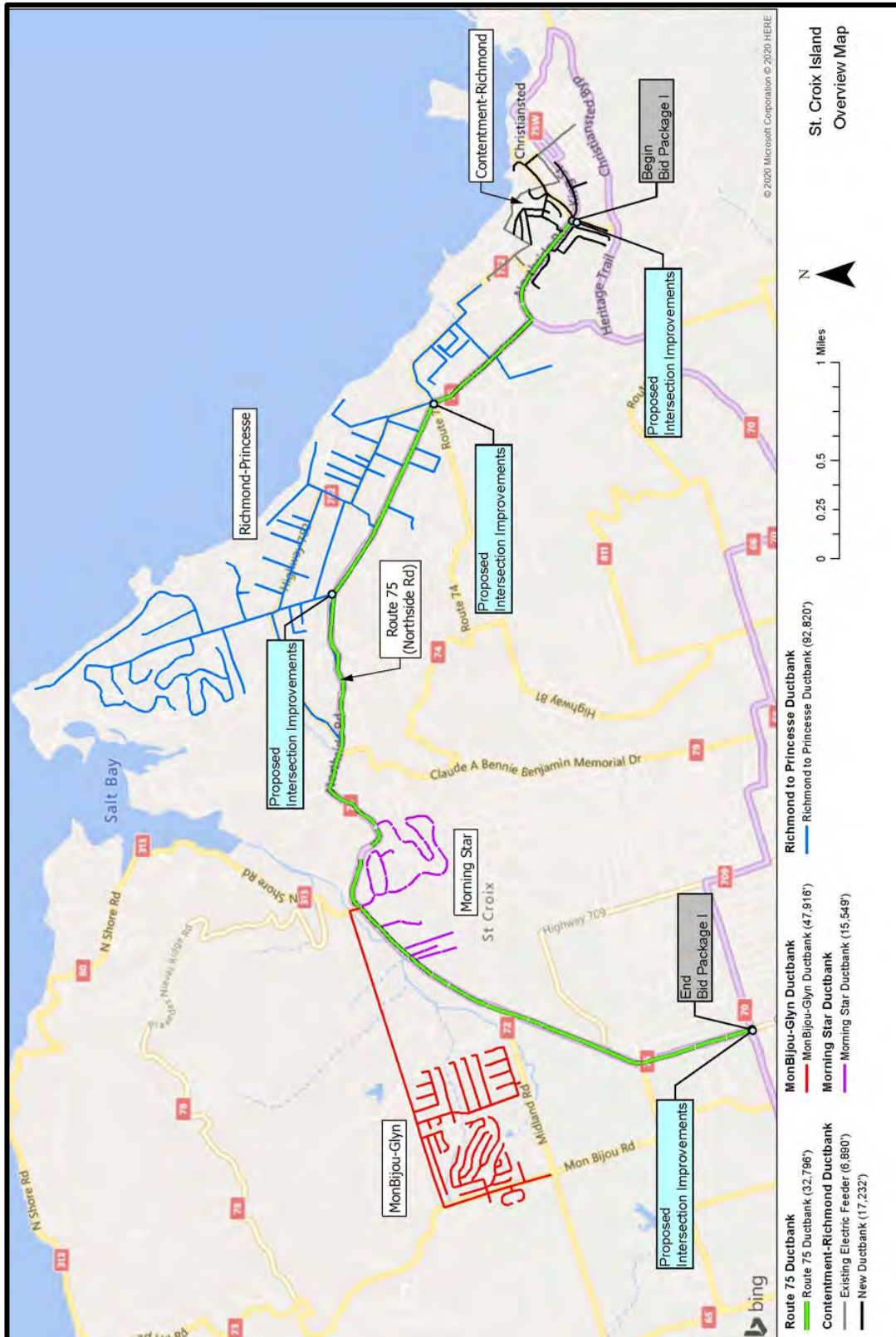


Figure 1: Overview map of the proposed duct bank alignments



## **1.2. Environmental Setting**

The proposed duct banks will be installed along existing paved roads. The project begins at Triangle Basin in the urban setting of the town of Christiansted. With very minor exceptions, this section of Northside Highway is completely hard surfaced. The hard surfaced alignment continues to Route 751 where it begins to enter hilly terrain which required that roads be cut largely from side slopes. At the approximate intersection of Northside Highway and Salt River Road, the duct bank alignment will enter the Central Limestone Plain which is largely gently sloping to nearly level topography to the intersection of Northside Highway and Centerline Road where the main artery for the project ends.

## **1.3 Cultural Setting**

The following is a brief discussion of the general cultural setting to provide the reader with general information regarding the history and archaeology of the U.S. Virgin Islands.

### **1.3.1 Precolonial Cultural Contexts**

The U.S. Virgin Islands (USVI) contains a rich milieu of cultural resources that offer testimony to over three thousand years of human experience. These cultural resources range from habitation sites established during the Archaic Period at Krum Bay and the Magens Bay Arboretum Complex on St. Thomas approximately three thousand years ago, to the multiple village and farmstead sites on all the islands, to chiefly ceremonial centers such as the Salt River Site on St. Croix, which is the site of the first encounter between the Taino and Europeans.

After the Archaic Period, the indigenous people of the Virgin Islands participated in a geographically vast network of social and economic relationships. Recent archaeological research indicates that the insular landscapes were dotted with small and large villages along the coastal section fringes of the islands as well as the uplands. Additionally, small settlements herein characterized as farmsteads are beginning to be discovered in the uplands. These small farmsteads in the uplands have mostly been unrecognized in the archaeological record; however, recent archaeological surveys for large development projects have resulted in the identification of such sites.

The indigenous people of the Virgin Islands participated within a larger social, religious and economic network (s), as evidenced by shared stylistic attributes of ceramics from the Saladoid, Ostionan and Chican culture periods across a significant part of the Antilles. Shared cosmological ideas are also evidenced by the presence of cemís and other religious paraphernalia in the Virgin Islands and across large areas of the Caribbean Archipelago.

Long distance trade is evidenced by the presence of jadeite artifacts manufactured from raw lithic sources found in Central America and chert from Puerto Rico and down island. A whole host of cultigens with origins in the continent became part of the quotidian diet; more exotic items such as guinea pig, an Andean domesticate, have been found in Puerto Rico and are likely to be documented by future archaeological studies as also present in Virgin Island archaeological contexts.

On November 14, 1493, Columbus's expeditionary fleet anchored in Salt River Inlet and Columbus ordered his long boat to search for provisions and water. The Spanish

prevarication was met with a fierce barrage of arrows from the Taino, and what appears to have been a short skirmish ensued, resulting in casualties on both sides. The Spanish named the site Cabo de las Flechas (Cape of Arrows).

### **1.3.2 Colonial Period**

Following the brief European incursion on St. Croix in 1493, the islands came to be in the possession of several European nations including Spain, England, Malta, the Netherlands and France. The colonies that these nations attempted to establish largely failed. Not until Denmark's Danish West Indies Company settled in St. Thomas in 1672 and on St. John in 1694, did these colonies become viable enterprises. The Danes purchased St. Croix from the French in 1733 and the island, with its larger size, gentler topography, fertile soils, and surface streams, became a dynamic sugar cane based enterprise that lasted for over a century.

The Danes divided the islands into estates that were largely dedicated to agriculture. Although largely owned by Danes, British managers often administered the estates. The early plantations, particularly on St. Thomas and St. John were primarily dedicated to the production of cotton and indigo, but because of competition from the continent, particularly the southern U.S. states, these two agricultural pursuits were largely abandoned in favor of sugar cane. The economies of St. Croix and St. John were primarily based on sugar cane agriculture and the production of muscovado sugar and rum. In contrast, the economy of St. Thomas was primarily based on trade, although agricultural pursuits also formed an integral part of its economy.

An unusually large number of colonial era plantation sites containing well preserved archaeological remains characterize the St. Croix where the remains of scores of plantations are also preserved on St. Croix. These plantation sites contain the domestic contexts of the planter elite, the spatially organized village structures of the enslaved work force, the iconic windmill towers, sugar factories and curing houses, as well as a host of other architectural features and their village cemeteries. The historic towns of Charlotte Amalie, Frederiksted and Christiansted, which are designated historic districts, retain a remarkable number of preserved buildings that date to the 18th and 19th Centuries.

## **2.0 SURVEY METHODS**

### **2.1 RECORDS AND LITERATURE SEARCH**

The Virgin Islands State Historic Preservation Office provided site location data for the Northside Highway corridor and the areas to the north and south of the corridor. These data were used to determine whether cultural resources of record existed in or in proximity (50 meters +/-) to the duct bank alignments. Published and unpublished literature was consulted to gain a general understanding of the archaeology and history of the locality and the region in general.

### **2.2. FIELD SURVEY**

CocoSol initially performed a vehicular and pedestrian reconnaissance of the approximately 53 miles of road alignments that will be affected by the project for the presence of artifacts or constructed features. We then proceeded to mark by measuring wheel the location of the tests at 30-meter intervals along the roads, followed by the excavation of shovel tests (where feasible). The shovel tests measured approximately 30 centimeters in diameter and were excavated to depths no longer considered to have the potential for containing non-random artifact bearing matrices. The excavated soil was screened through ¼ inch hardware cloth to aid in artifact recovery.



**Figure 2: Photograph of the shovel testing activities along Northside Highway**





**Figure 3: Photograph of example shovel test**

### 3.0. FINDINGS

No potentially significant archaeological contexts were found in the shovel tests performed for this *Survey*. The artifacts contained in the shovel tests invariably consisted of highly fragmented modern bottle glass fragments, an occasional brick fragment, metal artifacts such as bolts, plastic, cloth, and barbed wire, all in the disturbed contexts of road shoulders and swales. Two isolated finds of hand built coarse earthenware in the coastal sections of the Richmond-Princess sub project were recovered from shovel tests along with modern materials. Isolated finds of colonial ceramics (n5) and olive-green glass (n3) were recovered from shovel tests in the Richmond-Princess and Northside Highway sub projects.

The *Survey* did identify potentially significant resources in close proximity or adjacent to proposed project roadways where there exists the potential for the presence of cultural resources below the road. The records search also resulted in the identification of archaeological sites of record with limited definition of their horizontal extent that may possibly extend beneath the roadway, if preserved or disturbed.

Discussion regarding the findings of the *Survey* performed for the Northside Improvements Project are presented below by each of the project's five components.

#### 3.1 Northside Road

The main artery for the project begins at Triangle Basin (Figure 1) which has been heavily impacted by the construction of the Christiansted Bypass Road. The proposed duct bank alignment enters the Contentment-Richmond sub-project at Contentment Road which is discussed in the following section.

Approximately 40 meters to the west of the fenced Contentment ruins is part of a rubble masonry wall (Figure 6) that appears to continue behind a modern concrete retaining wall. It remains undetermined whether this feature was associated with the Contentment settlement. The rubble masonry wall will not be affected by the proposed project as it is outside the proposed duct bank alignment, but any excavations necessary in the general area of the ruins and this feature is considered to have the potential for containing constructed features below the existing roadway.

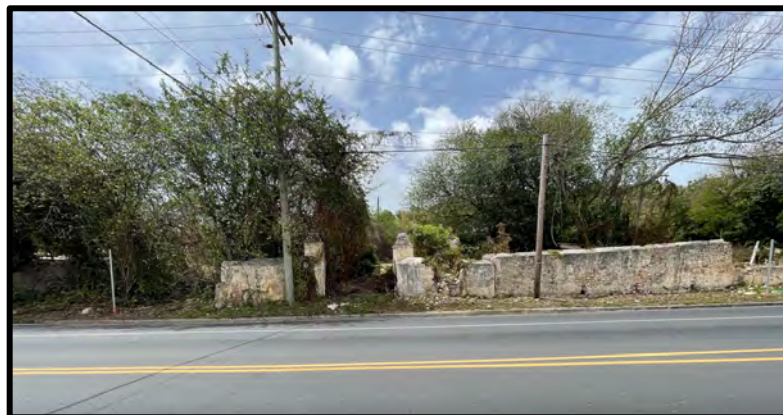


**Figure 4: Photograph of the Triangle Basin Area, view to south**



**Figure 5: Photograph of a rubble masonry wall and concrete retaining wall.**

At the intersection of Contentment Road and Northside Highway the duct bank alignment continues to the west for approximately 6 miles to its end at Centerline Road. Just east of the intersection of Northside Highway and Highway 70 are the remains of entrance monuments, walls, and possible building foundations in close proximity to the pavement, the building foundations are in fact almost adjacent to the pavement (Figures 6 and 7).



**Figure 6: Photograph of entrance ruins to No. 1 Estate Orange Grove**





**Figure 7: Photograph of probable building foundations at No. 1. Estate Orange Grove.**

From the intersection of Northside Highway and Highway 70 to Highway 751, the duct bank alignment passes through developed commercial areas, this entire right of way is hard surfaced by the road and sidewalks. Where unsurfaced gaps were noted, these were shovel tested and/or visually surveyed for cultural materials.

From Highway 751 to Salt River Road the road of project alignment is contained on cut slopes. Areas along this alignment with more level ground were selectively tested, otherwise this section of the project alignment was visually surveyed for artifacts contained in exposed ground surface contexts.

From Salt River Road to the intersection of La Reine and Centerline Road, Northside Road enters gently sloping terrain. The shovel testing performed for this section of the project resulted in the recovery of isolated finds of colonial ceramics and glass, and as ordinary, the contents of the shovel tests included significant amounts of small fragments of modern glass, plastic, and other modern materials.

From the intersection of Salt River Road for approximately 2 kilometers to the southwest, there are multiple archaeological sites of record in close proximity to the roadway including the Upper Salt River Archaeological District which envelops part of Northside Road.

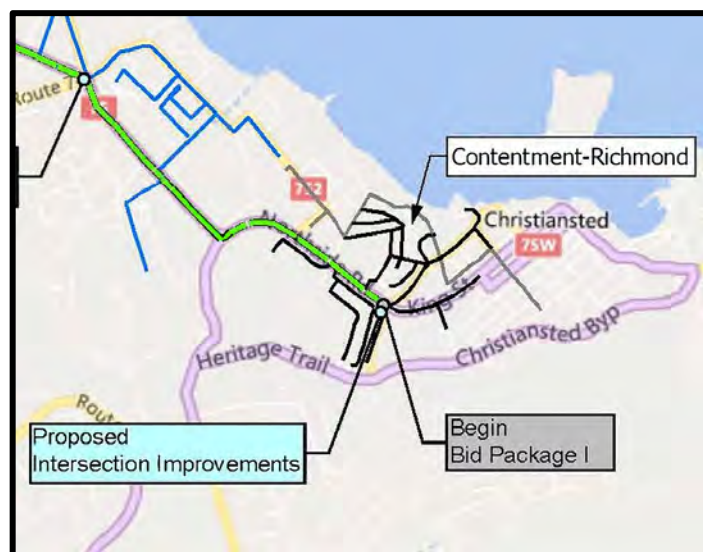
Approximately 20 meters east of the intersection of Northside and Midland Road on the east side of oad are the remains of a watch house in poor state of preservation (Figure 8). This structure is behind a fence.



**Figure 8: Photograph of watch house near the intersection of Northside and Midland Roads**

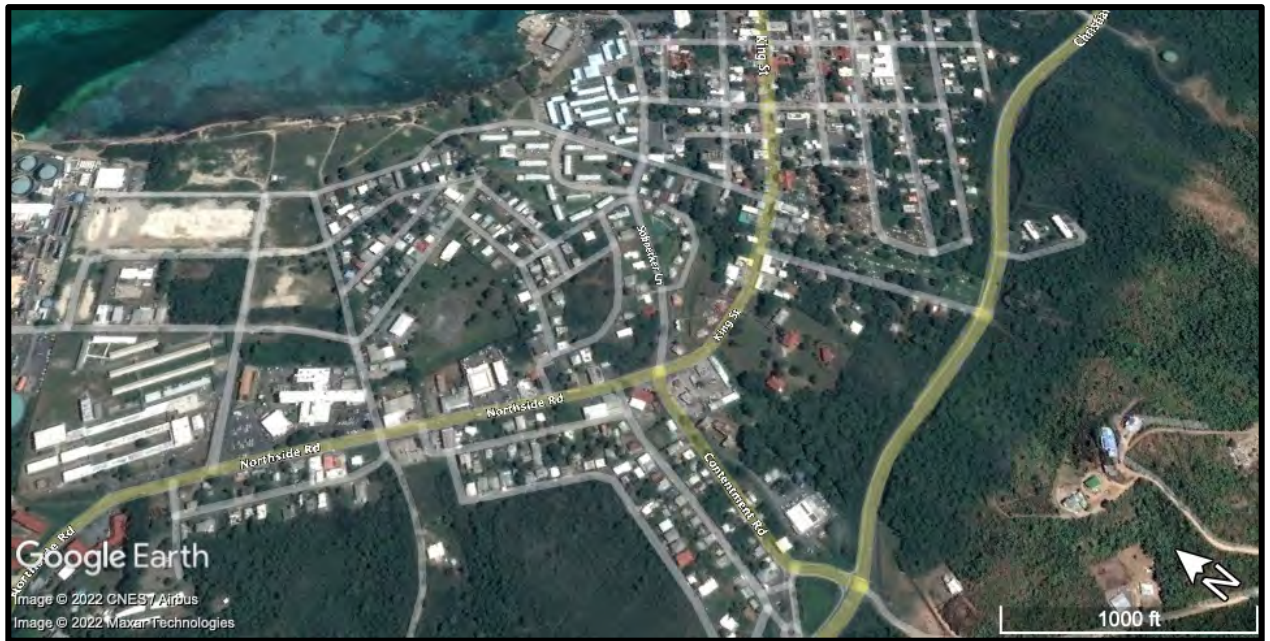
### **3.2. Contentment – Richmond Alignments**

This section of the project (Figures 9 and 10) begins at Triangle Basin and enters Contentment Road proceeds to its intersection with King Street where it continues for approximately 250 meters to the east. At Peter's Farm Road the duct bank alignment turns and continues to the end of Peter's Farm Road. We note that the Christiansted Archaeological District boundary starts at Peter's Farm Road.



**Figure 9: Section of Figure 1 depicting the Contentment-Richmond project component, lined in black**

The entire length of the Contentment Road contains the remains of multiple structure in ruins, some of which have been adaptively reused can be observed along the length of Contentment Road. Two roads to the west and parallel to Contentment Road along the edges of Estates Orange Grove and Harmon Hill were cut from slopes and the roads basically extend to the edge of houses and/or house yards, no shovel testing was performed on these two streets, but exposed ground surfaces were visually surveyed for surface materials.



**Figure 10: Google Earth image of the general Contentment-Richmond vicinity**

From the Contentment Road and King Street intersection, the project alignment continues along King Street towards Christiansted for approximately 250 meters. A cemetery is depicted on the 1958 USGS map for Christiansted just east of the Contentment Road and King Street intersection on the grounds of the Friedensthal Mission (Figure 11). At Peter's Farm Road/Peter's Farm Hospital Street the project alignment enters the Christiansted Historic District. The walls of the Christiansted cemetery parallel Peter's Farm Road (Figure 12). The duct bank alignment along King Street continues for approximately past Peter's Farm Road, and well into the Christiansted Historic District.





**Figure 11: Segment of the USGS Christiansted quadrangle depicting the location of the two cemeteries**



**Figure 12: Google Earth image depicting the approximate polygon for the Christiansted cemetery**

From the Contentment Road and King Streets intersection, the duct bank alignment continues north along Soboetker Lane, Soboetker Lane is a road that was cut from slopes and extends to a residential community, tests along the fence line indicate that no topsoil is preserved and was very compacted (Figure 13).



**Figure 13: Photograph of Soboetker Lane depicting the cut slopes on its west side and the narrow grassy area on its east side that has been stripped of topsoil and compacted**

Continuing to the north-northeast from Soebetker Lane the duct bank alignment enters West Street and North Lane and continues to the Seaplane Terminal. These two streets have multiple ruins along both sides of the roads on the east side are what appear to have been domestic structures, on the west side is a rubble masonry Ghut that drains into the ocean, the remains of a large historic structure are contained within the public housing complex. A community well remains preserved along this alignment, Figures 14 to 18 depict these features. This section of the project is contained within the Christiansted Historic District.





**Figure 14: Photograph of rubble masonry ruin along West Lane.**



**Figure 15: Photograph of rubble masonry storm water Ghut**





**Figure 16: Photograph depicting the remains of a historic wall now painted blue**



**Figure 17: Photograph of the elevation remains of the historic wall**



**Figure 18: Photograph of community well along West Lane**

To the west of the area described above, the project alignment enters via West Street on the north where an existing electric feeder, new alignments are proposed for four streets lined with residential structures to the south of the existing electric feeder. The project alignment turns from this area to the south and connects back to Northside Road through a residential street. Shovel testing in this area, where feasible, indicated that the narrow road's compacted shoulders extend to the property lines of the lots.

### **3.3 Richmond – Princess**

To the west of the Richmond Power Plant, the project alignments enter neighborhoods, hotel and condominium facilities, residential streets, and the Judith's Fancy subdivision on the north side of Northside Highway (Figure 19). Two duct bank alignments are proposed for the southside of Northside Highway. The shovel testing performed for Richmond-Princess project alignments resulted in the recovery of two sherds of undecorated hand-built coarse earthenware and a small fragment of olive-green glass fragment. Except for parts of the Princess Plantation Road, the Judith's Fancy subdivision and a small road to the St. Croix Condominiums which are at higher elevations, nearly all the Richmond-Princess duct banks are on low lying coastal flats (Figures 20 to 23).





**Figure 19.** Segment of map shown in Figure 1 depicting the duct bank alignments for the Richmond-Princess sub project.



**Figure 20:** View of the north end of Little Princess Road section





Figure 21: Google Earth image of coastal road view to the west from near entrance to the Palms



Figure 22: Google Earth image depicting neighborhood road



**Figure 23: Photograph of part of Road 751, view to the north.**

The Judith's Fancy subdivision duct alignments that would pass in the south and southeastern parts of the subdivision which are extensively landscaped. After grubbing and grading, the road beds appear to have been built up with introduced materials and swales excavated. Shovel testing in the gently sloping terrain did not produce any precolonial or colonial artifacts.. In the north and west parts of the subdivision the duct banks would enter into hilly terrain, the roads in these areas have been cut into the sideslopes of the hills.

There are two sites of record at Judith's Fancy, in the northwest is the site of *Cabo de Las Flechas* which is mentioned in Section 1.3.1 of this report. This site is contained within property of the U.S. Government and is a considerable distance from the duct bank alignments proposed for this subdivision.

The Judith's Fancy Plantation settlement is located in the central part of the subdivision and is bracketed by Hamilton Drive on the west, Caribe Road on the north, Jefferson Way on the east and houses on the south. The proposed duct banks would pass along Jefferson Way and Hamilton Drive, the latter is the closest to some of the plantation's ruins (Figures 24 to 26).

On Caribe Road, we noted the presence of scatters of building rubble (Figures 27 and 28) to the north of the Caribe Road swale, indicating that road construction likely impacted constructed features. Also, at the intersection of Caribe Road and Jefferson Way and for approximately 50 meters to the south-southeast along Jefferson Way are landscaped features for residences that include what appear to be building



materials that may have been robbed from the plantation settlement to the west or the plantation settlement may have extended further to east and were closer to the now existing Jefferson Way road. Both the Cabo de las Flechas and the Judith's Fancy plantation sites are listed in the National Register of Historic Places.



**Figure 24: Google Earth image of readily visible structures for the Judith's Fancy Plantation settlement**





**Figure 25: Photograph showing road cut along Hamilton Drive and historic building ruins on the center right of the photograph.**



**Figure 26: Photograph of ruins closest to Hamilton Drive, and chimney and windmill tower in background, view to the east.**



**Figure 27: Photograph of individual standing on top of a disarticulated rubble wall.**

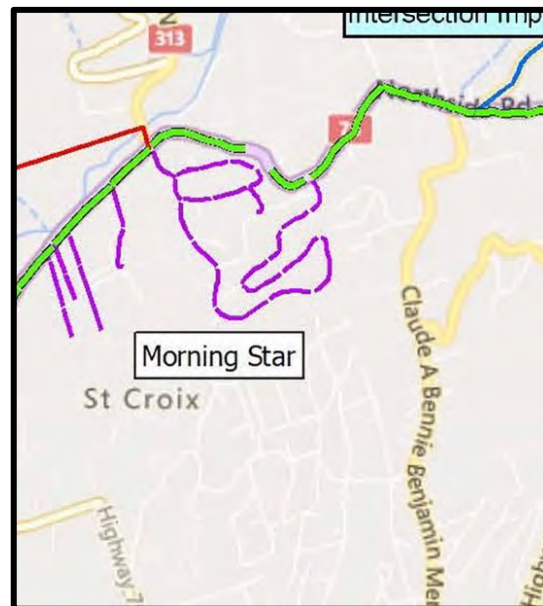


**Figure 28: Photograph of a scatter of building rubble in swale**



### 3.4 Morning-Glynn Star Duct Bank

The Morning Star – Glynn Duct Bank is 15,549 feet in length and largely concentrated in the Morning Star subdivision, and four shorter duct banks perpendicular to Northside Highway (Figure 29). The Morning Star subdivision roads have been largely cut from slopes (Figures 30 to 32) and the roads practically end at property lines.



**Figure 29:** Segment of map shown in Figure 1 showing the duct bank alignments for the Morning Star-Glynn project component, lined in purple.



**Figure 30:** Photograph showing a characteristic road cut in the Morning Star subdivision





**Figure 31: Photograph of another road cut in the Morning Star subdivision**



**Figure 32: Photograph of section of the north side of Morning Star Circle**

### 3.5. MonBijou-Glyn Duct Bank

This duct bank is 47,916 feet long, it begins at the intersection of Northside Road and Windsor Road and continues west to MonBijou Road where it turns south and ends at Midland Road. As can be seen in Figure 34, the project' duct bank alignments enter the MonBijou – Glyn communities in multiple places.



**Figure 33: Section of the Figure 1 map depicting the MonBijou-Glyn project component, lined in red.**

Approximately 350 meters west of the intersection of Northside and Windsor Roads are ruins associated with the Estate Concordia plantation settlement in close proximity to the edge of Windsor Road. (Figures 34 to 36)



**Figure 34: Photograph of adaptively reused Estate Concordia ruin along Windsor Road.**



**Figure 35: Photograph of same ruin as above, and the Estate Concordia chimney in the background.**





**Figure 36: Photograph of an Estate Concordia plantation building, as seen from Windsor Road.**

Approximately 500 meters to the east of the intersection of Windsor Road and Mon Bijou Roads is a large precolonial site that is reportedly partly destroyed, the site's polygon runs along the north edge of Windsor Road. No precolonial artifacts were recovered in the shovel tests performed along the approximate south edges of the site's polygon.

Three other archaeological sites are recorded within the MonBijou- Glynn sub project. At the intersection of Rama and South Lanes of the subdivision is the Old Friedensfeld Midlands Cemetery, the concentration of grave monuments is approximately 50 meters from the proposed duct bank for Rama Lane. The subdivision's roads have been both cut from side slopes or graded on relatively gently sloping terrain, for the most part, the compacted road shoulders extend to the property lines (Figures 37 and 38).

Three tributary streams pass in whole or in part through the MonBijou-Glynn subdivisions, what appears to be the higher order stream passes on an east to west axis through the central parts of the subdivisions. The other two streams partially pass in the northeast corner and southwest of the subdivisions. Recent analyses of precolonial settlement patterns for St. Croix by Meredith Hardy (2009) indicate that such environmental settings were attractive settlement locations to the precolonial inhabitants of St. Croix. We note that archaeological sites of record exist in close proximity to the proposed duct bank alignments for the MonBijou- Glynn sub-project.



**Figure 37: Photograph from near the entrance on Rama Lane, view to the south.**



**Figure 38: Photograph of a characteristic street at the MonBijou subdivision.**

## 4.0. CONCLUSIONS AND RECOMMENDATIONS

Our concluding remarks and recommendations are provided below.

### 4.1. Conclusions

The Phase I A&B Cultural Resources Survey performed for the proposed Northside Highway Improvements Project resulted in the identification of several proposed duct bank alignments considered to have the potential for containing cultural resources beneath the existing roadways. The shovel testing performed within the rights of way (where feasible) only yielded a small number of isolated finds consisting of precolonial (n2) and colonial ceramics (n5) and vast quantities of modern trash.

As discussed in Section 3 and 4.2 below, the *Survey* did identify several duct bank alignments that contain historic constructed features adjacent to or in close proximity to roadways. The records review resulted in the identification of an approximately 2-kilometer stretch of the Northside Highway where cultural resources of record exist. Part of this stretch also contains the Upper Salt River Archaeological District, which partially envelops this same stretch of Northside Highway. Parts of the coastal sections of the project are also considered to have the potential to contain archaeological contexts preserved and/or disturbed beneath the roadways, as these areas are considered to have been important sources for subsistence resources from the sea and mangrove environments.

### 4.2. Recommendations

CocoSol recommends to the Department of Planning and Natural Resources: Virgin Islands State Historic Preservation Office that it issue a ***conditioned finding of no objection*** for the proposed Northside Highway Improvements Project. The condition being that archaeological monitoring be performed during the earth change activities required to install the duct banks at the following sub projects.

#### 4.2.1. Northside Highway (main artery)

We recommend archaeological monitoring for two areas along the Northside Highway, one is the road fronting Orange Grove 1, historic ruins are in close proximity to the roadway including what appears to be the remains of building foundations adjacent to the pavement (Figure 39).





**Figure 39: Google Earth image showing the recommended archaeological monitoring alignment for Estate Orange Grove, lined in red.**

At the approximate intersection of Salt River Road and Northside Highway and for approximately 2 kilometers to the southwest (Figure 40) the duct bank alignments would pass in close proximity through a cluster of colonial and precolonial sites, including within the boundaries of the Upper Salt River Archaeological District.



**Figure 40: Google Earth image showing the duct bank alignment sections recommended for the Upper Salt River Archaeological District and duct bank alignments for the Morning Star-Glynn sub-project, lined in red**

#### 4.2.2 Contentment – Richmond

We recommend archaeological Monitoring for the following duct bank alignments for the Contentment-Richmond sub-project. The alignments are shown in Figure 41.

- Contentment Road
- King Street
- Peters Rest Road
- West Lane
- Neighborhood

These alignments will pass through town streets that are considered to have a high potential for containing archaeological contexts, though not all with good contextual integrity. Past monitoring activities within the town have also resulted in the identification of precolonial cultural resources,



**Figure 41: Google Earth image depicting the Contentment - Richmond recommended for archaeological monitoring, lined in red.**

#### 4.2.3. Richmond - Princess

The Richmond – Princess duct bank alignments primarily pass through low-lying coastal lands, except for sections of the Princess Plantation Road, parts of Judith’s Fancy and a small road that leads to the St. Croix Condominiums. As previously noted, two hand built coarse earthenware sherds were recovered from shovel tests along the northernmost coastal road. The environmental setting for the coastal duct banks pass through the intersection of beach and coastal plain lands providing an ecotonal setting where ocean and



mangrove environments provided subsistence resources for precolonial inhabitants. As such, temporary settlements, and resource processing activity loci for fish, conch, crabs etc., have the potential to remain preserved or disturbed beneath existing roadways.

In the case of the Judith's Fancy subdivision, we recommend that parts of Hamilton Drive and Jefferson Way that parallel the plantation's ruins complex be monitored by an archaeologist during earth change activities. Figure 42 depicts the alignments where monitoring is recommended, lined in red.



**Figure 42: Google Earth image depicting the duct bank alignments recommended for archaeological monitoring for the Richmond-Princess sub project, lined in red.**

#### **4.2.4 Morning Star – Glynn**

No archaeological monitoring is considered warranted for this subproject except for four branch duct banks off Northside Highway which are partially contained within the Upper Salt River Archaeological District (Figure 40).

#### **4.2.5 MonBijou - Glynn**

As proposed, the MonBijou – Glynn duct bank alignments will pass adjacent to or near archaeological sites of record and a cemetery. Additionally, tributary streams to Salt River pass through the subdivision proper and are considered to have likely been attractive settlement locations to precolonial inhabitants. We recommend archaeological monitoring for the entirety of the subdivision. We also recommend archaeological monitoring be performed for an archaeological site along the edge of Windsor Road, and the Estate Concordia section along Windsor Road alignment be monitored by an archaeologist during earth change activities, Figure 43 depicts the locations of these two areas.





**Figure 43: Google Earth image depicting the archaeological monitoring polygon (lined in white) and the monitoring sections along Windsor Road, lined in red.**

## REFERENCES

2009

Hardy, Meredith

The St. Croix Archaeological Project and the Vescellius Collection: A Reexamination. Bulletin of the Peabody Museum of Natural History.

1958

United States Geological Survey

Topographic map of Christiansted, VI.

2022

Virgin Islands Historic Preservation Office

Archaeological Site Data Files for St. Croix, USVI.

## ADDENDUM A

TO

PHASE I (A&B) CULTURAL RESOURCES SURVEY  
FOR THE PROPOSED  
NORTHSIDE IMPROVEMENTS PROJECT  
ST. CROIX U.S. VIRGIN ISLANDS  
Report dated July 22, 2022

Prepared for:  
Stanley Consulting Inc.  
225 Iowa Avenue  
Muscatine, IA 52761

Prepared by:  
CocoSol International Inc.  
777 Brickell Ave  
No. 500-97996  
Miami, Florida  
33131

August 26, 2022



## **ADDENDUM A**

Addendum A to the July 22, 2022 report referenced above includes a response to comments made by the Virgin Islands State Historic Preservation Office (VISHPO) on August 6, 2022, and is attached to this document as Attachment A. Attachment B provides the proposed alignments along existing rights of way for the Northside Improvements Project.

### **General Comments**

1. The VISHPO attributes the report to Soltec when in fact, the consultant is Cocosol International Inc.
2. The VISHPO interchangeably uses Northside and Northshore Road; the main artery for the project is Northside Road.
3. Based on our experience with numerous other archaeological monitoring projects for buried infrastructure in the USVI, we understand that earth change activities are ordinarily limited to the right of way with duct bank trenches of approximately 50 centimeters in width by varying depths, and larger excavations such as manholes are also ordinarily contained within the existing rights of way.
4. As noted in our executive summary (iv) the Area of Potential Effects (APE) for this project was defined as 25 meters on each side of the existing right of way. Additionally, as noted in Section 2.1 of our report, our search of the archaeological site data base provided by the VISHPO considered presence or absence of significant cultural resources within 50 meters of the proposed duct bank alignments.
5. The report addendum was formatted to address the VISHPO's comments and following our discussions with Mr. David Brewer of the VISHPO on August 10, 2022, to provide modifications to the report through the text and figures of this addendum where required. It was agreed that future changes/modifications to the project such as the intersection improvements currently under design would be best managed through respective addenda.

### **Specific Response to VISHPO Comments**

#### **Richmond – Princess Duct Bank Alignments**

- The former Richmond Prison is located approximately 150 meters from the closest proposed duct bank alignment and well outside of the APE. Figure 1 does show an alignment closer to the prison, but we note that this is an existing electrical feeder (Figure 1 and Attachment B).



Figure 1: Google Earth image of the eastern parts of the Richmond – Princess sub-project depicting the location of the prison (lower right-hand corner)

- We concur with the VISHPO's observation that the Estate Richmond Plantation village shown on the 1779 Oxholm map along Northside Road appears to have been destroyed by modern development. We do note that the 1799 Oxholm map places the Richmond plantation settlement more distant from Northside Road.
- La Grande Princess plantation village is shown on the Oxholm map of 1779 adjacent to Northside Road. The 1799 Oxholm map places the plantation settlement approximately 200 meters further to the north. The duct bank alignment along Road 752 passes near plantation buildings, and our report recommended archaeological monitoring for this duct bank alignment section, though the name of the plantation was inadvertently not mentioned in the text of the report. As recommended by the VISHPO, the monitoring alignment proposed in our report is extended to Northside Road and for approximately 100 meters to the west to cover the village's road front.
- The Leper Asylum site at the approximate northwest boundary of the Richmond WAPA plant is located approximately 200 meters from the nearest duct bank alignment and well outside of the APE.
- With regards to the Judith's Fancy plantation settlement, our report does recommend archaeological monitoring of earth change activities along Hamilton and Jefferson Roads. Please note that no earth change activities are proposed on Caribe Road.

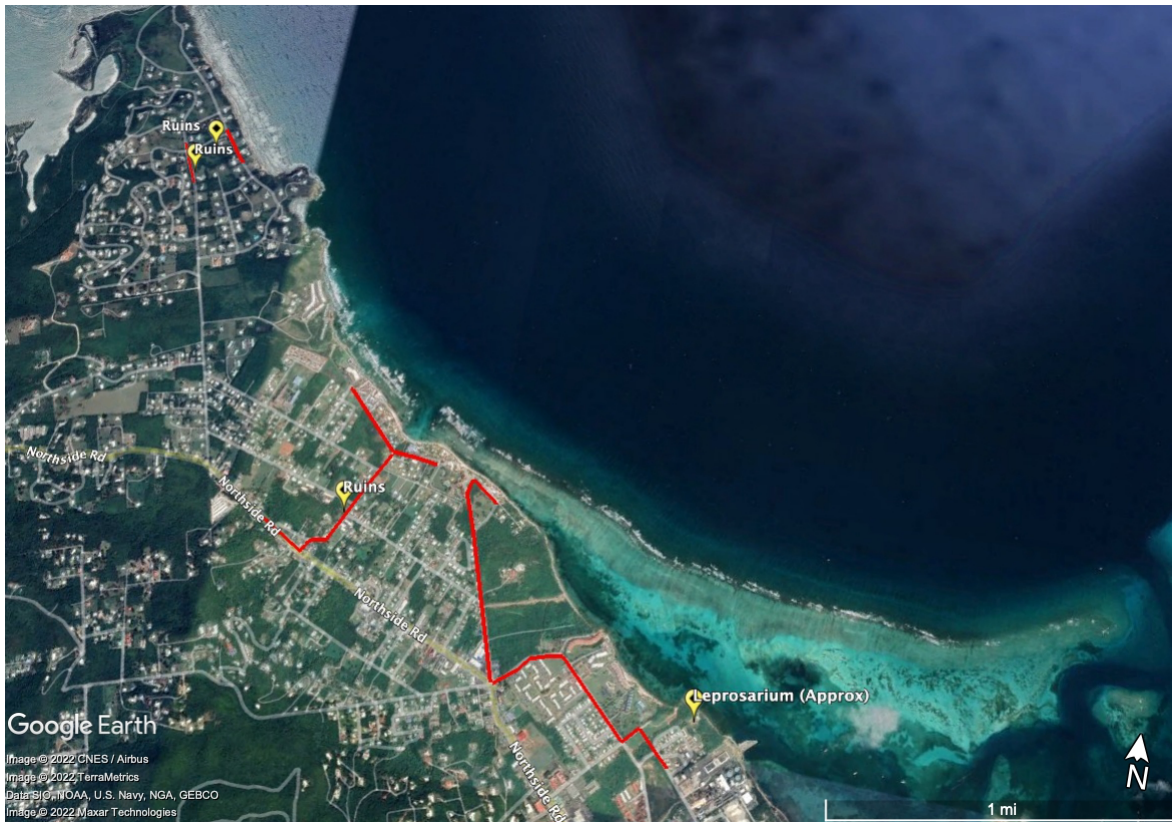


Figure 2: Google Earth image depicting the proposed archaeological monitoring alignments (in red) for the Richmond-Princess sub-project.

### **Morning Star - Glynn and Mon Bijou Duct Bank Alignments**

The Morning Star – Glynn general project area contains three historic plantation settlements on Estates Concordia, Morning Star and Windsor. Parts of the Concordia ruins are located immediately adjacent to the south edge of Windsor Road, our report (pp.32) recommends archaeological monitoring along those parts of the earth change activities that pass adjacent and near the Estate Concordia plantation settlement, the extent of the archaeological monitoring alignment for Concordia is shown in Figure 43 of our report.

Estate Windsor was not considered in our report because the plantation settlement is located approximately 300 meters distance from the proposed duct bank alignment on Windsor Road. Following the VISHPO's recommendation, we have extended the archaeological monitoring along Windsor Road to include the Estate Windsor plantation settlement road frontage. The Estate Morning Star plantation settlement was also not considered in our report because of its distance from the APE, approximately 60 meters to the plantation settlement and 90 meters to the windmill. Following the VISHPO's recommendation, we have extended the archaeological monitoring recommendation along Windsor and Northside Roads to include the Estate Morning Star plantation settlement road frontage (Figure 3).

With regards to Mon Bijou, we note that the duct bank alignment does not extend west of the alignment shown on pages 2, 25 and 33 of the report and Attachment B to this document. Following further assessment of the Mon Bijou sub project we have reduced the number of alignments recommended for archaeological



monitoring. The revised recommendations now bracket the lands above the tributary stream to Salt River that crosses through parts of the existing subdivision (Figure 3). These lands are considered to potentially contain precolonial settlements.



Figure 3: Google Earth image of the Morning Star- Glynn and Mon Bijou sub projects depicting the sections of the duct bank alignments (lined in red) recommended be monitored

## Summary

Based on the comments provided by the VISHPO (Attachment A) we have modified the recommendations for archaeological monitoring for the Richmond- Princess to extend monitoring for the La Grande Princess onto Northside Road. With regards to the Prison and Leprosarium, we note that no duct banks are designed within 150 and 200 meters (respectively) of these two sites and no archaeological monitoring is necessary. We also note that no duct banks are proposed on Caribe Road, the reported location of the Judith's Fancy village. We note that Hamilton and Jefferson Roads that border the Judith's Fancy plantation settlement are recommended for archaeological monitoring. Figure 2 of this document shows red lines/paths for the duct bank alignments that we have recommended for monitoring during earth change activities.

Following the VISHPO's recommendations, we have extended the archaeological monitoring segment originally proposed for the Estate Concordia plantation settlement to include the road frontage for Estate

Windsor. The monitoring alignment for Windsor Road has been extended to its intersection with Northside Road to cover the western boundaries of Estate Morning Star. Additionally, the originally proposed monitoring segment for the Morning Star-Glynn along Northside Road is now extended to the east to cover the southern road frontage to the Morning Star plantation settlement. The red lines/paths shown on Figure 3 of this document show the duct bank alignments where we recommend archaeological monitoring during earth change activities.

With regards to the comment regarding the Mon Bijou duct bank alignments, we note the existing design does not include areas to the west of the Mon Bijou road. Upon further review of our original recommended archaeological monitoring alignment for the Mon Bijou sub project we have reduced the recommended monitoring segments to now only bracket the tributary stream to Salt River that passes through the subdivision to cover the banks and lands to the north and south of the stream. The monitoring segments to cover the sites of record and the cemetery have been adjusted to only the duct bank alignments closest to each site. The duct bank alignments that are recommended for monitoring during earth change activities are shown as red lines/paths on Figure 4 of this addendum.

## ATTACHMENT A VIHPO Comments

### **Comments and Recommendations for SOLTEC's "PHASE 1 (A&B) Cultural Resources Survey for the Proposed Northside Improvements Project, St. Croix, U. S. Virgin Islands, July 22, 2022", submitted to VI SHPO**

**Prepared by George F. Tyson, Historian, August 6, 2022**

These comments extend only to the historic sites within the Project Area. I did not consider prehistoric sites.

This survey missed several documented historic sites that are identified below. Its basic deficiency is that it relied solely on the 1958 USGS map for its information about the historic resources that might be impacted by the proposed undertaking. Consequently, the study failed to locate/identify several important sites shown by several other readily available and essential earlier maps that should also have been consulted, specifically: 1) Oxholm's 1779 map of Christiansted environs; 2) Oxholm's map of St. Croix 1794 (both of which are available at the Danish National Archives West Indian Website) and 3) the USCGS St. Croix map of 1923, which is also online. I did consult those maps and found the following historic sites that the SOLTEC Survey failed to identify and address.

1. Within the Richmond-Princess segment:

- \*Richmond Prison, as shown by the US Survey maps of 1923 and 1958;
- \*Estate Richmond plantation village along Northshore Road, as shown on the Oxholm map of 1779;
- \*Estate La Grande Princesse plantation village bordering the Northshore Road, as shown by the Oxholm map of 1779;
- \*Leper Asylum bordering the WAPA plant on the northwest, shown by US Survey maps of 1923 & 1958.

2. Within the Morning Star-Glynn segment

- \*Estate Morning Star plantation village along Northside Road, as shown by the US Survey maps of 1923 and 1958;
- \*Estate Concordia plantation village on the northside of the "Windsor Road", as shown by the 1923 and 1958 Survey maps and the Oxholm map of 1794;
- \*Estate Windsor plantation village along "Windsor Road", as shown by the above set of maps;
- \*Possibly the entire Estate Mon Bijou settlement site, as shown by the above references. **Note** the Study presents two different representations of the Mon Bijou component – one on pages 2 & 25, the other on page 33.

Accordingly, my recommendations are that the study be revised to:

- 1) include all the above referenced historic sites;
- 2) recommend archaeological monitoring at:
  - a) all the above locations, with the possible exception of the Richmond village, which may have been destroyed by modern development.



- b) along Caribe Road in Judith's Fancy – because that was the location of the plantation village, as shown on Oxholm's Christiansted environs map of 1779.
- c) Mon Bijou, if the project extends west of the Mon Bijou road as shown on page 33 of the SOLTEC Survey.

## ATTACHMENT B

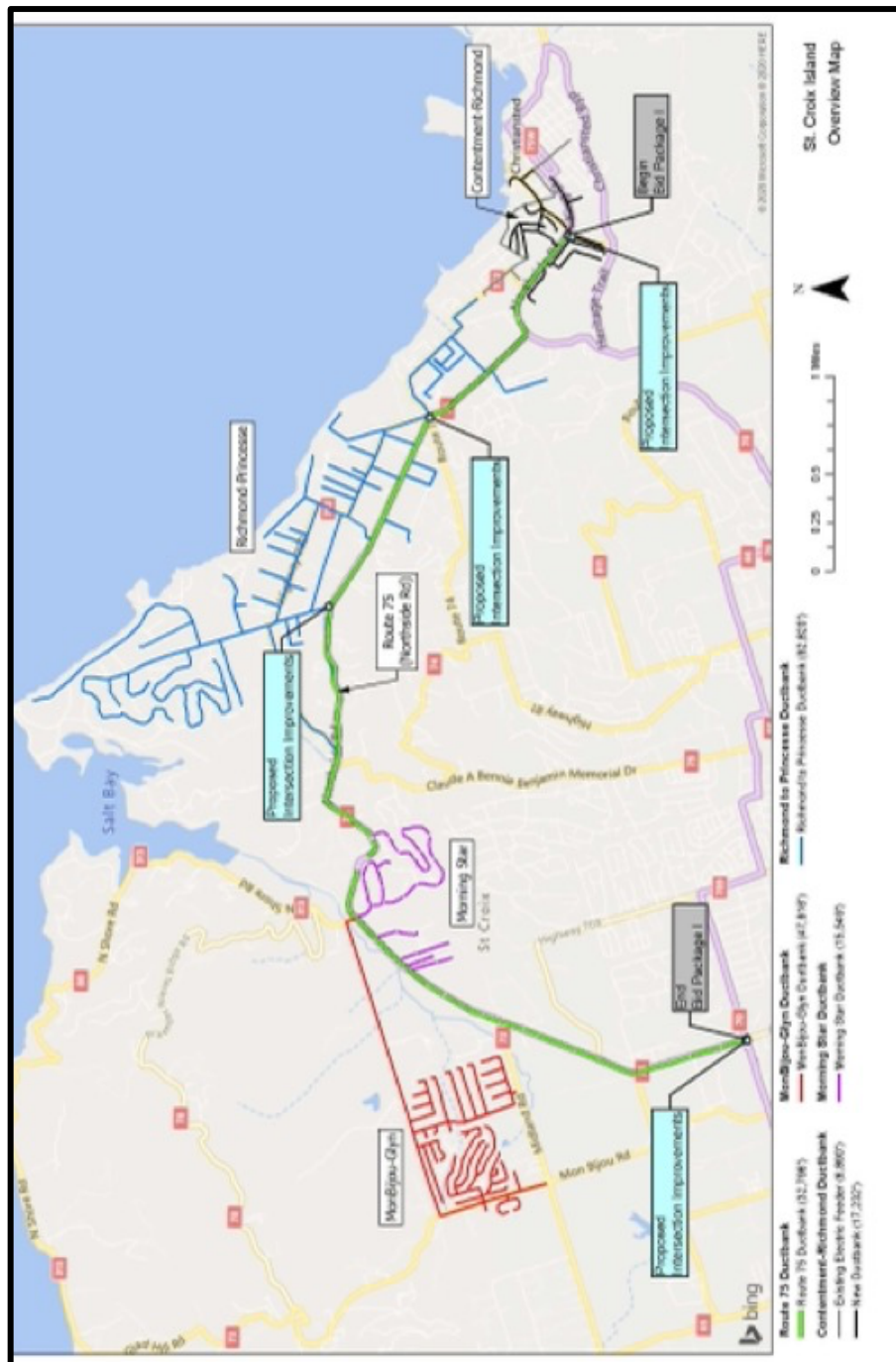


Figure 4: Overview Map for the Northside Improvements Project

**ATTACHMENT B**

**VISHPO CLEARANCE LETTER**





GOVERNMENT OF THE UNITED STATES VIRGIN ISLANDS

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**DEPARTMENT OF PLANNING AND NATURAL RESOURCES**

**Virgin Islands State Historic Preservation Office**

Fort Frederik National Historic Landmark Site  
Strand Street 198  
Frederiksted, Virgin Islands 00840

Telephone: (340) 719-7089

Ms. Amy Dempsey, President  
Bioimpact Inc.

September 23, 2022

Mr. Carlos Solís, President  
CocoSol International Inc.

**Re: VISHPO Review of the Cultural Resource Survey Consultations for the Northside Road Improvement Project in St. Croix, Virgin Islands**

Dear Ms. Dempsey and Mr. Solís:

This letter is to confirm that the Virgin Islands State Historic Preservation Office (VISHPO) is in agreement with the archaeological monitoring mitigation procedures for the protection and preservation of historic and archaeological resources that may be identified within the limits of the Northside Road Improvement Project in St. Croix, Virgin Islands as outlined in the Phase I A and B Archaeological Survey report dated July 22, 2022, and the Addendum A report dated August 26, 2022 by the Archaeological consultant, CocoSol International Inc.

Therefore, with the noted archaeological monitoring taking place in those agreed to locations along the Northside Road Improvement Project route (Richmond to La Grande Princess, Hamilton Road and Jefferson Roads, Estate Concordia Plantation Settlement, Estate Windsor to the western boundary of Estate Morning Star, Estate Morning Star to Estate Glynn and the Mon Bijou Sub Project) the VISHPO has No Objections to the proposed development.

Thank you for the opportunity to review this project.

Sincerely,

Sean L. Krigger  
Director and Deputy SHPO

Cc: Marlon Hibbert, Director, Division of Coastal Zone Management

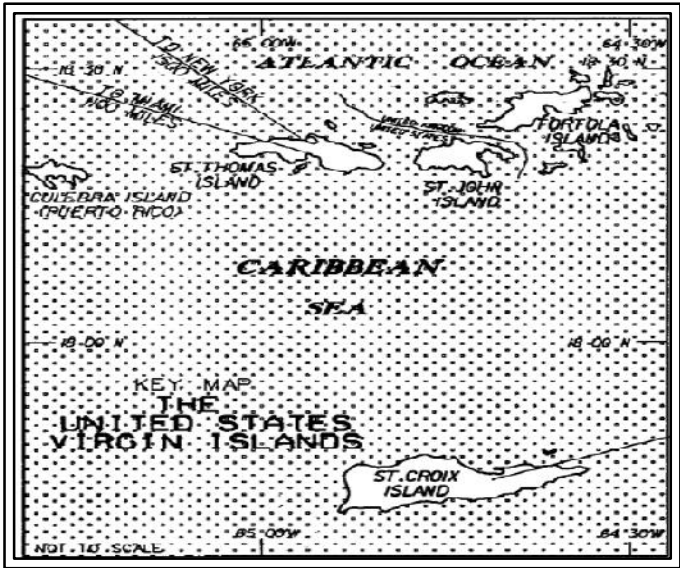
**ATTACHMENT C**

**PROJECT PLANS**

U:\01-sheets\PKG\_1\A00-VI75\_COVER.dwg - Tuesday, July 12, 2022 10:14:04 AM

30% PLANS - NOT FOR CONSTRUCTION IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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PLANS FOR PROPOSED

# CONTRACT P149DPWT21

## NORTHSIDE HIGHWAY (ROUTE 75)

### ROADWAY IMPROVEMENTS

ST.CROIX  
U.S. VIRGIN ISLAND  
LENGTH : 6.6 miles

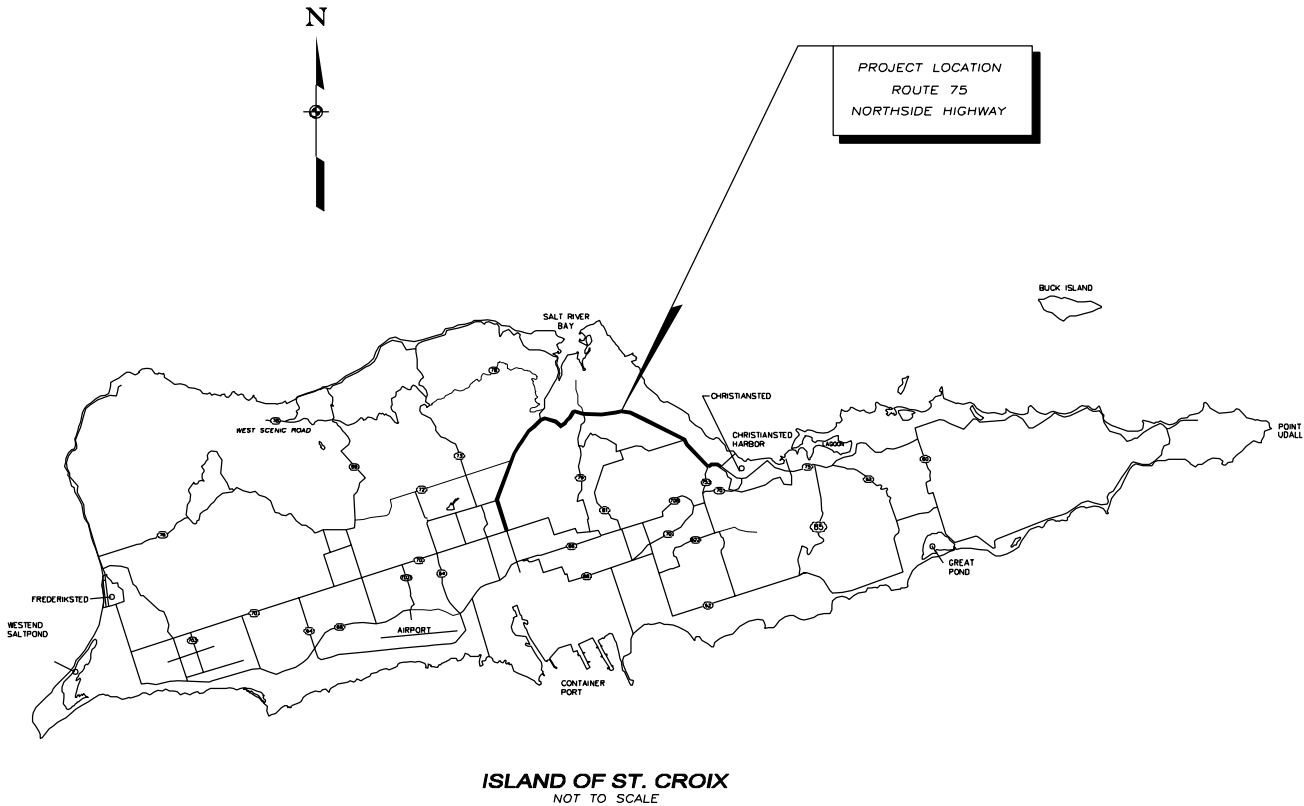
INDEX OF COMPONENTS	
	ROADWAY IMPROVEMENTS - PACKAGE I
	ELECTRICAL IMPROVEMENTS - PACKAGE I
	ELECTRICAL IMPROVEMENTS - PACKAGE II

TYPE OF CONSTRUCTION:  
Pavement Rehabilitation, Drainage Improvements,  
Electrical Improvements, and Safety Improvements.

DESIGN DESIGNATIONS:  
ADT (2022) ----- 9,217  
ADT (2046) ----- 10,713  
D ----- 50%  
T ----- 7%  
V ----- VARIES; REFER TO TYPICAL SECTIONS  
e(max) ----- 8%

U.S. CUSTOMARY DIMENSIONS:  
Slopes are expressed as RISE:RUN

SPECIFICATIONS:  
"STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS  
AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-14,  
U.S. CUSTOMARY UNITS"



PLANS PREPARED BY



FOR

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

AND

VIRGIN ISLANDS  
WATER AND POWER AUTHORITY



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JULY 2022

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FEDERAL-AID HIGHWAY PROGRAM MANAGER

DATE: \_\_\_\_\_

PROJECT MANAGER	ROADWAY LEAD	ELECTRICAL LEAD	ENGINEER OF RECORD PK 1 RDWY	ENGINEER OF RECORD PK 1 ELEC AND PK 2 ELEC
M. PENN	R. OLIVIER	G. WILSON	R. OLIVIER	B. SCHOER



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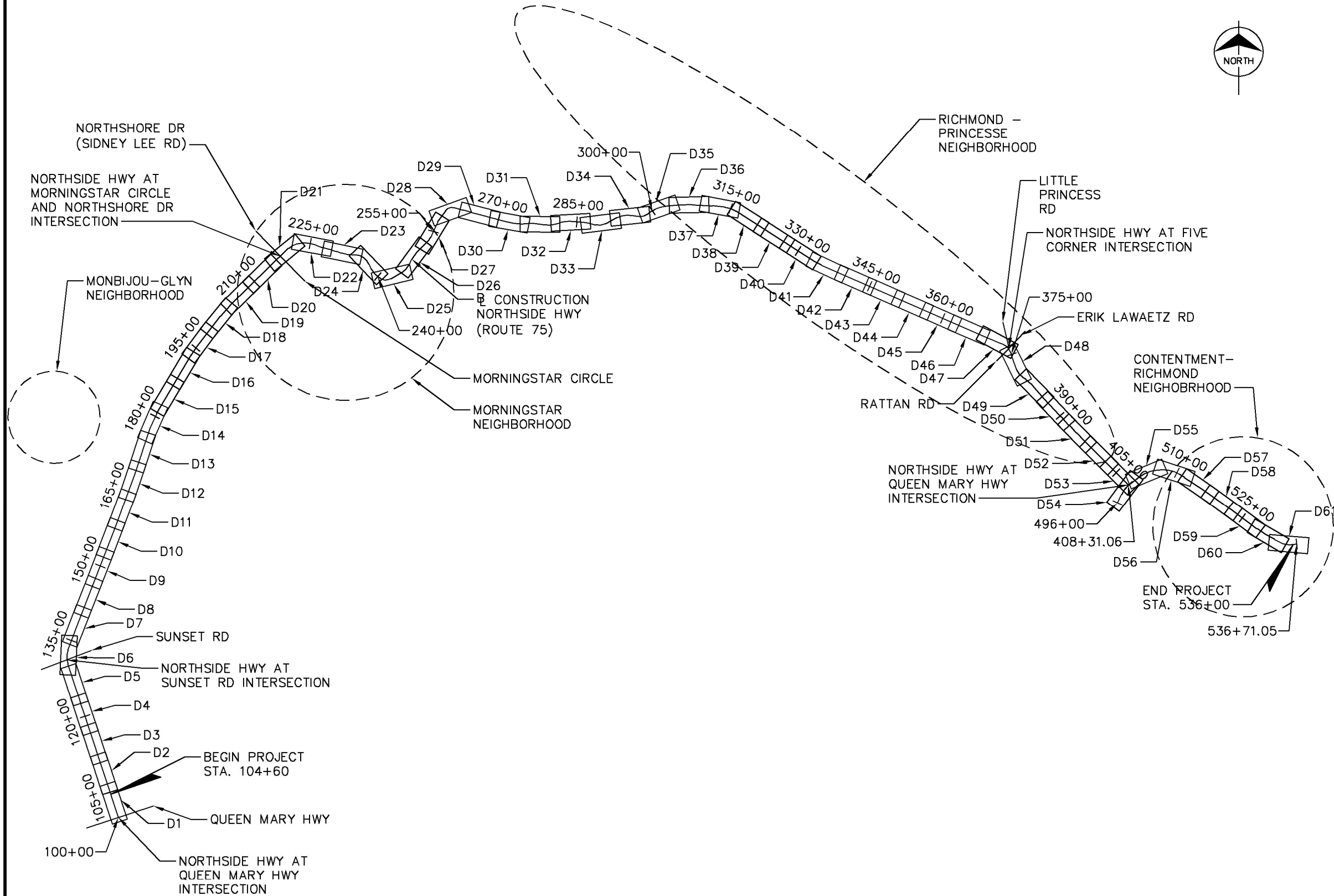
IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

REG	STATE	CONTRACT	SHEET NO.	
SE	VI	P149DPWT21	A01	

PLANS FOR PROPOSED  
CONTRACT P149DPWT21  
PACKAGE I  
ROADWAY IMPROVEMENTS

INDEX OF SHEETS	
A00	COVER SHEET
A01	PACKAGE I ROADWAY TITLE SHEET
A02	LEGEND AND ABBREVIATIONS
A03	GENERAL NOTES
A04	SHEET SEQUENCE
A05 - A10	HORIZONTAL GEOMETRY
A11 - A14	HORIZONTAL GEOMETRY TABLE
VF1 - VF71	EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY
B01 - B04	TYPICAL SECTIONS
C01 - C02	TABULATION OF QUANTITIES
C03	DRAINAGE MAP
D01 - D61	ROADWAY PLAN AND PROFILE
F01 - F03	DRIVEWAY AND BUS STOP DETAILS
N01 - N05	TTCP TYPICAL SECTIONS SHEETS
S01 - S73	FHWA STANDARD DETAILS
520-001	FDOT STANDARD DETAILS
T01 - T05	CROSS SECTIONS

30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.
USVI	ST CROIX	P149DPWT21	A02

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:
REV. NO. _____			
REV. DATE: _____			

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS












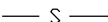

















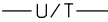









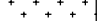

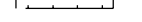





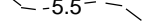




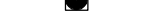




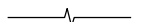





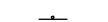











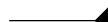

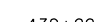

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)**  
**SHEET SEQUENCE**

SCALE: NO SCALE (11"x17")	SHEET 2 OF 4
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30% PLANS – NOT FOR CONSTRUCTION

SYMBOLS				ABBREVIATIONS				STATE	ISLAND	CONTRACT	SHEET NO.			
								USVI	ST CROIX	P149DPWT21	A03			
	CONTROL STATION		IRON POST	AC	ALTERNATING CURRENT, ACRE	H.W.	HEADWALL	SQ	SQUARE	<div>ENGINEER: _____</div> <div>DRAWN: _____</div> <div>CHECKED: _____</div> <div>PRINT DATE: _____</div> <div>REV. NO. _____</div> <div>REV. DATE: _____</div>				
	PROPERTY POINT		CONCRETE MONUMENT	ADDL	ADDITIONAL	H	HEIGHT	SQ FT	SQUARE FEET					
	SANITARY SEWER MANHOLE		BITT	AFG	ABOVE FINISHED GRADE	HH	HANDHOLE	SQ IN	SQUARE INCHES					
	STORM SEWER MANHOLE		FIRE WATER NOZZLE	AL	ALUMINUM	HORIZ	HORIZONTAL	SST	STAINLESS STEEL					
	ELECTRIC UTILITY MANHOLE		CONCRETE GUTTER	ALT	ALTERNATE	HP	HIGH POINT, HORSE POWER	ST	STEEL					
	TELEPHONE MANHOLE		SANITARY SEWER LINE	AMP	AMPERE	HVAC	HEATING, VENTILATION AND AIR	STRL	STRUCTURAL					
	WATER MANHOLE		STORM SEWER LINE	APPROX	APPROXIMATE	I	DRAINAGE INLET	STS	STORM SEWER					
	HEAD WALL		WATER LINE	AUX	AUXILIARY	IE	INSIDE ELEVATION	ST.M.H.	STORM SEWER MANHOLE					
	CATCH BASINS		TELEPHONE LINE	BLD	BUILDING	INSTR	INSTRUMENTATION	T&B	TOP AND BOTTOM					
	WATER METER		POWER LINE	B.S.	BUS STOP	INV	INVERT	TCE	TEMPORARY CONSTRUCTION					
	WATER VALVE		CHAIN LINK FENCE	BOC	BACK OF CURB	I.E.	INVERT ELEVATION	T.E.	TOP ELEVATION					
	CONCRETE LIGHT POLE		BARBED WIRE FENCE	BOT	BOTTOM	JT	JOINT	TOC	TOP OF CONCRETE					
	CONCRETE POWER POLE		UNDERGROUND POWER LINE	BP	BEGIN POINT	K	K CURVE VALUE	TOS	TOP OF STEEL					
	UTILITY POLE		UNDERGROUND TELEPHONE LINE	C&G	CURB AND GUTTER	L	LENGTH, ANGLE	TRANS	TRANSVERSE					
	GUY POLE		GUARDRAIL	CES	CONCRETE END SECTION	LB	POUND	TTCP	TEMPORARY TRAFFIC					
	WOODEN POWER/TELEPHONE POLE		SPOT ELEVATIONS	CFLHD	CENTRAL FEDERAL LANDS	LC	LIGHTING CIRCUIT	T.W.E.	TOP OF WALL ELEVATION					
	TELEPHONE POLE		EXISTING STRUCTURES	CIP	CAST IRON PIPE	LF	LINEAL FEET	TYP	TYPICAL					
	WOODEN POWER POLE		CONCRETE SLAB	C.B.	CATCH BASIN	LG	LENGTH, LONG	TV	TUNNEL VAULT					
	WOODEN LIGHT POLE		METAL CAP	CL	CENTERLINE	LONG	LONGITUDINAL	UG	UNDERGROUND					
	NOT IN USE POLE		PAVEMENT PATCH	CLR	CLEARANCE	LP	LOW POINT	UNK	UNKNOWN					
	CAMERA POLE		CONTOUR 1 METER INTERVAL	CNTRL	CONTROL	LT	LEFT	UNO	UNLESS NOTED OTHERWISE					
	METAL LIGHT POLE		CONTOUR 0.5 METER INTERVAL	CO	CLEANOUT	LV	LOW VOLTAGE	UTIL	UTILITY					
	ELECTRIC BOX		MONITORING WELL	COL	COLUMN	m	METER (DIMENSION)	VC	VERTICAL CURVE					
	BORING		ELEVATION DESIGNATION	COMM	COMMUNICATIONS	mm	MILLIMETER (DIMENSION)	VERT	VERTICAL					
	TEL WITNESS		CENTER LINE	CONC.	CONCRETE	MAX	MAXIMUM	VV	VALVE VAULT					
	TWO SIDE METAL LIGHT POLE		HIDDEN LINE	CONN	CONNECTOR	MECH	MECHANICAL	W	WIDTH, WATER, WIDE FLANGE					
	STREET LIGHT POLE		SURFACE BREAK LINE	CONT	CONTRACTOR, CONTINUOUS, CONTINUATION	MFR	MANUFACTURER, MULTIFUNCTION RELAY	W/	WITH					
	KM ID		PROPERTY LINE	CONST	CONSTRUCTION	MH	MANHOLE	WACP	WARM ASPHALTIC CONCRETE PAVEMENT					
	SANITARY CLEAN OUT		CENTERLINE	CTR	CENTER	MIN	MINIMUM	WP	WEATHER PROOF, WORKING POINT					
	FIRE HYDRANT		DIAMETER OR ROUND	CU M	CUBIC METER	NO.	NUMBER	WT	WEIGHT					
	CURB INLET		SIGN (ONE POST)	CU MM	CUBIC MILLIMETER	N.T.S.	NOT TO SCALE							
	PUBLIC TELEPHONE BOOTH		ROAD SWALE FLOW ARROW	C.I.	CURB INLET	N/A	NO ACCESS							
	STREET LIGHT BOX		DESIGN FLOW DIRECTION ARROW	DB	DUCT BANK	O.C.	ON CENTER							
	HANDICAP RAMP		OPEN SLOPE ARROW (CUT)	DC	DIRECT CURRENT	OPNG	OPENING							
	SIGN		SOLID SLOPE ARROW (FILL)	DIP	DUCTILE IRON PIPE	OPP	OPPOSITE							
	GUY CABLE		BASELINE, STATION MARK AND STATION	DIA	DIAMETER	P&ID	PIPING & INSTRUMENTATION DIAGRAM							
	EXISTING TREE		WATER LEVEL	DIST	DISTANCE	P	LIGHT POLE							
	EXISTING BUSH		EXISTING SPOT ELEVATION	DN	DOWN	PC	POINT OF CURVATURE, PERSONAL COMPUTER							
	EXISTING PALM TREE		FINISH GRADE SPOT ELEVATION	DWG	DRAWING	PCC	PORTLAND CEMENT CONCRETE							
	VERTICAL PIPE			EA	EACH	PK	PACKAGE							
	BOLLARD			EG	EXISTING GRADE	PL	PLATE, PROPERTY LINE							
	GATE			EJ	EXPANSION JOINT	PNL	PANEL							
				EL	ELEVATION	PRC	POINT OF REVERSE CURVE							
				EOP	EDGE OF PAVEMENT	PROT	PROTECTION							
				EP	END POINT	PSF	POUNDS PER SQUARE FOOT							
				ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH							
				E.M.H.	ELECTRIC MANHOLE	PT	POINT OF TANGENCY							
				EQ	EQUAL	PVC	POLYVINYL CHLORIDE							
				EQPT	EQUIPMENT	PVI	POINT OF VERTICAL INTERSECTION							
				ES	ELECTRICAL SUPPLY	PWR	POWER							
				ETC	ET CETERA	QTY	QUANTITY							
				EXP	EXPANSION, EXPOSED	R	RADIUS							
				EXIST.	EXISTING	RCP	REINFORCED CONCRETE PIPE							
				EXT	EXTERIOR, EXTENSION	RECT	RECTANGLE							
				F.F.E.	FINISH FLOOR ELEVATION	REF	REFERENCE							
				FG	FINISHED GRADE	REINF	REINFORCING							
				FLH	FEDERAL LANDS HIGHWAY	REQD	REQUIRED							
				FT	FOOT, FEET	REV	REVISION, REVERSE							
				GA	GAUGE	RM	ROOM							
				GALV	GALVANIZE(D)	ROW	RIGHT OF WAY							
				GEN	GENERATOR	RPM	REVOLUTIONS PER MINUTE							
				GND	GROUND	RR	RAILROAD							
				GR	GRADE	RT	RIGHT							
						SCHED	SCHEDULE							
						SEC	SECONDS							
						SHT	SHEET							
						S.M.H.	SANITARY SEWER MANHOLE							
						SP,	SPACE							
						SPA								
								SCALE: ---- (11"x17")						
								SHEET 3 OF 4						

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IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
LEGEND AND ABBREVIATIONS

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## 30% PLANS – NOT FOR CONSTRUCTION

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




































EXISTING CONDITIONS AND TOPOGRAPHIC SURVEY  
AND UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]  
ST. CROIX, US VIRGIN ISLANDS

INDEX :

DWG. NO.	DESCRIPTION
VF-1	TITLE SHEET
VF-2	GENERAL SITE PLAN
VF-3 @ VF-70	EXISTING CONDITIONS, TOPOGRAPHIC SURVEY AND UTILITY LOCATIONS
VF-71	EXISTING CONDITIONS, TOPOGRAPHIC SURVEY AND UTILITY LOCATIONS (BLOW-UP NO. 1)

LEGEND:

	CONTROL STATION		GUY POLE		CONCRETE GUTTER
	PROPERTY POINT		NOT IN USE POLE		SANITARY SEWER LINE
	SANITARY SEWER MANHOLE		CABLE TV POLE		STORM SEWER LINE
	STORM SEWER MANHOLE		CONCRETE LIGHT POLE		WATER LINE
	ELECTRIC UTILITY MANHOLE		TWO SIDE LIGHT POLE		TELEPHONE LINE
	TELEPHONE MANHOLE		METAL POWER POLE		POWER LINE
	WATER MANHOLE		STREET LIGHT POLE		CHAIN LINK FENCE
	HEAD WALL		KM ID		UNDERGROUND POWER LINE
	CATCH BASINS		SANITARY CLEAN OUT		BARBED WIRE FENCE
	WATER METER		FIRE HYDRANT		UNDERGROUND TELEPHONE LINE
	WATER VALVE		CURB INLET		SPOT ELEVATIONS
	CONCRETE LIGHT POLE		HANDICAP RAMP		CONTOUR INTERVAL EVERY 1 FOOT
	CONCRETE POWER POLE		SIGN		CONTOUR INTERVAL EVERY 5 FEET
	CONCRETE POWER & TELEPHONE POLE		GUY CABLE		EXISTING STRUCTURES
	UTILITY POLE		EXISTING TREE		CONCRETE SLAB
	WOODEN POWER/TELEPHONE POLE		PALM TREE		GREEN AREA
	TELEPHONE POLE		COMMUNICATION BOX		PAVEMENT MARKING
	WOODEN POWER POLE		ELECTRIC BOX		GAS CAP
	WOODEN LIGHT POLE		GREASE TRAP MANHOLE		FIRE WATER NOZZLE
	SANITARY SEWER VALVE		POST INDICATOR VALVE		
	IRRIGATION CONTROL VALVE				
	NUMBER OF PARKING SPACES				

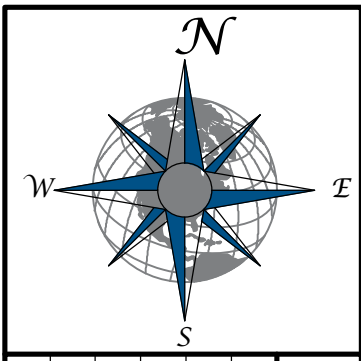
ABBREVIATIONS :

C.B.	CATCH BASIN
S.M.H.	SANITARY SEWER MANHOLE
S.T.M.H.	STORM SEWER MANHOLE
EMH	ELECTRIC MANHOLE
CONC.	CONCRETE
C.S.	CONCRETE SLAB
N/A	ESTIMATED DEPTH
F.F.E.	FINISH FLOOR ELEVATION
N/A	NO ACCESS
T.W.E.	TOP OF WALL ELEVATION
I.E.	INVERT ELEVATION
T.E.	TOP ELEVATION
D.	PIPE DIAMETER
HW	HEADWALL
C.I.	CURB INLET
C.I. UNK	UNKNOWN
RCP	REINFORCE CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
UG	UNDERGROUND
TCP	TOP OF CASING
GE	GROUND ELEVATION
TYP	TYPICAL
L.W.E.	LOW WIRE ELEVATION
R/W	RIGHT OF WAY

GENERAL NOTES:

1. ALL DISTANCES ARE EXPRESSED IN US SURVEY FEET, UNLESS OTHERWISE NOTED.
2. FIELDWORK PERFORMED FROM NOVEMBER 16, 2021 THRU FEBRUARY 1, 2022.
3. PLEASE REFER TO SURVEY JEB-3646.
4. HORIZONTAL CONTROL IS REFERRED TO NAD 83 (2011) SPC ZONE PRJUS VIRGIN ISLANDS.
5. VERTICAL DATUM IS REFERRED TO VIVD09.
6. THE INFORMATION OF THIS MAP REPRESENTS THE RESULT OF THE SURVEY MADE IN THE DATE INDICATED AND CAN BE ONLY CONSIDERED AS AN INDICATION OF THE GENERAL CONDITIONS EXISTING AT THAT TIME.
7. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND MEASUREMENTS AND ADVISE ARCHITECT OR OWNER OF ANY DIFFERENCES.
8. UNDERGROUND UTILITIES WERE LOCATED TO A QUALITY LEVEL C OF SPECIFICATION ASCE 3802.2-18. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO ANY WORK.

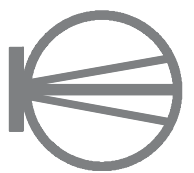
STA	COORDINATES		ELEVATION	DESCRIPTION
	NORTHING	EASTING		
GCP-1	620760.23	1233687.778	102.121	PK NAIL AND WASHER
GCP-2	620680.243	1233642.633	102.437	PK NAIL AND WASHER
GCP-3	626260.4	1233607.788	128.558	PK NAIL AND WASHER
GCP-4	623857.174	1233433.85	139.099	PK NAIL AND WASHER
GCP-5	624944.84	1233143.85	139.099	PK NAIL AND WASHER
GCP-6	627666.95	1233947.241	99.711	PK NAIL AND WASHER
GCP-7	627396.805	1234011.431	87.704	PK NAIL AND WASHER
GCP-8	629075.51	1234773.605S	62.181	PK NAIL AND WASHER
GCP-12	630789.988	1236213.744	33.354	PK NAIL AND WASHER
GCP-13	631309.76	1236770.589	25.847	PK NAIL AND WASHER
GCP-14	630861.911	1234551.786	72.1	PK NAIL AND WASHER
GCP-15	632025.928	1234832.938	117.425	PK NAIL AND WASHER
GCP-16	629752.21	1231047.68	189.333	PK NAIL AND WASHER
GCP-17	6296262.851	1229617.297	156.931	PK NAIL AND WASHER
GCP-18	629106.731	1228649.303	186.671	PK NAIL AND WASHER
GCP-19	627748.295	1229164.914	199.125	PK NAIL AND WASHER
GCP-21	626566.75	1229536.482	138.689	PK NAIL AND WASHER
GCP-28	631338.149	1230998.586	113.725	PK NAIL AND WASHER
GCP-30	630681.872	1230899.786	186.035	PK NAIL AND WASHER
GCP-36	632237.583	1239916.342	200.46	PK NAIL AND WASHER
GCP-37	631938.958	1240893.551	168.101	PK NAIL AND WASHER
GCP-38	631911.638	1242403.563	145.171	PK NAIL AND WASHER
GCP-39	632193.243	1243731.019	109.583	PK NAIL AND WASHER
GCP-40	632098.796	1245321.885	69.578	PK NAIL AND WASHER
GCP-41	633890.07	1244618.745	55.227	PK NAIL AND WASHER
GCP-42	633019.799	1245301.63	168.035	PK NAIL AND WASHER
GCP-45	635386.456	1244059.937	45.241	PK NAIL AND WASHER
GCP-46	636909.012	1245124.347	15.409	PK NAIL AND WASHER
GCP-48	637654.762	1243262.681	42.718	PK NAIL AND WASHER
GCP-49	638108.981	1243916.905	16.915	PK NAIL AND WASHER
GCP-51	640161.955	1242471.539	79.053	PK NAIL AND WASHER
GCP-52	637781.502	1242184.214	126.687	PK NAIL AND WASHER
GCP-53	638452.881	1243310.711	58.662	PK NAIL AND WASHER
STA-59	631016.285	1241444.727	77.827	PK NAIL AND WASHER
GCP-60	630198.375	1249043.227	69.98	PK NAIL AND WASHER
STA-61	629741.536	1250343.339	57.088	PK NAIL AND WASHER
STA-78	629256.175	1250543.969	89.464	PK NAIL AND WASHER
STA-79	628290.298	1251349.916	91.603	PK NAIL AND WASHER
GCP-84	630195.498	1251307.359	23.592	PK NAIL AND WASHER
GCP-86	627434.352	1252662.721	86.715	PK NAIL AND WASHER
GCP-87	628613.191	1252662.721	86.715	PK NAIL AND WASHER
GCP-89	627030.3	1252912.092	83.62	PK NAIL AND WASHER
GCP-101	626589.249	1255883.132	44.487	PK NAIL AND WASHER
GCP-103	626477.22	1259640.647	20.931	PK NAIL AND WASHER



SWM	REVISION	BY:	DATE:

THE MATERIAL SHOWN HEREON IS PROPERTY OF JAVIER E. BIDOT ASSOCIATES, PSC AND SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT PERMISSION OF JAVIER BIDOT ASSOCIATES, PSC.

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EXISTING CONDITIONS, TOPOGRAPHIC AND  
UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]  
ST CROIX, US VIRGIN ISLANDS

LAST DAY OF FIELD SURVEY	FEB 1, 2022
DRAWN BY:	J.C.
CHECKED BY:	C. LEBRON
SCALE:	1"=50'

CERTIFY CORRECT
I, JAVIER E. BIDOT CRUZ, HEREBY CERTIFY THAT THIS PLAN IS AN EXACT AND TRUE GRAPHIC REPRESENTATION OF THE EXISTING CONDITIONS

JAVIER E. BIDOT CRUZ  
LAND SURVEYOR LIC. NO. 0-41929-1B

DRAWING TITLE:

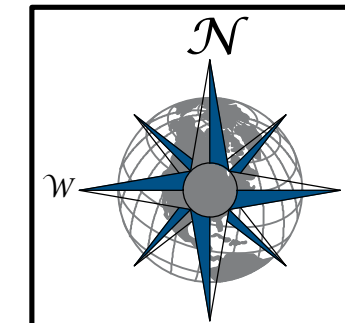

TITLE SHEET

DATE: JUN 20, 2022	DWG. NO.	SHEET NO.
PROJECT JEB-3646	VF-01	01 71

PAPER SIZE: 24x36

PLOT DATE : JUNE 20, 2022



[illegible]

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& ASSOCIATES**  
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EXISTING CONDITIONS, TOPOGRAPHIC AND  
UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]

LAST DAY OF FIELD SURVEY	FEB 1, 202
DRAWN BY:	J.C.
CHECKED BY:	C. LEBRON
SCALE:	1"=50'

**CERTIFY CORRECT**

I, JAVIER E. BIDOT CRUZ, HEREBY CERTIFY THAT THIS PLAN IS AN EXACT AND TRUE GRAPHIC REPRESENTATION OF THE EXISTING CONDITIONS

JAVIER E. BIDOT CRUZ  
LAND SURVEYOR LIC.NO. 0-41925

DRAWING TITLE:

\_\_\_\_\_

GENERAL SITE PLAN

\_\_\_\_\_

[illegible]

DATE:	DWG. NO.	SHEET
JUN 20, 2022		02

PROJECT	VF-02	02
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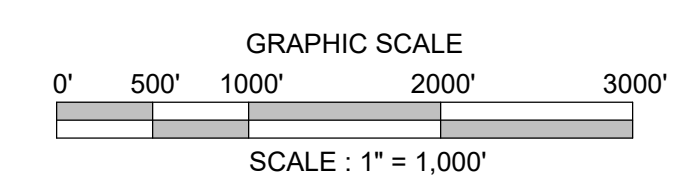
PAPER SIZE: 24x36

PLOT DATE : JUNE 20, 2022

## GENERAL SITE PLAN

SCALE 1" = 1000'

NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1



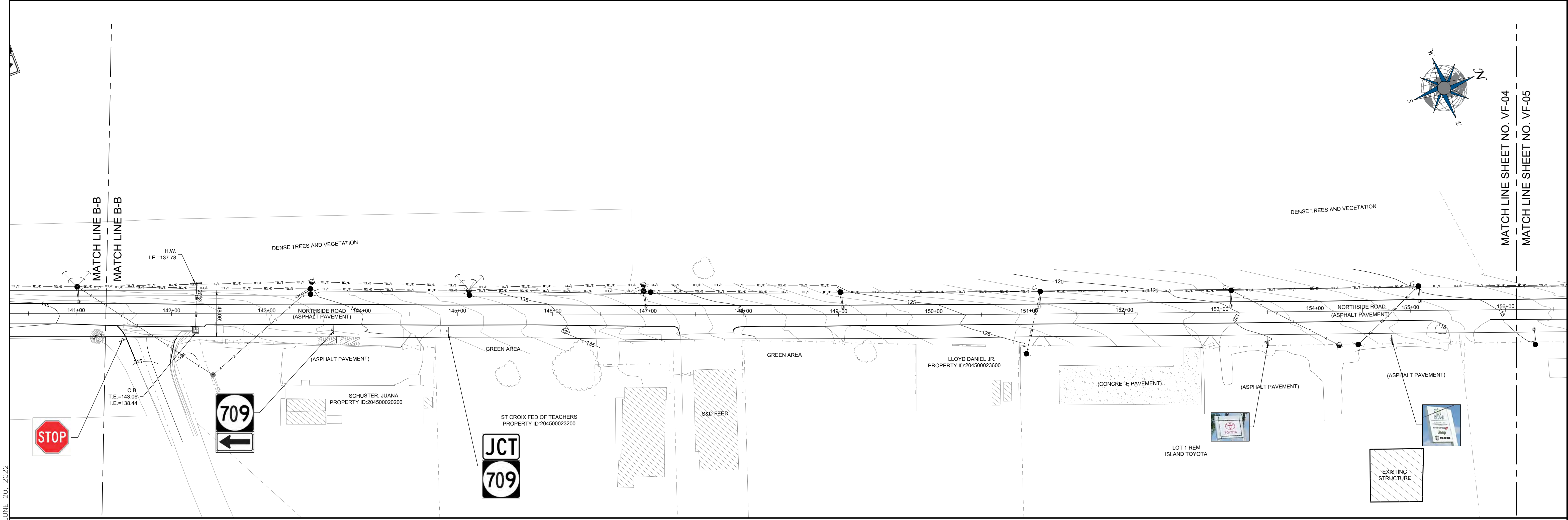
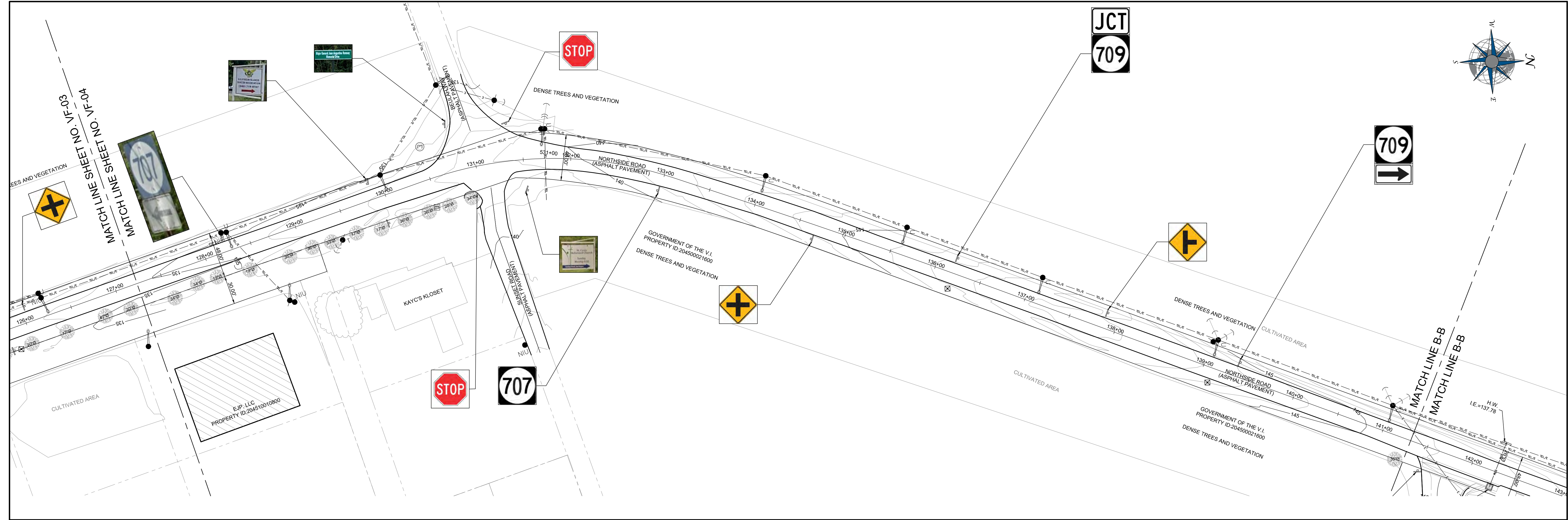
PLOT SCALE : 1:1

71  
NO.  
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9-1B  
FILE NAME:3646-STX-VF-2



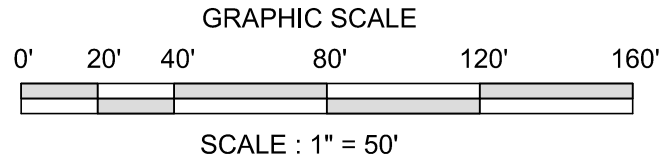






EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

SCALE 1" = 50' NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1



SYN.

BY:

REVISION

DATE:


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EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT

[RFP-022-C-2020(P)]

ST CROIX, US VIRGIN ISLANDS

LAST DAY OF FIELD SURVEY: FEB 1, 2022

DRAWN BY: J.C.

CHECKED BY: C. LEBRON

SCALE: 1" = 50'

CERTIFY CORRECT

JAVIER E. BIDOT CRUZ, HEREBY CERTIFY THAT THIS PLAN IS AN EXACT AND TRUE GRAPHIC REPRESENTATION OF THE EXISTING CONDITIONS

JAVIER E. BIDOT CRUZ, LAND SURVEYOR, LIC. NO. 9,419/29-18

DRAWING TITLE: EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

DATE: JUN 20, 2022 DWG. NO. 04

PROJECT: VF-04

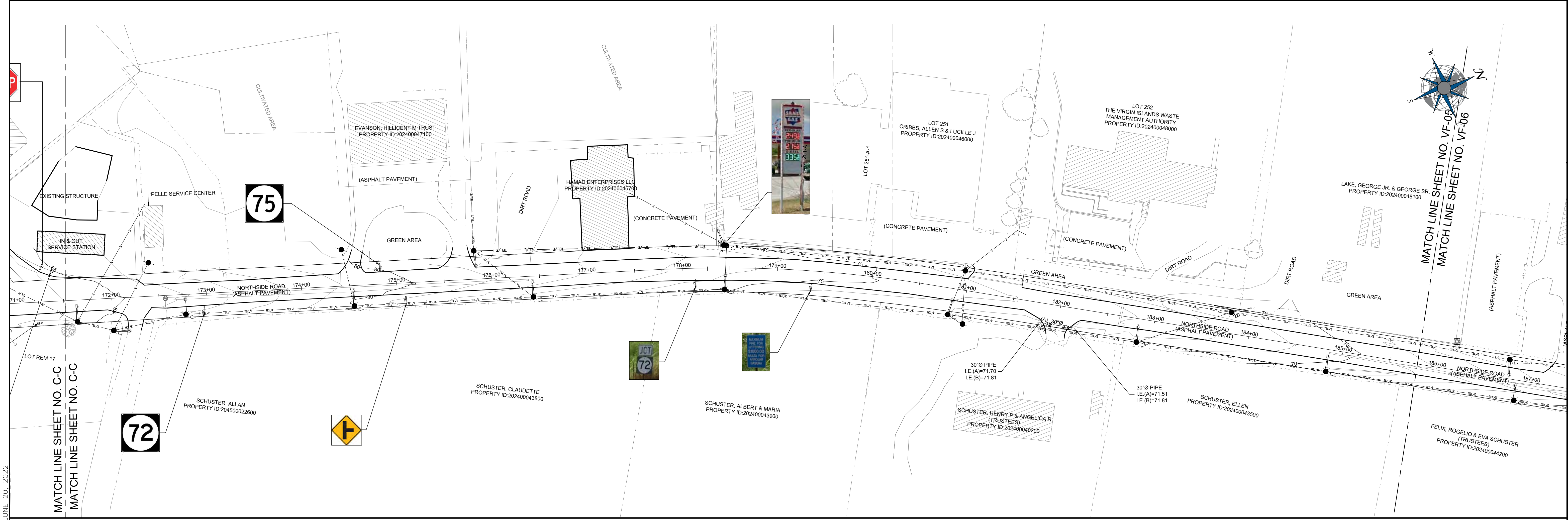
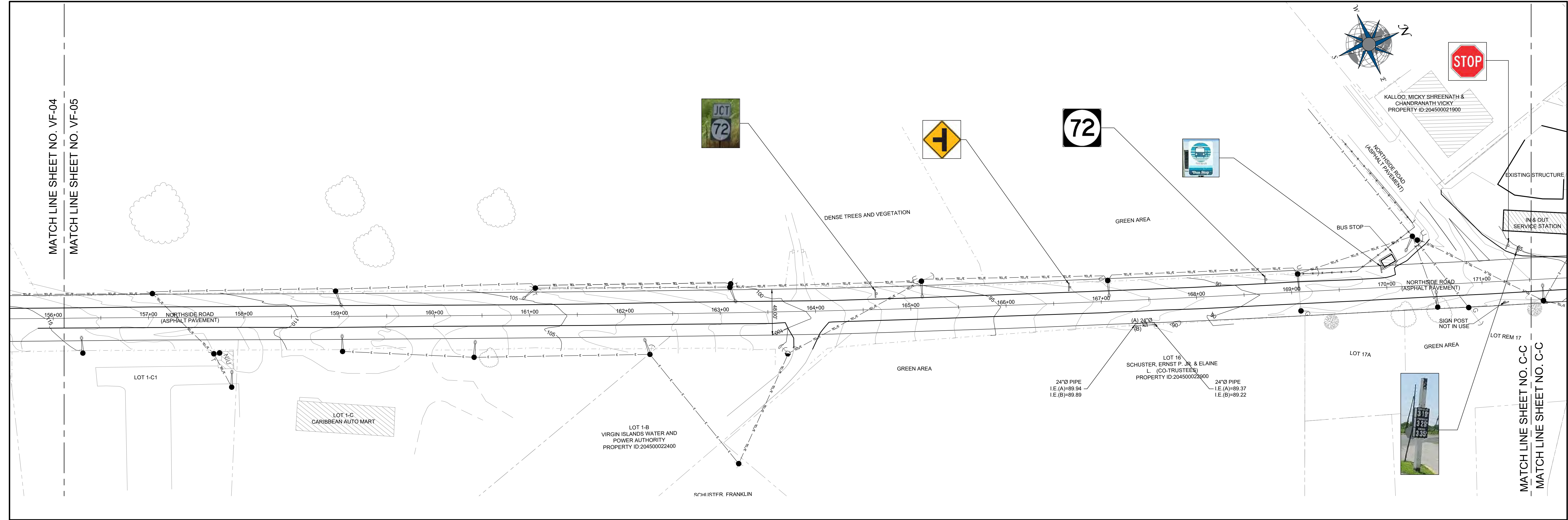
FILE NAME: 3646-STX-FC

PAPER SIZE: 24x36

PLOT DATE : JUNE 20, 2022

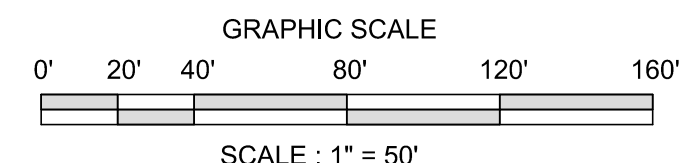
PLOT SCALE : 1:1





EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

SCALE 1" = 50' NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1



DATE:   
BY:   
REVISION:   
SYM:

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EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]  
ST. CROIX, US VIRGIN ISLANDS

LAST DAY OF FIELD SURVEY: FEB 1, 2022  
DRAWN BY: J.C.  
CHECKED BY: C. LEBRON  
SCALE: 1" = 50'

CERTIFY CORRECT  
I, JAVIER E. BIDOT CRUZ, HEREBY CERTIFY THAT THIS PLAN IS AN EXACT AND TRUE GRAPHIC REPRESENTATION OF THE EXISTING CONDITIONS

JAVIER E. BIDOT CRUZ  
LAND SURVEYOR L.S.C. NO. 9,419/29-18

DRAWING TITLE:  
EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

DATE: JUN 20, 2022  
PROJECT: JEB-3646

SHEET NO: 05  
DWG. NO: VF-05

PAPER SIZE: 24x36

PLOT DATE: JUNE 20, 2022

PLOT SCALE: 1:1

FILE NAME: 3646-STX-EC













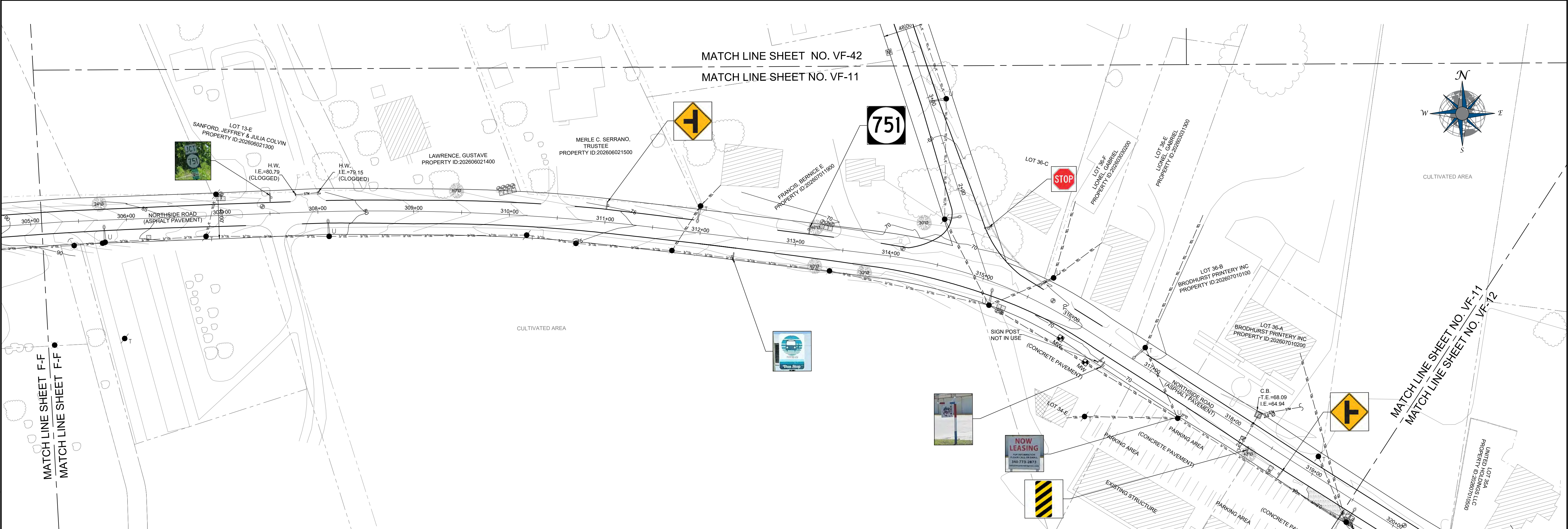
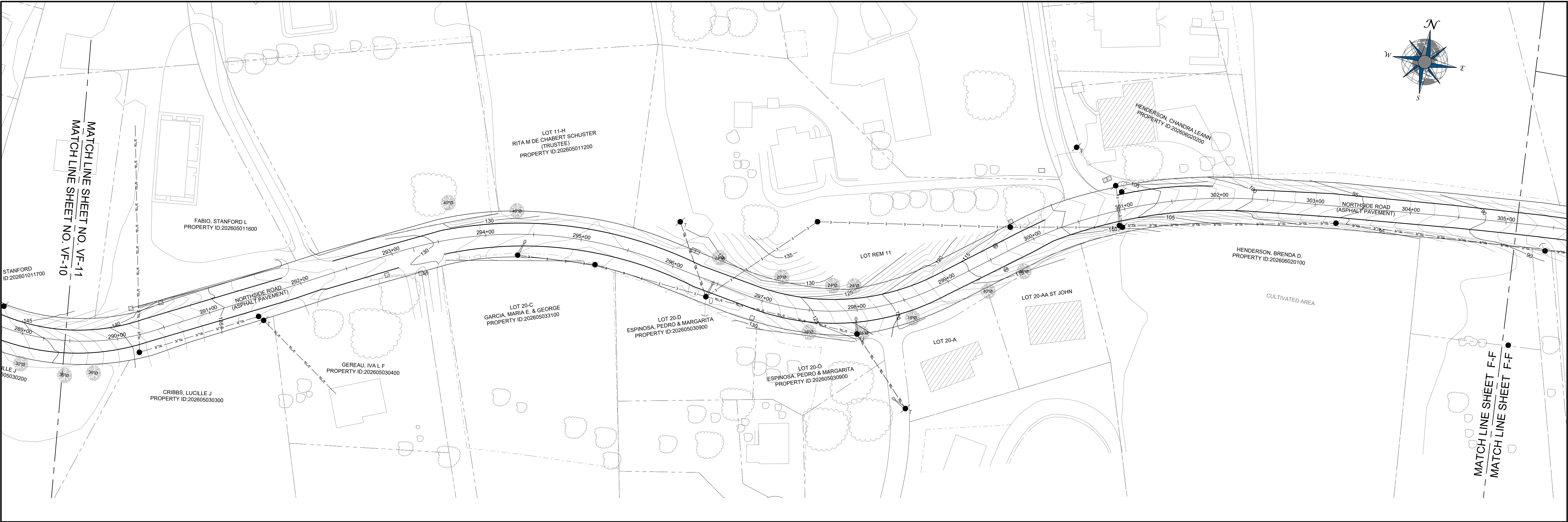








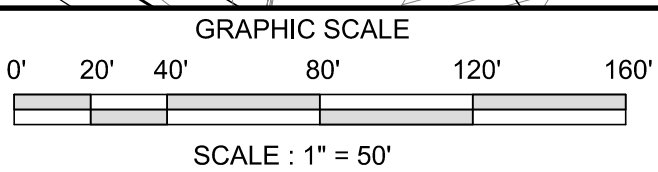




EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

SCALE 1" = 50'

NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1



EXISTING CONDITIONS, TOPOGRAPHIC AND  
UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]  
ST CROIX, US VIRGIN ISLANDS

LAST DAY OF  
FIELD SURVEY FEB 1, 2022  
DRAWN BY: J.C.  
CHECKED BY: C. LEBRON  
SCALE: 1"=50'

CERTIFY CORRECT  
JAVIER E. BIDOT CRUZ, HEREBY  
CERTIFY THAT THIS PLAN IS AN  
EXACT AND TRUE GRAPHIC  
REPRESENTATION OF THE EXISTING  
CONDITIONS

JAVIER E. BIDOT CRUZ,  
LAND SURVEYOR, LIC. NO. 041929-18

DRAWING TITLE:  
EXISTING CONDITIONS,  
TOPOGRAPHIC AND  
UTILITY LOCATION  
SURVEY

DATE: JUN 20, 2022  
PROJECT: VB-3646  
SHEET NO. 11  
DWG. NO. 11  
7/

PAPER SIZE: 24x36

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& ASSOCIATES**  
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SY.	REVISION	BY:	DATE:

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JAVIER E. BIDOT ASSOCIATES, P.S.C.



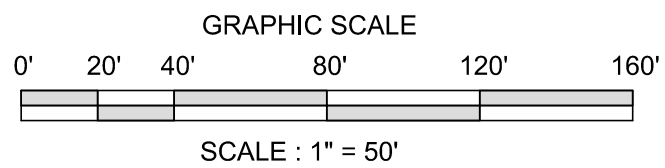




EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

SCALE 1" = 50'

NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1



SYN.

BY:

REVISION

DATE:





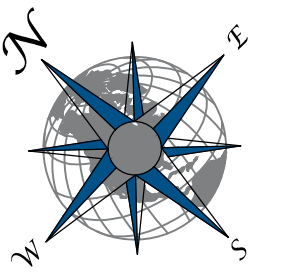










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UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]  
ST CROIX, US VIRGIN ISLANDS

PLOT SCALE : 1:1

DATE OF SURVEY	FEB 1, 2022
DRAWN BY:	J.C.
CHECKED BY:	C. LEBRON
SCALE:	1"=50'

IF CORRECT

BIDOT CRUZ, HEREBY  
AT THIS PLAN IS AN  
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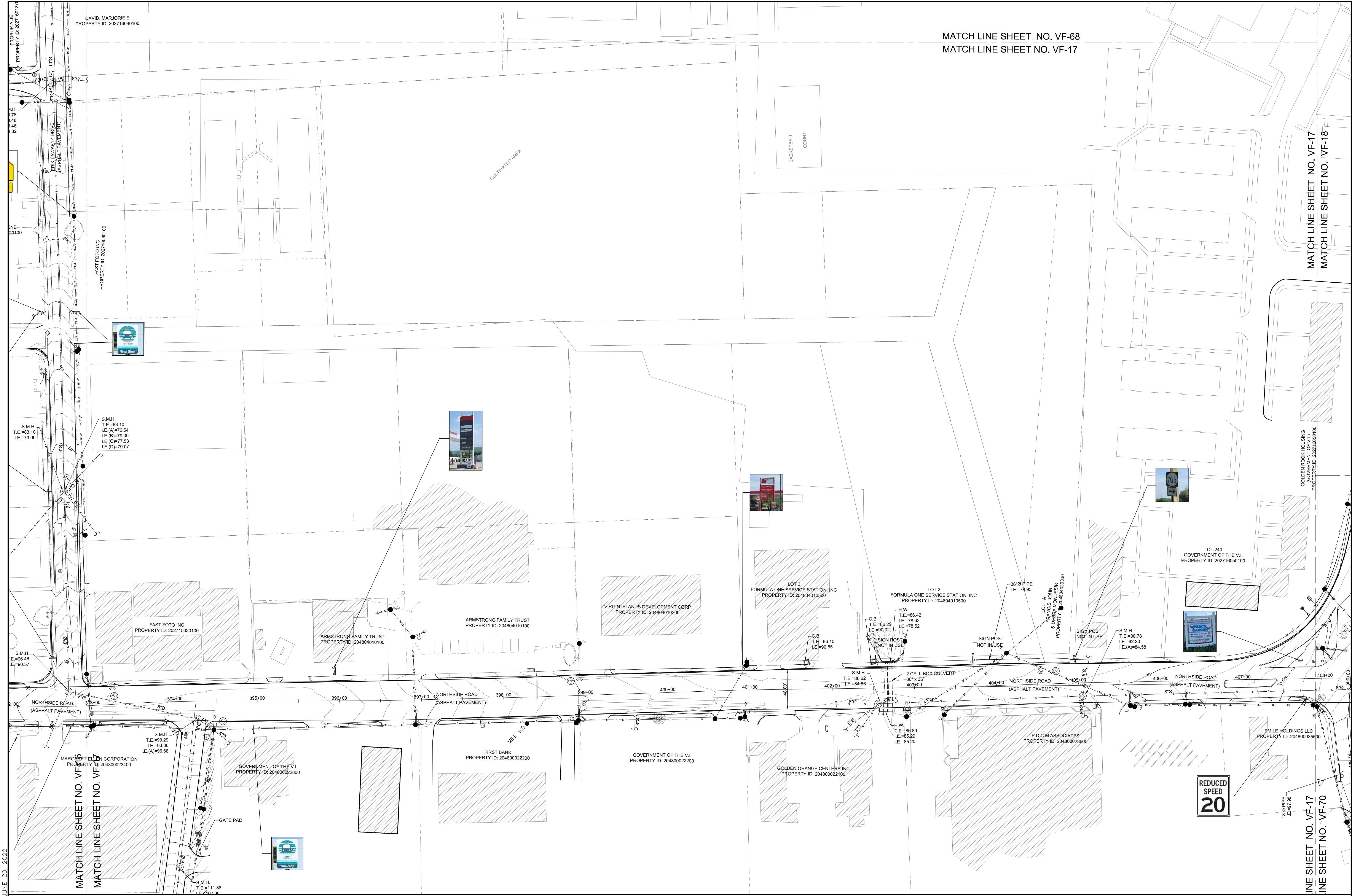
ER E. BIDOT CRUZ  
SURVEYOR LIC.NO. 0-41929-1B

DRAWING TITLE:  
TESTING CONDITIONS  
TOPOGRAPHIC AND  
QUALITY LOCATION  
SURVEY

DATE: 20, 2022	DWG. NO. VF-16	SHEET NO. 16 7
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ER SIZE: 24x36

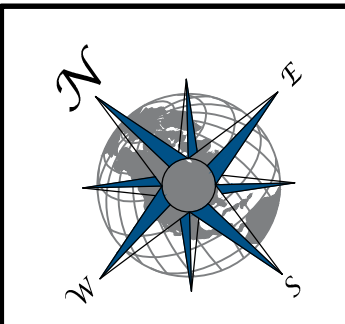
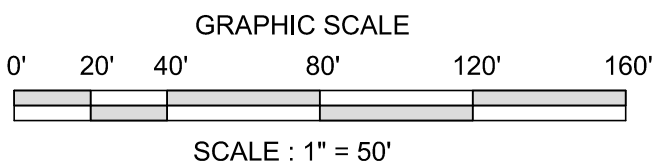




EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

SCALE 1" = 50'

NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1



SY.	REVISION	BY:	DATE:

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EXISTING CONDITIONS, TOPOGRAPHIC AND  
UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]  
ST. CROIX, US VIRGIN ISLANDS

LAST DAY OF FIELD SURVEY FEB 1, 2022  
DRAWN BY: J.C.  
CHECKED BY: C. LEBRON  
SCALE: 1"=50'

CERTIFY CORRECT  
I, JAVIER E. BIDOT CRUZ, HEREBY  
CERTIFY THAT THIS PLAN IS AN  
EXACT AND TRUE GRAPHIC  
REPRESENTATION OF THE EXISTING  
CONDITIONS

JAVIER E. BIDOT CRUZ  
LAND SURVEYOR LIC NO. 941929-18

DRAWING TITLE:  
EXISTING CONDITIONS,  
TOPOGRAPHIC AND  
UTILITY LOCATION  
SURVEY

DATE: JUN 20, 2022  
PROJECT: JEB-3646

SHEET NO. 17  
DWG. NO. VF-17

FILE NAME: 3646-STX-EC  
PAPER SIZE: 24x36





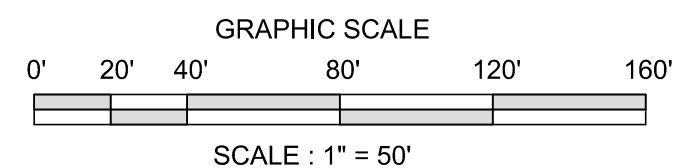


PLOT DATE : JUNE 20, 2022

# EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

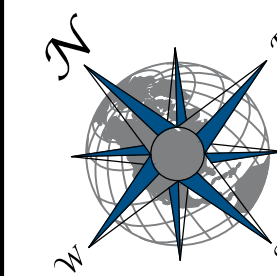
SCALE 1" = 50'

NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1



MATCH LINE SHEET NO. VF-18  
MATCH LINE SHEET NO. VF-19

MATCH LINE SHEET NO. VF-21  
MATCH LINE SHEET NO. VF-19



SY.	REVISION	DATE	BY

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EXISTING CONDITIONS, TOPOGRAPHIC AND  
UTILITY LOCATION SURVEY  
FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT  
[RFP-022-C-2020(P)]  
ST CROIX, US VIRGIN ISLANDS  
PLOT SCALE : 1" = 11'

LAST DAY OF FIELD SURVEY	FEB 1, 2022
DRAWN BY:	J.C.
CHECKED BY:	C. LEBRON
SCALE:	1"=50'

CERTIFY CORRECT  
JAVIER E. BIDOT CRUZ, HEREBY  
CERTIFY THAT THIS PLAN IS AN  
EXACT AND TRUE GRAPHIC  
REPRESENTATION OF THE EXISTING  
CONDITIONS

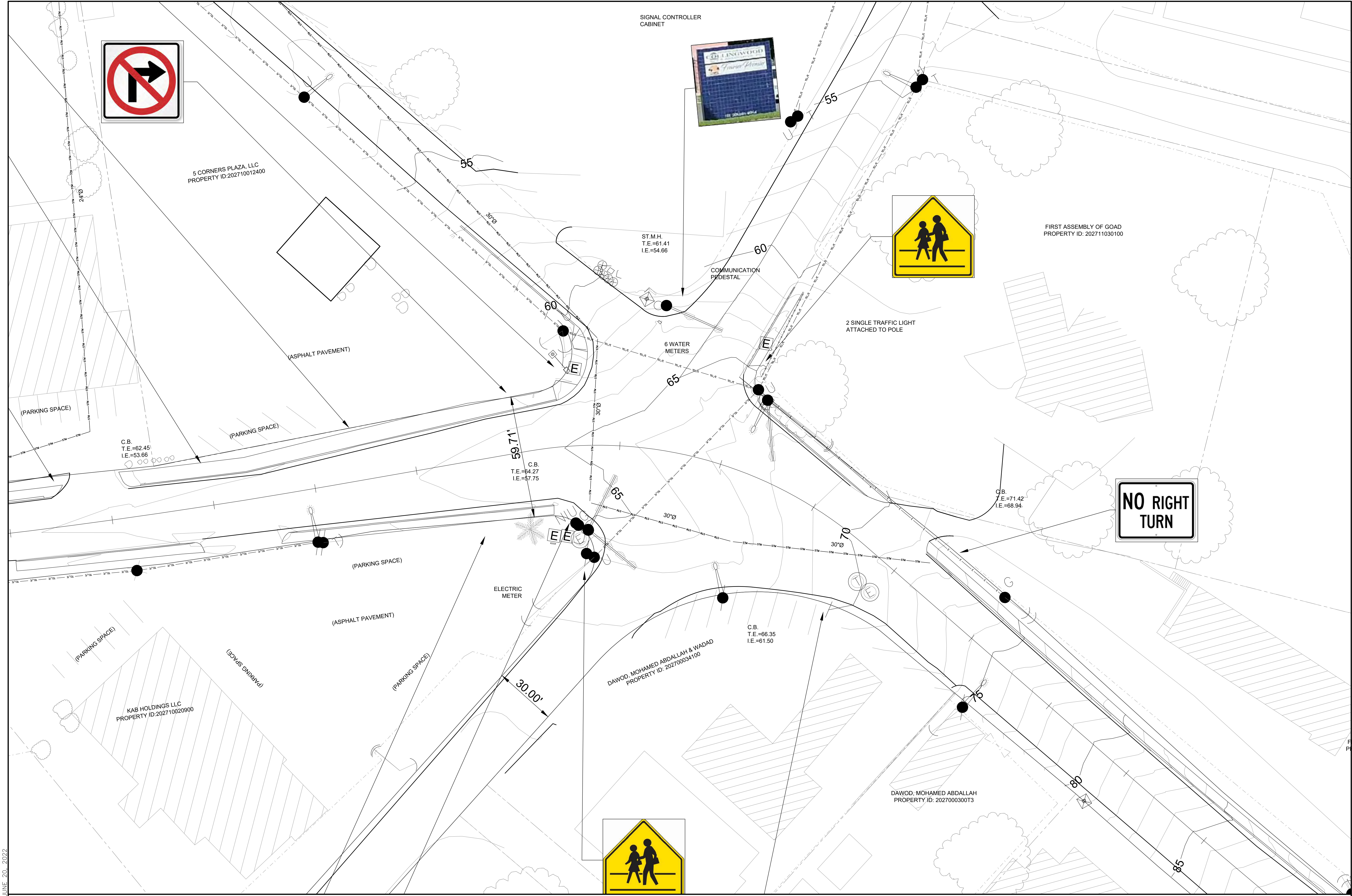
JAVIER E. BIDOT CRUZ  
LAND SURVEYOR  
LIC. NO. 941929-18

DRAWING TITLE:  
EXISTING CONDITIONS,  
TOPOGRAPHIC AND  
UTILITY LOCATION  
SURVEY

DATE:	JUN 20, 2022	DWG. NO.	19	SHEET NO.	70
PROJECT:	VB-3646	VF-19			

PAPER SIZE: 24x36





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DATE: JUN 20, 2022

DWG. NO. 71

PROJECT VF-71

JEB-3646

BY: J.C.

CHECKED BY: C. LEBRON

SCALE: 1"=20'

REVISION

DATE

BY

SYN.

THE MATERIAL SHOWN HEREON IS PROPERTY OF JAVIER E. BIDOT ASSOCIATES, P.C. AND SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT PERMISSION OF JAVIER E. BIDOT ASSOCIATES, P.C.

JAVIER E. BIDOT & ASSOCIATES

Land Surveyors & Consultants

2385 Executive Center Drive, Suite 100 Boca Raton, FL 33431

Phone: (561) 962-2851 | www.JEBPC.COM

EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

FOR IMPROVEMENTS TO NORTHSIDE HIGHWAY PROJECT

[RFP-022-C-2020(P)]

ST CROIX, US VIRGIN ISLANDS

CERTIFY CORRECT

I, JAVIER E. BIDOT CRUZ, HEREBY CERTIFY THAT THIS PLAN IS AN EXACT AND TRUE GRAPHIC REPRESENTATION OF THE EXISTING CONDITIONS

JAVIER E. BIDOT CRUZ

LAND SURVEYOR

J.C. NO. 041929-18

DRAWING TITLE:

EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY (BLOW UP 1)

DATE:

JUN 20, 2022

DWG. NO.

71

PROJECT

VF-71

JEB-3646

PAPER SIZE:

24x36

0'

10'

20'

40'

60'

GRAPHIC SCALE

SCALE: 1" = 20'

EXISTING CONDITIONS, TOPOGRAPHIC AND UTILITY LOCATION SURVEY

BLOW-UP NO. 1

SCALE 1" = 20'

NOTE: FOR LEGEND AND GENERAL NOTES, PLEASE SEE DWG. NO. VF-1

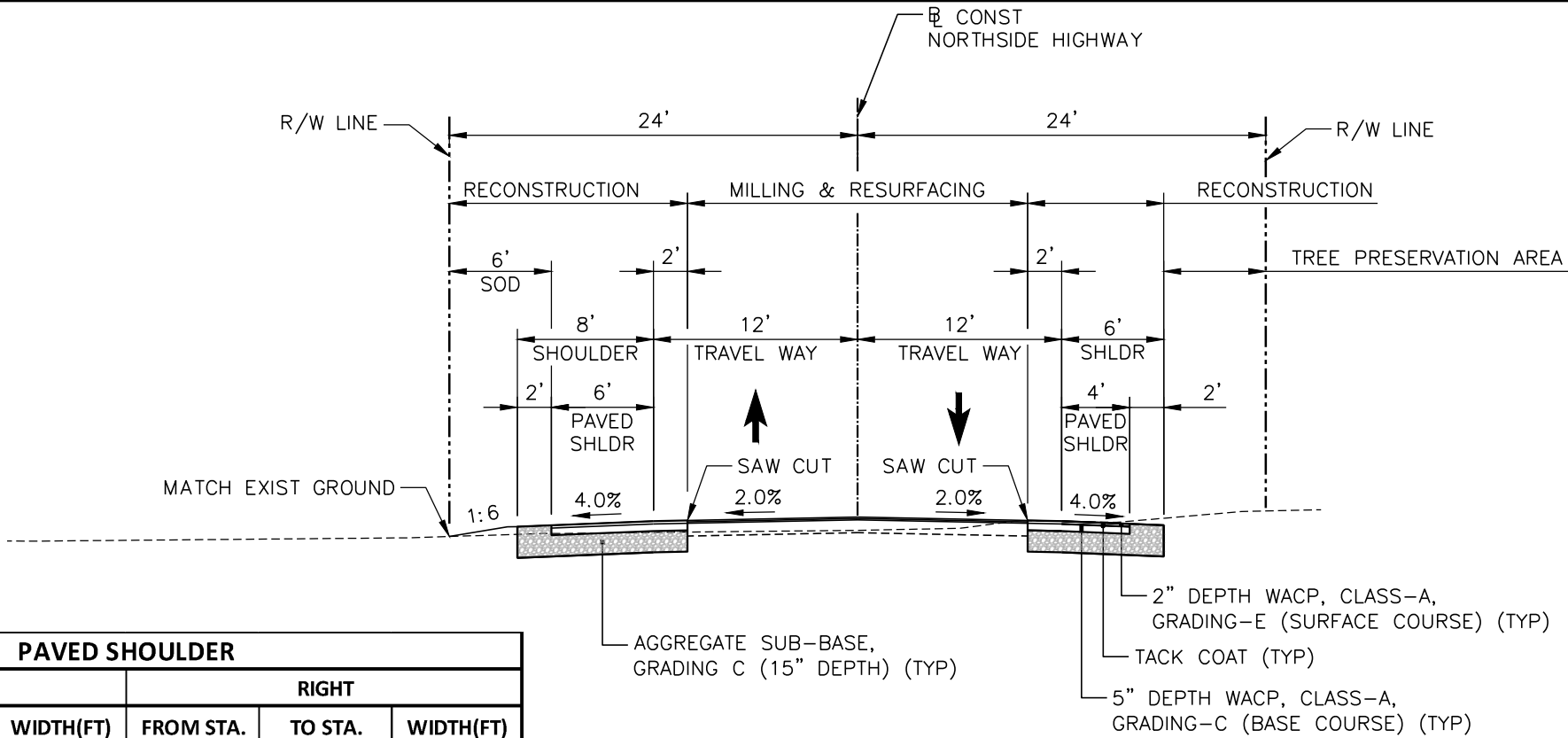
PLOT DATE: JUN 20, 2022

PLOT SCALE: 1:1



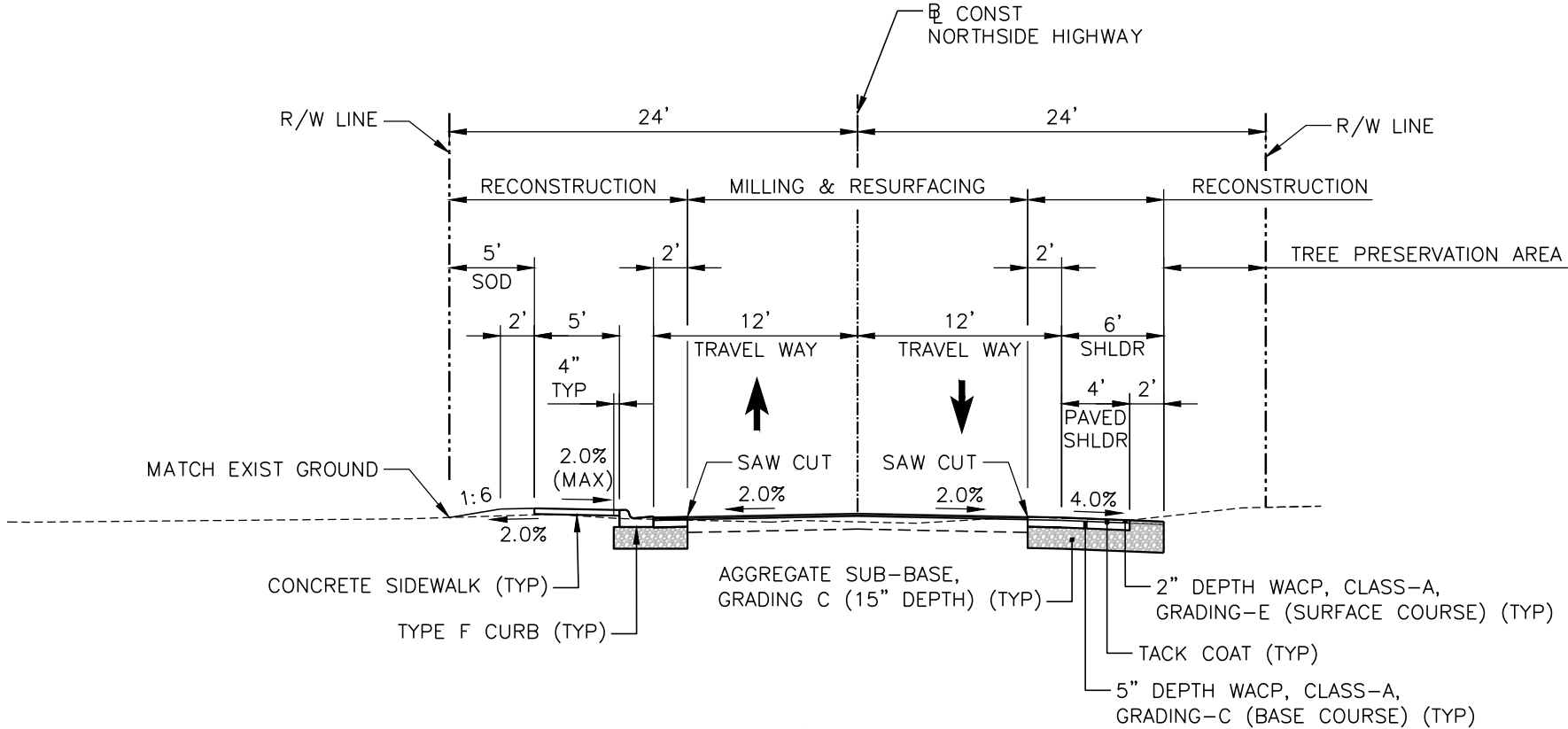
30% PLANS – NOT FOR CONSTRUCTION

PAVED SHOULDER					
LEFT			RIGHT		
FROM STA.	TO STA.	WIDTH(FT)	FROM STA.	TO STA.	WIDTH(FT)
117+80	218+56.50	6	104+60	131+60	4
220+82	330+62	4	131+60	215+62.66	6
			224+88.68	330+50	4



**TYPICAL SECTION  
FROM STA 117+80 TO STA 131+60**

DESIGN SPEED 30 MPH  
POSTED SPEED 30 MPH




**TYPICAL SECTION  
FROM STA 104+60 TO STA 117+80**

DESIGN SPEED 30 MPH  
POSTED SPEED 30 MPH

STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	B01	

ENGINEER:  
DRAWN:  
CHECKED:  
PRINT DATE:

REV. NO. \_\_\_\_\_  
REV. DATE: \_\_\_\_\_



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

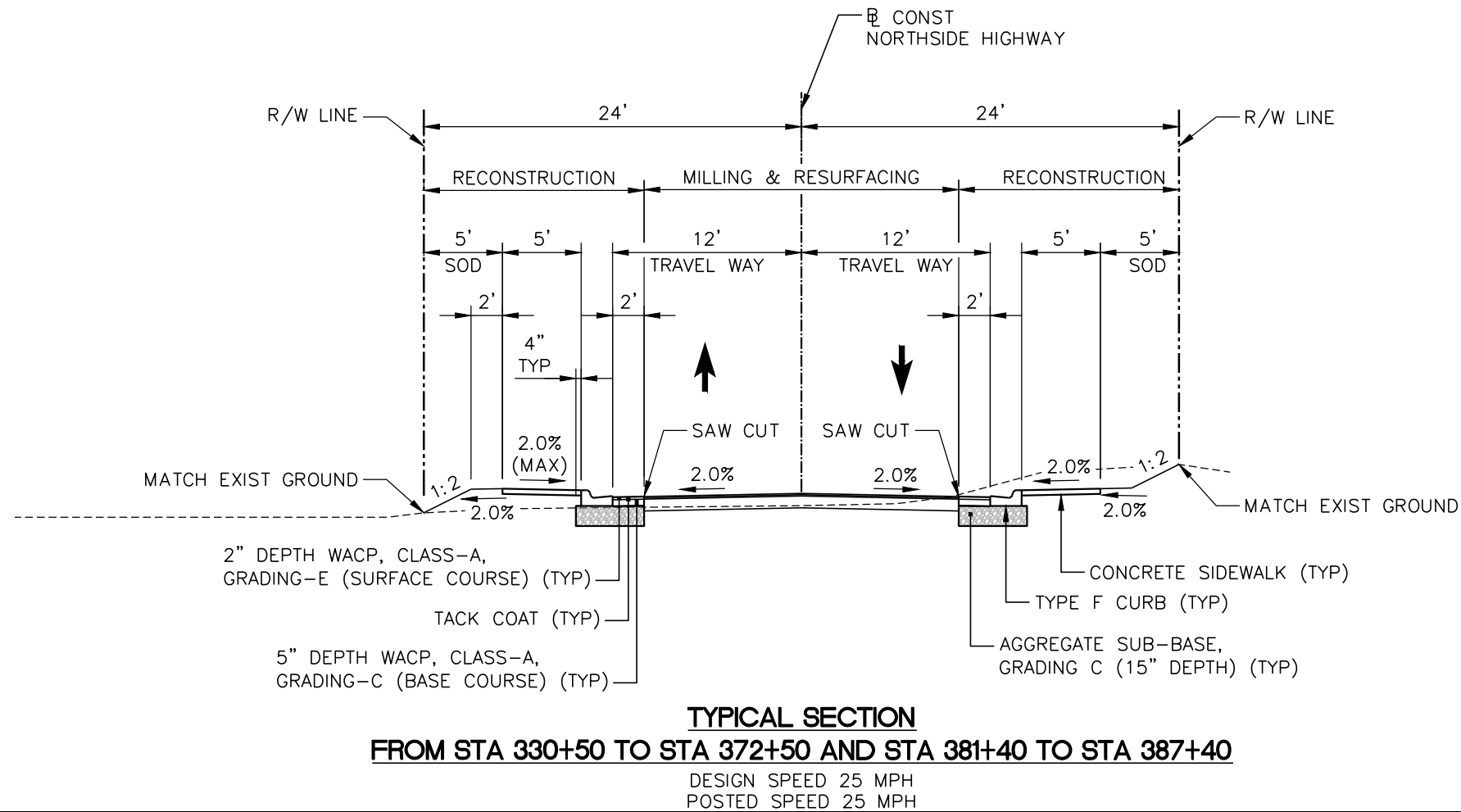
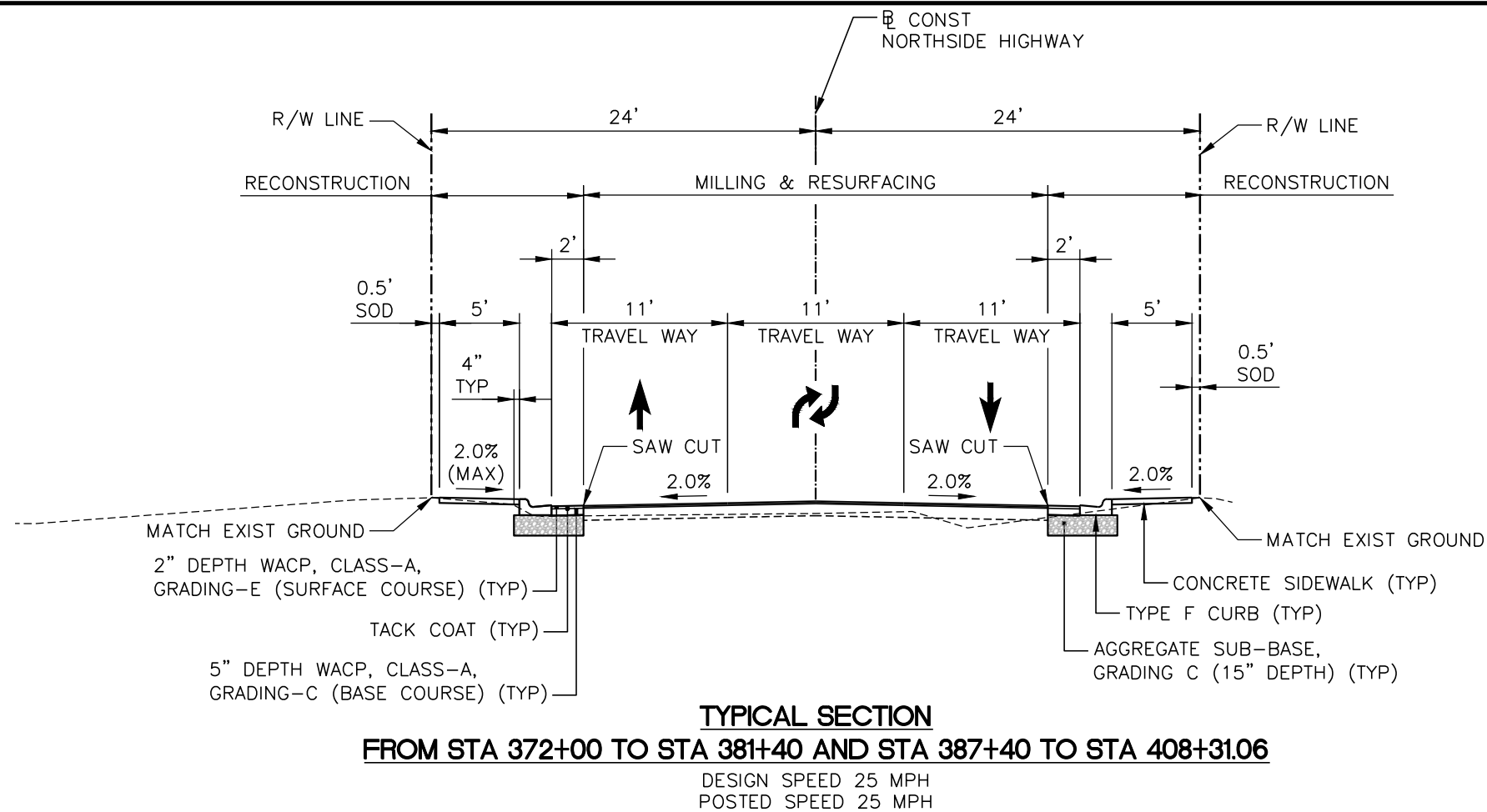
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY TYPICAL SECTIONS  
(1 OF 4)**

SCALE: NO SCALE (11"x17")	SHEET 1 OF 4
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30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	B03	

ENGINEER:  
DRAWN:  
CHECKED:  
PRINT DATE:

REV. NO. \_\_\_\_\_  
REV. DATE: \_\_\_\_\_



**Stanley Consultants INC.**  
1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

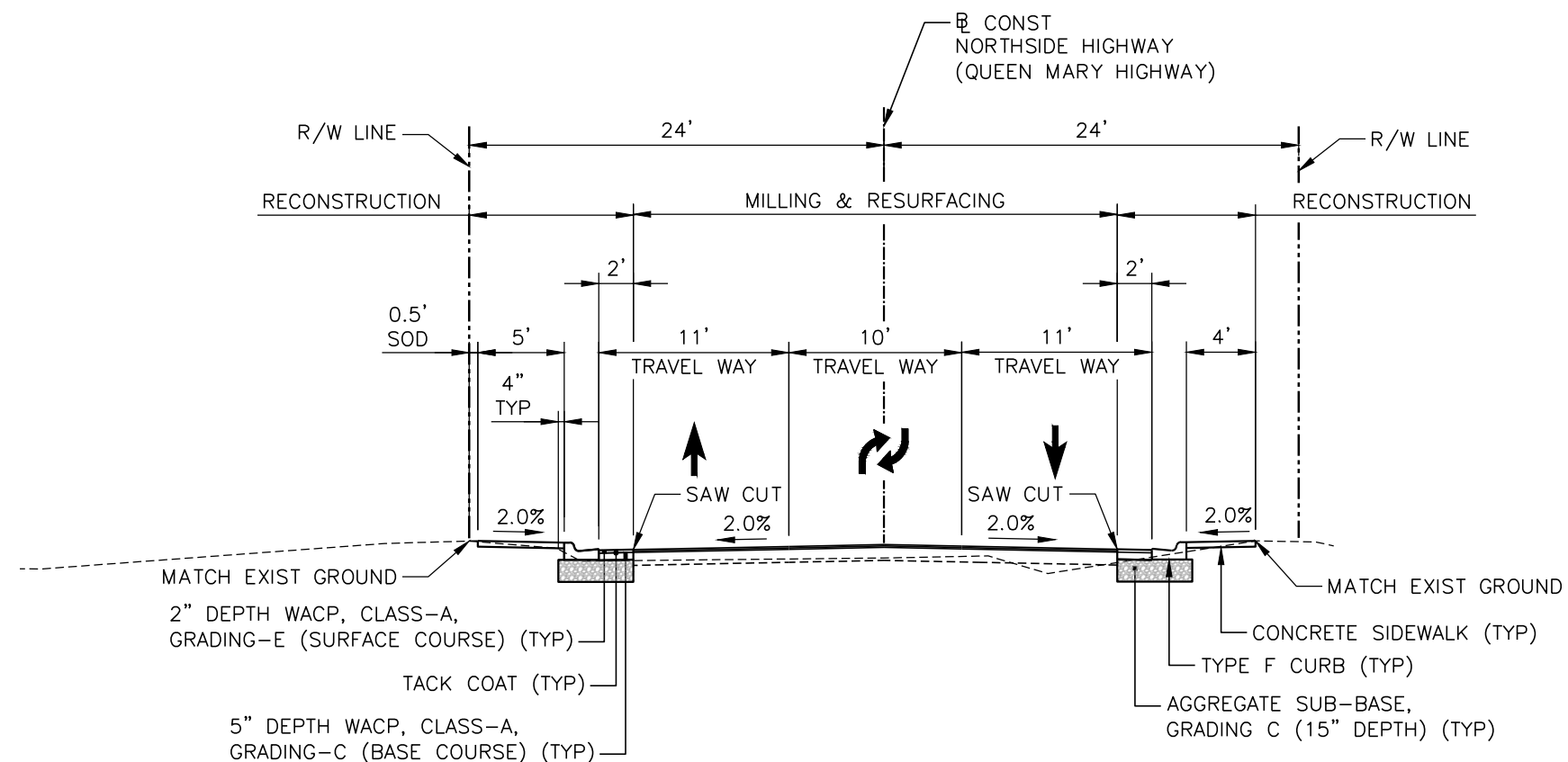
DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY TYPICAL SECTIONS  
(3 OF 4)**

SCALE: NO SCALE (11"x17")	SHEET 3 OF 4
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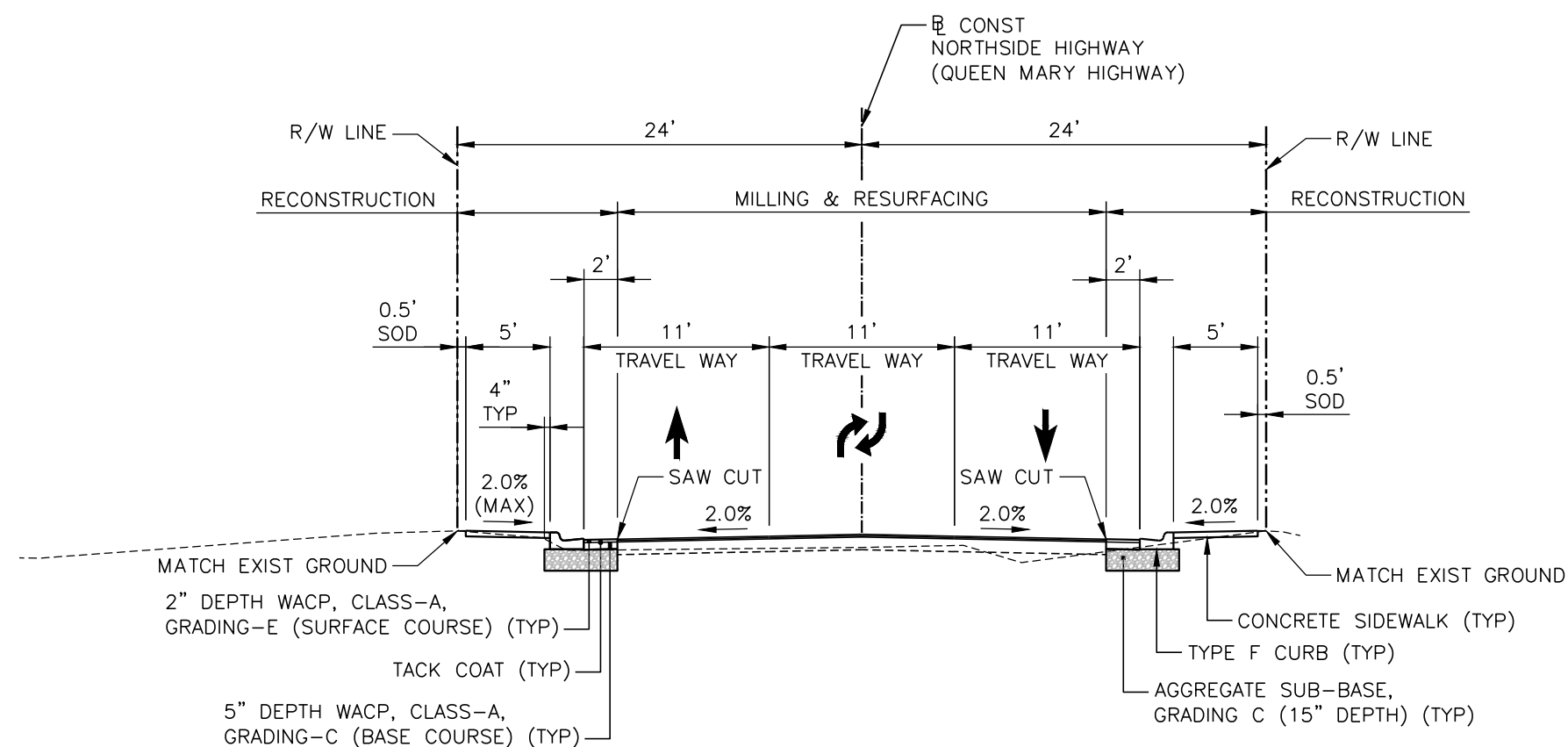


## 30% PLANS – NOT FOR CONSTRUCTION




**TYPICAL SECTION**  
**FROM STA 510+49.09 TO STA 536+00**

DESIGN	SPEED	30	MPH
POSTED	SPEED	30	MPH



**TYPICAL SECTION**  
**FROM STA 500+00 TO STA 510+49.09**

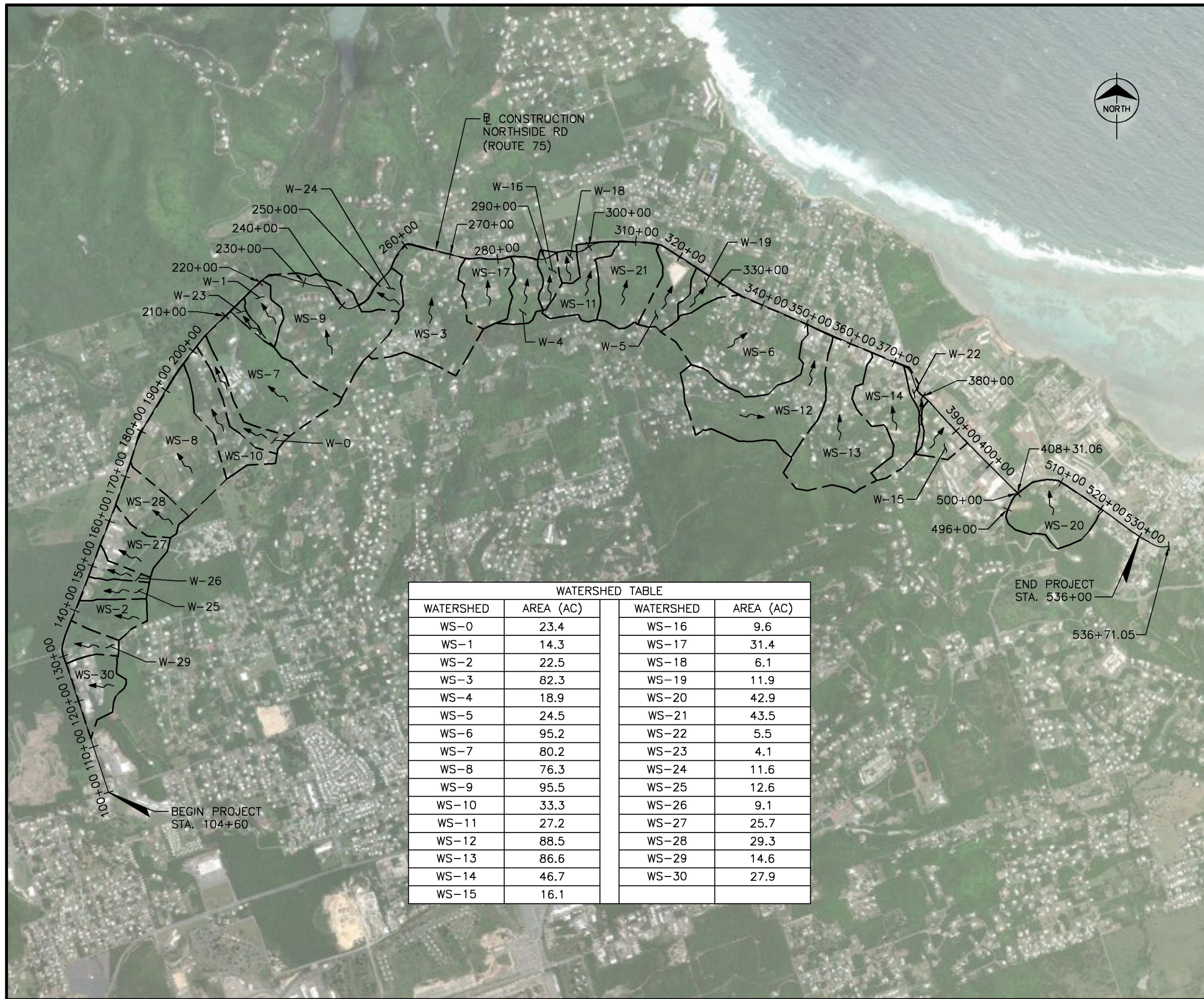
DESIGN	SPEED	25	MPH
POSTED	SPEED	25	MPH

STATE	ISLAND	CONTRACT	SHEET NO.	
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			CHECKED: _____	
			PRINT DATE: _____	
			REV. NO. _____	
			REV. DATE: _____	
 <p><b>Stanley Consultants INC.</b></p> <p>1641 WORTHINGTON ROAD, SUITE 400 WEST PALM BEACH, FLORIDA 33409</p>				
DEPARTMENT OF PUBLIC WORKS UNITED STATES VIRGIN ISLANDS				
<p align="center"><b>IMPROVEMENTS TO NORTHSIDE HIGHWAY (ROUTE 75) ROADWAY TYPICAL SECTIONS (4 OF 4)</b></p>				
SCALE: NO SCALE (11"x17")			SHEET 4 OF 4	

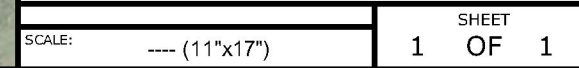
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30% PLANS – NOT FOR CONSTRUCTION

PACKAGE I - ROADWAY IMPROVEMENTS - TABULATION OF QUANTITIES				
ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITIES	
			PLAN	BID
	GENERAL			
15101-0000	MOBILIZATION	LPSM	1	
15201-0000	CONSTRUCTION SURVEY & STAKING	LPSM	1	
15301-0000	CONTRACTOR QUALITY CONTROL	LPSM	1	
15401-0000	CONTRACTOR TESTING	LPSM	1	
15705-0100	SOIL EROSION CONTROL, SILT FENCE	LNFT	53,200	
15705-1400	SOIL EROSION CONTROL, FIBER ROLL	LNFT	2,000	
15706-1000	SOIL EROSION CONTROL, INLET PROTECTION	EACH	50	
15706-1600	SOIL EROSION CONTROL, STABILIZED CONSTRUCTION ENTRANCE	EACH	3	
	ROADWAY			
20101-0000	CLEARING AND GRUBBING	ACRE	14.41	
20301-1400	REMOVAL OF INLET	EACH	50	
20301-1700	REMOVAL OF MANHOLE	EACH	30	
20301-1900	REMOVAL OF PIPE CULVERT	EACH	20	
20301-2000	REMOVAL OF PIPE END SECTION	EACH	40	
20302-0300	REMOVAL OF CURB AND GUTTER, CONCRETE	LNFT	16,320	
20301-2400	REMOVAL OF SIGNS	EACH	155	
20301-3700	REMOVAL OF TERMINAL SECTION	EACH	24	
20302-1200	REMOVAL OF GUARDRAIL	LNFT	2,485	
20302-1600	REMOVAL OF PAVED WATERWAY	LNFT	440	
20303-1600	REMOVAL OF PAVEMENT, ASPHALT	SQYD	20,000	
20303-2300	REMOVAL OF PAVEMENT, CONCRETE	SQYD	580	
20303-3200	REMOVAL OF SIDEWALK, CONCRETE	SQYD	9,067	
20305-1000	REMOVAL OF CONCRETE	SQFT	1,000	
20401-0000	ROADWAY EXCAVATION	CUYD	24,172	
20420-0000	EMBANKMENT CONSTRUCTION	CUYD	3,932	
20503-0000	CONTROLLED VIBRATION MONITORING	LPSM	1	
21301-0000	SUBGRADE STABILIZATION	SQYD	48,909	
30103-1000	AGGREGATE BASE GRADING C (15' Thickness)	CUYD	20,381	
40201-0100	5 INCHES WARM ASPHALT CONCRETE PAVEMENT, MARSHALL MIX, CLASS A, GRADING C (BASE COURSE)	TON	9,883.0	
40201-0101	2 INCHES WARM ASPHALT CONCRETE PAVEMENT, MARSHALL MIX, CLASS A, GRADING E (SURFACE COURSE) RECONSTRUCTION AREA	TON	3,953.0	
40201-0102	2 INCHES WARM ASPHALT CONCRETE PAVEMENT, MARSHALL MIX, CLASS A, GRADING E (SURFACE COURSE) MILL & RESURFACE AREA	TON	7,028.0	
40303-0100	ASPHALT CONCRETE PAVEMENT, TYPE 1, WEDGE AND LEVELING COURSE	TON	1,757.0	

PACKAGE I - ROADWAY IMPROVEMENTS - TABULATION OF QUANTITIES				
ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITIES	
			PLAN	BID
41102-0000	PRIME COAT	SQYD	35,935	
41202-0000	TACK COAT	GAL	9,503	
41301-0600	ASPHALT PAVEMENT MILLING, 2-INCH DEPTH	SQYD	63,886	
60901-1700	CURB, CONCRETE, 18-INCH DEPTH	LNFT	1,000	
60902-1000	CURB AND GUTTER, CONCRETE, 12-INCH DEPTH (2-FT WIDE FDOT TYPE F)	LNFT	19,620	
61108-2000	ADJUST FIRE HYDRANT	EACH	3	
61108-3000	ADJUST WATER METER	EACH	100	
61108-4000	ADJUST VALVE BOX	EACH	3	
61501-0100	SIDEWALK, CONCRETE	SQYD	10,790	
61502-1000	DRIVE PAD, CONCRETE	SQYD	1,700	
61502-2000	DRIVE PAD, ASPHALT CONCRETE	SQYD	1,848	
61503-1000	MEDIAN, CONCRETE	SQYD	223	
61504-1000	ACCESSIBILITY RAMP, CONCRETE	SQYD	567	
61701-1800	GUARDRAIL SYSTEM G4, TYPE IV, CLASS B STEEL POSTS	LNFT	2,982	
61702-0600	TERMINAL SECTION, TYPE FLARED	EACH	6	
61702-0800	TERMINAL SECTION, TYPE TANGENT	EACH	18	
62501-0000	TURF ESTABLISHMENT	ACRE	5.82	
63301-0000	SIGN SYSTEM (w/POSTS)	EACH	200	
63401-1500	PAVEMENT MARKINGS, TYPE H, SOLID 4" YELLOW	LNFT	86,900	
63401-1501	PAVEMENT MARKINGS, TYPE H, SOLID 18" YELLOW	LNFT	500	
63401-1502	PAVEMENT MARKINGS, TYPE H, SOLID 4" WHITE	LNFT	67,500	
63401-1503	PAVEMENT MARKINGS, TYPE H, SOLID 12" WHITE	LNFT	1,080	
63401-1504	PAVEMENT MARKINGS, TYPE H, SOLID 18" WHITE	LNFT	500	
63401-1505	PAVEMENT MARKINGS, TYPE H, SOLID 24" WHITE	LNFT	480	
63401-1600	PAVEMENT MARKINGS, TYPE H, BROKEN 4" YELLOW	LNFT	5,500	
63406-0200	RAISED PAVEMENT MARKER, NON-PLOWABLE, BI-DIRECTIONAL REFLECTIVE	EACH	1,800	
63501-0000	TEMPORARY TRAFFIC CONTROL	LPSM	1	
	DRAINAGE			
20702-0300	GEOTEXTILE FILTER, CLASS I, TYPE C	SQYD	265	
25101-0000	PLACED RIPRAP, METHOD A	CUYD	176	
60103-0160	CONCRETE, HEADWALL FOR 30-INCH PIPE CULVERT	EACH	6	
60103-0180	CONCRETE, HEADWALL FOR 36-INCH PIPE CULVERT	EACH	7	
60103-0220	CONCRETE, HEADWALL FOR 48-INCH PIPE CULVERT	EACH	4	
60103-0240	CONCRETE, HEADWALL FOR 54-INCH PIPE CULVERT	EACH	2	

STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	C01	
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			REV. NO.	
			REV. DATE:	
<div> <b>Stanley Consultants INC.</b> 1641 WORTHINGTON ROAD, SUITE 400 WEST PALM BEACH, FLORIDA 33409</div>				
DEPARTMENT OF PUBLIC WORKS UNITED STATES VIRGIN ISLANDS				
<b>IMPROVEMENTS TO NORTHSIDE HIGHWAY (ROUTE 75) TABULATION OF QUANTITIES (1 OF 2)</b>				
SCALE: NO SCALE (11"x17")			SHEET 1 OF 2	

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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## 30% PLANS – NOT FOR CONSTRUCTION

PACKAGE I - ROADWAY IMPROVEMENTS - TABULATION OF QUANTITIES				
ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITIES	
			PLAN	BID
60201-0800	24-INCH PIPE CULVERT, RCP	LNFT	3,295	
60201-0900	30-INCH PIPE CULVERT, RCP	LNFT	205	
60201-1000	36-INCH PIPE CULVERT, RCP	LNFT	144	
60201-1200	48-INCH PIPE CULVERT, RCP	LNFT	218	
60201-1300	54-INCH PIPE CULVERT, RCP	LNFT	130	
60401-0000	MANHOLE	EACH	8	
60404-0000	CATCH BASIN	EACH	36	
60405-0000	MANHOLE ADJUSTMENT (DRAINAGE)	EACH	10	
60405-0001	MANHOLE ADJUSTMENT (SEWER)	EACH	37	
60405-0002	MANHOLE ADJUSTMENT (COMMUNICATIONS)	EACH	28	
60409-0100	INLET TOP, METAL FRAME AND GRATE, FLH Type A	EACH	1	
60704-0000	CLEANING CULVERT, IN PLACE	EACH	1	
60706-0000	CLEANING DRAINAGE STRUCTURE	EACH	1	
60801-0400	PAVED WATERWAY, TYPE 4	LNFT	500	
	<u>STRUCTURES</u>			
20301-2700	REMOVAL OF STRUCTURE	EA	0	
20303-3600	REMOVAL OF WALL	SQYD	134	
25801-0000	REINFORCED CONCRETE RETAINING WALL	SQFT	1,440	
55201-0100	STRUCTURAL CONCRETE, CLASS A, DECK	CUYD	0	
55401-1000	REINFORCING STEEL	LB	5,000	

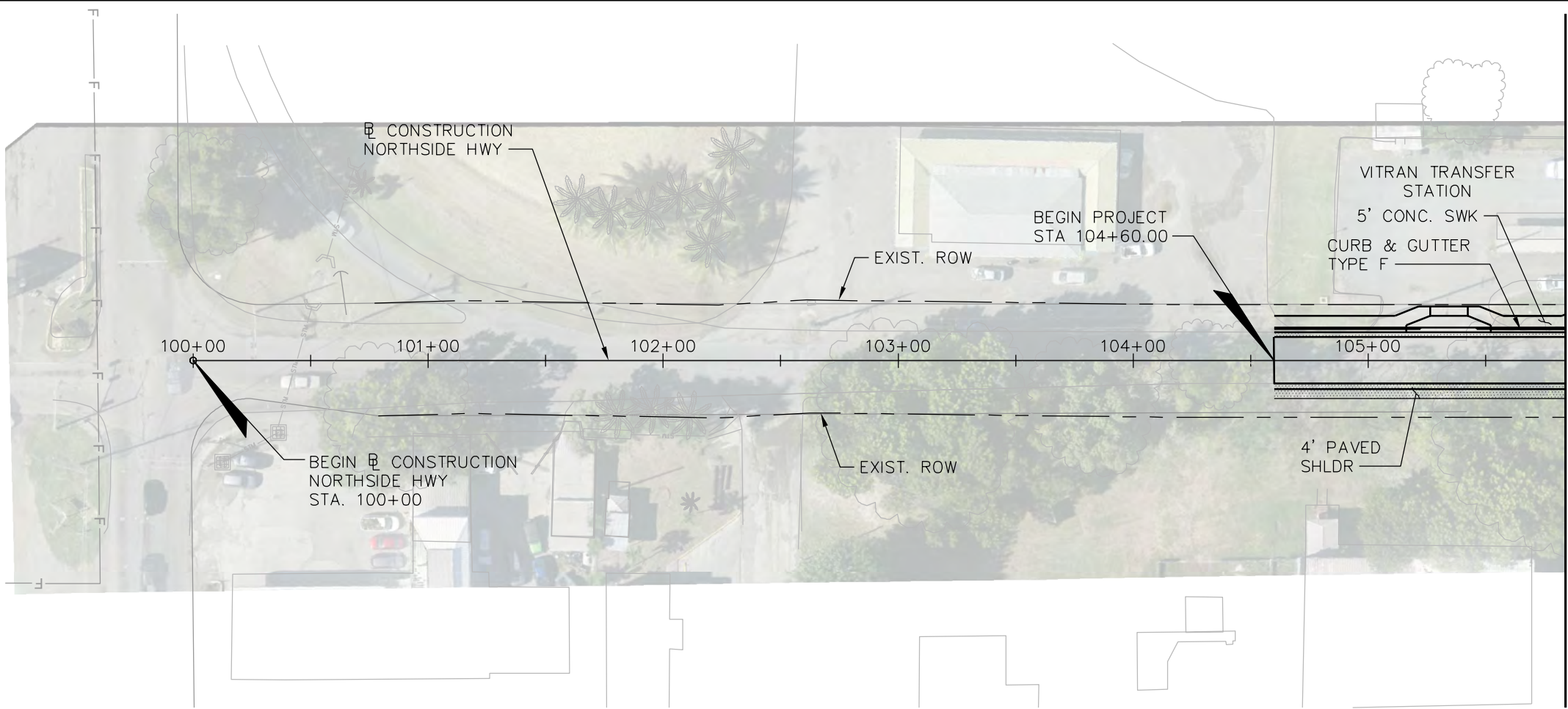
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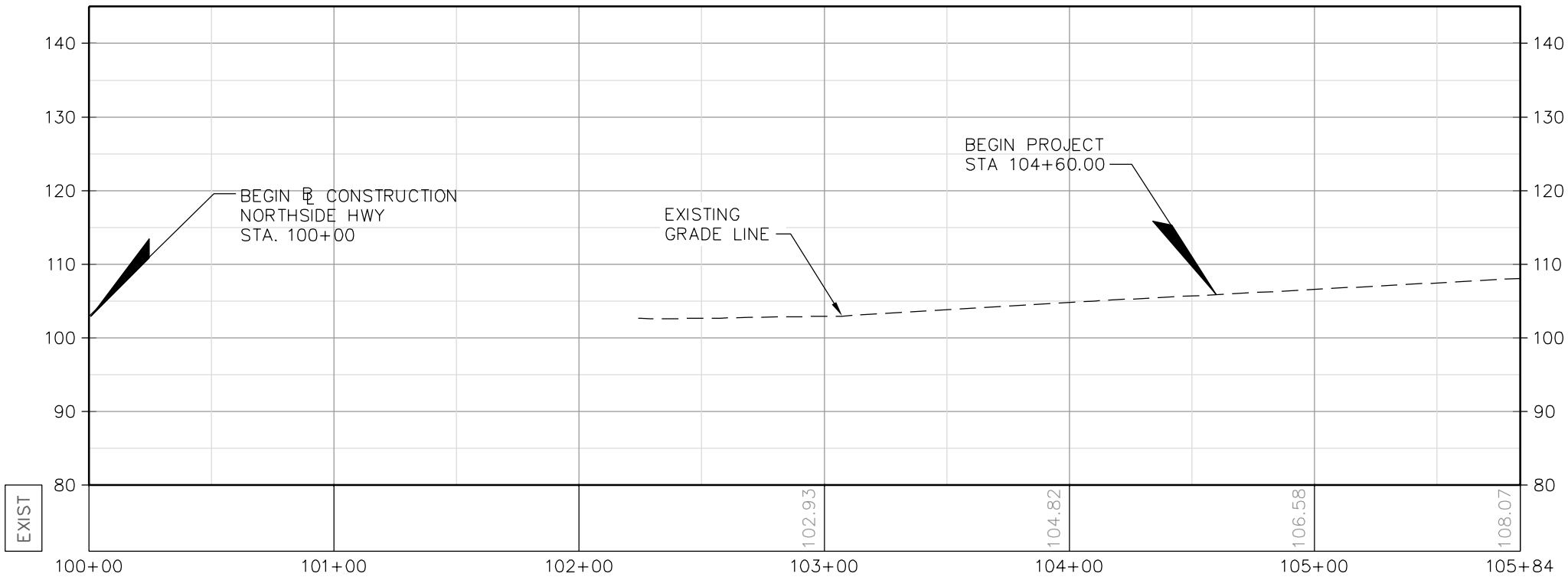
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30% PLANS – NOT FOR CONSTRUCTION



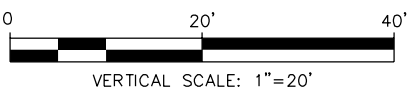
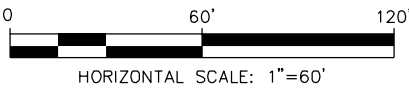
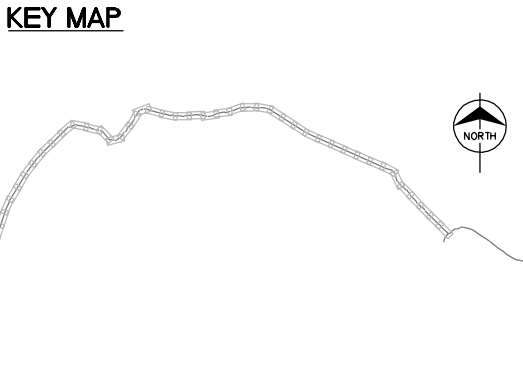
MATCH LINE - STA 105+84



STATE	ISLAND	CONTRACT	SHEET NO.	
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			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

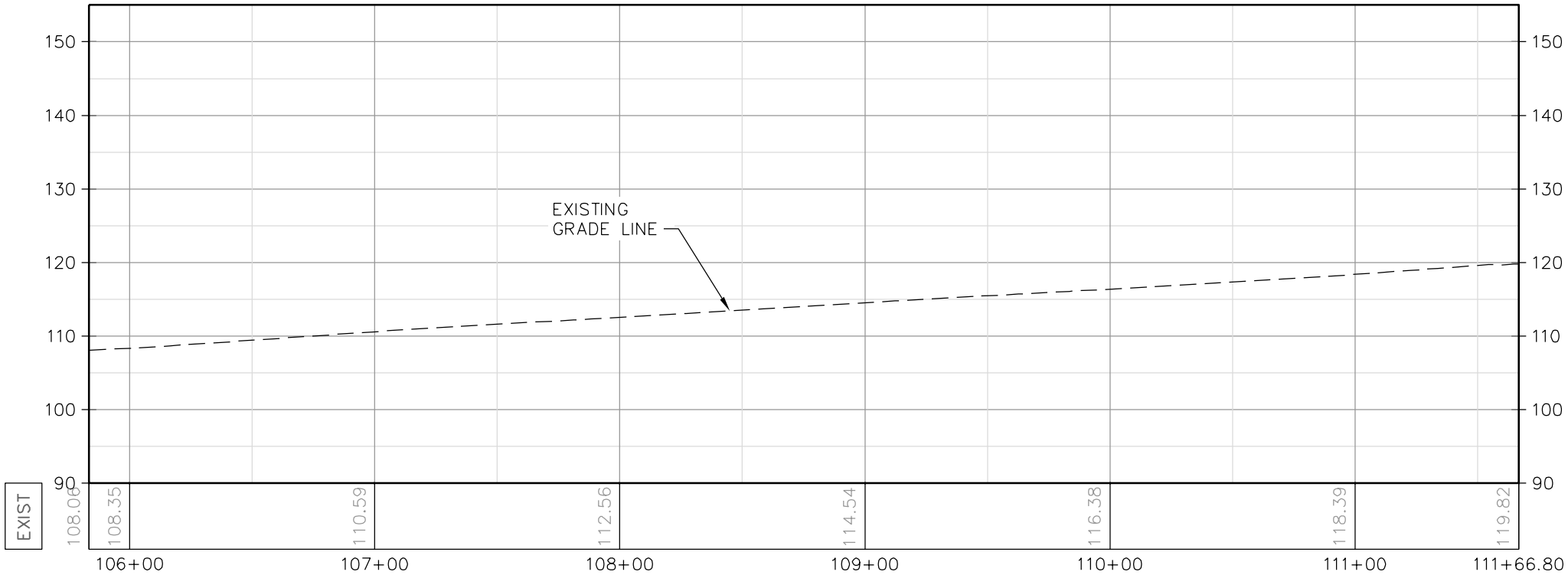
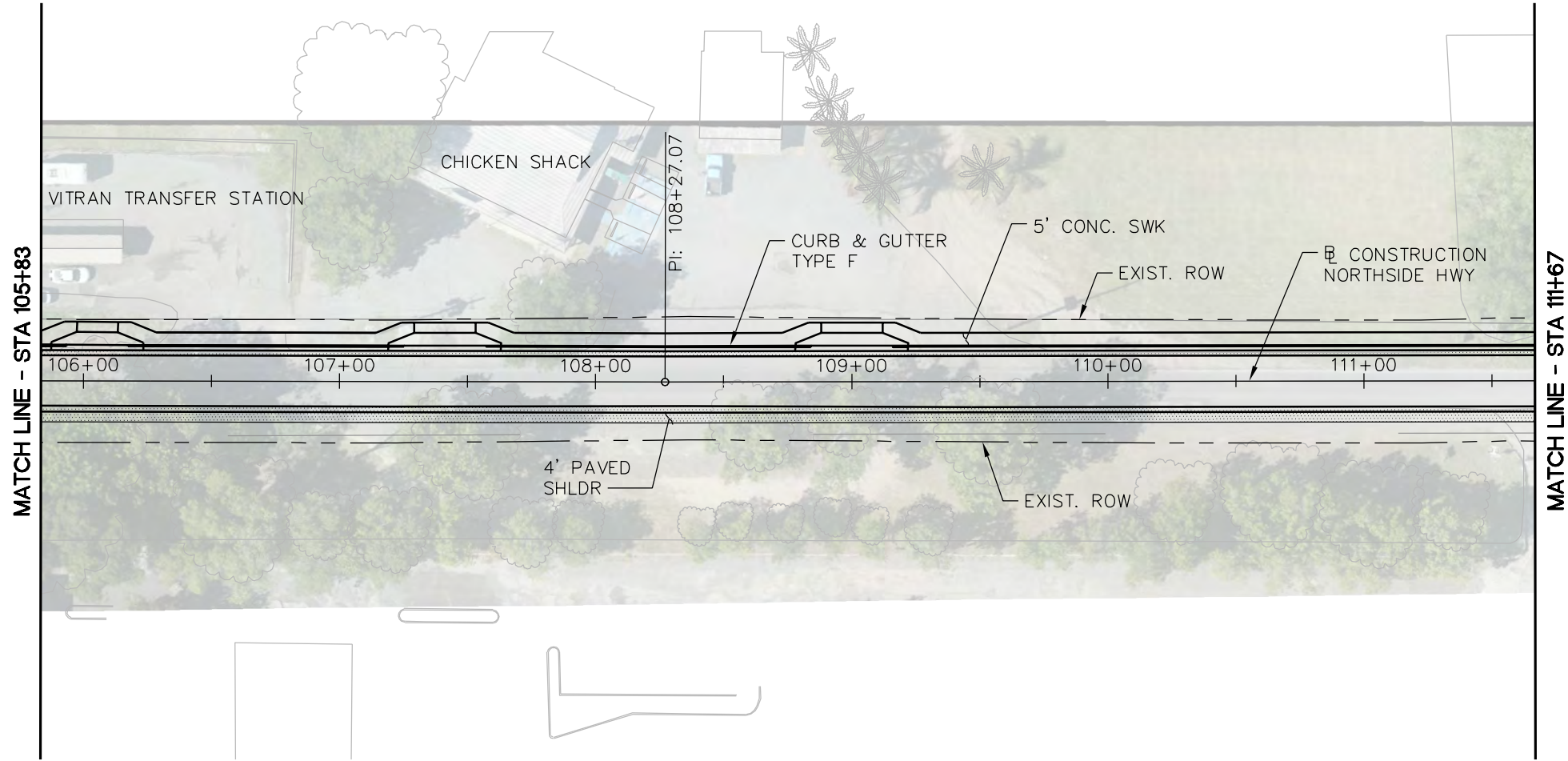
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SCALE:	1" = 60' (11"x17")	SHEET	01 OF 61
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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D02	


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CHECKED: \_\_\_\_\_  
PRINT DATE: \_\_\_\_\_

REV. NO. \_\_\_\_\_  
REV. DATE: \_\_\_\_\_

**LEGEND**


 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



0 60' 120'  
HORIZONTAL SCALE: 1"=60'

0 20' 40'  
VERTICAL SCALE: 1"=20'



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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

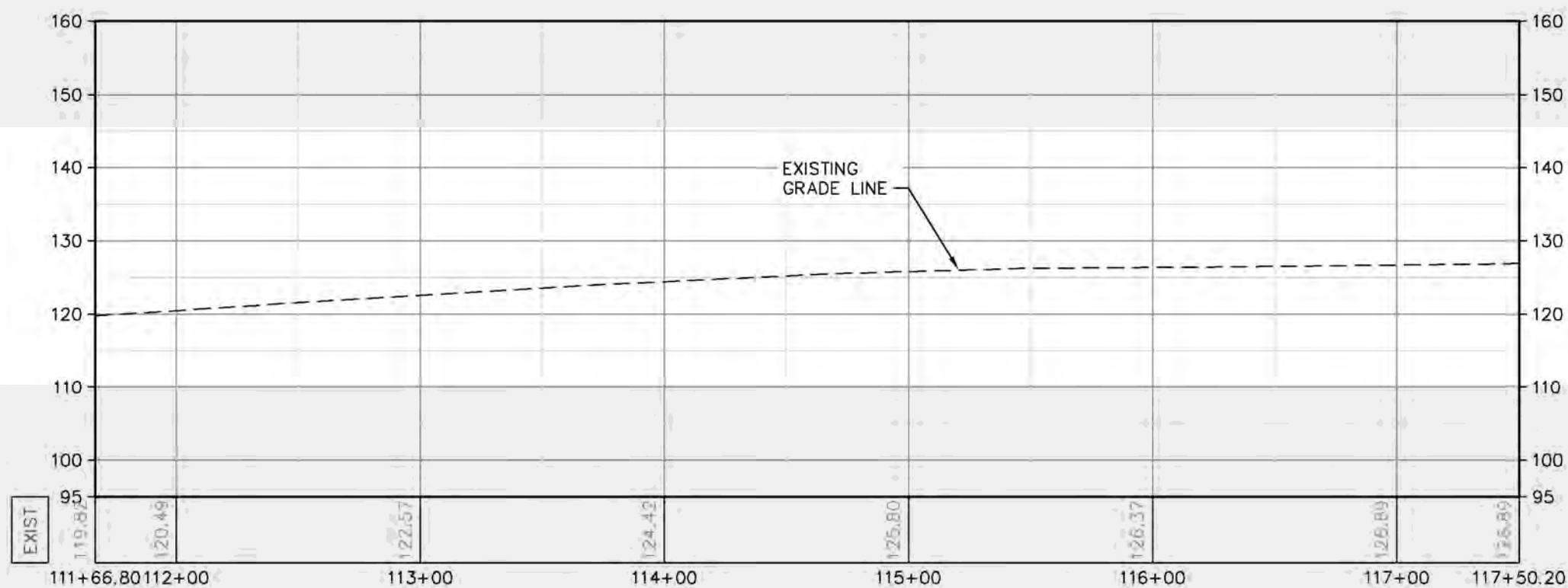
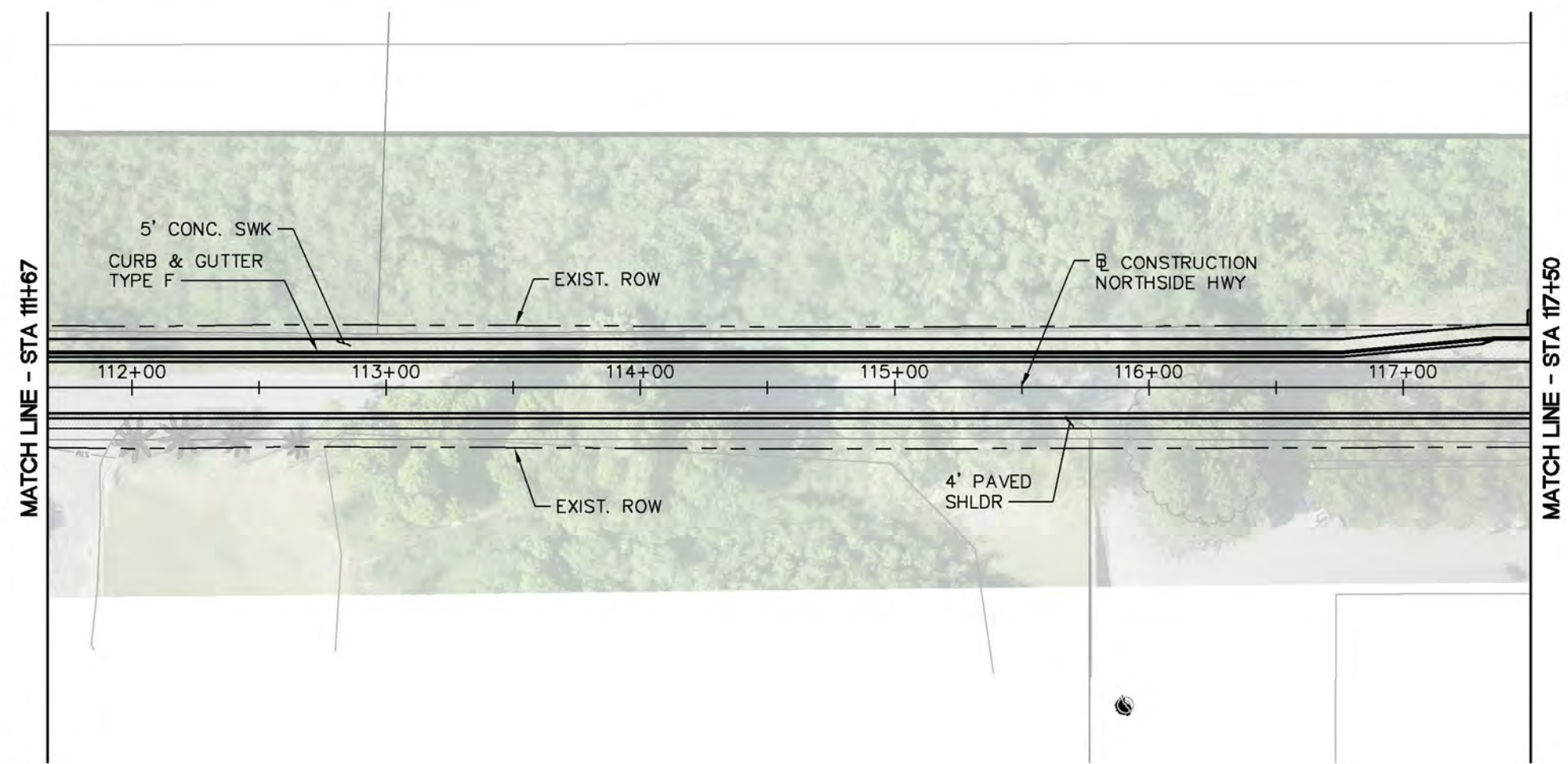
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SCALE: 1" = 60' (11"x17")	SHEET 02 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



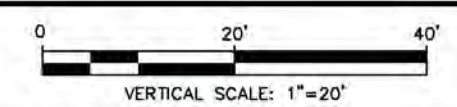
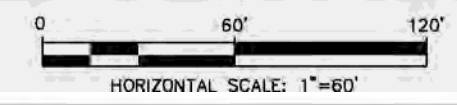
30% PLANS - NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.
USVI	ST CROIX	P149DPWT21	D03
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**LEGEND**  
[Pattern Box] DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



**Stanley Consultants INC.**  
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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

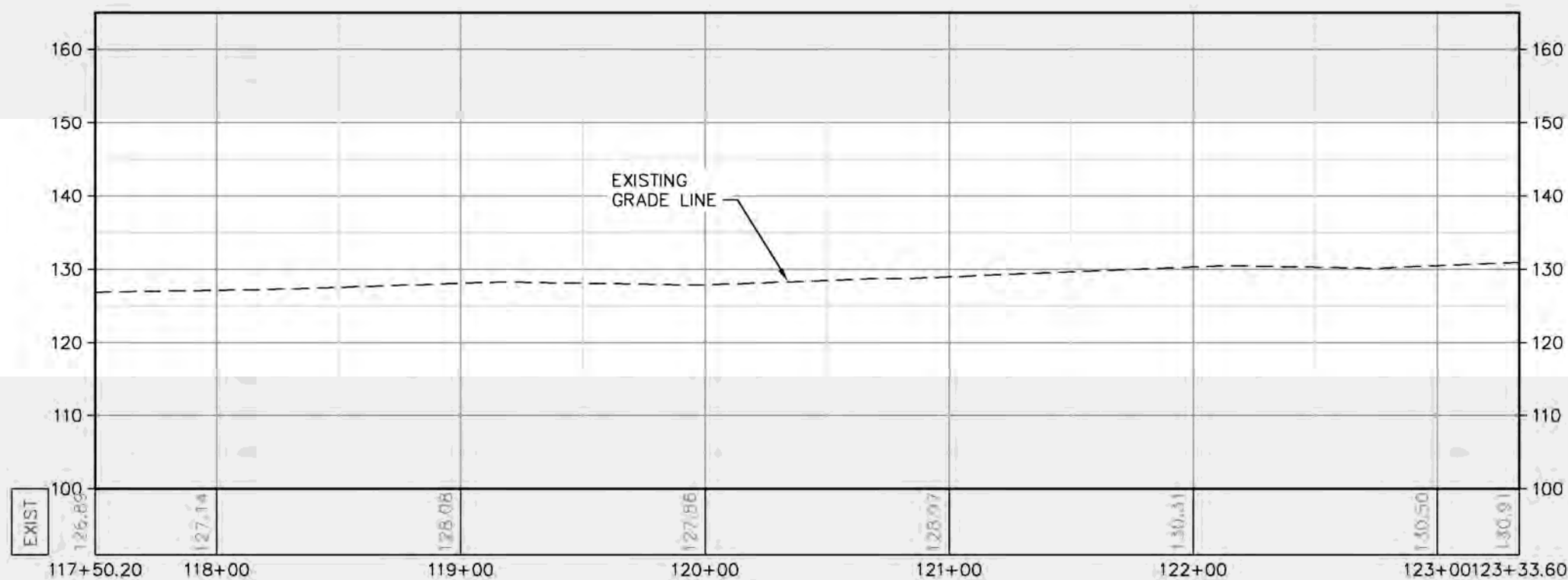
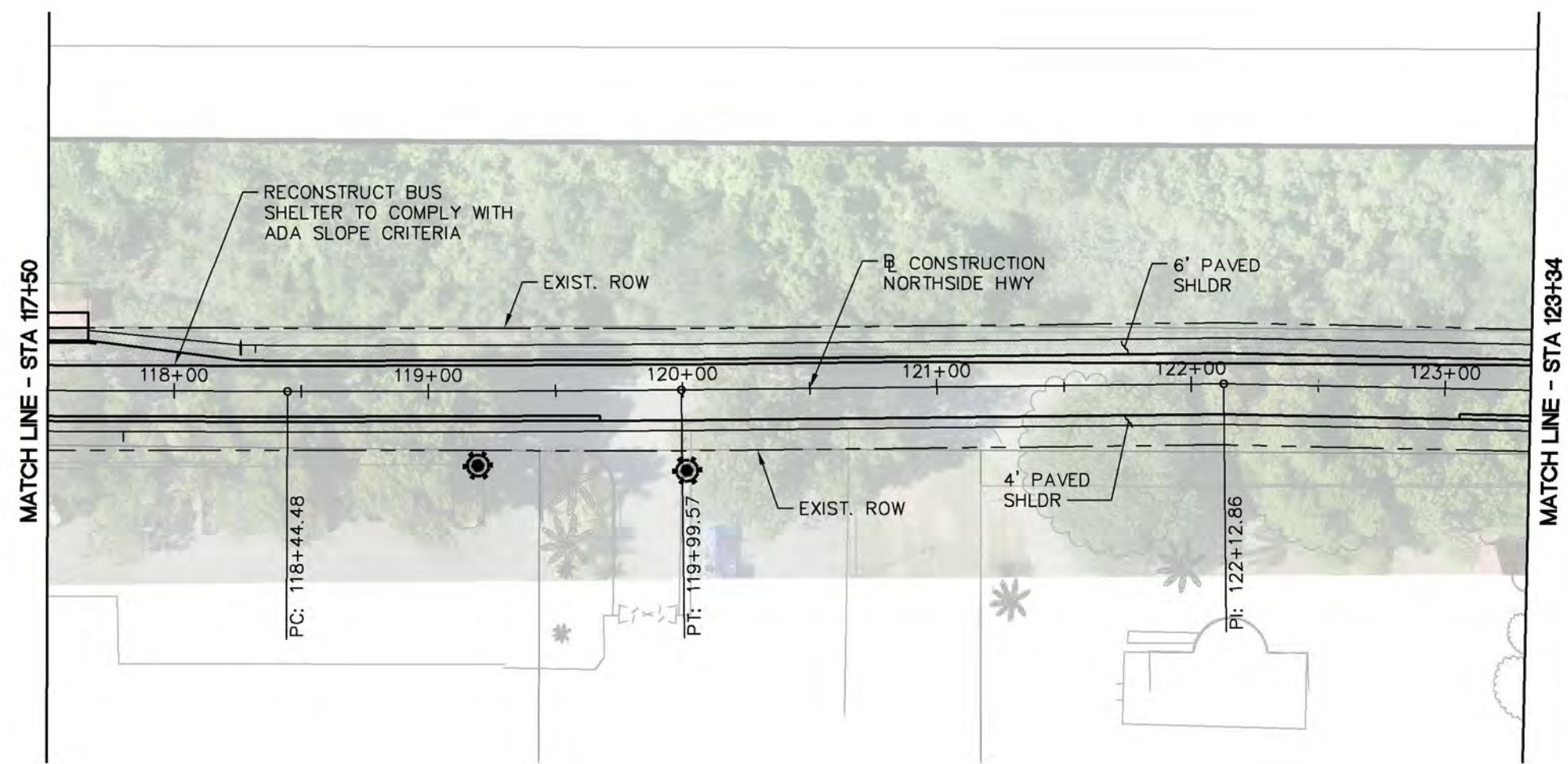
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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30% PLANS - NOT FOR CONSTRUCTION

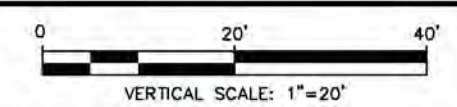
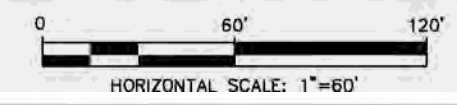


STATE	ISLAND	CONTRACT	SHEET NO.
USVI	ST CROIX	P149DPWT21	D04
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**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



  
**Stanley Consultants INC.**  
1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

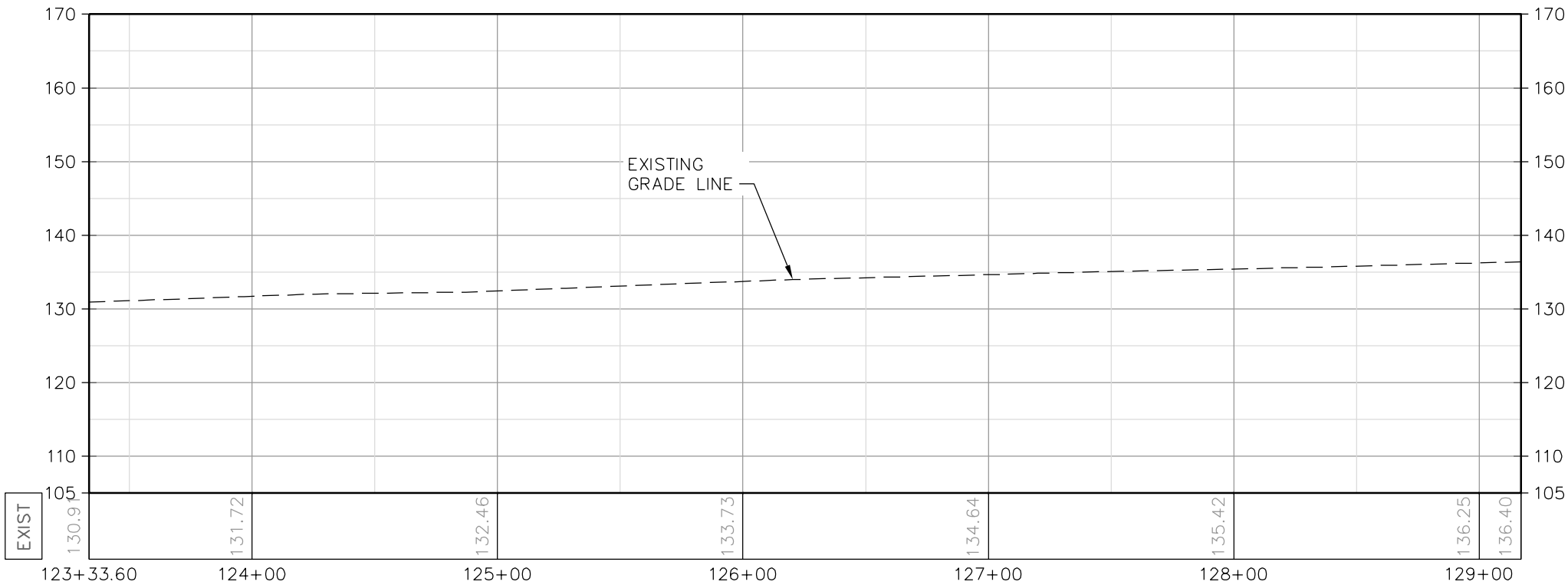
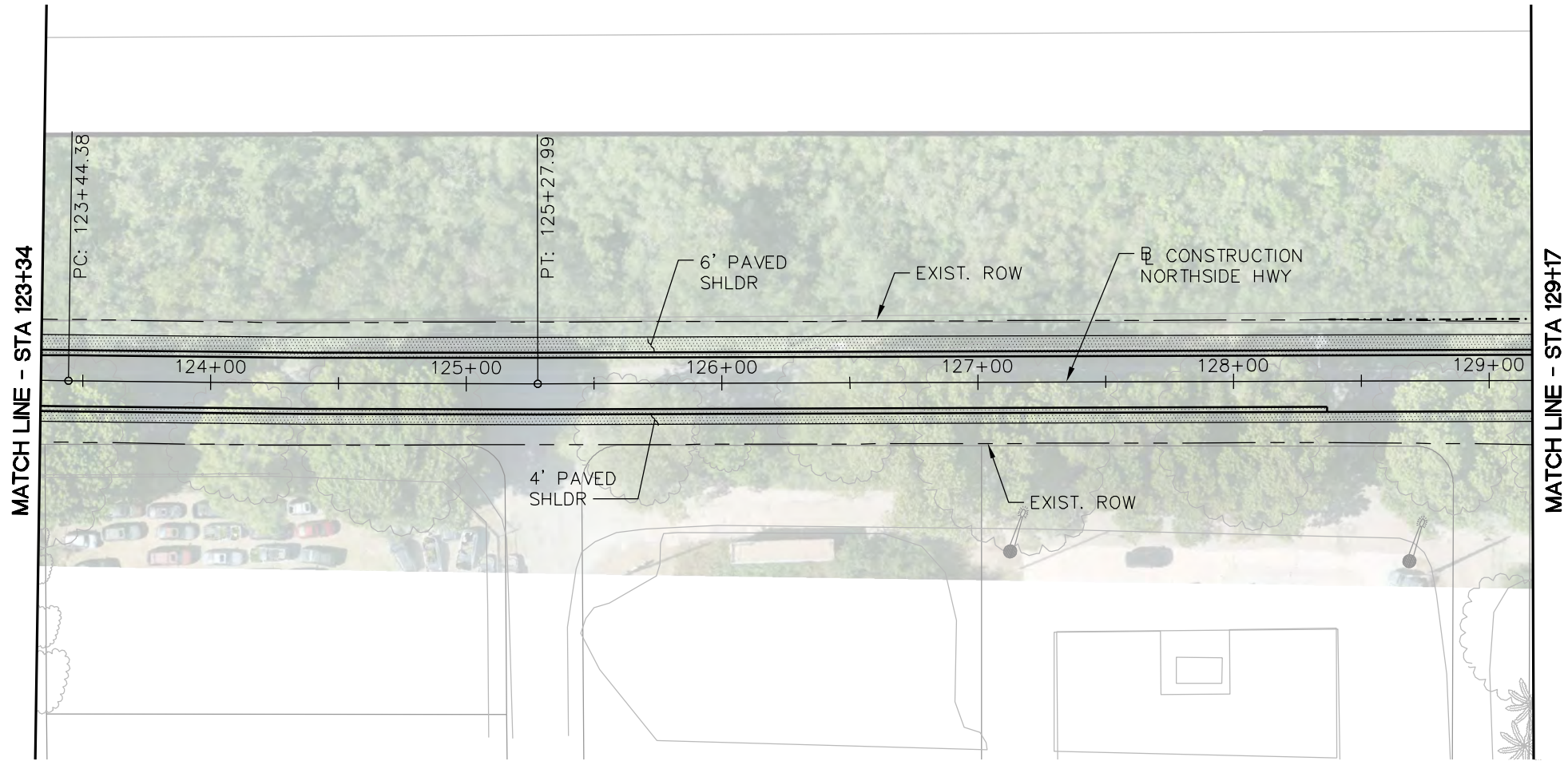
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D05	

ENGINEER: \_\_\_\_\_

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PRINT DATE: \_\_\_\_\_


REV. NO. \_\_\_\_\_

REV. DATE: \_\_\_\_\_

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**




0 60' 120'

HORIZONTAL SCALE: 1"=60'

0 20' 40'

VERTICAL SCALE: 1"=20'

  
**Stanley Consultants INC.**

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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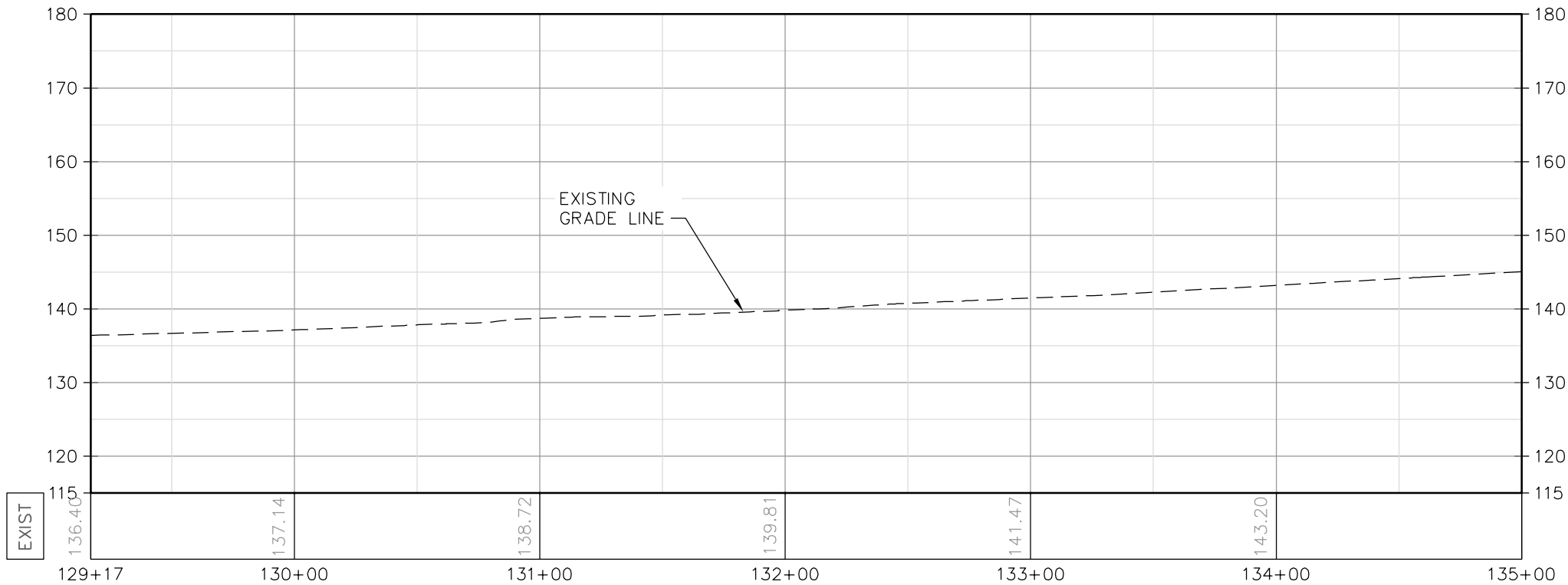
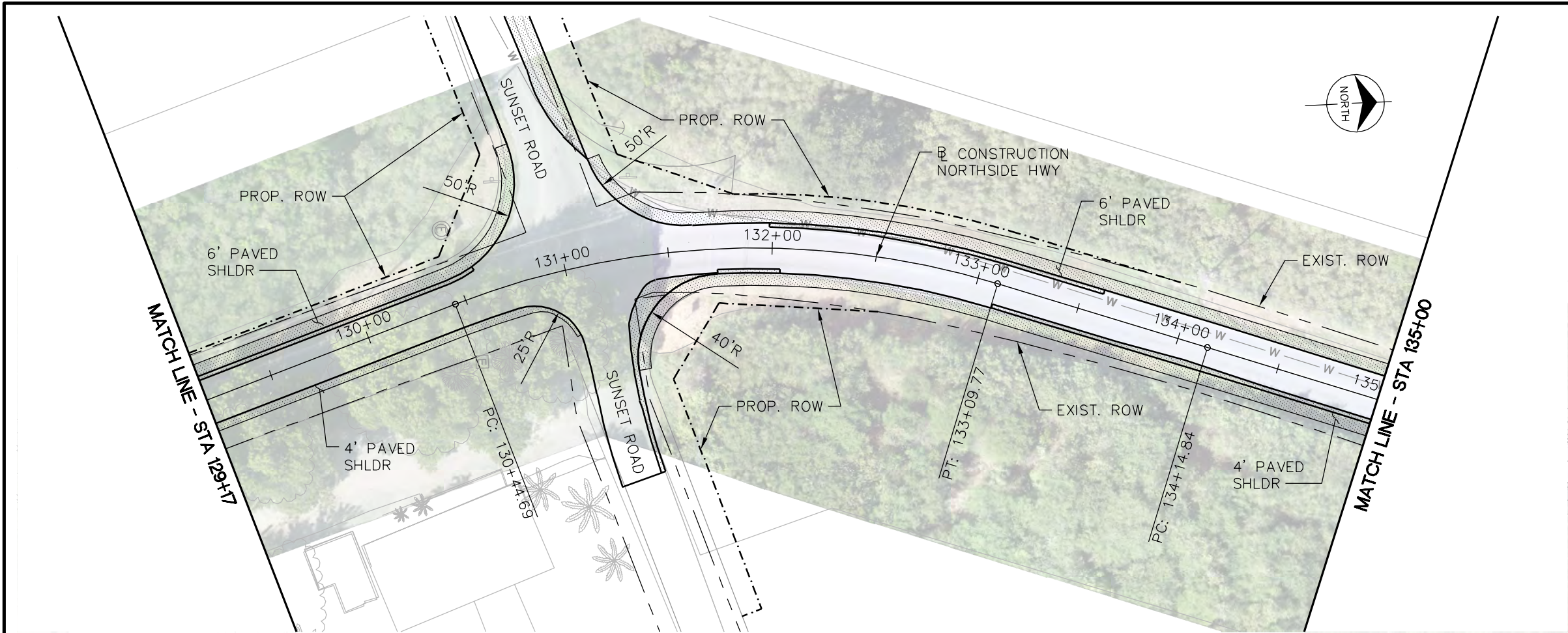
SCALE: 1" = 60' (11"x17")

SHEET  
05 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.
USVI	ST CROIX	P149DPWT21	D06

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:

REV. NO.	REV. DATE:

**LEGEND**

■ DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**

0 60' 120'

HORIZONTAL SCALE: 1"=60'

0 20' 40'

VERTICAL SCALE: 1"=20'

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UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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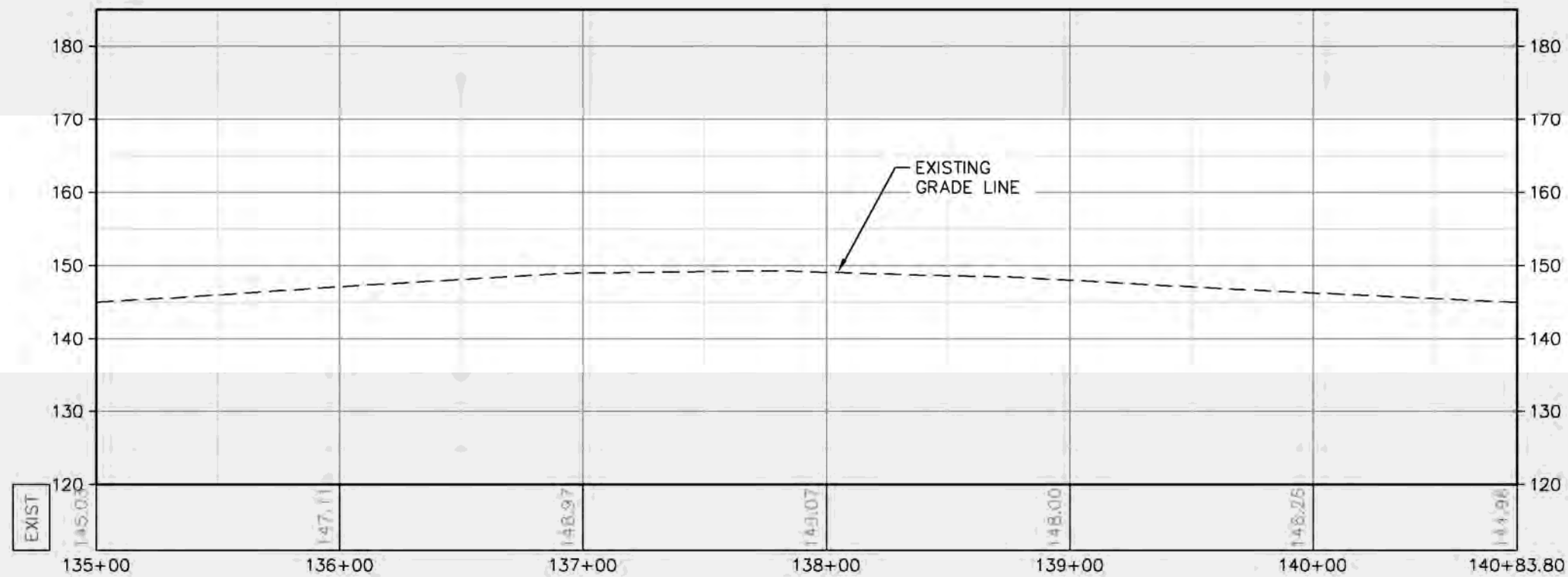
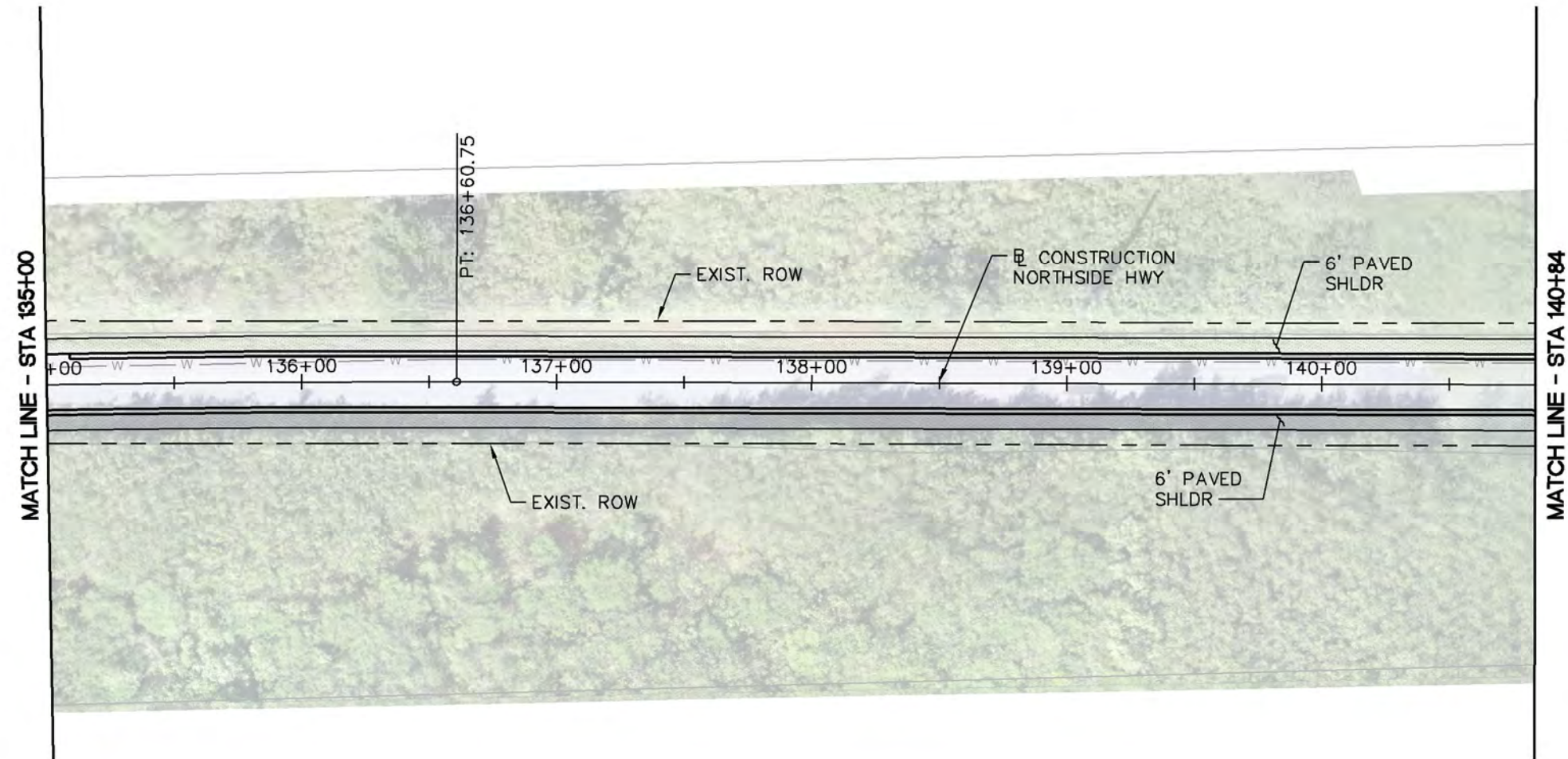
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SHEET 06 OF 61

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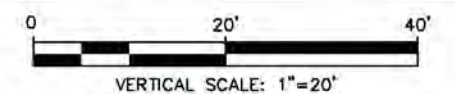
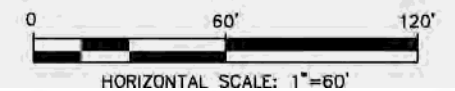


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**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**

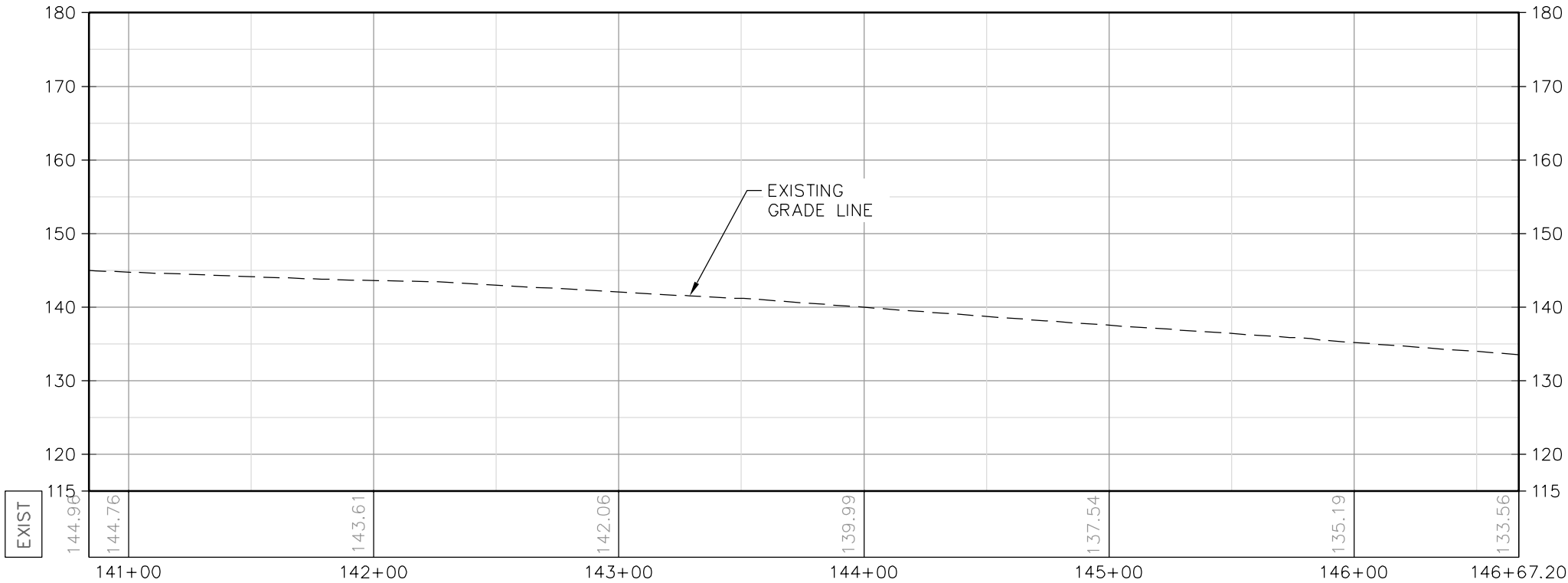
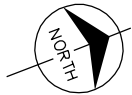
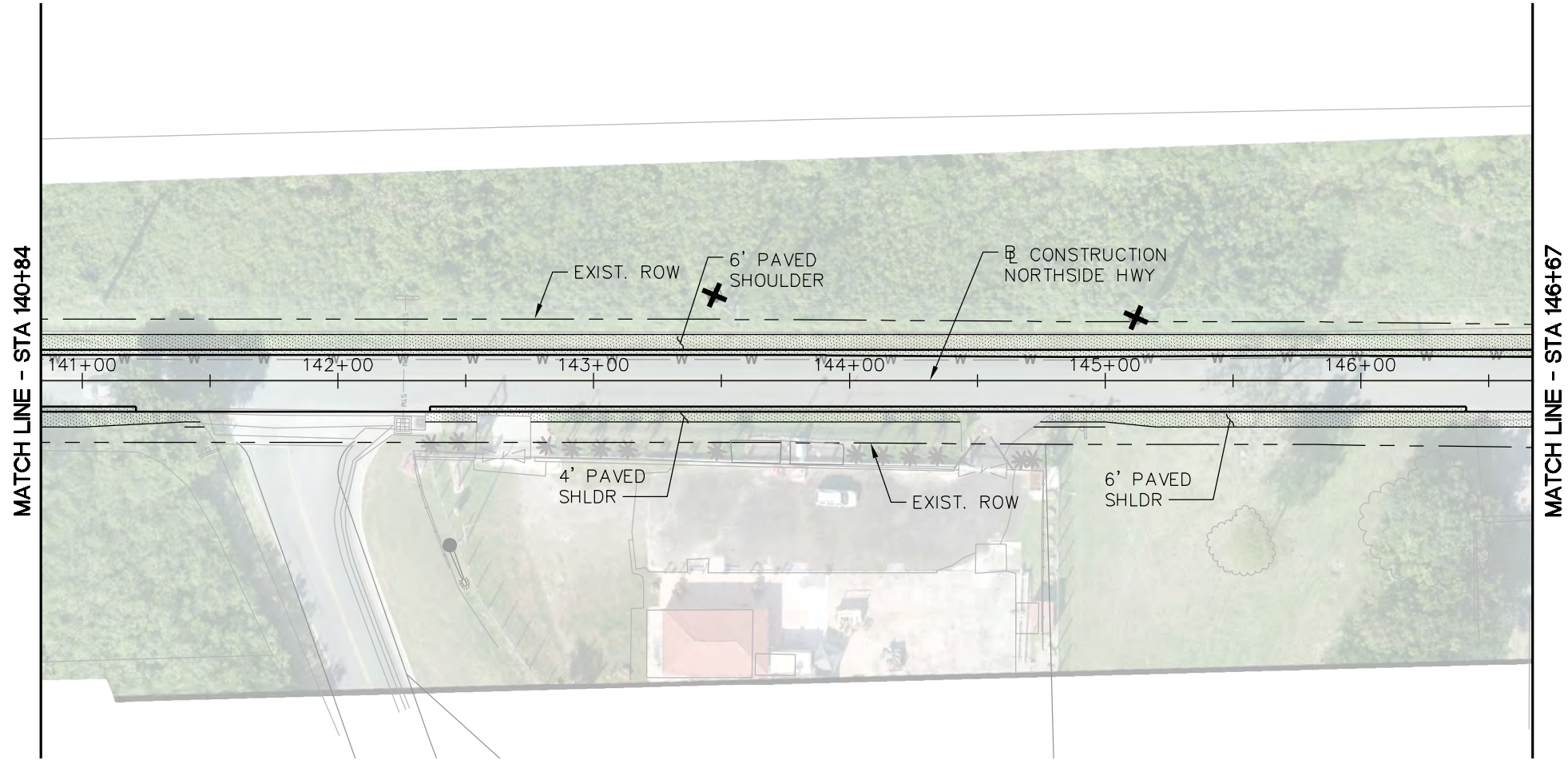


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**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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STATE	ISLAND	CONTRACT	SHEET NO.	
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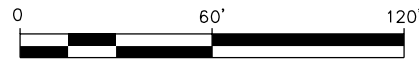
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#### LEGEND

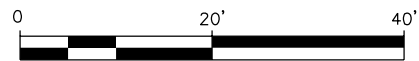


DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

#### KEY MAP



HORIZONTAL SCALE: 1"=60'



VERTICAL SCALE: 1"=20'



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IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

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SCALE: 1" = 60' (11"x17")

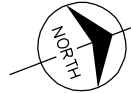
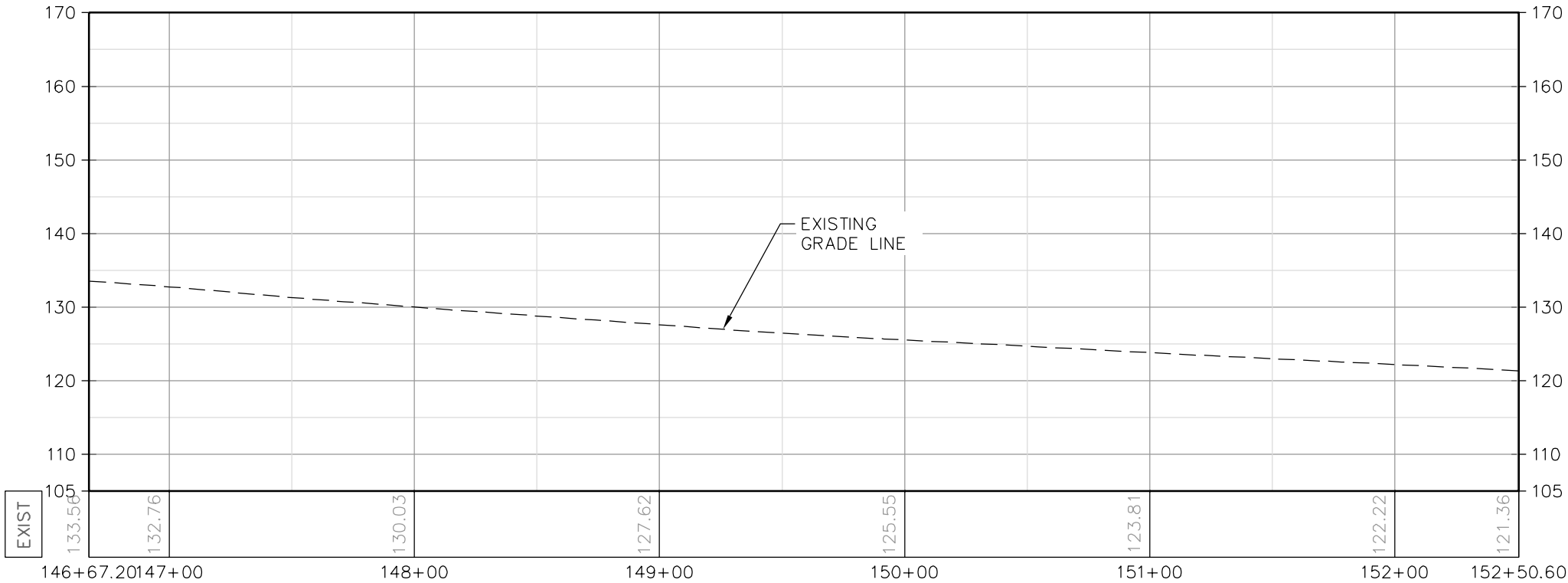
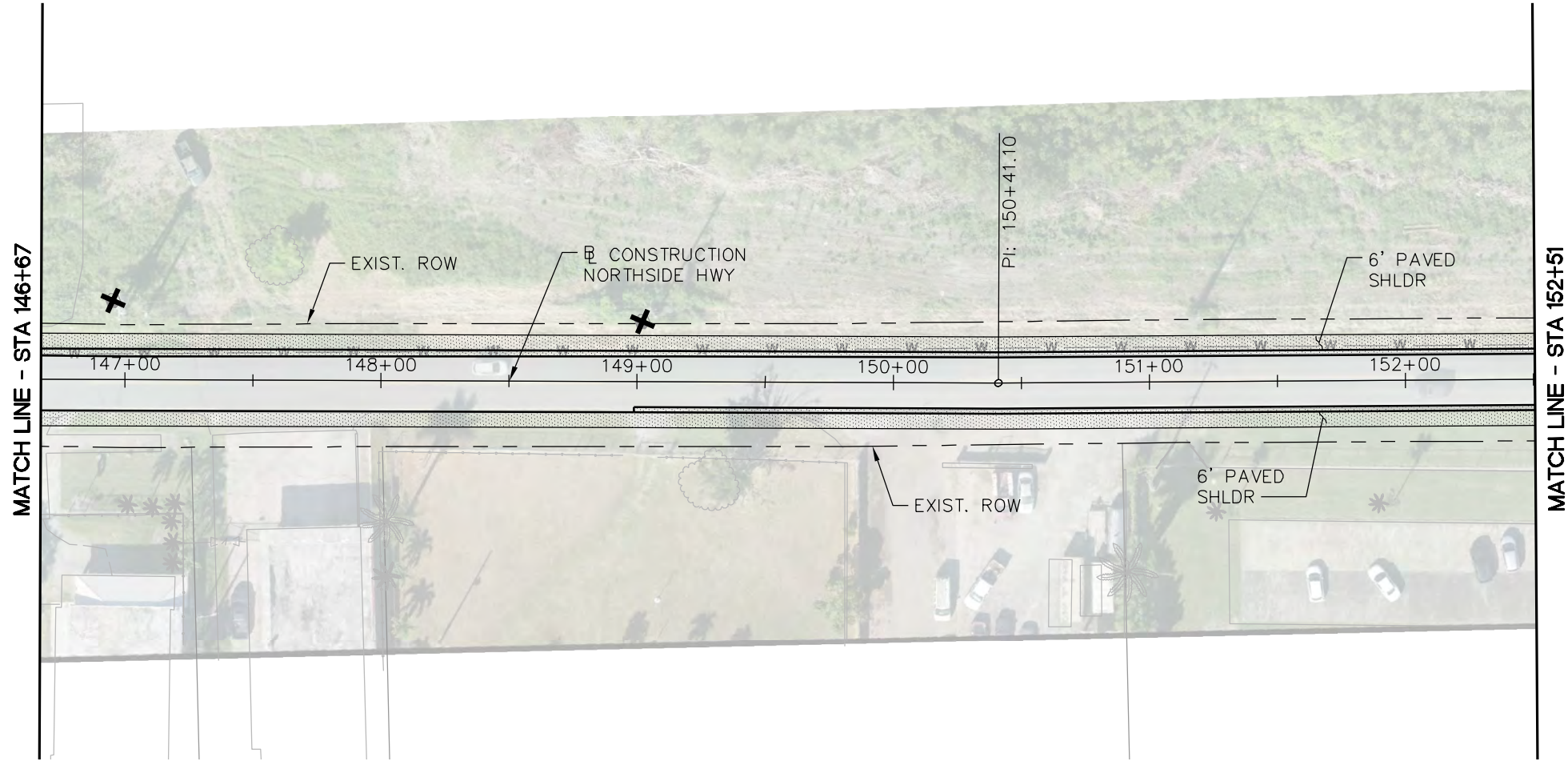
SHEET  
08 OF 61

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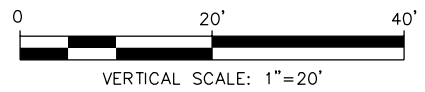
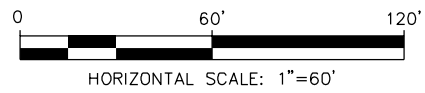
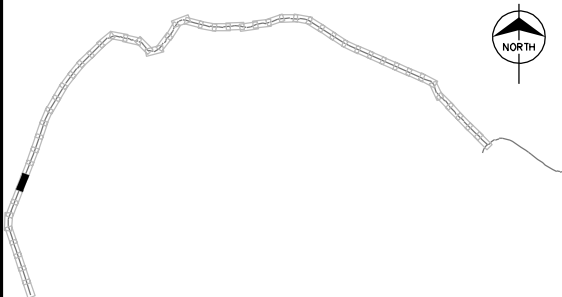
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USVI	ST CROIX	P149DPWT21	D09	

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REV. DATE: _____			

**LEGEND**

DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



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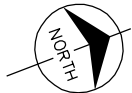
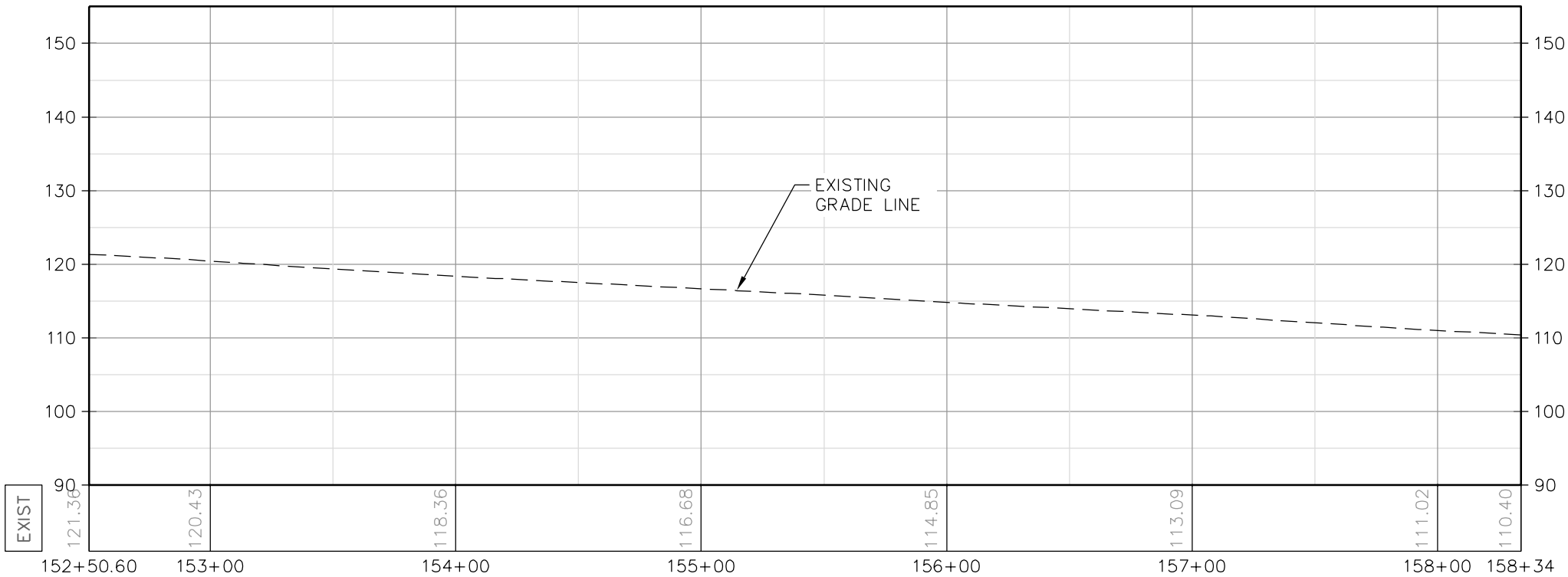
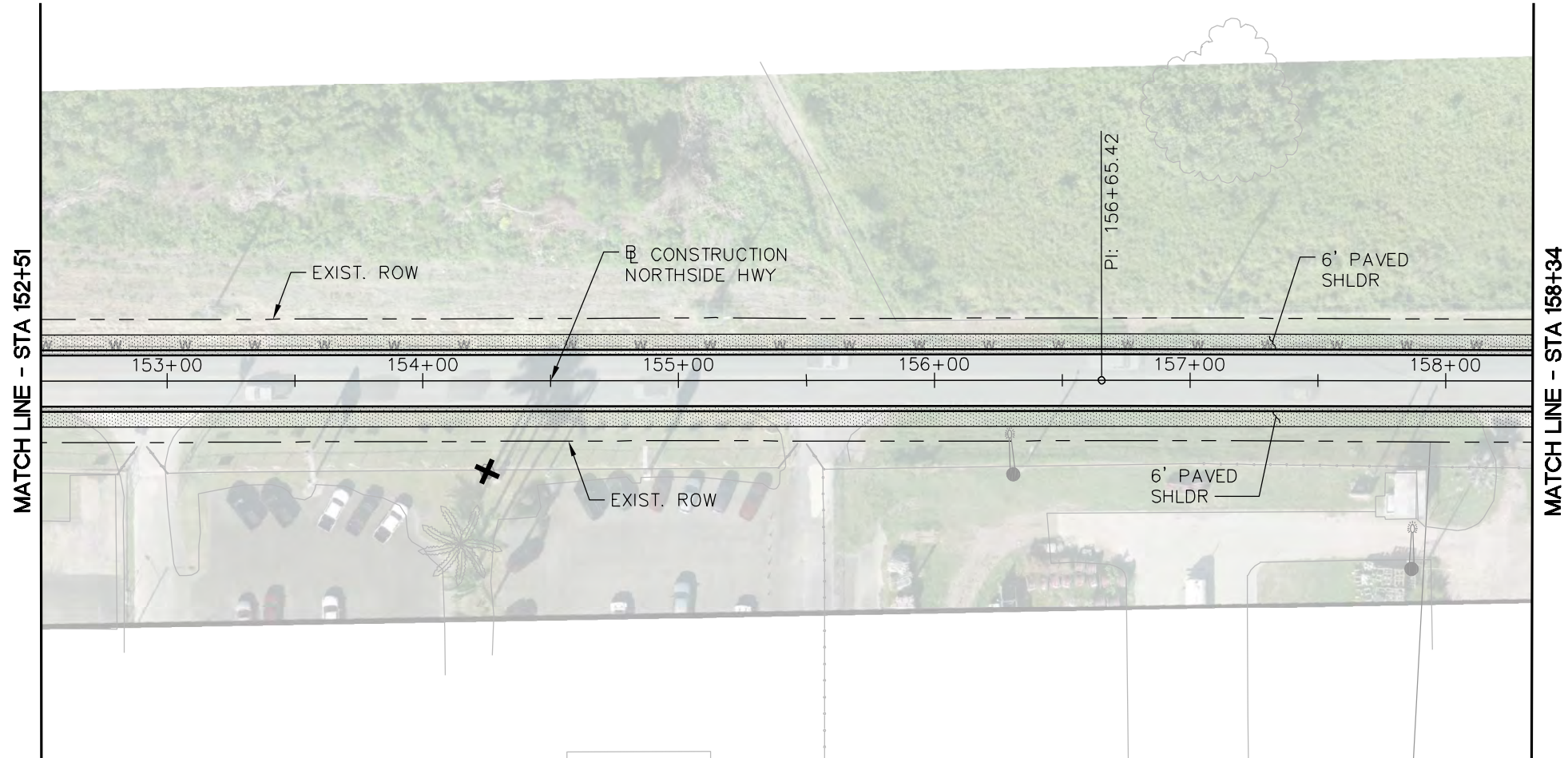
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

SCALE: 1" = 60' (11"x17")	SHEET 09 OF 61
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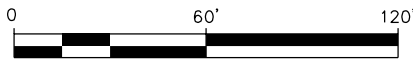
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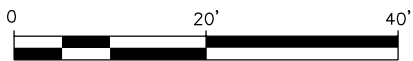


DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

KEY MAP



HORIZONTAL SCALE: 1"=60'



VERTICAL SCALE: 1"=20'



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IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

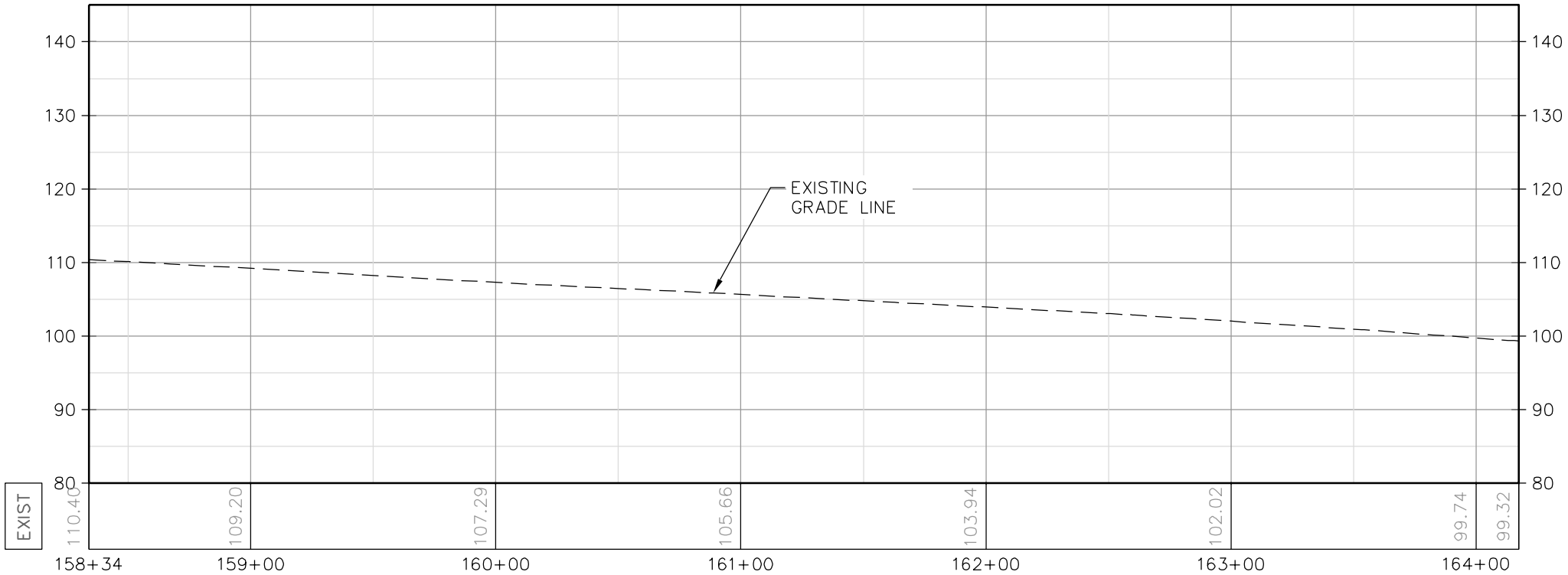
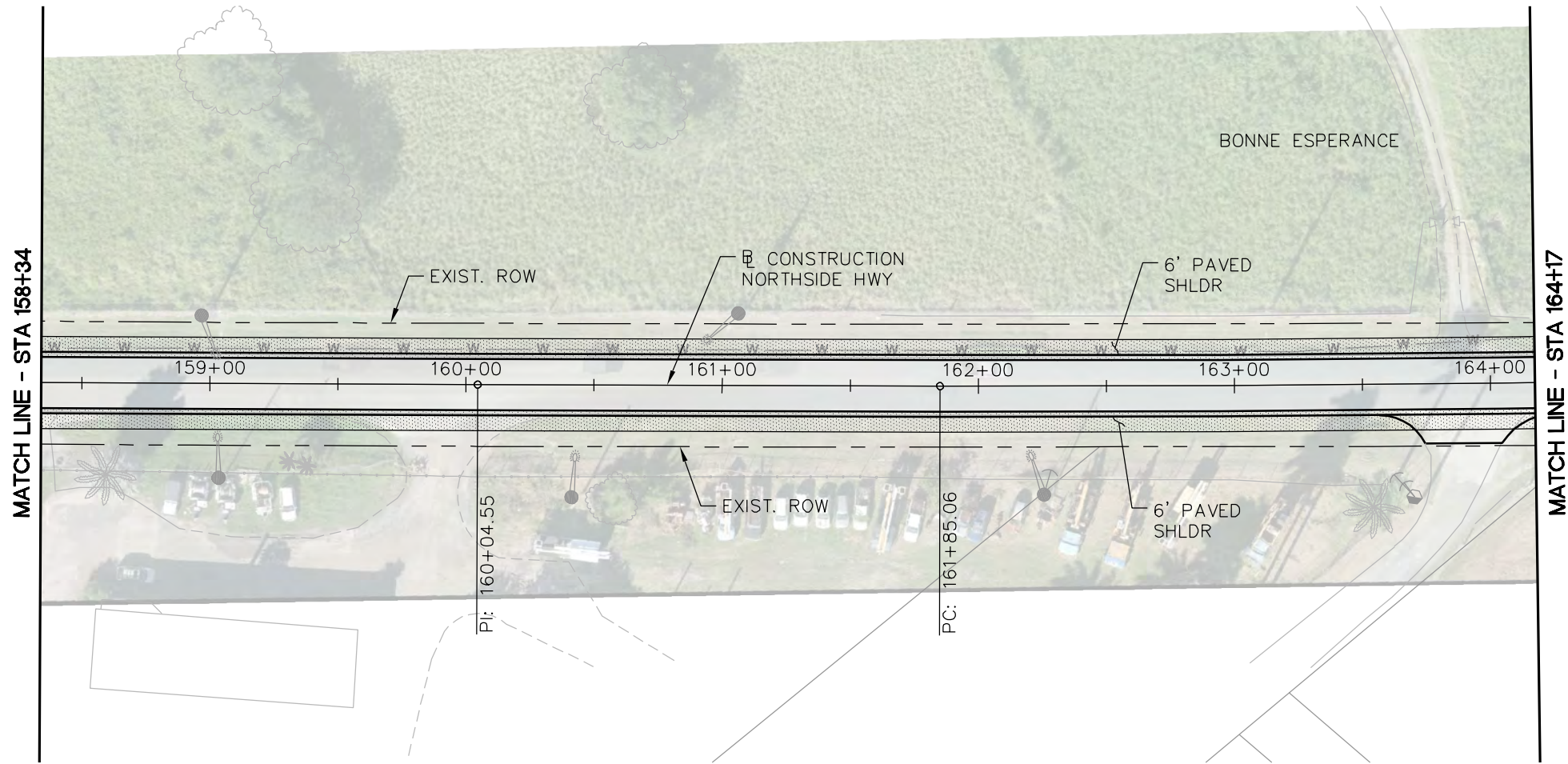
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SCALE:	1" = 60' (11"x17")	SHEET	10 OF 61
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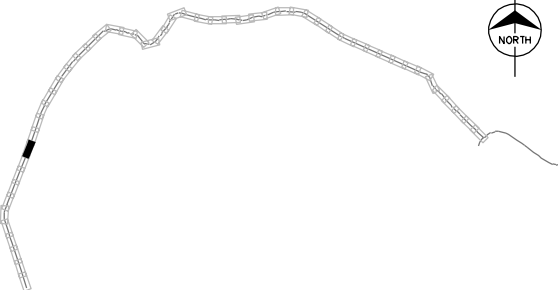
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**LEGEND**


 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



0 60' 120'  
HORIZONTAL SCALE: 1"=60'

0 20' 40'  
VERTICAL SCALE: 1"=20'

  
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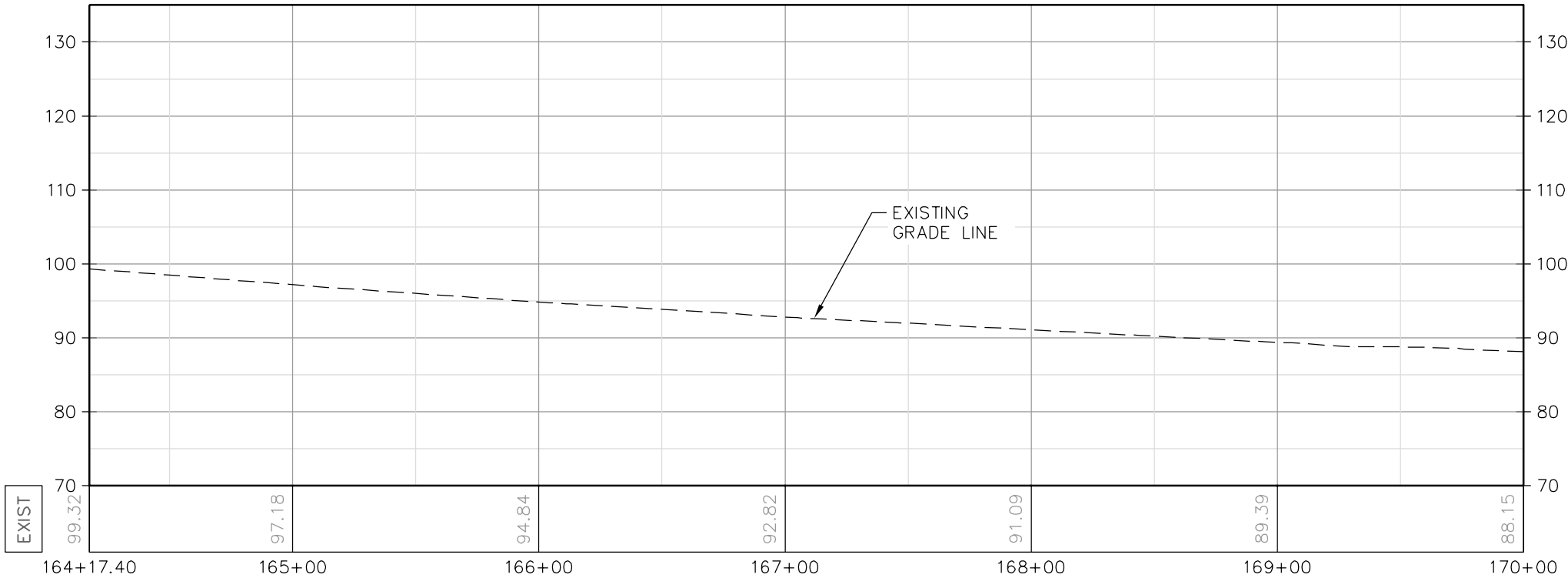
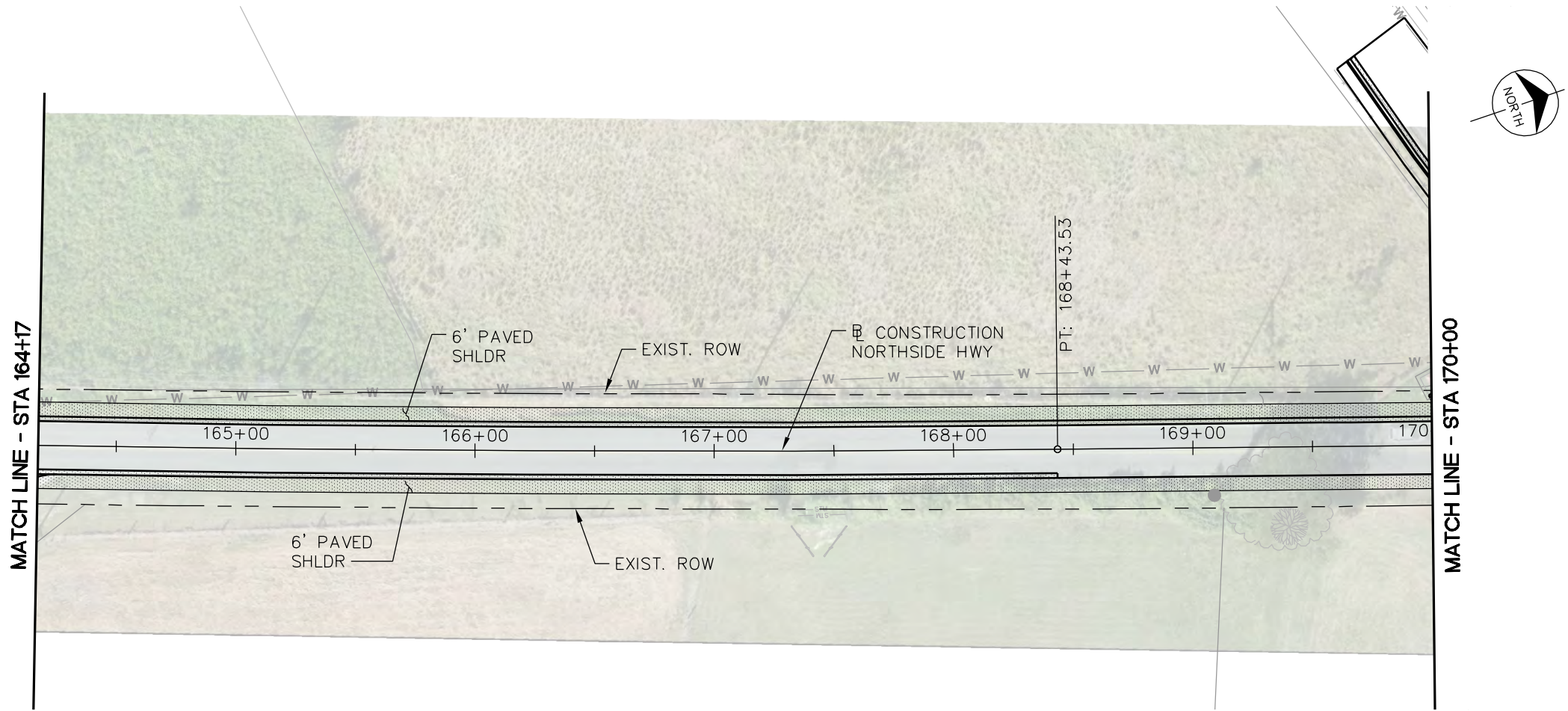
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**  
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SCALE: 1" = 60' (11"x17")

SHEET  
11 OF 61

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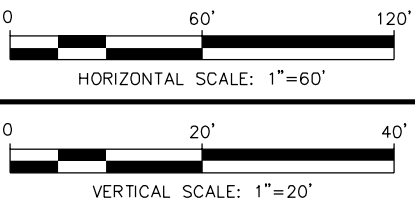
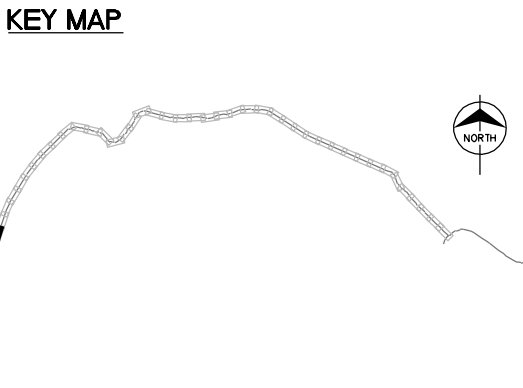


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**LEGEND**

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**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

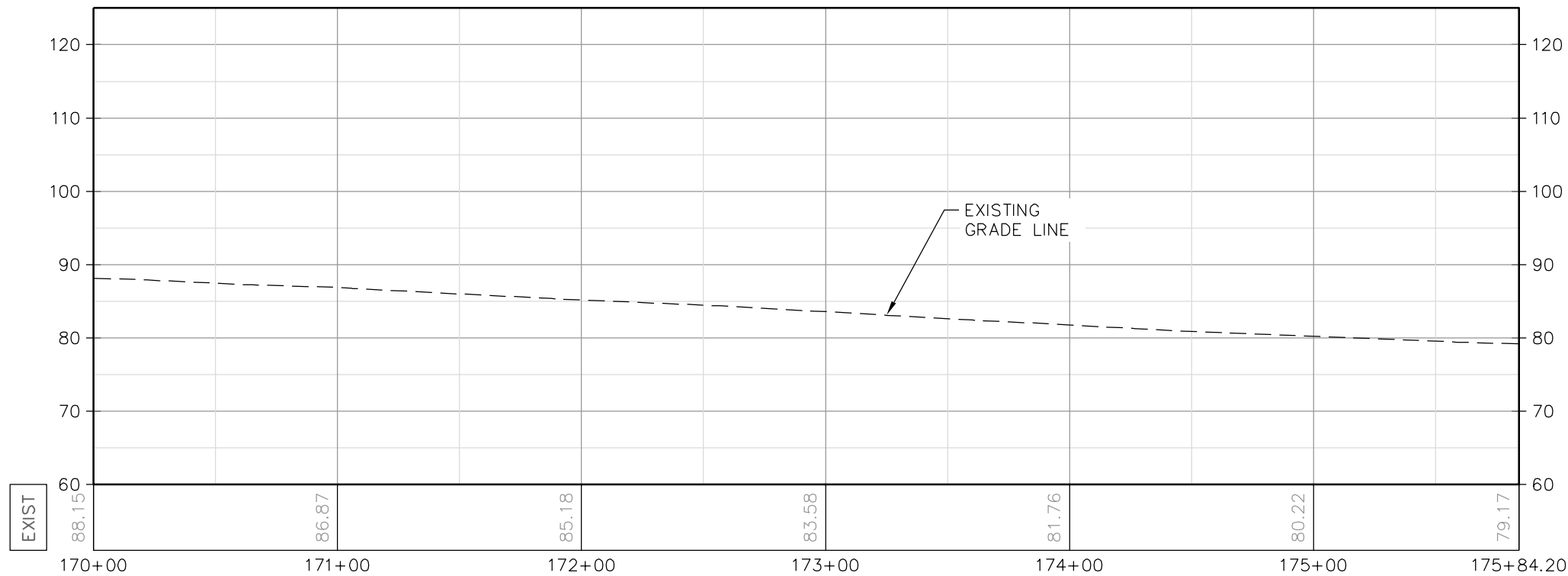
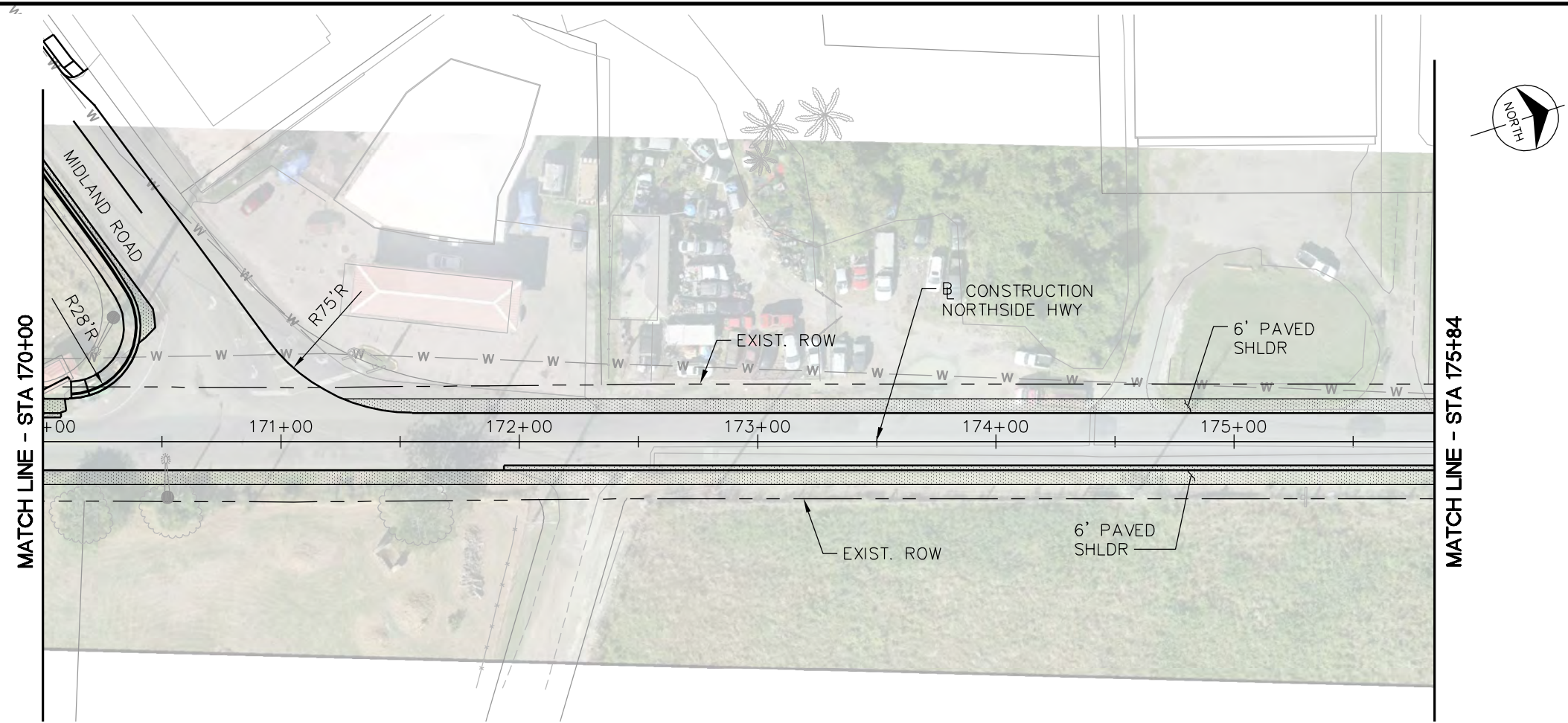
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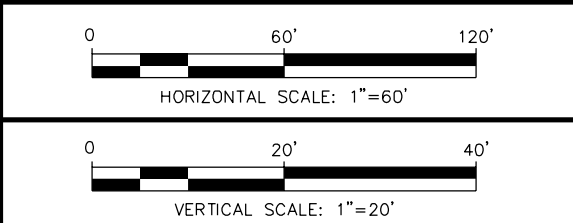
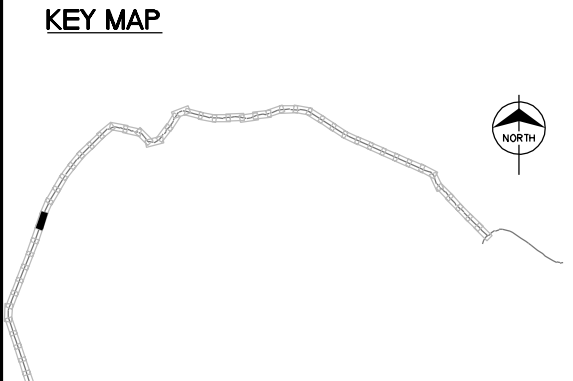
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**LEGEND**

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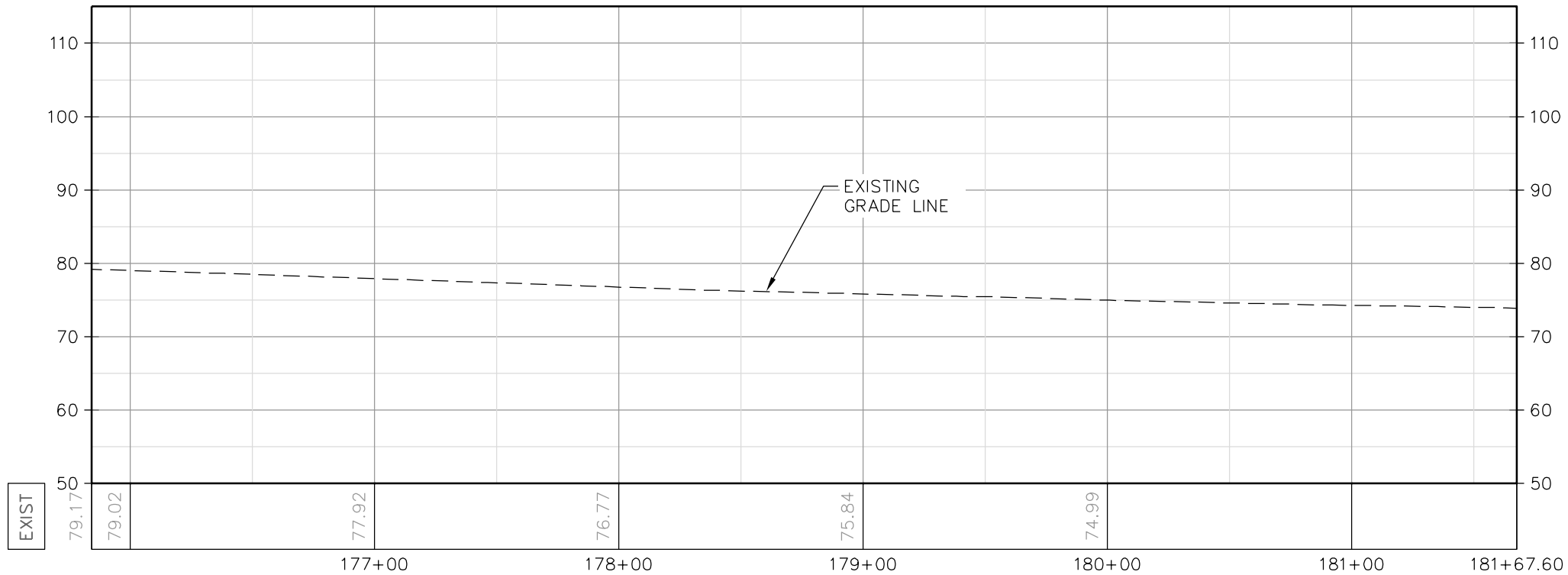
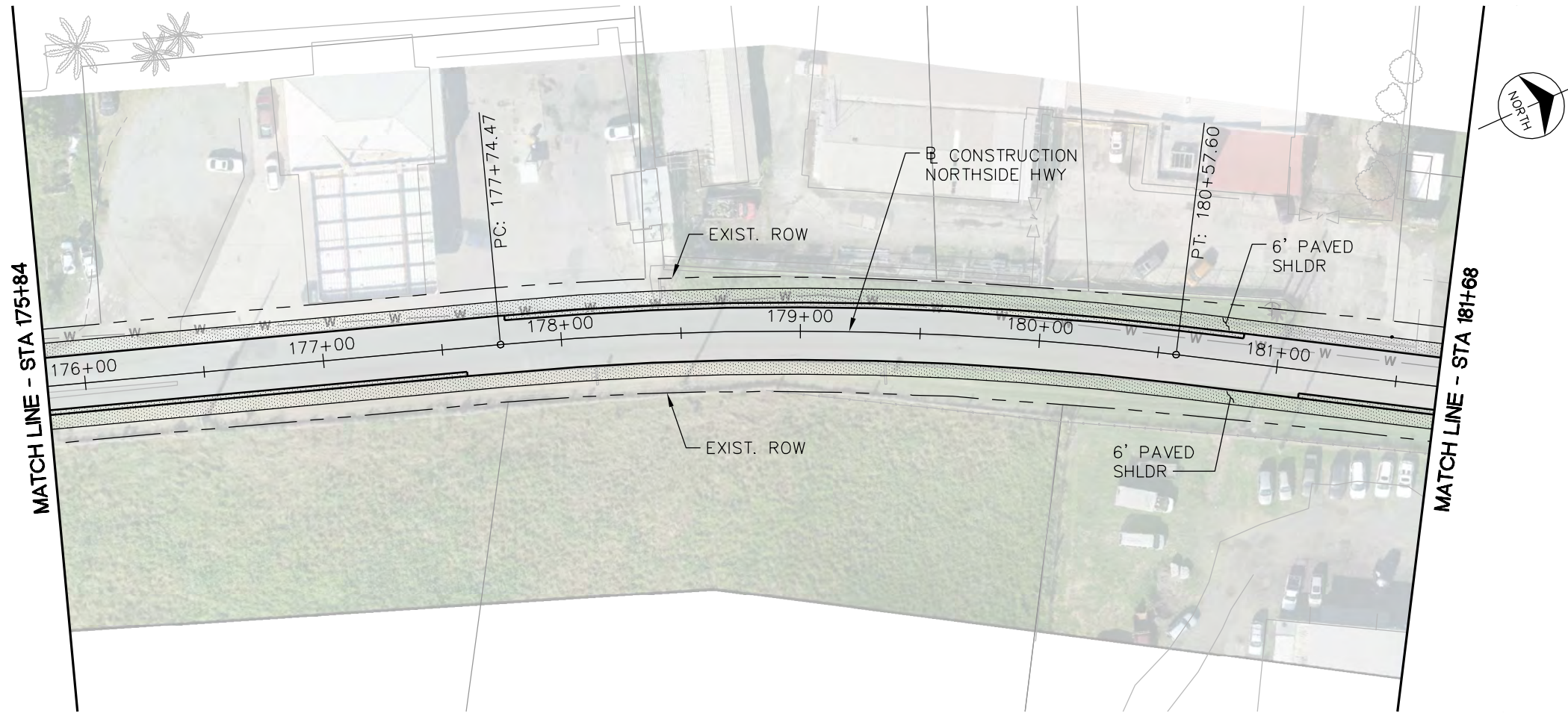
DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE  
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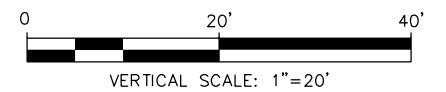
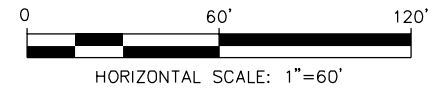
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 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

KEY MAP



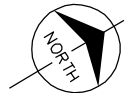
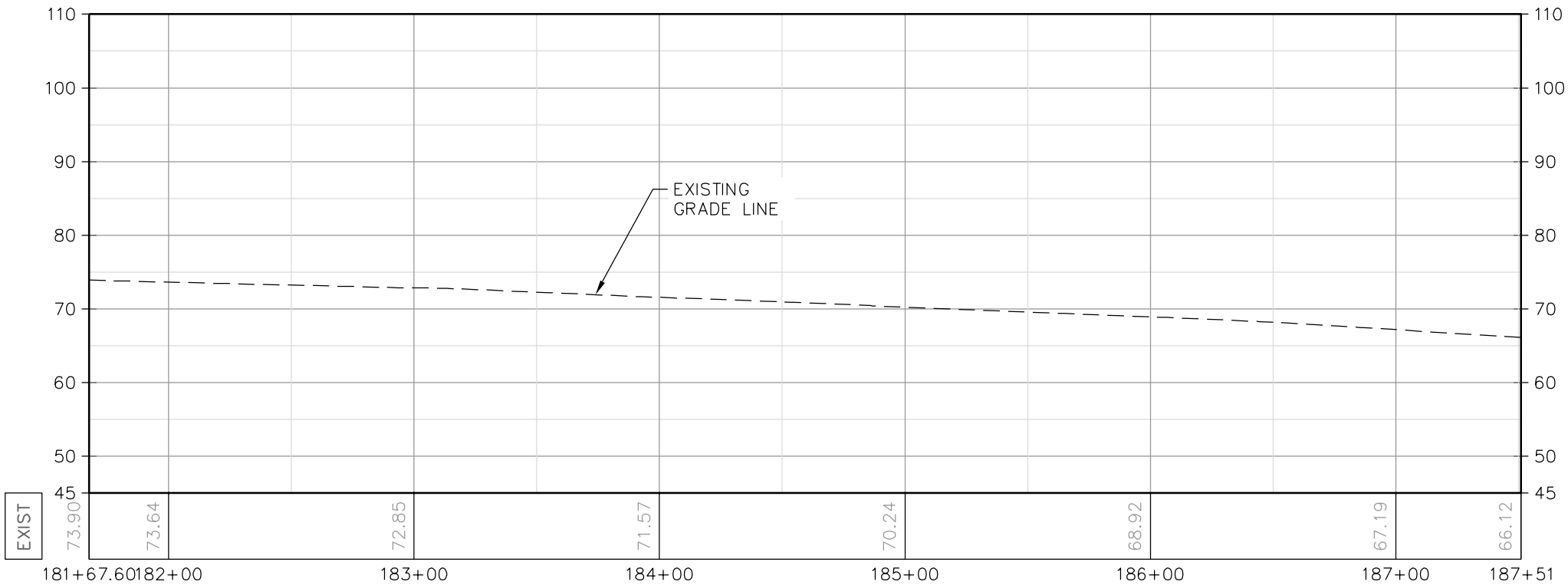
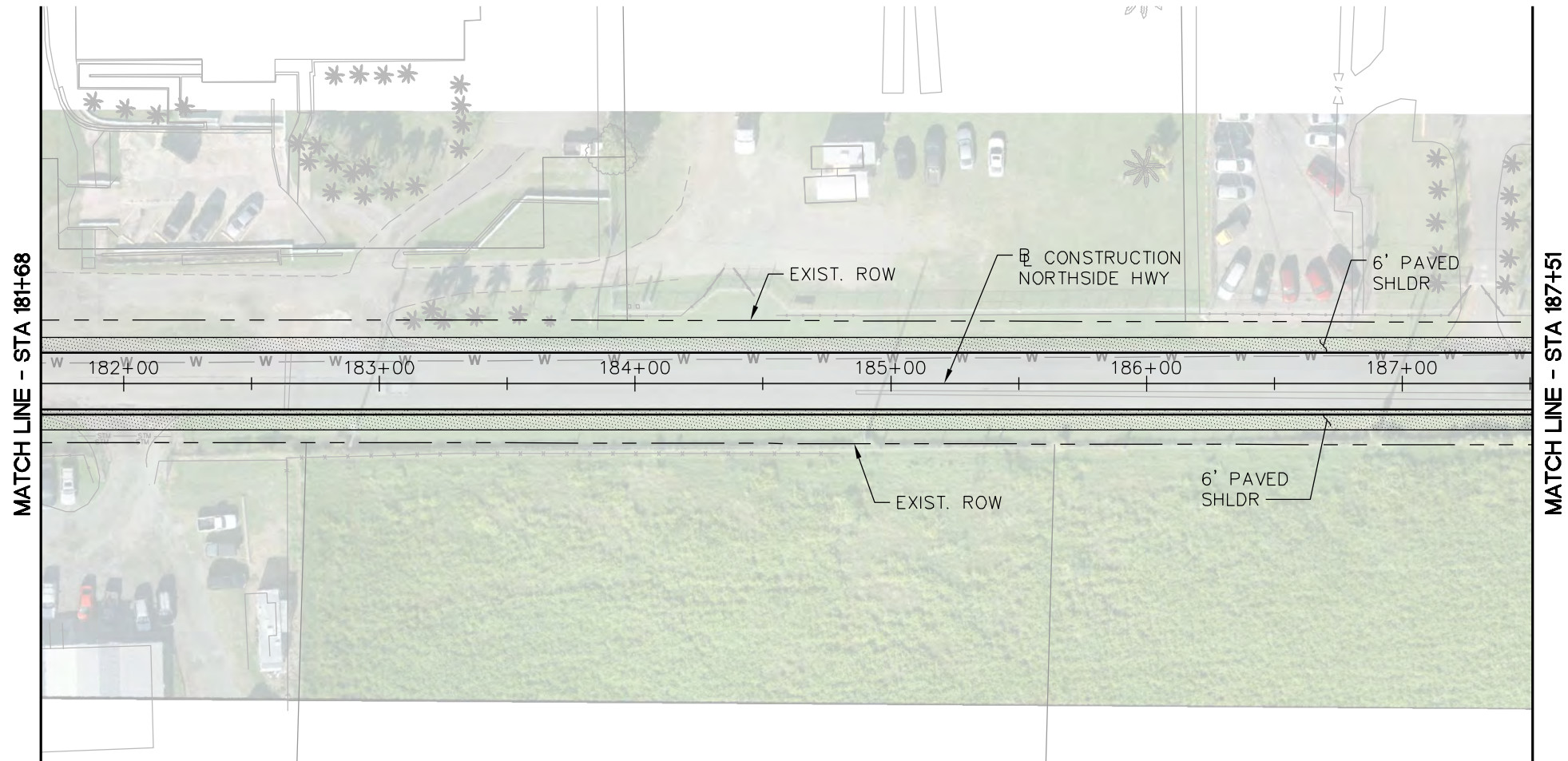
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IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE



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STATE	ISLAND	CONTRACT	SHEET NO.	
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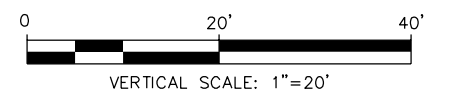
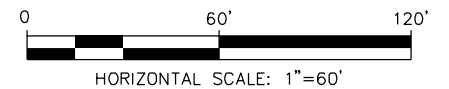
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#### LEGEND

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

#### KEY MAP



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UNITED STATES VIRGIN ISLANDS

### IMPROVEMENTS TO NORTHSIDE HIGHWAY (ROUTE 75) ROADWAY PLAN AND PROFILE

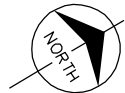
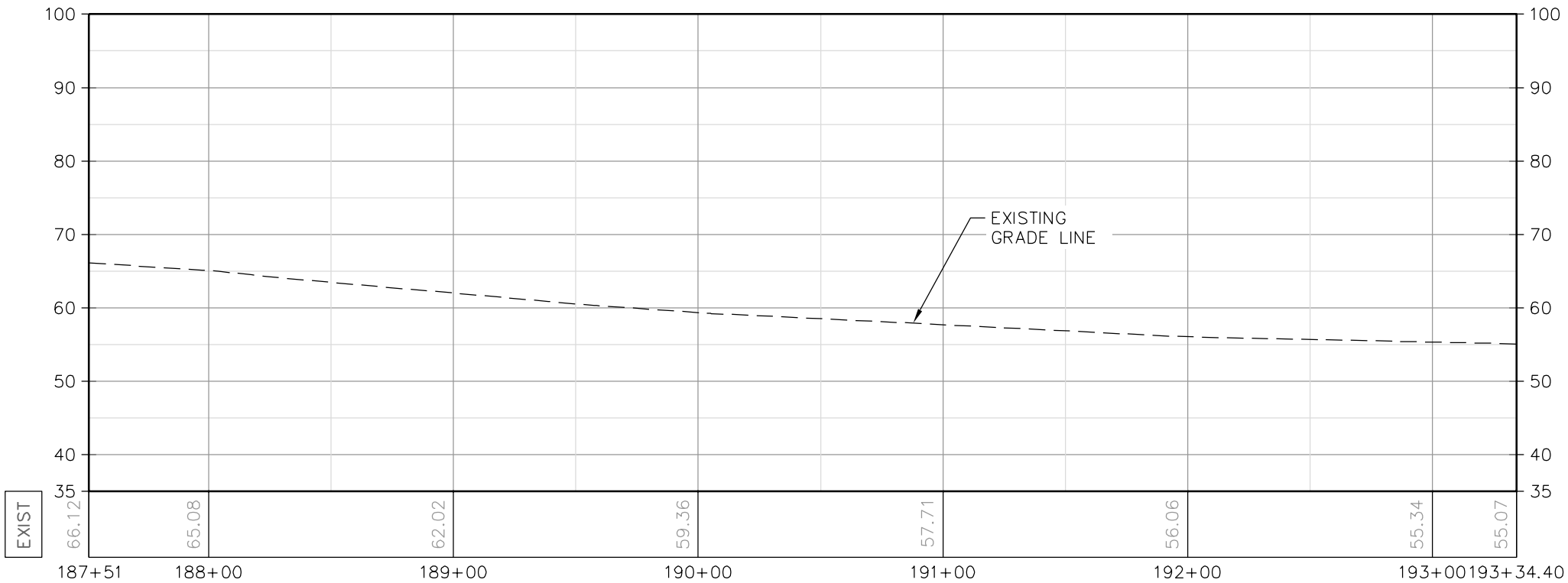
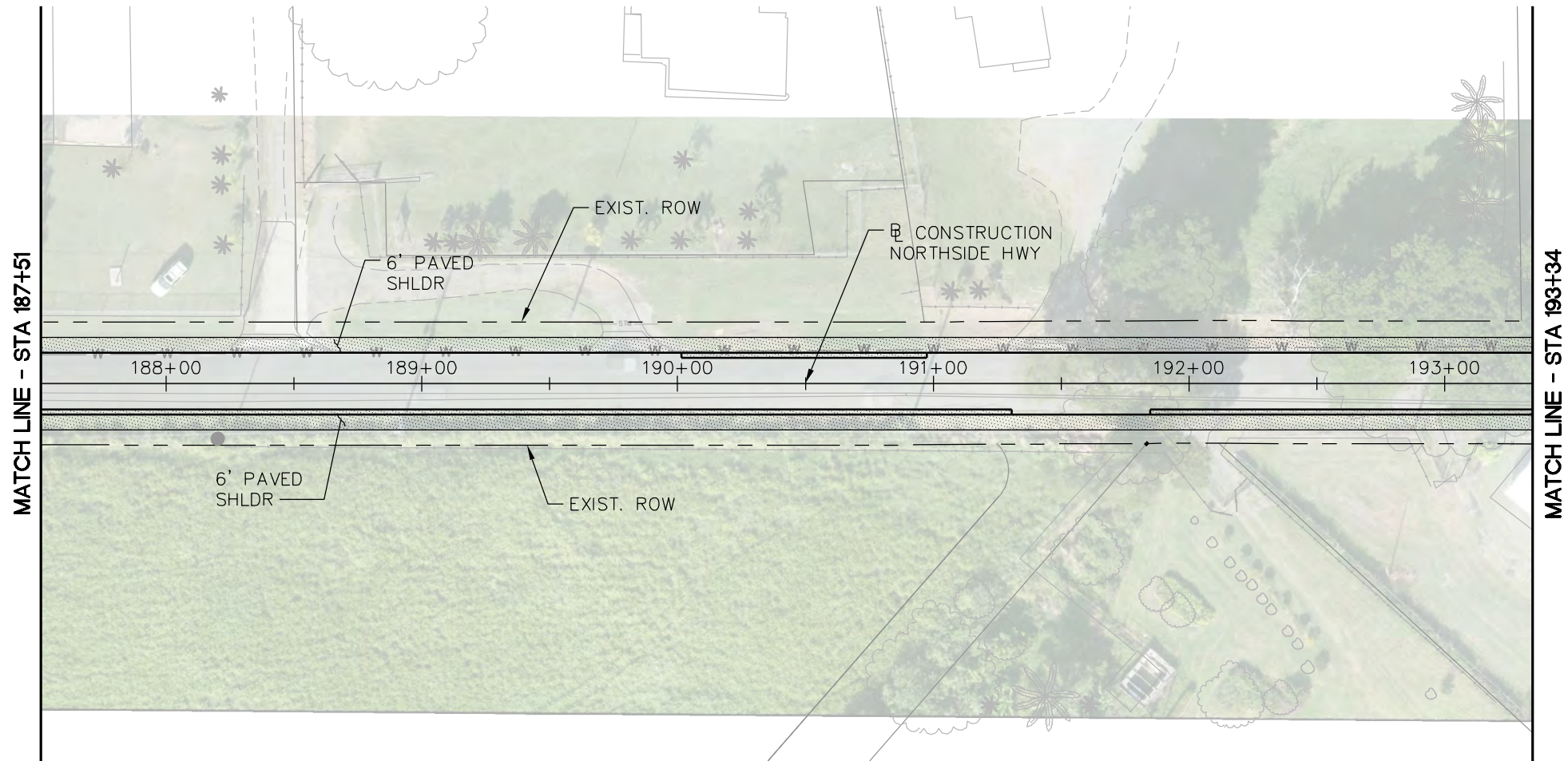
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SCALE:	1" = 60' (11"x17")	SHEET	15 OF 61
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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D16	

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REV. DATE: \_\_\_\_\_

#### LEGEND

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

#### KEY MAP



0 60' 120'  
HORIZONTAL SCALE: 1"=60'

0 20' 40'  
VERTICAL SCALE: 1"=20'



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WEST PALM BEACH, FLORIDA 33409

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UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

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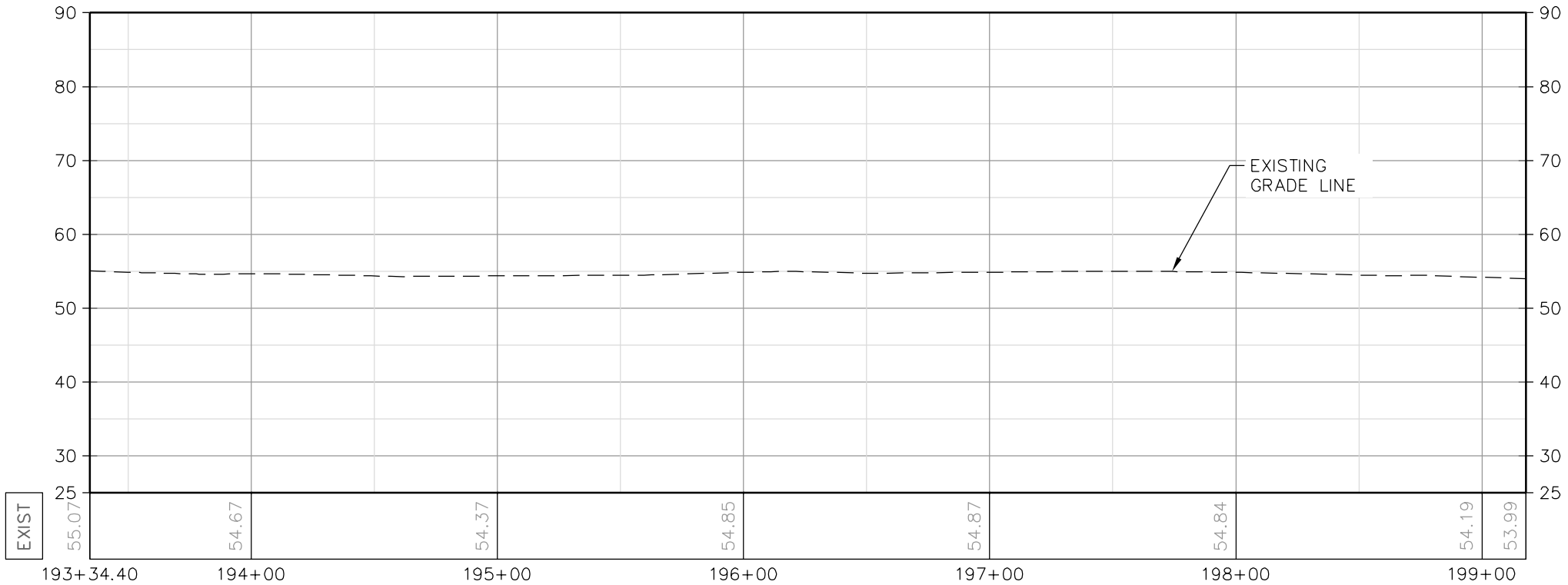
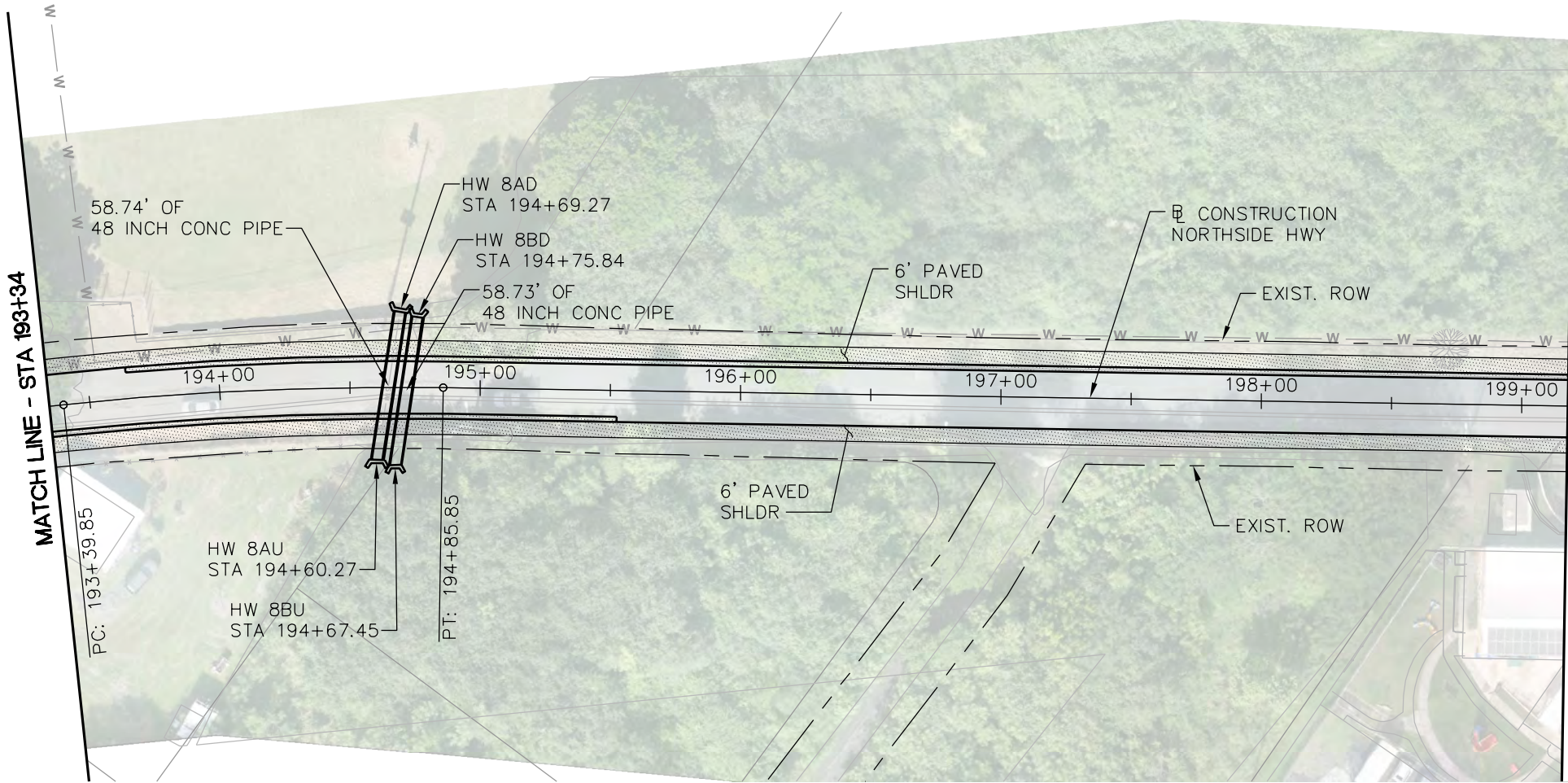
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.
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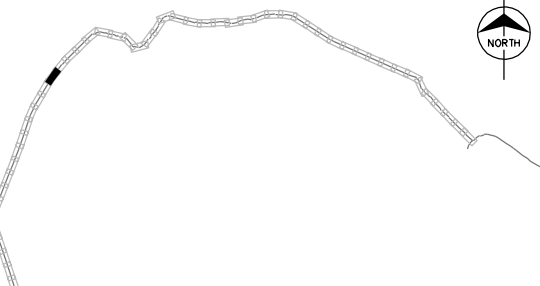
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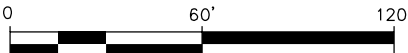
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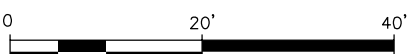
 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION


**KEY MAP**





  
HORIZONTAL SCALE: 1"=60'

  
VERTICAL SCALE: 1"=20'

  
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UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**  
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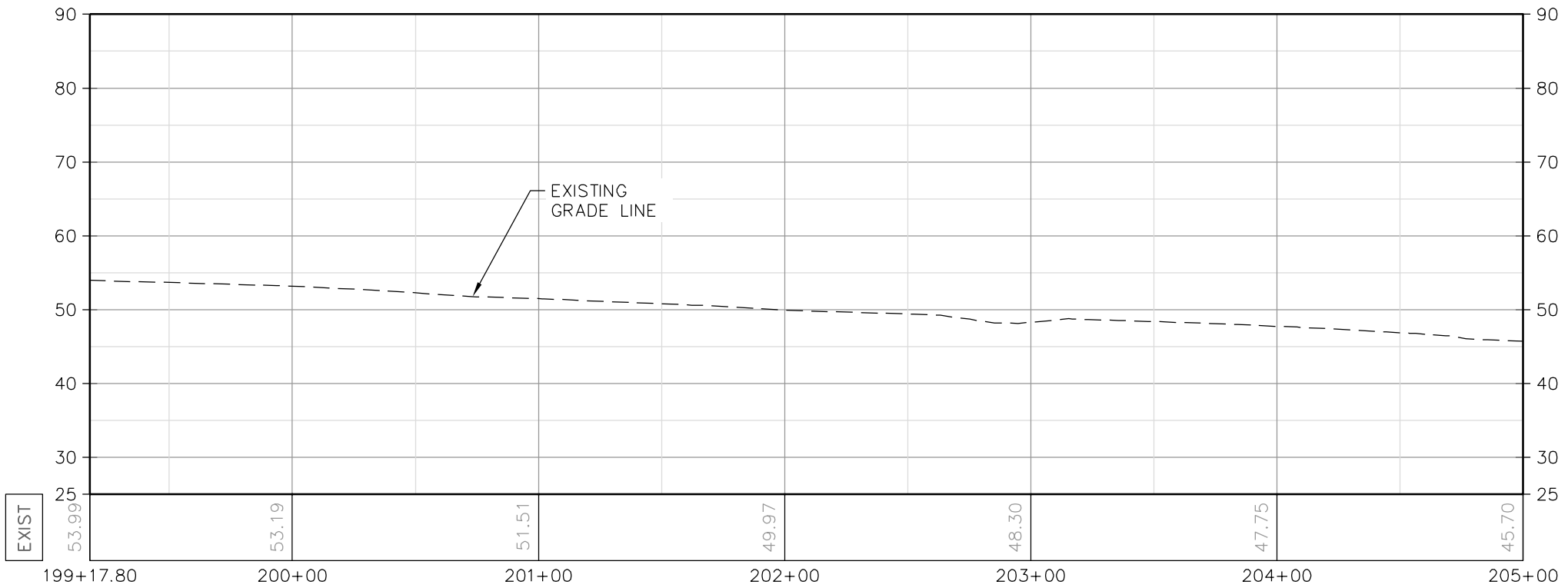
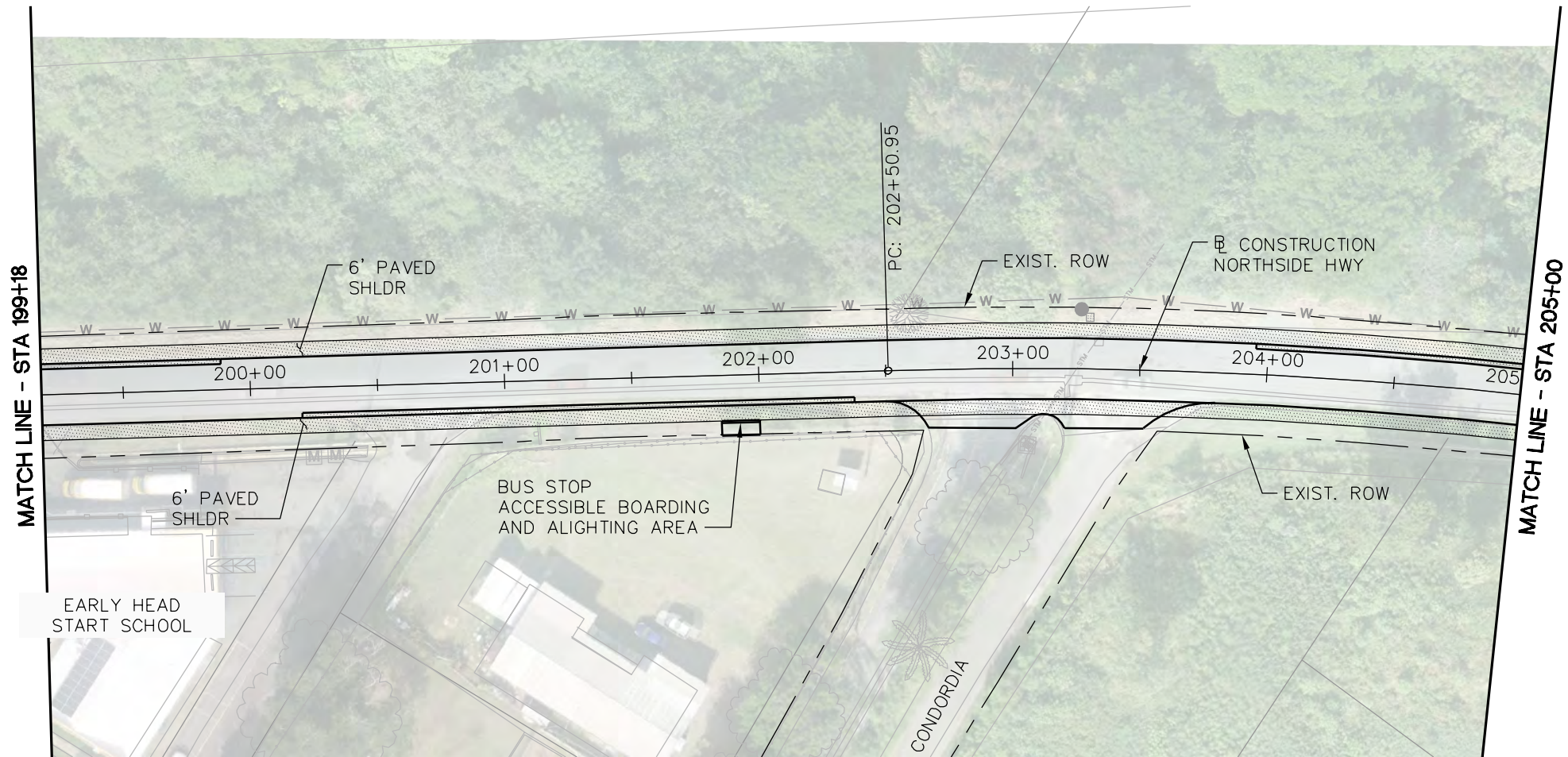
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SHEET 17 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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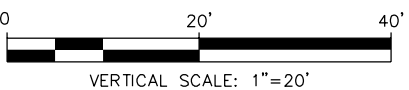
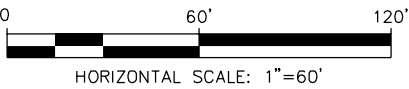


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			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

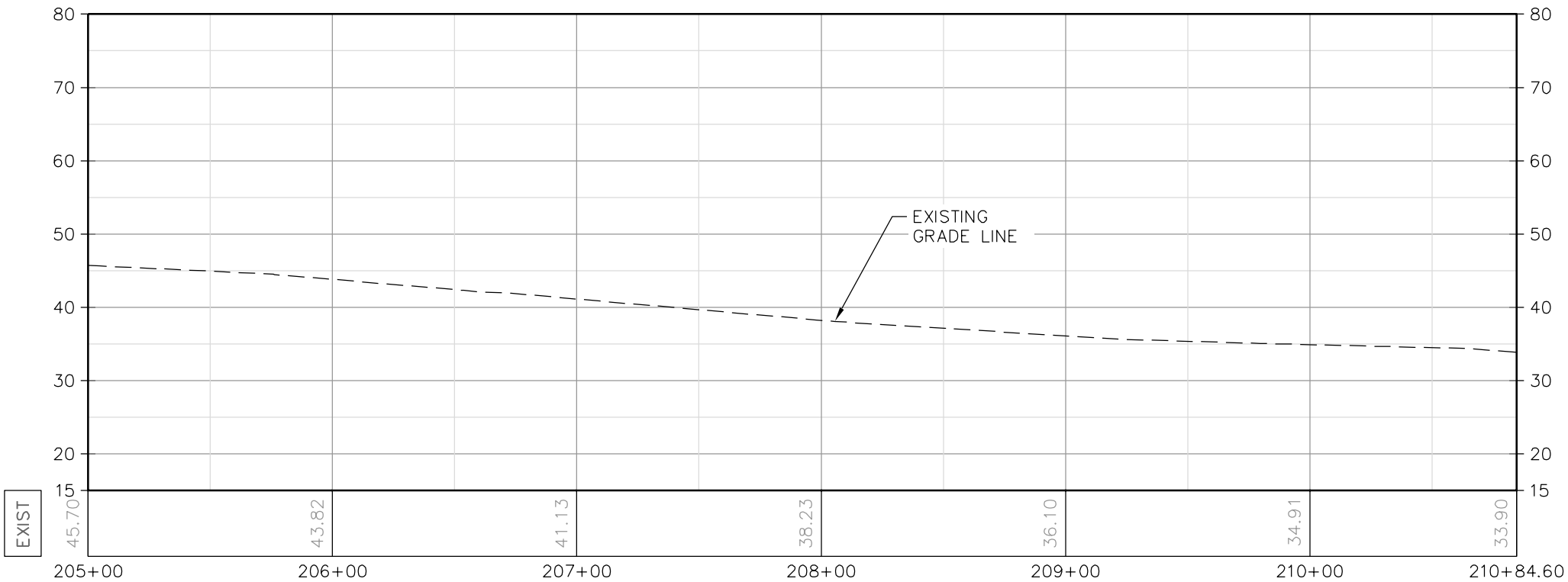
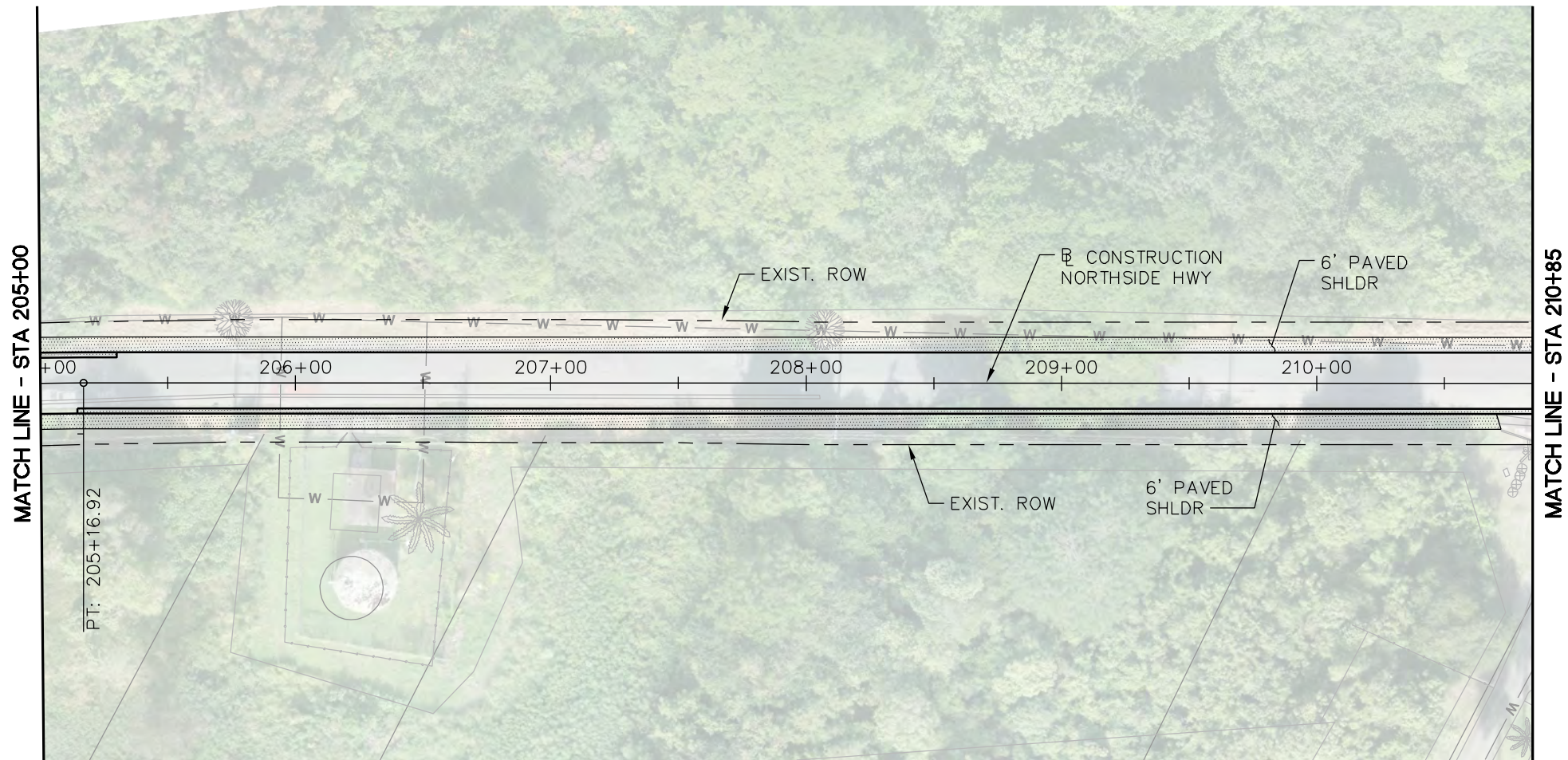
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SCALE:	1" = 60' (11"x17")	SHEET	18 OF 61
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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D19	


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PRINT DATE: \_\_\_\_\_

REV. NO. \_\_\_\_\_  
REV. DATE: \_\_\_\_\_

**LEGEND**


 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



0 60' 120'  
HORIZONTAL SCALE: 1"=60'

0 20' 40'  
VERTICAL SCALE: 1"=20'

  
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UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**  
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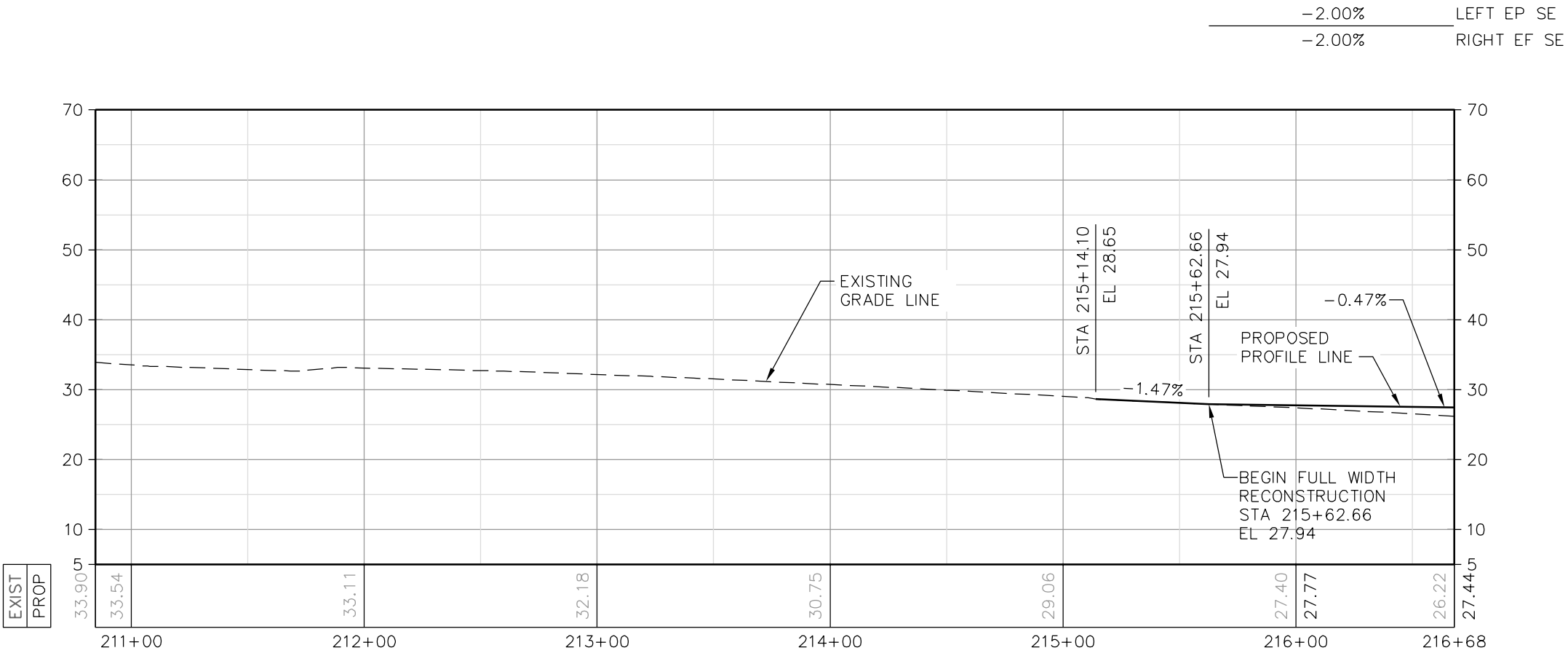
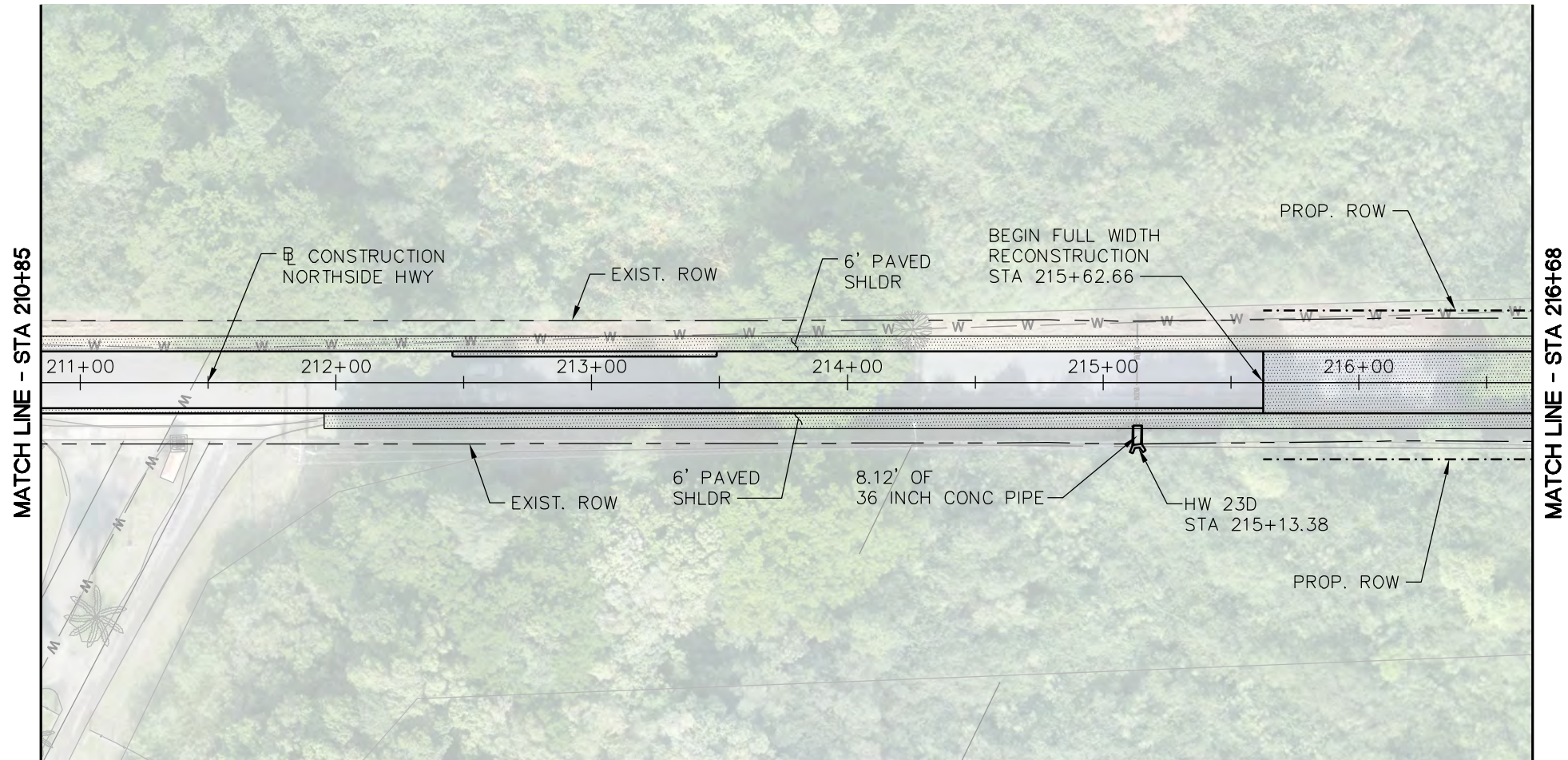
SCALE: 1" = 60' (11"x17")

SHEET  
19 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D20	

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REV. DATE: \_\_\_\_\_

**LEGEND**

[Pattern Box] DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**

0 60' 120'

HORIZONTAL SCALE: 1"=60'

0 20' 40'

VERTICAL SCALE: 1"=20'

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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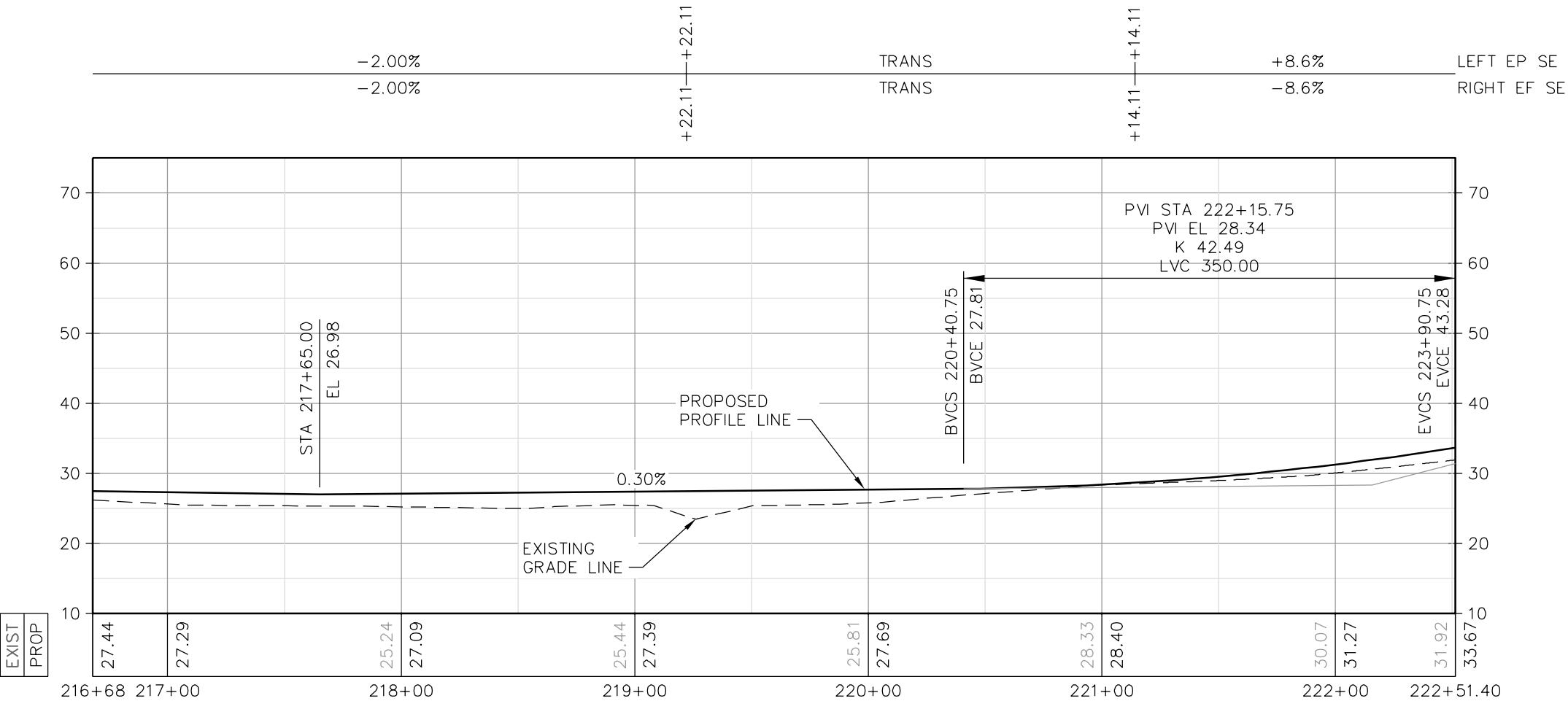
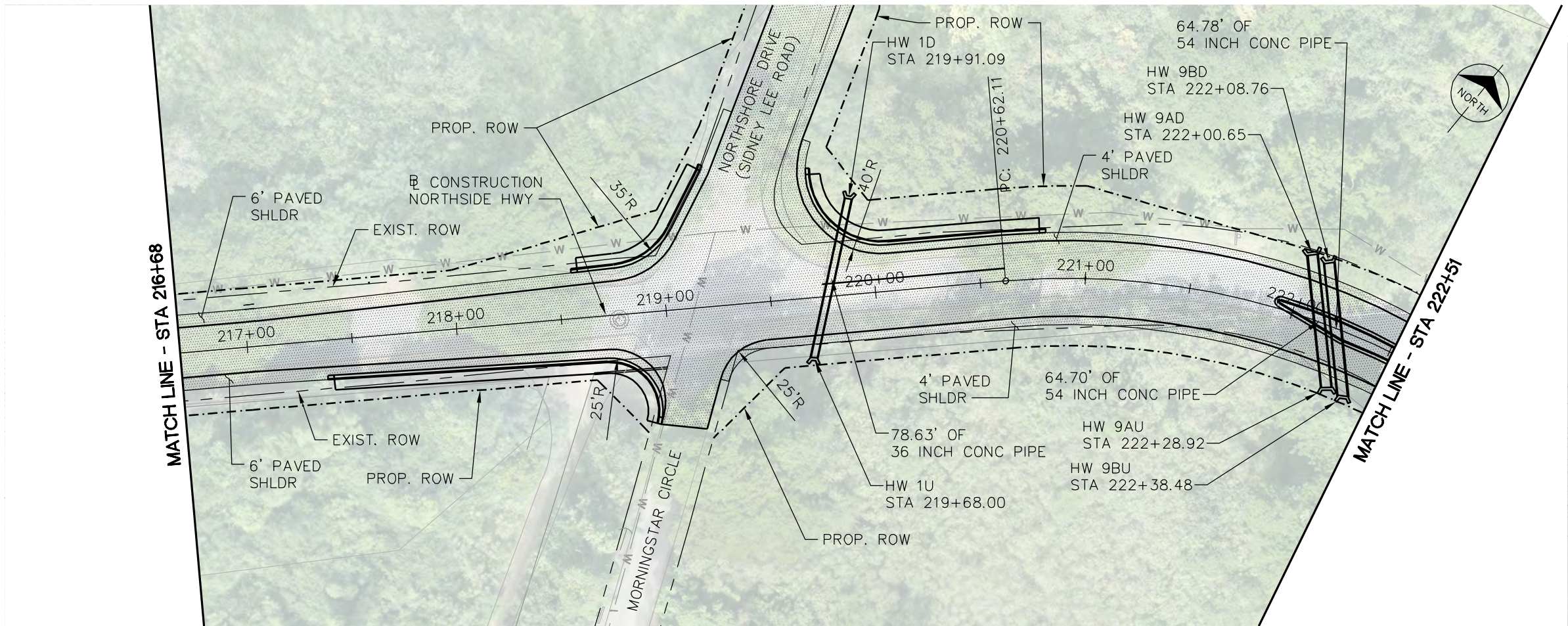
SCALE: 1" = 60' (11"x17")

SHEET  
20 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



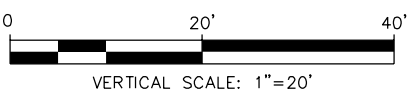
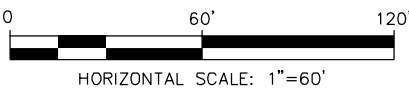
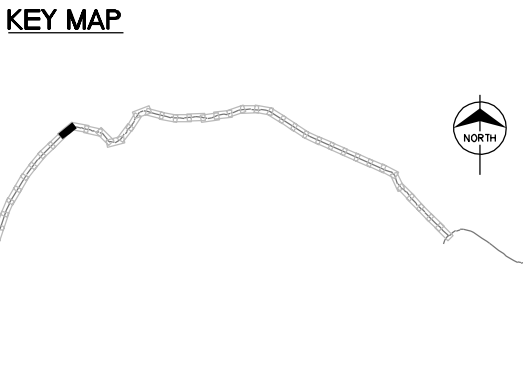
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STATE	ISLAND	CONTRACT	SHEET NO.
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			REV. DATE: _____

**LEGEND**

DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

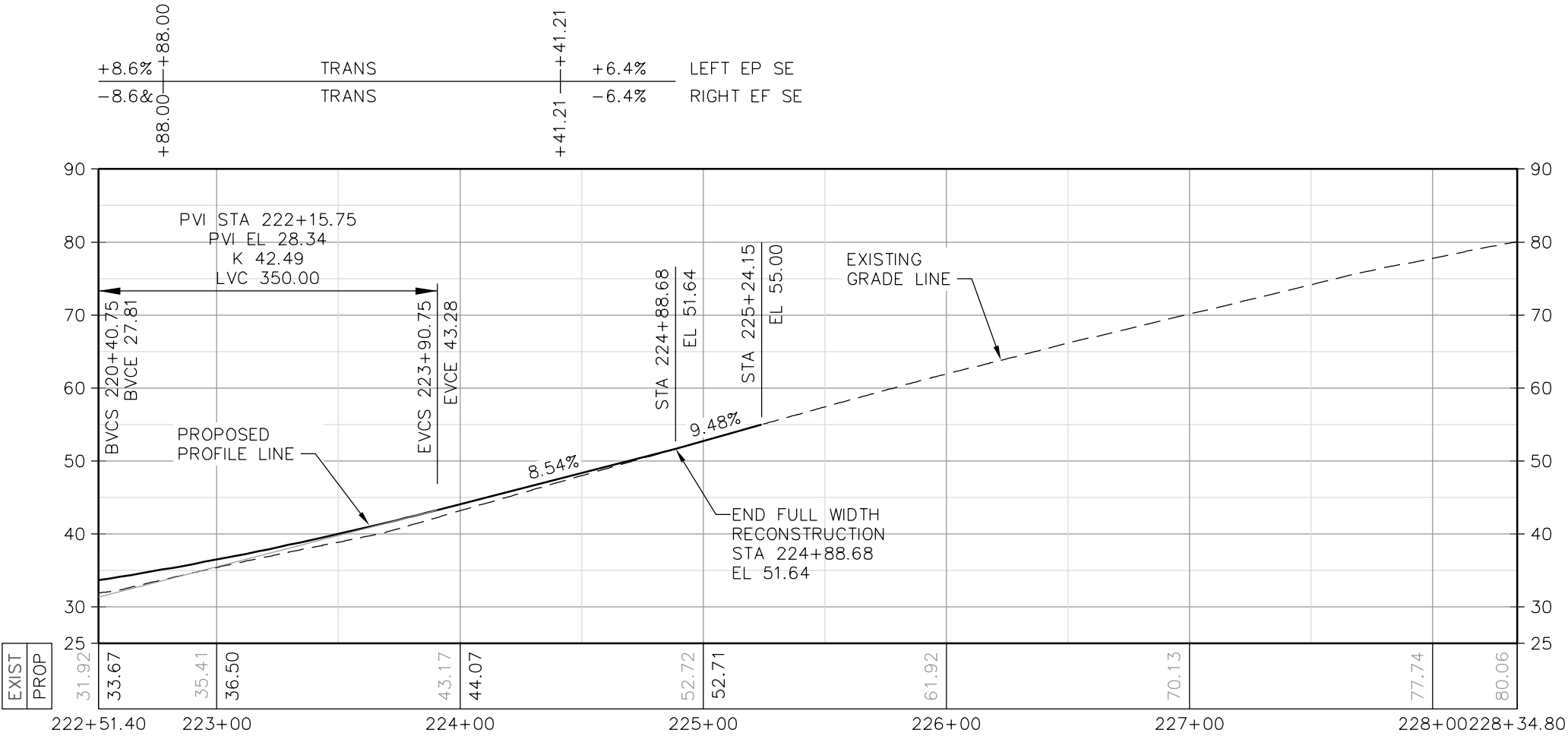
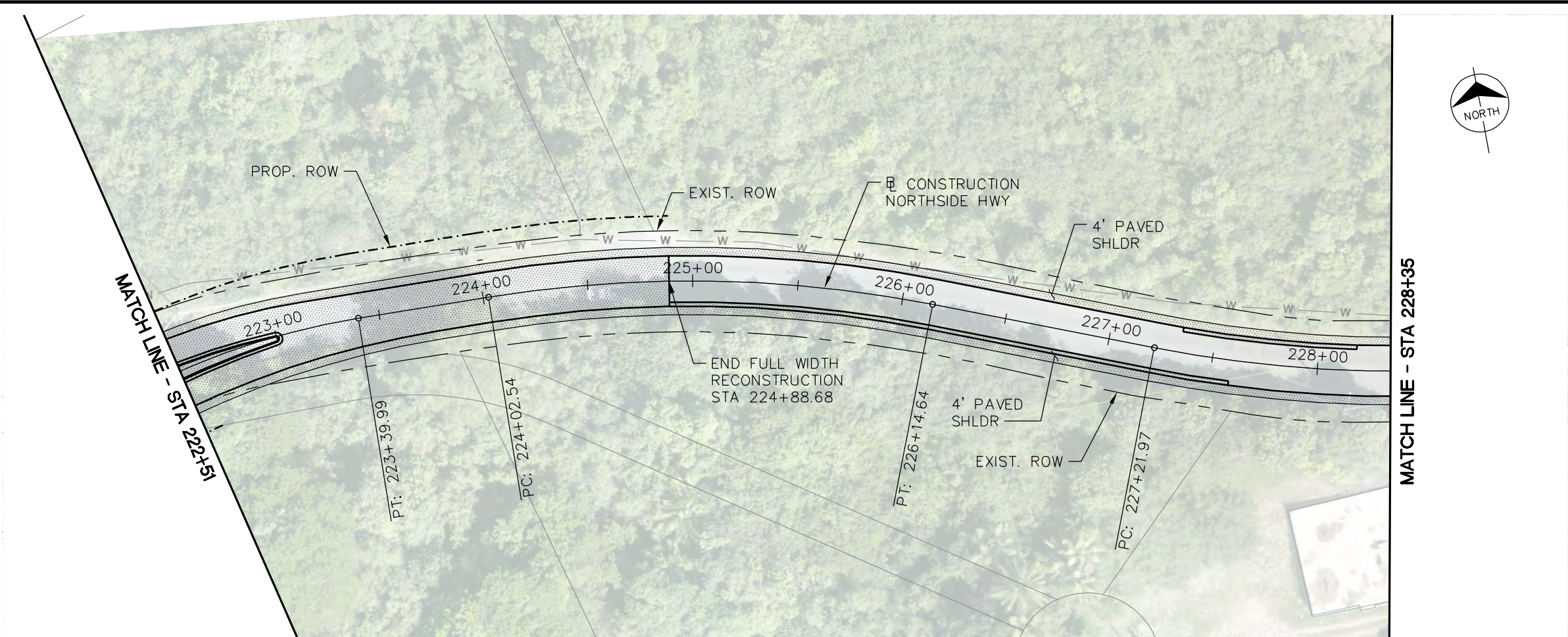
IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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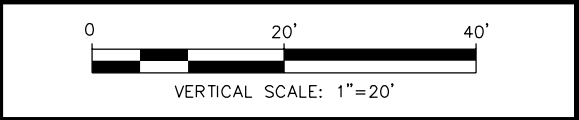
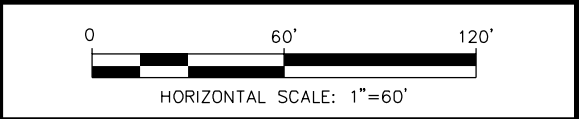
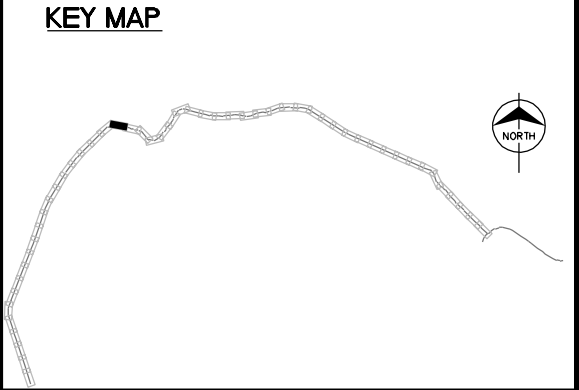


STATE	ISLAND	CONTRACT	SHEET NO.	
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REV. DATE: _____			

**LEGEND**

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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

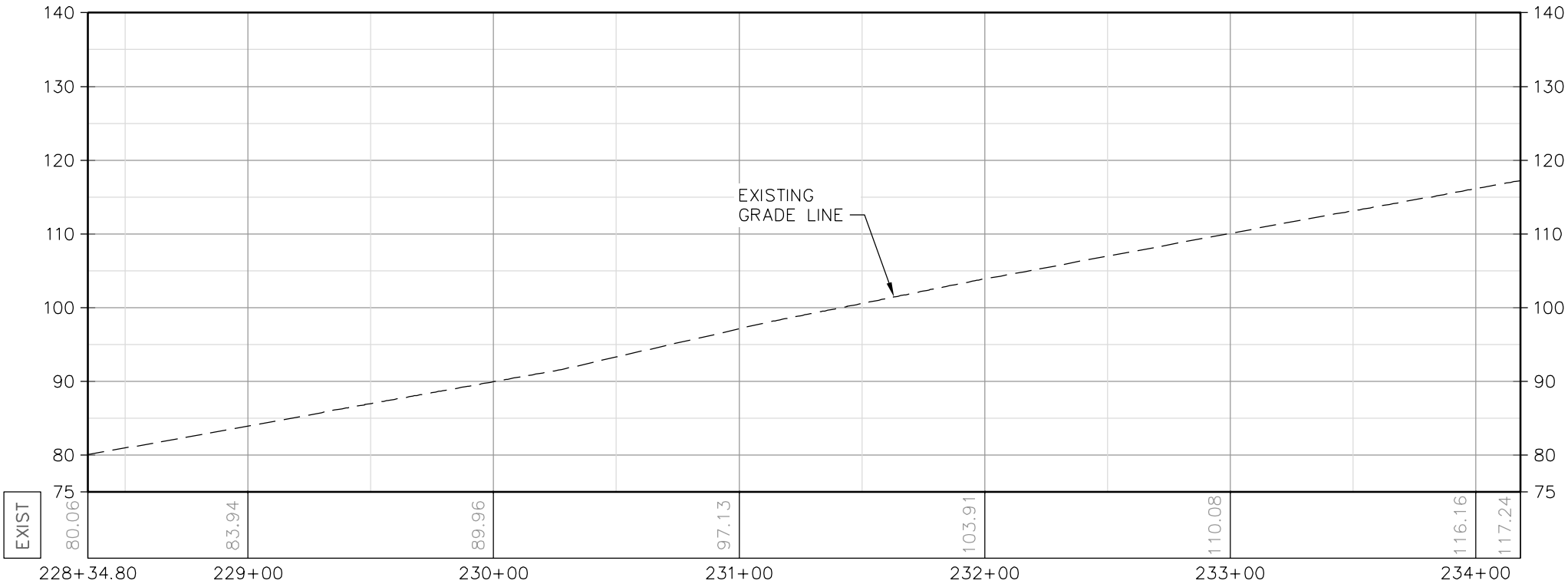
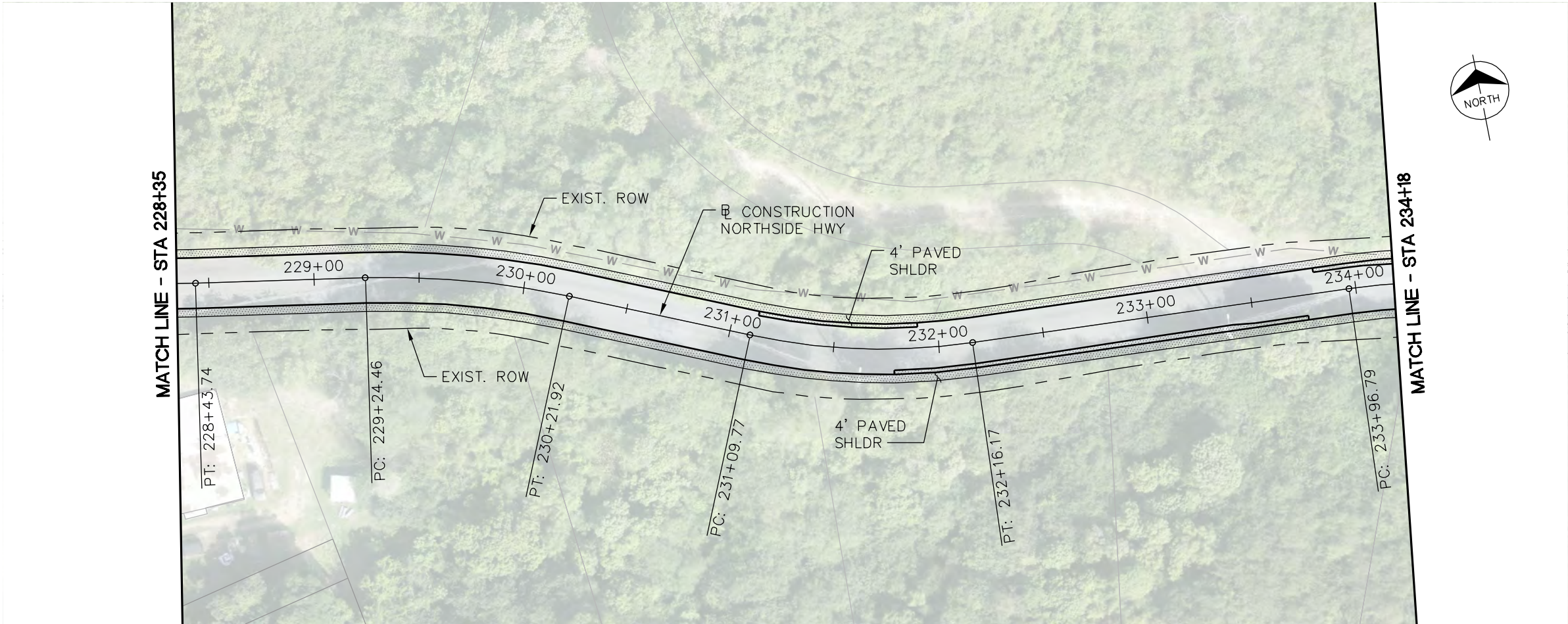
SCALE: 1" = 60' (11"x17")	SHEET 22 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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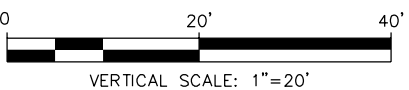
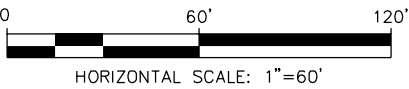
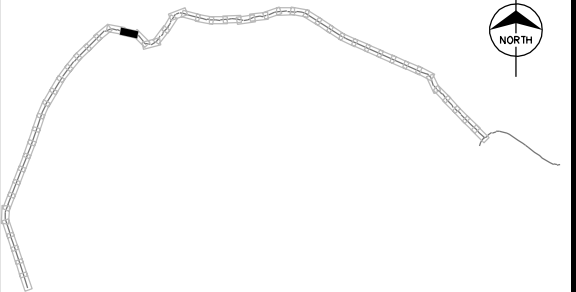


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**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

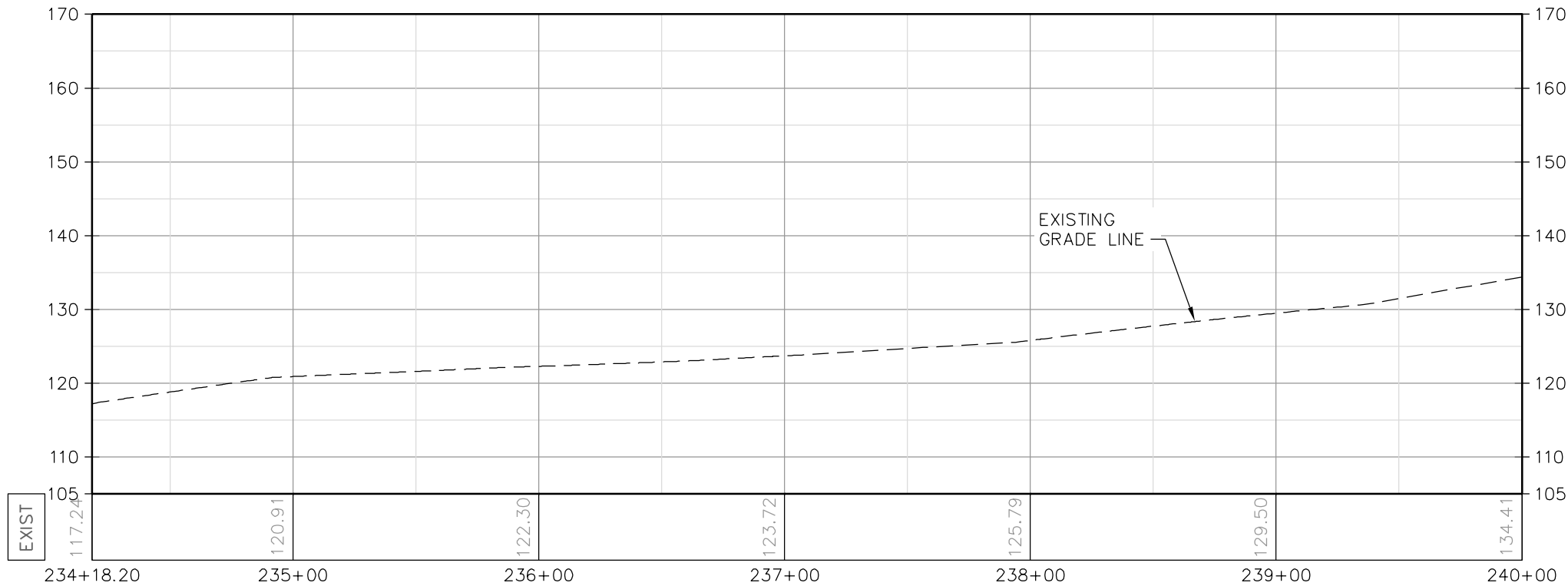
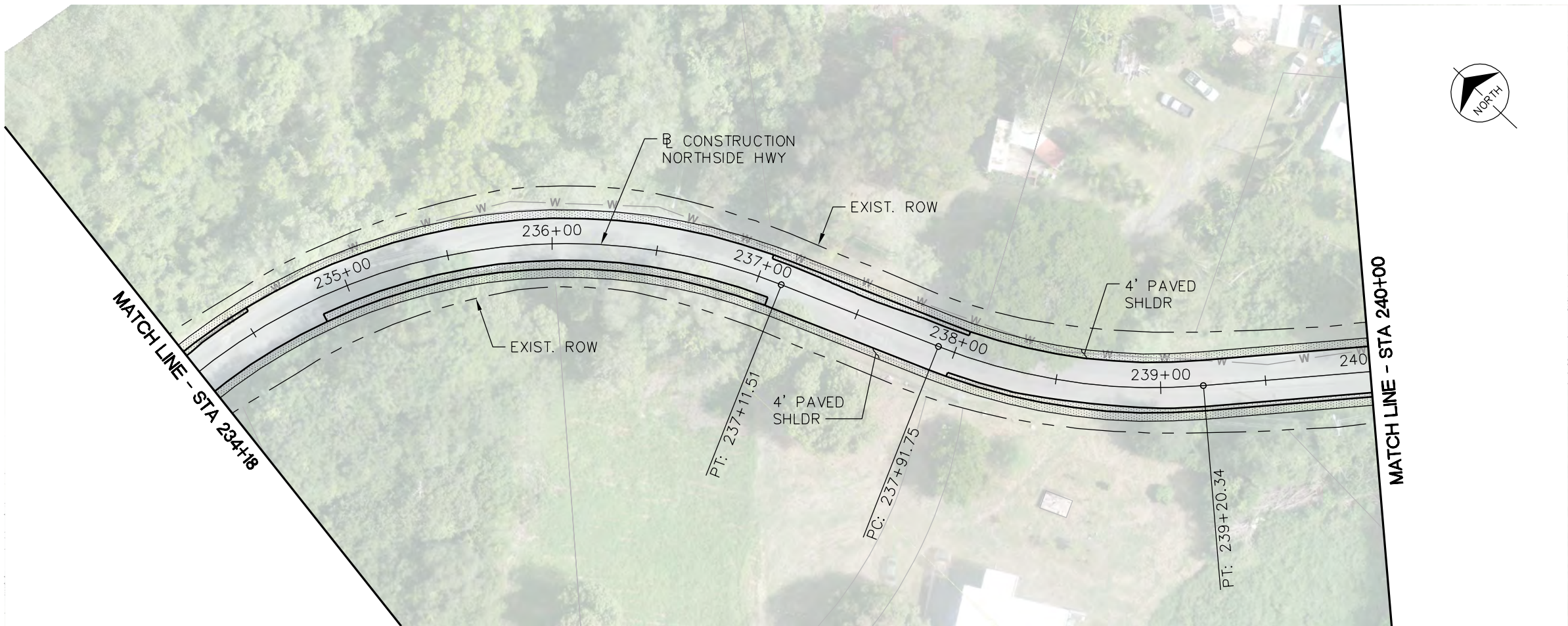
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SCALE:	1" = 60' (11"x17")	SHEET	23 OF 61
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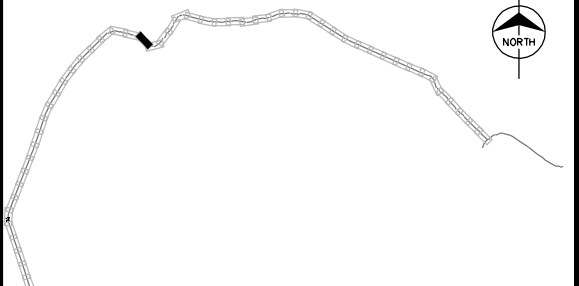
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REV. DATE: \_\_\_\_\_

**LEGEND**


 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



0 60' 120'  
HORIZONTAL SCALE: 1"=60'

0 20' 40'  
VERTICAL SCALE: 1"=20'



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UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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SCALE: 1" = 60' (11"x17")

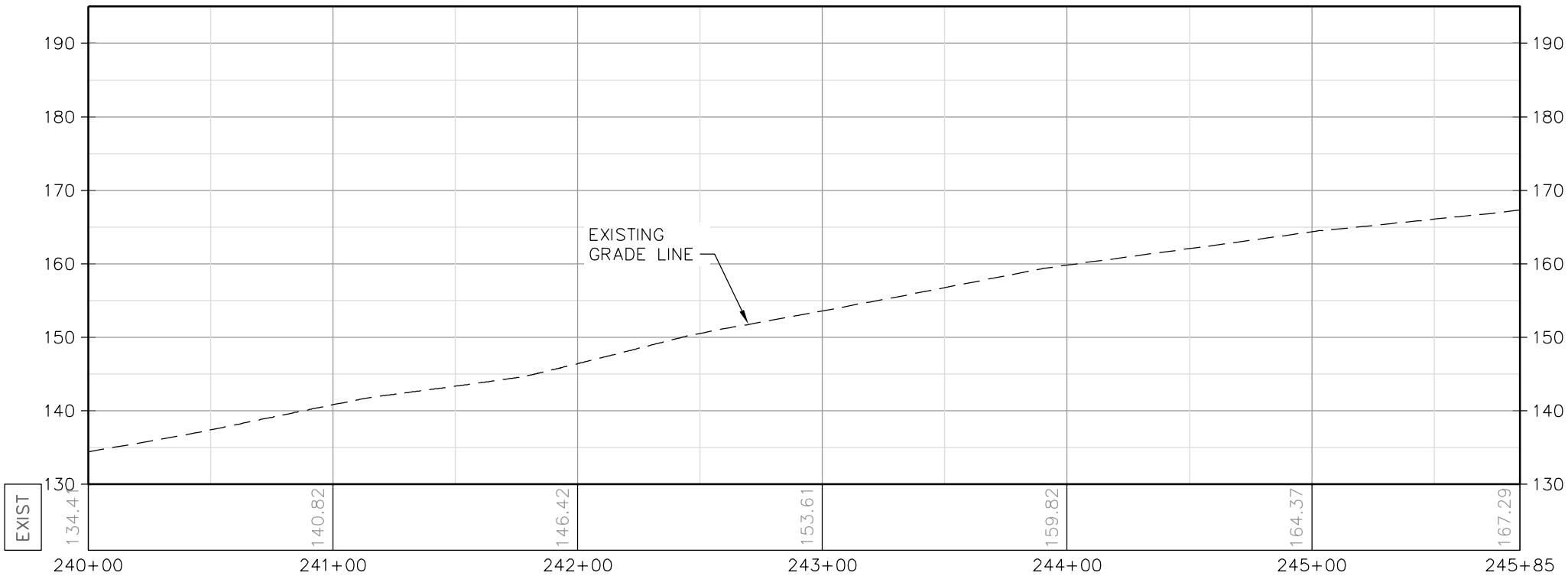
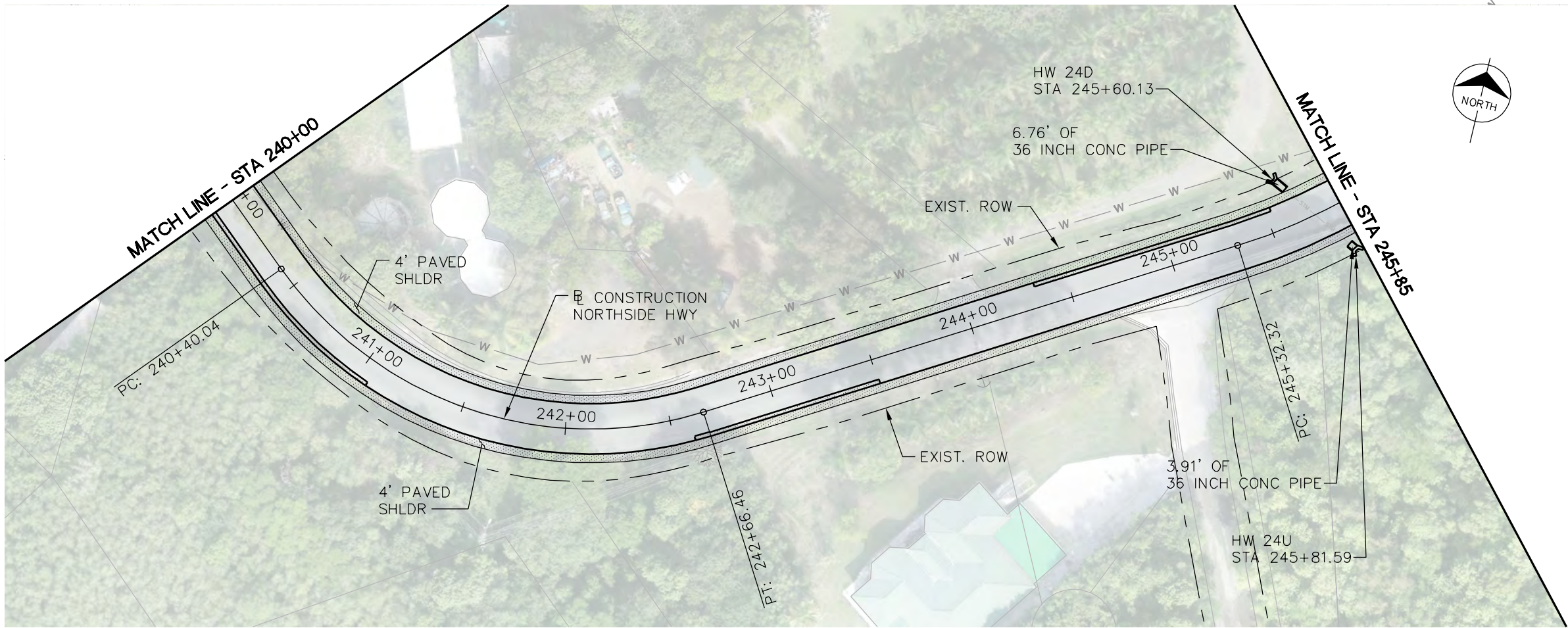
SHEET  
24 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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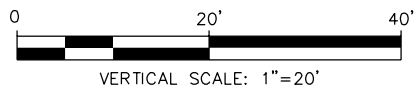
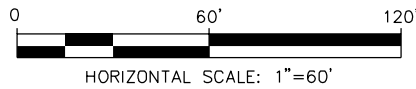
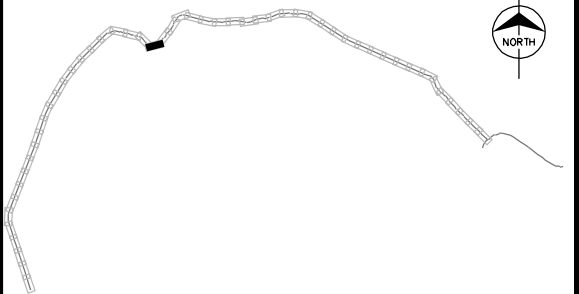
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LEGEND

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

KEY MAP



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

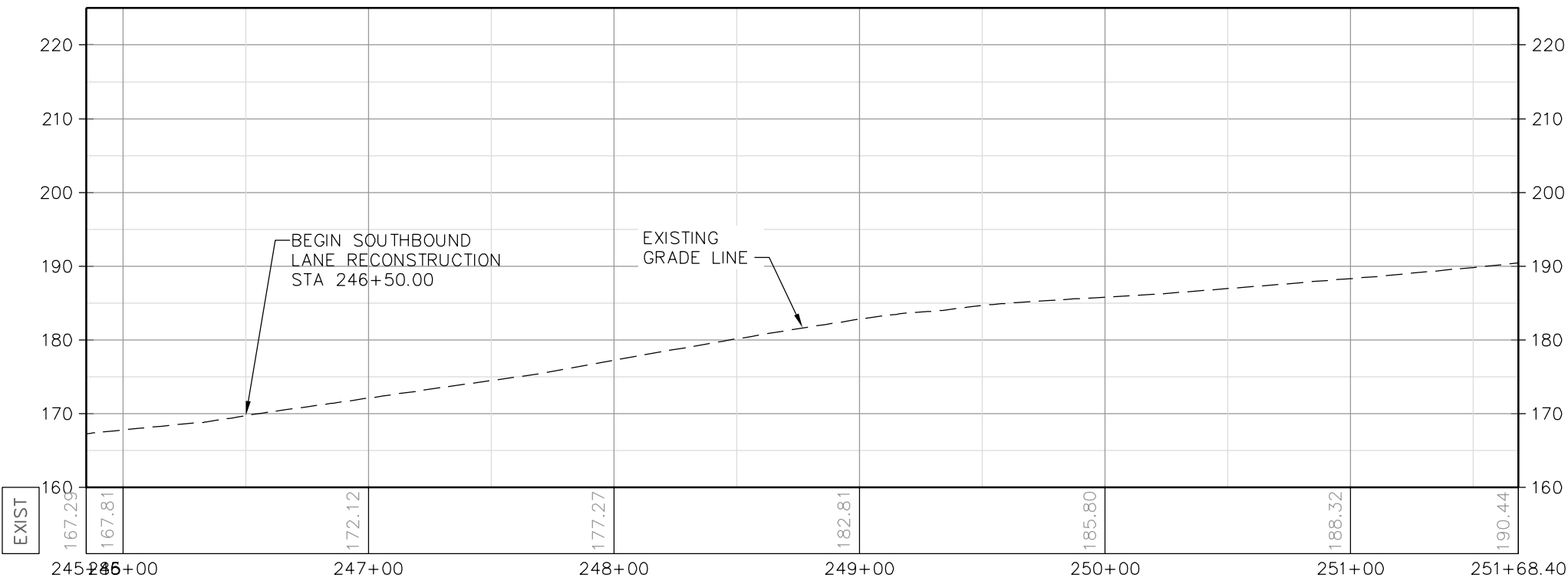
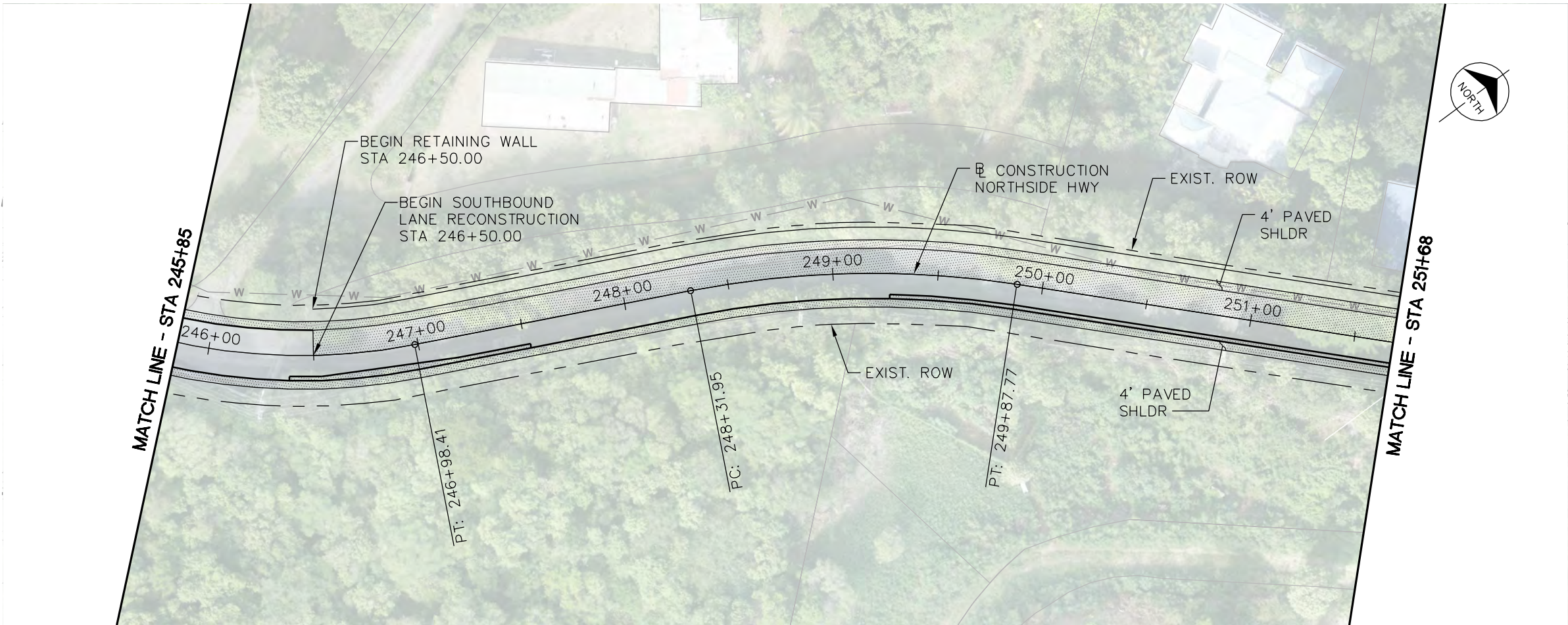
SCALE: 1" = 60' (11"x17")	SHEET 25 OF 61
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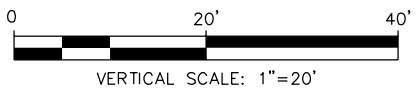
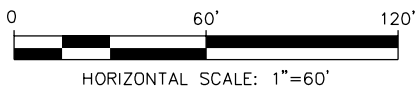
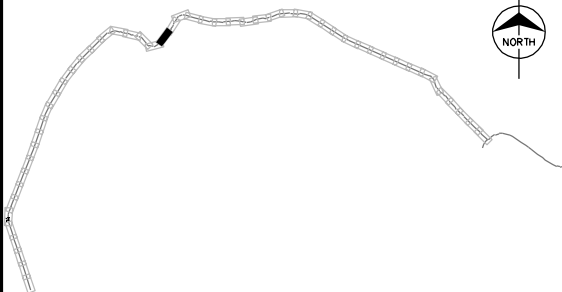


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**LEGEND**

■ DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

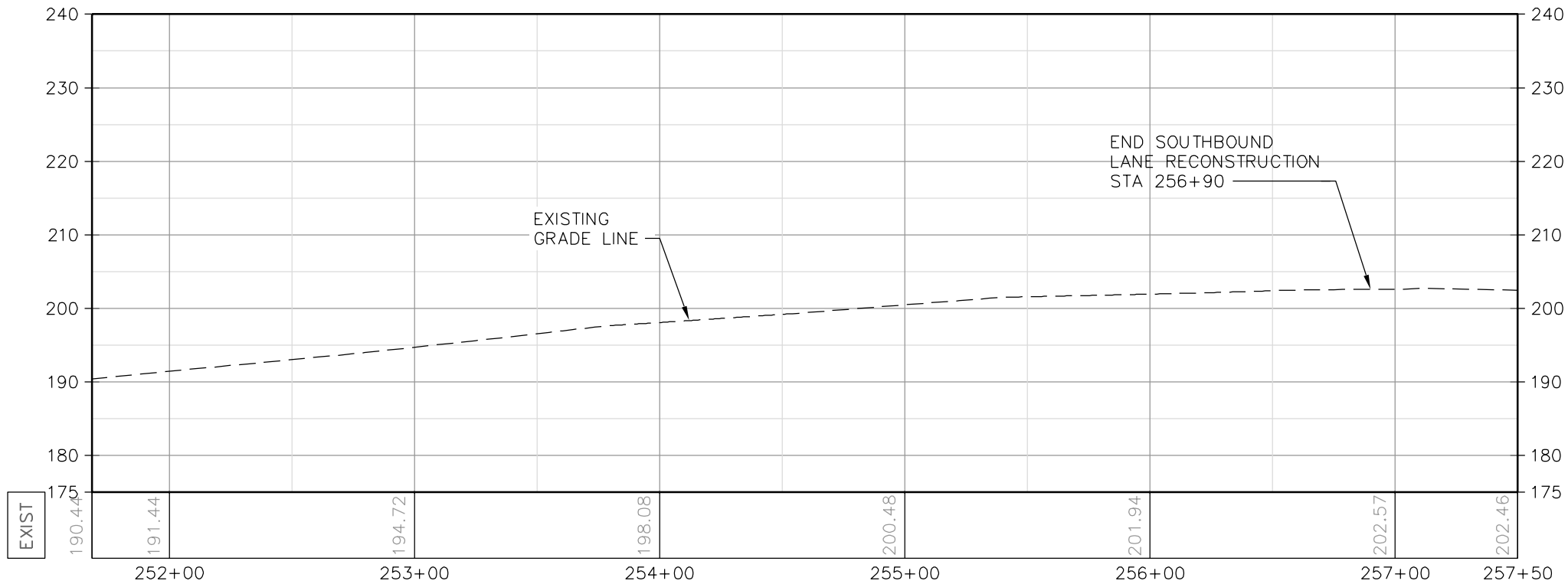
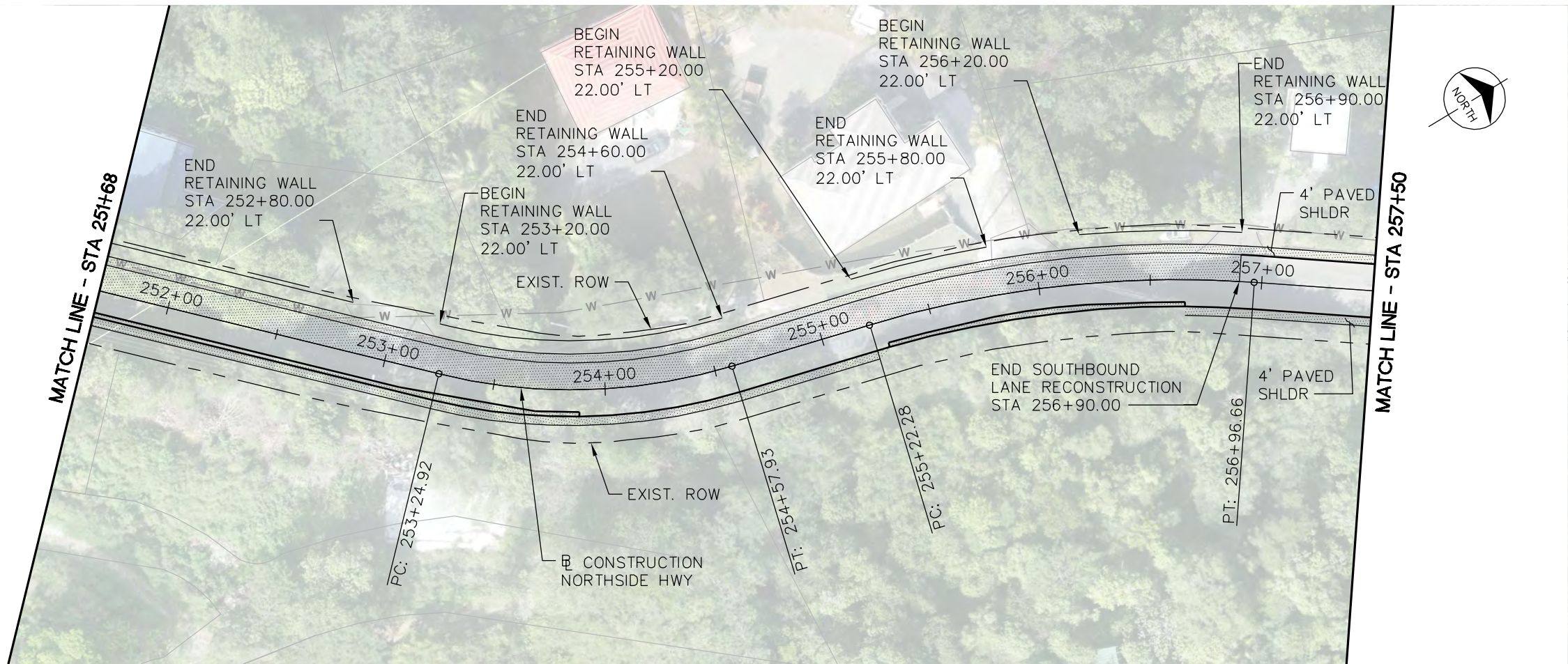
SCALE:	1" = 60' (11"x17")	SHEET	26 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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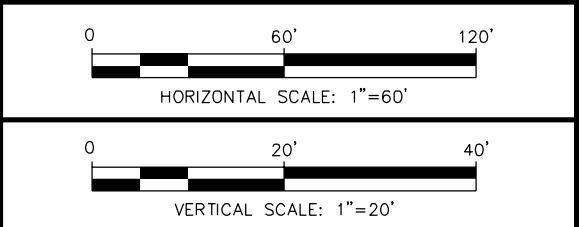
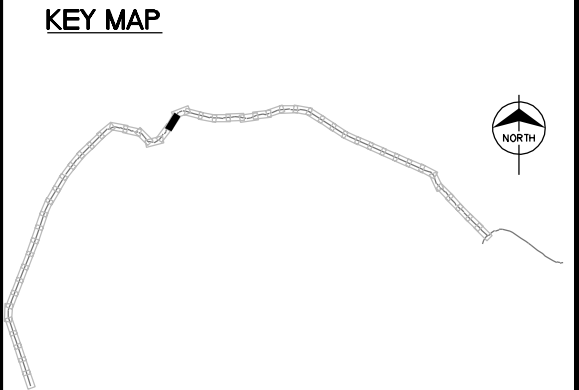
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STATE	ISLAND	CONTRACT	SHEET NO.	
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**LEGEND**

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WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**  
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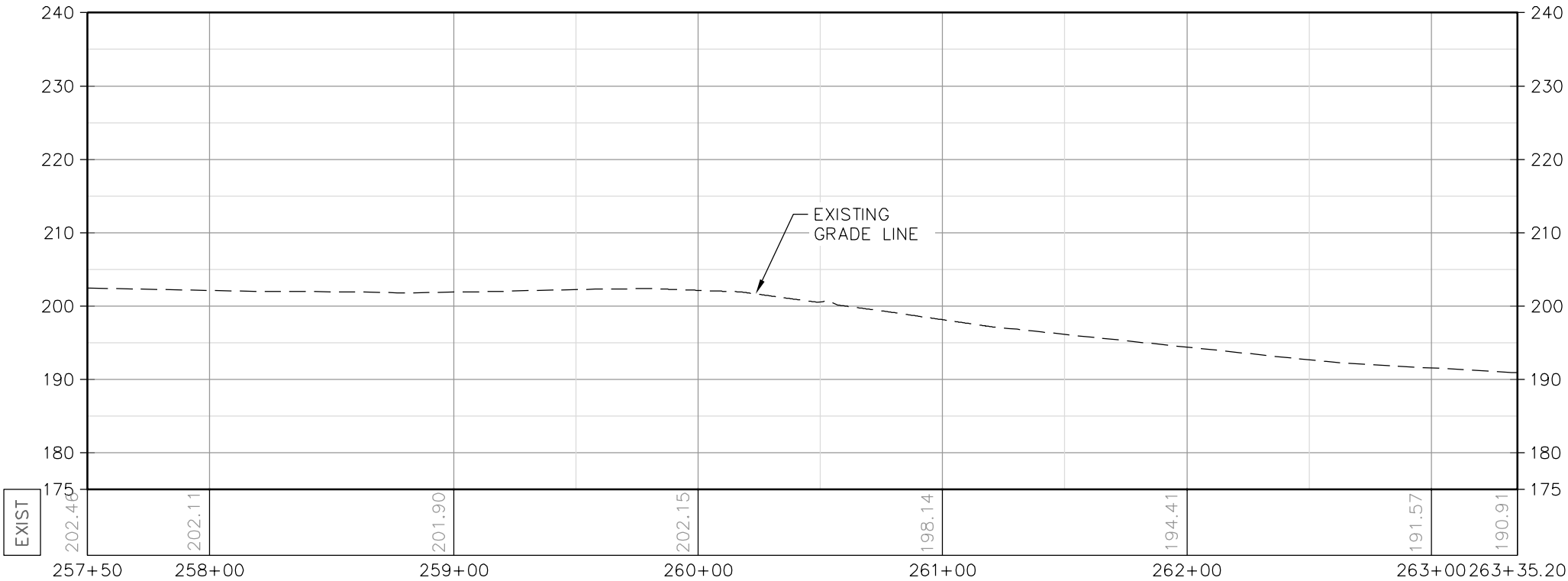
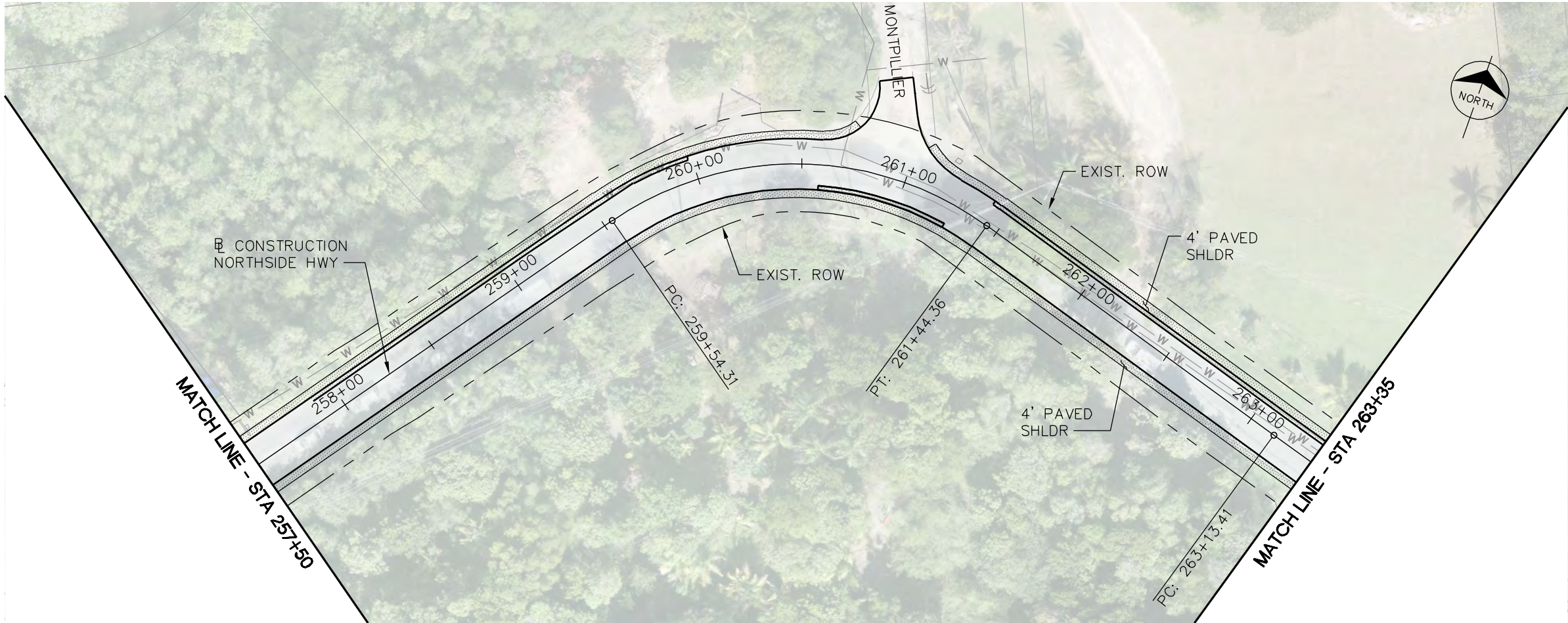
SCALE: 1" = 60' (11"x17")	SHEET 27 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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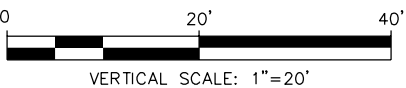
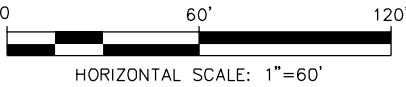
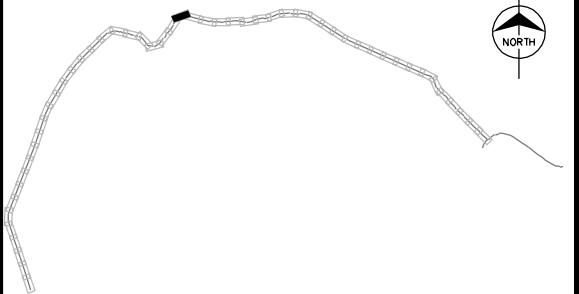


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**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

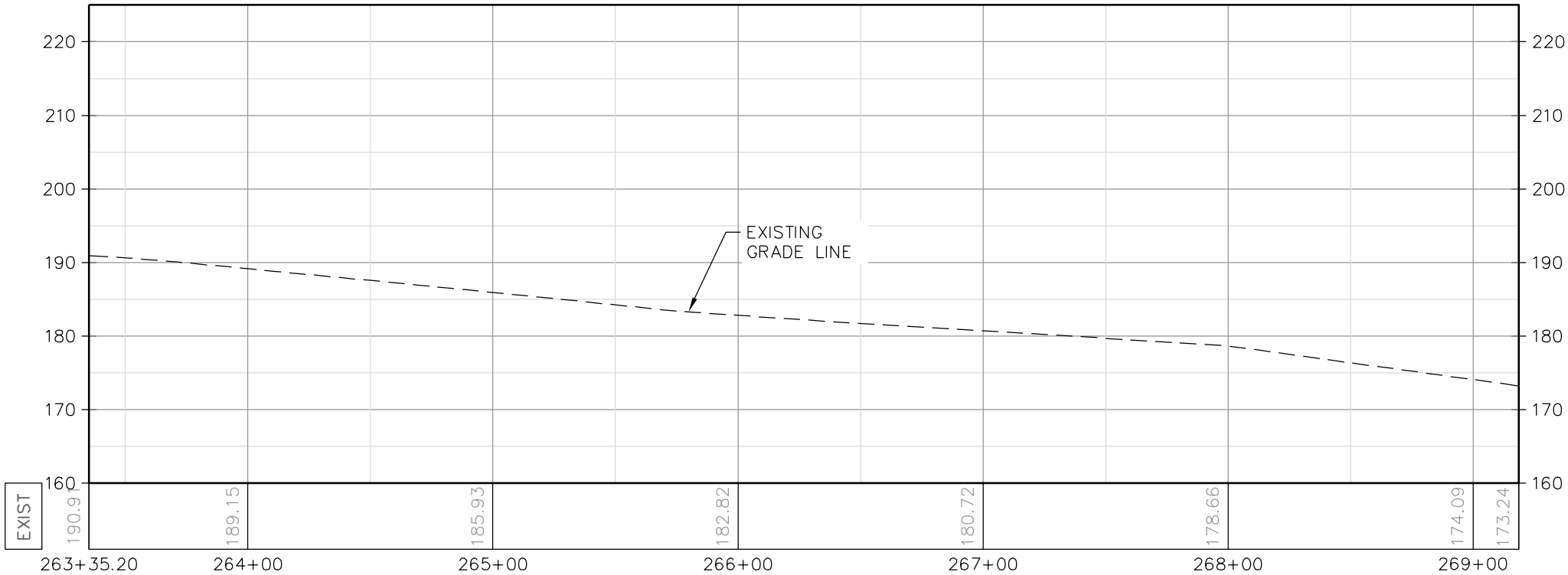
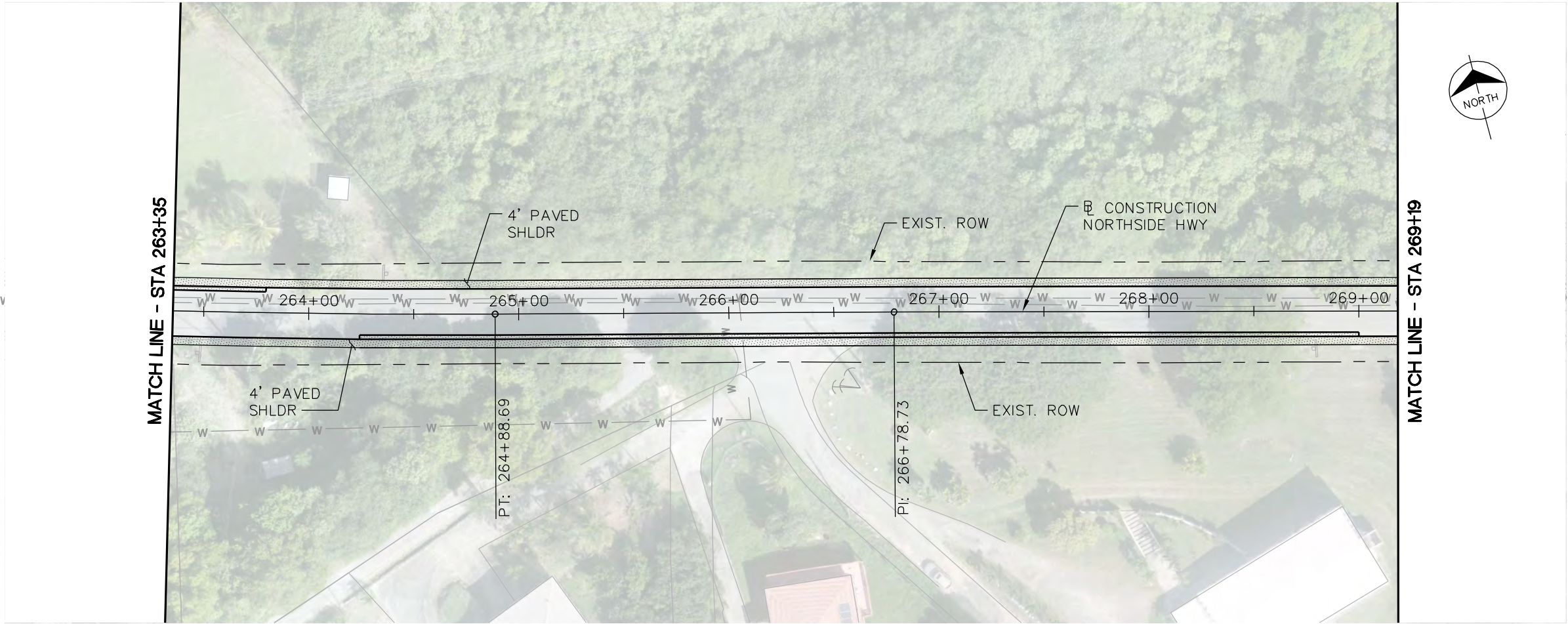
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SCALE: 1" = 60' (11"x17")	SHEET 28 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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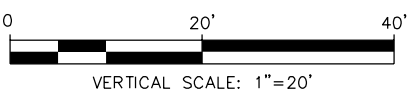
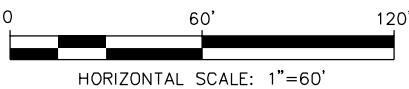
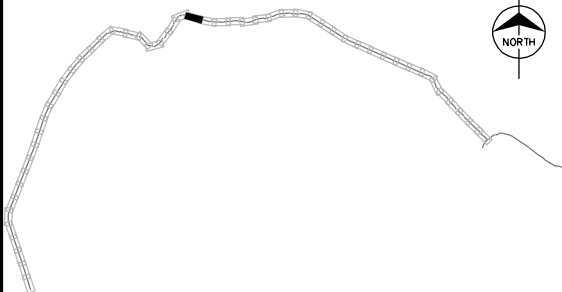


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**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**





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1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

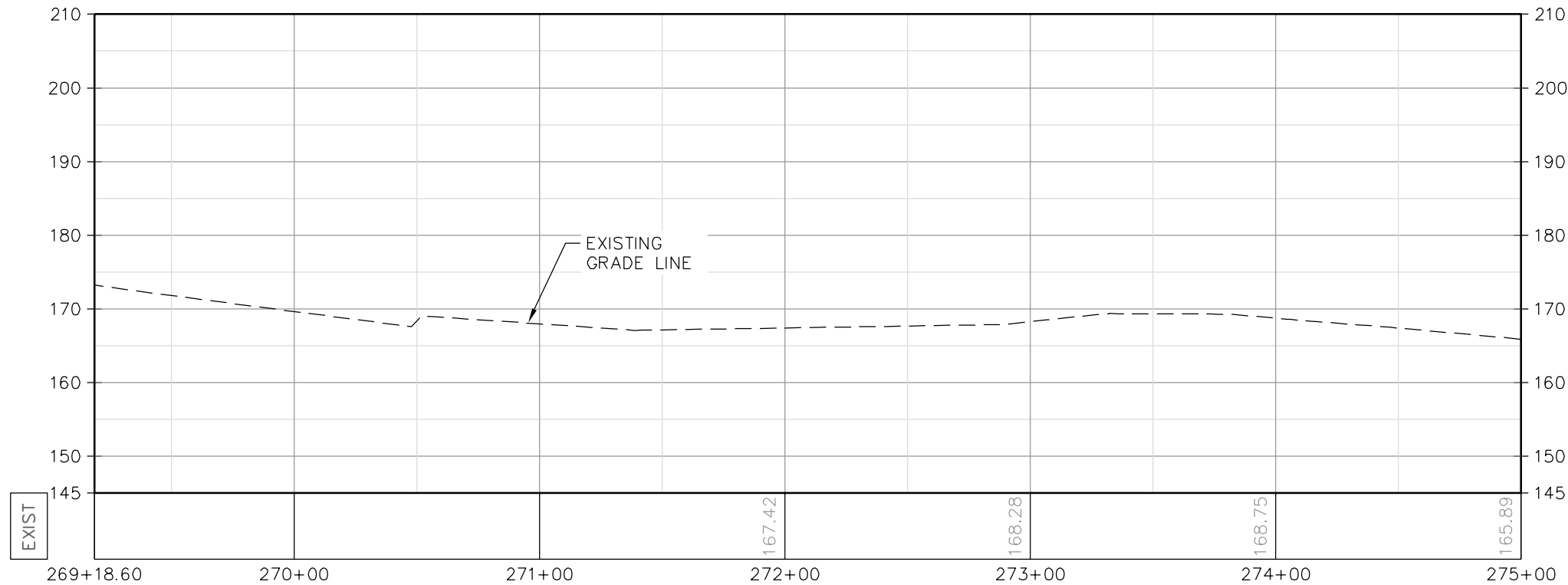
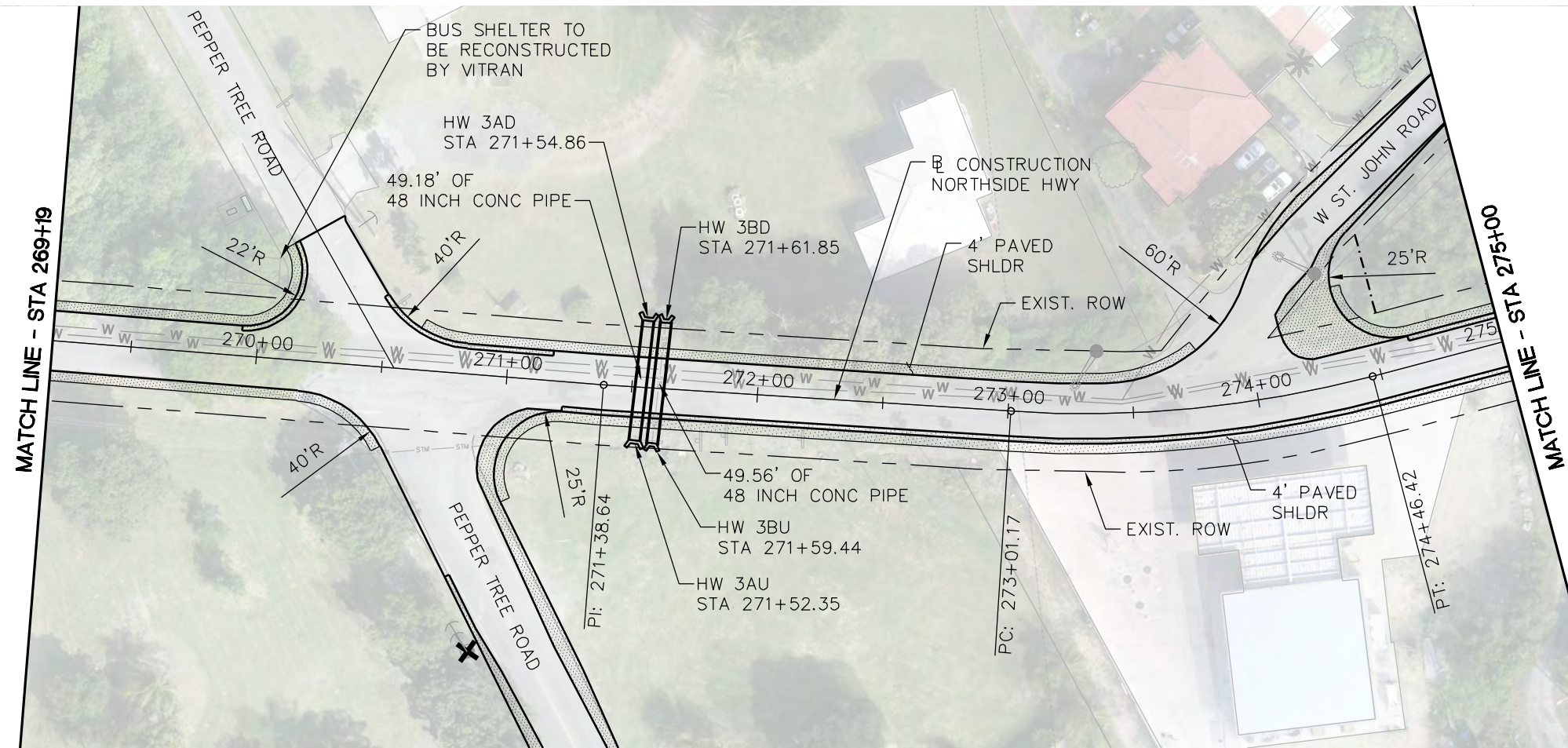
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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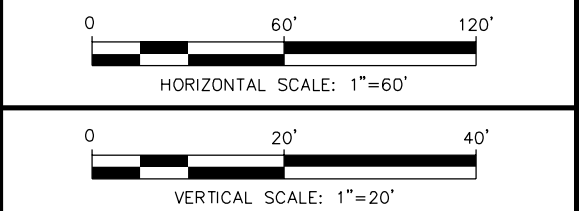
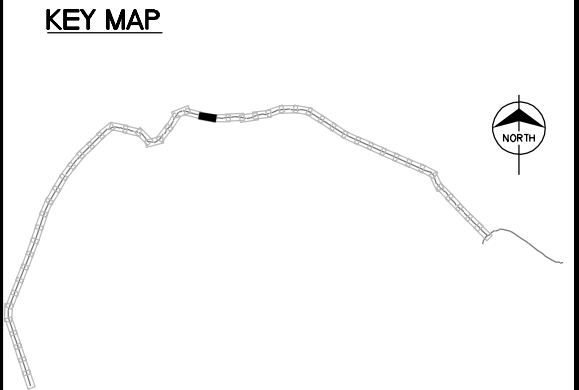
30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
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			DRAWN:	
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			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

■ DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



**Stanley Consultants INC.**

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WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

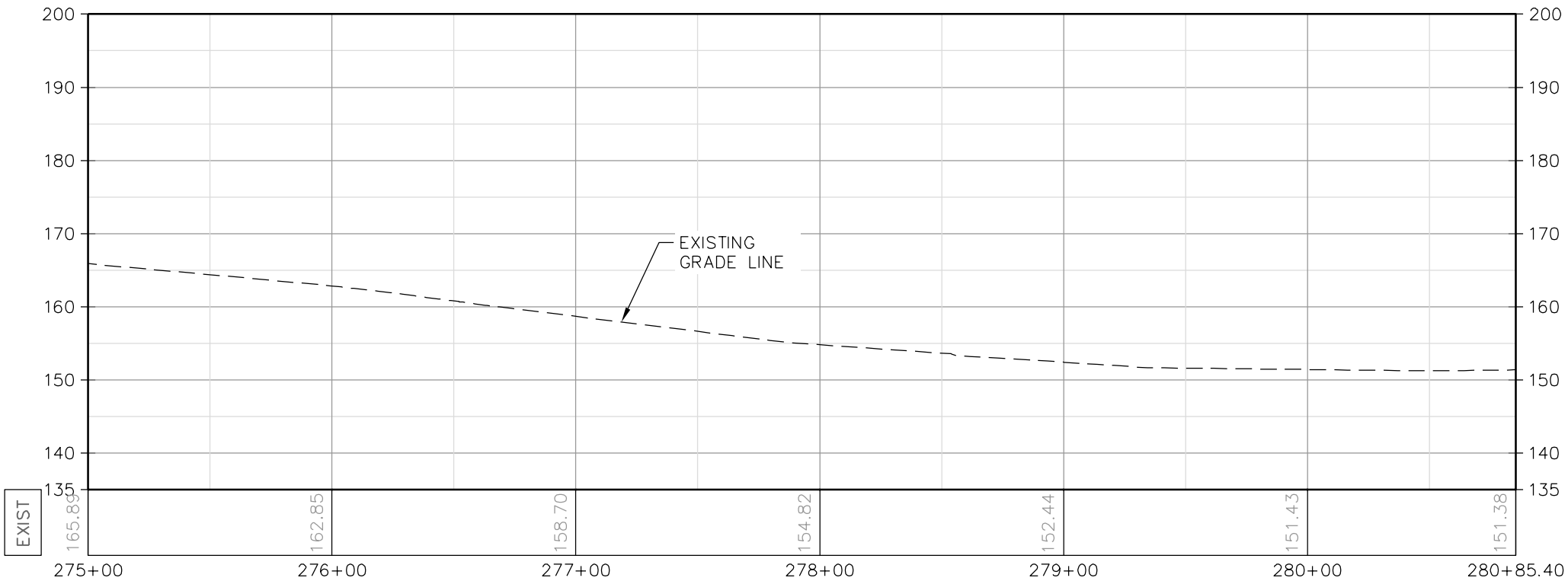
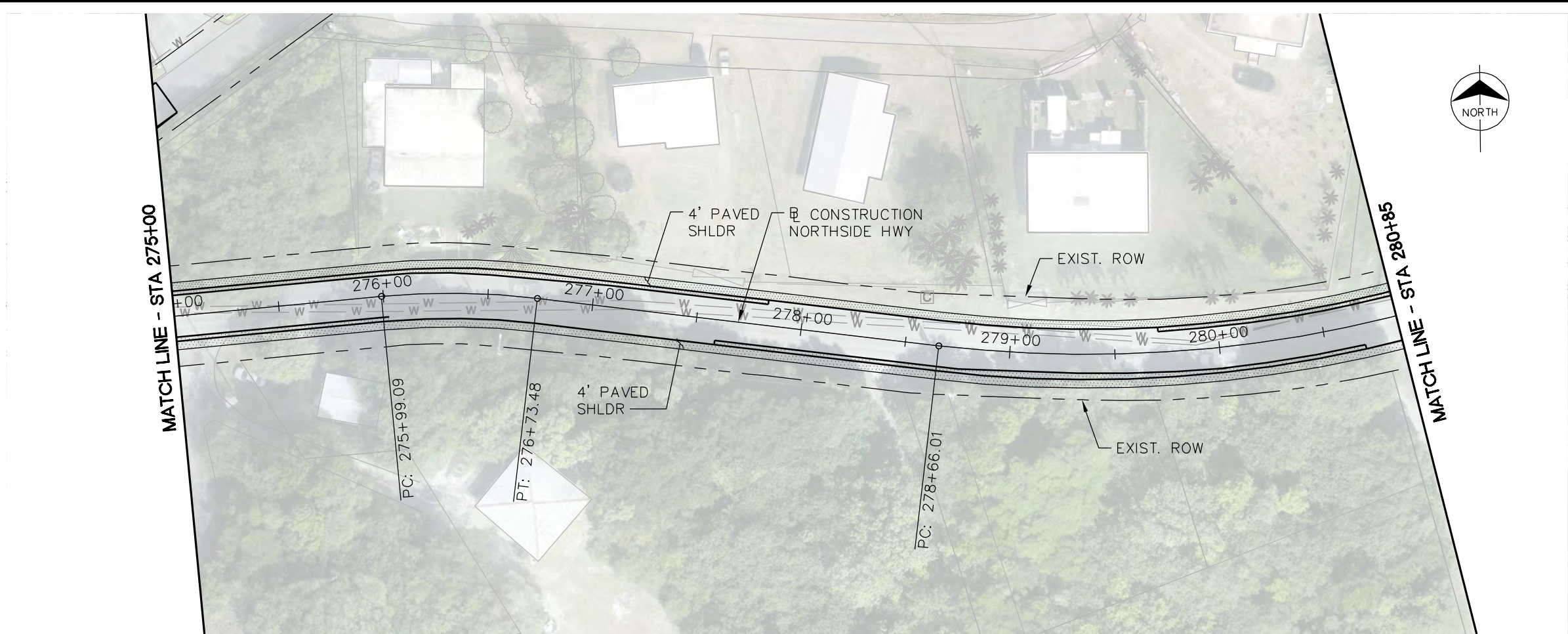
SCALE:	1" = 60' (11"x17")	SHEET	30 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D31	

ENGINEER: \_\_\_\_\_

DRAWN: \_\_\_\_\_


CHECKED: \_\_\_\_\_

PRINT DATE: \_\_\_\_\_

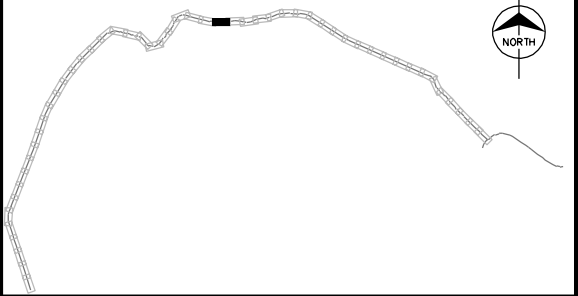
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REV. DATE: \_\_\_\_\_

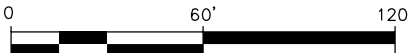
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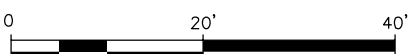
 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION


**KEY MAP**





  
HORIZONTAL SCALE: 1"=60'

  
VERTICAL SCALE: 1"=20'

  
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UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**  
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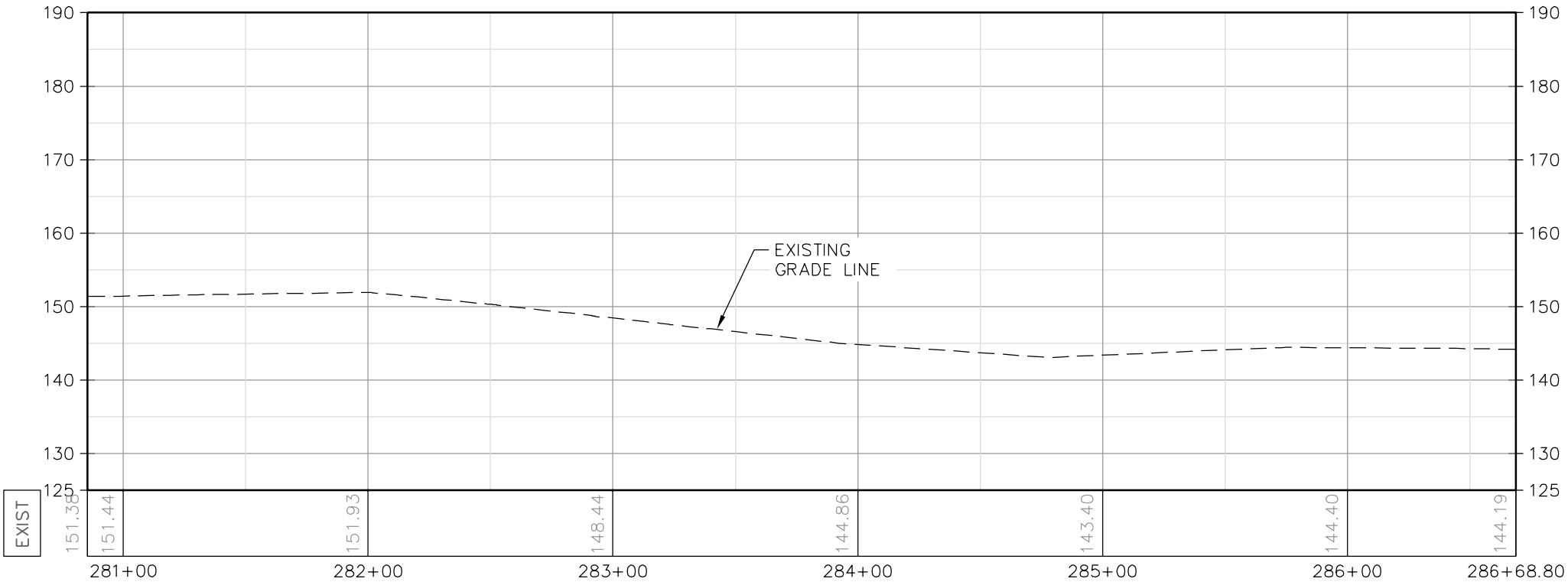
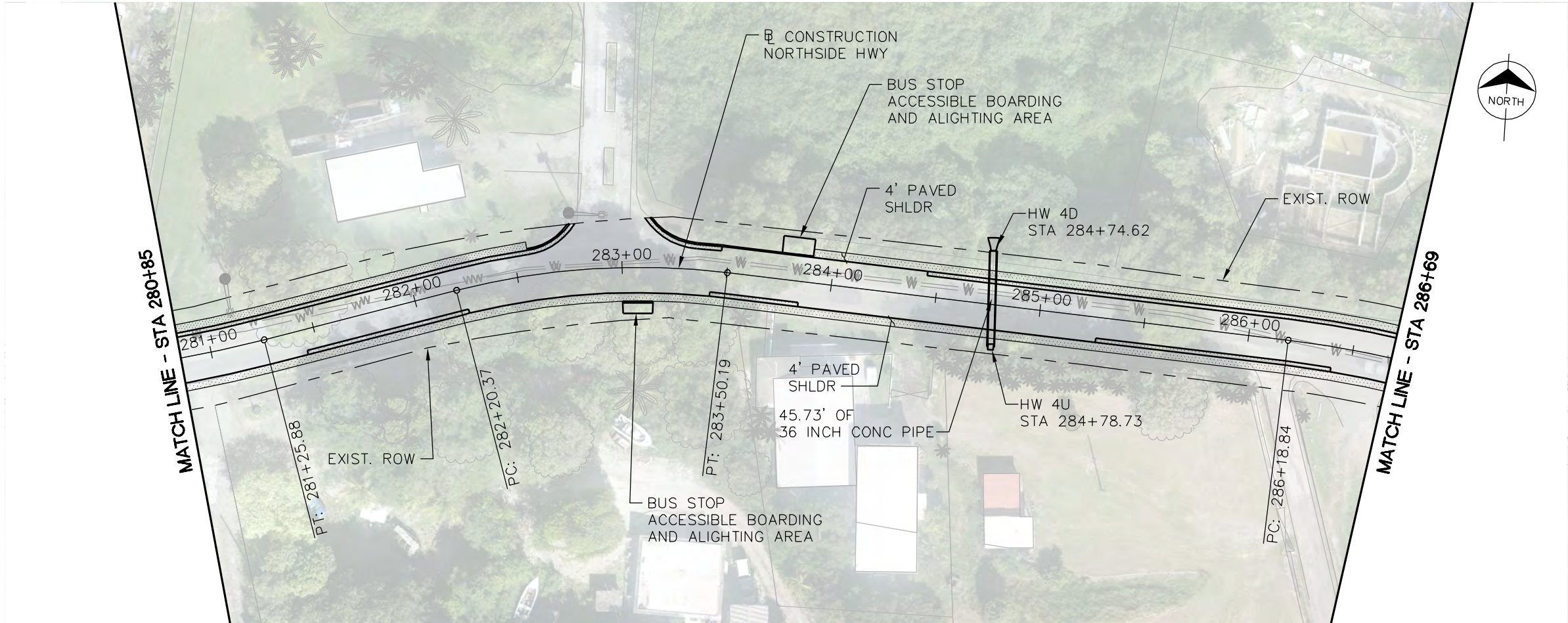
SCALE: 1" = 60' (11"x17")

SHEET  
31 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



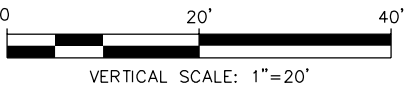
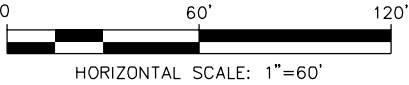
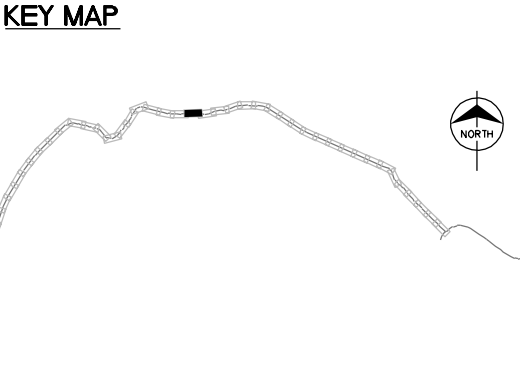
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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D32	
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			DRAWN:	
			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

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WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
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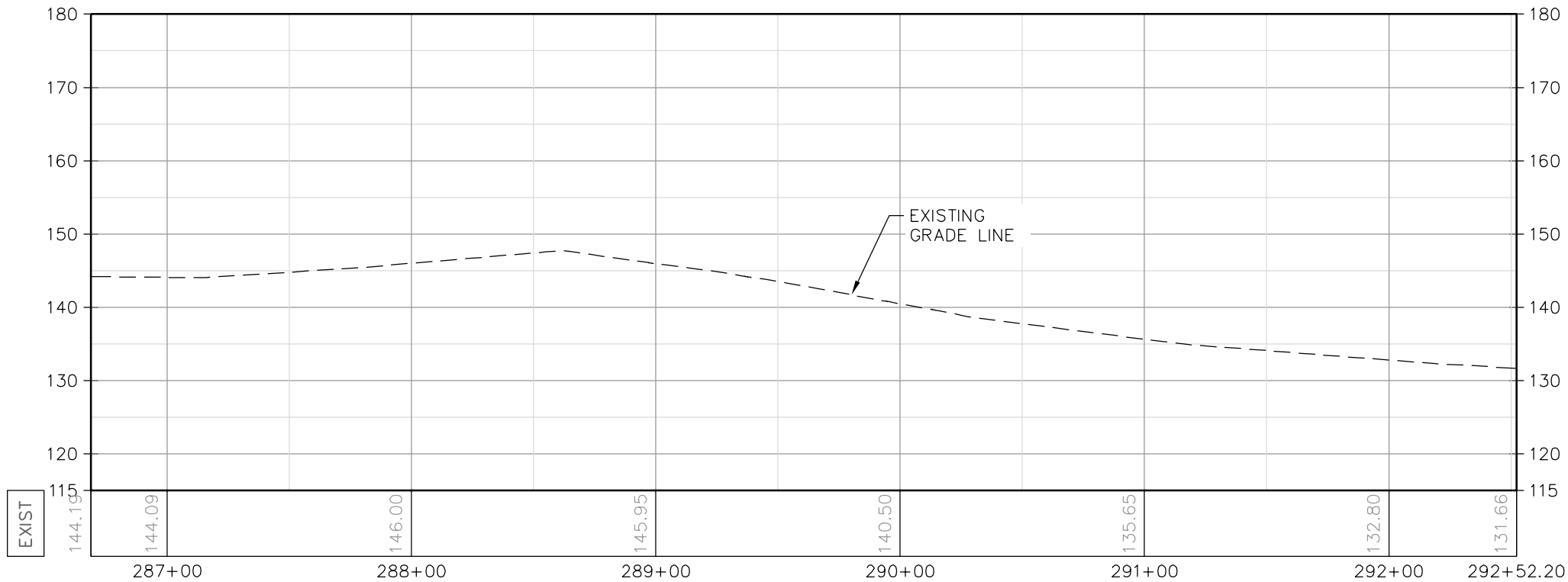
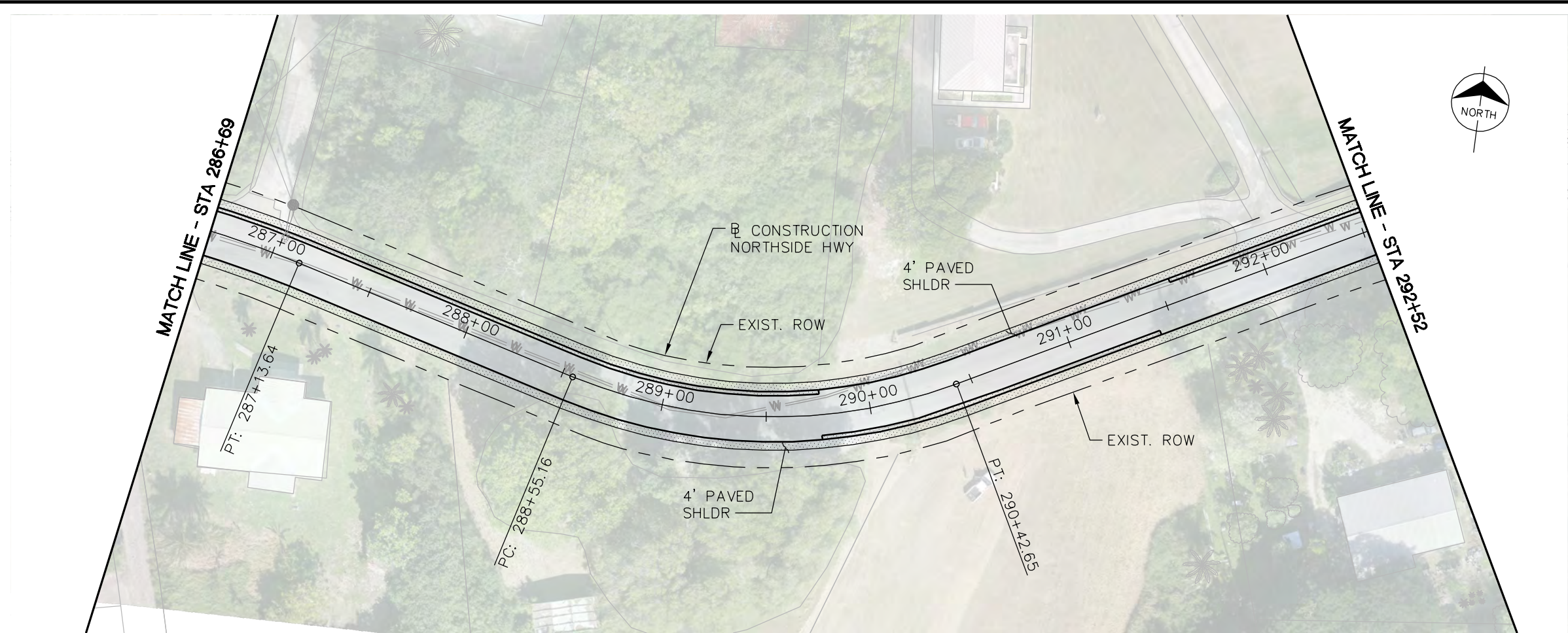
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



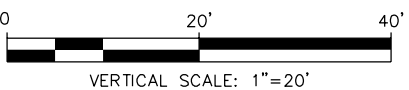
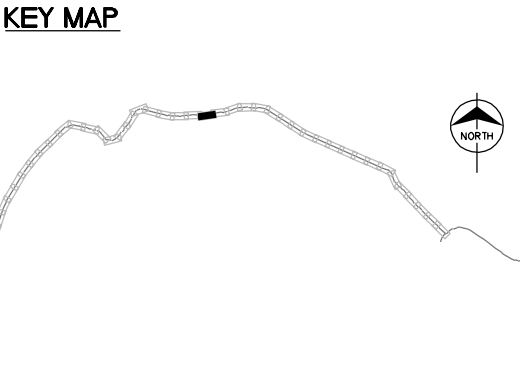
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STATE	ISLAND	CONTRACT	SHEET NO.	
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			REV. NO.	
			REV. DATE:	

**LEGEND**

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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

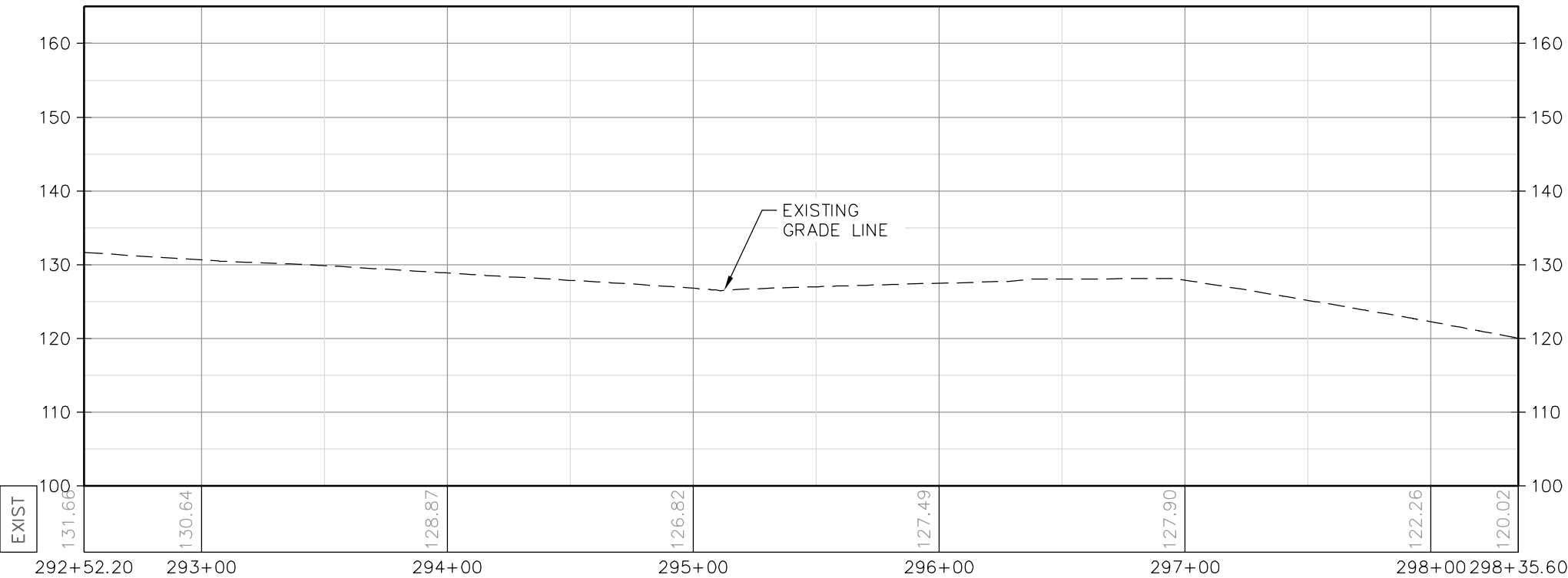
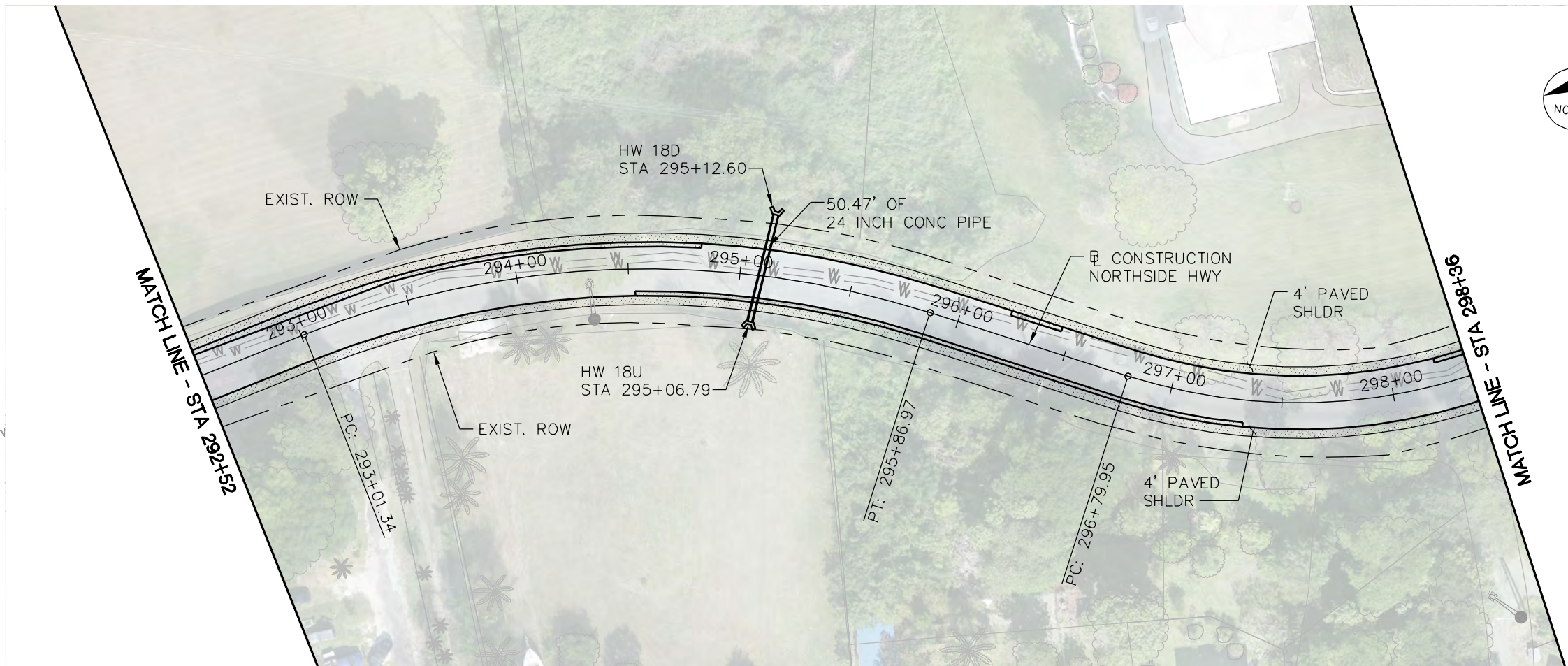
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SCALE:	1" = 60' (11"x17")	SHEET	33 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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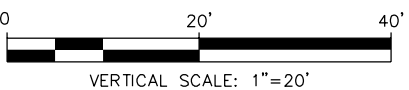
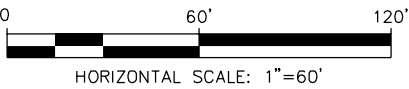
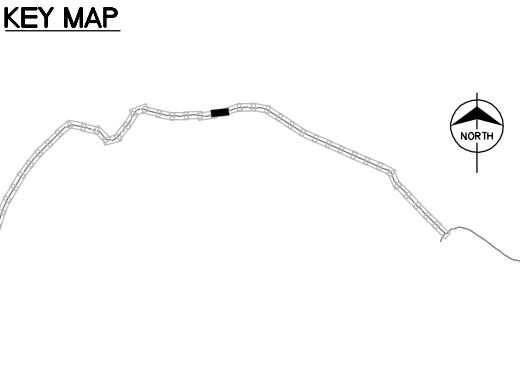


STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D34	

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:
REV. NO. _____			
REV. DATE: _____			

**LEGEND**

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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

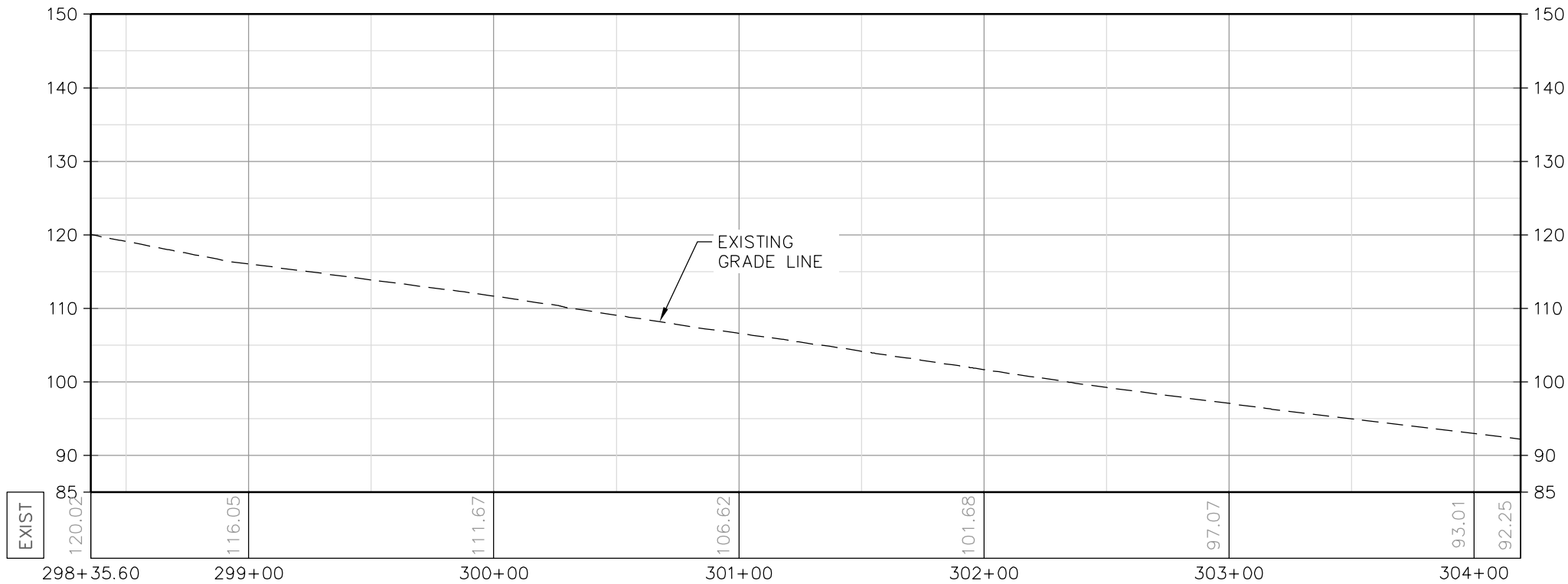
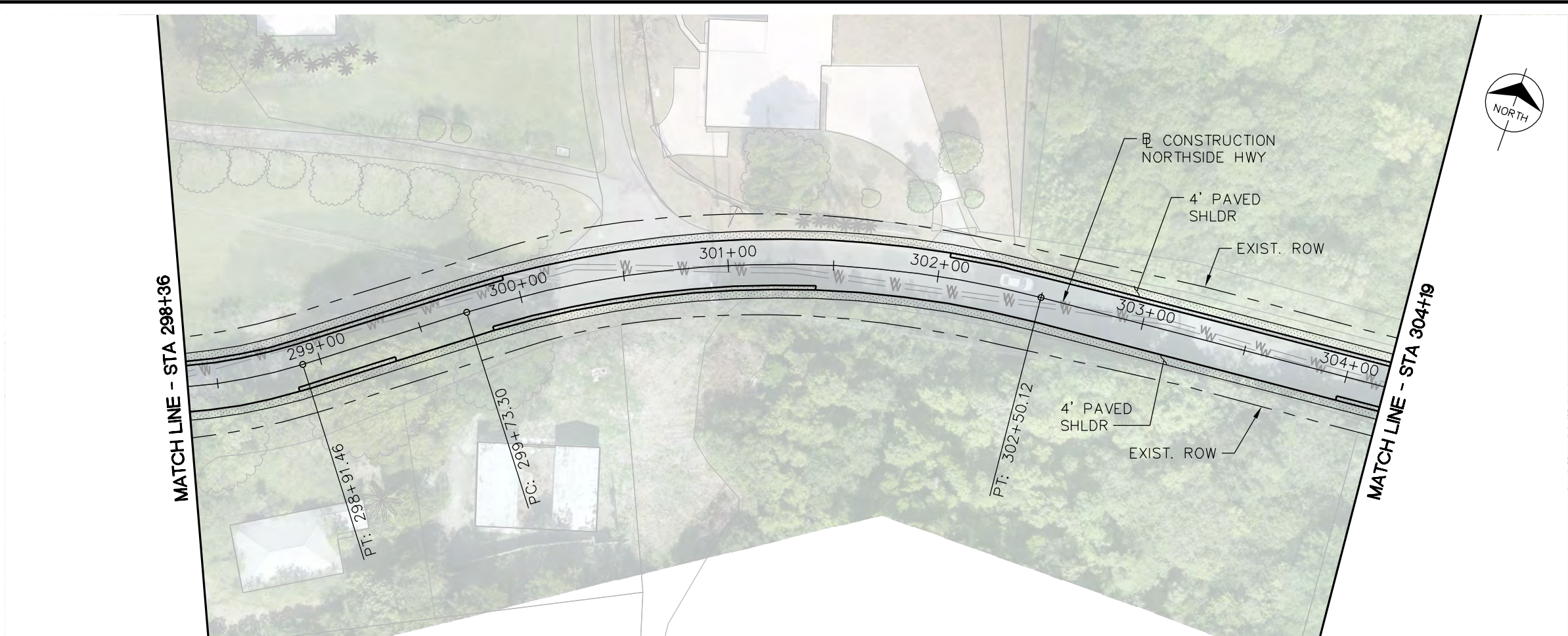
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SCALE: 1" = 60' (11"x17")	SHEET 34 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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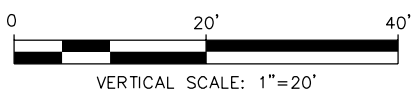
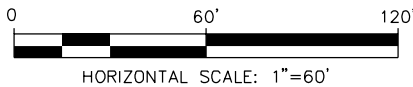
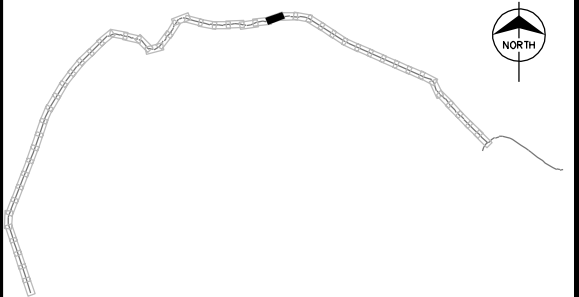
STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D35	

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:
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REV. DATE:			

LEGEND

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

KEY MAP



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

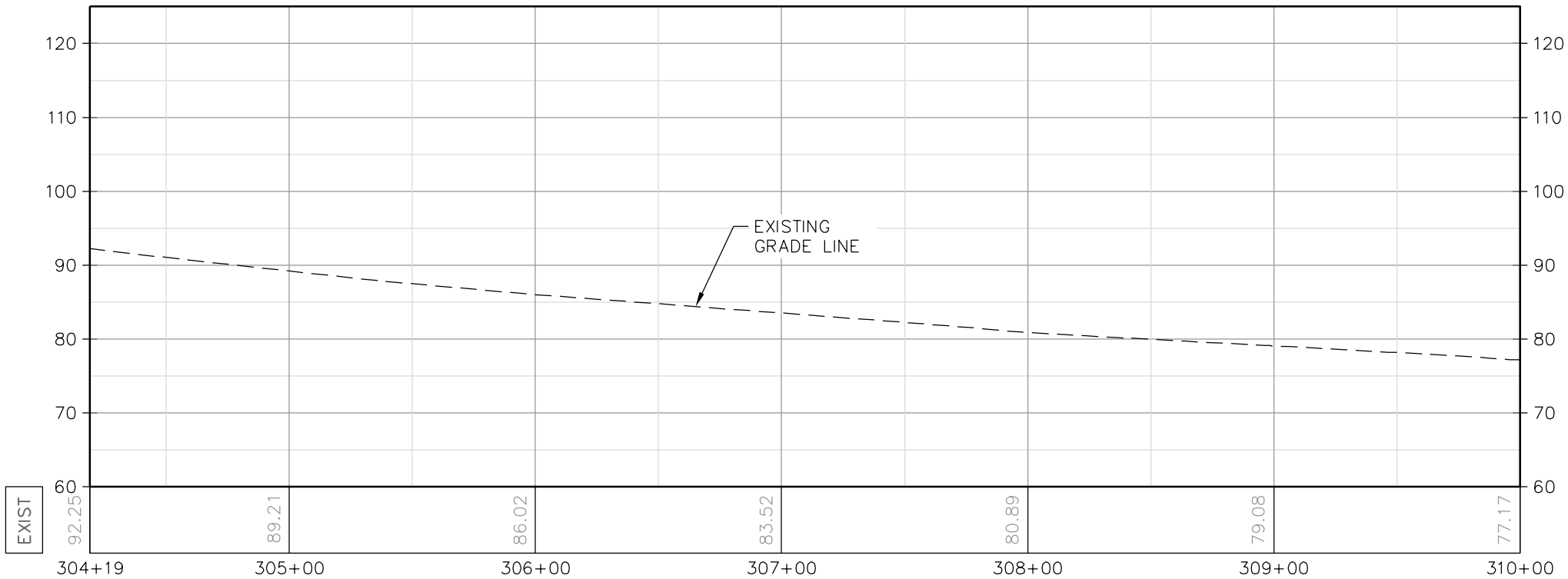
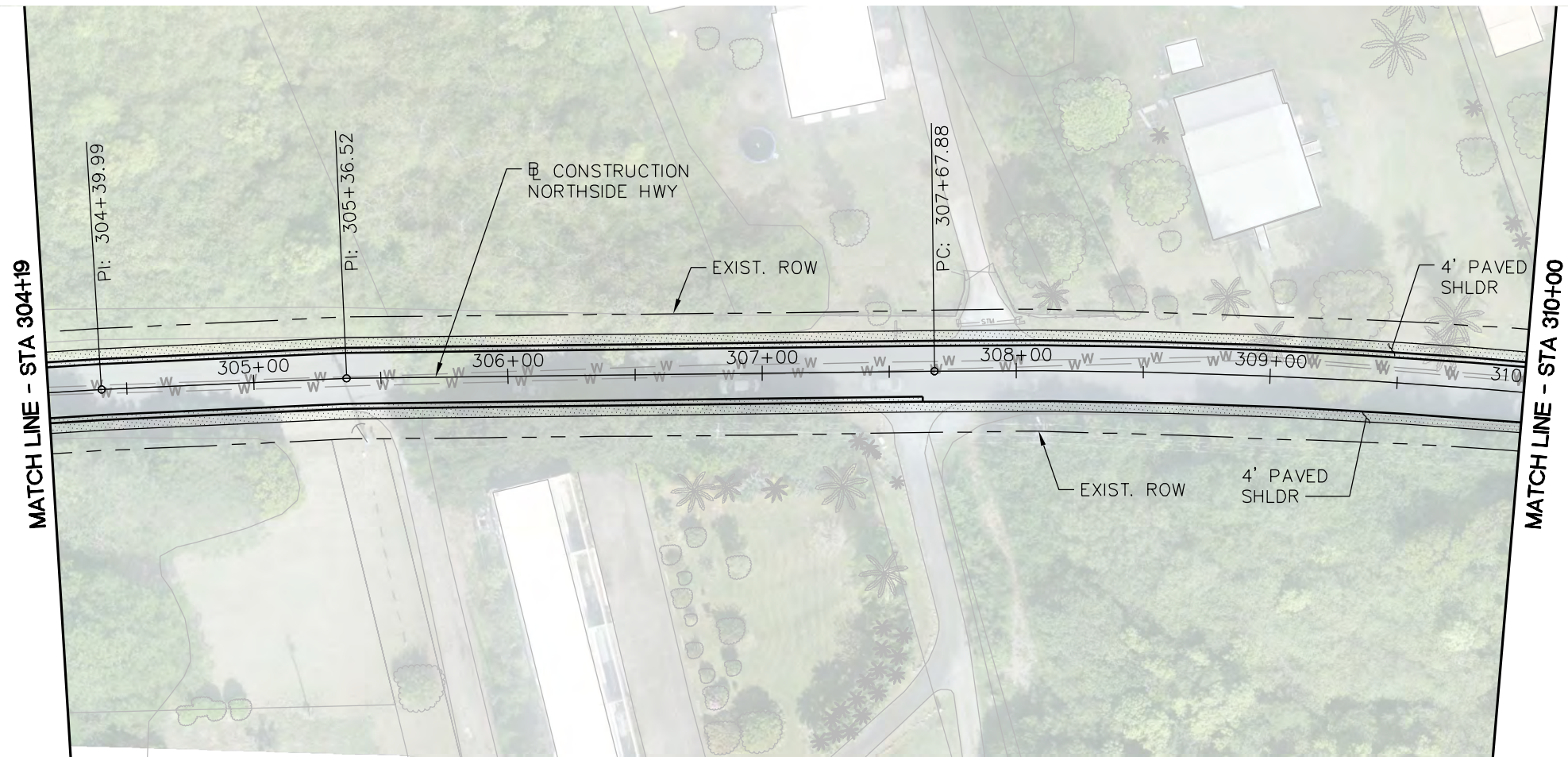
IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE  
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SCALE:	1" = 60' (11"x17")	SHEET	35 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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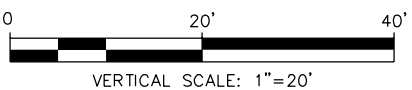
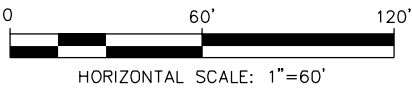
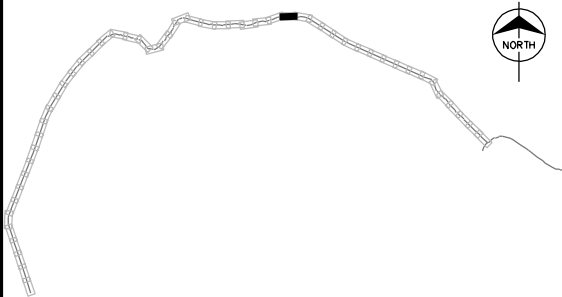


STATE	ISLAND	CONTRACT	SHEET NO.	
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			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

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**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

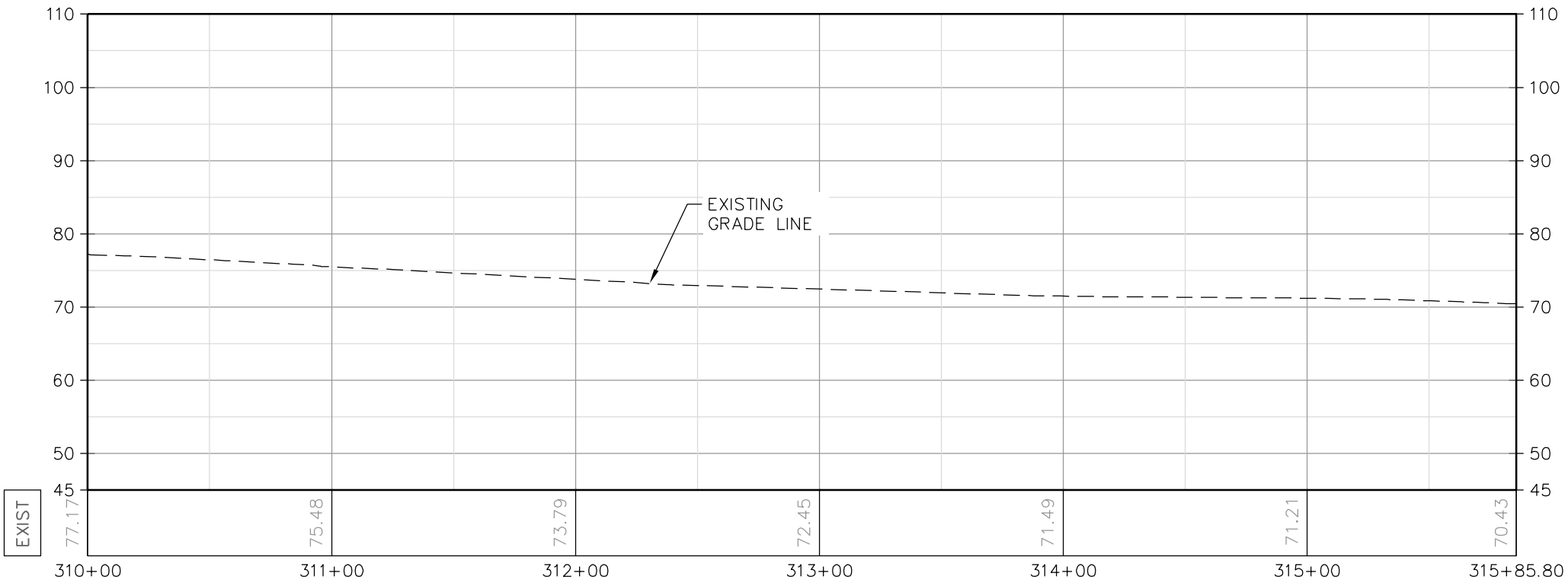
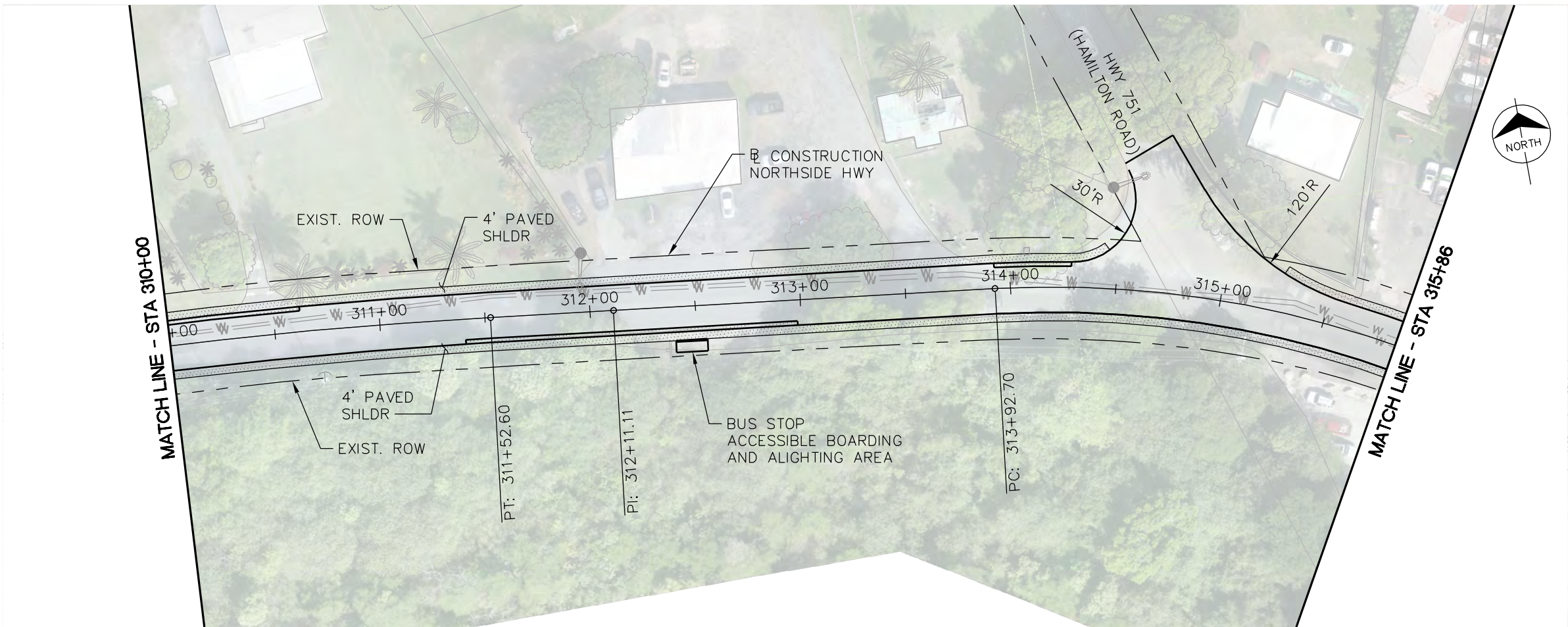
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SCALE:	1" = 60' (11"x17")	SHEET	36 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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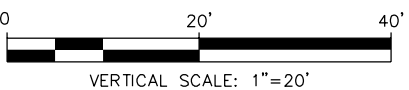
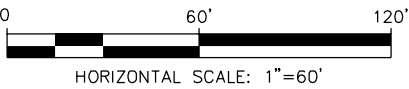
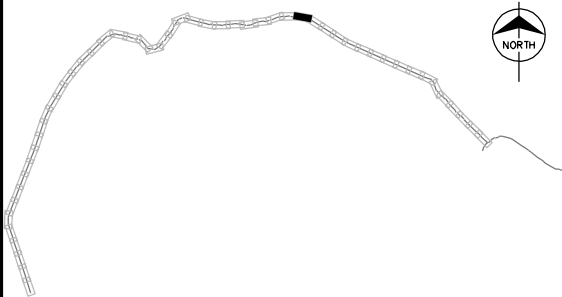


STATE	ISLAND	CONTRACT	SHEET NO.	
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			ENGINEER:	
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			REV. NO.	
			REV. DATE:	

**LEGEND**

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**KEY MAP**



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WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

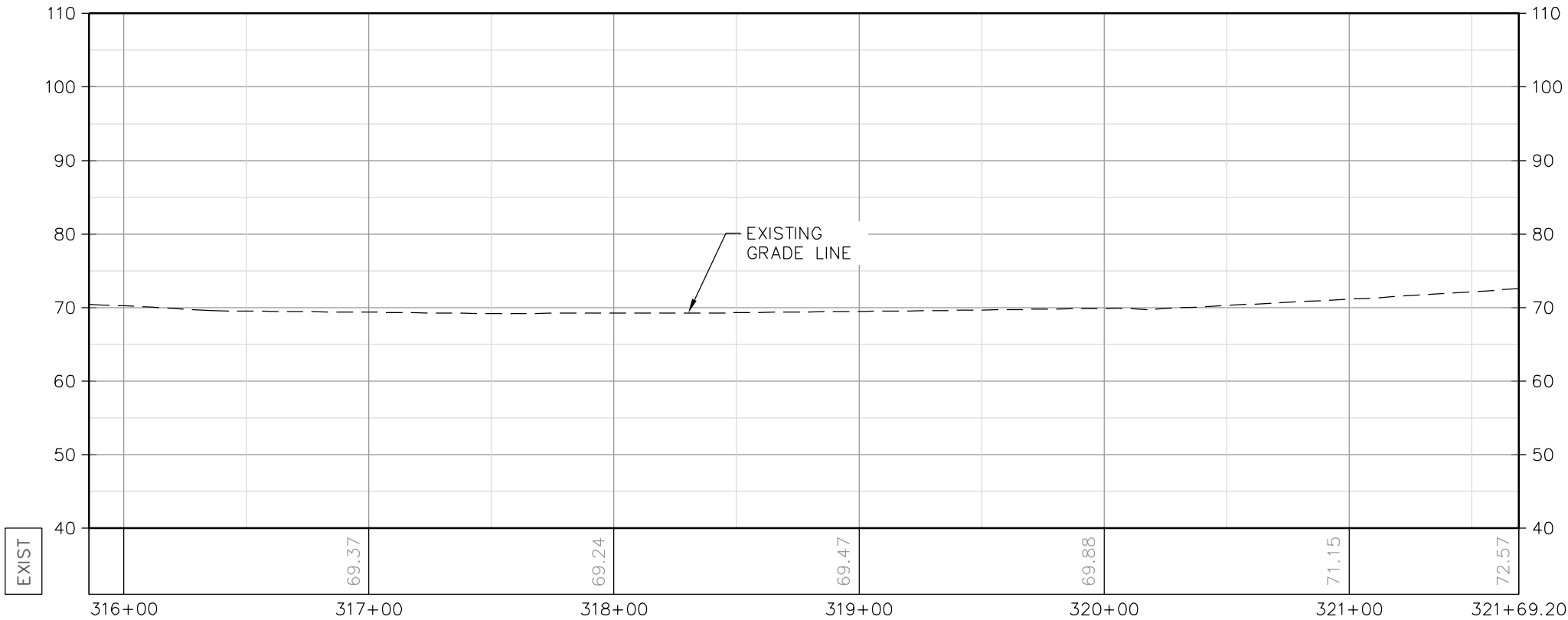
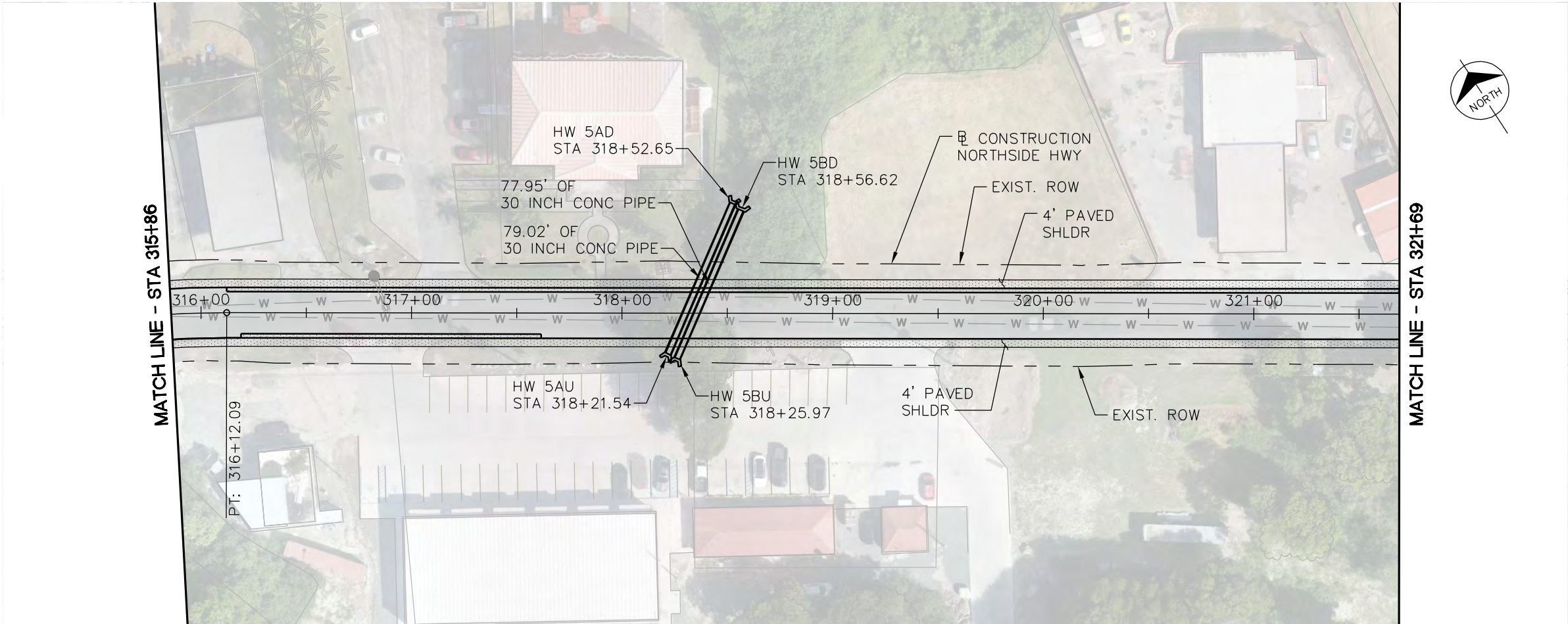
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SCALE:	1" = 60' (11"x17")	SHEET	37	OF	61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.	
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ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:
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REV. DATE: _____			

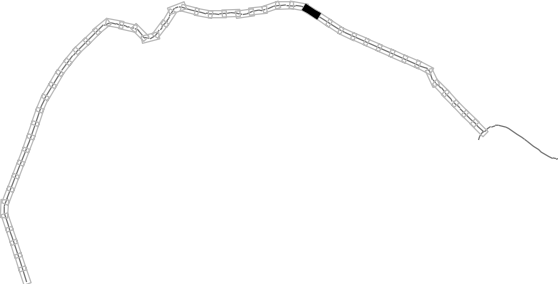
  

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**

0 60' 120'


HORIZONTAL SCALE: 1"=60'

0 20' 40'

VERTICAL SCALE: 1"=20'

  
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UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**  
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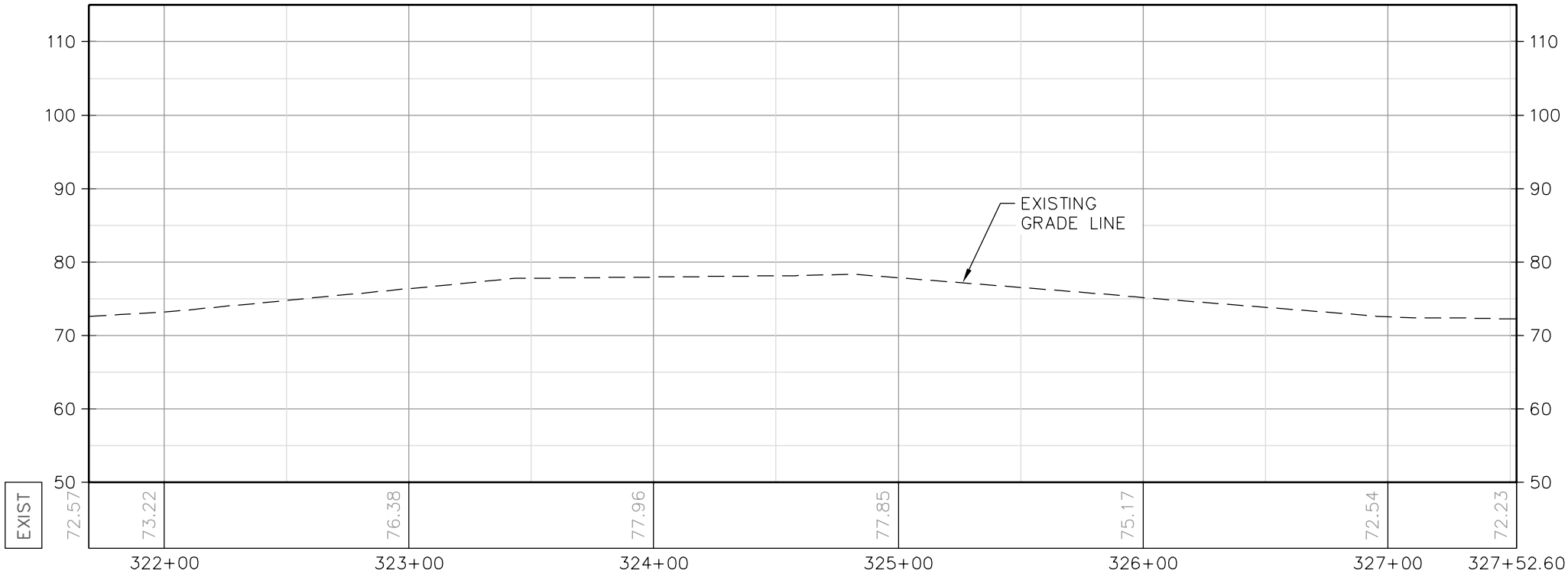
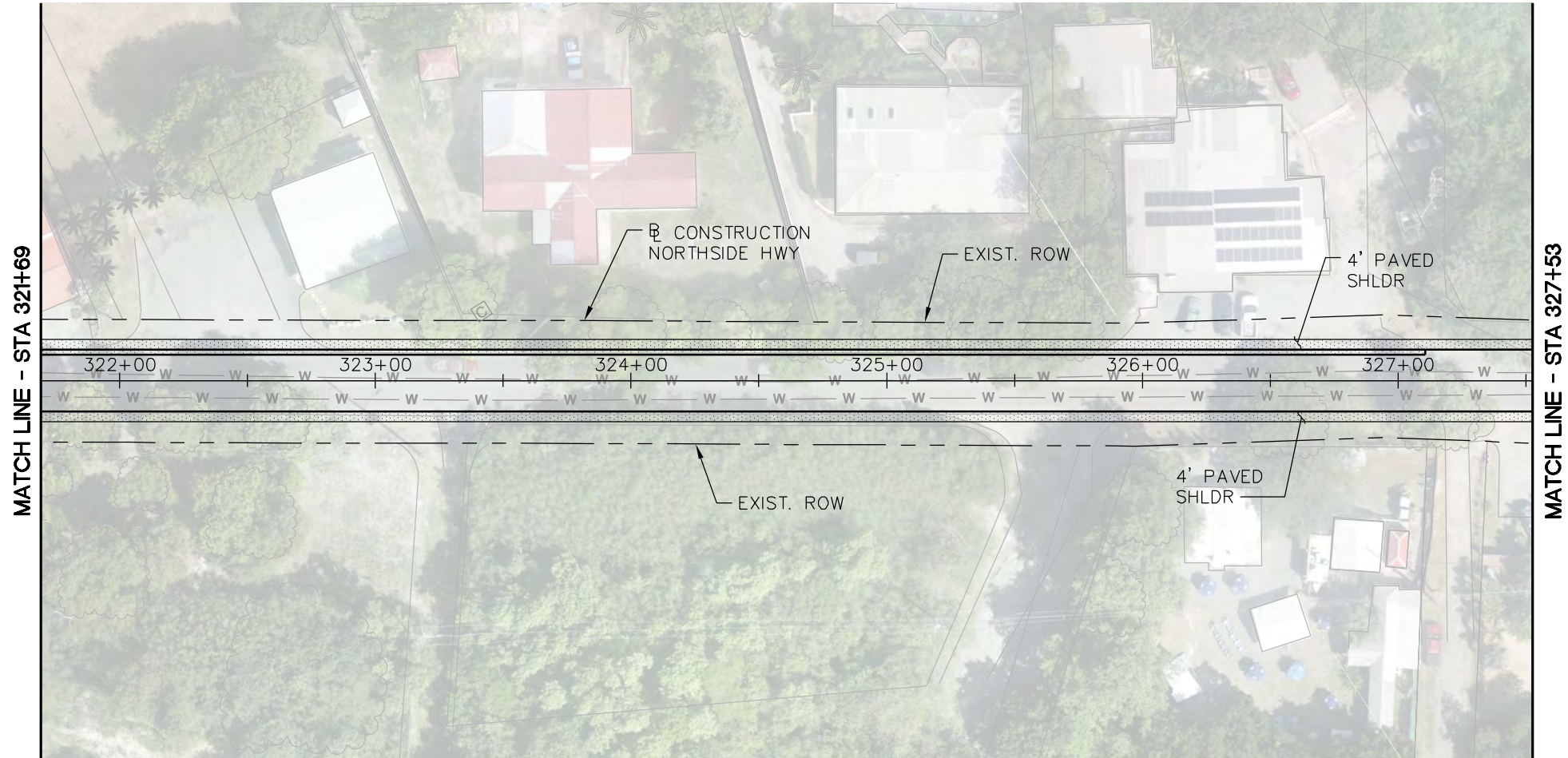
  

SCALE:	SHEET 38 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



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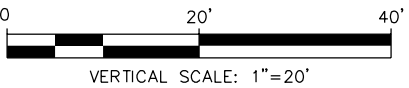
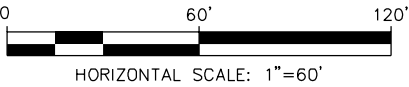
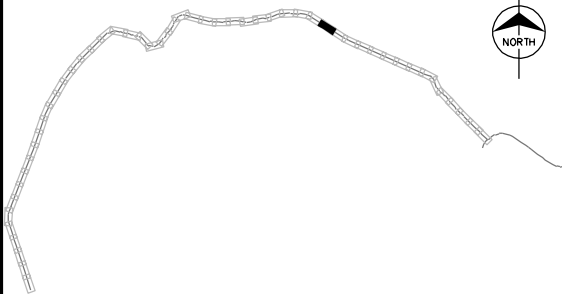


STATE	ISLAND	CONTRACT	SHEET NO.	
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			REV. NO.	
			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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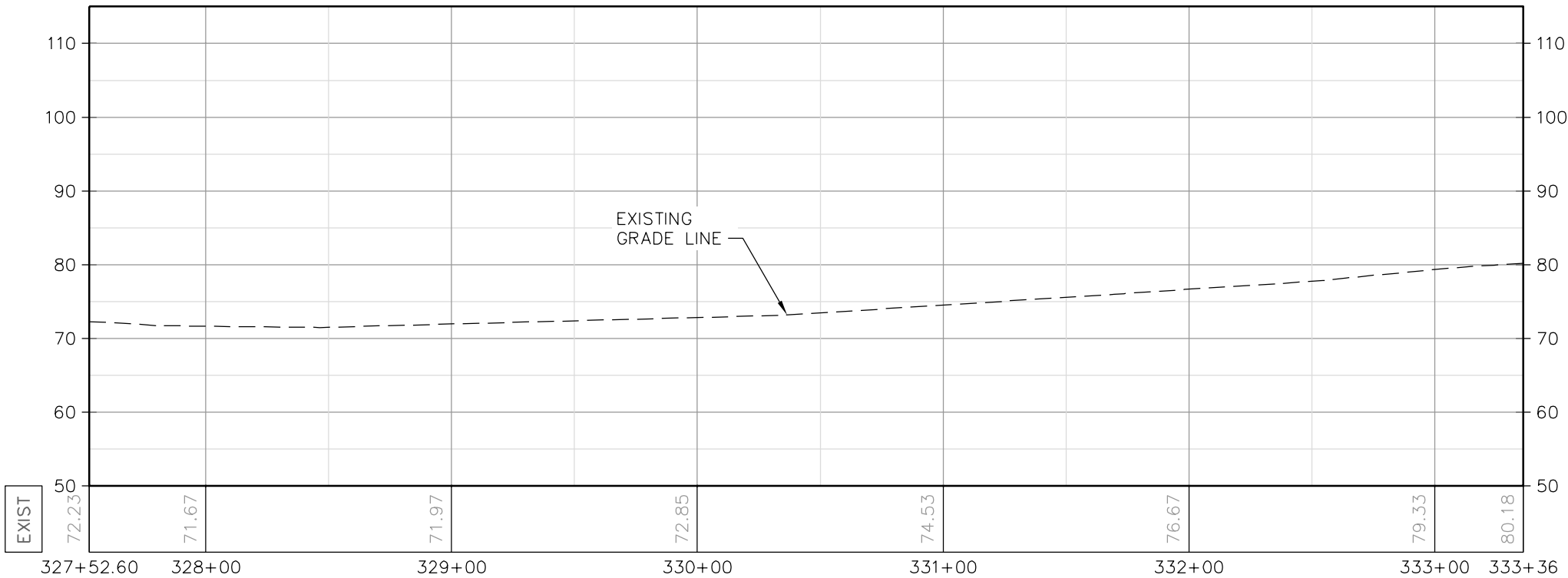
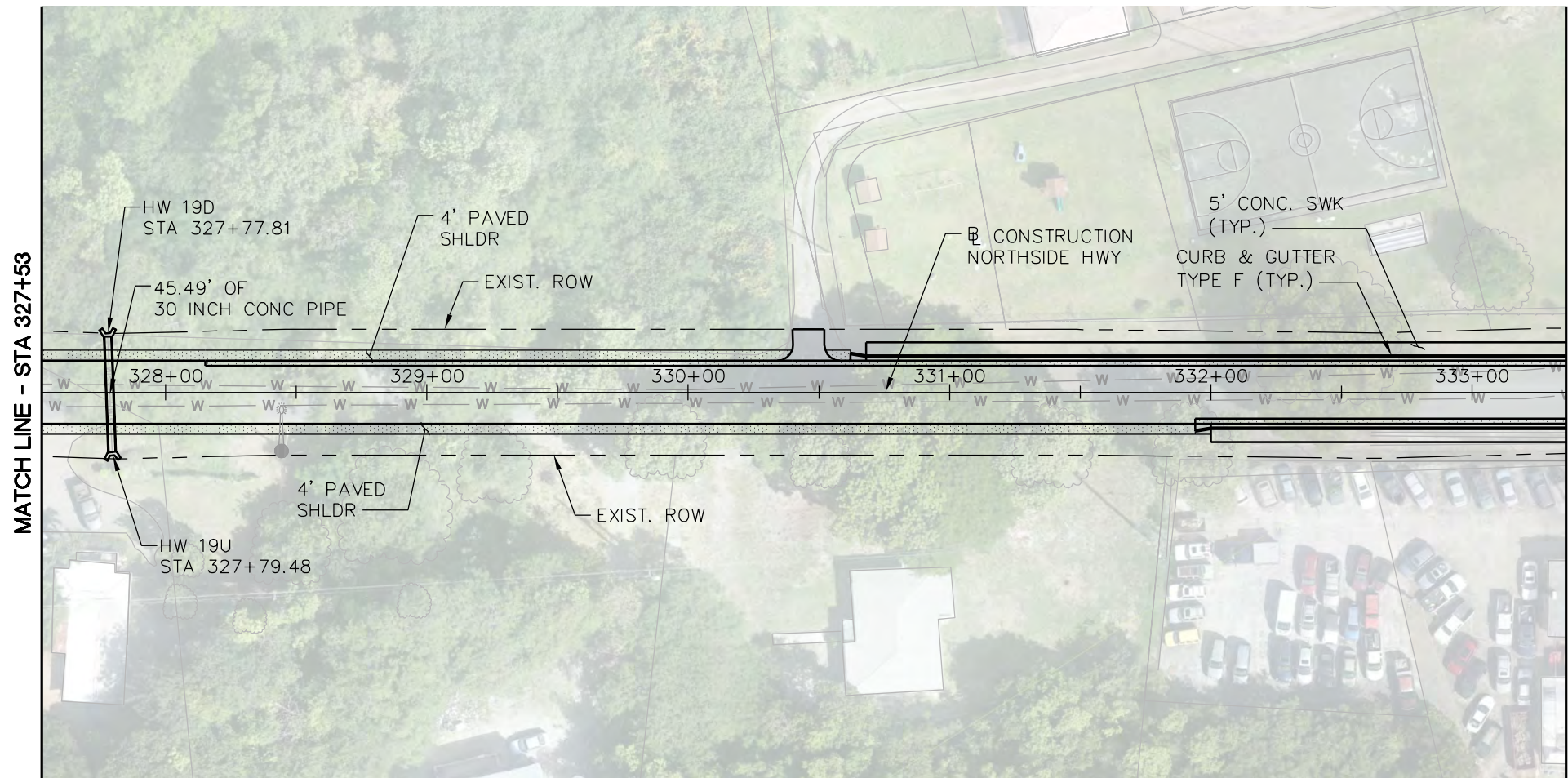
SCALE:	1" = 60' (11"x17")	SHEET	39 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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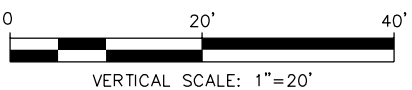
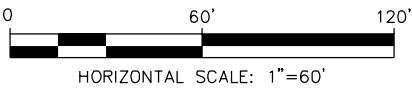
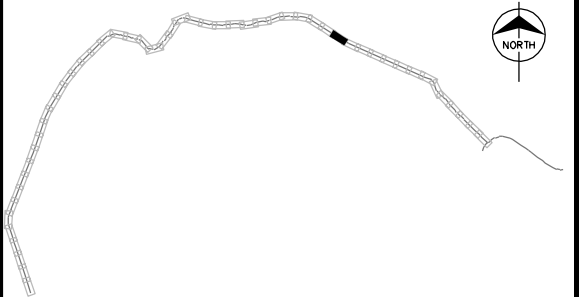


STATE	ISLAND	CONTRACT	SHEET NO.	
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			DRAWN:	
			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

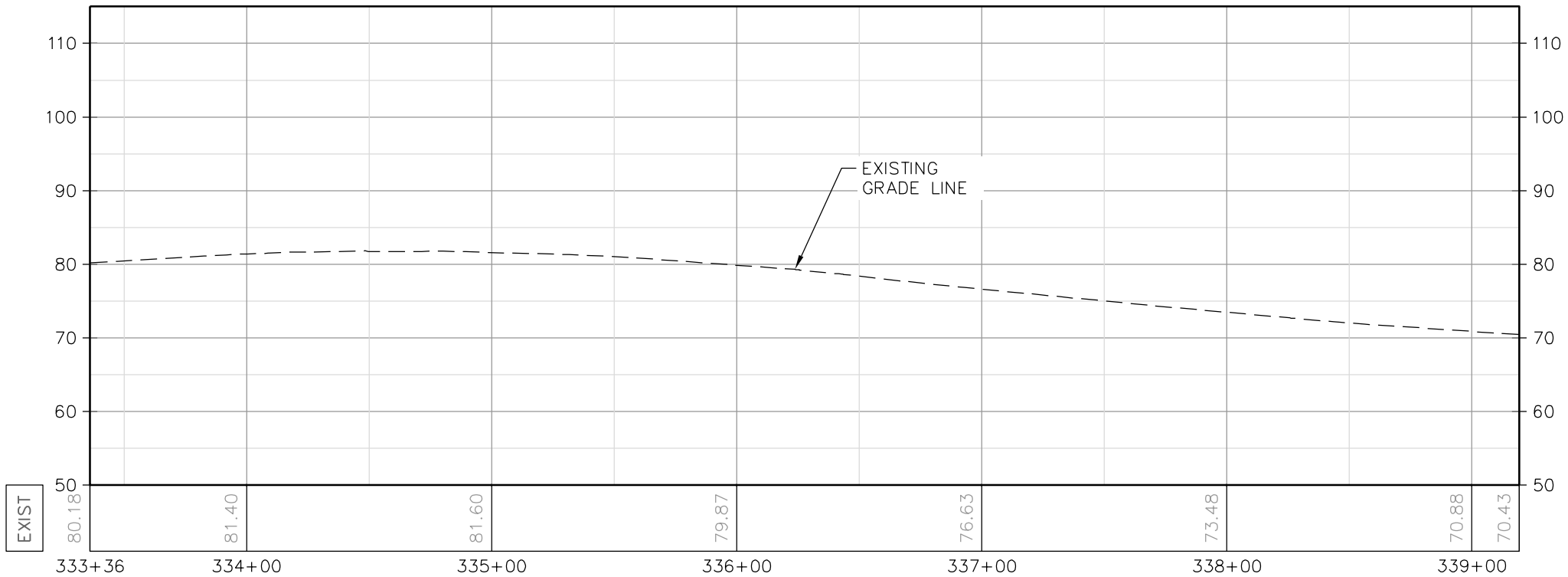
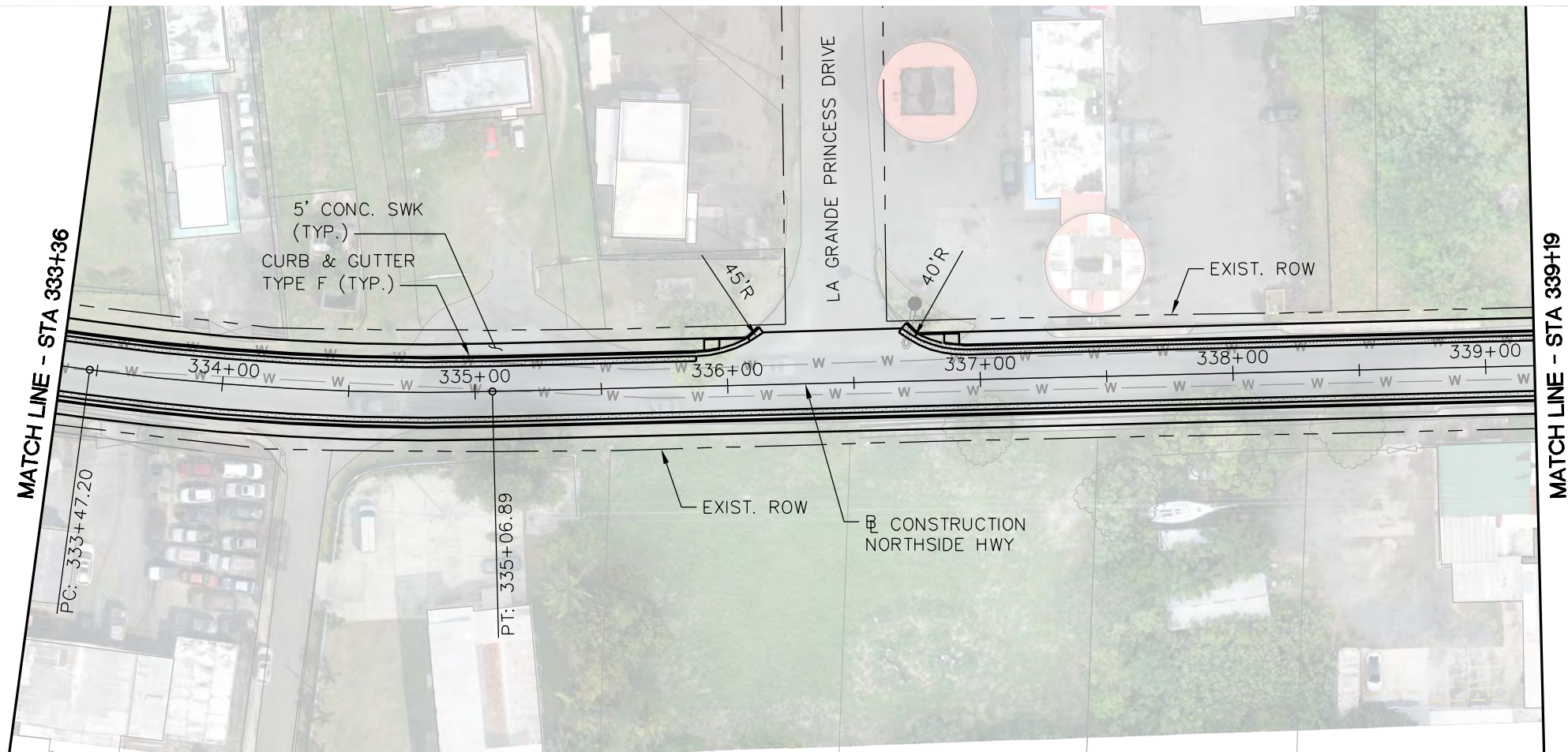
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SCALE:	1" = 60' (11"x17")	SHEET	40 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



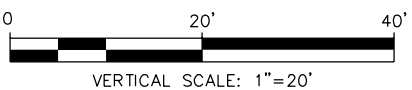
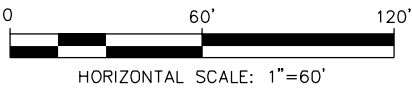
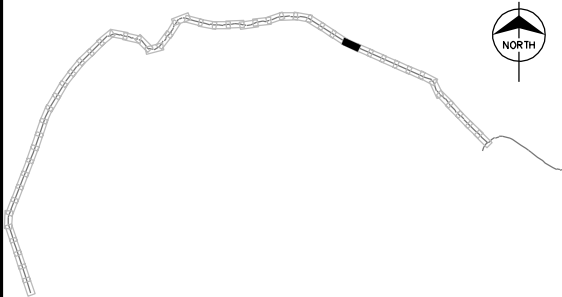
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STATE	ISLAND	CONTRACT	SHEET NO.	
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			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**  
DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
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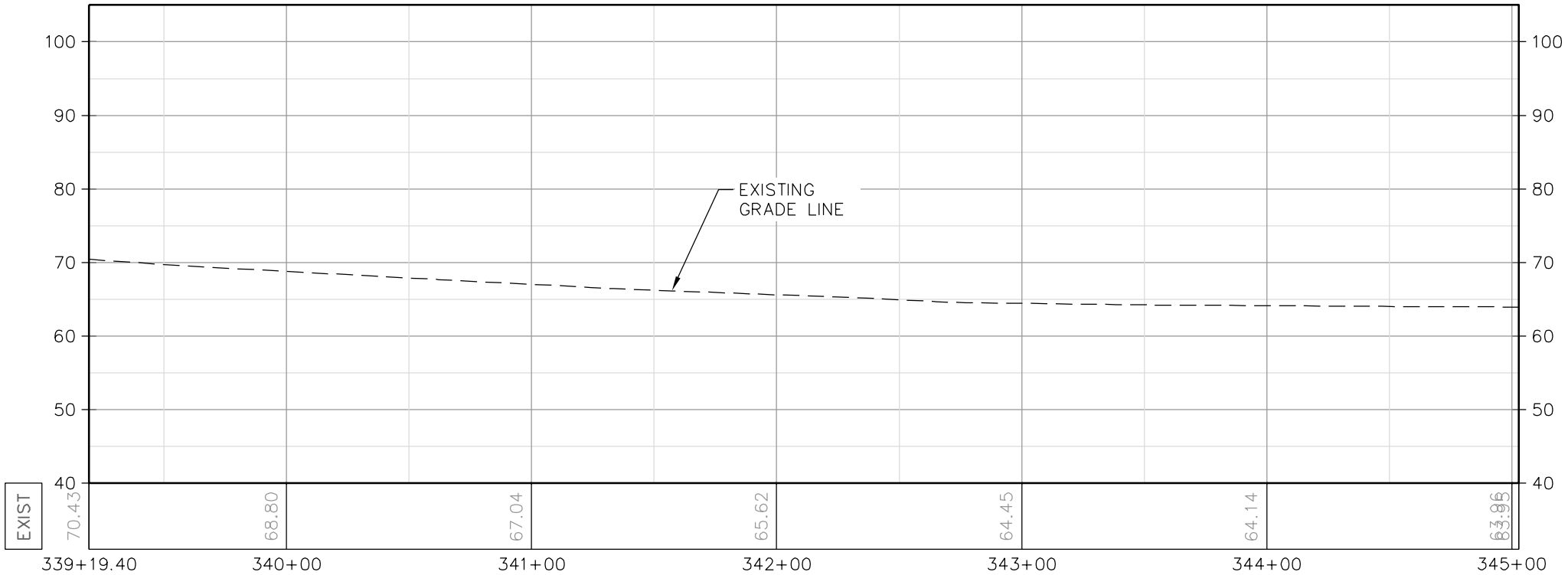
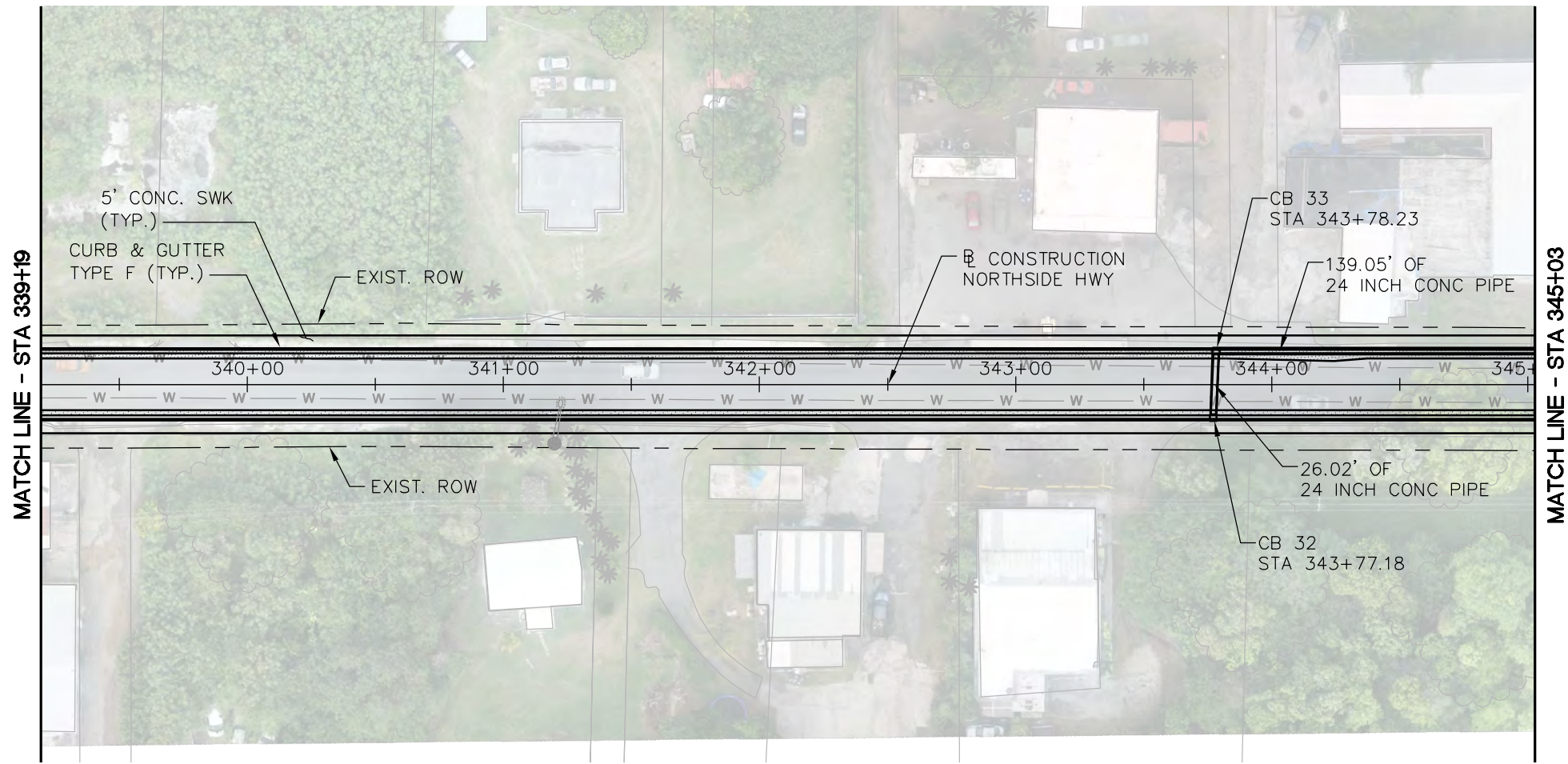
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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SCALE: 1" = 60' (11"x17")	SHEET 41 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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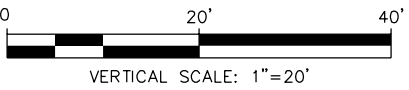
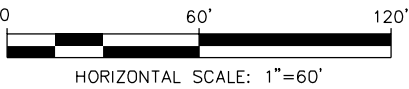
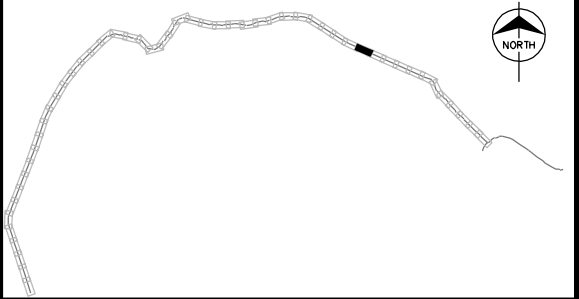


STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D42	
			ENGINEER:	
			DRAWN:	
			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

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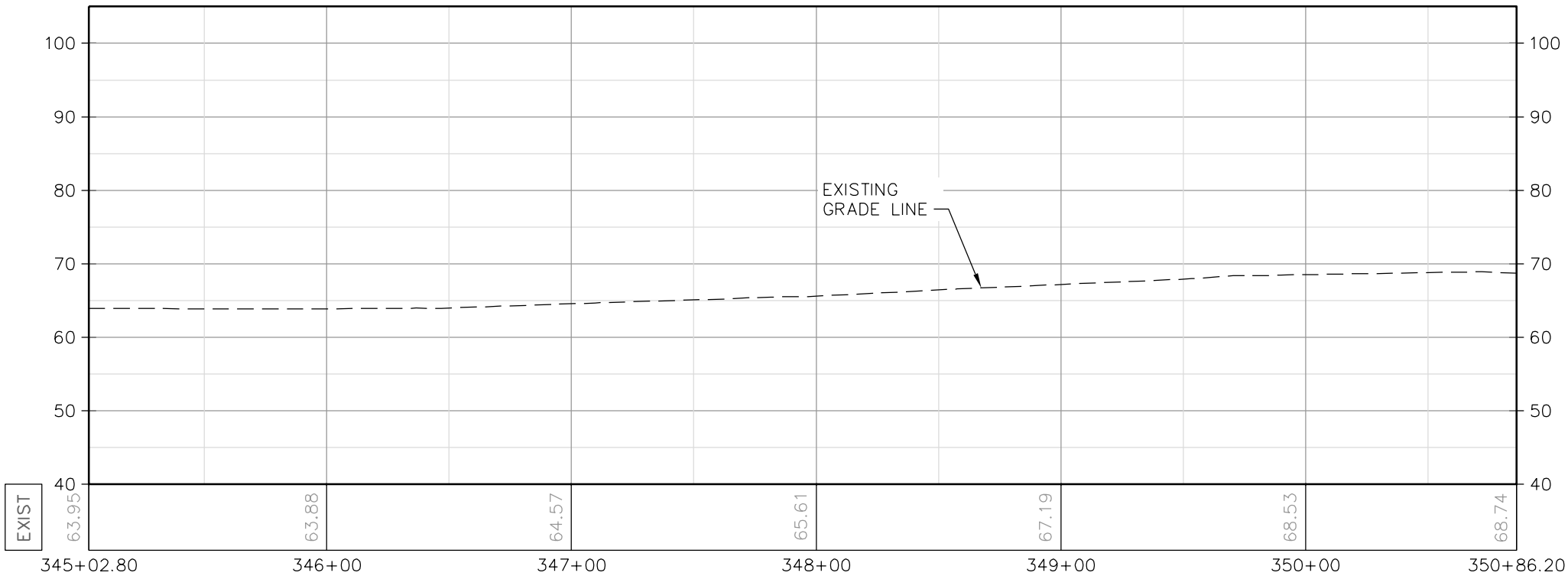
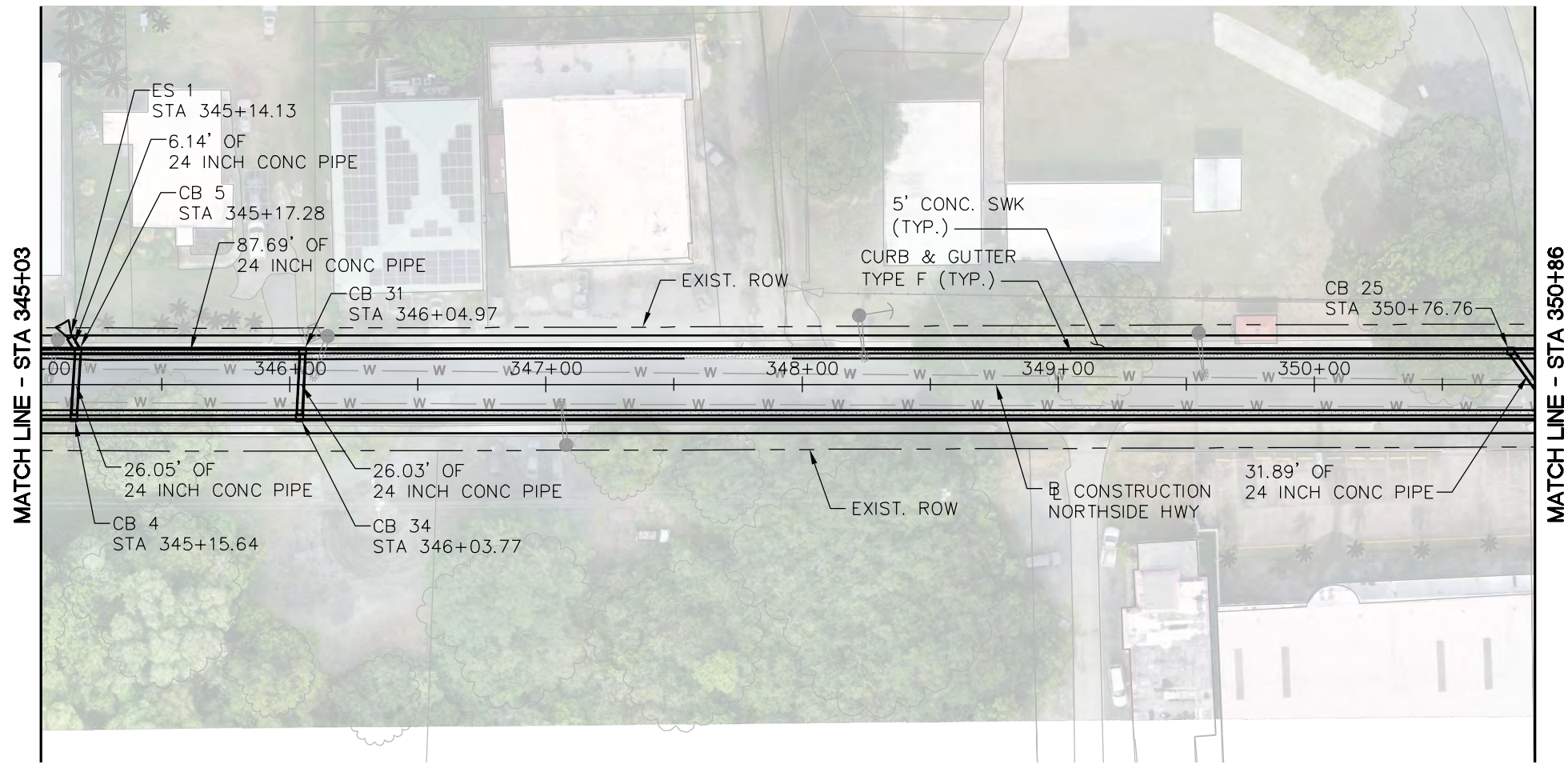
SCALE:	1" = 60' (11"x17")	SHEET	42 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.	
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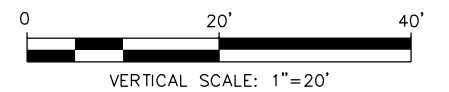
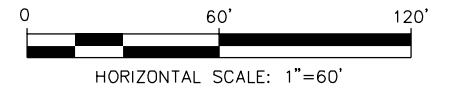
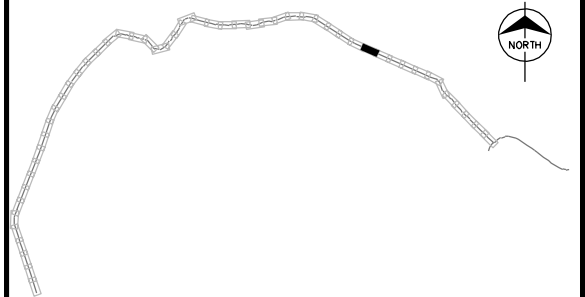
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REV. NO.	
REV. DATE:	

#### LEGEND

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

#### KEY MAP



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

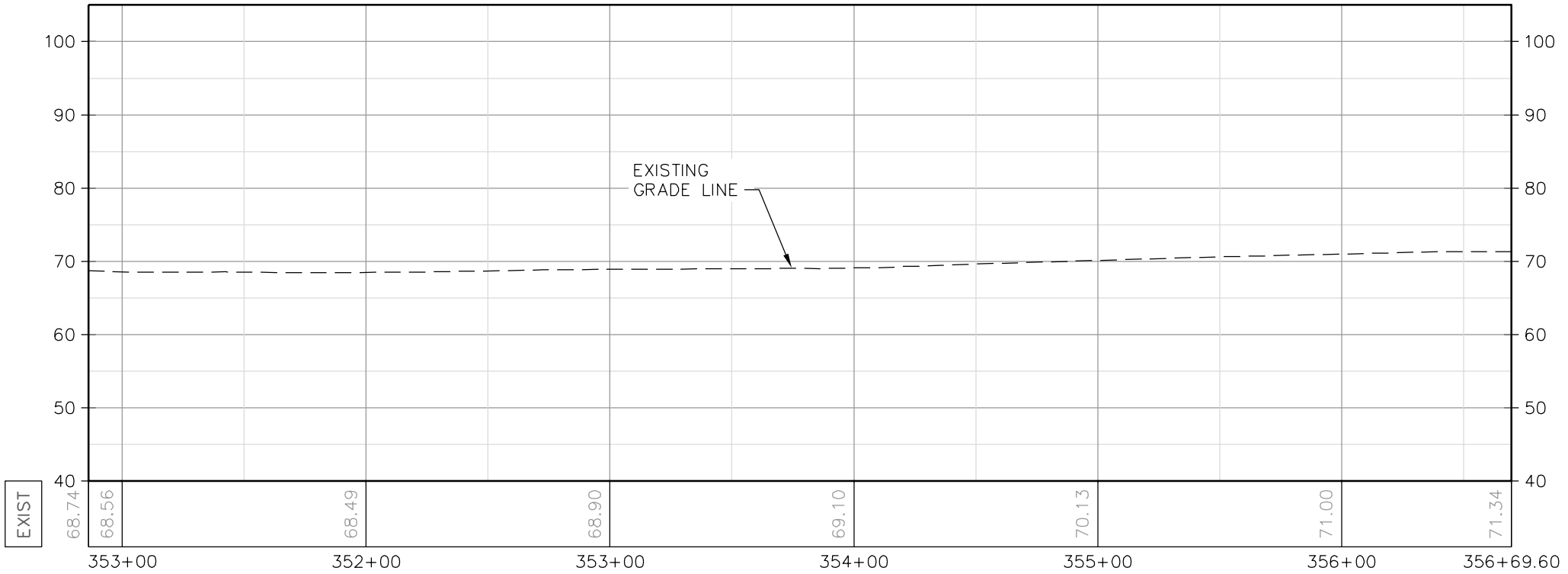
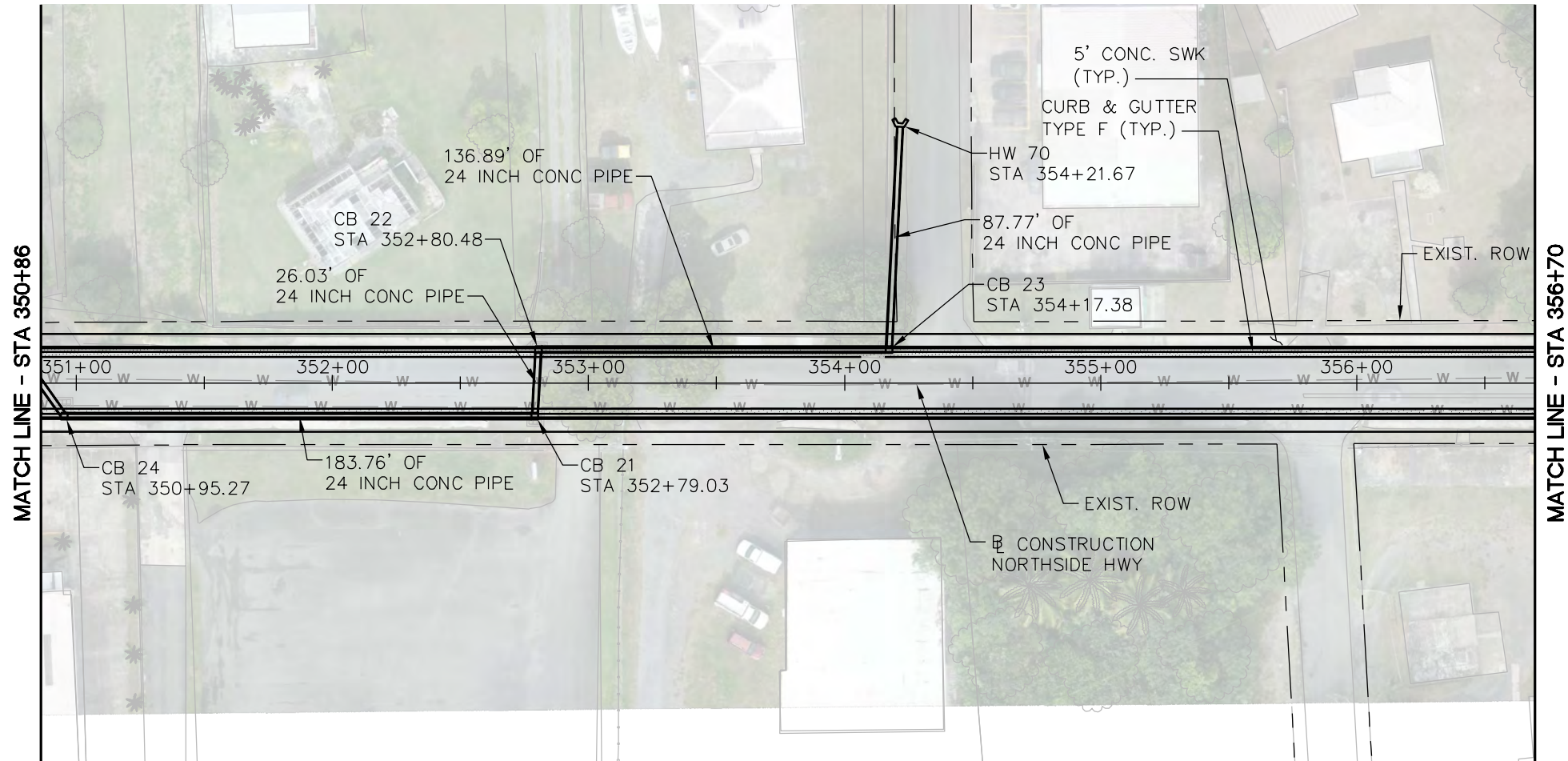
### IMPROVEMENTS TO NORTHSIDE HIGHWAY (ROUTE 75) ROADWAY PLAN AND PROFILE

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SCALE: 1" = 60' (11"x17")	SHEET 43 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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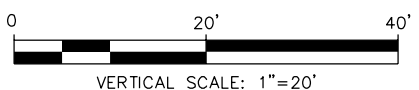
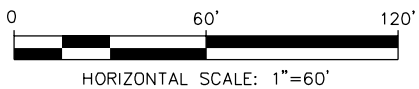
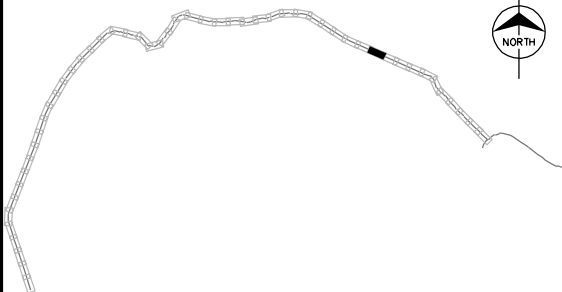


STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D44	
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			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

LEGEND

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

KEY MAP



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE  
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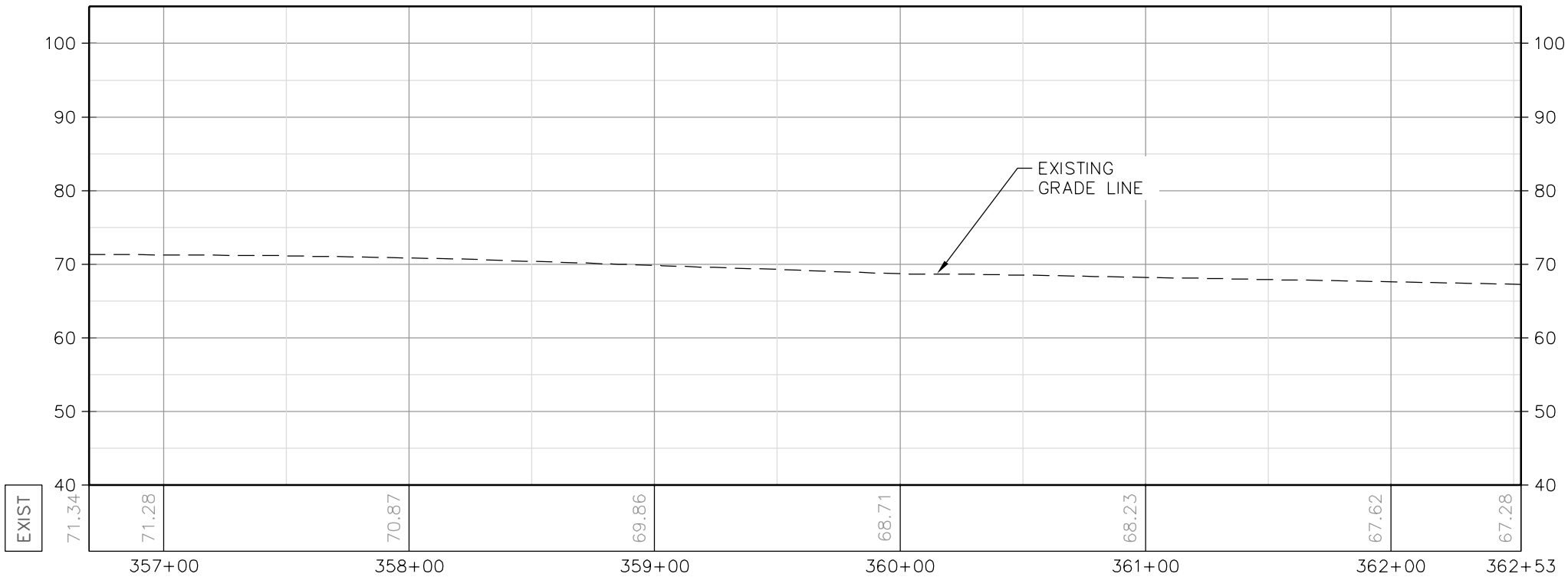
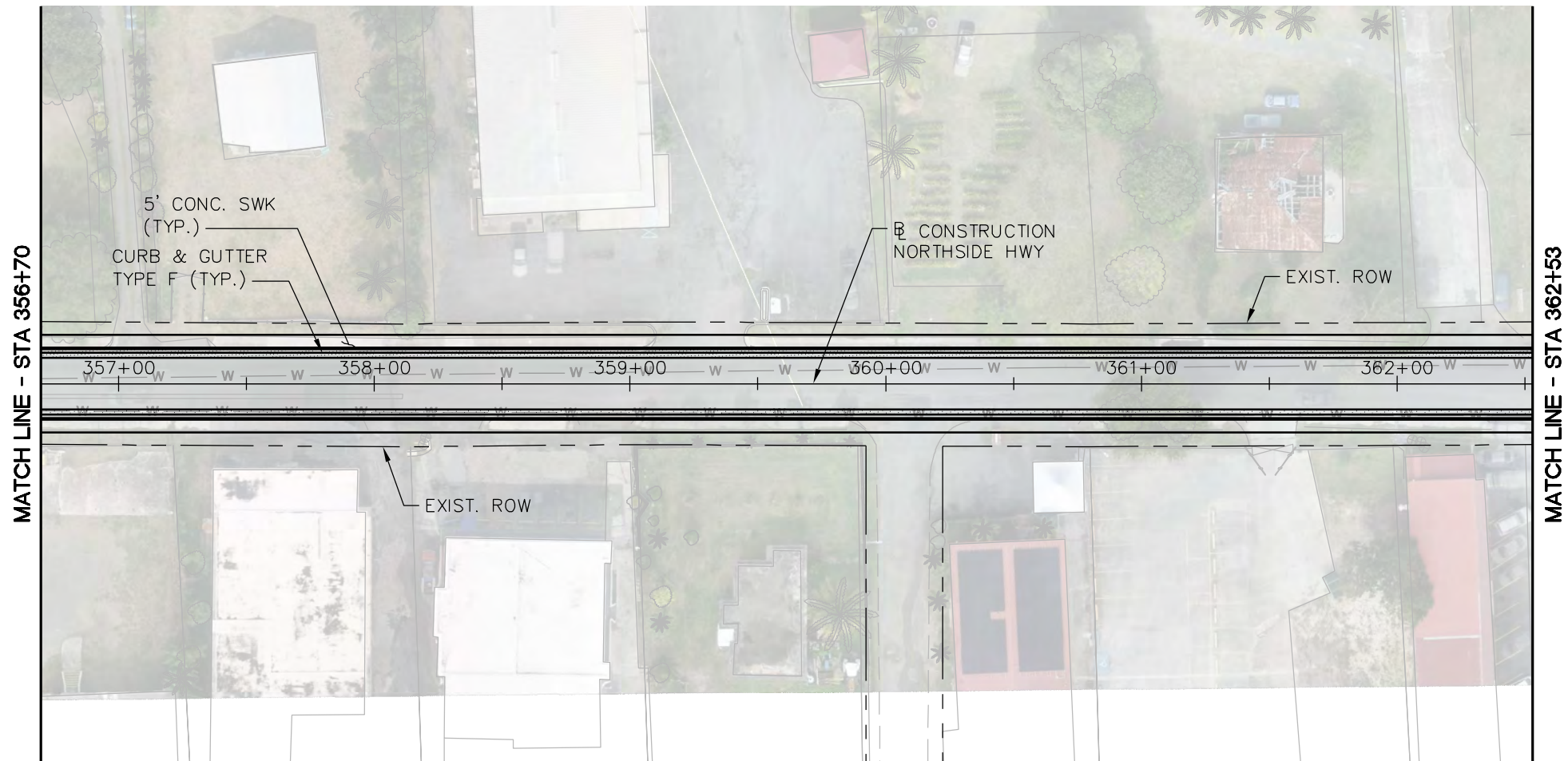
SCALE:	1" = 60' (11"x17")	SHEET	44 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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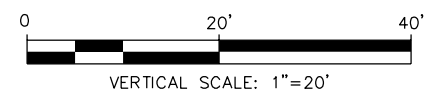
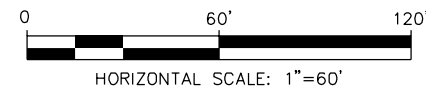
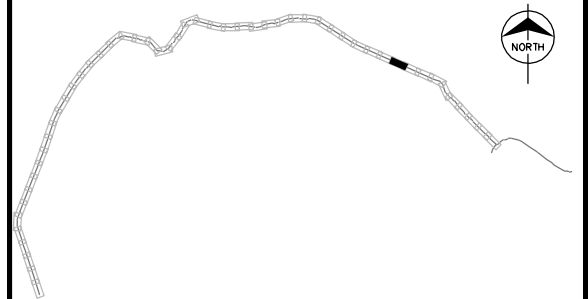
STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D45	

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:
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REV. DATE: _____			

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

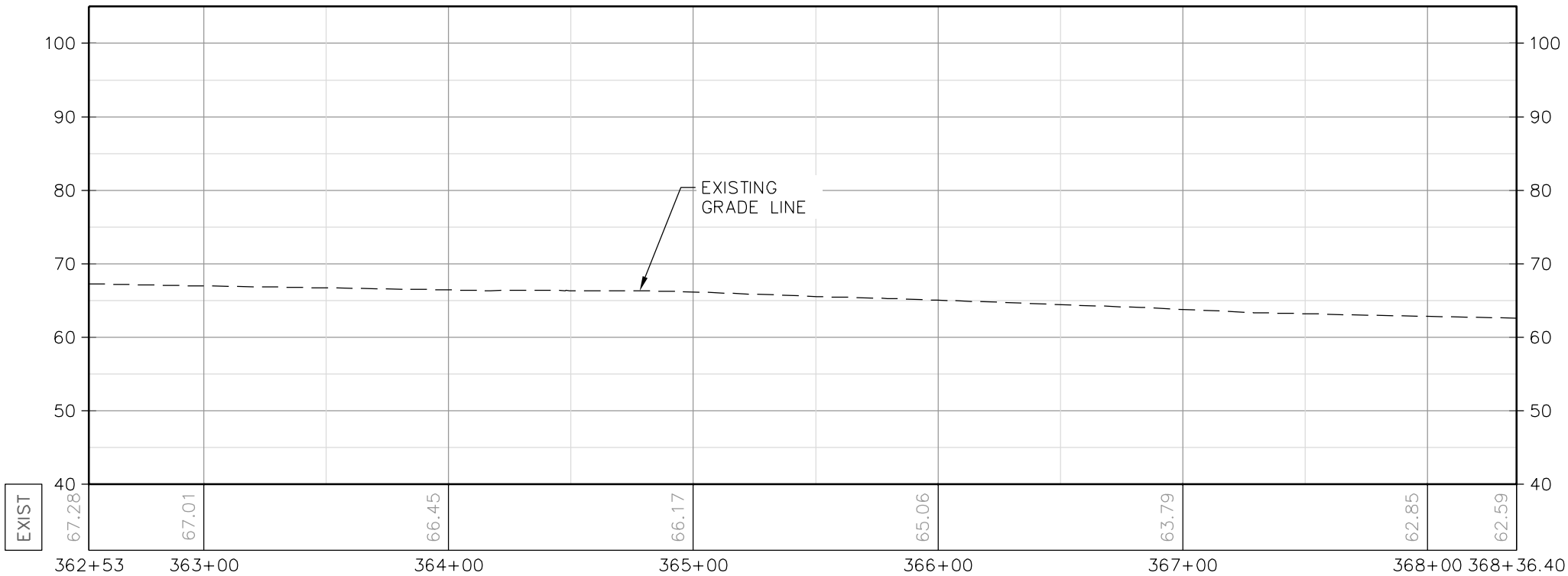
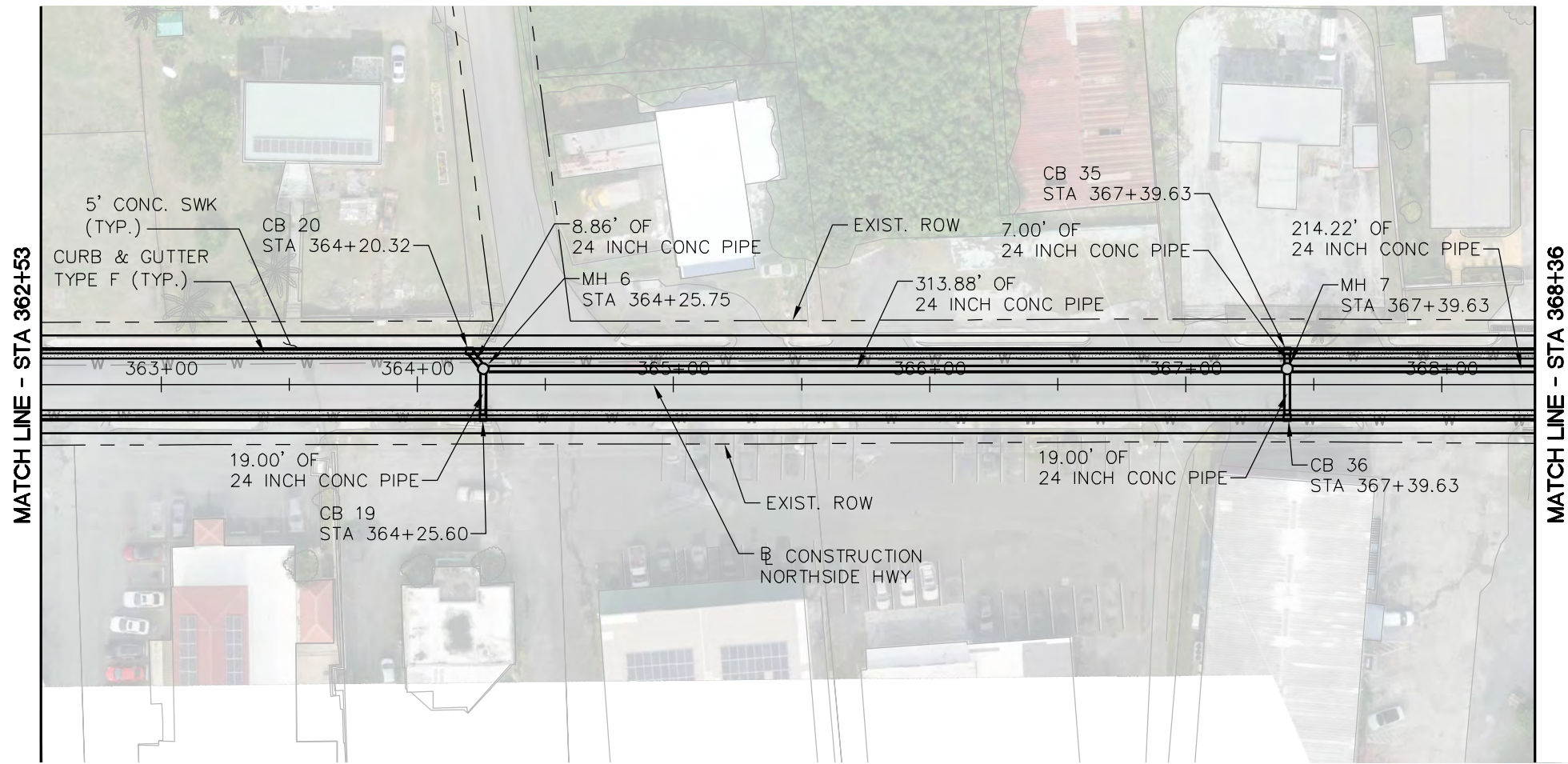
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SCALE: 1" = 60' (11"x17")	SHEET 45 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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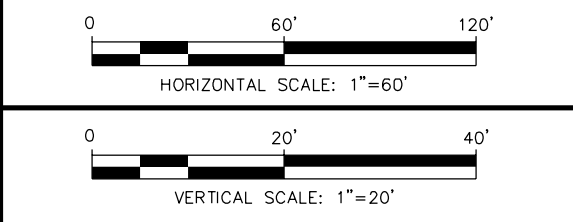
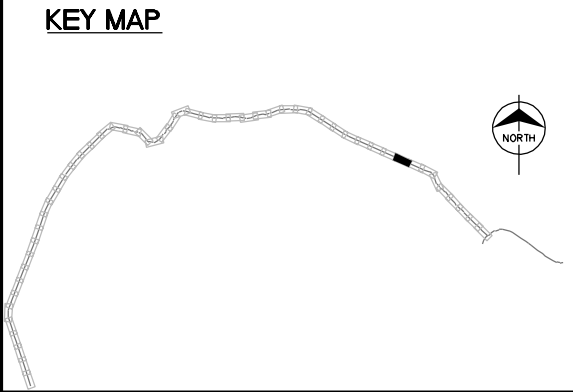


STATE	ISLAND	CONTRACT	SHEET NO.
USVI	ST CROIX	P149DPWT21	D46

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**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



  
1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

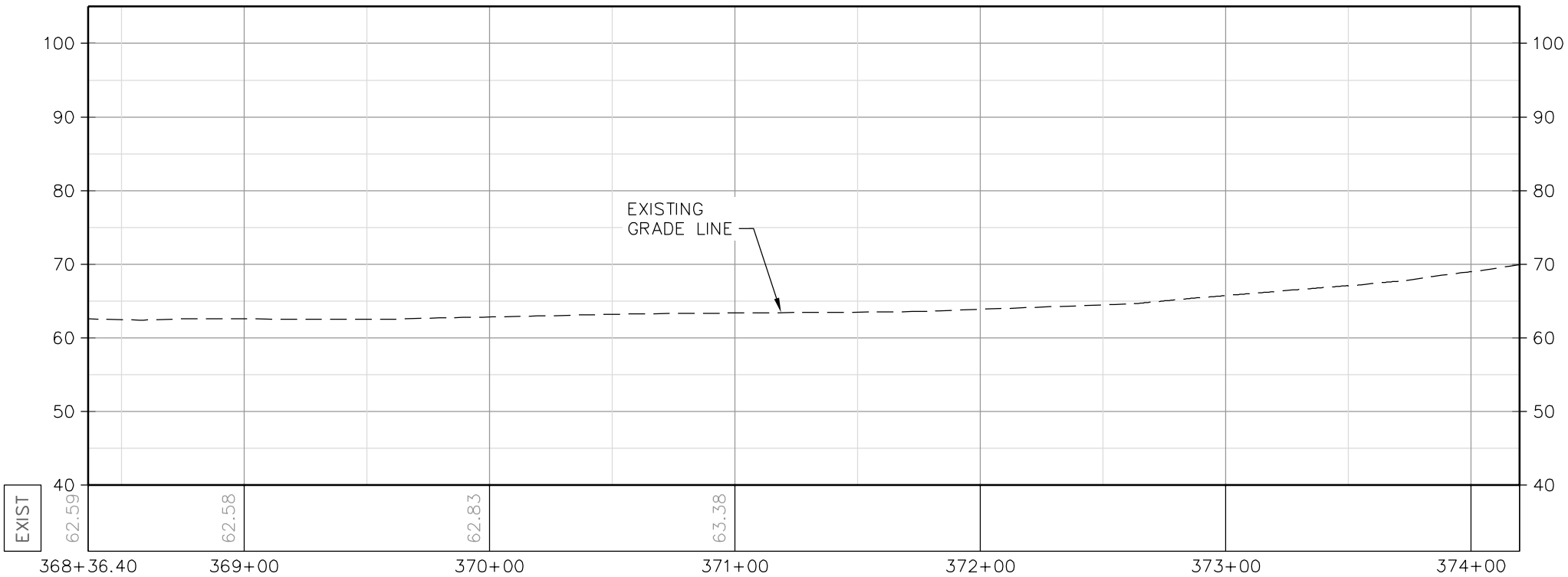
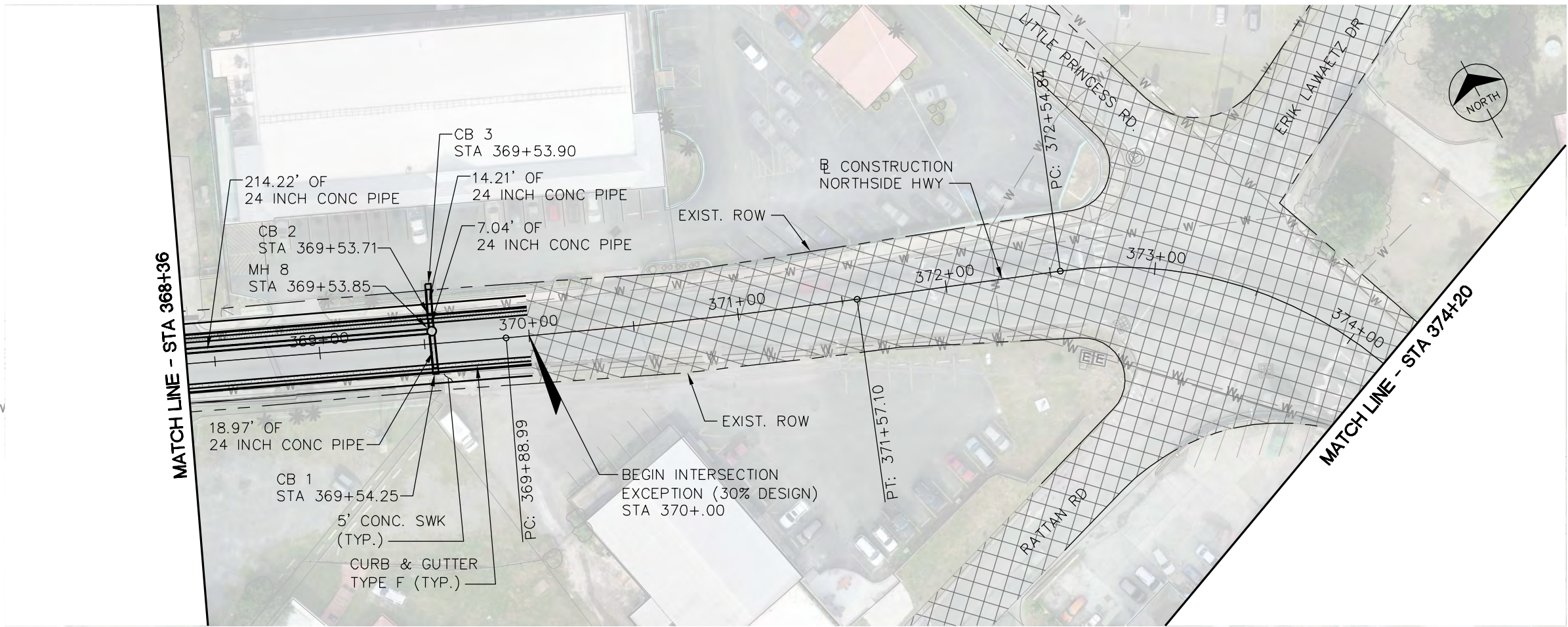
IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE  
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D47	

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PRINT DATE: \_\_\_\_\_

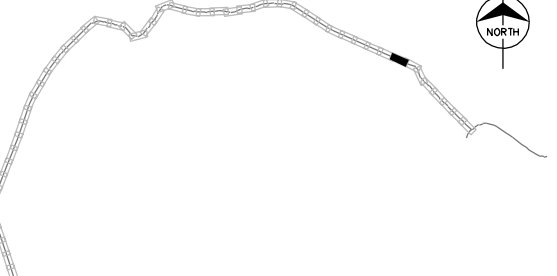
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REV. DATE: \_\_\_\_\_


**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

 DENOTES INTERSECTION EXCEPTION (30% DESIGN)

**KEY MAP**



  
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1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE  
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SCALE: 1" = 60' (11"x17")

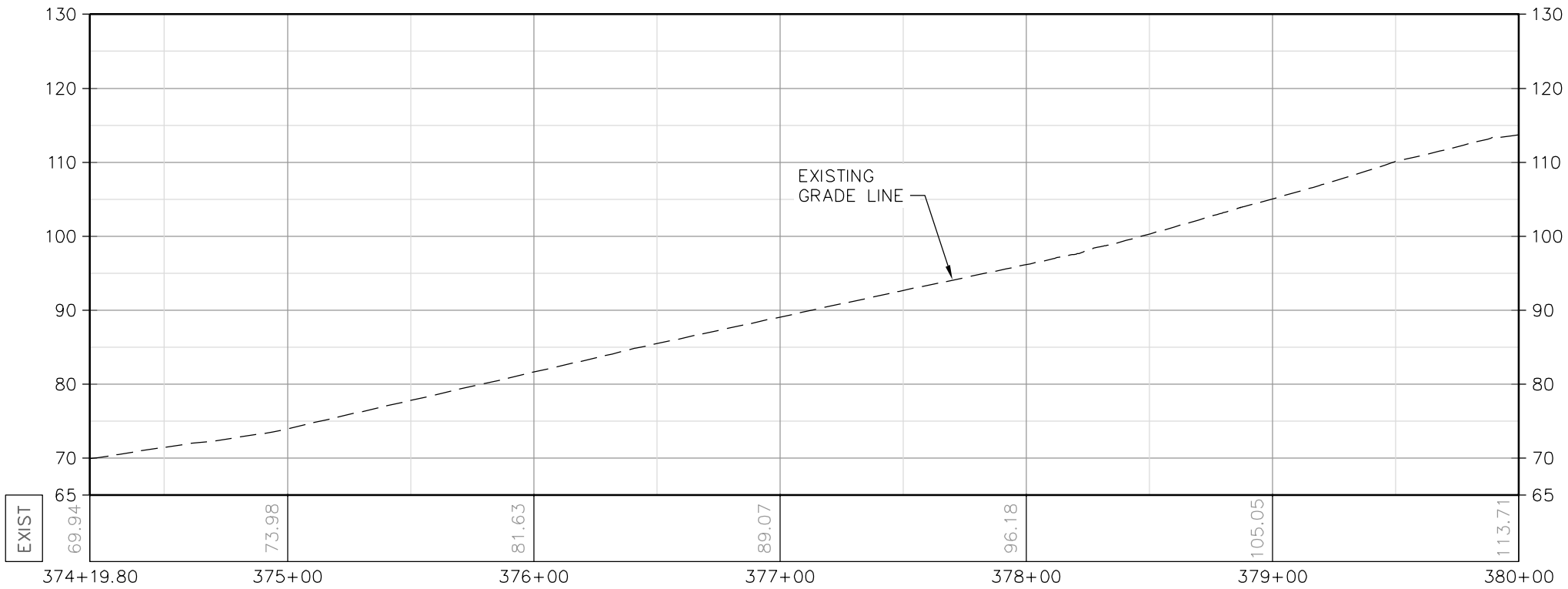
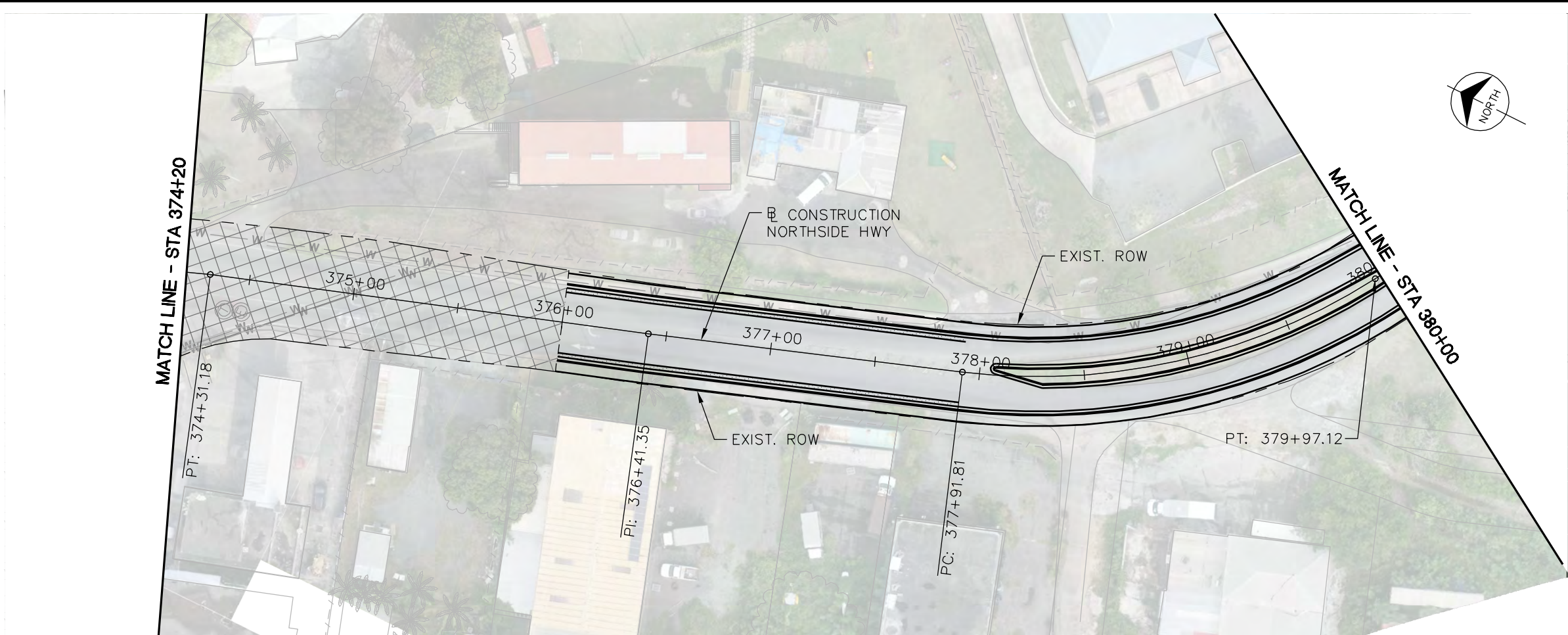
SHEET  
47 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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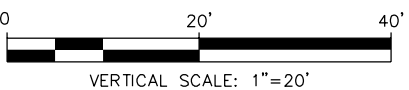
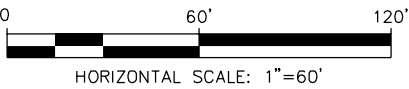
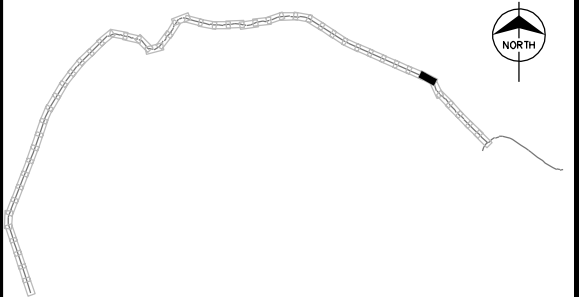
30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
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			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

- LEGEND**
- DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION
  - DENOTES INTERSECTION EXCEPTION (30% DESIGN)

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

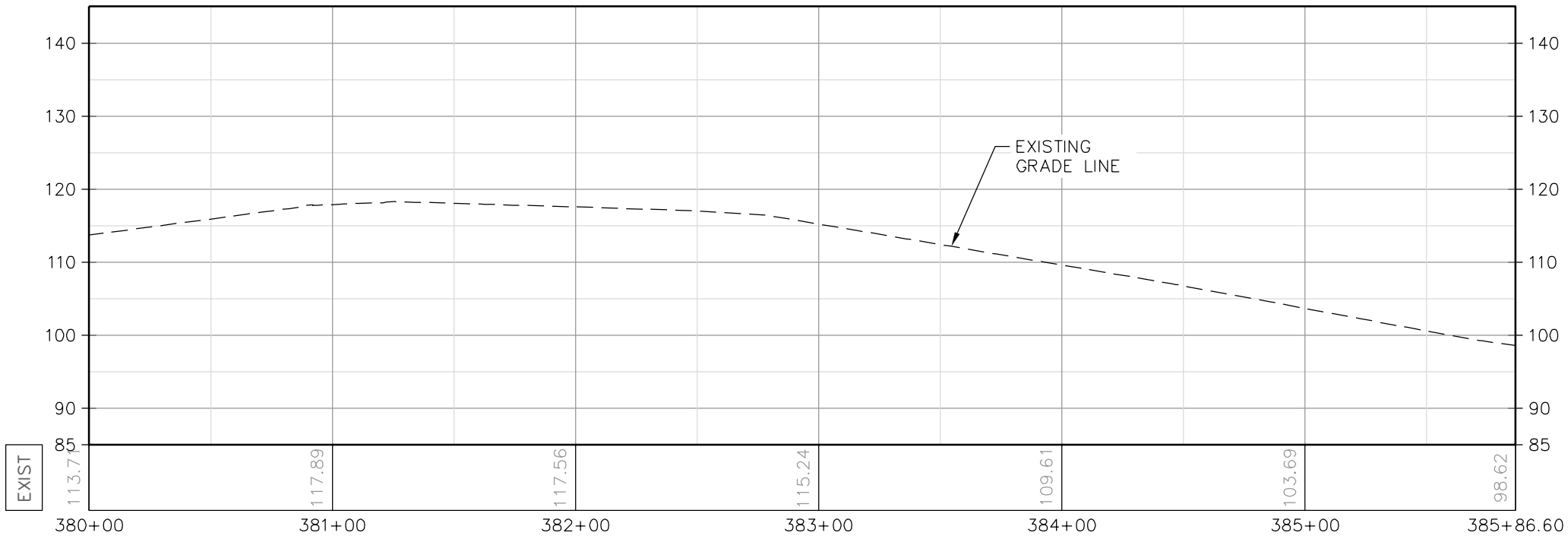
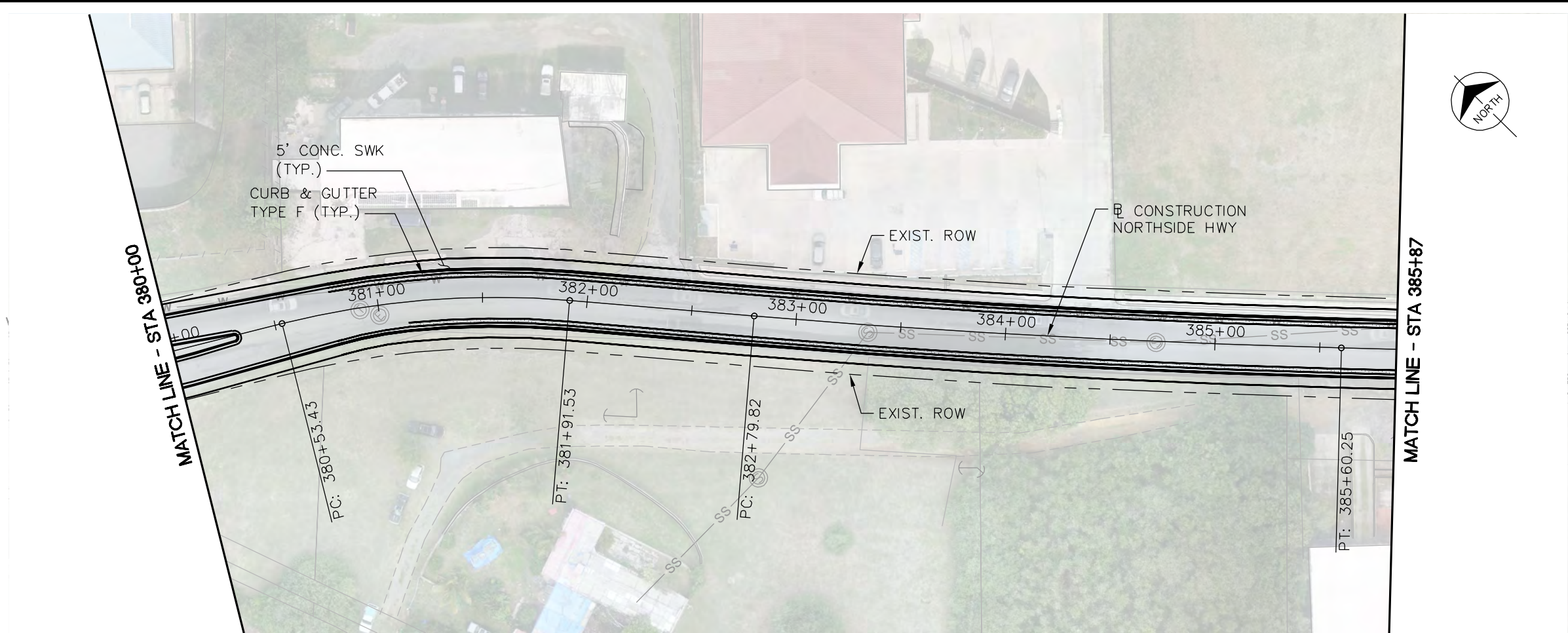
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SCALE:	1" = 60' (11"x17")	SHEET	48 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



30% PLANS – NOT FOR CONSTRUCTION

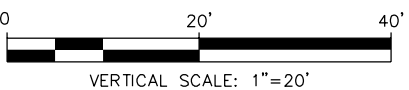
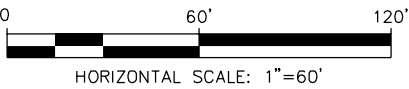
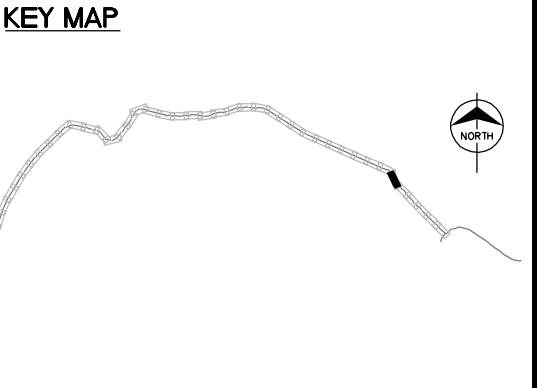


STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D49	

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REV. DATE: _____			

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

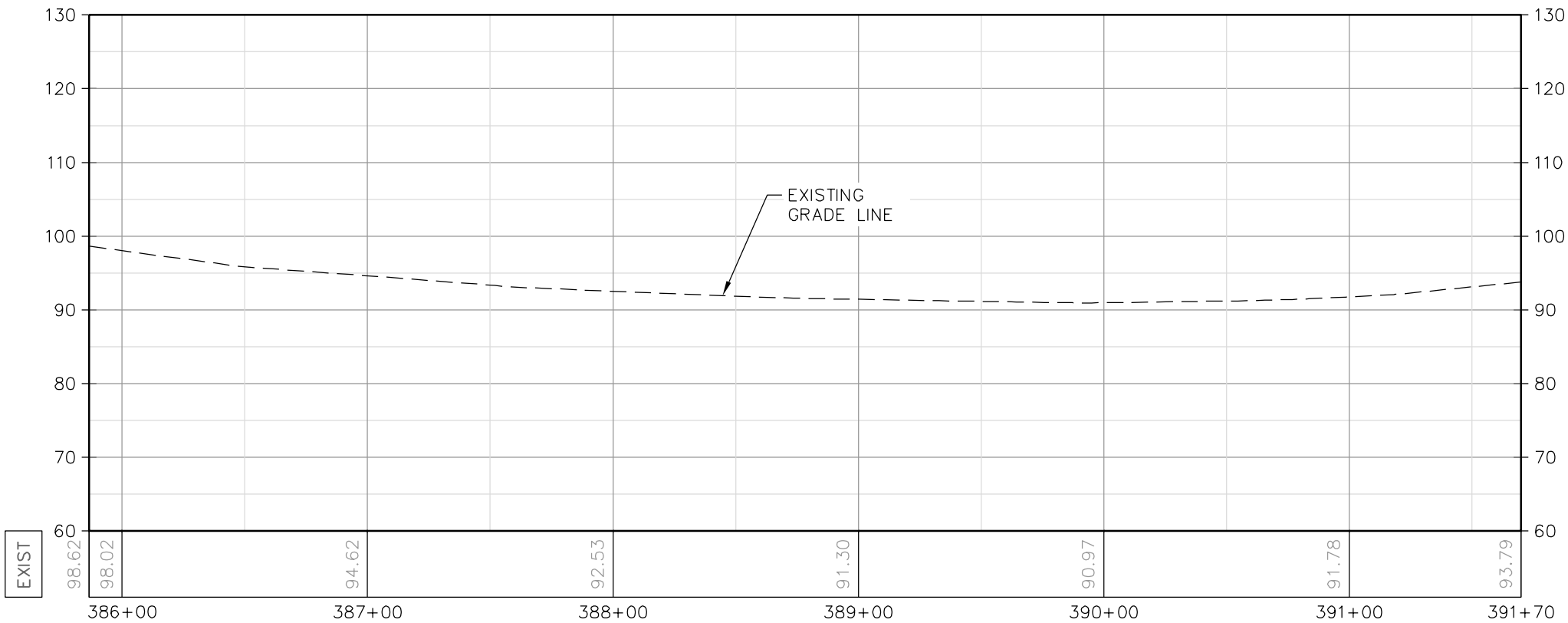
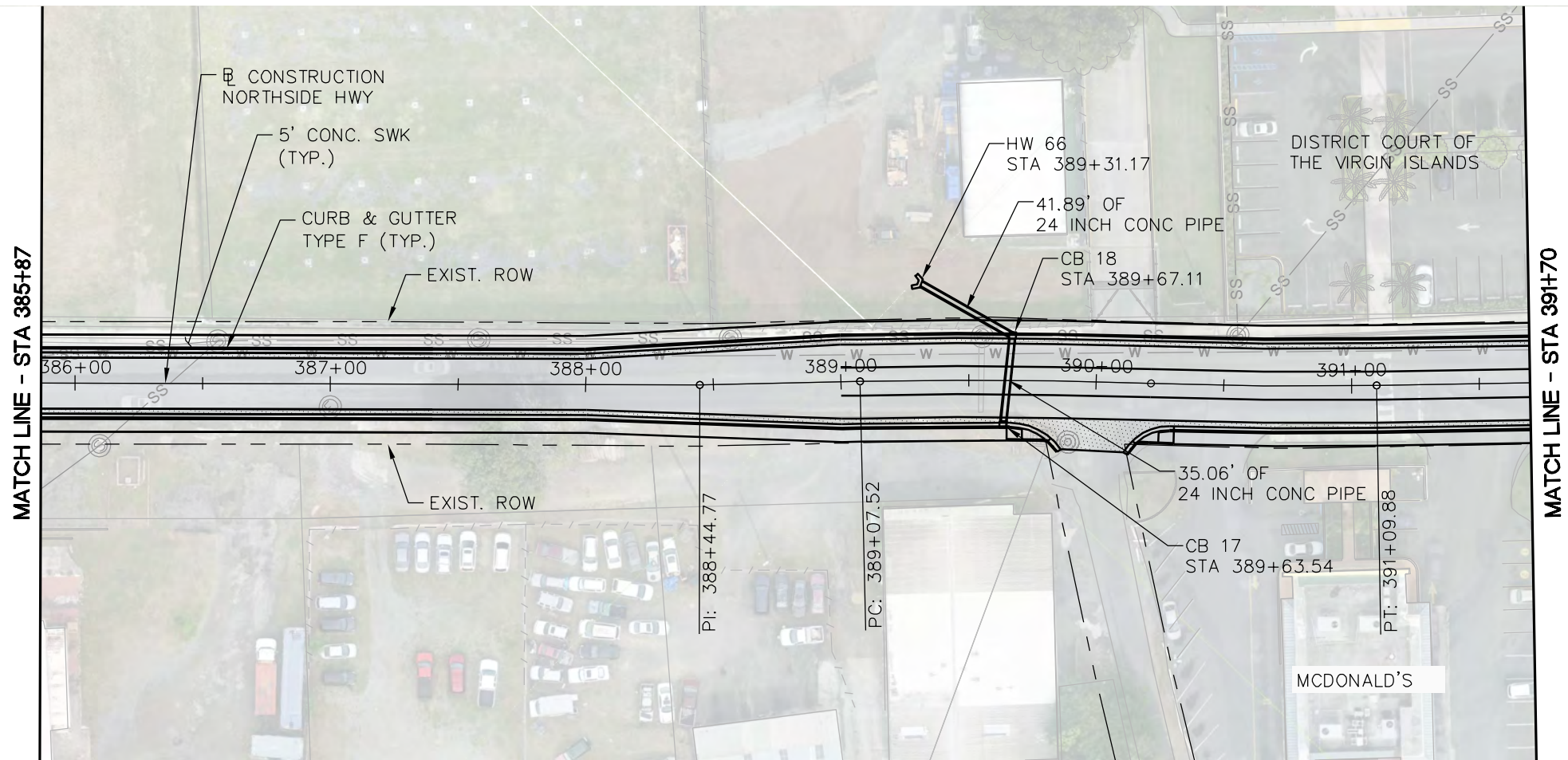
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SCALE: 1" = 60' (11"x17")	SHEET 49 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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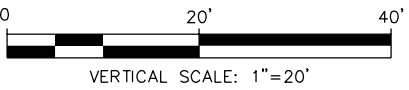
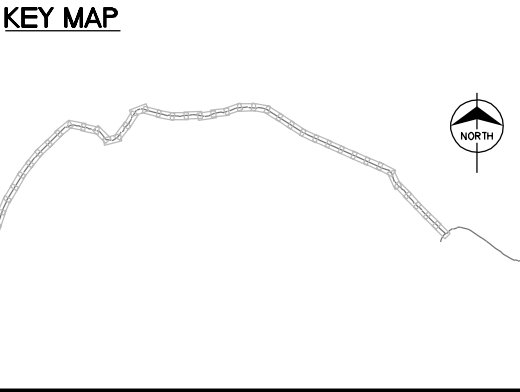
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STATE	ISLAND	CONTRACT	SHEET NO.	
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			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



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WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE  
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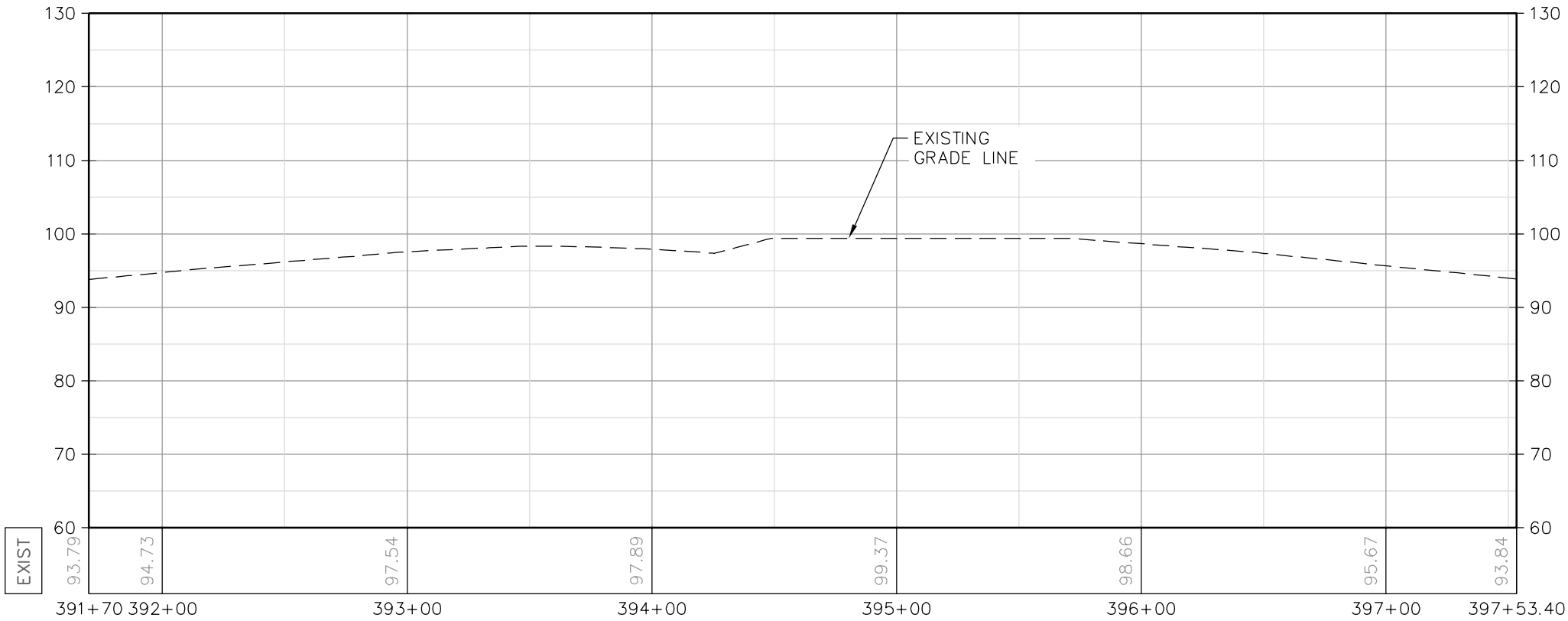
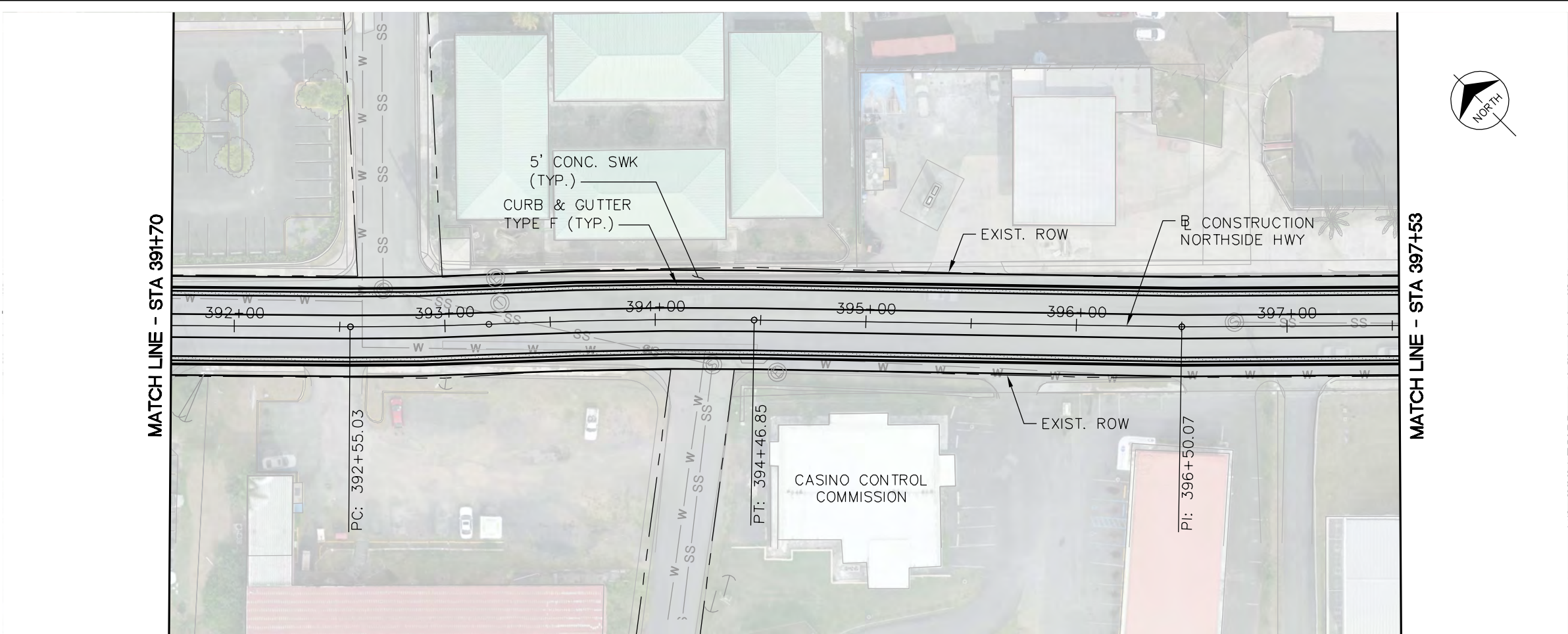
SCALE:	1" = 60' (11"x17")	SHEET	50 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D51	

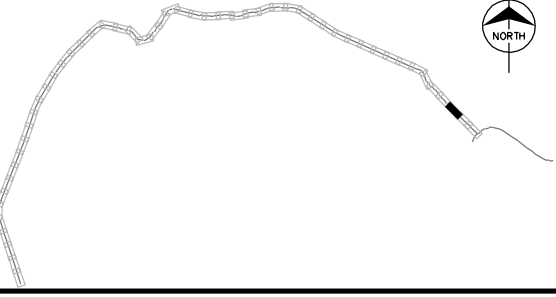
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REV. NO. \_\_\_\_\_  
REV. DATE: \_\_\_\_\_

**LEGEND**


 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



0 60' 120'  
HORIZONTAL SCALE: 1"=60'

0 20' 40'  
VERTICAL SCALE: 1"=20'



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**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

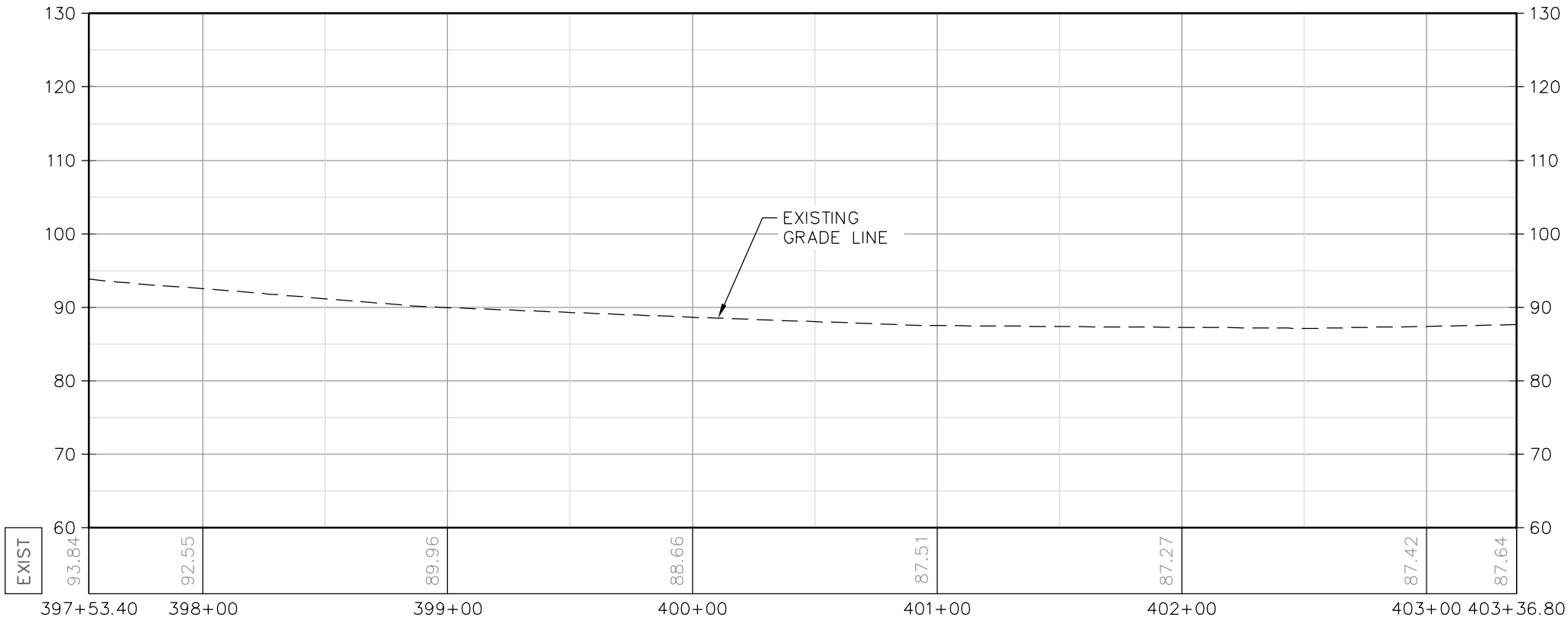
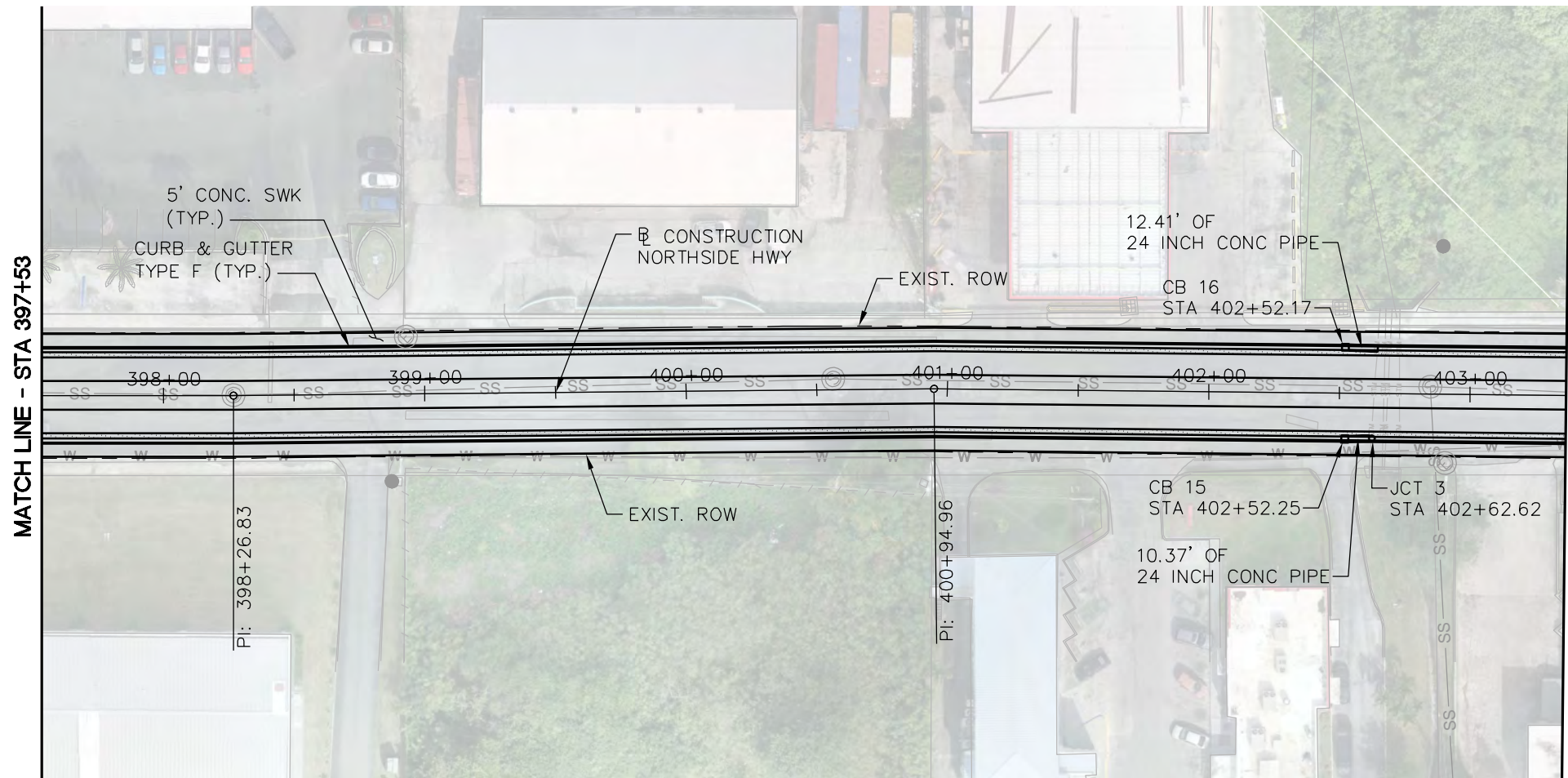
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SCALE: 1" = 60' (11"x17")

SHEET 51 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D52	

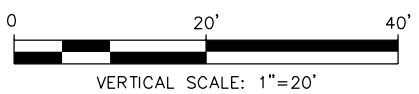
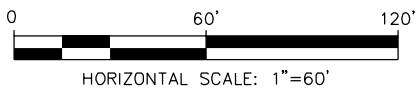
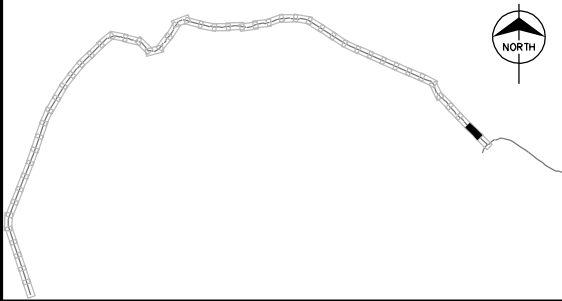
ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:

REV. NO.	
REV. DATE:	

**LEGEND**

	DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION
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**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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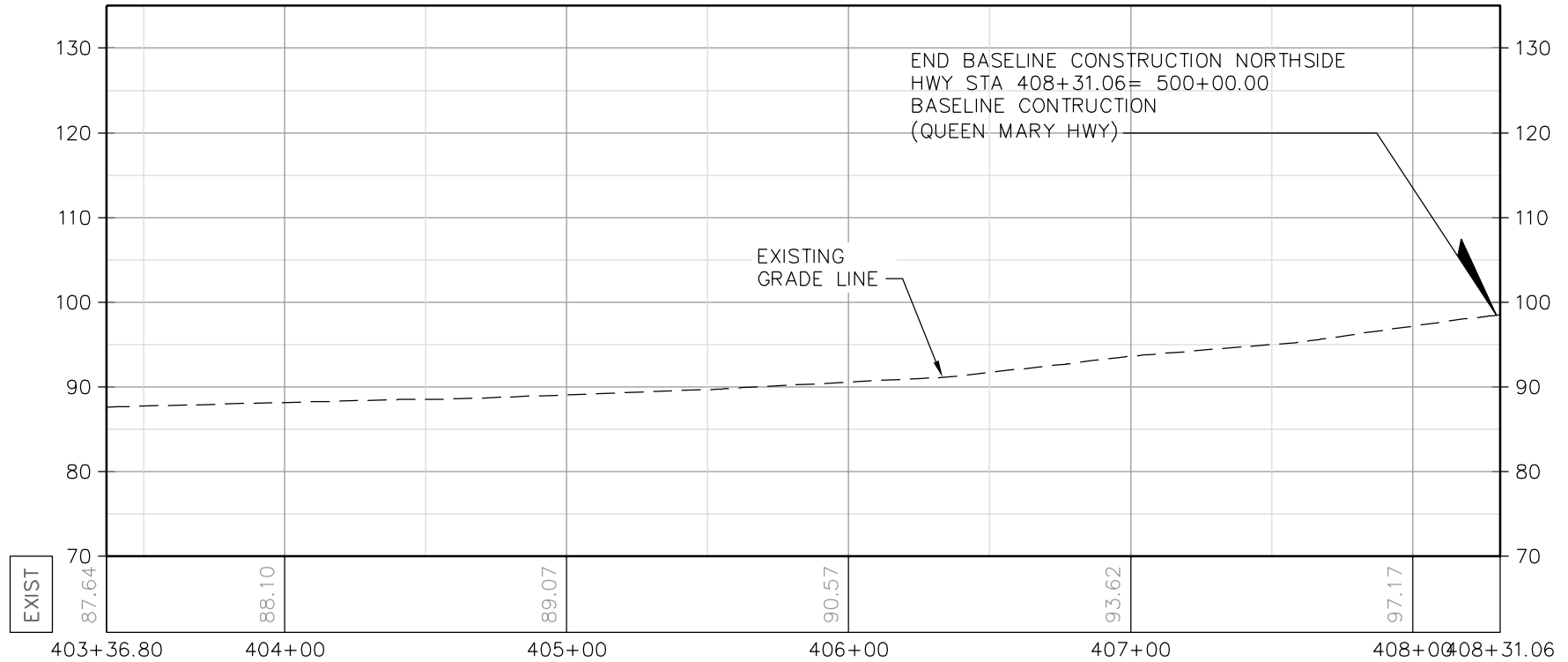
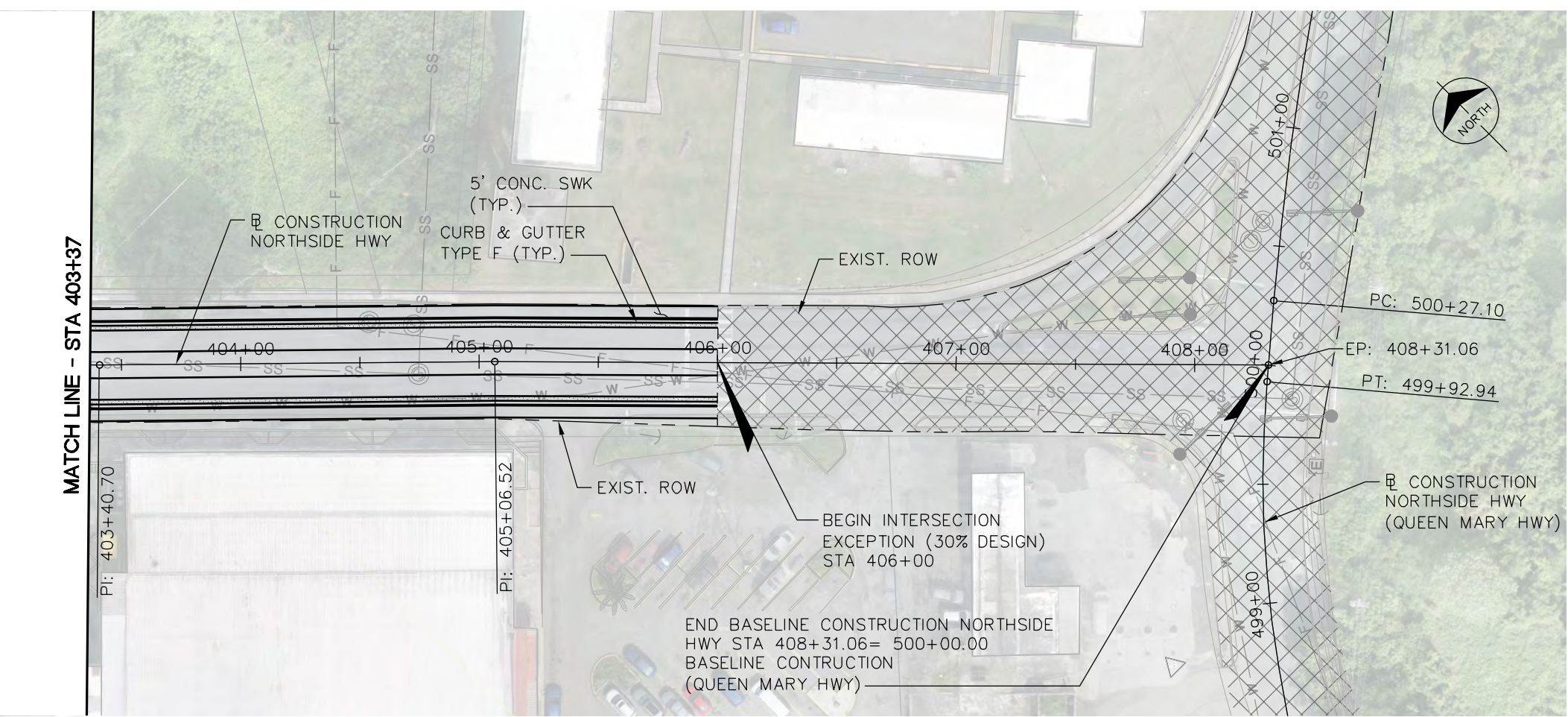
SCALE: 1" = 60' (11"x17")	SHEET 52 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.
USVI	ST CROIX	P149DPWT21	D53

ENGINEER: \_\_\_\_\_

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REV. DATE: \_\_\_\_\_

**LEGEND**

DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

DENOTES INTERSECTION EXCEPTION (30% DESIGN)

**KEY MAP**

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

SCALE: 1" = 60' (11"x17")

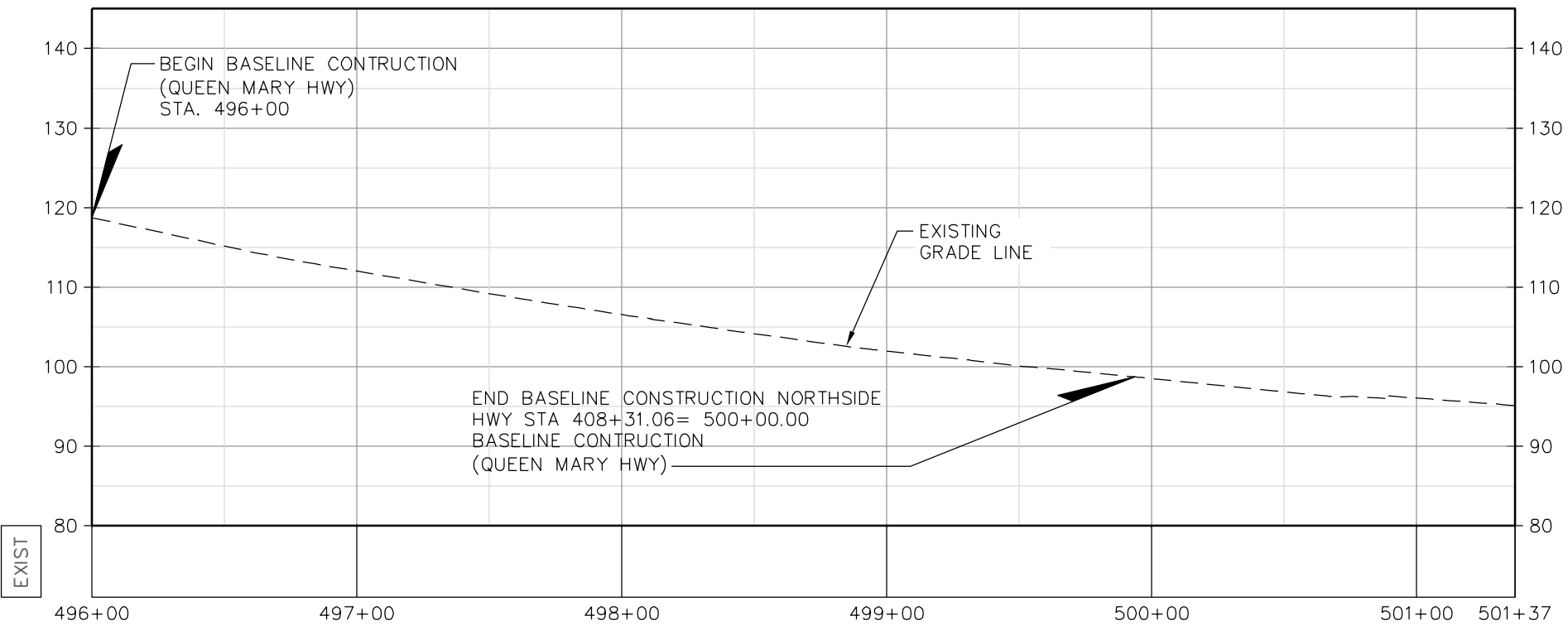
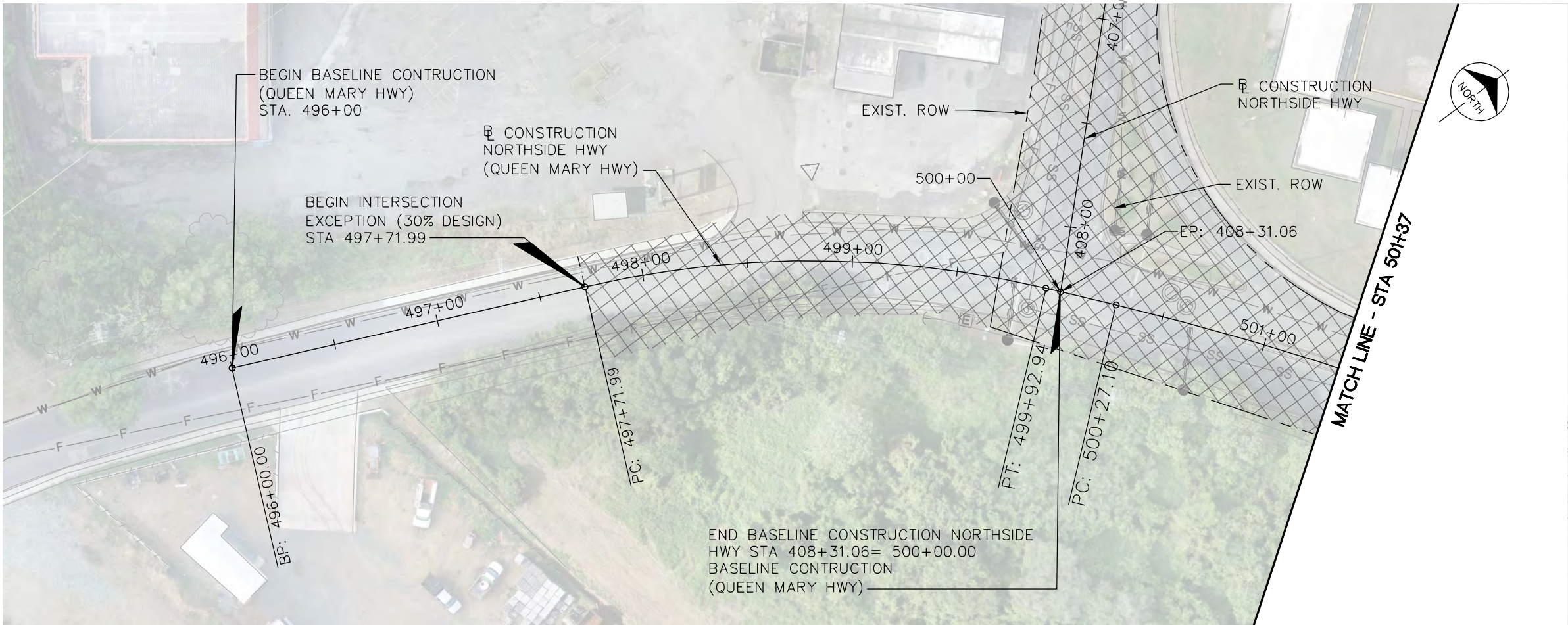
SHEET 53 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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STATE	ISLAND	CONTRACT	SHEET NO.
USVI	ST CROIX	P149DPWT21	D54

ENGINEER: \_\_\_\_\_  
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REV. DATE: \_\_\_\_\_

**LEGEND**

DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

DENOTES INTERSECTION EXCEPTION (30% DESIGN)

**KEY MAP**

0 60' 120'

HORIZONTAL SCALE: 1"=60'

0 20' 40'

VERTICAL SCALE: 1"=20'

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE  
----

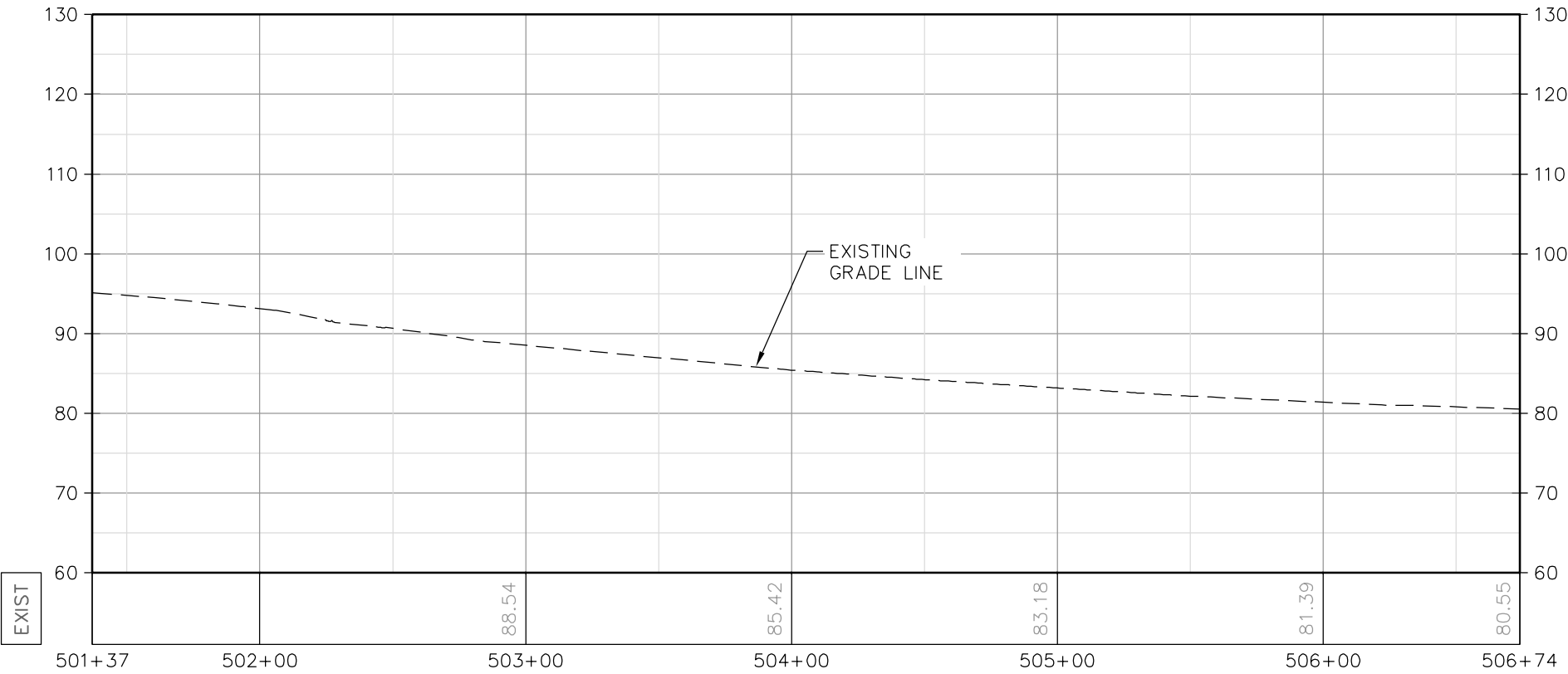
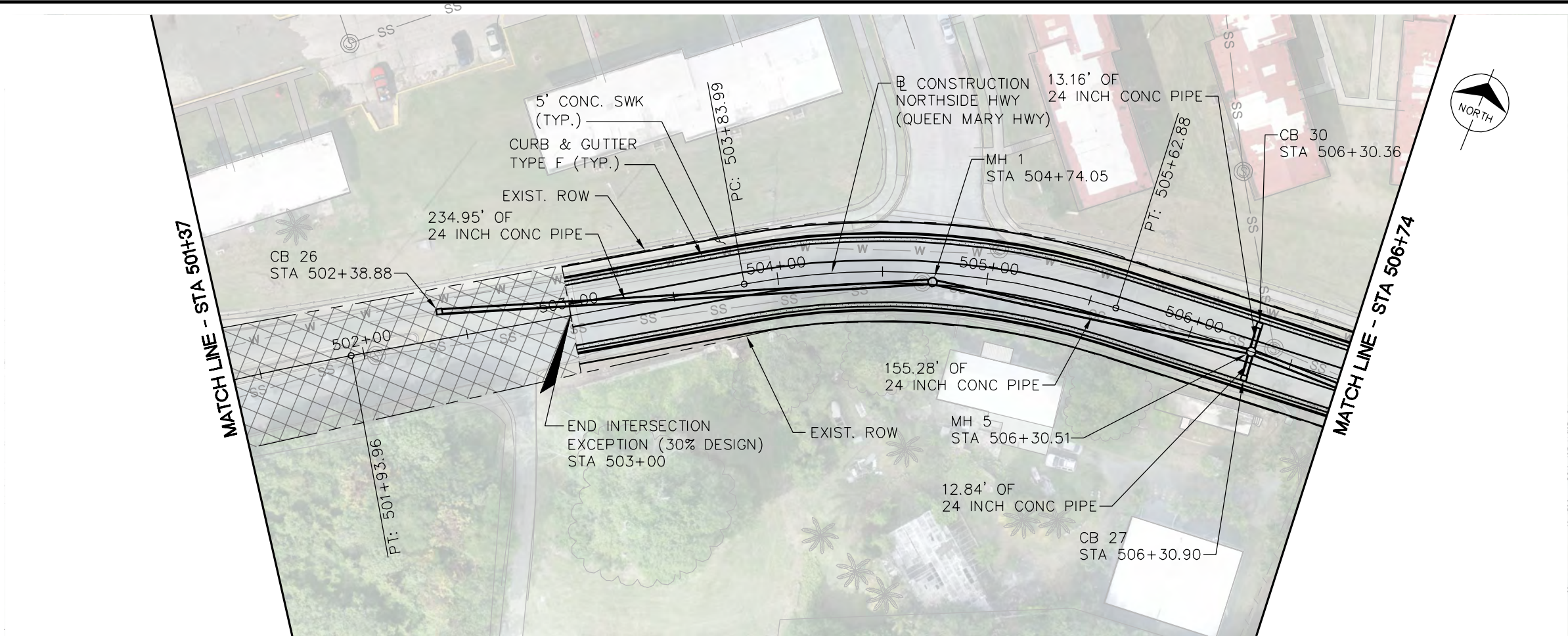
SCALE: 1" = 60' (11"x17")

SHEET  
54 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.



30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D55	

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:

REV. NO.	REV. DATE:

  
**LEGEND**  

	DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION
	DENOTES INTERSECTION EXCEPTION (30% DESIGN)

  
**KEY MAP**  
  

HORIZONTAL SCALE: 1"=60'
VERTICAL SCALE: 1"=20'

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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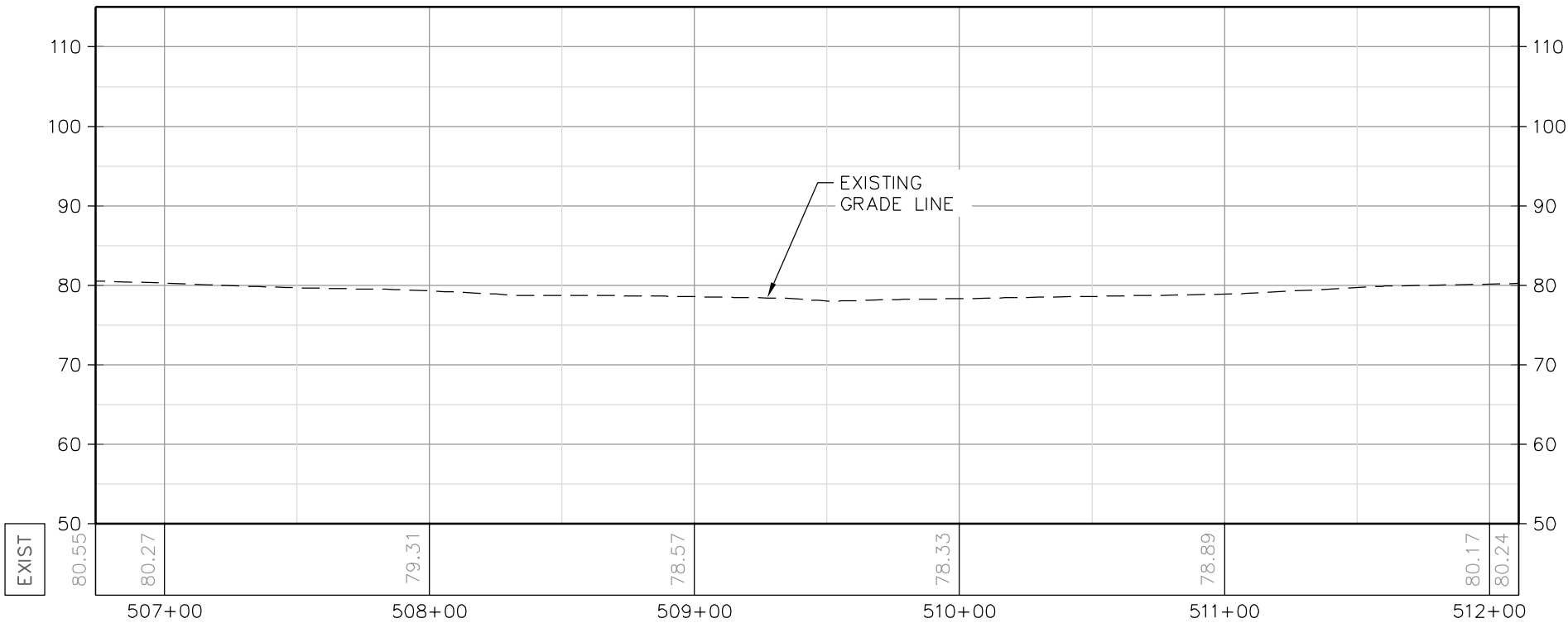
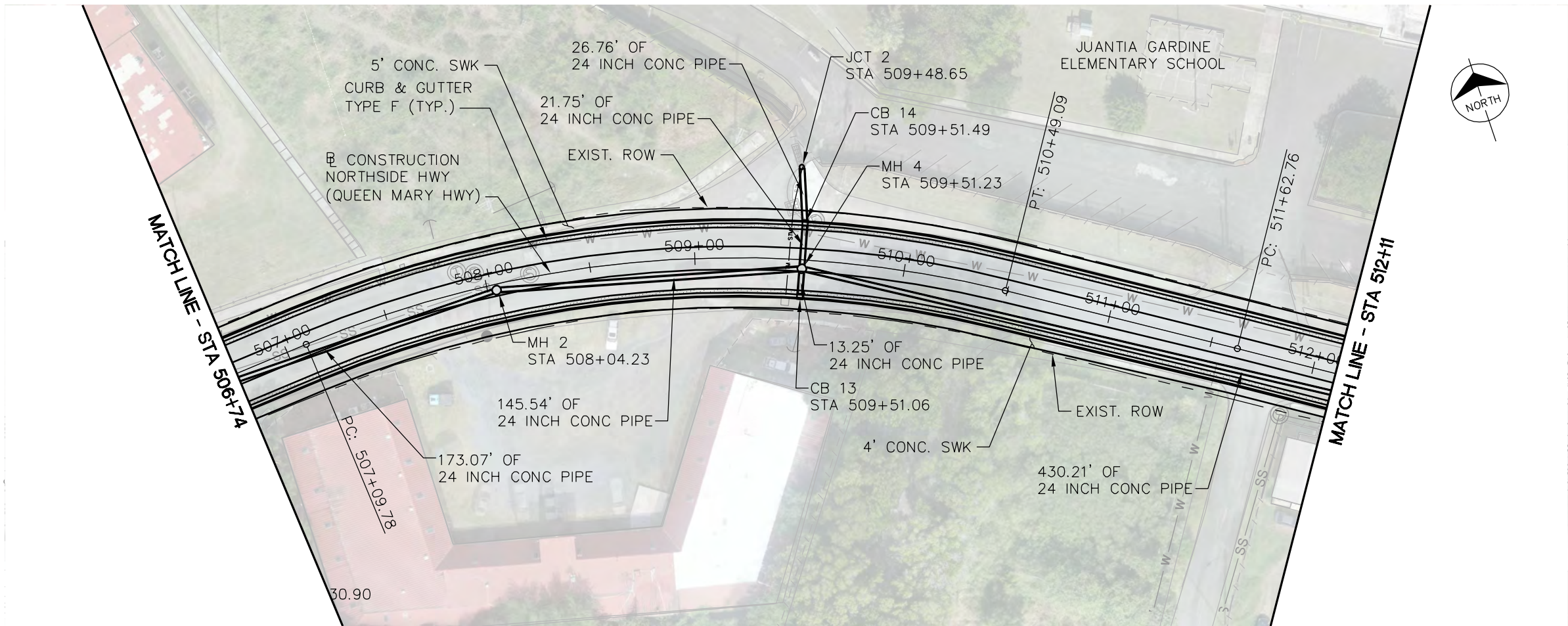
SCALE:	SHEET
1" = 60' (11"x17")	55 OF 61

IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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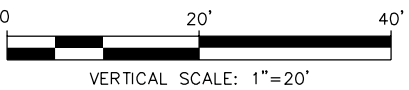
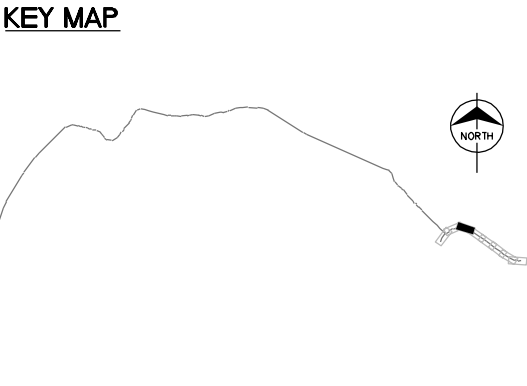
30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D56	
			ENGINEER:	
			DRAWN:	
			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

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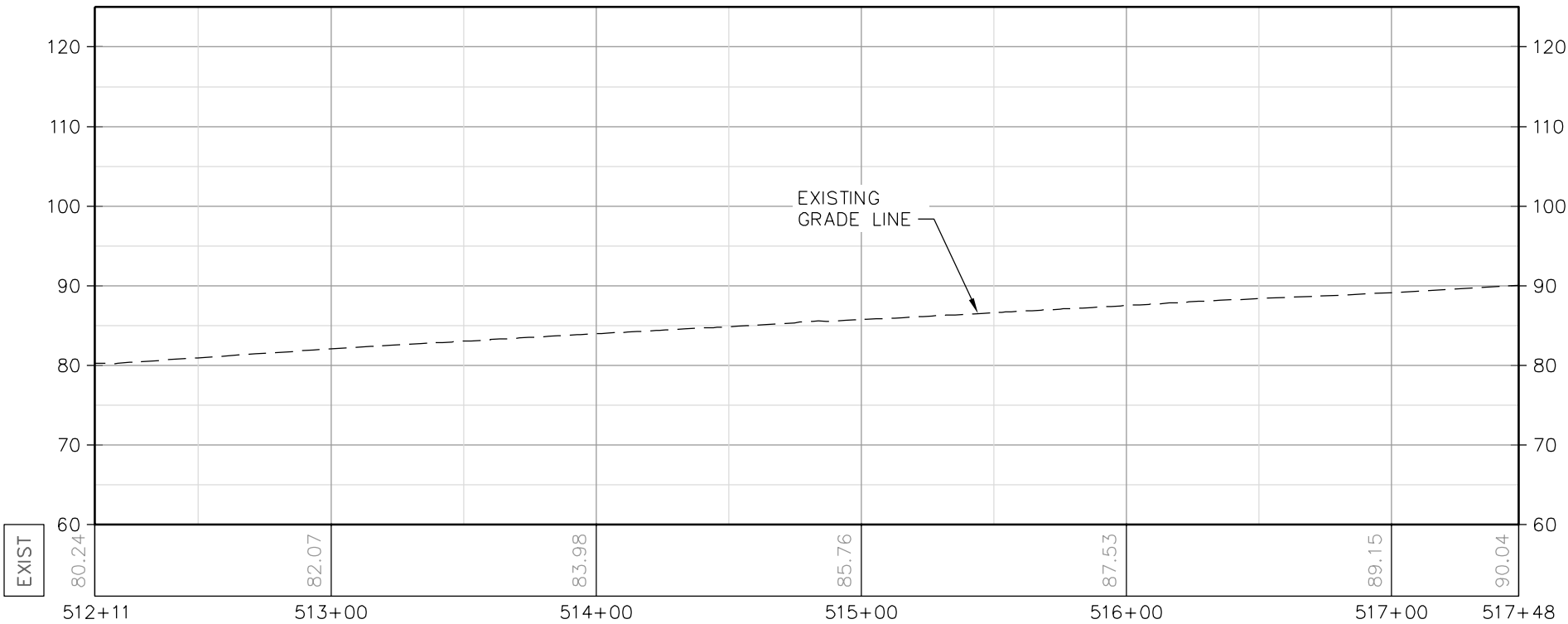
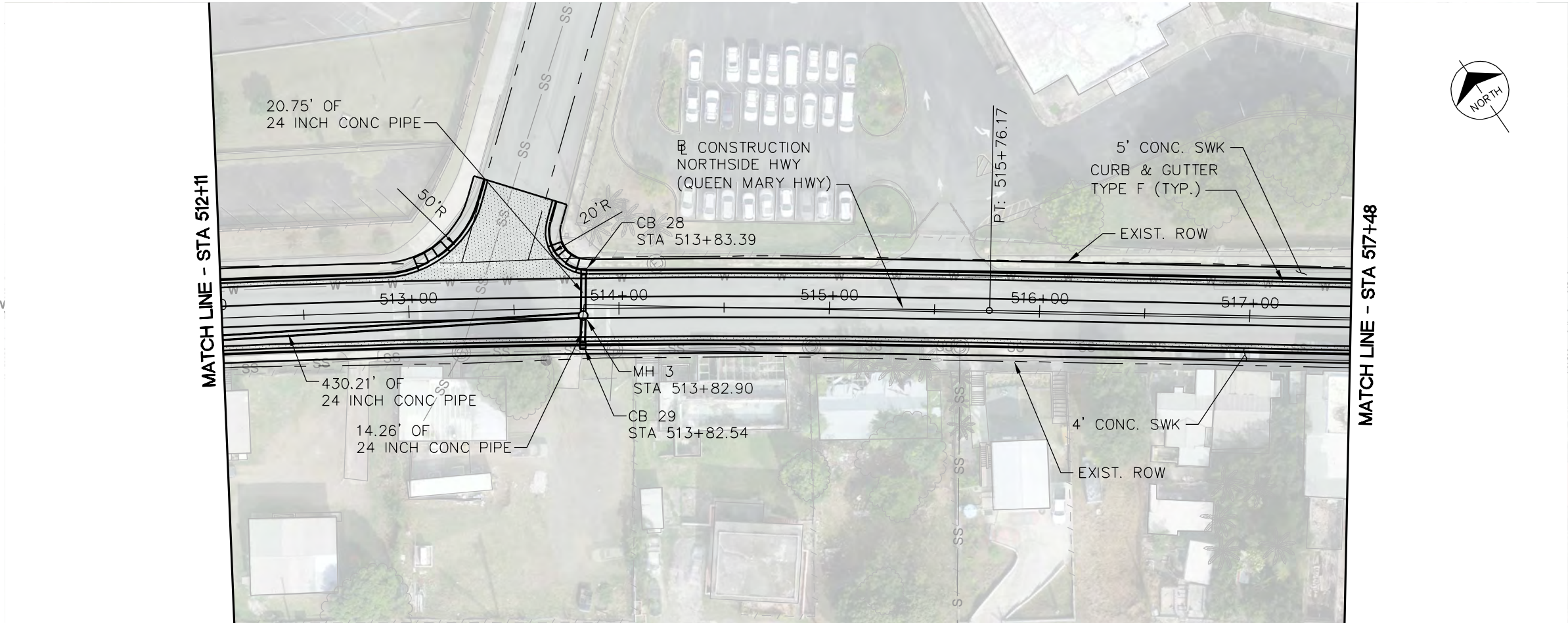
SCALE:	1" = 60' (11"x17")	SHEET	56 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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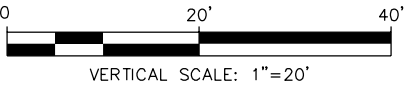
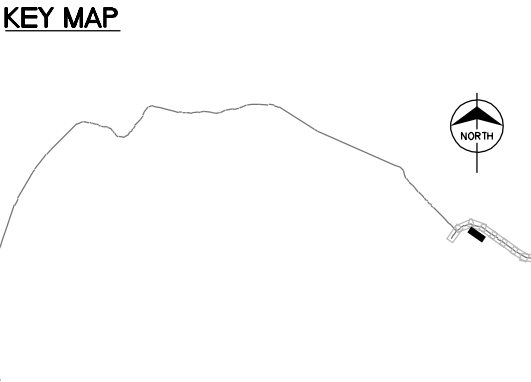
30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D57	
			ENGINEER:	
			DRAWN:	
			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION



  
**Stanley Consultants INC.**  
1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

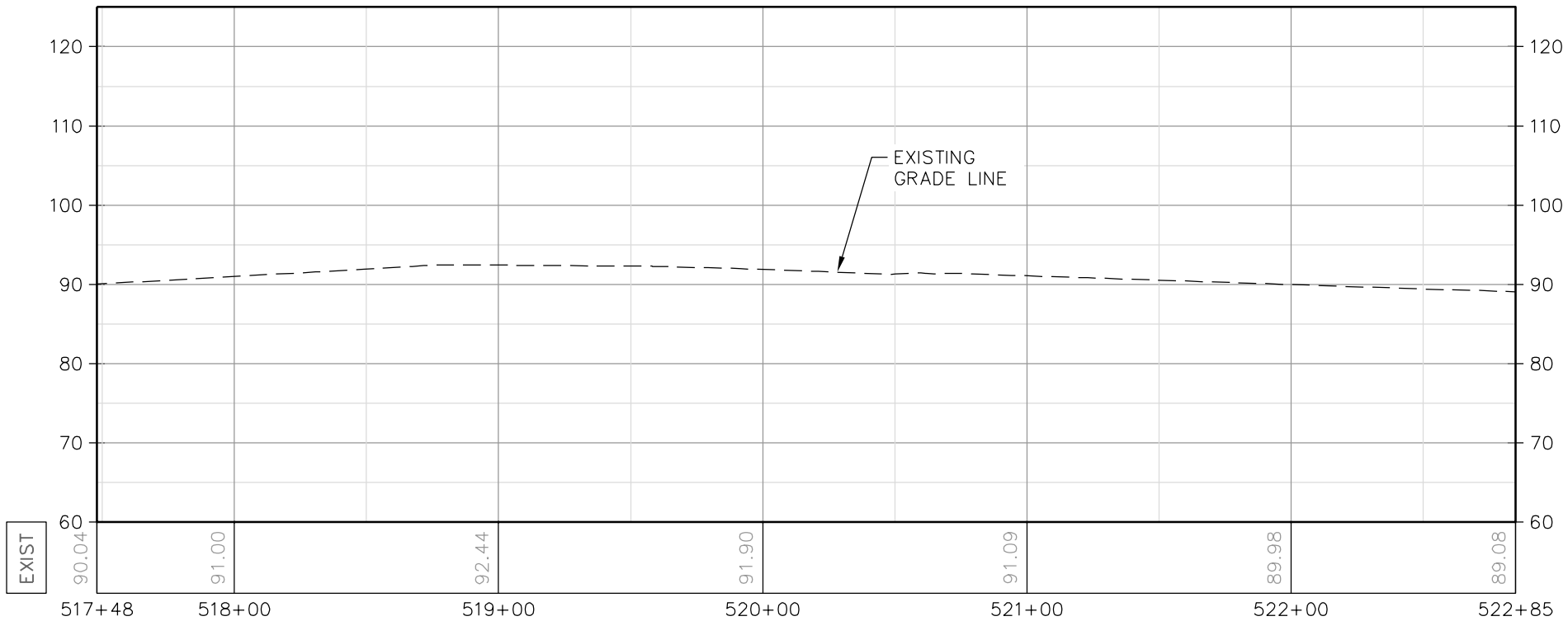
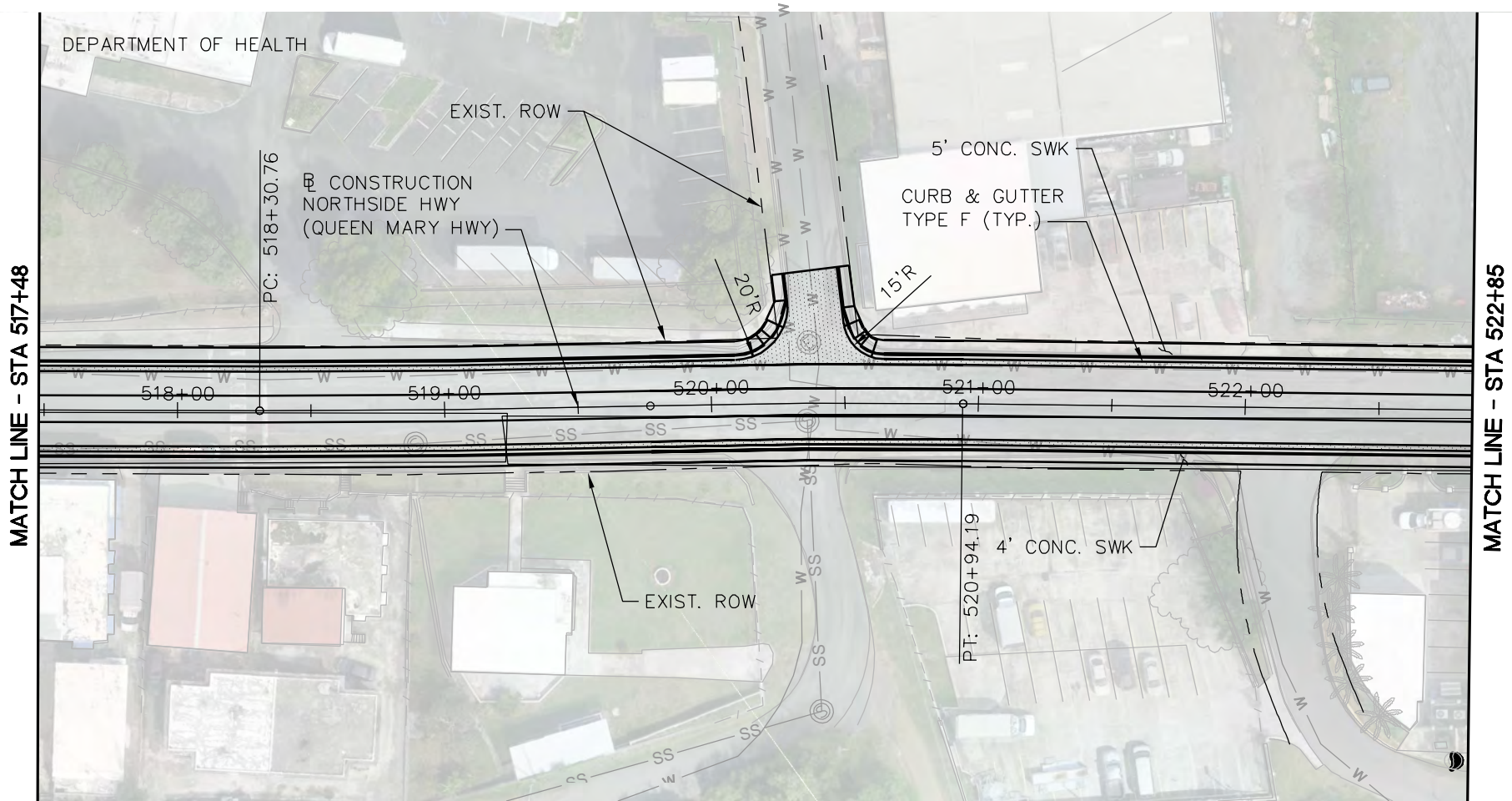
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SCALE:	1" = 60' (11"x17")	SHEET	57	OF	61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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30% PLANS – NOT FOR CONSTRUCTION

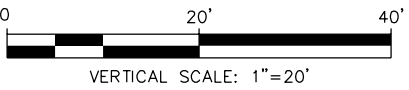
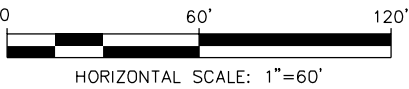
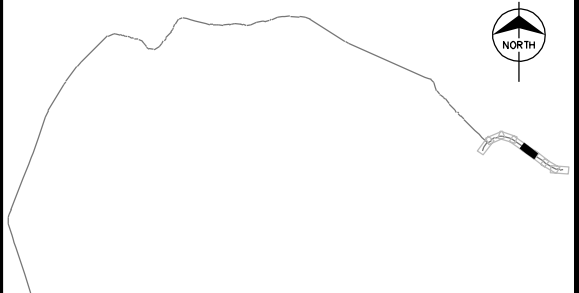


STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D58	
			ENGINEER:	
			DRAWN:	
			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

**LEGEND**

 DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE

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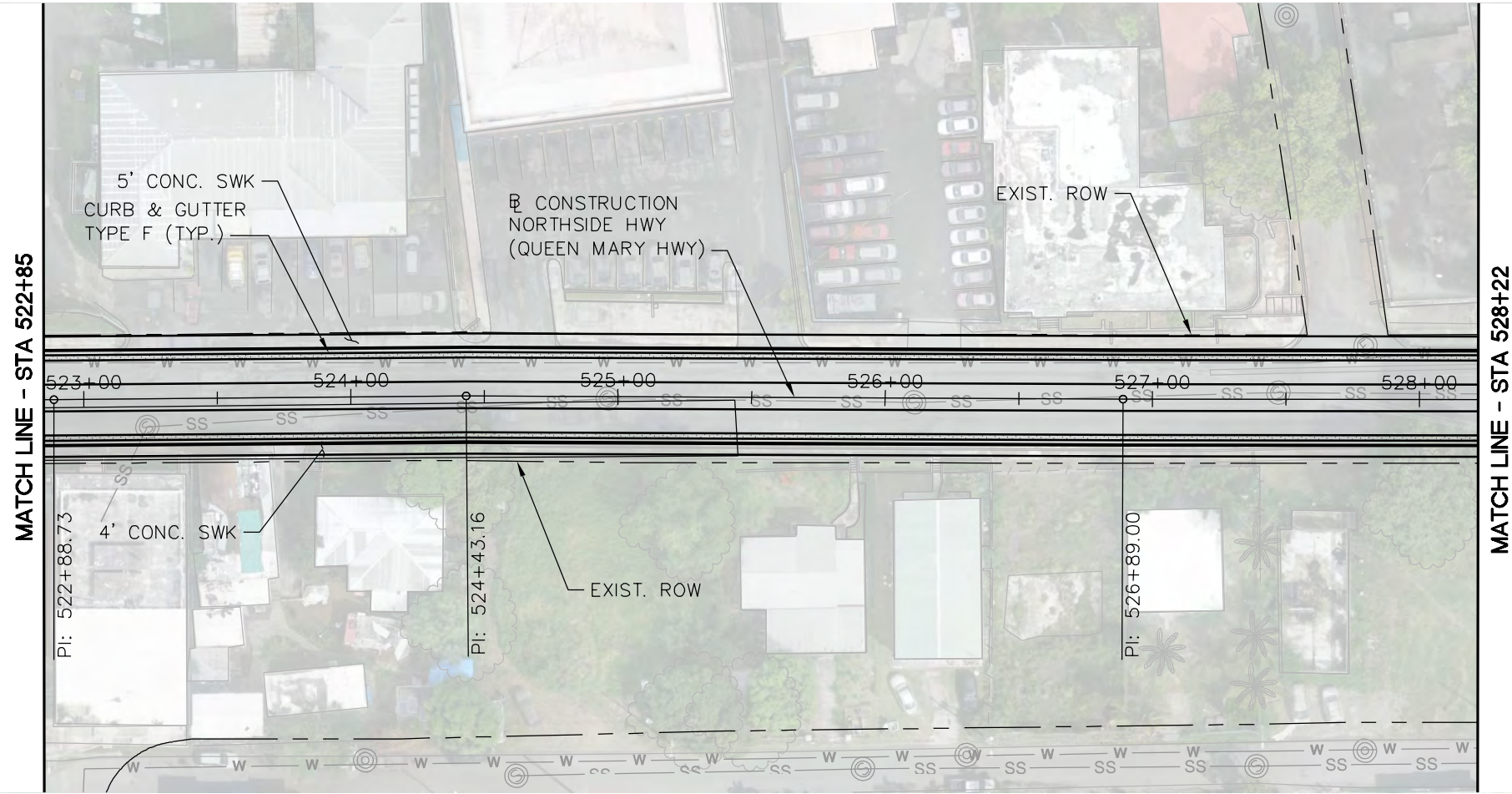
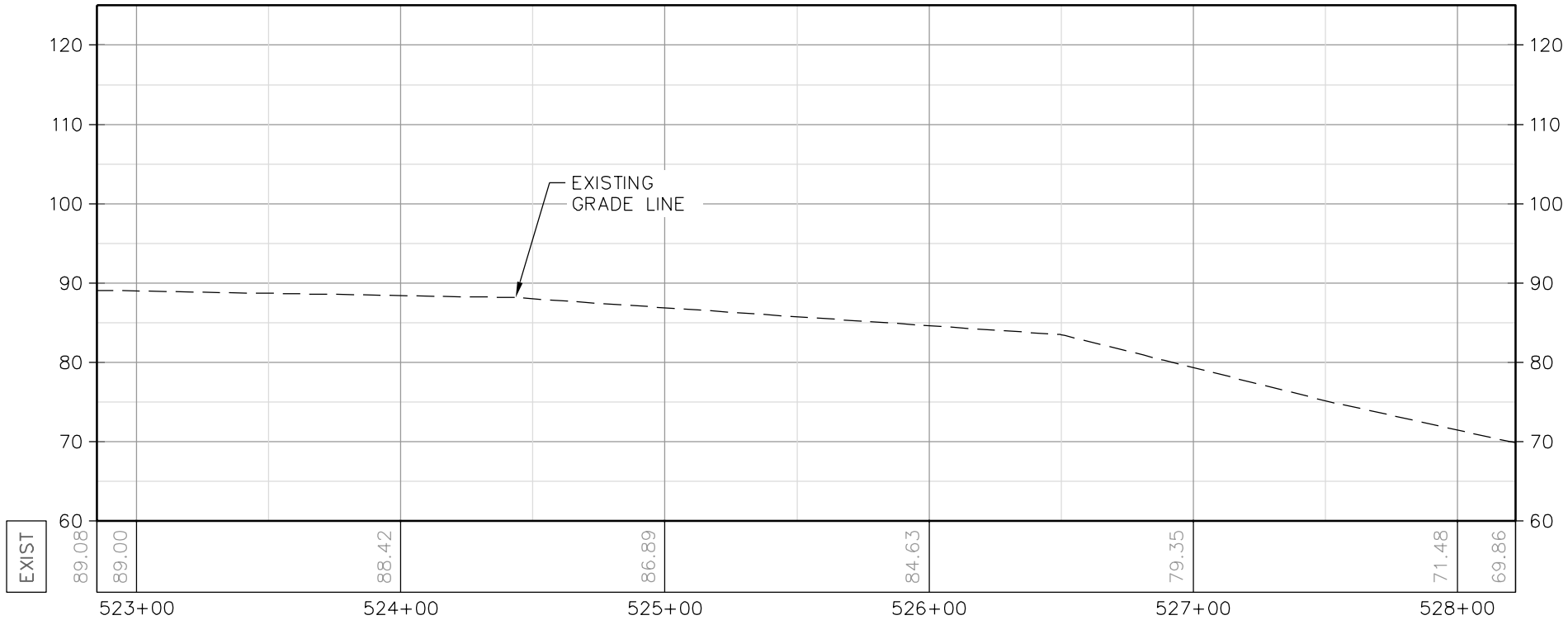
SCALE:	1" = 60' (11"x17")	SHEET	58 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D59	

ENGINEER: \_\_\_\_\_  
DRAWN: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
PRINT DATE: \_\_\_\_\_

REV. NO. \_\_\_\_\_  
REV. DATE: \_\_\_\_\_

**LEGEND**

DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION

**KEY MAP**

0 60' 120'

HORIZONTAL SCALE: 1"=60'

0 20' 40'

VERTICAL SCALE: 1"=20'

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

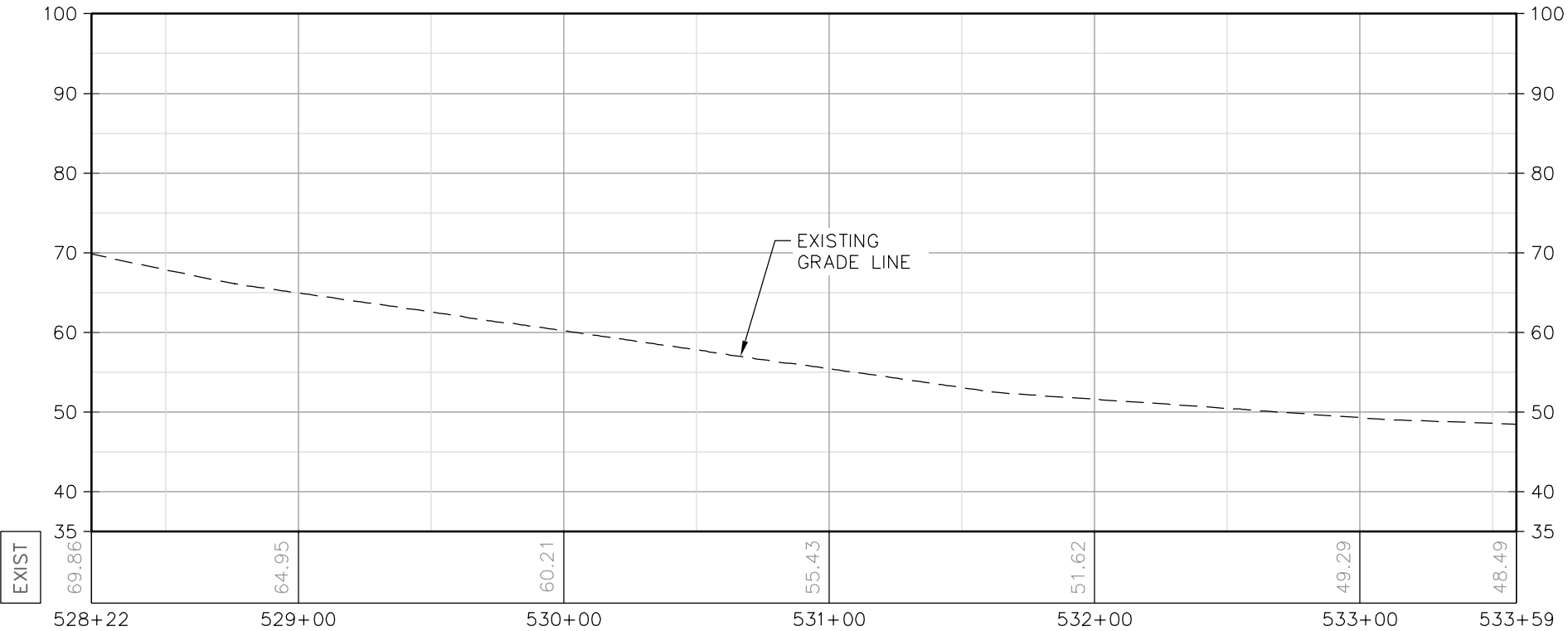
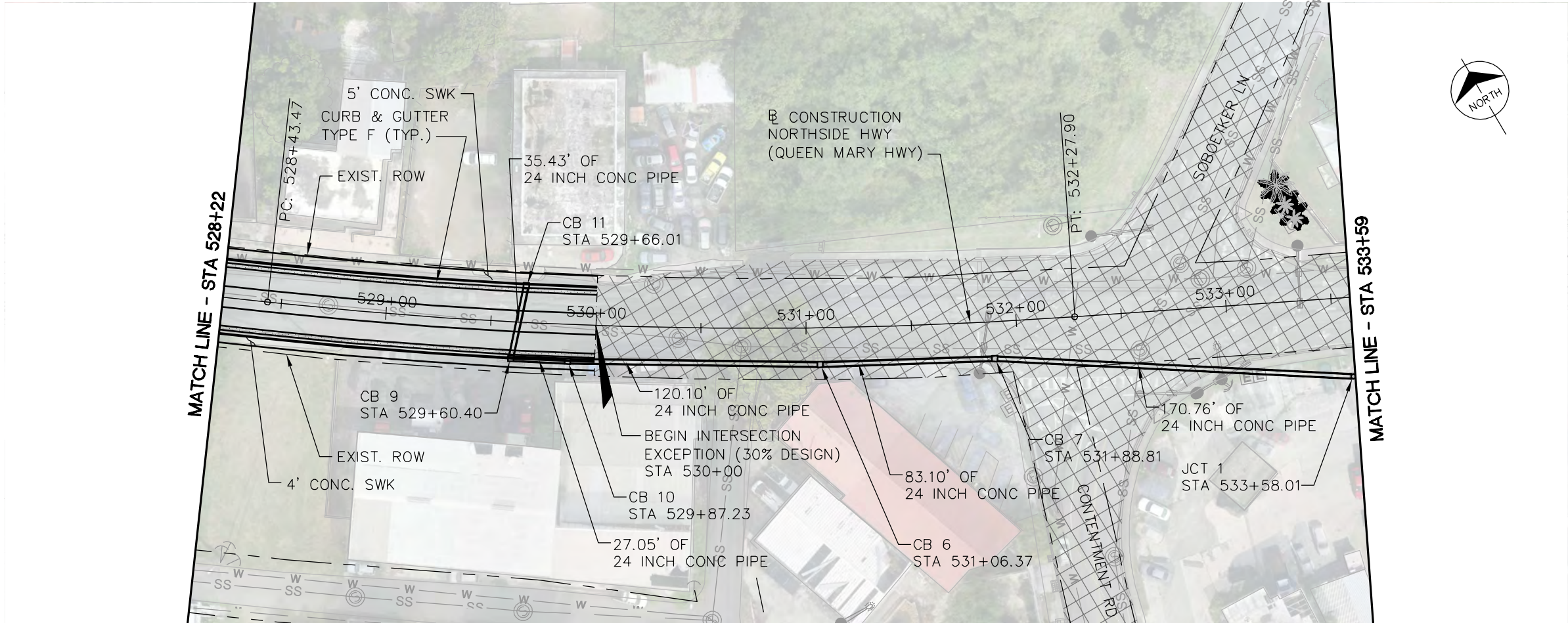
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SCALE: \_\_\_\_\_

SHEET  
59 OF 61

IF SHEET IS DIFFERENT THAN (11"X17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

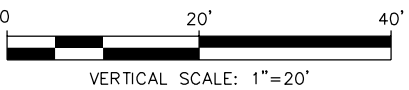
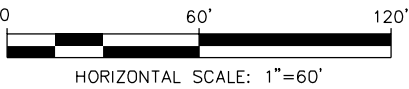
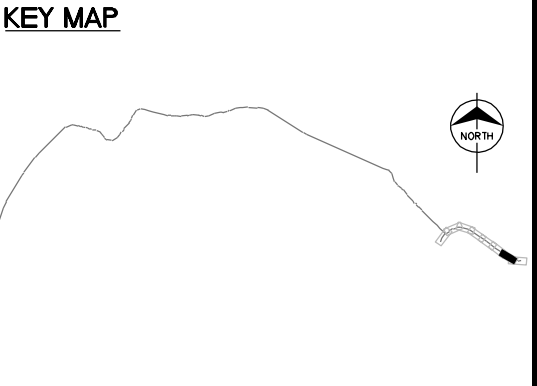
30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D60	

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:
REV. NO. _____			
REV. DATE: _____			

- LEGEND**
- DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION
  - DENOTES INTERSECTION EXCEPTION (30% DESIGN)



1641 WORTHINGTON ROAD, SUITE 400  
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DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

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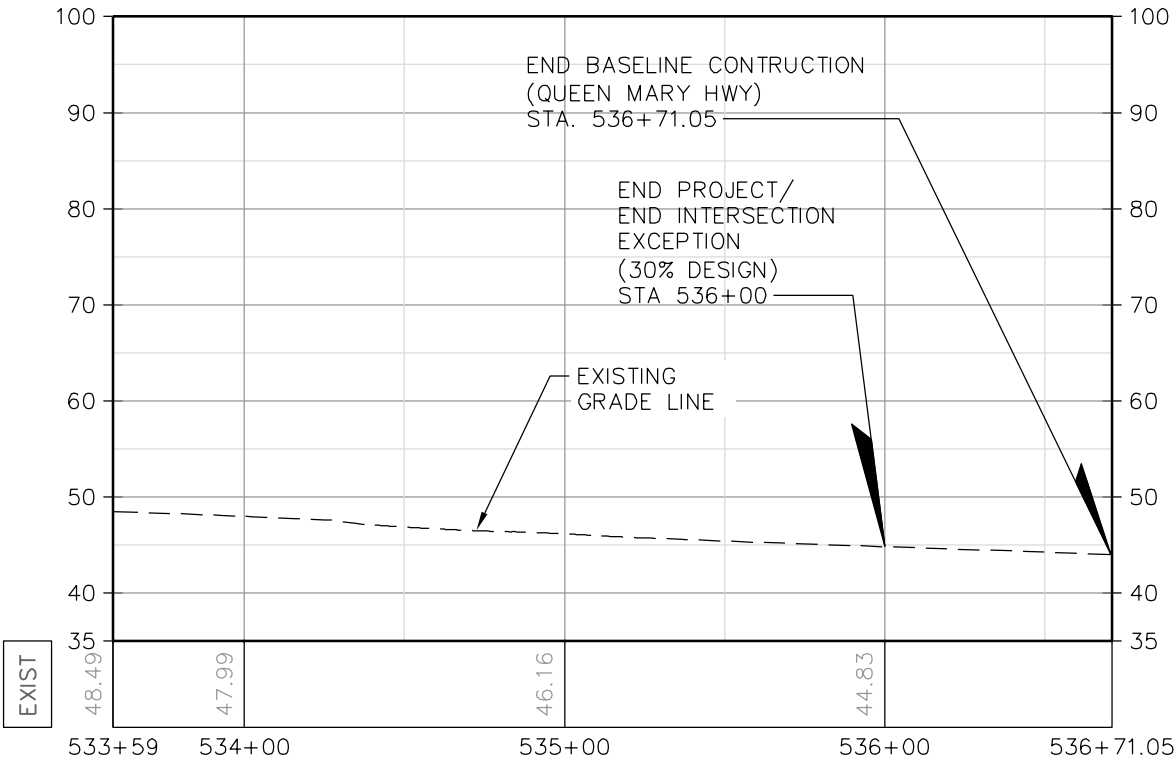
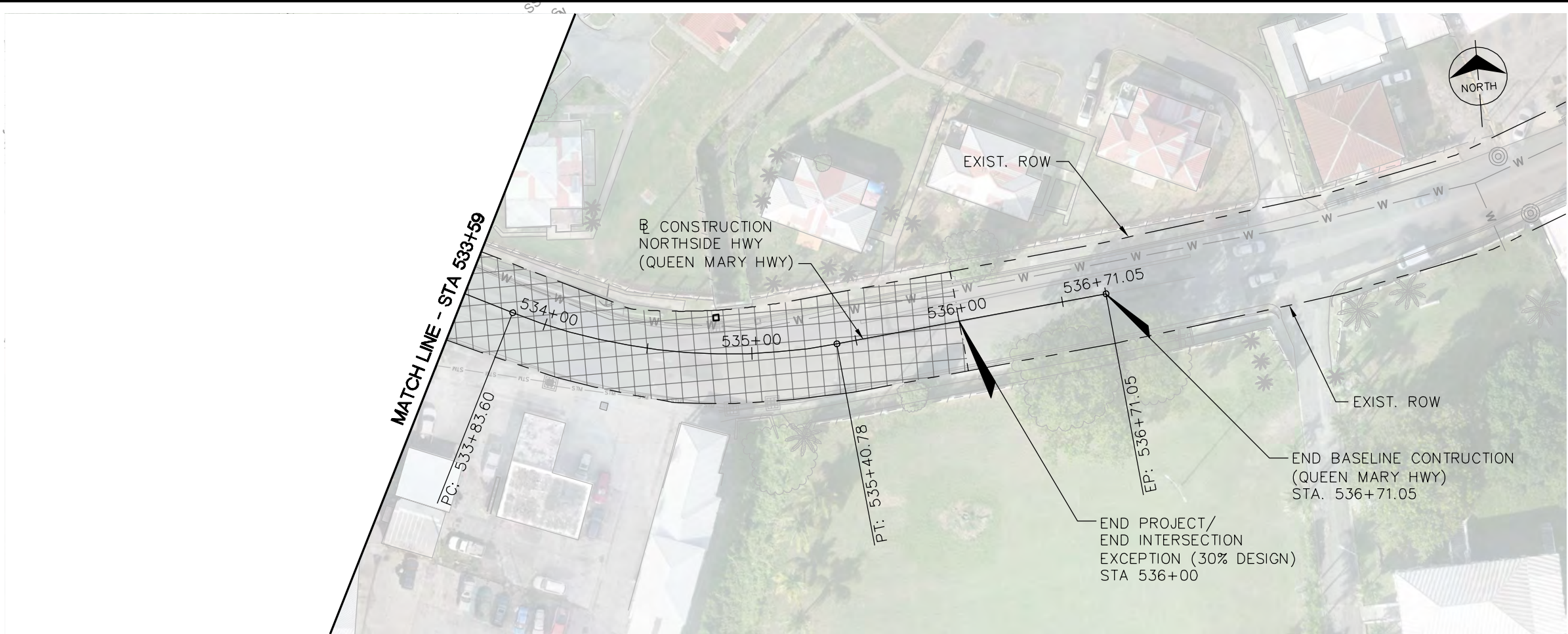
SCALE: 1" = 60' (11"x17")	SHEET 60 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

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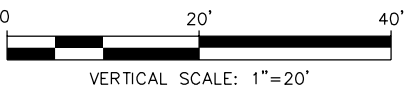
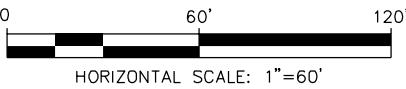
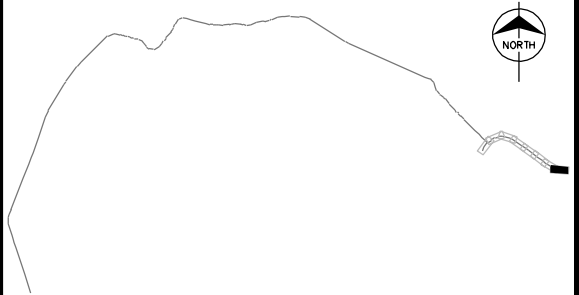
30% PLANS – NOT FOR CONSTRUCTION



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	D61	
			ENGINEER:	
			DRAWN:	
			CHECKED:	
			PRINT DATE:	
			REV. NO.	
			REV. DATE:	

- LEGEND**
- DENOTES SHLDR. WIDENING & PAVEMENT RECONSTRUCTION
  - DENOTES INTERSECTION EXCEPTION (30% DESIGN)

**KEY MAP**



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

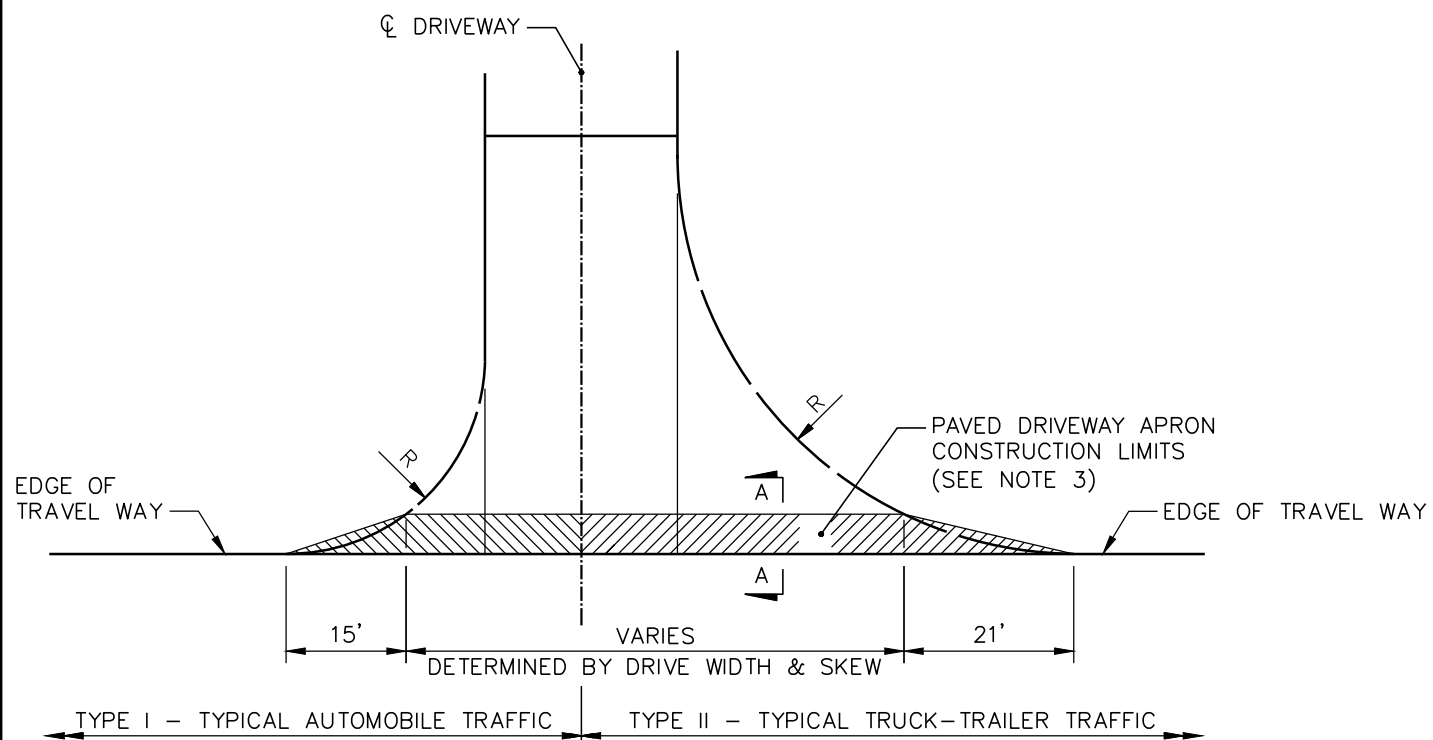
**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
ROADWAY PLAN AND PROFILE**

----

SCALE:	1" = 60' (11"x17")	SHEET	61 OF 61
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

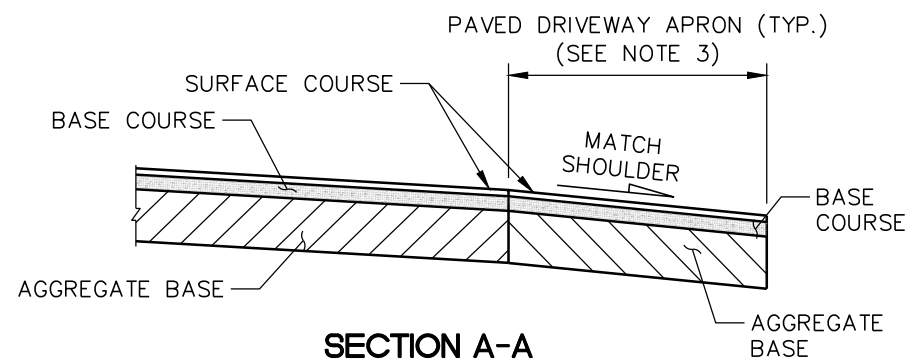
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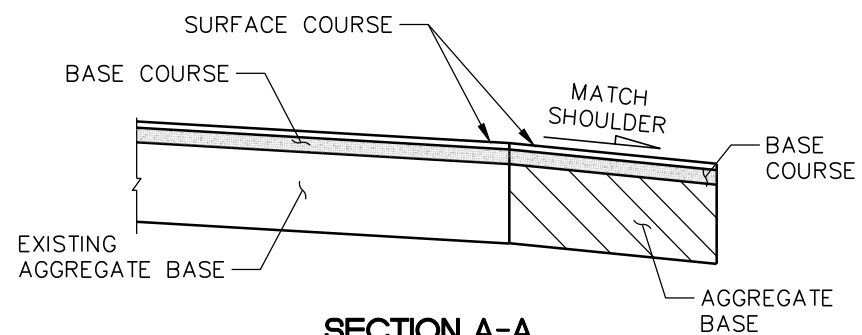
## FLUSH SHOULDER DRIVEWAY TYPES

GENERAL NOTES:

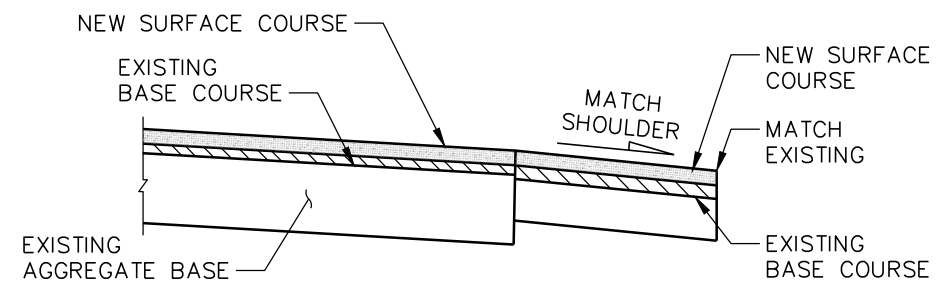
1. DRIVEWAYS ARE TO BE CONSTRUCTED OR RESURFACED FOR LOW VOLUME (SINGLE FAMILY, DUPLEX, FARM, ETC.) RESIDENTIAL CONNECTIONS AS DIRECTED BY THE CONTRACTING OFFICER OR AUTHORIZED REPRESENTATIVE (CO).
2. DRIVEWAYS CONSTRUCTION IS NOT REQUIRED FOR LOW VOLUME RESIDENTIAL CONNECTIONS WHERE ROADWAY SHOULDERS ARE PAVED.
3. MATCH EXISTING PAVED SHOULDER WIDTHS  $\geq 4'$ . FOR ALL OTHER SHOULDERS CONDITIONS, CONSTRUCT AT 5' WIDE.
4. CONNECTIONS BEYOND THE SHOULDER WIDTH ARE TO BE CONSTRUCTED AS DIRECTED BY THE CO.
5. CONSTRUCT DRIVEWAY BASE USING SIMILAR PAVEMENT DESIGN AS THE MAINLINE.
6. PAYMENT FOR BASE COURSE AND SURFACE COURSE IS TO BE INCLUDED IN ROADWAY PAVEMENT PAY ITEM.
7. MATCH EXISTING RADIUS, R OR AS DIRECTED BY THE CO.



**SECTION A-A**  
**NEW CONSTRUCTION**



SECTION A-A  
RESURFACING NEW DRIVEWAY



## SECTION A-A

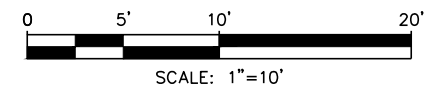
### RESURFACING EXISTING DRIVEWAY

STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	F01	

ENGINEER: \_\_\_\_\_  
DRAWN: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
PRINT DATE \_\_\_\_\_

REV. NO. \_\_\_\_\_

REV. DATE:



1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

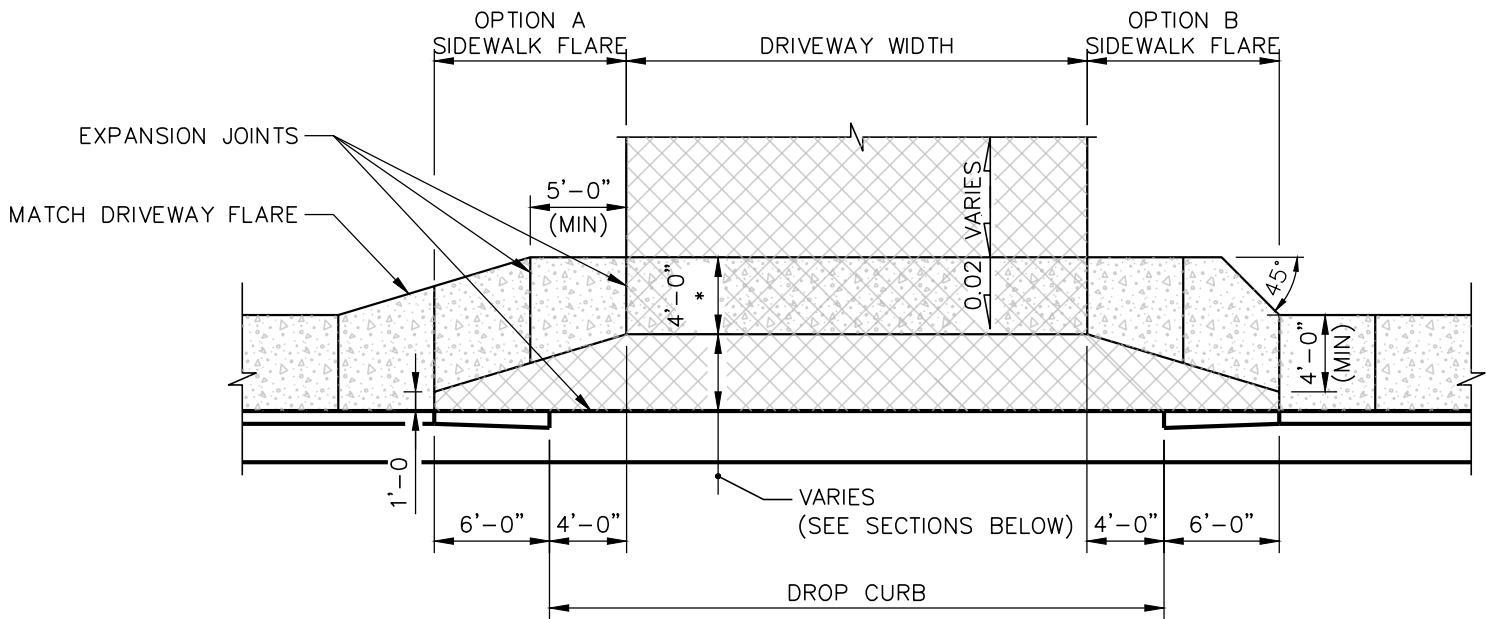
DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

## IMPROVEMENTS TO NORTHSIDE HIGHWAY (ROUTE 75) DRIVEWAY DETAILS (1 OF 2)

SCALE: NOT TO SCALE (11"x17")

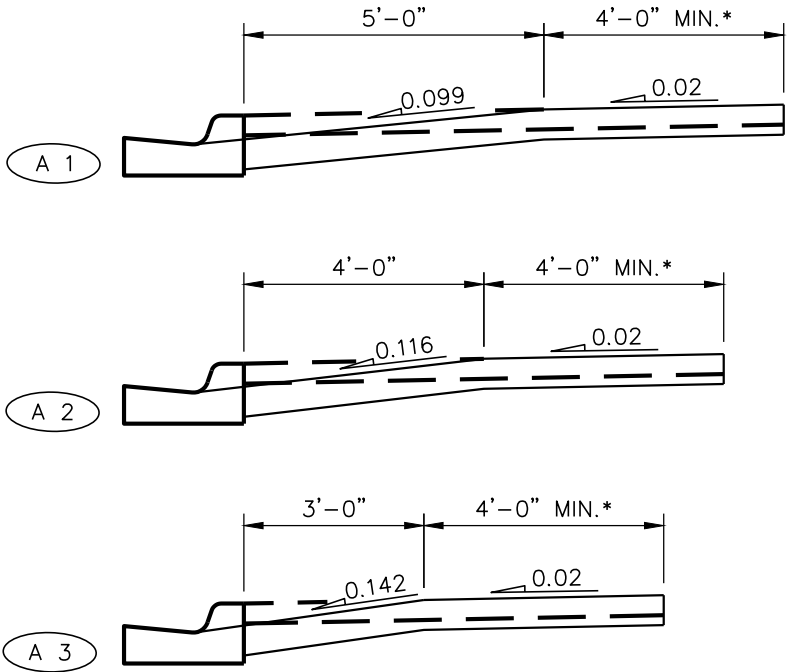
SHEET  
OF 2





NOTES:

1. DRIVEWAY TYPE A1 IS PREFERRED AT ALL DRIVEWAYS WITH SIDEWALK.
2. DRIVEWAY TYPES A1, A2 AND A3 ARE ALLOWED. CONTRACTOR TO SELECT BEST OPTION TO MEET EXISTING CONDITIONS.
3. \* 4'-0" MAY BE REDUCED TO 3'-0" IN CONSTRAINED CONDITIONS.
4. CONTRACTOR TO COORDINATE THE DRIVEWAY CONNECTIONS WITH EACH PROPERTY OWNER.
5. MATCH THE EXISTING DRIVEWAY WIDTH. MINIMUM DRIVEWAY WIDTH ALLOWED IS 12 FEET.
6. CONSTRUCT LONGITUDINAL EXPANSION JOINTS TO BE 1/8" OPEN JOINTS AT EQUAL (20' MAX.) INTERVALS FOR DRIVEWAYS OVER 20' WIDE. MATCH JOINTS IN CURB AND GUTTER TO MATCH JOINTS IN DRIVEWAYS.
7. CONSTRUCT TRANSVERSE EXPANSION JOINTS TO BE 1/8" OPEN JOINTS AT 10' CENTERS AND 1/2" EXPANSION JOINTS WITH PREFORMED JOINT FILLER EVERY 5TH JOINT.
8. REFER TO THE CURB AND GUTTER DETAILS FOR DROP CURB.



STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	F02	

ENGINEER:  
DRAWN:  
CHECKED:  
PRINT DATE:

REV. NO. \_\_\_\_\_  
REV. DATE: \_\_\_\_\_

**LEGEND**

SIDEWALK

FLARED DRIVEWAY (6" THICK CONCRETE)

SIDEWALK THRU DRIVEWAY (6" THICK CONCRETE)

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

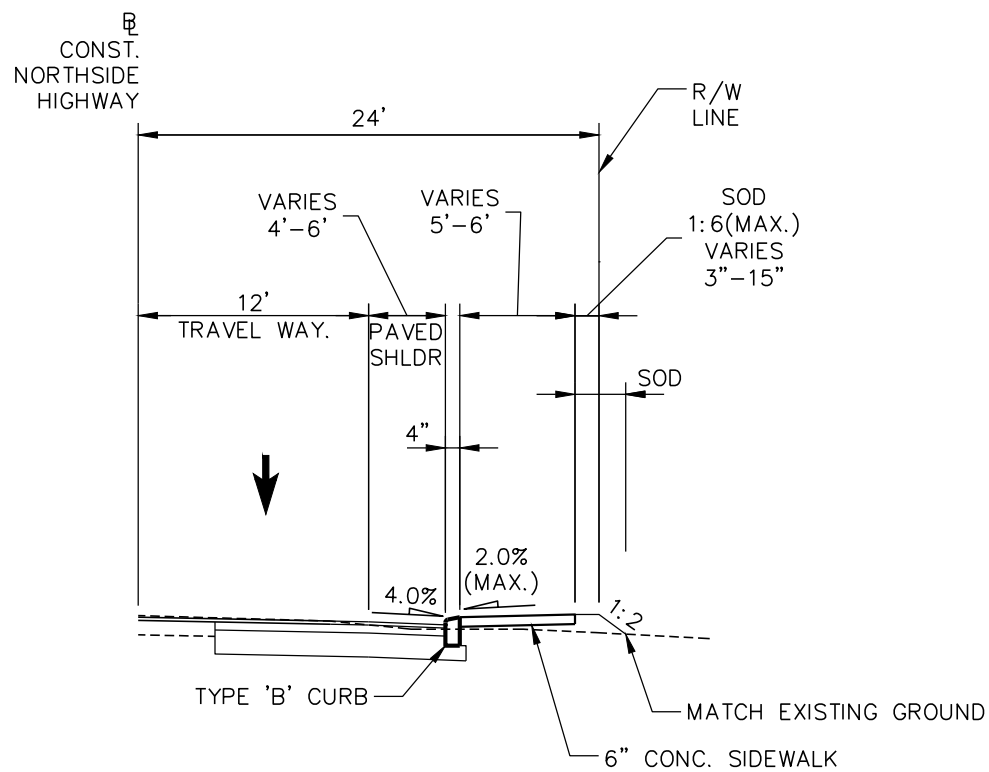
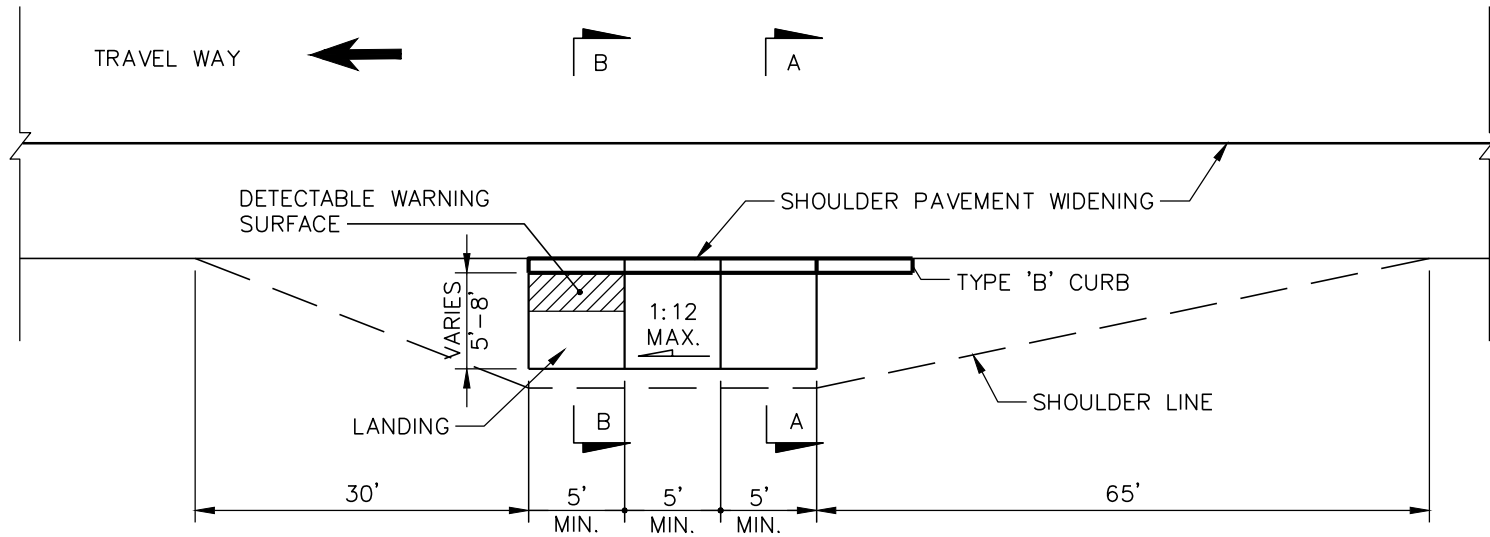
DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
DRIVEWAY DETAILS  
(2 OF 2)**

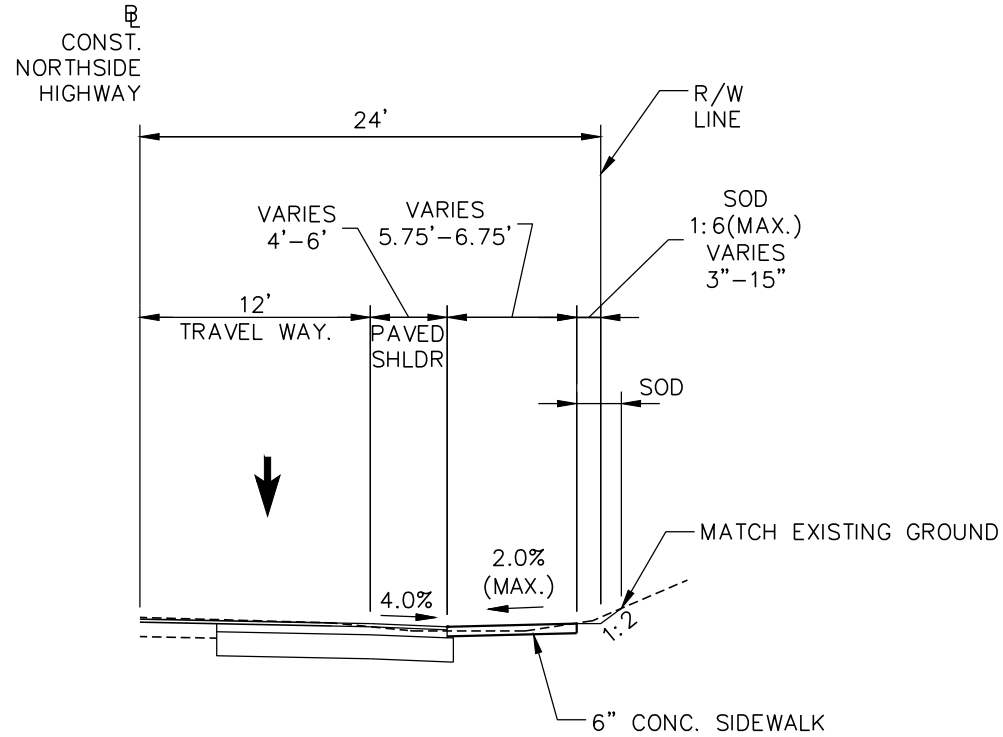
SCALE: NOT TO SCALE (11"x17")

SHEET  
2 OF 2

30% PLANS – NOT FOR CONSTRUCTION



SECTION A-A



SECTION B-B

**BUS STOP  
ACCESSIBLE BOARDING AND ALIGHTING AREA  
FOR FLUSH SHOULDER ROADWAYS**

STATE	ISLAND	CONTRACT	SHEET NO.	
USVI	ST CROIX	P149DPWT21	F03	

ENGINEER:	DRAWN:	CHECKED:	PRINT DATE:

REV. NO.	
REV. DATE:	

1641 WORTHINGTON ROAD, SUITE 400  
WEST PALM BEACH, FLORIDA 33409

DEPARTMENT OF PUBLIC WORKS  
UNITED STATES VIRGIN ISLANDS

**IMPROVEMENTS TO  
NORTHSIDE HIGHWAY (ROUTE 75)  
BUS STOP DETAILS**

SCALE: NOT TO SCALE (11"x17")	SHEET 1 OF 1
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IF SHEET IS DIFFERENT THAN (11"x17") IT IS A MODIFIED PRINT; SCALE ACCORDINGLY.

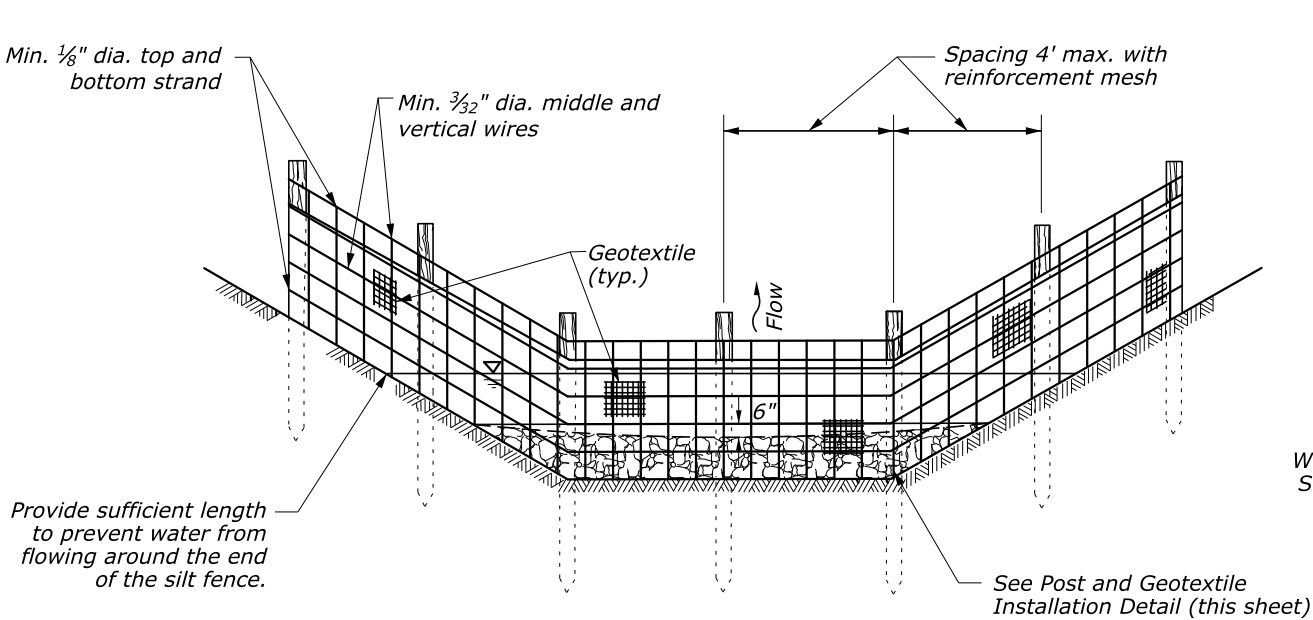
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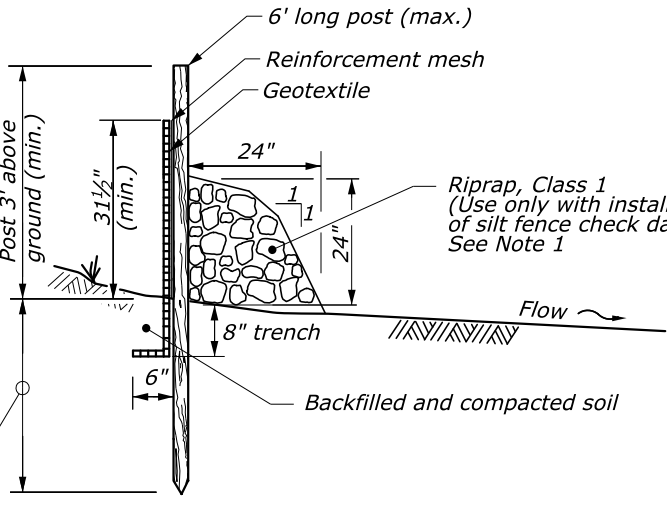
STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01

NOTES:

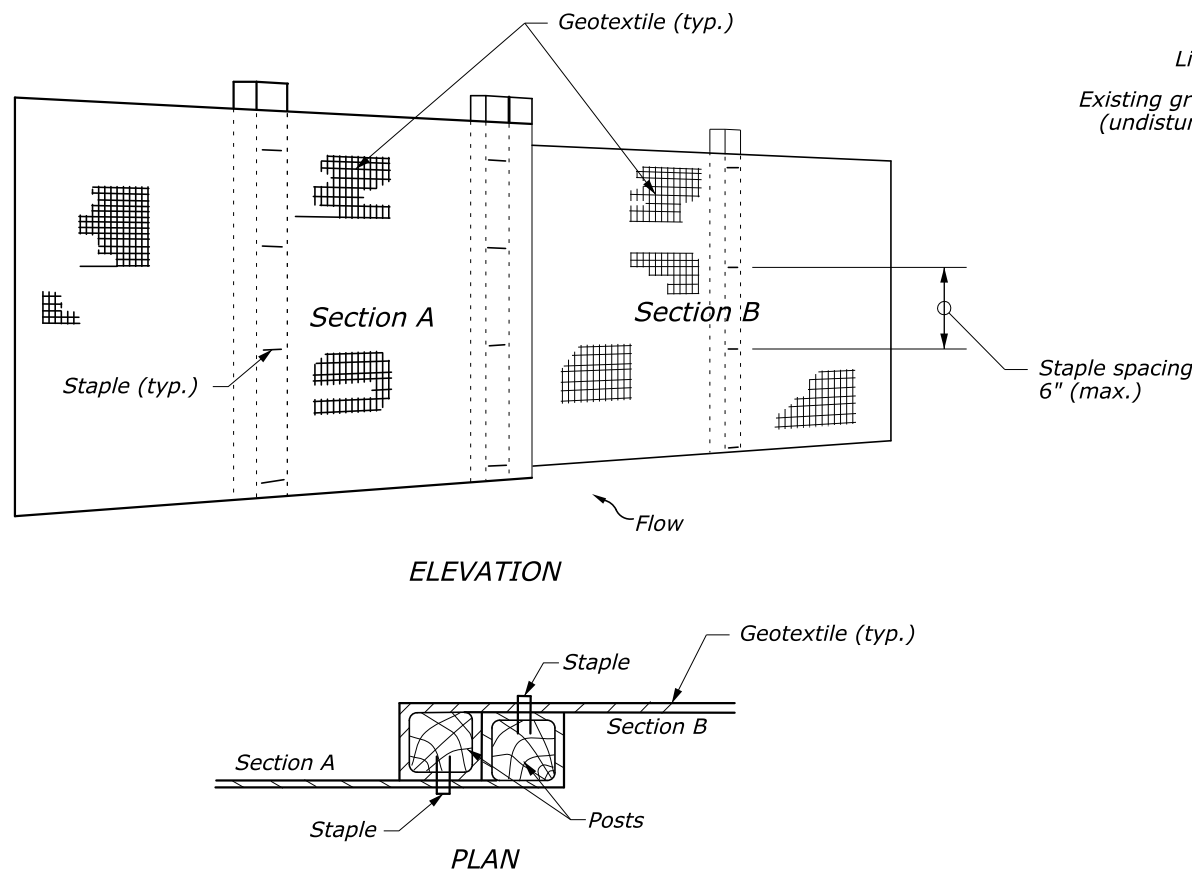
1. Install silt fence with Class 1 riprap only in low-flow drainage ditches where shown on the Erosion and Sediment Control Plan.
2. Install pre-assembled silt fence according to the manufacturer's recommendations.
3. Install silt fence along ground contours. Curve ends of silt fence upgrade to prevent water from running around the ends.
4. Attach geotextile and reinforcement mesh so they do not slide down posts. Provide detail for attaching to steel posts to the CO for approval.
5. Use reinforcement mesh that is a minimum of 32 inches in width and has a minimum of 6 line wires with 12-inch stay spacing.
6. Use geotextile that is a minimum of 45 inches in width and fasten adequately to the reinforcement mesh as directed by the CO.
7. Use 60-inch minimum height steel posts of the self-fastener angle steel type.
8. Use 70-inch minimum height x 3-inch diameter wood posts.
9. Extend reinforcement mesh and geotextile into trench.



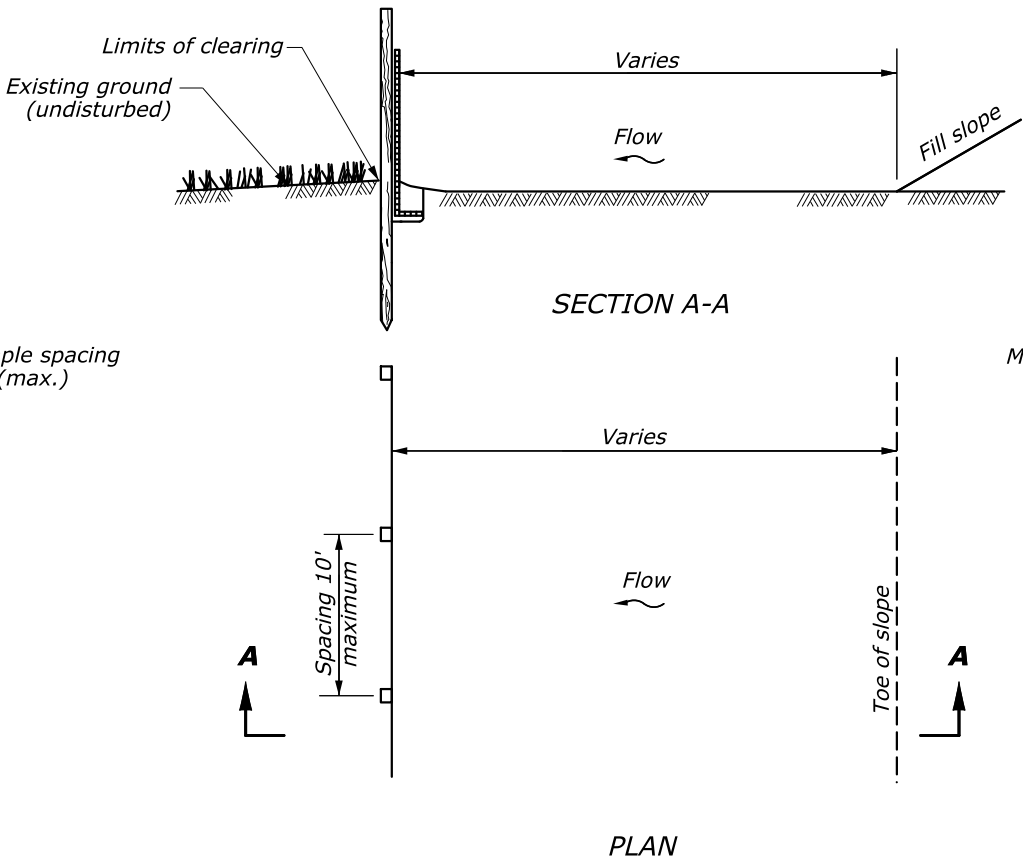
WIRE-BACKED SILT FENCE WITH CHECK DAM



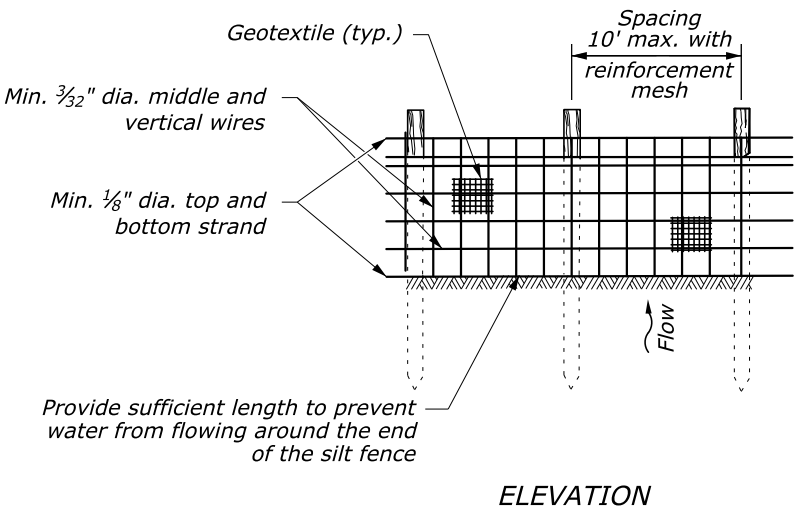
POST AND GEOTEXTILE INSTALLATION



JOINING TWO ADJACENT SILT FENCE SECTIONS  
(See Note 4)



WIRE-BACKED SILT FENCE  
INSTALLATION AT TOE OF FILL



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

WIRE-BACKED SILT FENCE

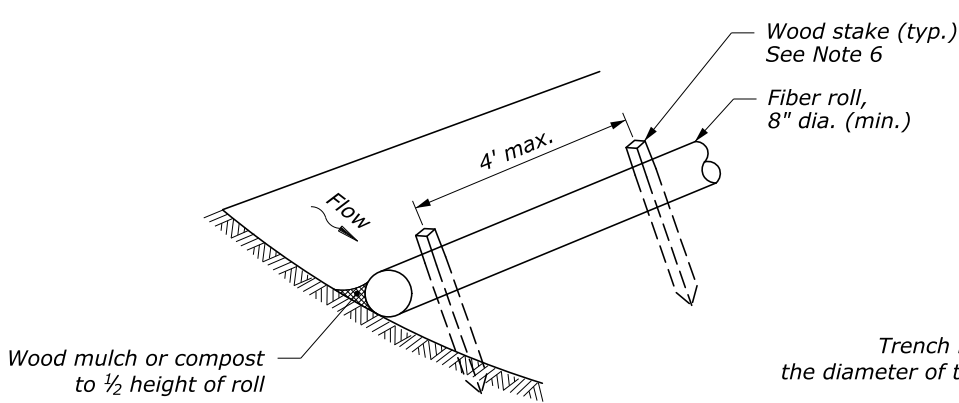
DETAIL APPROVED FOR USE

APPROVED: MARCH 2015  
REVISED: MARCH 2018

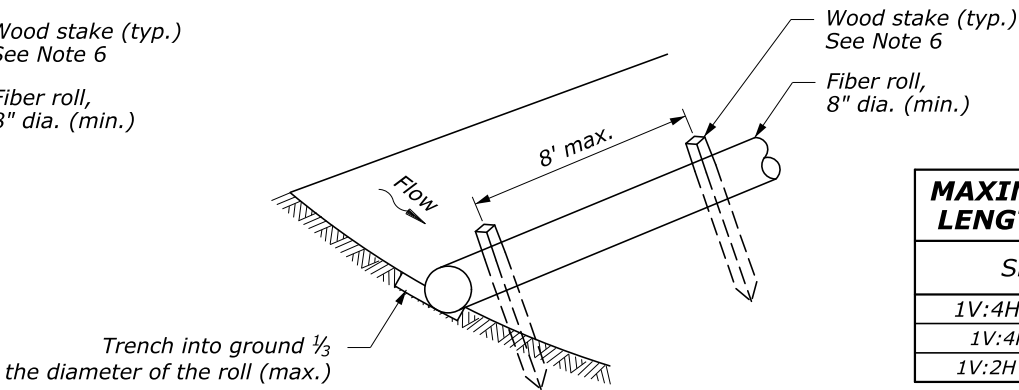
DETAIL

E157-02

NO SCALE



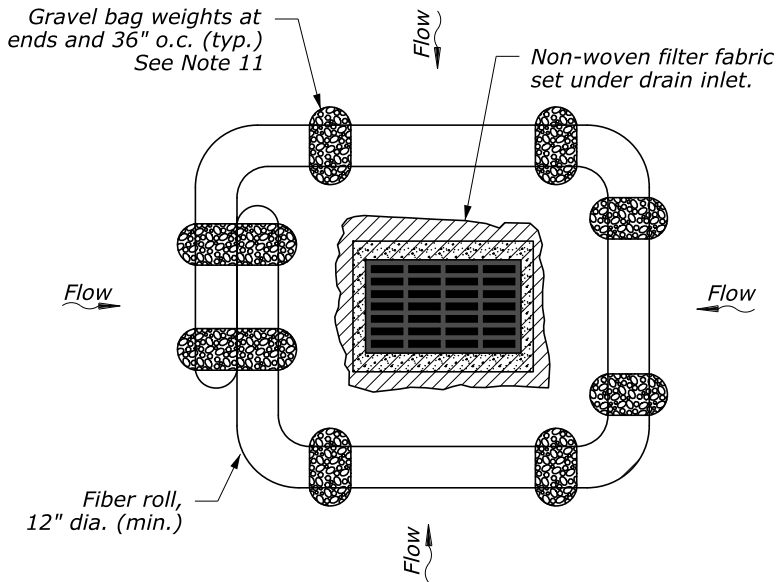
UNTRENCHED INSTALLATION



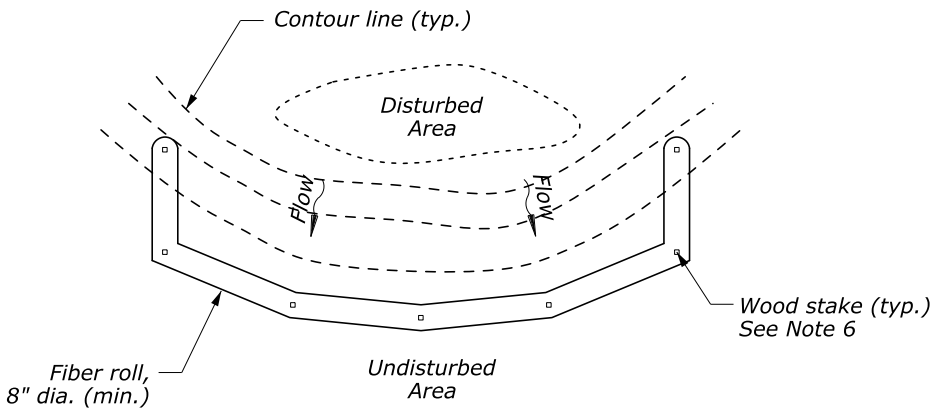
ENTRENCHED INSTALLATION

MAXIMUM ALLOWABLE SLOPE LENGTH ABOVE FIBER ROLLS	
SLOPE	MAX INTERVAL
1V:4H or Flatter	20 ft
1V:4H - 1V:2H	15 ft
1V:2H or Steeper	10 ft

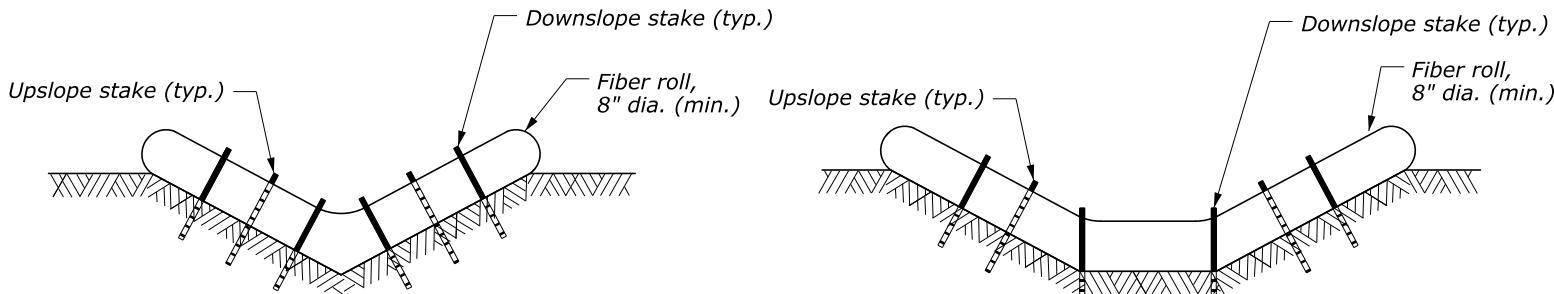
FIBER ROLL ISOMETRIC VIEW



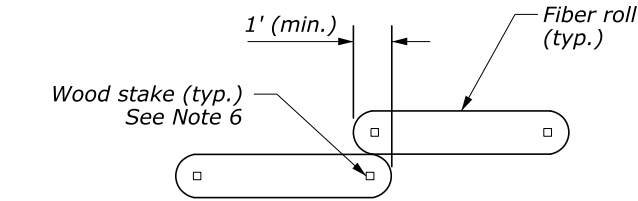
INLET PROTECTION



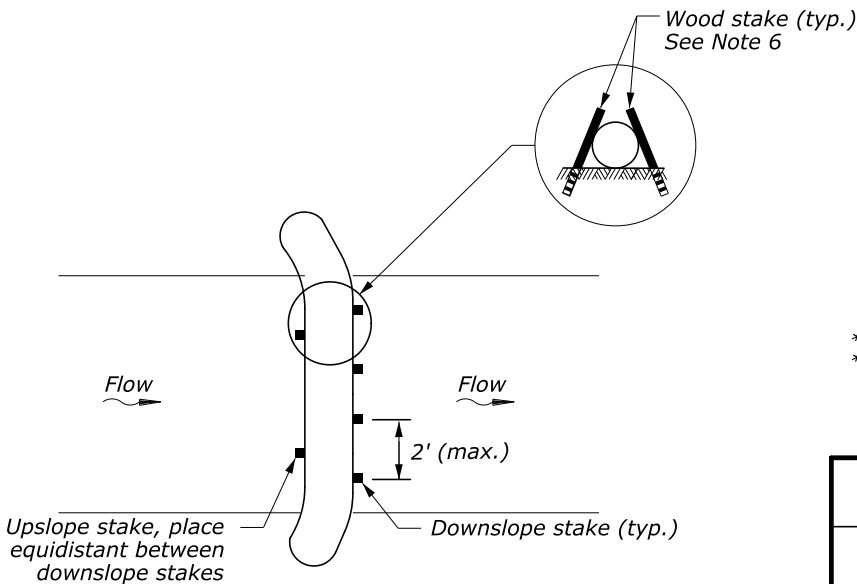
PLAN VIEW



FIBER ROLL CHECK DAM CROSS SECTIONS



FIBER ROLL OVERLAP



FIBER ROLL CHECK DAM PLAN VIEW

NOTES:

1. Provide fiber rolls meeting the requirements of Subsection 713.12.
2. Use fiber rolls with a minimum 8-inch diameter. For drain inlet protection, use fiber rolls with a minimum 12-inch diameter.
3. Prior to installation, clear all obstructions including rocks, clods, and debris greater than 1-inch that may interfere with proper function of the fiber roll.
4. For untrenched installation, blow or hand place mulch or compost on uphill side of the slope along the fiber roll.
5. Place fiber rolls on level grade and parallel to contours. Extend both ends of the fiber roll at least 8 feet upslope at 45 degrees to the main alignment.
6. Use wood stakes with a minimum nominal cross section of 2-inch x 2-inch and of sufficient length to attain a minimum of 12 inches into the ground and 3 inches protruding above the roll. Furnish wood stakes meeting the requirements of Subsection 713.08(a).
7. When more than one fiber roll is needed, overlap ends 12 inches minimum and stake.
8. Remove sediment deposits when accumulation is one-half the height of the exposed fiber roll.
9. Replace biodegradable fiber rolls 6 months after installation and photodegradable fiber rolls 12 months after installation.
10. When fiber rolls are required on paved surfaces, use gravel bags to support them as shown on the inlet protection detail.
11. Provide gravel bag weights meeting the requirements of Subsection 713.13.

FIBER ROLL CHECK DAM SPACING TABLE

DITCH GRADE *	CHECK DAM SPACING (S)**	
	8" HIGH	12" HIGH
2%	33 ft	50 ft
3%	22 ft	33 ft
4%	16 ft	25 ft
5%	13 ft	20 ft

\* Do not install check dams on grades below 2%  
\*\* Adjust spacing as approved based on site conditions

U.S. DEPARTMENT OF TRANSPORTATION  
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EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

FIBER ROLL

DETAIL APPROVED FOR USE

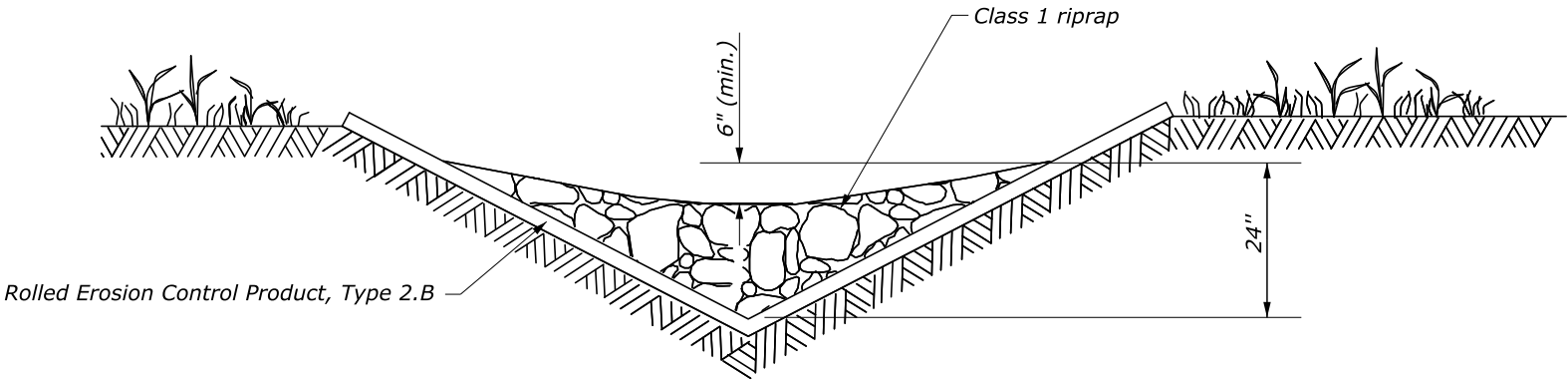
APPROVED: MAY 2016  
REVISED: MARCH 2018

DETAIL

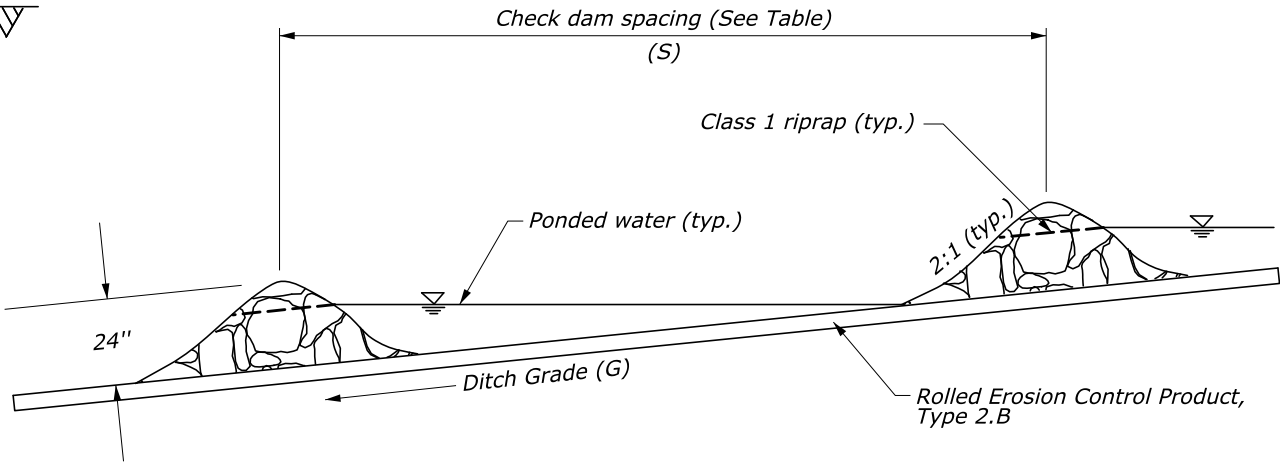
E157-04

NO SCALE

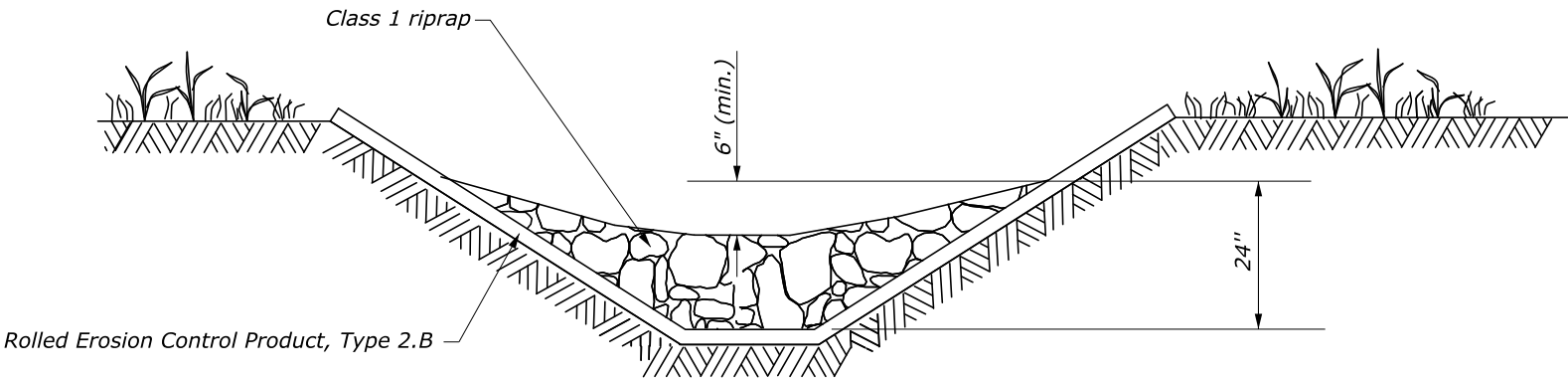




V DITCH



DITCH PROFILE VIEW



TRAPEZOIDAL DITCH

DITCH CROSS SECTION VIEW

CHECK DAM SPACING TABLE	
DITCH GRADE (G)*	SPACING (S) LNFT
2%	75
3%	50
4%	40
5%	30
6%	25

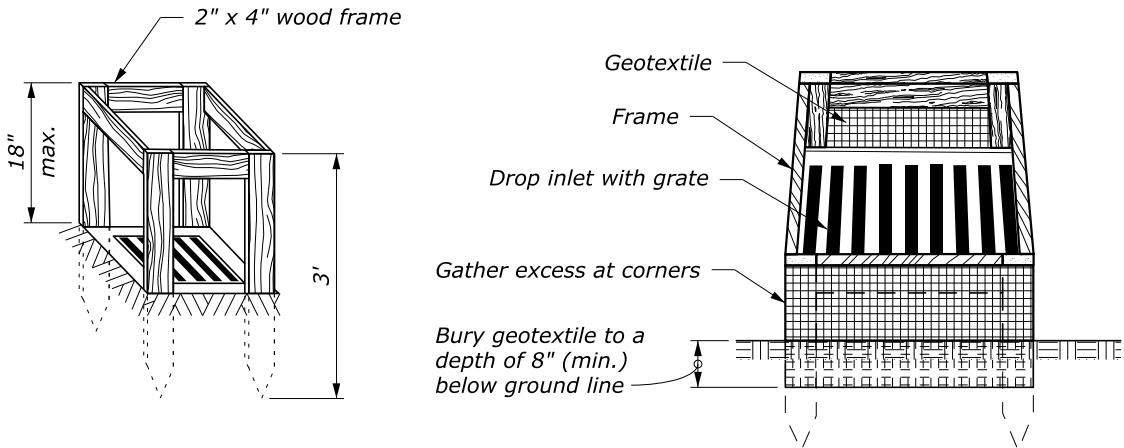
\* Do not use Check Dams below 2% or above 6% ditch grades.

NO SCALE

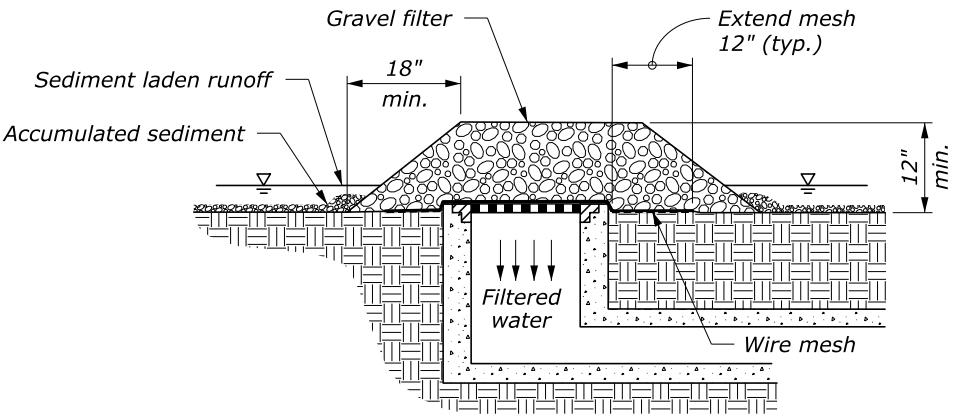
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
<b>CHECK DAM WITH ROLLED EROSION CONTROL PRODUCT</b>	
DETAIL APPROVED FOR USE APPROVED: MARCH 2015 REVISED: MARCH 2018	DETAIL E157-06

NOTE:

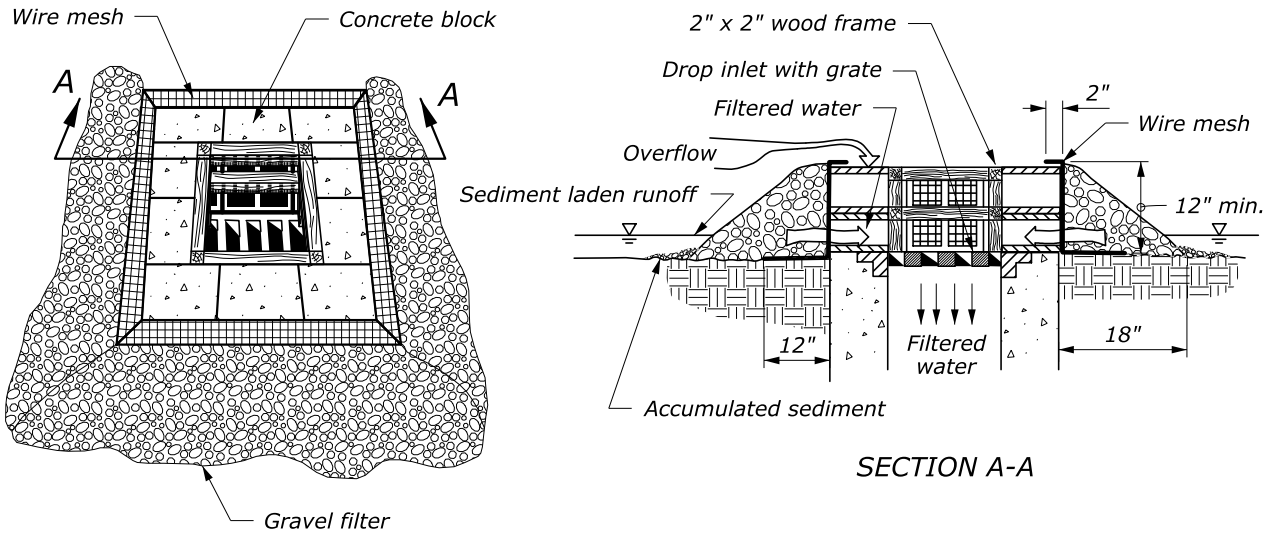
- 1. For gravel filters use 2"- 3" diameter coarse aggregate.
- 2. Use wire mesh with 1/2" x 1/2" openings.
- 3. Use type A inlet protection in sump locations only.
- 4. Use type B inlet protection only in sump locations where heavy concentrated flows are not expected. Do not use where ponding around the structure might cause inconvenience or damage.



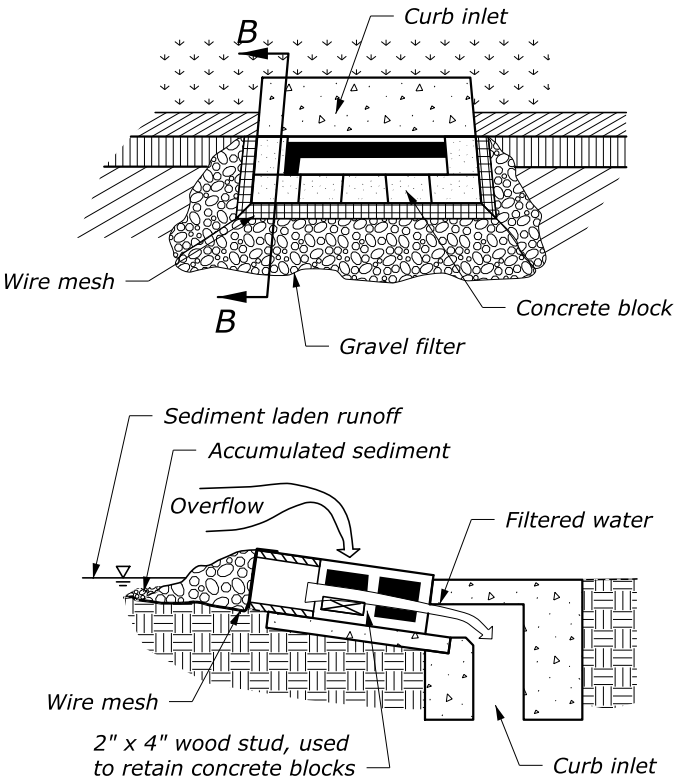
SILT FENCE DROP INLET PROTECTION (TYPE A)



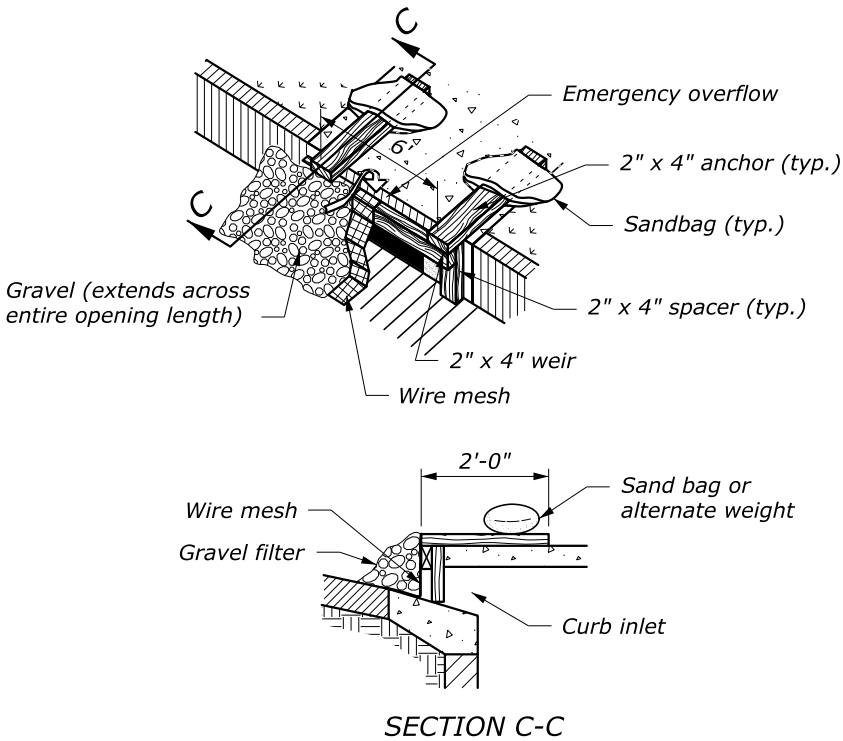
GRAVEL AND WIRE MESH DROP INLET PROTECTION (TYPE B)



BLOCK AND GRAVEL DROP INLET PROTECTION (TYPE C)



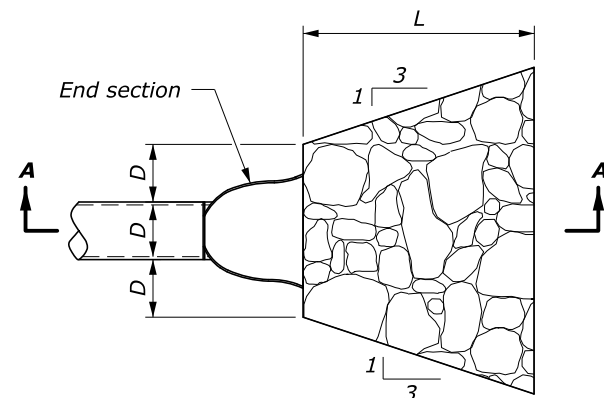
CURB INLET PROTECTION, BLOCK AND GRAVEL (TYPE D)



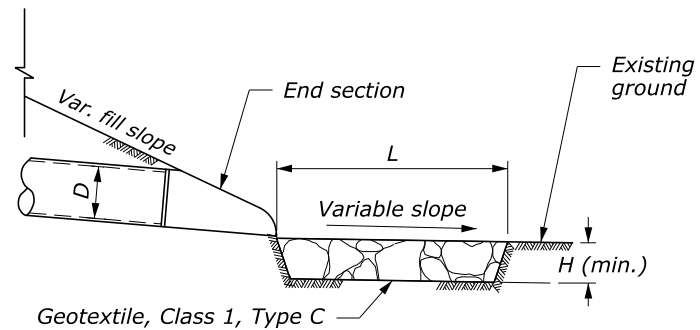
CURB INLET PROTECTION, WOODEN WEIR (TYPE E)



STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01

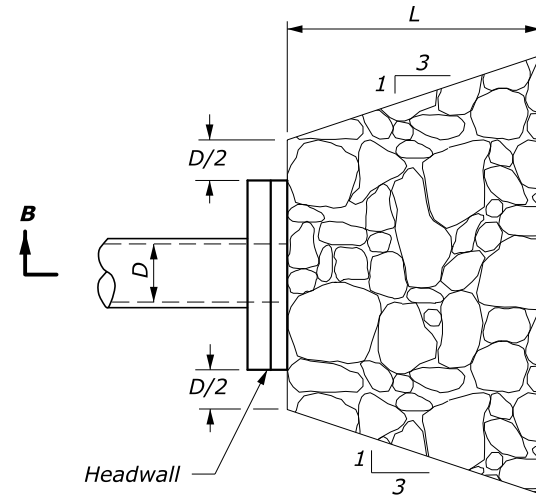


PLAN VIEW

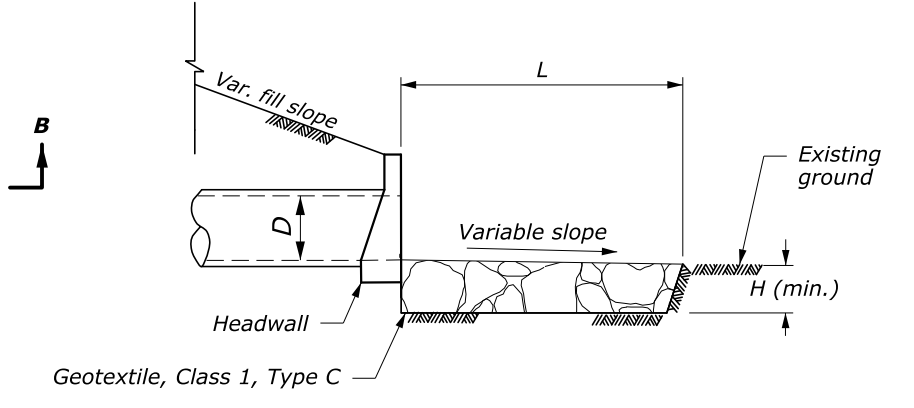


SECTION A-A

CULVERT WITH END SECTION



PLAN VIEW



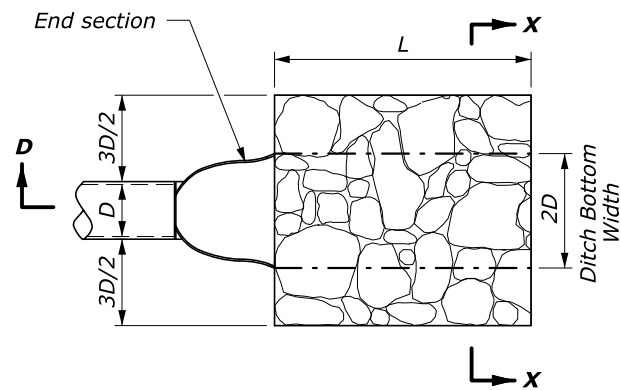
SECTION B-B

CULVERT WITH HEADWALL

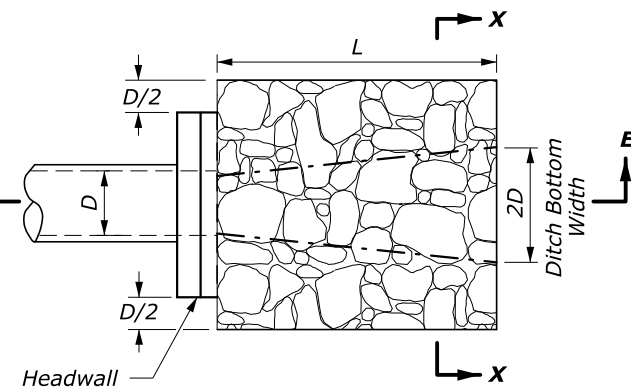
### PROTECTIVE APRON AT CULVERT OUTLET WITHOUT DITCH

#### NOTES:

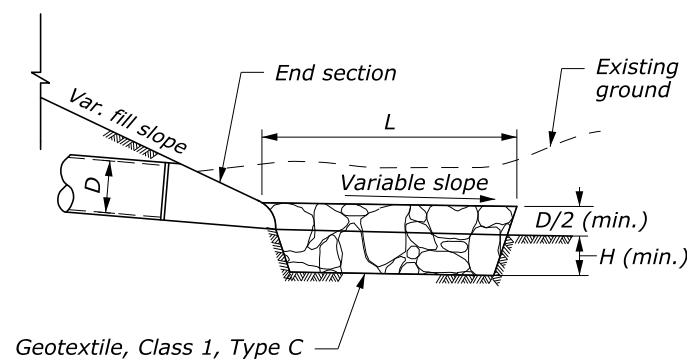
1. Use for aprons serving culverts with slopes of less than 10%.
2. For arch or elliptical pipes, use equivalent diameter for (D) dimension.
3. See Sheet 2 of 2 for dimensions and estimated quantities.



PLAN VIEW

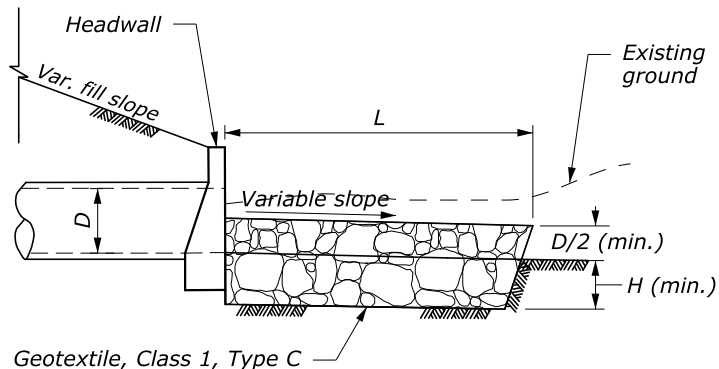


PLAN VIEW



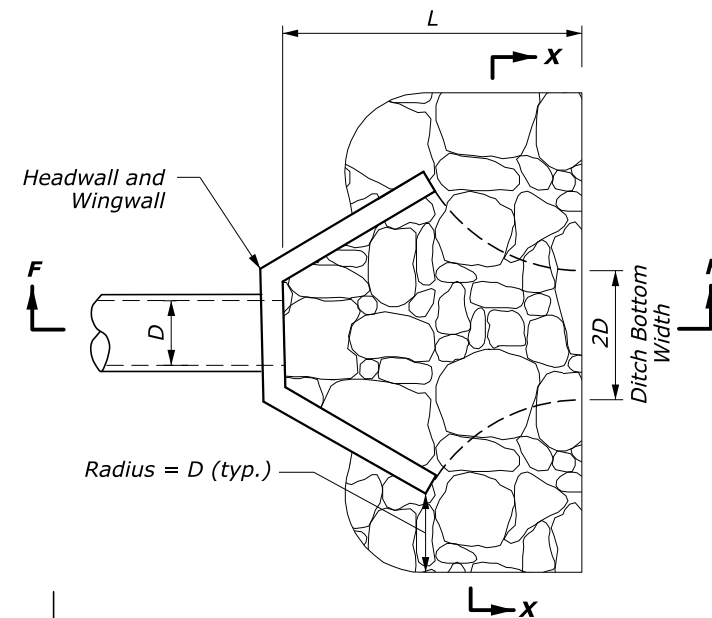
SECTION D-D

CULVERT WITH END SECTION

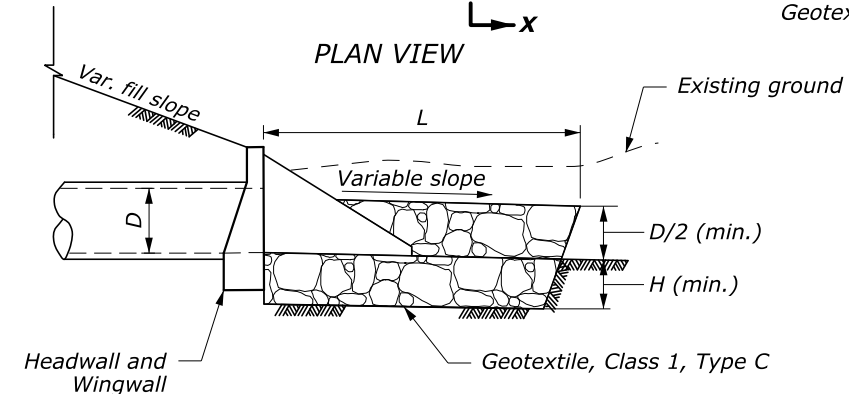


SECTION E-E

CULVERT WITH HEADWALL

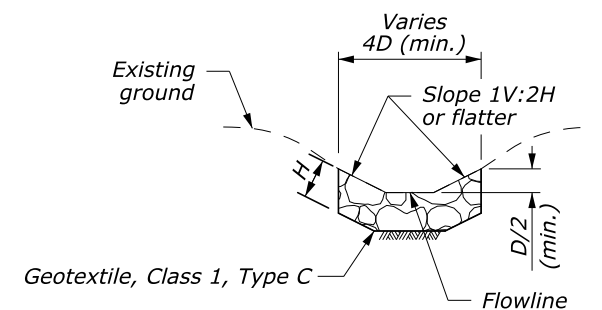


PLAN VIEW



SECTION F-F

CULVERT WITH HEADWALL AND WINGWALL



SECTION X-X

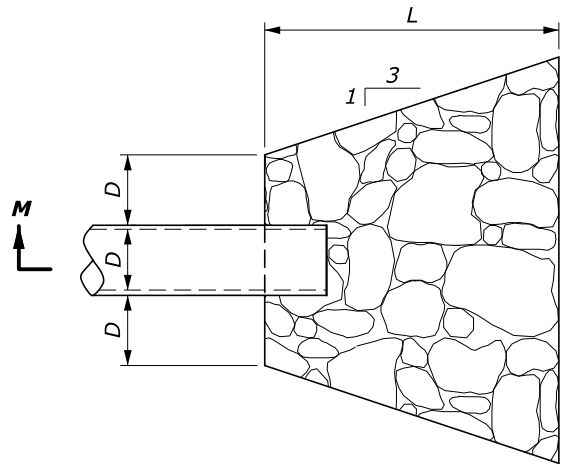
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

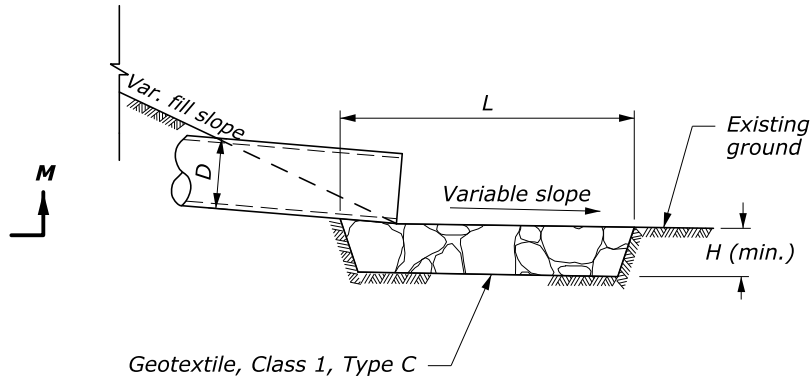
U.S. CUSTOMARY DETAIL  
**PLACED RIPRAP AT  
CULVERT OUTLETS**  
Sheet 1 of 2

DETAIL APPROVED FOR USE  
APPROVED: MAY 2017  
REVISED: OCTOBER 2021

DETAIL  
E251-01

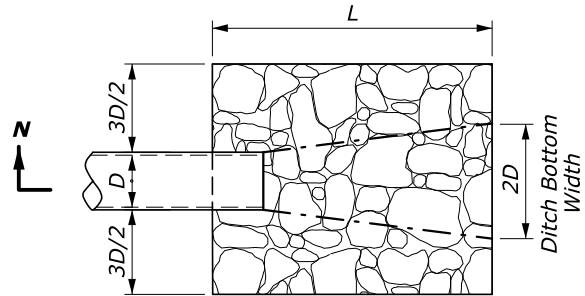


PLAN VIEW

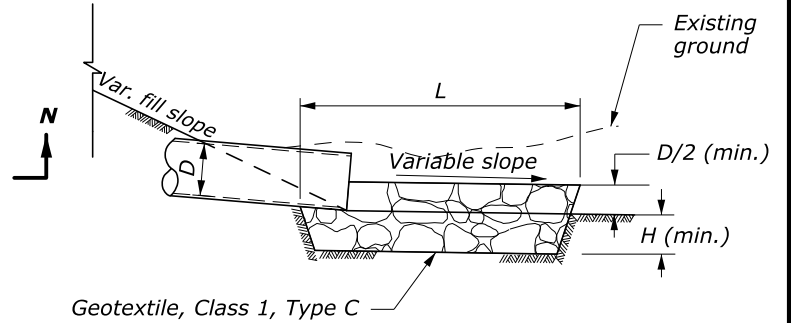


SECTION M-M

CULVERT OUTLET WITHOUT DITCH



PLAN VIEW



SECTION N-N

CULVERT OUTLET WITH DITCH

PROTECTIVE APRON AT CULVERT OUTLET WITH NO END TREATMENT

PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES								
					OUTLET WITHOUT DITCH		OUTLET WITH DITCH	
	CULVERT SIZE (D) INCHES	RIPRAP CLASS	LENGTH OF APRON (L) LNFT	DEPTH OF APRON (H) LNFT	ESTIMATED RIPRAP QUANTITY CUYD	ESTIMATED GEOTEXTILE QUANTITY SQYD	ESTIMATED RIPRAP QUANTITY CUYD	ESTIMATED GEOTEXTILE QUANTITY SQYD
WITH END SECTION	12	2	4	1.5	1	5	0.9	4
	18	2	6	1.5	2.2	9	2	8
	24	2	8	1.5	3.9	13	3.6	12
	30	3	12.5	2	10.8	27	9.3	24
	36	3	15	2	15.6	37	13.3	32
	42	4	21	2.5	34	63	27.2	52
WITH HEADWALL	48	4	24	2.5	44.4	78	35.6	65
	12	2	4	1.5	1.6	6	1.1	5
	18	2	6	1.5	3	10	2	8
	24	2	8	1.5	5.3	16	3.6	12
	30	3	12.5	2	15	32	9.3	24
	36	3	15	2	21.7	43	13.3	32
WITH HEADWALL AND WINGWALL	42	4	21	2.5	47.6	73	27.2	52
	48	4	24	2.5	62.2	91	35.6	65
	12	2	4	1.5	1.6	6	1.1	6.3
	18	2	6	1.5	3	10	2.5	11.1
	24	2	8	1.5	5.3	16	4.5	17
	30	3	12.5	2	15	32	11.6	32
WITH NO END TREATMENT	36	3	15	2	21.7	43	16.7	42.6
	42	4	21	2.5	47.6	73	34.1	68.4
	48	4	24	2.5	62.2	91	44.5	84.9
	12	2	6	1.5	1.7	7	1.3	6
	18	2	8	1.5	3.2	12	2.7	10
	24	2	10	1.5	5.2	17	4.4	15
	30	3	14.5	2	13.2	32	10.7	27
	36	3	17	2	18.5	42	15.1	36
	42	4	23	2.5	38.7	70	29.8	56
	48	4	26	2.5	49.8	86	38.5	70

NOTES:

1. Use for aprons serving culverts with slopes of less than 10%.
2. For arch or elliptical pipes, use equivalent diameter for (D) dimension.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

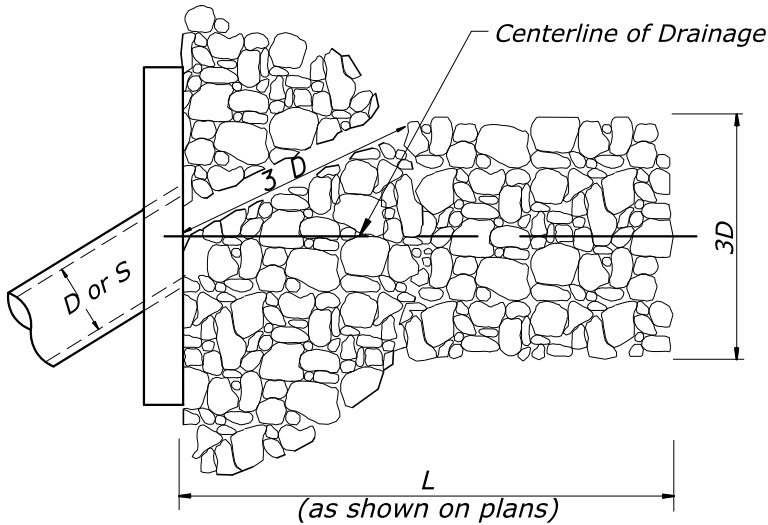
U.S. CUSTOMARY DETAIL  
**PLACED RIPRAP AT  
CULVERT OUTLETS**  
Sheet 2 of 2

DETAIL APPROVED FOR USE  
APPROVED: MAY 2017  
REVISED: OCTOBER 2021

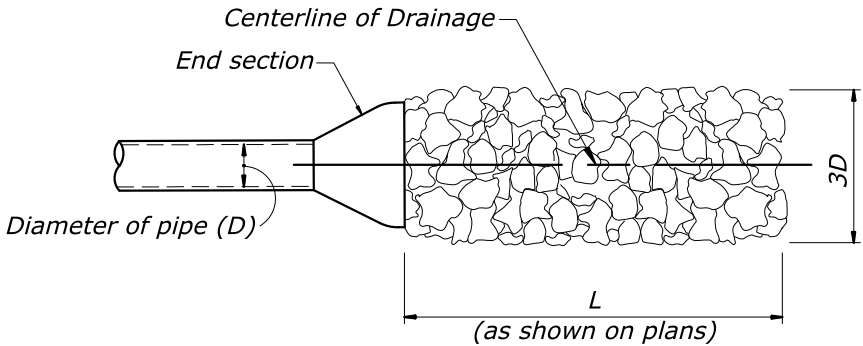
DETAIL  
E251-01



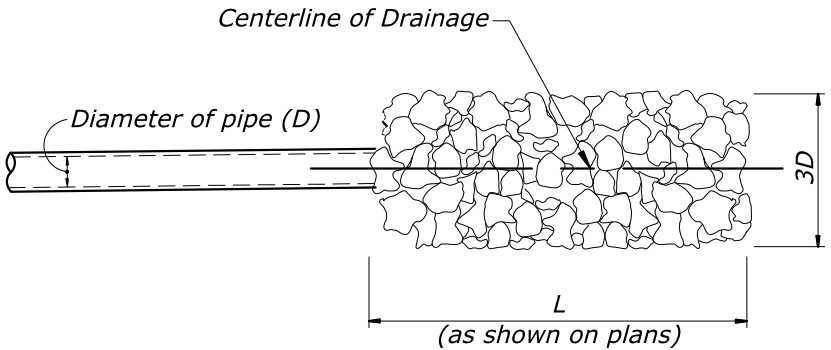
RIPRAP DEPTH TABLE	
Riprap Class	Depth (d)
2	18"
3	24"
4	30"



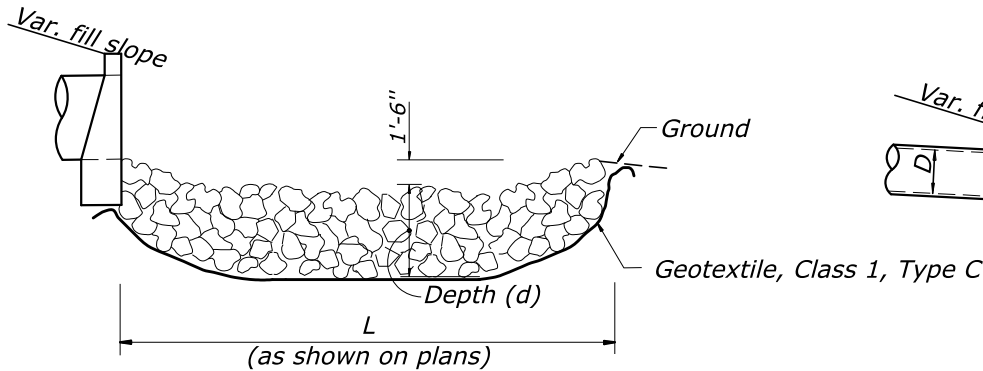
PLAN



PLAN

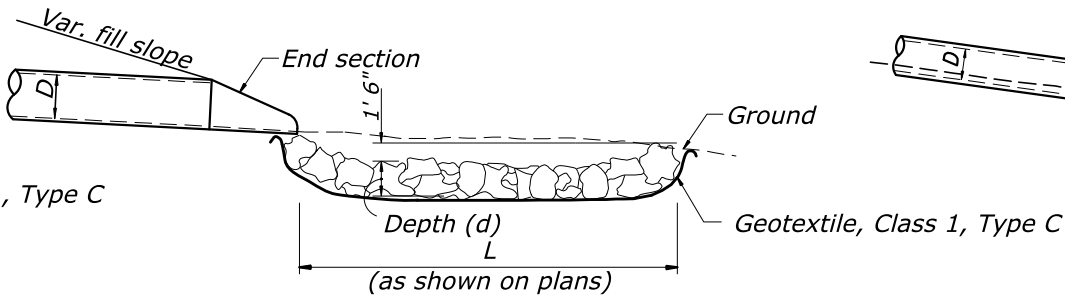


PLAN



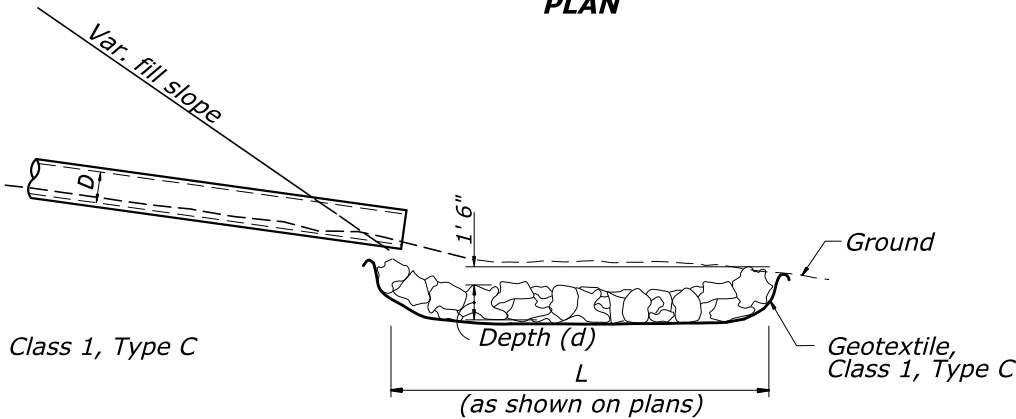
ELEVATION

CULVERT WITH HEADWALL



ELEVATION

CULVERT WITH END SECTION



ELEVATION

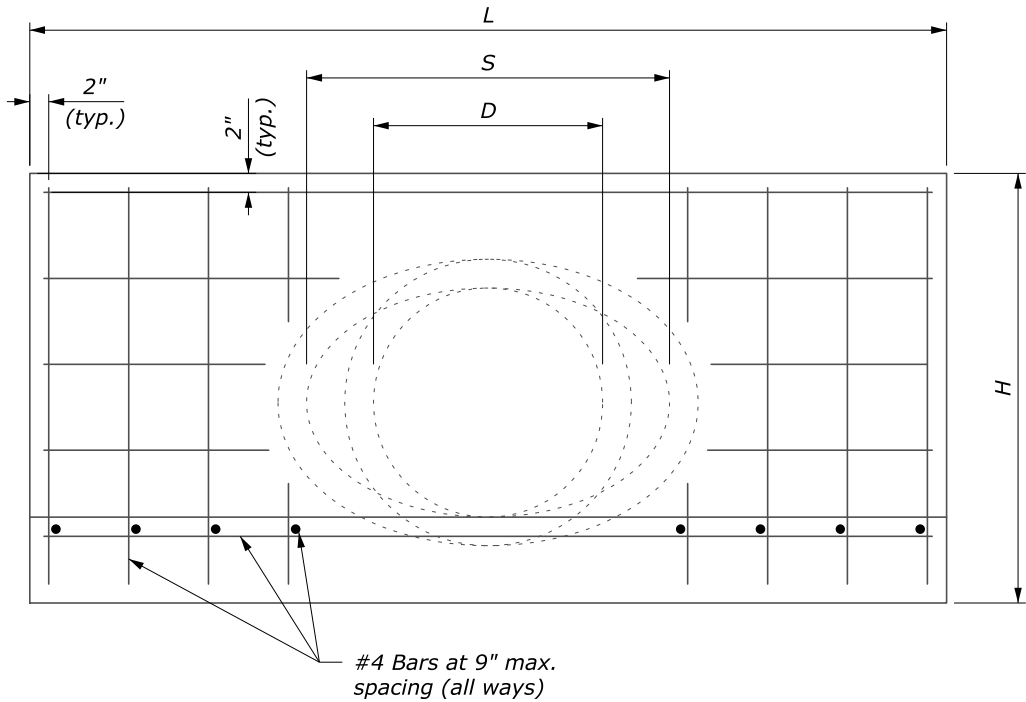
CULVERT WITH NO  
END TREATMENT

NOTES:

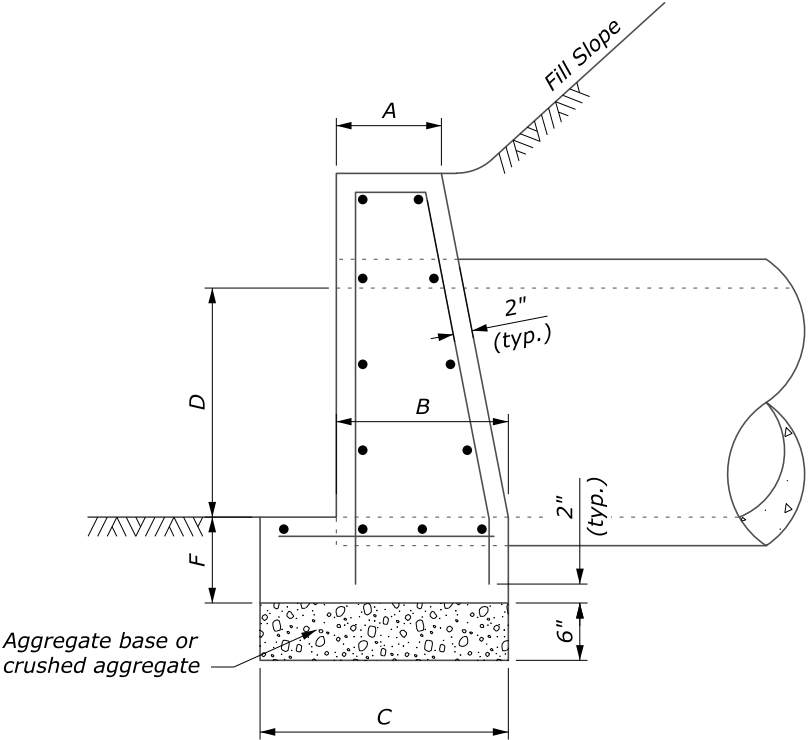
1. For arch or elliptical pipes (S), use equivalent diameter for (D) dimension

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
<b>LOOSE RIPRAP CHANNEL AT CULVERT</b>	
DETAIL APPROVED FOR USE	DETAIL
APPROVED : MAY 2011 REVISED : MAY 2015	E251-02



FRONT ELEVATION



SIDE ELEVATION

NOTE:

1. Orient all headwalls parallel to the roadway centerline unless otherwise indicated in the plans or by the CO.
2. When pipes are on a skew, adapt and lengthen headwalls as directed.
3. Chamfer all exposed corners not rounded to 3/4".
4. Quantities shown are for one headwall with pipe at right angles.
5. Construct headwalls using dimensions shown under values for 1V:1.5H slope, unless otherwise designated by the CO.

HEADWALL FOR CIRCULAR PIPE

DIAMETER OF PIPE CULVERT						
	6"	15"	18"	21" or 24"	27" or 30"	33" or 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-9"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-2"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-0"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	3'-8"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CUBIC YARDS OF CONCRETE						
Conc. Pipe	0.241	0.492	0.697	1.319	2.067	2.947
C.M. Pipe	0.257	0.521	0.739	1.398	2.198	3.145

HEADWALL FOR ELLIPTICAL PIPE

SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)										
	23" x 14"	30" x 19"	34" x 22"	38" x 24"	42" x 27"	45" x 29"	49" x 32"	53" x 34"	60" x 38"	68" x 43"
A	0'-8"	0'-9"	0'-10"	0'-10"	0'-11"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"	1'-11"	2'-0"
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"	3'-3"	3'-6"
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"	3'-2"	3'-7"
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"	4'-11"	5'-4"
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"	13'-0"	13'-0"
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"	5'-0"	5'-8"
CUBIC YARDS OF CONCRETE										
Conc. Pipe	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801	2.969	2.904

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL





CONCRETE HEADWALL FOR  
SMALL PIPE CULVERT



CONCRETE ROUND PIPE CULVERT

PIPE SIZE DIAMETER INCHES	FILL HEIGHT AND PIPE CLASS TABLE								
	EMBANKMENT					TRENCH			
	MINIMUM COVER INCHES	CLASS II	CLASS III	CLASS IV	CLASS V	CLASS II	CLASS III	CLASS IV	CLASS V
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
12	12	10	10	15	23	18	18	26	13
18	12	10	10	25	39	13	13	31	45
24	12	10	10	15	30	15	15	22	40
30	12	9	13	15	35	13	16	20	46
36	12	9	9	20	41	10	13	26	56
48	12	12	13	26	44	15	16	30	49
60	12	15	17	28	44	15	20	32	49
72	12	13	17	30	41	15	20	35	49
84	12	13	19	30		15	23	37	
96	12	13	20			15	24		
108	14	15	20			18	26		

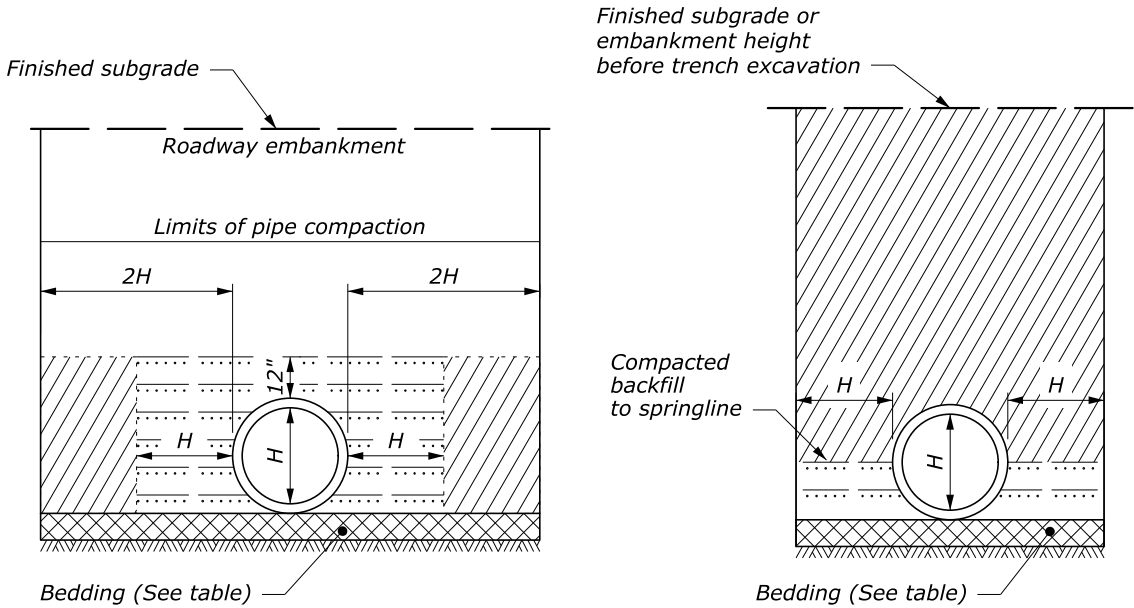
LEGEND:

-  Bedding material (uncompacted).
-  Embankment material placed in layers not exceeding 6" compacted depth.
-  Compacted backfill material placed in layers not exceeding 6" compacted depth, or lean concrete backfill in accordance with Section 614
-  Impermeable backfill material.

NOTES:

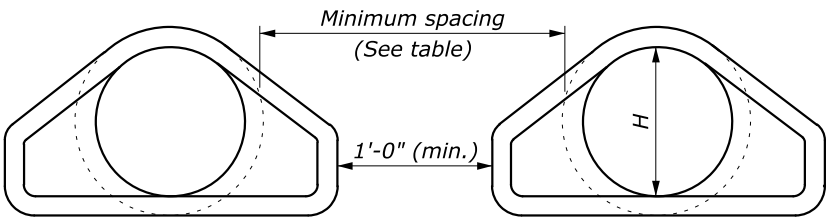
1. When directed, camber pipe culverts upwards from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
2. For flexible pavement and aggregate surface roadways, measure minimum cover from the top of the pipe culvert to the bottom of the roadway subgrade. For rigid pavement, measure minimum cover from the top of the pipe culvert to the top of the pavement. For all roadway surface types, measure maximum fill height from the top of the pipe culvert to the top of the pavement.
3. Pipe compaction limits shown are for pipe installation in an embankment. For pipe installation in a trench, ensure the compaction limits are the walls of the trench.
4. Where unyielding or unstable material is encountered, install the pipe culvert according to the limits of pipe compaction shown on Detail ET 602-3.
5. Maximum fill heights for pipe culvert installations may be increased on approval of site-specific structural pipe designs meeting the criteria of AASHTO Standard Specifications for Highway Bridges.
6. Use Supplemental Concrete Pipe Tie when specified in the contract documents. Ensure all tie hardware are galvanized and conforming to ASTM A 307.

BEDDING DEPTH	
PIPE SIZE (H)	DEPTH
12" TO 54"	4"
> 54"	6"



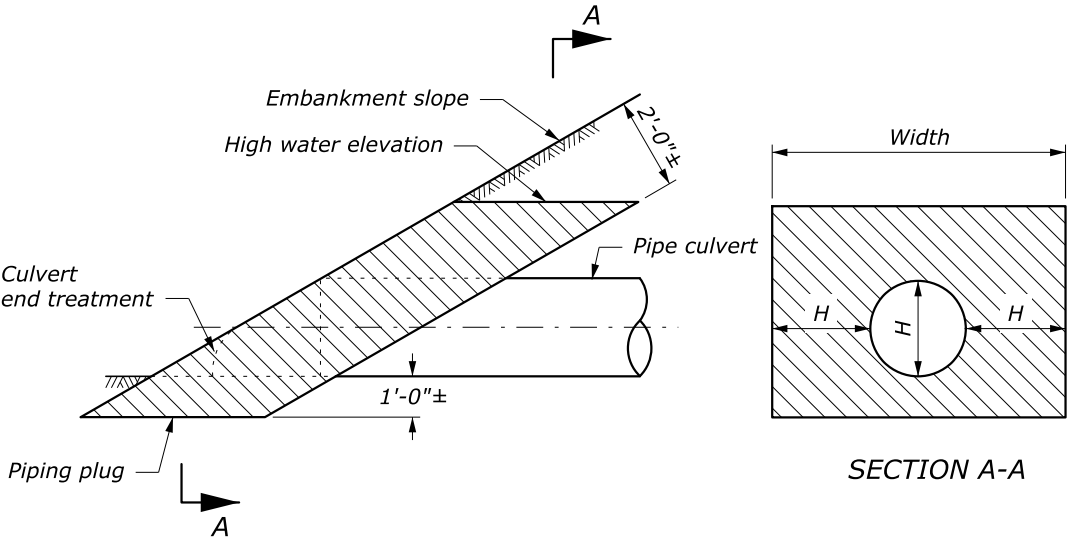
EMBANKMENT INSTALLATION

TRENCH INSTALLATION

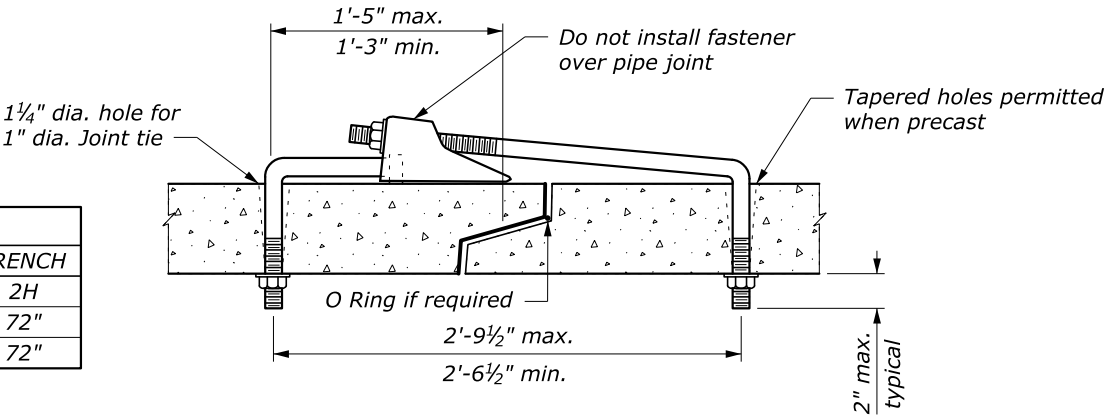
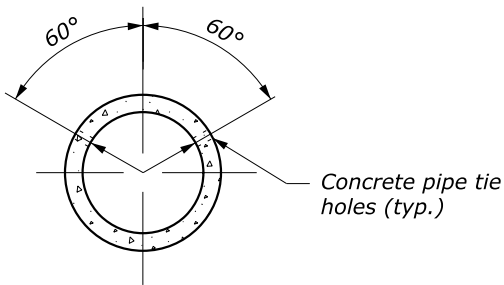


MULTIPLE ROUND PIPE INSTALLATION

MINIMUM SPACING		
DIAMETER	EMBANKMENT	TRENCH
12"-36"	15"	2H
36"-96"	0.5H	72"
OVER 96"	48"	72"



PIPING PLUG



SUPPLEMENTAL CONCRETE PIPE TIE

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

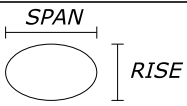
CONCRETE PIPE  
CULVERT INSTALLATION


STANDARD APPROVED FOR USE 12/1993  
REVISED: 4/1994 6/2005 2/2008 3/2016 7/2020

DETAIL  
ET 602-7

15-Jul-2020 12:40 PM M:\PROJECTS\...COLLABORATION\Notes\04162020\_EFL-Detail-Updates\602\VI-st60208\_detail.dgn

STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01

HORIZONTAL INSTALLATION			
EQUIVALENT ROUND SIZE (IN.)	SPAN X RISE (IN.)	MAX. HEIGHT OF COVER IN FEET	
		1 - 13	14 - 21
		HE - III	HE - I V
18	23 x 14	METHOD "A" BEDDING	METHOD "A" BEDDING
24	30 x 19		
27	34 x 22		
30	38 x 24		
33	42 x 27		
36	45 x 29		
39	49 x 32		
42	53 x 34		
48	60 x 38		
54	68 x 43		
60	76 x 48		
66	83 x 53		
72	91 x 58		
78	98 x 63		
84	106 x 68		

VERTICAL INSTALLATION				
SPAN X RISE (IN.)	MAX. HEIGHT OF COVER IN FEET			
	1 - 13	14 - 21	22 - 29	
	VE - III	VE - I V	VE - V	
	↑	↑	↑	
29 x 45	METHOD "A" BEDDING ↑	METHOD "A" BEDDING ↑	METHOD "A" BEDDING ↑	
32 x 49				
34 x 53				
38 x 60				
43 x 68				
48 x 76				
53 x 83				
58 x 91				
63 x 98				
68 x 106				↓

ELLIPTICAL CONCRETE PIPE COVER TABLES FOR H-20 LIVE LOAD

NOTES:

- 1. Cover heights indicated in the Tables are for finished construction.
- 2. To protect pipe during construction, ensure the minimum heights of cover prior to allowing construction traffic to cross installation are 1/2 of the span or 3 feet, whichever is greater. Extend cover the full length of the pipe. Extend the approach fill ramp to a minimum of 10 times the span plus 3 feet on each side of the pipe or to the intersection with a cut.
- 3. Standard minimum finished height of cover for all pipes is 1/2 of the span or 2 feet, whichever is greater. In cases in which these cover heights cannot be achieved, an absolute minimum finished cover height of 12 inches will be allowed only if all possible means to obtain the standard height have been exhausted. Ensure minimum finished height of cover for pipes under entrances and median crossovers is 9 inches.
- 4. For flexible pavement and aggregate surface roadways, measure minimum cover from the top of the pipe culvert to the bottom of the roadway subgrade. For rigid pavement measure minimum cover from the top of the pipe culvert to the top of the pavement. For all roadway surface types, measure maximum fill height from the top of the pipe culvert to the top of the pavement.

NO SCALE

ADOPTED FROM:  
VIRGINIA DEPARTMENT OF TRANSPORTATION  
STANDARD PC-1, PAGE 107.06

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

ELLIPTICAL CONCRETE PIPE

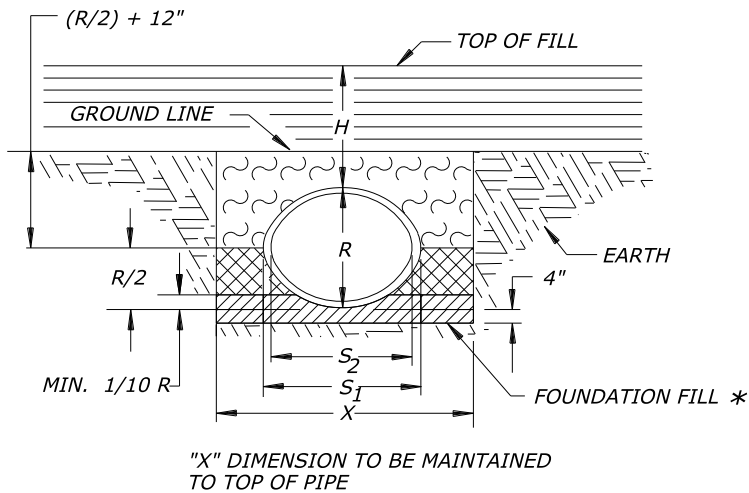
DETAIL APPROVED FOR USE

APPROVED: MAY 2011  
REVISED: JULY 2020

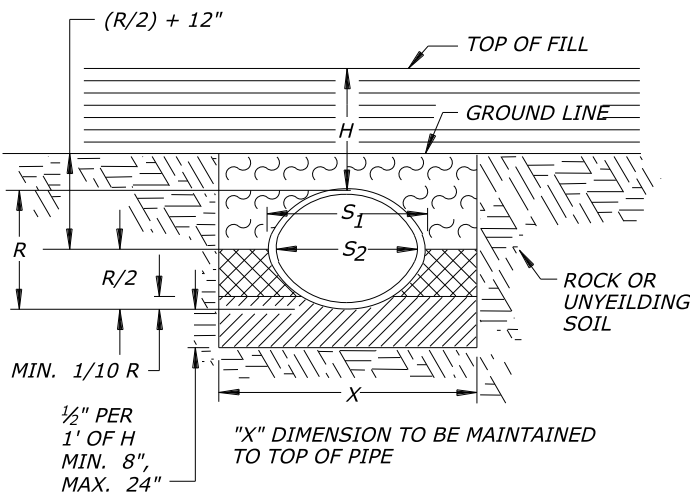
DETAIL  
E602-08



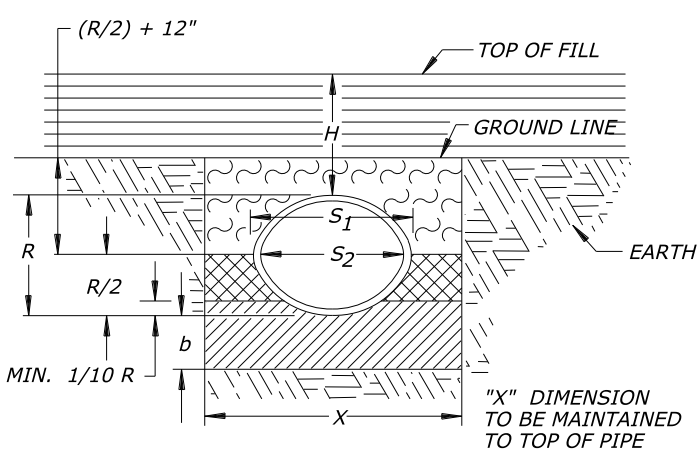
NO PROJECTION OF PIPE ABOVE GROUND LINE



NORMAL EARTH FOUNDATION

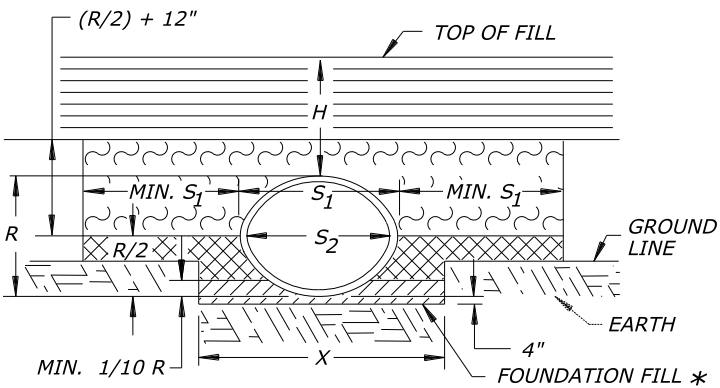


ROCK FOUNDATION

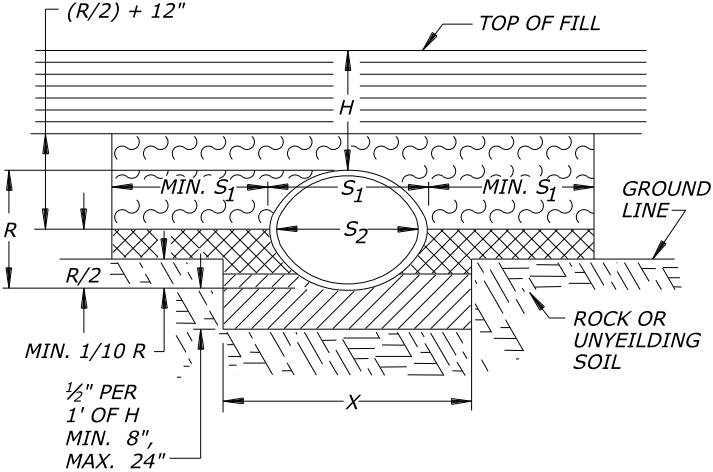


FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

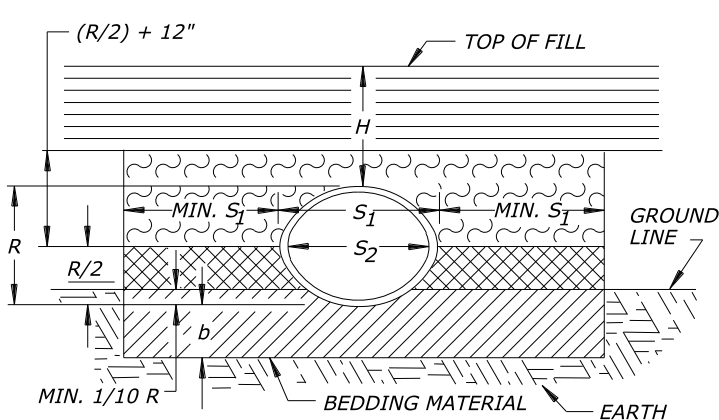
PIPE PROJECTION ABOVE GROUND LINE



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

CULVERTS LESS THAN  $S_1 = 36"$   
 $X = S_2 + 24"$

CULVERTS WHERE  $S_1 = 36"$  AND OVER  
 $X = S_2 + 36"$

METHOD "A" PIPE BEDDING SHALL BE USED AS FOLLOWS UNLESS OTHERWISE NOTED ON PLANS:

RIGID PIPE  
WHEN H IS LESS THAN OR EQUAL TO 30'

FLEXIBLE PIPE  
AS SHOWN ON TABLES

\* MAY BE ELIMINATED UNDER ENTRANCE PIPE WHERE DIRECTED BY THE CO.

H = HEIGHT OF COVER MEASURED FROM TOP OF DRAINAGE STRUCTURE TO FINISHED GRADE.

$S_1$  = OUTSIDE SPAN OF PIPE.

$S_2$  = INSIDE SPAN OF PIPE.

R = OUTSIDE RISE OF PIPE.

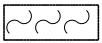
b = DEPTH AS SHOWN ON PLANS OR TO FIRM BEARING SOIL.



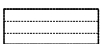
FOUNDATION FILL MATERIAL IN ACCORDANCE WITH SUBSECTIONS 209 AND 704.01



BACKFILL MATERIAL IN ACCORDANCE WITH SUBSECTIONS 209.09 AND 704.03



SUITABLE ROADWAY EXCAVATION OR UNCLASSIFIED BORROW MATERIAL IN ACCORDANCE WITH SUBSECTION 209.09



EMBANKMENT

NO SCALE

ADOPTED FROM:  
VIRGINIA DEPARTMENT OF TRANSPORTATION  
STANDARD PB-1, PAGE 107.02

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

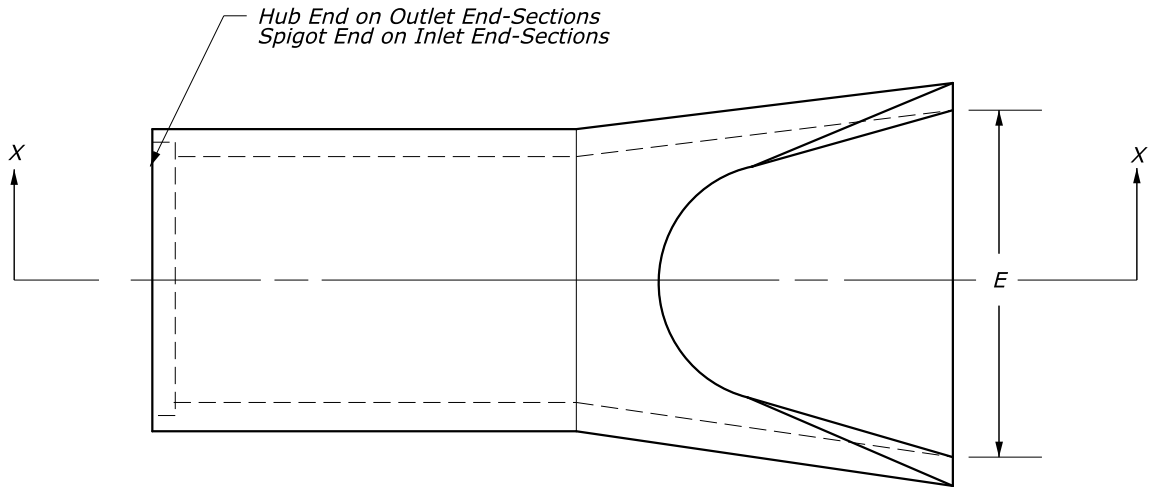
ELLIPTICAL CONCRETE PIPE  
CULVERT INSTALLATION

DETAIL APPROVED FOR USE

APPROVED : MAY 2011

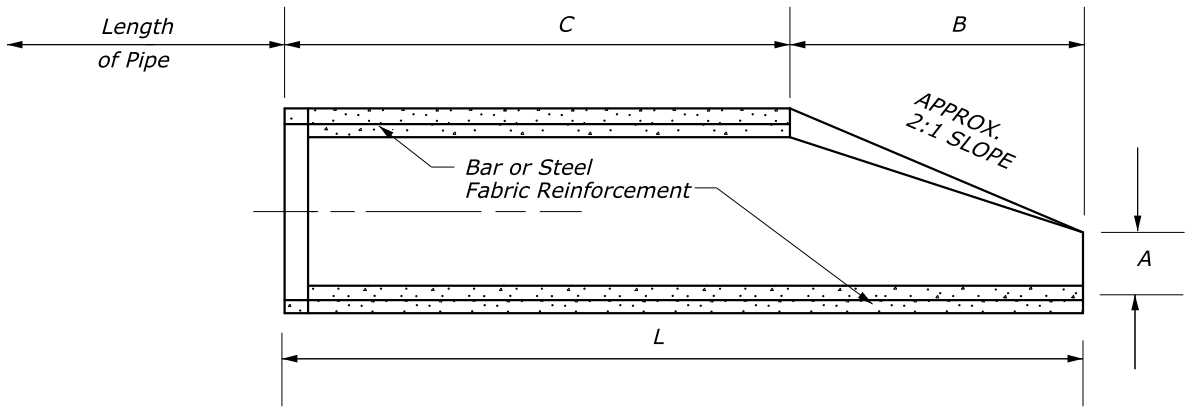
DETAIL

E602-09

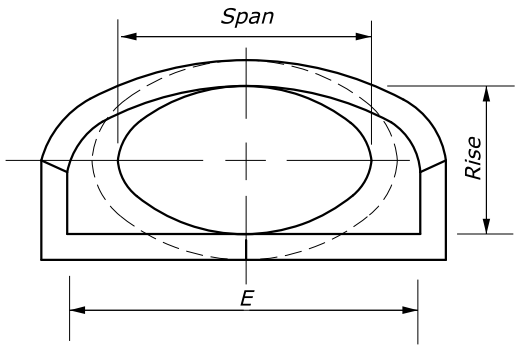


PLAN

END SECTION DIMENSIONS					
SPAN X RISE	A	B	C	L	E
23" X 14"	6"	2'-3"	3'-10"	6'-1"	2'-8"
30" X 19"	9"	2'-11"	3'-2"	6'-1"	3'-6"
38" X 24"	10"	3'-8"	2'-6"	6'-2"	4'-0"
42" X 27"	12"	4'-8"	1'-8"	6'-2"	5'-0"
45" X 29"	13"	4'-11"	3'-3"	8'-2"	5'-6"
53" X 34"	15"	5'-3"	2'-11"	8'-2"	6'-0"

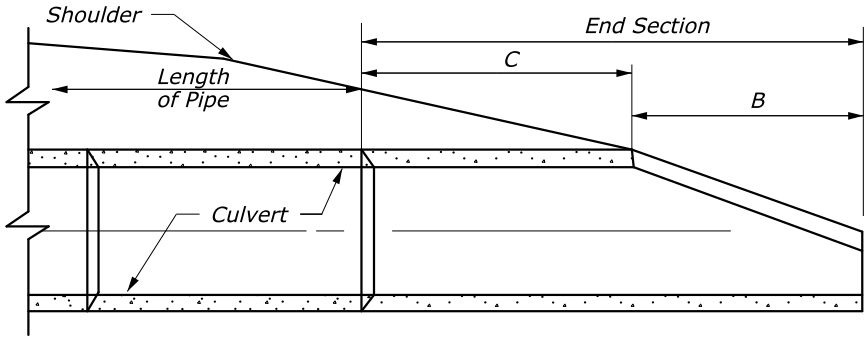


SECTION X-X



END VIEW

Note :  
Use 4000 PSI minimum Concrete



SLOPE DETAIL

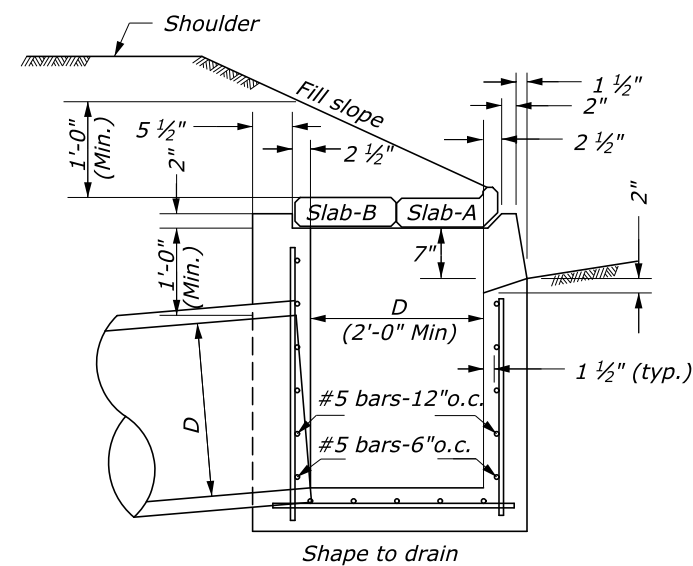
NO SCALE

ADOPTED FROM:  
VIRGINIA DEPARTMENT OF TRANSPORTATION  
STANDARD PB-1, PAGE 107.02

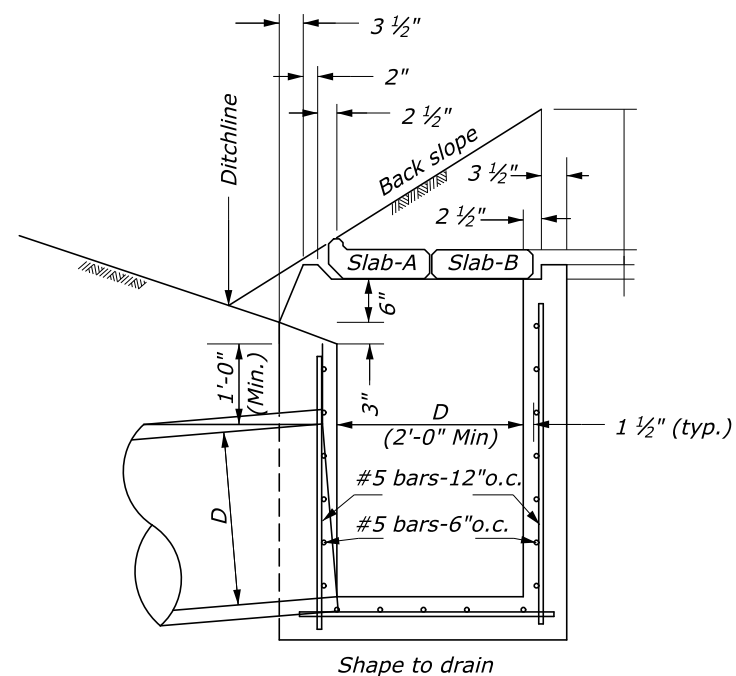
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
<b>CONCRETE END SECTION FOR ELLIPTICAL PIPE</b>	
DETAIL APPROVED FOR USE APPROVED : MAY 2011	DETAIL E602-10



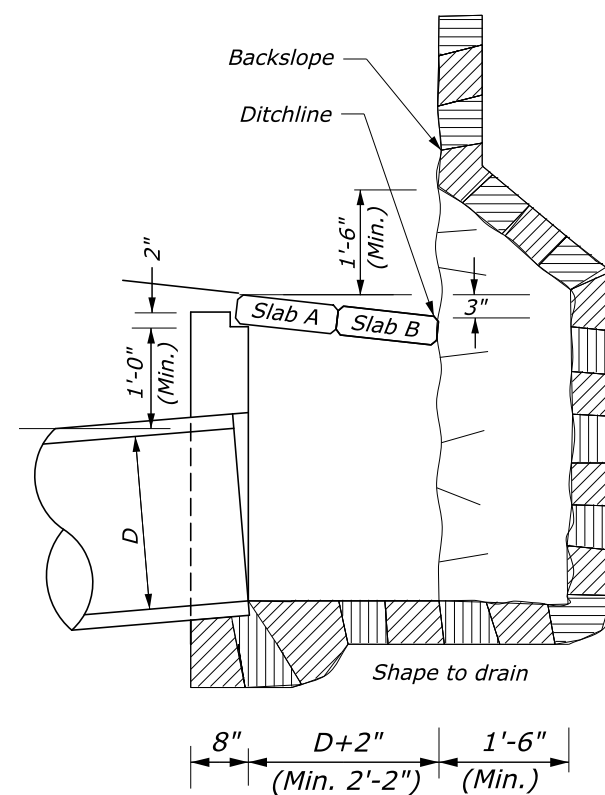
STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01



**TYPE - 4A**

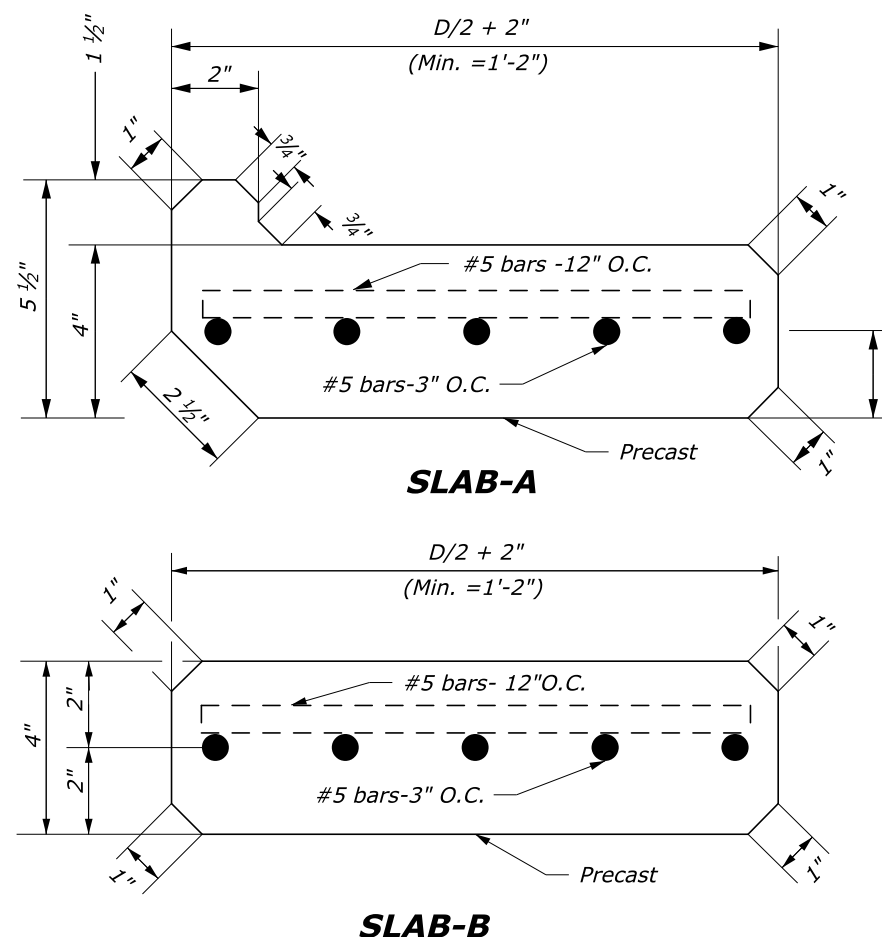


**TYPE - 4B**



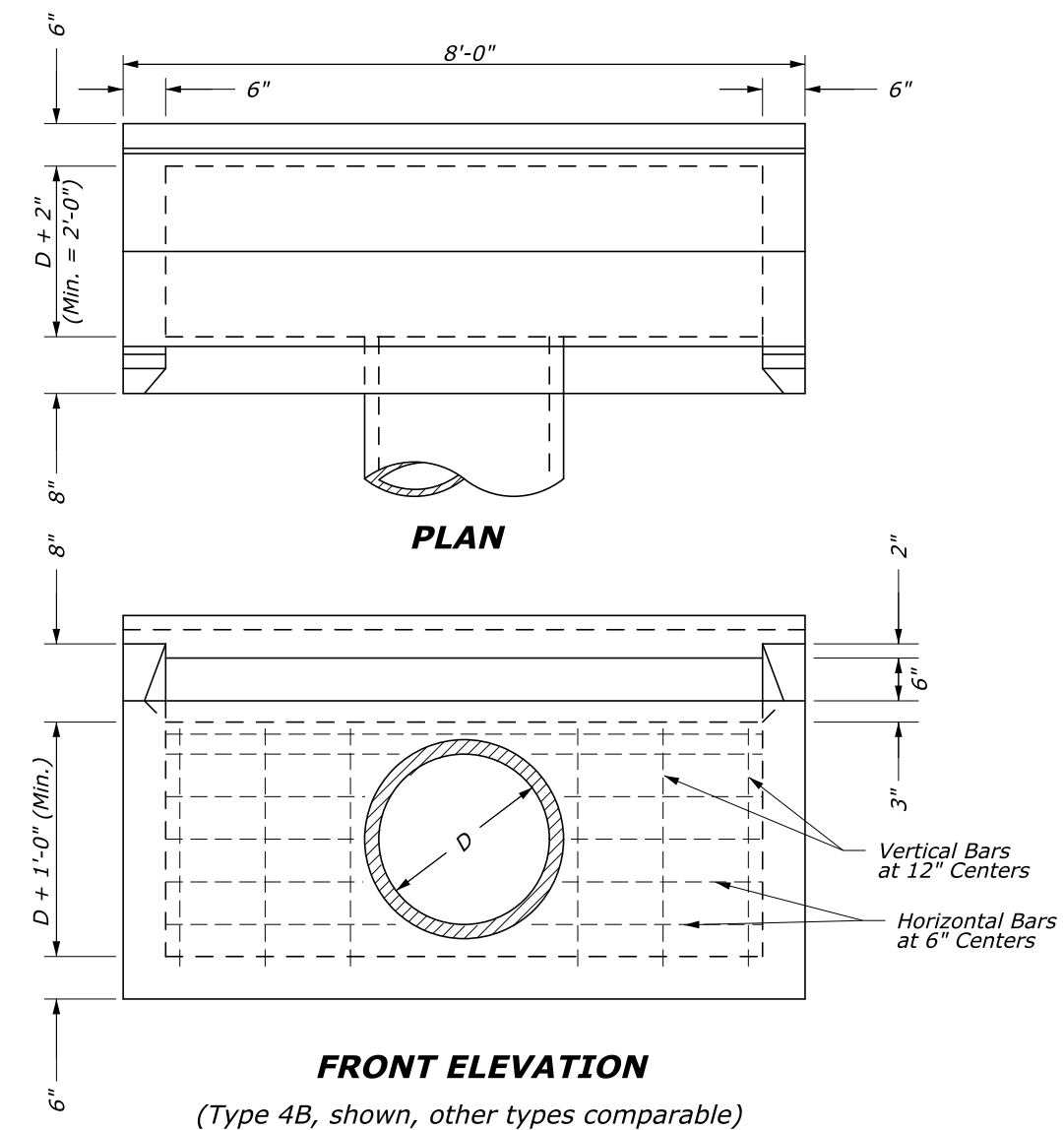
**TYPE - 4C**

*Note:*  
*In rock without backwall or floor.*  
*Reinforce same as Type 4A*



***SLAB-B***

- ## **NOTES:**
- 1. At the option of the Contractor, walls less than 4 feet deep may be of concrete or concrete block.*
  - 2. Inlets to be parallel to roadway centerline and grade. For pipes on skew, adjust inlets as directed.*
  - 3. Ditch or paved waterways to be warped and widened near inlets as directed by the CO, to facilitate drainage and to protect slopes at ends of inlets.*
  - 4. For payment purposes, one slab A plus one slab B or two slabs B constitute one concrete cover.*



*NO SCALE*

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

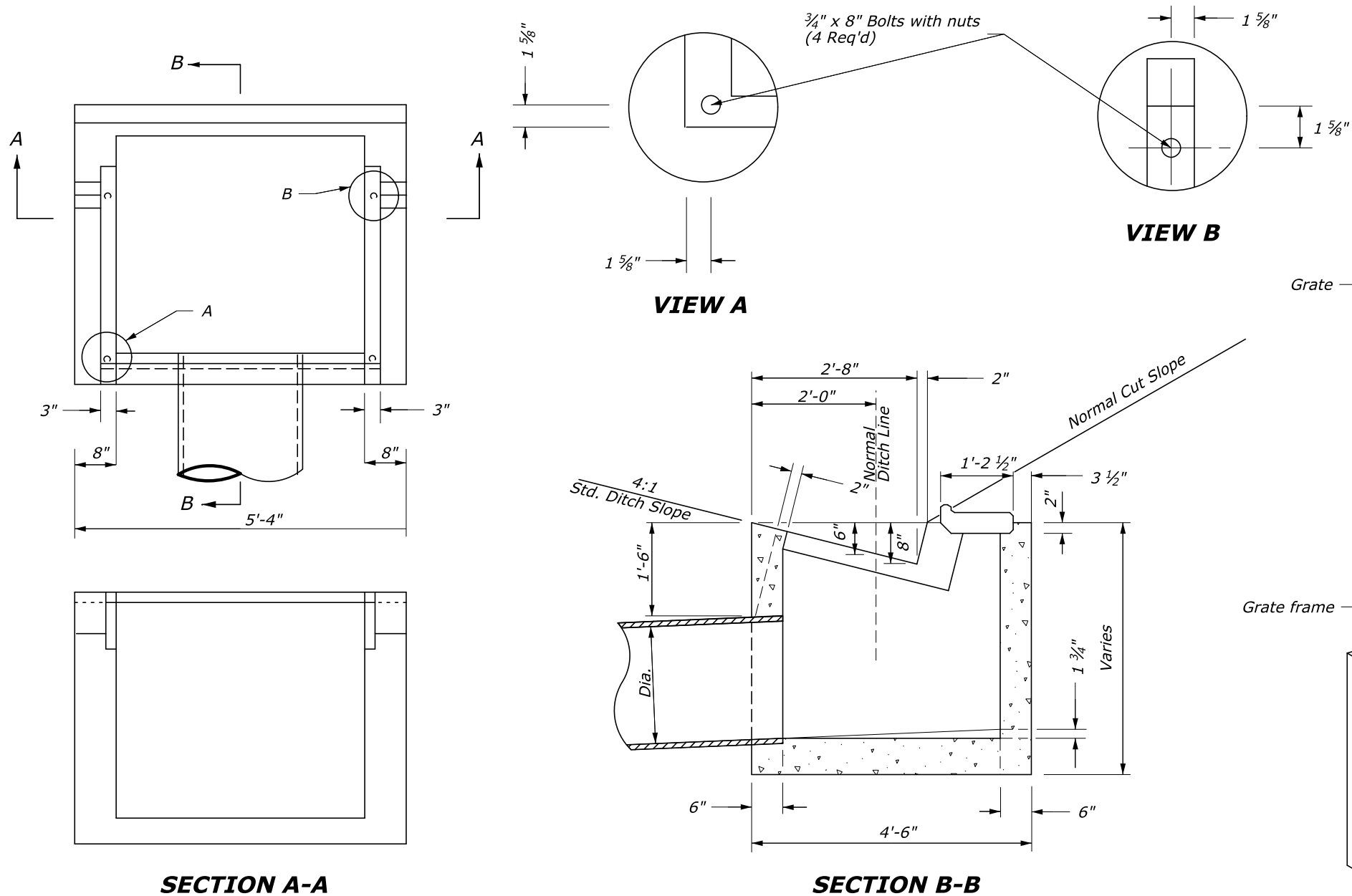
U.S. CUSTOMARY DETAIL

### INLET, TYPE 4A, 4B, and 4C

DETAIL APPROVED FOR USE	
APPROVED : MAY 2011	

DETAIL  
E604-01

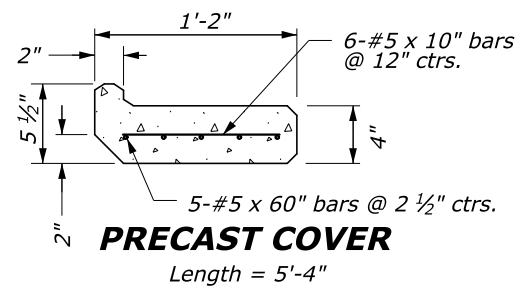
STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01



Notes:

1. All reinforcing bars are #5, placed 1 1/2", minimum from face of concrete.
2. In floors bars to be 6" centers each way. In walls horizontal bars to be on 6" centers and vertical bars to be on 12" centers.
3. All square corners on precast cover have 1/2" x 45° chamfer.
4. Bolt grate frame to inlet; alternate fastening methods will be allowed with the approval of the CO.
5. See Sheet 2 of 2 (Detail 604-02) for metal frame and grating.

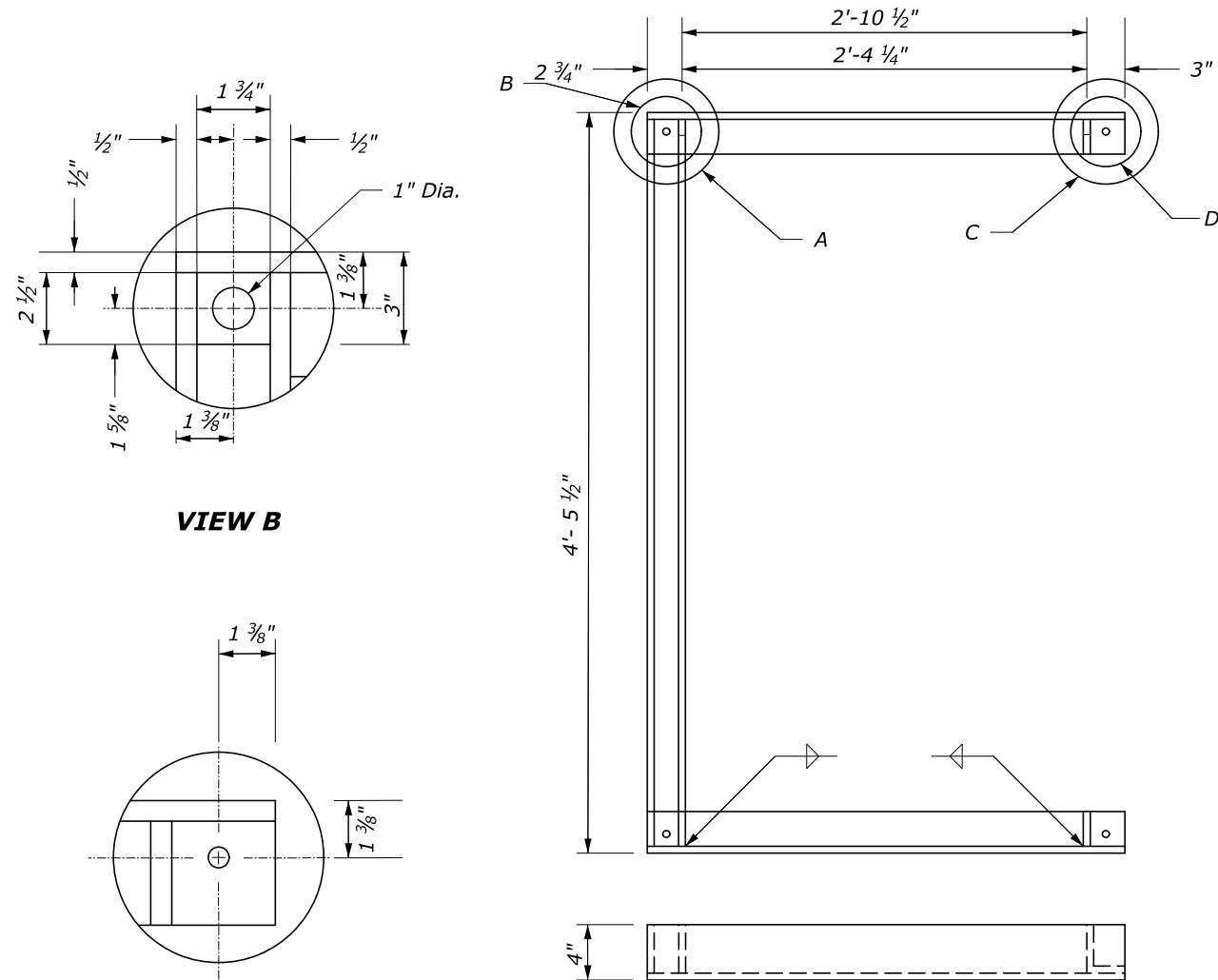
Inlet shown in cut location. In fill locations, inlet to be similar except pipe outlet is on opposite side.



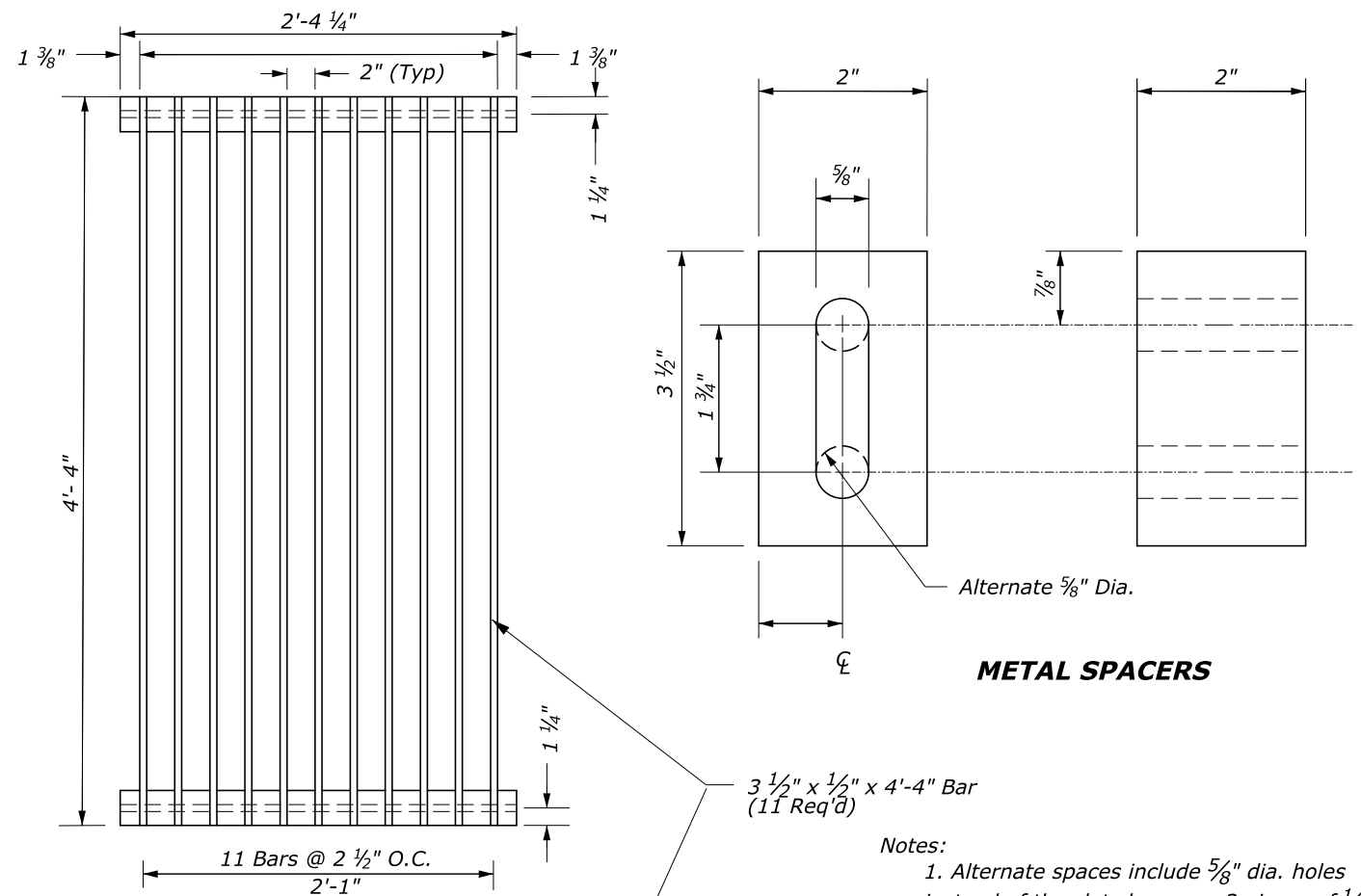
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
<b>INLET, TYPE 4D</b>	
Sheet 1 of 2	
DETAIL APPROVED FOR USE APPROVED : MAY 2011	DETAIL E604-02



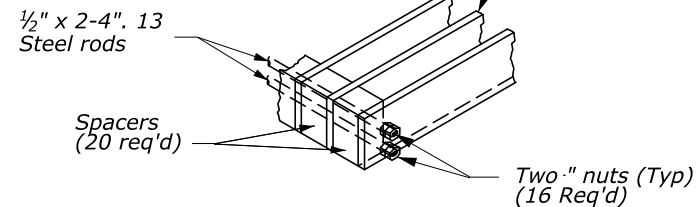


GRATE FRAME

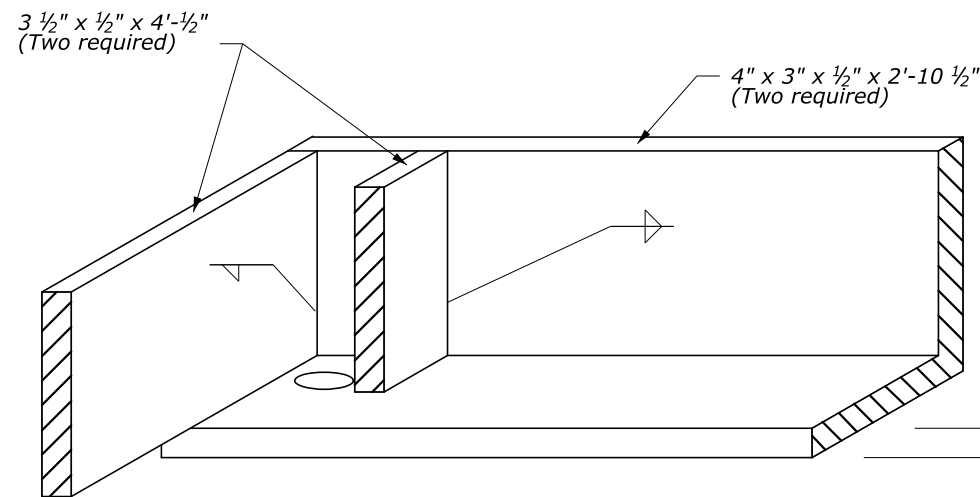


METAL SPACERS

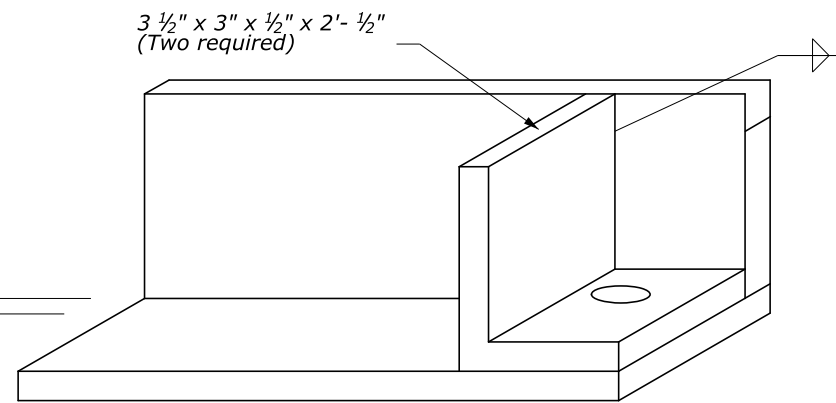
GRATE



- Notes:
1. Alternate spaces include 5/8" dia. holes instead of the slot shown, or 2 pieces of 1/2" galvanized iron pipe.
  2. Four 1/2" Dia. x 2'-4 1/4" steel rods, two nuts each end rods threaded 2" +/- each end.
  3. In place of rods and nuts, bars may be welded together using spacers with 2 extra 1 3/4" outside spacers added to each end.
  4. Galvanize all metal parts for frame and grating after fabrication.
  5. Frame and grating are steel.



VIEW A (OBLIQUE)



VIEW C (OBLIQUE)

LEGEND

- Weld both sides  
Fillet lap weld

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

INLET, TYPE 4D

Sheet 2 of 2

DETAIL APPROVED FOR USE

APPROVED : MAY 2011

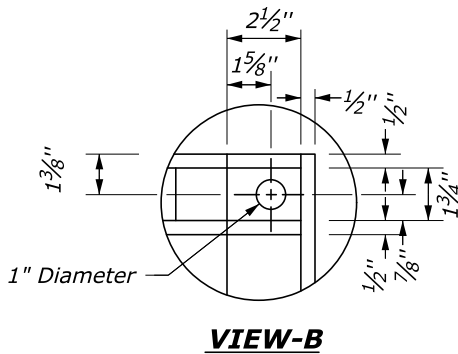
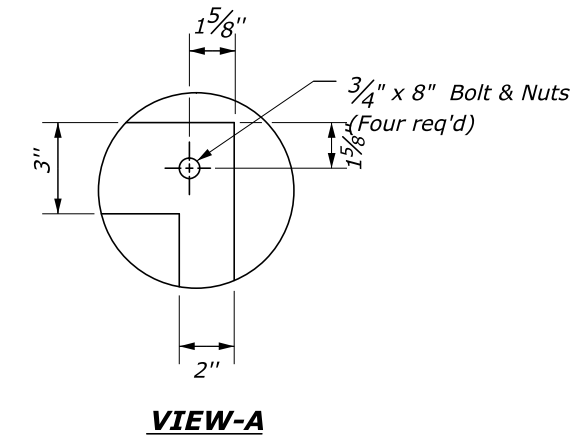
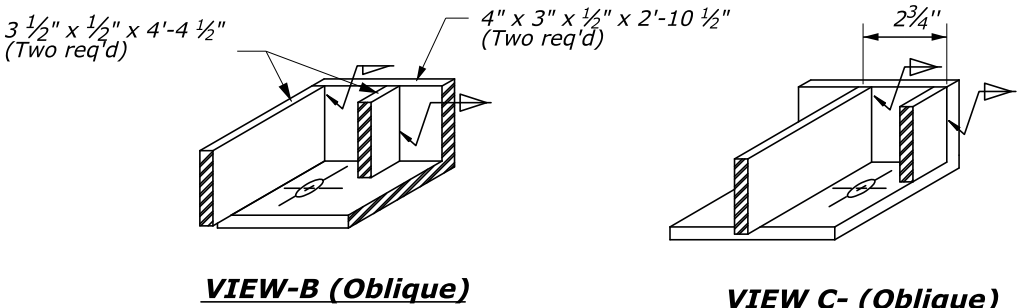
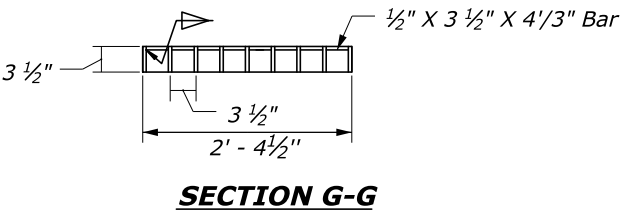
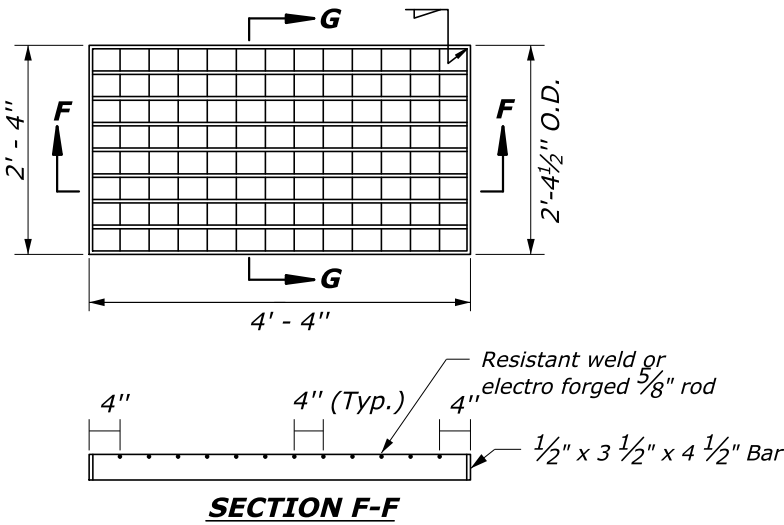
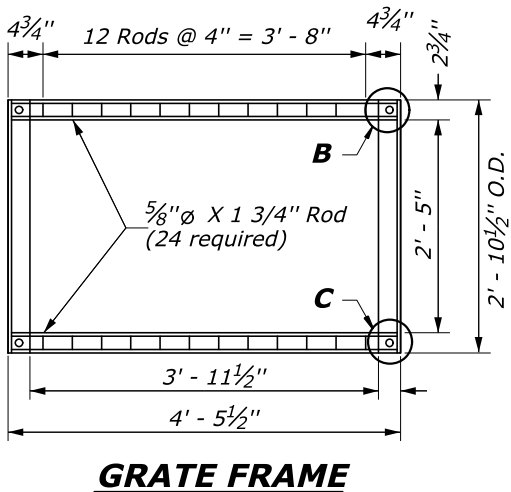
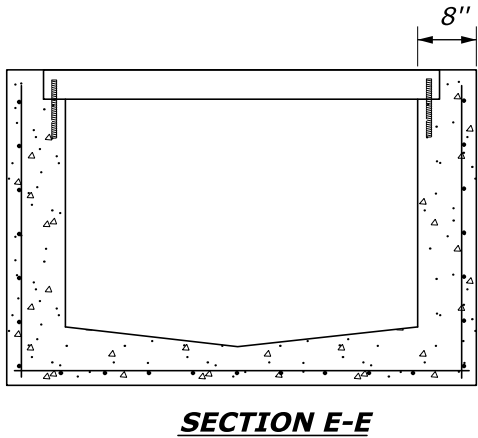
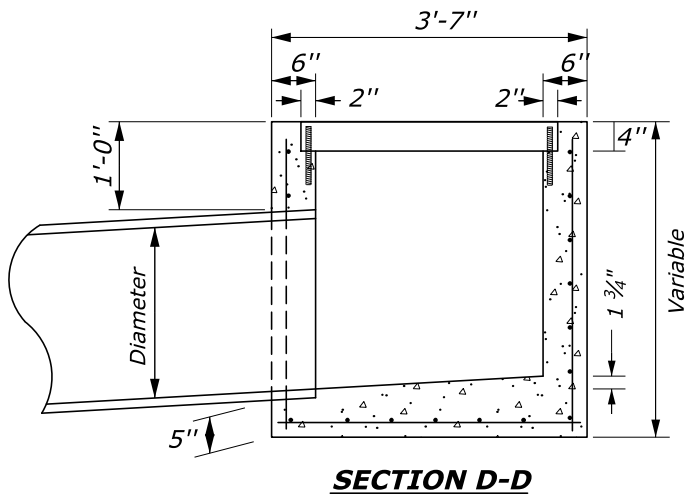
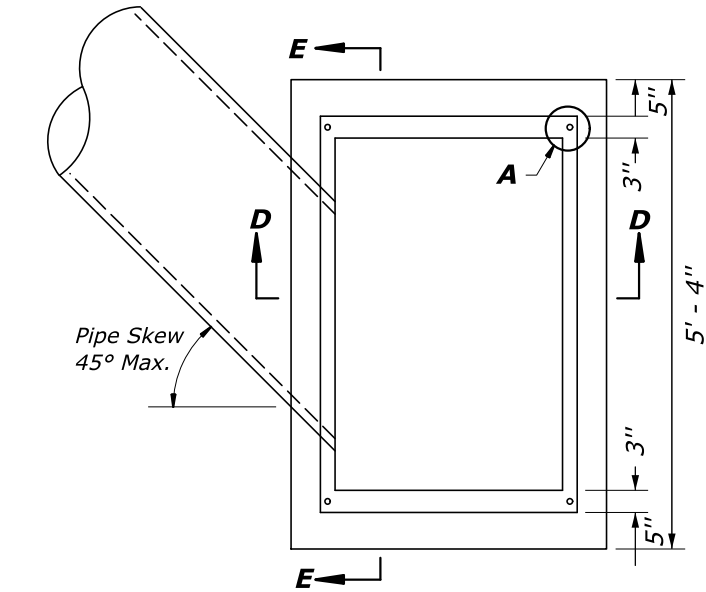
DETAIL

E604-02





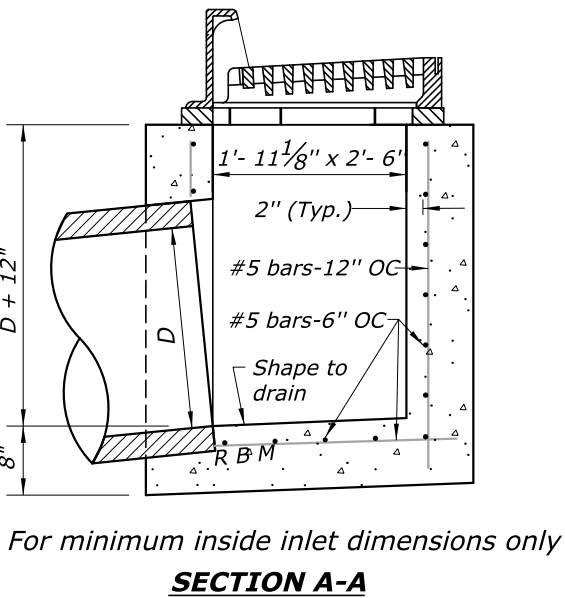
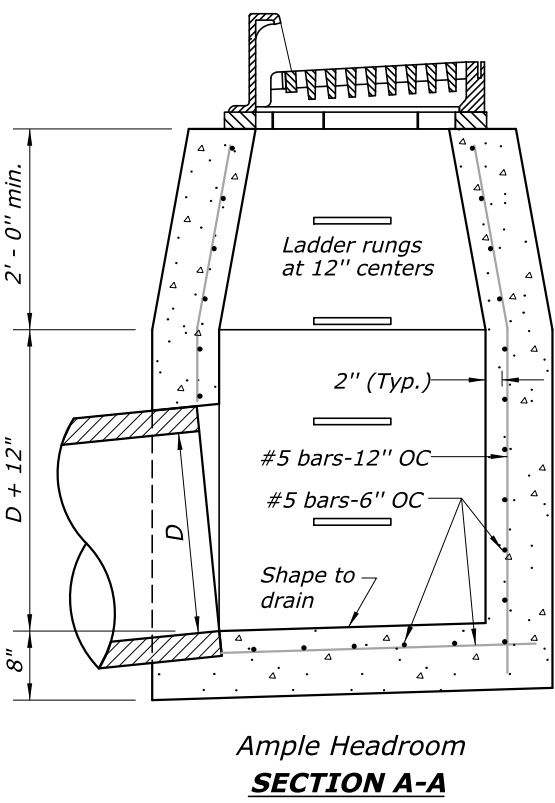
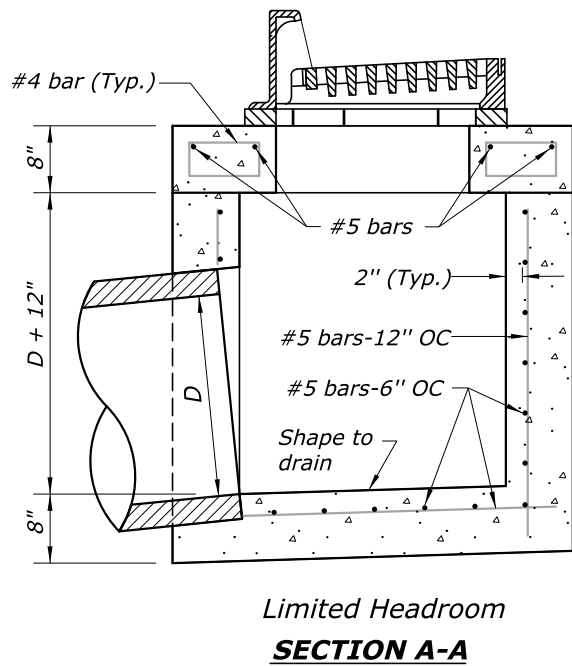
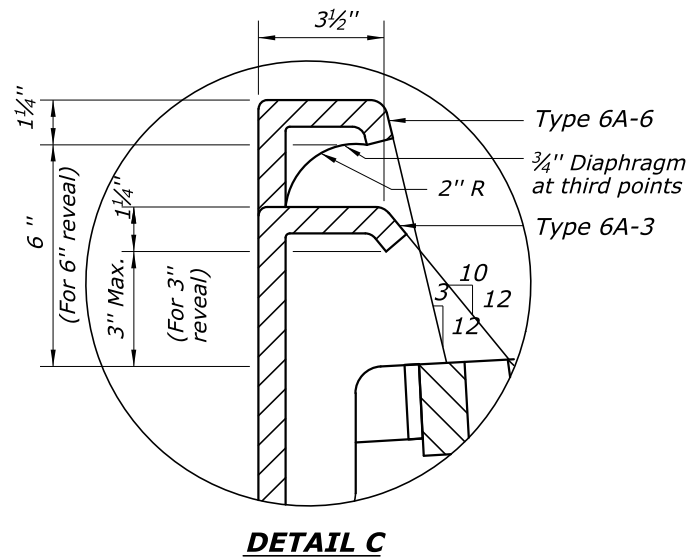
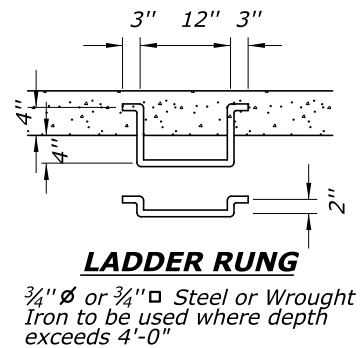
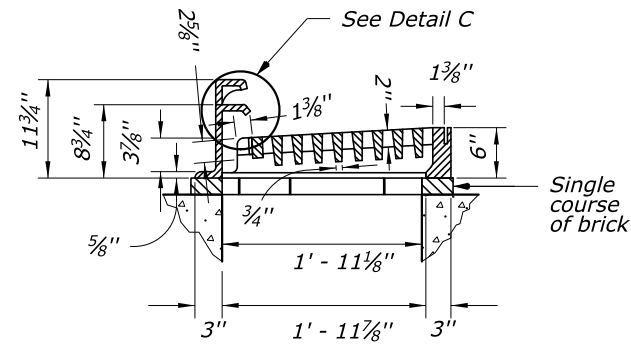
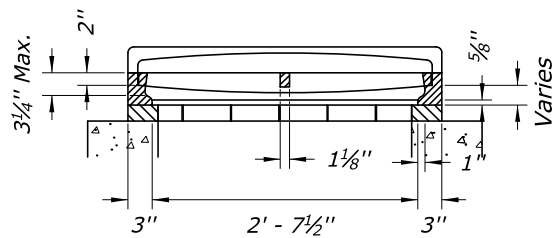
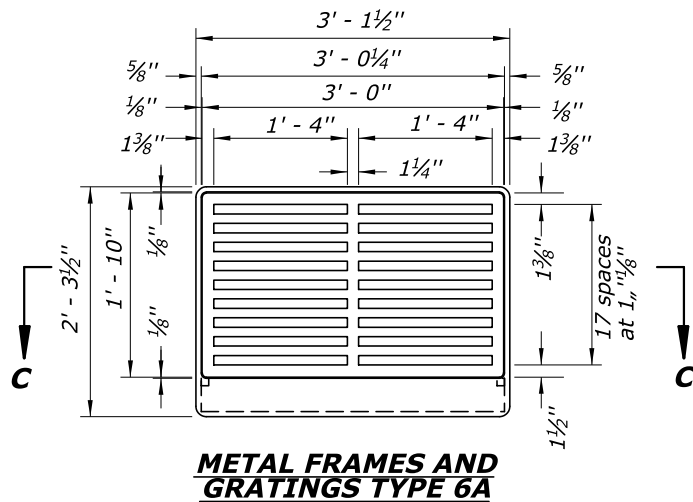
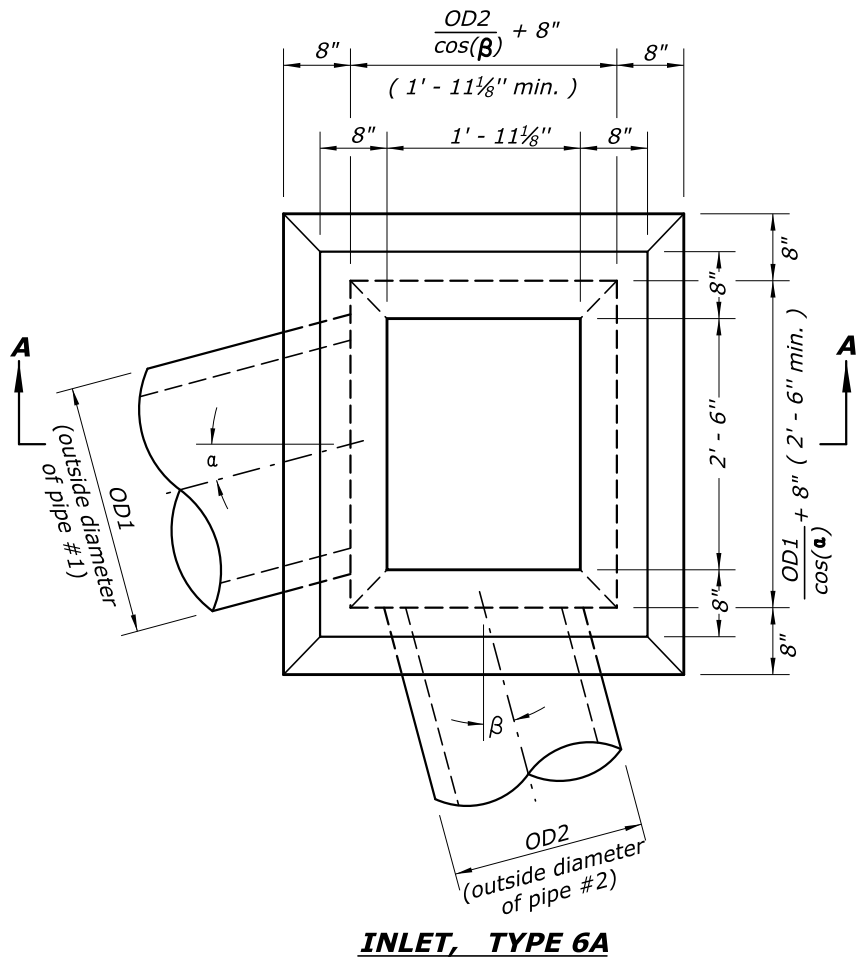
STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01



- NOTES:**
1. Furnish #5 reinforcing bars, placed 1 1/2 inches minimum from face of concrete.
  2. In floors, place bars on 6-inch centers each way. In walls, place horizontal bars on 6-inch centers and vertical bars on 12-inch centers.
  3. Provide metal parts for the frame and grate that are hot dipped galvanized after fabrication. Furnish steel frame and grate.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
<b>INLET TYPE 5B</b>	
DETAIL APPROVED FOR USE	DETAIL
APPROVED: MAY 2011 REVISED: NOVEMBER 2015	E604-04

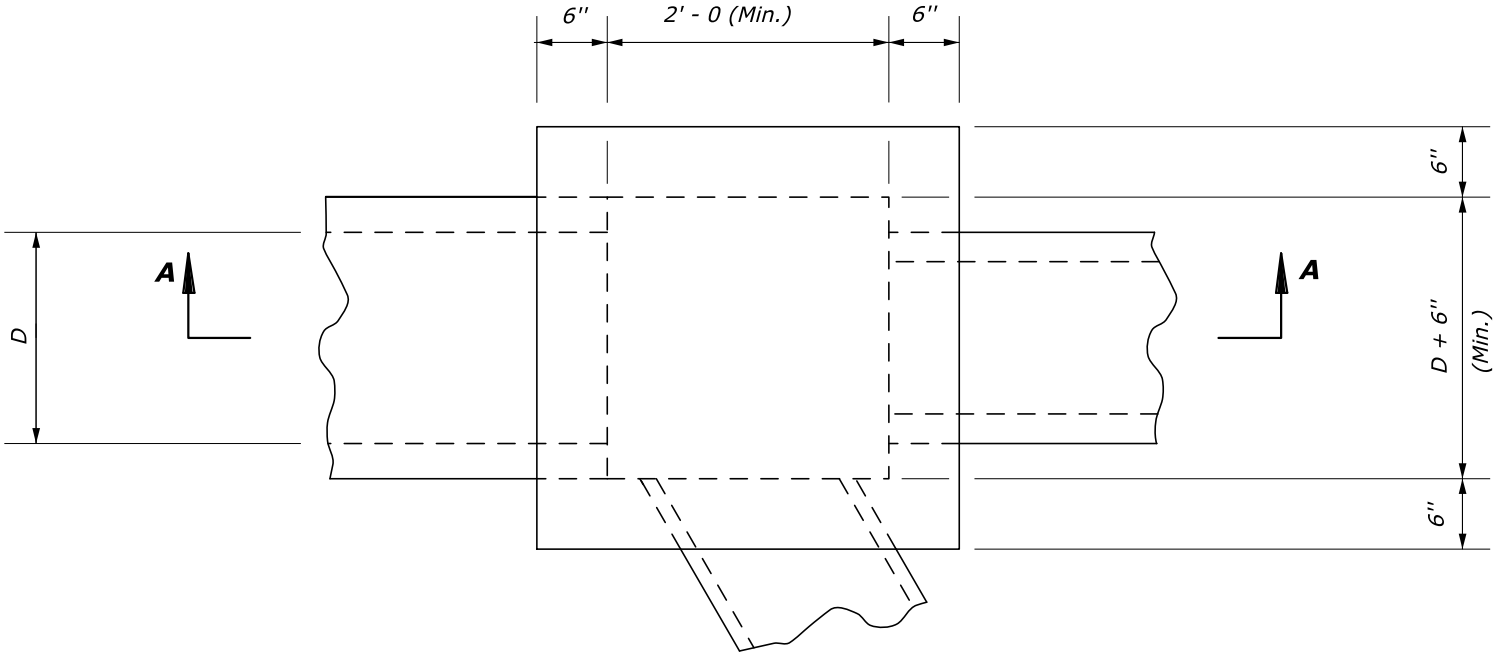


- Notes:**
1. At the option of the Contractor walls less than 4 feet may be of concrete as shown.
  2. Construct Type A inlets for pipes 24 inch and larger "For Ample Headroom", unless otherwise directed by the CO.
  3. Construct inlets parallel to the roadway centerline and grade. Adapt inlets as directed by the CO.
  4. For frames and gratings minor variations in design and dimensions are permitted to allow manufacturer's standards.

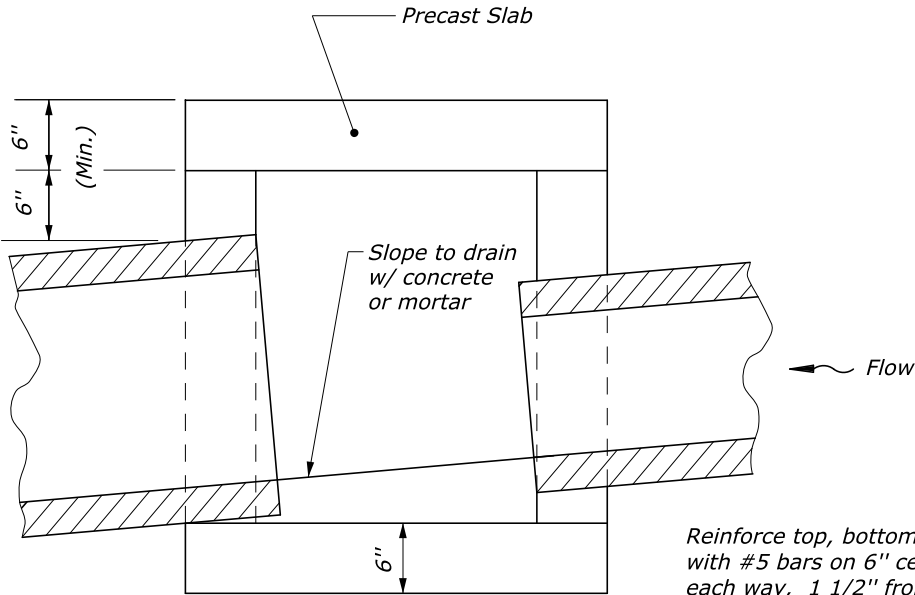


STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01

**Note:**  
1. At the option of the Contractor, walls less than 4 feet may be of concrete or concrete block.



**PLAN**



**SECTION A-A**

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

**JUNCTION BOX**

DETAIL APPROVED FOR USE

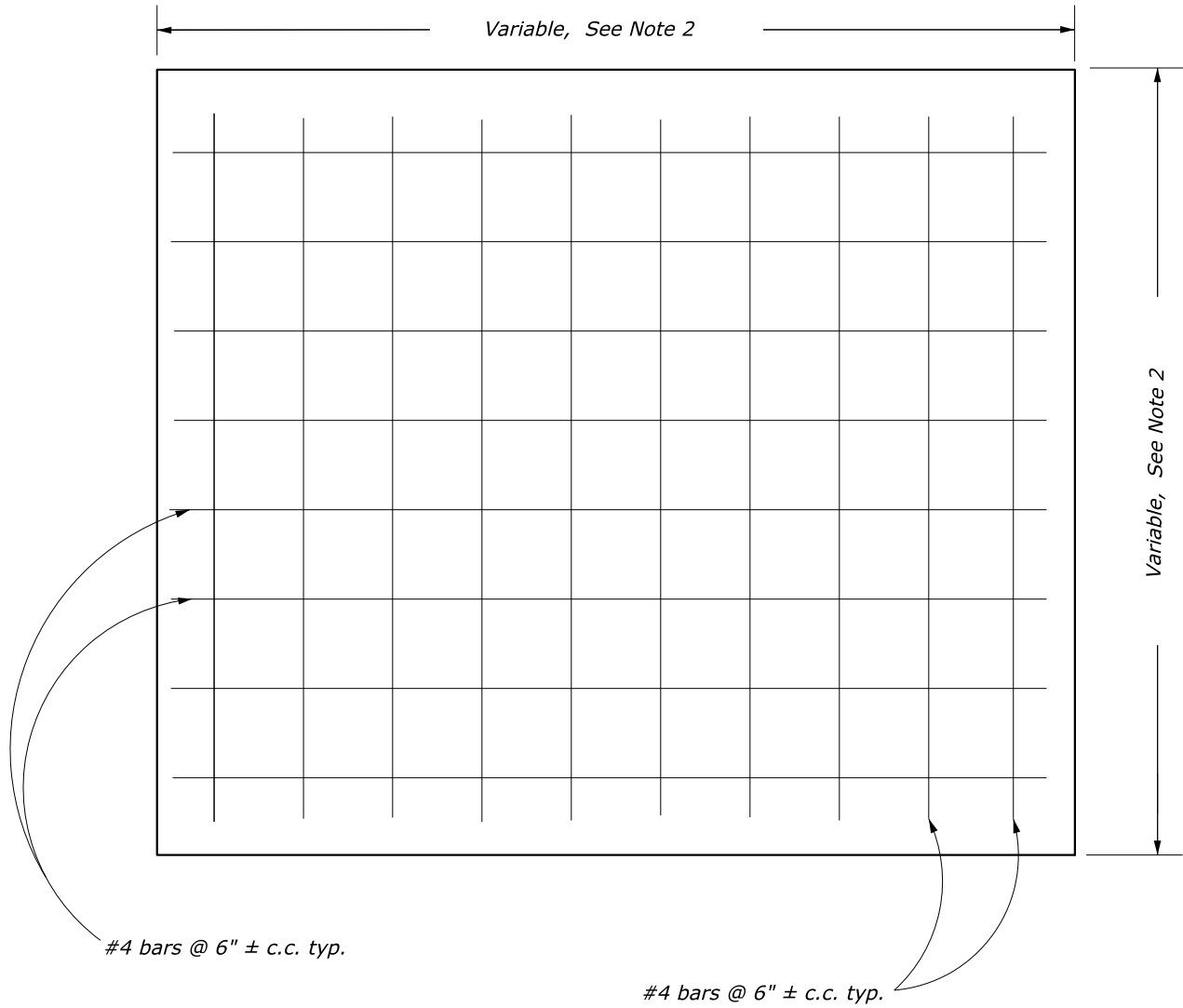
APPROVED : MAY 2011  
REVISED: SEPTEMBER 2014

DETAIL

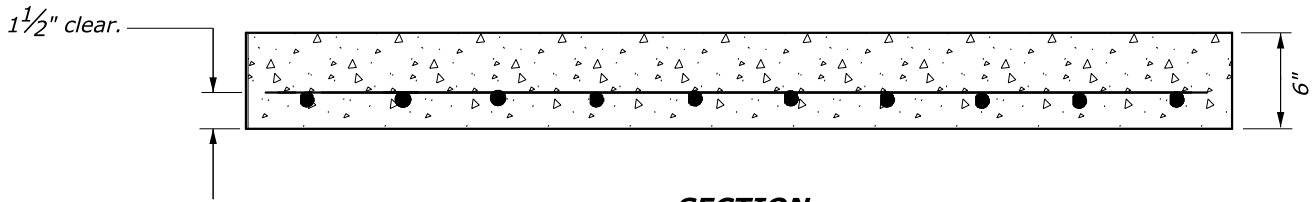
E604-06

NO SCALE

STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01



PLAN



SECTION

**NOTES:**

- 1. Set concrete cap on a 2" mortar bed
- 2. Field measure the length and width of the caps to complete cover the existing inlets.
- 3. Cut the top of the existing inlets to a depth such that 6 inches remain above the highest existing culvert tying into the inlet.
- 4. All reinforcing bars are to have a 1 1/2" clearance to the outside face.

NO SCALE

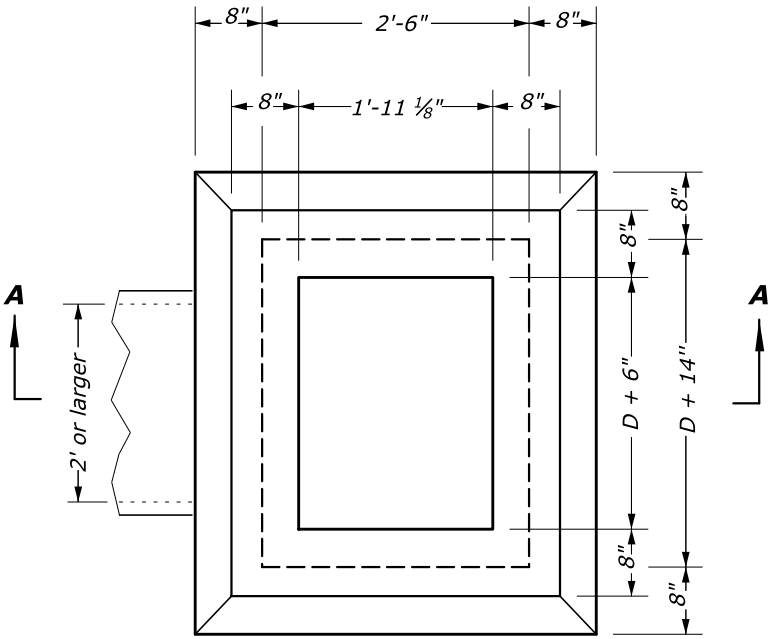
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
<b>PRECAST CONCRETE INLET CAP</b>	
DETAIL APPROVED FOR USE	DETAIL
APPROVED : MAY 2011 REVISED: SEPTEMBER 2014	E604-08



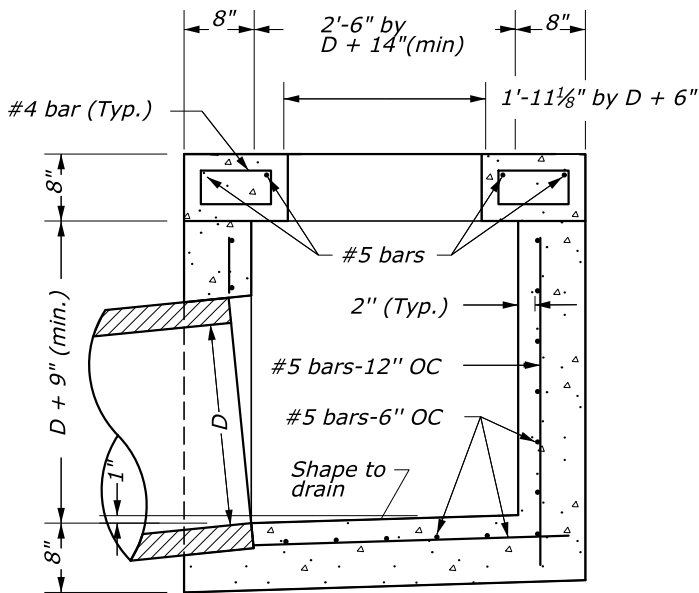
STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01

NOTES:

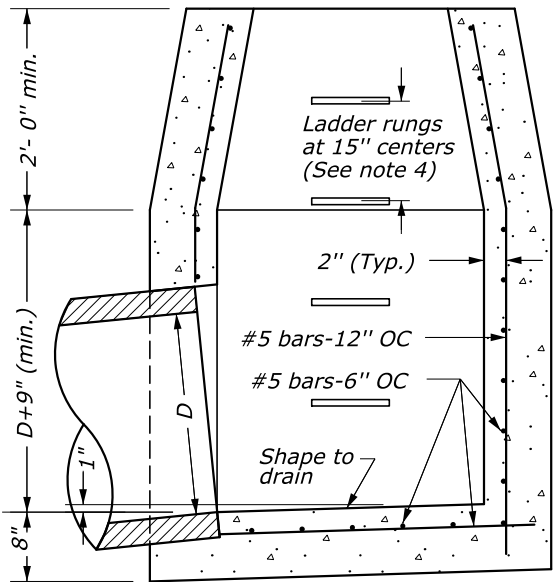
- At the option of the Contractor, walls less than 4 feet in depth may be of either concrete block or concrete as shown.
- Construct Type 6A-6 inlets for 24-inch pipes and larger for "Limited Headroom", unless otherwise directed by the CO.
- Construct inlets parallel to the roadway centerline and grade. For pipes on skew, adjust inlets as directed by the CO.
- Construct ladder rungs of  $\frac{3}{4}$ -inch round or  $\frac{3}{4}$ -inch square steel or wrought iron where depth exceeds feet.
- Minor variations in design and dimensions for frames and grating are permitted to allow manufacturers standards. Ensure all grates are bicycle safe.
- Orient curved vanes toward direction of stormwater flow. In a sump condition, orient curved vanes in either direction. Ensure all grates are correctly oriented towards stormwater flow.
- Construct Type 6A-6 metal frame and grating for 6-inch reveal, unless otherwise directed by the CO.
- See Sheet 2 of 2 for metal frame and grate (Curved Vane Grate) details.



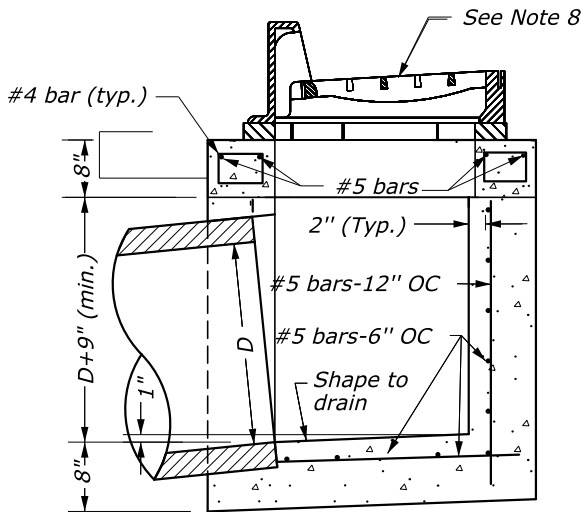
PLAN VIEW



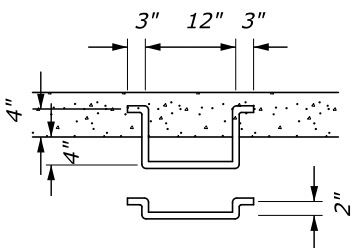
SECTION A-A  
Limited Headroom



SECTION A-A  
Ample Headroom



SECTION A-A



LADDER RUNG  
See Note 4

INLET, TYPE 6A-6  
(For 24" or larger pipes)

INLET, TYPE 6A-6  
(For up to 24" pipes)

NO SCALE

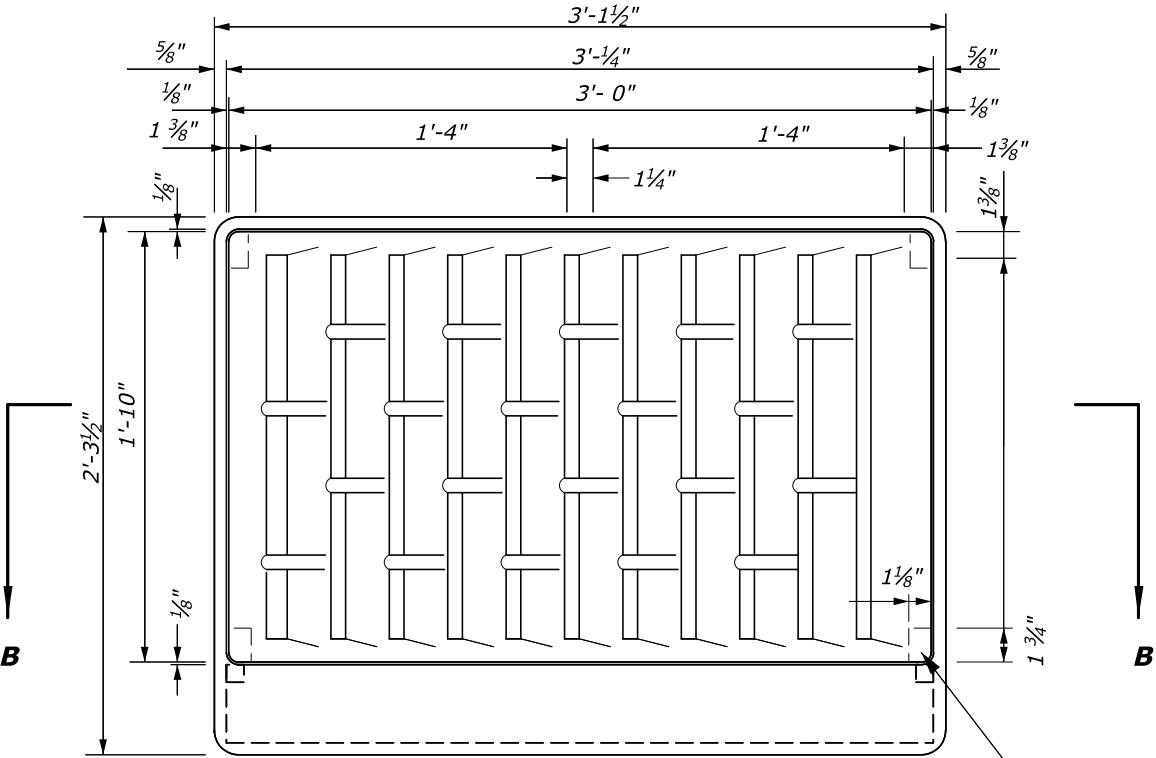
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
INLET, TYPE 6A-6 Sheet 1 of 2	
DETAIL APPROVED FOR USE APPROVED: MAY 2011 REVISED: NOVEMBER 2021	DETAIL E604-09

STATE	PROJECT	SHEET NUMBER
VI	VI-75	S01

NOTES:

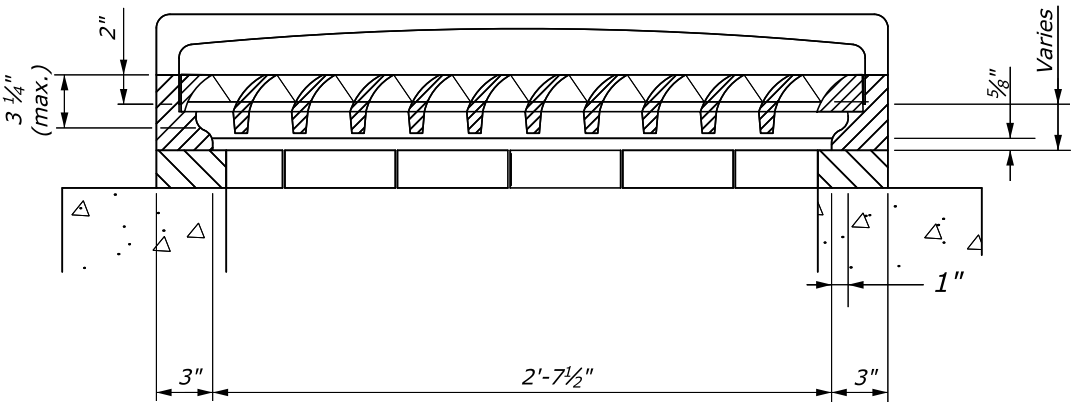
- Minor variations in design and dimensions for frames and grating are permitted to allow manufacturer's standards. Ensure all grates are bicycle safe.
- Orient curved vanes toward direction of stormwater flow. In a sump condition, orient curved vanes in either direction. Ensure all grates are correctly oriented towards stormwater flow.

FRONT ELEVATION GRATE TYPE 6A-6 MOUNTED (CURVED VANE GRATINGS)



(4) Position notches

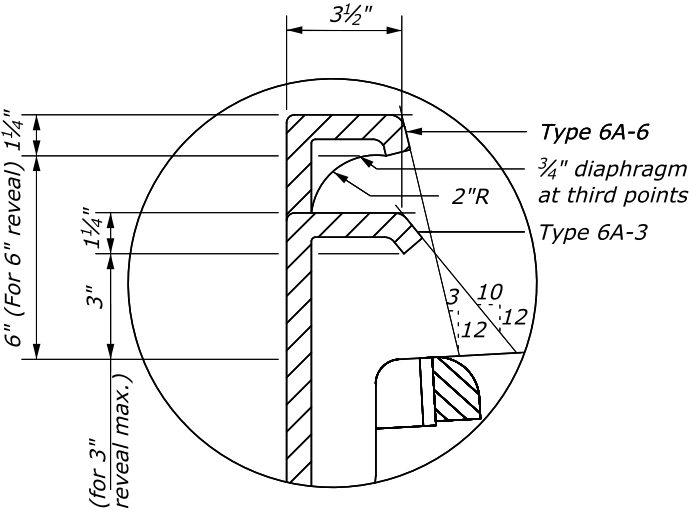
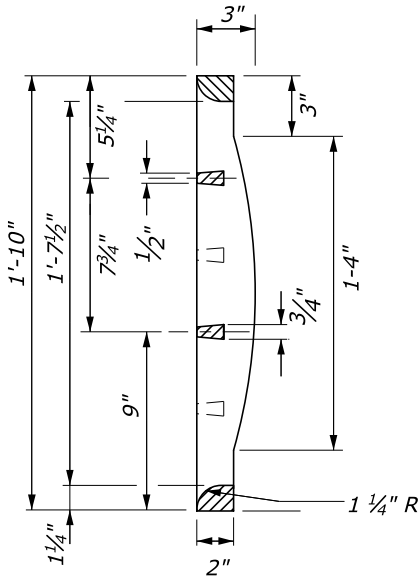
TOP VIEW FRAME GRATE TYPE 6A-6 MODIFIED (CURVED VANE GRATINGS)



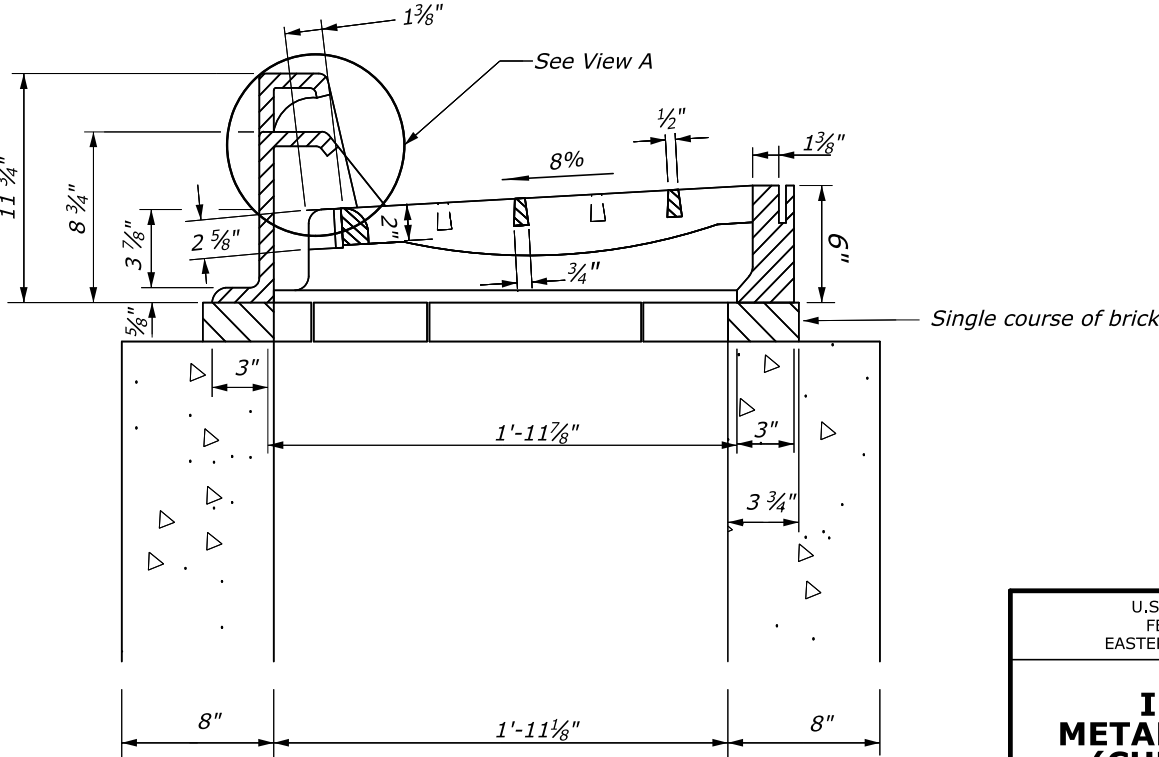
SECTION B-B

METAL FRAMES AND GRATING TYPE 6A-6 MODIFIED

SIDE ELEVATION GRATE TYPE 6A-6 MODIFIED (CURVED VANE GRATINGS)



VIEW A



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL  
**INLET, TYPE 6A-6  
METAL FRAME AND GRATE,  
(CURVED VANE GRATE)**  
Sheet 2 of 2

DETAIL APPROVED FOR USE	DETAIL
APPROVED: MAY 2011 REVISED: NOVEMBER 2021	E604-09