FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☐ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TR-26

Site Name: MR. RODRIGUEZ / TOTAL GAS

Description of Existing Conditions:

Large culvert goes under buildings & Auto Shop

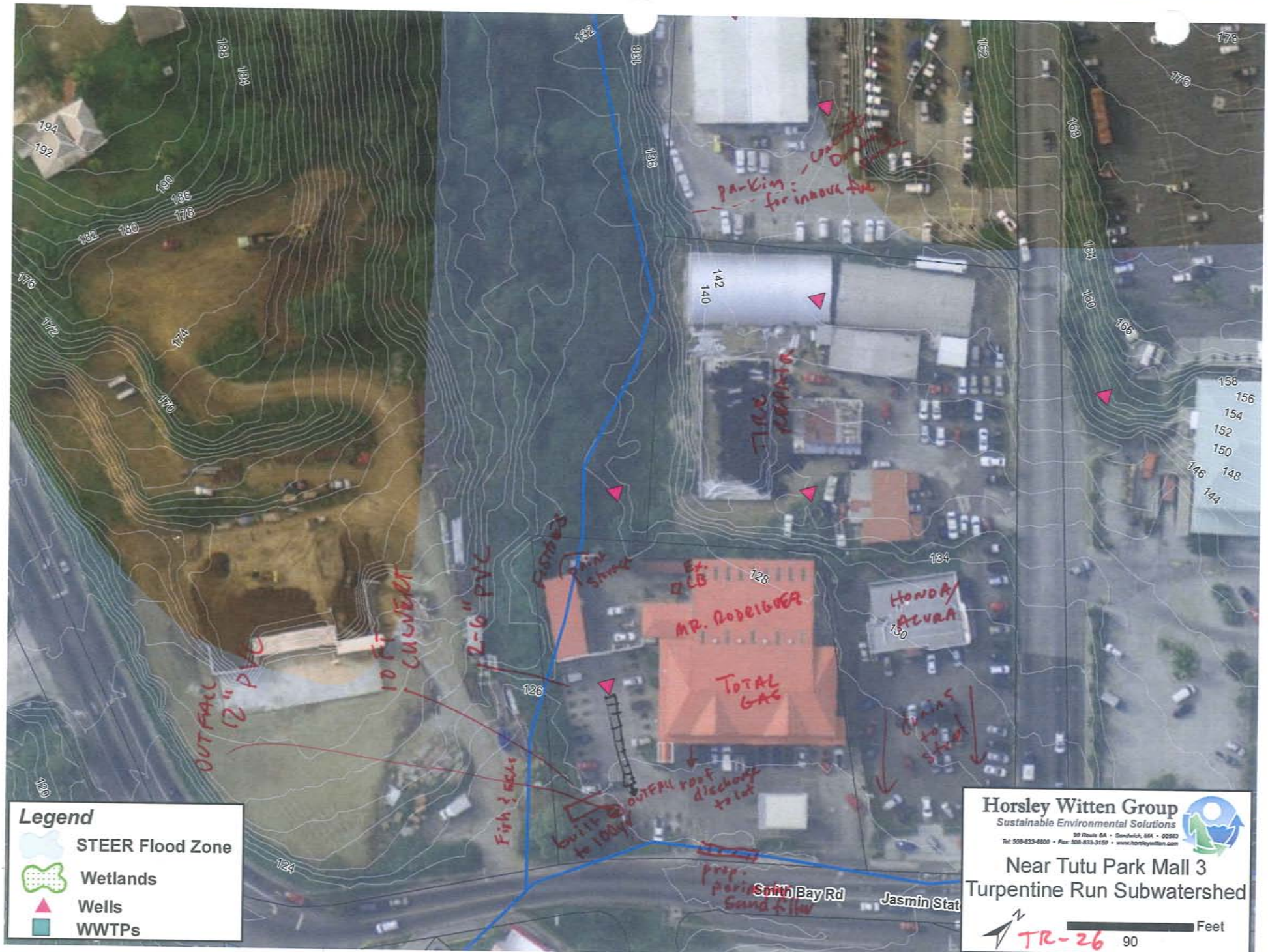
Rooftop and parking lot drainage goes directly to ~~stre~~ gut ~ no treatment.

Perimeter sand filter & entrance to gas station prior to discharge to road drain line, and down central isle of Auto Shop.

Conduct pollution prevention eval. of auto shop. to assist w Secondary containment, storage, & waste managment / to reduce pollutants.

Additional Notes and/or Sketch Information:

Tough site.


Legend
STEER Flood Zone
Wetlands
Wells
WWTPs
Horsley Witten Group
Sustainable Environmental Solutions
Near Tutu Park Mall 3
Turpentine Run Subwatershed
TR-26
Feet
90
South Bay Rd
Jasmin Stat
MR. ROBELGUER
TOTAL GAS
HONDA/ ACURA
parking for inbound tour
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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [ ] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: TR-27

Site Name: 1st BANK

Description of Existing Conditions:

Across from McD's at TVtr Plaza

Good example of using landscaped area to collect runoff. (there is one ex. curb cut into landscape)

- investigate potential retrofit to enhance landscape area to provide WQ treatment for entire parking lot via more curb cuts.

highly visible site.

Additional Notes and/or Sketch Information:

Date: 1/25/2013

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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [ ] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [x] Other EDUCATION

Subwatershed: TURPENTINE RUN

Site Name: CHURCH SCHOOLS TR-28

Description of Existing Conditions:

STEEP!! WHOLE AREA DRAINS TO EX DI AT BASE OF ROAD — DIRECT DISCHARGE INTO TURPENTINE RUN AT ~36" CMP

Additional Notes and/or Sketch Information:

Description of Proposed Project:

Direct portion of flow into grassed areas in a few locations – but not easy.
- bottom of hill (A)
- (B) into basketball court area (redirect : concrete flume)
- (C) open grassed area adjacent to driveway

Additional Notes and/or Sketch Information:

Site Priority: ☐ Love it ☐ Has Potential ☒ Not Likely ☐ Enforcement Needed

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FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☒ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☐ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TURP. RUN

Site Name: TR-29 HERNNHUT POND

Description of Existing Conditions:

- called out in DFW Wetlands Conservation Plan for protection
- Consider land conservation options.
- drainages to POND should be protected from future development.

Additional Notes and/or Sketch Information:

FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [ ] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: TURPENTINE RUN

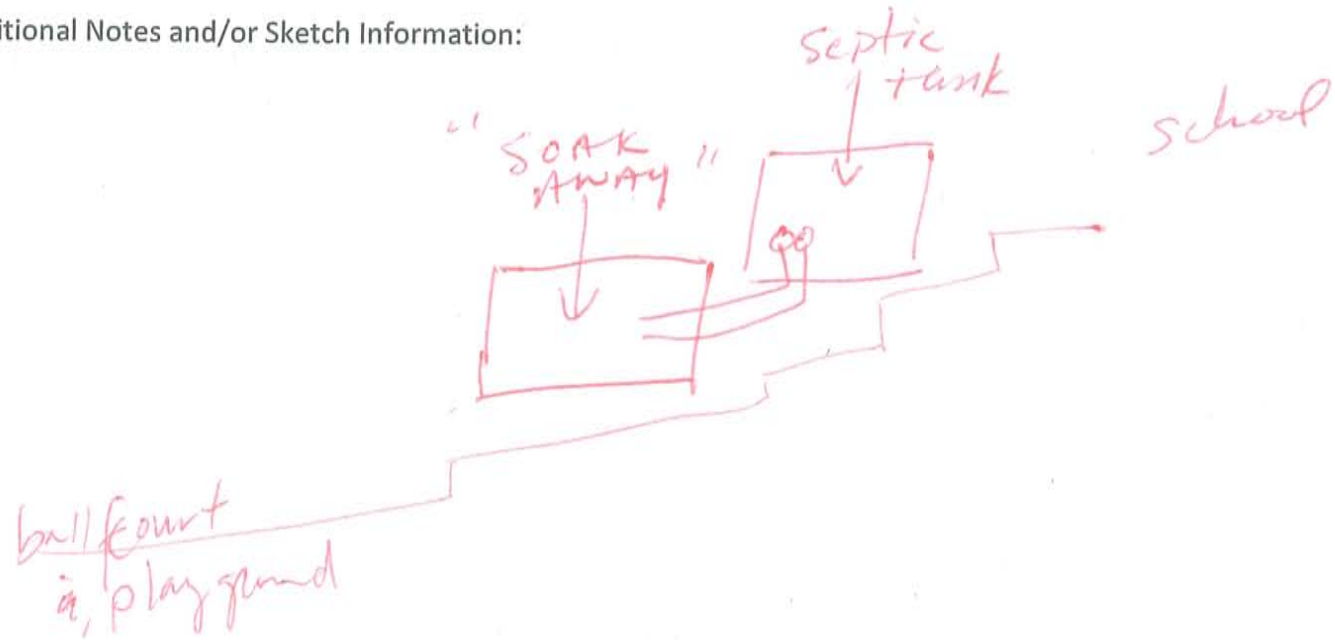
Site Name: EDITH WILLIAMS ALTERNATIVE ACADEMY (TR-30)

Description of Existing Conditions:

School has no real drainage issues, parking lot in front drains to road. Some roofs are directed to cisterns. Gut runs behind school / fence - has a wooden buffer. Some trash. School is on septic.

- have had to pay money to fill up cistern w purchased water

Additional Notes and/or Sketch Information:



Description of Proposed Project:

- Hook up rest of roofs to the cistern.
- saves $
- tight space, not much opportunity. for stormwater retrofits of parking lot.

Additional Notes and/or Sketch Information:

DR. LEONARD RICHARDSON
ASSISTANT PRINCIPAL

Site Priority: ☒ Love it ☐ Has Potential ☐ Not Likely ☐ Enforcement Needed

Date: 2/22/2012

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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [x] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [ ] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: TR-31

Site Name: SMITHBAY RD / FT. MYLNER PLAZA

Description of Existing Conditions:

OPEN AREA ADJACENT TO FT. MYLNER PLAZA AND PRICESMART DRIVE THAT COULD BE EXPANDED TO MANAGE HIGH FLOWS FROM GUT AND TREAT RUNOFF FROM SMITHBAY RD.

- NEED TO DELINEATE EX. WETLAND BOUNDARY

- CONCEPT IS TO DIVERT SMITHBAY RD DRAINAGE VIA NEW CATCHBASINS AND CONCRETE SWALES ON ROAD INTO A STORMWATER WETLAND.

Additional Notes and/or Sketch Information:

OVER FLOWS TO DISCHARGE TO GUT.

May be possible depending on space available, to divert high flows from gut into wetland also.

★ NEED TO CONFIRM EX. WETLAND BOUNDARY AND PROPERTY OWNERSHIP.

Description of Proposed Project:

Additional Notes and/or Sketch Information:

Site Priority: ☐ Love it ☒ Has Potential ☐ Not Likely ☐ Enforcement Needed

TR-31. Price Smart / Smith Bay Road — Stormwater Retrofit

Site Description

Immediately south of the entrance to Price Smart grocery, there is a vacant parcel that currently accepts a portion of the runoff from Smith Bay Road. The runoff that currently flows onto the vacant property is untreated and reaches it through an existing curb cut along the southern side of Smith Bay Road. The vacant lot consists of wetland areas and the western branch of Turpentine Run. This area is frequented by local residents because it abuts a popular outdoor market, as well as the Fort Mylner Plaza. This site offers opportunities for public education about stormwater management and resource area protection.

Proposed Concepts

A stormwater treatment facility is proposed in the vacant lot, south of Smith Bay Road. Depending on the depth to the groundwater table, either a constructed wetland or bioretention facility is recommended. Even though the majority of Smith Bay Road is super-elevated away from the vacant lot, there appears to be adequate gradient to capture the roadway runoff in a below-grade drainage system and pipe it to the proposed practice. The remaining drainage area will drain to the practice via the existing curb cut. A drainage easement may be required from the owner of the vacant parcel in order to construct such a facility but it is possible that the system could be over-sized to accommodate runoff from any future development on the lot.

Practice Sizing/Design Considerations

The constructed wetland would be sized to treat up to the first 1.25 inch of runoff from the contributing impervious area. The total drainage area to the site would be approximately 2.0 acres, with 0.7 acres of that total being impervious surface. Available surface area for the proposed practice is about 3,000 SF, sufficient for effective water quality treatment. The outflow from the system would be designed to limit discharge rates and down-gradient channel erosion of Turpentine Gut.

Pollutant Removal

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 and delineate existing wetland;
- Conduct test pits to verify subsurface soil conditions and depth to groundwater;
- Contact property owner to investigate willingness to participate in design discussions; and
- Map existing resource area boundaries and buffers.

Site ID	Drainage Area (ac)	% Impervious	Design Treatment Volume (cf)*	Practice Area Required (sf)*	Practice Area Available (sf)*
TR-31	2.0	35	3,200	1,300	3,000

*Design Treatment Volume: 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.


HARTHMAN T-H LEASING, INC.
COMMERCIAL PROPERTY
AVAILABLE FOR LEASE
FOR MORE INFORMATION CALL
340-775-0507

Date: 2/23/2012

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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [x] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: TURPENTINE RUN

Site Name: PRICESMART TR-32

Description of Existing Conditions:

- CLEAN UP DEBRIS / TRASH / CARTS, ETC
- REMOVE PAVEMENT - POSSIBLE PERVIOUS PAVERS
  * PLANT SHADE / CANOPY COVER
  * INSTALL LINEAR BIOS
  * INVESTIGATE EX. FACILITY. RETROFIT POTENTIAL.
- OPEN AREA - THERE ANY WAY TO TAKE ADDITIONAL RUNOFF FROM ROAD ?

Additional Notes and/or Sketch Information:

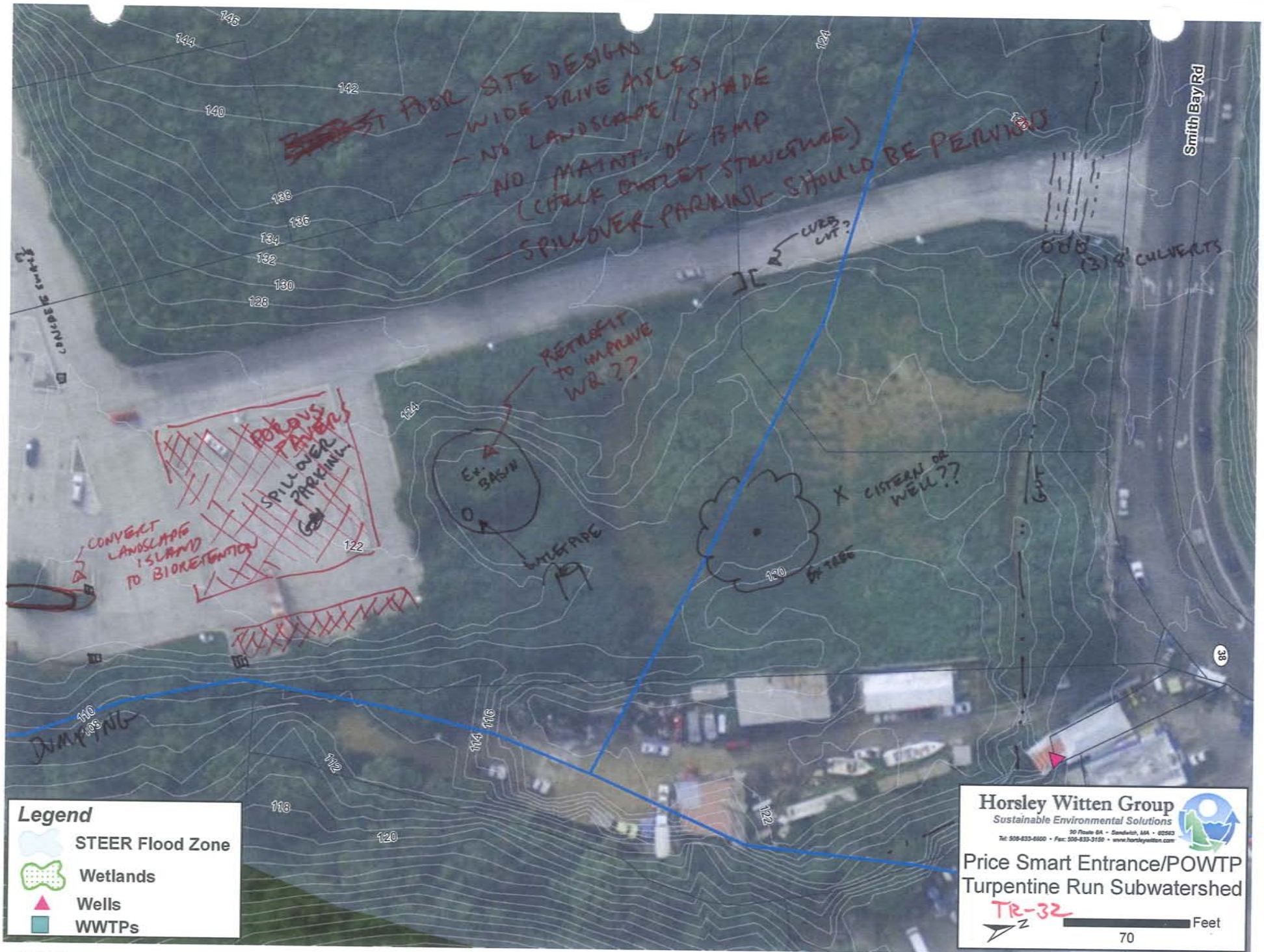
PRIVATE PROPERTY.

MAY BE EASY RETROFIT OF EX. FACILITY TO IMPROVE W.Q. TREATMENT. NEED TO GET PLANS.

Description of Proposed Project:

Additional Notes and/or Sketch Information:

Site Priority: ☐ Love it ☐ Has Potential ☒ Not Likely ☐ Enforcement Needed



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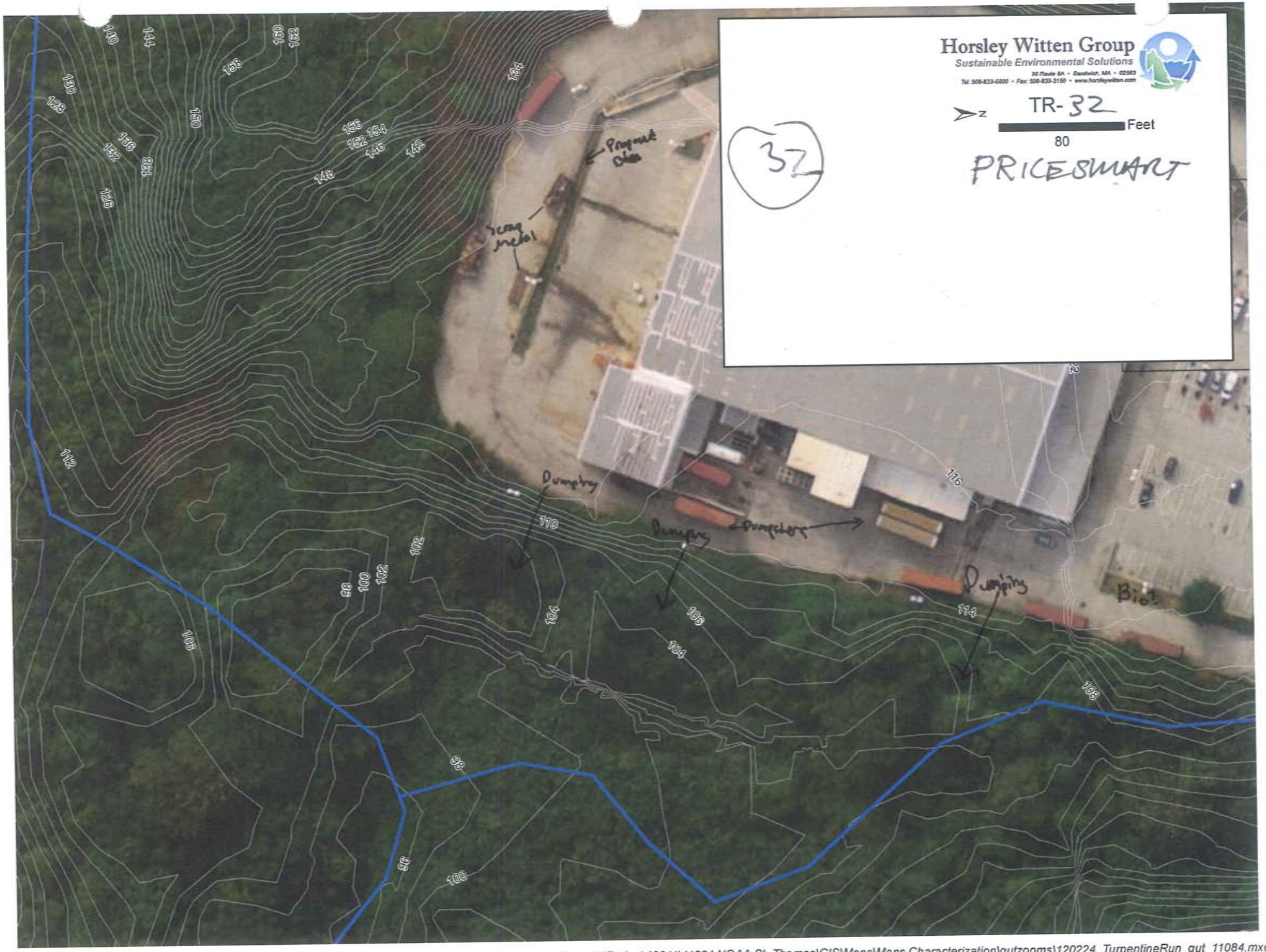

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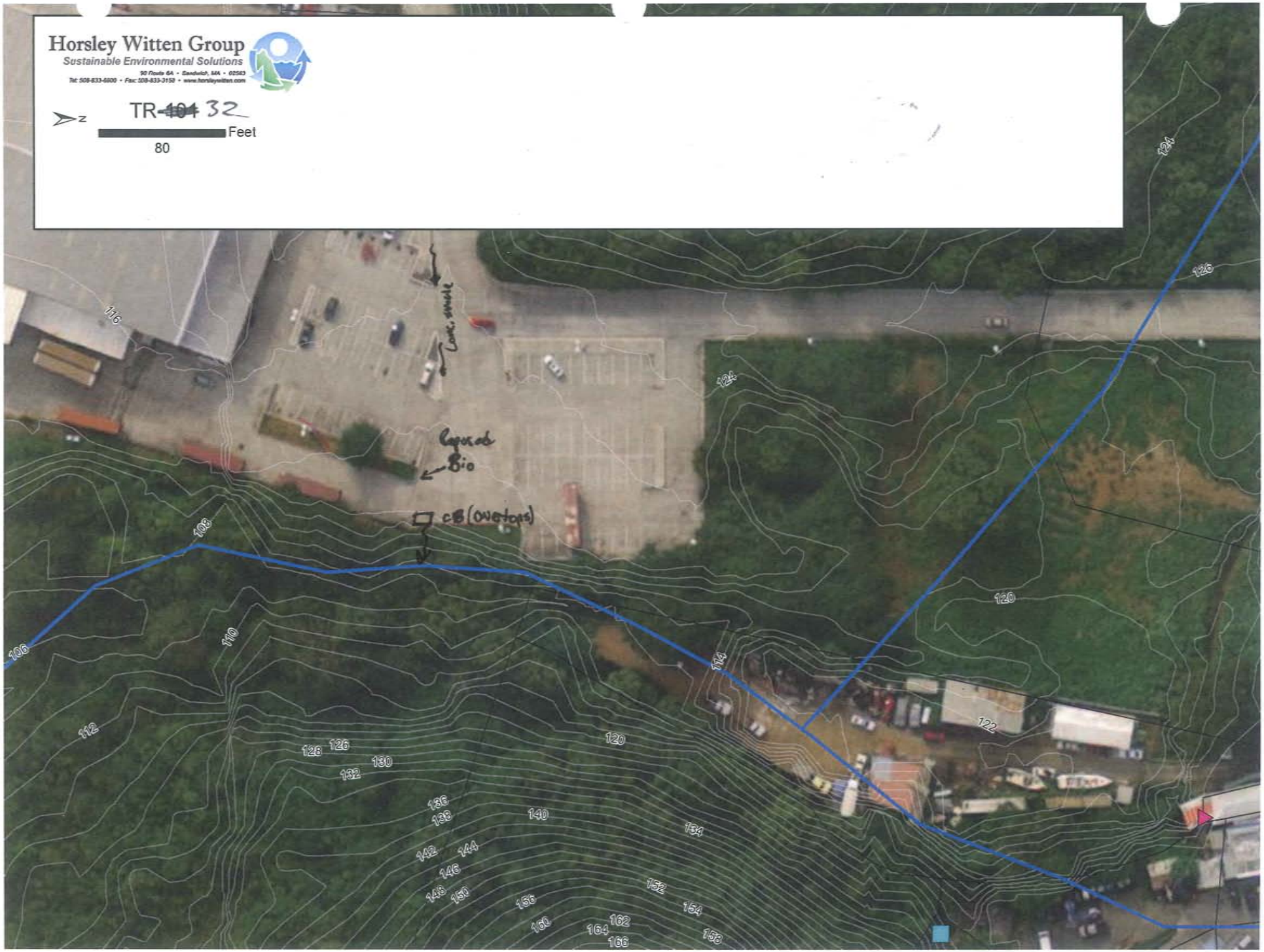

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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [ ] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [x] Other EDUCATION

Subwatershed: TURPENTINE RUN

Site Name: E. B. OLIVER ELEMENTARY SCHOOL

TR-33

Description of Existing Conditions:

- USED TO BE WATER PLANT??
- FLOODING IN BUILDINGS ON SLOPES
- PTA CURRENTLY PLANTING TO DO A COMMUNITY GARDEN IN CENTRAL POD

- RUNOFF COMES DOWN FROM SIDE OF MAIN BUILDING ADDS TO LOAD IN CENTRAL GREEN EXISTING DRAIN INLET, DISCHARGES ON HILLSLOPE

-ASK MR LIBURD ABOUT HISTORIC CISTERN OR LOCATION FOR DISCHARGE FROM EXIST. IN CENTRAL ISLAND CUL-DE-SAC

-SCHOOL IS ON SEWER.

Additional Notes and/or Sketch Information:

Emanuel Benjamin Oliver Elementary

JAMON E. LIBURD jliburd@sttj.k12.vi

Assistance Principal

340-775-2000

x2102

Government of the United States Virgin Islands
DEPARTMENT OF EDUCATION
St. Thomas - St. John District
JAMON E. LIBURD
Assistant Principal
Emanuel Benjamin Oliver Elementary
1834 Kongens Gade
St. Thomas, V. I. 00802
Phone: 340-775-2000 ext. 2102
Cell: 340-642-6246
Fax: 340-775-4357
Email: jliburd@sttj.k12.vi

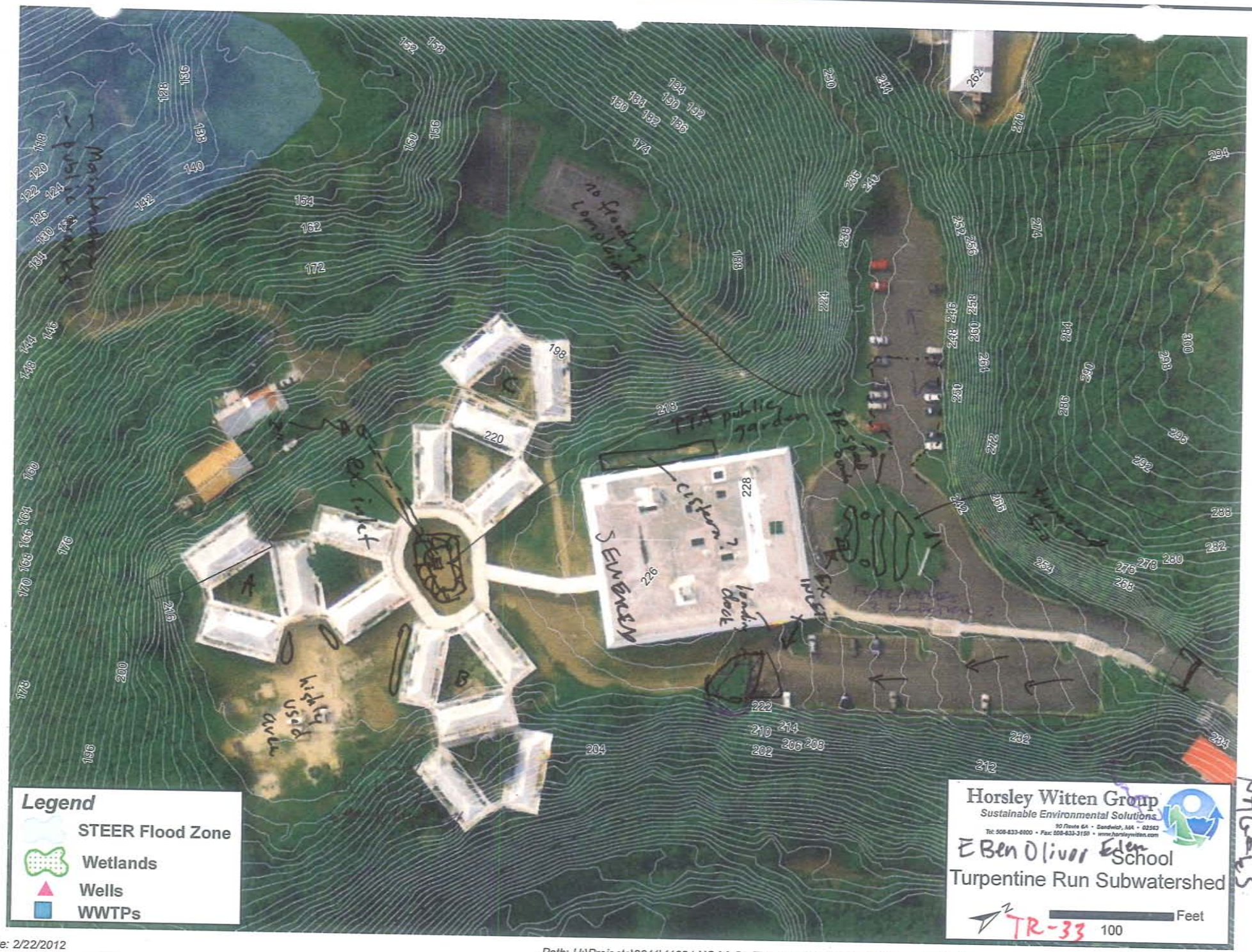
Description of Proposed Project:

THERE ARE A NUMBER OF OPPORTUNITIES

- RAIN GARDEN IN CENTRAL AREA
- BIO / TERRACED IN FRONT CUL-DE-SAC TO CAPTURE ~~PART~~ PORTION OF PARKING LOT AND ENTRANCE
- BIO AT LOWER LOT & LOADING DOCK SWALE ALONG BACK LOT LINE.

Additional Notes and/or Sketch Information:

Site Priority: ☒ Love it ☐ Has Potential ☐ Not Likely ☐ Enforcement Needed


Legend
STEER Flood Zone
Wetlands
Wells
WWTPs
Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Sandwich, MA • 02563
Tel: 508-833-6600 • Fax: 508-833-3150 • www.horsleywitten.com
E Ben Oliver Eden School
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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [ ] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [x] Other Education

Subwatershed: TERPENTINE

Site Name: Community Center Willy George TR-34

Description of Existing Conditions:

Ponding to East of Entrance → Possible AREA For BMP Retrofit.
To West of Entrance SW From Parking AREA Collects Along Ditch midway in Parking Aisle & Flows over wall (4-5' High) then down A-Slope To A grass AREA along Building and Vegetation behind Building (Thick). Possible swale or stepped System.

SW System Retrofits would be more educational as Property is in the Upper Reaches of the WATERSHED.

Additional Notes and/or Sketch Information:

Date: 2/22/2012

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FIELD ASSESSMENT NOTES

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- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☐ Pollution Prevention
- ☒ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TURPENTINE RUN

Site Name: TR-3S TURP. ROAD CULVERT (UPPER)

Description of Existing Conditions:

The biggest complaint received by public is flooding at road crossings on Turpentine Run. At this location is a box culvert that appears to be undersized for the amount of area draining to it.

Confluence of two major guts occurs at this location.

There is not a lot of space available for larger culverts probably need to replace with a bridge.

See write up & aerial

Additional Notes and/or Sketch Information:

Culvert approx. 4x8 but unable to measure adequately at the time ≈ 18" to road surface from top of culvert. Not much room to make larger vertically → have to widen

TR-35, 37, & 40. Turpentine Run Road Culverts—
Drainage Improvements

Site Description

Turpentine Run Road parallels and crosses Turpentine Run for much its length and as a result, the condition of the roadway and the gut can be intertwined. For instance, undersized drainage infrastructure will contribute to erosion of the receiving channel. When that receiving channel abuts the street it is servicing, the erosion can jeopardize the integrity of the roadway. This scenario is occurring in many locations along Turpentine Run Road, several of which have created flooding and public safety hazards.

Proposed Concepts

Approximately one-half mile north of the main entrance to Heavy Materials, Turpentine Run flows beneath Turpentine Run Road. There is a box culvert at this location (TR-35) that is reportedly overwhelmed during significant rain events. At the public meetings that were held in February 2012, many residents commented on the observed roadway flooding at the site. The culvert is approximately 4'x8'which is not sufficient for handling large storm flows given the hydrology of the gut. Increasing the culvert size or constructing a bridge in its place would offer the most improvement for flow capacity and for better managing the flooding. One significant design constraint is the elevation of Turpentine Run Road at the culvert location. There is only ~18" above the culvert to the top of the roadway, therefore limiting the improvements to options that create a wider channel cross-section. Installing a bridge would be the least flow restrictive option but it will likely be the most expensive to construct and cause the longest traffic delays. An alternative to a bridge would be to target better floodplain drainage by installing multiple small culverts adjacent to the existing culvert. This option may provide a reasonable balance between effectiveness and cost.

About one-quarter mile south, near the northern entrance to Heavy Materials, Turpentine Run crosses Turpentine Run Road again through a 48-inch diameter corrugated metal pipe (CMP) at TR-37. Velocities at the downstream end of the culvert are so great that a large scour pool has formed and the culvert is protruding 10-15 feet from the roadway embankment. Lack of and deteriorating roadway drainage infrastructure has exacerbated the problem. An incomplete concrete channel has caused an erosion gully to form leading into the gut. Sedimentation in the gut is a problem, both from erosion and from the dirt driveway leading to Heavy Materials. Design improvements should include: (1) upgrading and properly sizing the culvert beneath Turpentine Run Road, (2) stabilizing the stream bank and bed downstream of the culvert, (3) and repairing the concrete drainage channel that empties into the gut and providing adequate energy dissipation.

Across from the main entrance to Heavy Materials is a third location where inadequate drainage infrastructure has caused severe impacts to Turpentine Road (TR-40). Here runoff from the steep roads of the Mariendahl neighborhood collects and flows underneath Turpentine Road through a 24-inch diameter CMP. Due in part to the likely undersized culvert, poor channel alignment, and high velocity storm flows, undermining of the roadway has occurred. This has created a safety hazard not only to vehicles but also pedestrians. Pedestrians now have to walk into the roadway to maneuver around the resulting scour hole. Design improvements may include a combination of increasing the culvert size, relocating it to provide better channel alignment, and providing runoff energy dissipation up-gradient of the culvert.

Stormwater should be managed strategically throughout the Mariendahl neighborhood to attenuate the high energy flows before they reach Turpentine Run Road. When velocities are reduced, erosion potential also decreases.

Practice Sizing/Design Considerations

When feasible, culverts should be sized to adequately pass at least the relevant design recurrence interval storm. In the case of the two culverts discussed that serve the main Turpentine Run channel, consideration should be given to balancing both high and low flows for environmental reasons versus simply installing the largest culvert possible. Traffic management (both vehicular and pedestrian) is likely to be the most challenging obstacle to overcome during the design and construction phases. All proposed designs should be coordinated with the DPW or DOT to make sure the concepts fit with any long-term goals that may exist.

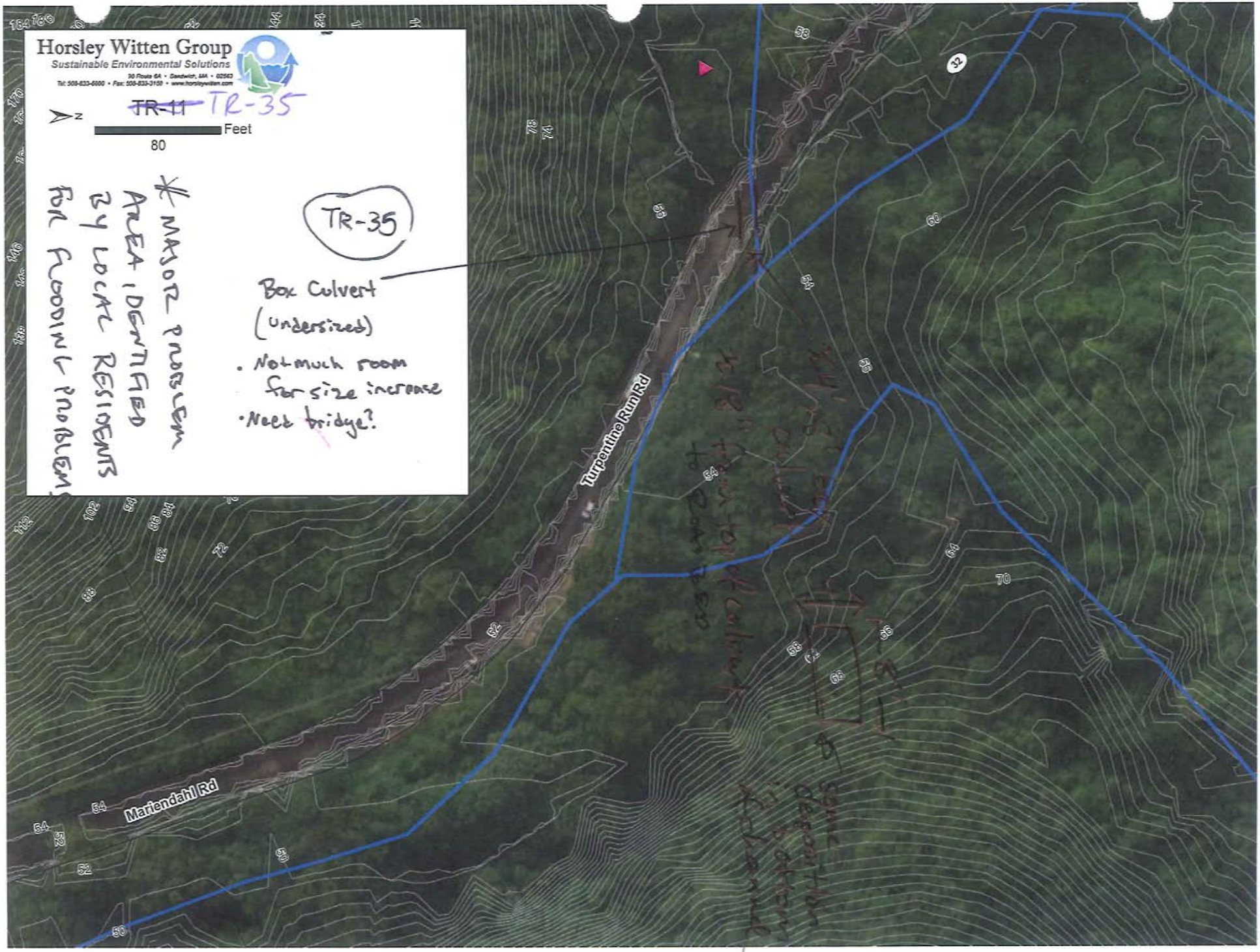
Next steps

- Complete a topographic survey of the area. Determine if there are any site utility conflicts;
- Determine contributing drainage areas and size new culverts accordingly;
- Conduct in-stream flow monitoring for use in the calibration of stream simulation models;
- Investigate contributing watersheds to identify possible up-gradient drainage controls to reduce channel flows;
- Discuss design concepts with the DPW.

TR-35 culvert. USGS gauging station is upstream from here.

TR-40 showing hazardous conditions below Mariendahl neighborhood.


Concrete channel and scour downstream of culvert at TR-37.



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FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☒ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TURTLEPUNCH RUN

Site Name: TR-36 AUTO SALVAGE

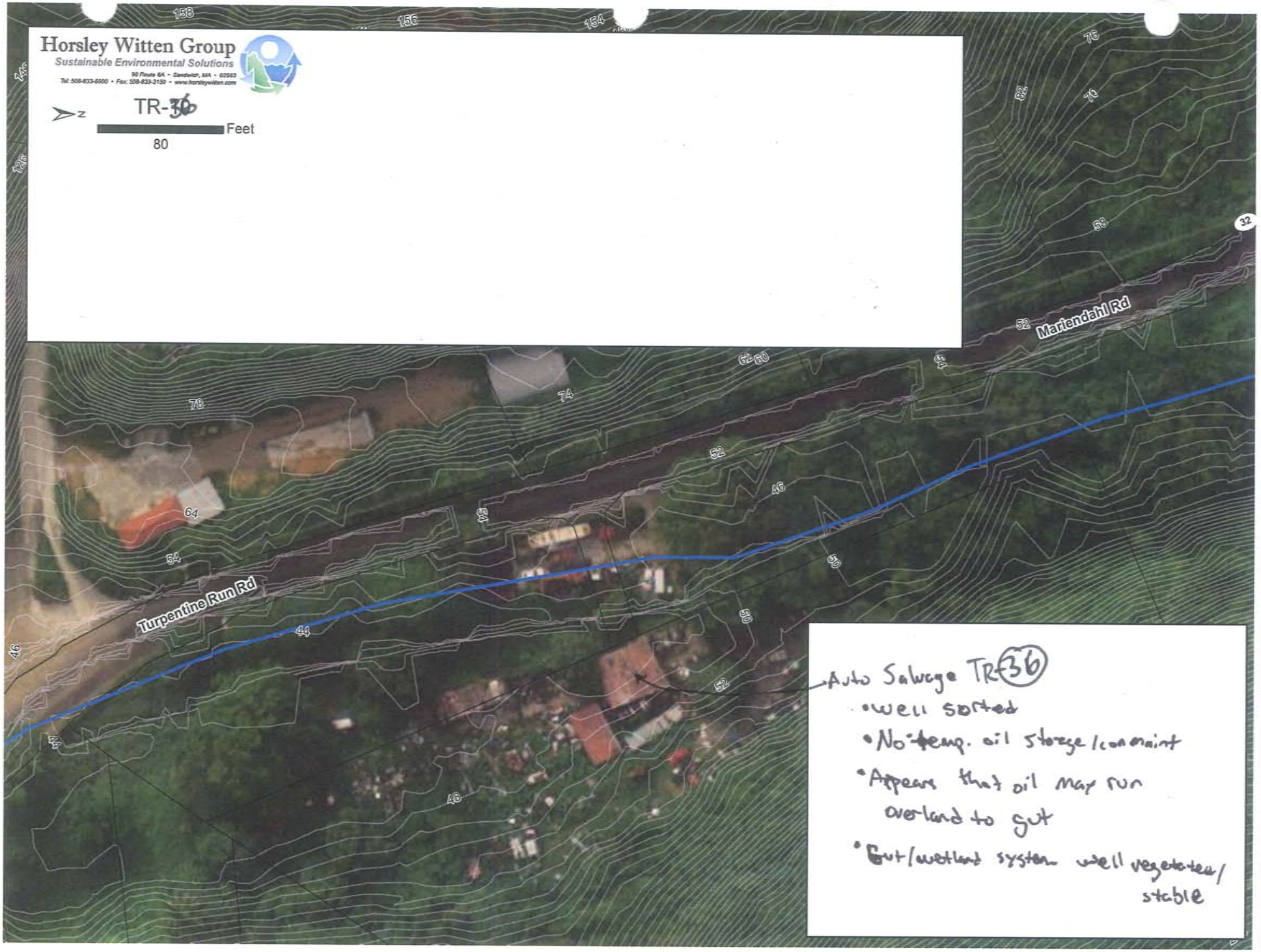
Description of Existing Conditions:

Area is well-sorted and organized. There appears to be no secondary containment for oil. There is a cut that runs thru the property but appears to be fairly stable & vegetated.

*Consider pollution prevention planning & make sure veg. buffer is protected.

Additional Notes and/or Sketch Information:

see aerial



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- ☐ Land Conservation
- ☐ Pollution Prevention
- ☒ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TURP. RUN

Site Name: TR-37 TURP. RD. CULVERT (M10)

Description of Existing Conditions:

- Piped culvert of ≈ 48" diameter CMP
- large scour pool evident downstream
- concrete channel from road is incomplete and erosion is occurring above culvert.
- sediment loading to cvt evident from erosion & possibly from sed. transport from quarry.

High priority.

Additional Notes and/or Sketch Information:

FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [x] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: TURPENTINE RUN

Site Name: TR-39 BEST CARWASH/BEST TIRES

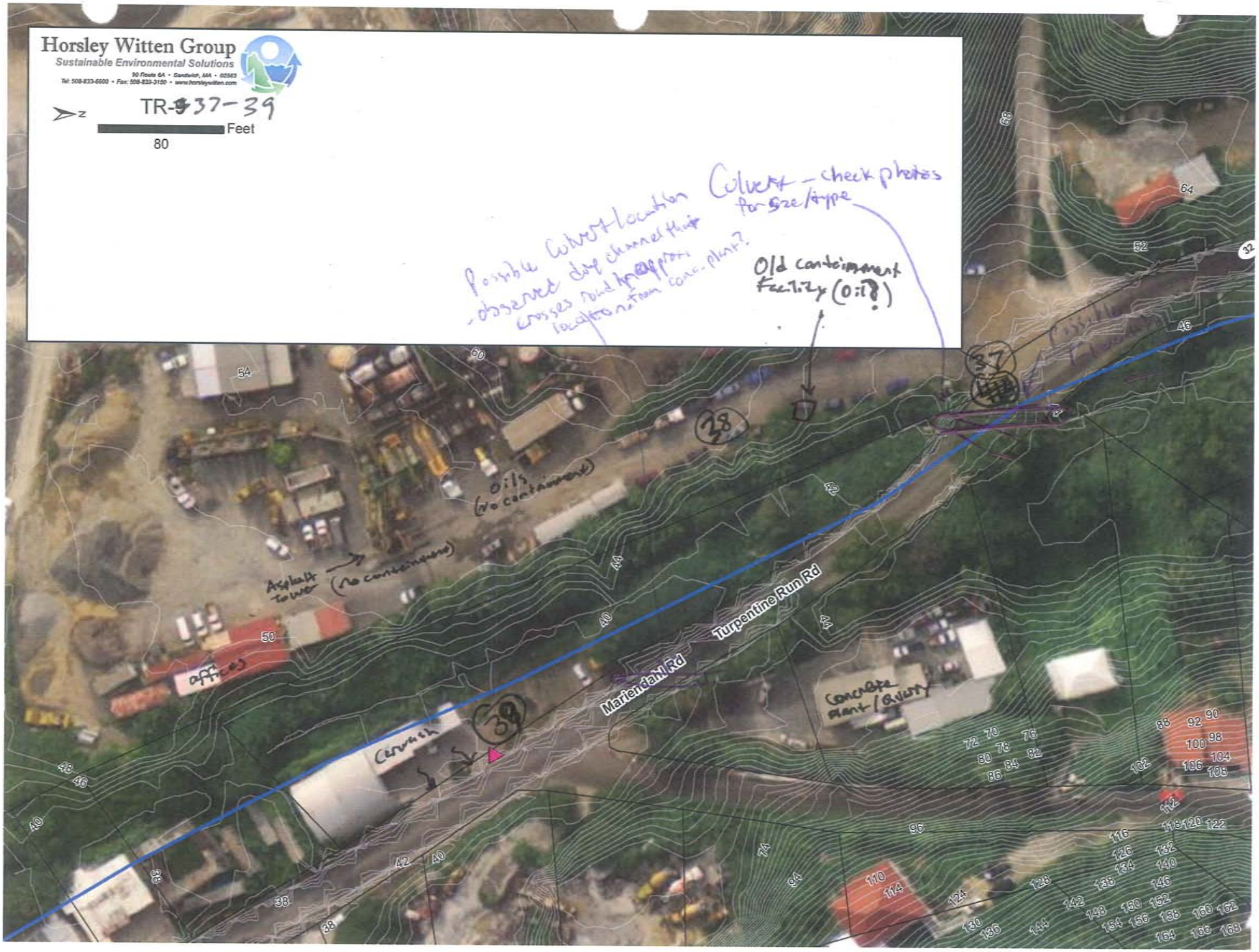
Description of Existing Conditions:

Carwash drains to road/out carrying soaps & cleaning fluids along with oils and automotive fluid.

Recommend providing formal washing area (with berms) and drains to sewer.

- O/W separator ??

Additional Notes and/or Sketch Information:



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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [x] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

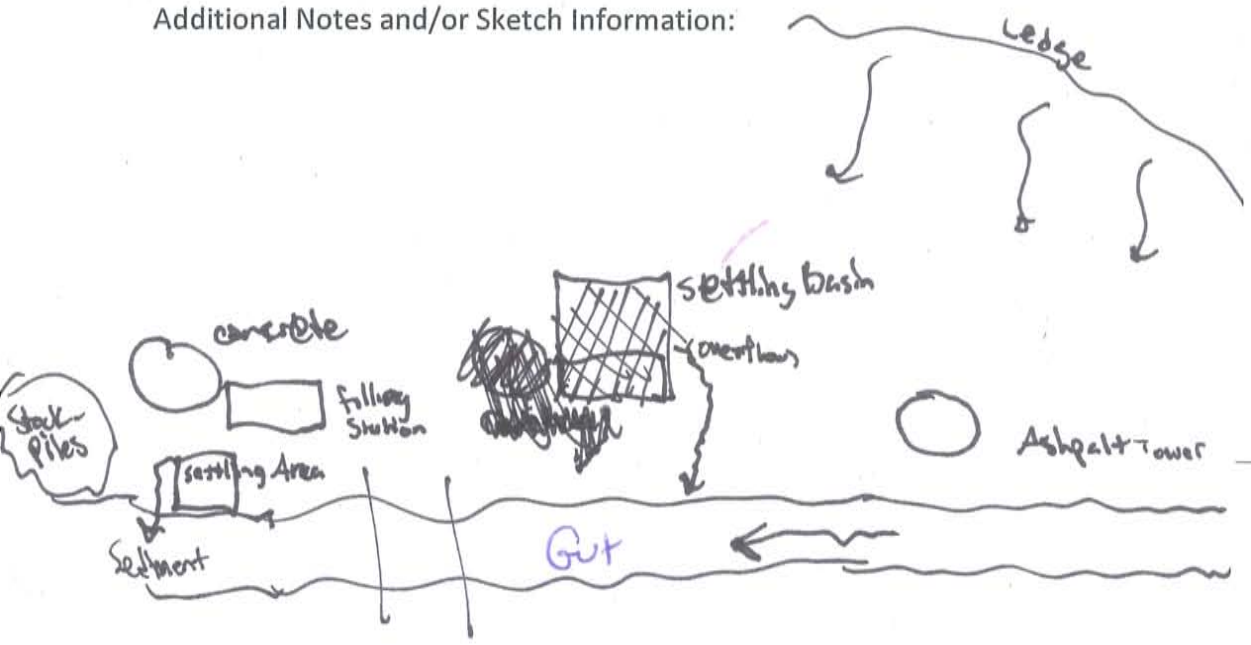
Subwatershed: Turpentine Run

Site Name: Heavy Materials TR-38

Description of Existing Conditions:

- No stormwater management
- Direct discharges from concrete truck filling station
- leaking septic pipes / septic discharges
- Human waste area along ghut bank
- Heavy sedimentation in ghut from stockpiles/runoff
- Settling basin overtops (very turbid) and flows overland to ghut. only silt fence protecting ghut (currently filled in).
- No containment for ashpalt/oil facilities
- Major Earth change activities

Additional Notes and/or Sketch Information:



Douglas Gurlea
President
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St. Croix, US Virgin Islands 00841
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F: (340) 692-2889

HEAVY MATERIALS

TR-38. Heavy Materials Quarry — Retrofit / Pollution Prevention

Site Description

Heavy Materials, LLC operates a quarry facility on Turpentine Run Road that supplies construction aggregates, masonry blocks, and ready-mix concrete. It is one of the largest facilities of its kind in the U.S.V.I. The quarry consists of approximately 23 acres of disturbed land. The magnitude of the operation alone gives it the potential for significant impact to surrounding resource areas. All precipitation that runs off the site ultimately travels northeast to Turpentine Run. Erosion control and runoff management practices on the property were found to be either poorly maintained or non-existent. Numerous opportunities for site improvements were observed that would help to reduce sediment and pollutant discharges.

Proposed Concepts

Water is commonly used in the production of aggregate and concrete products. For this reason, at least four settling ponds can be found on the Heavy Materials property for removing sediment particles from the facility process water. In order for the settling ponds to be effective, they must be sized appropriately according to influent flow rates and desired settling times. The ponds must also be periodically maintained to remove accumulated sediments. At the time of the site walk, the most down-gradient settling pond was observed to be overtopping its banks and was flowing across the access drive to its ultimate discharge point in Turpentine Run. Proposed strategies for preventing pond overtopping include increasing the available storage within the setting pond and modifying the pond outlet control system to handle the appropriate flow rate. Furthermore, settling ponds do little for removing the fine, suspended particles from water. Consequently, filtration and/or flocculation processes are recommended in conjunction with the existing settling strategies.

Proper sediment containment was also lacking at the concrete truck filling stations on the Heavy Materials property. The process for producing concrete involves mixing water with cement and aggregate. During the filling process, water was allowed to spill from the truck, creating a stream of cement slurry that was flowing directly into Turpentine Run with little or no treatment. A small containment bay was observed in one location near ghut but the flow of slurry at the time of observation was much greater than the capacity of the bay. Impacts from this process were observed in Turpentine Run at and downstream of the truck filling station, including cement deposits and highly turbid stream flows.

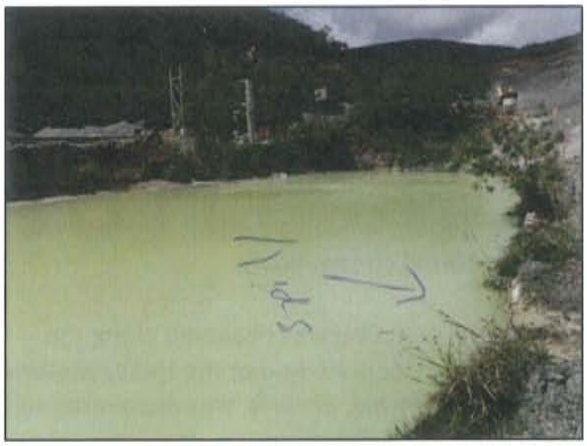
Bacterial pollution was observed along the banks of Turpentine Run at the Heavy Materials facility. A latrine, of sorts, was discovered near concrete truck filling station. Human waste was present along the banks of Turpentine Run in close proximity to the cement slurry flows.

Practice Sizing/Design Considerations

In order to reduce the long-term environmental impacts of the Heavy Materials facility, a more complete investigation of the operational processes and planning measures is necessary. Only then can a complete set of future goals and strategies be developed. However, small steps can be taken in the near-term to reduce the extent of the untreated discharges currently entering Turpentine Run. At a minimum, erosion control practices and properly sized sediment containment bays could be installed. Sizing of the proposed treatment or containment practices, either in the long- or near-term, might also consider future site expansion and increased material production.

Next steps

- Meet with the facility operations manager to discuss the current and future plant processes;
- Develop goals and strategies to adequately manage and treat the facility process water;
- Develop a plan and schedule for construction and installation of agreed-upon management strategies;
- Educate the Heavy Materials staff on the importance of protecting the sensitive resource areas that abut the property.



FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☐ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TR-40

Site Name: Mariendal Neighborhood / TURP. ROAD CULVERT (lower)

Description of Existing Conditions:

Very steep roads. no drainage infrastructure. Drainage flows down roads to intersection w Turpentine Run Rd. where it results in gut erosion and road flooding at undersized culverts. ROAD IS being undermined.

~~EATS~~

24" culvert is undersized and misaligned.

DEAD/DYING GOAT

Additional Notes and/or Sketch Information:

Description of Proposed Project:

High priority to address flooding per Stakeholder Meeting recommendations

→ need to go back into neighborhood and look for opportunities to disconnect runoff.

Additional Notes and/or Sketch Information:

Site Priority: ☐ Love it ☐ Has Potential ☐ Not Likely ☐ Enforcement Needed

FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☒ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TURPENTINE RUN

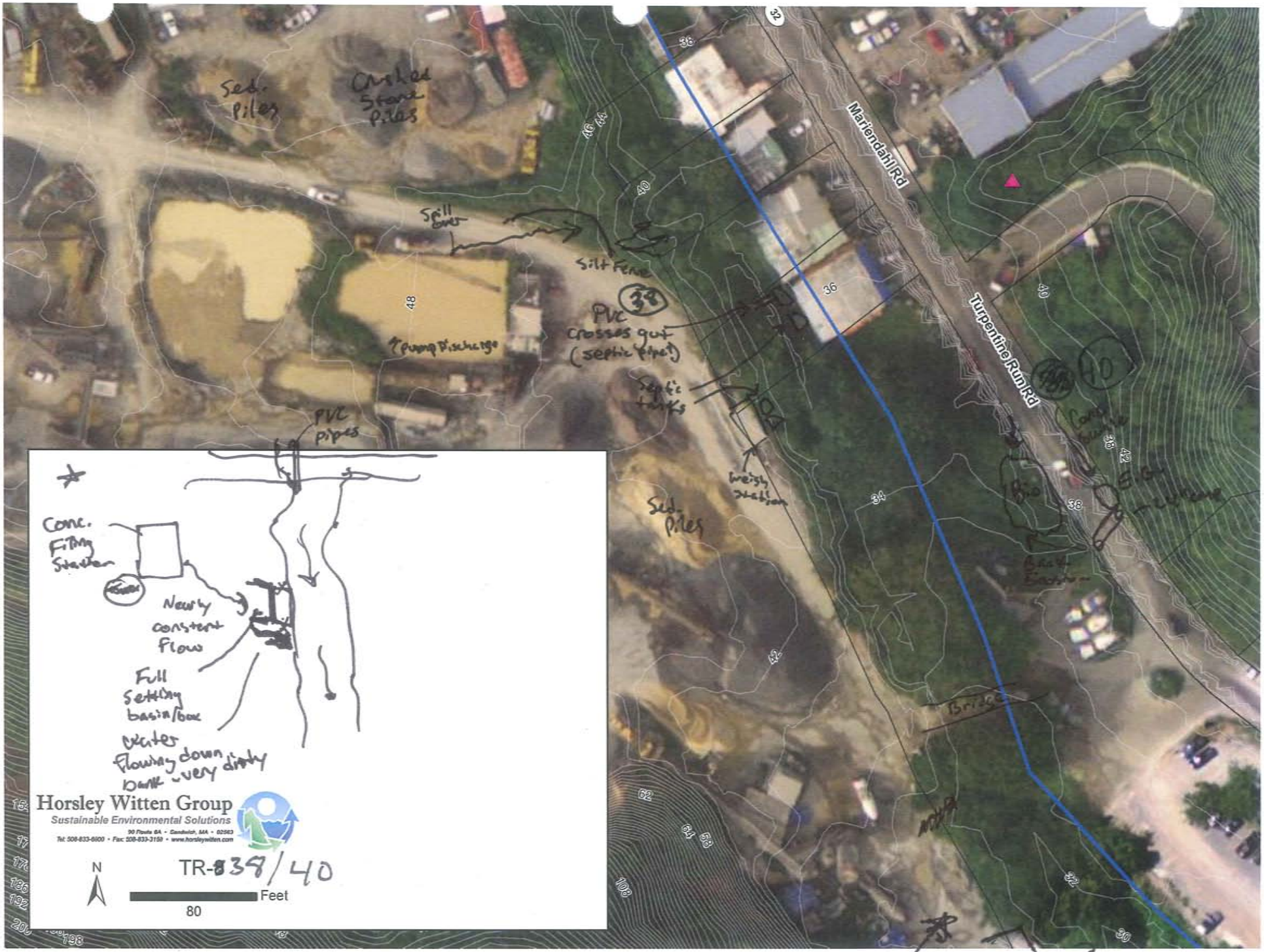
Site Name: TR-41 EQUIPMENT STORAGE

Description of Existing Conditions:

This is a dumping area and area of outdoor storage. Lots of trash & debris dumped near gut. Material stockpiles w no ESC. Barrels of oil sitting open were observed.

- Need to clean up & prevent further dumping
- take used oil to Bovoni for recycling
- cover stockpiles.

Additional Notes and/or Sketch Information:



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FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☐ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: Turpentine Run

Site Name: TR-42 (Dumpsters) / TR-43 Cheyenne's Exc.

Description of Existing Conditions:

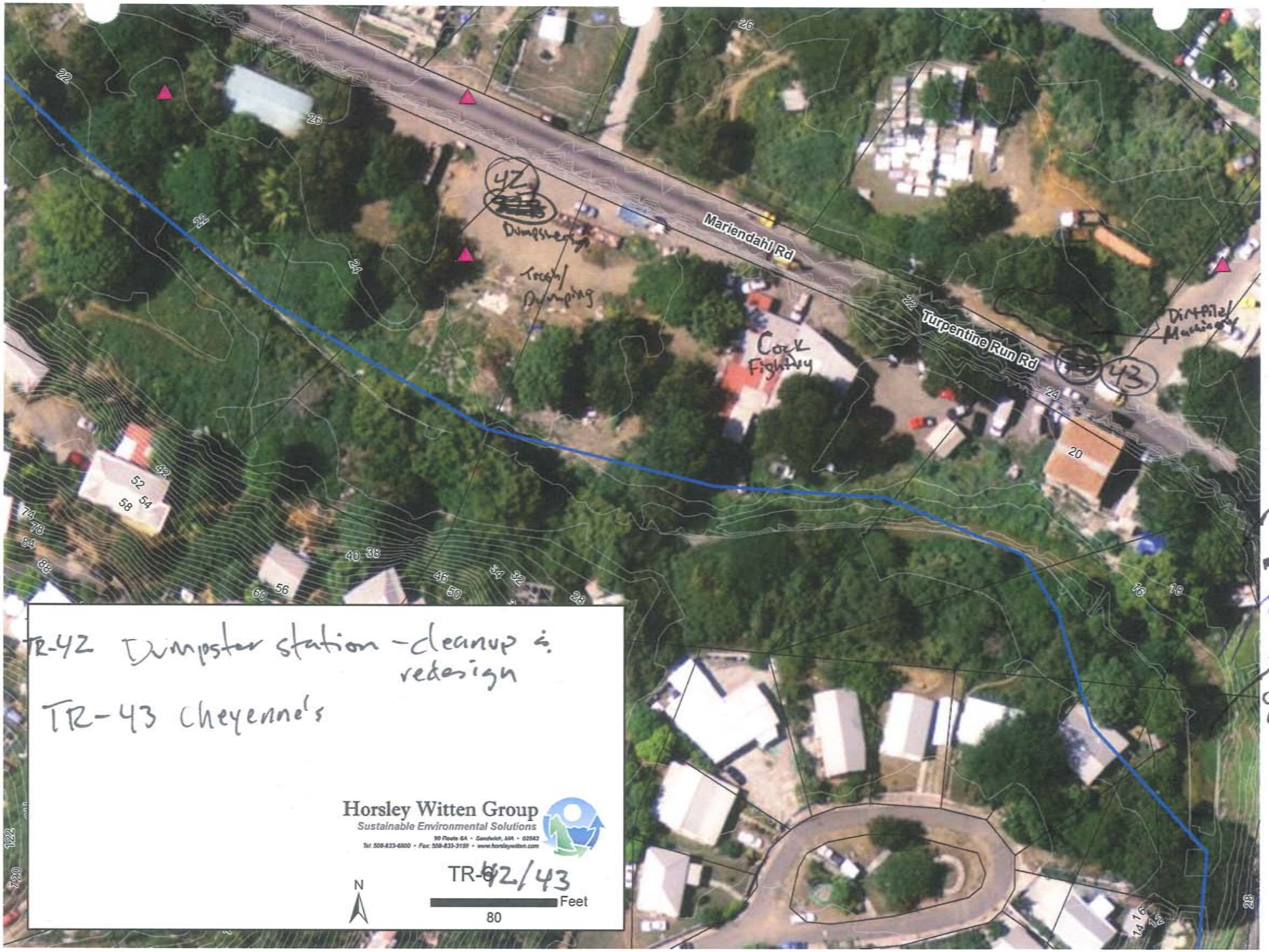
There are a number of places along road where dumping of materials and sediment along cut is evident.

TR-42 Dumpster / collection stations should be retrofitted to provide covered storage and containment to prevent dumping in buffer / cut.

TR-43 – Consider providing stabilized construction entrance (rock pad) and silt fence along perimeter to prevent sediment from discharging off-site.

Additional Notes and/or Sketch Information:

Soil stockpiles in parking area should be stabilized (e.g. covered or with silt fence perimeter)



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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [x] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [x] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: Turpentine Run

Site Name: TR-44 NADIR BRIDGE PARK "BRIDGE TO NOWHERE" / TR-55 Truck disposal area

Description of Existing Conditions:

SEE WRITE UP

Additional Notes and/or Sketch Information:

SEE ATTACH

TR-44. Nadir Bridge Park — Drainage Improvements & Gut/Floodplain Restoration

Site Description

Nadir Bridge Park is a popular recreational site that serves many purposes for the surrounding community. The park offers a location for residents to play sports, barbeque, and organize for a variety of social events. These activities are hampered during rain events due to poor drainage and standing water. The park currently accepts untreated runoff from Mariendahl Road and the surrounding neighborhoods. The runoff causes flooding in the park because it is isolated from Turpentine Run by a two-three foot high flood-control concrete wall. The lack of drainage infrastructure creates a pond in the park until the water evaporates or infiltrates. Moreover, the concrete wall is part of a ¼ mile long concrete lined segment that acts as a barrier to fish passage and eliminates any natural connection between the ghut and the floodplain. Nadir Bridge Park offers opportunities for restoring the Turpentine Run riparian corridor while also enhancing public interest and recreation.

Proposed Concepts

Nadir Bridge Park is approximately two acres in size. Although much of the park is used for recreation, a significant portion is either unutilized or poorly controlled. With better control of traffic patterns in the park, drainage improvements such as bioretention areas could be installed to treat runoff from Mariendahl Road and the park. By converting the travel lanes and parking areas to pavement or gravel, soil erosion could be minimized. There is also ample space near the ghut to restore floodplain connectivity and vegetation if the eastern-face of the concrete channel were removed. The bottom of the concrete channel could also be removed to provide deeper flows and improved fish passage.

Practice Sizing/Design Considerations

The bioretention areas would be sized to treat up to the first 1.25 inches of runoff from the contributing impervious area. The available surface area at this location is approximately 6,000 SF which substantially exceeds the minimum surface area recommended for effective treatment. Any additional runoff that enters the bioretention areas will pass through an overflow structure and discharge into the gut.

An important consideration for the ghut & floodplain restoration components is the stability of the concrete wall on the western bank of the ghut if the existing concrete channel is modified. A footing for the wall will have to be designed that can withstand scour from the flow of the gut.

Any proposed improvements to the park area should be coordinated directly with the roadway design plans for the new Nadir Bridge. The drainage improvements and gut restoration features should be sited to avoid potential conflicts with the future roadway traffic patterns. It is also important to engage the community in the park design so there is a complete understanding of how the park is currently used and what the key features are for all stakeholders.

Pollutant Removal

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

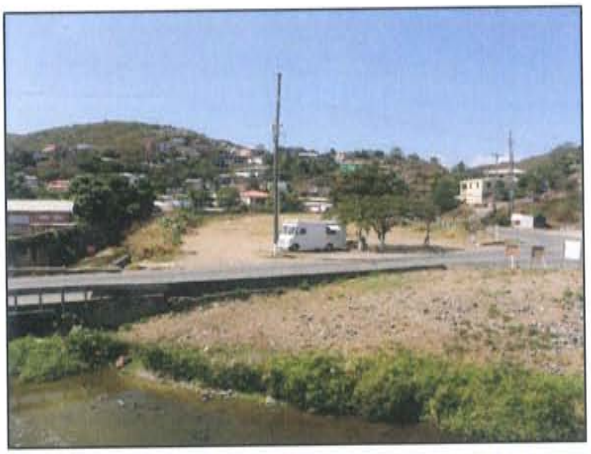
Next steps

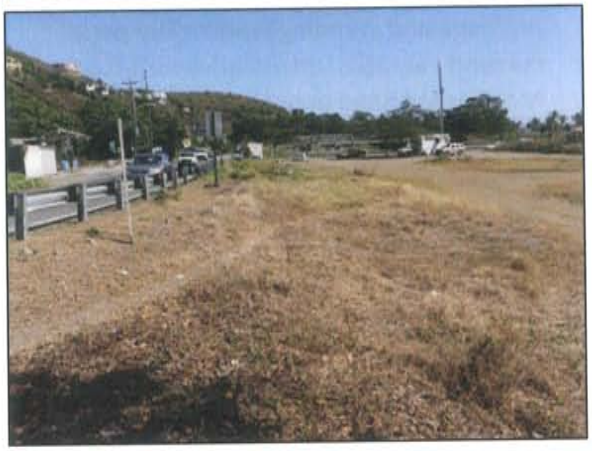
- Review the existing design plans for the Nadir Bridge intersection. Site proposed drainage improvements and

park amenities to accommodate the future road layout;

- 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 park design and layout.

Nadir Bridge Park, 3/22/2012
(Source: Frank Galdo)





Site ID	Drainage Area (ac)	% Impervious	Design Treatment Volume (cf)*	Practice Area Required (sf)*	Practice Area Available (sf)*
TR-44	3.1	40	5,600	5,600	6,000

*Design Treatment Volume: Tv (cf) = (1.25")(I)/12; I = impervious 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.

Date: 2/23/2012

* Geotextile purchased for Bridge project

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FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [ ] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: TURPENTINE RUN

Site Name: LIMA PROPERTY (TR-46)

Description of Existing Conditions:

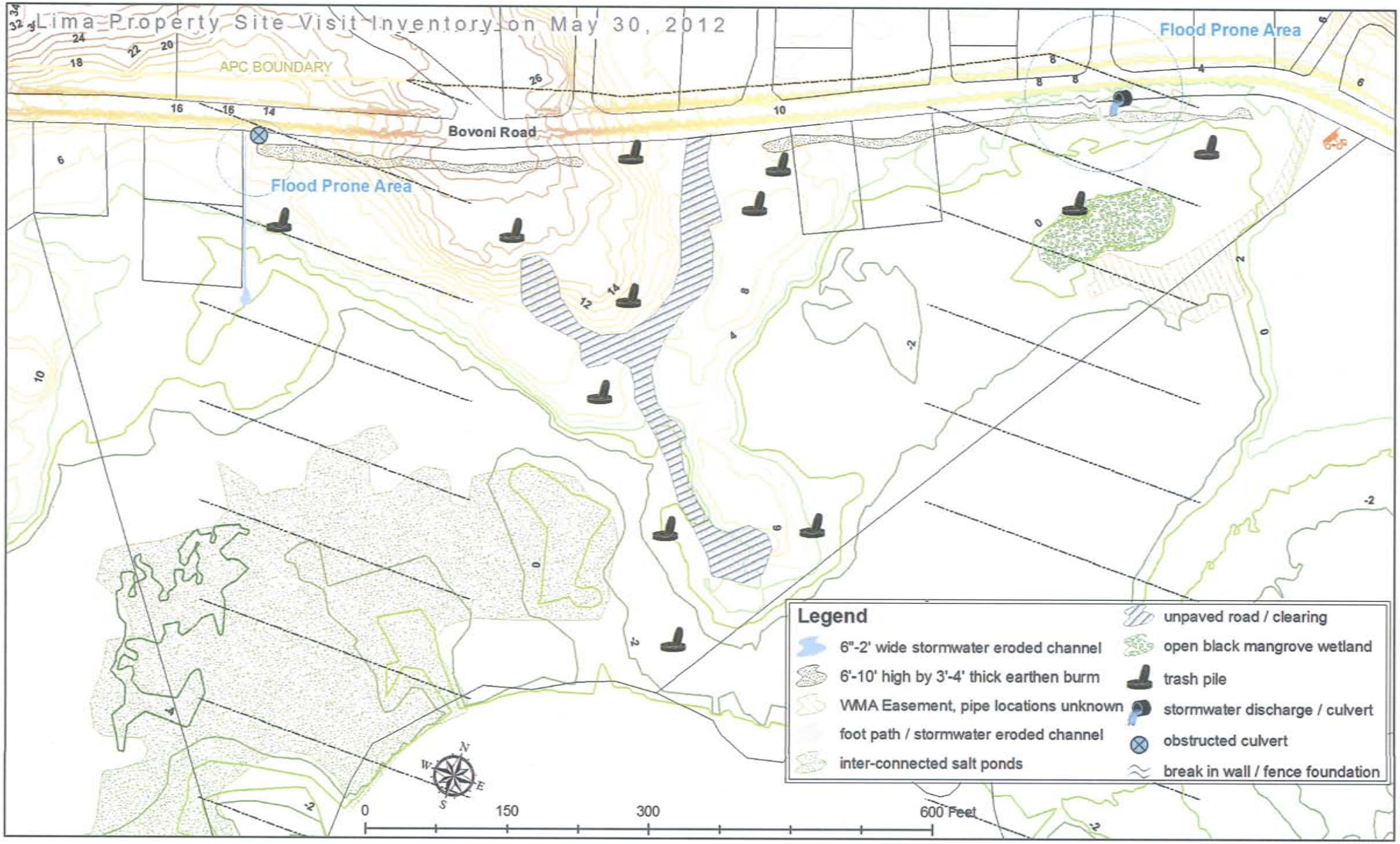
ACROSS STREET FROM BOVONI (6) NEIGHBORHOOD IS AN OPEN PARCEL FULL OF TRASH.

DPW IS DOING ROADWORK AND POTENTIAL CONSTRUCTED WETLAND AT THIS SITE COULD TREAT ROAD RUNOFF AND SERVE AS STORMWATER BMP FOR NEIGHBORHOOD

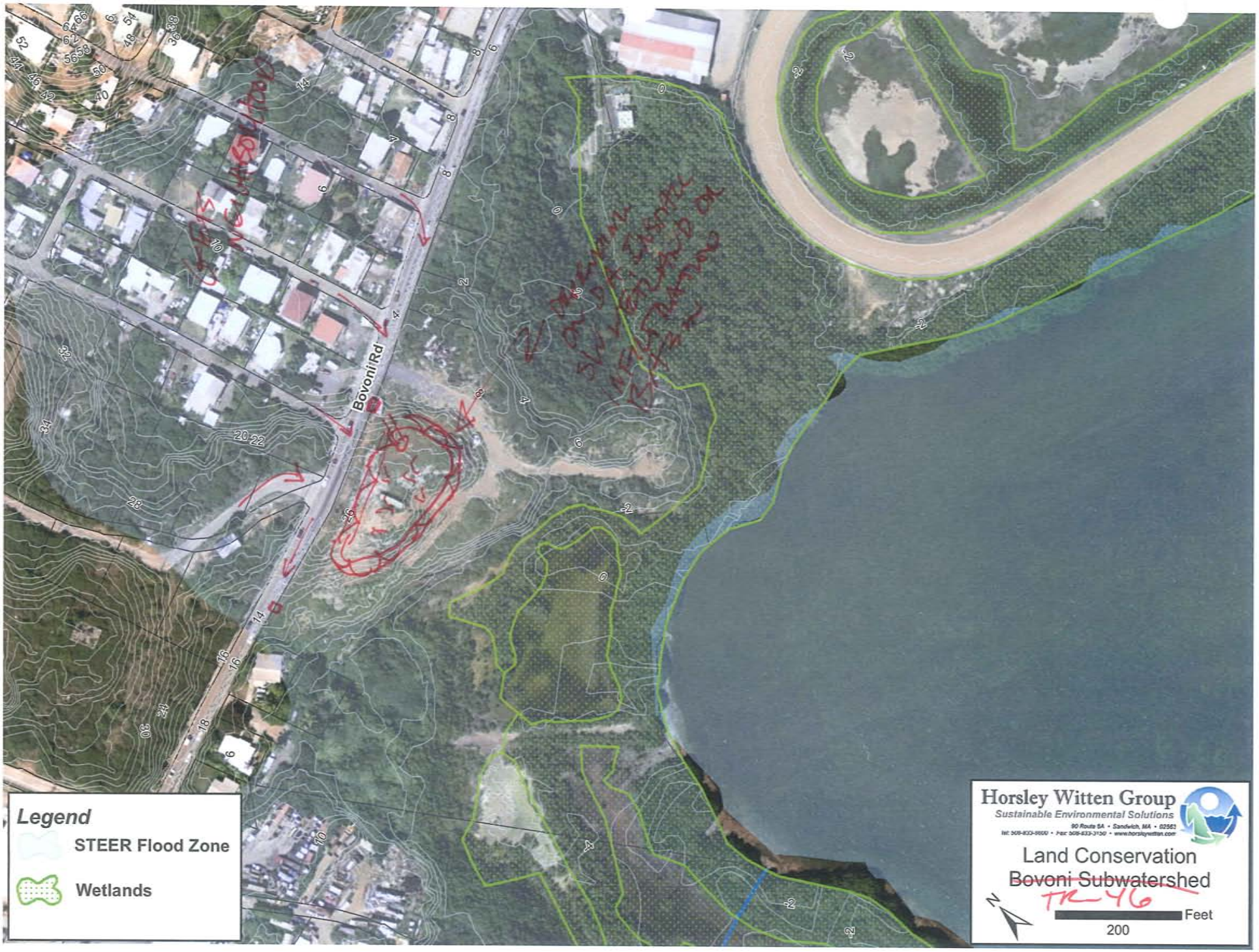
REPORTEDLY, PROPERTY OWNER HAS BEEN INTERESTED IN CONS. EASEMENT FOR PARCEL.

COULD TURN INTO A PARK?

Additional Notes and/or Sketch Information:


Lima Property Site Visit Inventory on May 30, 2012
APC BOUNDARY
Bovoni Road
Flood Prone Area
Flood Prone Area
Legend
6"-2' wide stormwater eroded channel
6'-10' high by 3'-4' thick earthen burm
VIMA Easement, pipe locations unknown
foot path / stormwater eroded channel
inter-connected salt ponds
unpaved road / clearing
open black mangrove wetland
trash pile
stormwater discharge / culvert
obstructed culvert
break in wall / fence foundation
N
W
E
S
0
150
300
600 Feet

TR-46
LIMA



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2,696,092.5 sqft

TR-46 Lima

FIELD ASSESSMENT NOTES

- [x] Stormwater Retrofit
- [ ] Stream/Wetland Restoration
- [ ] Residential Stewardship
- [ ] Land Conservation
- [x] Pollution Prevention
- [ ] Infrastructure Repair
- [ ] Illicit Discharge
- [ ] Other _____

Subwatershed: Turpentine Run

Site Name: CLINTON PHIPPS RACETRACK TR-47

Description of Existing Conditions:

Active horse track - ~~regular~~ center of track is wetland area, sediment ~~and~~ folding from track into central wetland. Piles of horse waste observed at disposal site to east of track.

~~3 x 30"~~

Proposed:

① Conduct pollution prevention investigation. Find stormwater permit SWPPP for confined animal operations → particularly waste disposal

② Investigate potential to use interior of track as const. stormwater wetland to manage area across road. Include sediment forebays along outer edge.

Additional Notes and/or Sketch Information:

③ options for smaller practices in the upland portion of site.

SEE AERIAL

Date: 2/22/2012

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FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☐ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TR-48

Site Name: TRASH COLLECTION / DUMP STATION

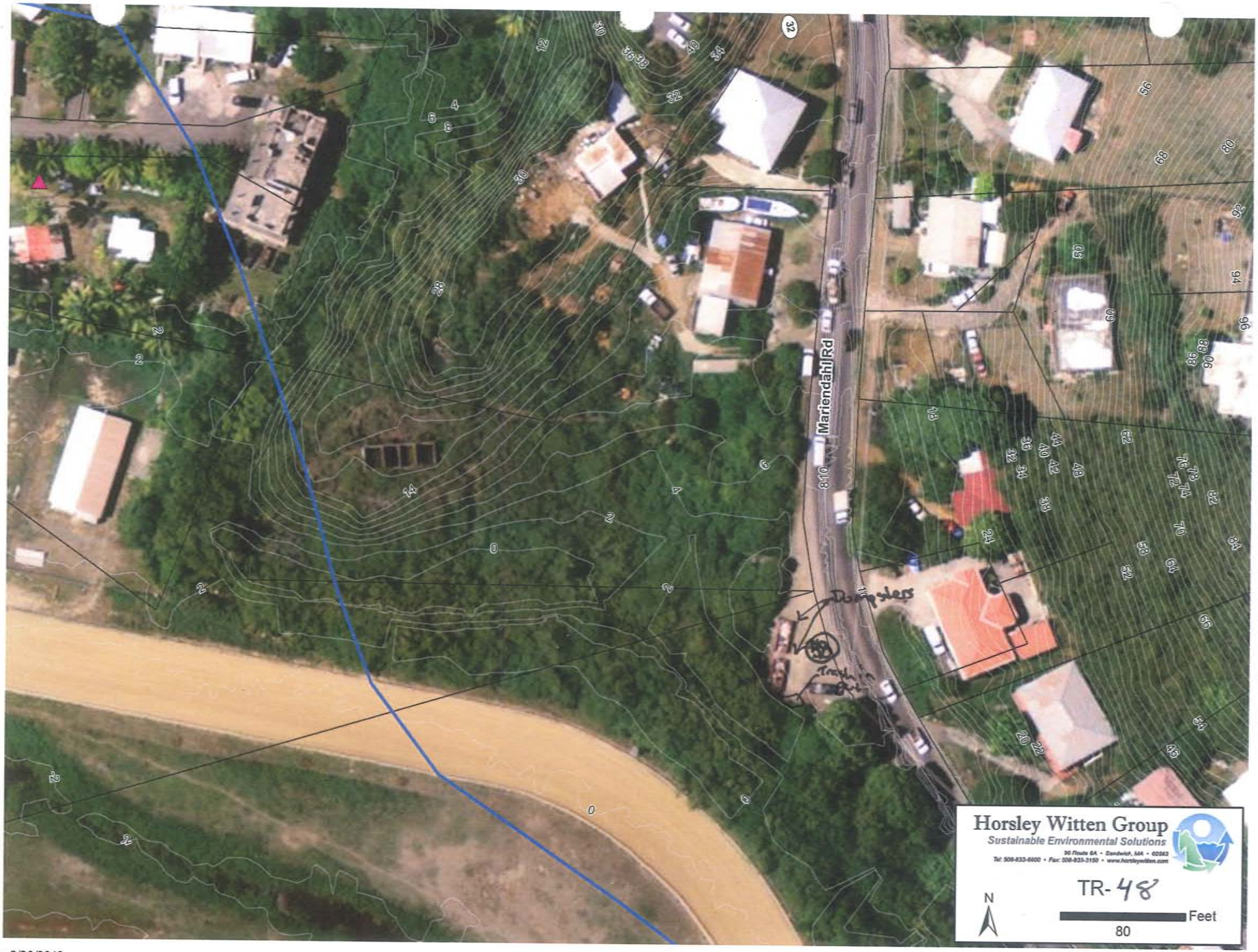
Description of Existing Conditions:

This site is constant source of trash dumping / and being blown by wind into mangroves/wetlands behind dumpsters.

IT would make a highly visible site to showcase alternative collection station design-

- fencing in back to prevent wind blow/overflow
- covered area for rollaways to reduce rain / trash contact.
- posting of signage for special collection days or recycling efforts of VIWMA

Additional Notes and/or Sketch Information:



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FIELD ASSESSMENT NOTES

- ☐ Stormwater Retrofit
- ☐ Stream/Wetland Restoration
- ☐ Residential Stewardship
- ☐ Land Conservation
- ☐ Pollution Prevention
- ☐ Infrastructure Repair
- ☐ Illicit Discharge
- ☐ Other _____

Subwatershed: TR-49

Site Name: KAYAK TOURS

Description of Existing Conditions:

Parking area and building are in the floodplain. not good site for retrofitting - coisider pollution prevention activities

- oil & grease
- marine debris
- vessel removal

* good location for watershed-related signage (although audience is primarily tourists)

Additional Notes and/or Sketch Information:

Date: 2/23/2012

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