STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADDENDUM NO. 1

FOR

HONOAPIILANI HIGHWAY WIDENING

MAALAEA ROAD TO NORTH KIHEI ROAD

FEDERAL AID PROJECT NO. NH-030-1(28)

DISTRICT OF WAILUKU

ISLAND OF MAUI

2002

Amend the TABLE OF CONTENTS, SPECIAL PROVISIONS, PROPOSAL SCHEDULE and PLANS as follows:

1. TABLE OF CONTENTS

   a. Replace pages 1, 2, 3, 4 and 5 dated 11/19/01 with the attached pages 1, 2, 3, 4 and 5 dated r1/07/02.

2. SPECIAL PROVISIONS

   a. Replace pages 203-1a through 203-4a dated 11/19/01 with the attached pages 203-1a through 203-8a dated r1/03/02.

   b. Replace pages 306-1a through 306-3a dated 8/12/98 with the attached pages 306-1a through 306-3a dated r1/02/02.

   c. Add the attached pages 605-1a through 605-3a dated 1/02/02.

   d. Add the attached pages 607-1a through 607-6a dated 1/03/02.

3. PROPOSAL SCHEDULE

   a. Replace pages P-8 through P-14 dated 11/02/01 with the attached pages P-8 through P-14 dated r1/07/02.

4. **PLANS**

a. **Replace Plan Sheet Nos. 6, 8, 9, 10, and 36 with the attached Plan Sheet Nos. ADD.6, ADD.8, ADD.9, ADD.10, and ADD.36.**

b. **Add Plan Sheet Nos. ADD.36 S-1 and ADD.36 S-2.**

Please acknowledge receipt of this Addendum No. 1 by recording the date of its receipt in the space provided on Page P-4 of the Proposal.

for **BRIAN K. MINAAI**
Director of Transportation

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Performance Bond

Labor and Material Payment Bond (Surety)

Labor and Material Payment Bond

Disclosure of Lobbying Activities
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Form WH-348

Statement of Materials and Labor Used by Contractors on
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Form FHWA-47

Request for Approval of Subcontractor/Joint Contractor

Monthly Report of DBE Participation

Non-Gratuity Affidavit

Amend **Section 203 - Excavation and Embankment** to read as follows:

"SECTION 203 - EXCAVATION AND EMBANKMENT

203.01 Description. This section is for roadway excavation, borrow excavation, embankment and earth berm construction, and disposal of unsuitable or surplus excavated material.

(A) Roadway Excavation. Roadway excavation includes the use or disposal of materials of whatever character encountered in the work. Use the suitable material removed from excavation in the formation of embankment, subgrade, shoulders, slopes, bedding, and backfill for structures, and for other purposes shown on the plans or as specified by the Engineer.

(B) Borrow Excavation. Borrow excavation includes using material obtained from acceptable sources outside of the highway rights-of-way for the construction of embankments or for other portions of the work.

203.02 Materials. None specified.

203.03 Construction Requirements. Clear and grub all areas requiring excavation, grading, and embankment according to Section 201 - Clearing and Grubbing. Excavate and embank roadways, intersections and entrances to a smooth and uniform surface. Excavate so as not to disturb the material outside the limits of slopes.

(A) Excavation.

(1) General. Obliterate old roadways according to Section 202 - Removal of Structures and Obstructions.

When encountering remains of prehistoric people's dwelling sites or artifacts of historical or archaeological significance, refer to Subsection 107.17(D) - Archaeological, Historic, and Burial Site Findings.

The Engineer will not allow blasting.

(2) Widening or Flattening and Steepening Cut Slopes. The Contractor may widen or flatten the planned cut slopes to obtain material required:

(a) for embankment construction;

(b) to preclude the opening of unsightly borrow pits;

(c) to increase the stability of cut slopes; or

(d) when specified by the Engineer.

The Contractor may submit the necessary data to steepen the cut slopes for acceptance by the Engineer, if:

(a) the material can stand at a slope steeper than shown in the contract and

(b) the Contractor does not need the planned material for roadway construction.

(3) Cut Slopes. Round the tops and ends of cut slopes according to the contract or as specified by the Engineer.

Finish cut slopes that are flatter than half horizontal to one vertical (0.5H:1V) true and straight according to the lines and grades of slope shown in the contract.

Finish cut slopes that are half horizontal to one vertical (0.5H:1V) or steeper and slopes in rock excavation in a rough condition with debris and loose material removed. When completed, the average plane of excavation slopes shall conform to the slopes shown on the plans. No points shall vary from the planned slopes by more than 6 inches measured at right angle to the slope.

(4) Potential Slide Areas. Excavate and remove the unstable material by:

(a) benching to the lines designated;

(b) excavating the material to a designated slope from an elevation at or near the roadway grade; or

(c) as specified by the Engineer.

Use this material in the construction of the roadway or dispose along the roadway as specified by the Engineer.

(5) Maintaining Slopes. The above provisions do not relieve the Contractor of maintaining slopes true and smooth or requiring the redesign of a sound slope.

(B) Excavated Material.

(1) Selected Material. Selected material is suitable excavated material from areas within the highway right-of-way.

Use the selected material:

(a) for finishing the top portion of the roadbed,

(b) for constructing roadbed shoulders,

(c) for structure backfill,

(d) for constructing berms,

(e) for erosion control,

(f) for landscaping,

(g) for other uses according to the plans, or

(h) as specified by the Engineer.

Place selected material on the roadbed according to Subsection 203.03(c) - Embankment Construction and selected topsoil for erosion control according to Section 209 - Erosion Control.

The selected material shall remain in place until the Contractor can haul, place, and compact it in final position. The Contractor may stockpile the material at specified locations for later placement in final position only if it is according to the contract. The stockpile locations shall be determined by the Contractor and accepted by the Engineer. The Engineer will not allow additional compensation for any delay or inconvenience in excavation caused by stockpiling the material.

The Engineer will not consider selected topsoil placed in windrows along the tops of roadway slopes for erosion control work as stockpiled material.

(2) Borrow Material. Borrow material shall conform to the size and quality requirements specified in the contract. When the contract does not specify size or quality, the material shall be of a quality suitable for the purpose intended. The sand equivalent (SE) value as determined by AASHTO T 176 for the top three feet of the embankment, excluding the pavement structure, shall not be less

than the filled area and less than two.

Arrange to obtain borrow material and pay the costs involved. Notify the Engineer 20 working days before opening borrow areas. Allow sufficient time for testing the borrow by the Engineer.

Control of borrow material shall be according to Section 106 - Control of Materials.

Do not excavate beyond the dimensions and elevations established for the borrow pit. Do not remove the borrow material until after the Engineer completes the staking out and cross sectioning of the site. Establish and specify the finished borrow areas approximately true to line and grade. Complete the finished borrow areas so no water may collect or stand therein. Blade and leave borrow areas in shape as to permit accurate measurements after completing the excavation.

Do not place borrow material until after placing the selected material in fill. When there is more borrow material than is required, the Engineer will deduct the excess quantity from the borrow volume as measured in the borrow area.

When necessary to remove an existing fence, replace it to as good condition as the existing fence. The Contractor shall be responsible for the confinement of livestock when removing part of the fence. Provide and maintain temporary fencing, when required for security purpose, at no cost to the State. Furnish and install permanent fencing after the temporary fence is no longer needed at no cost to the State.

(3) Surplus Selected Material. Use surplus excavated material to uniformly widen the embankments, flatten the slopes, or dispose along the locations specified by the Engineer. Do not dispose surplus material above the grade of the adjacent roadbed. Complete the embankments before arranging the disposal of surplus excavation. Do not dispose material unless authorized by the Engineer.

The quantity of surplus material, when shown, is only approximate. When disposing the surplus excavated material prematurely, replace the shortage of material at no cost to the State.

Unused surplus excavated material shall become the Contractor's property. Level or free the disposal area from depressions and humps upon completion of disposal operations.

(4) Unsuitable Material. Where excavation to the finished grade results in a subgrade or slopes of unsuitable soil, the Engineer will require:

(a) removing of the unsuitable material and

(b) backfilling to the finished grade with acceptable material according to Subsection 203.03(c) - Embankment Construction.

The Engineer may designate as unsuitable those soils that cannot be properly compacted in embankment. Unsuitable material may include vegetable matter, garbage and junk piles, on the surface or buried. Unsuitable material shall become the property of the Contractor.

Conduct the operations so that the Engineer can take the necessary cross-sectional measurement before placing the backfill.

When the relative compaction of the original ground is less than the compaction shown in Subsection 203.03(C)(2)- Compaction of Embankment with Moisture and Density Control and Subsection 203.03(C)(3) - Compaction of Embankment without Moisture and Density Control, compact the upper 6 inches of the exposed original ground according to the contract.

(5) Highly Sensitive Soil. When soil, having a high moisture content, loses its stability and becomes plastic or muddy, the Engineer will allow such equipment and methods in excavating the material that will result in the least possible manipulation or churning of this material. The Engineer will not permit cable operated scrapers of the Sauerman type.

203.04 Method of Measurement.

(A) Roadway Excavation. The Engineer will measure roadway excavation per cubic yard.

The Engineer will compute the quantities of roadway excavation by the average end area method and centerline distances. The Engineer will not apply correction for curvature to the quantities within the roadway prism shown on the cross sections. The Engineer will make correction for curvature having a centerline radius of 1,000 feet or less in computing excavation quantities from outside the roadway prism where using the roadway centerline as a base.

When the Engineer cannot measure the roadway excavation quantities by the average end area method due to the nature of a particular operation or changed conditions, the Engineer will determine the method to get an accurate quantity estimate.

The Engineer will not measure for payment excavation that is more than the planned or authorized cross section except as provided in Subsections 203.03(A)(4) - Potential Slide Area, 203.03(A)(2) - Widening or Flattening and Steepening Cut Slopes, and 203.03(B)(3) - Surplus Selected Material. Backfill and compact unauthorized excavated areas to the original ground elevation at no cost to the State.

The Engineer will not measure stockpiling of selected material for payment.

(B) Borrow Excavation. The Engineer will measure borrow excavation per cubic yard.

The Engineer will measure borrow material on a volume basis in excavation. The Engineer will compute by the average end area method from measurement taken before and after removal of the material at the borrow site. The Engineer will deduct material excavated at the borrow site and not incorporated into the work from the computed volume of excavation. The Engineer will not pay for the deducted material.

The Engineer will include binder material entering and becoming a part of the borrow excavation material placed on the roadbed in the pay quantities of borrow material.

The Engineer will determine the quantities of materials to be paid for by the cubic yard by converting the weight measurement to volume as provided in Subsection 109.01 - Measurement of Quantities. When the Engineer cannot exercise the control of measurements of pits as supplying the materials, the Engineer will decide the weight-volume ratio from the material in its natural state. The Engineer will use the maximum dry density of the material obtained by the method specified in Subsection 106.09(A)(1) - Maximum Dry Unit Weight when the Engineer cannot determine the weight-volume ratio of the material in its natural state.

When selecting the borrow pit, the Contractor shall be responsible for the weighing of the material loads.

When the Contractor chooses to use pits other than those designated, the Engineer will estimate the difference in the swell and shrinkage factors involved. When these factors increase or decrease by more than two

percentage points, the Engineer will apply a suitable correction to the measured quantities taken from the pit when calculating pay quantities.

The Engineer will not measure Earth Berm for payment.

203.05 Basis of Payment.

(A) Roadway Excavation. The Engineer will pay for the accepted roadway excavation at the contract unit price per cubic yard.

The price includes full compensation for obliterating old roadways; preparing the subgrade; placing selected material in final position; disposing surplus excavation material; rounding of slopes; using water for compaction; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will not pay for stockpiling selected material or subsequently placing it in final position. The Engineer will consider payment for this work to be included in the contract unit price for roadway excavation.

The Engineer will pay for removing and disposing of slide material as roadway excavation:

(1) that slides from outside the planned roadway slopes and into the planned roadway prism, and

(2) the removal and disposal of unstable material in natural position outside the planned roadway slopes.

The Engineer will consider full compensation to be included in the contract price for roadway excavation within the authorized lines and elevations for removing and disposing of material that may come into excavations for structures and drainage facilities.

The Engineer will not include slide material quantities that slide across the roadway prism in the roadway excavation quantities unless the Contractor rehandles and reuses the material. The Engineer will only pay for the quantities rehandled.

When choosing to remove the rocks and lumps or break up hardened material and the contract specifies the source of the selected material, such work shall be at no cost to the State. When the contract does not specify the source of the selected material, the Engineer will pay this work as extra work as specified in Subsection 104.03 - Extra Work.

When specified, the Engineer will pay for:

(1) removing of the unsuitable material below the subgrade and
(2) backfilling and compacting to the finished grade with acceptable material.

The Engineer will pay the following excavation for unlined gutters as roadway excavation:

(1) within the median area of a divided highway; and
(2) between the roadbed shoulder and an adjacent cut slope.

(B) Borrow Excavation. The Engineer will pay for the accepted borrow excavation at the contract unit price per cubic yard complete in place.

The price includes full compensation for staking out and cross sectioning the site; establishing the borrow area; providing, replacing, and maintaining temporary and permanent fencing; confining livestock; watering; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will not pay for selected material from ditch and channel or structure excavations, when used, instead of borrow.

The Engineer will not pay for Earth Berm separately. The costs shall be incidental to Borrow Excavation.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Roadway Excavation	Cubic Yard
Borrow Excavation	Cubic Yard"

END OF SECTION

Make the following Section a part of the Standard Specification:

"SECTION 306 - UNTREATED PERMEABLE BASE COURSE

306.01 Description. This work includes furnishing and placing one or more courses of untreated permeable base on a prepared surface according to the contract.

306.02 Materials. Materials shall conform to the following:

Prime Coat for Untreated Permeable Base Course	420.02
Coarse Aggregate	703.04(A)
Filler	703.04(B)
Water	712.01
Geotextiles	716.03

306.03 Construction Requirements.

(A) Shoulder Preparation. Water, shape, and compact the adjacent shoulder for a width not less than five feet and to the proposed grade for the upper surface of the permeable base course.

Provide a form or choker to retain the untreated permeable base material, by cutting the edge of the shoulder as nearly vertical as possible with the toe of the cut located at the exterior bottom limit of the untreated permeable base material.

Dispose of the cut away material as specified by the Engineer.

(B) Placing. Place the coarse aggregate only upon an accepted surface. Do not lay the aggregate until the surface is dry and fully capable of supporting loaded trucks or other equipment.

Spread the coarse aggregate on the prepared surface to such a depth that when thoroughly compacted, the coarse aggregate shall be of the form and dimensions shown on the typical cross-section.

Place the geotextiles as specified in section 605.03.

When the required thickness is 9 inches or less, place the permeable base course on one layer.

When the required thickness is more than 9 inches, place the permeable base course in two or more layers of approximately equal thickness. Each layer shall have a compacted thickness of not more than 9 inches.

Dump the coarse aggregate in piles upon the surface and spread by bulldozing ahead from the previously spread coarse aggregate. When the prepared surface on which the permeable base is to be placed is stable and without a permeable separator, the Engineer may allow the Contractor to spread the coarse aggregate using vehicles equipped with an acceptable spreading device. When spreading, the coarse aggregate shall be free from segregation. Remix any segregated materials to conform to the contract.

(C) Compacting. Immediately after spreading a layer of coarse aggregate, use power rollers to compact the material thoroughly according to the contract. Roll the coarse aggregate to smooth out bumps or irregularities. The finished surface shall be within 0.04-foot of the required grade and cross-section.

Rolling shall be longitudinal to the roadway lanes. Start at the lower edge and progress toward the higher portion of the roadbed with an overlap of at least ½ of the wheel tracks on successive trips. Do not roll the center of the base material first. Proceed without interruption across the area to be compacted until a minimum of 8 complete coverage with the roller is attained on each lift.

After rolling the final lift of coarse aggregate, spread the filler in thin layers. The filler shall be sufficiently dry to choke the surface voids without caking or bridging. The layer of filler shall not exceed 30 pounds per square yard. Roll the filler with two complete coverage. Scatter the excess filler by light brooming. Apply the prime coat according to Section 420 - Prime Coat for Untreated Permeable Base Course soon thereafter. Keep all traffic, except construction equipment directly connected with the prime coat operation, off the permeable base.

(D) General. When disturbing or displacing the finished permeable base or when foreign matter enters into the base materials during storage, hauling, or placing operations, repair or replace such permeable materials with acceptable materials at no cost to the State.

When constructing untreated permeable base in more than one layer, construct each layer as specified above except apply the filler and the prime coat only on the top of the final layer.

The completed base shall have a firm, even surface free from bumps and irregularities. Provide sufficient filler, water, brooming, and rolling to thoroughly consolidate and compact the edges of the permeable base course to an unyielding condition.

(E) Equipment. Use static steel power rollers weighing not less than 10 tons.

Broom with long bristle brooms. Standard rattan street brooms may be used when acceptable by the Engineer.

306.04 Method of Measurement. The Engineer will measure the permeable base course per cubic yard complete in place according to the dimensions shown on the plans or specified by the Engineer. The Engineer will not measure permeable separator for payment.

306.05 Basis of Payment. The Engineer will pay for the accepted untreated permeable base course at the contract unit price per cubic yard.

The price includes full compensation for preparing the surface; furnishing, applying, and protecting the prime coat; spreading the material; furnishing and placing the geotextile; furnishing, depositing, and placing the coarse aggregate; disposing the excess material; rolling; compacting; water for compaction; filler for the permeable base; brooming; and furnishing labors, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Untreated Permeable Base Course	Cubic Yard"

END OF SECTION

Amend **Section 605 - Underdrains** to read as follows:

"SECTION 605 - UNDERDRAINS

605.01 Description. This section is for installing underdrains according to the contract.

605.02 Materials.

(A) Geotextile. Geotextiles shall conform to Subsection 716.03 - Geotextiles for Underdrain.

(B) Perforated Plastic Pipe. The perforated corrugated polyethylene pipe shall conform to AASHTO M 252 or AASHTO M 294.

The perforated corrugated polyethylene pipe shall be either Type CP corrugated surface outside and smooth inner liner or Type SP corrugated wall outside and smooth inner liner.

The perforated PVC pipe shall conform to ASTM D 2729.

Submit a Certificate of Compliance to the Engineer before using the plastic pipes.

(C) Non-Perforated Pipe. Non-perforated drain pipe shall conform to the requirements of perforated pipes except that the provisions for perforation shall not apply.

(D) Concrete. Concrete for cleanouts shall be Class B and shall conform to Section 601 - Structural Concrete.

(E) Steel Plate. Steel plate for cleanouts shall conform to AASHTO M 183/M183M (ASTM A 36/A 36M).

605.03 Construction Requirements. Excavate to the dimensions and grade shown in the contract or as specified by the Engineer.

Protect the geotextiles from sunlight and temperatures over 140 °F during transport and storage. The information on the packaging shall warn against exposing the geotextile to sunlight.

Place the geotextile as shown in the Contract. Overlap successive sheets a minimum of 18 inches.

Fold the geotextile over the top of the permeable base course to produce a minimum overlap of 12 inches after compaction of the permeable base course. Do not leave geotextile exposed more than five days without being covered by backfill.

Remove and replace geotextile that becomes torn or damaged observing the 18 inches overlap requirement in all directions.

Place perforated pipe with the perforations down. Join the pipe sections securely with the appropriate couplings or bands.

Install non-perforated drain pipe of the type and size specified according to the contract or as specified by the Engineer.

605.04 Method of Measurement. The Engineer will measure the perforated and non-perforated underdrain pipe per linear foot complete in place.

The Engineer will measure the cleanouts per each complete in place.

The Engineer will not measure the geotextile.

The Engineer will not measure underdrain connections to GRP Channel.

605.05 Basis of Payment. The Engineer will pay for the accepted underdrain pipe at the contract unit price per linear foot. The price includes full compensation for furnishing and installing the perforated and non-perforated underdrain pipe; and furnishing materials, equipment, tools, labor and other incidentals necessary to complete the work.

The Engineer will pay for the accepted cleanouts at the contract unit price per each. The price includes full compensation for furnishing and installing the cleanouts; and furnishing materials, equipment, tools, labor and other incidentals necessary to complete the work.

The Engineer will not pay for underdrain connections to GRP Channel separately. The cost shall be considered incidental to Non-Perforated Underdrain Pipe.

The Engineer will not pay for the geotextile. The cost shall be considered incidental to the Untreated Permeable Base Course as specified in Subsection 306.05.

The Engineer will make payment under:

Pay Item	Pay Unit
Perforated Underdrain Pipe	Linear Foot
Non-perforated Underdrain Pipe	Linear Foot
Cleanout	Each"

END OF SECTION

Amend **Section 607 - Fences** to read as follows:

"SECTION 607 - FENCES

607.01 Description. This work includes constructing fences and gates according to the contract.

607.02 Materials. Materials shall conform the following:

Barbed Wire	710.01
Woven Wire	710.02
Chain Link Fencing	710.03
Fence Posts	710.06

Concrete for fence footings shall be Class D and shall conform to Section 601 - Structural Concrete.

When the location of manufacturing plants allows, the Engineer may inspect the plants periodically for compliance with specified manufacturing methods. The Engineer may get samples of materials for laboratory testing for compliance with material quality requirements. This may be the basis for acceptance of manufacturing lots regarding quality.

The condition of materials will be subject to inspection for acceptance before or during incorporation of materials into the work.

607.03 Construction Requirements.

(A) General. Clear, grade and grub as may be necessary to construct the fence to the required grade and alignment.

Make appropriate adjustment in post spacing to conform to the type of closure shown at locations requiring breaks in a run of fencing or at intersections with existing fences.

Install temporary guys or braces until the concrete has set sufficiently to hold the posts when the contract requires embedding posts, braces, or anchors in concrete. Do not install materials on posts or strain placed on guys and bracing set in concrete until 7 days have elapsed from the time of placing of the concrete.

Crown concrete fence footings at the top to shed water.

Set the tops of posts to the required grade and alignment. The Engineer will allow cutting of the tops of the posts only under the written request and the conditions specified.

Firmly attach wire or fencing of the size and type required to the posts and braces according to the contract. Stretch the wires taut and install the wires to the required elevations.

Furnish and install a ground conforming to Section 9 of the National Electric Safety Code at each location where an electric transmission, distribution, or secondary line crosses the fences covered by the contract.

(B) Chain Link Fence. Fabricate posts from pipes conforming to Table 607-I. Space line posts at not more than 10-foot intervals, measured from center to center of posts. In general, make measurement parallel to the slope of the natural ground in determining the post spacing. Place posts in a vertical position.

The depths of footing are as follows:

Type of Post	Fabric Height, Inch	Footing Depth, (Minimum) Foot
Line Post	36	2
End, Corner, and Gate Post	36	2-1/2
Line Post	48	2-1/2
Other Post	--	3

In cross section, the minimum dimension of footings shall not be less than three times the maximum cross-sectional dimension of the post. Also the minimum dimension of footings shall not be less than 8 inches.

Brace end, corner, and gate posts for fencing of a height of 6 feet or more to the nearest line post with horizontal braces used as compression members and truss rods with turnbuckles used as tension members. Brace and truss pull post shall be at intervals of 300 feet in both directions as specified above.

Install corner posts when the fence line changes 30^{o} or more.

TABLE 607-1 - SCHEDULE OF CHAIN LINK FENCE POSTS								
ZINC-COATED PIPE - NOMINAL								
Ht. of Fence (Feet)	Line Posts		End, Corner & Pull Posts		Braces		Top Rails	
	OD Inch	Wt #/ft	OD Inch	Wt #/ft	OD Inch	Wt #/ft	OD Inch	Wt #/ft
3	1-7/8	2.72	1-7/8	2.72	1-5/8	2.57	1-3/8	1.68
4	1-7/8	2.72	1-7/8	3.65	1-5/8	2.57	1-3/8	1.68
5	1-7/8	2.72	2-3/8	3.65	1-5/8	2.57	1-5/8	2.27
6	2-3/8	3.65	3	5.79	1-5/8	2.57	1-5/8	2.27
[illegible]								
Ht. of Fence (Feet)	Line Posts		End, Corner & Pull Posts		Braces		Top Rails	
	OD Inch	Wt #/ft	OD Inch	Wt #/ft	OD Inch	Wt #/ft	OD Inch	Wt #/ft
3	2	1.264	3	2.621	1-1/4	0.786	1-1/4	0.786

The top rail or top tension wire shall pass through the base of line post tops or extension arms and form a continuous brace from end to end of each stretch of fence.

Furnish top rails in approximately 20-foot lengths. Provide with accepted outside couplings or expansion sleeves. Fasten the top rail or top tension wire securely to terminal posts by rail ends and brace bands.

Furnish brace rails in the required lengths.

Fasten chain link fabric on the designated side of the posts. Also, mount chain link fabric on the posts so that the bottom of the fabric is two inches above ground.

Chain link fences shall have knuckled finish on the bottom edge. Chain link fences with fabric width over 60 inches shall have a twisted and barbed finish on the top edge projecting over the top rail or top tension wire of the fence. Chain link fences with fabric widths 60 inches or less shall have knuckled finish on the top edge.

Weave chain link fence fabric into approximately two inch mesh except around tennis courts. Weave chain link fence fabric into approximately 1.75 inches mesh around tennis courts.

Fasten between posts, the top edge of the fabric to a top rail or top tension wire and the lower edge fastened to a tension wire. Install the tension wire on a straight grade between posts by excavating the high points of ground. The Engineer will not permit filling of depressions.

Fasten the fabric to end, corner, and gate posts with stretcher bars and stretcher bar bands spaced at one-foot intervals; and to line posts and tension wires with tie wires or metal bands. Space tie wires or metal bands on line posts at intervals of approximately 14 inches, and on top rails and tension wires at approximately 24 inches.

Drive gates shall be of the widths designated in the contract. Walk gates shall be four-foot wide.

Fabricate gate frames and posts from pipes conforming to of Table 607-II, or if accepted, from shapes of equivalent structural strength. Drive gate shall be cross-trussed with accepted adjustable truss rods. Assemble by the use of properly designed fittings or by accepted welding techniques.

Fabric for the gate shall be the same as that used for the fence. Attach the fabric for the gate to the gate frame by stretcher bars and tie wires as specified for fence construction, and suitable tension connectors spaced at approximately one-foot intervals.

Hang the gates by at least two hinges designed to clamp securely to the gate post and permit the gate to swing back against the fence.

Provide gates with a combination catch and locking attachment of acceptable design. Provide stops to hold gates open and a center rest with catch where required.

TABLE 607-II GATES 3 FEET TO 6 FEET HEIGHT

ZINC-COATED PIPE

GATE FRAMES		GATE OPENING	GATE POSTS	
O.D. Inch	Nominal Weight lbs/ft		O.D. Inch	Nominal Weight lbs/ft
1.875	2.72	Single to 6' or Double to 12'	3	5.79
1.875	2.72	Single over 6' to 13' or Double over 12' to 26' inclusive	4	9.11
1.875	2.72	Single over 13' to 18' or Double over 26' to 36' inclusive	6.625	18.97
1.875	2.72	Single over 18' or Double over 36'	8.625	24.70

ALUMINUM PIPE

GATE FRAMES			GATE OPENING	GATE POSTS		
Nominal Size Inch	Nominal O.D. Inch	Wt. lbs/ft		Nominal Size Inch	Nominal O.D. Inch	Wt. lbs/ft
1.50	1.9	0.94	Single to 6' or Double to 12'	3	3-1/2	2.621
1.50	1.9	0.94	Single over 6' to 13' or Double over 12' to 26' inclusive	3.50	4	3.151
1.50	1.9	0.94	Single over 13' to 18' or Double over 26' to 36'inclusive	6	6.625	6.564
1.50	1.9	0.94	Single over 18' or Double over 36'	8	8.625	9.878

(C) Wire Fences. Stretch the wires tightly with an accepted fence wire stretcher and stapled to each wooden post with zinc-coated staples or wired to each concrete post with several turns of tie wire. Staple or wire wood spreaders, if required by the contract, to each strand of the fence wires. The wire shall always be on the side of the fence that faces this pasturage when the fence impounds animals.

Brace the fence at corners and angles and anchor against pull according to details shown in the contract.

Dip wood posts before use in creosote as required on the plans. Set posts vertically in the ground to the approximate depth shown on the plans. Tamp posts thoroughly into place.

607.04 Method of Measurement. The Engineer will measure the fence per linear foot complete in place. Measurement will be along the top of the fence from outside to outside of end post for each continuous run of fence.

607.05 Basis of Payment. The Engineer will pay for the accepted fence at the contract unit price per linear foot complete in place. The price includes full compensation for clearing, grading, and grubbing; placing and crowning the concrete footing; installing temporary bracing; setting the tops of post; furnishing and installing the fence, wires, posts, top rail or top tension wires, grounds and its accessories; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
_____ Fence With _____ Posts	Linear Foot"

END OF SECTION

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
201.0200	Clearing and Grubbing Including Removing 45 Large Trees (520,000 Sq. Ft.)	L.S.	L.S.	L.S.	$
203.0100	Roadway Excavation	11,100	Cu. Yd.	$	$
203.0210	Borrow Excavation	19,500	Cu. Yd.	$	$
206.2020	Structural Excavation for Drainage Systems	2,675	Cu. Yd.	$	$
206.7000	Structure Backfill for Concrete Box Culverts	464	Cu. Yd.	$	$
206.8000	Filter Material	25	Cu. Yd.	$	$
209.1000	Water Pollution and Erosion Control	F.A.	F.A.	F.A.	$ 50,000.00
305.1110	Aggregate Subbase Course	3,600	Cu. Yd.	$	$
306.1000	Untreated Permeable Base Course	3,900	Cu. Yd.	$	$
312.0100	Plant Mix Glassphalt Concrete Base Course	10,800	Ton	$	$
401.0400	Asphalt Concrete Pavement, Mix No. IV	11,040	Ton	$	$
503.1300	Concrete in Concrete Inlet and Outlet Structures (Class A)	111	Cu. Yd.	$	$
503.1301	Concrete in Concrete Box Culverts (Class A)	227	Cu. Yd.	$	$
602.0400	Reinforcing Steel for Concrete Inlet and Outlet Structures (14,960 Lb.)	L.S.	L.S.	L.S.	$

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
602.0401	Reinforcing Steel for Concrete Box Culverts (33,110 Lb.)	L.S.	L.S.	L.S.	$ _____
603.0010	Bed Course Material for Culvert	637	Cu. Yd.	$ _____	$ _____
603.1010	18-Inch Reinforced Concrete Pipe, Class III, or 18-Inch High Density Polyethylene Pipe, Type S, or 18-Inch Aluminum Spiral Rib Pipe, thickness = 0.105"	5	Lin. Ft.	$ _____	$ _____
603.1012	24-Inch Reinforced Concrete Pipe, Class III, or 24-Inch High Density Polyethylene Pipe, Type S, or 24-Inch Aluminum Spiral Rib Pipe, thickness = 0.105"	1,304	Lin. Ft.	$ _____	$ _____
603.1014	36-Inch Reinforced Concrete Pipe, Class III	18	Lin. Ft.	$ _____	$ _____
603.1024	29" x 18" Corrugated Aluminum Pipe Arch, thickness = 0.105"	317	Lin. Ft.	$ _____	$ _____
603.2100	Type "1" Reinforced Concrete Collar	1	Each	$ _____	$ _____
603.2200	Type "2" Reinforced Concrete Collar	1	Each	$ _____	$ _____
604.2300	Type "61614P" Grate	2	Each	$ _____	$ _____
604.5100	Type "A" Storm Drain Manhole, 4.00 feet to 4.99 feet	1	Each	$ _____	$ _____
604.5200	Type "A" Storm Drain Manhole, 6.00 feet to 6.99 feet	1	Each	$ _____	$ _____
604.5210	Type "61614P" Grated Drop Inlet, 3.00 feet to 3.99 feet	1	Each	$ _____	$ _____
604.5211	Type "61614P" Grated Drop Inlet, 4.00 feet to 4.99 feet	10	Each	$ _____	$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
604.5212	Type "61614P" Grated Drop Inlet, 5.00 feet to 5.99 feet	1	Each	$	$
604.5220	Modified Type "61614P" Grated Drop Inlet, 5.00 feet to 5.99 feet	1	Each	$	$
604.5230	Special Type "61614P" Grated Drop Inlet, 4.00 feet to 4.99 feet	1	Each	$	$
605.1000	Perforated Underdrain Pipe	3,940	Lin. Ft.	$	$
605.2000	Non-Perforated Underdrain Pipe	160	Lin. Ft.	$	$
605.3000	Cleanout	7	Each	$	$
606.3000	Guardrail, Type 3 - Single with Steel Post	3,893	Lin. Ft.	$	$
606.7100	Terminal Section, Type FLEAT-350	9	Each	$	$
607.9030	5-Strand Barbed Wire Fence, 5-Feet High (With Metal Posts 10-Feet on Center)	2,200	Lin. Ft.	$	$
609.2200	Gutter, Type 2(61614)	3,772	Lin. Ft.	$	$
612.6400	Grouted Rubble Paving for Lined Channel	2,305	Lin. Ft.	$	$
612.6410	Grouted Rubble Paving for Inlet and Outlet Structures	44	Cu. Yd.	$	$
621.0200	Panel for Destination Sign	31	Sq. Ft.	$	$
621.0300	Relocate Existing Destination Sign	1	Each	$	$

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
621.1000	Galvanized Steel Post (W6x12) for Relocated Ground Mounted Destination Sign	36	Lin. Ft.	$ _____	$ _____
621.1400	2.50 Lbs./Ft. Flanged Channel Post for Destination Sign	6	Each	$ _____	$ _____
621.3010	Type VI Footing for Relocated Destination Sign	2	Each	$ _____	$ _____
621.4120	Reflector Marker (RM-3) with Steel Post	28	Each	$ _____	$ _____
621.5100	Regulatory and Warning Sign (10 Sq. Ft. or Less) with Post	7	Each	$ _____	$ _____
621.5600	Relocate Existing Shoreline Access Sign with Post	1	Each	$ _____	$ _____
621.5700	Relocate Existing Adopt A Highway Sign with Post	2	Each	$ _____	$ _____
621.6100	State Route Marker Assembly with Post (Type A)	5	Each	$ _____	$ _____
621.7100	Construction Sign with Posts	6	Each	$ _____	$ _____
621.7600	Mile Post Marker and Highway Route Marker Plate with Post	2	Each	$ _____	$ _____
622.0010	Roadway Lighting Standard Foundation	9	Each	$ _____	$ _____
622.0020	2-Foot x 4-Foot MECO Pre-Cast Concrete Pullbox	9	Each	$ _____	$ _____
622.0030	3-Inch PVC Schedule 40 Concrete Encased Conduit (1,600 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
622.0040	3-Inch PVC Schedule 40 Conduit Elbow and Riser	1	Each	$ _____	$ _____
622.0050	MECO Charges for Street Light Installation	F.A.	F.A.	F.A.	$ 21,500.00

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.1010	4-Inch Pavement Striping (Tape - Type I or Thermoplastic Extrusion, 1,210 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1011	4-Inch Pavement Striping (Tape - Type II or Thermoplastic Extrusion, 17,680 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1012	4-Inch Pavement Striping (Tape - Type III or Thermoplastic Extrusion, 1,200 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1015	8-Inch Pavement Striping (Tape - Type II or Thermoplastic Extrusion, 580 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1016	12-Inch Pavement Striping (Tape - Type II or Thermoplastic Extrusion, 610 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1017	12-Inch Pavement Striping (Tape - Type III or Thermoplastic Extrusion, 15 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1018	Double 4-Inch Pavement Striping (Tape - Type I or Thermoplastic Extrusion, 870 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1019	Double 4-Inch Pavement Striping (Tape - Type II or Thermoplastic Extrusion, 2,480 Lin. Ft.)	L.S.	L.S.	L.S.	$ _____
629.1031	Pavement Arrows (Tape - Type III, or Thermoplastic Extrusion)	14	Each	$ _____	$ _____
629.1041	Pavement Words (Tape - Type III, or Thermoplastic Extrusion)	6	Each	$ _____	$ _____
629.2010	Type A Pavement Markers (1,020 Each)	L.S.	L.S.	L.S.	$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.2030	Type C Pavement Markers (586 Each)	L.S.	L.S.	L.S.	$
629.2040	Type D Pavement Markers (44 Each)	L.S.	L.S.	L.S.	$
629.2070	Type H Pavement Markers (288 Each)	L.S.	L.S.	L.S.	$
630.0010	2-Foot x 4-Foot MECO Pre-Cast Concrete Handhole	1	Each	$	$
630.0020	3-Foot x 5-Foot HTCO Pre-Cast Concrete Handhole	1	Each	$	$
630.0030	2-Inch PVC Schedule 40 Concrete Encased Conduit (40 Lin. Ft.)	L.S.	L.S.	L.S.	$
630.0040	4-Inch PVC Schedule 40 Concrete Encased Conduit (90 Lin. Ft.)	L.S.	L.S.	L.S.	$
630.0050	2-Inch PVC Schedule 80 Conduit Elbow and Riser	1	Each	$	$
630.0060	4-Inch PVC Schedule 80 Conduit Elbow and Riser	3	Each	$	$
630.0070	Meter Socket, Breaker and Electrical Connection	L.S.	L.S.	L.S.	$
630.0080	Electrical Equipment Demolition	L.S.	L.S.	L.S.	$
630.0090	MECO Service Connection Charge	F.A.	F.A.	F.A.	$ 1,500.00
636.1000	Project Site Laboratory (Not to Exceed $22,000.00)	L.S.	L.S.	L.S.	$
636.2000	Maintenance of Field Office and Project Site Laboratory	F.A.	F.A.	F.A.	$ 30,000.00
641.0100	Hydro-Mulch Seeding (Approximately 200,000 Sq. Ft.)	L.S.	L.S.	L.S.	$

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
645.2000	Additional Police Officers and/or Additional Traffic Control Devices	F.A.	F.A.	F.A.	$ 100,000.00
656.1000	Dumped Riprap	140	Cu. Yd.	$ _____	$ _____
699.0100	Mobilization (Not to Exceed 10 Percent of the Sum of All Items Excluding This Item, Project Site Laboratory, and all Force Account Items)	L.S.	L.S.	L.S.	$ _____
	A. SUM OF ALL ITEMS				$ _____
	B. Either Furnish Foreign Steel Not to Exceed Minimal Amount (Insert "0") or Furnish Foreign Steel in Excess of Minimal Amount (Insert "25% x A")				$ _____
	C. Amount for Comparison of Bids (A + B)				$ _____

*All Bidders must fill in B and complete C.
NOTE: Bidders must complete all unit prices. Failure to do so may be grounds for rejection of bid.