



FIELD ASSESSMENT NOTES

<input type="checkbox"/> Stormwater Retrofit	<input type="checkbox"/> Pollution Prevention
<input type="checkbox"/> Stream/Wetland Restoration	<input type="checkbox"/> Infrastructure Repair
<input checked="" type="checkbox"/> Residential Stewardship	<input type="checkbox"/> Illicit Discharge
<input type="checkbox"/> Land Conservation	<input checked="" type="checkbox"/> Other <u>enforcement?</u>

Subwatershed: Nadir

Site Name: Elm Rd/gut NG-1

Description of Existing Conditions:

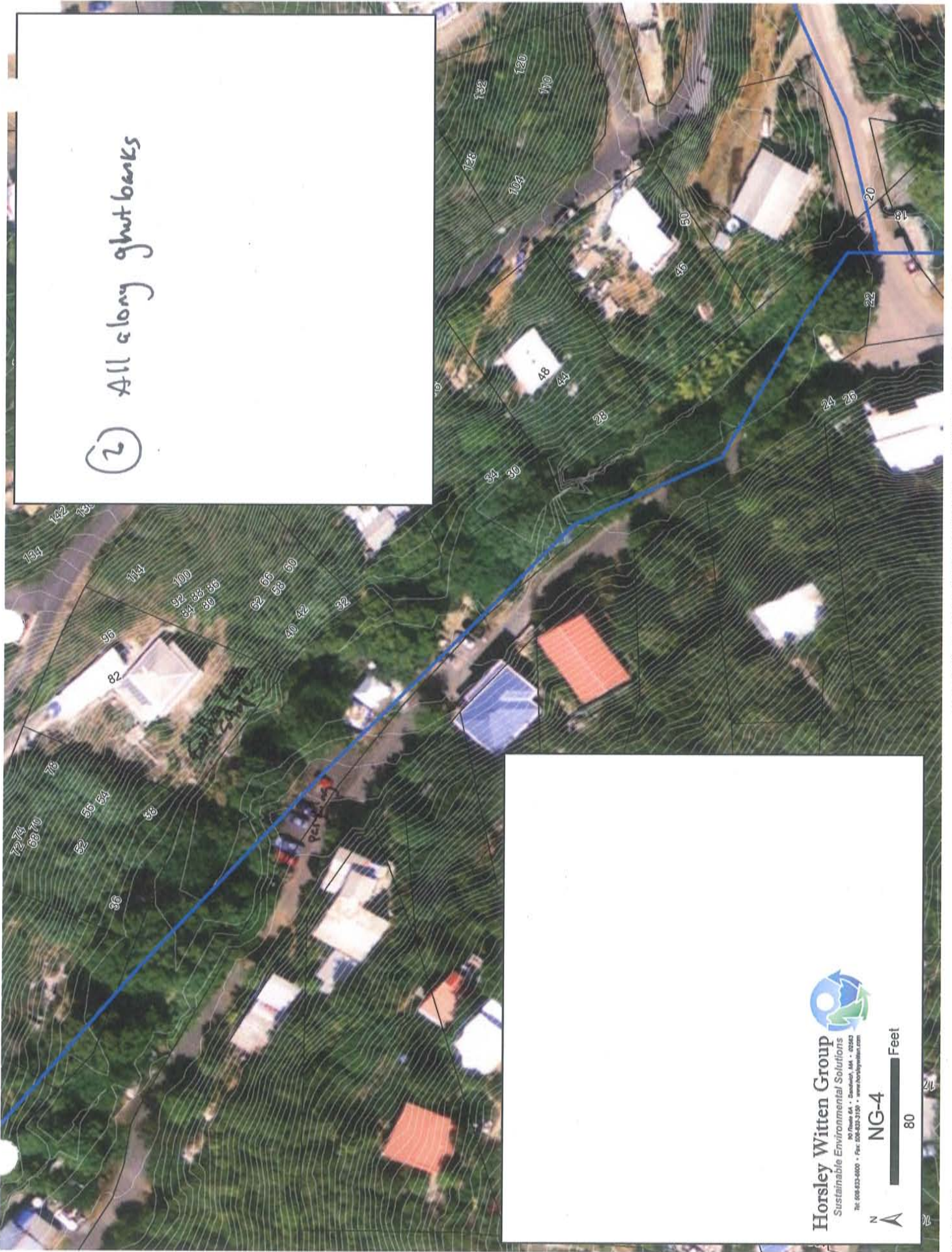
erosion observed along unvegetated slopes of gut, lots of trash, not maintaining vegetated buffers, goat farm in buffer/gut building walls in ~~alignment~~ to gut w/ no ESE
 - recommend that a residential Stewardship program to:

- ① sediment control
- ② Maintaining 35 ft veg. buffer
- ③ dumping prevention & clean up

Additional Notes and/or Sketch Information:

* Ex. where homes are built basically in the gut.

② All along gully banks



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NG-4
80 Feet



FIELD ASSESSMENT NOTES

- | | |
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| <input type="checkbox"/> Land Conservation | <input type="checkbox"/> Other _____ |

Subwatershed: NADIR

Site Name: GOLD HILL RD / EMERALD Xing (NG-2)

Description of Existing Conditions:

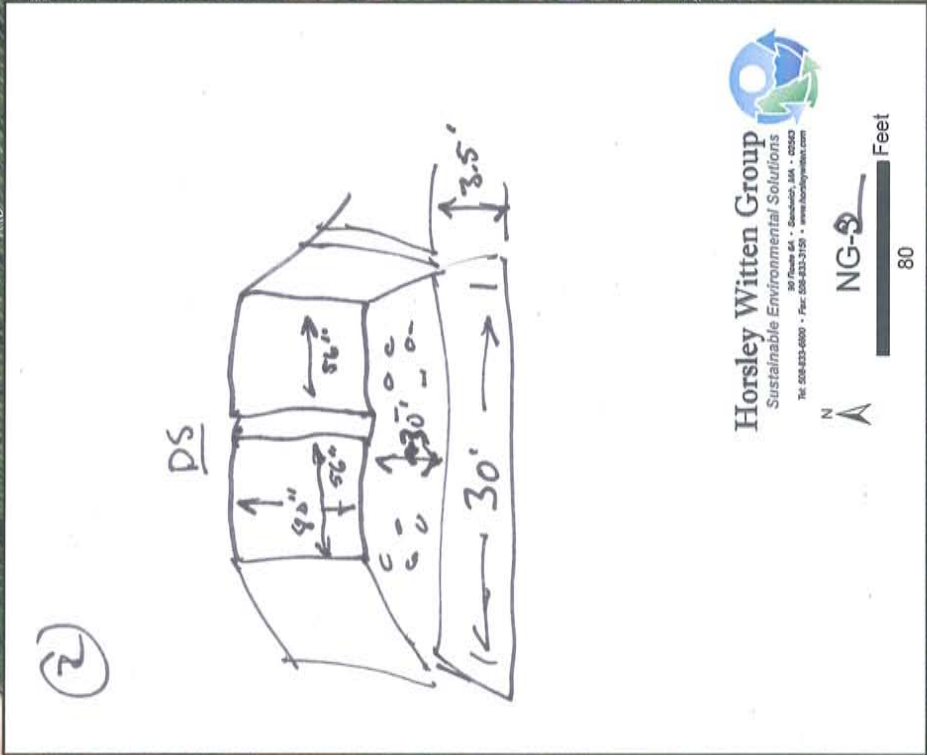
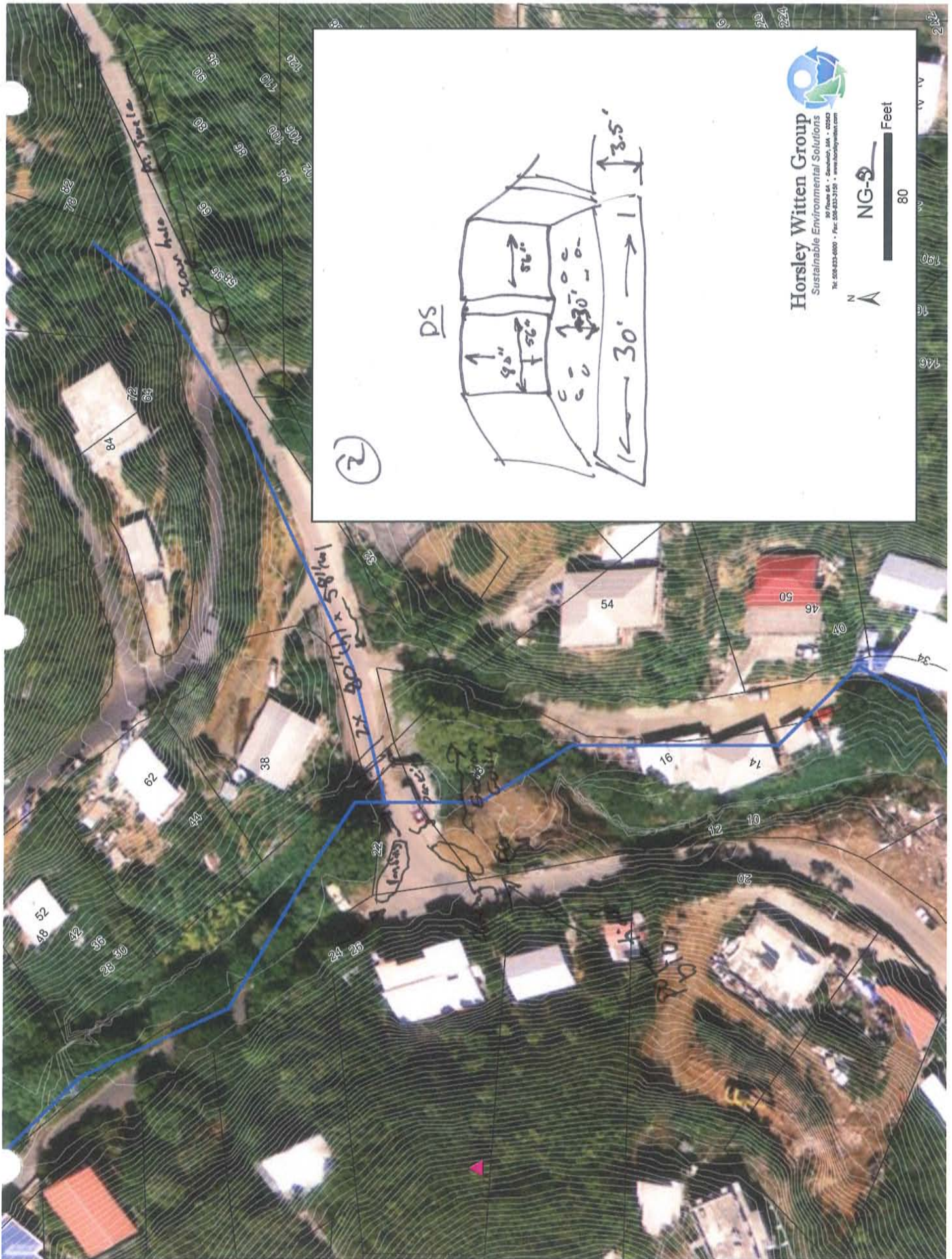
Trash and debris in gut to be removed.

Runoff from uphill road network could be managed in a roadside bio-retention / or swale (but would be expensive for the benefit)

~~The gut is the~~ scour hole
There is a head cut forming at the culvert splash pad - it appears that energy dissipaters at this location may be helpful

- small bios / rain gardens at intersection to reduce flooding of roadway.

Additional Notes and/or Sketch Information:



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- | | |
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| <input type="checkbox"/> Land Conservation | <input type="checkbox"/> Other _____ |

Subwatershed: NADIR

Site Name: NADIR BAUFIELD NG-3

Description of Existing Conditions:

SEE WRITE UP

AND AERIAL

Additional Notes and/or Sketch Information:

NG-3. Nadir Ballpark — Retrofits

Site Description

Nadir Ballpark is a recreational facility that offers residents a field for baseball, a court for basketball, and a playground for young children. The parking area for the facility currently accepts untreated runoff from Elm Road and the surrounding neighborhoods. A portion of the runoff temporarily ponds in the dirt parking area where it picks up sediment and then spills, untreated, into Nadir Ghut. Ghut encroachment is also a significant problem in this area with many examples of unauthorized clearing of vegetation and solid waste disposal. Nadir Ballpark offers opportunities for public education about stormwater management and resource area protection.

Proposed Concepts

Two stormwater treatment facilities are proposed at Nadir Ballpark to treat runoff from Elm Road and the surrounding residences, one bioretention area and one constructed wetland facility. Runoff from the roadway will be directed to the treatment facilities via paved flumes and/or drainage swales. Sediment forebays will be included in the design to provide runoff pretreatment.

The bioretention area is proposed along the road shoulder, north of the basketball court. This practice could treat runoff from the 2.6 acre drainage area and reduce erosion in the dirt parking area.

A constructed wetland is proposed to capture and treat runoff from the southern portion of Elm Road. The practice is proposed in the ballpark property near the intersection of Elm Road and Red Hook Road. There is currently a 5,000 SF existing wetland in the proposed treatment location that has formed due to an elevated outlet pipe and likely high groundwater. Minor alteration to the existing

wetland would be necessary to enhance pretreatment and pollutant removal capabilities. This would involve installation of a stabilized drainage inlet or paved flume, construction of a sediment forebay, and modification of the existing outlet. There is currently a roadside drainage swale that discharges into the wetland which could be expanded and enhanced. The swale could be converted to wet swale to provide an additional 1,500 SF of treatment area. Improved management of the influent stormwater is paramount because severe erosion along the road shoulder has comprised the integrity of the roadway.

For any of the proposed management strategies, it is also important to engage the community in the design process so there is a complete understanding of how the ballpark is currently used and what the key features are for all stakeholders.

Practice Sizing/Design Considerations

The bioretention area and constructed wetland would be sized to treat up to the first 1.25 inches of runoff from the contributing impervious area. The available surface area at each location is 1,600 SF and 6,500 SF, respectively, which is sufficient for meeting the minimum surface area requirements for effective treatment. Any additional runoff that enters the facilities will pass through an overflow structure or culvert and discharge into the ghut.

Pollutant Removal

Bioretention areas are expected to remove 90% TSS; 30% TP; 55% TN; and 70% bacteria. Constructed wetlands are expected to remove 85% TSS; 48% TP; 30% TN; and 60% bacteria (RI Manual, 2010). This assumes the full design treatment volume is provided.

Next steps

- Complete a topographic survey of the area. Determine if there are any site utility conflicts;
- Conduct test pits to verify subsurface soil conditions and depth to groundwater;
- Engage the community for input of the proposed design and layout.

Site ID	Drainage Area (ac)	% Impervious	Design Treatment Volume (cf)*	Practice Area Required (sf)*	Practice Area Available (sf)*
NG-3A	2.6	20	2,400	1,000	1,600
NG-3B	15.9	20	14,400	10,400	6,500

*Design Treatment Volume: Bioretention Areas, $T_v (cf) = (1.25'')(I)/12$; I = impervious area (sf); Constructed Wetlands, $0.015*DA$; DA = drainage area (sf)

*Practice Area Required is calculated based on practice-specific design assumptions.

*Practice Area Available is estimated from available mapping. Actual practice area may be adjusted as needed during pre-construction.



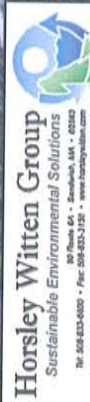
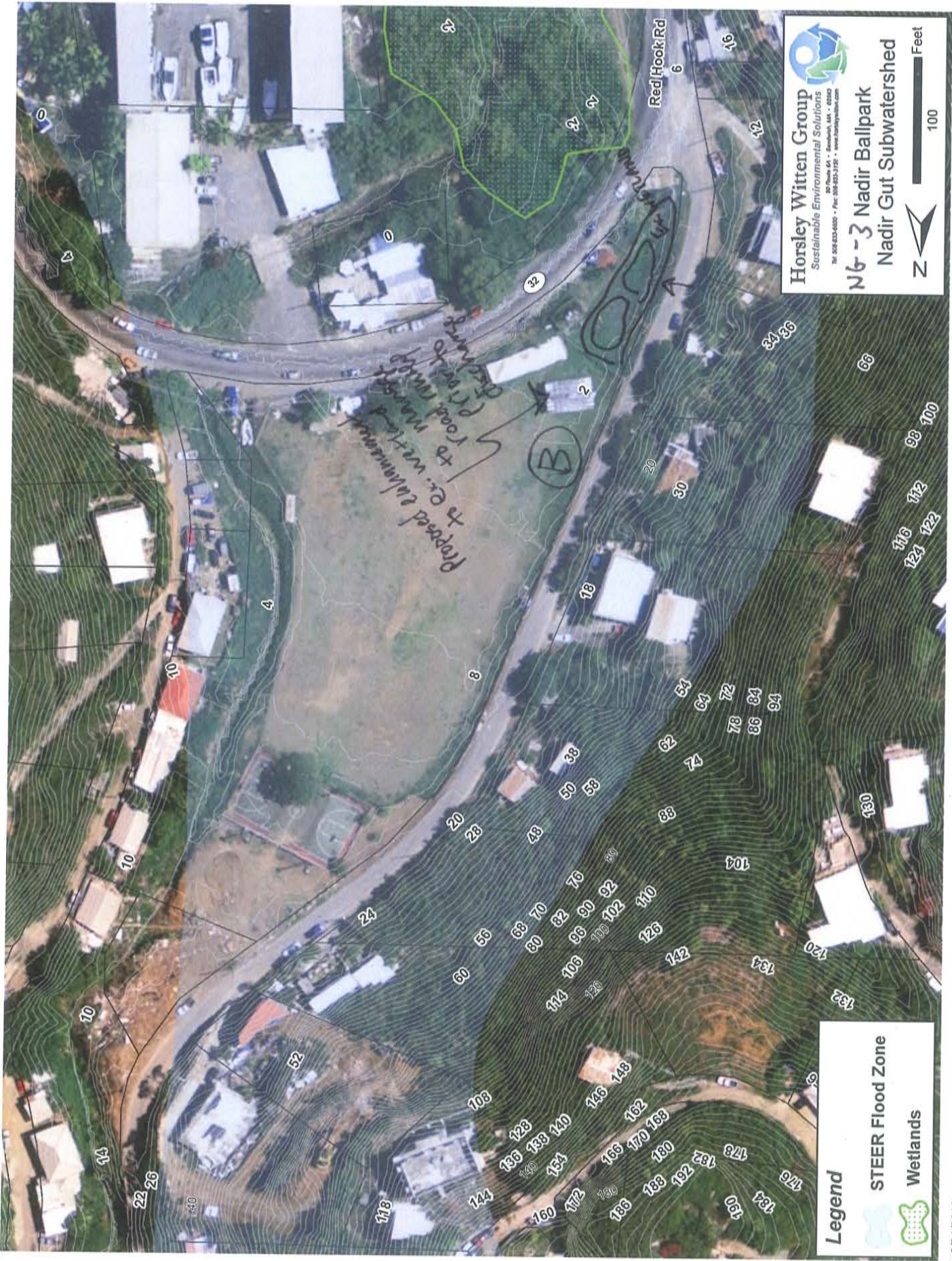


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N
NG-3
 80 Feet

3A





N6-3 Nadir Ballpark
Nadir Gut Subwatershed



Legend

STEER Flood Zone

Wetlands

Date: 2/21/2012



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Subwatershed: NADIR

Site Name: TROPICAL MARINE NG-4

Description of Existing Conditions:

- gut takes a right angle turn to go under road ulvvert. There is an existing set of plans for a proposed stream restoration project here.

- Reports that septic pump out vehicle discharge at this ulvert/location

- Surface of boat yard drains directly to bay without treatment.

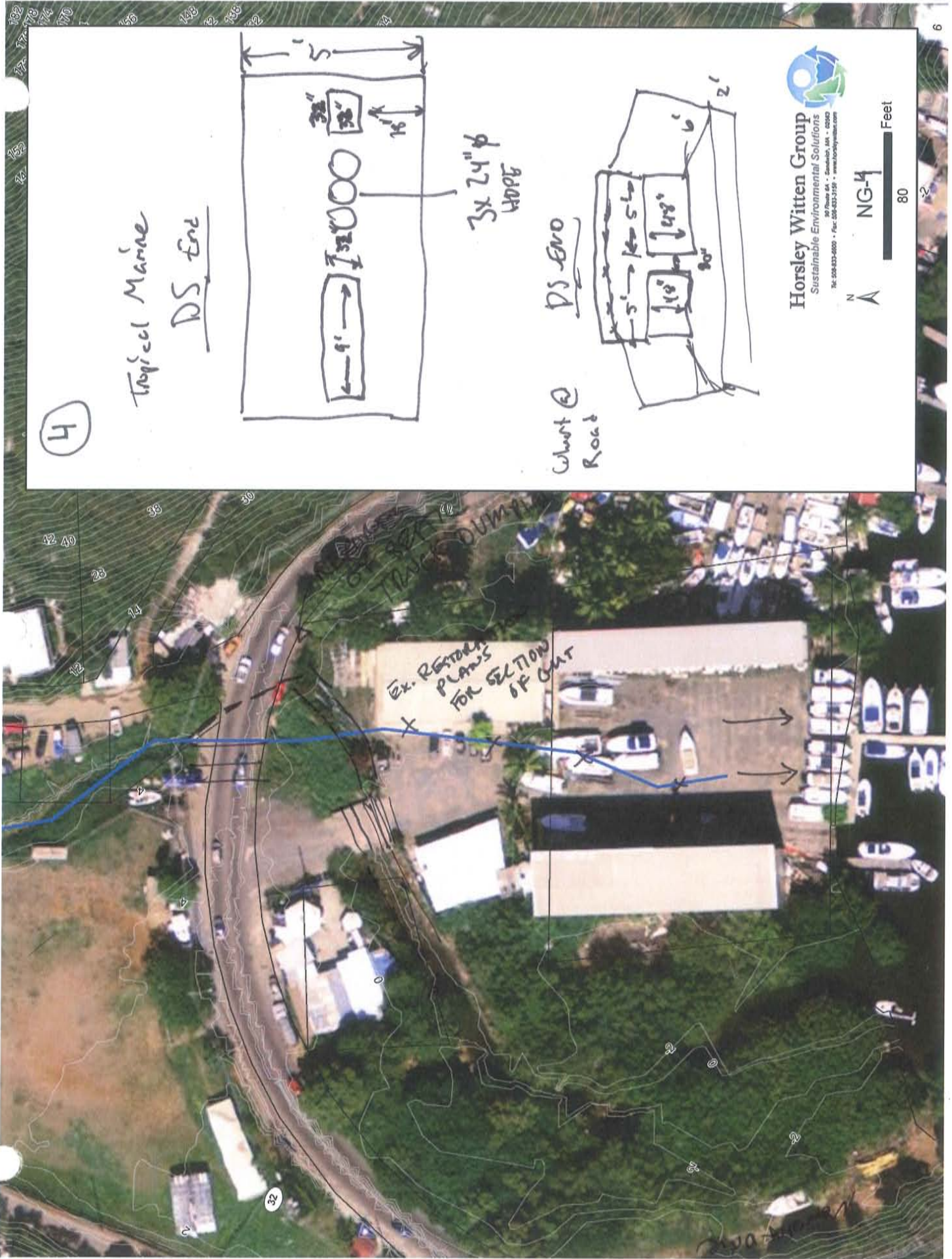
- Consider pollution prevention opportunities here such as
① paving for areas where fluids are drained.

Additional Notes and/or Sketch Information:

- ② trench drain to O/W separator
- ② or sand filter

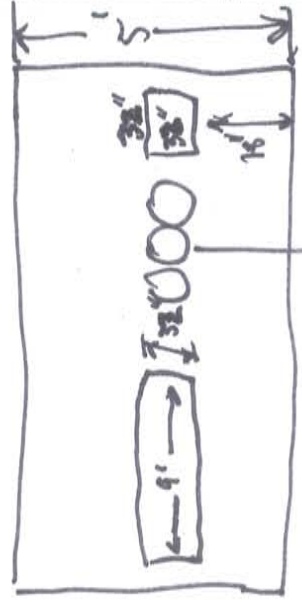
- consider rainwater harvesting @ roof that drains to "the patch"

**SEE EX. DESIGN PLANS FOR GUT RESTORATION*



(H)

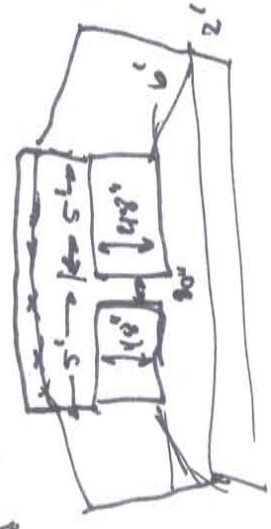
Tropical Marine
DS End



3x 2 1/2\"/>

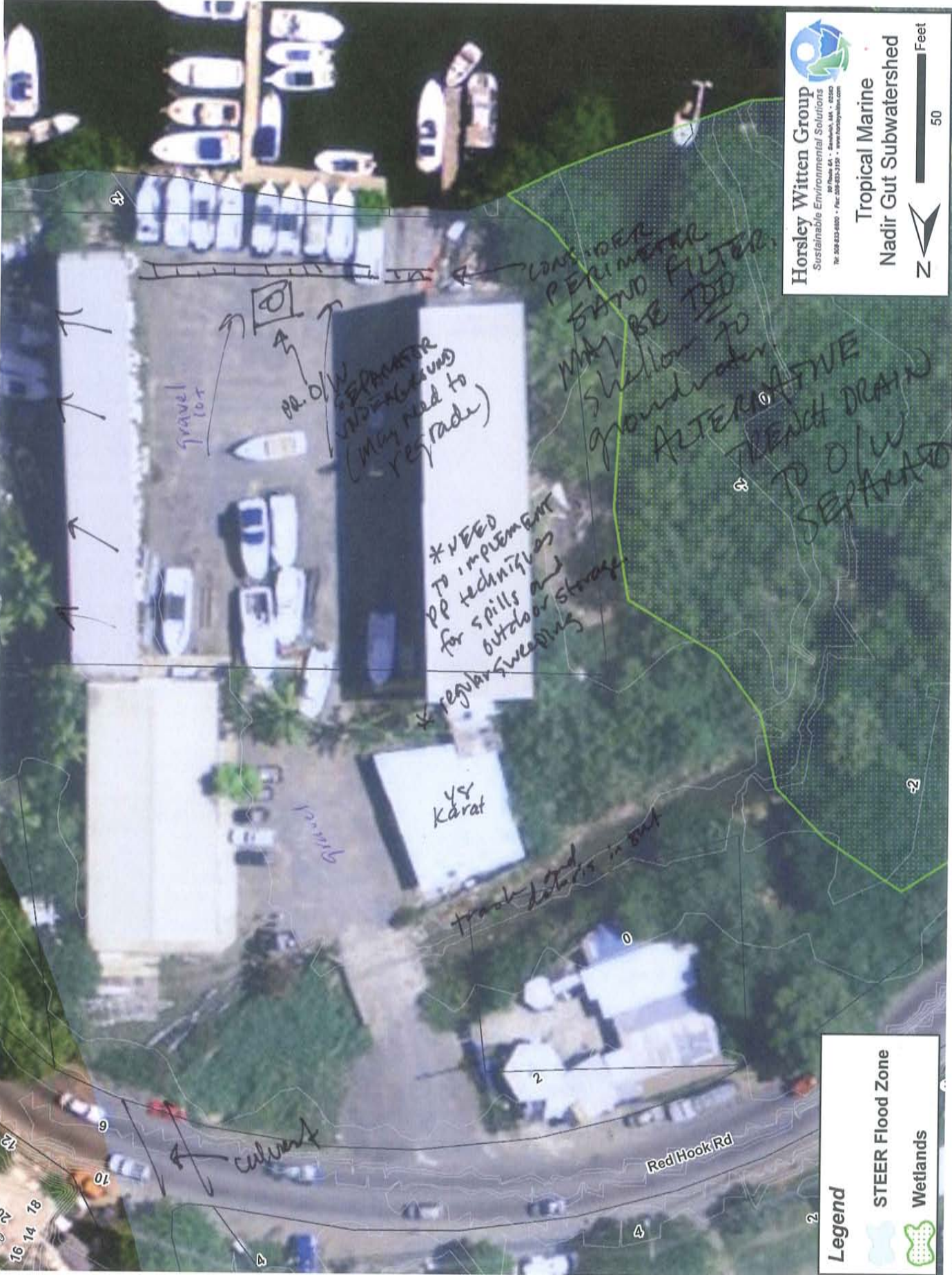
Wharf @
Road

DS End




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80 Feet
NG-4



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**Tropical Marine
 Nadir Gut Subwatershed**

50 Feet

N

Legend

STEER Flood Zone

Wetlands

DATE 12/20/90	REVISION REDRAWN	BY RFH
Road & Drainage Improvements Route 32 St. Thomas, Virgin Islands		
PLAN & PROFILE BALLPARK ROAD Sta. 10+00F to 16+00F		
SURVEY CAH	SCALE SHOWN	
DESIGN WW/EA	DATE 10-7-88	DRW NO 2
DRAWN LAC	JOB NO NS-001	
CHECKED RFH/WW	FILE	

Donald L. Hamlin

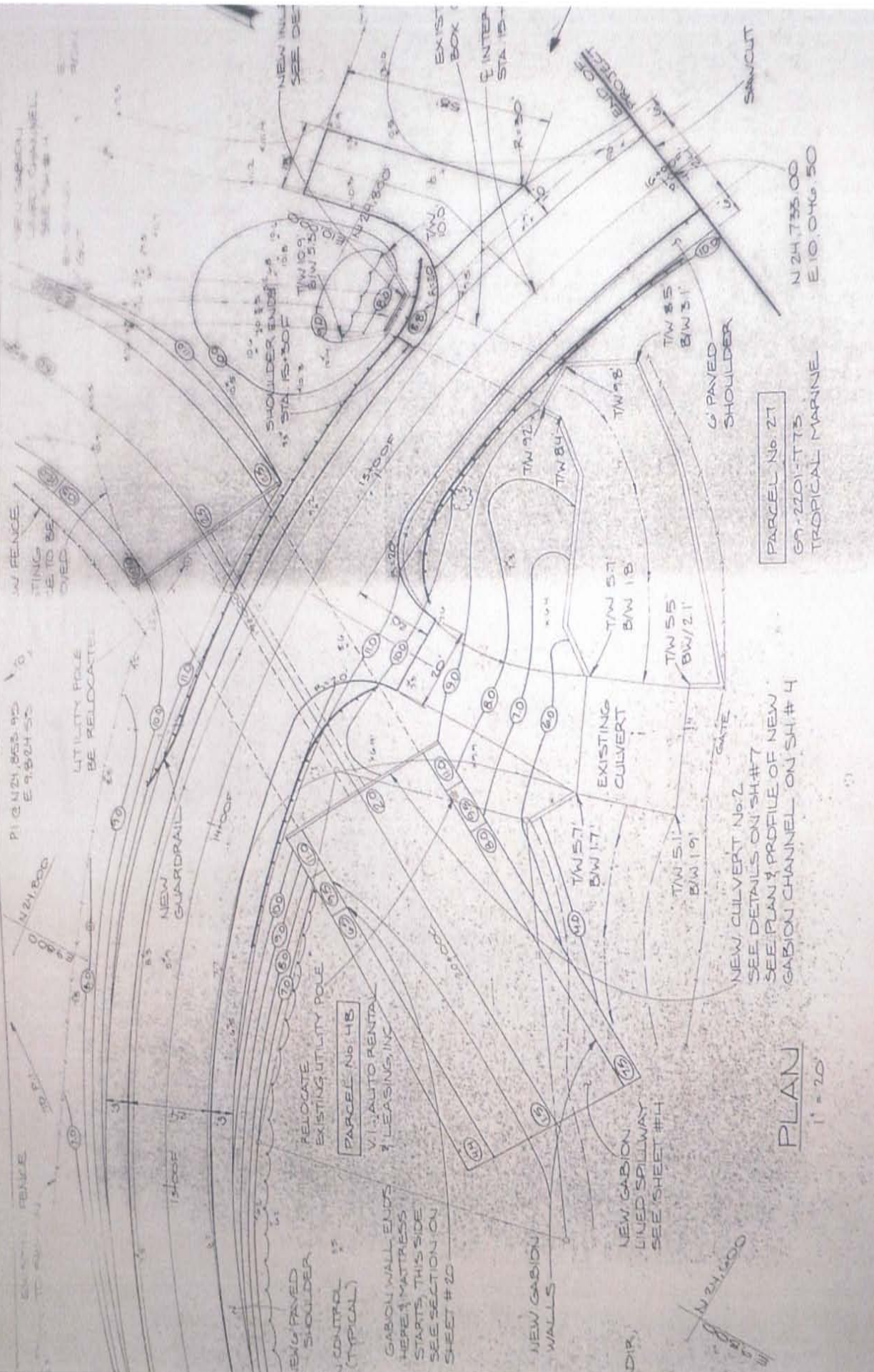
CONSULTING ENGINEERS, INC.
St. Thomas, S. Virgin Islands

6

4

2

0
50F



PARCEL No 21
 69-2201-775
 TROPICAL MARINE

NEW CULVERT No. 2
 SEE DETAILS ON SH.#7
 SEE PLAN & PROFILE OF NEW
 GABION CHANNEL ON SH.#4

PLAN
 1" = 20'

STATION	100' VERTICAL CURVE	90' VERTICAL CURVE
10+00	AD: 41.54 K: 2350	AD: 41.1 K: 220
10+50		
11+00		
11+50		
12+00		
12+50		
13+00		
13+50		
14+00		
14+50		
15+00		
15+50		
16+00		
16+50		
17+00		
17+50		
18+00		
18+50		
19+00		
19+50		
20+00		

PARCEL No. 37
 ESTATE NADIR
 BALL PAVEMENT

SAWCUT SHOULDER
 ENDS STA 11+47.6
 2 EXISTING
 CULVERTS, No. 1
 INV. 12.00

EXISTING
 WALL
 TW 9.2
 BW 4.5

SAWCUT EXISTING
 CEMENT CONCRETE
 PAVEMENT TO PROVIDE
 CLEAN BOARDING
 LE FOR THE NEW
 LIMOUSINE PAVEMENT

TW 9.2
 BW 4.5
 TAPER SHOULDER
 FROM 0.810+00F
 TO 5' AT 11+12F
 TO MEET ENDWALL

CURVE DATA # 1F	
R=	280.578
Δ=	36° 35' 10"
L=	178.999
T=	92.624
C=	175.979
PC=	10+00F
PT=	11+79.00F
P1=	10+92.624F BK.
P2=	10+86.344F AHD.

EXISTING HEADWALL &
 CULVERTS, No. 1
 TO REMAIN
 INV. ELEV. 1.2'

MANGROVE
 WETLAND

PARCEL No. 37
 PORTION OF ESTATE NADIR,
 U.S. V.I. GOV'T

NEW GABION
 WALLS

NEW GABION
 LINED SPILLWAY
 SEE SHEET # 4



PLA 1" = 1'

20

200' VERTICAL CURVE

RELOCATE
 EXISTING UTIL

PARCEL No. 37

V.I. AUTO R
 & LEASING,
 GABION WALL ENDS
 HERE & MATRESS
 STARTS THIS SIDE.
 SEE SECTION ON
 SHEET # 20

NEW 6' PAVED
 SHOULDER
 EROSION CONTROL
 FENCE (TYPICAL)

EXISTING EDGE
 OF PAVEMENT
 NEW EDGE
 OF ROAD
 NEW GUARDRAIL

11+24.600

10



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Subwatershed: Nadir

Site Name: The Patch **NG-5** (Humphrey's owner) *UNPAVED YARD*

Description of Existing Conditions:

- History of gut reworking around the ball field
- option for small swale down back of Tropic Marine. bid be ok with that, but not to much.
- brackish well & diesel plant
- wastewater goes into the ground
- cesspool
- wants to dredge when current drainage is right @ boat landing. average dredging every 3 years
- tropical marine rooftop not collected on cistern

Description of Proposed Project:

Projects:

- ① Remove and/or relocate cess pool.
- ② pave area designated to collect oils & other boat repair fluids/pollutants
- ③ direct sediment laden runoff from entrance to swale or other basin
- ④ consider bioswale along western edge w tropical marine

Additional Notes and/or Sketch Information:




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The Peter Hummer Group
 Unpaved Boat Yard
 Nadir Gut Subwatershed

50 Feet

Legend

STEER Flood Zone