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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

July 15, 2009
Honolulu, Hawaii

Application for a Stream Channel Alteration Permit
State of Hawaii, Department of Transportation
Castle Hills Access Road Drainage Improvements and
Streambank Stabilization, Kapunahala Stream, Kaneohe, Oahu
TMKs: (1) 4-5-024:002 to 005 and (1) 4-5-108:068 to 074

APPLICANT:

Dr. Brennon Morioka, Director
State Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

LANDOWNERS:

Same

SUMMARY OF REQUEST:

Application for a Stream Channel Alteration Permit (SCAP) for the State Department of Transportation's (DOT) Castle Hills Access Road Drainage Improvements and Streambank Stabilization, Kapunahala Stream, in Kaneohe, Oahu at TMKs: (1) 4-5-024:002 to 005 and (1) 4-5-108:068 to 074.

LOCATION: See Exhibit 1.

BACKGROUND:

The project area is commonly referred to as the Castle Hills Subdivision in Kaneohe, Oahu. The proposed project is located within a single-family residential district bounded by Pilina Way to the north, Kupohu Street to the south, Pookela Street to the west, and Pilina Place to the east. The project area slopes down from Pookela Street to Pilina Place. Kapunahala Stream bisects the site from the uphill westerly direction down to the south easterly direction. The area of the proposed drainage improvements is fed by a culvert located under Pookela Street and exits into a culvert system located beneath Pilina Place which is part of the Kahelelani Subdivision.

A period of heavy rainfall in 1966 caused the subject area along Kapunahala Stream to experience severe flooding. Since that time, the area has undergone significant settling and extreme erosion resulting in loss of property and the potential to cause severe damage to homes located adjacent to the stream. The existing stream bed consists of primarily rocks and sediment. The upstream portion of the site is heavily overgrown while the lower portions are relatively open. Both sides of the stream are covered with grass and weedy species as both banks were in residential use and significant portions were maintained as lawns.

DESCRIPTION:

The project involves dredging and fill activities along approximately 200 linear feet of the Kapunahala Stream and encompasses approximately 86,177 square feet or 1.98 acres. The project consists of the reconstruction of an existing outlet structure located east of Pookela Street, the addition of gabion apron, gabion walls and riprap downstream of the outlet structure, and the grubbing and grading of the stream bank to allow natural flowage and reduce or eliminate erosion of the adjacent banks. Approximately 3,060 cubic yards of existing soils and outlet structure will be excavated, and 2,634 cubic yards of structured fill material will be placed in the stream bed. A new reinforced concrete drop structure will be integrated into the new outlet to reduce the flow velocity and dissipate energy of heavy stream flows. A 60-inch by-pass diversion pipe will be installed and connected to the concrete wall of the outlet structure to divert stream flow temporarily during construction.

The proposed gabion walls will stabilize portions of the stream bank that are eroding into the stream. No existing habitat functions will be eliminated by the installation of the gabion walls. The proposed concrete outlet structure, which will replace the existing CRM wall, will be 20 feet wide and 13 feet long and incorporate a 15-foot vertical drop that will dissipate energy before entering the new gabion apron. Previously, the flow from the CRM wall entered the stream directly causing the fast moving water to erode away the stream banks.

A temporary silt fence will be installed during construction. The contractors will adhere to the erosion control plan, proper management techniques and best management practices (BMP) plan. Final BMPs will be provided to the contractor prior to the commencement of construction. Work within the stream is anticipated to run approximately from February to August 2010.

ANALYSIS:

Agency Review:

The U.S. Fish and Wildlife Service (USFWS) made the following comments:

- USFWS has not seen a Pre-Construction Notification, public notice or other form of correspondence for this project which would trigger USFWS review and comment under the Clean Water Act of Fish and Wildlife Coordination Act.
- USFWS asked if there was any potential for habitat enhancement to improve conditions for native species with minor augmentations to the project design or mitigation for stream bed, banks or riparian habitat impacted by the project.
- The applicant should describe the conditions of the existing stream bed and banks and whether their functions would be eliminated by the replacement of the gabion walls.
- The applicant should explain the purpose of the concrete drop structure, its slope and its elevation above the stream bed to ensure that the drop structure does not inhibit passage of native species.
- Best management practices (BMPs) state that hydroseeding and grasses may be used to stabilize banks during and after construction. Non-native grasses and vegetative cover that would eliminate riparian habitat function should not be introduced. A more explicit BMP should be developed.

The U.S. Army Corps of Engineers commented that a Department of Army (DA) Permit, POH-2009-185, was in process.

The Office of Hawaiian Affairs (OHA) made the following comments:

- OHA inquired about the necessity of an environmental review for this project because permits are required by the Army Corps of Engineers Harbor and Rivers Act Section 10 and Clean Waters Act Section 404.
- The project area appeared to be large enough to require a National Pollutant Discharge Elimination System (NPDES) permit. The project area is listed as 1.978 acres; however, the demolition of several residential structures in the project area and the stream bank stabilization should have been integrated together and would have likely required additional regulatory oversight because of the larger project area.
- The applicant should include an assessment of the impact of the channel alteration on the stream environment.
- The applicant should provide data to verify the presence or absence of native diadromous species that require unimpeded mauka to makai connection and provide aquatic pathways to facilitate the migration of native diadromous species.

The Department of Health (DOH) Clean Water Branch (CWB) commented that the project is subject to Section 401 Water Quality Certification (WQC) and Section 402 National Pollutant Discharge Elimination System (NPDES) Permit and that the applicant's May 12, 2009, WQC application was incomplete because additional information was required.

The City and County of Honolulu, Department of Planning and Permitting (DPP) made the following comments:

- The project is not located in the Special Management Area (SMA); and, therefore, is not subject to SMA use permit requirements.
- According to the Flood Insurance Rating Map (FIRM), the project is not located within the AE floodway district. Therefore, a certification of 'no-rise' is not applicable.
- Grading and trenching permits will be required. A stream study, drainage report and soils report shall be submitted with the construction/grading plans to DPP for review and approval.
- Section A-8 of the permit should explain how the project is consistent with Section 3.1.3.4, "Natural Gulches, Streams and Drainageways" and Section 4.6 "Drainage Systems" of the Koolaupoko Sustainable Communities Plan.

City and County of Honolulu, Department of Design and Construction recommended the following:

- Neatly cut the toe of the excavation for the base of the gabion wall to minimize future erosion.
- Round off the edge of the new top slab to reduce free-fall distance of the water flow and reduce the velocity of the outflow from the drop structure.
- Use one layer of large boulders, three feet thick, instead of the gabion for the apron. When the wire cage of the gabion rusts away, the small stones will wash out and create a pool of water which may become a nuisance/hazard.

Engineering Division commented that the project site is located in Flood Zone X according to the Flood Insurance Rate Map (FIRM) and that the Flood Insurance Program does not have any regulations for developments within Flood Zone X.

Historic Preservation Division commented that no historic properties will be affected because residential development/urbanization has altered the land.

The Department of Hawaiian Home Lands, State Parks, Land Division, and Forestry and Wildlife had no objections to the project. The University of Hawaii Environmental Center and the Division of Aquatic Resources did not submit comments as of the date of preparation of this submittal.

Staff Review:

The State Department of Transportation prepared a Final Environmental Assessment (FEA) for the Castle Hills Access Road Drainage Improvements, and on May 9, 2006, DOT determined that the proposed action would not have a significant impact (Finding of No Significant Impact, FONSI,) on the environment that would warrant an Environmental Impact Statement (EIS).

The applicant believes that the project was addressed in its entirety and was not parceled out during the Environmental Assessment (EA) process. Cumulative impacts were addressed in the EA. Due to funding and other administrative considerations, the entire project will be undertaken on a phased basis. Because permits cannot be held indefinitely, the applicant will obtain permits on a scheduled basis when funding for the work becomes available.

The applicant and staff from the Division of Aquatic Resources surveyed the site for wildlife and native species. None were observed on the site, and the site is not suitable for such species as the *opae oe`ha* and *o`opu akupu* because the stream flows entirely in a concrete channel downstream of the project limits. The 15-foot drop upstream makes migration difficult in the mauka direction.

RECOMMENDATION:

That the Commission approve a Stream Channel Alteration Permit for the State Department of Transportation's (DOT) Castle Hills Access Road Drainage Improvements and Streambank Stabilization, Kapunahala Stream, in Kaneohe, Oahu at TMKs: (1) 4-5-024:002 to 005 and (1) 4-5-108:068 to 074.

The permit shall be subject to the Commission's standard conditions in Exhibit 8.

Respectfully submitted,



KEN C. KAWAHARA, P.E.
Deputy Director

- Exhibits:
1. Location Map
 2. Plan Profile New Drainage Outlet
 3. Temporary Stream diversion Plan
 4. Gabion Wall Details
 5. Cross Sections
 6. Drop Structure Plan and Sections
 7. Photos of Bridge and Stream
 8. Standard Stream Channel Alteration Permit Conditions

APPROVED FOR SUBMITTAL:



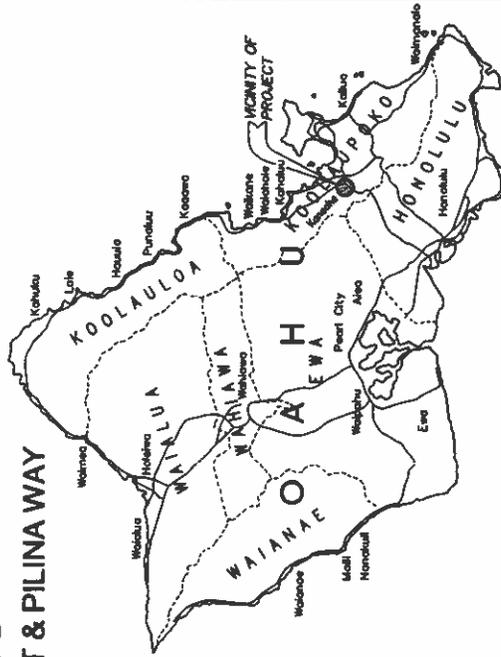
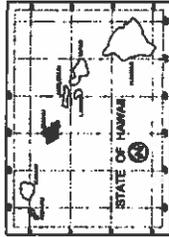
LAURA H. THIELEN
Chairperson

INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STANDARD PLANS SUMMARY
3-4	CONSTRUCTION NOTES
5-7	WATER POLLUTION, EROSION CONTROL NOTES & DETAILS
8	LEGEND & ABBREVIATIONS
9	EXISTING CONDITIONS
10	EROSION CONTROL PLAN
11	GENERAL LAYOUT PLAN
12-13	DEMOLITION PLAN
14-15	GRADING PLAN
16	PLAN AND PROFILE - NEW DRAINAGE OUTLET
17	TEMPORARY STREAM DIVERSION PLAN
18-19	DETAILS
20-30	STRUCTURAL PLANS
31-33	CROSS SECTIONS

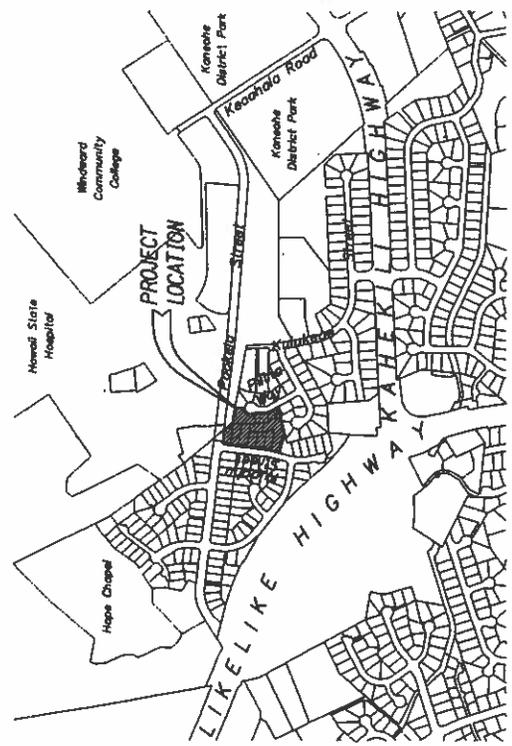
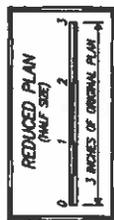
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 HONOLULU, HAWAII

PLANS FOR
 CASTLE HILLS ACCESS ROAD
 DRAINAGE IMPROVEMENTS
 VICINITY OF POOKELA STREET, KUPOHU STREET & PILINA WAY
 PROJECT NO. HWY-O-04-98
 DISTRICT OF KOOLAUPOKO
 ISLAND OF OAHU

FILE NO.	HWY-O-04-98	PROJECT NO.	7	SHEET NO.	33
DATE	2009				



DEPARTMENT OF TRANSPORTATION
 STATE OF HAWAII
 APPROVED: _____
 DIR. OF TRANSPORTATION _____ DATE _____



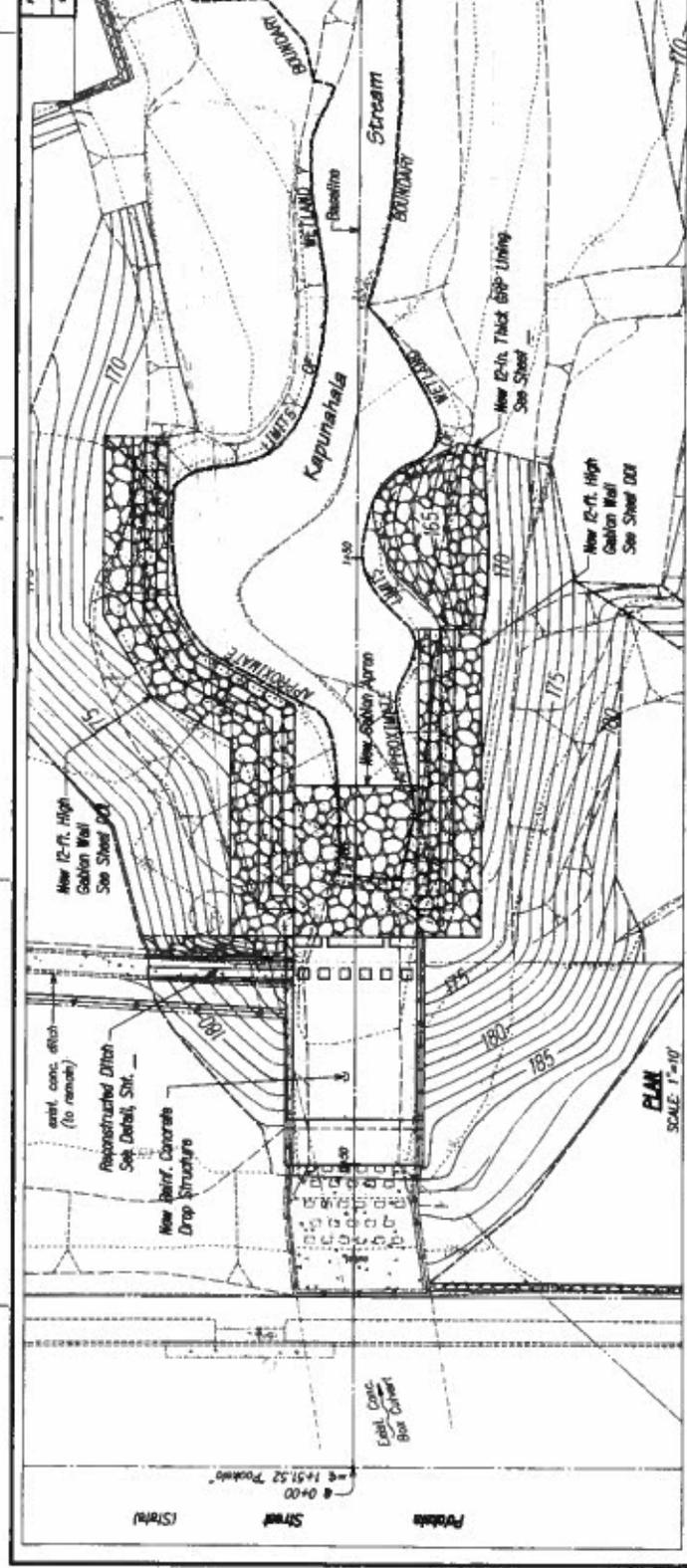
SCALE IN FEET
 1" = 400'-0"

LAYOUT PLAN

DESIGNED BY: PAREN, INC.
 DRAWN BY: HWY-05
 CHECKED BY: 982-7952
 DATE: MARCH 2009

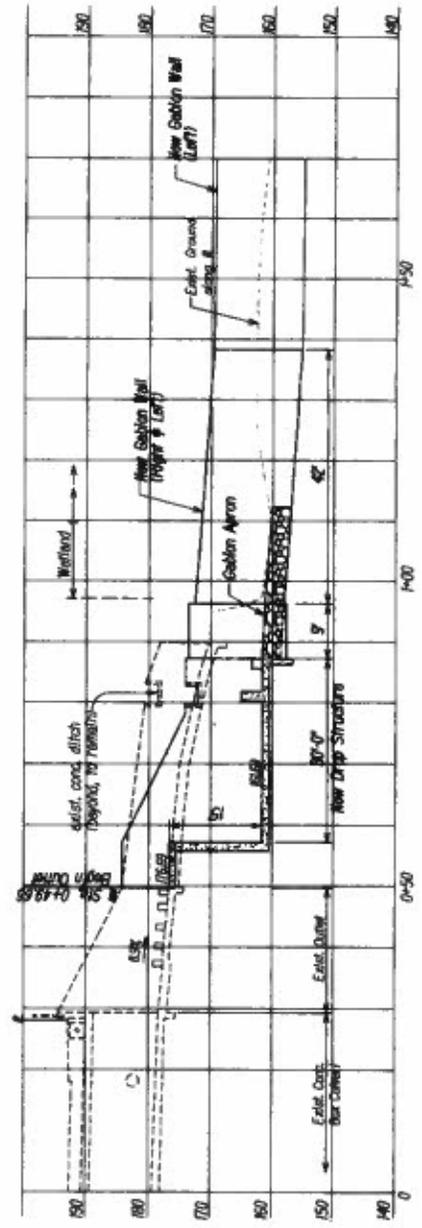
DATE	DESCRIPTION

DATE	BY	CHKD	APP'D	SCALE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
04/04/09	HW	HW	HW	1"=10'	HW-04-09	16	30



THE SEAL AND FIGURE THEREON ARE TO BE USED BY THE ENGINEER ONLY.

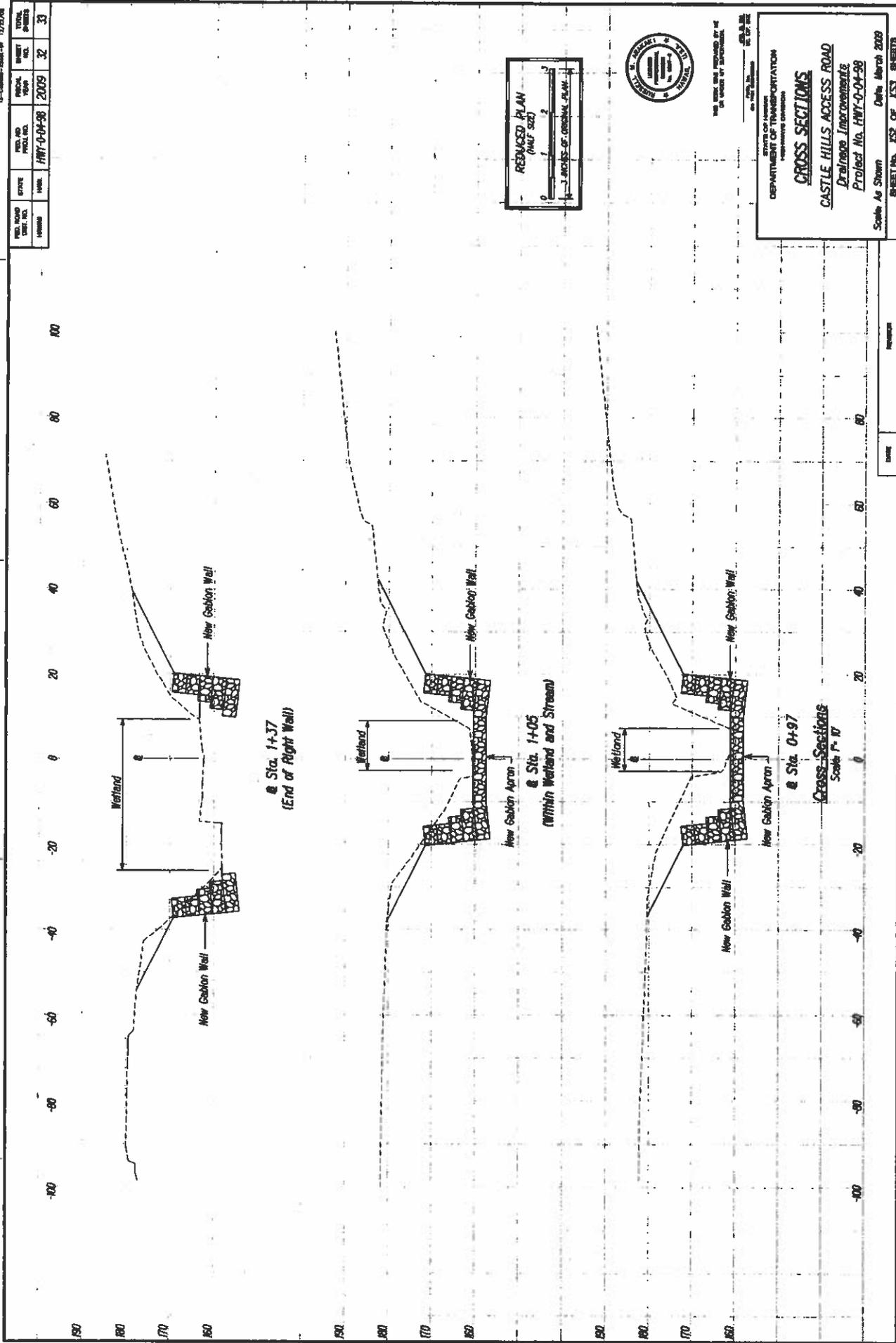
DEPARTMENT OF TRANSPORTATION
PLAN AND PROFILE
NEW DRAINAGE DITCH
 CASTLE HILLS ACCESS ROAD
 Drainage Improvements
 Project No. HW-04-09
 Scale As Shown Date: March 2009
 SHEET NO. OF OF SHEETS



PROFILE
 Scale: 1"=10' (Vertical)

DATE	BY	CHKD	APP'D
04/04/09	HW	HW	HW

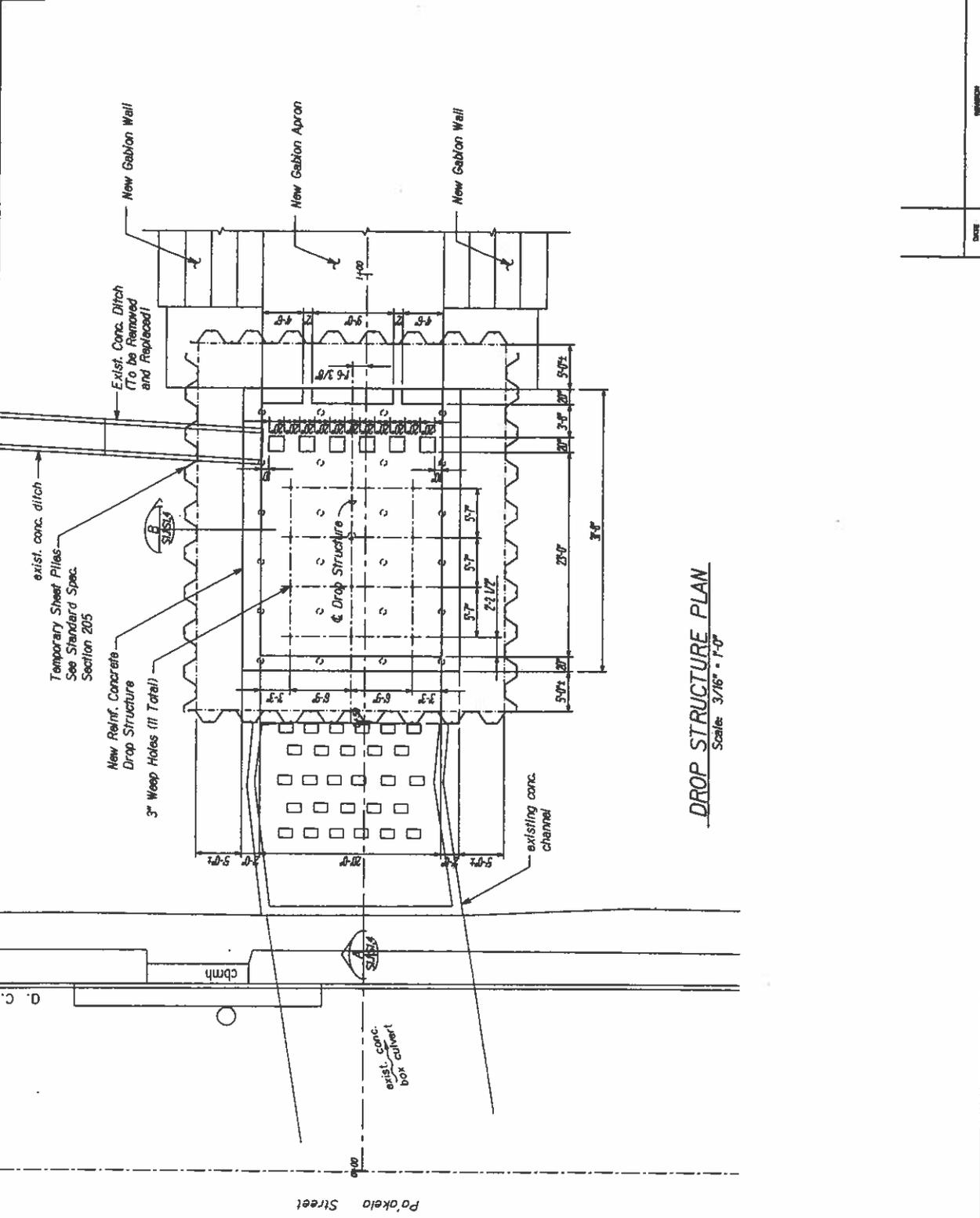
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DATE	12/22/08
BY	J. J. [unreadable]
CHECKED BY	[unreadable]
APPROVED BY	[unreadable]

EXHIBIT 5

PROJECT NO.	DATE	PROJECT NO.	TOTAL SHEETS
HWT-0-04-98	2009	00	X



DROP STRUCTURE PLAN
Scale: 3/16" = 1'-0"

THE WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

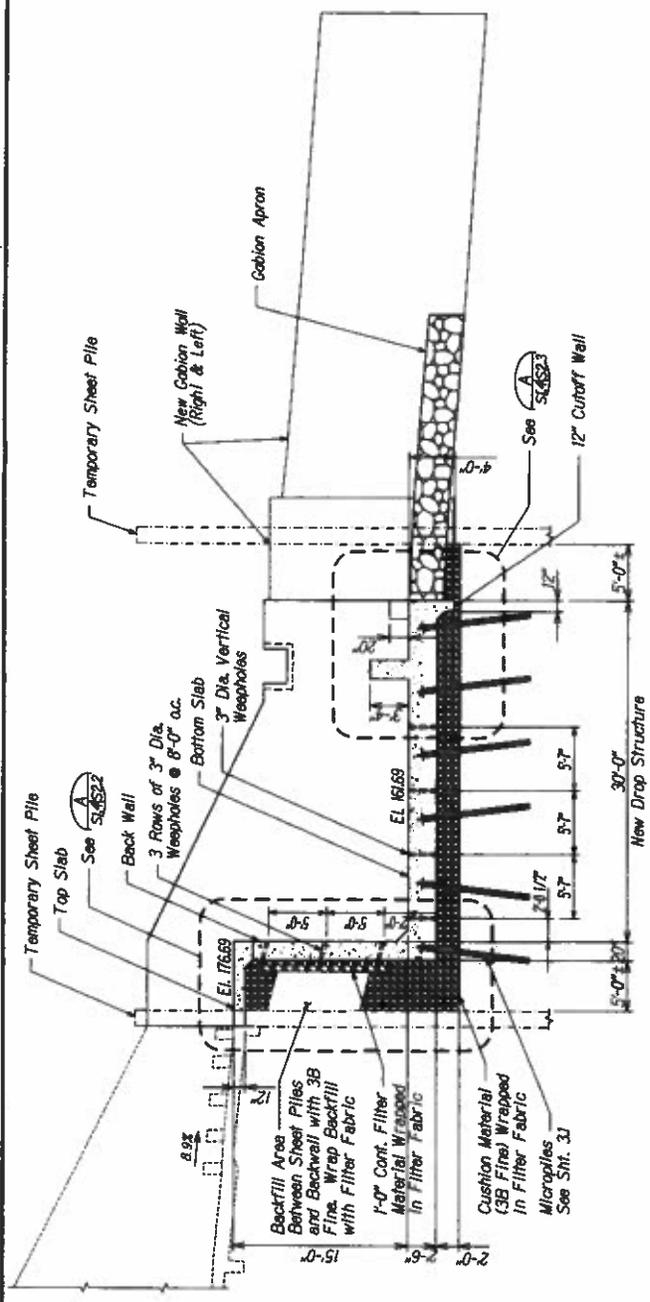
DATE: 02/28/09

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
TRANSPORENTATION ADMINISTRATION

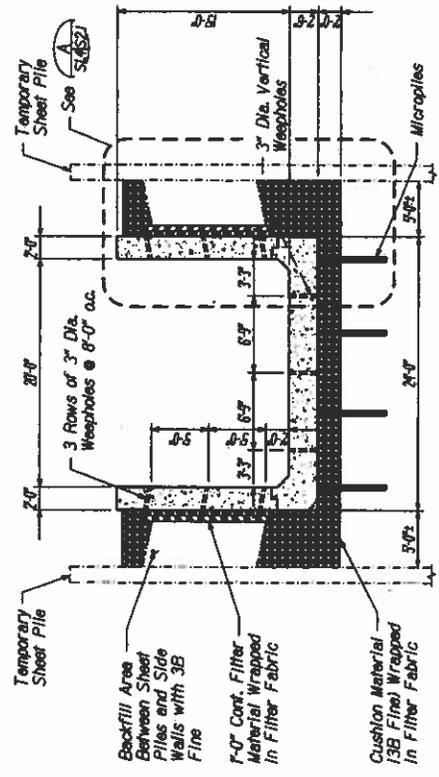
DROP STRUCTURE PLAN
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWT-0-04-98

Scale As Shown Date March 2009
SHEET NO. 512 OF 7 SHEETS

PROJECT NO.	2009	DATE	00	SHEET NO.	X
STATE	MD	PROJECT NO.	HWY-0-04-98	DATE	
YEAR	2009	PROJECT NO.	HWY-0-04-98	DATE	



LONGITUDINAL SECTION A
Scale: 3/16" = 1'-0"



TRANSVERSE SECTION B
Scale: 3/16" = 1'-0"

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
CONSTRUCTION DIVISION

DROP STRUCTURE SECTIONS
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale As Shown Date March 2009
SHEET No. 54 OF 71 SHEETS

NO.	DESCRIPTION
1	CONCRETE
2	STEEL
3	GRAVEL
4	SAND
5	CLAY
6	ROCK
7	BRICK
8	GLASS
9	PLASTER
10	PAINT
11	WOOD
12	ASPHALT
13	BITUMEN
14	INSULATION
15	REINFORCING
16	MEASUREMENT
17	PROTECTION
18	FINISH
19	FOUNDATION
20	ROOFING
21	MECHANICAL
22	ELECTRICAL
23	PLUMBING
24	HEATING
25	Cooling
26	Lighting
27	Signage
28	Landscaping
29	Site Work
30	Other



Aerial view of the project site. Kapunahala Stream is located along the tree line and dense vegetation adjacent to the Castle Hills subdivision (homes on the left) and the Kahelelani Subdivision (homes on the right and foreground). Pookela Street and the outlet of the existing 20-foot x 10-foot concrete box culvert are located in the background. The new concrete drop structure and stream stabilization improvements will be located downstream of the existing outlet structure.



Downstream view of Kapunahala Stream at existing outlet structure. The proposed concrete drop structure will replace the existing CRM outlet structure. The stream bypass/diversion pipe will be located on the left side of the existing outlet structure.



Upstream view of waterfall at the end of the existing CRM outlet structure. The stream bypass/diversion pipe will be located on the right side of the waterfall.



Upstream view of the existing outlet structure. The existing concrete headwall for the 20-foot x 10-foot concrete box culvert is located in the foreground. The stream bypass/diversion pipe will be located on the right side of the outlet structure.



Photograph of the existing 2-foot x 2-foot concrete lined drainage ditch. The drainage ditch discharges into the existing outlet structure. The stream bypass/diversion pipe will be located under the drainage ditch near the Mango tree.

STANDARD STREAM CHANNEL ALTERATION PERMIT CONDITIONS
(Revised 9/19/07)

1. The permit application and staff submittal approved by the Commission at its meeting on July 15, 2009, shall be incorporated herein by reference.
2. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State and county governments.
3. The applicant, his successors, assigns, officers, employees, contractors, agents, and representatives, shall indemnify, defend, and hold the State of Hawaii harmless from and against any claim or demand for loss, liability, or damage including claims for property damage, personal injury, or death arising out of any act or omission of the applicant or his successors, assigns, officers, employees, contractors, and agents under this permit or related to the granting of this permit.
4. The applicant shall notify the Commission, by letter, of the actual dates of project initiation and completion. The applicant shall submit a set of as-built plans and photos of the completed work to the Commission upon completion of this project. This permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The proposed work under this stream channel alteration permit shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.
5. Before proceeding with any work authorized by the Commission, the applicant shall submit one set of construction plans and specifications to determine consistency with the conditions of the permit and the declarations set forth in the permit application.
6. *The applicant shall develop site-specific, construction best management practices (BMPs) that are designed, implemented, operated, and maintained by the applicant and its contractor to properly isolate and confine construction activities and to contain and prevent any potential pollutant(s) discharges from adversely impacting state waters. BMPs shall control erosion and dust during construction and schedule construction activities during periods of low stream flow.*
7. *The applicant shall protect and preserve the natural character of the stream bank and stream bed to the greatest extent possible. The applicant shall plant or cover lands denuded of vegetation as quickly as possible to prevent erosion and use native plant species common to riparian environments to improve the habitat quality of the stream environment.*
8. In the event that subsurface cultural remains such as artifacts, burials or deposits of shells or charcoal are encountered during excavation work, the applicant shall stop work in the area of the find and contact the Department's Historic Preservation Division immediately. Work may commence only after written concurrence by the State Historic Preservation Division.