TECHNICAL PROVISIONS

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END

TECHNICAL PROVISIONS FOR:

FORT WEAVER ROAD WIDENING,
VICINITY OF AAWA DRIVE TO GEIGER ROAD
EWA, OAHU, HAWAII

I. OVERVIEW

The Fort Weaver Road Widening, Vicinity of Aawa Drive to Geiger Road (Project) is a **design-build project** and will be awarded using the two-step process described in paragraph III Qualifications Proposal and in paragraph IV Design and Price Proposal.

The purpose of these provisions is to provide sufficient programming information and parameters so that interested firms are able to put together a contractor-designer team's (Contractor) Qualification Proposal and, if qualified and ranked in the top three by the Department, prepare and submit a Design and Price Proposal.

The project will be awarded to the Contractor with the highest total score of the Design Documentation and the Price scores.

The Department's intent is to establish a single point of responsibility by combining the project management, engineering services, and construction work under a single contract. The Contractor shall use the information contained in this package and other information as deemed necessary by the Contractor to prepare construction drawings and specifications; obtain the necessary permits and plan acceptance; obtain the Department's acceptance of the construction documents; provide quality control measures; and construct the Project in accordance with the contract documents.

II. CRITERIA AND PARAMETERS FOR DESIGN AND CONSTRUCTION

A. GENERAL PROJECT DESCRIPTION

The Project includes the design, permitting and construction of the widening of Fort Weaver Road from Station 123+80, north of Honouliuli Stream Bridge, to Station 257+45±, south of Geiger Road. See the plans listed in paragraph II.L Plans, Specifications, and Attachments.

B. PROJECT GOAL AND OBJECTIVES

It is the goal of the Department to have the road widening constructed and opened to the public as quickly as possible. The Department seeks to achieve the following objectives from the synergism of the design-build process:

1. Expedient design and construction that will allow the traveling public to use completed increments and will lead to the earliest completion of the project,
2. Effective storm drainage systems that address the constraints of the existing highway systems,
3. Comprehensive development of a utility corridor for power and communications cables, and the logical relocation and removal of other utilities,
4. Construction phasing that minimizes disruptions to traffic flow and safety, and
5. Least impacts to existing roadside landscaping that are integrated with communities along the highway.

C. DESIGN SCOPE OF WORK AND SERVICES

The Contractor shall be solely responsible for finalizing and completing the scope of design and construction necessary to complete the Project. The Contractor shall also be responsible for determining the incrementation of the Project to allow construction to commence as soon as practical; to allow construction to continue simultaneously with the design and permitting activities; and to allow the earliest possible use of the completed facility by the public.

For the purpose of this Project, a road increment shall be a stand alone segment of the highway (inbound and outbound lanes) that is physically complete and operational in terms of traffic lanes, traffic control devices, traffic signals, signs, pavement striping markings, highway lighting, and drainage that will allow the increment to be used by the traveling public. Other possible increments are the drainage cut off channel, pedestrian bridges and utility corridor for power and communications cables.

Engineering and other designers shall be licensed in the State of Hawaii and shall stamp all plans, calculations, and reports. The construction documents prepared by these Engineers and designers will be used by the Contractor to construct the Project and will be used by the Department to monitor the work progress.

Furnish all supervision, professional services, labor, equipment, tools, supplies, permanent materials, and temporary materials required to provide the following services:

1. Project Management: Overall project management shall include coordinating, scheduling, and monitoring the activities of design build team, and coordinating with utility companies and government agencies from who plan acceptance are required. Project management also includes processing payment requests of the design consultants and subcontractors,

and making payments; settling any Project related disputes; distributing required documents; coordinating and making submittals to the Department; coordinating the work on the site; preparing and updating project schedule; providing documents and material control; preparing and distributing public announcements and conducting public meetings, resolving public complaints, and any other coordination required for the successful completion of the Project.

All activities and decisions of the Contractor relating to the Project concerning the following shall be subject to the review and acceptance by the Department:

a. Change in scope of improvements,
b. Change in the project schedule submitted as part of the Design Documentation Requirements in Section IV.A.1.(g),
c. Change in project incrementation submitted as part of the Design Documentation Requirements in Section IV.A.1.(a),
d. Change in Contractor key subcontractors and key designers listed in the Contractor's Qualification Proposal, Section III.A.3,
e. Changes in design criteria,
f. Changes in design or construction activities that may impact the traveling public or the adjoining communities,
g. Changes in utility cost or schedule,
h. Changes in quality of materials, and
i. Changes in design or construction activities that may require changes to the approved environmental documents listed in paragraph C.4. Permits and Clearances. The Contractor shall be responsible for all delays and associated costs related to additional public notices or hearings and review by all affected agencies as a result of these changes.

Submit 10 copies of documentation related to item nos. a thru i above for the Department's review and acceptance. The Department will review any such submittals within 28 calendar days upon receipt from the Contractor. The Project completion time will not be extended due to the Department's review time of these items.

2. Design Services: Design and prepare construction plans, special provisions specifications and detailed construction estimate for the various elements of work. Obtain the acceptance(s) of government agencies and utility companies, as appropriate. The Contractor shall be responsible for the professional quality, technical accuracy and coordination of the above services.

Design and construct the Project to the following design designation:

	Aawa Drive to Kolowaka Drive	Kolowaka Drive to Geiger Road
2003 ADT	55,700	35,000
2023 ADT	77,800	49,600
2023 DHV	5,800	4,000
Design D	70/30	60/40
Design T	6.5%	5.0%
T24	5.5%	4.0%
Design V	45 MPH	45 MPH
Functional Classification	Urban Arterial	Urban Arterial

In addition, design all work in conformance with appropriate Federal, State, and City and County of Honolulu Standards, Regulations, and Codes listed in, but is not limited to, Paragraph II.C.5 Codes and Design Standards.

The Project scope of improvements are described herein below and by the plans listed in paragraph II.L Plans, Specifications, and Attachments.

a. Road Design:

1) General Description of Existing Roadway: The highway is a four lane divided highway with 10-foot shoulders and roadside swales. There is an 8-foot wide shared pathway on the east side of the road.

2) Scope of Improvements: The widening includes, but is not limited to, adding a third lane in each direction, replacing the existing 10-foot shoulder and swale on both sides with a 5-foot shoulder with concrete curb and gutter, adding a 6-foot sidewalk on the western side, and a 10-foot wide shared pathway on the eastern side, adding deceleration lanes and bus turnouts and shelters at various locations, and installing pavement markings and traffic signs.

Provide curb ramps in accordance with the American with Disability Act Accessibility Guidelines (ADAAG) throughout the project. If compliance is technically infeasible, prepare a "Technical Infeasibility" Statement for each occurrence.

The existing shared pathway on the eastern side is 8 feet wide which shall be replaced with a 10 feet wide pathway. In many

areas, the existing pathway is separated from the roadway and is incorporated into the landscaping layout of the adjoining development. The contractor is encouraged to reconstruct the pathway in its present location to minimize the impacts to landscaping and drainage of these areas.

Retaining wall(s) may be required in areas where the new cut or fill slopes cannot be contained within the existing right-of-way. All retaining walls shall be cement rubble masonry (CRM) wall or concrete wall with rock veneer, and shall have the same appearance (color and texture) of the existing walls within the highway corridor.

Coordinate with the City Department of Transportation Services regarding the location of the bus shelter at each bus turnout. Shelters may be installed outside the highway right-of-way only if the City executes a memorandum of understanding with the property owner affected.

The Department will acquire the additional right-of-way for the bus turnout at Fort Weaver Road Station 191+00, for the curb returns for Karayan Road and the sidewalk extension at Arizona Road. See paragraph II.E.

Install guardrails in areas where guardrails are warranted or adjust existing guardrail to be consistent with the road widening and current standards.

An "Acoustic Study for the Fort Weaver Road Widening Project, Vicinity of Aawa Drive to Geiger Road", was prepared in June 2003. Although the report concludes that only one area (the neighborhood park at the southwest corner of the Kolowaka Drive intersection), may be a candidate for the construction of a 6-foot high sound attenuation wall, such a wall would not be desirable as the area is the entry feature to the Ewa Gentry development. Construction of sound attenuation walls is not part of the scope of work.

b. Bridge Design

1) General Description of Existing Bridges: There are two existing bridges within the Project limits. The Honouliuli Stream Bridge is a five-span concrete bridge and the Cane Haul Road Overpass Bridge is a single-span prestressed concrete girder bridge.

2) Scope of Improvements: Provide a separate concrete bridge structure at each bridge location to accommodate the 6-foot wide sidewalk on the western side of the highway. The footings for the pedestrian bridges shall not interfere with the load capacity of the existing structures nor shall it be connected to the existing bridges. The pedestrian bridge shall be aesthetically compatible to the existing surroundings.

An option to the separate pedestrian bridge is to widen the existing bridge to provide a 6-foot wide walkway; however, take into account recent code changes in evaluating this option and design and construct the necessary upgrades to the existing bridge(s) accordingly.

In addition to obtaining the permits required to work in reaches of Honouliuli Stream, conduct stream stabilization and scour evaluations for the new bridge structure, and conduct hydraulic analysis to ensure the flood elevations are not raised above the limits allowed by FEMA.

An existing golf cart path crosses under the Honouliuli Stream Bridge. The design and construction of the pedestrian bridge shall provide uninterrupted golf course access under the bridge at all times.

The bridge over the cane haul road shall be a single span bridge.

c. Utility Corridor and Utility Company Systems

1) General Description of Existing Utilities: The utilities located within the existing highway right-of-way include, but are not limited to, the following:
   a) Navy AVGAS line (inactive)
   b) Navy JP-5 fuel line (inactive, pending transfer to another user)
   c) Navy water mains
   d) US Army Signal cables
   e) BWS potable water mains
   f) BWS recycled water mains
   g) City and County Sewers
   h) Honolulu Gas Company gas line
   i) Chevron fuel lines These lines shall not be relocated
   j) HECO overhead and underground power lines

k) Verizon overhead and underground systems
l) Oceanic Cablevision overhead and underground systems

2) Scope of Improvements: The work shall include, but is not limited to, the following:
   a) Remove the existing Navy AVGAS line within the limits shown in the contract documents. The bid price for this item shall include the cost to excavate and backfill, to cut and install valve and box on the fuel line at the limits of removal, to remove the fuel line, and to dispose of the effluent and pipe material in accordance with appropriate government rules and regulations. Work associated with contaminated soils, if encountered along the pipeline, will be paid on a force account basis.
   b) A utility corridor for power and communications cables shall be established from the north to south project limits. The primary purpose of the corridor is to minimize future utility related excavation in the roadway. The utility corridor shall be located longitudinally in the area between the road curb and the right-of-way line, shall be concrete encased, shall have a minimum cover of 36-inches over the concrete encasement, and shall, at a minimum, consist of ducts with light vehicle resistant handholes and or manholes for the following:
      (1) The existing US Army Signal system consists of two direct buried armored (lead, possible wrapped with hemp), paper insulated cables, 404 pair and 606 pair that runs from Sta 160+00 (approximately) to the underground "hut" on the north side of Geiger Road, west of Fort Weaver Road intersection. The existing Signal cables shall be relocated into the utility corridor regardless whether the existing cables are impacted directly or indirectly by the road improvements. Work shall consist of the following:
         (a) Three 4-inch ducts from the intercept point to the hut.
         (b) 4' wide by 6' long by 6' deep handhole or manholes space no more than 1000 feet apart.
         (c) New 900 pair, 22 AWG, OSP copper telephone cable from the intercept point to the hut. Splice or terminate at both ends in accordance with I3A and EIA/TIA standards. Test cable in accordance with EIA/TIA and submit test

results to the Engineer. All splices shall be waterproof.

(d) The communication cables cannot be out of service except during the splicing operations.

(e) Prepare metes and bound description of the center line of the concrete encased duct bank and a cross sectional drawing showing the location of the signal cable ducts within the duct bank.

(2) State Telecommunication ductline system shall have two 4-inch ducts and handhole or manhole space no more than 500 feet apart.

(3) City Traffic Camera system shall have one 4-inch duct and shall be designed and installed in accordance with paragraph II.C.2.i.

(4) Traffic Signal interconnecting cable shall have one 4-inch duct and shall be designed and installed in accordance with paragraph II.C.2.f.

(5) Work also includes duct work from the connection points to the corridor.

(6) If any of the existing underground cables belong to Verizon, Oceanic or Hawaiian Electric are impacted by the Project improvements and are required to be relocated, these cables shall also be relocated within the utility corridor.

c) Relocate all other utilities, as necessary, to accommodate the road widening work.

d) Except for minor and isolated areas, relocate all utilities impacted by the new work in accordance with the directive provided hereinabove, with Chapter 105, "Accommodation and Installation of Utilities on State Highways and Federal Aid County Highways", with the requirements of the utility company or government agency involved, and the Contract Documents.

e) As required by the Department's Pipeline Removal Policy, all segments of existing utility rendered inactive as a result of any relocation work shall be removed from the highway right-of-way.

f) Prepare construction plans and detailed cost proposal for the utility relocation and obtain plan and cost proposal acceptance from the affected utility or government agency and from the Department. If the detailed cost proposal is more than the lump sum bid item entered in the Contractor's price proposal under paragraph IV.B for that

work item, the Contractor shall not be entitled to a price adjustment by the Department.

Utility Agreements for the following utility, if affected by the Project, are required:

(1) US Army Signal system
(2) Honolulu Gas Company gas line
(3) HECO overhead and underground power lines
(4) Verizon overhead and underground systems
(5) Oceanic Cablevision overhead and underground systems

The Department will prepare the utility agreements based on complete and accurate information provided by the Contractor. Once the plans and cost proposals are accepted, submit to the Department a "Request for Utility Agreement" which shall include a color-coded plan, and a cost proposal to relocate the utility, all in accordance with the Department's format and requirements. See section II.F. for more details on the "Request for Utility Agreement."

d. Drainage Improvements

1) General Description of Existing Drainage: The existing road drainage system includes roadside swales and inlets, and drain inlets in the median strip for the superelevated sections. There are several culverts that cross the highway. Many of the existing highway drainage are connected to the drainage systems of the adjoining developments located outside the right-of-way. Most of these connections do not have easements covering the downstream entitlements.

The highway traverses across four drainage basins: Honouliuli Stream, Pearl Harbor West Loch, Kaloi Stream, and Ewa Makai East Drainage Sump.

2) Scope of Improvements:
The curbed highway section will require a new road drainage system (catch basins, manholes and piping.)
   a) Prepare drainage report(s) to document the design of the new drainage systems. Include the following:
      (1) Executive Summary,
      (2) Introduction (including Project description, location, and vicinity maps),

(3) Listing of previously approved report(s) covering all or part of the drainage basin(s) in question,
(4) Description of existing conditions (map to appropriate scale, easement documents, etc.),
(5) Hydrology Analysis,
(6) Plan and written description of proposed improvements,
(7) Hydraulic Analysis of the existing and proposed conditions,
(8) Stream Stability and Scour Evaluations, where necessary,
(9) Description of required easements, if necessary,
(10) References, and
(11) Appendices.

Be familiar with all easement documents covering drainage systems downstream of the highway drainage systems. Coordinate the new system discharge with the downstream landowner(s), and the City and County of Honolulu (City.) Assess the impact(s) to the downstream properties, obtain the acceptance of the City and any other government agencies having jurisdiction, and prepare easement documents to cover the flowage rights of each outlet as deemed necessary by the Department.

b) The cutoff channel on the western side of the highway, between Station 138+50 (approximately) and Station 165+00, will require-additional right-of-way which the Department is in the process of acquiring. See Section II.E. If hydraulically possible, vegetation lining for the channel is preferred over rigid type lining, such as concrete. Install appropriate temporary lining to ensure proper growth of the vegetation and install appropriate BMP's to minimize sediment runoff until the vegetation growth is complete. Restore the natural vegetation on the west side of the channel.

The location of the channel outlet shall be determined by the Honouliuli stream hydraulic, coordination with the City Department of Parks and Recreation, the requirements of the permits, and the location of existing and new bridges.

If it is not feasible or permitted to outlet the channel on the west side, the contractor shall install a culvert across the

highway and continue the channel on the east side (within the existing right-of-way) to the Honouliuli stream. The cost of any improvements to the golf course such as cart bridges, etc to accommodate the channel shall be included in the channel work and will not be paid separately.

c) Do selective clear and grub around the existing bridges and dredge the stream to the grades shown in the record drawings, dated August 9, 1984, on file with the Department. Do re-landscaping as necessary. Coordinate the clearing, grubbing and re-landscape work with the City Department of Parks and Recreations and obtain all the necessary permits for this work.

d) Conduct stream flow (FEMA) and scour (bridge) analyses for the new pedestrian bridge over the Honouliuli stream.

e) Design pavement subdrains in accordance with the Department's "Pavement Design Manual".

f) Remove all existing siphon pipes (possibly transite material) crossing the highway including the segments outside the right-of-way line in its entirety and restore the grounds to its original conditions or better. Obtain the written approval of the landowners whose property contains segment of the siphon to be removed outside the right-of-way.

g) Complete and submit the "Permanent BMP Consideration Checklist and Project Record." See Attachments to these Technical Provisions for form.

e. Median Landscaping

1) General description of existing median landscaping
The existing median consists of Bermuda grass and a mix of groundcovers consisting of Wedelia and Golden Glory. Shrubs include Naupaka, Hibiscus, Star Jasmine, and Spider Lily. Trees include Manila Palms, Geiger Trees, Kalamona and Silver Buttonwood.

2) Scope of Improvements
With the exception of large banyan tree at Sta 158+00, the median shall be cleared and grubbed and re-landscaped. Add top soil mix to match the new curb height and slope to drain. Adjust existing drain inlets as necessary. Clearing of existing

plantings and the re-landscaping shall be implemented and completed with the incrementation of the road improvements. Existing plantings outside of active construction increments shall either be maintained in a healthy state or removed but shall not be allowed to perish in place. Guidelines for desired planting are as follows:

a) Median (back of curb to back of curb) less than six feet in width shall be covered with mounded cobblestone imprinted concrete with realistic color and shading. Submit sample for acceptance.
b) Median greater than 6 feet but less than 20 feet shall be planted with Manila Palms (use existing palms or similar size specimen) and Geiger Trees at 10 feet on center. A continuous triple row of alternating groupings of Spider Lily and naupaka shall be installed in the center of the median. Plantings shall not impair sight distance requirements.
c) Median strip greater than 20 feet shall be planted with 5 to 8 inch caliper field specimen Monkey pod trees 50 to 60 feet on center evenly positioned between the light standards. Trees shall not impair street light illumination. A continuous triple row of alternating groupings of Spider Lily and naupaka shall be installed in the center of the median.
d) All areas outside the shrub beds shall be planted with Seashore Paspalum grass.

f. Median Irrigation System

1) General Description of Existing Median Irrigation System

The irrigation within the median strip is divided into several independent systems with individual point of connection. The irrigation systems located between Sta 177+20 and Sta 247+00 use recycled water. The remaining systems use potable water.

In anticipation of the conversion to recycled water, the existing irrigation piping in the Laulaunui Street project, between Sta 100+50 to Sta 123+80, was upgraded to accommodate recycled water in the future. New valves suitable for recycled water were installed; however, the system was not reviewed by DOH for recycled water use.

2) Scope of Improvements

The existing irrigation systems between the project limits shall be demolished, removed, and replaced with a new irrigation

system(s.) The removal of the existing system(s) shall be phased and maintained until the existing plantings are removed.

The new irrigation system(s) between Sta 123+80 and Geiger Road shall be designed for recycled water conforming to the applicable provisions of Chapter 11-62, Hawaii Administrative Rules, and the DOH "Guideline for the Treatment and Use of Recycled Water, date May 15, 2002. Incorporate the as-built plans of the irrigation system between Sta 100+50 to Sta 123+80 in the plans submittal to DOH and make any retrofit requirements for recycled water use. If recycled water with adequate pressure is not available at the time of plan development, the Contractor shall make provisions to temporarily connect the irrigation system to the potable water system. Potable water connection(s) shall meet the requirements of BWS.

The irrigation piping between Geiger Road to the southern project limit shall remain connected to the existing system and will use potable water.

The new irrigation system shall provide 100% coverage of median and consist of new valves, concrete valve boxes, new Internet-enabled irrigation controllers in a locking stainless steel enclosure with central control capabilities accessible through any web browser, flow sensors, new sprinkler heads, and clean outs at appropriate intervals and at the end of the lines. Install Venturi type fertilizer injector in a stainless steel enclosure. Refurbish existing irrigation controllers and turn over to the State DOT.

g. Traffic Signals

1) General Description of Existing Traffic Signals:
There are four signalized intersections and one signalized pedestrian crossing within the Project limits. Each intersection is interconnected via an underground duct line system throughout the limits of work. Traffic signal systems generally consist of Types I, II, and III traffic signal standards, signal heads, pedestrian heads and pushbuttons, opticom receivers, controller, pullboxes, and wiring.

There are signal heads strung on temporary overhead wiring at the pedestrian crossing near the Child and Family Center.

2) Scope of Improvements
   a) Maintain operation of traffic signal system at all times during construction by phased construction, temporary installation or both.
   b) Replace the existing wire strung signal heads with a new underground permanent traffic signal installation for the pedestrian crossing at the Child and Family Center.
   c) Provide new traffic signal poles, standards, heads, wiring, duct lines, etc., for relocated system. Do not reuse removed materials. Return designated salvaged materials to the Department's designated baseyard. All traffic signal heads shall be LED type where applicable. Programmed visibility type shall match existing.
   d) Install flashing yellow beacon with appropriate signage where warranted.
   e) Provide longer arms on Types II and III traffic signal standards to accommodate widened road. Provide new concrete bases conforming to AASHTO Standard Specifications for Structural Supports.
   f) Relocate existing inter-connect duct line and pullboxes to the new utility corridor for power and communications cables. Provide new interconnect cable to run from existing controller to existing controller without splice.
   g) Provide ADA compliant pedestrian pushbuttons at all intersections. Replace all pushbuttons at intersection even if unaffected by road widening.
   h) Ensure opticom receivers are operational at all times. Do not splice Opticom cables. Provide new cables back to the controller.
   i) Provide new loop detectors where affected by pavement reconstruction. Provide temporary microwave or video detectors while loops are out of service, and remove the temporary microwave or video detectors at the end of the project.
   j) Include reprogramming of controllers where affected by the relocation of interconnect cable.
   k) Relocate street name signs and traffic signs onto new traffic signal standards.
   l) New pullboxes shall be metric type, composite type, with stencil, Type "B" minimum size. Use type "A" pull boxes for detector loop wiring.

m) New traffic signal ductline shall be PVC, Schedule 40, concrete encased, 36-inch minimum burial depth, with detectable warning tape in trench.

Prepare optimized signal timing plans and phasing diagram for each traffic system. Coordinate with the Engineer and the Traffic Signal and Technology Division, Department of Transportation Services.

3) Structural Criteria for Traffic Standards
   a) Basic Wind Speed: 105 mph
   b) Mean Recurrence Interval: 100 years

h. Highway Lighting

1) General Description of Existing Highway Lighting:
The existing street lighting system was constructed in 1979 through 1985 and has essentially remained unchanged, except for a stretch near Geiger Road, which was redone in 1994. The street lighting essentially consists of a metered service and underground 480-volt; 3-phase feeders run in the median via pullboxes. Each photocell-controlled street light is tapped to the feeders with in-line fuses. There are two service points for the street lighting within the Project limits. The 480-volt service at Farrington Highway and Ft. Weaver Road feeds street lighting from H-1 Freeway Station 204+50. The second 480-volt service at Station 290+50, across from HECO substation, serves street lights from Stations 204+50 to 291+64.

2) Scope of Improvements
   a) Replace all street light standards within the Project limits with aluminum standards, with internal vibration damper and breakaway transformer base. 35 feet mounting height is required. Do not reuse existing materials.
   b) Provide new underground duct lines and cables for the entire street lighting system within limits of work. Remove abandoned duct lines, cables, and pullboxes. Abandoned duct lines in the landscaped median shall remain in place. New pullboxes shall be metric, composite type, conforming to the Department's standards.
   c) Locate new street light standards to provide required illumination over traffic and pedestrian areas (including new pedestrian bridges.) Lighting criteria shall be 1.0 average maintained foot-candles at grade over paved areas

with 3.0 average/minimum uniformity ratio and 0.70 maintenance factor. Submit, at the 50% design stage, computer printout of representative layouts along project to validate lighting design conformance. Sample grid shall be no larger than 15 feet x 15 feet.

d) Reuse existing 480-volt service transformer, meter cabinet, and apparatus to serve new street lighting. Replace cables to limits of work.
e) Luminaire shall be semi-cutoff high-pressure sodium, 150 watt or 250 watt, photocell controlled, as required, "cobra head" conforming to the Department's specifications.
f) Due to community concerns, provide a new street light standard within 10 feet of the new mid-block crosswalk fronting the existing Family Center.
g) The existing highway lighting shall remain operational during construction.
h) Pullboxes shall be placed outside the drainage flow.
i) Splices in pullboxes shall be watertight.
j) Replace all non-State street light and wiring, if any, within the State right-of-way.
k) State owned street light replacement along Geiger and Iroquois Point Road shall be limited to the roadway reconstruction limits of work.

3) Structural Criteria for Street Lighting Standards
   a) Basic Wind Speed: 105 mph
   b) Mean Recurrence Interval: 100 years

i. Closed Circuit Traffic Camera System

1) General Description of Existing System:
There are no existing closed circuit TV ducts or cameras within the Project limits. A fiber optic duct line from Waipahu Street to Sta 123+80 was installed under the Laulaunui Street Project; however, the cable was not installed south of Laulaunui Street.

2) Scope of Improvements
   a) Provide motor driven, remote controlled, pole-mounted, CCTV cameras at five locations: Family Service Center, and the intersections of Aawa Drive, Renton Road, Kolowaka Drive, and Geiger Road. Cameras shall be capable of looking up and down Ft. Weaver Road.
   b) Provide a freestanding 332-controller cabinet at each CCTV camera location for CCTV equipment. Tap power to existing traffic signal system meter via a separate

breaker or provide a new meter and service where no adequate existing supply exists.

c) Provide CCTV hub/mux in 332 cabinet and pad near Karayan Street intersection with new meter and secondary service.

d) Provide fiber optic cables from Laulaunui Street to Geiger Road. See sketch attached to these technical provisions. Provide all fiber splices and terminations. Install fiber optic cables in dedicated duct with 3 minimum subducts.

e) Provide a new 2-inch fiber optic duct line (PVC Schedule 80) from Sta 123+80 to Geiger Road in the new utility corridor.

f) The new system shall be compatible with the City's CCTV system.

g) Submit CCTV drawings to the City & County of Honolulu DTS for review. City will determine exact location of CCTV cameras.

j. Temporary work required for incremental work: Design, install and remove all temporary work necessary to tie in a completed increment(s) to the existing or new highway. This work includes but is not limited to pavement striping and markers; traffic signs; street lighting wiring; traffic signal cables; drainage; and any other improvements necessary to make and keep the highway operational. The Department will consider the temporary work as included in the contract prices of the various contract items and will not pay for the temporary work separately.

k. Maintenance of Completed Increments: Maintain any completed increments opened for public use in accordance with Subsection 105.14-Maintenance of the Standard Specifications. The Department will consider this maintenance work as included in the contract prices for the various contract items and will not pay for this maintenance work separately.

l. Miscellaneous Work: The Contractor is responsible for all work necessary to complete the Project, even if the work is not described hereinabove or covered by the documents listed in paragraph II.L. Plans, Specifications, and Attachments or listed in the Proposal Schedule. The Department, at its sole discretion, may compensate the Contractor for work that is not reasonably inferred to be part of the Project requirements or for any Department directed changes.

m. Detail Breakdown of Contract Items: Prior to the start of construction, the Contractor is responsible for preparing a detailed breakdown of all contract items by increments and in smaller more measurable unit in a format accepted by the Department and for updating the breakdown as the design and construction progresses.

3. Design Support Services

a. Geotechnical Work: The Department retained the services of a geotechnical engineer to conduct a soils evaluation to derive the pavement designs which is documented in a Pavement Justification report. The Contractor shall include the pavement designs in the road widening design and may use the boring logs (included in the plans), in preparing the Contractor's design documents. The boring logs only depict soil conditions at the boring locations at the time of drilling. The Contractor shall retain a geotechnical engineer to assist in the interpretation of this information. The Department will not consider claims for differing site condition on this Project.

A copy of the following reports will be provided to each Contractor preparing a design and price proposal:

1) Geotechnical Field and laboratory Data Report Fort Weaver Road (Route 76) Widening Aawa Street to Geiger Road, Ewa, Oahu, Hawaii, June 2, 2004
2) Pavement Justification Report Fort Weaver Road (Route 76) Widening Aawa Drive to Geiger Road, Ewa, Oahu, Hawaii, July 16, 2004

Additional Geotechnical Work: At a minimum, retain the services of a geotechnical engineer to address geotechnical issues other than the pavement design such as the design criteria for bridge foundation and wall designs, street light and traffic standards, slope stability and for other purposes deemed necessary by the Contractor.

b. Topographic Survey: The Department will provide a copy of a topographic survey, dated March 2003, to reduce time and cost by the Contractor in producing the Design Documentation; however, the survey may not reflect changes in the topography after the survey was completed. An electronic file of the topographic survey will be provided to each Contractor preparing a design and price proposal.

The Contractor may also use this topographic survey in the design of the project, however, it shall be done at Contractor's own risk and the Contractor shall not be entitled to any claims that are related to

changed features or missing features in the Department's furnished topographic survey.

Additional Surveys: At a minimum, obtain additional topographic survey that may be required for the design of the bridge structures, offsite drainage studies, stream studies, permitting, and for other purposes deemed necessary by the Contractor.

c. Survey Mapping and Written Documentation: Retain the services of a licensed surveyor to prepare mapping and written documentation for easements and construction parcels, utility corridor maps and metes and bounds descriptions, etc. that may be required for the Project.

4. Permits and Clearances:

The Department has processed the following documents for the Project, which can be viewed and or borrowed for informational purposes from the Department Project Manager's office at 601 Kamokila Boulevard, Room 688. Call Mr. Emilio Barroga at 692-7546 to check for availability. Contractors borrowing these documents shall return the document to the Department within two working days.

a. State of Hawaii Chapter 343 Environmental Assessment	August 23, 2003
b. Section 106 Consultations	August 23, 2003 June 2005
c. NEPA Categorical Exclusion	September 9, 2003
d. Acoustic Study	June 2003
e. Coastal Zone Management Federal Consistency Determination (Phase 1)	June 2004

Prepare, process and obtain the approval of the permits listed herein below. The Department will consider permit fees as included in the contract prices for the various contract items and will not pay for permit fees separately.

a. US Army Corps of Engineers (Section 404), Water Quality Certification (Section 401), and SCAP permits for the Honouliuli Bridge work.
b. NPDES permits for discharge of storm water associated with construction activities into the Honouliuli stream, Pearl Harbor West Loch, Koloi Drainage, and the Gentry Ewa East Makai Sump.
c. NPDES permits for discharge of effluent from dewatering operations.
d. Coast Zone Federal Consistency Determination,
e. Work within City and County right-of-way,

f. Erosion Control Plan(s) per City and County of Honolulu's "Rules Relating to Soils Erosion Standards and Guidelines for the Department's Review and Approval.
g. Noise variance permit for nighttime work,
h. Other permits as required.

5. Codes and Design Standards

At a minimum, design and construct all permanent and temporary features of the project according to the following Codes and Design Standards. Other Codes, Design Standards, or Rules and Regulations not listed may also apply to the Project and it shall be the sole responsibility of the Contractor to adhere to the appropriate documents.

a. A policy on Geometric Design for Highways and Streets, 2004 edition, by AASHTO (Green Book),
b. AASHTO LRFD Bridge Design Specifications, US Units (2004) and subsequent interim revisions,
c. Hawaii Statewide Uniform Design Manual for Streets and Highways, State Highway Division, October 1980
d. American Disabilities Act – ADAAG reference manual, Designing Sidewalks and Trails for Access Part I and II, 7/99,
e. Roadside Design Guide, AASHTO 2002,
f. Guide for the Development of Bicycle facilities, AASHTO, 1999
g. NCHRP Report 350,
h. Manual on Uniform Traffic Control Devices, 2003 edition,
i. Americans with Disabilities Act,
j. Design Criteria for Highway Drainage, SDOT Highways Division, dated 3/16/04,
k. New Development and Significant Redevelopment BMP Manual, Volume II, Hawaii Department of Transportation, December 2000"
l. Accommodation and Installation of Utilities on State Highway and Federal Aid County Highway, Hawaii Administrative Rules, Title 19, Chapter 105
m. Evaluating Scour at Bridge, Second Edition, HEC #18, U.S. Department of Transportation Federal Highway Administration, April 1993,
n. Stream Stability at Highway Structures, HEC #20, U.S. Department of Transportation Federal Highway Administration,
o. Applicable Hydraulic Engineer Circulars (HEC), U.S. Department of Transportation, Federal Highway Administration,
p. Pavement Design Manual by the Materials Testing and Research Branch, Highways Division, Department of Transportation, March 2002.
q. Applicable sections of 23 CFR 650.
r. National Electrical Code, 2002 Edition, NFPA 70.

s. An Informational Guide for Roadway Lighting, AASHTO, 1984.
t. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, 4th Edition, 2001, including Subsequent Interim Revisions.
u. State of Highway, Department of Transportation, Bridge Design Criteria, February 14, 2005 (HWY-DB 2.6843).
v. Updated Operating and Inventory Rating Using Load Factor Design (LFD) (HWY-DB 2.6272).
w. Required Data for Consultant Design Projects or Design-Built Project, dated November 24, 1999, HDOT, Bridge.
x. Basic Wind Speed: 105 mph.
y. Mean Recurrence Interval: 100 years.
z. Standard for Fiber Optic Outside Plant Communications Cable, ANSI/ICEA S-87-640-1992.
aa. EIA/TIA-492AAA-1989, Detail Specification for 62.5 um core diameter 125um cladding diameter Class 1a multi-mode, graded index optical wave-guide fibers.
bb. TIA/EIA-758 Customer-Owned Outside Plant Telecommunications Cabling Standard, April 1999
cc. Technical Guide for Installation Information Infrastructure Architecture Interim August 2003, Department of the Army, United States Army Information Systems Engineering Command
dd. (I3A), Interim August 2003, Department of the Army, United States Army Information Systems Engineering Command
ee. Water System Standards, Board of Water Supply, 2002
ff. Standard Specifications and Details, Public Works Construction, September 1986
gg. Water System Construction Requirements, Utilities Department, Navy Public Works Center, Pearl Harbor, HI
hh. Guidelines for the Treatment and Use of Recycled Water, Hawaii State Department of Health, May 15, 2002
ii. Any other applicable other codes and standards typically used for design of highways projects.

D. THE DEPARTMENT REVIEW OF CONSTRUCTION DOCUMENTS:

Prior to commencing with the construction documents, meet with the Department's engineers to confirm the drawing requirements such as sheet size and content of drawings and special provision requirements.

If the Project is done in increments, the construction shop drawings for each increment shall be complete and "stand alone." Cross referencing between increment plans will not be allowed.

The Special Provisions which are part of the Request for Proposal is the specifications governing the construction of the Project. The Contractor shall add to or modify the sections in Division 200 to 700 to suit the final design. If there are any additions or modifications, submit a compilation of RFP Special Provisions, Proposal, Contract and Bond and those changes with the appropriate submittal.

The Department will not pay claims for any item that the Department may have reviewed in the Contractor's submittals, that may have contained design errors or omissions, changes, scheduling conflicts, improper material, or other conflicting information that the Department did not comment on or accepted in previous submittals.

1 Submittal Format

a. Submit CAD files for construction drawings in Microstation using the Protocol for Line Weight, Color, Level, Size, Grid Reference, Standard Units, Fonts, and Symbology for Microstation Produced Contract Plans ("State Drafting Protocol"), dated December 1999 on CD ROM Disk or 3.5-inch high density diskettes. CAD files are required for Final Submittal Only.
b. All other electronic files shall be usable in Microsoft Word 2000 and Microsoft Excel 2000 on 3.5-inch high-density diskettes.
c. Submit Design and Construction schedules in Primavera Systems' Suretrak Project Manager, or Microsoft Project.
d. Print hardcopies on 20 pound bond and bind.
e. Detailed cost estimates shall follow the Department's format used for Federal Aid projects.
f. Plot tracings on 100% rag vellums.

2. Copies per Submittal to the Department

a. Submit three copies of engineer stamped full size construction drawing sheets and 20 copies of engineer stamped half-size construction drawings,
b. Five sets of calculations,
c. Five copies of permit applications,
d. 20 sets of design reports,
e. 20 sets of detailed cost estimates,
f. 20 sets of special provisions specifications,
g. 20 sets of legible Design and Construction schedule plots on construction drawing size (or smaller) sheets, and
h. CD-ROM or one set of 3.5-inch High Density diskettes containing CAD and other electronic files.

Make the necessary submittals to other government agencies and utility companies and secure the required acceptances independent of the Department's review and acceptance.

3. Design Submittal and Review by the Department
   The Department will review all scheduled submittals within 28 calendar days after the Department notifies the Contractor in writing that a complete submittal was received as determined by the Department. In the event a resubmittal is required due to incompleteness as determined by the Department, the Department will be afforded an additional 28 calendar days to review any resubmittals. The Project's completion time will not be extended due to any review time required by the Department for resubmittals due to incompleteness. Scheduled submittals shall be as follows:
   a. 50% Design Submittal: Develop these preliminary plans to clearly document the complete scope of improvements and to allow the Contractor to determine the permitting, plan acceptances, and construction parcels necessary to accomplish the work.
      1) Contractor's incrementation Plan,
      2) Prefinal Structural Design Report,
      3) Prefinal Drainage report,
      4) Bridge Scour Reports,
      5) Site specific best management plan (BMP), and details,
      6) Prefinal Geotechnical Report, as required,
      7) Basis for Design for elements not covered by a specific report,
      8) Preliminary construction drawings for all of the highway improvements, including traffic control plans,
      9) Request for Utility Agreement (See Attachments to these Technical Provisions for form), Utility Relocation plan(s) and estimate(s),
      10) Highway lighting and voltage drop calculations,
      11) Construction parcel requirements,
      12) Log of submittals made to other government agencies and utility companies and status of coordination and approvals,
      13) Log of permit applications to be made in conjunction with the work proposed and copies of draft permit applications,
      14) The Progress schedules shall be prepared in accordance with Section 108.03-Progress Schedules of the Special Provisions and any activities including non-construction

activities with durations exceeding one month shall be broken into smaller sub-activities,
15) Schedule and copies of public announcements,
16) New special provisions section (Division 200-700), as applicable
17) Quality Control and Assurance Plan, and
18) Detailed breakdown of contract payment items with schedule of values and theoretical quantities, broken down by increments and in smaller more measurable units.

b. 100% Design Submittal (Final Design)
1) Design and construction phasing schedule (updated as necessary),
2) Construction shop drawings,
3) Finalized calculations,
4) Finalized cost estimate,
5) Finalized Geotechnical Report,
6) Finalized Drainage Report,
7) Compilation of RFP Special Provisions, Proposal, Contract and Bond and accepted additions and modifications to Division 200 to 700.
8) Completed "Permanent BMP Consideration Checklist and Project Record." (See Attachments to these Technical Provisions for form.)
9) Finalized "Request for Utility Agreement" document,
10) Finalized Easement documentation, and
11) Tabulation of how each comment from the 50% submittal was addressed,
12) CAD files for construction drawings.

c. End of Job Design Submittal. At the completion of the construction work, furnish metes and bounds description of the utility corridor for power and communication cables; as-built vellum drawings prepared in accordance with Special Provisions Section 108.13(B)(2) As-Built Drawing and with the State Drafting Protocol; and any other submittals to complete the design and construction of the Project.

E. THE DEPARTMENT'S ACQUISITION OF ADDITONAL REAL PROPERTY

The Contractor is advised that at the time of advertisement for this Project, the Department is still in the process of acquiring additional real property from

various landowners. It is anticipated that rentals, acquisitions or at minimum, right-of-entry for construction will be secured by August 1, 2006. Construction NTP will not be issued earlier than June 1, 2006 even if construction shop drawings have been accepted and applicable permits secured by the Contractor as described in Section II.C.4. No claims will be considered for the Department's imposed delay.

F. THE DEPARTMENT'S PROCEDURE IN PROCESSING UTILTY AGREEMENTS

1. Submittal Format
   a. Request for Utility Agreement with appropriate fields filled out. See Attachments to these Technical Provisions for form.
   b. Color-coded plans
   c. Cost Estimates. See Attachments to these Technical Provisions for form.
2. Number of copies: Seven (7) copies
3. Timeframe for processing <u>scheduled</u> Utility Agreement.
   The processing of a Utility Agreement involves the Department, the State Attorney General's office (AG), and the Utility Company. The following is an approximate timetable for processing a Utility Agreement from the date the Department notifies the Contractor in writing that a scheduled and complete "Request for Utility Agreement" was received as determined by the Department.
   a. Processing the agreement by the Department and review and approval by the AG: 60 calendar days
   b. Review and acceptance by Utility Company 60 calendar days
   c. Department's completing process 10 calendar days

The Project's completion time will not be extended if a Utility Agreement is not processed to completion within the approximate time provided hereinabove unless the Contractor states in his transmittal, with proper documentation, that the Agreement is a critical path item. The Contractor will not be entitled to additional compensation should the process go beyond the timeframe provided hereinabove.

G. THE DEPARTMENT'S PROCEDURE IN PROCESSING CONSTRUCTION PARCEL REQUEST

1. Submittal Format:
   a. Construction parcel delineated on the Rights-of-Way Map
   b. State the use of the parcel, the start date, and the duration the parcel will be used.
2. Number of copies: One (1) copy
3. Timeframe for processing <u>scheduled</u> Construction Parcel request

The processing of a Construction Parcel involves obtaining an appraisal, title search, and land owner's approval (negotiated or condemnation.) The following is an approximate timetable for processing a construction parcel from the date the Department notifies the Contractor, in writing, that a complete submittal (as determined by the Department) was received by the Department.

a. Title search, appraisal and prepare documentation, all reviewed by the AG office: 60 to 120 calendar days
b. Owner's approval (no challenge) 30 calendar days
   Owner's approval (condemnation) 150 calendar days

The Project's completion time will not be extended if the right-of-entry is not obtained within the approximate time provided hereinabove unless the Contractor states in his transmittal, with proper documentation, that the right-of-entry is a critical path item. The Contractor will not be entitled to additional compensation should the process go beyond the timeframe provided hereinabove.

H. THE DEPARTMENT'S PROCEDURE IN PROCESSING DRAINAGE EASEMENTS

1. Submittal Format:
   Drainage easement delineated on file plan and Land Court maps
2. Number of copies: One (1) copy
3. Timeframe for processing Easements
   The processing of a Construction Parcel involves obtaining an appraisal, title search, and land owner's approval (negotiated or condemnation.) The following is an approximate timetable for processing a construction parcel from the date the Department notifies the Contractor in writing that a scheduled and complete submittal for a construction parcel was received as determined by the Department.

a. Title search, appraisal and other documentation: 60 to 120 calendar days
b. Review and approval by AG's office 45 calendar days
c. Owner's approval (no challenge) 30 calendar days
   Owner's approval (condemnation) 150 calendar days

I. CONSTRUCTION WORK DURING DESIGN

If the Department determines that the construction drawings and other design documents related to an increment have been sufficiently addressed after the review of the 100% submittal, the Department at its sole discretion may authorize the Contractor to start construction of that increment in writing.

1 Submit copies of approved applicable permits to the Department prior to start of any construction work,
2 Construction parcel, if required,
3 Have all Best Management Practice measures in place,
4 Obtain written acceptance from all utility companies,
5 Obtain written acceptance from the City and County of Honolulu where work is conducted within City Right-of-Way,
6 Establish the Field Office and utility connections, and
7 Submit to the Department and obtain acceptance of all proposed materials to be used.

The Department may delay the Notice to Proceed for construction of any increment affected by referenced rights-of-way acquisition even if all of the above items have been satisfactorily completed by the Contractor. No claim for this State imposed delay will be considered.

Construct the improvements in accordance with the accepted engineered construction drawings and specifications. Provide revised drawings and applicable calculations to the Department for any revisions or deviations from the accepted construction drawings for review and acceptance.

Provide copies of correspondence between the Contractor's designers and the Contractor that pertains to any corrections or clarifications to the construction drawings to the Department.

J. INSURANCE REQUIREMENTS

See Subsection 107.29-Insurance Requirements.

K. PRECEDENCE OF CONTRACT DOCUMENTS

See Subsection 105.04-Interpretation of the Contract Documents; Drawings

L. PLANS, SPECIFICATIONS, AND ATTACHMENTS

In addition to the items covered in this Technical Provisions and attachments, use the following for the design and preparation of Construction Drawings, Project Specifications, and Detailed breakdown of contract items.

State of Hawaii, Department of Transportation Highways
Division STANDARD PLAN, 1986 and subsequent revisions

All applicable Details	Check with the Department's Highway Traffic Branch Design Section, Hydraulics Design Section, and Bridge

Design Section for revisions at Project award.

Request for Proposal Plans, dated April 1, 2005

1	Title Sheet
2	Standard Plans Summary
3 – 8	General Notes and Legend
9 – 12	Utility Notes
13 – 17	Typical Road Sections
18	Bus Pad Pavement Section and Railroad Sections
19	Bus Stop Details
20 – 25	Roadway Plans
26	Drainage General Site Plan
27 – 38	Drainage Plans
39 – 44	Utility Plans
45 – 50	Guardrail Details
51	Work Zone Signing Plan, Notes & Details
52 – 53	Portable Concrete Barrier Details
54 – 56	Bus Shelter Details
57 – 64	Boring Logs

Hawaii Standard Specifications for Road, Bridge, and Public Works Construction

All Applicable Section	Use and modify all applicable sections from the 1994 "Hawaii Standard Specifications for Road, Bridge, and Public Works Construction" and sections from the Special Provisions 200-700 series that become applicable. Latest version of Special Provisions sections is available from the Department's website.

M. CONTRACTOR QUALITY CONTROL

Provide quality control of materials incorporated into the Project. Perform all necessary acceptance sampling and testing with verification by the Department as outlined in the Department's "Quality Assurance Manual for Materials, October 2001."

Prepare and submit a Quality Control Plan, which at a minimum shall provide an organizational chart identifying the personnel, the name of the laboratory(s), and the flow chart of the documentation that will be required to comply with the requirements of aforesaid manual. The Department will consider the cost of the Contractor's quality control work as included in the contract prices for the various contract items and will not pay for Contractor's quality control work separately.

N. PUBLIC RELATIONS AND PUBLIC COMPLAINTS

When directed by the Engineer, investigate and take appropriate actions to resolve public complaints resulting from the design and construction in a timely manner.

Conduct one Public Informational Meeting (PIM) during design to provide project status and information to the community. Conduct a second PIM just prior to construction to advise the community of temporary construction impacts and schedule. The Department will coordinate and accept the scheduling of these PIMs. The Department will consider the cost of these PIMs as included in the contract prices for the various contract items and will not pay for the cost of these PIMs separately.

If required and as solely determined by the Department, any additional PIMs conducted by the Contractor may be considered as extra work and compensable by change order. The State will not pay for the cost Public meeting(s) associated with the permits separately, if required. The Department will consider the cost of the public meeting(s) associated with the permits as included in the contract prices for the various contract pay items.

For each meeting, provide technical assistance, data, and information necessary to produce display boards, printed materials, video graphics, and other forms of information necessary for exchanging dialogue with the public. The Contractor shall also provide the necessary staffing and video equipment to present the information. Also find a suitable location to conduct the PIM and make arrangements to reserve the meeting facility. Submit a newspaper notice to the Department for acceptance, and publish the notice in the Honolulu Star Bulletin and the Honolulu Advertiser.

Publish the notice no later than 14 calendar days prior to the PIM date. The Department will be given 14 calendar days to review the public notice. The Department may at its own discretion, issue a press release to the media.

The Department will provide aid in the introduction of the Contractor to the public, aid in facilitating the meeting, and give general information about the project. The Contractor's staff will be available to provide more project specific information and technical information as needed to effectively present all aspects of the project.

In addition to the general public attending the PIM, contact the organizations from a list provided by the Department.

Prepare a list of attendees and meeting minutes. Record the meeting minutes accurately on all discussions in the PIM and identify all action items and

responsible parties for each action item. Provide 20 copies of the list of attendees and meeting minutes shall be provided to the Department within seven calendar days from the PIM date.

O. CONTRACT TIME

The Contract Time shall be either a maximum of 730 calendar days from date of Design Notice to Proceed to completion of all construction work items, or the duration shown in the Project Schedule submitted as part of the Design Documentation Requirements in Section IV.A.1. (g) plus 30 calendar days, whichever is less. For any work beyond the established Contract Time, the Contractor will be subject to Liquidated Damages in accordance with Subsection 108.09-Liquidated Damages for Contractor's Delays of the Special Provisions.

III. QUALIFICATIONS PROPOSAL

Each Contractor interested in being considered for this project is required to submit a Qualification Proposal no later than the date and time specified in the Request for Proposals, at the State Contracts Office, 869 Punchbowl Street, Room 105, Honolulu, Hawaii, 96813.

The Department has scheduled a mandatory pre-qualifications proposal meeting for all interested Contractors at the time, date, and location specified in the Request for Proposals. At a minimum, a representative of the prime contractor shall attend this meeting. The Department highly recommends that representative(s) from the prime firms making up the contractor-design team attend this meeting. The Department will disqualify any Contractor from submitting a proposal for this Project who does not attend this meeting. The purpose of this meeting will be to present a summary of the information contained in the technical provisions related to the Project scope of work and requirements: and to the proposal, selection and award process. The Department will give all attendees an opportunity to pose any questions to the Department. Meeting minutes will be taken and these minutes will be issued as an addendum before the qualification proposals are due.

A. QUALIFICATION PROPOSAL ITEMS

The Qualification Proposal shall contain the following:

1. Contractor, key subcontractors and key consultants' experience and qualifications relevant to the Project and to Design Build process.
2. Past performance on highway projects of similar scope. Provide a list of specific projects, owner, and client contacts. Indicate which projects was Design Build.

3. Capacity to accomplish the work in the required time (Contractor's proposed staffing plan showing the organizational structure proposed to accomplish the management, design and permitting, construction, quality control, and administrative services) and listing of current projects and future projects (for the next two years beginning June 2005) which may require some of the contractor's resources to be allocated to the listed projects.
4. Contractor's understanding of the project scope of work and the Contractor's proposed approach to accomplishing the work;
5. Submit a Draft Quality Control Plan, which at a minimum shall provide an organizational chart identifying the personnel, the name of the laboratory(s), and the flow chart of the documentation that will be required to comply with the requirements of Department's Quality Assurance Manual for Materials, October 2001.;
6. Demonstration of financial capability. This may include a certification or letter from a financial institution attesting that the contractor-designer team is financially capable of undertaking the project. If you are including balance sheets, consolidated statements of income or consolidated statements of cashflow, please enclose one copy of these documents in a separate sealed envelope marked "CONFIDENTIAL". The financial documents in the separate sealed envelope will not be counted towards the 100 page qualification proposal limitation.

Submit 10 copies of the Qualification Proposal in a bound volume on 8 ½ "x 11" letter size paper. Drawings, charts, or exhibits may be of larger size up to 11" x 17" but shall be folded down to letter size. To facilitate the Department's review, tab each of the five items above clearly and include a Table of Contents.

In addition to the items contained in the six categories above, a completed CONFLICT OF INTEREST (COI) DISCLOSURE FORM shall be included as a separate tabbed appendix to the Qualification Proposal. A blank form is provided after the Technical Provisions. Failure to submit the completed COI Disclosure Forms by the General Contractor and all of its subcontractors (i.e. engineering, environmental, or architectural consultants) will automatically designate the proposer as non-responsive to this solicitation. All potential conflicts of interest must be disclosed in the COI Disclosure Form. The proposer may include a conflict mitigation plan as described in the COI disclosure form. If the proposer was aware of an organizational COI as defined in the COI form prior to award of the contract and did not disclose the conflict or potential COI to the Department, the Department may automatically disqualify the proposer from further consideration, or may terminate the contract for default if discovery is made after contract execution. The separately sealed financial documents, the COI forms and tabs will not count against the Qualification Proposal 100-page limitation.

The COI forms shall be used throughout the term of the contract to disclose any conflicts that may arise (i.e. new contract awards, replacement of subcontractors/subconsultants, etc.).

B. QUALIFICATION PROPOSAL EVALUATION CRITERIA

The Department's Review Committee will review the Qualification Proposal and a Qualification Score will be based on the following criteria items tabulated below:

	CRITERIA ITEM	MAXIMUM POINTS	ACTUAL POINTS
1	Experience and qualifications of the contractor's staff (engineers and construction members to be assigned to the Project), relevant to the Project and to the Design Build process.	30	
2	Past performance on highway projects of similar scope for public agencies or private industry. Provide a list of specific project titles, project owners, and contacts. Indicate which projects were Design Build.	25	
3	Capacity to accomplish the work in the required time (Contractor's proposed staffing plan showing the organizational structure proposed to accomplish the management, design and permitting, construction, quality control, and administrative services.) Show a listing of current projects or future projects (for the next two years beginning June 2005) which may require some of the contractor's resources to be allocated to the listed projects.	20	
4	Contractor's understanding of the project scope of work and the Contractor's proposed approach to accomplishing the work	15	
5	Submit a Draft Quality Control Plan, which at a minimum shall provide an organizational chart identifying the personnel, the name of the laboratory(s), and the flow chart of the documentation that will be required to comply with the requirements of Department's Quality Assurance Manual for Materials, October 2001.	5	

6	Demonstration of financial capability. This may include a certification or letter from a financial institution attesting that the contractor-designer team is financially capable of undertaking the project. If you are including balance sheets, consolidated statements of income or consolidated statements of cashflow, please enclose one copy of these documents in a separate sealed envelope marked "CONFIDENTIAL". The financial documents in the separate sealed envelope will not be counted towards the 100 page qualification proposal limitation	5	
	QUALIFICATION PROPOSAL SCORE:		_____ pts

Total Qualification Points Possible = 100 Points

The total number of pages including all introductory letters, evaluation criteria items, exhibits, and references shall not exceed 100 pages. Tabs will not be counted as a page. A penalty of one point per page will be deducted from the total score if the number of pages exceeds 100 pages total. If double sided pages are used, each printed face will count as one page. (Example, 2 sheets of paper with one sheet with double sided print and one sheet with single sided print will count as three pages.) All pages shall be numbered.

All information required for the Department to properly evaluate the proposers for each criteria item contained in six categories shown in the table on pages TP-29 and TP-30 MUST be submitted in the Qualifications Submittal. Failure to provide complete information in the Qualification Proposal will automatically result in a reduced score for a given Criteria Item where complete information is not provided. If no information is provided, this will automatically result in a score of zero points or the Department, at its sole discretion, deems the Qualifications Submittal as non responsive if the information submitted is incomplete and the Department is unable to assign a credible Qualification Proposal score based on an incomplete submittal.

The maximum total score is 100. Any score of 60 or less will be considered as non-qualified for the project.

In the event only one qualified Contractor remains after all Qualification Proposals are evaluated, the Department reserves the right to cancel this Request for Proposals and re-advertise the project.

C. DETERMINATION OF TOP THREE QUALIFIED CONTRACTORS

The Department will use the three highest Qualification Proposal Total Score determined above to determine the top three qualified Contractors. In the event of a tie, the Contractor with the highest sum of criteria item nos. 3 to 4 will prevail.

For Example:

Contractor	Qualifications Proposal Total Score	Total Sum of 3 to 4	Rank
Contractor A	75	30	3*
Contractor B	75	25	4
Contractor C	78	30	2*
Contractor D	80	35	1*
*Contractors invited to submit Design and Price Proposal			

When the Department's determination of the top three qualified Contractors is made, the Department will notify the selected and non-selected firms in writing. The Department will invite the top three qualified Contractors to submit a Design and Price Proposal as described in Section IV below.

IV. DESIGN AND PRICE PROPOSAL

The Design and Price Proposal shall consist of design documentation and price, to be received no later than the date and time specified in the Request of Proposals at the Department's Contracts Office, 869 Punchbowl Street, Room 105, Honolulu, Hawaii, 96813.

By submitting a Design and Price Proposal, the Contractor acknowledges the Contractor's team is fully qualified to complete the Project and that the allocated time was sufficient to collect the necessary information and to prepare designs to base its price proposal. There will be no claims due to "insufficient time to collect information and prepare studies and designs."

The Department will accept Request for Information related to preparing the Design Documents up to 30 calendar days prior to the proposal (Design and Price Proposal) submittal date. All requests for information (RFI) will be received by the Department in writing, by FAX, letter, or email by 4:00pm of this date. RFI's shall be emailed concurrently to the following addresses: emilio.barroga@hawaii.gov, and ken@knconsultingservices.com or faxed concurrently to the following numbers: 692-7555 and 941-8828, attention: Emilio Barroga and Kenneth Nagai, respectively. No verbal inquiries will be accepted by the Department. After this date, the Contractors shall finish their design documentation according to their best understanding of the project given

all information received in this Request for Proposal Documents, in the mandatory pre- qualifications proposal meeting, and any addenda documents received to that point.

Once the Design and Price Proposal is submitted to the State, the Department becomes the owner of the Design Documentations. After the winning Contractor is selected and the project is awarded, the Department may disclose desirable elements from the second ranked and third ranked designs to the winning Contractor.

A. DESIGN DOCUMENTATION

1. Design Documentation Requirements

The Design Documentation shall be done in sufficient detail to effectively present to the Department the scope of design and construction that is being priced and shall contain the following, at a minimum:

a. Contractor's proposed Project Incrementation Plan. Except for utility relocation(s), each increment shall result in a completed highway facilities that is operational in every aspect typical of any active highway and can be opened for use by the traveling public.
b. 20 or 40 scale drawings showing the roadway widening including approximate grading limits, drainage systems, utility corridor for power and communications cables, utility removal and relocation, highway lighting, and traffic control. Other drawings at appropriate scales shall include structural plans for bridges and retaining wall(s.)
c. Preliminary drainage report(s) covering the proposed drainage systems;
d. Sample color-coded plan and cost estimate for one of the utility relocation;
e. Listing of anticipated permits and clearances to be obtained;
f. Contractor's quality control plan and proposed list of materials to be used for construction of the various elements; and
g. Project Schedule – A critical path method schedule showing the sequence of design, permitting and construction work leading to the completion of each increment and the Project. The schedule shall indicate the total number of calendar days from design NTP to Project completion. The number of calendar days derived from this Schedule plus 30 calendar days, if less than 730 calendar days, will be the Proposer's Contract time. See Section II.O. Contract Time.
The schedule shall show a separate path for each increment outlining the sequence of design, permitting and construction work leading to the completion of an increment and the relationship of that increment

to other increments. As a minimum, this schedule shall include the following milestones with sufficient documentation:

(1) Geotechnical Investigation and topographic survey,
(2) 50% Design Submittal,
(3) 100% Design Submittal,
(4) The Department design reviews and acceptance milestones as outlined in Section II.D,
(5) The Department's anticipated date of real property acquisition outlined in Section II. E,
(6) Coordination with utility companies or agencies and the Department's processing of Utility Agreement(s) as outlined in Section II.F,
(7) Procurement of construction parcels as outlined in Section II.G.
(8) Coordination with government agencies,
(9) Permitting submittals and approvals,
(10) Start of Construction,
(11) Sequencing any activity that relates to a contract pay item,
(12) Increment completion, and operational and available for public use,
(13) End of Job Design Submittals, and
(14) Completion of All Work Items.

2. Design Documentation Submittal

The submittal shall contain the following:

a. 10 bounds sets of drawings,
b. Three bound sets of preliminary drainage report(s),
c. 10 copies of a listing of anticipated permits and clearances to be obtained,
d. 10 plots of the Project Schedule neatly folded to 8 ½" x 11" size, and
e. 10 bound sets of the Contractor's quality control plan and proposed materials list.

3. Evaluation Criteria for Design Documentation

	CRITERIA ITEM	**MAX POINTS**	**ACTUAL POINTS**
1	Expediency of design and construction as indicated by the Project Incrementation Plan and Schedule submitted as part of the Design Documentation, Section IV.A.1.(e)	35	

2	Design documentation that demonstrates a thorough understanding of the drainage requirements. Conceptual plans of the drainage systems and the preliminary drainage report(s) covering the proposed drainage systems will be the primary basis for this evaluation.	25	
3	Design documentation that demonstrates a thorough understanding of the utility corridor for power and communications cables, utility relocation and removal requirements. Conceptual plans of the utility corridor and a sample color-coded plan and cost estimate for one of the utility relocation will be the primary basis for this evaluation.	20	
4	Design documentation that develops a road widening plan with the least impact to the existing road side landscaping.	5	
5	Aesthetic design of Pedestrian bridges	5	
6	Traffic management plans that minimize disruption to the vehicular traffic during construction. The handling of pedestrian traffic and the bus stops will be subfactors in this evaluation.	10	

DESIGN DOCUMENTATION SCORE: _____Points

Total Design Documentation Points Possible = 100 Points

4. Interviews with Contractors

The Department, at its sole discretion, may schedule a separate interview with each Contractor after the Design Proposals are reviewed but before the Priced Proposals are opened. These interviews will be held to promote understanding of the Department's requirements and the Contractor's design proposal and to facilitate the Department's evaluation of design proposal taking into consideration the criteria for design documentation provided hereinbefore.

Any substantial oral clarification by the Contractor shall be reduced to writing by the Contractor. The Department will consider all information presented in the interview together with the Design Proposal before determining a final score for Design Proposal.

The winning Contractor will be expected to incorporate into their design and construction, any clarifications presented in this interview that were not clearly reflected in the Design Proposal. The Department will take meeting minutes and will incorporate these meeting minutes and any written clarification offered by the Contractor into the design build contract documents.

The Contractor shall be permitted to submit a new proposal or amend those submitted if, and only if, the Department issues an addendum following these interviews.

The Department will limit each interview to 60 minutes maximum. The Department will contact each Contractor to set the final time, date, and location of the interview.

B. PRICE PROPOSAL

1. Price Proposal Items

The Project is a design build project to be priced for a total lump sum price plus force account work items. The itemized lump sum prices in the Proposal Schedule are intended principally to serve as a guide in determining and comparing the price proposals. The Schedule may not include all units of work traditionally itemized in other HDOT projects. It is the responsibility of the Contractor to price the total scope of work necessary to complete the Project and to include the costs of any work items, not listed in the schedule, in the various lump sump prices contained in the Proposal Schedule.

The Contractor shall submit a Price Proposal, which shall consist of a completed Proposal Schedule, in a sealed envelope that is separate from the Design Documentation. The Contractor shall clearly mark the completed Price Proposal as follows:

"PRICE PROPOSAL
For
Fort Weaver Road Widening, Vicinity of Aawa Drive to Geiger Road
Project No. CMAQ-076-1(9)

Submitted by

Name of Contractor"

The Department will consider this Price Proposal to be the Contractor's Best and Final offer unless the Department issues addendum(s) to the Request for Proposal after receiving the Design and Price Proposals.

2. Price Score

The maximum score for the Price Proposal is 100 points. The envelopes containing the sealed Price Proposal will be opened and the Department's Review Committee will determine a Price Score as follows:

$$\text{Price Score:} \quad \frac{\text{100 points x Lowest Price Proposal Amount}}{\text{Price Proposal amount of any given Contractor}}$$

The score will be rounded to the nearest tenth of a point. The Department will round any score of 0.05 or greater to the next higher tenth of a point.

Example:	Contractor	Bid Amount
	Contractor A	$32,400,000
	Contractor C	$31,200,000
	Contractor D	$33,000,000

Calculation of Price Score:

$$\text{Contractor C} = \frac{100 \times 31{,}200{,}000}{31.200{,}000} = 100 \text{ points (low bid price)}$$

$$\text{Contractor A} = \frac{100 \times 31{,}200{,}000}{32{,}400{,}000} = 96.3 \text{ points}$$

$$\text{Contractor D} = \frac{100 \times 31{,}200{,}000}{33{,}000{,}000} = 94.5 \text{ points}$$

C. DETERMINATION OF PROJECT AWARD AND CONTRACT EXECUTION

The project will be awarded to the Contractor with the highest total score of the Design Documentation and the Price Proposal scores. The maximum Design

Documentation score is 100 points and the maximum Price Proposal score is 100 points; therefore, the highest possible total score is 200 points. The award will be made after the Department's Review Committee determines the Design Documentation and Price Proposal scores for the three Contractor teams.

Example of score tabulation

	Design Documentation score (100 point maximum)	Price Proposal score (100 point maximum)	Total	Rank
Contractor A	85	96.3	181.3	1*
Contractor C	75	100	175.0	2
Contractor D	80	94.5	174.5	3

* Apparent winning Contractor. In the event of a tie, the Contractor with the higher Design Documentation score will prevail.

After the Department completes its review of the completed Proposal Documents and determines that the documents are in order, the Department will issue an award letter to the Contractor with the apparent winning proposal.

The winning Contractor shall break down any of the contract items contained in the Proposal Schedule by increments and to smaller, more easily measurable elements for monthly payment and measurement purposes. The winning Contractor shall provide a schedule of values and the theoretical quantities associated with each lump sum bid item, and shall clearly indicate which contract item and specification section(s) it applies to. **Unless otherwise shown in the Proposal Schedule (P-8 to P-11)** all items shall be lump sum based on theoretical quantities. The Contractor shall provide this breakdown of items with the 50% Design Submittal described in Section II.D. of the Technical Provisions.

END OF TECHNICAL PROVISIONS

Received from Robert Sequeira 12/17/99 [illegible]

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROTOCOL FOR LINE WEIGHT, COLOR, LEVEL, SIZE, GRID REFERENCE, STANDARD UNITS, FONTS AND SYMBOLOGY FOR MICROSTATION PRODUCED CONTRACT PLANS

December, 1999

CHAPTER 5 - CADD DATA AND FILE FORMAT

CHAPTER 5 - CADD DATA FORMAT

5.01 Working Units And Global Origin For CADD Drawings

5.01.01 General

The Design Plane is the digital CADD surface that the drawing is created on and is composed of points where the graphic elements are placed. Each point has an associated X and Y position (X,Y and Z positions for 3-Dimensional drawings). The accuracy of these points is dependent on the Intergraph System's Units of Resolution (UOR). The Design Plane has 4,294,967,296 UORs in the x-axis and in the y-axis (also in the z-axis for 3-Dimensional Files).

A UOR is the smallest increment of precision to which the drawing data can be stored in the system; i.e., the drawing resolution. The UOR is defined by the user and is done by assigning values to the working units known as Master Units (MU), Sub Units (SU), and Positional Units (PU). The maximum area which can be included in a drawing is reduced as the precision is increased.

5.01.02 Reasons for Establishing A Standard Working Unit

Uniformity in the drawing Working Unit definition enables operators to become accustomed to working with a known system; permits users of the CADD drawings to be assured of the drawing precision; and promotes transfer of drawing data.

The use of a standard Working Unit facilitates using previously created drawings, or portions of drawings, into new drawings. The text sizes, line dimensions, symbolization, etc. are based on this definition.

5.01.03 CADD Working Units

Except for drawings of an unusual scale, such as state and island maps, the standard Working Units for CADD drawings shall be the following :

Master Units (MU) - - 357,913 (Feet)

Sub Units (SU) - - - - - - 12 (Inches)

Positional Units (PU) - 1,000 (1000th of an Inch)

This means that the 4,294,967,296 addressable UORs are divided into Master Units of Feet, Subunits of 12 inches to the Foot, and Positional Units of 1,000 parts to each inch. This gives 357,913 Feet as the maximum X and Y dimensions (X, Y and Z dimensions for 3-Dimensional drawings) of the drawing i.e., the system can accomodate drawings covering 357,913 square feet, approximately 68 square miles, with these unit definitions.

For Island and State type of maps, such as developed by the Highway Planning Mapping Section, the following Working Units shall be used :

Master Units (MU) - 3,579,130 (Feet)

Sub Units (SU) - - - - - - 12 (Inches)

Positional Units (PU) - - -10 (10th of an Inch)

This gives 35,791,300 Feet as the maximum X and Y dimension of the drawing (X,Y and Z dimensions for 3-Dimensional drawings); i.e., the system can accomodate drawings covering 35,791,300 square feet, approximately 6,780 square miles, with these unit definitions.

5.01.04 Global Origin

The Global Origin is the reference point of the Design Plane. The standard Global Origin is set for the coordinate 0,0 to be in the exact center of the Design Plane (For coordinate 0,0,0 to be in the exact center of the Design Cube for 3-Dimensional Files). The Global Origin may be changed for special cases.

CHAPTER 6 - CADD DRAWING STANDARDS AND GUIDELINES

CHAPTER 6 - CADD DRAWING STANDARDS AND GUIDELINES

6.01 Standard CADD Drawing Levels

6.01.01 General

The CADD permits the separation of data by levels or layers. Similar types of data should be drawn on the same level. Each level is analogous to a tracing sheet in manual drafting, however, with the CADD file there are 63 different levels or layers that data can be drawn on. The CADD allows one, all or any combination of levels to be seen at one time. To make effective use of the CADD capabilities to create specific drawings by combining certain levels and to have standardization and uniformity, the CADD drawings created shall follow the Level Schemes described in the following Subsections. It is very important that the elements are placed on the correct levels. The CADD user shall use the customized menus to place elements and text in their files to eliminate and/or reduce key-in errors.

6.01.02 Geographical Type of Drawings

Geographical types of drawings are those where the elements are drawn to their on-ground locations (x & y coordinates for 2-dimensional files and x,y & z coordinates for 3-dimensional files). Geographical drawings can be drawn with actual or assumed coordinate values.

Examples of Geographical types of drawings include topographical survey maps; roadway base maps; roadway, utility, drainage, traffic signal, highway lighting and pavement marking and signing plans; right-of-way maps; easement maps; etc. Generally, geographical oriented maps or plans are created by combining various levels of a base map or using the base map as an underlay (Reference File). The CADD user shall follow the Level Scheme as shown in Figure 6.01-1 when creating Geographical type of drawings.

6.01.03 Geographical Highway Maps

The Geographical Highway Maps are those that are created by using the digital United States Geological Survey maps as the base or underlay (Reference File). The CADD user shall follow the Level Scheme as shown in Figure 6.01-2 when creating Geographical Highway Maps.

6.01.04 Non-Geographical Type of Drawings

Non-geographical types of drawings are those where elements are not drawn to any specific on-ground location. Examples include typical sections; cross sections; profiles; detail type of drawings; etc. The CADD user shall follow the Level Scheme as shown in Figures 6.02-1 to 6.02-4 depending on the

type of non-geographical drawing.

HIGHWAYS DIVISION CADD DRAWING LEVELS FOR GEOGRAPHICAL DRAWINGS

LEVEL	DESCRIPTION	WT	LC	CO	
1	Baseline element & symbol	4	0	4	(yellow)
	(Cadastral Section)	2	0	4	(yellow)
2	Alternate baseline element & symbol	4	0	12	(lt. mustard)
	(Cadastral section)	2	0	12	(lt. mustard)
3	Text	4	0	0	(white)
4	Exist. Highway structures	2	2	19	(aqua)
5	New Highway structures	4	0	19	"
6	Exist. edge of pavement & shoulders	2	2	2	(green)
7	New edge of pavement & shldr.	4	0	0	(white)
8	Exist. curb/gutter/sidewalk	2	2	2	(green)
9	New curb/gutter/sidewalk	4	0	0	(white)
10	ICS, TDP point I.D. nos.				
11	Misc. symbols & annotation				
12	Cut/Fill slopes	2	0	8	(tan)
13	Topographic ground shots	2	2	8	(tan)
14	Misc. exist. structures	2	2	9	(med. green)
	Misc. new structures	4	0	9	(med. green)
15	Pavement Reconstruction Limits	4	0	0	(white)
	" " Hatching	1	0	0	"
	Cold Planing Limits	4	0	0	(white)
	" " Cross-Hatching	1	0	0	"
16	Construction Parcel	6	6	6	(orange)
17	Access Control	6	*	1	(blue)
18	Cadastral Section Text				
19	Exist. Easements	4	5	**	
20	Original Land Ct., Property Lines, and Subdivision	0	0	2	(green)

Figure 6.01-1

LEVEL	DESCRIPTION	WT	LC	CO
20	Original Grants, Land Commision Awards and Royal Patents	0	6	3 (red)
21	Final Land Ct., Property Lines, Subdivisions and Remnants	2	0	2 (green)
	Final Grants, Land Commision Awards and Royal Patents	2	6	3 (red)
22	Exist. Right-of-Way (Contract Plans)	4	6	1 (blue)
	Exist. Right-of-Way (Cadastral Section)	8	0	1 (blue)
23	Traverse	0	2	0 (white)
24	New Right-of-Way (Contract Plans)	4	6	1 (blue)
	New Right-of-Way (Cadastral Section)	12	0	1 (blue)
	New Easements (Cadastral Section)	8	5	1 (blue)
25	Triangles & border for TDP			
26	"			
27	"			
28	"			
29	"			
30	Contours for TDP			
31	"			
32	"			
33	"			
34	"			
35	Text For Utility Symbols			
36	Water (exist.)	2	4	16 (very lt. blue)
	Water (new)	4	4	16 "

LEVEL	DESCRIPTION	WT	LC	CO
37	Electric (exist.)	2	4	24 (orange)
	Electric (new)	4	4	24 "
38	Telephone (exist.)	2	4	22 (lt. mustard)
	Telephone (new)	4	4	22 "
39	Sewer (exist.)	2	4	23 (blue)
	Sewer (new)	4	4	23 "
40	Gas (exist.)	2	4	8 (tan)
	Gas (new)	4	4	8 "
	Misc. utilities (exist.)	2	4	15 (lt. purple)
	Misc. utilities (new)	4	4	15 "
41	Drain (exist.)	2	2	13 (lt. yellow)
42	Drain (new)	4	0	13 (lt. yellow)
43	Sprinkler system (exist.)	2	2	16 (very lt. blue)
	Sprinkler system (new)	4	2	16 (very lt. blue)
44	Landscaping (exist.)	2	2	10 (chartreuse)
	Landscaping (new)	4	2	10 "
45	Fence (exist)	2	7	7 (gray)
	Fence (new)	4	7	7 "
46	Boundary Points	2	*	0 (white)
47	Guardrails (exist.)	2	3	25 (lt. pink)
48	unused			
49	Topographic Water Shots (streams, lakes, ocean, etc.)	2	2	16 (very lt. blue)
50	Users level			
51	Point Elevations			
52	Cadastral State Plane Grids	0	0	6 (orange)
53	Cadastral Geodetic Grids	0	0	3 (red)
54	Guardrails (new)	4	0	25 (lt. pink)
55	Pavement marking (exist.)	2	0	4 (yellow)
	Pavement marking (new)	4	0	4 "
56	Traffic signs (exist.)	2	0	21 (white)
	Traffic signs (new)	4	0	21 "

Figure C.01.1

LEVEL	DESCRIPTION	WT	LC	CO	
57	Traffic signal (exist.)	2	2	20	(flesh)
	Traffic signal (new)	4	0	20	"
58	Highway lighting (exist.)	2	2	3	(red)
	Highway lighting (new)	4	0	3	"
59	Traffic control				
60	Border sheet				
61	As-built postings	4	0	29	(hot pink)
62	Half-Size Label Ticks For Half-Size Plots				
63	SAVE - DO NOT USE				

NOTE:

* Element is a cell

** Color is the same as Type of Easement
(i.e. Drain easement is same color as drain)

Figure 6.01-1

LEVELS USED FOR GENERAL HIGHWAY MAPPING/SPECS

1 – INTERSTATE ROAD SYSTEM
CO=3, WT=1, LC=7, CPK=30'(TOTAL WIDTH 60')
A–DIVIDED HWY. BY CENTERLINE OR BARRIER, CPK=75'(TOTAL WIDTH 150')
B–DIVIDED HWY. BY MEDIAN, CPK=60'(MEDIAN WIDTH 30')
(TOTAL WIDTH 150' TREES & LANDSCAPING)
C–RAMPS CPK 20'(TOTAL WIDTH 40')
D–INTERCHANGES BETWEEN INCOMING & OUTGOING VIADUCTS, CPK=15'

2 – INTERSTATE ROAD SYSTEM CENTER LINE
CO=3, WT=1, LC=7, CREATED WITH AUTO CHAIN

3 – FAP HIGHWAYS/FREEWAYS & EXPRESSWAY
CO=25(COLOR DISPLAY SAME AS CO=11), WT=1, LC=7,
CPK=30'(TOTAL WIDTH 60')
A–DIVIDED HWY. BY CENTERLINE OR BARRIER, CPK=75'(TOTAL WIDTH 150')
B–DIVIDED HWY. BY MEDIAN, CPK=60'(MEDIAN WIDTH 30')
(TOTAL WIDTH 150'–TREES & LANDSCAPING)

4 – FAP HIGHWAYS/FREEWAY & EXPRESSWAY CENTER LINE
CO=25(COLOR DISPLAY SAME AS CO=1), WT=1, LC=7
CREATED WITH AUTO CHAIN

5 – FAS HIGHWAYS/PRINCIPAL ARTERIAL
CO=26(COLOR DISPLAY SAME AS CO=17), WT=1, LC=7,
CPK=30(TOTAL WIDTH 60')
A–DIVIDED HWY. BY CENTERLINE OR BARRIER, CPK=75'(TOTAL WIDTH 150')
B–DIVIDED HWY. BY MEDIAN, CPK=60'(MEDIAN WIDTH 30')
(TOTAL WIDTH 150'–TREES & LANDSCAPING)

6 – FAS HIGHWAYS/PRINCIPAL ARTERIAL CENTER LINE
CO=26(COLOR DISPLAY SAME AS CO=17), WT=1, LC=7
CREATED WITH AUTO CHAIN

7 – FASC HIGHWAYS/MINOR ARTERIAL
CO=0, WT=1, LC=7, CPK=30'(TOTAL WIDTH 60')
A–DIVIDED HWY. BY CENTERLINE OR BARRIER CPK=75'(TOTAL WIDTH 150')
B–DIVIDED WHY. BY MEDIAN, CPK=60'(MEDIAN WIDTH 30')
(TOTAL WIDTH 150'–TREES & LANDSCAPING)

8 – FASC/MINOR ARTERIAL CENTER LINE
CO=0, WT=1, LC=7, CREATED WITH AUTO CHAIN

9 – FAU HIGHWAYS/MAJOR COLLECTOR
CO=19(COLOR DISPLAY SAME AS CO=28), WT=1, LC=7,
CPK=20'(TOTAL WIDTH 40')

10 – FAU HIGHWAYS/MAJOR COLLECTOR CENTER LINE
CO=19(COLOR DISPLAY SAME AS CO=28), WT=1, LC=7
CREATED WITH AUTO CHAIN

11 – MINOR COLLECTOR
CO=15, WT=1, LC=7, CPK=30'(TOTAL WIDTH 60')
A–DIVIDED HWY. BY CENTERLINE OR BARRIER, CPK=75'(TOTAL WIDTH 150')
B–DIVIDED HWY. BY MEDIAN, CPK=60'(MEDIAN WIDTH 30')

LEVELS USED FOR GENERAL HIGHWAY MAPPING/SPECS

12 – MINOR COLLECTOR CENTER LINE
CO=15, WT=1 LC=7, CREATE WITH AUTO CHAIN

13 – STATE HIGHWAY SYSTEM TEXT
TH =150', TW=150', LS=75', FT=29, WT=0, CO=3(lv=1), 25(lv=3), 26(lv=5), 0(lv=7),19(lv=9), 15(lv=

14 – COUNTY ROAD SYSTEM
CO=4, WT=0, LC=0, CPK=20'(TOTAL WIDTH 40'), DIRT ROAD/ PRIMITIVE(LC=2)

15 – TEXT COUNTY ROAD SYSTEM
TH=100', TW=100', LS=50', FT=29, CO=4, WT=0

16 – COUNTY ROAD SYSTEM CENTER LINE
WT=0, LC=0, CO=4, PRIMITIVE (LC=2) CREATED WITH AUTO CHAIN

17 – PROPOSED STATE HIGHWAYS
CO=25, WT=1, CPK=30'(TOTAL WIDTH 60'), LC=1
A-DIVIDED HWY. BY CENTERLINE OR BARRIER, CPK=75'(TOTAL WIDTH 150')
B-DIVIDED HWY. BY MEDIAN, CPK=60'(MEDIAN WIDTH 30')

18 – TEXT PROPOSED STATE HIGHWAYS
TH=150', TW=150', LS=75', FT=29,
CO=25(COLOR DISPLAY SAME AS CO=11), WT=0

19 – REVISED ROAD UPDATED (ALL NEW ROAD ELEMENTS)
PLACED ACCORDING TO RESPECTIVE COLORS
CO=3,25,26,0,19,15,4

20 – SHORELINE
CO=1, WT=1, LC=0

21 – TEXT SHORELINE
CO=1, WT=0, FT=45
BAYS-TH=250', TW=250', LS=125'
OCEAN-TH=600', TW=600', LS=300'

22 – STREAMS
CO=1, WT=0, LC=0,(INTERMITTENT STREAMS CO=18, WT=0, LC=2)
FLUME BRACKET(AS LINE TERMINATOR) 30' @ 45 DEGREES
WATER TUNNEL BRACKET (AS LINE TERMINATOR) 30' @ 45 DEGREES

23 – TEXT STREAMS
TH=125', TW=125', LS=100', FT=45, CO=1, WT=0,
CHAR. SPACING=50' UPPER & LOWER CASE

24 – LAKES/PONDS (SHAPE)
CO=1, WT=0, LC=0

25 – TEXT LAKES
TH=150', TW=150', LS=75', FT=45, CO=1, WT=0

26 – BRIDGES/OVERPASS/UNDERPASS USING APPROPRIATE CELLS

27 – VACANT

28 – VACANT

LEVELS USED FOR GENERAL HIGHWAY MAPPING/SPECS

29 – TEXT CITIES/TOWNS
TH=200', TW=200', LS=100', FT=29, CO=0, WT=0
CITIES=UPPER CASE, TOWNS=LOWER CASE

30 – TEXT CULTURAL FEATURES
TH=125', TW=125', LS=50', FT=29, CO=0, WT=0
UPPER & LOWER CASE

31 – VACANT

32 – PARTIAL ADJUSTED & URBANIZED AREA BOUNDARY
CO=12, WT=3, LC=5(ADJUSTED), LC=6(URBANIZED)
CPK=100' FROM ANY OTHER BOUNDARY OR LINE

33 – CENSUS URBAN BOUNDARY
CO=10, WT=3, LC=4
CPK=100' FROM ANY OTHER BOUNDARY OR LINE

34 – ADJUSTED & URBANIZED AREA BOUNDARY
CO=29(COLOR DISPLAY SAME AS CO=14), WT=3,
LC=4(ADJUSTED BOUNDARY), LC=6(URBANIZED AREA BOUNDARY),
CPK=100' FROM ANY OTHER BOUNDARY OR LINE

35 – TEXT CENSUS BOUNDARY
TH=200', TW=200', LS=100', FT=29
CO=29(COLOR DISPLAY SAME AS CO=14), WT=0

36 – DISTRICT BOUNDARY
CO=6(COLOR DISPLAY SAME AS CO=24), WT=3, LC=3

37 – TEXT DISTRICT BOUNDARY LINE
TH=200', TW=250', LS=150', FT=29, CO=6, WT=0, CHAR. SPACING=50',
DISTRICT AREA (TH=250', TW=750', LS=200', FT=29, CO=6, WT=0)

38 – FOREST BOUNDARY
CO=2, WT=0, LC=0

39 – TEXT FOREST BOUNDARY
TH=200', TW=250', LS=100', FT=29, CO=2, WT=0

40 – FOREST SHAPE
CO=6, WT=0, LC=0, AP=DOT3, PD=50',50'

41 – MILITARY BOUNDARY
CO=8, WT=0, LC=0

42 – TEXT MILITARY BOUNDARY
TH=200', TW=250', LS=100', FT=29, CO=8, WT=0
OR
TH=100', TW=100', LS=50', FT=29, CO=8, WT=0

43 – MILITARY SHAPE
CO=6, WT=0, LC=0, AP=DOT2, PD=100',100'

44 – GRID TICKS(SHEET BORDER/FRAME)
CO=0, WT=0, LC=0

LEVELS USED FOR GENERAL HIGHWAY MAPPING/SPECS

45 – COORDINATE GRID TEXT
TH=150', TW=150', LS=75', FT=1, CO=0, WT=0
SHEET TITLE
TH=1000', TW=1000', LS=500', FT=43, CO=0, WT=0

46 – 1:1000 SCALE GRID
CO= , WT=

47 – 1:2000 SCALE GRID
CO= , WT=

48 – 1:3000 SCALE GRID
CO= , WT=

49 – CONTOURS
CO=23(COLOR DISPLAY SAME AS CO=1), WT=0

50 – USER LEVEL
ALL ELEMENTS USER DOES NOT WANT PLOTTED OUT
COMPLETE PATH/FILE NAME LOWER RIGHT OF PLOT SHEET
FT=0, CO=3, WT=1, TX=400'(2000 SCALE)

51 – CONTROL POINTS FOR DIGITIZING
CO=20, WT=10

52 – LANDING STIP/AIRPORT & PERIMETER
CO=27(COLOR DISPLAY SAME AS CO=18), WT=0

53 – VACANT

54 – RAILROAD
CO=20, WT=0

55 – URBAN MAP/FUNCTIONAL CLASSIFICATION MAP TEXT

56 – VACANT

57 – VACANT

58 – VACANT

59 – VACANT

60 – BORDER CELL

61 – VACANT

62 – VACANT

63 – DO NOT USE

6.02 CADD Drafting Conventions

6.02.01 Drafting Guidelines For CADD Contract Plans

The text and symbology (weight, linestyle, and color) requirements for CADD Contract Plan Sheets have been standardized to provide uniform CADD Contract Plan Drawings throughout the Division. See Figures 6.02-1 to 6.02-4 for the CADD Drafting Guidelines for the element symbology and text parameters.

6.02.02 Drafting Guidelines For Other Type of CADD Drawings

Each office has developed their own CADD Drafting Standards for other type of drawings because of the many different types of drawings created.

The Lead Operator will be responsible to document the CADD Drafting Standards used by his office for these type of drawings and give this information to the CADD Manager.

CADD TEXT WEIGHTS, COLOR, LEVEL, WEIGHT AND FONT

FOR CONTRACT PLANS

DESCRIPTION	WEIGHT	COLOR	LEVEL	HEIGHT	FONT
Existing Features	2*	0	3**	3/16" ***	27
Planned Construction Features (New Work)	4	0	3**	3/16" ***	27
Sub-Titles	6	0	3**	1/4"	27
Main Titles	8	0	3**	5/16"	27
F.A. Block Title Block	3	0	3**	5/32"	27
Main Title (Line 1)	10	0	3**	1/4"	27
Limits (Line 2)	6	0	3**	3/16"	27
Project Name & No. (lines 3,4 & 5)	6	0	3**	3/16"	27
Scale/Date	3	0	3**	5/32"	27
Sheet No.	6	0	3**	5/32"	27
Plan Sheet No.	0	0	3**	3/8"	30

NOTE :

* Text weight for existing features may be same as new work.

** Levels 1 & 2 may also be used for Text as determined by each Section

*** HWY-DB and HWY-DH Text Height = 5/32"

CADD LINE WEIGHT, LINESTYLE, COLOR AND LEVELS

FOR CONTRACT PLANS

PLAN TYPE DRAWINGS

DESCRIPTION	WEIGHT	LINESTYLE	COLOR	LEVEL
Existing Features	2 ***	2 *	****	****
Planned Construction Features (New Work)	4	0	"	"
Existing Utilities	2	4 *	"	"
New Utilities	4	4 *	"	"
Contours				
Existing (Minor/Major)	0/2	5	"	"
New	4	0	"	"
Right of Way Line	5	6*	"	"
Property Line	4	6*	"	"
Easements	7	5	"	"
Baseline or Station Line of Highway	4	0	"	"
Centerline for Highway	4	0	"	"
Dimension Line	2	0	0	3
Break Line	2	0	0	3
Section Line **	6	0	0	3
Match Line **	6	0	0	3

NOTE :

* Linestyle Modified With Pentable.

** Element is a cell

*** Existing Features for Structural Plans are Weight=0.

**** The Symbology and Level for Plan Drawings will follow the Highways Division CADD Drawing Levels For Geographical Drawings.

CADD LINE WEIGHTS, LINESTYLE, COLOR AND LEVELS

FOR CONTRACT PLANS

DETAIL TYPE OF DRAWINGS

DESCRIPTION	WEIGHT	LINESTYLE	COLOR	LEVEL
Existing Features	2	2 *	2	1
Planned Construction Features (New Work)	4	0	0	2
Existing Utilities	2	4 *	2	1
New Utilities	4	4 *	0	2
Right Of Way Line **	5	0	0	2
Baseline or Station Line of Hwy. **	5	0	0	2
Centerline for Highway **	5	0	0	2
Dimension and Leader Lines	2	0	0	3
Break Line	2	0	0	3
Centerline for Detail **	1	0	0	3
Section Line **	5	0	0	3
Cross Section Plans				
Existing Ground	3	2 *	2	1
New Grade	5	0	0	2
Profile and/or Elevation Plans				
Existing Ground	3	2 *	2	1
New Grade	5	0	0	2

NOTE :

* Linestyle Modified With Pentable.

** Element is a cell

CADD LINE WEIGHT, LINESTYLE, COLOR AND LEVLES

FOR CONTRACT PLANS

STRUCTURAL TYPE OF DRAWINGS

DESCRIPTION	WEIGHT	LINESTYLE	COLOR	LEVEL
Concrete				
Existing	0	0	30	40
Hidden	4	2	2	22
New	4	0	2	21
Metal				
Existing	0	0	45	40
Hidden	4	2	17	24
New	4	0	17	23
Wood				
Existing	0	0	12	40
Hidden	4	2	6	28
New	4	0	6	27
Grade				
Existing	0	3	13	40
Hidden	2	2	2	30
New	2	0	2	29
Reinforcing				
Existing	3	3	49	40
Hidden	8	5	4	26
New	8	0	4	25
Concrete Joints	5	0	14	33
Dimension and Leader Lines	1	0	0	3
Break Line	1	0	0	3
Centerline for Detail				
3/8" Long Dash	1	4*	51	3
1" Long Dash	1	4*	0	3
5" Long Dash	1	4*	50	3
Section Line **	6	0	0	3

NOTE :

* Linestyle Modified With Pentable.

** Element is a cell

Figure 6.02-4

6.03 Highways Font Library

The Engineering CADD Office has developed a standard Highways Font Library called 'fontlib'. The CADD System Engineer will maintain and revise the Highways Font Library. The Lead Operator shall request to the CADD System Engineer for any revisions or additions to the Highways Font Library. The CADD System Engineer may assign the revisions to the Lead Operator if the font is unique to the Lead Operator's office. The Highways Font Library is located in the '/usr/ip32/mstation/font' subdirectory. (See Figures 6.03-1 to 6.03-9 For The Highways Font Library).

The Highways Font Library contains special characters, as the baseline, centerline, plus/minus etc. characters that uses certain keys to input. The keys that were used to input these special characters will display on the workstation screen, however, when the file is plotted the special characters will be plotted. (See Figure 6.03-10 For these special characters).

November 20, 1995

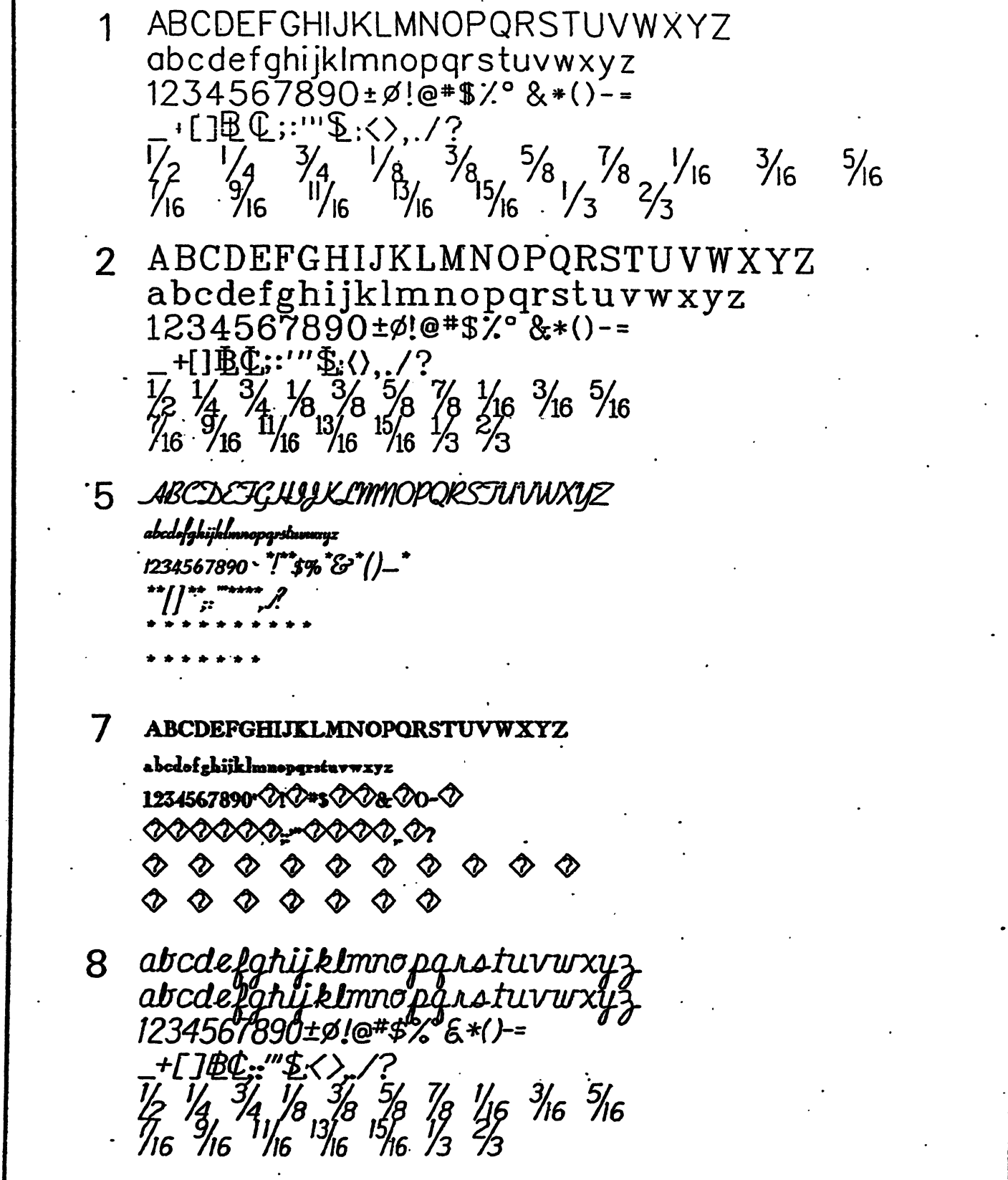
HIGHWAYS DIVISION CADD FONTS - hwyd.rsc

Revision Date: 20-MAR-1995

All character fonts are stick fonts unless TYPE is designated as BIT.
BIT fonts are low-resolution bit stream fonts (filled fonts).

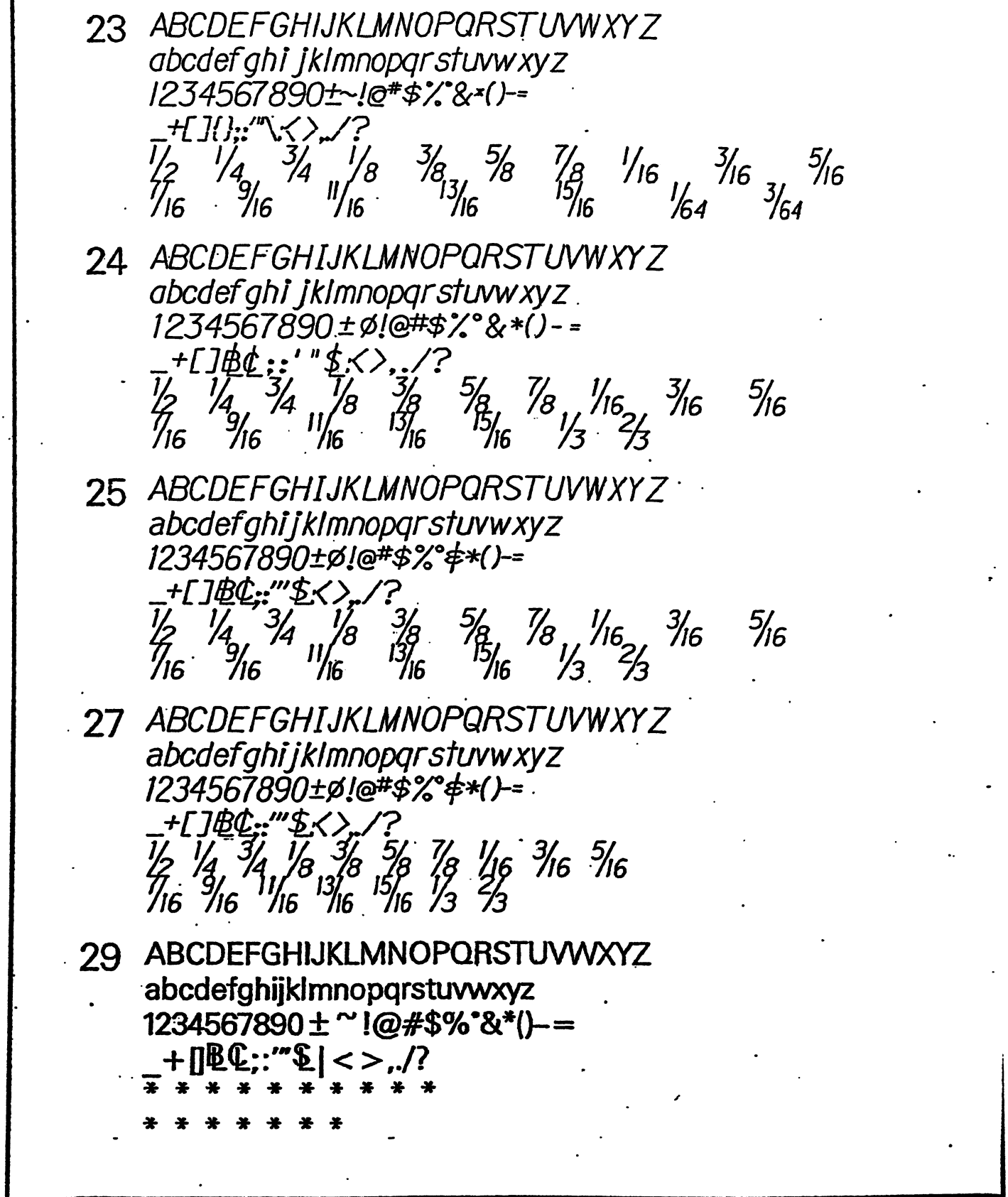
NO.	TYPE	NAME	DESCRIPTION
1		MOD WORKING	(modified) USTN WORKING
2		AS BUILT	(modified) FANCY FONT
5	BIT	SCRIPT	Ribbon 131
7		font007	INTERGRAPH FONT 7
8		SCRIPT2	(modified) Lowercase script
23		MODFONT23	Superceded w/27, used on old drawings
24		MOD23WIDE	Superceded w/27, used on old drawings
25		MOD23NARW	Superceded w/27, used on old drawings
27		HDOT STANDARD	(modified) ITALICS - HWY-D Standard
29	BIT	SWISS 722 L L	(modified) HWY-D Leroy Std, Light
30	BIT	SWISS 722 L	(modified) HWY-D Leroy Std
31	BIT	SWISS 722 B L	(modified) HWY-D Leroy Std, Bold
45	BIT	ALDINE 401 I L	
42		OUTLINE	(modified)
90	SYMB	ICS MODSURSYM	(modified) Cogo points
127		font127	fast font

Total Character Fonts: 15
Total Symbol Fonts: 1



HIGHWAYS FONT LIBRARY

Figure 6.03-1
11/20/95



HIGHWAYS FONT LIBRARY

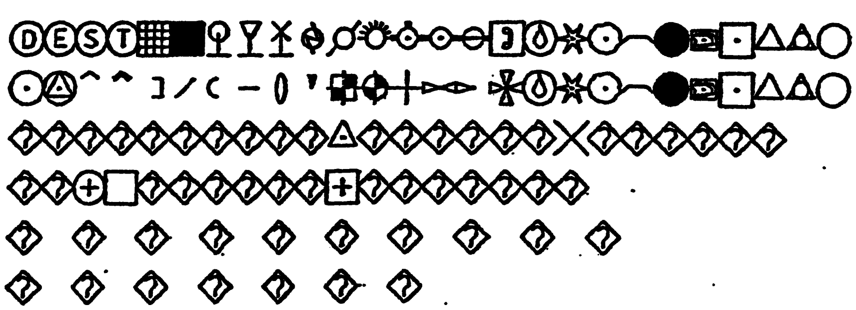
Figure 6.03-2
11/20/95

30 ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890± ~ !@#$%°&*()–=
_+[]₽₡;:'"$|<>,./?
* * * * * * * * * * *
* * * * * * *

31 **ABCDEFGHIJKLMNOPQRSTUVWXYZ**
abcdefghijklmnopqrstuvwxyz
1234567890± ~ !@#$%°&*()–=
_+[]₽₡;:'"$|<>,./?
* * * * * * * * * * *
* * * * * * *

42 ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890◊◊!◊◊$ ◊◊& ◊( ) - ◊
◊◊◊◊◊◊;:◊◊◊◊◊< > , . / ?
◊ ◊ ◊ ◊ ◊ ◊ ◊ ◊ ◊ ◊
◊ ◊ ◊ ◊ ◊ ◊ ◊

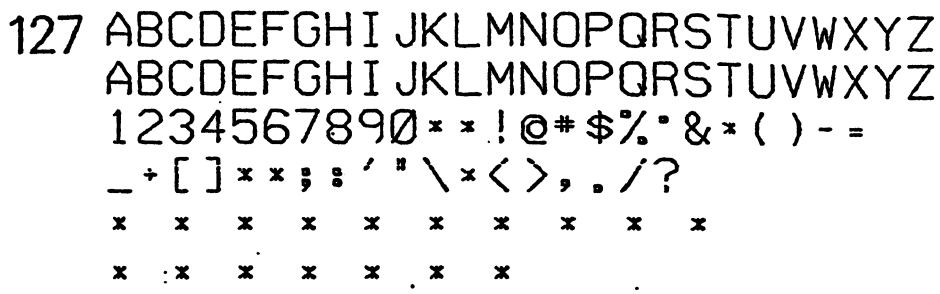
45 *ABCDEFGHIJKLMNOPQRSTUVWXYZ*
abcdefghijklmnopqrstuvwxyz
1234567890` ~ !@#$%^&()–=*
_+[]{};:'"\|<>,./?
* * * * * * * * * * *
* * * * * * *

90


HIGHWAYS FONT LIBRARY

Figure 6.03-3

11/20/95



HIGHWAYS FONT LIBRARY

Figure 6.03-4
11/20/95

MODIFIED CHARACTER KEYS

	LEFT BRACE	RIGHT BRACE	BACK SLASH	GRAVE	CAROT	TILDE	1/64	3/64
OLD KEYS	{	}	\	`	^	~	1/64	3/64
FONT 1	₿	₡	₴	±	°	ø	1/3	2/3
FONT 2	₿	₡	₴	±	°	ø	1/3	2/3
font 8	₿	₡	₴	±	°	ø	1/3	2/3
FONT 27, 28	₿	₡	₴	±	°	ø	1/3	2/3
FONT 29	₿	₡	₴	±	°			
FONT 30	₿	₡	₴	±	°			
FONT 31	₿	₡	₴	±	°			

6.04 Highways Color Table

The Engineering CADD Office has developed a standard Highways Color Table called 'color.tbl'. The CADD System Engineer will maintain and revise the Highways Color Table. The Lead Operator shall request to the CADD System Engineer for any revisions or additions to the Highways Color Table. The CADD System Engineer will copy the color table to all workstations under the '/usr/ip32/mstation/data' subdirectory during software upgrades. (See Figure 6.04-1 For The Highways Color Table).

HIGHWAYS DIVISION COLOR TABLE

NUMBER	COLOR	RED	GRN	BLUE
0	white	205	205	205
1	blue	20	150	255
2	green	0	255	0
3	red	255	0	0
4	yellow	255	255	0
5	flesh	235	185	185
6	orange	255	110	50
7	gray	150	150	150
8	tan	185	135	85
9	medium green	85	185	85
10	chartreuse	185	255	85
11	light pink	255	155	185
12	light mustard	255	200	100
13	light yellow	235	255	145
14 *	hot pink	255	35	185
15	light purple	175	175	255
16	very light blue	180	255	255
17	dark pink	205	50	150
18	very light pink	255	215	255
19	aqua	0	245	170
20	flesh	~~235~~ ~~105~~	~~185~~ ~~125~~	~~185~~ ~~140~~
21	white	205	205	205
22	light mustard	255	200	100
23	blue	20	150	255
24	orange	255	110	50

Figure 6.04-1

HIGHWAYS DIVISION COLOR TABLE

NUMBER	COLOR	RED	GRN	BLUE
25	light pink	255	155	185
26	dark pink	205	50	150
27	very light pink	255	215	255
28	aqua	0	245	170
29 *	hot pink	255	35	185
Highlight	bright white	255	255	255

* For Contract Plan Drawings, DO NOT use colors 14 & 29. These colors will be reserved for posting as-built drawings.

The following color pairs are the same colors :

0 & 21 - white
1 & 23 - blue
5 & 20 - flesh
6 & 24 - orange
11 & 25 - light pink
14 & 29 - hot pink
17 & 26 - dark pink
18 & 27 - very light pink
19 & 28 - aqua

Figure 6.04-1

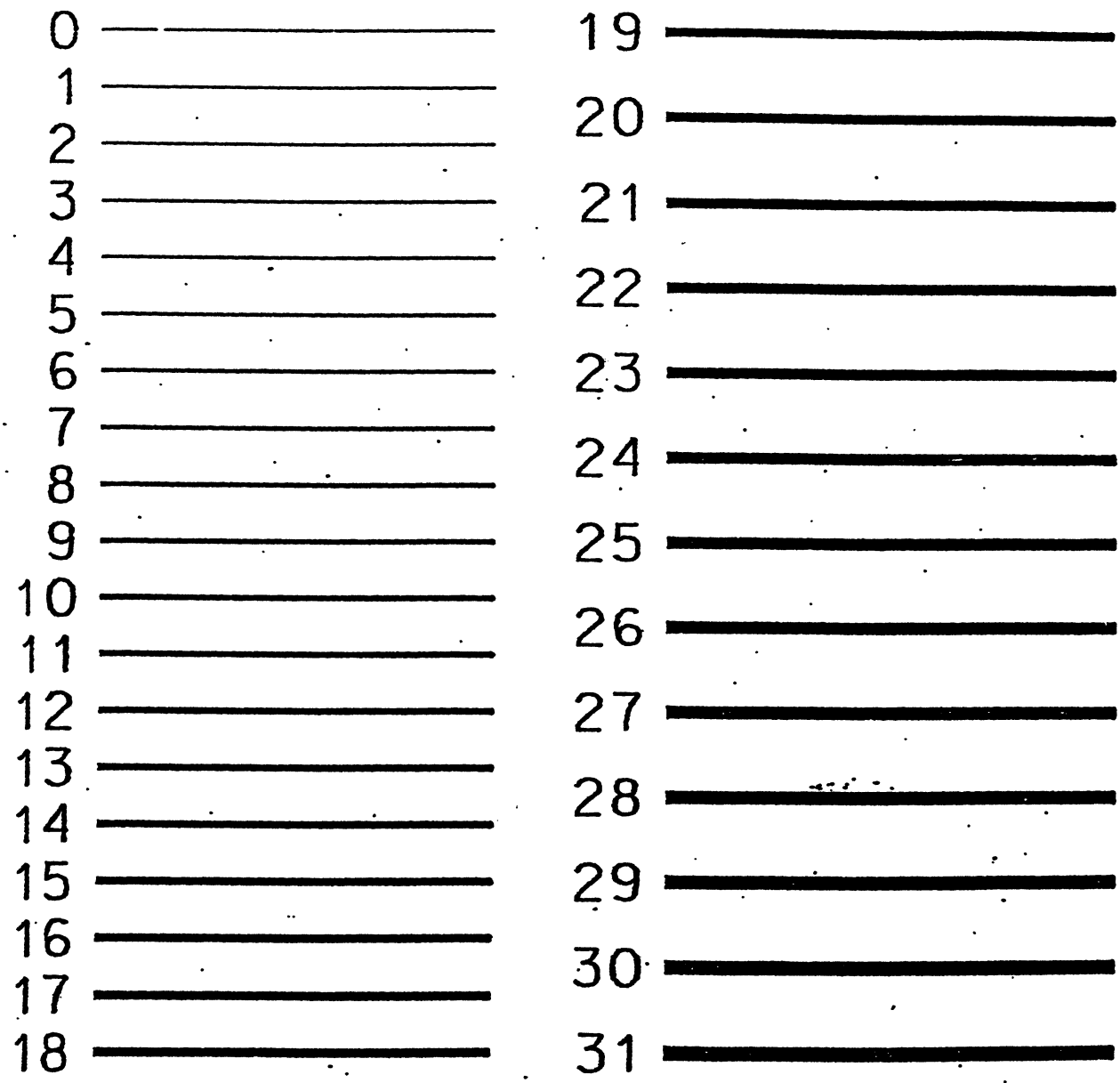
6.05 Highways Pen Tables

Pen Tables are used to selectively modify elements during the plotting process from how they were created in the design file. The Pen Table enables the user to change the symbology (linestyle or weight) of the element in the hardcopy plot. Lines can be modified to plot to any user defined linestyle or weight, however the symbology as seen on the CADD monitor is not changed.

Pen Tables are also used to assign pens in the Pen Plotter to a set of criteria, so each element is plotted by a pen based on the criteria that is set.

The Lead Operator may create customized Pen Tables for his office to modify the CADD files to meet his office criteria. All Pen Tables shall be reviewed and approved by the CADD Office. The Lead Operator shall be responsible for maintaining his office's customized Pen Tables and shall inform the CADD Office of any revisions.

Element Weights



```
"ddstyle.tbl" r05/11/94

THIS TABLE IS LINESTYLE TABLE FOR IPS PLOTTING
TO CHANGE THE EXIST. EP/CURB/GUTTER/SIDEWALK, UTILITIES AND R/W
LINESTYLES FOR HWY-DD BASE PLANS.

Revised 11/29/91

LINESTYLES 0, 2, 3, 4, AND 6 HAS BEEN ALTERED


!IF (LNAME .NE. 'IRAS*') THEN      !Use styles if not raster(Type 87/88)element
IF (TYPE .NI. 7,17) THEN           !Use styles if not text-nodes or text
  IF (STYLE .EQ. 0) THEN
    IF (COLOR .EQ. 33) THEN
      STYLE = (1.0, 0.09375)       ! NEW CUT AND FILL
    ELSE
      STYLE = 0                    ! DEFAULT LINESTYLE LC=0
    ENDIF
  ELSE IF (STYLE .EQ. 1) THEN
    STYLE = (.03125, .03125)       ! DEFAULT LINESTYLE LC=1


 LINESTYLE FOR EXISTING EP/CURB/GUTTER/SIDEWALK

  ELSE IF (STYLE .EQ. 2) THEN
    IF (COLOR .EQ. 2) THEN
      STYLE = (0.175, 0.075)       ! EXIST. EP/CURB/GUTTER/SIDEWALK
    ELSE IF (COLOR .EQ. 19) THEN
      STYLE = (0.175, 0.075)       ! BRIDGES
    ELSE
      STYLE = (.0625, .0625)       ! DEFAULT LINESTYLE LC=2
    ENDIF


  ELSE IF (STYLE .EQ. 3) THEN
    IF (COLOR .EQ. 32) THEN
      STYLE = (0.5, 0.09375)       ! SUPERELEVATION
    ELSE
      STYLE = (.125, .125)         ! DEFAULT LINESTYLE LC=3
    ENDIF


 LINESTYLE FOR UTILITIES (WATER,SEWER,ELECTRIC,TELEPHONE,DRAIN,GAS AND MISC.)

  ELSE IF (STYLE .EQ. 4) THEN
    IF (COLOR .EQ. 16) THEN
      STYLE = (0.25, 0.10)         ! WATER LINE LINESTYLE
    ELSE IF (COLOR .EQ. 23) THEN
      STYLE = (1.0, 0.15)          ! SEWER LINE LINESTYLE
    ELSE IF (COLOR .EQ. 24) THEN
      STYLE = (1.0, 0.15)          ! ELECTRIC LINE LINESTYLE
    ELSE IF (COLOR .EQ. 22) THEN
      STYLE = (1.0, 0.15)          ! TELEPHONE LINE LINESTYLE
    ELSE IF (COLOR .EQ. 13) THEN
      STYLE = (1.0, 0.15)          ! DRAIN LINE LINESTYLE
    ELSE IF (COLOR .EQ. 8) THEN
      STYLE = (1.0, 0.15)          ! GAS LINE LINESTYLE
    ELSE IF (COLOR .EQ. 15) THEN
      STYLE = (1.0, 0.15)          ! MISC. UTIL. LINE LINESTYLE
    ELSE
      STYLE = (.1, .0625, .03125, .0625)  ! DEFAULT LINESTYLE LC=4
    ENDIF
```

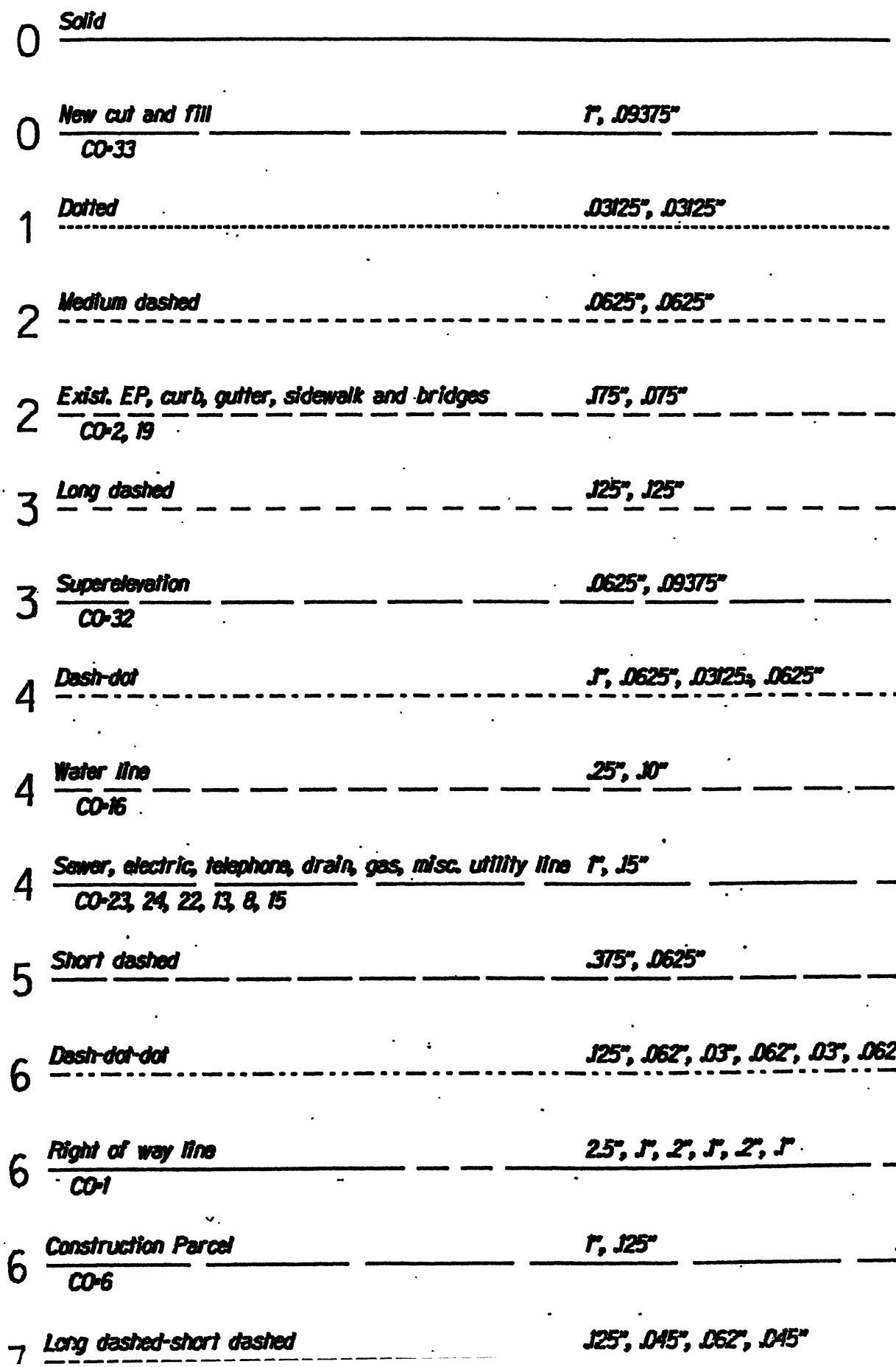
```
ELSE IF (STYLE .EQ. 5) THEN
  STYLE = (.375, .0625)              ! DEFAULT LINESTYLE LC=5


 LINESTYLE FOR R/W

ELSE IF (STYLE .EQ. 6) THEN
  IF (COLOR .EQ. 1) THEN
    STYLE = (2.5, .1, .2, .1, .2, .1)          ! RW LINE LINESTYLE
  ELSE IF (COLOR .EQ. 6) THEN
    STYLE = (1, .125)                          ! CONSTRUCTION PARCEL
  ELSE
    STYLE = (.125, .062, .03, .062, .03, .062) ! DEFAULT LINESTYLE LC=6
  ENDIF

ELSE IF (STYLE .EQ. 7) THEN
  STYLE = (.125, .045, .062, .045)     ! DEFAULT LINESTYLE LC=7
ENDIF
NDIF
ENDIF
```

Linestyles


0 Solid
0 New cut and fill 1", .09375"
CO-33
1 Dotted .03125", .03125"
2 Medium dashed .0625", .0625"
2 Exist. EP, curb, gutter, sidewalk and bridges .175", .075"
CO-2, 19
3 Long dashed .125", .125"
3 Superelevation .0625", .09375"
CO-32
4 Dash-dot .5", .0625", .03125, .0625"
4 Water line .25", .10"
CO-16
4 Sewer, electric, telephone, drain, gas, misc. utility line 1", .15"
CO-23, 24, 22, 13, 8, 15
5 Short dashed .375", .0625"
6 Dash-dot-dot .125", .062", .03", .062", .03", .062"
6 Right of way line .25", .5", .2", .5", .2", .5"
CO-1
6 Construction Parcel 1", .125"
CO-6
7 Long dashed-short dashed .125", .045", .062", .045"

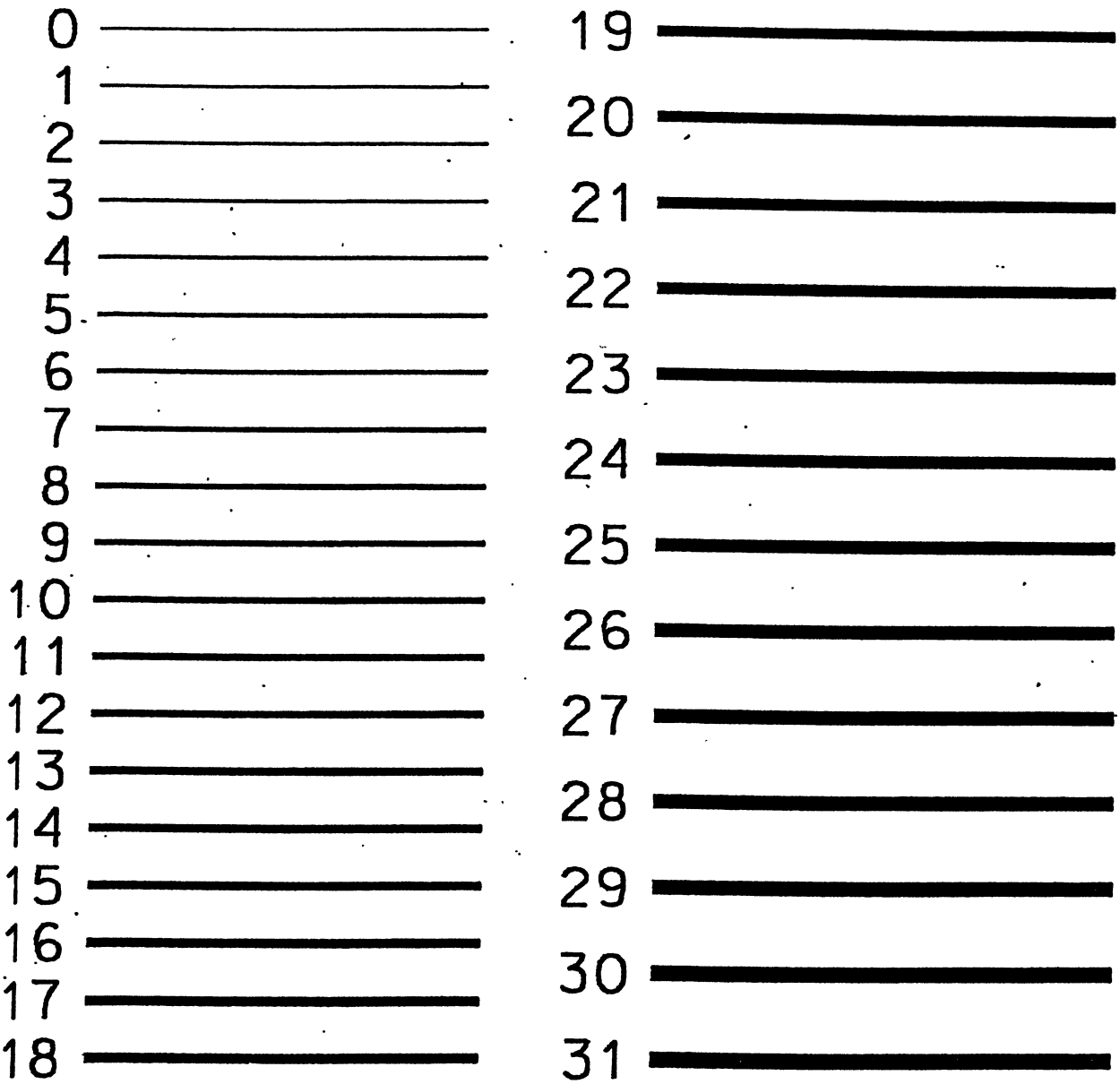
```
! "dbstyle.tbl" r02/12/94
!
! Bridge section pen table for full size plotting to IPLOT and IPS.
!
IF (TYPE .NI. 7,17) THEN
  IF (STYLE .EQ. 0) THEN
    STYLE = 0
  ELSE IF (STYLE .EQ. 1) THEN
    STYLE = (.03125, .03125)
  ELSE IF (STYLE .EQ. 2) THEN
    STYLE = (.0625, .0625)
  ELSE IF (STYLE .EQ. 3) THEN
    STYLE = (.125, .0625)
  ELSE IF (STYLE .EQ. 4) THEN
    IF (COLOR .EQ. 50) THEN
      STYLE = (5., .0625, .03125, .0625)
    ELSE IF (COLOR .EQ. 51) THEN
      STYLE = (.375, .0625, .03125, .0625)
    ELSE
      STYLE = (1., .0625, .03125, .0625)
    ENDIF
  ELSE IF (STYLE .EQ. 5) THEN
    STYLE = (.375, .0625)
  ELSE IF (STYLE .EQ. 6) THEN
    STYLE = (4., .0625, .03125, .0625, .03125, .0625)
  ELSE
    STYLE = (4., .0625, .125, .0625)
  ENDIF
ENDIF
```

Linestyles

Bridge Design Section - dbstyle.tbl

0	Solid		
1	Dotted	.03125", .03125"	
2	Medium dashed	.0625", .0625"	
3	Long dashed	.125", .0625"	
4	Long centerline CO-50	1", .0625", .03125", .0625"	
4	Short centerline CO-51	.25", .10"	
4	Dash-dot	1", .0625", .03125", .0625"	
5	Short dashed	.375", .0625"	
6	R/w & Property line	4", .0625", .03125", .0625", .03125", .0625"	
7	Baseline	4", .0625", .125", .0625"	

Element Weights



PERMANENT BMP CONSIDERATION CHECKLIST AND PROJECT RECORD

Project Name: _____ Project Number: _____

Project Route, Milepost, & Offset: _____

Planners and designers of new development and significant redevelopment of State rights-of-way shall consider utilizing all BMPs listed hereon. Those BMPs that are not used shall be checked as such and shall include a brief statement describing why they are not used. Other BMPs selected shall be listed.

BMP I.D. (1)	BMP Description/Name	Check if Used	Check if Not Used	If Used, Estimate Cost ($)	If Not Used, State Reason
Part 1 – SOIL STABILIZATION					
Consideration shall be given to implementing one or more of the following BMPs					
ND-1	Preservation of Existing Vegetation				
ND-2	Permanent Seeding and Planting				
ND-3	Mulching				
ND-4	Geotextiles, Mats/Plastic Covers, Erosion Control Blankets				
ND-5	Sodding, Grass Plugging, and Vegetative Buffer Strips				
Other BMPs selected (List)					
1					
2					
3					
Part 2 - STORM WATER FLOW CONTROL					
Consideration shall be given to implementing one or more of the following BMPs					
ND-6	Earth Dikes/Drainage Swales/Ditches and Lined Ditches				
ND-7	Slope Drains and Subsurface Drains				
ND-8	Top and Toe of Slope Diversion				
ND-9	Outlet Protection/Velocity Dissipation				
ND-10	Flared Culvert End Sections				
ND-11	Slope Roughening/Terracing/Rounding				
ND-12	Level Spreader				
Other BMPs selected (List)					
1					
2					
3					
Part 3 – STORM WATER TREATMENT					
Consideration shall be given to implementing one or more of the following BMPs					
ND-13	Retention Basins				
ND-14	Detention Basins				
ND-15	Constructed Wetlands				
ND-16	Oil/Grit Separator				
Other BMPs selected (List)					
1					
2					
3					
	TOTAL PROJECT COST FOR PERMANENT BMPs			$_____	

(1) BMP I.D. numbers correspond to the numbers in, *New Development and Significant Redevelopment BMP Manual* , December 2000

State of Hawaii
Department of Transportation
MEMORANDUM

DIR 1.094

Date: 9/24/ 02

TO: HWY, HAR, AIR Offices

FROM: DIR

SUBJECT: Departmental Pipeline Removal Policy

Effective immediately, it is the state Department of Transportation (DOT) policy to prohibit the abandonment of pipelines and utilities' facilities on all DOT properties, including the highway right-of-way. This policy is effected in order to address the increasing problem of unidentified, abandoned pipelines on DOT property, and the heightened awareness of environmental concerns related to and arising from abandoned pipelines.

Additionally, if any current or pending projects call for any utility lines to be abandoned in place, the DOT will require that the respective utility company, tenant/user, state, county and federal agency agree to be responsible for all costs of removing said pipelines, and also agree to be liable for any clean-up costs, if any, that are related to said pipelines, the prior use of said pipelines, or the removal of same, if such action becomes necessary in the future. The Director may consider exceptions to the removal policy, if the justification is provided in writing. Such consent, however, will be subject to the utility company agreeing to remove its facilities left in place, at its own cost, if the DOT makes such determination in the future.

Finally, any plans that the utility company, state, county and federal agency and other tenant/user has in leasing any of the existing abandoned lines to other utility companies for use in fiber optics, cabling, etc. for which there is no lease with the DOT is strictly prohibited. The new Use and Occupancy Agreement form is specific that the "right under this Agreement shall not be sold, assigned, conveyed, leased, mortgaged, or otherwise transferred or disposed of, directly or by operation of law, except with the prior written consent of the State." This language should be added to the Utility Agreement forms currently in use. If any such use and/or activity have occurred, you must notify Director immediately and appropriate agreements must be negotiated with the DOT.

Each division is hereby responsible to notify by letter to be signed by the Director to all of their utility companies, state, county and federal agencies, and tenants/users that currently have lines within our properties and highway right-of-way of this said policy.

You should also notify any company, agency and tenant/user that in the event, such company, agency or tenant/user is already leasing any of the existing abandoned lines to other companies for use in fiber optics, cabling, or other use, and there is no direct agreement for such use with the DOT, they must notify the DOT within five (5) working days of said letter describing the assignee and the current uses and/or activities. They must be further advised that those unauthorized uses and/or activities must be immediately terminated, or a direct agreement with the DOT must be reached for their continued use. The DOT will otherwise take appropriate action against said violators.

To ensure consistency within each of the divisions, a sample letter is attached.

cc: DEP-P, DEP-S, DIR-CZ, PMN, DIR-P, STP, PPB, LEG (S. Faust, J. Kato, D. Ferm, A. Chock)

cc given to all Branches Districts 9/26/02 wt

(HWY-D 9/94)

DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DESIGN BRANCH

SUBJECT: REQUEST FOR UTILITY AGREEMENT NO. _____

TO: (1) HWY-R Date _____ Suspense Date

(2) LEG: Date _____ Suspense Date

FROM: HWY-D

PROJECT: _____

_____

☐ FEDERAL AID ☐ NON FEDERAL AID

COMPANY INVOLVED: _____ TYPE CODE: _____

ATTACHMENTS:
☐ UTILITY COST ESTIMATE AND PLANS.
☐ COST ESTIMATE ONLY, PLANS TO FOLLOW BY
☐ PLANS.
☐ _____

FOLLOWING INFORMATION FURNISHED:
DESCRIPTION OF WORK: (RELOCATE, REPLACE, ETC.)

_____

_____

_____

_____

2. DEPRECIATION:
☐ YES, SEE PAGE _____ OF ESTIMATE.
☐ NONE, MINOR RELOCATION/REPLACEMENT SEGMENTAL WORK THAT WILL NOT CONTRIBUTE TO LENGTHEN THE LIFE OF THE TOTAL SYSTEM.
☐ _____

3. SALVAGE VALUE:
☐ YES, SEE PAGE _____ OF ESTIMATE.
☐ NONE, EXISTING LINES ARE ABANDONED OR DISPOSED OF.
☐ NONE, EXISTING LINES ARE ABANDONED BUT SALVABLE MATERIALS ARE REUSED.
☐ _____

4. BETTERMENTS:
☐ YES, SEE PAGE _____ OF ESTIMATE.
☐ NONE - REPLACEMENT IN KIND.
☐ _____

5. COMPANY/COUNTY WILL PERFORM THEIR PHASE OF WORK IN A TOTAL OF WORKING DAYS

6. _____ PLANS ARE DATED _____

7. THE STATE WILL GIVE THE COMPANY WORKING DAYS NOTICE TO PROCEED.

8. THE COMPANY WILL GIVE THE STATE WORKING DAYS NOTICE PRIOR TO START.

REMARKS: _____

_____

PROJECT MANAGER/ENGINEER: _____ PHONE EXT.

SUPERVISING R/W AGENT: _____ PHONE EXT.:

CC:

_____
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DOT 4-232
(HWY-RL 6/00)

UTILITY COST ESTIMATE FOR UTILITY AGREEMENT NO. _____

Project: _____ Utility Co.: _____

_____ Prepared By: _____ Date: _____

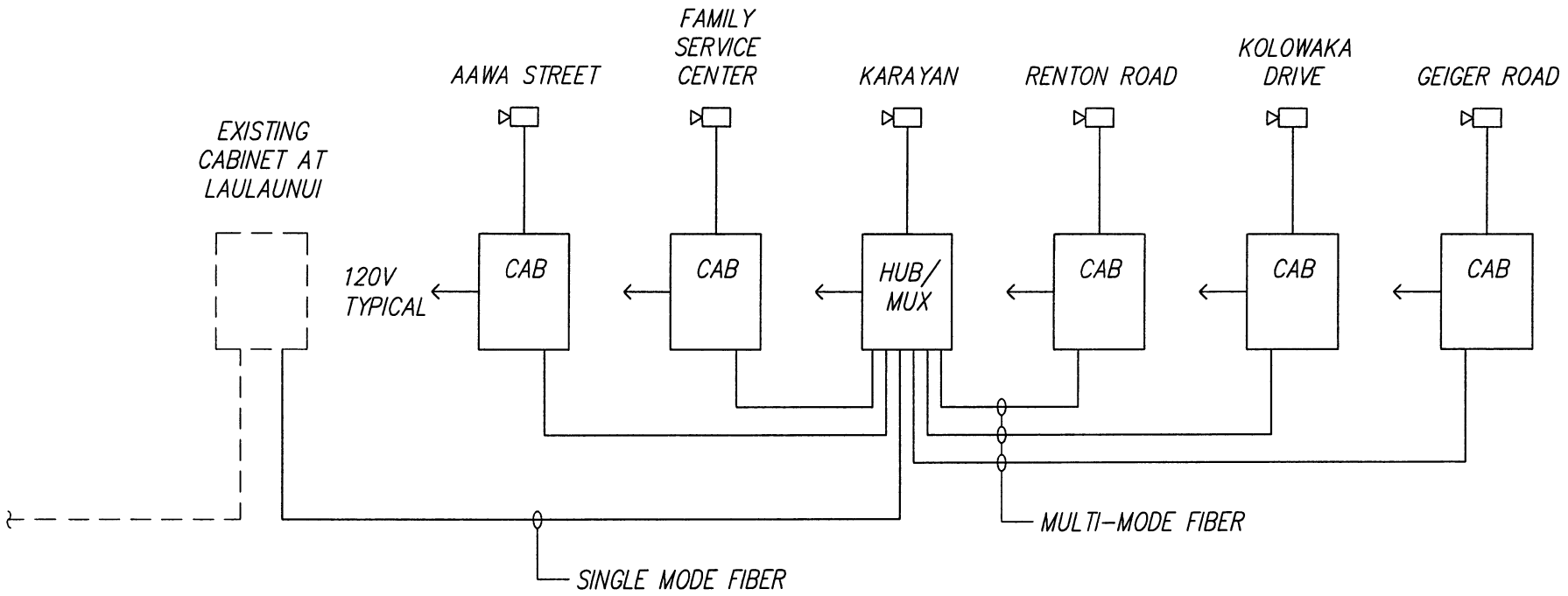
Project No.: _____ Checked By: _____ Date: _____

UTILIY PAYMENT STANDARD COMPARISON

		STATE STANDARDS		FEDERAL STANDARDS (FAPG Sect. 645.117)	
A.	Work/material by the Utility Company and/or its Contractor	$ _____			
B.	Work/material by the State and/or its Contractor	$ _____			
C.	Total Cost of Utility Work (A + B)		$ _____		$ _____
D.	Less Deductions:				
	1. Depreciation	$ _____		$ _____	
	2. Salvage Value	$ _____		$ _____	
	3. Betterments	$ _____		$ _____	
	4. Expired Service Life	$ _____		$ _____	
E.	Total Deductions:(D1+D2+D3+D4)		$ _____		$ _____
F.	Net Cost of Relocation (C minus E)		$ _____		$ _____
G.	Less Cost Sharing Arrangements:				
	1. $10,000 (only if required by Sec. 264-33, H.R.S. e.g., privately owned facilities within the highway right-of-way)	$ _____		$ _____	
	2. Amount for Extraordinary* Items referred to in Item J	$ _____		$ _____	
	3. Total (G1+G2)		$ _____		$ _____
H.	Net Amount (F minus G3)		$ _____		$ _____
I.	State's share in Net Amount [50%]	$ _____		$ _____	
J.	State's Share for Extraordinary* Items which have been deleted from G2	$ _____		$ _____	
K.	State's share in Total Cost of Utility Work (I+J)		$ _____		$ _____ (Amount for Fed Par)
L.	Utility's share in Total Cost of Utility Work (C minus K)		$ _____		

* Extraordinary Items are special improvements in which the State does not participate on the same basis, percentagewise. Attach a description.

ESTIMATED REIMBURSEMENT		FEDERAL SHARE
Utility Company to State (B minus K)	$ _____	$ _____ (K x Fed Par Rate)
State to Utility Company (K minus B)	$ _____	



CCTV CONCEPT DIAGRAM

FT. WEAVER WIDENING

NOT TO SCALE

LIST OF REFERENCE DRAWINGS: The following is a list of reference drawings that are relevant to the Project; however, there may be others. The Contractor is responsible for obtaining all other information necessary to complete his design and construction work.

NO.	YEAR	PROJECT NO.	PROJECT NAME	AGENCY OR DESIGNER
1	2003		FORT WEAVER ROAD WIDENING NEAR LAULAUNUI STREET	HDOT
2	1999	76-A-01-98	FORT WEAVER ROAD DRAINAGE IMPROVEMENTS AT RENTON ROAD AND VICINITY OF KAHUA RANCH NURSERY	HDOT
3	1998	STP-076-1(4)	FORT WEAVER ROAD LANDSCAPING VICINITY OF FARRINGTON HIGHWAY TO HANAKAHI STREET	HDOT
4	1997	PMT-76A-01-97	EWA BY GENTRY FORT WEAVER ROAD INTERSECTION AND IROQUOIS POINT ROAD IMPROVEMENTS	BELT COLLINS & ASSOCIATES
5	1991	76B-01-91	FORT WEAVER ROAD DRAINAGE IMPROVEMENTS VICINITY OF KAHUA RANCH	HDOT
6	1985	F-076-1(1)	FORT WEAVER ROAD WIDENING AND REALIGNMENT	HDOT
7	1982	7600B-01-82 AND S-RS-0760(2) RW	FORT WEAVER ROAD REALIGNMENT AND WIDENING VICINITY OF MANGO TREE ROAD TO THE VICINITY OF RENTON ROAD	HDOT
8	1979	M-7600(2)	FORT WEAVER ROAD REALIGNMENT AND WIDENING	HDOT
9	1998	STP-076-165	FORT WEAVER ROAD RESURFACING NORTH OF LAULAUNUI STREET TO THE VICINITY OF HANAKAI STREET	HDOT
10	1994		WEST LOCH FAIRWAYS	RM TOWILL CORPORATION

LIST OF REFERENCE DRAWINGS continued

NO.	YEAR	PROJECT NO.	PROJECT NAME	AGENCY OR DESIGNER
11	1995		CHILD AND FAMILY SERVICES	MITSUNAGA & ASSOCIATES
12	1995		FORT WEAVER ROAD 36" WATER LINE REALIGNMENT	TOM NANCE WATER RESOURCE ENGINEERING
14	1993		EWA BY GENTRY IROQUOIS POINT ROAD NEW BWS 12-IN WATERLINE	BELT COLLINS & ASSOCIATES
15	1992		EWA BY GENTRY 12-IN WATERLINE	GENTRY HAWAII, LTD.
16	1992		EWA BY GENTRY GEIGER ROAD IMPROVEMENTS	BELT COLLINS & ASSOCIATES
17	1989		EWA TRANSMISSION MAIN AND 16" INTERCONN. MAIN	BELT COLLINS & ASSOCIATES
18	1986		FERNANDEZ VILLAGE WATER PROJECT	STANLEY YIM & ASSOCIATES
19	1986		EWA 42" WATER LINE	ESH, INC.
20	1986		FORT WEAVER ROAD WIDENING AND REALIGNMENT BL 204+50 TO BL 291+63.97	HDOT
21	1983		FERNANDEZ VILLAGE SUBDIVISION	WILLIAM HEE & ASSOCIATES, INC.
22	1982		FORT WEAVER ROAD REALIGNMENT AND WIDENING BL 160+00 TO BL 204+50	HDOT
23	1957		EWA BEACH WATER SUPPLY PROJECT	BELT COLLINS & ASSOCIATES
24	1988		NEW 6" PLASTIC GAS MAIN ALONG FT. WEAVER ROAD BETWEEN FARRINGTON HIGHWAY AND GENTRY SUBDIVISION	THE GAS COMPANY
25	1943		ADD'L GASOLINE STORAGE AND DISTRIBUTION SYSTEM	US NAVY

LIST OF REFERENCE DRAWINGS continued

NO.	YEAR	PROJECT NO.	PROJECT NAME	AGENCY OR DESIGNER
26			RIGHT OF WAY MAP FORT WEAVER ROAD ALIGNMENT, LAST UPDATED 1999	DOT
27			LAND COURT MAPS 367, 422,427,435,442,443,453,454,455,482 ,569,579,633,812,814,878,901,916,48 4,543,582,772,838,914, AND 945	DLNR
28	12/91		Plan and Profile, Pipeline to Honolulu HA-722	Chevron USA Inc.
29	12/71		C-6345 & C-6346 Hut 314J to Hut 5R 1111B-PC 101 11 sheets	Hawaiian Telephone Company

List of Drainage Reports **The following is a list of drainage reports; however, there may be others. The Contractor is responsible for obtaining all other reports that may be relevant to the design and construction of the drainage systems for the Project.**

Honouliuli Stream Drainage Boundary

1. Honouliuli Stream Flood Study for the West Loch Development
   Prepared for: Dept. of Housing and Community Development, C & C of Honolulu
   Prepared by: R. M. Towill Corporation
   Dated: May 1992

2. Honouliuli Stream Flood Study for the West Loch Estates Mauka Golf Course
   Prepared for: Dept. of Housing and Community Development, C & C of Honolulu
   Prepared by: R. M. Towill Corporation
   Dated: April 1988

3. Hydraulic Report for Fort Weaver Road Crossing of Honouliuli Stream
   Prepared By: Parsons Brinckerhoff Quade & Douglas, Inc.
   Dated: April 1977

4. Hydrologic Report for Fort Weaver Road Realignment and Widening
   Prepared By: Parsons Brinckerhoff Quade & Douglas, Inc.
   Dated: October 1976

Pearl Harbor West Loch Drainage Boundary

1. Drainage Report for Ewa by Gentry-East, Phase 1 Offsite Drainage Improvements
   Prepared for: Gentry Homes, Ltd.
   Prepared by: ParEn, Inc. dba Park Engineering
   Dated: January 2004

2. Ewa Villages Drainage Master Plan
   Prepared for: Dept. of Housing and Community Development, C & C of Honolulu
   Prepared by: R. M. Towill Corporation
   Dated: April 1996

3. Ewa by Gentry-East Phase II Area 19, 20 and 21
   Prepared for: Gentry Homes, Ltd.
   Prepared by: ParEn, Inc. dba Park Engineering
   Dated: November 1994

List of Drainage Report

Kaloi Stream Drainage Boundary

1. Fort Weaver Road Conceptual Drainage Plan Kolowaka Drive to Iroquois Point Road
   Prepared for: Gentry Homes, Ltd.
   Prepared by: Belt Collins & Associates
   Dated: August 3, 1994

2. Drainage Report Ewa by Gentry Drainage Sump
   Prepared for: Gentry Homes, Ltd.
   Prepared by: Belt Collins & Associates
   Dated: April 1993

3. Ewa by Gentry-West Drainage Master Plan
   Prepared for: Gentry Development Company
   Prepared by: Belt Collins & Associates
   Dated: July 1989

4. Drainage Master Plan for Ewa By Gentry – East, Phase 1
   Prepared for: Gentry Homes, Ltd
   Prepared by: ParEn, Inc
   Dated: September 1996

Gentry East Makai Sump Drainage Boundary

1. Drainage Report and Hydraulic Calculations for the Proposed Fort Weaver Road Intersection and Iroquois Road Improvements
   Prepared for: Gentry Development Company
   Prepared by: Belt Collins & Associates
   Dated: October 1994

2. Revised Drainage Master Plan for Ewa by Gentry-East, Phase II & Ewa Makai East
   Prepared for: Gentry Homes Inc.
   Prepared by: Engineering Concepts, Inc.
   Dated: May 1997

3. Drainage Master Plan (Revised) for Ewa by Gentry-East, Phase II & Ewa Makai East
   Prepared for: Gentry Homes Inc
   Prepared by: KN Consulting Services, Inc.
   Dated: September 20, 2004