



Department of Administrative Services

Purchasing and Contracts

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Sabra Smith Newby, Chief Administrative Officer
Adleen B. Stidhum, Purchasing Manager

CLARK COUNTY, NEVADA
BID NO. 603766-15
HACIENDA AVENUE, DURANGO DRIVE TO RAINBOW BOULEVARD

August 31, 2015

ADDENDUM NO. 1

INVITATION TO BID

1. The bid opening date of **September 14, 2015 at 2:15:00 p.m. remains the same.**

BID FORM

2. Disregard the Bid Form, pages 4-1 through 4-6 and replace with the attached Revised Bid Form, pages 4-1 through 4-6 attached to this Addendum No. 1.
 - a. Bid item **216.01 – Cold-Mill Fine** has been added.
 - b. Quantity for bid item 302.01 – Type II Aggregate Base has been changed to **4,665 CY.**
 - c. Quantity for bid item 402.01 – Plantmix Bituminous Surface has been changed to **4,550 TON.**
 - d. Bid item 412.01 – Slurry Seal (Type III) has been removed.
 - e. Bid item 412.02 – Surface Grinding has been removed.
 - f. Bid item 412.03 – Rolling has been removed.
 - g. Bid item 412.04 – Excess Ravel Sweeping has been removed.
 - h. Bid item **413.01 – 1” UTACS Mixture S3-Gradation** has been added.
 - i. Quantity for bid item 613.02 – Reconstruct Concrete Curb and Gutter changed to **600 LF.**
 - j. Quantity for bid item 616.01 – Reconstruct Fence has been changed to **2,000 LF.**
 - k. Bid item 623.07 – Remove Street light Pole w/ Mounted Service has been replaced with Bid item **623.07 – Remove Street light Pole.**
 - l. Bid item 623.08 – Relocate Street Light Pole w/ Flashing Beacon has been replaced with Bid item **623.08 – Relocate Flashing Beacon.**
 - m. Quantity for bid item 623.09 – 250W HPS Street Light Assembly w/ Standard Foundation to **21 EA.**
 - n. Quantity for bid item 627.01 – Permanent Sign Post has been changed to **7 EA.**
 - o. Bid item 627.06 – Permanent Sign Panel (R3-17BP) (24”x18”) has been replaced with Bid item **627.06 – Permanent Sign Panel (R2-1) (30”x36”).**
 - p. Bid item 627.07 – Permanent Sign Panel (R3-17AP) (24”x18”) has been replaced with Bid item **627.07 – Permanent Sign Panel (R3-17R) (30”x36”).**

- q. Bid item **627.08 – Permanent Sign Panel (OM3-R) (12”x36”)** has been added.
- r. Bid item **627.09 – Permanent Sign Panel (W2-7R) (30”x30”)** has been added.
- s. Quantity for bid item 628.01 – Type 2 Film (Crosswalk) has been changed to **1,480 SF.**
- t. Quantity for bid item 628.02 – Type 2 Film (Stop Bar) has been changed to **488 SF.**
- u. Quantity for bid item 628.03 – Type 2 Film (Arrow Legend) has been changed to **21 EA.**
- v. Quantity for bid item 628.04 – Type 2 Film (Bike Legend) has been changed to **13 EA.**
- w. Quantity for bid item 628.05 – Type 1 Film (6” White) has been changed to **17,486 EA.**
- x. Bid item **628.06 – Type 1 Film (8” White)** has been added.
- y. Bid item **628.07 – Type 1 Film (4” Yellow)** has been added.
- z. Bid item **628.08 – Type 2 Film (Chevron)** has been added.
- aa. Quantity for bid item 629.01 – Vertically Adjust Water Valve Box has been changed to **25 EA.**
- bb. Bid item **629.04 – Vertically Adjust Water Manhole** has been added.
- cc. Bid item **629.05 – Vertically Adjust Water Pullbox** has been added.
- dd. Quantity for bid item 630.01 – Vertically Adjust Manhole Grade Rings (Sanitary Sewer) has been changed to **20 EA.**
- ee. Quantity for bid item 630.02 – Vertically Adjust Lined Manholes (Sanitary Sewer) has been changed to **13 EA.**
- ff. Quantity for bid item 633.01 – Non-Reflective Pavement Markers has been changed to **6,287 EA.**
- gg. Quantity for bid item 633.02 – Reflective Pavement Markers has been changed to **2,301 EA.**

SPECIAL PROVISIONS

3. SECTION 203.05.01 BASIS OF PAYMENT

- a. the following paragraphs shall be added:

No separate payment will be made for removal of wheel ruts, other surface irregularities, and to restore proper grade and/or transverse slope of pavement as indicated in the plans or as instructed by the Engineer as such; the cost thereof shall be included in the price bid for the roadway excavation to which such work is incidental or appurtenant.

No separate payment will be made for excavation due to variation of the existing grade, and to construct the proper grade and/or transverse slope of pavement as indicated in the plans or as instructed by the Engineer as such; the cost thereof shall be included in the price bid for the roadway excavation to which such work is incidental or appurtenant.

4. The following sections are being reissued with this addendum.

- a. Section 216
- b. Section 412
- c. Section 413

- d. Section 623
- e. Section 628
- f. Section 629

CONTRACT DRAWINGS

- 5. The following sheets are being reissued with this addendum.
 - a. SHEET NO. 4 thru SHEET NO. 13.

Except as modified herein, all other bid specifications, terms, conditions and special provisions shall remain the same.

Issued by:



THOMAS BOLDT, C.P.M.
Sr. Purchasing Analyst

Attachment(s): Revised Bid Form, pages 4-2 to 4-6
Section 216
Section 412
Section 413
Section 623
Section 628
Section 629
SHEET NO. 4 to SHEET NO. 13

cc: Richard Robinson, Public Works
Joe Yatson, Public Works
Mike Mamer, Public Works
Cindy Beauchamp, Public Works

CLARK COUNTY, NEVADA

BID FORM

BID NO. 603766-15
HACIENDA AVENUE, DURANGO DRIVE TO RAINBOW BOULEVARD
PWP NUMBER: CL-2015-357
REVISED PER ADDENDUM NO. 1

(NAME)

(ADDRESS)

I, THE UNDERSIGNED BIDDER:

1. Agree, if awarded this Contract, I will complete all work for which a Contract may be awarded and to furnish any and all labor, equipment, materials, transportation, and other facilities required for the services as set forth in the Bidding and Contract Documents.
2. Have examined the Contract Documents and the site(s) for the proposed work and satisfied themselves as to the character, quality of work to be performed, materials to be furnished and as to the requirements of the specifications.
3. Have completed all information in the blanks provided and have submitted the following within this Bid:
 - a) Have listed the name of each Subcontractor which will be paid an amount exceeding five percent (5%) of the Total Base Bid amount.
 - b) Attached a bid security (in the form of, at my option, a Cashiers Check, Certified Check, Money Order, or Bid Bond in favor of the Owner in the amount of five percent (5%) of the Total Base Bid amount.
 - c) If claiming the preference eligibility, I have submitted a valid Certificate of Eligibility with this Bid.
4. I acknowledge that if I am one of the three apparent low bidders at the bid opening, and if I have listed Subcontractor(s) pursuant to NRS 338.141, I must submit Bid Attachment 2 within two-hours after completion of the bid opening pursuant to the Instructions to Bidders, forms must be submitted via hand delivery or email to COUNTYPURCHASING@CLARKCOUNTYNV.GOV and I understand that hand delivery is recommended, and Owner shall not be responsible for lists received after the two-hour time limit, regardless of the reason. I understand that submission after the two-hour time limit is not allowed and will be returned to me and the bid will be deemed non-responsive. I acknowledge that for all projects, I will list:
 - a) My firm's name on the list If my firm will perform any work which is more than 1 percent of the prime contractor's total bid and which is not being performed by a subcontractor. The prime contractor shall also include on the list:
 - 1) A description of the labor or portion of the work that the prime contractor will perform: or
 - 2) A statement that the prime contractor will perform all work other than that being performed by a subcontractor listed.
 - b) The name of each first tier subcontractor who will provide labor or a portion of the work on the public work to the prime contractor for which the first tier subcontractor will be paid an amount exceeding \$250,000.
 - c) If I will employ a first tier subcontractor who will provide labor or a portion of the work on the public work to the prime contractor for which the first tier subcontractor will not be paid an amount exceeding \$250,000, the name of each first tier subcontractor who will provide labor or a portion of the work on the public work to the prime contractor for which the first tier subcontractor will be paid 1 percent of the prime contractor's total bid or \$50,000, whichever is greater.
5. I acknowledge that if I am one of the three apparent low bidders at bid opening, and if I have submitted a valid Certificate of Eligibility as described in 3.c above, I must submit Bid Attachment 3, Affidavit Pertaining to Preference Eligibility, within two-hours after completion of the bid opening pursuant to the General Conditions. The forms must be submitted via hand delivery or email to COUNTYPURCHASING@CLARKCOUNTYNV.GOV and I understand hand delivery is recommended. Owner shall not be responsible for lists received after the two-hour time limit, regardless of the reason. I understand that submission of the Certificate after the two-hour time limit is not allowed and it will be returned to me and the bid will be deemed non-responsive.

- 6. I acknowledge that if I am one of the three apparent low bidders at the bid opening I must submit BID ATTACHMENT 4, LOCAL SMALL BUSINESS PARTICIPATION SURVEY within twenty four hours after completion of the bid opening.
- 7. I acknowledge that if notified that I am the low bidder, I must submit the Disclosure of Ownership/Principals form within 24-hours of request.
- 8. I acknowledge that my bid is based on the current State of Nevada prevailing wages.
- 9. I acknowledge that I have not breached a public work contract for which the cost exceeds \$25,000,000, within the preceding year, for failing to comply with NRS 338.147 and the requirements of a contract in which I have submitted within 2 hours of the bid opening an Affidavit pertaining to preference eligibility.
- 10. Upon faxed or mailed receipt of a Notice of Intent to Award the Contract, I will provide the following submittals within seven business days from receipt of the Notice:
 - a) Performance Bond, Labor and Material Payment Bond and a Guaranty Bond, for 100% of the Contract amount as required.
 - b) Certificates of insurance for Commercial General Liability in the amount of \$1,000,000, Automobile Liability in the amount of \$1,000,000, and Workers' Compensation insurance issued by an insurer qualified to underwrite Workers' Compensation insurance in the State of Nevada, as required by law.
- 11. I acknowledge that if I do not provide the above submittals on or before the seventh business day after receipt of the Notice of Intent to Award; or do not keep the bonds or insurance policies in effect, or allow them to lapse during the performance of the Contract; I will pay over to the Owner the amount of **\$1,500** per day as liquidated damages.
- 12. I confirm this bid is genuine and is not a sham or collusive, or made in the interest of, or on behalf of any person not herein named, nor that the Bidder in any manner sought to secure for themselves an advantage over any bidders.
- 13. I further propose and agree that if my bid is accepted, I will commence to perform the work called for by the contract documents on the date specified in the Notice to Proceed and I will complete all work within the calendar days **specified in the General Conditions.**
- 14. I further propose and agree that I will accept as full compensation for the work to be performed the price written in the Bid Schedule below.
- 15. I have carefully checked the figures below and the Owner will not be responsible for any error or omissions in the preparation or submission of this Bid.
- 16. I agree no verbal agreement or conversation with an officer, agent or employee of the Owner, either before or after the execution of the contract, shall affect or modify any of the terms or obligations of this Bid.
- 17. I am responsible to ascertain the number of addenda issued, and I hereby acknowledge receipt of the following addenda:

Addendum No. _____	dated, _____	Addendum No. _____	dated, _____
Addendum No. _____	dated, _____	Addendum No. _____	dated, _____
Addendum No. _____	dated, _____	Addendum No. _____	dated, _____
Addendum No. _____	dated, _____	Addendum No. _____	dated, _____
Addendum No. _____	dated, _____	Addendum No. _____	dated, _____
- 18. I agree to perform all work described in the drawings, specifications, and other documents for the amounts quoted below:

BID SCHEDULE				
ITEM NUMBER	ITEM DESCRIPTION	APPROX. QUANTITY	UNIT	TOTAL
107.01	TRAFFIC CONTROL	90	DAY	\$
109.01	CONSTRUCTION CONFLICTS AND ADDITIONAL WORK	1	LS	\$150,000
109.02	HISTORICAL OWNER CAUSED DELAY ALLOWANCE	5	DAY	\$2,500
109.03	ADDITIONAL AMOUNT OVER \$500.00 / DAY AS DETERMINED BY BIDDER	5	DAY	\$

BID SCHEDULE				
ITEM NUMBER	ITEM DESCRIPTION	APPROX. QUANTITY	UNIT	TOTAL
110.01	TRAINING	1,000	HOUR	\$1,400
200.01	MOBILIZATION	1	LS	\$
203.01	ROADWAY EXCAVATION 4"	10,495	SY	\$
203.02	ROADWAY EXCAVATION 5"	770	SY	\$
203.03	ROADWAY EXCAVATION 12"	1,435	SY	\$
203.04	ROADWAY EXCAVATION 14"	12,395	SY	\$
203.05	ROADWAY OVER EXCAVATION 1"	770	SY	\$
216.01	COLD-MILL FINE	56,050	SY	\$
302.01	TYPE II AGGREGATE BASE	4,665	CY	\$
302.02	RECONSTRUCTION OF BASE FAILURES	500	CY	\$
302.03	GEOTEXTILE SOIL STABILIZATION FABRIC	300	SY	\$
402.01	PLANTMIX BITUMINOUS SURFACE	4,550	TON	\$
413.01	1" UTACS MIXTURE S3-GRADATION	78,500	SY	\$
609.01	(SIDEWALK UNDERDRAIN) DROP INLET	1	EA	\$
613.01	RECONSTRUCT CONCRETE SIDEWALK	960	SF	\$
613.02	RECONSTRUCT CONCRETE CURB AND GUTTER	600	LF	\$
613.03	RECONSTRUCT CONCRETE SPANDREL / CROSS GUTTER	770	SF	\$
613.04	CAST-IN-PLACE DETECTABLE WARNING PANEL (5'X2')	11	EA	\$
613.06	CONCRETE SIDEWALK	31,600	SF	\$
613.07	TYPE L CURB AND GUTTER	3,540	LF	\$
613.09	CONCRETE CROSS GUTTER	3,015	SF	\$
616.01	RECONSTRUCT FENCE	2000	LF	\$
623.01	INDUCTION LOOPS DETECTOR (6'X6')	8	EA	\$
623.02	INDUCTION LOOPS DETECTOR (6'X30')	2	EA	\$
623.03	INSTALL 3-INCH PVC CONDUIT	250	LF	\$
623.04	INSTALL 1 1/2-INCH CONDUIT	5,500	LF	\$
623.05	NO. 3 1/2 PULL BOX	1	EA	\$
623.06	NO. 5 PULL BOX	1	EA	\$
623.07	REMOVE STREET LIGHT POLE	2	EA	\$
623.08	RELOCATE FLASHING BEACON	1	EA	\$
623.09	250W HPS STREET LIGHT ASSEMBLY W / STANDARD FOUNDATION	21	EA	\$
627.01	PERMANENT SIGN POST	7	EA	\$
627.02	PERMANENT SIGN PANEL (R1-1) (36"x36")	3	EA	\$
627.03	PERMANENT SIGN PANEL (D3) (9")	2	EA	\$

BID SCHEDULE				
ITEM NUMBER	ITEM DESCRIPTION	APPROX. QUANTITY	UNIT	TOTAL
627.04	PERMANENT SIGN PANEL (R7-1ARP) (12"x18")	9	EA	\$
627.05	PERMANENT SIGN PANEL (R3-17) (24"x18")	4	EA	\$
627.06	PERMANENT SIGN PANEL (R2-1) (30"x36")	2	EA	\$
627.07	PERMANENT SIGN PANEL (R3-17R) (36"x36")	2	EA	\$
627.08	PERMANENT SIGN PANEL (OM3-R) (12"x36")	2	EA	\$
627.09	PERMANENT SIGN PANEL (W2-7R) (30"x30")	2	EA	\$
628.01	TYPE 2 FILM (CROSSWALK)	1,480	SF	\$
628.02	TYPE 2 FILM (STOP BAR)	488	SF	\$
628.03	TYPE 2 FILM (ARROW LEGEND)	21	EA	\$
628.04	TYPE 2 FILM (BIKE LEGEND)	13	EA	\$
628.05	TYPE 1 FILM (6" WHITE)	17,486	LF	\$
628.06	TYPE 1 FILM (8" WHITE)	64	LF	\$
628.07	TYPE 1 FILM (4" YELLOW)	100	LF	\$
628.08	TYPE 2 FILM (CHEVRON)	350	SF	\$
629.01	VERTICALLY ADJUST WATER VALVE BOX	25	EA	\$
629.02	VERTICALLY ADJUST WATER BLOW-OFF	3	EA	\$
629.03	VERTICALLY ADJUST TEST STATION BOX	1	EA	\$
629.04	VERTICALLY ADJUST WATER MANHOLE	6	EA	\$
629.05	VERTICALLY ADJUST WATER PULL BOX	2	EA	\$
630.01	VERTICALLY ADJUST MANHOLE GRADE RINGS (SANITARY SEWER)	10	EA	\$
630.02	VERTICALLY ADJUST LINED MANHOLES (SANITARY SEWER)	3	EA	\$
633.01	NON-REFLECTIVE PAVEMENT MARKERS	6,287	EA	\$
633.02	REFLECTIVE PAVEMENT MARKERS	2,301	EA	\$
637.01	DUST CONTROL	90	DAY	\$
TOTAL BASE BID				\$

19. BUSINESS ENTERPRISE INFORMATION:

The Prime Contractor submitting this Bid is a MBE WBE PBE SBE VET DVET ESB as defined in the Instructions to Bidders.

20. BUSINESS ETHNICITY INFORMATION:

The Prime Contractor submitting the Bid Ethnicity is Caucasian (CX) African American (AA) Hispanic American (HA) Asian Pacific American (AX) Native American (NA) Other as defined in the Instructions to Bidders.

21. BIDDERS' PREFERENCE Is the Bidder claiming Bidders' Preference?

Yes If yes, the Bidder acknowledges that he/she is required to follow the requirements set forth in the Affidavit (Bid Attachment 3).

No I do not have a Certificate of Eligibility to receive preference in bidding.

LEGAL NAME OF FIRM AS IT WOULD APPEAR IN CONTRACT

ADDRESS OF FIRM

CITY, STATE, ZIP CODE

TELEPHONE NUMBER

FAX NUMBER

NEVADA STATE CONTRACTORS' BOARD LICENSE INFORMATION:

I certify that the license(s) listed below will be the license(s) used to perform the majority of the work on this project.

LICENSE NUMBER: _____

LICENSE CLASS: _____

LICENSE LIMIT: _____

ONE TIME LICENSE LIMIT INCREASE \$ _____ IF YES, DATE REQUESTED _____

CLARK COUNTY BUSINESS LICENSE NO. _____

STATE OF NEVADA BUSINESS LICENSE NO. _____

AUTHORIZED REPRESENTATIVE
(PRINT OR TYPE)

E-MAIL ADDRESS

SIGNATURE OF AUTHORIZED REPRESENTATIVE

TODAY'S DATE

The following Section is added:

SECTION 216

COLD PLANING

DESCRIPTION

216.01.01 GENERAL

This work includes cold-planing of existing asphaltic concrete pavement for rehabilitation, for removal of wheel ruts and other surface irregularities, and to restore proper grade and/or transverse slope of pavement as indicated in the plans or as instructed by the Engineer. The specification addresses three types of pavement milling or grinding, consisting of fine-milling, micro-milling, and concrete and asphalt pavement profiling.

The work shall include the removal and disposal of all planing residues and the sweeping and cleaning of the existing and milled surfaces, and all other work as may be necessary to properly complete the pavement milling or grinding work in accordance with these special provisions and the accompanying plans.

Traffic loops that are damaged or destroyed during cold planing shall be replaced at the direction of the Engineer according to Section 623T.02.04 of these Special Provisions.

CONSTRUCTION

216.02.01 GENERAL

For this application, there are two different cold plane mill drum heads: fine and micro. The uses are as follows:

- Fine – Overlay (mill and fill)
- Micro – Overlay, profile correction or grade adjustment
- Grinding – Concrete profile correction

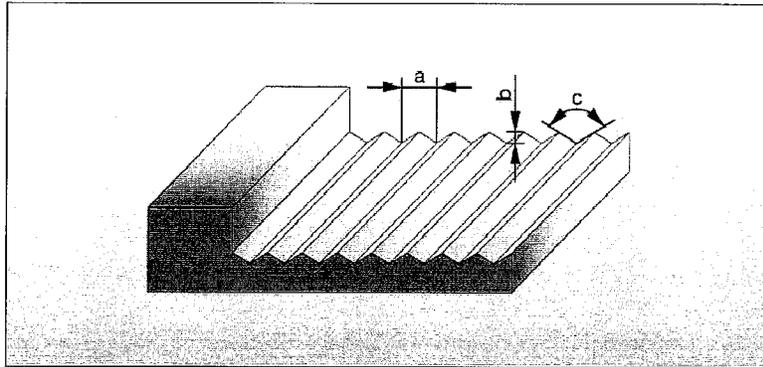
The “pick” spacing dimensions for fine- and micro-milling are displayed in Figure 1. The concrete grinding texture spacing is shown in Figure 2.

Cold planing shall consist of milling to the length, depth, and width shown on the plans or required for profile adjustment to remove a portion of the existing Hot Mix Asphalt (HMA) or concrete pavement, using equipment as approved by the Engineer. For fine-milling, the milled surface shall be a texture suitable for use as a temporary riding surface or an immediate overlay with no further treatment required for overlays. The use of the fine-milled pavement as a temporary riding surface shall be for a maximum of seven days. The micro-milled or grinding surface shall be a texture suitable for use as a riding surface. The contractor shall perform the work according to these special provisions and details as shown on the plans.

The FHWA type of milling operation is as follows and will be identified on the contract drawings:

1. Class I consists of milling the existing surface to the extent necessary to remove surface irregularities (Grinding).

2. Class II consists of milling the existing surface to a uniform depth as shown in the plans (Fine, Micro).



	Fine	Micro
a = Pick spacing in mm	8	5
b = Theoretical base height in mm	2.3	1.4
c = Theoretical disruption angle in degrees	120	120

Figure 1 – Fine and Micro-mill Pick Spacing

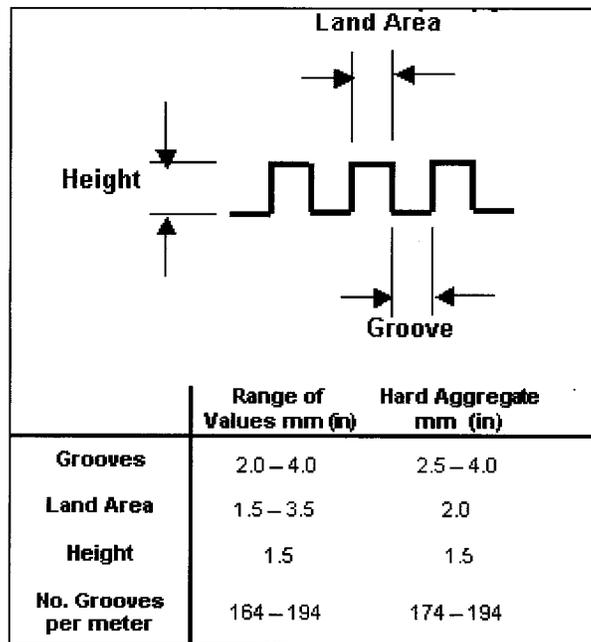


Figure 2 Concrete Grinding Texture Spacing

216.02.02 PRECONSTRUCTION PLAN

Prior to beginning milling operation, the Contractor shall submit a milling plan and a Quality Control Plan for approval by the Engineer.

The milling plan shall include at a minimum:

1. The number, types and sizes of milling machines to be used;
2. The width and location of each milling pass;
3. The number and types of brooms to be used with their locations with respect to mill machines;
4. The proposed method for milling and wedging, if appropriate, around existing structures such as manholes, valve boxes, and inlets; and
5. The longitudinal and transverse typical sections for tie-ins at the end of the day.
 - a. If requested by the Engineer, a plan sheet showing the milling passes.

The Quality Control Plan shall include at a minimum:

1. The schedule for replacing the cutting teeth, where applicable;
2. Proposed use of automatic grade controls (for profile control, only ski's will be approved);
3. The surface testing schedule for smoothness;
4. The process for filling distressed areas;
5. The schedule for testing texture of milled surface;
6. Corrective procedures if the milled surface does not meet the minimum transverse or longitudinal surface finish when measured with a 10-foot straightedge.

The Contractor shall not start the milling operation until a milling and Quality Control plan has been submitted and approved by the engineer in writing.

216.02.03 FINE AND MICRO MILLING EQUIPMENT

The milling machine shall be a self-propelled machine, specifically designed to fully or partially remove existing pavement to the desired depth, profile, cross slope and surface texture. The machine shall have a control system to automatically control the elevation and transverse slope of the machine head. If required, the machine shall be equipped with a conveyor capable of loading the milled material directly from the roadway to a truck and the following:

1. Size and shape of machine that allows traffic to pass safely through areas adjacent to the work;
2. Fine milling shall be capable of removal of a 12-foot travel lane and cleaning up both edge seams in the single pass;
3. Shall be equipped with a means to control dust and other particulate matter created by the cutting action and prevent dust from escaping the milling operation;
4. Capable of maintaining the required depth of cut and cross slope;
5. Furnished with a lighting system for night work;
6. The plane shall be performed using a drum;
7. The tooth holder blocks shall be uniform and not cause variations greater than ± 0.02 inches;
8. The cutting speed of the milling operation shall be so as to have the result of two factors:
 - a. Revolutions per minute at which the milling drum is set

- b. The forward speed of the milling machine;
9. The speed of milling machine in feet per minute shall be limited to two-thirds times the drum RPM.
10. The speed shall be displayed in the Machine controls and visible for Inspection by field personnel.
11. Averaging Ski: Sonic sensors are averaged together with each other utilizing a 30-foot ski or the rigid milling machine frame as a ski, whichever is longer and can be mounted on either side.

216.02.04 DIAMOND GRINDING EQUIPMENT

Grinding and texturing shall be completed utilizing diamond blades, mounted on a self-propelled machine, designed for grinding and texturing of pavements. The equipment shall have a wheel base of not less than 12 feet, equipped with a rotating powered mandrel drum with diamond grinding blades of the appropriate bond hardness and a cutting head of not less than 3 feet wide.

The equipment shall not cause strain or damage to the underlying surface of the pavement. Grinding and texturing equipment that causes excessive ravels, aggregate fractures, spalling, or disturbance of the joints will not be permitted.

The equipment shall be equipped with a means to control dust and other particulate matter created by the cutting action, shall prevent dust from escaping the milling operation, and shall be furnished with a lighting system for night work.

216.02.05 FINE AND MICRO MILLING DEPTH

The depth shall be as indicated on the plans.

216.02.06 DUST CONTROL

The Contractor shall provide power brooms, vacuum sweepers or other means to remove loose debris or dust. The Contractor shall not allow dust control operations to restrict visibility of passing traffic or to disrupt adjacent property owners. The surface texture shall be clean enough to be able to accurately test the surface texture.

216.02.07 FINE AND MICRO CONTROL STRIP

During the first day of production, a control strip shall be constructed to prove to the Engineer that the construction will meet specification requirements. The control strip shall be at least 1,000 feet in length and have a uniform textured surface and cross section for the contractor to prove that the construction meets the requirements, including surface acceptance testing, performed in accordance with specification 402.03.03 "Surface Tolerances."

Unless the contractor's equipment and process fail to meet the requirements for successful completion of the operation, the operation may continue through the first day.

The operation shall not continue beyond the first day unless a control strip has been approved by the Engineer. If any of these requirements are not met in the test strip, the Contractor shall submit a written plan of action detailing what steps will be taken to improve operations. If the written plan is approved by the Engineer, the Contractor shall construct another 1,000 foot test section. This test section shall be located in a different area than the initial section using the approved corrective

action plan. This designated section shall be milled to conform to the same requirements as those required in the initial test section. The Contractor shall not be allowed to start continual milling until an acceptable test section is obtained. Control strips that do not meet the requirements shall be reworked at the Contractor's expense.

Upon acceptance of the control strip by the Engineer and unless adjustments made by the Contractor are approved by the Engineer, the contractor shall use the same approved equipment, materials and construction methods for the remainder of milling operations. If any adjustments are made, the Contractor shall produce a new control strip.

216.02.08 FINE AND MICRO MILLING OPERATION

The Contractor shall follow the plans to mill the designated areas and depths, including bridge decks, shoulders and ramps, as required. The Contractor shall ensure the following requirements are met:

1. The existing pavement shall be removed to varying depths in a manner, which will restore the pavement surface to a uniform longitudinal profile and cross section, as shown on the plans or as directed by the Engineer.
2. The approximate depths of required removal are shown on the plans. The depth of removal shall be increased or decreased across the width of the pavement to obtain the required roadway cross slope. The Contractor may make multiple cuts to achieve the required depth of cut. The final cut must result in a neat and uniform surface. The remaining surface shall not be damaged.
3. The pavement removal shall be done to effectively minimize the amount of airborne dust. Wetting of the pavement may be required to minimize the airborne dust. The Contractor shall provide a means of drainage to prevent water accumulation on the surface where the pavement has been removed. Unless otherwise noted on the plans, the pavement removal shall be limited to an area that will be covered with a surface treatment or a layer of pavement within 72 hours after removal has begun.
4. The Contractor shall use milling methods that will produce a uniform finished surface and maintain a constant cross slope between extremities in each lane.
5. The Contractor shall bevel back the longitudinal vertical edges greater than 2 inches that are produced by the removal process and left exposed to traffic. The bevel shall be at least 3 inches for each 2 inches of material removed. An attached mold board or other approved method shall be used.
6. If a transverse joint is tapered with temporary asphalt ramp, the milled surface at the joint shall be constructed as a butt joint, the full depth of the lift of asphalt to be placed on the milled surface. The Contractor shall be responsible for maintaining this asphalt ramp until all corresponding HMA is placed. All work associated with this joint will not be paid for separately, but shall be included in the cost of milling. The removed material shall become the property of the Contractor unless otherwise noted on the plans.
7. If the transverse joint is tapered with a milling machine, a butt joint shall be cut into the taper, the full depth of the lift of asphalt to be placed on the milled surface prior to

commencement of resurfacing. All work associated with this joint will not be paid for separately, but shall be included in the cost of milling.

8. When removing material at ramp areas and ends of milled sections, the Contractor shall taper the transverse edges 10 foot to avoid creating a traffic hazard and to produce a smooth surface.
9. Where appropriate, the Contractor shall protect with temporary asphaltic concrete tie-in (paper joint) vertical edges at other areas, such as bridge approach slabs, drainage structures and utility appurtenances greater than 1/2 inch that are left open to traversing vehicles. The Contractor shall place the temporary tie-in at a taper rate of at least 6 to 1 horizontal to vertical distance. Material used for HMA temporary tapers may be non-polymer mix designs.
10. The Contractor shall remove dust, residue and loose milled material from the milled surface. Traffic shall not be allowed on the milled surface and asphaltic concrete shall not be placed on the milled surface until removal is complete. Immediately prior to resurfacing or opening to traffic, the surface shall be thoroughly swept with a power broom to remove fine material and dust particles. Sweeping shall be conducted in a manner that will minimize the potential for creation of a traffic hazard and minimize the creation of airborne dust. Material removed by sweeping shall be collected, transported and disposed by the Contractor.
11. Other approved transverse joints shall be maintained at the expense of the Contractor, and at a minimum, shall incorporate a butt joint the full depth of the lift of asphalt to be placed on the milled surface prior to commencement of resurfacing.
12. Distressed or irregular areas identified in the milled surface by the Engineer shall be patched.
13. The roadway shall be left in a safe and usable condition at the end of each work day. The contractor shall take appropriate measures to ensure that the milled surface does not trap or hold water. All required pavement markings removed by the milling shall be restored before the roadway is opened to traffic. If the Contractor fails to adequately clean the roadway, work shall cease until the Engineer has approved the Contractor's revised written proposal to adequately clean the roadway.
14. All milling shall be completed parallel to the travel lanes before resurfacing commences unless otherwise directed by the Engineer.
15. All required pavement markings removed by the planing shall be restored before the roadway is opened to traffic.

216.02.09 ASPHALT AND CONCRETE PLANING OPERATION FOR PROFILE

The construction shall be accomplished as a one pass or two pass operation as determined by the Contractor. The contractor may elect to plane in two passes. However, measurement of the work shall be done as a one pass operation. Should the Contractor elect to accomplish the configuration in two passes, the construction operation shall be scheduled and shall proceed in a manner that produces a neat, uniform finished surface.

A conventional feather pass will be required when necessary on adjacent shoulders and ramps to maintain a consistent cross slope and ensure pavement surface drainage as directed by the Engineer. Feather passes for maintenance of cross slopes or drainage corrections, if necessary, shall be considered incidental. The actual textured area of any selected 2-foot by 100-foot longitudinal area of pavement shall not be less than 98 percent of the selected area. The Contractor shall not grind within 2 feet of existing curb, bridge barrier, and roadway barrier.

Planing shall be performed in the longitudinal direction so that it begins and ends at lines normal to the pavement centerline. The allowable overlap between passes shall be 0 to 2 inches and the maximum allowable depth variance between adjacent passes shall be 1/8 inch. The planing shall be feathered out as directed by the Engineer.

The surface of the planed pavement shall have a texture consisting of grooves between 0.090 and 0.130 inches wide. The peaks of the ridges shall be approximately 1/32 inch higher than the bottom of the grooves.

High shoulders shall be planed to provide drainage and safety.

Where present in a given area, pavement marking tape shall be obliterated by the Contractor prior to the operation, with the exception of centerline skips, which shall be planed with the pavement surface.

The pavement shall be left in a clean condition. The removal of all slurry or residue resulting from the operation shall be continuous. The operation shall be controlled so the residue from the operation does not flow across lanes utilized by traffic.

The surface tolerance shall have a surface finish that is in accordance 216.02.10 "Surface Tolerances".

216.02.10 SURFACE TOLERANCES

The surface shall be measured by the Contractor:

The entire surface shall be textured substantially free from waves or irregularity at no cost to the County, shall be measured in accordance with surface acceptance testing, shall be performed in accordance with specification 402.03.03 "Surface Tolerances, and shall not vary from 10-foot straight edge by more than 3/8 inch for Fine-milling or 1/4 inch for Micro-milling and grinding. All irregularities exceeding the specified tolerance shall be corrected.

The following ASTM test will be performed on milled surfaced at the rate of two per lane mile or at minimum of one per milled area:

- Current version of ASTM E965 Standard Test Method for Measuring Pavement Macrotexture Depth Using a Volumetric Technique

The above ASTM test will also be performed on the milled surface at the beginning and end of each day of milling operation to report the change in surface texture throughout the day of operation.

METHOD OF MEASUREMENT

216.03.01 MEASUREMENT

The quantity of Cold-mill Fine to be measured for payment will be the number of square yards, as indicated in the contract, conforming to all the requirements in the completed work.

All measurements shall be made in accordance with subsection 109.01, "Measurement of Quantities."

BASIS OF PAYMENT

216.04.01 PAYMENT

The accepted quantity of materials measured as provided in subsection 216.03.01 "Measurement" will be paid for at the contract unit price bid per square yard for Cold-mill Fine.

The above prices shall be full compensation for furnishing all the milling, loading, hauling, cleaning, and incidentals necessary for doing all the work involved in Cold-mill Fine, as shown on the drawings or established by the Engineer.

No separate payment will be made for removal of wheel ruts and other surface irregularities, and to restore proper grade and/or transverse slope of pavement as indicated in the plans or as instructed by the Engineer as such; the cost thereof shall be included in the price bid for Cold-mill Fine.

Where loops are existing, as verified in the field, no payment will be made for the removal and replacement of conduit, wires, and/or cables damaged during construction; the cost thereof shall be included in the price bid for Cold-mill Fine.

Where cathodic protection as verified in the field are existing, no payment will be made for the removal and replacement of conduit and/or wires damaged during construction; the cost thereof shall be included in the price bid for Cold-mill Fine.

All payments will be made in accordance with subsection 109.02, "Scope of Payment."

Partial payments for Cold-mill Fine may be made in accordance with subsection 109.06, "Partial Payments."

Payment will be made under:

Pay Item	Pay Unit
Cold-mill Fine	Square Yard

SECTION 412

PAVEMENT SURFACE TREATMENTS - SLURRY SEAL/MICROSURFACING

DESCRIPTION

412.03.02 PREPARATION OF SURFACE

Add the following to Paragraph C:

The crack sealing material shall be CRAFCO Polyflex Type 3 (Style S21, Number 34521) or approved equal. Crack sealing material shall be applied to all cracks 1/4" or wider in accordance with manufacturer recommendations and as required by the Engineer. Cracks shall be filled flush with the surface and any overfill shall be squeegeed so that the overband cap does not exceed 1/16" above the surface and the width does not exceed two (2) inches beyond the crack edges. Multiple applications of the crack sealing material may be required for deeper cracks.

Any unacceptable applications of the crack sealing material shall be corrected by the Contractor at no additional cost to the Owner and shall be corrected within five days of notification. Work shall be scheduled such that crack seal operations in a given area are performed and completed at least three (3) weeks prior to application of slurry seal.

Add Subsection H:

The Engineer shall give final approval that the surface has been properly prepared, prior to the application of the UTACS, but this approval shall not relieve the Contractor from responsibility as outlined above.

Add Subsection I:

It shall be the Contractors responsibility to insure that the surface is suitable for the proper adhesion of UTACS when complete.

METHOD OF MEASUREMENT

412.04.01 MEASUREMENT

Add the following to this subsection:

The quantity of crack sealing material measured for payment will be considered incidental to the application of the UTACS and no additional payment will be made therefore.

SECTION 413

PLANTMIX BITUMINOUS GAP-GRADED SURFACE

MATERIALS

413.02.01 GENERAL MATERIALS

The following is added to this subsection:

Prior to the production of the UTACS gap-graded mix material, all of the contract aggregate quantity shall be stockpiled and shall be tested by the Contractor. The tests are to be submitted to the Engineer no earlier than 2 weeks prior to placement and may be used only after the Engineer has taken no exception to the results.

METHOD OF MEASUREMENT

413.04.01 MEASUREMENT

This subsection is changed to read as follows:

The quantity of Ultra-Thin Asphalt Concrete Surface (UTACS) bonded with a polymer modified membrane (PMM) shall be the number of square yards placed at the specified minimum thickness in the accepted work.

The quantity of UTACS Polymer Modified Membrane (PMM) shall not be measured for payment as it is to be incidental to the Ultra-Thin Asphalt Concrete Surface (UTACS) pay item.

BASIS OF PAYMENT

413.05.01 PAYMENT

Add the following:

The Ultra-Thin Asphalt Concrete Surface (UTACS) mixture which shall be bonded to a polymer modified membrane (PMM) will be paid at the contract price bid per square yard, which price shall include all material, mixing, loading, hauling, placing, compacting, crack sealing, expansion joint material (where applicable), incidentals, and for all labor, tools, and equipment necessary to complete the work as shown on the plans, as specified herein and as directed by the Engineer.

The quantity of UTACS Polymer Modified Membrane (PMM) shall be included in the price bid for UTACS. No separate payment will be made for PMM.

All payments will be made in accordance with Subsection 109.02, "Scope of payment." Partial payments for UTACS may be made as set forth under Subsection 109.06, "Partial Payments."

Pay Item

Pay Unit

1" UTACS Mixture – S3 Gradation

Square Yard

SECTION 623

TRAFFIC SIGNALS AND STREET LIGHTING

DESCRIPTION

623 G.01.05 GLOBAL POSITIONING SYSTEM (GPS) COORDINATES

Replace this subsection with the following:

Information related to traffic assets shall be the responsibility of the Contractor and Clark County will not be responsible for furnishing any information. All traffic asset information shall be provided by completing the Traffic Asset Data Collection Forms 1 and/or 2 as appropriate for all new and relocated traffic signal systems, ITS, and street lighting facilities that are connected via the underground conduit system(s) and are visible at ground level, including but not limited to poles, pull boxes, splice vaults, cabinets, service pedestals, transformers, school flasher assemblies, and changeable message signs. Traffic asset information shall also be provided for all pull boxes that are buried underground as shown on the plans. The information on traffic assets shall be submitted to Clark County Public Works in an electronic file (.doc or .xls) and "hard copy" format following the Traffic Asset Data Collection Forms. The asset information shall be complete and free from error, with coordinates based on (Northing/Easting, NAD 1983, State Plane Nevada East, US Survey Feet) at the end of the project prior to final acceptance and maintenance. The information and data shall comply with the requirements of Clark County Public Works and identify post construction coordinates with identification to each item or facility on the plans. The horizontal precision of the coordinates shall be recorded with a device that has an accuracy tolerance within three (3) feet of the actual location of the object.

MATERIALS

623 G.02.01 CONDUIT

Add the following:

Electrical conduits, fittings, and couplings shall be joined together per NEC section 352.48.

623 G.02.02 PULL BOXES

Replace the first sentence of paragraph B with the following:

Non-conductive lids shall be used for all pull box covers except for Type 200 splice vault. Steel lids shall be used for Type 200 splice vault.

Add the following to this subsection:

Pull boxes shall not be installed within the roadway, shoulder, nor bike lane. Pull boxes shall also not be installed within sidewalk ramp, driveway, nor within 10-feet of a driveway.

623 G.02.04 CONDUCTORS AND CABLE

Replace the second sentence of paragraph A.4 with the following:

All traffic signal cable shall be 25-conductor, No. 14 AWG solid copper wire traffic signal cable.

Replace paragraph A.7.a in this subsection with the following:

Conductors shall be 7-strand No. 4/0 AWG copper wire with THW-2 or XHHW-2 insulation, unless otherwise shown in the plans or indicated herein.

Replace paragraph A.9.b with the following:

The insulation shall be 15 mils of orange PVC complying with UL62 with an overall jacket of clear nylon in accordance with ASTM D4066.

Add the following:

The induction loop wires shall be soldered and sealed to the loop lead-in wires.

623 G.02.07 ELECTRICAL SERVICE PEDESTALS

Replace paragraph J1 with the following:

The main body of the pedestal, the hood and the main door shall be polyurethane powder coated inside and out with a gloss, mint green coating (Federal color 14672).

Replace paragraph M with the following:

The pedestals shall incorporate a tin plated copper load center. Bus bars for grounding and neutral connections shall be tin plated aluminum rated for both copper and aluminum wire with facilities for landing two (2) No. 1/0 AWG conductors, six (6) No. 2 to No. 12 AWG and 12 No. 4 to No. 14 AWG conductors. The utility landing lugs shall be tin plated aluminum rated for both copper and aluminum service wire.

Replace paragraph O.1 with the following:

Each lighting circuit shall have a separate test toggle switch (or toggle switch position) rated for 10 amps with sealed leads for testing the circuit during maintenance activities.

CONSTRUCTION

623 G.03.03 SCHEDULING OF WORK

Add the following to paragraph G:

The Contractor shall supply Traffic Jackets as supplied by Phoenix Highway Products, 2631 North 37th Drive, Phoenix, Arizona 85009, Phone 602-344-7770, www.phoenixhighwayproducts.com, or approved equal by the Maintaining Agency.

The covers shall be bright orange with a vertical message "NOT IN SERVICE" in black on each cover, for new construction. The covers shall be black with a vertical message "NOT IN SERVICE" in white on each cover, for modifications to a traffic signal already in operation.

Coverings that are not installed when a signal head is installed, and not activated, shall have a cover installed by the Contracting Agency and the cost of the covering shall be deducted from any unpaid invoices that have been or will be submitted to the Contracting Agency by the Contractor.

623 G.03.07 FOUNDATIONS

Add the following:

Service pedestal and controller cabinet foundations shall be level.

623 G.03.08 WIRING AND CONDUIT

Add the following to paragraph D of this subsection:

Splices for street light cables shall be split bolt type of the appropriate size. The split bolt connector shall be copper or copper alloy with copper plating, and shall accommodate range of cable sizes specified in the Drawings. The split bolt connector shall be Brundy KS22, Brundy KS23, or approved equivalent by the Maintaining Agency.

Replace paragraph I of this subsection:

14 AWG UF wire shall be used between the pole-mounted "J" box and the traffic signal tenons on the traffic signal mast arms. All 14 AWG UF wire shall be uniquely identified in the "J" box. Six (6) conductors shall be installed from the pole mounted "J" box to any unused tenon at the end of the mast arm. Four (4) conductors shall be installed from the pole mounted "J" box to any unused tenons located elsewhere on the mast arm. All empty tenons shall be sealed with 10mil tape. Contractor shall determine and install the appropriate number of conductors from the pole mounted "J" box to all traffic signal indications.

623 G 03.09 ELECTRICAL SERVICES

Replace paragraph E in this subsection with the following:

Electrical conductors for service shall have THW-2 or XHHW-2 insulation and shall be 4/0 AWG, stranded, copper wire unless otherwise specified.

Add the following to this subsection:

623 G 03.13 CONDUIT VERIFICATION AND CONDUIT BLOCKAGE

At locations where existing conduit is to be utilized, Contractor shall verify condition of the conduit. In the event of a conduit blockage at existing conduit locations, the Contractor shall attempt to clear the blockages by any reasonable means to his disposal until the conduit is cleared of obstruction to the satisfaction of the Engineer or until the Engineer determines that further attempts to clear the conduit are not feasible. Reasonable means include any industry standard methods for removing conduit blockages, such as, blowing air through the blocked conduit(s) with an air compressor of a minimum size of 185 cfm, soaking the blocked conduit(s) with water for 24 hours then blowing air with an air compressor of a minimum size of 185 cfm, and any other methods as approved by the Engineer.

TRAFFIC SIGNAL SECTION

623 T.01.01 GENERAL

Add the following:

A Clark County-licensed Journeyman Electrician shall perform all electrical terminations.

MATERIAL

623 T.02.04 MAGNETIC INDUCTION LOOP DETECTORS

Add the following to paragraph A:

6 feet diameter circular detection loop may be used in lieu of 6 feet by 6 feet square detection loop. Spacing between each loop and the number of loops shall be as specified in the plans.

Replace paragraph G.1 with the following:

A separate lead-in cable to the controller cabinet shall be provided for each left turn, straight through, and right turn lanes. A separate lead-in cable to the controller cabinet shall be provided for advanced detection loops for each approach. Each lead-in cable shall be individually tagged.

Replace paragraph H.2 with the following:

All detectors shall be shelf mounted.

TRAFFIC SIGNALS AND FITTINGS

623 T.02.08 VEHICLE SIGNAL FACES

Add the following to paragraph D.5:

Testing by an independent laboratory may be required if the LED offered does not have prior approval of the Traffic Manager. All vehicular LED modules not previously approved shall be tested by Intertek - ETL/Semko, Cortland, NY. Test reports for each ball LED module shall include verification of power consumption, chromaticity, luminous intensity and light distribution and shall indicate compliance to the ITE VTCSH-LED specification. Test reports for arrow LED modules shall indicate compliance with the luminous intensity of the CALTRANS standards and measurement criteria. All supporting data and test results shall be delivered to the maintaining Agency Operations Engineer for approval prior to the installation of the LED modules.

Replace paragraph 1.5 with the following:

All traffic signal backplates shall be louvered and shall be painted or powder coated flat black (front side)/dark olive green (backside), using the same technique as on the signal housing.

623 T.02.09 PROGRAMMED VISIBILITY VEHICLE SIGNAL FACES

Replace the first sentence paragraph C with the following:

All signal sections shall be provided with an adjustable connection that permits incremental tilting from 7 degrees to 15 degrees above or below the horizontal while maintaining a common vertical axis through couplers and mountings.

623 T.02.13 TRAFFIC SIGNAL POLES

Add the following to paragraph B:

Multi-sided steel traffic signal and luminaire mast arms will not be accepted.

623 T.02.18 UNINTERRUPTIBLE POWER SUPPLY SYSTEMS (UPS)

Replace this subsection with the following:

An uninterruptible power supply system shall be supplied as an integral part of the service pedestal installed. The service pedestal shall comply with the requirements of Subsection 623 G.02.07 with the exception of the size and general make-up of the service pedestal enclosure.

The enclosure shall have double doors installed on the front of the cabinet with stainless steel piano hinges that allow access to the power and distribution enclosure on the left and the UPS and battery array on the right. The electrical meter shall be installed under a hooded door above the distribution center that is installed with a stainless steel piano hinge. A door shall also be installed on the back of the pedestal enclosure with a stainless steel piano hinge to allow access to the rear of the battery compartment. The overall dimensions of the enclosure shall be 48 inches wide, 56 inches high and 18 inches deep.

Service pedestals shall be finished inside and out with gloss polyurethane powder coating consisting of Federal specification 595 polyurethane, industrial grade high gloss powder paint with 1.7 mil thickness minimum. Service pedestals shall be mint green (Federal color 14672). The finish shall present a smooth surface, uniform in color and free of runs, sags or other irregularities.

The UPS system will be designed to automatically assume power of the signal breaker only

when the line service falls below a selected amount. The unit shall not provide electrical power to the intersection unless the line power fails. The UPS will operate as a true standby power source.

A. General Features

1. Fully programmable Front Display Panel
2. Easy Maintenance
3. Remote access via RS-232 Serial Interface
4. Time/Date stamp of 50 events and alarms with download and print capability including but not limited to:
 5. Date and time of power failure
 6. Reason of failure (low voltage, irregular frequency, voltage spike, etc.)
 7. Mode of initial signal operation by UPS
 8. Date and time of signal operation change by UPS
 9. Date and time of power restoration
10. Shall operate LED and incandescent loads
11. Seamless transfer of power sources to the traffic signal
12. Flasher circuit shall be programmable from .1 to 10 hours
13. UPS system shall be PC compatible
14. A minimum of two (2) thermostatically controlled fans shall be provided for air circulation to cool batteries with exhaust at the top of the cabinet.

B. Electrical Features

1. Power shall be held constant in the field so that dimming does not occur when the power is switched.
2. A Power Transfer Switch (PTS) shall be provided so that the UPS may be removed and serviced while the intersection remains fully operational.
3. The PTS shall allow for an AC generator to plug directly through the service pedestal.
4. Input operating voltage and frequency shall be 85-135 volts AC @ 40-70 HZ.
5. Output voltage and frequency shall be 115-125 volts @ 57-63 HZ
6. Total harmonic distortion shall be less than 2.5%
7. The power transfer time shall be less than 100 milliseconds.
8. The UPS system shall provide a true filtered sine wave as output.
9. Lighting/Surge protection shall be provided that meets or exceeds ANSI/IEEE C.62.41/C62.45 Cat A & B
10. Six (6) Form C, dry relay contacts shall be furnished with normally open (NO) and normally closed (NC) position terminals.
11. The UPS shall incorporate input power factor correction
12. The UPS shall provide transient voltage protection
13. Circuit breakers shall be provided for both input and output circuits.
14. Minimum power output shall be 2000 VA , minimum active power shall be 1500 watts
15. Utility landing lugs shall be raw copper

C. Batteries

1. Batteries shall be maintenance free and spill-proof.
2. There shall be a maximum of four batteries
3. Batteries shall be rated for temperatures to 70 deg C.
4. Batteries shall automatically recharge within 12 hours following discharge

5. Battery recharge rate shall be programmable
6. Battery temperature compensation shall be provided

D. Operational Features

1. The UPS shall be designed to operate in three (3) modes.
2. In normal operation, the system shall operate the traffic signal indications in the standard red-yellow-green sequence commands provided by the traffic signal controller. The system shall operate for a minimum of two (2) hours with a 10-amp load.
3. Flashing operation shall put all approach indications on all-red flash while the pedestrian heads go dark. The system shall operate the signal in this mode for a minimum of four (4) hours with a 10-amp load.
4. Combination mode will require the system to support normal operation of the indications at the beginning of the power outage and convert to flashing operation after a preset time or percentage of battery usage.
5. Communication Alarms
6. LED indicators shall be provided on the front panel for the following:
 - ON SERVICE POWER
 - ON BATTERY POWER
 - LOW BATTERY
 - OVERLOAD
 - FAULT
7. Six (6) fully programmable dry contacts shall be provided to interconnect with communications network.
8. Programmable Features: The UPS shall be programmable using a keyboard and display located on the front panel of the module and via software from a lap top computer.

E. Warranty

The manufacturer shall warranty the UPS System for a full 2 years from the date of installation. The warranty shall cover all parts and labor necessary to repair or replace any part of or the entire system at no cost to the County. Shipping both ways shall be included in the warranty.

CONSTRUCTION

623 T.03.01 PAINTING

Replace paragraph A.4 with the following:

Directional louvers shall be painted or powder coated flat black (interior)/dark olive green (exterior) and backplates shall be painted or powder coated flat black (front side)/dark olive green (backside), using the same technique as the signal housing.

623 T.03.02 ELECTRICAL TESTING

Replace paragraph A.3 with the following:

A megohm test shall be conducted on all single conductor, except ground wire, between a new service pedestal and transformer, and between service pedestal to controller cabinet. Additionally, loop continuity shall be tested using a loop amplifier. The insulation resistance

shall not be less than 100 megohms when tested at 500 volts for 1 minute.

STREET LIGHTING SECTION

DESCRIPTION

623 L.01.01 GENERAL

Replace paragraph G with the following:

Refer to Subsection 623 G.01.05 GLOBAL POSITIONING SYSTEM (GPS) COORDINATES of these Special Provisions for requirements the collection of field data including State Plane and Geodetic coordinates.

MATERIALS

623 L.02.01 STREET LIGHT POLES AND ARMS

Replace paragraph O.1 with the following:

The handhole shall be 4-inch by 6-inch O.D. reinforced frame with slip-resistant indented type cover located 12 inches above the base plate. The edges of the handhole at the base of the streetlight pole shall be continuously, permanently welded shut by bead welding, after project walk-thru and prior to final acceptance of the project. Welded surfaces shall be galvanized by hot-stick galvanizing per Section 623 T.03.01. Welding shall be done by American Welding Society (AWS) certified welders.

623 L.02.03 STREET LIGHTING LUMINAIRES

Replace the first sentence of paragraph A with the following:

The standard luminaire, except at signalized street intersections, shall be of the high pressure sodium type, horizontal burning cobra head style, and in wattages specified in the Contract Documents.

Replace paragraph e.2 with the following:

The ballast shall be voltage specific to the lighting application and shall be capable of starting and operating the lamp type indicated in the Drawings and specified herein from a nominal 120/240 volt, 60 HZ power source within the limits specified by the lamp manufacturer.

Add the following to this subsection:

For new construction, Contractor shall install 400 watt equivalent light emitting diode (LED) type LED optical assembly with cobra head style fixture. For existing intersection lighting, Contractor shall remove the existing high pressure sodium type fixture at street intersections and replace with 400 watt equivalent light emitting diode (LED) type LED optical assembly with cobra head style fixture. The LED luminaire and fixture for intersection lighting shall meet the following requirements:

A. Photometric

1. A normal Correlated Color Temperature (CCT) of 5000 °K to 6200 °K.
2. A Color Rendering Index (CRI) ≥ 65 .
3. A minimum luminaire efficacy ≥ 60 lumen/watts.
4. Photometric measurement shall be documented by an independent test lab report according to IESNA specification.
5. LED light distribution shall be in accordance with IESNA Type III distribution with a true 90° light cutoff.
6. Luminaire must operate at 77°F (25 °C) for a minimum of 50,000 hours before the LED light output has decreased to 80% of initial output (L80).
7. LED's in the fixture shall be manufactured by Cree, Nichia or Lumileds.
8. Fixtures installed for a typical intersection lighting for a major/major intersection shall achieve average minimum foot-candle as outlined in IESNA RP-8-00 (latest edition), Table 9 (Low and E_{avg} / E_{min}) within the limits of the intersection (see Limits of Intersection detail). Lighting luminaire arms are 15 ft in length, with fixtures at the mounting height of 30 and 37 ft. Supplier must provide an illuminance study that proves that lighting luminaire standards are met or exceeded per IESNA RP-8-00, with a light loss factor of 0.94, for both 30 and 37-ft height.
9. Per IESNA TM-15-2007 (Revised) Backlight, Uplight, and Glare (BUG) rating shall be B3 U1 G3 or better. Fixture shall be Dark Sky compliant.

B. Electrical

1. Off state power draw of 0 watts (excluding photocell).
2. Power factor of ≥ 0.90 .
3. Maximum LED forward current of ≤ 525 mA.
4. UL 1310 class 2, UL 1598 and/or UL 8750 approved.
5. Operating temperature range of -10°F to 120°F (-23°C to 49°C).
6. Transient voltage/surge suppression protection must meet or exceed the requirements of ANSI/IEEE C.62.41-1991 Class A operation, which consists of seven strikes of a 100 Hz ring wave, 6 KV level, for both common mode and differential mode.
7. Class A sound rating for power supply per ANSI C63.4.
8. Power supply shall meet FCC 47 CFR 15/18.
9. Nominal operating voltage within a range of 120 to 277 volts at 60 Hz ± 3 Hz.
10. Output operating frequency must be ≥ 120 Hz.
11. Fixture shall have a prewired heavy-duty barrier type terminal block, with captive screws capable of terminating three (3) #14 to #10 AWG.
12. Total power consumption of the fixture shall not exceed 160 Watts.

C. Housing

1. Luminaires shall be painted with 2 finish coats of high gloss gray enamel or polyurethane powder coating, free of lead and mercury.
2. Constructed of die cast aluminum.
3. Lens shall be made of high impact acrylic.
4. Driver(s) mounted internally and replaceable.
5. All parts to be corrosion resistant.
6. Fixture shall have heat sink integrated into fixture body, and be resistant to debris buildup that may cause degraded heat dissipation. No fans, pumps or liquids are allowed.

7. Fixture weight \leq 35 Lbs.
8. Fixture must withstand a minimum vibration of 2Gs per ANSI C136.31-2001.
9. Fixture shall have a photoelectric receptacle, 3-prong twist-lock per ANSI C136.10. The receptacle (socket) will need to be able to rotate to face north direction without the use of tools.
10. The fixture shall have a slip-fitter capable of adapting to 1-1/4-inch through 2-inch pipe bracket without rearrangement of parts and be adjustable $+5^\circ$ degrees from horizontal. There shall be no more than four (4) 9/16-inch hex bolts to secure fixture to pipe. Bolts shall be secured from bottom of fixture and mounted internally.
11. The optical assembly of the fixture shall have a minimum IP-65 rating to protect internal components.
12. The maximum effective projected area (calculated from either side) shall not exceed 1.2 square foot. (slim, low profile design to optimize for wind loading).
13. Maximum dimension 36" long x 19" wide x 10" tall.
14. Fixture shall have bird guard or wildlife intrusion protection.
15. Fixture shall have tool-less entry.

D. Fixture Identification

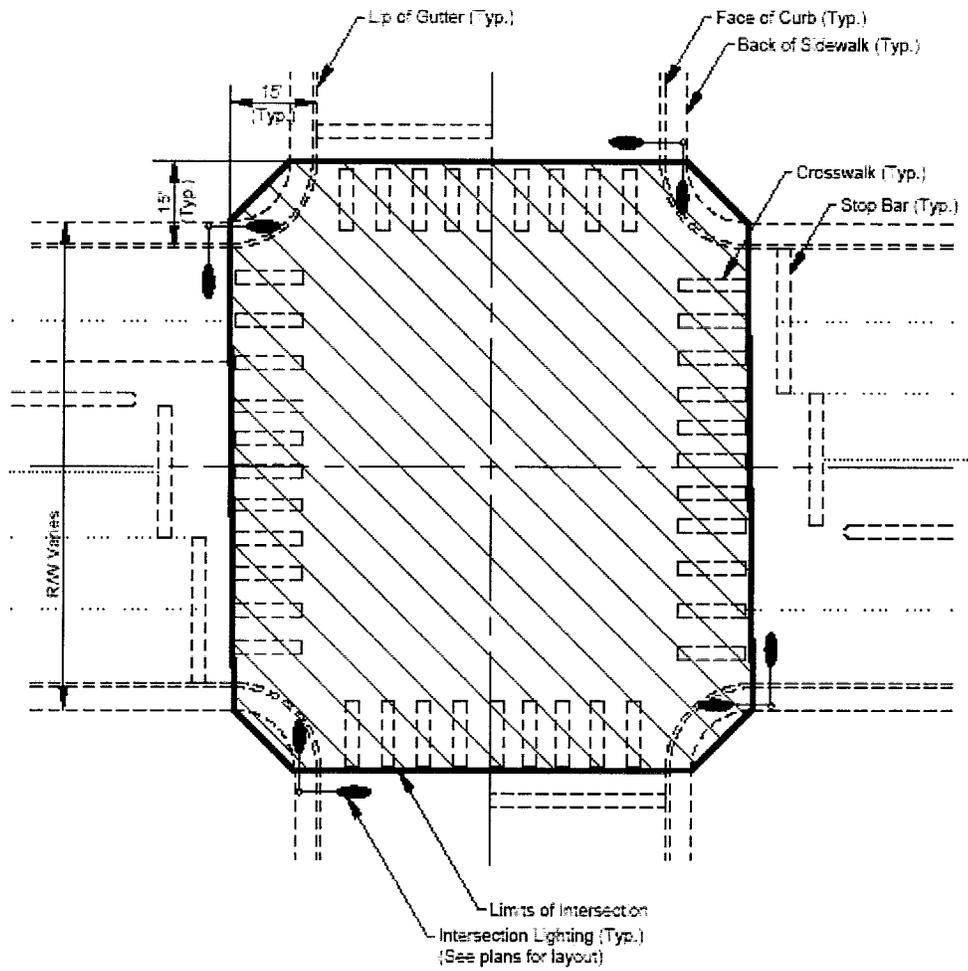
1. Each fixture shall have the manufacturer's name, trademark, model number, serial number, date of manufacture (month/year), and lot number permanently marked on inside of each unit. (See Wattage Label detail)
2. The wattage of the fixture must be able to be detected visibly from an observer standing at ground elevation at base of pole.
3. Operating characteristics shall be permanently marked inside each unit: Voltage rating, power rating (in watts and volt-ampere) and fixture efficiency rating (LER).
4. Each LED light source shall be permanently marked with correlated color temperature (CCT) rating in Kelvin, color rendering index (CRI) and wattage driver current.

E. Measurements and Performance

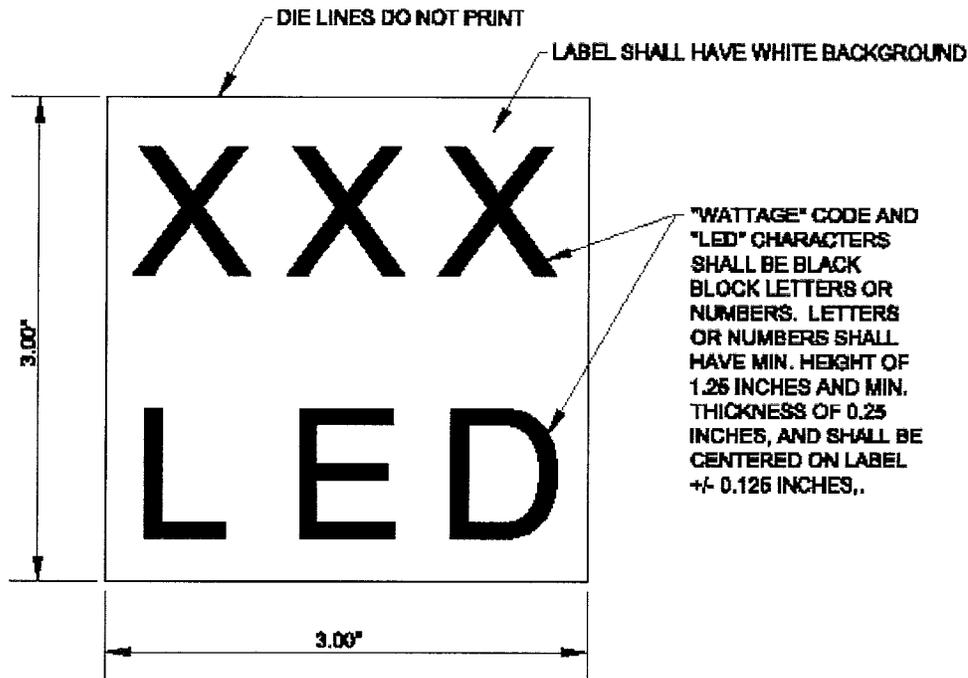
1. IESNA LM-79-08 approved method for electrical and photometric measurements of solid-state lighting products.
2. IESNA LM-80-08 approved method for measuring lumen maintenance of LED lighting sources.
3. IESNA files shall be submitted for each fixture type, and also must include photometric test results for 30 foot and 37 foot mounting heights.

F. Warranty

A manufacturer's warranty must be provided for the replacement or repair of the tube lamp due to any electrical failure (including light source and power supplies/drivers) for a minimum of five (5) years from final acceptance of the project. Warranty documents shall have Clark County Public Works as the warrantee. Contractor shall provide all warranty documents to Clark County Public Works Traffic Management Division. Documents shall contain project name, bid number of the project, manufacturer, brand, model, and quantity of tube lamps installed.



TYPICAL LIMITS OF INTERSECTION DETAIL
(N.T.S)



WATTAGE LABEL
(N.T.S)

623 L.02.04 FUSEHOLDERS AND FUSES

Replace paragraph F with the following:

Fuse holders shall be rated for 600 volts. Single fuse holders shall be Littlefuse, 600 volt, Series LEB fuse holders, with WPB1 rubber boots and Littlefuse BLF10, fast-acting Midget, 250 volt, L4J12F fuse or approved equal. Double pole fuseholders shall be Littlefuse double fuse holder, Series LEX rated for 600 volts with Littlefuse rubber boot WPB1 and Littlefuse BLF10, Fast-Acting, Midget 250 volt L4J12F fuse or approved equal for 240 volt multiple street lighting systems. Glass, paper or indicating type fuses are not acceptable.

CONSTRUCTION

623 L.03.03 ELECTRICAL TESTING

Replace paragraph A.3 with the following:

A megohm test shall be conducted on all single conductor, except ground wire, between a new service pedestal and transformer. The insulation resistance shall not be less than 100

megohms when tested at 500 volts for 1 minute.

METHOD OF MEASUREMENT

623.04.01 MEASUREMENT

Add the following to this subsection:

Induction loops detectors (size) shall be measured per each, complete and in place. The Contractor shall verify the location of all existing traffic loops prior to construction.

Installation of 3-inch PVC conduit as shown on the plans or ordered by the Engineer shall be paid for at the unit price bid per linear foot, installed complete and in place.

Installation of 1 1/2-inch PVC conduit as shown on the plans or ordered by the Engineer shall be paid for at the unit price bid per linear foot, installed complete and in place.

The quantity of pull boxes as shown as proposed in the plan set and as required for loop detectors, regardless of type, shall be measured on a per each basis from actual count, complete in place & accepted. Pull boxes not associated with the installation of the loop detectors or shown as proposed within the plan sheets shall not be measured for payment directly, the cost thereof shall be considered as included in the price bid of related work to which such items are incidental or appurtenant.

The quantity of pull boxes, sidewalk, curb and gutter, spandrel/cross gutter as required for the construction of street lights system shall not be measured for payment directly. The cost thereof shall be considered as included in the price bid for the modification of the installation of "Install 1 1/2-Inch PVC Conduit" to which such items are incidental or appurtenant.

Contractor shall inspect the existing service pedestal from which the street light is fed, and supply and install any missing breakers. The cost thereof shall be considered as included in the price bid for the construction of the "250 HPS Street Light Assembly w/ Standard Foundation" to which such items are incidental or appurtenant.

All work required to replumb the street light poles after live arm load is attached shall not be measured for payment directly. The cost thereof shall be considered as included in the price bid for the bid items to which such items are incidental or appurtenant.

Remove Street Light Pole as shown on the plans or ordered by the Engineer shall be paid for at the unit price bid per each, removal completed.

Relocate Flashing Beacon as shown on the plans or ordered by the Engineer shall be paid for at the unit price bid per each, relocation complete and in place.

Installation of 250W HPS Street Light Assembly w/ Standard Foundation as shown on the plans or ordered by the Engineer shall be paid for at the unit price bid per each, installed complete and in place.

BASIS OF PAYMENT

623.05.01 PAYMENT

The following is added to this subsection:

The contract unit bid price per each of induction loops detectors (size) shall be full compensation for furnishing all materials, as well as labor, tools, equipment and incidentals necessary to complete the work.

Where loops are existing, as verified in the field, no payment will be made for the removal and replacement of conduit, wires, and/or cables damaged during construction; the cost thereof shall be included in the price bid for the construction or installation of the items to which such material is incidental or appurtenant.

The contract unit prices paid for Pull Boxes, of the sizes and types specified, shall be full compensation for furnishing and installing all materials including, but not limited to, furnishing the specified pull box with cover with the appropriate markings, for all trenching, excavation, removals, connections to existing conduit, back filling and compaction operations, for all materials and equipment, for installing ground connections on conductive pull box covers as required and directed by the Engineer.

The contract unit price paid per linear foot for Conduit, of the sizes and types specified, shall be full compensation for furnishing and installing all materials in accordance with the plans and specifications at the locations identified or designated by the Engineer. It shall include all costs for trenching, excavation and compacted backfill operations, backfill material, encasement material, and CONTROLLED LOW STRENGTH MATERIAL (CLSM), pull boxes, sidewalk, curb and gutter, spandrel/cross gutters, all required conduit fittings, pull wire, cable, wire, conduit cement, connections to existing conduit, for the removal of existing surface material, for hauling and disposing of removed materials, and for all incidentals necessary to place the conduit in the prescribed location to the satisfaction of the Engineer.

The contract unit bid price per each light pole removal shall be full compensation for furnishing all materials, as well as labor, tools, equipment and incidentals necessary to complete the work.

Existing street lighting equipment to be removed shall include removing and salvaging the equipment with all of their components disassembled from their main part, Contractor shall exercise care with all equipment salvaged and shall assume that salvaged equipment will be re-used again by Clark County. All salvaged equipment shall be delivered to Clark County Traffic Operations located at 5821 East Flamingo Road, in good working condition and with all of the components included.

Any items to be returned to Clark County Traffic Operations shall include a transmittal form with the Contractor's company letterhead. The transmittal form shall include the associated project name and number, and a list of the items and the quantities of items being returned. Contractor shall call (702) 455-6100 to make an appointment for dropping off salvaged items.

The contract unit bid price per each relocation of flashing beacon shall be full compensation for furnishing all materials, including new material necessary to rebuild the flashing beacon, installation of new cable and wiring as required by the contract documents or as specified here in, as well as labor, tools, equipment and incidentals necessary for a complete operating system.

The unit prices paid for 250W HPS Street Light Assembly w/ Standard Foundation, shall be full compensation for doing all the work complete and in place as indicated in the Contract Documents and as directed by the Engineer, including excavation and backfill; concrete foundations; restoring sidewalk, pavement, and appurtenances damaged or destroyed during construction; salvaging existing materials; and making all required tests. Full compensation for all additional materials and labor, not shown on the Drawings or specified, which are necessary to complete the installations of the various street light systems, shall be considered as included in the prices paid for the systems, or units thereof, and no additional compensation will be allowed therefor.

No separate payment will be made for replumbing the signal poles after live arm load is attached. The cost thereof shall be considered as included in the lump sum bid price for the traffic signal modification and no additional compensation will be allowed.

<u>Pay Item</u>	<u>Pay Unit</u>
Induction Loops Detector (6'x6')	EA
Induction Loops Detector (6'x30')	EA
Install 3-Inch PVC Conduit	LF
Install 1 1/2-Inch PVC Conduit	LF
No. 3 1/2 Pull Box	EA
No. 5 Pull Box	EA
Remove Street Light Pole	EA
Relocate Flashing Beacon	EA
250W HPS Street Light Assembly w/ Standard Foundation	EA

**CLARK COUNTY PUBLIC WORKS TRAFFIC MANAGEMENT DIVISION
TRAFFIC ASSET DATA COLLECTION FORMS
FORM 1 – SIGNAL ASSET**

SIGNAL ASSET:

Signal Type: _____ (Traffic / Fire / School Flasher / Pedestrian Flasher)

Street name 1 _____
Street name 2 _____

Controller Cabinet:

Type: _____ (R-type / School / Other - Specify)

X _____ Y _____

Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)

Service Pedestal: X _____ Y _____

Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)

Address: _____

Meter #: _____

Amp Rating: _____ (200A / 125A / Other)

Poles:

Pole Type: _____ (1A / 1B / XX / XX-A / XX-B / TYPE 7 / SPECIAL)

Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)

Pole Height: _____

Mast arm length: _____ (Feet)

Luminaries: _____ (1 / 2)

X _____ Y _____

Pole Type: _____ (1A / 1B / XX / XX-A / XX-B / TYPE 7 / SPECIAL)

Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)

Pole Height: _____

Mast arm length: _____ (Feet)

Luminaries: _____ (1 / 2)

X _____ Y _____

Pole Type: _____ (1A / 1B / XX / XX-A / XX-B / TYPE 7 / SPECIAL)

Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)

Pole Height: _____

Mast arm length: _____ (Feet)

Luminaries: _____ (1 / 2)

X _____ Y _____

Pole Type: _____ (1A / 1B / XX / XX-A / XX-B / TYPE 7 / SPECIAL)

Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)

Pole Height: _____

Mast arm length: _____ (Feet)

Luminaries: _____ (1 / 2)

X _____ Y _____

**CLARK COUNTY PUBLIC WORKS TRAFFIC MANAGEMENT DIVISION
TRAFFIC ASSET DATA COLLECTION FORMS
FORM 1 – SIGNAL ASSET**

SIGNAL ASSET (CONTINUED)

Pull Boxes:

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / 7 / P30 / T200 / other)
Corner/median: _____ (NE / NW / SE / SW / N / S / E / W)
X _____ Y _____

**CLARK COUNTY PUBLIC WORKS TRAFFIC MANAGEMENT DIVISION
TRAFFIC ASSET DATA COLLECTION FORMS
FORM 2 – STREET LIGHTING**

STREET LIGHTING

Circuit: _____ (A, B, C, etc.)

Service Pedestal: X _____ Y _____

Address: _____

Meter #: _____

Amp Rating: _____ (200A / 125A / Other)

Poles:

Pole designation: _____ (A-1, A-2, etc.; must be same designation from the plans)

Street name: _____ (NE / NW / SE / SW / N / S / E / W)

Pole Height: _____ (Feet)

Pole Type: _____ (CCPW, NDOT, Summerlin, Southern Highland, Other - Specify)

Pole Base: _____ (Standard, Safety)

Pole Gage: _____ (7, 11, Other - Specify)

Luminaire arms: _____ (single, double)

Luminaire arm type: _____ (3-Bolt / Single Bolt)

Luminaire arm length: _____ (Feet) (8', 12', 15', 18')

Fixture type: _____ (HPS / Induction / LED)

Fixture Wattage: _____

Voltage: _____ (120 / 240 / 277)

X _____ Y _____

Pole designation: _____ (A-1, A-2, A-3, etc.; must be same designation from the plans)

Street name: _____ (NE / NW / SE / SW / N / S / E / W)

Pole Height: _____ (Feet)

Pole Type: _____ (CCPW, NDOT, Summerlin, Southern Highland, Other - Specify)

Pole Base: _____ (Standard, Safety)

Pole Gage: _____ (7, 11, Other - Specify)

Luminaire arms: _____ (single, double)

Luminaire arm type: _____ (3-Bolt / Single Bolt)

Luminaire arm length: _____ (Feet) (8', 12', 15', 18')

Fixture type: _____ (HPS / Induction / LED)

Fixture Wattage: _____

Voltage: _____ (120 / 240 / 277)

X _____ Y _____

Pole designation: _____ (A-1, A-2, A-3, etc.; must be same designation from the plans)

Street name 1: _____ (NE / NW / SE / SW / N / S / E / W)

Pole Height: _____ (Feet)

Pole Type: _____ (CCPW, NDOT, Summerlin, Southern Highland, Other - Specify)

Pole Base: _____ (Standard, Safety)

Pole Gage: _____ (7, 11, Other - Specify)

Luminaire arms: _____ (single, double)

Luminaire arm type: _____ (3-Bolt / Single Bolt)

Luminaire arm length: _____ (Feet) (8', 12', 15', 18')

Fixture type: _____ (HPS / Induction / LED)

Fixture Wattage: _____

Voltage: _____ (120 / 240 / 277)

X _____ Y _____

**CLARK COUNTY PUBLIC WORKS TRAFFIC MANAGEMENT DIVISION
TRAFFIC ASSET DATA COLLECTION FORMS
FORM 2 – STREET LIGHTING**

STREET LIGHTING (CONTINUED)

Pull Boxes:

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

Pull Box Type: _____ (3½ / 5 / Other)
X _____ Y _____

SECTION 628

PAINTING TRAFFIC STRIPING, PAVEMENT MARKINGS AND CURB MARKINGS

MATERIAL

628.02.01 MATERIALS FOR TRAFFIC STRIPING, PAVEMENT MARKING AND CURB MARKING

Paragraph A of this subsection is changed to read as follows:

Materials for permanent traffic striping and marking shall conform to the applicable requirements of Section 714, "Paint and Pavement Markings." Materials for temporary traffic striping shall conform to the requirements in Section 634, "Temporary Pavement Striping Tape". Temporary traffic lanes may be delineated using paint only if pavement is to be replaced or overlaid as part of this contract, and with the Engineer's approval.

628.03.04 PREPARATION OF EXISTING SURFACES

Paragraph A of this subsection is changed to read as follows:

Existing markings and striping on asphalt pavement surfaces, either permanent or temporary, that are to be removed shall be removed by carbide scraping or by other approved means by the Engineer.

Existing markings and striping on concrete pavement surfaces, either permanent or temporary, that are to be removed shall be removed by water blasting as stated in Section 202 of these Special Provisions.

Abandoning and/or covering the permanent or temporary markings and striping with black paint, tack coat, and/or seal coat shall not be permitted.

CONSTRUCTION

628.03.09 INSTALLATION OF RETROREFLECTIVE PREFORMED PAVEMENT MARKINGS

This subsection is changed to read as follows:

Traffic striping and marking shall be applied at locations and to the dimensions and spacing indicated on the approved plans in accordance with requirements of this specification and Section 714, "Paint and Pavement Markings," or as provided in the Special Provisions.

The preformed retroreflective pavement markings shall be applied in accordance with the manufacturer's recommendations, a copy of which the Contractor shall supply the governing agency prior to installing the pavement marking material.

Type I and Type II retroreflective preformed pavement markings shall be installed using either of the following options:

Option 1 - Applications during laying and rolling asphalt concrete wearing courses (Hot-inlaid): Both types of pavement marking films shall be capable of being adhered to asphalt concrete by a pre-coated pressure sensitive adhesive. The film shall be placed on the final asphalt surface prior to the final passes of the roller-compaction equipment. The Engineer must be present during application to approve the position and orientation of the film. The roller compaction equipment shall then complete the installation by compressing the film into the surface of the new asphalt.

The Contractor shall notify the Engineer 48-hours prior to installation.

Option 2 - Applications more than ten (10) calendar days after the completion of asphalt placement (Overlay): Contractor shall apply primer and/or adhesive on all surfaces prior to installing retroreflective preformed pavement markings. Primer shall be from the same manufacturer of the preformed pavement markings, and shall be applied following manufacturer's directions and instructed rate.

Note: If option 2 is utilized, contractor must provide temporary signage at stop bar locations until application of marking. The required time for Option 2 work is part of the original contract time and this work is required to be part of the Contractor's CPM schedule.

Joints in the initial installation of new pavement markings will be allowed only on lane lines and change of direction. The longitudinal bars in crosswalks shall be one piece.

Pavement marking failures shall be removed and replaced. For stop bar and edge line failures, pavement marking shall be removed and replaced for a minimum of twenty four (24) inches in length, with a minimum of six (6) inches on each side of the failure. For crosswalk bars and arrow legends failures, the whole crosswalk bar and arrow legend shall be removed and replaced. For word legends failures, the whole letter shall be removed and replaced.

METHOD OF MEASUREMENT

628.04.01 MEASUREMENT

The following is added to this subsection:

Type 2 film (Crosswalk), Type 2 film (Stop Bar) and Type 2 Film (Chevron) marking shall be measured per square foot, complete and in place.

Type 2 film (Arrow Legend) and Type 2 film (Bike Legend) marking shall be measured per each, complete and in place.

Type 1 (width color) marking placed for line delineation shall be measured per linear foot of color and width specified, complete and in place.

BASIS OF PAYMENT

628.05.01 PAYMENT

The following is added to this subsection:

The contract unit bid price of Type 2 film (type) marking shall be full compensation for furnishing all materials, preparing the surface, as well as labor, tools, equipment and incidentals necessary to complete the work as shown on the plans, as specified herein and as required by the Engineer.

The contract unit bid price per linear foot of Type 1 (width color) marking shall be full compensation for furnishing all materials, as well as labor, tools, equipment and incidentals necessary to complete the work.

Payment shall be made under:

<u>Pay Item:</u>	<u>Pay Unit:</u>
Type 2 Film (Crosswalk)	Square Foot
Type 2 Film (Stop Bar)	Square Foot
Type 2 Film (Arrow Legend)	Each
Type 2 Film (Bike Legend)	Each
Type 1 (6-inch White)	Linear Foot
Type 1 (8-inch White)	Linear Foot
Type 1 (4-inch Yellow)	Linear Foot
Type 2 Film (Chevron)	Square Foot

SECTION 629

WATER DISTRIBUTION FACILITIES

DESCRIPTION

629.01.02 STANDARDS

The following is added to this subsection:

All water distribution facilities shall be constructed in accordance with the Las Vegas Valley Water District's *Uniform Design and Construction Standards for Water Distribution Systems*, latest edition, unless otherwise shown on the plans or as directed by the engineer.

CONSTRUCTION

629.03.01 GENERAL

The following is added to this subsection:

The approximate location of water manholes, valves, pull boxes, and main lines are indicated on the plans. The locations of service lines, meters and fire hydrants are not indicated on the plans. However, it shall be the Contractor's responsibility to locate, relocate, and/or adjust these items as necessary for proper placement according to the plans and standard drawings.

Any method of adjustment and/or relocation of water valve boxes, meters, vaults, mains, manholes, pull boxes or fire hydrants other than that indicated on the plans or standard drawings must be approved by the Engineer prior to beginning work

In paved areas, all new or adjusted water valve boxes shall be provided a concrete collar as required by the Las Vegas Valley Water District.

It shall also be the Contractor's responsibility to provide reference markers and records of the location of each water valve box and water meter to allow access at any time. The Contractor shall perform all work required for construction of water mains and appurtenances as shown.

METHOD OF MEASUREMENT

629.04.01 MEASUREMENT

This subsection is changed to read as follows:

The quantity of water valve box, water blow-off, Test Station Box, manholes, pull boxes vertical adjustments and/or relocations will be measured for payment per each regardless of size adjustment/relocation complete and accepted.

BASIS OF PAYMENT

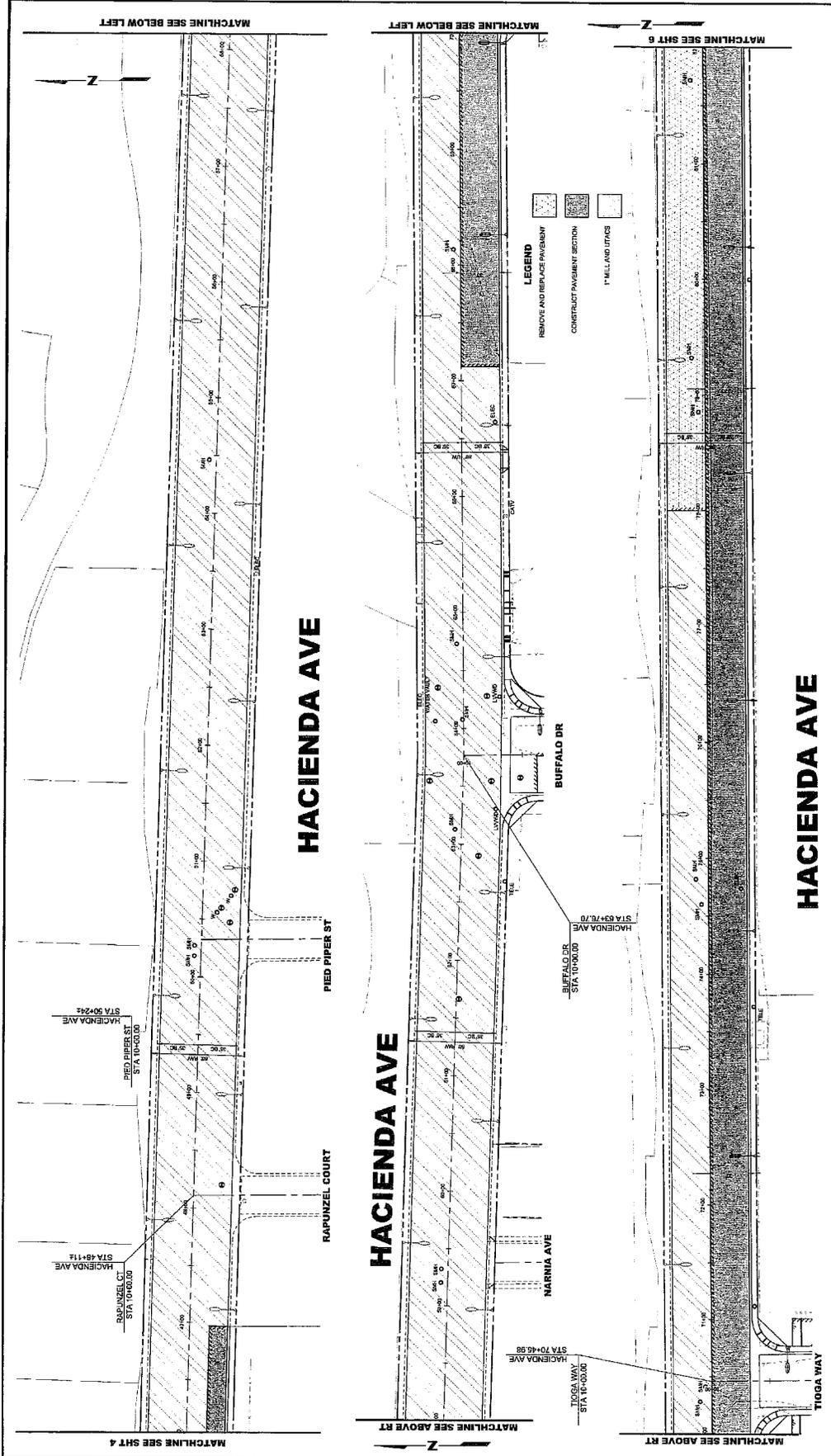
629.05.01 PAYMENT

This subsection is changed to read as follows:

The contract unit price paid per each to adjust/relocate water valve boxes, water blow-offs, manholes, pull boxes and Test Station Box shall be full compensation for horizontal relocation and vertical adjustment to final grade, including removal and replacement of all material, excavation, backfill, concrete, labor, tools, equipment and incidentals necessary to complete the relocation in accordance with the Las Vegas Valley Water District and Clark County specifications and requirements.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Vertically Adjust Water Valve Box	Each
Vertically Adjust Water Blow-off	Each
Vertically Adjust Test Station Box	Each
Vertically Adjust Water Manhole	Each
Vertically Adjust Water Pull box	Each

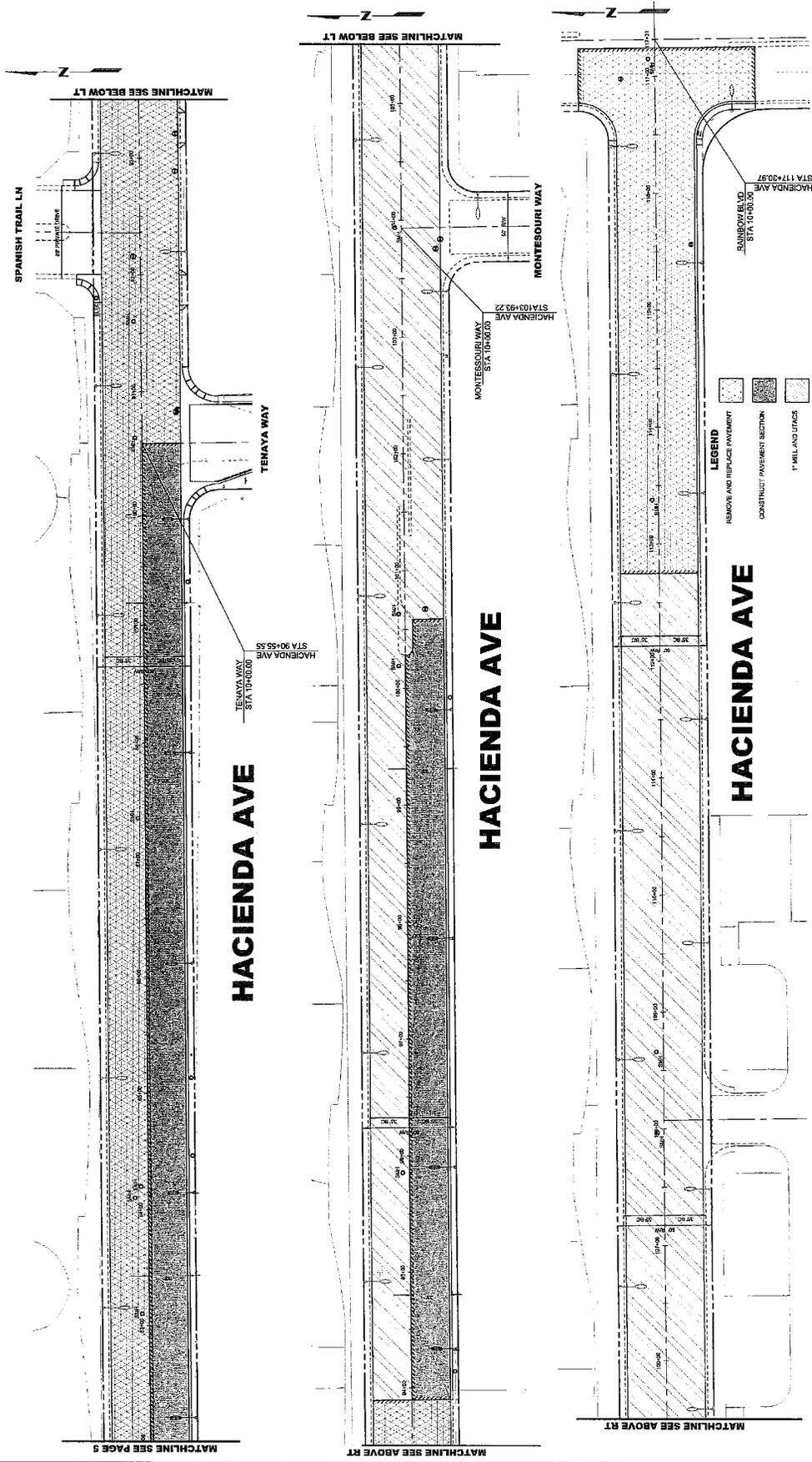


SCALE	HORIZ. 1" = 40'
VERT.	1" = 4'
DESIGNED BY	R. ROZANSKI
DRAWN BY	P.P. M.
CHECKED BY	R. ROZANSKI
DATE	AUG. 31, 2005 - 22/05
FIELD BOOK	8021-54
WORK ORDER	00216-06
PROJECT NO.	NONE



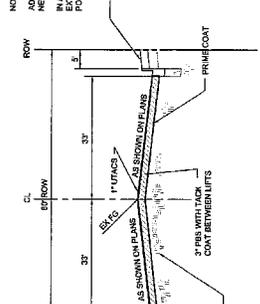
HACIENDA AVE
 PAVEMENT LAYOUT
 STA 46+00 TO 82+00
 CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

APPROVED	ERR
DATE	DESCRIPTION
	APPROVAL No. 1

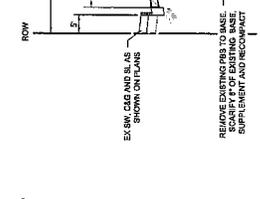


	DESIGNED BY: R. RIZOVSKAN DRAWN BY: P.P. M CHECKED BY: R. RIZOVSKAN DATE: Aug 11, 2018 - 2:44pm	SCALE: 1" = 47' HORIZ: NA VERT: NA FIELD BOOK: 652154 WORK ORDER: 20181060 PROJECT NO: NONE	SHEET No: 6 N15173A L-2088
	<p>HACIENDA AVE PAVEMENT LAYOUT STA 83+00 TO 117+31</p> <p>CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS</p>		
PER APPROPRIATE DATE:	RRR APPROVED		

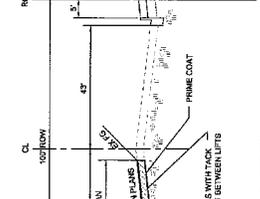
NOTES:
 1. MOISTURE BARRIERS AND OTHER UTILITIES WITHIN
 IN AREAS WHERE THE TYPICAL SECTION
 EXTENDS INTO THE SIDEWALK AREA, RESET FENCE
 POSTS BEHIND SIDEWALK AREA.
 EX SW, C&G AND S&S AS SHOWN ON PLANS
 SEE PLAN FOR PROPOSED C&G



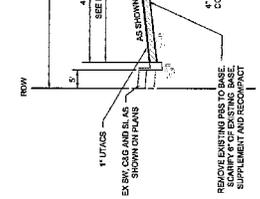
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 112+74.00 TO STA 117+34.00
NIT



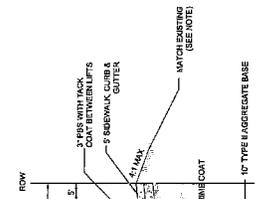
RAINBOW BLVD
TYPICAL PAVEMENT SECTION
STA 9+45.2 TO STA 10+63.2
NIT



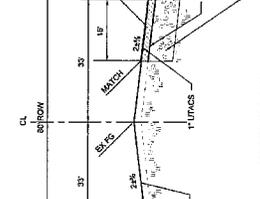
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 43+80.00 TO STA 48+12.00
NIT



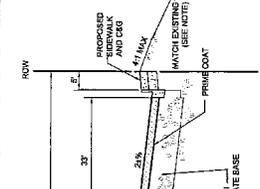
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 80+56.53 TO STA 83+49.00
NIT



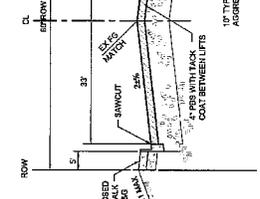
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 10+87.00 TO STA 43+60.00
STA 48+12.00 TO STA 112+74.00
NIT



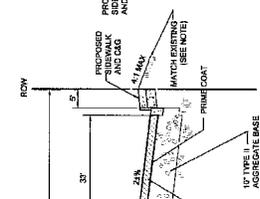
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 80+56.53 TO STA 93+49.00
NIT



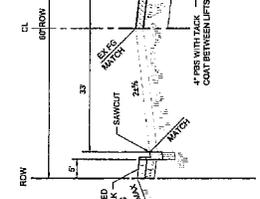
BUFFALO DR
TYPICAL PAVEMENT SECTION
STA 8+11.00 TO STA 9+33.00
NIT



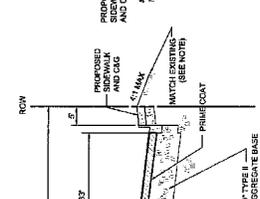
BUFFALO DR
TYPICAL PAVEMENT SECTION
STA 8+11.00 TO STA 9+33.00
NIT



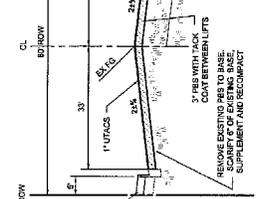
BUFFALO DR
TYPICAL PAVEMENT SECTION
STA 8+11.00 TO STA 9+33.00
NIT



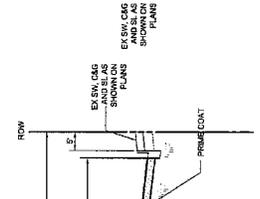
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 78+00.00 TO STA 80+56.53
NIT



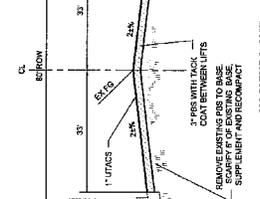
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 78+00.00 TO STA 80+56.53
NIT



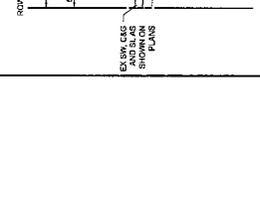
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TYPICAL PAVEMENT SECTION
STA 78+00.00 TO STA 80+56.53
NIT



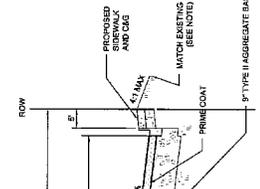
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TYPICAL PAVEMENT SECTION
STA 78+00.00 TO STA 80+56.53
NIT



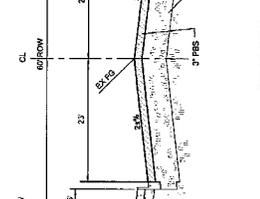
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 78+00.00 TO STA 80+56.53
NIT



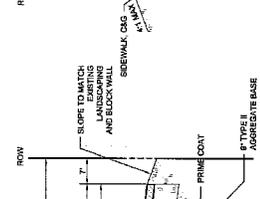
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 78+00.00 TO STA 80+56.53
NIT



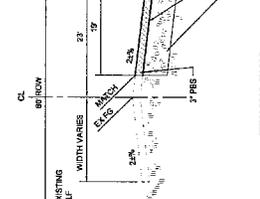
TIOGA WAY
TYPICAL PAVEMENT SECTION
STA 8+74 TO STA 9+00
NIT



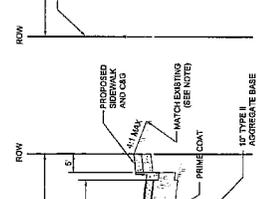
TIOGA WAY
TYPICAL PAVEMENT SECTION
STA 8+74 TO STA 9+00
NIT



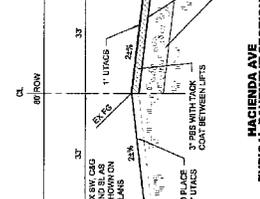
TIOGA WAY
TYPICAL PAVEMENT SECTION
STA 8+74 TO STA 9+00
NIT



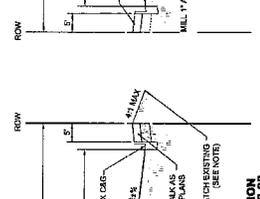
TENAYA WAY
TYPICAL PAVEMENT SECTION
STA 8+78 TO STA 8+78
NIT



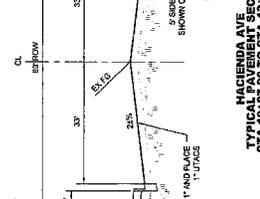
TENAYA WAY
TYPICAL PAVEMENT SECTION
STA 8+78 TO STA 8+78
NIT



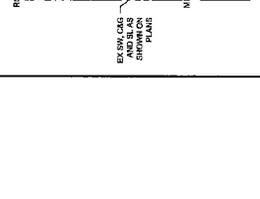
HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 67+12.00 TO STA 78+00.00
STA 80+56.53 TO STA 10+87.00
NIT



HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 67+12.00 TO STA 78+00.00
STA 80+56.53 TO STA 10+87.00
NIT

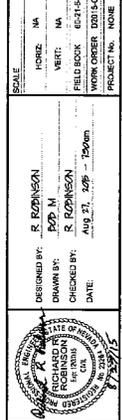


HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 67+12.00 TO STA 78+00.00
STA 80+56.53 TO STA 10+87.00
NIT



HACIENDA AVE
TYPICAL PAVEMENT SECTION
STA 67+12.00 TO STA 78+00.00
STA 80+56.53 TO STA 10+87.00
NIT

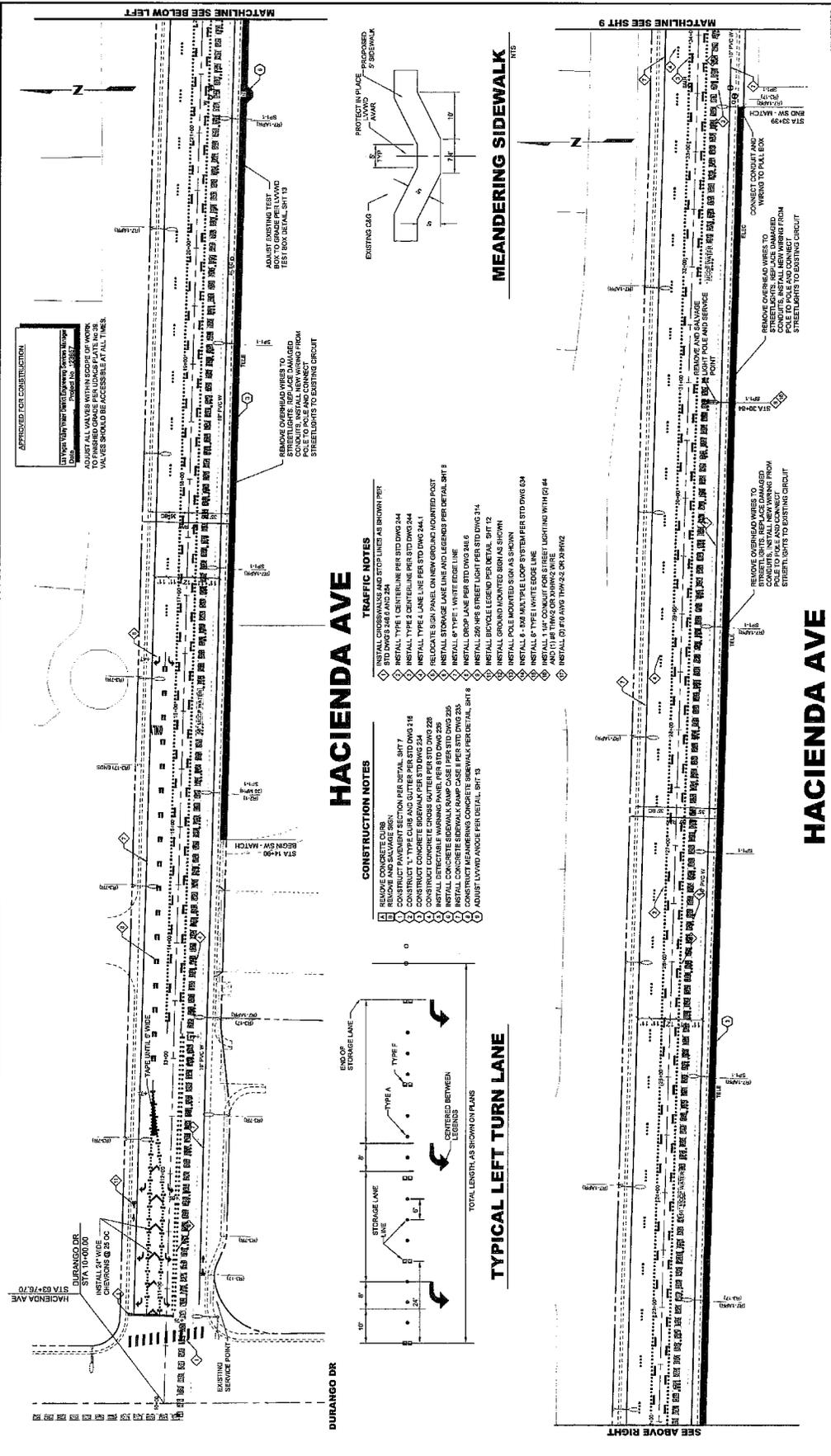
SCALE: 1" = 10'-0"
 SHEET NO: **7**
 DESIGNED BY: R. ROZANSKI
 DRAWN BY: POP M
 CHECKED BY: R. ROZANSKI
 DATE: AUG 27, 2008
 FIELD BOOK: 60-31-54
 WORK ORDER: 001-5405
 PROJECT NO.: NONE
 N15173A
 L-2088



HACIENDA AVE
DURANGO DR TO RAINBOW BLVD
TYPICAL SECTIONS
 CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS



DATE	APPROVED
NOV 2008	RRR
DESCRIPTION	



APPROVED FOR CONSTRUCTION
 DATE: 08/27/2018
 PROJECT NO: 2018-005
 DRAWN BY: R. ROBINSON
 CHECKED BY: R. ROBINSON
 DATE: Aug 27, 2018 - 7:29am

ADJUST ALL VALVES WITHIN SCOPE OF WORK TO FINISH GRADE PER LIDARS PLATE NO. IS. VALVES SHOULD BE ACCESSIBLE AT ALL TIMES.

REMOVE OVERHEAD WIRES TO STREETLIGHTS. REPLACE DAMAGED WIRES TO POLES AND CONNECT STREETLIGHTS TO EXISTING CIRCUIT.

ADJUST EXISTING TEST BOX TO GRADE PER LIDAR PER DETAIL SHT 11.



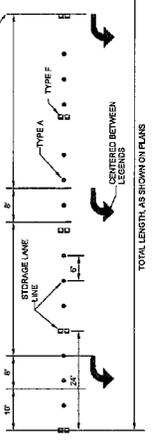
MEANDERING SIDEWALK

TRAFFIC NOTES

- ◇ INSTALL SIGN AND STOP LINES AS SHOWN PER STD DWG 240 AND 241
- ◇ INSTALL TYPE 1 CENTERLINE PER STD DWG 244
- ◇ INSTALL TYPE 2 CENTERLINE PER STD DWG 244
- ◇ INSTALL TYPE 4 LANE LINE PER STD DWG 244.1
- ◇ RELOCATE SIGN PANEL ON NEW GROUND MOUNTED POST
- ◇ RELOCATE SIGN PANEL ON NEW GROUND MOUNTED POST
- ◇ INSTALL 8' TYPE 1 WHITE EDGE LINE
- ◇ INSTALL DROP LANE PER STD DWG 246
- ◇ INSTALL 226 INR STREET LIGHT PER STD DWG 244
- ◇ INSTALL BICYCLE LEGEND PER DETAIL SHT 12
- ◇ INSTALL GROUND MOUNTED SIGN AS SHOWN
- ◇ INSTALL POLE MOUNTED SIGN AS SHOWN
- ◇ INSTALL 14' TYPE 1 WHITE SIDE LINE
- ◇ INSTALL 14' TYPE 1 WHITE SIDE LINE
- ◇ AND (1) INR THING OR MARKING WIRE
- ◇ INSTALL (2) INR THING OR MARKING WIRE

CONSTRUCTION NOTES

- REMOVE CONCRETE CURB
- CONSTRUCT PAVEMENT SECTION PER DETAIL SHT 7
- CONSTRUCT 'L' TYPE CURB AND GUTTER PER STD DWG 118
- CONSTRUCT CONCRETE SIDEWALK PER STD DWG 234
- INSTALL DETECTABLE MARKING PANEL PER STD DWG 235
- INSTALL CONCRETE SIDEWALK RAMP CASE 1 PER STD DWG 235
- CONSTRUCT MANHOLE CONCRETE SIDEWALK PER DETAIL SHT 8
- ADJUST LIDAR ANGLE PER DETAIL SHT 13

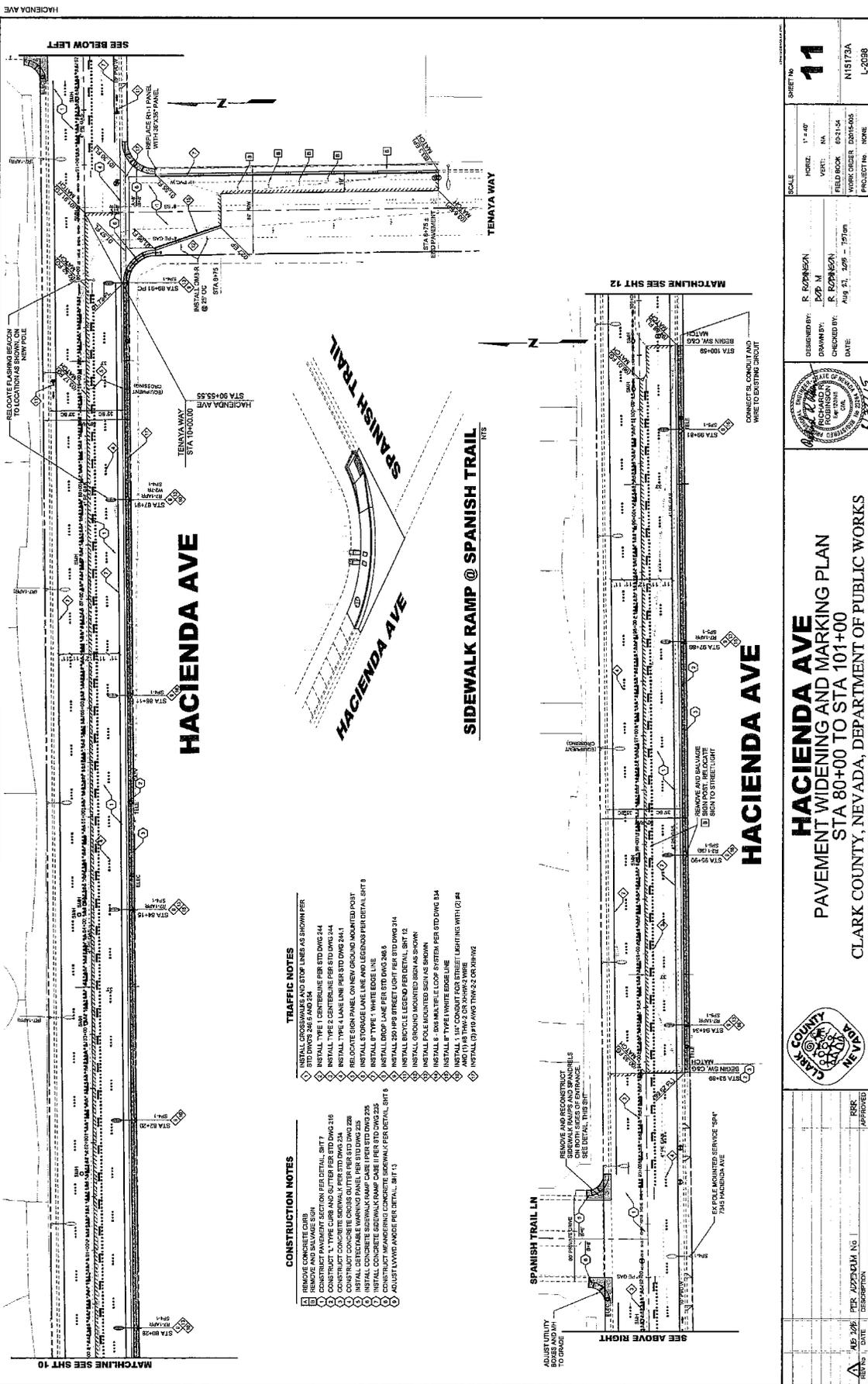


TYPICAL LEFT TURN LANE

SEE ABOVE RIGHT

MATCHLINE SEE SHT 9

	COUNTY OF CLARK CLARK COUNTY, NEVADA	PROJECT NO. NVCE N15173A L-2088
	SHEET NO. 8	SCALE: HORIZ. 1" = 40' VERT. 1" = 10' FIELD BOOK: 802-154 WORK ORDER: 2018-005 PROJECT NO. NVCE
DESIGNED BY: R. ROBINSON DRAWN BY: POP. N CHECKED BY: R. ROBINSON DATE: Aug 27, 2018 - 7:29am	PER APPROPRIATE AGENCY APPROVAL RRR APPROVED	DATE: _____ DESCRIPTION: _____



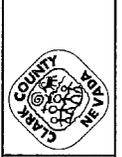
- CONSTRUCTION NOTES**
- 1 REMOVE CONCRETE CURB
 - 2 REMOVE AND SALVAGE SIGN
 - 3 CONSTRUCT PAVEMENT SECTION PER DETAIL SFT 7
 - 4 CONSTRUCT CONCRETE SIDEWALK PER STD DWG 216
 - 5 CONSTRUCT CONCRETE SIDEWALK PER STD DWG 216
 - 6 CONSTRUCT CONCRETE CROSS CUTTER PER STD DWG 228
 - 7 INSTALL DETACHABLE WARNING PANEL PER STD DWG 235
 - 8 INSTALL CONCRETE SIDEWALK RAMP CURB PER STD DWG 235
 - 9 CONSTRUCT MARKING CONCRETE SIDEWALK PER DETAIL SFT 8
 - 10 ADJUST LIGHTING AND/OR SIGN PER DETAIL SFT 13
- TRAFFIC NOTES**
- 1 INSTALL CROSSWALKS AND STOP LINES AS SHOWN PER
 - 2 STD DWG 245 AND 254
 - 3 INSTALL TYPE I CENTERLINE PER STD DWG 244
 - 4 INSTALL TYPE I LANE LINE PER STD DWG 241
 - 5 INSTALL TYPE I LANE LINE PER STD DWG 241
 - 6 RELOCATE SIGN PANEL ON NEW GROUND ADJUSTED POST
 - 7 INSTALL STORAGE PANEL LINE AND LEGENDS PER DETAIL SFT 9
 - 8 INSTALL TYPE 1 WHITE EDGE LINE
 - 9 INSTALL DROP LANE PER STD DWG 245
 - 10 INSTALL 200 IP40 STREET LIGHT PER STD DWG 314
 - 11 REMOVE AND SALVAGE SIGN PER DETAIL SFT 12
 - 12 INSTALL GROUND MOUNTED SIGN AS SHOWN
 - 13 INSTALL POLE MOUNTED SIGN AS SHOWN
 - 14 INSTALLS - 6X6 MULTIPLE LOOP SYSTEM PER STD DWG 534
 - 15 INSTALL TYPE I WHITE EDGE LINE
 - 16 INSTALL 1" CONDUIT FOR STREET LIGHTS WITH (2) #4
 - 17 INSTALL (2) #4 AWG TRW-32 OR TRW-2

SCALE: HORIZ: 1" = 40'
 VERT: 1" = 4'
 FIELD BOOK: 03-2154
 WORK ORDER: 02015405
 PROJECT NO: NONE

DESIGNED BY: R. RAZMNEAN
 DRAWN BY: D.P. M
 CHECKED BY: R. RAZMNEAN
 DATE: Aug 21, 2019 - 7:51 am

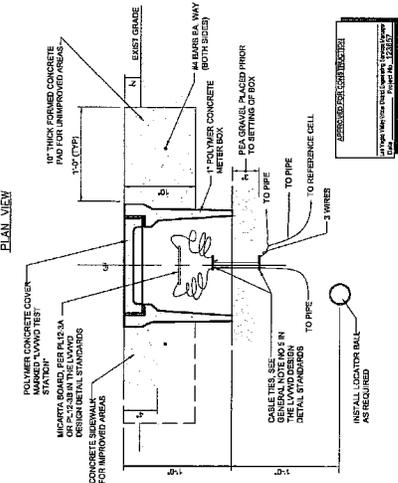
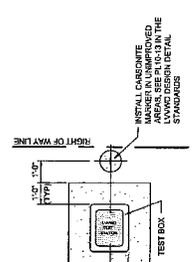


HACIENDA AVE
 PAVEMENT WIDENING AND MARKING PLAN
 STA 80+00 TO STA 101+00
 CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

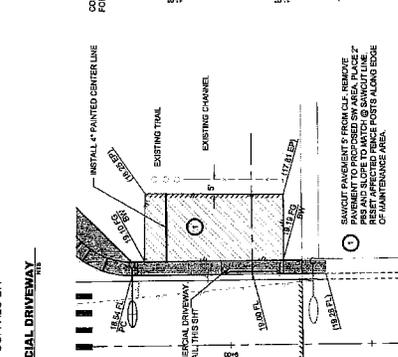
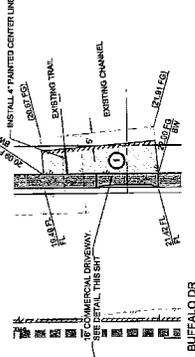


APPROVED: RRR
 DISAPPROVED: _____
 PER APPROVAL NO: _____
 DATE: _____

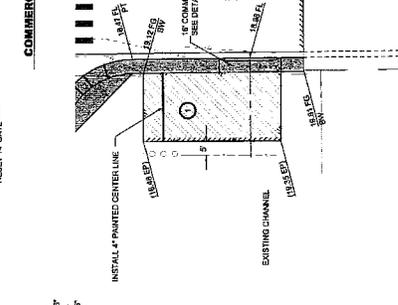
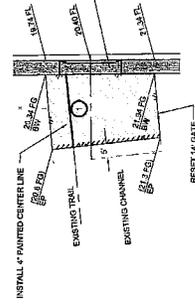
SHEET NO: **11**
 N15173A
 L-2019



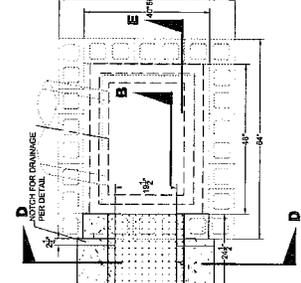
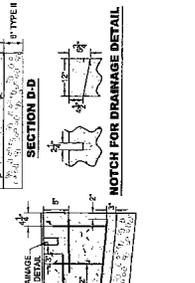
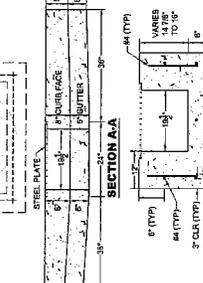
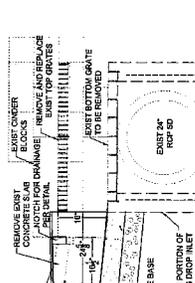
TEST BOX DETAIL - TYPICAL
NOT TO SCALE



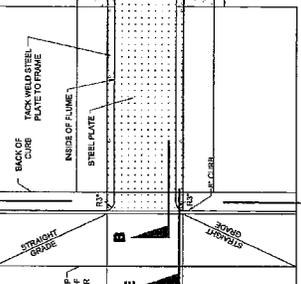
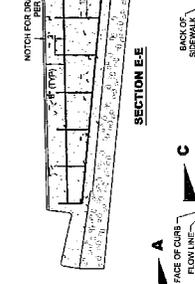
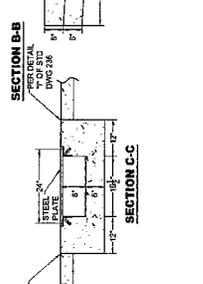
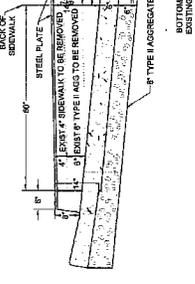
COMMERCIAL DRIVEWAY
NOT TO SCALE



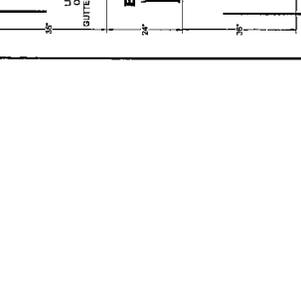
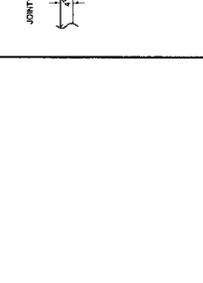
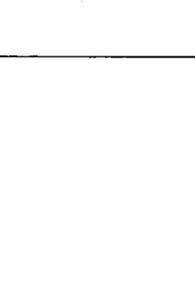
COMMERCIAL DRIVEWAY
NOT TO SCALE



SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D



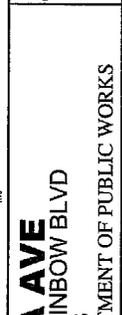
SECTION E-E
SECTION F-F
SECTION G-G
SECTION H-H



SECTION I-I
SECTION J-J
SECTION K-K
SECTION L-L

SCALE	HORIZ. NA	VERT. NA
DESIGNED BY	R. SZANSAN	
DRAWN BY	R. SZANSAN	
CHECKED BY	R. SZANSAN	
DATE	05/17/11 10:00 AM	
FIELD BOOK	02-11-A	
WORK ORDER	0201-005	
PROJECT NO.	NONE	

SHEET NO.	13	
DATE	05/17/11 10:00 AM	
FIELD BOOK	02-11-A	
WORK ORDER	0201-005	
PROJECT NO.	NONE	



HACIENDA AVE
DURANGO DR TO RAINBOW BLVD
DETAILS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS



APPROVED	DATE	DESCRIPTION
RRR		APPROVED

SCALE	HORIZ. NA	VERT. NA
DESIGNED BY	R. SZANSAN	
DRAWN BY	R. SZANSAN	
CHECKED BY	R. SZANSAN	
DATE	05/17/11 10:00 AM	
FIELD BOOK	02-11-A	
WORK ORDER	0201-005	
PROJECT NO.	NONE	

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS