

Bid Number 13.36802
Hansen Number 36802

SPECIAL PROVISIONS
100% PRE-FINAL SUBMISSION

OCTOBER 2013

RANCHO-FORT APACHE STORM DRAIN

PREPARED FOR:

CITY OF LAS VEGAS

PREPARED BY:

THE LOUIS BERGER GROUP INC.

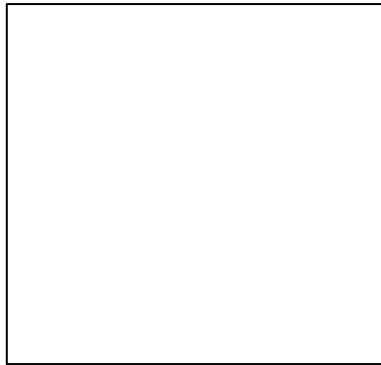
FUNDED BY:

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT
AND
REGIONAL TRANSPORTATION COMMISSION
OF SOUTHERN NEVADA

RANCHO-FORT APACHE STORM DRAIN

SPECIAL PROVISIONS

The following special provisions supplement and modify the City of Las Vegas, City Engineer Division Supplemental Specifications; "Uniform Standard Specifications for Public Works' Construction Off-site Improvements Clark County Area Nevada", third edition; and the "Uniform Standard Drawings for Public Works' Construction Off-site Improvements Clark County Area Nevada, Volume I (1988 edition), and Volume II (adopted 1992), along with revisions thereto, hereinafter referred to as the "Standard Specifications" and "Standard Drawings". Said Standard Specifications and Standard Drawings are hereby incorporated into these Special Provisions.



PRELIMINARY – NOT FOR CONSTRUCTION

NOTE: THE ENGINEERS' APPROVAL AND SUBSEQUENT SEAL IS LIMITED TO THE FOLLOWING PORTIONS OF THESE DOCUMENTS AS PREPARED BY OR UNDER THE DIRECT SUPERVISION OF THE ENGINEER:

- (1) SPECIAL PROVISIONS, PAGES SP-100-1 THROUGH SP-714-01***
- (2) BID SCHEDULE PAGE(S) – ATTACHMENT A***

ALL OTHER ATTACHMENTS, INCLUSIONS, ENCLOSURES, SCHEDULES, FORMS, GRAPHICS, ETC. WERE PREPARED BY OTHERS AND NOT UNDER THE DIRECT SUPERVISION OF THE ENGINEER.

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ADD THE FOLLOWING SECTION TO DIVISION I – GENERAL REQUIREMENTS**SECTION 100 – GENERAL PROJECT REQUIREMENTS****100.01 REFERENCE SPECIFICATIONS AND DRAWINGS**

- A. Work specified herein shall conform to or exceed the requirements of all applicable codes and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of these Special Provisions or the applicable codes. Wherever references are made in the contract, standards or codes in accordance with which work under this contract is to be performed or tested, the latest edition or latest revision(s) of the standards or codes shall apply.
- B. The following standards and codes are an integral part of the contract and are incorporated herein by reference. The Contractor is advised to become familiar with the contents of the “Uniform Standard Specifications”, “Special Provisions” and the “Uniform Standard Drawings”, as they shall govern the construction of this Project. Work on any public utility shall be performed in accordance with the Uniform Standard Specifications and Drawings except where modified by the utilities’ own standards.
- C. **“Uniform Standard Specifications for Public Works Construction Off-Site Improvements, Clark County Area, Nevada”**, also referred to as the “Uniform Standard Specifications” or “USS”. All of the requirements and provisions of said Uniform Standard Specifications shall apply except where otherwise provided herein or otherwise shown on the Contract Drawings. There may be recently adopted changes to the Uniform Standard Specifications and the Contractor should be aware of these before he submits a bid. Copies may be obtained from the Regional Transportation Commission of Southern Nevada, 600 S. Grand Central Parkway, Suite 350, Las Vegas, Nevada 89106 or online at www.rtcsonthernnevada.com
- D. **“Uniform Standard Drawings for Public Works Construction, Clark County Area, Nevada Volume I and Volume II”**, also referred to as the “Uniform Standard Drawings” or “USD” and shall be adhered to except where otherwise provided herein or otherwise shown on the Contract Drawings. Copies may be obtained from the Regional Transportation Commission of Southern Nevada, 600 S. Grand Central Parkway, Suite 350, Las Vegas, Nevada 89106 or online at www.rtcsonthernnevada.com
- E. **“Manual on Uniform Traffic Control Devices”**, also referred to as “MUTCD” and shall be adhered to except where otherwise provided herein or otherwise shown on the Contract Drawings. Copies may be obtained from the U.S. Government Printing Office, Washington, D.C. 20402 or online at mutcd.fhwa.dot.gov
- F. **“State of Nevada Department of Transportation Standard Specifications for Road and Bridge Construction”**, also referred to as the “NDOT Standard Specifications” or the “State of Nevada Standard Specifications” and shall be adhered to when specifically referenced herein or as shown on the Contract Drawings. NDOT is located at 123 E. Washington Blvd., Las Vegas, Nevada 89101; Phone (702) 385-6500 or online at www.nevadadot.com/business/contractor/standards/

- G. **“State of Nevada Department of Transportation Standard Plans for Road and Bridge Construction”**, also referred to as the “NDOT Standard Drawings” or the “State of Nevada Standard Plans” and shall be adhered to when specifically referenced herein or as shown on the Contract Drawings. NDOT is located at 123 E. Washington Blvd., Las Vegas, Nevada 89101; Phone (702) 385-6500 or online at www.nevadadot.com/business/contractor/standards/.
- H. **“Nevada Work Zone Traffic Control Handbook”**, also referred to as the “Work Zone Handbook”. Copies may be obtained from Lisa Cody, University of Reno Nevada, (775) 784-1433.
- I. **“American Society for Testing and Materials”**, also referred to as the “ASTM”. ASTM is located at 100 Barr Harbor Drive, Conshohocken, Pennsylvania, 19428-2959; Phone (610) 832-9585 or online at www.astm.org
- J. **“Uniform Design and Construction Standards for Water Distribution Systems”**, also referred to as the “Water District Standards” or “UDACS”. Copies may be obtained from the Las Vegas Valley Water District, 1001 South Valley View Boulevard, Las Vegas, Nevada 89153 or online at http://www.lvwd.com/html/eng_udacs.html
- K. **“LVVWD Design Guidance Documents”**, Copies may be obtained from the Las Vegas Valley Water District, 3700 W. Charleston Blvd., Las Vegas, Nevada 89153.
- L. **“Design and Construction Standards for Wastewater Collection Systems – Southern Nevada Current Edition”**, also referred to as the “Sewer Specifications” or “DCSWCS”. Issued by the Clark County Water Reclamation District, 5857 E. Flamingo Blvd., Las Vegas, Nevada, 89122; Phone (702) 668-8160.

100.02 SUBMITTALS

- A. The Contractor shall forward 6 copies of each submittal to the Engineer unless otherwise stated in applicable sections.
- B. The Contractor shall make all submittals in accordance with the Special Provisions, Uniform Standard Specifications and the following:
- C. **CONTRACTOR SUBMITTAL CHECKLIST:** The Contractor shall make the following submittals to the Engineer as indicated:

100.02.01 SUBMITTALS REQUIRED AT THE PRE-CONSTRUCTION CONFERENCE UNLESS OTHERWISE NOTED

<u>REQUIRED</u>	<u>SUBMITTAL</u>	<u>APPLICABLE SECTIONS</u>	<u>REMARKS</u>
☒ YES ☐ NO	Preliminary Baseline Project Schedule	108.03.01	Submit as required by Instruction to Bidders (ITB) 8.03
☒ YES ☐ NO		624.01.71A	Submit as required by ITB 8.03
RANCHO-FORT APACHE STORM DRAIN		Bid No. 13.36802 CLVRev061313	

	Barricade and Traffic Control Plan		
☒ YES ☐ NO	Bus Stop Closure Plan	624.01.71K	Submit as required by ITB 8.03
☒ YES ☐ NO	Name and twenty-four hour telephone number of the Contractor's Superintendent plus another contact person and telephone number.	105.05	Name of Superintendent shall be given in accordance with ITB Section 7.04. Twenty-four hour telephone number and name of another contact person and telephone number due at Pre-Construction Conference.
☒ YES ☐ NO	Name and title of Contractor's Authorized Representative(s)	105.05	To execute orders or directions of the Engineer without delay, who can receive correspondence and instruction, as well as sign Change Orders.
☒ YES ☐ NO	Name and title of Contractor's Authorized Representative(s)	108.03	To prepare, revise and update the progress schedules.
☒ YES ☐ NO	Name/telephone number of Contractor's safety officer	107.05	To receive notification of any safety concerns or accidents.
☒ YES ☐ NO	Name and title of Contractor's "Competent Person"	105.05	As required by CFR 29 Part 1926 Subpart P (OSHA Standards & Interpretations).
☒ YES ☐ NO	Name/telephone number of Traffic Control Supervisor and copy of their ATSSA Certification.	624.03.74	For notification in the event of a traffic control deficiency and for verification of their ATSSA certification.
☒ YES ☐ NO	Digital Image Recording	200.01.03	Digital image recording of length and width of entire project and adjacent properties/structures prior to start of construction.

100.02.02 SUBMITTALS PRIOR TO BEGINNING THE WORK

<u>REQUIRED</u>	<u>SUBMITTAL</u>	<u>APPLICABLE SECTIONS</u>	<u>REMARKS</u>
☒ YES ☐ NO	Baseline Project Schedule	108.03.02 107.02	Due 14 calendar days after acceptance of Preliminary Baseline Project Schedule.

☒ YES ☐ NO	Clark County Encroachment Permit		Permit from Clark County Development Services.
☒ YES ☐ NO	Barricade and Traffic Control Plan	624.01.71B	Submit fourteen (14) calendar days prior to starting segment or phase of construction
☒ YES ☐ NO	A copy of any notification to residents, homeowners, homeowners associations, businesses, schools or emergency agencies affected by construction	107.07	Allow 5 working days for CLV review prior to distribution.
☒ YES ☐ NO	Monument tie sheet	105.08 622	For placement and/or replacement of permanent survey monuments.
☒ YES ☐ NO	Inventory of Existing Landscape and Irrigation System	107.12 212 213	Prior to work being done in these areas.
☒ YES ☐ NO	Copy of written notification to utilities	107.17	Prior to distribution.
☒ YES ☐ NO	Copy of necessary permits and written consent from property owner(s)	107.18	Prior to entering or occupying any lands outside the right-of-way or easement or where no Authorization to Enter Property exists.
☒ YES ☐ NO	Copy of Construction Water Permit	210 107.02	Permit from Las Vegas Valley Water District to use a hydrant as a water source.
☒ YES ☐ NO	Copy of CLV Boring Permit	603 630 670	Permit from City of Las Vegas if the contractor proposes trenchless technology for utility installation.
☒ YES ☐ NO	Copy of RCB Manufacturer's Qualifications	502.01.01	Prior to ordering the RCB to be used on the Project.
☐ YES ☒ NO	IMSA Level 2 Certification	623	Prior to any work on Traffic Signals.
☒ YES ☐ NO	Project Identification Signs	200.01.02	Approval and erection prior to any work being done.
☒ YES ☐ NO	Copy of Commercial Use Permit and written authorization from property owner(s)	106.08 107.02	Permit from CLV Building Dept. if Contractor intends to store materials on private property.
☒ YES ☐ NO		203.03.03	Due prior to beginning the work.

	Name of Contaminated Soil Disposal Site or Facility	107.14	
☒ YES ☐ NO	Copy of Construction Permit	107.02	Permit from CLV Land Development Dept. for off-site work.
☒ YES ☐ NO	Copy of Grading Permit and written authorization from property owner(s)	107.02 107.14	Permit from CLV Building Dept. if Contractor intends to dispose materials on private property.
☒ YES ☐ NO	Copy of Clark County Construction Activities Permit	107.02	Permit from Clark County Public Works.
☒ YES ☐ NO	Copy of General NPDES Permit	107.02 637.01.01	If construction activities will disturb one or more acres and flow will discharge into the Las Vegas Wash.
☒ YES ☐ NO	Copy of Stormwater Pollution Prevention Plan	637.01.01	Should be completed prior to submittal of the Notice of Intent with NDEP.
☒ YES ☐ NO	Copy of Clark County Dust Control Permit	107.02 637.01.01	Prior to beginning work requiring a Dust Control Permit. Permit from Clark County Dept. of Air Quality Management.
☒ YES ☐ NO	Identification of Professional Land Surveyor	105.08 622.01.01	To supervise construction staking and replacement of permanent survey monuments.
☐ YES ☒ NO	Copy of Detention Basin Initial Pre-Excavation Topographic Survey	622	Furnish to Owner completed and sealed reproducible and electronic copies of the results.
☐ YES ☒ NO	Letter identifying the methods the Contractor is to use in cleaning operations	692.03.03	Due 15 working days prior to beginning of the cleaning operations.
☐ YES ☒ NO	Rehabilitation Plan	105.09	For locations of rehabilitation work and storage sites.
☒ YES ☐ NO	Odor Control Plan	105.09 695.02.01 696.03.02	For locations of odor control devices.
☐ YES ☒ NO	Applicator Qualifications and Performance History	691.01.06	Due 20 working days prior to beginning work.

☐ YES ☒ NO	Manufacturer's Specification, Product Data and Quality Control Procedures	691	Instruction for installation. Due 15 days prior to the work.
☐ YES ☒ NO	Coating System Application Plan	691	Due 15 days prior to the work.
☐ YES ☒ NO	List of Manholes and Appurtenances	NDOT Encroachment Permit	List of manholes or other appurtenances that may be affected by this project per the NDOT Encroachment Permit, as shown in the "Additional Terms and Conditions."

100.02.03 SUBMITTALS PRIOR TO USE

<u>REQUIRED</u>	<u>SUBMITTAL</u>	<u>APPLICABLE SECTIONS</u>	<u>REMARKS</u>
☒ YES ☐ NO	Pipe Trench Bedding	208	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Pipe Trench Backfill	208	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Copy of Trench Safety System Plan	208.03.01	Due 1 week prior to beginning trenching operations.
☒ YES ☐ NO	Type II Aggregate Base	302 704	Allow Owner 15 working days for each review.
☐ YES ☒ NO	Geotextile	272	Allow Owner 15 working days for each review.
☐ YES ☒ NO	Geogrid	271	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Plantmix Bituminous Pavement Marshall Mix Design	401 404	Allow Owner 15 working days for each review.
☐ YES ☒ NO	Plantmix Bituminous Open Graded Surface	403	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Concrete Mix Designs	501	Allow Owner 15 working days for each review.
☐ YES ☒ NO	CMU Wall Surface Finish	570	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Reinforced Concrete Pipe	603	Allow Owner 15 working days for each review.
☒ YES ☐ NO		609	

	Drop Inlet Grates and Incidentals		Allow Owner 15 working days for each review.
☐ YES ☒ NO	Manhole Extensions	609	Allow Owner 15 working days for each review.
☐ YES ☒ NO	Streetlight Conduit	623	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Sanitary Sewer Pipe	630	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Construction Materials not identified above	Per bid items	Allow Owner 15 working days for each review.
☐ YES ☒ NO	Manufacturer's recommended installation procedures	690.01.03 691.01.06	Allow Owner 15 working days for each review.
☐ YES ☒ NO	Shop Drawings	690.01.03 691.01.06	Allow Owner 15 working days for each review; shall include liner, SLC details and manhole installation details (if applicable) as described in the applicable sections.
☐ YES ☒ NO	Linear End Seal Materials	690.01.03 691.01.06	Allow Owner 15 working days for review.
☐ YES ☒ NO	Liner sampling requirements; sample location, size, removal and method of liner repair	690.01.03 691.01.06	Allow Owner 15 working days for each review.
☐ YES ☒ NO	CCTV Inspection Reports	690.01.03 691.01.06	Allow Owner 15 working days for each review.
☒ YES ☐ NO	Flow Diversion and Bypassing Plan	695.02.01	Due 15 working days prior to operations governed by the plan.
☒ YES ☐ NO	Copy of Clark County District Certification	692.03.04	Due 2 days prior to cleaning sewers.

100.02.04 SUBMITTALS DURING THE COURSE OF WORK

<u>REQUIRED</u>	<u>SUBMITTAL</u>	<u>APPLICABLE SECTIONS</u>	<u>REMARKS</u>
☒ YES ☐ NO	Monthly Progress Schedule	108.03	Submit monthly with each Pay Estimate.
☒ YES ☐ NO	3 Week Look Ahead Schedules	108.03	Submit weekly.

☒ YES ☐ NO	Remedial Project Schedules	108.03	Submit if required by the Engineer.
☒ YES ☐ NO	Daily Traffic Control Device Inspection Records	624.03.74	Submit weekly.
☒ YES ☐ NO	Daily Best Management Practices Compliance Report	637	Submit weekly.
☒ YES ☐ NO	Digital Image Recording	200.01.03	Digital image recording during construction.
☐ YES ☒ NO	Daily Heavy Equipment Record of Use in the Detention Basin	203	Furnish to Owner copies of Records of Use.

100.02.05 SUBMITTALS PRIOR TO ISSUANCE OF "NOTICE OF COMPLETION" OR RELEASE OF RETENTION

<u>REQUIRED</u>	<u>SUBMITTAL</u>	<u>APPLICABLE SECTIONS</u>	<u>REMARKS</u>
☒ YES ☐ NO	Final Record Documents	105.09	
☒ YES ☐ NO	Monument Tie Sheet	622	Post Construction Tie Sheet
☒ YES ☐ NO	Final Location Map	622	GPS Location Map of all sewer and storm drain facilities
☒ YES ☐ NO	Digital Image Recording	200.01.03	Digital image recording of length and width of entire project and adjacent properties/structures upon completion of construction.
☒ YES ☐ NO	Copy of Post Installation Storm Drain Video	603	Submit prior to Issuance of Notice of Substantial Completion. Allow 30 days for video review.
☒ YES ☐ NO	Consent of Surety to Final Payment		.
☒ YES ☐ NO	Affidavit of Payment of Debts and Claims,		
☒ YES ☐ NO			.

Affidavit of Release of
Liens

☐ YES ☒ NO	Copy of Detention Basin Post Excavation Completion Topographic Survey	622	Furnish to Owner completed and sealed reproducible and electronic copies of the results.
☐ YES ☒ NO	Third party testing results	690.01.03	Furnish to Owner results of the third party materials testing required for CIPP Liner and/or Machine PVC Spiral Wound Liner.
☒ YES ☐ NO	APEX landfill receipts	692.01.03	One week after final cleaning operations.
☒ YES ☐ NO	Copy of Post Installation Sewer Video	693	Submit prior to Issuance of Notice of Substantial Completion.
☐ YES ☒ NO	Manufacturer's Warranty	690.01.03 691.01.06	Submit prior to Issuance of Notice of Substantial Completion.

END OF SECTION 100

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SECTION 101 – DEFINITIONS AND TERMS

DELETE SUBSECTION 101.01 BLANK AND REPLACE WITH THE FOLLOWING:

101.01 ABBREVIATIONS

AGA	American Gas Association
AI	The Asphalt Institute
AIEE	American Institute of Electrical Engineers
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
API	American Petroleum Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ATSSA	American Traffic Safety Services Association
CFR	Code of Federal Regulations
CPM	Critical Path Method
CRSI	Concrete Reinforcement and Steel Institute
EPA	Environmental Protection Agency (USA)
IMSA	International Municipal Signal Association
IPCEA	Insulated Power Cable Engineers' Association
ITB	Instructions to Bidders
NBFU	National Board of Fire Underwriters
NCPI	National Clay Pipe Institute
NDEP	Nevada Department of Environmental Protection
NDOT	Nevada Department of Transportation
NOAA	National Ocean and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRS	Nevada Revised Statutes
OSHA	Occupational Safety and Health Standards
PCA	Portland Cement Association
SSPC	Steel Structures Painting Council
UBC	Uniform Building Code, International Conference of Building Officials
USS	Uniform Standard Specifications for Public Works' Construction Off-Site Improvements, Clark County Area Nevada
USD	Uniform Standard Drawings for Public Works' Construction Off-Site Improvements, Clark County Area Nevada, Volumes I & II

101.02 ADDENDUM

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Addendum means a written or graphic instrument issued by the Owner via the City of Las Vegas Purchasing and Contracts Office prior to the submission of bids which modifies or interprets the Bidding Documents by means of additions, deletion, clarification, correction or other type of modification. All Addenda will become part of the executed Contract.

101.06 BASE COURSE

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. The layer or layers of specified or selected material of designated thickness on a subgrade to support a surface course.

101.07 BIDDER

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Refer to the INSTRUCTIONS TO BIDDERS section IT B 2 Definitions of the Bid Documents.

101.11 CONTRACT CHANGE ORDER OR FIELD CHANGE ORDER

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

101.11 CHANGE ORDER AND CONSTRUCTION CHANGE DIRECTIVE

- A. Change Order means a written order issued by the Owner to the Contractor after execution of the Contract that authorizes a change in the Work, Contract Amount or Contract Time. Except as allowed by the Contract Documents, the Contract Amount or Contract Time may be changed only by the issuance of a Change Order. The execution of the Change Order indicates the Contractor's agreement to the terms set forth therein including the adjustment, if any, in the Contract Amount or Contract Time.
- B. Construction Change Directive means a written order issued by the Owner to the Contractor directing immediate changes in the Work for which a modification to the Contract Amount, Contract Time or other provision of the Contract may be appropriate but may not have been negotiated at the time of issuance. The Contractor is to proceed immediately with the implementation of the Construction Change Directive.

101.13 CONTRACT

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Refer to the INSTRUCTIONS TO BIDDERS section IT B 2 Definitions of the Bid Documents.

101.16 CONTRACTOR

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Refer to the INSTRUCTIONS TO BIDDERS section IT B 2 Definitions of the Bid Documents.

101.17 CONTRACT TIME

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Refer to the INSTRUCTIONS TO BIDDERS section IT B 2 Definitions of the Bid Documents.

101.38 NOTICE TO PROCEED

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Refer to the INSTRUCTIONS TO BIDDERS section IT B 2 Definitions of the Bid Documents.

101.58 SPECIAL PROVISIONS

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Special Provisions means the written descriptions of the requirements for the Work incorporated as a part of the Contract.

101.61 SUBCONTRACTOR

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Refer to the INSTRUCTIONS TO BIDDERS section IT B 2 Definitions of the Bid Documents.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:

101.80 ACTIVITY-ON-NODE (AON)

- A. A format for illustrating a network diagram where activities are represented by nodes, and arrows are used to show the precedence relationships. AON format is utilized in Precedence Diagramming.

101.81 AGENCY

- A. The governing body to which a work or facility will be dedicated upon successful completion. Agency may be one or more of the following entities: City of Las Vegas, Nevada; City of North Las Vegas, Nevada; Las Vegas Valley Water District, Las Vegas, Nevada; Clark County Sanitation District, Las Vegas, Nevada; Clark County, Nevada; and state of Nevada Department of Transportation.

101.82 BAR (GANTT) CHART

- A. A graphical format for displaying network schedules which shows planned and actual progress for a number of tasks against a horizontal time scale. The Bar Chart is frequently updated throughout the project to monitor the detailed progress of the work and is the primary source of reporting/displaying project schedule information to others.

101.83 CERTIFIED ENVIRONMENTAL MANAGER (CEM)

- A. One who is certified by Nevada Department of Environmental Protection as an Environmental Manager.

101.84 CRITICAL PATH METHOD (CPM)

- A. A mathematical analysis technique for schedule development utilizing realistic activity time estimates. CPM is designed to control both the time and costs of a project by identifying the activities, which must be kept on schedule ("critical" activities) and the activities, which have extra time ("float") available for their completion.

101.85 DEWATERING

- A. The removal and/or lowering of any surface or subsurface water by a method chosen by the Contractor and acceptable to the Engineer, which results in a ground moisture content which enables construction to be carried out under relatively dry and stable conditions. Unless specifically indicated elsewhere in these specifications, no separate payment will be made for dewatering but shall be included in other items of work.

101.86 FLOAT

- A. The amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activity or group of activities in the schedule.

101.87 NETWORK DIAGRAM

- A. A general scheduling term for several methods of describing the net effect of interconnecting lines used to indicate dependencies and interrelationships of project activities.

101.88 NOMINAL DIAMETER

- A. The inside diameter of a standard pipe as specified by the manufacturer.

101.89 PRECEDENCE DIAGRAMMING (PDM)

- A. A graphical format of presenting a schedule utilizing the AON network diagramming method. All activities are linked to successor and predecessor activities with start-start, finish-finish, finish-start or start-finish relationships, allowing lead and lag.

101.90 PROJECT SCHEDULE (SCHEDULE)

- A. The fundamental basis for planning, scheduling, monitoring and controlling project activity. The schedule illustrates the interdependence of all tasks, work packages and work units.

101.91 SERVICE CONNECTION LATERAL

- A. All or any portion of a utility, including pipe, conduit, wire, cable or duct, including meters between a utility distribution (or collection) line and an individual customer or customers.

END OF SECTION 101

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SECTION 102 – BIDDING REQUIREMENTS AND CONDITIONS

SUBSECTIONS 102.01 THROUGH 102.03 AND 102.06 THROUGH 102.13 SHALL BE DELETED IN THEIR ENTIRETY AND REPLACED WITH THE FOLLOWING:

A. The INSTRUCTIONS TO BIDDERS section of the Bid Documents shall govern.

102.04 INTERPRETATION OF QUANTITIES IN THE PROPOSAL

ADD THE FOLLOWING TO THIS SUBSECTION:

C. It shall be the Contractor's responsibility to field verify required quantities prior to bidding.

102.05 EXAMINATION OF PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS AND SITE OF WORK

ADD THE FOLLOWING TO THIS SUBSECTION:

- G. The Contractor, by submitting a bid proposal for this work, represents that Contractor has studied all surveys and investigative reports about potential surface and subsurface conditions pertaining to the site of work; that Contractor has performed such additional surveys and investigations as Contractor deems necessary to complete the work at Contractor's bid proposal price; and that Contractor has correlated the results of all such data with the requirements of the contract documents.
- H. A preliminary geotechnical exploration report was prepared by Converse Consultants on April 25, 2011 and may be reviewed at the following address: 2731 Pilot Road Suite H, Las Vegas, NV 89119 or may be purchased by calling the following phone number: 702-263-7600 twenty-four hours prior to pick-up.
 - 1. Bidders shall be aware of the contents of these reports and shall make their own interpretation of the data contained therein.
 - 2. ***This report(s) is provided as "Materials Information" only.***
 - 3. The Contractor shall not be relieved of liability under the Contract for any loss sustained as a result of variances between conditions indicated and the actual conditions encountered during the progress of the work.
- I. The Contractor should be aware that high levels of petroleum hydrocarbons may be present in the area.
 - 1. In such case that hazardous material is encountered, the Contractor shall notify the Engineer and all appropriate agencies in writing in accordance with subsection 203.03.71 "Hazardous Material" of these Special Provisions.

END OF SECTION 102

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SECTION 103 – AWARD AND EXECUTION OF CONTRACT

THIS SECTION SHALL BE DELETED IN ITS ENTIRETY AND REPLACED WITH THE FOLLOWING:

- A. The INSTRUCTIONS TO BIDDERS section of the Bid Documents shall govern.

END OF SECTION 103

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SECTION 104 – SCOPE OF WORK

ADD THE FOLLOWING SUBSECTION:

104.00 LOCATION AND SCOPE OF WORK

- A. LOCATION: Fort Apache Road between Clark County 215 and Severance Lane.
- B. SCOPE OF WORK: The Rancho-Fort Apache Storm Drain includes reinforced concrete box (RCB), reinforced concrete pipe (RCP), junction structures, inlet structures, manholes, and associated facilities. The project will construct approximately 1 mile of 12 foot x 6 foot RCB under Fort Apache Road from Elkhorn Road to the Clark County 215 (CC 215) Beltway. Two major lateral storm drains connect to the main system: 1) Deer Springs Way Lateral consisting of a 48-inch RCP at the upstream end and 4 foot x 4 foot RCB at the downstream end; and, 2) Echelon Point Drive Lateral consisting of a 24-inch RCP and 36-inch RCP at the upstream and downstream ends, respectively.

A separate lateral storm drain is to be constructed in Severance Drive. The Severance Drive Lateral consists of an 18-inch RCP and a 48-inch RCP at the upstream and downstream ends, respectively, and connects to an existing 60-inch RCP in Fort Apache Road.

At CC 215, the 12 ft x 6 ft RCB turns east and continues along the CC 215 Right-of-Way. The 12 ft x 6 ft RCB will replace an existing riprap channel and connect to an existing concrete channel along the north side of the CC 215. This project also includes utility relocations and roadway reconstruction as necessary for the installation of the storm drain facilities. Existing waterline and sewer line in conflict with the proposed storm drain facilities will be relocated.

104.04 MAINTENANCE OF TRAFFIC

ADD THE FOLLOWING TO THIS SUBSECTION:

- F. During working hours, the Contractor shall have no more than three hundred (300) feet of open trench and/or structure excavation, nor more than one half (1/2) of an intersection closed to vehicular traffic, except with specific written permission by the Engineer. During non-working hours, the Contractor shall have no more than one hundred (100) feet of open trench and/or structure excavation, barricaded in accordance with these special provisions. Pedestrian access crossings suitably equipped with handrails shall be provided as directed by the Construction Manager. The cost of such crossings shall be included as a part of the traffic control bid item.
- G. The Contractor shall have no more than six hundred (600) feet of open structure excavation within a closed segment of Fort Apache Road, except with specific written permission by the Engineer. See Subsection 107.07 Traffic and Access for the limits of each closed roadway segment on Fort Apache Road. During non-working hours, the excavation shall be barricaded in accordance with these special provisions.

END OF SECTION 104

SECTION 105 – CONTROL OF WORK**105.01 AUTHORITY OF THE ENGINEER*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- E. The Engineer shall not direct Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and program incident thereto and will not be responsible for Contractor's failure to perform the work in accordance with the Contract.
- F. Engineer will not be responsible for the acts or omissions of the Contractor, or any Subcontractor or any of his or their agents or employees or any other persons at the site or otherwise performing any of the work.

105.02 PLANS AND WORKING DRAWINGS***ADD THE FOLLOWING TO THIS SUBSECTION:***

- D. The Contractor shall make submittals for all materials prior to use.
 - 1. All submittals made and signed by the Contractor shall be accompanied by the Contractor's standard transmittal form, containing, at a minimum, the bid item to which the submittal pertains.
 - 2. Any submittals not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for re-submittal.
 - 3. Items submitted by anyone other than the Contractor will be returned, without action, for resubmission by the Contractor.
 - 4. All submittals shall be carefully reviewed by an authorized representative of the Contractor prior to submission to the Engineer.
 - 5. Each submittal shall be dated, signed and certified by the Contractor as being correct and in strict conformance with the Contract Documents.
 - 6. All non-certified submittals will be returned to the Contractor without action taken by the Engineer and any delays caused thereby shall be the total responsibility of the Contractor.
- E. The Contractor shall submit any City of Las Vegas acceptance letters for asphalt concrete, aggregate and Portland Cement Concrete in lieu of test data.
 - 1. If the asphalt concrete, aggregate or Portland Cement Concrete mix design are not on the City of Las Vegas' current list of approved materials, a mix design for asphalt or Portland Cement Concrete or test data must be signed and approved by a Nevada Licensed P.E.
 - 2. The Contractor shall establish its bid price according to the mix designs that are delineated on the City of Las Vegas' current list of approved materials.
 - 3. Any additional costs arising from mix designs submitted by the Contractor that are rejected for not meeting the City of Las Vegas' criteria for any reason whatsoever shall be borne solely by the Contractor.
 - 4. All mix designs are to be submitted thirty (30) days prior to anticipated material placement.

- F. The Engineer's review of working drawings submitted by the Contractor will cover only general conformity to the drawings, specifications and special provisions, external connections and dimensions which affect the layout.
 - 1. The Engineer's review does not indicate a thorough review of all dimensions, quantities and details of the material, equipment, devices or items shown.
 - 2. The Engineer's review of submittals shall not relieve Contractor from responsibility for errors, omissions, or deviations, or responsibility for compliance with the Contract Documents.
 - 3. Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis of claims for extra work.
- G. If a submittal is returned to the Contractor marked "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS AS NOTED", formal revision and resubmission of said submittal will not be required.
- H. If a copy of the submittal is returned to the Contractor marked "AMEND – RESUBMIT", or "REJECTED – RESUBMIT" the Contractor shall revise said submittal and shall resubmit to the Engineer.
 - 1. When corrected copies are submitted, the Contractor shall indicate any revisions not made and any revisions made other than those called for by the Engineer on previous submissions.
 - 2. Manufacture, fabrications or purchasing of items prior to final acceptance is at the Contractor's own risk.

105.03 CONFORMITY WITH PLANS AND SPECIFICATIONS

ADD THE FOLLOWING TO THIS SUBSECTION:

- D. In the event the Contractor desires to perform work that does not conform with the plans and specifications, the Contractor will make a written request to the Engineer for review and approval.
- E. As a minimum, the written request will address the following:
 - 1. The Contractor will demonstrate that the performed work is of equal or greater value than the work specified in the plans and specifications.
 - 2. Various requests may require the seal and signature of approval from a licensed Nevada Professional Engineer. Prior to submitting a request, the Contractor shall inquire as to whether the Owner will require the approval of an Engineer, and if so, the Contractor will be responsible for the associated costs of this review.

105.04 COORDINATION OF PLANS, SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. During the Bidding Phase of the proposed Work the governing order of the Bid Documents shall be per Instruction to Bidders (ITB) Section 3.02 "Governing Order of Bid Documents".

- B. After the Contract has been awarded, the governing order of the Contract Documents shall be per General Conditions (GC) Section 14.03 "Governing Order of Bid Documents".
- C. The Contractor shall take no advantage of any apparent error or omission in the plans or specifications. In the event the Contractor discovers such an error or omission, he shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the plans and specifications.
- D. The Contractor shall attend the Pre-Construction meeting.

105.05 COOPERATION BY CONTRACTOR

DELETE PARAGRAPH "A" OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

- A. All approved plans and contract assemblies including special provisions are available on demandstar.com and the Contractor is responsible for printing all copies for his use, one set of which the Contractor shall keep available on the work site at all times.

DELETE PARAGRAPH "C" OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

- C. The Contractor shall provide his own mobile telephone, capable of making and receiving both local and long distance calls to allow communication with the Engineer and Resident Project Representative at all times. The contractor shall provide his own electronic device capable of receiving and sending e-mails from the field. The Contractor shall also provide his own electric power, potable water, construction water and sanitary facilities required in the performance of the work under the contract. All costs associated with these items shall be the responsibility of the Contractor.

105.06 COOPERATION WITH UTILITIES

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- R. The Contractor shall be responsible for verifying that each utility has responded to each notification.
- S. If, during the course of paving operations, the Contractor paves over water and/or gas distribution valves, the Contractor shall have no more than 48 hours to remove the asphalt over the valves and adjust the valves to grade. The Contractor shall be responsible for adequately marking all such valves prior to paving operations so as to readily locate them after paving. Adjustment of valves may require a temporary adjustment to dense grade prior to the permanent final adjustment to the top of finish grade.
- T. The location and elevation of utilities that have the potential to be in conflict with the proposed improvements have been determined by subsurface utility exploration (potholing), the results of which are depicted on the plans. The following list identifies the utility companies that are located within this project and their contact representative. The contractor shall contact the following representatives 14 days prior to beginning construction to coordinate relocation or adjustment of existing facilities, to install new

facilities, and to coordinate inspection of work on or near facilities:

Utility Company Name	Contact Name	Contact Number
CenturyLink	Scott Gifford	244-7290
City of Las Vegas – Collection System	Tim Parks	229-2178
Cox Communications Las Vegas	Doney Villareal	545-1679
Las Vegas Valley Water District	Steve Jackson	258-3249
NV Energy Distribution	Marrita Perea	402-6721
Southwest Gas Corporation	Bob Middag	365-2071
Freeway & Arterial System of Transport	Thomas Theisen	432-5308

Unless otherwise specified below, the contractor shall contact the affected utility company a minimum of 14 days prior to starting construction in areas which impact their facilities to allow sufficient time for the companies to mobilize their crews to perform the necessary adjustments. Contractor shall provide the utility company access to the work site in the affected location(s) for the purpose of completing the portion of the work for which they are responsible. Contractor shall coordinate work to meet the project deadlines as specified in these Special Provisions.

Contact the Freeway and Arterial System of Transportation (FAST) not less than 48 hours before starting any excavation in the vicinity of the underground FAST cable. Notify FAST by telephone at (702) 432-5300 and comply with all instructions so received. In the event of interruption to the FAST as result of accidental breakage, promptly call FAST. Cooperate with FAST in the restoration of service as promptly as possible.

1. CenturyLink

CenturyLink has existing conduit, along with other facilities, running north-south along both sidewalks on the east and west side of Ft. Apache Road north of Elkhorn Road from approximate station “FA” 151+00 to the north side of Elkhorn Road at the intersection of Elkhorn Road and Ft. Apache Road. The conduit on the east side of Ft. Apache Road turns easterly, along the sidewalk on the north side of Elkhorn Road and leaves the project limits. The conduit on the west side of Ft. Apache Road crosses Elkhorn Road and splits, with a line continuing southerly and a line turning and heading easterly along the south side of Elkhorn Road to a telephone vault on the south side of Elkhorn Road near approximate station “EK” 406+00.

The conduit continuing southerly along the west side of Ft. Apache Road from Elkhorn Road continues to Dorrell Lane. On the east side of Ft. Apache Road, conduit from the existing telephone vault on the south side of Elkhorn Road near approximate station “EK” 406+00 runs along the sidewalk south to Denver Sky Avenue, where it turn east and leaves the project limits.

At Dorrell Lane, the conduit on the west side of Ft. Apache Road ties into the existing conduit running east-west along the north side of Dorrell Lane. The conduit heading west along the sidewalk on the north side of Dorrell Lane continues out of the project limits. The conduit heading east on the north side of Dorrell Lane turns to the south and crosses Dorrell Lane on the east side of Ft. Apache Road.

At the southeast corner of Ft. Apache Road and Dorrell Lane, the conduit splits with a line heading east along the sidewalk on the south side of Dorrell Lane and leaving the project limits. The other line continues south on the east side of Ft. Apache Road. At Umler Avenue, the existing conduit on the east side of Ft. Apache Road splits, with a line heading east and leaving the project limits on the south side of Umler Avenue. The other conduit continues south along the east side of Ft. Apache Road to Deer Springs Way.

At Deer Springs Way, the conduit on the east side of Ft. Apache Road crosses the existing conduit running east-west on the north side of Deer Springs Way and continues south. The conduit on the north side of Deer Springs Way runs east-west in the sidewalk area and leaves the project limits.

On the south side of Deer Springs Way, existing conduit east of Ft. Apache Road turns south on the east side of Ft. Apache Road and joins the conduit heading south on the east side from north of Deer Springs Way. The conduit continues south on the east side of Ft. Apache Road to approximate station "FA" 118+50 where it crosses to the existing manhole on the west side of Ft. Apache Road. The conduit continues south on the west side of Ft. Apache Road to Echelon Point Drive.

At Echelon Point Drive, the existing conduit on the west side of Ft. Apache Road crosses diagonally to the southeast corner of the intersection of Ft. Apache Road and Echelon Point Drive and continues east on the south side of Echelon Point Drive and leaves the project limits.

Contractor shall verify all CenturyLink utility crossings and protect existing telephone conduit in place. Where shown on the plans, CenturyLink will relocate existing telephone facilities that are in conflict with construction.

2. The City of Las Vegas – Collection System

The CLV Collection System has two parallel sewer lines that run north-south in Ft. Apache Road from the north end of the project limits to Severence Lane. One sewer enters from the cul-de-sac of Gold Lake Avenue to the west of Ft. Apache Road and heads south, on the west side, to tie into the sewer in the cul-de-sac of Olympia Falls Avenue. The other sewer begins in the intersection of Picturesque Avenue and Ft. Apache Road and heads south to Severence Lane. At Severence Lane, the sewer connects to the existing sewer running east-west through the project limits on the north side of Severence Lane.

The CLV Collection System has a sewer running east-west from the cul-de-sac of Oxbow Lake Avenue on the west side of Ft. Apache Road.

The CLV Collection System has a sewer running east-west from the cul-de-sac of White Waterfall Avenue on the west side of Ft. Apache Road.

The CLV Collection System has a sewer running from the cul-de-sac of Brownstone Ledge Avenue to the west of Ft. Apache Road and heads south on the west side of Ft. Apache to the intersection of Elkhorn Road. This sewer has laterals entering from the west at the cul-de-sac at Enchanted Grove and Bronze River Avenues.

At the intersection of Elkhorn Road and Ft. Apache Road, the sewer jogs slightly to the east and ties into the existing sewer running east-west near the center of Elkhorn Road through the project limits. A portion of the existing sewer in Elkhorn Road will be lowered to allow the proposed storm drain in Ft. Apache to cross the intersection. The existing sewer will be lowered from station "EK" 413+85.7 to station "EK" 407+54.5.

The CLV Collection System has a sewer entering Ft. Apache Road on the north side of Witting Avenue. The sewer heads south near the center of Ft. Apache Road to a manhole at Dorrell Lane. This sewer has laterals entering from the west at the cul-de-sac at Avon Park Avenue and Horseshoe Basin Avenue.

At Dorrell Lane, the sewer ties into the existing sewer heading east-west near the center of Dorrell Lane. A new manhole will be constructed on the existing sewer just east of the intersection.

From the intersection of Ft. Apache Road and Dorrell Lane, the existing sewer continues south near the center of Ft. Apache to a manhole at Deer Springs Way. This sewer has laterals entering from the west at the cul-de-sac at Hamstead Hills Avenue, Thunder Falls Court, and Loghorn Falls Court. At Deer Springs Way, the sewer ties into the existing sewer heading east-west near the center of Deer Springs Way.

A portion of the existing sewer in Deer Springs will be lowered to allow the proposed storm drain in Ft. Apache to cross the intersection. The existing sewer will be lowered from station "DW" 308+53.7 to station "DW" 304+91.5.

In addition, the CLV Collection System has a sewer running east-west near the centerline of Deer Springs Way between Campbell Road and Beloved Road. A portion of the existing sewer line in Deer Springs Way will be replaced between approximate stations "DW" 292+52 and "DW" 293+95 as part of this project as well.

There is no known sewer in Ft. Apache Road from the center of the intersection of Ft. Apache Road and Deer Springs Road south to approximate station "FA" 115+30. An existing sewer enters Ft. Apache from the subdivision to the west and turn south in Ft. Apache to Echelon Point Drive.

The CLV Collection System has a sewer running east-west near the center of Echelon Point Drive. A portion of the existing sewer in Echelon Point Drive as well as the portion of the sewer in Ft. Apache Road just north of Echelon point Drive will be lowered to allow the proposed storm drain in Ft. Apache to cross the intersection. The existing sewer will be lowered from station "EC" 210+42.3 to station "EC" 204+10.0.

Unless otherwise noted on the plans, the Contractor shall protect existing sewer in place. Where shown on the plans, the contractor shall relocate the existing sewer and associated facilities.

3. Cox Communications

Cox Communications has existing conduit, along with other facilities, running east-west through the project limits along the sidewalk on the south side of Severence Lane. At the intersection of Severence Lane and Ft. Apache Road, the line splits. One run continues east on the south side of Severence across Ft. Apache Road and leaves the project limits. The other conduit turns south and runs in the sidewalk area on the west side of Ft. Apache Road. The conduit apparently ends at a pullbox approximately 120 feet south of Severence Lane.

Cox Communications has existing conduit, along with other facilities, running east-west through the project limits along Elkhorn Road. There is existing conduit on both the north and south sides west of Ft. Apache Road. The conduit on the north side, west of Ft. Apache Road, turns north and runs along the west side of Ft. Apache Road from the north side of Elkhorn Road to approximate station "FA" 151+00. The conduit on the south side, west of Ft. Apache Road, crosses to the north side near approximate station "EK" 411+00 and continues easterly on the north side of Elkhorn Road through the project limits.

On the south side of Elkhorn Road, east of Ft. Apache Road, existing conduit runs from the intersection of Elkhorn Road and Ft. Apache Road to approximate station "EK" 406+00. In addition, Cox Communications has existing conduit, along with other facilities, running north-south along the east side of Ft. Apache Road from the north side of Elkhorn Road to approximate station "FA" 141+00, where it turns east and exits the project limits.

At the southeast corner of the intersection of Ft. Apache Road and Dorrell lane, Cox has existing conduit in the sidewalk area on the south side of Dorrell Lane that runs east out of the project limits.

There are no known Cox Communication facilities in Ft. Apache Road between Dorrell Lane and Deer Springs Road. There is existing conduit running east-west through the project limits on both the north and south sides west of Deer Springs Way. In addition, there is existing conduit that runs south in the sidewalk area on the east side of Ft. Apache Road from Deer Springs Way. The conduit continues south on the east side of Ft. Apache Road to approximate station "FA" 118+50 where it crosses to the west side of Ft. Apache Road. The conduit continues south on the west side of Ft. Apache Road to Echelon Point Drive.

At the northwest corner of Ft. Apache Road and Echelon Point Drive the existing conduit on the west side of Ft. Apache Road crosses diagonally to the southeast corner of the intersection of Ft. Apache Road and Echelon Point Drive and splits. One run continues east on the south side of Echelon Point Drive and leaves the project limits. The other run heads south on the east side of Ft. Apache Road to the 215 beltway. Just north of the beltway, the conduit turns east and heads southeasterly toward the beltway and out of the project limits.

Contractor shall verify all Cox Communications utility crossings and protect existing cable and fiber optic conduit in place. Where shown on the plans, Cox Communications will relocate existing cable facilities that are in conflict with construction.

4. Las Vegas Valley Water District

The LVVWD has an existing waterline that runs north-south on the east side of Ft. Apache Road from the north end of the project limits to Severence Lane. At Severence Lane, the waterline connects to the existing waterline running east-west near the centerline of Severence Lane through the project limits.

The LVVWD has an existing waterline that runs south on the east side of Ft. Apache Road from Severence Lane. The line apparently ends approximately 100 feet south of Severence Lane and there are no known waterlines south to Elkhorn Road.

The LVVWD has an existing waterline, along with other facilities, running from the west along the south side of Elkhorn Road. At the intersection of Ft. Apache Road and Elkhorn Road, a portion of the existing line will need to be raised to allow the proposed storm drain in Ft. Apache to cross the intersection. The waterline turns south along the east side of Ft. Apache Road. The existing waterline continues south to Dorrell Lane. This waterline has laterals teeing off to the east and west at several locations, which leave the project limits. In particular is the line heading west on the south side of Witting Avenue. This waterline will need to be raised to allow the proposed storm drain in Ft. Apache to cross the intersection.

At Dorrell Lane, the existing water line on the east side of Ft. Apache Road connects to the existing waterline heading east-west on the south side of Dorrell Lane. A portion of the existing waterline on the south side of Dorrell Lane, west of Ft. Apache Road, will be relocated. In addition, the water service lines will need to be reconnected as well.

The existing waterline on the east side of Ft. Apache Road continues south from Dorrell Lane to Deer Springs Way. This waterline has laterals teeing off to the east at several locations, which leave the project limits.

At Deer Spring Way, the waterline on the east side of Ft. Apache Road terminates at the existing waterline heading east-west on the south side of Deer Springs Way. West of Ft. Apache Road, a portion of the existing waterline on the south side of Deer Springs Way, will be relocated. Between the two waterline relocations areas, a water lateral heads north from the existing waterline on the south side of Deer Springs Way on the east side of Mansion Oaks Street and leaves the project limits.

The LVVWD has an existing waterline, along with other facilities, running south from Deer Springs Way, on the west side of Ft. Apache Road, to Echelon Point Drive. At Echelon Point Drive, the waterline on the west side of Ft. Apache Road terminates at the existing waterline heading east-west on the north side of Echelon Point Drive. The waterline on the north side of Echelon Point Drive continues west and leaves the project limits. There appears to be a blow-off valve extending to the south of the existing waterline in Echelon Point Drive, near the west side of the intersection of Ft. Apache Road and Echelon Point Drive.

Unless otherwise noted on the plans, Contractor shall protect existing waterline crossings in place. Where shown on the plans, the contractor shall relocate the existing waterline and associated facilities.

5. NV Energy

NV Energy has existing conduit, along with other facilities, running east-west through the project limits along the sidewalk on the south side of Severence Lane. In addition, NV Energy has existing conduit and facilities that run on the east side of Ft. Apache Road to the northeast corner at the intersection of Severence Lane.

There are no known NV Energy facilities in Ft. Apache Road between Severence Lane and approximate station "FA" 153+00. NV Energy has existing conduit, along with other facilities, running north-south along both sidewalks on the east and west side of Ft. Apache Road from the north side of Elkhorn Road to approximate station "FA" 153+00.

NV Energy has existing conduit, along with other facilities, running east-west through the project limits along Elkhorn Road. The conduit is on the south side of Elkhorn Road, west of Ft. Apache Road, and crosses to the north side near approximate stations "EK" 411+00 and "EK" 412+80. The conduit continues easterly on the north side of Elkhorn Road, across Ft. Apache Road, and leaves the project limits.

NV Energy has existing conduit, along with other facilities, running north-south along the east side of Ft. Apache Road from Elkhorn Road to Dorrell Lane. At Dorrell Lane the conduit turns east and runs along the north sidewalk area of Dorrell Lane.

NV Energy has existing conduit, along with other facilities, running east-west along the sidewalk on the north and south side of Dorrell Lane west of Ft. Apache Road. The run on the north side of Dorrell Lane terminates at the northwest corner of the intersection of Dorrell Lane west of Ft. Apache Road. The conduit on the south side of Dorrell Lane splits at Ft. Apache Road. One run crosses Ft. Apache Road and turns north to cross Dorrell Lane on the east side of Ft. Apache Road. The conduit joins the conduit running east in the sidewalk area on the north side of Dorrell Lane. The other conduit turns south on the west of Ft. Apache Road.

NV Energy has existing conduit, along with other facilities, running north-south along both sidewalks on the east and west side of Ft. Apache Road just south of Dorrell Lane to Deer Springs Way. At Deer Springs Way, the conduit on the west side of Ft. Apache Road turns west and runs along the sidewalk area on the north side of Deer Springs Way and leaves the project limits. In addition, the conduit on the east side of Ft. Apache Road turns east and runs along the sidewalk area on the north side of Deer Springs Way and leaves the project limits.

NV Energy has existing conduit, along with other facilities, running east-west through the project limits along the sidewalk on the south side of Deer Springs Way. At the southwest corner of Deer Springs Way, the conduit splits, with a run turning north and crossing Deer Springs Way on the west side Ft. Apache Road to join the conduit on the north side.

There are no known NV Energy facilities in Ft. Apache Road south of Deer Springs Road.

Contractor shall verify all NV Energy utility crossings and protect existing electric conduit in place. Where shown on the plans, NV Energy will relocate existing electric facilities that are in conflict with construction.

6. Southwest Gas

Southwest Gas has an existing gasline running east-west through the project limits along the south side of Severence Lane. On the east side of the intersection of Severence Lane and Ft. Apache Road, there is an existing gas line stub to the north.

Southwest Gas has an existing gasline running east-west along the north side of Elkhorn Road, west of Ft. Apache Road. At Ft. Apache Road, the gasline turn southerly along the west of Ft. Apache Road and continues to Dorel Lane. At Dorel Lane the gas line splits, with a line heading west along the south side of Dorel Lane and leaving the project limits;

A second line that heads east along the south side of Dorel Lane and leaves the project limits, also has a gas line that heads south along the east side of Ft. Apache Road. The gas line continues south along the east side of Ft. Apache Road to Deer Springs Way. In addition, there is a gas line that tees off at Umler Avenue and heads east near the centerline and leaves the project limits.

At Deer Springs Way, the gas line connects to an existing gas line that runs east-west along the north side of Deer Springs Way. In addition, there is a separate gas line that heads south along the east side of Ft. Apache Road from the east-west gas line in Deer Springs Way. The gas line jogs slightly to the east near approximate station 119+00, then continues south along the east side of Ft. Apache Road to Echelon Point Drive. At Echelon Point Drive, the gas line connects to the existing gas line running east-west along the north side of Echelon Point Drive through the project limits.

Contractor shall verify all Southwest Gas gasline locations and protect existing gasline in place. Where shown on the plans, Southwest Gas will relocate existing gasline facilities that are in conflict with construction.

105.08 CONSTRUCTION STAKES, LINES AND GRADES

DELETE THIS SUBSECTION IN IT'S ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Construction staking work shall be required of the Contractor, as indicated in Section 622 "Construction Surveying by the Contractor" of these Special Provisions, and shall conform to all requirements therein.

DELETE SUBSECTION 105.09 "BLANK" OF THE USS IN IT'S ENTIRETY AND REPLACE WITH 105.09 "RECORD DOCUMENTS" AS DESCRIBED BELOW:

105.09 RECORD DOCUMENTS

- A. General Instructions
 - 1. Ensure entries are complete and accurate. Current Progress Record Documents shall be available for review by the Owner, Owner's Consulting Engineer and the Owner's Construction Management Consultant (if applicable) at all times during the progress of the work.
 - 2. Store Progress Record Documents separate from documents used for construction.

3. Neatly record information concurrent with construction progress. Maintain Progress Record Documents in a clean and orderly manner. The Contractor shall not conceal any work until the required record information has been recorded on the record document set. The Contractor shall bear the cost of uncovering any prematurely concealed work for required record documentation.
 4. Progress Record Documents shall be made available to the Owner, the Owner's Consulting Engineer and the Owner's Construction Management Consultant (if applicable) for review at the site, at progress meetings and during Owner's review of the monthly progress bill requesting payment
 5. Failure of the Contractor to maintain a current record of information on the Progress Record Documents shall entitle the Owner to withhold payment until corrected. The release of payment to the Contractor shall be contingent upon the Contractor's diligent performance as required herein.
- B. Progress Record Documents - The Contractor shall maintain the following documents, which constitute the Progress Record Documents, at the job site during construction:
1. Drawings – Owner shall provide a full size copy of the approved set of drawings on bond paper for use as the Progress Record Document drawings prior to starting the work.
 - a. The Contractor will supplement the drawing set with approved drawings submitted as deferred submittals. The Contractor shall insert approved Addenda and revision sheets in front of the original sheet
 - b. The Contractor shall legibly mark each sheet to record actual construction including (but not limited to):
 - i. Measured horizontal and vertical locations of underground installations, utilities and appurtenances referenced to permanent surface improvements;
 - ii. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work;
 - iii. Field changes of dimension and detail;
 - iv. Details not on original Contract Drawings
 2. Specifications – The Contractor shall legibly mark and record at each product section description of actual products installed, including (but not limited to) the following:
 - a. Manufacturer's name and product model and number
 - b. Product substitutions or alternates utilized;
 - c. Changes made by addenda and modifications.
 3. The Contractor shall keep copies of and maintain a record of all Change Orders and any other modifications to the Contract.
 4. The Contractor shall keep copies of and maintain a record of all reviewed Shop Drawings, Product Data and Samples.
 5. The Contractor shall keep copies of and maintain a record of all Manufacturer's instructions for assembly, installation and adjusting.
- C. Final Record Documents - Upon completion of the work, including all punch list items and prior to Release of Retention, the Contractor shall provide to Owner a complete set of Final Record Documents. The Final Record Documents shall include (but not limited to) the following:
1. Final Drawings

- a. The Contractor will supplement the drawing set with approved drawings submitted as deferred submittals. The Contractor shall insert approved Addenda and revision sheets in front of the original sheet including any revisions required for completion of the punch list
- b. The Contractor shall legibly mark each sheet to record actual construction including, (but not limited to):
 - i. Measured horizontal and vertical locations of underground installations, utilities and appurtenances referenced to permanent surface improvements;
 - ii. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work;
 - iii. Field changes of dimension and detail;
 - iv. Details not on original Contract Drawings;
 - v. Changes made during completion of the punch list.
- c. The Contractor shall mark each sheet as "Record" or "As-Built"
- 2. Specifications
 - a. Manufacturer's name and product model and number
 - b. Product Substitutions or alternates utilized
 - c. Changes made by Addenda and modifications
 - d. Changes made during completion of the punch list.
- 3. Contractor shall keep copies of and maintain a record of all Change Orders and any other modifications to the Contract including any changes made during completion of the punch list.
- 4. The Contractor shall keep copies of and maintain a record of all reviewed Shop Drawings, Product Data and Samples including any additional shop drawings, product data and samples required for completion of the punch list.
- 5. The Contractor shall keep copies of and maintain a record of all Manufacturer's instructions for assembly, installation and adjusting and any Manufacturer's instructions for assembly, installation and adjusting required for completion of the punch list.

105.17 CLAIMS FOR ADJUSTMENT AND DISPUTES

DELETE PARAGRAPH "A" OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

- A. If the Contractor deems that additional compensation is due for work or material not clearly covered in the Contract and not ordered by the Engineer as extra work as defined herein, the Contractor shall notify the Engineer in writing within 24 hours of his intention to make claim for additional compensation before beginning the work which will be the subject of the claim.
 - 1. If the notification is not given, and the Engineer is not afforded proper facilities by the Contractor for keeping strict account of actual cost as required, then the Contractor shall be deemed to have waived any claim for such additional compensation.
 - 2. The notice by the Contractor, and the fact that the Engineer has kept account of the cost as aforesaid, shall not in any way be construed as proving or substantiating the validity of the claim.
 - 3. If the claim, after consideration by the Engineer, is found to be just, it will be paid as extra work as provided for as "Force Account" work.

4. Nothing in this subsection shall be construed as establishing any claim contrary to the terms of Subsection 104.02, "Increased or Decreased Quantities and Change in Character of Work".

DELETE PARAGRAPH "C" OF THIS SUBSECTION IN ITS ENTIRETY.

ADD THE FOLLOWING SUBSECTION:

105.18 VALUE ENGINEERING PROPOSALS

- A. Value Engineering Proposals (VEP) may be submitted in writing for modifying the plans, specifications or other requirements of the contract for the purpose of reducing the total cost of construction without reducing design capacity or quality of the finished product. If accepted, net savings resulting from a VEP will be shared by the Owner and the Contractor on a 50-50 basis.
- B. The requirements herein apply to all VEPs initiated and developed by the Contractor and which are identified as such at the time of submission. Nothing herein shall be construed as requiring consideration or approval of a VEP submitted hereunder.
- C. Each VEP shall result in a net savings over the contract costs without impairing essential functions and characteristics of the item(s) or of any other part of the project, including but not limited to environmental considerations, service life, reliability, economy of operation, ease of maintenance, desired aesthetics and safety. Submit the following information with each VEP:
 - (a) A statement that the proposal is submitted as a VEP;
 - (b) A statement concerning the basis for the VEP and benefits to the Owner together with an itemization of the contract requirements affected by the VEP;
 - (c) A detailed estimate of the cost under the existing contract and under the VEP;
 - (d) Proposed specifications and recommendations as to how such VEP changes are to be accomplished; and
 - (e) A statement as to the time by which a contract change order adopting the VEP must be issued so as to obtain the maximum cost effectiveness.
- D. The VEP will be processed in the same manner as prescribed for any other proposal which would necessitate issuance of a contract change order. The Owner may accept in whole or in part any VEP by issuing a contract change order which will identify the VEP on which it is based. The Owner will not be liable for failure to accept or act upon any VEP submitted pursuant to these requirements nor for any delays to the work attributable to any such proposal. Until a proposal is effected by contract change order, remain obligated to perform under the terms and conditions of the existing contract. If an executed contract change order has not been issued by the date upon which the proposal specifies that a decision thereon should be made, or such other date as the Contractor may have subsequently specified in writing, such proposal shall be deemed rejected.
- E. The contract change order effecting the necessary contract modification will establish the net savings agreed upon, will provide for adjustment in the contract prices and will indicate the new savings to be equally divided between the Contractor and the Owner. Absorb all costs incurred in preparing a VEP for submission. All reasonably incurred costs of reviewing

and administering the VEP will be borne by the Owner. The Owner reserves the right to include in the agreement any conditions it deems appropriate for consideration, approval, and implementation of the proposal. The Contractor's 50% share of the net savings shall constitute full compensation to him for effecting all changes pursuant to the agreement.

- F. Acceptance of the VEP and performance of the work thereunder will not change the contract time limit as a result of the VEP, unless specifically provided for in the contract change order authorizing the VEP.
- G. The Owner expressly reserves the right to adopt a VEP for general use in contracts administered by the Owner when it determines that said proposal is suitable for application to other contracts. VEPs identical or similar to previously submitted proposals will be eligible for consideration and compensation under these provisions if such proposals were not previously adopted for general application to other contracts administered by the Owner. When a VEP is adopted for general use, compensation pursuant to these requirements will be applied only to those contracts awarded and for which the subject VEP has been submitted before the date of adoption of the specific VEP.
- H. Proposed changes in the basic design of a bridge or pavement type, traffic control plan, or changes which require different right of way limits, will not normally be considered as an acceptable VEP. The elimination or changes to the required marination of plantmix bituminous aggregates will not be considered as an acceptable VEP. The Engineer shall be the sole judge of the acceptability of a VEP. Subject to the provisions contained herein, the Owner or any other public agency shall have the right to use all or part of any accepted VEP without obligation or compensation of any kind to the Contractor. In the event a VEP is accepted by the Owner, the provisions of Subsection 104.02 which pertain to adjustment of contract unit prices due to alterations of contract quantities will not apply to items adjusted or deleted as a result of effecting the VEP by contract change order.

END OF SECTION 105

SECTION 107 – LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.02 PERMITS, LICENSES, AND TAXES

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- B. The Contractor shall obtain Grading and/or Stockpile permits for on-site storage or disposal of materials from the City of Las Vegas Building Department prior to beginning the work, unless waived by Section 100.02.02.
- C. It shall be the Contractor's responsibility to determine if the permit requirements of Section 637 "Pollution Control" shall be required.
- D. The Contractor shall obtain a permit from the Las Vegas Valley Water District to use a hydrant as a water source.
- E. The contract documents detail the right-of-way and construction easement/AEPs and in some cases staging areas the contractor may occupy during the duration of the project and traffic control requirements associated with the occupation of said areas. If the contractor desires to use any areas outside the limits described in the drawings and specifications, he shall be responsible for meeting the requirements of Title 19 (The Zoning Code) or applicable requirements for jurisdictions outside of the City. The contractor shall obtain all permits required for the use of private property and provide copies to the City prior to any use of the site. If a temporary commercial permit is required for work performed on private property, the Contractor shall ensure that a temporary commercial permit is obtained through the City of Las Vegas Planning Department or other applicable jurisdictions prior to any use of the site. All work, fees, and scheduling associated with compliance to this subsection shall be borne entirely by the contractor and shall not be a justification for delay claims.

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:

107.05 SAFETY

- A. General: Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. The name and telephone number of the Contractor's safety officer shall be provided to the Contracting Agency. He shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. All employees engaged in the work and the other persons who may be affected thereby;
 - 2. All the work and all materials or equipment to be incorporated therein, whether in storage or on the project site, and
 - 3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of the work.
- B. Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from

damage, injury or loss. He shall erect, install, employ and maintain, as required by the conditions and progress of the work, all necessary safeguards. Contractor's duties and responsibilities for the safety and protection of the work shall continue until such time as all the work is completed and a "Notice of Completion" has been issued to the Contractor by the Engineer.

C. Trench Safety: Trench Safety shall be per Subsection 208.03.01.

107.07 TRAFFIC AND ACCESS

ADD THE FOLLOWING TO PARAGRAPH "C" OF THIS SUBSECTION:

1. When the Contractor's construction operations encroach upon a sidewalk, walkway, or crosswalk area, the Contractor shall take special precautions to protect the pedestrian's safety including provisions to separate pedestrian traffic from the work area and vehicular traffic.
 - a. When pedestrian traffic is routed onto the roadway, at other than existing crosswalk locations, the Contractor shall use portable precast concrete barrier rails to separate the pedestrian traffic from the work area and vehicular traffic.
 - b. All portable precast concrete barrier rails shall be butted tight and pinned in accordance with the requirements of the NDOT Standard Drawing R-8.7.1, entitled "Portable Precast Concrete Barrier Rail."
2. When a designated Suggested Route to School is encroached upon by a construction work zone and/or the City of Las Vegas's Traffic Engineering Division identifies a need for students to be assisted in the safe crossing through the work zone, the Contractor shall be required to provide a qualified crossing guard.
 - a. The guard shall be present for the full duration of time that children are likely to be present, as determined by the Traffic Engineering Division.
 - b. It will be the Contractor's responsibility to arrange for crossing guards properly trained in traffic control pursuant to local ordinances.
 - c. Fees for the use of these guards, if required, will be paid under Bid Item No. 624.01 "Traffic Control and Maintenance".
 - d. Following are designated Suggested/Safe Routes to School that will be impacted by construction:
 - 1) Fort Apache Road from Farm Road to Echelon Point Drive
 - 2) Echelon Point Drive from Campbell Road to Tee Pee Lane
 - 3) Deer Springs Way from Campbell Road to Tee Pee Lane
 - 4) Dorrell Lane from Campbell Road to Tee Pee Lane
 - 5) Elkhorn Road from Campbell Road to Tee Pee Lane
 - 6) Severence Lane from Campbell Road to Tee Pee Lane
3. It is anticipated that this project will begin construction in late 2013 or early 2014. Information on attendance boundaries for elementary and middle schools in the project area is only available for the current school year. It is possible that the attendance boundaries may change for the 2013-2014 school year. The following attendance boundary information is provided for reference purposes only. For the 2012-2013 school year, the entire project limits are within the attendance boundary for Escobedo Middle School. For the 2012-2013 school year, the southern limit for the attendance boundary

for Thompson Elementary School is Elkhorn Road. For the 2012-2013 school year, the majority of the project limits are within the attendance boundary for Darnell Elementary School. However, the project area is over 2 miles from Darnell Elementary School. Therefore, it is anticipated that there may be school bus routes and stops within the project limits.

DELETE PARAGRAPH "K" OF THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

K. Notifications:

1. The Contractor shall cooperate with, and give written notice to all emergency agencies, public entities, each resident, homeowner, homeowner association, business or school that will be affected by any part of the construction process, particularly concerning temporary interruptions to vehicular access.
2. This notice of the approximate schedule and explanation of work shall be distributed at least fourteen (14) days prior to commencement of work in the area.
3. A second written notice, as well as a verbal notice, including door-to-door communication shall be made at least twenty-four (24) hours prior to construction to remind all affected parties of the construction to take place.
4. The Contractor shall notify by phone the following agencies:

METRO DISPATCH	702-795-3111
FIRE DEPARTMENT DISPATCH	702-382-3001
AMBULANCE DISPATCH CENTER	702-384-3400
RTC – Bus Stop Closures, when applicable Contact Carl Scarborough, per SP 624.01.71	702-676-1608
CITIZEN'S AREA TRANSIT (CAT), when applicable	702-676-1731
CLARK COUNTY SCHOOL DISTRICT	702-799-8100 X 5395
NEVADA DEPT. OF TRANSPORTATION (NDOT), when applicable	702-385-6588
CLV - DEPT. OF PUBLIC WORKS PUBLIC INFORMATION SPECIALIST TRAFFIC ENGINEERING DIVISION	702-229-6581 702-229-6327
UNITED STATES POSTAL SERVICE	1-888-275-8777
REPUBLIC SERVICES	702-735-5151 X 314

5. The Owner shall receive a copy of all notifications for acceptance.

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- M. Construction materials may not be stored in streets, roads or highways for more than five days after unloading. All materials or equipment not installed or used in the construction within five days after unloading shall be stored elsewhere by the Contractor at his expense unless he is authorized additional storage time.
- N. Construction equipment shall not be stored at the work site before its actual use on the work nor for more than five days after it is no longer needed on the work. Time necessary for repair or assembly of equipment may be authorized by the Engineer.
- O. Excavated material, except that which is to be used as backfill in the adjacent trench, may not be stored in public streets, roads or highways unless otherwise permitted. After placing backfill, all excess material shall be removed immediately from the site.
- P. Five days prior to implementing any traffic control changes, lane closures, or detours; the Contractor shall place a portable changeable message sign on each approach to the proposed work area with an appropriate informational message.
- Q. Contractor's operations that involve lane closure changes, roadway closure changes, detour modifications, or any other activity that requires workers to enter the traffic stream to place or remove traffic control devices on the roadways shall be restricted to being performed during the hours of 7:00 a.m. to 6:00 p.m. daily, Monday through Friday. Such operations may be performed on weekends subject to approval of the Engineer. This restriction does not apply to emergency repair or replacement of damaged or displaced devices.
- R. The indicated allowable time frames for lane restrictions and/or closures as detailed in this section include set-up and removal of all temporary traffic control devices.
- S. Access to and from the existing fire station on Elkhorn Road east of Fort Apache Road shall be maintained at all times.
- T. Continuous access across the construction zone shall be maintained at all public streets, at private roadways, and at a minimum of one two-way driveway to each parcel unless otherwise noted in these Special Provisions. The continuous access shall be paved wherever possible and, when not paved, shall be well compacted Type II aggregate base. Access may be closed for paving, subject to the approval of the Engineer, when paving operations are imminent and for a period not to exceed four (4) hours. The Contractor shall be responsible for the notification of all affected property owners at least 48 hours in advance of all access closures.
- U. Fort Apache Road shall have at least one lane in each direction open to traffic, unless otherwise noted in this subsection.
- V. The Contractor may temporarily close Fort Apache Road entirely between two consecutive cross streets as noted in this subsection while installing the storm drain improvements within that segment of roadway. The temporary full closure of Fort Apache Road between

any two consecutive cross streets shall be subject to the following:

1. On each segment closed to vehicular traffic, work shall be prosecuted diligently until vehicular traffic is restored.
 2. Pedestrian traffic shall be maintained at all times.
 3. An approved detour route shall be provided for the duration of the roadway closure.
 4. Emergency vehicle access shall be allowed through the closed segment. The Contractor shall coordinate with the City of Las Vegas Fire Department for the emergency vehicle routes through the closure as work within the closure progresses.
- W. No more than one segment of Fort Apache Road may be subject to full street closure at any one time when the work area is within that roadway segment. Two consecutive segments of Fort Apache Road may be closed at the same time only when the intersection between the two segments is also closed in accordance with these Special Provisions and as approved by City of Las Vegas Traffic Engineering. The segments of Fort Apache Road that may be closed between two consecutive cross streets are designated as follows:
1. From the north curb line of Echelon Point Drive to the south curb line of Deer Springs Way
 2. From the north curb line of Deer Springs Way to the south curb line of Umberland Avenue
 3. From the north curb line of Umberland Avenue to the south curb line of Dorrell Lane
 4. From the north curb line of Dorrell Lane to the south curb line of Wittig Avenue
 5. From the north curb line of Denver Sky Avenue to the south curb line of Elkhorn Road
- X. The intersection of Wittig Avenue and Fort Apache Road and the intersection of Denver Sky Avenue and Fort Apache Road shall be considered to be two adjacent intersections. The portion of Fort Apache Road between these two adjacent intersections shall not be considered as a roadway segment for closure purposes.
- Y. The Contractor shall maintain access at all times to any development or property that has only one access point.
- Z. At the Fort Apache Road-Umberland Avenue intersection one-lane, two-way traffic control may be implemented on Umberland Avenue to facilitate construction. Pedestrian access shall be maintained at all times.
- AA. At the Fort Apache Road-Denver Sky Avenue intersection one-lane, two-way traffic control may be implemented on Denver Sky Avenue to facilitate construction. Pedestrian access shall be maintained at all times.
- AB. The raised median on Fort Apache Road at Denver Sky Avenue may be temporarily removed to provide traffic access for the subdivision on the east side of Fort Apache Road. If removed, the Contractor shall replace the raised median upon completion of the underground work on Fort Apache Road between Dorrell Lane and Elkhorn Road including any landscaping, irrigation, or other structures and facilities damaged or removed with the raised median island removal.

- AC. The Contractor shall maintain at least one lane in each direction open to traffic on Elkhorn Road at all times.
- AD. Echelon Point Drive shall have at least one lane in each direction open to traffic with the following exceptions:
1. Echelon Point Drive from the west curb line of Fort Apache Road to the east curb line of Hinoki Cypress Street (located west of Fort Apache Road) may be reduced to one lane in one direction from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. An approved detour route shall be provided for traffic for the closed direction. Or;
 2. Echelon Point Drive from the west curb line of Fort Apache Road to the east curb line of Hinoki Cypress Street (located west of Fort Apache Road) may be reduced to one lane using one-lane, two-way traffic control from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. Or;
 3. Echelon Point Drive from the west curb line of Fort Apache Road to the east curb line of Hinoki Cypress Street (located west of Fort Apache Road) may be temporarily closed from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. An approved detour route shall be provided for the duration of the roadway closure.

Note: For all three options local pedestrian traffic shall be maintained at all times.

- AE. Deer Springs Way shall have at least one lane in each direction open to traffic with the following exceptions:
1. Deer Springs Way from the west curb line of Fort Apache Road to the east curb line of Mansion Oaks Street (located west of Fort Apache Road) may be reduced to one lane in one direction from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. An approved detour route shall be provided for traffic for the closed direction. Pedestrian traffic shall be maintained at all times. Or;
 2. Deer Springs Way from the west curb line of Fort Apache Road to the east curb line of Mansion Oaks Street (located west of Fort Apache Road) may be reduced to one lane using one-lane, two-way traffic control from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. Pedestrian traffic shall be maintained at all times.
- AF. Dorrell Lane shall have at least one lane in each direction open to traffic with the following exceptions:
1. Dorrell Lane from the west curb line of Fort Apache Road to the east curb line of Ashton Wood Street (located west of Fort Apache Road) may be reduced to one lane in one direction from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. An approved detour route shall be provided for traffic for the closed direction. Pedestrian traffic shall be maintained at all times.
 2. Dorrell Lane from the west curb line of Fort Apache Road to the east curb line of Ashton Wood Street (located west of Fort Apache Road) may be reduced to one lane using one-lane, two-way traffic control from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. Pedestrian traffic shall be maintained at all times.

AG. Severance Lane shall have at least one lane in each direction open to traffic with the following exceptions:

1. Severance Lane from the west curb line of Fort Apache Road to the east curb line of River Cliff Street (located west of Fort Apache Road) may be reduced to one lane in one direction from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. An approved detour route shall be provided for traffic for the closed direction. Pedestrian traffic shall be maintained at all times. Or;
2. Severance Lane from the west curb line of Fort Apache Road to the east curb line of River Cliff Street (located west of Fort Apache Road) may be reduced to one lane using one-lane, two-way traffic control from 9:00 a.m. to 3:00 p.m. daily, Monday through Friday. Pedestrian traffic shall be maintained at all times.

AH. The following intersections shall not be closed to traffic at the same time:

- Fort Apache Road and Echelon Point Drive
- Fort Apache Road and Deer Springs Way
- Fort Apache Road and Dorrell Lane
- Fort Apache Road and Severance Lane

The Fort Apache Road and Elkhorn Road intersection shall not be closed to traffic at any time during construction.

AI. Intersections along Fort Apache Road may be closed at separate times as noted in the following items. There shall be no concurrent closures of any of these intersections.

1. The intersection of Fort Apache Road and Echelon Point Drive may be closed for a total of 20 working days. The extent of the full closure on Echelon Point Drive shall not exceed the limits from the east curb line of Hinoki Cypress Street (located west of Fort Apache Road) to the west curb line of the first multi-family residential driveway east of Fort Apache Road. The extent of the full closure on Fort Apache Road shall not exceed the limits from Echelon Point Drive to the south curb line of Deer Springs Way.
2. The intersection of Fort Apache Road and Deer Springs Way may be closed for a total of 15 working days. The extent of the full closure on Deer Springs Way shall not exceed the limits from the east curb line of Mansion Oaks Street (located west of Fort Apache Road) to the west curb line of Deercrest Street (located east of Fort Apache Road). The extent of the full closure on Fort Apache Road shall not exceed the limits from the north curb line of Echelon Point Drive to the south curb line of Umberland Avenue.
3. The intersection of Fort Apache Road and Dorrell Lane may be closed for a total of 15 working days. The extent of the full closure on Dorrell Lane shall not exceed the limits from the east curb line of Ashton Wood Street (located west of Fort Apache Road) to the west curb line of Tree Harbor Street/Caribou Ridge Street (located east of Fort Apache Road). The extent of the full closure on Fort Apache Road shall not exceed the limits from the north curb line of Umberland Avenue to the south curb line of Wittig Avenue.
4. The intersection of Fort Apache Road and Severance Lane may be partially closed for a total of 15 working days. The extent of the full closure on Severance Lane shall not

exceed the limits from the median of Fort Apache Road to the east curb line of River Cliff Street (located west of Fort Apache Road). The extent of the west half closure on Fort Apache Road shall not exceed the limits from the north curb line of Big Horn Peak Avenue (located south of Severence Lane) to the south curb line of Picturesque Avenue (located north of Severence Lane). Maintain one lane in each direction open to traffic on the east half of Fort Apache Road.

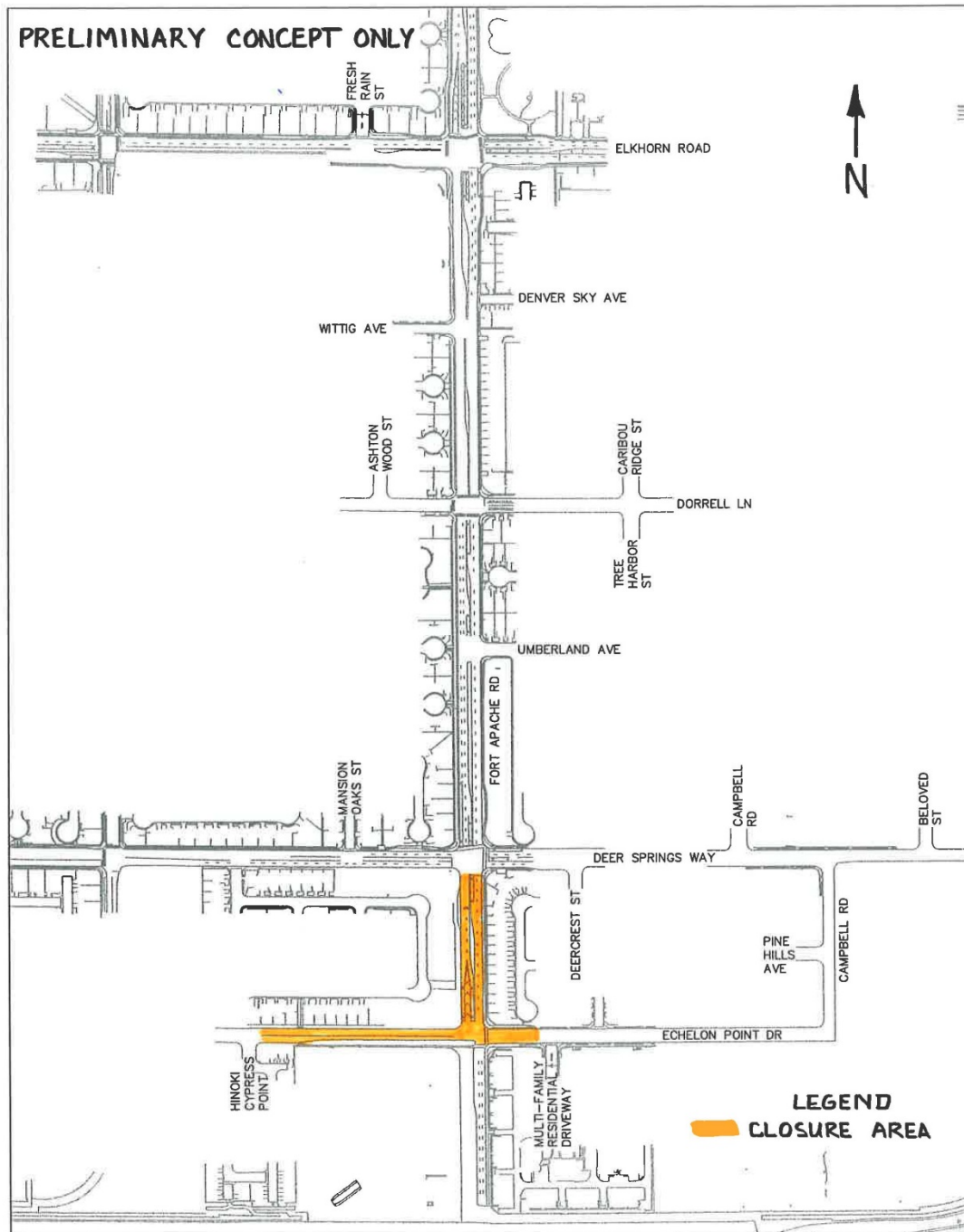
The following applies to intersection closures described in 1 through 4 above:

Emergency vehicle access shall be allowed through the closed intersection to any connecting roadway. The Contractor shall coordinate with the City of Las Vegas Fire Department for the emergency vehicle routes through the closure as work within the closure progresses. An approved detour route shall be provided for traffic for the duration of the intersection closure. Pedestrian traffic shall be maintained through the intersection.

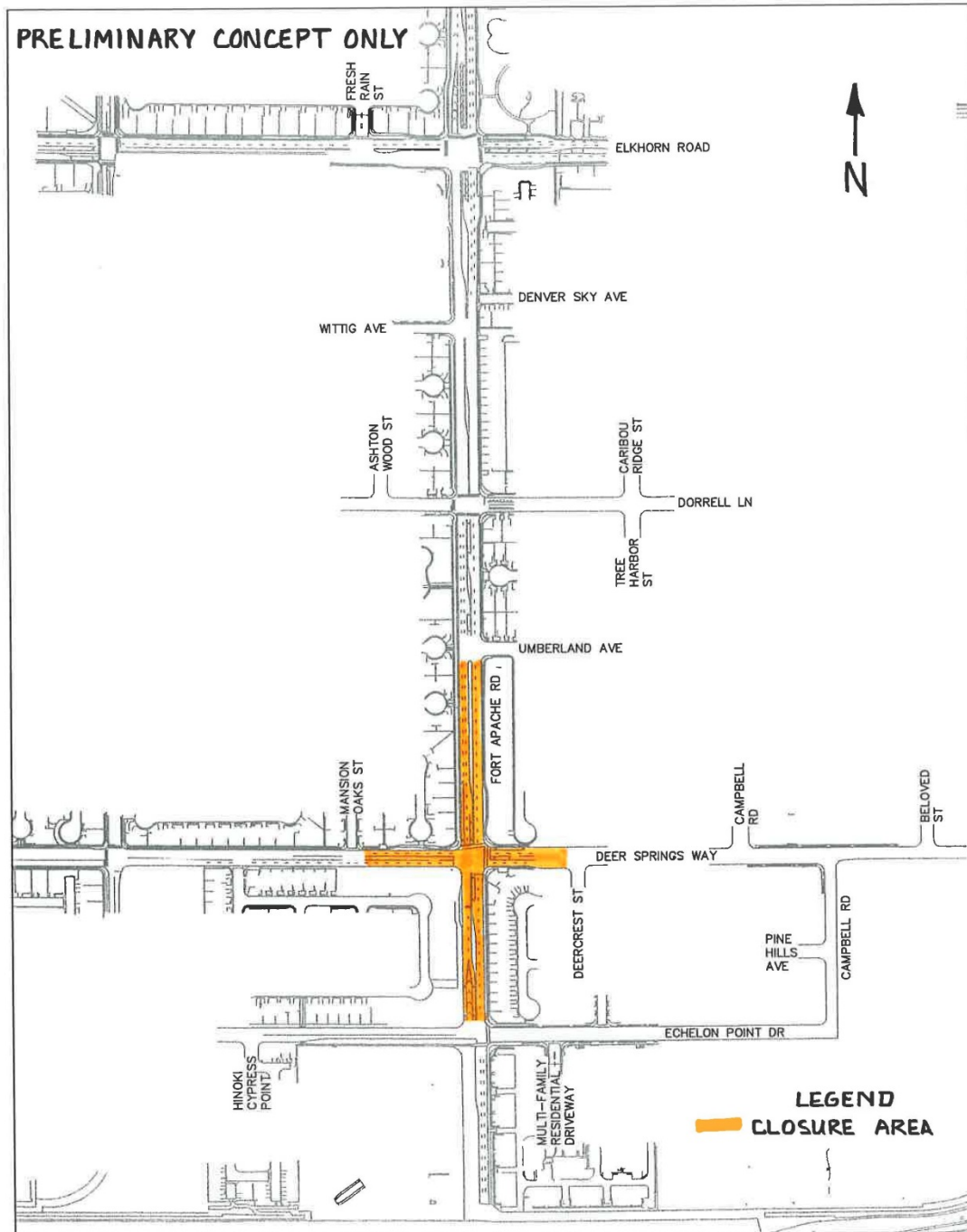
See exhibits, *Rancho-Fort Apache Storm Drain Project Intersection Closure Limits*, at the end of this subsection.

- AJ. The intersection of Deer Springs Way and Campbell Road (south of Deer Springs Way) may be closed for a total of 10 working days for the sewer work at this intersection. The extent of the full closure on Deer Springs Way shall not exceed the limits from the east curb line of Campbell Road (north of Deer Springs Way) to the west curb line of Beloved Street (located east of Campbell Street). The extent of the full closure on Campbell Road shall not exceed the limits from the north curb line of Pine Hills Avenue to Deer Springs Way. This intersection closure shall not be concurrent with any other intersection closure on Fort Apache Road. This intersection closure shall not be concurrent with any of the Fort Apache Road segment closures. Emergency vehicle access shall be allowed through the closed intersection to any connecting roadway. The Contractor shall coordinate with the City of Las Vegas Fire Department for the emergency vehicle routes through the closure. An approved detour route shall be provided for traffic for the duration of the intersection closure. Pedestrian traffic shall be maintained through the intersection.

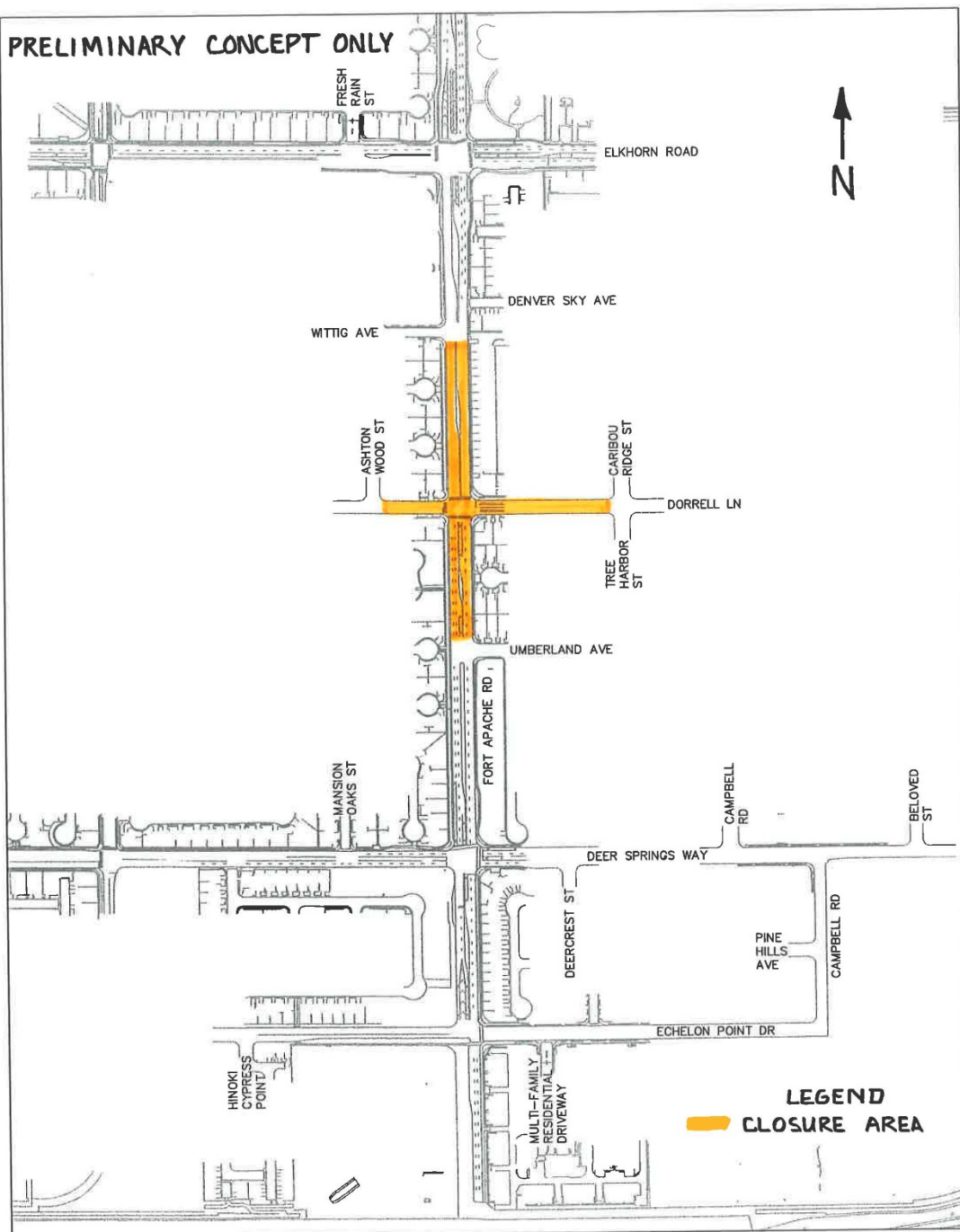
See exhibits, *Rancho-Fort Apache Storm Drain Project Intersection Closure Limits*, at the end of this subsection.



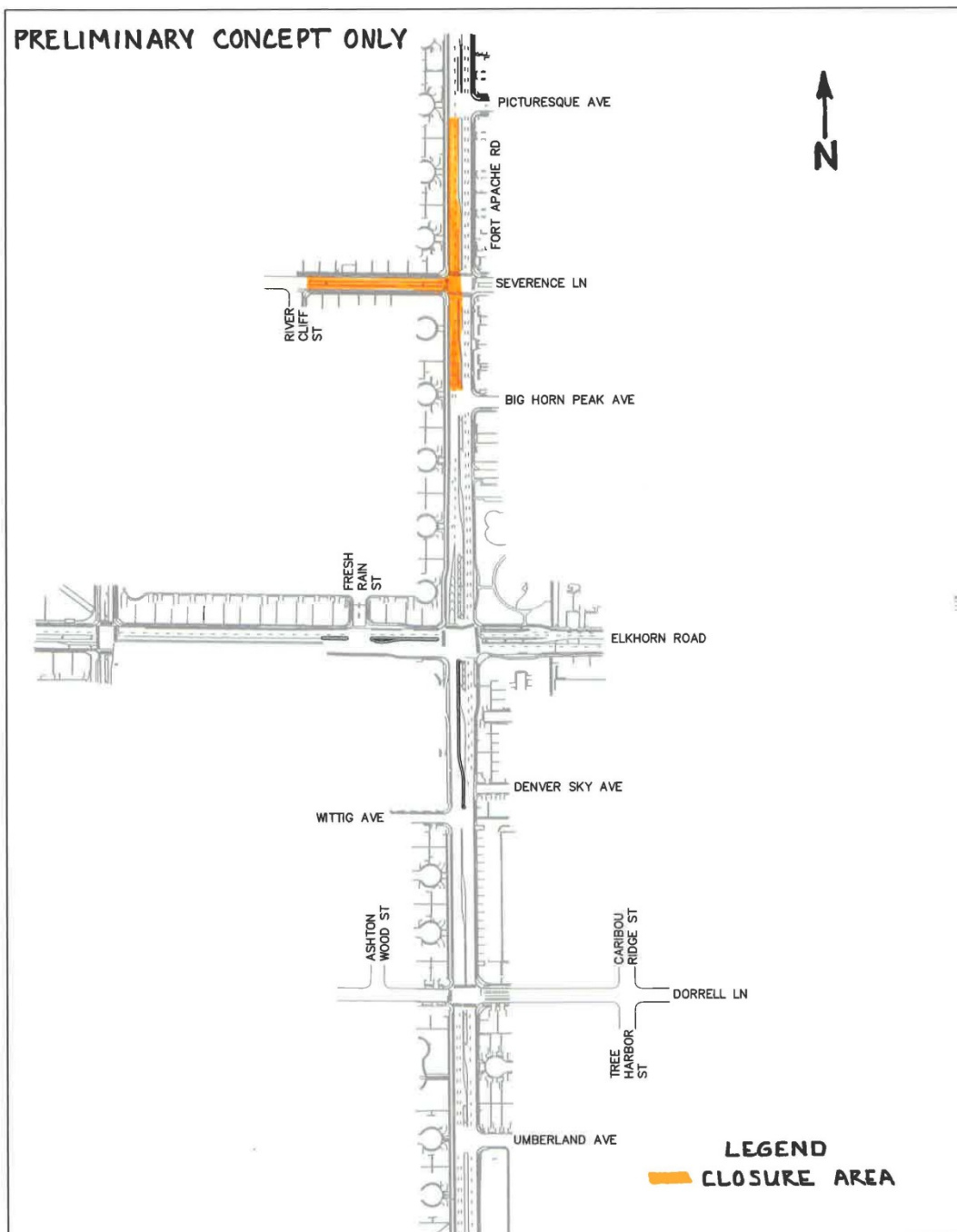
**RANCHO-FORT APACHE STORM DRAIN PROJECT
 INTERSECTION CLOSURE LIMITS
 FORT APACHE RD AND ECHELON POINT DR**



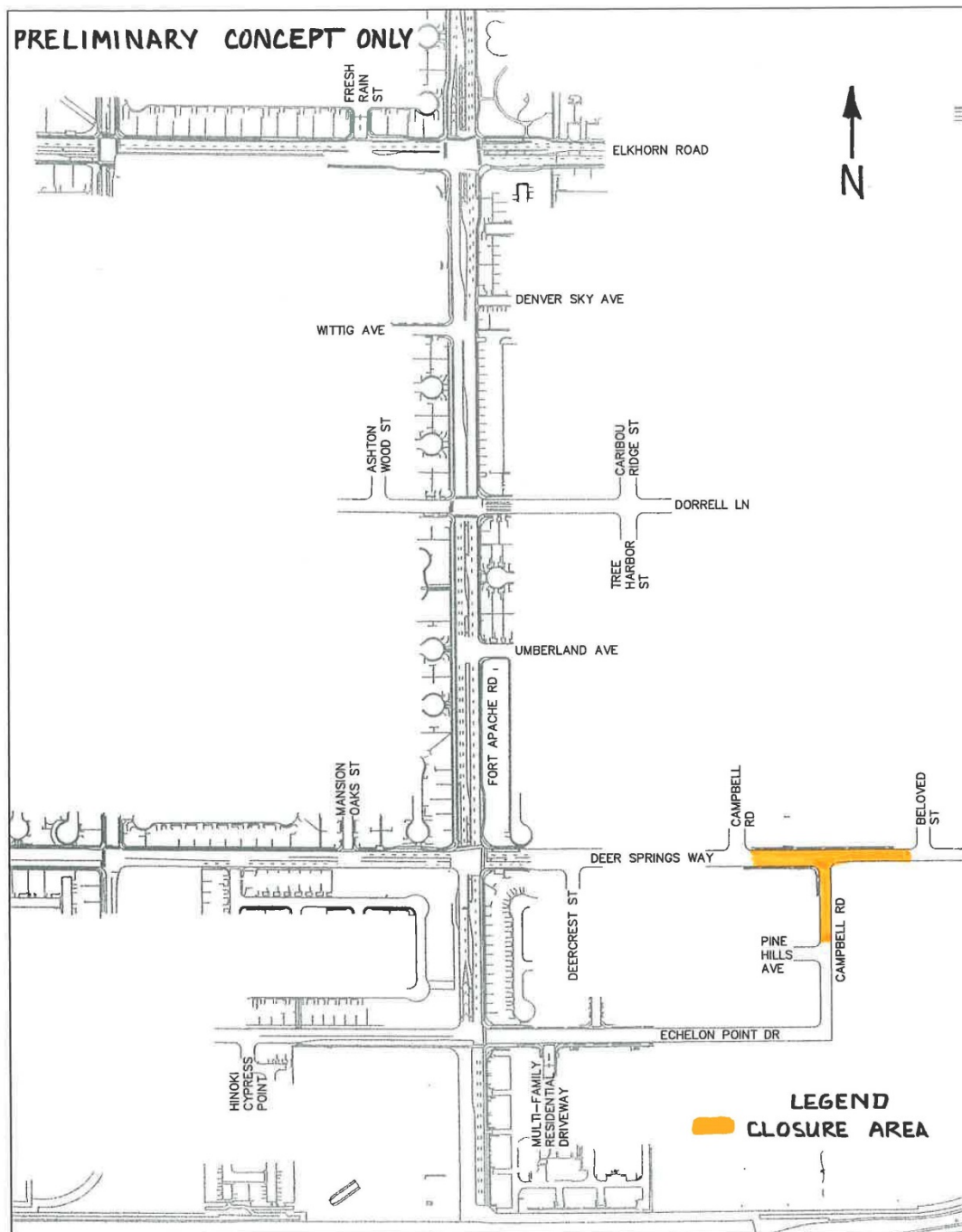
**RANCHO - FORT APACHE STORM DRAIN PROJECT
 INTERSECTION CLOSURE LIMITS
 FORT APACHE RD AND DEER SPRINGS WAY**



**RANCHO-FORT APACHE STORM DRAIN PROJECT
 INTERSECTION CLOSURE LIMITS
 FORT APACHE RD AND DORRELL LN**



**RANCHO-FORT APACHE STORM DRAIN PROJECT
 INTERSECTION CLOSURE LIMITS
 FORT APACHE RD AND SEVERENCE LN**



**RANCHO-FORT APACHE STORM DRAIN PROJECT
 INTERSECTION CLOSURE LIMITS
 DEER SPRINGS WAY AND CAMPBELL RD (SOUTH)**

107.12 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE***ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:***

- J. Contractor shall provide for the drainage of storm water and such water as may be applied or discharged on the site in the performance of the work. Drainage facilities shall be adequate to prevent damage to the work, the site and the adjacent property.
- K. Contractor shall prevent erosion of soil on the site and adjacent property resulting from his construction activities. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation or other operation that will disturb the natural protection of the soil.

107.17 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICE***ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:***

- I. All utility valves, manholes, vaults, pull boxes, etc., which are buried, shall be conspicuously marked by the Contractor to allow their location to be determined by the Engineer or utility personnel under adverse conditions (i.e. inclement weather or darkness).

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:**107.70 CONTRACTOR'S RESPONSIBILITY TO THE PUBLIC**

- A. The Contractor is responsible to answer and resolve any conflicts that may arise between a homeowner or business owner and himself during the construction process.

107.71 ALLOWABLE WORK HOURS

- A. No work between the hours of 6 p.m. and 7 a.m. will be allowed in residential areas unless approved by the Engineer or otherwise stated in the Special Provisions. If work after the aforementioned hours is approved, then the Contractor shall provide each affected resident at least forty-eight (48) hours written notice explaining the reason for the work after hours and providing an approximate duration of the activity.

107.72 NATURAL DRAINAGE AND STORM WATER RUNOFF

- A. The Contractor shall be responsible for protecting and preserving public and private property from damage directly or indirectly caused by drainage or storm water runoff leaving the project during construction of all improvements, including downstream properties if damage is a result of the Contractor's actions in diverting or redirecting existing natural runoff patterns.

107.73 NDOT RIGHT-OF-WAY OCCUPANCY TERMS AND CONDITIONS

- A. The Contractor shall abide by the terms and conditions of the NDOT right-of-way occupancy permit, if required, as attached in the Appendix of these Special Provisions.

END OF SECTION 107

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SECTION 108 – PROSECUTION AND PROGRESS

108.03 PROSECUTION AND PROGRESS

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. The Contractor shall be responsible for planning, scheduling and reporting the progress of the work to ensure timely completion of the contract.
- B. The Contractor shall submit a baseline schedule in two parts, based upon the Sequence of Construction shown in the project plans or in these Special Provisions, in accordance with the following:
 - 1. Part I shall be a Preliminary Baseline Project Schedule (PBPS) and shall be submitted in accordance with ITB 8.03.
 - 2. Part II shall be a Baseline Project Schedule and shall be submitted 14 calendar days after acceptance of the PBPS.
- C. Milestone for 12' X 6' RCB south of Echelon Point Drive being determined. LBG will add milestone time after discussions with CLV and CCPW for the Rancho-Fort Apache Storm Drain Project (CLV) and Fort Apache Bridge Project (CCPW).

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:

108.03.01 PRELIMINARY BASELINE PROJECT SCHEDULE (PBPS)

- A. The Contractor shall prepare and submit to the Project Contract Specialist in Finance and Business Services Department – Purchasing and Contracts, the PBPS as specified herein showing the order in which the work is proposed to be carried out.
 - 1. Along with the PBPS, the Contractor shall include his calendar for the contract period, which shall show workdays, calendar days and dates, Contractor holidays and historical anticipated weather delays.
 - 2. The Contractor shall designate an authorized representative who will be responsible for the preparation, revision and updating of the PBPS.
 - 3. In addition to hard copies of plots and reports (submitted in accordance with Section 100), the Contractor shall also submit the schedules (generated using Primavera or a compatible scheduling program acceptable to the Project Engineer) on a single-write compact disk.
 - 4. Acceptable formats for the PBPS include Bar (Gantt) Chart or Precedence Diagram.
 - 5. Regardless of format, a Critical Path Method shall be utilized.
- B. The PBPS shall be in sufficient detail to allow day-to-day monitoring of the Contractor's operations.
- C. As a minimum, the first thirty (30) working days shall be shown on this schedule, including the following activities:
 - 1. Long-lead purchases and deliveries of critical materials
 - 2. Fabrication, installation and testing of critical equipment
 - 3. Submittal and approval of materials, samples and shop drawings
 - 4. All activities that affect progress of the job
 - 5. Required dates of completion of all activities

- 6. Mobilization, milestones, punch list and final clean-up
- D. Failure to submit the PBPS on time may result in liquidated damages being assessed to the Contractor.

108.03.02 BASELINE PROJECT SCHEDULE (BPS)

- A. Part II shall be submitted for the Engineer's acceptance within fourteen (14) calendar days after acceptance of the Preliminary Baseline Project Schedule. The contractor shall allow fourteen (14) calendar days for review by the Engineer. If BPS is rejected, an additional fourteen (14) calendar days is allowed for each subsequent review by the Engineer. The BPS shall be generated using either Primavera or a compatible scheduling program acceptable to the Project Engineer and submitted on a single-write compact disc.
- B. The BPS shall include a detailed network diagram acceptable to the Engineer with the following features:
 - 1. It shall be time scaled in calendar days. All activities shall be plotted on their early start and finish dates. Unless approved by the Engineer, activities shall not exceed twenty-one (21) calendar days in length. The plot shall have a size and scale acceptable to the Engineer.
 - 2. It shall show the order and interdependence of activities and the sequence of work as reflected in the Schedule Report specified in #7 below. The critical activities shall be prominently distinguished on all reports by the use of color or other means acceptable to the Engineer.
 - 3. It shall include all activities required for the Preliminary Baseline Project Schedule, any utility relocation required by project documents and any interfacing required with other projects.
 - 4. The construction activities shall be in sufficient detail to list all components of the work and to allow day-to-day monitoring of the Contractor's operations. For example, an activity such as placement of a concrete structure should show the interdependency of all related items, such as submittals (mix designs, rebar certifications, shop drawings, etc.); any required review period; start work; excavation; forming; reinforcing; concrete placement; removal of forms; etc. No one work activity shall have a duration of greater than twenty-one (21) calendar days in length, unless approved by the Engineer.
 - 5. The diagram shall show for each activity the preceding and following event numbers or activity numbers, the activity description, the total float and the duration of the activity in working days.
 - 6. The activities shall be organized, described and identified so as to conform to the contract bid items and their respective bid item number. Activity descriptions shall be unique and specific with respect to the type of work and location.
 - 7. The diagram shall be accompanied by a Schedule Report of the network with a tabulation of the following data for each activity:
 - a. Preceding and following event numbers or activity number

- b. Activity description
 - c. Activity duration
 - d. Earliest start date
 - e. Earliest finish date
 - f. Scheduled or actual start date
 - g. Scheduled or actual finish date
 - h. Latest start date
 - i. Latest finish date
 - j. Total float times
 - k. Responsibility for activity (e.g. Contractor, Subcontractor, Supplier, etc.)
 - l. Percentage of activity completed during the reporting period and on the project to date
 - m. Bid item for which the activity is a part
 - n. Any activity constraints
 - o. **For Projects Over Five (5) Million Dollars –**
 - 1) A balanced resource loading for each activity listing personnel and equipment anticipated to accomplish the activity.
 - 2) Personnel should be identified as the number of each trade anticipated.
 - 3) Equipment shall be identified by type and, if known, by model/size.
 - 4) Contractor shall be responsible for including in the balanced resource loaded schedule all subcontractors designated for completing five percent (5%) or more of the total contract value.
8. Seasonal weather conditions shall be considered and included in the planning and scheduling of all work influenced by high or low ambient temperatures and/or precipitation to ensure completion of all work within the contract time.
9. Seasonal weather conditions shall be determined by an assessment of average historical climatic conditions based upon the preceding ten (10) year records published for the locality by the National Ocean and Atmospheric Administration (NOAA) and entitled "Local Climatological Data".
10. The following schedule of anticipated adverse weather delays is based on NOAA or similar data for the project location and will constitute the baseline for the total contract time adverse weather delay evaluations. The Contractor's Baseline Project Schedule must assume to anticipate this degree of adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DAYS

Based on Work Days as Described in Section 110

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
6	2	2	1	1	0	2	2	1	1	1	3

11. The Contractor is to provide written notification to the Engineer of the occurrence of adverse weather delay days and resultant impact to normally scheduled work, within ten (10) calendar days of each occurrence, when such weather prevents work on critical activities for fifty percent (50%) or more of the Contractor's scheduled workday. A time extension may be granted when the number of actual adverse weather days

calculated from the Notice to Proceed date to the date the Contractor asserts the request exceeds the total anticipated adverse weather delays using the above table for the same time period. If the Contractor wishes to assert additional claim(s) for time adjustment at later date(s), each succeeding claim must address the time period from Notice to Proceed date to the date of the request. No compensation will be made for monetary damages due to adverse weather delay(s).

- a. Float time belongs to the project and is not for the exclusive use or benefit of either the Owner or the Contractor. Extension of time for performance may be granted to the extent that equitable time adjustment for the activity affected exceeds the total float, or where otherwise justified, and impact on the contract completion can be shown. The Contractor's schedule shall be based on the contract time and shall not be based on an early completion schedule. No additional compensation will be allowed to the Contractor for delays to an early completion schedule.
- b. Acceptance of the Contractor's schedules by the Engineer is not to be construed as relieving the Contractor of his obligation to complete the work within the contract time; or as granting, rejecting or in any other way acting on the Contractor's requests for adjustments to the date for completing contract work, or claims for additional compensation.

108.03.03 MONTHLY PROGRESS SCHEDULE

- A. For all projects the Contractor shall submit a monthly progress schedule with each pay estimate.
- B. The monthly progress schedule shall conform to all the requirements indicated under Section 108.03.02 "Baseline Project Schedule" and shall state the percentage of revenue actually earned as of the report date. The monthly progress schedule shall also be accompanied by a narrative description of job progress, problem areas and current and anticipated delaying factors and their expected effect and any corrective actions proposed or taken. The narrative description shall also clearly identify any departures from earlier Baseline Project Schedules, including but not limited to, changes in logical sequence or logical ties, constraints, changes in activity duration and changes, additions or deletions in event numbers, activity numbers and activity descriptions. The reasons for each departure shall be included in the narrative description.
- C. The Contractor shall allow fourteen (14) calendar days for the Owner's review and acceptance or rejection of any Monthly Progress Schedules or Remedial Project Schedules. The Contractor shall participate in a review and evaluation of the schedules with the Engineer, as requested. Requested revisions to the schedules shall be provided to the Owner within seven (7) calendar days. Acceptance of the monthly progress schedule is required prior to the submittal of the following month's pay request.

108.03.04 THREE WEEK LOOK AHEAD SCHEDULE

- A. Concurrent with the weekly progress meetings, the Contractor shall submit a three week look ahead schedule (two weeks forward and one behind) to the Construction Manager indicating, on portions of the current computer produced schedule reports, a status report on scheduled activities within the three week window, including:
 1. percent complete

2. actual start/finish dates
 3. planned start dates
 4. continuation of work
- B. These status reports shall serve as the basis for discussion at construction progress meetings and will be used to evaluate the status of the work in progress on a continuing basis.

108.03.05 REMEDIAL PROJECT SCHEDULE

- A. The Contractor shall submit a Remedial Project Schedule if, in the opinion of The Engineer, the project is determined to be behind schedule. A schedule revision shall be submitted within five (5) working days of recognition of the need for the change. A revised network diagram and Time Impact Analysis showing the proposed revised Baseline Project Schedule shall be included.
- B. The conditions under which revisions of the Baseline Project Schedule will be required include the following:
1. When delay in completion of any work item or sequence of work items results in an estimated extension of project completion by either twenty (20) working days or five percent (5%) of the remaining duration of time to complete the Project, whichever is less.
 2. When delays in submittals or deliveries make replanning or rescheduling of the work necessary.
 3. When the schedule does not represent actual prosecution and progress of the work.
 4. When any change to the sequence of activities, the completion date for major portions of the work, or changes occur which affect the critical path.
 5. When contract modification necessitates schedule revision.

108.03.06 FAILURE TO SUBMIT MONTHLY PROGRESS SCHEDULES

- A. Failure of the Contractor to submit the Monthly Progress Schedule will be grounds for the Engineer to deduct ten percent (10%) of the monthly progress payments until the Contractor is in compliance. Upon compliance, this amount will be paid to the Contractor in the next scheduled monthly estimate.

108.04 LIMITATIONS OF OPERATIONS

ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:

- D. The Contractor shall conduct the work in such a manner and in such a sequence as will ensure the least interference with traffic and as approved by the Engineer.
- E. At a minimum, do not place fill or in any way decrease conveyance capacity of storm water flow paths without first installing conveyance, either temporary or permanent, to

perpetuate the flows. This conveyance shall be maintained for all existing flow areas and temporary and permanent conveyance facilities constructed as part of this project. The conveyance system shall be operational and include necessary upstream collection facilities, and shall be extended downstream to a reasonable outfall location. Do not divert flows from their historic pattern until downstream facilities, either temporary or permanent, are in place to safely convey flows to a safe outfall location.

- F. Construct drainage facilities in a manner that will not exacerbate or increase the potential for flooding during construction of the project.
- G. Sequence construction of drainage features, such as drop inlets, lateral connections, storm drains, channels, reinforced concrete boxes, etc., so they can be connected to their appropriate outfall to convey flows as designed. If the construction of the outfall is constructed to a point where direct connection of drainage features cannot be done, provide temporary conveyance of water flows at own expense.

108.05 CHARACTER OF WORKMEN; METHODS AND EQUIPMENT

ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:

- H. OSHA Standards and Interpretations, CFR 29 Part 1926 Subpart P, defines “competent person”, one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate those hazards and conditions.

108.08 DETERMINATIONS AND EXTENSION OF CONTRACT TIME

DELETE PARAGRAPH “A” OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

- A. The contract time for completion will be fixed by the Contracting Agency and will be stated in the Owner–Contractor Agreement, either as a calendar date or based on a number of working days or on a specified number of calendar days.

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- E. Completion of all Work within Contract Time Limits. When change orders are indicated, delays are experienced, or the Contractor proposes to revise the Baseline Project Schedule with impact to project milestones and/or substantial completion, the Contractor shall submit to the Owner a written Time Impact Analysis (TIA) illustrating the influence of each modification, delay or Contractor request on the contract time. The preparation of the TIA is considered part of the construction process and will be performed at no additional cost to the Owner. Each TIA shall include a fragmentary network (network analysis) demonstrating how the Contractor proposes to incorporate the modification, delay or Contractor request into the Baseline Project Schedule. The TIA shall demonstrate the time impact based on the date the modification is given to the Contractor or the date the delay occurred; the status of construction at that point in time; and the event time computation of all affected activities. The event times used in the TIA shall be those included in the latest schedule update or as adjusted by mutual agreement.

- F. A contract time change shall only be authorized when an approved TIA indicates impact to milestone or substantial completion dates. The Baseline Project Schedule shall be revised only upon Contractor's receipt of an approved change order for the contract. The approved revision shall then be incorporated into the next monthly progress schedule submission.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:

108.70 FAILURE TO COMPLETE THE PUNCH LIST ON TIME

- A. At the time of the Contractor's notice of presumptive completion of the work, which shall include all valve and manhole adjustments, complete signal systems and streetlight assemblies, all permanent signage, striping and other pavement markings and all other work, excepting minor correction punch list items and clean up, the Contractor will receive a Notice of Substantial Completion from the Engineer. On the date of the Notice of Substantial Completion, the time specified in the contract for completion of the work will terminate. Thereafter, the Contractor shall complete all work on the punch list and required clean up **within thirty (30) calendar days** or other time as agreed to by the Contractor and the Engineer.
- B. Should the Contractor fail to complete the punch list and required clean up within the allocated time or within such extra time as allowed by the Engineer, there shall be deducted from any money due the Contractor the sum of **\$3500** per each calendar day exceeding the allotted time. This sum shall be considered and treated, not as a penalty, but as damage due the Contracting Agency from the Contractor by reason of added administration of the contract, including cost of engineering, inspection, supervision and other items which have caused an expenditure of funds resulting from the Contractor's failure to complete the work on the punch list and required cleanup.

108.71 CONTRACT CLOSE-OUT PROCEDURE

- A. When the Contractor considers that all work under the contract is completed, the Contractor shall inform the Engineer in writing and submit the Final Record Drawings to the Engineer, per Section 105 of the Special Provisions.
- B. Upon receipt of notification from the Contractor that all work has been complete, the Engineer shall:
1. Inspect the work to determine if it is substantially complete and inform the Contractor in writing of this determination.
 2. Notify, in writing, all affected utilities and other governmental agencies and request their acceptance or punch list comments within fourteen (14) calendar days of receipt of the request or as an alternate their participation in the project walk-thru.
 3. Schedule an inspection with the Contractor's representative and any other affected agency. This inspection shall be for the purpose of developing a punch list of items requiring correction, repair or completion. The punch list shall include comments made by the Engineer on the final Record Drawings submitted by the Contractor.
 4. Compile the punch list from the comments provided at the inspection and supply type written copy to the Contractor. Upon distribution of the punch list items to the Contractor, the punch list time allotment shall commence.

- C. Scheduled completion of the punch list shall not exceed thirty (30) calendar days from date of the punch list letter or as otherwise agreed to by the Contractor and Engineer.
- D. When all punch list items are completed, the Contractor shall notify, in writing, the Owner/Engineer who will verify their completion.
- E. Failure of the Contractor to complete the punch list within the stated time shall be cause for assessment of damages in accordance with Section 108.09, "Failure to Complete the Work on Time" of these Special Provisions.

108.72 WARRANTY INSPECTION

- A. The Contractor shall be responsible for scheduling and conducting a warranty inspection with the Owner and its representatives approximately one (1) month prior to the expiration of the warranty period. This shall also include a meeting prior to the warranty inspection.
- B. All warranty corrections identified during the warranty inspection shall be commenced prior to the Guarantee Bond expiration date. The Contractor shall be required to comply with all Federal, State and local laws, regulations and ordinances regarding safety and environmental issues as it applies to the warranty inspection. The warranty inspection shall include, but not limited to, the following: traffic control plan submission; approval and set up for the inspection; confined space entry; support staff as needed; provide access to the inspection site and all equipment, materials, and manpower required to conduct the warranty inspection.
- C. The cost of this inspection shall be considered incidental to the bid items in the contract. The Contractor's failure to perform the inspection shall not constitute waiver of warranty, and may necessitate the Owner to complete the warranty inspection and corrections, with costs incurred charged to the Contractor or against the Warranty Bond at the option of the Owner.

METHOD OF MEASUREMENT

108.73 MEASUREMENT

- A. Submittals required by this section will not be measured for payment directly but shall be included as 10 percent of Bid Item No. 200.01 "Mobilization and Demobilization".

METHOD OF PAYMENT

108.74 PAYMENT

- A. No direct payment will be made for Contractor costs relating to preparation and submission of schedules and reports and revisions thereto, the cost being considered as included in the Bid Item No. 200.01 "Mobilization and Demobilization".
- B. The Contractor's cost for Section 108 shall be included in Bid Item No. 200.01 "Mobilization and Demobilization", which shall be full compensation for all materials, equipment and labor required including, but not limited to, Preliminary Baseline Project Schedule; review

meetings; revisions as directed by the Engineer; Schedule Reports; Monthly Progress Schedules; Three Week Look Ahead; any required Time Impact Analysis; Remedial Project Schedules; including any and all other incidentals necessary to complete and comply with the work as described herein.

END OF SECTION 108

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SECTION 109 – MEASUREMENT AND PAYMENT

109.06 PARTIAL PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

- A. Invoices may not be submitted for payment until the Project Baseline Schedule has been accepted and approved by the Engineer.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:

109.70 CONTRACTOR EVALUATION NOTIFICATION

- A. The City of Las Vegas Engineering Department has instituted a post construction process of Contractor Evaluation. This performance evaluation will encompass all aspects of project performance and responsiveness to all job related issues. These can and will include: adherence to schedule; expertise shown in field and management personnel; quality of the finished product; response to changes and project closeout. Additional items will include: compliance to Contract Documents; compliance with labor laws and Equal Opportunity Contracting Policy (EOCP); and overall cooperation of the Contractor and sub-contractors. This evaluation will be done with the input from all relevant City of Las Vegas Departments up to and including any outside consultants.
- B. Above average performance could result in a bonus payment to the Contractor of up to one-half of one percent (0.5%) of the final contract amount (not to exceed \$20,000.00).
- C. Substandard performance could result in possible temporary bidding suspension, lasting a maximum of twelve months, on future City of Las Vegas related projects beginning in the next annual quarter.
- D. Results will be sent via registered mail to the company Principals as recorded by the Nevada State Contractor's Board.

109.71 COMPENSATION FOR OWNER INITIATED TIME EXTENSIONS

- A. Any claim by the Contractor for additional compensation for time extensions to the Project Schedule caused by the Owner shall be subject to the requirements of this Section. The parties agree that for the Owner initiated time extensions which the Owner agrees to pay, or is found liable for payment, shall be based on the unit price set forth herein. The unit price for additional compensation is composed of the allowance established by the Owner based upon the Contracting Agency's historical experience with the cost of Owner initiated time extensions plus the additional amount bid by the Contractor per day for the time extension. The unit price multiplied by the number of days that the Owner initiated time extension impacts the Project Schedule shall be the full compensation due the Contractor for all time extension related costs, both direct and indirect, connected to the Project, including, but not limited to, home and field office overhead, supervision costs, and opportunity costs, except traffic control costs which will be paid on a per day basis in accordance with Sections 624 and 625. The Traffic Control per day costs shall be calculated by dividing the lump sum amount by the original contract duration. Equipment standby costs will be paid based on equipment rental rates minus operating costs, as determined by the latest edition of the *Rental Rate Blue Book for Construction Equipment*, Volumes 1-3. The rental rates shall be

computed at the weekly rate divided by 40, paid on an hourly basis with a maximum of 8 hours in any 24 hour period. Owner initiated time extensions shall mean the time extensions authorized by Time Impact Analysis (TIA), as set forth in Section 108.08 of the Standard Specifications and these Special Provisions.

- B. If the Owner initiated time extension for which the Contractor is seeking additional compensation is concurrent with (i) an excusable time extension as defined in Section 108.08, (ii) with a time extension which is beyond the control of the Owner, or (iii) with a time extension caused by the Contractor, the Contractor shall not be entitled to any additional compensation for that portion of time during which the time extensions are occurring concurrently. In no event shall the Contractor be entitled to any additional compensation on the basis that an early completion date in the Project Schedule was anticipated or planned for by the Contractor. If the Contractor experiences multiple concurrent Owner initiated time extensions which are not concurrent with any other time extensions, compensation will be paid for one Owner initiated time extension only based upon the bid price day per calendar day set forth in this Section.
- C. Any time extension costs incurred while performing additional work on a force account basis shall be considered as compensated for within the markups allowed in Subsection 109.03 "EXTRA AND FORCE ACCOUNT WORK." Owner initiated time extensions will not be added to extra work or force account markups.
- D. This is an allowance item that will be paid for the actual quantity used, and is not subject to price re-negotiation based on quantity variance from the bid quantity of days. The claim for additional compensation submitted by the Contractor shall be evaluated by the City and, if deemed valid, paid pursuant to this Section. Section 104.02 of the Standard Specifications does not apply to this item.
- E. In the case that the owner initiates a "stop work" on the project, the contract days will not be affected, per Section 108.06 of the Standard Specifications, and bid amounts for Owner Initiated Time Extension will not be paid. The Contractor will, however, be allowed compensation for actual costs associated with demobilization, remobilization, site security, traffic control, temporary pavement, including asphalt and concrete patches, and compliance with section 637 "Pollution Control".
- F. The Owner initiated Time extension Allowance shall be \$500.00 per day. The Owner initiated Time extension Amount in Addition to Allowance will be paid for at the contract unit price per day and shall be in an amount as bid by the Contractor.

- G. Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
109.01	OWNER INITIATED TIME EXTENSION ALLOWANCE	DAY
109.02	OWNER INITIATED TIME EXTENSION AMOUNT IN ADDITION TO ALLOWANCE	DAY

END OF SECTION 109

SECTION 110 – WAGES, HOURS AND CONDITIONS OF EMPLOYMENT**ADD THE FOLLOWING SUBSECTION TO THIS SECTION:****110.70 NORMAL WORKING HOURS**

- A. The Contractor is advised that the normal working hours for City of Las Vegas employees will be **7:00 a.m. to 4:00 p.m.**, Monday through Friday except the following holidays: New Year's Day; Martin Luther King, Jr. Day; President's Day; Memorial Day; Independence Day; Labor Day; Nevada Day; Veteran's Day; Thanksgiving Day; Day After Thanksgiving; and Christmas Day.
- B. The Contractor shall pay for the overtime of all employees of the City and its designated representatives, who are requested by the Contractor to perform inspection or testing, or who as a result of the Contractor's operation, are required to perform inspections or testing beyond the normal hours of the established working day listed above. **Overtime rate for City employees and its designated representatives is \$85.50 per hour**
- C. The Contractor shall not be required to pay for the overtime of employees of the City or its designated representatives who, as a result of a request by the Owner, are required to perform inspections or testing beyond the normal hours of the contract.
- D. The Contractor shall not be required to pay for the wages of the employees of the City or its designated representatives who are required to work beyond the normal working hours due to work phases that require night work under NDOT encroachment permits; however, work will be restricted to a normal eight hour shift.
- E. The City of Las Vegas construction project representative may not approve any portion of the work completed during his absence. The City will retain the right to insist on removal of work completed during inspector's absence.
- F. The Contractor will be required to pay for inspection of facilities not under the jurisdiction of the City of Las Vegas, performed outside of regular working hours. Payment will be at the current rates charged by the responding agency.

END OF SECTION 110

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ADD THE FOLLOWING SECTION TO DIVISION I – GENERAL REQUIREMENTS**SECTION 170 – CONSTRUCTION CONFLICTS AND CONTINGENCIES****DESCRIPTION****170.01.01 GENERAL**

- A. Construction conflicts and contingency costs are those costs incurred due to alterations, deviations or additions to the plans and specifications, including increases in the quantity of any item or portion of work as deemed necessary by the Engineer for the proper completion and construction of the work as a whole.

MATERIALS**170.02.01 GENERAL**

- A. All materials shall conform to the requirements set forth in the USS, USD, the Supplemental Specifications, Special Provisions, or as agreed to in writing by the Contractor and the Engineer.

CONSTRUCTION**170.03.01 GENERAL**

- A. The work shall include, but is not limited to, supplying all labor, material, equipment, and transportation necessary to repair, rebuild, remove, relocate, replace, construct or reconstruct any surface or subsurface improvements which are not shown on the plans and or otherwise addressed in the contract documents. Such work shall be performed in accordance with the USS, USD, the Supplemental Specifications, Special Provisions and/or as directed by the Engineer.

METHOD OF MEASUREMENT**170.04.01 MEASUREMENT**

- A. Measurement for construction conflicts and contingencies will be in accordance with the applicable bid items and at the contract unit bid prices.

BASIS OF PAYMENT**170.05.01 PAYMENT**

- A. Full compensation for construction conflicts and contingencies will be paid under the appropriate contract unit price bid for the type of work completed. When the additional work is not covered by any unit bid price, payment will be as determined in Section 109.03 "Extra and Force Account Work" or by negotiated cost, agreed to in writing by the Contractor and the Engineer. Such payment shall be full compensation for all the labor, materials, and incidentals necessary to complete the work. **No work shall be performed under this item**

without prior written approval from the Engineer.

END OF SECTION 170

ADD THE FOLLOWING SECTION TO DIVISION II – CONSTRUCTION DETAILS**SECTION 200 – MOBILIZATION AND DEMOBILIZATION****DESCRIPTION****200.01.01 GENERAL**

- A. The item of mobilization and demobilization shall consist of preparatory work and clean up operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site, for the establishment of all offices, buildings and other facilities necessary for work on the project, as well as all other work and operations which must be performed, or costs incurred, not otherwise paid for prior to beginning work and final completion of work on the various items on the project site.
- B. The lump sum bid amount for mobilization and demobilization shall be determined by the Owner and shown on the bid schedule.

200.01.02 PROJECT SIGN

- A. Two project signs shall be provided by the Contractor for placement near the limits of the project. Sign details are included in Appendix A of these Special Provisions. The Contractor shall erect said signs at locations as approved by the Engineer. The signs shall be erected at such time as construction activity is visible to the public.
- B. The Contractor shall properly maintain said signs throughout the construction until final completion of the contract, or as directed by the Engineer. Upon completion of the project and at the direction of the Engineer, the Contractor shall remove and dispose of the project signs.
- C. The Contractor's cost for furnishing, installing, maintaining and removing these signs shall be included in the lump sum bid item for Mobilization and Demobilization and will not be measured or paid for separately.

200.01.03 DIGITAL IMAGE RECORDING

- A. Prior to initiating construction operations and prior to final acceptance, Contractor shall perform digital image recording of the entire project, its full length and width including any adjacent properties/structures that may be impacted by the construction. The Contractor shall also include or add as necessary, any areas to be disturbed for material storage, employee parking or equipment storage.
- B. The images provided in this section:
 1. Are intended for use as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations.
 2. Are for the protection of the Contractor and the Contracting Agency.
 3. Will be a means of determining whether and to what extent damage resulting from the Contractor's operations occurred during the Contract work.

- C. The video documentation shall be completed in digital format; it shall be a minimum resolution of 1920x1080 pixels, and at 60fps (frames per second). The actual date of recording shall be date-stamped within each frame of the video. Approval of the video must be obtained from the Engineer prior to the commencement of any clearing and grubbing operations.
- D. Video documentation may be supplemented by still images, date stamped with image location information, to provide additional detail when necessary.
- E. A DVD copy of the digital image recording shall be submitted to the Engineer, in the format compatible with standard DVD players.

BASIS OF PAYMENT

200.05.01 PAYMENT

- A. Partial payments for MOBILIZATION AND DEMOBILIZATION shall be made in accordance with the following schedule:
 - 1. The Contractor shall be entitled to twenty-five percent (25%) of the lump sum amount for mobilization and demobilization on their first pay request after the Notice to Proceed, provided the initial digital image recording has been submitted and accepted.
 - 2. When five percent (5%) of the original contract amount is earned from other bid items, up to fifty percent (50%) of the total lump sum amount for mobilization and demobilization will be paid.
 - 3. When twenty-five percent (25%) of the original contract amount is earned from other bid items, up to seventy-five percent (75%) of the total lump sum amount for mobilization and demobilization will be paid.
 - 4. With the submittal of the monthly schedule update, ten percent (10%) of the lump sum amount for mobilization and demobilization, divided by the number of calendar months for the project duration, will be paid.
 - 5. Upon completion of all work on the project any unpaid amount of the original contract lump sum amount for mobilization and demobilization, minus any deducted amounts for non-submittal of the monthly schedule update (see item #4 above), will be paid, provided the final digital image recording has been submitted and accepted.
- B. All payments will be made in accordance with Subsection 109.02, "Scope of Payment".
- C. Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
200.01	MOBILIZATION AND DEMOBILIZATION	LS

END SECTION 200

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SECTION 201 – CLEARING AND GRUBBING

METHOD OF MEASUREMENT

201.04.01 MEASUREMENT

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

No direct measurement shall be made for CLEARING AND GRUBBING.

BASIS OF PAYMENT

201.05.01 PAYMENT

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Unless otherwise provided in the Special Provisions, no payment will be made for CLEARING AND GRUBBING as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which CLEARING AND GRUBBING is required.

END OF SECTION 201

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SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS**CONSTRUCTION****202.03.02 REMOVAL*****DELETE PARAGRAPH H IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

- H. In removing catch basins, and inlets, any live sewers connected to item shall be rebuilt and properly reconnected and a satisfactory bypass service shall be maintained during such construction operations. When abandoning catch basins, and inlets, they shall be thoroughly cleaned and existing pipe connections shall be plugged with concrete of the class and grade specified for structures. The portions of the structures shall then be removed to the required elevations and any necessary backfill shall be placed and compacted to specifications. All manholes shall be abandoned/removed in accordance with DCSWCS Section 3.18.2 a & c, whichever applies.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:**202.03.70 REMOVAL OF EXISTING TRAFFIC STRIPING AND MARKERS**

- A. All existing paint striping and markings to be removed from existing pavement to remain, shall be removed by sandblasting. A slurry seal emulsion shall be applied to the sand blasted areas to "blackout" the removed striping.

202.03.71 GRINDING OF EXISTING BITUMINOUS SURFACE (ROTOMILLING)

- A. In removing bituminous pavement by the rotomilling process, the work shall be accomplished with a machine designed to remove, profile and texture the remaining surface of the pavement in one (1) operation. The milling machine shall consist of a rotating powered mandrel drum studded with conical tungsten carbide tipped bits and shall produce a reasonable smooth textured surface satisfactory to the Engineer and shall be equipped with an effective means for controlling dust and other particulate matter created by the milling action.
- B. The machine shall be capable of accurately establishing profile grades (within plus or minus one quarter (1/4") inch) by referencing from the existing pavement or from an independent grade control. It shall have a positive means for controlling cross slope elevations. At the option of the Engineer, and if the pavement warrants it, the use of the averaging ski may be discontinued.

202.03.72 ABANDONMENT OF STORM DRAIN AND SEWER LINE

- A. Storm drains pipe shall be abandoned by plugging the downstream end of the pipe with concrete of the class and grade specified for structures and pressure grouting of the line with approved grout. Sewer lines shall be abandoned in accordance with DCSWCS Section 3.18.1.

203.03.73 COLD PLANING

- A. In those areas that require overlaying of existing pavement, all existing asphalt surfaces abutting any concrete appurtenances (curb, gutter, and valley gutter), the cold planing operations shall be performed with self-propelled machinery capable of accurately planing asphalt pavement to a width of six feet.
- B. Cold planing will also be used to match the overlay with existing asphalt pavements of cross streets and at intersections as directed by the Engineer.
- C. The machinery shall not tear, break and/or damage the asphalt pavement in any way and shall be equipped with a grade control sensing device capable of controlling cross slope elevations. When referencing from the existing pavement, an averaging ski shall be used except when pavement irregularities warrants, the averaging ski may be discontinued at the option of the Engineer. The minimum length of the averaging ski shall be 20 feet.
- D. Adequate water shall be provided in the planing operations to insure dust control and to prevent any material from adhering to the planed surface.
- E. The Contractor shall provide a motorized pickup, brooming sweeper that will clean the planed surface directly behind the cold planing machinery. All equipment, tools and operations shall be subject to the approval of the Engineer. The Engineer may, at his discretion, request demonstrations of all equipment, tools and operations prior to and during construction of the overlaid streets. The Contractor will not be paid directly for such demonstrations, but will be considered as incidental to the cold planing operations and compensation shall be included in the contract price for other items of work.
- F. Traffic loops that are damaged or destroyed during cold planing or reconstruction operations shall be replaced at the direction of the Engineer according to Section 623T.02.04 of these Special Provisions.
- G. Under the direction of the Engineer, any bumps, waves or corrugations that might affect the quality of the overlaid surface will be removed by cold planing to the elevation of the surrounding pavement.
- H. Those pavement cuts that are longitudinal to the roadway may be wheel-cut with equipment as approved by the Engineer.

METHOD OF MEASUREMENT**202.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of COLD PLANING will be measured per square yard.

The quantity of REMOVAL OF CONCRETE CHANNEL TRANSITION will be measured per lump sum.

The quantity of REMOVAL OF STONE WALL will be measured per lump sum.

The quantity of REMOVAL OF END SECTION will be measured per each.

The quantity of ABANDON STORM DRAIN PIPE will be measured per linear foot.

The quantity of REMOVAL OF STORM DRAIN PIPE will be measured per linear foot.

The quantity of REMOVAL OF DROP INLET will be measured per each.

The quantity of REMOVAL OF STORM DRAIN MANHOLE will be measured per each.

The quantity of REMOVAL OF RIPRAP will be measured per square yard.

The quantity of REMOVAL AND SALVAGE OF 72-INCH CHAIN LINK FENCE will be measured per linear foot.

The quantity of REMOVAL OF WATER LINE will be measured per linear foot.

The quantity of ABANDON SEWER LINE will be measured per linear foot.

The quantity of REMOVAL OF SEWER MANHOLE will be measured per each.

The quantity of REMOVAL OF SEWER LINE will be measured per linear foot.

The quantity of removal of driveway, median island, sidewalk, curb and gutter to be measured for payment shall not include the following:

1. Driveway, median island, sidewalk, curb and gutter removed for construction of proposed drop inlets.
2. Driveway, median island, sidewalk, curb and gutter abutting proposed drop inlets 3 feet 6 inches, or to the nearest joint, away from either side of the inlet opening.
3. Driveway, median island, sidewalk, curb and gutter removed because of unnecessary damage during construction.

BASIS OF PAYMENT

202.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantity of COLD PLANING will be paid for at the contract unit price per square yard and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; grinding of asphalt pavement to the depths shown on the plans; recycling of Recyclable Asphalt Pavement (RAP) for use elsewhere on the project and disposal of unused RAP; restoration of pavement surface to specified grade and cross slope; haul trucks; water truck;

power broom or vacuum sweeper; protection and restoration, if damaged, of all manhole covers, valves covers other items within the roadway surface not identified for removal; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF CONCRETE CHANNEL TRANSITION will be paid for at the contract unit price per lump sum and shall include all materials, equipment, tools and labor required including, but not limited to, sawcutting; sawcutting required to reconstruct the expansion joint, remove any cutoff walls, pipes or other structures; all excavation; shoring; compaction and recompaction; backfill; removal and disposal of concrete, steel reinforcement, weepholes, and aggregate base materials; backfilling the void with satisfactory backfill with a minimum 95% compaction or as directed by the Engineer; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF STONE WALL will be paid for at the contract unit price per lump sum and shall include all materials, equipment, tools and labor required including, but not limited to, all excavation; shoring; removal and disposal of rock; removal and disposal of any foundations or footings that are a part of the stone wall and filling any voids with suitable backfill material; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF END SECTION will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, sawcutting; sawcutting required to remove any pavement, pipes or other structures; all excavation; compaction and recompaction; backfill; removal and disposal of concrete, steel reinforcement, and end section and backfilling the void with satisfactory backfill with a minimum of 95% compaction or as directed by the Engineer; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of ABANDON STORM DRAIN PIPE will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, abandonment of pipe regardless of type (RCP, HDPE, PVC, etc.) and size; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; sawcutting required to remove any sidewalk, curb and gutter, pipes or other structures; sawcutting; all excavation; compaction and recompaction; backfill; grout; suitable fill material for pipe and manholes; abandon pipe and connection to laterals; cap existing pipe with brick and mortar plug, cap existing manhole, and filling the pipe section to be abandoned with sand or slurry; reconnections to existing and proposed storm drain structures; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF STORM DRAIN PIPE will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, removal of pipe regardless of type (RCP, HDPE, PVC, etc.) and size; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; sawcutting required to remove any sidewalk, curb and gutter, pipes or other structures; sawcutting; all excavation; compaction and recompaction; grading; shoring; backfilling excavated trench with satisfactory backfill with a minimum of 95% compaction or as directed by the Engineer; removal and disposal of encasement (regardless of type), pipe, plugs; cap existing pipe with brick and mortar plug; reconnections to existing and proposed storm drain structures; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF DROP INLET will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, removal of drop inlet regardless of size, type or material; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; sawcutting required to remove any sidewalk, curb and gutter, pipes or other structures; sawcutting; replacement of bituminous pavement, curb, gutter, sidewalk, landscaping, irrigation, or other items damaged or removed during removal of drop inlet; all excavation; compaction and recompaction; backfill; removal and disposal of concrete, grates, steel reinforcement, drop inlet, and foundation structure and backfilling the void with satisfactory backfill with a minimum of 95% compaction or as directed by the Engineer; removal and salvage of grates identified for salvage; brick and mortar plug or remaining pipes or other structures; reconnections to existing and proposed storm drain structures; potholing to determine location of existing utilities; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF STORM DRAIN MANHOLE will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, removal of storm drain manhole regardless of size, type or material; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; sawcutting required to remove any sidewalk, curb and gutter, pipes or other structures; sawcutting; replacement of bituminous pavement, curb, gutter, sidewalk, landscaping, irrigation, or other items damaged or removed during removal of the manhole; all excavation; compaction and recompaction; backfill; removal and disposal of concrete, manhole cover, cones, rings, ladders, steel reinforcement, manhole, and foundation structure and backfilling the void with satisfactory backfill with a minimum of 95% compaction or as directed by the Engineer; removal and salvage of grates, rings, and manhole covers identified for salvage; brick and mortar plug for remaining pipes or other structures; reconnections to existing and proposed storm drain structures; potholing to determine location of existing utilities; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF RIPRAP will be paid for at the contract unit price per square yard and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; shoring; removal and disposal of rock; restoring side slopes where the riprap was removed to 10H:1V or as directed by the Engineer; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL AND SALVAGE OF 72-INCH CHAIN LINK FENCE will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, removal and disposal of fencing poles and foundations; removal, salvaging and storing of the wire mesh fence and appurtenances as shown on the plans protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF WATER LINE will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, sawcutting; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; all excavation; compaction and recompaction; grading; shoring; backfilling excavated trench with satisfactory backfill with a minimum of 95% compaction or as directed by the Engineer; removal and disposal of encasement (regardless of type or size), concrete, pipe, and fittings; cap existing pipe; reconnections to existing and proposed water line facilities; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of ABANDON SEWER LINE will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, abandonment of pipe regardless of type and size; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; sawcutting required to remove any sidewalk, curb and gutter, pipes or other structures; sawcutting; all excavation; compaction and recompaction; backfill; grout; plugs; suitable fill material for pipe and manholes; abandon pipe and connection to laterals; cap existing pipe with brick and mortar plug, cap existing manhole, and filling the pipe section to be abandoned with sand or slurry; reconnections to existing and proposed sanitary sewer structures; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF SEWER MANHOLE will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, removal of sewer manhole regardless of size, type or material; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; sawcutting; sawcutting required to remove any sidewalk, curb and gutter, pipes or other structures; replacement of bituminous pavement, curb, gutter, sidewalk, landscaping, irrigation, or other items damaged or removed during removal of the manhole; all excavation; shoring; compaction and recompaction; backfill; removal and disposal of concrete, manhole cover, cones, rings, ladders, steel reinforcement, manhole, and foundation structure and backfilling the void with satisfactory backfill with a minimum of 95% compaction or as directed by the Engineer; removal

and salvage of grates, rings, and manhole covers identified for salvage; brick and mortar plug for remaining pipes or other structures; reconnections to existing and proposed sanitary sewer facilities; potholing to determine location of existing utilities; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of REMOVAL OF SEWER LINE will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, sawcutting; temporary patches; removal of temporary patches and pavement; temporary and permanent pavement; all excavation; compaction and recompaction; grading; shoring; backfilling excavated trench with satisfactory backfill with a minimum of 95% compaction or as directed by the Engineer; removal and disposal of encasement (regardless of type or size), concrete, pipe, plugs, and fittings; cap existing pipe; reconnections to existing and proposed sanitary sewer facilities; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
202.01	COLD PLANING	SY
202.02	REMOVAL OF CONCRETE CHANNEL TRANSITION	LS
202.03	REMOVAL OF STONE WALL	LS
202.04	REMOVAL OF END SECTION	EA
202.05	ABANDON STORM DRAIN PIPE	LF
202.06	REMOVAL OF STORM DRAIN PIPE	LF
202.07	REMOVAL OF DROP INLET	EA
202.08	REMOVAL OF STORM DRAIN MANHOLE	EA
202.09	REMOVAL OF RIPRAP	SY
202.10	REMOVAL AND SALVAGE OF 72-INCH CHAIN LINK FENCE	LF
202.11	REMOVAL OF WATER LINE	LF
202.12	ABANDON SEWER LINE	LF
202.13	REMOVAL OF SEWER MANHOLE	EA
202.14	REMOVAL OF SEWER LINE	LF

END OF SECTION 202

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SECTION 203 – EXCAVATION AND EMBANKMENT**DESCRIPTION****203.01.01 GENERAL*****ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:***

- B. The compacted subgrade shall be maintained at optimum moisture content until placement of an aggregate base course.

CONSTRUCTION**203.03.01 ROADWAY*****ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:***

- E. It is expected that roadway, trench, channel, structure, drainage and impoundment excavation will require removal of various types of material, including cemented soils and rock. The cost for the excavation of cemented soils and rock encountered shall be considered as included in the unit prices bid for pay items requiring excavation and no additional compensation will be allowed.
- F. Vibration monitoring by a qualified professional shall be conducted by the CONTRACTOR during excavation of cemented soils. The CONTRACTOR shall be required to conduct impact assessment tests of the equipment excavating cemented soils prior to construction. The CONTRACTOR shall submit an Impact Assessment Test Plan and Impact Assessment Test Results. The frequency and amplitude of the vibratory equipment shall be calibrated and used to measure ground velocity for conformance to the current regulatory limit of 0.5 inch per second peak ground velocity at the nearest affected structure. The measurements shall comply with the recommendations of the "Office of Surface Mining, Blasting Guidance Manual, 1987." The cost for vibration monitoring during excavation of cemented soils shall be considered as included in the unit price bid for pay items requiring excavation and no additional compensation will be allowed.
- G. Excavations near mapped alluvial faults shall be inspected by a qualified professional prior to RCP/RCB installation. If a fault is encountered, appropriate remedial action shall be taken by the CONTRACTOR per geotechnical recommendations.

203.03.04 BLASTING***DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

- A. Blasting shall not be permitted.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:**203.03.70 OVEREXCAVATION AND BACKFILL**

- A. Where overexcavation below the depths as shown on the plans or required by the specifications is necessary to remove unsuitable material, the Engineer may require the Contractor to remove the unsuitable materials and backfill to the finished graded section with Type I aggregate base, conforming to 3-inch size per subsection 704.03.03, compacted to a minimum of 90% of ASTM D1557 Modified Proctor and in accordance with the methods in the USS.
- B. Unless otherwise provided in the Special Provisions, overexcavation and backfill below the limits shown on the plans will be paid for as "Extra Work".

203.03.71 HAZARDOUS MATERIAL

- A. Hazardous material shall be defined as material or water contaminated with volatile organic compounds, inorganic non-metals, petroleum hydrocarbons or other contaminants as specified by the Nevada Division of Environmental Protection Agency (NDEP).
- B. The Contractor shall retain a Certified Environmental Manager (CEM) for making periodic inspection of the project for potential hazardous materials. In addition, the CEM will be available for inspection of the project as directed by the Engineer and/or NDEP should material be uncovered that may be potential hazardous material.
- C. When potential hazardous material is encountered with the project, the Contractor shall:
 - 1. Immediately contact the CEM, Engineer and NDEP (486-2863).
 - 2. Have the CEM perform the inspection of the potential hazardous material and if required perform the inspection for the removal and disposal of the hazardous material.
 - 3. Retain a certified geotechnical firm to perform the required tests for hazardous materials and/or contaminants.
 - 4. If required, perform the removal and disposal of the hazardous materials as directed by the CEM, Engineer and/or the NDEP.
 - 5. Removal of hazardous material will be paid for as "Extra Work".

METHOD OF MEASUREMENT**203.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of ROADWAY EXCAVATION will be measured per cubic yard.

Overexcavation and backfill volumes will be measured by the average end area method of the over-excavated material in its original state. If for any reason it is impossible or impractical to measure quantities by average end areas, the Engineer will compute the quantities by a method which, in the Engineer's opinion, is best suited to obtain an accurate determination. This quantity will include both the cost for removing the unsuitable material and the cost to replace it with suitable backfill.

BASIS OF PAYMENT**203.05.01 PAYMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The accepted quantity of ROADWAY EXCAVATION will be paid for at the contract unit price of cubic yards and shall conform to the requirements of subsection 203.05.01 of the Uniform Standard Specifications, in addition to these requirements, the following items are also included as incidental to this bid item, removal and disposal of existing Type II Aggregate Base materials.

Unless otherwise provided in the Special Provisions, no payment will be made for DRAINAGE EXCAVATION, CHANNEL EXCAVATION, EMBANKMENT, DITCHES or BORROW as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which DRAINAGE EXCAVATION, CHANNEL EXCAVATION, EMBANKMENT, DITCHES or BORROW is required.

The CEM retained by the Contractor will not be paid for directly, but will be included in the unit prices bid for pay items requiring excavation and no additional payment will be allowed.

Unless otherwise provided in the Special Provisions, dewatering will not be paid for directly and will be included in the unit prices bid for pay items requiring excavation and no additional payment will be allowed.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
203.01	ROADWAY EXCAVATION	CY

END OF SECTION 203

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SECTION 206 – STRUCTURE EXCAVATION**DESCRIPTION****206.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- C. Where structure over-excavation below the depths as shown on the plans or required by the specifications is necessary to remove unsuitable material, the Engineer may require the Contractor to remove the unsuitable materials and backfill to the required grade with material conforming to subsection 704.03.02, compacted to a minimum of 90% of ASTM D1557 Modified Proctor and in accordance with the methods in the USS.
- D. Unless otherwise provided in the Special Provisions, structure over-excavation and backfill below the limits shown on the plans will be paid for as “Extra Work”.
- E. If groundwater is encountered within the excavated area, dewatering shall be performed as specified in Section 270 “Dewatering”.

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:**METHOD OF MEASUREMENT****206.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

No unit of measurement shall be made for Structure Excavation and Backfill.

METHOD OF PAYMENT**206.05.01 PAYMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

Unless otherwise provided in the Special Provisions, no payment will be made for Structure Excavation and Backfill as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which Structure Excavation and Backfill is required.

END OF SECTION 206

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SECTION 207 – STRUCTURE BACKFILL

DESCRIPTION

METHOD OF MEASUREMENT

207.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

No direct measurement shall be made for Structure Excavation and Backfill.

METHOD OF PAYMENT

207.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

Unless otherwise provided in the Special Provisions, no payment will be made for Structure Excavation and Backfill as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which Structure Excavation and Backfill is required.

END OF SECTION 207

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SECTION 208 – TRENCH EXCAVATION AND BACKFILL**DESCRIPTION****208.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- E. Frequency of quality control field inspection and testing shall be in accordance with 203.05.02 Testing.
- F. Ponding and jetting will not be allowed on City of Las Vegas projects.

MATERIAL**208.02.08 CRUSHED ROCK*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. Unless otherwise shown in the plans, crushed rock will not be permitted as structural or trench backfill.

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:**208.02.70 STRUCTURAL BACKFILL**

- A. Structural backfill shall consist of material conforming to subsection 207.02.02 “Granular Backfill” or subsection 207.02.01 “Selected Backfill”. Additionally, the backfill material shall be non-gypsiferous (solubility less than 4%), have an expansion potential less than 4%, shall be free of vegetation and debris and contain no rocks larger than four inches nominal diameter. Crushed rock will not be permitted as structural or trench backfill unless otherwise noted on the plans.

CONSTRUCTION**208.03.01 TRENCH EXCAVATION, GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- C. Trenching and shoring operations shall be conducted in accordance with 29 CFR (Code of Federal Regulations) Part 1926, Occupational Safety and Health Standards (OSHA) – Subpart P – Excavations (July 1, 1990).

208.03.12 PIPE BEDDING***ADD THE FOLLOWING TO THIS SUBSECTION:***

- G. For precast reinforced concrete boxes provide a minimum 2-inch crushed rock leveling course (over native soil or 4 -Inch Type II) as bedding.

208.03.21 CUTTING AND RESTORING STREET SURFACING

ADD THE FOLLOWING TO THIS SUBSECTION:

- Q. Pavement in the area of the trench excavation shall be sawcut.
- R. Cold mix patches will not be allowed.

METHOD OF MEASUREMENT

208.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

No direct measurement shall be made for PERMANENT PATCH, TRENCH EXCAVATION and BACKFILL.

BASIS OF PAYMENT

208.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

Unless otherwise provided in the Special Provisions, no payment will be made for PERMANENT PATCH, TRENCH EXCAVATION and BACKFILL as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which PERMANENT PATCH, TRENCH EXCAVATION and BACKFILL is required.

END OF SECTION 208

SECTION 211 – EROSION CONTROL

DESCRIPTION

METHOD OF MEASUREMENT

211.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

No direct measurement shall be made for EROSION CONTROL.

METHOD OF PAYMENT

211.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

Unless otherwise provided in the Special Provisions, no payment will be made for EROSION CONTROL as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which EROSION CONTROL is required.

END OF SECTION 211

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SECTION 212 – LANDSCAPING

DESCRIPTION

ADD THE FOLLOWING TO THIS SUBSECTION:

212.01.01 GENERAL

- B. All plant material to be warranted for two years from the substantial completion date.
- C. Any landscaping not designated for removal that is disturbed or damaged by demolition, construction or implementation of the Contractor's traffic control shall be replaced. The Contractor is to replace damaged plant material and ground cover of the same size, genus, species, form, type, etc. The Contractor shall coordinate the landscape and irrigation restoration work with the Property Owners and the Construction Manager. The Contractor shall tour the site, assess and inventory the landscape restoration areas, become familiar with the extent of removal and replacement and bid that amount which will cover all costs associated with the restoration of the existing landscaping. All work shall be performed in a manner such that the landscaping and irrigation are returned to their original condition at a minimum.
- D. Contractor shall protect and preserve existing landscaping areas not designated for removal. Any plant material or landscape materials disturbed or damaged by demolition, construction or implementation of the Contractor's traffic control is to be replaced at the contractor's expense. The Contractor is to replace damaged plant material of the same size, genus, species, form, etc.

MATERIALS

212.02.02 NOMENCLATURE

DELETE PARAGRAPH B OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

- B. All plant material in these specifications will be classified by group as follows:
 - 1. Plants, Group A: Denotes container plant material
 - 2. Plants, Group B: Denotes boxed plant material

212.02.04 HANDLING AND SHIPPING

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Plants shall be packed for shipment according to standard practice for the type of plant being shipped. The root system of plants shall not be permitted to dry out at any time. Plants shall be protected against heat and freezing temperatures, sun, wind, climatic, or seasonal conditions during transit. Plant material shall be furnished in containers unless otherwise specified. Container grown plants shall be well developed with sufficient root development to hold the earth intact after removal from the container without being root bound.

- B. All plant materials are to be hardened material. Accomplish this by storing plants in a local licensed commercial nursery or by providing equivalent storage and care with written approval, for not less than 4 weeks before planting.
- C. Before moving plants from nursery or storage area to job site, thoroughly spray them with a solution of an anti-desiccant/anti-transpirant conforming to the following requirements:
 - 1. The material shall be in liquid form capable of application by spraying and/or dipping.
 - 2. Upon drying, the mixture shall produce a gas-permeable, but water retarding, colorless film having an MVT (Moisture-vapor-transmission) value of not more than 2.5. This means that not more than 160 mg (2.5 grains) of water pass through the film in 24 hours at 38 °C (100 °F) and relative humidity of 90 to 95%. The procedure for testing shall be as described in ASTM E96 or Technical Association of the Pulp and Paper Industry publication T464m-45.
 - 3. Furnish two certificates from the manufacturer covering anti-desiccant/anti-transpirant material, certifying that the product complies with the specifications. Deliver the certificates at the time of, or before delivery of the order.

212.02.05 INSPECTION OF PLANT MATERIAL

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. The Contractor shall inform the Landscape Architect as soon as possible of the source of plant material for the project. At the Landscape Architect's option an inspection of all plant materials at the source may be required prior to shipping of plants from the nursery. This inspection shall coordinate the judgment areas regarding size and quality of plant material between the Contracting Agency, the Contractor and the nursery. However, there will be no acceptance of any plant material during this inspection. All plant material shall meet the requirement specified in Subsection 726.02.01, "Certificates and Samples."
- B. All plant material will be inspected by the Landscape Architect on arrival at the site or storage area for quality. These inspections shall determine the acceptance or rejection of the plant material based on quality as specified in Subsection 212.02.03, "Quality of Plant Materials." This inspection is for quality of plant material only and does not constitute final acceptance. Plants which are rejected shall be immediately removed from the holding area and replaced by acceptable plants at no additional cost to the Contracting Agency.
- C. All plant material will be continually inspected from the time of arrival at the holding area, during planting and through the plant establishment period. Plants may be individually rejected during this time based on mechanical damage, quality or physical change of the plant which is not normal to the plant or to the season of the year. Plants which are rejected shall be immediately removed from either the holding area or the project and replaced by the Contractor at no additional cost to the Contracting Agency.

212.02.06 SUBSTITUTION OF PLANTS

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. No substitution of plant material will be permitted unless evidence is submitted in writing to the Landscape Architect that a specified plant cannot be obtained and has been unobtainable since the award of the contract. If substitution is permitted, it can be made only with written approval by the Landscape Architect. The nearest variety, size, and grade as approved by the Landscape Architect shall then be furnished.

212.02.07 TEMPORARY STORAGE

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Plant material delivered and accepted at the project site shall be planted immediately. Plants that cannot be planted within 1 day after arrival shall be "held" in accordance with accepted horticultural practice, and as follows:
 - 1. Container grown plants shall be placed under shelter and kept moist. Plants stored under temporary conditions shall be protected at all times from extreme weather conditions, and shall be kept moist.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:

212.02.12 PLANTING RESTRICTIONS

- A. Perform actual planting only when weather and soil conditions are suitable, in accordance with locally accepted practice.
- B. Do not install plant life when ambient temperatures may drop to below 35 degrees F or above 100 degrees F.
- C. Do not install plants when wind velocity exceeds 20 mph.

CONSTRUCTION**212.03.03 PREPARATION OF PLANTING AREAS**

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. During the preparation of planting areas, all clods, rocks, or other debris over 1 inch in dimension shall be removed from both cultivated areas and backfill material, and disposed of as directed by the Engineer.
- B. **Planting Holes:** Prior to drilling holes, the proposed location of the irrigation lines shall be designated by means of stakes or other approved markings. In the event of conflict between individual planting holes and irrigation lines, the planting holes in question shall be relocated under the direction of the Engineer.

1. All holes shall be drilled with a power auger to the dimensions specified in the contract documents unless otherwise approved by the Engineer. Holes shall be drilled at the location of each individual plant, the stake or marking being considered the center of the hole. The holes shall have vertical walls and horizontal bottoms.
2. Pre-wetting of tree plant pits: Fill tree plant pits to the top with water within 72 hours of planting. Plant pits can be planted as soon as water is completely drained. If water is not 90 percent gone within 24 hours, do not plant and bring to the immediate attention of OWNER's representative.
3. Documentation: Submit written documentation of test pit drainage results, with locations, date and signature of tester.
4. Obstructions: If rock, caliche, underground construction work, tree roots or other obstructions are encountered in the excavation of plant pits, acceptable alternate locations may be used as directed by Owner's Representative.
5. Root Guard: Install Root Guard as indicated in Landscape Plans.

212.03.04 PLANTING

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. No planting shall be done in any area until the Contractor has received the Engineer's approval that the area concerned has been satisfactorily prepared as provided in Subsection 212.03.03, "Preparation of Planting Areas."
- B. No more plants shall be distributed within the project area on any 1 day than can be planted and watered on that day.
- C. Any planting done in soil that is too wet or dry or not properly conditioned as provided herein will not be accepted. No payment will be made for such planting and any further planting work will be suspended until the Contractor has complied in every way with the specifications.
 1. **Plants (Group A):** Nursery stakes supporting plants in containers shall be removed and the plants pruned, if necessary, as specified herein, after planting.
 - a. Containers shall be cut 3 times from top to bottom.
 - b. Plants shall be removed from the containers in such a manner that the ball of earth surrounding the roots is not broken, and the plants shall be planted and watered as hereinafter specified immediately after removal from the containers.
 - c. Containers shall not be cut prior to delivery of the plants to the planting areas.
 2. **Plants (Group B):** Nursery stakes supporting plants in boxes shall be removed and the plants pruned, if necessary, as specified herein, after planting.
- D. Set plants vertical and flush to finish grade. Do not install soil on top of the root ball. The root ball shall be flush with finish grade.
- E. Pry off bottom boards of boxed trees rather than hammering boards off. Boxed plants may not be planted with the sides of the box in place.

- F. Set plants in pits or beds, partly filled with prepared soil mixture. Scarify root ball before planting.
- G. Saturate soil with water when the pit or bed is half full of soil mix and again when full. Install Fertilizer tablets when hole is 2/3 full.
- H. Backfill for trees and shrubs:
 - 1. Mix shall consist of (3) parts Humus, (3) parts imported topsoil and (2) parts native soil. Do not add additional soil above the root ball.
- I. Watering Basin: Form an earth berm 4 inches high by 8 inches wide centered around the tree or shrub pit. The outer edges of the water basin shall extend 12 inches beyond the plant's root ball.
- J. Remove nursery stakes; do not leave broken portions of the stake.

212.03.05 STAKING AND GUYING

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. All staking shall be done concurrently with the planting operation.
 - 1. **Staking:** Plants that are to be staked will be specified in the contract documents.
 - a. The size, number of stakes, and the depth to be driven shall be as specified in the contract documents, or as approved by the Engineer.
 - b. The stakes shall be placed against but not through the plant ball in the case of plants (Groups A and B).
 - 2. **Tree Ties:** The method of attaching the ties to stakes and trees shall provide firm connection, but the trunk loop shall be sufficiently loose to prevent damage to the bark.

212.03.06 PRUNING

ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:

- C. When pruning, Contractor shall not prune more than 1/8 of the canopy off newly planted trees. Contractor shall complete pruning before Substantial Completion but after all planting is complete.

212.03.07 WATERING

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. The Contractor shall make arrangements for furnishing and applying water at no additional cost to the Contracting Agency.
- B. Valves at meters shall be kept closed at all times, except while the irrigation system is actually in use.
- C. Precautions shall be taken during times when the irrigation system is on to prevent water from wetting vehicles, pedestrians, and pavement. Any erosion, slippage, or settlement of

the soil caused by watering shall be repaired by the Contractor at no additional cost to the Contracting Agency.

- D. Compliance with the provisions in this section shall not relieve the Contractor of responsibility for the replacement of plants as provided hereinafter.

1. Plants (Groups A and B):

- a. All plants shall be watered immediately after planting. Water shall be applied in a moderate stream until the backfill soil around and below the roots or ball, or earth around each plant, is thoroughly saturated. Where watering is done with a hose, a metal or plastic pressure reducing device approved by the Engineer shall be used. Under no circumstances shall the full force of the water from the open end of a hose be allowed to fall within the basin around any plant.
- b. After the first watering, water shall be applied to all plants as often and in sufficient amount as conditions may require to keep the soil moist, above, around, and below the root systems of the plants during the life of the contract. After the installed irrigation system has been accepted, it may be used to water the planted area.
- c. Any additional watering measures required to initially saturate the backfill, water the plants immediately after planting, or to maintain the plants in a satisfactory growing condition shall be anticipated and furnished by the Contractor at no additional cost to the Contracting Agency.

212.03.08 REPLACEMENTS

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

A. Plants (Groups A and B):

1. During the planting and plant establishment period of the project, all plants that show signs of failure to grow normally or which are so injured or damaged as to render the plants unsuitable for the purpose intended, as determined by the Engineer, shall be removed and replaced in kind. The Engineer will inspect the work on the first and second working day of each week during the planting and plant establishment periods, and will mark or otherwise indicate all plants to be replaced. The Contractor shall complete replacement of such plants as soon as possible, but in no case shall the Contractor take more than 2 weeks to complete the replacement.
2. Replacement plants shall be furnished and planted by the Contractor at no additional cost to the Contracting Agency.

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:**212.03.12 ROCK MULCH INSTALLATION**

- A. Rock Mulch shall not be mixed with, and shall be protected from contamination by, on-site soil materials and other undesirable materials prior to installation and any time during the installation operation.
- B. Rock Mulch shall not be placed until after plant materials in the area have been planted and a pre-emergent herbicide applied.
- C. After placing and grading the Rock Mulch, the Contractor shall water settle the Rock Mulch with a light spray to remove fine material from the surface. Care shall be taken in the placement of the Rock Mulch not to disturb or damage any plant material.
- D. A second application of pre-emergent herbicide shall be applied to planting areas in accordance with manufacturer's printed instructions. After each application of herbicide Contractor to water in pre-emergent so that it saturates the Rock Mulch layer and into the soil.

METHOD OF MEASUREMENT**212.04.01 MEASUREMENT****ADD THE FOLLOWING TO THIS SUBSECTION:**

The quantity of SITE PREPARATION will be measured per square foot.

The quantity of PLANTS, GROUP A will be measure per each.

The quantity of PLANTS, GROUP B will be measure per each.

The quantity of ROOT GUARD will be measured per linear foot.

The quantity of ROCK MULCH will be measured per square foot.

The quantity of LANDSCAPE BOULDER, 2' DIA. will be measure per each.

The quantity of LANDSCAPE BOULDER, 3' DIA. will be measure per each.

The quantity of LANDSCAPE BOULDER, 4' DIA. will be measure per each.

No direct measurement shall be made for LANDSCAPING REMOVAL AND REPLACEMENT.

METHOD OF PAYMENT**212.05.01 PAYMENT****ADD THE FOLLOWING TO THIS SUBSECTION:**

The accepted quantity of SITE PREPARATION will be paid for at the contract unit price per square foot and shall include all materials, equipment, tools and labor required including, but not limited to, removal of all clods, rocks, or other debris over 1 inch in dimension; fine grading so that finish surfaces prior to the installation of the rock mulch are reasonably smooth, conform to the typical sections and proposed grades shown on the landscape and civil plans, compacted and free from irregular surface drainage; delivery, storage, disposal and handling; repair and replace damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of PLANTS, GROUP A and PLANTS, GROUP B will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, watering; hole preparation; approved backfill material; fertilizer; humus; watering ring installation; tree staking; delivery, storage, and handling; repair and replace damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of ROOT GUARD will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; trenching; approved backfill material; dewatering; delivery, storage, and handling; repair and replace damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of ROCK MULCH will be paid for at the contract unit price per square foot and shall include all materials, equipment, tools and labor required including, but not limited to, the installation of the rock mulch; installation of pre-emergent herbicide; delivery, storage, and handling; repair and replace damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of LANDSCAPE BOULDER, 2' DIA., LANDSCAPE BOULDER, 3' DIA., and LANDSCAPE BOULDER, 4' DIA. will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, furnishing and placement of boulders; all excavation; grading; backfill; compaction; delivery, storage, and handling; repair and replace damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Water will be considered subsidiary to the major items of work and no further compensation will be allowed therefor.

Unless otherwise provided in the Special Provisions, no payment will be made for LANDSCAPING REMOVAL AND REPLACEMENT as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which LANDSCAPING REMOVAL AND REPLACEMENT is required.

Unless otherwise provided in the Special Provisions, no payment will be made for PLANT ESTABLISHMENT WORK as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which PLANT ESTABLISHMENT WORK is required.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
212.01	SITE PREPARATION	SF
212.02	PLANTS, GROUP A	EA
212.03	PLANTS, GROUP B	EA
212.04	ROOT GUARD	LF
212.05	ROCK MULCH	SF
212.06	LANDSCAPE BOULDER, 2' DIA.	EA
212.07	LANDSCAPE BOULDER, 3' DIA.	EA
212.08	LANDSCAPE BOULDER, 4' DIA.	EA

END OF SECTION 212

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SECTION 213 – IRRIGATION SYSTEMS

DESCRIPTION

213.01.01 GENERAL

ADD THE FOLLOWING TO THIS SUBSECTION:

- C. Any irrigation not designated for removal that is disturbed or damaged by demolition, construction or implementation of the Contractor's traffic control shall be replaced. The Contractor shall coordinate the irrigation restoration work with the Property Owners and the Construction Manager. The Contractor shall tour the site, assess and inventory the irrigation systems, become familiar with the extent of removal and replacement and bid that amount which will cover all costs associated with the restoration of the irrigation systems. All work shall be performed in a manner such that the irrigation systems are returned to their original condition at a minimum.
- D. Contractor shall protect and preserve existing irrigation not designated for removal. Any irrigation systems disturbed or damaged by demolition, construction or implementation of the Contractor's traffic control is to be replaced at the contractor's expense.

MATERIALS

213.02.05 PIPE AND FITTINGS

ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:

- C. Solvent weld sockets.

213.02.08 CONTROL VALVES

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Manual control valves shall be straight or angle pattern globe valves of all brass or bronze construction with replaceable compression disks. Manual control valves shall be of the same size as the pipes on which the valves are placed unless otherwise indicated on the plans, and shall be provided with a union connection. Manual control valves shall be capable of withstanding a cold water working pressure of 150 psi except for valves of 1-1/2-inch and larger where 200 psi valves will be required.
- B. Electric control valves shall be of the diaphragm type, normally closed. Control Module station output shall drive one single potted latching solenoid. The valve solenoids shall be completely encapsulated for positive waterproofing. Operating Range
 - 1. Flow: 0.20 to 5.0 GPM.
 - 2. Inlet Pressure: 20 to 150 PSI.
 - 3. Regulated Pressure: 30 PSI.
 - 4. Filtration: 200 mesh.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:**213.02.16 BATTERY OPERATED CONTROLLERS**

- A. There shall be an electrically timed device for automatically opening and closing control valves for predetermined periods of time and mounted so that all normal adjustments will be conveniently located for use by the operator. Controllers shall be enclosed in the valve box of the valve it is controlling. Operating features shall include the following:
1. The irrigation controller (control module) shall be programmable by a separate transmitter device only (Field Transmitter). The programs and manual operations shall be communicated to the Control Module from the Field Transmitter via an infrared connection.
 2. The Control Module shall be of a module type which may be installed in a valve box underground. They shall function normally if submerged in water and the communication from the transmitter shall function if submerged in water.
 3. The Control Module shall be housed in an ABS plastic cabinet and shall be potted to insure waterproof operation. Their battery compartment shall be dual-sealed to prevent water from entering the compartment. The Control Module shall have two mounting slots for screws allowing the module to be securely mounted inside a valve box.
 4. The controller shall be designed to accommodate one 9V alkaline battery for one full year regardless of the number of stations utilized.
 5. The Control Module shall operate 1 station.
 6. One sensor input shall be present on Control Module and shall accommodate dry contact rain sensor.
 7. All valves shall affect the Master Valve.
 8. The controller shall have station run time capability from one minute to twelve hours in one minute increments, a 365-day calendar with leap year and three programs A, B,C with eight start times each. One valve can be assigned to none, one, any or all programs.
 9. The controller shall be capable of starting/ stopping a manual single valve or manual program, cancel irrigation in progress or launch a test valve via infrared of the Field transmitter.
 10. Each valve not activated during the last 24 hours shall be automatically activated during 1 second each day for an anti-calcium effect.
- B. Field Transmitter. Operating Features shall include the following
1. The Field Transmitter shall be water resistant and housed in ABS plastic. The Field Transmitter shall be designed to accommodate a rechargeable NiMH 750mAh 2.4V battery pack.
 2. The Field Transmitter shall have a large dot matrix LCD screen with reverse video and a seven-key programming pad. Icons and texts without abbreviations shall ease

understanding. A Home button shall ease navigation.

3. The Field Transmitter shall be able to program an unlimited number of Control Modules via infrared communication.

213.02.17 BACKFLOW PREVENTER COVER

- A. Construct the backflow preventer cover of marine grade aluminum alloy 5052-H32 conforming to ASTM B209 with a minimum wall thickness of 3 mm (0.125 in.). Manufacture the mounting base entirely of stainless steel. Construct the main housing of solid sheet with a minimum R-8 rigid sheet insulation on the top and sides. Install a flexible rubber insert formed in a loop to provide dead air space along the bottom. The backflow preventer cover shall be vandal and weather resistant. The length of the cover shall be expandable to allow for site adjustment and shall be a center split design having mounting lips on each side. Submerge the mounting base into the concrete a minimum of 50 mm (2 in.), and position the cover 63 mm (2.5 in.) above the concrete for drainage purposes. The locking mechanism shall be of the full release type which allows for complete removal of the cover from its mounting base without use of tools. Conceal the handle controlling the locking mechanism within the surface of the enclosure and provide either a single or dual padlock system. Take care to insure that the cover can be properly opened in all directions.

CONSTRUCTION

213.03.12 AS-BUILT RECORD DRAWINGS

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- C. Accurately record on reproducible drawings actual locations of piping system, backflow preventer, controller, wiring, sleeves, gate valves, irrigation heads, quick couplers, and automatic control valves, flow meters, air vacuum valve, pressure reducing valves, and so forth.
- D. For irrigation plan, give 2 reference measurements to all underground valve box locations, show precise mainline locations, and indicate on the plan where sleeves enter under paved areas. All measurements shall be from established monuments such as corners of buildings or fence line corners. All as-built drawings shall be readable.
- E. Submit updates of irrigation as-builts on black line prints on a weekly basis.
- F. OWNER's representative will review all as-built drawings for final approval.

METHOD OF MEASUREMENT

213.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The quantity of 1-INCH VALVE will be measured per each.

The quantity of 1-INCH IRRIGATION LINE (SCH 40) will be measured per linear foot.

The quantity of 2-INCH PVC SLEEVE (SCH 40) will be measured per linear foot.

The quantity of ¾-INCH IRRIGATION LINE (CLASS 200) will be measured per linear foot.

The quantity of FIELD TRANSMITTER will be measured per each.

The quantity of ¾-INCH DRIP VALVE will be measured per each.

The quantity of QUICK COUPLING VALVE will be measured per each.

The quantity of EMITTERS will be measured per each.

No direct measurement shall be made for IRRIGATION REMOVAL AND REPLACEMENT.

METHOD OF PAYMENT

213.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantity of 1-INCH VALVE will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; trenching; approved backfill material; dewatering; valves (regardless of type or size); risers; o-rings; double stop handles; valve boxes; bottom extensions; locking covers; color-coded wiring; solenoids; loopsin; all other hardware required to install the valves; delivery, storage, and handling; air pressure testing; repair and replace pavement cuts and damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer. All valves shall be NSF (National Sanitation Foundation) certified for potable water. Automatic drain valves are not permitted.

The accepted quantity of 1-INCH IRRIGATION LINE (SCH 40), 2-INCH PVC SLEEVE (SCH 40) and ¾-INCH IRRIGATION LINE (CLASS 200) will be paid for at the contract unit price per linear foot and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; trenching; approved backfill material; dewatering; cleaning the inside of pipes and making them free of dirt, debris and foreign matter; pipe cutter; pipe supporting plate; cleaner; solvent; gravel filtration layers; all other hardware required to install the irrigation line; delivery, storage, and handling; air pressure testing; repair and replace pavement cuts and damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of FIELD TRANSMITTER will be paid for at the contract unit price per each and shall include all furnishing the field transmitter, or approved equivalent, and batteries as specified on the plans.

The accepted quantity of ¾-INCH DRIP VALVE will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; trenching; approved backfill material; dewatering; valves (regardless of type or size); pressure regulating filters; battery operated controller; risers; o-rings; double stop handles; valve boxes; bottom extensions; locking covers; color-coded wiring; solenoids; loopsin; all other hardware required to install the valves; delivery, storage, and handling; air pressure testing; repair and replace pavement cuts and damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer. All valves shall be NSF (National Sanitation Foundation) certified for potable water. Automatic drain valves are not permitted.

The accepted quantity of QUICK COUPLING VALVE will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; trenching; approved backfill material; dewatering; valves (regardless of type or size); risers; o-rings; double stop handles; valve boxes; bottom extensions; locking covers; color-coded wiring; loopsin; all other hardware required to install the valves; delivery, storage, and handling; air pressure testing; repair and replace pavement cuts and damage to existing surfacing with equivalent materials and finishes (match existing); protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of EMITTERS will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, excavation; trenching; approved backfill material; flexible tubing; miscellaneous connections; all other hardware required to install the valves; delivery, storage, and handling; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Unless otherwise provided in the Special Provisions, no payment will be made for IRRIGATION REMOVAL AND REPLACEMENT as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which IRRIGATION REMOVAL AND REPLACEMENT is required.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
213.01	1-INCH VALVE	EA
213.02	1-INCH IRRIGATION LINE (SCH 40)	LF
213.03	2-INCH PVC SLEEVE (SCH 40)	LF
213.04	¾-INCH IRRIGATION LINE (CLASS 200)	LF
213.05	FIELD TRANSMITTER	EA
213.06	¾-INCH DRIP VALVE	EA
213.07	QUICK COUPLING VALVE	EA
213.08	EMITTERS	EA

END OF SECTION 213

ADD THE FOLLOWING SECTION TO DIVISION II – CONSTRUCTION DETAILS**SECTION 270 – DEWATERING****DESCRIPTION****270.01.01 GENERAL**

- A. This work shall consist of furnishing all materials, labor, equipment and supervision to design, install, operate, remove dewatering systems and to lower the water table sufficient to prevent ground water from entering excavations.
- B. The work shall also consist of, but is not necessarily limited to, the proper disposal of groundwater removed by a dewatering system **in accordance with local, state, and federal regulations**. Prior to discharging groundwater into the storm drain system, the Contractor shall be responsible for obtaining the groundwater discharge permit from the Nevada Division of Environmental Protection, comply with the conditions of the permit and pay all costs associated with the permit requirements such as permit fees, laboratory analysis and treatment of the discharge water, if required. The permit application can be downloaded at: ndep.nv.gov/BWPC. Sampling and laboratory analysis shall be completed by Nevada Certified Environmental Manager and Certified Laboratory.
- C. Dewatering shall conform to the requirements of Section 208 “Trench Excavation and Backfill” and Section 502 “Concrete Structures” unless otherwise specified herein.

MATERIALS**270.02.01 GENERAL**

- A. At or prior to the preconstruction conference, the Contractor shall submit the dewatering plan showing method of dewatering, piping locations, discharge points, sewer and storm drainage facilities utilized and estimated discharge quantities.

CONSTRUCTION**270.03.01 GENERAL**

- A. Dewatering for structures and pipelines shall commence when groundwater is first encountered and shall be continuous until such times as water can be allowed to rise in accordance with the following provisions. Dewatering shall be conducted such that no concrete footings or floors or pipelines are placed in water nor shall water be allowed to rise over them until the concrete or mortar has set at least eight (8) hours. Water will not be allowed to rise in pipeline trenches or drained excavations until pipelines or facilities are backfilled or restrained to prevent flotation.
- B. The Contractor shall remove all dewatering equipment and materials at the completion of the work or as otherwise directed by the Engineer.

- C. The dewatering system shall be kept in operation until all work in the excavation is backfilled and properly compacted to a point three (3) feet above the existing water table elevation.
- D. The Contractor shall arrange for and provide all necessary utilities to operate the dewatering system.

270.03.02 POINT OF DISCHARGE

- A. The Contractor shall dispose of groundwater removed by the dewatering system into the storm drain system in accordance with local, state and federal regulations.

METHOD OF MEASUREMENT

270.04.01 MEASUREMENT

No direct measurement shall be made for Dewatering.

BASIS OF PAYMENT

270.05.01 PAYMENT

Unless otherwise provided in the Special Provisions, no payment will be made for Dewatering as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which Dewatering is required.

END OF SECTION 270

SECTION 302 – AGGREGATE BASE COURSES

DESCRIPTION

302.01.01 GENERAL

ADD THE FOLLOWING TO THIS SUBSECTION:

- B. Pursuant to NRS (SB236) the City of Las Vegas Department of Public Works provides for the use of recycled aggregate in public road construction projects. Substitution by the Contractor of recycled aggregate for new aggregate will follow the procedures in Sections 2.10 of the General Conditions and 105.03 of the Special Provisions and the following:
- i. In order to encourage the use of recycled materials these substitutions will be considered to have demonstrable benefit to the City whether or not they result in a cost savings to the City or a reduction in Contract time
 - ii. No substitutions will be considered unless submitted by the Contractor within 10 days of the Contract award date.
 - iii. Such substitutions will not be rejected by the City unless scientific evidence satisfactory to the City clearly indicates that the use of the recycled aggregate for construction compromises the soundness of the project.
 - iv. No additional Contract time or cost will be granted for these substitutions.

METHOD OF MEASUREMENT

302.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The quantity of TYPE II AGGREGATE BASE will be measured per cubic yard.

The quantity of TYPE II AGGREGATE BASE will be measured in all areas to receive bituminous pavement. Measurement does not include the area under sidewalks, cross-gutters, driveways, sidewalk ramps, curb and gutters, Portland cement concrete pavement, median pavements, permanent patches, trench backfill for drainage structures or other underground facilities.

BASIS OF PAYMENT

302.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantity of TYPE II AGGREGATE BASE will be paid for at the contract unit price of cubic yard and shall conform to the requirements of subsection 302.05.01 of the Uniform Standard Specifications and shall include all materials, equipment and labor required to perform this work, including but not limited to, all excavation; grading; compaction; subgrade preparation and waterin; re-compacting the subgrade; and all work as shown on the Plans, as specified herein and as directed by the Engineer.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
302.01	TYPE II AGGREGATE BASE	CY

END OF SECTION 302

SECTION 401 – PLANTMIX BITUMINOUS PAVEMENTS - GENERAL**DESCRIPTION****401.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- C. Pursuant to NRS (SB236) the City of Las Vegas Department of Public Works provides for the use of recycled bituminous pavement in public road construction projects. Substitution by the Contractor of recycled bituminous pavement for new bituminous pavement will follow the procedures in Sections 2.10 of the General Conditions and 105.03 of the Special Provisions and the following:
- i. In order to encourage the use of recycled materials these substitutions will be considered to have demonstrable benefit to the City whether or not they result in a cost savings to the City or a reduction in Contract time
 - ii. No substitutions will be considered unless submitted by the Contractor within 10 days of the Contract award date.
 - iii. Such substitutions will not be rejected by the City unless scientific evidence satisfactory to the City clearly indicates that the use of the recycled bituminous pavement for construction compromises the soundness of the project.
 - iv. No additional Contract time or cost will be granted for these substitutions.

MATERIALS**401.02.01 COMPOSITION OF MIXTURES*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- O. The Traffic Category for all permanent Plantmix Bituminous surfaces shall be Traffic Category I, with AC-30 asphalt.

401.02.02 AGGREGATES***ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. Aggregate Type 3 shall be used for pavements 2 inches or less in total thickness.
- C. Aggregate Type 2 shall be used for pavements greater than 2 inches in total thickness.

METHOD OF MEASUREMENT**401.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of Plantmix Bituminous Surface will be measured in accordance with section 402 "Plantmix Bituminous Surface".

BASIS OF PAYMENT

401.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantity of Plantmix Bituminous Surface will be paid for in accordance with section 402 "Plantmix Bituminous Surface".

END OF SECTION 401

SECTION 402 – PLANTMIX BITUMINOUS SURFACE**METHOD OF MEASUREMENT****402.04.01 MEASUREMENT**

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

The quantity of 5-INCH PLANTMIX BITUMINOUS SURFACE will be measured per square yard.

BASIS OF PAYMENT**402.05.01 PAYMENT**

DELETE PARAGRAPH "A" OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

The accepted quantity of 5-INCH PLANTMIX BITUMINOUS SURFACE will be paid for at the contract unit price of square yard and shall include all materials, equipment and labor required including, but not limited to, asphalt cement; mixing; loading; hauling; placing; compacting; tack coat; prime coat and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
402.01	5-INCH PLANTMIX BITUMINOUS SURFACE	SY

END OF SECTION 402

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SECTION 405 – TACK COAT**CONSTRUCTION****405.03.02 WEATHER LIMITATIONS*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. Application of bituminous material shall be in accordance with subsection 401.03.05 "Weather Limitations".

405.03.03 PREPARATION OF SURFACE***DELETE PARAGRAPH "A" OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:***

- A. The existing surface shall be patched and cleaned and be free of irregularities to provide a smooth and uniform surface to receive the treatment. The edges of existing pavements shall be sawcut to full depth, in a neat line and shall be cleaned prior to the application of a tack coat.

405.03.04 APPLICATION OF ASPHALTIC EMULSION***DELETE PARAGRAPH "C.1" AND REPLACE WITH THE FOLLOWING:***

- C. 1. Tack coat shall be applied to no greater area in any one day than is planned to be covered by plantmix during the same day.

METHOD OF MEASUREMENT**405.04.01 MEASUREMENT*****DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

No direct measurement shall be made for Tack Coat.

BASIS OF PAYMENT**405.05.01 PAYMENT*****DELETE PARAGRAPHS "A", "B" AND "E" OF THIS SUBSECTION AND ADD THE FOLLOWING PARAGRAPH:***

Unless otherwise provided in the Special Provisions, no payment will be made for Tack Coat as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which Tack Coat is required.

END OF SECTION 405

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SECTION 406 – PRIME COAT**DESCRIPTION****406.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. Prime coat shall be applied to aggregate base courses when the thickness of the plantmix bituminous pavement is less than five inches (5"). Plantmix bituminous pavements five inches (5") and greater shall not require the application of a prime coat.

MATERIAL**406.02.01 BITUMINOUS MATERIAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- C. The type and grade of bituminous material shall be SS-1h liquid asphalt emulsion.

CONSTRUCTION**406.03.02 WEATHER LIMITATIONS*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. Application of bituminous material shall be in accordance with subsection 401.03.05 "Weather Limitations".

METHOD OF MEASUREMENT**406.04.01 MEASUREMENT*****DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

No direct measurement shall be made for Prime Coat.

BASIS OF PAYMENT**406.05.01 PAYMENT*****DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

When sand blotter is not included in the proposal and it is needed to protect the work or public traffic, sand blotter shall be considered subsidiary to other items of work and no additional compensation will be allowed.

The Contracting Agency reserves the right to increase or to omit all or any part of the estimated amount of blotter material or bituminous material to be used and no adjustment in unit price will be allowed by reason of such increase or decrease.

When an item for prime coat does not appear in the proposals, but is shown on the plans or Standard Drawings, prime coat will be considered as incidental to the subsequent paving and compensation shall be included in the contract prices for other items of work.

Unless otherwise provided in the Special Provisions, no payment will be made for Prime Coat as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which Prime Coat is required. Also included as incidental: furnishing the material, mixing, loading, hauling, placing, and incidentals necessary for doing all of the work involved in placing prime coat and sand blotter as shown on the plans or established by the Engineer.

END OF SECTION 406

SECTION 407 – SEAL COAT

METHOD OF MEASUREMENT

407.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

No direct measurement shall be made for Seal Coat.

METHOD OF PAYMENT

407.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

Unless otherwise provided in the Special Provisions, no payment will be made for Seal Coat as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which Seal Coat is required.

END OF SECTION 407

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SECTION 412 – PAVEMENT SURFACE TREATMENTS – SLURRY SEAL/MICRO-SURFACING**METHOD OF MEASUREMENT****412.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of SLURRY SEAL, ISSA TYPE III will be measured per square yard.

BASIS OF PAYMENT**412.05.01 PAYMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The accepted quantity of SLURRY SEAL, ISSA TYPE III will be paid for at the contract unit price of cubic yard and shall conform to the requirements of subsection 412.05.01 of the Uniform Standard Specifications and shall include all materials, equipment, labor and disposal required to perform this work and all work as shown on the Plans, as specified herein and as directed by the Engineer. The above payment shall also include, carbon black additive; raval sweeping; surface grinding; surface preparation; mixing; loading; hauling; mix design; placing; and rolling.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
412.01	SLURRY SEAL, ISSA TYPE III	SY

LBG note to CLV: Currently no quantity for Slurry Seal, kept section 412 as a place holder pending the City decision on expanding the striping limits (ie Fort Apache southbound between Wittig and Dorrell).

END OF SECTION 412

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SECTION 413 – PLANTMIX BITUMINOUS GAP-GRADED SURFACE (UTACS)**METHOD OF MEASUREMENT****413.04.01 MEASUREMENT**

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

The quantity of 1-INCH UTACS BONDED WITH A PMM, S3 GRADATION will be measured per square yard.

BASIS OF PAYMENT**413.05.01 PAYMENT**

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantity of 1-INCH UTACS BONDED WITH A PMM, S3 GRADATION will be paid for at the contract unit price of square yard and shall conform to the requirements of subsection 413.05.01 of the Uniform Standard Specifications and shall include all materials, equipment, labor and all work as shown on the Plans, as specified herein and as directed by the Engineer. The above payment shall also include asphalt cement.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
413.01	1-INCH UTACS BONDED WITH A PMM, S3 GRADATION	SY

END OF SECTION 413

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SECTION 501 – PORTLAND CEMENT CONCRETE**DESCRIPTION****501.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- C. All cement used on the work shall be standard brand Portland cement conforming to the "Specifications for Portland Cement" (ASTM C150), Type V, in accordance with requirements contained in Section 701 of the USS.
- D. All concrete for reinforced concrete box culverts (Precast and Cast-In-Place), confluence structures and transition structures, shall have a 28 day minimum compressive strength of 6,000 psi. All other concrete structures shall have a 28 day minimum compressive strength of 4,500 psi unless otherwise noted.

MATERIALS**501.02.03 ADMIXTURES*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- Q. The use of calcium chloride shall not be permitted.

CONSTRUCTION**501.03.04 CLASSIFICATION AND PROPORTIONS*****ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:***

- F. Concrete shall be composed of cement, admixtures (when approved), aggregates and water. These materials shall be as specified. The exact proportions in which these materials are to be used for different parts of the work shall be determined by the Contractor and submitted to the Engineer for review prior to use in the work. In general, the mix shall be so designed as to produce concrete capable of being deposited so as to obtain maximum density and minimum shrinkage and, where deposited in forms, to have maximum smoothness of surface. Mix designs where sand represents more than 41 percent of the total weight of fine and coarse aggregate shall not be permitted. The proportions shall be changed whenever necessary or desirable in the opinion of the Engineer. Concrete mixes shall be designed by a Registered Professional Engineer in the State of Nevada representing a qualified independent testing laboratory and approved in advance by the Engineer. Concrete mixing operations shall conform to ASTM C 94. Water shall not be added to concrete after leaving the batch plant unless specifically authorized by the Engineer.

501.03.10 WEATHER LIMITATIONS

ADD THE FOLLOWING PARAGRAPH TO “PART A: GENERAL” OF THIS SUBSECTION:

4. All exposed concrete surfaces shall be sprayed liberally with an evaporation retarder such as Confilm by Masterbuilders or approved equal, when the ambient air temperature is greater than 100 degrees F.; or when the ambient air temperature is above 90 degrees F. and the wind speed is above 20 mph; or as directed by the Engineer. Spraying shall be per manufacturer's recommendation and shall occur immediately upon completion of the finish.

ADD THE FOLLOWING PARAGRAPH TO “PART B: COLD WEATHER – GENERAL” OF THIS SUBSECTION:

7. Concrete shall not be placed on frozen ground, nor shall it be placed when atmospheric temperature is below 40 F. and within 24 hours of the time that the concrete is to be placed, except with the written permission of the Engineer and only after such precautionary measures for the protection of the concrete have been taken as the Engineer may direct.

ADD THE FOLLOWING PARAGRAPH TO “PART D: HOT WEATHER” OF THIS SUBSECTION:

9. When the temperature is 90 F. or above, or is likely to rise above 90 F. within the 24-hour period after concrete placement; or when there is any combination of high air temperature, low relative humidity and wind velocity which would impair concrete strength or quality, follow the recommendations of ACI 305R and the following:
 - a. Keep concrete as cool as possible during placement and curing
 - b. Do not allow concrete temperature to exceed 90° F. at placement.
 - c. Prevent plastic shrinkage cracking due to rapid evaporation of moisture.
 - d. Dampen subgrade and forms with cool water immediately prior to placement of concrete.
Protect the concrete with temporary wet covering during any appreciable delay between placement and finishing.
 - e. Take appropriate precautions per ACI 305R when the actual or anticipated evaporation rate equals or exceeds 0.2 pounds per square foot per hour as determined from ACI 305R, Figure 2.1.4.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:**501.03.70 CORROSION PROTECTION REQUIREMENT**

- A. Pipe, conduit, dowels and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there shall be a minimum of two inches clearance between said items and any part of the concrete reinforcement. Securing such items in position by wiring or welding them to the reinforcement shall not be permitted.

501.03.71 PREPARATION OF SURFACES FOR CONCRETING

- A. Native material surfaces shall be thoroughly wetted by sprinkling, prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud and debris at the time of placing concrete.
- B. Concrete surfaces upon or against which concrete is to be placed, where the placement of the old concrete has been stopped or interrupted so that, in the opinion of the Engineer, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be leveled with a wooded float to provide a reasonably smooth surface. A surface consisting largely of coarse aggregate shall be avoided. The joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material.
- C. No concrete shall be placed until all form work, installation of parts to be embedded, and preparation of surfaces involved in the placing have been approved by the Engineer.

501.03.72 EXCLUSION OF WATER

- A. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the work. No concrete shall be deposited under water without the explicit permission of the Engineer and then only in strict accordance with the Engineer's directions, nor shall the Contractor, without explicit permission from the Engineer, allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as to injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing groundwater, if required, shall be subject to the approval of the Engineer and shall be the responsibility of the Contractor. Said items shall be considered incidental to construction and no additional compensation shall be made.

501.03.73 TAMPING AND VIBRATING

- A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense, homogenous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement.

501.03.74 CARE AND REPAIR OF CONCRETE

- B. The Contractor shall protect all concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance by the Owner. Particular care shall be taken to prevent the drying of concrete and to avoid roughening or otherwise damaging the surface. Any concrete found to be damaged, or which becomes defective at any time prior to the final acceptance of the completed work, or which departs from the established line or grade, or which for any other reason does not conform to the specifications, shall be removed and replaced at the Contractor's expense.

END OF SECTION 501

SECTION 502 – CONCRETE STRUCTURES**DESCRIPTION****502.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- D. This work shall also include construction of headwalls, wingwalls, connection and transition/splitter structures, and pre-cast concrete box culverts. This shall include the construction of temporary head walls necessary to support the travel lanes and/or work adjacent to the excavation for the reinforced concrete box culvert and roadway.
- E. Pre-cast reinforced concrete box culvert sections shall conform to the Contract Drawings and with the Nevada Department of Transportation (NDOT) Standard Drawings.
- F. The precast units scheduled for attachment to cast-in-place improvements shall be furnished with exposed No. 4 reinforcement steel on 12-inch spacings. The No. 4 reinforcement steel shall be cast a minimum of 18 inches into the pre-cast section and extended 18 inches into the cast-in-place improvements.
- F. All reinforced concrete box culverts and confluence structures identified as cast-in-place on the drawings may be substituted for precast structures at no additional cost to the City. All precast concrete box culverts cannot be substituted with cast-in-place construction.

CONSTRUCTION**502.03.09 CONCRETE DEPOSITED UNDER WATER*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- G. It is anticipated that groundwater will be encountered on this project. In such case, the Contractor will dewater the excavated area and subbase for the concrete structures improvements in such a manner that the concrete will not be placed in any standing water.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:**502.03.70 TEMPORARY HEAD WALL**

- A. The Contractor may utilize the temporary head walls for support of the required travel lane(s) and/or work areas adjacent to open excavation. If the Contractor chooses to utilize temporary head walls, the Contractor shall provide the Engineer with design plans and calculations for such head walls and/or supports. The design plans shall be in detail, showing all information as required by the Engineer, and shall bear the seal of a Nevada Registered Engineer.

502.03.71 INSPECTION

- A. All RCB joints and lengths shall be 100 percent inspected. Inspection and Testing shall be performed by the Contractor during and after installation to ensure proper performance. Installation of bedding and backfill materials, as well as their placement and compaction, shall adhere to the requirements of this and other applicable sections. Errors in line and grade, as well as any improper assembly or backfill techniques, shall be corrected prior to placing significant backfill or trench fill. Joints shall be installed per manufacturer's recommendations to prevent the infiltration of soil fines. Shallow cover installations shall be checked to ensure the minimum cover level is provided.
- B. Internal Video Inspection. Internal video inspection shall be performed by the Contractor a minimum of 30 days after final backfill has been placed and prior to final acceptance by the Contracting Agency. The line shall be cleaned and inspected per Subsection 601.03.07 "Video Inspection". Cracks in RCBs that are less than 0.10 inch in width are generally considered non-structural flaws and need not be repaired. Cracks that are equal to or exceed 0.10 inch in width shall require an evaluation by a Nevada licensed Professional Engineer provided by the Contractor. The Contractor's Engineer shall provide a recommendation regarding removal or repair subject to approval by the Contracting Agency. RCB joints and length that do not meet the specification shall be repaired or RCB replaced at the Contractor's expense. All inspection results shall be submitted and approved by the Contracting Agency before final payment. Any replacement RCB shall also be subject to the same testing. All inspection and testing results shall be submitted to the Engineer for approval.

METHOD OF MEASUREMENT**502.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of PRECAST 4-FOOT X 4-FOOT REINFORCED CONCRETE BOX will be measured per linear foot along the centerline of the box.

The quantity of PRECAST 5-FOOT X 5-FOOT REINFORCED CONCRETE BOX will be measured per linear foot along the centerline of the box.

The quantity of PRECAST 7-FOOT X 6-FOOT REINFORCED CONCRETE BOX will be measured per linear foot along the centerline of the box.

The quantity of PRECAST 12-FOOT X 6-FOOT REINFORCED CONCRETE BOX will be measured per linear foot along the centerline of the box.

The quantity of 12-FOOT X 6-FOOT REINFORCED CONCRETE BOX will be measured per linear foot along the centerline of the box.

The quantity of CONFLUENCE STRUCTURE (ELKHORN ROAD) will be measured per lump sum.

The quantity of CONFLUENCE STRUCTURE (DEER SPRINGS WAY) will be measured per lump sum.

The quantity of RCB TO CHANNEL TRANSITION will be measured per lump sum.

BASIS OF PAYMENT

502.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantities of PRECAST 4-FOOT X 4-FOOT REINFORCED CONCRETE BOX, PRECAST 5-FOOT X 5-FOOT REINFORCED CONCRETE BOX, PRECAST 7-FOOT X 6-FOOT REINFORCED CONCRETE BOX, and PRECAST 12-FOOT X 6-FOOT REINFORCED CONCRETE BOX will be paid for at the contract unit price of linear foot and shall include all materials, equipment and labor required including, but not limited to, saw cutting; temporary patches; all excavation; over-excavation and backfill; trench excavation; compaction and recompaction; dewatering; bypass or pumping of water; disposing of excess material; grading; scarification; shaping; shoring; subgrade preparation; bedding; crush rock; trench backfill (granular, select or Controlled Low-Strength Material); cast-in-place connections and/or transitions; concrete; dowels; gaskets; grout; joint filler; joint sealant; joint water proofing; ready-mix flowable fill; reinforcing steel; removal of temporary steel piles; temporary closure wall (if applicable); temporary head walls; tools; potholing to determine the location of existing utilities; relocation of conduit; video inspection; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, median islands, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all utilities; delivery; handling; installation; placement; connection of manholes, concrete structures, and pipes; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 12-FOOT X 6-FOOT REINFORCED CONCRETE BOX will be paid for at the contract unit price of linear foot and shall include all materials, equipment and labor required including, but not limited to, saw cutting; temporary patches; all excavation; over-excavation and backfill; trench excavation; compaction and recompaction; dewatering; bypass or pumping of water; disposing of excess material; grading; scarification; shaping; shoring; subgrade preparation; bedding; crush rock; trench backfill (granular, select or Controlled Low-Strength Material); forming and curing concrete; reinforcing steel; concrete; curing compound; cast-in-place connections and/or transitions; cutoff walls; dowels; grout; joint filler; joint sealant; joint water proofing; ready-mix flowable fill; reinforcing steel; removal of temporary steel piles; temporary closure wall (if applicable); temporary head walls; tools; potholing to determine the location of existing utilities; relocation of conduit; video inspection; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, median islands, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all utilities; delivery; handling; installation; placement; connection of manholes, concrete structures, and pipes; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of CONFLUENCE STRUCTURE (ELKHORN ROAD) will be paid for at the contract unit price of linear foot and shall include all materials, equipment and labor required including, but not limited to, saw cutting; temporary patches; all excavation; over-excavation and backfill; trench excavation; compaction and recompaction; dewatering; bypass or pumping of water; disposing of excess material; grading; scarification; shaping; shoring; subgrade preparation; bedding; crush rock; trench backfill (granular, select or Controlled Low-Strength Material); forming and curing concrete; reinforcing steel; concrete; curing compound; cast-in-place connections and/or transitions; cutoff walls; dowels; grout; joint filler; joint sealant; joint water proofing; ready-mix flowable fill; reinforcing steel; removal of temporary steel piles; temporary closure wall (if applicable); temporary head walls; tools; potholing to determine the location of existing utilities; relocation of conduit; video inspection; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, median islands, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all utilities; delivery; handling; installation; placement; connection of manholes, concrete structures, and pipes; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of CONFLUENCE STRUCTURE (DEER SPRINGS WAY) will be paid for at the contract unit price of linear foot and shall include all materials, equipment and labor required including, but not limited to, saw cutting; temporary patches; all excavation; over-excavation and backfill; trench excavation; compaction and recompaction; dewatering; bypass or pumping of water; disposing of excess material; grading; scarification; shaping; shoring; subgrade preparation; bedding; crush rock; trench backfill (granular, select or Controlled Low-Strength Material); forming and curing concrete; reinforcing steel; concrete; curing compound; cast-in-place connections and/or transitions; cutoff walls; dowels; grout; joint filler; joint sealant; joint water proofing; ready-mix flowable fill; reinforcing steel; removal of temporary steel piles; temporary closure wall (if applicable); temporary head walls; tools; potholing to determine the location of existing utilities; relocation of conduit; video inspection; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, median islands, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all utilities; delivery; handling; installation; placement; connection of manholes, concrete structures, and pipes; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of RCB TO CHANNEL TRANSITION will be paid for at the contract unit price of lump sum and shall include all materials, equipment and labor required including, but not limited to, all structure and channel excavation; over-excavation and backfill; compaction and recompaction; dewatering; disposing of excess material; grading; scarification; shaping; shoring; saw cutting; subgrade preparation; bedding (Type II Aggregate Base); backfill (granular, select or Controlled Low-Strength Material); cast-in-place connections and/or transitions; concrete; contraction joints; construction joints; curing compound; dowels; expansion joints; forming and curing concrete; grout; joint filler; joint sealant; joint protection; joint water proofing; reinforcing steel; removal of temporary steel piles; temporary closure wall (if applicable); temporary head walls; tools; potholing to determine the location of existing utilities; relocation of conduit; video inspection; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all

utilities; delivery; handling; installation; placement; connection to concrete structures and pipes; and, all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
502.01	PRECAST 4-FOOT X 4-FOOT REINFORCED CONCRETE BOX	LF
502.02	PRECAST 5-FOOT X 5-FOOT REINFORCED CONCRETE BOX	LF
502.03	PRECAST 7-FOOT X 6-FOOT REINFORCED CONCRETE BOX	LF
502.04	PRECAST 12-FOOT X 6-FOOT REINFORCED CONCRETE BOX	LF
502.05	12-FOOT X 6-FOOT REINFORCED CONCRETE BOX	LF
502.06	CONFLUENCE STRUCTURE (ELKHORN ROAD)	LS
502.07	CONFLUENCE STRUCTURE (DEER SPRINGS WAY)	LS
502.08	RCB TO CHANNEL TRANSITION	LS

END OF SECTION 502

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SECTION 505 – REINFORCING STEEL**MATERIALS****505.02.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- F. At selected locations as indicated on the Contract Drawings, reinforcing steel shall be galvanized (zinc coated), in accordance with ASTM A767 or epoxy-coated.
- G. At the expansion joint locations shown on the Contract Drawings or as directed by the Engineer, reinforcing steel shall be sprayed, coating the entire circumference of the bar, with a zinc-rich formulation conforming to ASTM A767.

METHOD OF MEASUREMENT**505.04.01 MEASUREMENT*****DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

No direct measurement shall be made for Reinforcing Steel.

BASIS OF PAYMENT**505.05.01 PAYMENT*****DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

Unless otherwise provided in the Special Provisions, no payment will be made for Reinforcing Steel as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which such Reinforcing Steel is required.

END OF SECTION 505

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SECTION 601 – PIPE CULVERTS-GENERAL**DESCRIPTION****601.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- D. This work shall also consist of preparing a final location map as described on the project drawings and in Section 622 of these Special Provisions.

CONSTRUCTION**601.03.07 VIDEO INSPECTION*****ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION***

- H. The following paragraphs define the requirements for internal video inspection of storm drain facilities after installation.
1. The Contractor shall inspect the storm drain facility interior using a color closed circuit television (CCTV) camera and document the inspection on image with audio location and date information, image title information, and hard copy inspection logs. The CCTV inspection shall be performed after the installation has been completed.
 2. Field operator(s) of inspection equipment must have current National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) Certification.
 3. Television Inspection Camera. Equipment shall be operative in 100 percent humidity conditions. Lighting intensity shall be remote controlled and shall be adjusted to minimize reflective glare. Lighting and camera quality shall provide a clear, in-focus picture of the entire inside periphery of the storm drain facility.
 4. Digital Storage Medium. The inspection shall be recorded, stored and submitted on CD's (or DVD's) in high quality MPG format on CD -R/+R disks formatted for use with PC systems. The audio portion of the composite CD shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report.
 5. Footage Counter. A footage counter device, which measures the distance traveled by the camera in the storm drain facility, shall be accurate to plus or minus 2 feet in 1,000 feet.
 6. Video Tilting. Pan and tilt unit, with adjustable supports specifically designed and constructed for operation in connection with storm drain facility inspection.
 7. Flow in Storm Drain Facility. During internal video inspections the Contractor shall provide temporary dry conditions in the storm drain facility unless otherwise agreed

upon by the Engineer.

I. Inspection Methods for Internal Video:

1. Verbal Commentary. None required except to note operational problems such as camera failure, or restart of inspection.
2. Access. The Engineer shall have access to observe the monitor and all other operations at all times. The system of cabling employed to transport the camera and transmit its signal shall not obstruct the camera's view.
3. Inspection Rate. The camera shall be pulled through the storm drain facility in either direction, but all inspections at each location shall be in the same direction. Rate of travel shall be such that a comprehensive inspection/analysis may be performed but at no time shall exceed 30 feet per minute when recording.
4. Image Perspective. The camera image shall be down the center axis of the storm drain facility when the camera is in motion. The Contractor is required to provide a 360-degree view of the interior. Points of interest shall also be shown on the video and shall include, but not be limited to, all joints, defects, encrustations, mineral deposits, debris, sediment, any location determined not to be clean or part of a proper installation or defects in the materials.
5. Storm Drain Facility Identification. All inspection documentation shall include the location referenced to the project survey control specifically the pipe stationing.
6. Defect Coding. National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) coding system, latest version, shall be used to document all defects visible on the image recordings.
7. Quality Control. The Engineer will review CD's or DVD's and logs to ensure compliance with the requirements listed in this specification and contract documents.
8. The Contractor shall be responsible for modifications to his equipment and/or inspection procedures to achieve report material of acceptable quality. No work shall commence prior to approval of the material by the Engineer. Once accepted, the report material shall serve as a standard for the remaining work.
9. Contractor shall maintain a copy of all inspection documentation (CDs, databases, and logs) for the duration of the work and warranty period.

ADD THE FOLLOWING SUBSECTION:

601.03.70 MARKER BALLS

- A. Marker balls shall be installed per local entity requirements.

METHOD OF MEASUREMENT

601.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

No direct measurement shall be made for VIDEO INSPECTION.

METHOD OF PAYMENT

601.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

Unless otherwise provided in the Special Provisions, no payment will be made for VIDEO INSPECTION as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which VIDEO INSPECTION is required.

END OF SECTION 601

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SECTION 603 – REINFORCED CONCRETE PIPE**DESCRIPTION****603.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- C. This work shall also consist of providing storm drain connections for the storm drain and laterals as directed by the Engineer.

CONSTRUCTION**603.03.07 INSPECTION*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- E. Internal Video Inspection. Internal video inspection shall be performed by the Contractor a minimum of 30 days after final backfill has been placed and prior to final acceptance by the Contracting Agency. This inspection includes 360 degree taping of all storm drain lateral joints. The line shall be cleaned and inspected per Subsection 601.03.07 "Video Inspection."

METHOD OF MEASUREMENT**603.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of 18-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 24-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 30-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 36-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 42-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 48-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 60-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 30-INCH X 19-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 45-INCH X 29-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

The quantity of 60-INCH X 38-INCH REINFORCED CONCRETE PIPE (CLASS III) will be measured per linear foot, along the centerline of the pipe to the end section or inside face of structure.

BASIS OF PAYMENT

603.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantities of 18-INCH REINFORCED CONCRETE PIPE (CLASS III), 24-INCH REINFORCED CONCRETE PIPE (CLASS III), 30-INCH REINFORCED CONCRETE PIPE (CLASS III), 42-INCH REINFORCED CONCRETE PIPE (CLASS III), 48-INCH REINFORCED CONCRETE PIPE (CLASS III), 60-INCH REINFORCED CONCRETE PIPE (CLASS III), 30-INCH X 19-INCH REINFORCED CONCRETE PIPE (CLASS III), 45-INCH X 29-INCH REINFORCED CONCRETE PIPE (CLASS III), AND 60-INCH X 38-INCH REINFORCED CONCRETE PIPE (CLASS III) will be paid for at the contract unit price bid per linear foot for reinforced concrete pipe of the class and size specified, which shall be full compensation for saw cutting; trench excavation; furnishing and placing bedding and backfill material; compaction; furnishing and placing pipe and jointing mortar; brick and mortar plugs; covering open ends of laterals with plywood; cut and join connections; dewatering; bypass pumping or diversion of flow; shoring; disposal of excess excavated material; potholing to determine location of existing utilities; relocation of conduit; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, median islands, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; temporary patches; video inspection; related items of work not otherwise provided for, 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.

Unless otherwise provided in the Special Provisions, no payment will be made for Internal Video Inspection as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which Internal Video Inspection is required.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
603.01	18-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.02	24-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.03	30-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.04	36-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.05	42-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.06	48-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.07	60-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.08	30-INCH X 19-INCH REINFORCED CONCRETE PIPE (CLASS III),	
603.09	45-INCH X 29-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF
603.10	60-INCH X 38-INCH REINFORCED CONCRETE PIPE (CLASS III)	LF

END OF SECTION 603

SECTION 609 – CATCH BASINS, MANHOLES AND INLETS**DESCRIPTION****609.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. This work shall also consist of preparing a final location map as described on the project drawings and in Section 622 of these Special Provisions.

MATERIALS**609.02.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- F. Grout shall conform to ASTM C476 and shall have a minimum strength of 2000 psi. Fine grout shall be proportioned by volume of one part Portland cement and 2-1/4 to 3 parts sand. Coarse grout shall consist of one part Portland cement, 2-1/2 to 3 parts sand, and 1 to 2 parts coarse aggregate.
- G. Laboratory design mixes for grout, approved by a Licensed Professional Engineer in the State of Nevada, are acceptable in lieu of the above proportions and are required if the maximum strength is more than 2000 psi. Grout shall be of a fluid consistency with proper proportions of sand to gravel for pouring and pumping.
- H. All exposed steel shall be hot-dipped galvanized per section 715.

METHOD OF MEASUREMENT**609.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of RCB MANHOLE will be measured per each.

The quantity of 48-INCH TYPE I STORM DRAIN MANHOLE will be measured per each.

The quantity of 60-INCH TYPE I STORM DRAIN MANHOLE will be measured per each.

The quantity of 60-INCH TYPE III STORM DRAIN MANHOLE will be measured per each.

The quantity of NDOT TYPE 4 STORM DRAIN MANHOLE will be measured per each.

The quantity of NDOT TYPE 2 DROP INLET WITH CONCRETE APRON will be measured per each.

The quantity of 9.5-FOOT TYPE DM DROP INLET will be measured per each.

The quantity of 12-FOOT TYPE DM DROP INLET will be measured per each.

The quantity of 17-FOOT TYPE DM DROP INLET will be measured per each.

The quantity of 22-FOOT TYPE DM DROP INLET will be measured per each.

The quantity of TRENCH DRAIN will be measured per each.

BASIS OF PAYMENT

609.05.01 PAYMENT

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

The accepted quantity of RCB MANHOLE will be paid for at the contract unit price of each and shall include all materials, equipment and labor required including, but not limited to, dowels; concrete; reinforcing steel; cones or slab tops; steps; grout; beams; rings; frames; covers; castings; concrete collars around manholes; manhole mounting; relocation of conduit; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, median islands, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all utilities; temporary patches and, all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 48-INCH TYPE I STORM DRAIN MANHOLE, 60-INCH TYPE I STORM DRAIN MANHOLE, and 60-INCH TYPE III STORM DRAIN MANHOLE will be paid for at the contract unit price of each and shall include all materials, equipment and labor required including, but not limited to, saw cutting; excavation; shoring; grading; shaping; dewatering; bypass or pumping of water; bedding; backfill (granular, select or Controlled Low-Strength Material); compaction; delivery; handling; installation; placement; concrete; reinforcing steel; dowels; cones or slab tops; steps; grout; beams; rings; frames; covers; castings; concrete collars around manholes; connection of pipes; relocation of conduit; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all utilities; temporary patches and, all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of NDOT TYPE 4 STORM DRAIN MANHOLE will be paid for at the contract unit price of each and shall include all materials, equipment and labor required including, but not limited to, saw cutting; excavation; shoring; grading; shaping; dewatering; bypass or pumping of water; bedding; backfill (granular, select or Controlled Low-Strength Material); compaction; concrete; reinforcing steel; dowels; cones or slab tops; steps; grout; beams; rings; frames; covers; castings; concrete collars around manholes; connection of pipes; relocation of conduit; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; support and protection of all utilities; temporary patches and, all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 9.5-FOOT TYPE DM DROP INLET, 12-FOOT TYPE DM DROP INLET, 17-FOOT TYPE DM DROP INLET, 22-FOOT TYPE DM DROP INLET, NDOT TYPE 2 DROP INLET WITH CONCRETE APRON and TRENCH DRAIN will be paid for at the contract unit price of each and shall include all materials, equipment and labor required including, but not limited to, saw cutting; excavation; shoring; grading; shaping; dewatering; bypass or pumping of water; bedding; backfill (granular, select or Controlled Low-Strength Material); compaction; dowels; concrete; reinforcing steel; grout; beams; frames; grates; castings; structural steel; galvanizing; bolts; removal and replacement of sidewalk, curb and gutter; relocation of conduit; protection and restoration, if damaged, of all existing facilities and improvements required to remain in place including survey monuments, landscaping and irrigation systems, except where provided for elsewhere in these Special Provisions; connection of pipes; relocation of existing street light pull-boxes in the excavated area; support and protection of all utilities; temporary patches and, all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
609.01	RCB MANHOLE	EA
609.02	48-INCH TYPE I STORM DRAIN MANHOLE	EA
609.03	60-INCH TYPE I STORM DRAIN MANHOLE	EA
609.04	60-INCH TYPE III STORM DRAIN MANHOLE	EA
609.05	NDOT TYPE 4 STORM DRAIN MANHOLE	EA
609.06	NDOT TYPE 2 DROP INLET WITH CONCRETE APRON	EA
609.07	9.5-FOOT TYPE DM DROP INLET	EA
609.08	12-FOOT TYPE DM DROP INLET	EA
609.09	17-FOOT TYPE DM DROP INLET	EA
609.10	22-FOOT TYPE DM DROP INLET	EA
609.11	TRENCH DRAIN	EA

END OF SECTION 609

SECTION 613 – CONCRETE CURB, WALK, GUTTERS, DRIVEWAYS AND ALLEY INTERSECTIONS

MATERIALS

613.02.01 GENERAL

ADD THE FOLLOWING TO THIS SUBSECTION:

- B. The cement to be used for all concrete shall be Type V Portland Cement.
- C. The reinforcing steel shall be Grade 60.
- D. Any Median Island not designated for removal that is disturbed or damaged by demolition, construction or implementation of the Contractor's traffic control shall be replaced. The Contractor shall coordinate the median island replacement work with the Engineer. The Contractor shall tour the site, assess and inventory the median island areas, become familiar with the extent of removal and replacement and bid that amount which will cover all costs associated with the replacement of the existing median island. All work shall be performed in a manner such that the median island is returned to their original condition at a minimum.
- E. Contractor shall protect and preserve existing median island areas not designated for removal. Any median island area disturbed or damaged by demolition, construction or implementation of the Contractor's traffic control is to be replaced at the contractor's expense. The Contractor is to replace damaged median island area with the same curb type, painting, and surfacing materials.

CONSTRUCTION

613.03.06 SLIP FORMS

ADD THE FOLLOWING TO PARAGRAPH "H" OF THIS SUBSECTION:

- 1. The adhesive shall be applied, per the manufacturers recommended application rate.
- 2. Cover 100 percent of the contact area between the underlying surfaces and new concrete.

METHOD OF MEASUREMENT

613.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The quantity of TYPE L CURB AND GUTTER will be measured per linear foot.

The quantity of CONCRETE SIDEWALK will be measured per square foot.

The quantity of DECORATIVE SIDEWALK PANEL will be measured per each.

The quantity of 16-FOOT INDUSTRIAL DRIVEWAY (OPTION A) will be measured per each.

The quantity of SIDEWALK RAMP, MODIFIED CASE II will be measured per each.

No direct measurement shall be made for:

1. Curb and Gutter, Sidewalk, Driveway, Median Island, etc. abutting proposed drop inlets 3' - 6" away from either side, or to the nearest joint, of the inlet opening. For existing drop inlets without abutting sidewalk, include measurement of new sidewalk abutting on three sides to the property line.
2. The replacement of existing curb and gutter, sidewalk, driveway, median island, etc. where it is removed for the construction of drop inlets, traffic signal systems, interconnect pullboxes, street lights and the removal and salvage of existing streetlights.
3. The Curb and Gutter, Sidewalk, Driveway, Median Island, etc. being replaced because of unnecessary damage during construction.

BASIS OF PAYMENT

613.05.01 PAYMENT

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

The accepted quantity of TYPE L CURB AND GUTTER will be paid for at the contract unit price of linear foot and shall include all materials, equipment and labor required including, but not limited to excavation; Type II Aggregate Base; plates; compaction; concrete; depressions; reinforcing steel; finishing; joints; curing compound and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of CONCRETE SIDEWALK will be paid for at the contract unit price of square foot and shall include all materials, equipment and labor required including, but not limited to, excavation; Type II Aggregate Base; plates; compaction; concrete; depressions; reinforcing steel; sleeves; pedestrian curb ramps; adjusting all new or existing pullboxes; vault covers; meter boxes; handholes and valve boxes; finishing; joints; curing compound and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of DECORATIVE SIDEWALK PANEL will be paid for at the contract unit price of each and shall include all materials, equipment and labor required including, but not limited to, excavation; Type II Aggregate Base; panels; compaction; concrete; depressions; reinforcing steel; adjusting all new or existing pullboxes; vault covers; meter boxes; handholes and valve boxes; finishing; joints; curing compound and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 16-FOOT INDUSTRIAL DRIVEWAY (OPTION A) will be paid for at the contract unit price of each and shall include all materials, equipment and labor required including, but not limited to, excavation; Type II Aggregate Base; plates; compaction; concrete; depressions; reinforcing steel; adjusting all new or existing pullboxes; vault covers; meter boxes; handholes and valve boxes; finishing; joints; curing compound and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of SIDEWALK RAMP, MODIFIED CASE II will be paid for at the contract unit price per each and shall include all materials, equipment, tools and labor required including, but not limited to, sawcutting; temporary patches; removal of temporary patches; removal of interfering portions of curb and gutter; all excavation; compaction and recompaction; grading; backfill; detectable warnings, consisting of raised truncated domes; concrete; brick; mortar; reinforcing steel; depressions; sleeves; pedestrian curb ramps; joints; curing compounds; finishing; transitions; aggregate base materials; pavement, sidewalk, curb and gutter necessary to complete the ramp; monolithic curb; adjusting all new and existing pullboxes, vault covers, valve boxes, and meter boxes; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Reinforcing steel placed in curbs and gutters as shown on the plans or ordered by the Engineer will not be paid for directly but the cost thereof shall be considered as included in the contract bid prices for other items of work.

All payments shall be made in accordance with Subsection [109.02](#), "Scope of Payment."

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
613.01	TYPE L CURB AND GUTTER	LF
613.02	CONCRETE SIDEWALK	SF
613.03	DECORATIVE SIDEWALK PANEL	EA
613.04	16-FOOT INDUSTRIAL DRIVEWAY (OPTION A)	EA
613.05	SIDEWALK RAMP, MODIFIED CASE II	EA

END OF SECTION 613

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SECTION 616 – FENCING

DESCRIPTION

616.01.01 GENERAL

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- D. Temporary fencing will be required in association with chain link fence installation to maintain the integrity of fencing around private properties until the new fencing is complete. Temporary fencing shall be considered incidental to the chain link fence item and no additional compensation will be allowed. Temporary fencing is to meet the requirements of this subsection and shall be installed prior to the removal of existing fencing and shall remain in place until the new fence is complete.

METHOD OF MEASUREMENT

616.04.01 MEASUREMENT

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

The quantity of 2-CABLE FENCE will be measured per linear foot.

The quantity of 72-INCH CHAIN LINK FENCE will be measured per linear foot.

The quantity of 16-FOOT DOUBLE SWING CHAIN LINK GATE will be measured per each.

BASIS OF PAYMENT

616.05.01 PAYMENT

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

The accepted quantity of 2-CABLE FENCE will be paid for at the contract unit price of linear foot and shall include all labor, equipment and materials including but not limited to posts; wire rope thimbles; post tops; sleeves; base plates; nuts, washers and bolts; cable; galvanized chain and latches; u-bolts; clips; steel plates; welds; turnbuckles; eye bars; installation of temporary fencing until proposed fencing is installed and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 72-INCH CHAIN LINK FENCE will be paid for at the contract unit price of linear foot and shall include all labor, equipment and materials including but not limited to post hole excavation; disposal of excavated material; Portland cement concrete; sleeves; fence posts; post tops; installation of salvaged materials; new wire mesh; tension wire; fasteners; fittings; braces; barbs, stretcher bars, and anchors; where required, base plates, nuts, washers, and bolts; welding; connection to existing fencing; installation of temporary fencing until proposed fencing is installed and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 16-FOOT DOUBLE SWING CHAIN LINK GATE will be paid for at the contract unit price of each and shall include all labor, equipment and materials including but not

limited to post hole excavation; disposal of excavated material; Portland cement concrete; sleeves; hinges; posts; rods; bars; frame members; anchors; wire mesh; and all materials necessary for assembly and erection as required by the manufacturer's specifications; where required, including base plates, nuts, washers, bolts; welding; connection to existing fencing; installation of temporary gates until proposed gate is installed and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
616.01	2-CABLE FENCE	LF
616.02	72-INCH CHAIN LINK FENCE	LF
616.03	16-FOOT DOUBLE SWING CHAIN LINK GATE	EA

END OF SECTION 616

SECTION 621 – MONUMENTS**621.01.01 GENERAL**

DELETE PARAGRAPH "B" OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

- B. All monuments destroyed and/or damaged shall be installed by the Contractor in accordance with the Uniform Standard Drawings, and under the direct supervision of the Engineer. The Contractor shall coordinate his work with the Engineer.

METHOD OF MEASUREMENT**621.04.01 MEASUREMENT**

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

No unit of measurement will be made for Monuments.

BASIS OF PAYMENT**621.05.01 PAYMENT**

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Unless otherwise provided in the Special Provisions, no payment will be made for Monuments as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which such Monument replacement is required.

END OF SECTION 621

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ADD THE FOLLOWING SECTION TO DIVISION II – CONSTRUCTION DETAILS**SECTION 622 – CONSTRUCTION SURVEYING BY THE CONTRACTOR****DESCRIPTION****622.01.01 GENERAL**

- A. The Contractor shall, under supervision of a Professional Land Surveyor, registered in the state of Nevada, furnish and set construction stakes establishing locations, lines, and slope stakes for roadway, storm drain, drainage structures, sewer, laterals, and for all other improvements for project necessary to ensure conformance of work to lines, elevations, locations, and grades as shown on the Plans and in these Special Provisions. Any horizontal or vertical discrepancies shall be reported to Engineer prior to commencement of construction. Any revisions or changes approved by Engineer that affect lines, grades, elevations or locations of any improvement shall be indicated on As-Built (Record) Drawings.
- B. If necessary, the Contractor shall also perform and provide to the Engineer those items described in subsection 203.04.01 of the USS. Any revisions or changes approved by the Engineer that affect the lines, grades, elevations or locations of any improvement shall be indicated on the As-Built (Record) Drawings.
- C. Contractor shall preserve property line and corner survey points. If their destruction is determined by Engineer to be unavoidable, and their replacement is not called for on the plans, Owner shall replace or pay for their replacement under this contract as determined by Engineer. Markers that are disturbed or destroyed by Contractor's operations without prior approval by the Engineer shall be replaced by Contractor at no additional cost to the Owner. Replacement shall be done only by a Nevada Professional Land Surveyor and in accordance with the USS. A monument tie sheet for replacement of permanent survey monuments shall be submitted to Engineer for approval.
- D. When a permanent survey marker and/or monument is located within the construction area of any roadway, storm drain, drainage structures, sewer line or channel improvement, the Contractor shall adjust the cover or replace the monument as noted on the plans. The cost of replacement or adjustment of said monuments shall be included in the lump sum bid for Construction Survey. If monuments are to be installed as part of the work, they shall be placed in accordance with the USD numbers 239 through 243 and Section 621 of the USS.
- E. The Contractor shall, under the supervision of a Professional Land Surveyor, prepare and provide GPS location and mapping of as-built conditions for all proposed sanitary sewer and storm drainage facilities as described on the Project Drawings and in this Section.

MATERIALS**622.02.01 BLANK****CONSTRUCTION****622.03.01 GENERAL**

- A. Prior to all work in this section, the Contractor shall carefully inspect all installed work and verify that all such work is complete to a point where this installation may properly commence.
- B. The Contractor shall verify that all work can be installed in accordance with all pertinent codes and regulations, Contract Drawings and referenced standards.
- C. The Contractor shall verify that there are no conflicts with existing utilities prior to the start of work.
- D. In event of a discrepancy, the Contractor shall immediately notify the Engineer in writing.
- E. Installation of work in areas of discrepancy shall not proceed until all such discrepancies have been fully resolved.
- F. After stakes and marks have been set, it shall be the responsibility of the Contractor to protect the stakes and marks. Should any of the stakes or marks be destroyed or disturbed by the Contractor's operations or otherwise, the costs of replacing said stakes or marks shall be paid by the Contractor.
- G. The Engineer, at his discretion, may periodically have survey work performed to verify conformance to the construction plans. Any nonconformity found to be the fault of the Contractor, or the Professional Land Surveyor, shall be corrected at no additional cost to the Owner.
- H. Upon completion of the project and as a condition for final payment authorization, the Contractor shall furnish to the Engineer a Record of Survey/monument tie map and a certification attested to by the Professional Land Surveyor that the work performed for this contract has been constructed to the lines and grades as described in the As-built (Record) Drawings. When requested, the Contractor shall also provide the Engineer with copies of all field notes, computations, and other related work performed by the Professional Land Surveyor.
- I. Sanitary sewer and storm drain final location map(s) shall be provided to the engineer prior to project acceptance. The map(s) shall include the horizontal and vertical (invert) location of public sewer manholes, storm drain manholes, storm drain laterals at the connection to the storm drain main and at the connection to a drop inlet, and the connection of sewer service laterals to the sewer main and where the sewer service laterals exits the public right-of-way. The location shall be described by coordinates which shall be based on the official horizontal and vertical control networks of the City of Las Vegas. Final location maps must be sealed and certified by a Nevada Professional Land Surveyor to have positional

certainties of +/- 0.03 meter (+/- 0.1 feet) horizontally and +/- 0.015 meter (+/- 0.05 feet) vertically. A separate electronic comma delimited file for the sanitary sewer and storm drain coordinates shall also accompany the sanitary sewer and storm drain final location map(s).

622.03.02 FINAL ACCURACY

- A. Surface Drainage Structures (including all concrete or asphalt gutters and drains) shall be installed within 0.05 feet horizontally and 0.05 feet vertically from the location taken from the project plans, and shall not vary more than 10 percent of the gradient shown on the plans.
- B. Monument Cases and Brass Caps shall be centered to within 0.01 feet horizontally of the position as called for on the plans, and the ties to that monument.
- C. Sanitary and Storm Drainage Sewer Systems shall be installed within 0.05 feet horizontally and 0.05 feet vertically of the exact location taken from the project plans. In addition, the gradient of any 10-foot section of pipe shall not vary by more than 10 percent of the gradient shown the project plans

METHOD OF MEASUREMENT

622.04.01 MEASUREMENT

The quantity of CONSTRUCTION SURVEYING will be measured per lump sum.

BASIS OF PAYMENT

622.05.01 PAYMENT

The accepted quantity of CONSTRUCTION SURVEYING will be paid for at the contract unit price per lump sum and shall include all materials, equipment and labor, including, but not limited to, monuments, record of surveys, monumentation tie sheets, as-built drawings, sewer and storm drain final location map, property line markers, corner survey points, storm drainage and sanitary sewer GPS final location maps, construction survey and all other incidentals necessary to complete this work as described herein.

Monthly payments will be made in an amount equal to the percent of total contract complete multiplied times the lump sum price bid for construction surveying minus previous Construction Surveying monthly payments.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
622.01	CONSTRUCTION SURVEYING	LS

END OF SECTION 622

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SECTION 623

TRAFFIC SIGNALS AND STREET LIGHTING

DESCRIPTION

623 G.01.01 GENERAL

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- I. The Contractor shall provide all labor, materials, equipment, transportation and services required to install the street lighting, traffic control system, and related items on the plans and in the specifications resulting in complete and operational systems, to include fully functional opticom, video detection, pedestrian detection, and loop detection system complete with the manufacturer's latest versions of firmware.
- J. All equipment shall function as designed. All lighting standards shall be fully operational within fifteen (15) days after installation. The luminaries shall be leveled before they are energized.
- K. The Contractor shall maintain the new lighting system and traffic signal system from the date energized until the entire project has been accepted by the City of Las Vegas. The Contractor shall repair or replace any defective component of the systems within 24 hours after notice in writing by the Engineer of a non-hazardous nature. If public safety is endangered, the Contractor shall take immediate steps to correct the problem after verbal notice by the Engineer.
- L. The contractor shall have a lighting representative present at the time the City inspects the street lighting installations.

MATERIALS

623 G.02.04 CONDUCTORS AND CABLE

DELETE PARAGRAPH "A.4" AND REPLACE WITH THE FOLLOWING:

- A. 4. Electrical cable for traffic signals shall be IMSA 20-1 approved signal cable of proper size for the required installation unless otherwise specified in the Contract Documents. All traffic signal cable shall be 25-conductor, No. 14 AWG solid copper wire traffic signal cable or as specified in the Contract Documents or directed by the Engineer.

CONSTRUCTION

623 G.03.01 MAINTENANCE OF EXISTING AND TEMPORARY ELECTRICAL SYSTEMS

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- J. All equipment and materials shall be as manufactured or modified by the manufacturer and installed by the Contractor in the manner for which it was designed and intended. No equipment may be modified by the Contractor unless prior written permission is provided by

the Engineer.

- K. Existing service shall remain fully operational during construction. Outages required shall be scheduled with the Owner and timing devices reset after resumption of service. The Contractor shall field verify wiring connections and routing prior to disconnecting any conductors. The modification, extension or removal of the existing conductors and equipment shall be inspected by and accepted by the Engineer. Electrical work shall be in accordance with the requirements of the National Electrical Code.
- L. The data indicated on the plans and in these specifications is as exact as could be secured, but its absolute accuracy is not guaranteed. Exact locations, distances, levels, and other conditions will be governed by unforeseen obstacles in the field.
- M. The Contractor shall use the plans and these specifications for guidance, and secure the Engineer's approval for all changes of location or scope of work. The Engineer should be consulted regarding the exact locations of pullboxes, poles and cabinets for the traffic signal system.
- 1
- N. Once the Contractor commences work on the Project, the Contractor shall provide all maintenance for existing traffic signal facilities that are to be modified or replaced, except that the City will pay for power. The Contractor shall provide the above maintenance until the City gives written notice that the City accepts signals back for maintenance at the end of the Project. The above maintenance does not include any prior damage such as burned out signal displays, non-operative detection, or other malfunctioning equipment. The Contractor shall provide written documentation of all non-functioning and malfunctioning traffic signal equipment before commencing work on the project. This malfunctioning equipment shall be inspected by both the Contractor and the Engineer, or Engineer's Designee, prior to the commencement of work. In the event that the Engineer does not receive written notice and the Contractor begins work on the project, this will suffice as evidence that all equipment is functional and operational. If any traffic signal equipment fails or malfunctions during the course of the Project, the Contractor shall repair or replace traffic signal facilities as necessary to provide a fully functioning system before final acceptance for maintenance by the City. For traffic signals, repair work by qualified electricians shall commence within one hour of notification via the Contractor's 24-hour emergency response phone number, at which time the Contractor will have two hours to correct the noted violation.

1. If the repair is not completed within the two-hour time limit, the **Contractor will be assessed \$200.00 per hour until the repair is complete.**

2. This condition may cause the Project to "Stop Work"; this will not be grounds for a time extension of the contract.

2623 G.03.02 MAINTAINING EXISTING INTELLIGENT TRANSPORTATION SYSTEM (ITS) FACILITIES

NOTE: REFER TO PARAGRAPH A.1 OF THE USS FOR LIQUIDATED DAMAGES

623 G.03.05 EXCAVATION AND BACKFILLING

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- M. All trenching and backfill shall comply with applicable portions of the USS, USD and plans. All trenching shall be deep enough to insure a minimum of twenty four inches (24") of cover over the conduit measured from the top of conduit to finish grade, *with the exception* of interconnect conduit which shall have a minimum of thirty inches (30") of cover over the conduit. The backfill in street areas shall be Type II gravel compacted to 95% relative density or controlled low strength material (CLSM) Fill. No trench shall be left open after established working hours without approval of the Engineer.
- N. Conduit locations on the plans are for reference only. Actual locations are to be determined by the Contractor as to the most economical location --either behind the curb or in front of the lip of the gutter--but in either case, the conduit must remain parallel to the back of curb or the edge of pavement between the lighting standards, and the location shall be approved by the Engineer. "As Built" marked prints showing installed locations shall be given to the Engineer by the Contractor.
- O. All conduit that is terminated, stubbed and capped for future use shall be marked by a "+" a minimum of 3 inches high and directly above the conduit, cut into the face of the curb, wall, concrete paving, etc.

623 G.03.07 FOUNDATIONS

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- B. 3. Crash caps above foundations shall be sloped away from poles. All traffic signal poles shall be plumb AFTER the signal heads are in place. Any leveling shall be made before the grout cap is poured over the foundations.
- C. 6. Foundations shall be excavated without disturbing surrounding material. All loose material shall be removed before concrete is placed into the opening. Foundations shall not be over-excavated.

623 G.03.08 WIRING AND CONDUIT

ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:

- V. When new conduit is to be joined to existing conduit, the Contractor shall verify the integrity of the existing conduit and make necessary repairs. The Engineer shall approve any additional repair work prior to commencing.

623 G.03.09 ELECTRICAL SERVICE

ADD THE FOLLOWING TO PARAGRAPHS TO "A" OF THIS SUBSECTION:

Each service provided by the Contractor shall have a 200 amp rating for traffic signal system, streetlight circuits, or combined services.

Services shall be 200 amp pad mount (unless otherwise noted in the plans) and shall be equipped with one 60 amp single pole breaker for the signal and one 40 amp single pole breaker for the

intersection streetlights. In addition, other breakers as may be shown in the service panel schedule in the plans will be required.

The Contractor shall obtain all addresses for new services from the City of Las Vegas, Department of Planning and Development, 333 Rancho Drive, (702) 229-5408.

ADD THE FOLLOWING TO PARAGRAPH TO “B” OF THIS SUBSECTION:

It shall be the Contractor's responsibility to coordinate all work associated with service point connections required by this contract with Nevada Energy.

623 G.03.10 PULL BOXES

ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:

- E. The interior of pull boxes shall be void of any other materials except conduit risers and necessary wiring. All excess materials shall be removed to promote drainage.

ADD THE FOLLOWING SUBSECTION:

623 G.03.13 SALVAGING ELECTRICAL EQUIPMENT

- A. Where shown on the plans or ordered by the Engineer, existing electrical equipment to be removed, including controller units, cabinets, signal heads, luminaires, standards, mast arms, ballasts, transformers, service equipment, pull boxes, and detector contact units shall be salvaged for reuse by the maintaining agency.
- B. Care shall be exercised in removing and salvaging electrical equipment so that it will remain in its original form and existing condition whenever possible. Attention is directed to the provisions in subsection 107.11, "Responsibility for Damage Claims", and 107.12 "Protection and Restoration of Property and Landscape". The Contractor will be required to replace, at his expense, any of the above-mentioned electrical equipment, which, as determined by the Engineer, has been damaged or destroyed by reason of his operations.
- C. Unless otherwise specified, underground conduit, conductors, foundations, and detector frames not reused shall become the property of the Contractor and shall be removed from the City right-of-way, except if not interfering with other construction, said materials, except foundations, may, with the written approval of the Engineer, be abandoned in place. Certain other materials, where shown on the plans, shall also become the property of the Contractor.
- D. Unless otherwise specified, foundations to be abandoned shall have the top 18" below the crash cap removed and the resulting excavation backfilled. Attention is directed to the provisions in subsection 623 G.03.05, "Excavating and Backfilling", regarding foundations to be abandoned.
- E. Holes formed by removing pull boxes and foundations shall be filled with material equivalent to the surrounding material.

- F. All street lighting and traffic signal equipment removed and / or designated to be salvaged shall be delivered by the Contractor to the appropriate CLV Service Yard with a means to unload. A 48-hour notice of delivery is required. Call 229-6331 to set up delivery time. Repair of any damage to equipment during this process will be the contractor's responsibility, at no additional cost to the City.

ADD THE FOLLOWING SUBSECTION:

623 G.03.14 REINSTALLING SALVAGED ELECTRICAL EQUIPMENT

- A. When salvaged electrical equipment is to be reinstalled, the Contractor shall furnish and install all necessary materials and equipment, including signal mounting brackets, anchor bolts, nuts, washers, and concrete as required to complete the new installation.
- B. All traffic signal, flashing beacon, and lighting fixtures to be reinstalled shall be cleaned and relamped.
- C. Existing materials required to be relocated and found to be unsatisfactory by the Engineer shall be replaced by new material and the cost therefore will be paid for as extra work as provided in subsection 104.03, "Extra Work".

ADD THE FOLLOWING SUBSECTION:

623 G.03.15 STOCKPILING SALVAGED ELECTRICAL EQUIPMENT

- A. Existing equipment removed and not reused shall be salvaged, dismantled and returned to the maintaining agency during normal working hours. Call the maintaining agency to arrange for a time and location to stockpile the salvaged electrical equipment. An inventory of salvaged material shall accompany each delivery.

STREET LIGHTING SECTION

623 L.02.03 STREET LIGHTING LUMINAIRES

DELETE THIS SECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. The standard luminaire shall be as specified in the Contract Drawings.

623 L.03.03 ELECTRICAL TESTING

ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:

- B. The Contractor shall be required to submit record drawings prior to any inspections being performed. He and/or his representative shall be present at the project location during the maintaining agency's inspection of the streetlight installation.

BASIS OF MEASUREMENT

623.04.01 MEASUREMENT

The quantity of 160 WATT STREET LIGHT ASSEMBLY AND FOUNDATION will be measured per each.

The quantity of NO. 3-1/2 PULLBOX will be measured per each.

The quantity of 2-INCH STREETLIGHT CONDUIT W/ 2-#4 AND 1-#8 CONDUCTORS, and 2-INCH STREETLIGHT CONDUIT W/ 1-#8 BARE TRACER WIRE AND PULLSTRING will be measured per linear foot.

The quantity of MODIFY EXISTING SERVICE PEDESTAL will be measured per each.

BASIS OF PAYMENT

623.05.01 PAYMENT

The accepted quantity of 160 WATT STREET LIGHT ASSEMBLY AND FOUNDATION will be paid for at the contract unit price per each, which price shall be full compensation for furnishing and installing all materials including, but not limited to, street light pole and associated hardware; street light fixtures and associated hardware; electrical conductors; for all trenching, excavation, backfilling and compaction operations, materials and equipment; for all concrete foundations; grounding connections and materials; fuses and fuse holders; connections to existing conduit and circuits; restoring damaged or modified landscaping/irrigation; for making all required tests; and for all labor, equipment, tools and incidentals required to make streetlights fully operational as shown on the plans and Uniform Standard Drawings, as specified herein and as required and directed by the Engineer.

The accepted quantity of NO. 3-1/2 PULLBOX will be paid for at the contract unit price per each and shall be full compensation for furnishing all labor and materials, including but not limited to, excavation; backfilling; installation; grounding; extending existing conduit to new pull box; pull box lid; removal and disposal of adjacent sidewalk, constructing replacement sidewalk and modifying conduit as needed; and for all labor, tools, equipment, hardware and other incidentals required to complete the work as shown on the Plans, Uniform Standard Drawings, as specified herein and as required and directed by the Engineer. Compensation for pull boxes installed in new improvements shall include coordination with placement of the associated new improvements. Compensation for pull boxes installed in existing improvement areas shall include removing and replacing affected existing improvements as specified in Subsection 623 G.03.05.

The accepted quantity of 2-INCH STREETLIGHT CONDUIT W/ 2-#4 AND 1-#8 CONDUCTORS, and 2-INCH STREETLIGHT CONDUIT W/ 1-#8 BARE TRACER WIRE AND PULLSTRING will be paid for at the contract unit price per linear foot and shall be full compensation for all labor and materials, including but not limited to shipping and delivering costs, tools and required hardware for installing all materials including trenching, excavation, installation, backfilling and compaction operations, location markers, conductors, detection wire, fittings, bends, pull strings, restoring improvements designated to remain in place, and all other incidentals required to make operational and to function as specified and shown in the contract drawings, the Clark County Area Uniform Standard Specifications, and these Supplemental Project Special Provisions.

The accepted quantity of MODIFY EXISTING SERVICE PEDESTAL will be paid for at the contract unit price per each and shall be full compensation for all labor and materials, including but not

limited to shipping and delivering costs, tools and required hardware for installing all materials including circuit breakers, lighting contactors; trenching; excavation; installation; backfilling and compaction operations; electrical conductors; concrete foundations; connections to existing conduit and circuits; all grounding connections and materials; making all required tests; restoring improvements designated to remain in place and all other incidentals required to make operational and to function as specified and shown in the contract drawings, the Clark County Area Uniform Standard Specifications, and these Supplemental Project Special Provisions. The contract unit price bid for MODIFY EXISTING SERVICE PEDESTAL shall also include full compensation for coordination with NV Energy as required for electrical service to the electrical system.

Payment will be made under:

<u>ITEM NO.</u>	<u>PAY ITEM</u>	<u>PAY UNIT</u>
623.01	160 WATT STREET LIGHT ASSEMBLY AND FOUNDATION	Each
623.02	NO. 3-1/2 PULLBOX	Each
623.03	2-INCH STREETLIGHT CONDUIT W/ 2-#4 AND 1-#8 CONDUCTORS	Linear Foot
623.04	2-INCH STREETLIGHT CONDUIT W/ 1-#8 BARE TRACER WIRE AND PULLSTRING	Linear Foot
623.05	MODIFY EXISTING SERVICE PEDESTAL	Each

END OF SECTION 623

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SECTION 624 - ACCOMMODATIONS FOR PUBLIC TRAFFIC

DESCRIPTION

624.01.01 GENERAL

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH FOLLOWING:

- A. The work shall consist of providing safe and effective work areas and to warn, control, protect and expedite vehicular and pedestrian traffic through the construction zone. It shall be the sole responsibility of the Contractor to provide for the safety of the traveling public within the limits of the project.
- B. The work shall be performed in accordance with the MUTCD Latest Edition and as specified in these Special Provisions.

ADD THE FOLLOWING SUBSECTIONS:

624.01.70 SPECIAL TRAFFIC CONTROL, LANE RESTRICTIONS OR ACCESS ISSUES:

- A. Refer to section 107.07 for traffic and access requirements and section 108.04 for limitations of operations.

624.01.71 TRAFFIC CONTROL PLAN (TCP):

- A. The Contractor shall submit 6 copies of the "**Traffic Control Plan (TCP)**" to the Contract Specialist for acceptance, **as required by ITB 8.03**.
 - 1. The TCP shall be drawn to scale and shall be submitted on 24" by 36" paper.
 - 2. Acceptance of the plan shall be a condition on the Contractor prior to beginning any Work requiring an approved Traffic Control Plan.
 - 3. For work in the Nevada Department of Transportation, (NDOT) right-of-way, the TCP must also be submitted to NDOT for their acceptance, as outlined in the NDOT encroachment permit.
 - 4. For work in Clark County right-of-way, the TCP must also be submitted to Clark County after it has received City of Las Vegas approval for Clark County acceptance prior to beginning the work.
- B. A TCP shall be required for each phase or segment of the construction.
 - 1. The TCP shall be submitted fourteen (14) calendar days prior to the start of the proposed work.
 - 2. The TCP shall be prepared in accordance with the requirements of the MUTCD, specifically Part VI, latest edition.
 - 3. The TCP for each phase of construction will be considered separately.
 - 4. Acceptance of the TCP applies only to a specific phase of construction as identified on the plan.
- C. There shall be no deviations from the approved TCP unless a revised TCP is submitted to and accepted by the Engineer. The submittal shall be made at least fifteen (15) working days prior to the need for the proposed revision.

- D. In the event a routine TCP deficiency, including maintenance of traffic control items, is not corrected within twenty four (24) hours after notification, **a deduction in the amount of two hundred dollars (\$200) per deficiency** shall be made from monies due the Contractor for each calendar day that the deficiency is allowed to remain, not as a penalty, but as liquidated damages.
- E. If, in the opinion of the Engineer, a TCP deficiency causes an unsafe condition that requires immediate correction, the Engineer will issue the Contractor a "Barricading Violation Notification" at which time the Contractor will have two hours to correct the noted violation.
3. If the violation is not corrected within the two-hour time limit, the **Contractor will be assessed \$200.00 per hour as liquidated damages until the violation is corrected.**
4. This condition may cause the Project to "Stop Work"; this will not be grounds for a time extension of the contract.
- F. As an absolute minimum for each phase of the construction, the Traffic Control Plan shall show placement and spacing of all the traffic control devices (including signs, markings, channelizing devices, lighting devices, flaggers, etc.) and their spacing within the following traffic control areas:
1. Advance Warning Signs
 2. Transition Areas
 3. Buffer Spaces
 4. Work Areas
 5. Termination Areas
- G. Type B high-intensity warning lights are required on all warning signs within the advance warning and transitional areas of all traffic control and barricade setups. The Contractor shall provide Type C steady burn warning lights on channelizing devices within the transition areas of all night time traffic control and barricade setups.
- H. Additionally, the traffic control plans must clearly show the following minimum requirements:
1. Method for protecting excavations, work sites and school zone crosswalks
 2. Method of barricading at intersections
 3. Driveway access plan
 4. Provisions for emergency vehicle access
 5. All set-up changes to accommodate different phasing of the work
 6. Lane widths and transitions
 7. 24-hour emergency telephone number
 8. Business Access Signs
 9. Sidewalk Closed / Cross Here Signs
 10. No Parking Signs
 11. Project Signs
 12. Fresh Oil Signs
 13. Duration of Traffic Control and Barricade Plan
 14. All Advance Warning Signs
 15. Placement of "Double Penalty in Work Zones" warning signs
- I. The above-described plan must conform to the Special Provisions contained herein, the latest revisions of the Manual on Uniform Traffic Control Devices (MUTCD) for all traffic

control methods, devices and appurtenances.

- J. The Contractor shall begin placing the barricades in the direction of traffic. The Contractor shall remove the barricades in a direction opposing traffic.
- K. Attached to the TCP the Contractor shall provide a Bus Stop Closure Plan (BSCP). The BSCP shall identify specific durations and times of day for all proposed bus stop closures. The BSCP must be submitted to both the Construction Manager and the RTC for acceptance. During construction the Contractor must coordinate with the RTC regarding specific dates of bus stop closures (RTC Contact: Carl Scarborough @ 702-676-1608). Simultaneous closure of two or more sequential bus stops shall be minimized in duration and will only be allowed when necessary to maintain normal production levels for work items such as asphalt placement. The TCP shall show required signage and barricading associated with bus stop closures and all applicable requirements of the TCP shall apply to bus stop closures.

CONSTRUCTION

624.03.01 SPECIAL DETOURS

DELETE PARAGRAPH "A" AND REPLACE WITH THE FOLLOWING:

- A. Special detours shall be constructed as shown on the Traffic Control Plan prepared by the Contractor. Detour locations indicated on the Traffic Control Plan may be approximate only; the exact location shall be staked by the Contractor's surveyor.

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- G. It is the City of Las Vegas's policy that under no circumstances will travel on a temporary gravel surface be permitted for longer than fifteen (15) calendar days. Temporary gravel surfaces shall be graded, watered and maintained at all times to provide a smooth dust free traveled surface.
- H. All temporary detours and/or bypasses that are expected to be in service for more than fifteen (15) calendar days shall be hard surfaced with a minimum of 1-1/2 inches of AC pavement and maintained in a smooth and usable condition at all times for the duration of the detour and/or bypass.

624.03.02 FLAGGERS

ADD THE FOLLOWING TO THIS SUBSECTION:

- D. Proper advance warning signs shall be in place when flaggers are working and removed when work requiring flaggers is completed.
- E. Flaggers shall be used to assist trucks for safe ingress and egress whenever truck movements may interfere with safe passage through the work zone. The flaggers' first priority shall be to maintain the safe and efficient movement of the public traffic. In the event that a flagger is to flag at an intersection controlled by a stop sign they must bag the sign(s) prior to

taking control of traffic. If a flagger is to flag at an intersection controlled by a traffic signal the traffic signal must be turned off prior to taking control of traffic. Any changes to regulatory signs or changes to a traffic signal shall be reversed at the end of every workday, unless approved by the traffic engineer. Failure to do so could result in an order to stop work.

- F. The "Flagger Method" as outlined in Part VI of the MUTCD shall be used for all one lane, two-way traffic control.

ADD THE FOLLOWING SUBSECTIONS TO THIS SUBSECTION

624.03.70 TEMPORARY STRIPING

- A. The temporary traffic striping tape material shall conform to subsection 635.02.01 of the NDOT Standards. Placement of temporary pavement striping shall be by pilot line method and its use limited to fourteen (14) calendar days. The tape shall be four (4) inches wide and four (4) feet long and spaced every forty- (40) feet. The color of the tape shall match the color of the existing line. The double yellow line shall have two pieces of tape side by side with a four (4) inch space between, and spaced to the above increments.
- B. Painted temporary striping shall be 4-inches wide and shall be continuous or intermittent in accordance with the MUTCD. Painted temporary striping shall not be used on the final wearing course of the pavement.
- C. Existing pavement markings, either painted or raised pavement markers, which are not applicable and are within the transverse limits of the temporary travel lanes shall be removed to the satisfaction of the Engineer. Painting over existing markings will not be allowed.

624.03.71 TEMPORARY BRIDGES FOR VEHICULAR ACCESS

- A. Where necessary or required for the convenience of the traveling public or individual residents, businesses or schools, The Contractor shall provide temporary bridges over all unfilled excavations at all street, driveway and alleyway, crossings unless otherwise directed by the Engineer. The bridges shall remain in place until the excavations have been properly backfilled to the satisfaction of the Engineer.
- B. Temporary bridges for street crossings shall conform to the requirements of the authority having jurisdiction in each case, and the Contractor shall adopt designs furnished by said authority for such bridges or shall submit designs for approval by said authority as may be required. If plates are used, they must be capable of carrying the heaviest anticipated loads using the roadway, be properly anchored so as to prevent any transverse and/or any longitudinal shifting of the plate and must be certified by a structural engineer registered in the State of Nevada. Refer to the City of Las Vegas Trench Plate Requirements detail in Appendix "B".

624.03.72 PIPE LAYING OPERATIONS

- A. Pipe stored in the street rights of way within a barricaded work zone, with the approval of or at the direction of the Engineer, which is to remain one night or more shall be protected by

Barrier Rail. Type B high intensity warning lights will be installed on the barrier rail at intervals not exceeding 25 feet.

- B. During working hours, the Contractor shall have no more than three hundred (300) feet of open trench and/or structure excavation nor more than one half (1/2) of an intersection closed to vehicular traffic, except with specific written permission by the Engineer. During non-working hours, the Contractor shall have no more than one hundred (100) feet of open trench and/or structure excavation barricaded in accordance with these supplemental specifications. Pedestrian access crossings suitably equipped with handrails shall be provided as directed by the Engineer. The cost of such crossings shall be included as a part of the traffic control bid item.
- C. The Contractor shall have no more than six hundred (600) feet of open structure excavation within a closed segment of Fort Apache Road, except with specific written permission by the Engineer. See Subsection 107.07 Traffic and Access for the limits of each closed roadway segment on Fort Apache Road. During non-working hours, the excavation shall be barricaded in accordance with these supplemental specifications.

624.03.73 TRAFFIC CONTROL DEVICES

- A. Trained and knowledgeable traffic control personnel shall be utilized to insure proper set-up and maintenance of traffic control devices and to assist in the safe movement of vehicles through the traffic control zone.
- B. The Contractor from the public right-of-way shall remove all traffic control devices that are not in use or will not be used for a period greater than 24 hours. All traffic control devices that are determined by the Engineer to be unnecessary, confusing, or causing an unsafe condition, shall be removed by the Contractor from the public right-of-way immediately upon written notification by the Engineer. The Contractor shall not, at any time, use the sidewalk area to store unused barricades unless the sidewalk is closed and an approved barricade plan is provided for rerouting the pedestrians.
- C. The Contractor shall maintain all barricades and other traffic control devices in clean and effective condition. The Contractor shall replace poorly maintained devices immediately upon notification by the Engineer.
- D. The Contractor shall begin placing the barricades in the direction of traffic. The Contractor shall remove the barricades in a direction opposing traffic.
- E. **Temporary Stop Signs:** All temporary stop signs shall be installed in a semi-permanent manner in the ground or pavement surface in accordance with Standard Drawing Number 249 of the USD.

624.03.74 TRAFFIC CONTROL SUPERVISOR

- A. The Contractor shall designate a Traffic Control Supervisor who shall be responsible for initiating, installing and maintaining all traffic control devices as shown on the traffic and plans,

as specified in the MUTCD, and revisions thereto, the USS, these supplemental specifications or as directed by the Engineer. When traffic control devices are on the project site the designated Traffic Control Supervisor shall be available to the Engineer twenty-four (24) hours a day for the duration of the contract. The Traffic Control Supervisor shall be an employee of the Contractor and under the supervision of the Superintendent. The person so designated shall be certified as a worksite traffic control supervisor by the ATSSA. The name and qualifications of this person shall be submitted to the Engineer in accordance with subsection 100.02.02 "Contractor Submittals" of these Special Provisions.

- B. The Traffic Control Supervisor shall be capable of being on-site within thirty- (30) minutes of notification.
- C. The traffic control supervisor shall make at least four (4) inspections of all traffic control devices each calendar day as follows:
 - 1. Before beginning work
 - 2. At mid shift
 - 3. Half an hour after the end of the shift
 - 4. Once during the period of non working hours
- D. The Traffic Control Supervisor shall make a daily record of traffic control activities including a reference to the barricading in effect that day. The Project Superintendant shall sign the daily record each day attesting to its accuracy. The Contractor shall submit these records to the Engineer on a weekly basis.

624.03.75 REQUIRED PROTECTION FOR OPEN EXCAVATION DURING WORKING AND NON-WORKING HOURS

- A. The following requirements apply to any open excavations where the difference in elevation between the pavement and the excavated area is greater than 6":
 - 1. Any open excavations, in the roadway or within eighteen (18) feet of the roadway, which does not provide a 4:1 (horizontal: vertical) slope between the edge of pavement and the bottom of the excavation, shall be protected with portable precast concrete traffic barrier rails and six (6) feet high non-climb fence. All portable precast concrete traffic barrier rails shall be butted tight and pinned in accordance with the requirements of the Nevada Department of Transportation's Standard Drawing R-8.3.3, entitled "Portable Precast Concrete Barrier Rail", which is hereby incorporated into the plans.
 - 2. Any open excavation further than eighteen (18) feet and less than three hundred (300) feet from any building or roadway, shall be, as a minimum, completely fenced with a six (6) foot high non-climb fence.
 - 3. Any open excavation beyond three hundred (300) feet of any building or roadway shall be protected with a three (3) foot high earth berm completely around the excavation. Type II Barricades with Type B high intensity warning lights shall be spotted around the top of the berm after daylight hours.
 - 4. Barrier rails and fencing may be required, during working hours, when determined by the Engineer, to be in the interest of public safety.
- B. The following requirements apply to any open excavations adjacent to a sidewalk where the difference in elevation between the back of the sidewalk and the excavated area is greater

than 6 inches:

1. The open excavation shall be protected, as a minimum, with a six (6) foot high non-climb fence.

624.03.76 COORDINATION WITH CLARK COUNTY DEVELOPMENT SERVICES

- A. **On Going. At meeting will be scheduled to coordinate the Fort Apache Storm Drain (CLV) and Fort Apache Bridge (CCPW) projects.**

METHOD OF MEASUREMENT

624.04.01 MEASUREMENT

The quantity of TRAFFIC CONTROL AND MAINTENANCE will be measured per lump sum.

BASIS OF PAYMENT

624.05.01 PAYMENT

DELETE THIS SUBSECTION IN ITS ENTIRETY AND INSERT THE FOLLOWING:

The accepted quantity of TRAFFIC CONTROL AND MAINTENANCE will be paid for at the contract unit price of lump sum and shall include all labor, material and equipment necessary to provide measures to protect and maintain traffic 24 hours per day during the life of the Contract, including traffic control plan, temporary pavement, detours, the furnishing of such personnel, flaggers, traffic control supervisor including the furnishing of daily record of traffic control activities, barricades, signs, temporary pavement markings and striping (paint and tape), barrier rails, non climb fencing, flashers, bridges, plates, etc. as may be required to insure the safety of the traveling public in accordance with Sections 107, 624 and 625 and all other applicable sections of the USS, USD and these Special Provisions.

The value of the Traffic Control Supervisor's site inspections in accordance with Subsection 624.03.10, "Traffic Control Supervisor" will be considered to be 15 percent of the Traffic Control and Maintenance pay item. Submittal of the daily record of traffic control activities will be evidence that the Traffic Control Supervisor has made the required inspections. Failure to submit the required daily record of traffic control activities will result in the proportional amount of this bid item not being paid as work not performed.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
624.01	TRAFFIC CONTROL AND MAINTENANCE	LS

END OF SECTION 624

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SECTION 625 – CONSTRUCTION SIGNS

MATERIALS

625.02.01 GENERAL

ADD THE FOLLOWING TO THIS SUBSECTION:

- C. All work zone signs and channelizing devices shall be reflectorized. Minimum levels of reflectorization shall be as follows:
 - 1. Signs shall be reflectorized using Type I sheeting for all faces, except those on which the background or foreground colors are either orange or red, for which signs Type III sheeting shall be used.
 - 2. Channelizing devices such as barricades, cones, vertical panels, and drums shall be reflectorized using Type II sheeting, whether surfaces to which sheeting is applied are reboundable or rigid.

CONSTRUCTION

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:

625.03.05 PORTABLE CHANGEABLE MESSAGE SIGNS

- A. Portable Changeable Message Signs (PCMS) conforming to the MUTCD, Part VI, Section 6F-2 shall be used to advise the driver of road closures on streets with an 80-foot or greater right-of-way.
- B. The PCMS shall be placed far enough in advance of the closed street to allow traffic ample opportunity to detour around the disrupted area.
- C. The location and number of PCMS will be determined by the Engineer.
- D. Solar powered panels shall be used in residential areas.

625.03.06 ARROW DISPLAYS

- A. Arrow Displays conforming to the MUTCD, Part VI, Section 6F-3, Type B, shall be used to advise the driver of two or more lane closures in any one direction when so directed by the Engineer.
- B. The Arrow Displays shall be required at the beginning of the taper and placed behind the barricades in the closed lanes.
- C. Solar powered panels shall be used in residential areas.

METHOD OF MEASUREMENT

625.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

No direct measurement shall be made for PORTABLE CHANGEABLE MESSAGE SIGN or ARROW DISPLAY.

BASIS OF PAYMENT

625.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

Unless otherwise provided in the Special Provisions, no payment will be made for PORTABLE CHANGEABLE MESSAGE SIGN or ARROW DISPLAY as such. The cost thereof shall be considered as included in the price bid for TRAFFIC CONTROL AND MAINTENANCE.

END OF SECTION 625

SECTION 626 – FINAL CLEANUP**METHOD OF MEASUREMENT****626.04.01 MEASUREMENT**

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

No unit of measurement will be made for FINAL CLEANUP.

BASIS OF PAYMENT**626.05.01 PAYMENT**

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

Unless otherwise provided in the Special Provisions, no payment will be made for FINAL CLEANUP as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which such FINAL CLEANUP is required.

END OF SECTION 626

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SECTION 627 – PERMANENT SIGNS**DESCRIPTION****627.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- E. The work shall include all labor, material, equipment and incidental hardware necessary to remove, relocate and/or install roadway street signs and posts.
- F. The unit price shall include delivery of salvaged and unused signs to the City Maintenance Yard located at 3100 East Bonanza Avenue, Building A. The Contractor must call 229-6331, 24-hours in advance of delivery. The Contractor must also have the ability to unload their truck without use of City facilities or equipment.

MATERIALS**627.02.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. All permanent signs shall be manufactured with Class 6 reflective sheeting.
- C. All new signs, except street name and school speed limit signs, shall have 3M series 1160 or approved equivalent anti-graffiti protective overlay film; school zone signs shall have 3M series 1150 anti-graffiti protective overlay film.

CONSTRUCTION**627.03.03 INSTALLATION*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- K. Directional signs that are not functional may require covering during the progress of the work.
 - 1. Covers shall be sufficient size and density to completely block out the message so that it is not visible either during the day or night.
 - 2. The use of burlap or similar fabrics will not be allowed.
 - 3. Covers shall be fastened securely to prevent movement by wind action and withstand the effect of weathering.
 - 4. No adhesive tape shall be applied to the face of the sign.

METHOD OF MEASUREMENT**627.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of GROUND MOUNTED SIGNS will be measured per lump sum.

BASIS OF PAYMENT**627.05.01 PAYMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The accepted quantity of GROUND MOUNTED SIGNS will be paid for at the contract unit price of lump sum and shall include all materials, equipment and labor required to remove, and reset the existing signs including, but not limited to, removal; storing; excavation; backfill; concrete foundation; supports; poles; hardware; making all required tests and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

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

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
627.01	GROUND MOUNTED SIGNS	LS

END OF SECTION 627

SECTION 628 – TRAFFIC STRIPING, PAVEMENT MARKINGS, AND CURB MARKINGS**DESCRIPTION****628.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- D. Prior to using any material, the Contractor shall provide the Engineer with a written “Certification of Compliance” from the manufacturer of the material. The certification shall include the manufacturer’s name, business address and location of the manufacturing plant. It shall identify the specifications and include one copy. It shall show the quantity of materials supplied for each color, batch number and date of manufacture.
- E. Manufacturer’s lab test results must be supplied upon request of the Engineer.

MATERIAL**628.02.01 MATERIALS FOR TRAFFIC STRIPING, PAVEMENT MARKING AND CURB MARKING*****DELETE PARAGRAPH “E.2” AND REPLACE WITH THE FOLLOWING:***

- E. 2. If, for any reason, the markings fail to perform as specified, the Contractor, under this warranty, shall completely remove the old markings and apply new markings at no additional cost to the Contracting Agency. Removal shall be by wet sandblasting or other method authorized by the Engineer.

ADD THE FOLLOWING TO THIS SUBSECTION:

- F. No pavement marking material shall be used which is not on the Qualified Products Lists (QPL) established by the Nevada Department of Transportation (NDOT) unless otherwise specified.
 - 1. Liquid Pavement Marking (LPM) shall be either a polyurea or epoxy paint formulation.
 - 2. Pavement Marking Film shall be Type II from the NDOT QPL.

CONSTRUCTION**628.03.04 PREPARATION OF EXISTING SURFACES*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- D. Areas receiving slurry seal will be allowed to fully cure for a minimum of ten (10) days before application of the crosswalks, stop bars, arrows, epoxy or painted bike lanes and symbols and permanent raised pavement markers.

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:**628.03.70 TEMPORARY MARKINGS**

- A. When otherwise not shown on the plans, detour transitional traffic line striping shall have a minimum taper of 20:1 for temporary striping and 30:1 for permanent striping. Temporary traffic lanes shall be at least ten (10) feet (3 meters) wide and no lane shall encroach within five (5) feet (1.5 meters) of an open excavation or within two (2) feet (0.7 meters) of longitudinal curb.

METHOD OF MEASUREMENT

628.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The quantity of TYPE 2 FILM FOR ARROWS will be measured per each.

The quantity of TYPE 2 FILM FOR CROSSWALKS AND STOP BARS will be measured per square foot.

The quantity of TYPE 1 FILM FOR BIKE LEGENDS will be measured per each.

The quantity of TYPE 2 FILM FOR CHEVRONS will be measured per square foot.

The quantity of TYPE 2 FILM 6-INCH SOLID WHITE will be measured per linear foot.

The quantity of TYPE 2 FILM 6-INCH SKIP WHITE will be measured per linear foot.

The quantity of TYPE 1 WHITE 8-INCH MARKING will be measured per linear foot.

No direct measurement shall be made for TEMPORARY STRIPING.

BASIS OF PAYMENT

628.05.01 BASIS OF PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantity of TYPE 2 FILM FOR ARROWS will be paid for at the contract unit price of each and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of TYPE 2 FILM FOR CROSSWALKS AND STOP BARS will be paid for at the contract unit price of square foot and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of TYPE 1 FILM FOR BIKE LEGENDS will be paid for at the contract unit price of each and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of TYPE 2 FILM FOR CHEVRONS will be paid for at the contract unit price of square foot and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of TYPE 2 FILM 6-INCH SOLID WHITE will be paid for at the contract unit price of linear foot and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of TYPE 2 FILM 6-INCH SKIP WHITE will be paid for at the contract unit price of linear foot and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of TYPE 1 WHITE 8-INCH MARKING will be paid for at the contract unit price of linear foot and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Unless otherwise provided in the Special Provisions, no payment will be made for TEMPORARY STRIPING as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which such temporary striping is required. The TEMPORARY STRIPING shall include all materials, equipment and labor required including, but not limited to, 4-inch yellow or white temporary striping and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
628.01	TYPE 2 FILM FOR ARROWS	EA
628.02	TYPE 2 FILM FOR CROSSWALKS AND STOP BARS	SF
628.03	TYPE 1 FILM FOR BIKE LEGENDS	EA
628.04	TYPE 2 FILM FOR CHEVRONS	SF
628.05	TYPE 2 FILM 6-INCH SOLID WHITE	LF
628.06	TYPE 2 FILM 6-INCH SKIP WHITE	LF
628.07	TYPE 1 WHITE 8-INCH MARKING	LF

END OF SECTION 628

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SECTION 629 – WATER DISTRIBUTION FACILITIES**DESCRIPTION****629.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- C. The work for the vertical adjust valve box shall be in accordance with the Uniform Design and Construction Standards (UDACS) plate number 8.
- D. Any method of relocation or encasement of water facilities other than that indicated on the plans or Standard Drawings must be approved by the Engineer prior to beginning work.
- E. 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.
- F. It shall also be the Contractor's responsibility to verify the location of all existing water valves, meters, blow-off assemblies and other water facilities within the improvement area of this project and make any necessary adjustment of the cover to these facilities to their proper vertical location of the roadway and sidewalk improvement surface.
- G. The Contractor shall notify Las Vegas Valley Water District (LVVWD) Construction Division ((702) 258-7171) at least 48 hours prior to start of construction on any water facility in this project.
 - 1. Notice shall be given by 2:00 p.m., the business day prior to a LVVWD inspection.
 - 2. When calling for an inspection, refer to the LVVWD project number found in the notes for scheduling an inspection.

MATERIALS**629.02.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. All materials for the water line construction will be in accordance with the current edition of the Water Standards and the Construction Drawings and Specifications, respectively.

ADD THE FOLLOWING SUBSECTIONS:**629.02.70 PIPE CASING**

- A. Unless otherwise specified or shown on the drawings, all pipe casing shall be steel. The Contractor shall furnish all labor, equipment, and materials required for a complete installation of all pipe casing as specified and shown on the drawings

- B. Steel pipe casing shall be fabricated with a minimum of 5/16-inch thick steel plates conforming to the requirements of the "Specification for Low and Intermediate Tensile Strength Carbon Steel Plates of Structural Quality," ASTM A 283, Grades B, C, or D. All joints shall be welded. Interior joints shall be ground to a smooth finish. All welding shall be performed in accordance with the "Standard for Fabricated Electrically-Welded Steel Water Pipe," AWWA C 201. Coatings for steel casing are not required.
- C. The pipe to be installed inside the casing shall be supported by casing spacers of a type approved by the Water District and described below in Paragraph (D). The casing spacers shall be located in accordance with the drawings. The annular space between the pipe and the casing shall be backfilled with silica sand. After installation of the pipe, the casing shall be sealed at both ends with casing end seals as specified below in Paragraph (E).
- D. Casing spacers, shell, and risers shall be manufactured of stainless steel Type 304 with a minimum 14-gauge thickness. The spacer shall be lined with .090 inch thick PVC, the fasteners shall be stainless steel Type 304, and the runners shall be ultra-high molecular weight polymer. Casing spacers shall be Model CCS centered as manufactured by Cascade Waterworks Manufacturing Company or Engineer's approved equal.
- E. Casing end seals shall be virgin rubber with Type 304 stainless steel bands on each end of the seal. End seals to be installed after water pipe and spacers are in place. End seals shall be Model CCES as manufactured by Cascade Waterworks Manufacturing Company or Engineer's approved equal.

629.02.71 TAPPING SLEEVES

- A. Tapping sleeves shall comply with the UDACS.
- B. All tapping sleeves shall be epoxy coated at the factory and coated and wrapped in the field.

629.02.72 DUCTILE IRON PIPE (4-INCH THROUGH 36-INCH)

- A. All materials shall be new and of current manufacture.
- B. All ductile iron pipe shall be provided with two wraps of eight mil polyethylene or other suitable impermeable bulkhead on the ends of the pipe and all special openings.
- C. Restrained joints shall be Lok-Ring or Flex-Ring by American Pipe, TR-Flex by U. S. Pipe, Super-Lock by Clow, Lock-Ring by McWane, Lock-Joint by Pacific States Cast Iron Pipe, Megalug Series 1100 by EBBA Iron, Inc., or approved equal.

CONSTRUCTION

629.03.01 GENERAL

ADD THE FOLLOWING TO THIS SUBSECTION:

- B. The approximate locations of main lines are indicated on the plans.

- C. The location of vaults, meters, valves, fire hydrants and service lines are not indicated on the plans. It will be the Contractor's responsibility to locate, and/or adjust these items as necessary for their proper placement according to the plans and standard drawings and the LVVWD.

629.03.02 EXCAVATION

ADD THE FOLLOWING TO THIS SUBSECTION:

- B. Trenching, bedding, and backfilling for pipe shall be in accordance with Section 208, "Trench Excavation and Backfill" of the Uniform Standard Specifications for Public Works' Construction Off-Site Improvements, these Special Provisions and the construction plans and details.

ADD THE FOLLOWING SUBSECTIONS:

629.03.70 WATER SERVICE RELOCATIONS

- A. The locations of water service lines are not shown on the plans.
- B. It shall be the Contractor's responsibility to relocate all water service lines interfering with roadway and/or drainage construction according to the UDACS.
- C. The Contractor shall not leave said service lines disconnected for a longer period than 2 hours.

629.03.71 WATER LINE AND SANITARY OR STORM SEWER LINE CROSSING

- A. All waterline and sanitary or storm sewer crossings shall conform to UDACS section 2.22.

629.03.72 CUT AND CAP WATER MAIN

- A. Where indicated on the plans or as directed by the Engineer, Contractor shall cut and cap the existing water line in accordance with the plans and these Special Provisions.
- B. The cutting of pipe shall be done only by experienced persons, using power driven pipe cutters, in a neat and workmanlike manner without damage to the pipe so as to leave a smooth end at right angles to the axis of the pipe. Before any main is cut, it shall definitely be established that the line is not under pressure.
- C. Plugs or caps shall be used on dead ends of pipe where shown on the plans. Caps shall consist of a suitable adaptor and blind flange. A concrete thrust block seated against undisturbed native soil shall be constructed around the plug or cap.

629.03.73 PIPE LOCATORS

- A. Pipe Locator Ribbon. Pipe locator ribbon shall be installed over the entire length of all types, sizes, and locations of water mains and shall be in accordance with the UDACS. Pipe locator ribbon shall be 3 inches wide plastic coated aluminum and shall be clearly marked "CAUTION

BURIED WATER LINE" continuously along the length of the ribbon with minimum 1-1/4 inch letters. The ribbon shall be blue in color and shall be as listed in the LVVWD Approved Products Listing..

- B. Installation of Pipe Locator Balls. CONTRACTOR shall place LVVWD supplied pipe locator balls, similar to 3M-EMS 1403 (WATER), at all locations required. The pipe locator balls will be supplied to CONTRACTOR at the job site by LVVWD. The balls shall be placed in the pipeline excavation by CONTRACTOR as directed by LVVWD.

629.03.74 INSTALLATION OF DUCTILE IRON PIPE (DIP)

- A. Trenches shall be in a reasonably dry condition when the pipe is laid. CONTRACTOR shall employ dewatering methods as required to maintain the trench in a reasonably dry condition. Necessary facilities shall be provided by CONTRACTOR for lowering and properly placing the pipe sections into the trench without damage. The pipe shall be laid carefully to the lines and grades, or to the minimum depths shown on the drawings, and the sections shall be closely jointed to form a smooth flow line.
- B. The UDACS minimum covers shall be maintained unless otherwise shown on the drawings.

629.03.75 CONSTRUCTION OF TAPPING SLEEVES

- A. Where indicated on the plans, CONTRACTOR shall furnish wet taps for existing water mains. The installation of tapping sleeves and valves shall be done only by personnel experienced in the making of wet taps. Methods of installation and equipment for making taps shall be in accordance with the UDACS and under the supervision of LVVWD personnel.
- B. Tapping Sleeves and valves shall be supported and blocked with Class "C" concrete against undisturbed ground where shown on the plans. Tapping Sleeves shall be coated and wrapped in the field in accordance with the provisions of the UDACS.

629.03.76 REMOVE WATER LINE

- A. Where indicated on the plans or as directed by the Engineer, Contractor shall remove the existing water line and dispose of it in accordance with the plans and specifications including, when necessary, the Protocol for Asbestos Cement Pipe Abatement, the UDACS and all other AWWA, local, Federal, State and regulations pertaining thereto.
- B. If there is a remaining live line at the ends of an abandoned section of waterline, the live line shall be cut and plugged or capped and a thrust block installed in accordance with the plans, these Special Provisions and the UDACS.

629.03.77 WATER METERS

- A. At the locations shown on the plans, water meters shall be installed in accordance with the UDACS, Plate No. 4.

629.03.78 RPPA

- A. At the locations shown on the plans, RPPA's shall be installed in accordance with the UDACS, Plate No. 8.

METHOD OF MEASUREMENT

629.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The quantity of 10-INCH DUCTILE IRON PIPE and 12-INCH DUCTILE IRON PIPE will be measured per linear foot.

The quantity of VERTICAL ADJUST WATER VALVE COVER will be measured per each.

The quantity of 20-INCH STEEL CASING and 24-INCH STEEL CASING will be measured per linear foot.

The quantity of TAPPING SLEEVE AND VALVE will be measured per each.

The quantity of $\frac{3}{4}$ -INCH WATER METER will be measured per each.

The quantity of 1-INCH RPPA will be measured per each.

No direct measurement shall be made for locating, relocation and reconnections of existing water service laterals.

No direct measurement shall be made for waterline fittings, external restraints, and appurtenances.

No direct measurement shall be made for cutting and capping existing waterlines.

No direct measurement shall be made for the removal of pavement and the placing of the Permanent Patch in accordance with Section 208 "Trench Excavation and Backfill".

BASIS OF PAYMENT

629.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The accepted quantity of 10-INCH DUCTILE IRON PIPE and 12-INCH DUCTILE IRON PIPE will be paid for at the contract unit price of linear foot and shall conform to the requirements of the UDACS and shall include all materials, equipment and labor required including, but not limited to, excavation; shoring; supporting; dewatering; pipe bedding; furnishing and installing the pipe; restrained joints; mechanical joints; thrust blocks; jointing material; wrappings; coatings; testing; draining and disinfection; backfill; cutting, capping and removal and disposal of existing waterlines; compaction; pipe materials; pipe supports; fittings and other appurtenances;

connection to existing facilities; service components; protective coatings; concrete; reinforcing steel; relocation of conduit and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of VERTICAL ADJUST WATER VALVE COVER will be paid for at the contract unit price of each and shall conform to the requirements of the UDACS and shall include all labor, equipment and materials, including but not limited to Class B concrete collars; reinforcing; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 20-INCH STEEL CASING and 24-INCH STEEL CASING will be paid for at the contract unit price of linear foot and shall conform to the requirements of the UDACS and shall include all materials, equipment and labor required including, but not limited to, furnishing and installing minimum 5/16-inch thick welded steel plate casing; casing spacers; filling material; filling the annular space between pipe and casing; end seals for sealing the casing; field welding; coatings; trenching; bedding material; backfill material; compaction; relocation of conduit; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of TAPPING SLEEVE AND VALVE will be paid for at the contract unit price of each and shall conform to the requirements of the UDACS and shall include all materials, equipment and labor required including, but not limited to, furnishing and installing the tapping sleeve and valve (tapping or gate, as specified on the plans); cutting, removal and disposal of existing pavement as necessary; trenching; bedding; backfill; compaction; thrust blocks; installation of valve box; stem extensions as necessary; connection to new and existing waterlines; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of ¾-INCH WATER METER will be paid for at the contract unit price of each and shall conform to the requirements of the UDACS and shall include all materials, equipment and labor required including, but not limited to, furnishing and installing a new Owner approved water meter; all excavation, including trench excavation; bedding; backfill; compaction; ball angle meter stops; service saddles and connection to water main; copper service lateral; corporation stops; meter box; connection to RPPA and service lateral; surface restoration, including landscaping and irrigation; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 1-INCH RPPA will be paid for at the contract unit price of each and shall conform to the requirements of the UDACS and shall include all materials, equipment and labor required including, but not limited to, furnishing and installing a new Owner approved RPPA; sawcutting; temporary patches; temporary and permanent pavement; removal of temporary patches and pavement; all excavation, including trench excavation; furnishing and installing brass pipe between meter and RPPA; brass couple and fittings; connection to service line; concrete pad; approved RPPA enclosure; restoration of sidewalk, curb, gutter, facilities, landscaping, and irrigation; protection and restoration, if damaged, of all existing facilities; support and protection of all utilities; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Unless otherwise provided in the Special Provisions, no payment will be made for waterline fittings, external restraints, mechanical joints, and appurtenances as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which they are required.

Unless otherwise provided in the Special Provisions, no payment will be made for locating, relocation and reconnections of existing water service laterals as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which they are required.

Unless otherwise provided in the Special Provisions, no payment will be made for cutting and capping existing waterlines as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which they are required.

Unless otherwise provided in the Special Provisions, no payment will be made for locating, relocating and reconnections of existing water service laterals. The cost thereof shall be considered as included in the price bid for construction or installation of new water line related facilities.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
629.01	10-INCH DUCTILE IRON PIPE	LF
629.02	12-INCH DUCTILE IRON PIPE	LF
629.03	VERTICAL ADJUST WATER VALVE COVER	EA
629.04	20-INCH STEEL CASING	LF
629.05	24-INCH STEEL CASING	LF
629.06	TAPPING SLEEVE AND VALVE	EA
629.07	3/4-INCH WATER METER	EA
629.08	1-INCH RPPA	EA

END OF SECTION 629

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SECTION 630 – SANITARY SEWERS**DESCRIPTION****630.01.01 WORK INVOLVED*****ADD THE FOLLOWING TO THIS SUBSECTION:***

- B. This work shall consist of construction of a wastewater collection pipe and sanitary sewer manholes as shown on the Contract Drawings.
- C. This work shall also consist of removing and replacement of an existing sewer manhole. In such case, the manhole will be removed in such a manner that the flow of the existing sewer is maintained.
- D. This work shall also consist of preparing a final location map as described on the project drawings and in Section 622 of these Special Provisions.
- E. This work shall also consist of vertically adjusting manhole covers

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:**630.01.70 STANDARDS**

- A. All sanitary sewer improvements shall be constructed in accordance with the Southern Nevada Design and Construction Standards for Wastewater Collection Systems, most recent edition.

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:**630.02.02 MANHOLES**

- E. Cast-in-place and precast manhole bases will be allowed for new construction of sewer pipe.

CONSTRUCTION***ADD THE FOLLOWING SUBSECTION TO THIS SECTION:*****630.03.16 ADJUST SANITARY SEWER MANHOLE COVER**

- A. Manhole covers shall be adjusted to final grade in accordance with Subsection 609.03.02, Adjusting Catch Basins, Manhole, and Inlet Covers of the USS, these special provisions and the DCSWCS. Where provisions of the respective specifications vary, the DCSWCS shall govern.

METHOD OF MEASUREMENT**630.04.01 MEASUREMENT**

ADD THE FOLLOWING TO THIS SUBSECTION:

The quantity of 8-INCH PVC (SDR-35) SANITARY SEWER PIPE, 12-INCH PVC (SDR-35) SANITARY SEWER PIPE, 15-INCH PVC (SDR-35) SANITARY SEWER PIPE, and 18-INCH PVC (SDR-35) SANITARY SEWER PIPE will be measured per linear foot, measured from the end of pipe or inside face of structures.

The quantity of 60-INCH SANITARY SEWER MANHOLE and 72-INCH SANITARY SEWER MANHOLE will be measured per each.

The quantity of VERTICAL ADJUST MANHOLE COVER will be measured per each.

No direct measurement shall be made for installation of concrete cap and appurtenances.

BASIS OF PAYMENT**630.05.01 PAYMENT****CHANGE THIS SUBSECTION TO READ AS FOLLOWS:**

The accepted quantity of 8-INCH PVC (SDR-35) SANITARY SEWER PIPE, 12-INCH PVC (SDR-35) SANITARY SEWER PIPE, 15-INCH PVC (SDR-35) SANITARY SEWER PIPE, and 18-INCH PVC (SDR-35) SANITARY SEWER PIPE will be paid for at the contract unit price of linear foot and shall include all materials, equipment and labor required including, but not limited to, excavation (regardless of depth); shoring; grading; dewatering; bedding; backfill; compaction; connections to existing facilities; relocation of conduit; sewer diversion and bypass pumping; abandon pipe and connection of laterals; concrete cap and encasement; protection of existing utilities; disposal of all excess unsuitable material including disposal fees and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of 60-INCH SANITARY SEWER MANHOLE and 72-INCH SANITARY SEWER MANHOLE will be paid for at the contract unit price of each and shall include all materials, equipment and labor required including, but not limited to, excavation; removal or abandonment of existing manhole; shoring; grading; shaping; dewatering; aggregate base materials; granular backfill; drain rock; compaction; dowels; concrete; reinforcing steel; cones; steps; grout; PVC lining; precast concrete component; beams; grade rings; frames; grates; castings; lids; concrete collars around manholes; relocation of conduit; protection and restoration of all existing facilities; sewer diversion and bypass pumping; support and protection of all utilities and maintain existing sewer flows and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of VERTICAL ADJUST MANHOLE COVER will be paid for at the contract unit price of each and shall conform to the Southern Nevada Design and Construction Standards for Wastewater Collection Systems (DCSWCS), latest version, and shall include all materials, equipment and labor required including, but not limited to, removal and disposal of existing concrete collar where present; vertically adjusting the manhole frame and cover to final grade; excavation; construction of new concrete collar; reinforcement; backfill; compaction; and all other

items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of will be paid for at the contract unit price of and shall include all materials, equipment and labor required including, but not limited to, and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Unless otherwise provided in the Special Provisions, no payment will be made for concrete cap and appurtenances as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which it is required.

Unless otherwise provided in the Special Provisions, no payment will be made for plugging existing manhole outlets or reforming of manhole base troughs as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which it is required.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
630.01	8-INCH PVC (SDR-35) SANITARY SEWER PIPE	LF
630.02	12-INCH PVC (SDR-35) SANITARY SEWER PIPE	LF
630.03	15-INCH PVC (SDR-35) SANITARY SEWER PIPE	LF
630.04	18-INCH PVC (SDR-35) SANITARY SEWER PIPE	LF
630.05	60-INCH SANITARY SEWER MANHOLE	EA
630.06	72-INCH SANITARY SEWER MANHOLE	EA
630.07	VERTICAL ADJUST MANHOLE COVER	EA

END OF SECTION 630

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SECTION 633 – PAVEMENT MARKERS**DESCRIPTION****633.01.01 GENERAL*****ADD THE FOLLOWING TO THIS SUBSECTION:*****D. Warranty:**

1. The Contractor shall warranty the applied markings for one year from the date of installation.
2. If, for any reason, the markings fail to perform as specified, the Contractor, under this warranty, shall completely remove the old markings and apply new markings at the Contractor's expense.
3. Method of removal shall be as directed by the Engineer.

METHOD OF MEASUREMENT**633.04.01 MEASUREMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The quantity of REFLECTIVE RAISED PAVEMENT MARKERS will be measured per each.

The quantity of NON-REFLECTIVE RAISED PAVEMENT MARKERS will be measured per each.

The quantity of BLUE REFLECTIVE RAISED FIRE HYDRANT ID PAVEMENT MARKERS will be measured per each.

BASIS OF PAYMENT**633.05.01 BASIS OF PAYMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The accepted quantity of REFLECTIVE RAISED PAVEMENT MARKERS will be paid for at the contract unit price of each and shall conform to the requirements of subsection 633.05.01 of the Uniform Standard Specifications and shall include all materials, equipment, labor and disposal required to perform this work and all work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of NON-REFLECTIVE RAISED PAVEMENT MARKERS will be paid for at the contract unit price of each and shall conform to the requirements of subsection 633.05.01 of the Uniform Standard Specifications and shall include all materials, equipment, labor and disposal required to perform this work and all work as shown on the Plans, as specified herein and as directed by the Engineer.

The accepted quantity of BLUE REFLECTIVE RAISED FIRE HYDRANT ID PAVEMENT MARKERS will be paid for at the contract unit price of each and shall include all materials, equipment, labor and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
633.01	REFLECTIVE RAISED PAVEMENT MARKERS	EA
633.02	NON-REFLECTIVE RAISED PAVEMENT MARKERS	EA
633.03	BLUE REFLECTIVE RAISED FIRE HYDRANT ID PAVEMENT MARKERS	EA

END OF SECTION 633

SECTION 634 – TEMPORARY PAVEMENT STRIPING TAPE

METHOD OF MEASUREMENT

634.05.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

No unit of measurement will be made for Temporary Pavement Striping Tape.

BASIS OF PAYMENT

634.05.01 PAYMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

Unless otherwise provided in the Special Provisions, no payment will be made for Temporary Pavement Striping Tape as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which such temporary striping is required.

END OF SECTION 634

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SECTION 637 - POLLUTION CONTROL

DESCRIPTION

637.01.01 GENERAL

ADD THE FOLLOWING TO THIS SUBSECTION

- D. Dust control work includes creating a Dust Control Mitigation Plan (DCMP), obtaining all necessary approvals for the DCMP, obtaining a Dust Control Permit for Construction Activities, payment of all fees associated with the project dust control, all work necessary to comply with the DCMP, Dust Control Permit, and the requirements of Section 94 of the Clark County Department of Air Quality Regulations, most recently adopted.
- E. Any fines or penalties levied by the Clark County Department of Air Quality and Environmental Management due to violations of the project Dust Control Permit requirements are the sole responsibility of the Contractor and shall be paid by the Contractor.
- F. The Contractor shall use all necessary Stormwater Runoff Best Management Practices (BMPs) performing the Work so as to not discharge stormwater runoff containing pollutants or sediment into the waters of the United States, including municipal separate storm sewer systems (MS4s) in violation of federal and state laws, rules, and regulations and the City's water pollution requirements.
- G. The Contractor shall:
 - 1. Comply with the provisions of Nevada Revised Statutes, Chapter 445A: Water Pollution Control and City of Las Vegas Municipal Code 14.18; and
 - 2. Adhere to all Federal regulations under 40 CFR 122.26(b)(14).
- H. All information and forms pertaining to Nevada's Stormwater NPDES Permitting Program can be found on the following website:
<http://ndep.nv.gov/bwpc/storm01.htm>.
- I. The City, state and federal regulations identified above are hereby incorporated by reference as preconditions of this Contract. The Contractor shall familiarize itself with these regulations and practices, and is advised that prior to engaging in any construction activities, the Contractor shall submit a Notice Of Intent (NOI) to the Nevada Division of Environmental Protection. A Storm Water Pollution Prevention Plan (SWPPP) must be completed prior to submission of the NOI and must remain on the project site and be updated as necessary for the duration of the project. As applicant, the Contractor is responsible for insuring that all persons on the project site, including contractor and subcontractor personnel, abide by the conditions of the permit. As the applicant, the Contractor is responsible for supplying complete copies of the NOI and SWPPP to all project subcontractors.
- J. Upon completion of the project, the Contractor will need to permanently stabilize the construction area and file a Notice Of Termination (NOT) with NDEP to terminate the permit. The Contractor shall provide a copy of the approval letter of termination from

NDEP to the Owner. Receipt of this letter will be required prior to acceptance of Contractor's final payment request.

- K. Contractor shall apply for, pay for, and gain approval of the required permit from NDEP in a timely manner so as not to affect the project schedule. Contractor shall comply with the requirements of the permit and shall bear all associated costs. If the Owner suffers damages including but not limited to delays and fines as a result of the Contractor's failure to obtain a required permit or for non-compliance with the requirements of the permit, the Contractor shall reimburse the Owner for such damages and the Owner may withhold amounts equal to the damages from the Contractor's payments. Failure of the Contractor to obtain required permits in a timely manner shall not be justification for delay of the issuance of the Notice to Proceed by the Owner.
- L. Any fines or penalties levied by the City of Las Vegas, Nevada Division of Environmental Protection, U.S. EPA, or any local, state, or federal agency to violations of the project Stormwater Runoff Management requirements are the sole responsibility of the Contractor and shall be paid by the Contractor.

CONSTRUCTION

ADD THE FOLLOWING SUBSECTION TO THIS SECTION:

637.03.70 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PERMIT FOR CONTRACTOR'S STAGING AREAS

- A. The following applies to the Contractor's staging areas:

NDEP, Bureau of Water Pollution Control, has issued general permit NVR100000 that covers construction activities within the state of Nevada. The Contractor shall comply with the requirements of the general permit at no extra cost to the Owner. In order to be covered by the permit, the Contractor shall submit, at no extra cost to Owner, a Notice of Intent (NOI) and the required filing fee on the Internet at http://www.ndep.nv.gov/bwpc/storm_cont03.htm.
- B. Upon the completion of the construction, Contractor is responsible for permanently stabilizing the staging area, filing Notice of Termination (NOT), and obtaining approval of NOT with NDEP to terminate the permit.

METHOD OF MEASUREMENT

637.04.01 MEASUREMENT

ADD THE FOLLOWING TO THIS SUBSECTION:

The quantity of DUST CONTROL will be measured per lump sum.

The quantity of NPDES DISCHARGE PERMIT will be measured per lump sum.

BASIS OF PAYMENT**637.05.01 PAYMENT*****ADD THE FOLLOWING TO THIS SUBSECTION:***

The accepted quantity of DUST CONTROL will be paid for at the contract unit price per lump sum and shall include all permits, labor, materials and equipment necessary to provide dust control for the entire duration of the project as described in the approved DCMP or as directed by the Engineer. Payments shall be divided evenly using the initial contract duration, plus any additional contract time added by change order or as directed by the Engineer. When additional contract time is added the remaining unpaid portion of the lump sum bid amount shall be divided evenly over the remaining contract time by recalculating the prorated payment.

The accepted quantity of NPDES DISCHARGE PERMIT will be paid for at the contract unit price per lump sum and shall include all permits, labor, materials and equipment necessary to carry out the Storm Water Pollution Prevention Plan (SWPPP) for the entire duration of the project as described in the permit and as directed by the Engineer and shall also include permanent stabilization of the construction area and staging area. Payments shall be divided evenly using the initial contract duration, plus any additional contract time added by change order or as directed by the Engineer. When additional contract time is added the remaining unpaid portion of the lump sum bid amount shall be divided evenly over the remaining contract time by recalculating the prorated payment.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UOM</u>
637.01	DUST CONTROL	LS
637.02	NPDES DISCHARGE PERMIT	LS

END OF SECTION 637

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ADD THE FOLLOWING SECTION TO DIVISION II – CONSTRUCTION DETAILS**SECTION 670 – UTILITY CONDUITS****DESCRIPTION****670.01.01 GENERAL**

- A. The Contractor shall provide all labor, materials, equipment, transportation and services required to install the utility conduits and related items as shown on the plans and in the specifications.
- B. All materials furnished and used shall conform to the provisions in Section 106.
 - 1. The materials shall be manufactured, handled and used in a manner to insure completed work in accordance with the plans, specifications, Special Provisions, Cox Communications Specifications and Nevada Power Company Specifications.
 - 2. In the event of a conflict, the Cox Communications Specifications and Nevada Power Company Specifications shall govern as applicable.

670.01.02 REGULATIONS AND CODES

- A. Nothing described in these specifications or indicated on the plans shall be construed to permit work not conforming to the most stringent of applicable codes and regulations. When plans or specifications call for materials or construction of better quality or larger size than required by codes, laws, rules or regulations, the plans and specifications shall take precedence.
- B. All electrical equipment shall conform to the standards of the National Electrical Manufacturers Association (NEMA), and listed by Underwriters' Laboratories, Inc. (UL), or the Electronic Industries Association (EIA), wherever applicable. In addition to the requirements of the plans, the specifications, the Special Provisions and the Supplemental Specifications, all materials and workmanship shall conform to the requirements of the National Electrical Code; the National Electrical Safety Code (NESC); Standards of the American Society for Testing and Materials (ASTM); American National Standards Institute (ANSI) manuals; International Municipal Signal Association (IMSA) cable specifications; Institute of Electronic and Electrical Engineers (IEEE); Rural Electrification Association (REA); Nevada Occupational Safety and Hazard Act (NOSHA); National Board of Fire Underwriters (NBFU); Federal Specifications (FS), the Uniform Standard Drawings; and any local ordinance which may apply.

670.01.03 EQUIPMENT LIST AND DRAWINGS

- A. Unless otherwise permitted in writing by the Engineer, the Contractor shall within fifteen (15) days following approval of the contract, submit to the Engineer for approval, a list of equipment and materials which he proposes to install.
 - 1. The list shall be complete as to name of manufacturer, size, and identifying number of each item.
 - 2. The list shall be supplemented by such other data as may be required, including scale drawings of cabinets showing location and spacing of shelves, terminal blocks and equipment, including dimensioning.

MATERIALS

670.02.01 CONDUIT

- A. Underground conductors will be installed in conduit by the respective utility companies unless otherwise specified in the Special Provisions or on the drawings.
 - 1. Conduit shall be listed by the Underwriters' Laboratories Inc., and shall bear the U.L. label on each length.
 - 2. PVC SCH. 40 U.L. approved conduit shall be used unless otherwise noted.
- B. The conduit sizes and types to be used will be indicated on the plans, or specified in the Special Provisions.
 - 1. The Contractor may, at his own expense, use larger size conduit.
 - 2. Where used, it shall be for the entire length of the run from outlet to outlet with no reducing couplings permitted.
- C. Where conduit is to be placed in an open trench, excluding roadway sections, the trench shall be excavated to four (4) inches below the invert grade of the conduit and properly backfilled with sand.
 - 1. A cradle shall be shaped in the bedding to cushion and support the conduit.
 - 2. Backfill material of sand shall be used for the first six (6) inches over the top of the conduit.
- D. Where there is existing sidewalk, the conduit shall be run in the street next to the concrete gutter.
 - 1. Trenching for the installation of conduit shall only be 4-1/2 inches wide.
 - 2. The curb and gutter shall neither be cut nor damaged.

670.02.02 EXPANSION FITTINGS

- A. Expansion fittings, as detailed on the plans, shall be installed where the conduit crosses an expansion joint in the structure.
 - 1. Each expansion fitting shall be provided with a bonding.
 - 2. Expansion fittings shall be used where they exit a structure.

670.02.03 PULL BOXES

- A. Pull boxes shall be precast reinforced concrete or composite boxes of the sizes and details shown on the plans and standard drawings.
 - 1. Reinforcement shall be 3/4 inch (19 millimeters) mesh, No. 20 U.S. gage, hardware cloth or bar reinforcement.
 - 2. Either steel composite or cast iron lids shall be used.
- B. Pull boxes for structure installation shall conform to the dimensions and locations shown on the plans. Boxes or vaults formed in concrete shall have metal frames and covers with wording inscribed on the covers as shown on the plans.
- C. All metal parts shall be hot-dip galvanized and shall conform to the applicable portions of ASTM Designation A 153, after fabrication.

1. Gasket surfaces shall form a true plane.
 2. Gaskets shall be one piece neoprene 1/8 inch (3 millimeters) thick, and shall cover the contact surface between the frame and cover.
- D. No. 3-1/2, No. 5, and No. 7 pull boxes shall comply with applicable portions of the USS, USD, and plans.
1. The interior of pull boxes shall be void of any other materials except conduit risers and necessary pull strings.
 2. All excess materials shall be removed to promote drainage.
 3. The cost of supplying and installing new pull boxes or adjusting existing pull boxes to finished grade shall be considered as incidental to the work and no additional compensation shall be allowed.
- E. All pull boxes shall have steel covers and shall be grounded in accordance with standard drawing 404.140, sheet 1 of 2, *Steel Pull Box Cover* and Standard Drawing 404.140 sheet 2 of 2 *Steel Pull Box Cover Grounding Detail* as provided in the bid documents.
1. All pull box lids shall be stamped to identify the type of utility in accordance with the applicable utility company standards to identify their use.
 2. Any voltage over 600 shall be inscribed "HIGH VOLTAGE."

CONSTRUCTION

670.03.01 MAINTAINING EXISTING AND TEMPORARY UTILITY SYSTEMS

- A. The owner or owning utility will continue operation and maintenance of existing electrical facilities.
- B. Where damage is caused by the Contractor's operations, the Contractor shall, at his expense, repair or replace damaged facilities promptly in accordance with these specifications. Should the Contractor fail to perform the required repairs or replacements, the cost of performing such repairs or replacements will be deducted from any monies due or to become due the Contractor.
- C. The exact location of existing conduits and pull boxes shall be ascertained by the Contractor before using equipment that may damage such facilities or interfere with any system.
- D. These provisions will not relieve the Contractor in any manner of his responsibilities as provided in Subsection 107.11, "Responsibility for Damage", and Subsection 107.16, "Contractor's Responsibility for the Work and Materials".
- E. The data indicated on the plans and in these specifications is as exact as could be secured, but its absolute accuracy is not guaranteed. Exact locations, distances, levels, and other conditions will be governed by unforeseen obstacles in the field.
- F. The Contractor shall use the plans and these specifications for guidance, and secure the Engineer's approval for all changes of location or scope of work. The Engineer should be consulted regarding the exact locations of pullboxes, poles and cabinets.

- G. It shall be the Contractor's responsibility to coordinate all work required by this contract with all affected utility companies.

670.02.03 EXCAVATING AND BACKFILLING

- A. Excavations required for the installation of conduit, manholes, pullboxes and other facilities, shall be performed in such a manner as to cause the least possible damage to the streets, sidewalks, and other improvements.
 - 1. Excavations shall not be larger than necessary for the proper installation of conduit, electrical facilities and foundations.
 - 2. Excavating shall not be performed until immediately before installation of conduit, facilities, and foundations.
- B. The material from the excavation shall be placed in a position where the least disruption and obstruction to vehicular and pedestrian traffic will be realized and the least interference with surface drainage will occur.
- C. Surplus excavated material shall be removed and disposed of by the Contractor outside of the right-of-way.
- D. At the end of each day's work, and at other times when construction operations are suspended, equipment and other obstructions shall be removed from the right-of-way.
- E. Structural excavation and backfill shall conform to the requirements of Section 206, Structure Excavation and 207, Structure Backfill.
- F. Trench excavations shall be backfilled in conformance with the requirements of Section 208, Trench Excavation and Backfill, and with the applicable utility company specifications and requirements.
- G. Backfilled excavations shall be kept well filled and maintained in a smooth and well-drained condition, until permanent resurfacing is completed as specified in Subsection 208.03.05, Cutting and Restoring Street Surfacing.
- H. Unless otherwise specified in the Special Provisions, excavation in the street right-of-way shall be performed in such a manner that not more than one lane of traffic is restricted in either direction at any time, unless otherwise approved by the Engineer.
- I. All streets upon or within which any work is being done shall be kept open to all traffic by the Contractor, as specified in Subsection 104.04, Maintenance of Traffic, unless otherwise provided in the Special Provisions, or as approved by the Engineer.
- J. Barricading shall conform to the latest edition of the Nevada Traffic Control Manual or as directed by the Engineer.
- K. All trenches, conduit and backfill shall comply with applicable portions of the USS, USD, the contract drawings, applicable utility company specifications, and Section 208.
 - 1. All trenching shall be deep enough to insure 24 inches of cover over the conduit, unless otherwise noted.

2. The backfill in street areas shall be Type II gravel compacted to 95% relative density unless otherwise noted. No trench shall be left open after hours without approval of the Engineer.
- L. The Contractor shall not sawcut or disturb any concrete structures to remain in place.
1. Conduit locations on the plans are for reference only.
 2. Actual locations are to be determined by the Engineer as to the most economical, and the location shall be approved by the Engineer.
 3. As-built (Record) marked prints showing installed locations shall be given to the Engineer by the Contractor.
- M. All conduit that is terminated, stubbed and capped for future use shall be marked by a "+" a minimum of 3 inches high and directly above the conduit, cut into the face of the curb, wall, concrete paving, etc., or otherwise marked for location.
- N. Where conduit is to be placed in an open trench, excluding roadway sections, the trench shall be excavated to 4 inches below the invert grade of the conduit and properly backfilled with sand.
1. A cradle shall be shaped in the sand cushion to support the conduit.
 2. Backfill material of sand shall be used for the first six (6) inches over the top of the conduit.

670.03.03 REMOVING AND REPLACING IMPROVEMENTS:

- A. Improvements, such as sidewalks, curbs, gutters, Portland cement concrete and asphalt concrete pavement, bituminous surfacing, base material and other improvements removed, broken or damaged by the Contractor, shall be replaced or reconstructed in compliance with the applicable sections of these specifications.
- B. Whenever a portion of a panel or slab of existing concrete sidewalk or driveway is broken or damaged, it shall be repaired in accordance with Subsection 202.03.02, Removal.
- C. The outline of all areas to be removed in Portland cement concrete sidewalks and in pavements shall be cut to a minimum depth of 1-1/2 inches with an abrasive type saw prior to removing the sidewalk and pavement material.
1. Cut for the remainder of the required depth may be made by any method satisfactory to the Engineer.
 2. Cuts shall be neat and true with no shatter outside the removal area.

670.03.04 CONDUIT INSTALLATION

- A. Taped or PVC coated steel conduit shall be used for all bends, unless otherwise approved by the affected utility company.
- B. Conduit shall enter concrete pull boxes from the bottom and shall terminate two (2) inches inside the box wall and not less than two (2) inches nor more than four (4) inches above the bottom, and shall be sloped to facilitate pulling of conductors.
1. Conduit entering the bottom of a pull box shall be located near the end walls to leave the major portion of the box clear.
 2. At all outlets, conduit shall enter from the direction of the run.

- C. Existing underground conduit to be incorporated into a new system shall be cleaned by blowing out with compressed air, or by other methods required by the Engineer or the owning utility.
- D. Conduit runs shown on the plans are for bidding purposes only and may be changed with the approval of the Engineer to avoid underground obstructions.
- E. Trenching, conduit installation and backfill shall comply with these supplemental specifications, the Uniform Standard Specifications and Standard Details, and the applicable utility specifications and standards. In the event of a conflict, the utility specifications and standards shall govern.

METHOD OF MEASUREMENT

670.04.01 MEASUREMENT

No direct measurement shall be made for RELOCATION OF CONDUIT that is encountered during construction or installation of storm drain, water and sewer facilities.

BASIS OF PAYMENT

670.05.01 PAYMENT

Unless otherwise provided in the Special Provisions, no payment will be made for RELOCATION OF CONDUIT as such. The cost thereof shall be considered as included in the price bid for construction or installation of storm drain, water and sewer facilities to which RELOCATION OF CONDUIT is required.

END OF SECTION 670

ADD THE FOLLOWING SECTION TO DIVISION II – CONSTRUCTION DETAILS**SECTION 692 – SEWER PIPE AND STRUCTURE CLEANING****DESCRIPTION****692.01.01 GENERAL**

- A. This section specifies the requirements for cleaning of the sewers and sewer structures prior to CCTV inspection, quality assurance inspection, and rehabilitation.

692.01.02 REQUIREMENTS

- A. The work to be done under this Contract consists of furnishing all labor and equipment to remove and dispose of the accumulated sediments and clean the sewers and sewer structures as specified.
- B. The Contractor shall clean existing sewers and sewer structures to be inspected or lined and prepare the surfaces for installation of liner or coating system or repair grout.
- C. Cleaning of the sewer pipe with high-pressure hydraulic cleaning equipment, shall be required prior to installation of cured-in-place pipe (CIPP) liner in the existing pipelines, and manhole coating systems.
- D. All materials dislodged during cleaning shall be removed from the work area and carried to an approved disposal site.
- E. Cleaning of the sewer is required prior to CCTV inspection of the sewer to view current line conditions.

692.01.03 SUBMITTALS

- A. A letter shall be provided to the Engineer identifying the methods the Contractor plans to employ to remove sediment, debris, grease, scale, encrustations, and roots throughout the sewer to be lined and in the sewer structures to be repaired or coated. The letter shall include the following:
1. A detailed explanation of the cleaning process and a schedule of activities.
 2. References where the Contractor has used the identified cleaning method successfully in the past 3 years.
 3. A list of the actions planned to mitigate impact to the public during the cleaning operation.
- B. The Contractor shall submit a copy of the certification document providing for the safe transport of the material cleaned from the project sewers.
1. The City will provide the contractor with an APEX landfill approved profile number.
 2. The profile number identifies the dumper as the City of Las Vegas and characterizes the material.
 3. The characterization establishes a fee that will be charged per gallon of material dumped.
 4. The Contractor will provide copies of the dump site receipts to the Engineer.

MATERIALS

692.02.01 CHEMICAL ADDITIVES

- A. No chemicals shall be used without written approval of the Engineer. In no case shall any chemical additive be used which might be considered hazardous, or might be considered detrimental to organisms or equipment of a wastewater treatment plant, or detrimental to old or new pipe materials.

692.02.02 EQUIPMENT

- A. Equipment shall be capable of removing dirt, grease, rocks, sand, roots, and obstructions from pipelines and manholes.
- B. High-Velocity, Hydro Cleaning Equipment:
1. High-Pressure Hose: 700 feet, minimum;
 2. Hydraulically driven hose reel;
 3. High Velocity Nozzle:
 - a. Two, minimum; and
 - b. Capable of producing scouring action from 10 degrees to 45 degrees in lines to be cleaned.
 4. High-velocity Gun: Capable of producing flows ranging from fine spray to long distance solid stream;
 5. Water Tank: 1,000-gallon storage, minimum;
 6. Auxiliary engines and pumps;
 7. Equipment Operating Controls: Locate above ground; and
 8. Working Pressure: Minimum 2,000 pounds per square inch at 35 gallons per minute.
- C. Mechanically-powered Equipment
1. Bucket Machine:
 - a. Furnish with buckets in pairs, and with sufficient dragging power to perform work efficiently;
 - b. Use V-belts for power transmission or have overload device. No direct drive machines permitted; and
 - c. Equip with take-up drum and minimum 700 feet of cable.
- D. If debris volumes in the pipeline are too large to remove with hydraulic jet cleaning equipment, cleaning shall be performed by the Contractor using a bucket machine.

CONSTRUCTION

692.03.01 GENERAL

- A. The Contractor shall at all times conduct its work so as to prevent any blockage and minimize surcharging in the sewer manholes and connecting sewer pipelines. Damage to existing facilities as a result of the Contractor's work shall be promptly repaired in kind at the Contractor's expense.

- B. When using hydraulically propelled cleaning tools that depend on water pressure to provide cleaning force, or tools that retard flow are used, take precautions to ensure that water pressure created does not damage or cause flooding of public or private property

692.03.02 SEWER BYPASSING AND DEWATERING

- A. The sewer flow shall be bypassed during the cleaning of the sewers as specified in Section 695, "Diversion of Sewage Flow".

692.03.03 CLEANING

- A. Cleaning shall remove all sediment, rocks, debris, roots, grease accumulations and obstructions from the sewer to be lined and from the sewer structures to be coated.
- B. Cleaning of the sewer and structure interior surfaces shall remove all grease, scale, and encrustation so that no foreign intrusion shall cause imperfections in the lining (e.g., bumps, folds, dimples).
- C. During initial pipe cleaning, make a minimum of two passes through pipe segment.
- D. During final pipe cleaning, make a minimum of one pass through the pipe segment.
- E. Begin pipe cleaning at upstream end of system and proceed in downstream direction.
- F. Structure Cleaning:
 1. The entire manhole interior including frame, walls, and bench shall be cleaned prior to rehabilitation using either abrasive blasting and/or high-pressure water blast as recommended by the coating and/or repair product manufacturer, and approved by the Engineer, prior to coating installation. Where mechanical cleaning is accomplished by blast cleaning, the abrasive used shall be washed, graded and free of contaminants, which might interfere with the adhesion of the coatings. The air used for blast cleaning shall be sufficiently free of oil and moisture to not cause detrimental contamination of the surfaces to be coated. All concrete or mortar that is not sound or has been damaged by chemical exposure shall be removed to a sound, neutralized surface.
 2. All contaminants including oil, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed. Detergent water cleaning and hot water blasting may be necessary to remove oils, grease or other hydrocarbon residues from the concrete. A mild chlorine solution may be used to neutralize the surface to diminish microbiological bacteria growth prior to final rinse and coating system.
 3. Contractor shall also remove all dirt, rocks, rust, spalled masonry (including mortar and concrete), roots, sludge, grease grit and other deleterious materials and debris from the interior manhole. The manhole shall be restored to the original surface profile. The finished interior surface shall consist of sound concrete or brick with adequate profile and porosity to provide a strong bond between the necessary repair materials and/or coating and the substrate.
 4. Contractor shall also be responsible for any additional surface preparation beyond water blasting as required by the coating manufacturer. Where additional preparation is required, including abrasive blasting, shotblasting, grinding, scarifying or acid etching,

the Contractor shall provide all labor, materials, and equipment as necessary, and at no additional cost to the Owner. Solid blast materials shall be collected, removed and disposed of in the same manner as other cleaning debris.

- G. Any sediment or debris from cleaning operations larger than U.S. No. 8 sieve shall not be deposited downstream in the sewer main.
 - 1. Sedimentation deposit downstream, as determined by the Engineer, shall be removed at no cost to the City.
 - 2. The Contractor shall be thoroughly familiar with all phases of sewer and structure cleaning to ensure the completion of this Project without causing a health hazard or damage to the sewage system, public and private properties.
- H. The Contractor shall clean the sewer and structures so that there are no visible rocks, debris, roots, grease accumulation and obstructions.
 - 1. The Contractor shall clean the pipe and structures to ensure proper installation of the sewer liner and structures coating system and repair work.
 - 2. The Contractor shall clean all exposed rebar to remove areas of corrosion down to solid steel and solid concrete.
- I. Supply water for performing high-velocity hydro cleaning or flushing: Water may be obtained from the Las Vegas Valley Water District or City of North Las Vegas public water system. The Contractor shall obtain any necessary approval from and pay all permit fees to the Las Vegas Valley Water District or City of North Las Vegas prior to commencement of Work.

692.3.4 DISPOSAL OF SEDIMENTS

- A. The Contractor shall be responsible for obtaining all necessary permits and approval from all regulatory agencies required to perform the work, transporting and disposing, including all disposal fees, of any sediments and material removed from the sewer or structures. Remove sediments and material from cleaning operation at the end of each workday. Off-site disposal of all material removed from the sewer shall be the Contractor's responsibility.
- B. All sediment and debris removed from the sewer shall be disposed off-site in the APEX landfill. Hauling containers shall be watertight and shall be certified by the Clark County Health District. On-site stockpiling of removed material will not be permitted.

METHOD OF MEASUREMENT

692.04.01 MEASUREMENT

No unit of measurement will be made for Sewer Pipe and Structure Cleaning.

BASIS OF PAYMENT

692.05.01 PAYMENT

Unless otherwise provided in the Special Provisions, no payment will be made for Sewer Pipe and Structure Cleaning as such. The cost thereof shall be considered as included in the unit price bid for construction or installation of the items to which such Sewer Pipe and Structure Cleaning is

required.

END OF SECTION 692

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ADD THE FOLLOWING SECTION TO DIVISION II – CONSTRUCTION DETAILS**SECTION 693 – INTERNAL INSPECTION OF SEWERS****DESCRIPTION****693.01.01 GENERAL**

- A. This specification defines the requirements for internal television inspection of the existing sewer pipelines before and after rehabilitation.
- B. The Contractor shall inspect the sewer interior using a color closed circuit television (CCTV) camera and document the inspection on image with audio location and date information, image title information and hard copy inspection logs.
 - 1. The first CCTV inspection shall be performed after cleaning the sewer and prior to lining the pipe. This inspection may be omitted for portions of the project that have been inspected and are in the report [add report info here]. A copy of this report is available from [add contact info typically CLV collection system planning but may be an outside consultant] **LBG to CLV – Does the City have any video inspection in the project area?**
 - 2. The second CCTV inspection shall be performed in the same direction as the previous inspection after the lining of the sewer has been completed to ensure proper installation.
 - 3. The third CCTV inspection of the sewer shall be performed in the same direction as the previous inspection, approximately 1-month prior to the end of the 2-year warranty period. This final CCTV inspection may be performed while the sewer is active.
 - 4. The Contractor shall be responsible for properly inspecting the pipe or providing approval of the finished inspection image.
- C. Field operator(s) of inspection equipment must have current National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) Certification.

693.01.02 SUBMITTALS

- A. The Contractor shall submit the following information for review at the Pre-Construction Conference following notification of award of the Contract:
 - 1. An example of work consisting of one CD or DVD of previous sewer inspection work complete with audio commentary and inspection log(s) meeting the requirements of this specification.
 - a. The submitted CD or DVD shall show operational and structural defects in sewers that are of the same size as the sewers in this Project.
 - b. The CD or DVD and inspection logs will be reviewed to determine if the quality of the CCTV image is acceptable and if defects were properly identified and documented.
 - c. Samples shall be with the same camera and lighting equipment proposed for the work.
- B. One copy of the finished CDs or DVDs, including standard inspection reports, showing the existing sewer pipelines after cleaning and the sewer pipelines after liner installation, shall

be submitted to the Engineer within 5 days of inspection.

- d. The Engineer will review the inspection data, not for accuracy of content, but to make sure that the required information is provided and the recording is of acceptable quality.
 - e. If the Engineer determines that the inspection is defective or not of adequate quality, the Contractor shall CCTV inspect again at no additional cost to the Owner.
- C. Quality Control Submittals at the pre-construction conference:
- 1. List of staff and equipment.
 - 2. NASSCO PACP certifications for operators and supervisors who will be assigned to the work.

MATERIALS

693.02.01 TELEVISION INSPECTION CAMERA

- A. Camera shall be nationally-recognized testing laboratory (NRTL) certified for a normal sewer environment when gas meter readings of the manhole airspace indicate an LEL less than 10 percent.
- B. Camera shall be explosion proof certified for hazardous environment when gas meter readings of the manhole environment indicate an LEL greater than 10 percent.
- C. Equipment shall be operative in 100 percent humidity conditions.
- D. Resolution: 350 lines per inch, minimum, color image.
- E. Camera shall be skid mounts, sized for each pipe diameter, or self propelled; equipped with tag line suitable for pulling camera backwards.
- F. Lighting intensity shall be remote controlled and shall be adjusted to minimize reflective glare.
- G. Lighting and camera quality shall provide a clear, in-focus picture of the entire inside periphery of the sewer.

693.02.02 DIGITAL STORAGE MEDIUM

- A. The inspection shall be recorded, stored and submitted on DVDs or external hard drive in high quality MPG format formatted for use with Microsoft PC systems.
- B. The audio portion of the composite CD shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report.

693.2.3 FOOTAGE COUNTER

- A. A footage counter device, which measures the distance traveled by the camera in the sewer, shall be accurate to plus or minus 2 feet in 1,000 feet.

- B. The footage counter shall be calibrated each day prior to start of work using walking meter, roll-a-tape, or other suitable device.

693.02.04 CAMERA TILTING

- A. Pan and tilt unit, with adjustable supports specifically designed and constructed for operation in connection with pipe inspection.

693.02.05 FIELD DATA ACQUISITION SYSTEM

- A. User's manual and office copy of the software for the field data acquisition system, used to provide electronic data files, shall be provided to the Engineer prior to start of the internal inspection work. System shall be certified for NASSCO PACP Coding System.
 - 1. Wincan Software
 - 2. Peninsular Technologies
 - 3. Or equal.

CONSTRUCTION

693.03.01 FLOW IN SEWERS

- A. CCTV inspections are to be performed only while flow diversion system is in place and there is no flow in the pipe unless otherwise approved by these specifications or the Engineer.
- B. The bypassing requirements are provided in Section 695 "Diversion of Sewage Flow".

693.03.02 INSPECTION METHODS

- A. Verbal Commentary: None required except to note operational problems such as camera failure, or restart of inspection.
- B. Access:
 - 1. The Engineer shall have access to observe the monitor and all other operations at all times.
 - 2. The system of cabling employed to transport the camera and transmit its signal shall not obstruct the camera's view.
- C. Inspection Rate:
 - 1. The camera shall be pulled through the sewer in the downstream direction. If inspecting in the downstream direction is not possible, reverse inspection is permitted. All inspections at each location shall be in the same direction.
 - 2. Line segments shall be televised complete from structure to structure in a continuous run. Image stream must clearly show the camera starting and ending at the upstream and downstream structures, unless a defect(s) does not allow it. Do not record partial televising of a segment and then record another partial run.
 - 3. Maximum rate of travel shall be 30 feet per minute when recording. The camera shall be stopped for a minimum of 5 seconds at each pipe defect.

- D. Image Perspective:
1. The camera image shall be down the center axis of the pipe when the camera is in motion.
 2. The Contractor is required to provide a 360-degree view of the pipe interior.
 3. The Contractor shall provide opening screen with correct information of the entire pipe segment inspected.
 4. Continuous Footage Readings:
 - a. Visible on image at all times;
 - b. Record defect locations to the nearest one-half foot (e.g. 2.5 feet); and
 - c. Line segment recording will be rejected if continuous footage meter is inaccurate, not visible, or leave doubt as to the total length of pipe inspected.
 5. Points of interest shall also be shown on the video and shall include, but not be limited to, defects, encrustations, mineral deposits, debris, sediment, any location determined not to be clean or part of a proper liner installation and defects in the liner including, but not limited to, bumps, folds, tears, dimples, etc.
- E. Defect Coding: National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) coding system, latest version, shall be used to document all defects visible on the image recordings. Do not include defect codes on image at any time.
- F. Quality Control:
1. The Engineer will review CD's or DVD's and logs to ensure compliance with the requirements listed in this specification and contract documents. If, in the opinion of the Engineer, the inspection is not acceptable, reinspection will be completed by the Contractor at no additional cost to the Owner.
 2. If the sewer line is determined not to be adequately cleaned, as required in Section 692 "Sewer Pipe and Structure Cleaning", it shall be re-cleaned and CCTV inspected by the Contractor at no additional cost to the Contracting Agency.
 3. If any portion of the liner is determined not acceptable, the liner shall be repaired or replaced, whichever the Engineer deems appropriate, and re-inspected by CCTV at no additional cost to the Contracting Agency.
- G. The Contractor shall be responsible for modifications to his equipment and/or inspection procedures to achieve inspection data of acceptable quality. No work shall commence prior to approval of the material by the Engineer. Once accepted, the inspection data shall serve as a standard for the remaining work.
- H. Contractor shall maintain an electronic copy of all inspection documentation (DVDs and databases) for the duration of the work and warranty period.

METHOD OF MEASUREMENT

693.04.01 MEASUREMENT

No unit of measurement will be made for Internal Inspection of Sewers.

BASIS OF PAYMENT

693.05.01 PAYMENT

Unless otherwise provided in the Special Provisions, no payment will be made for Internal Inspection of Sewers as such. The cost thereof shall be considered as included in the price bid for CIPP liner installation for which such Internal Inspection of Sewers is required.

END OF SECTION 693

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ADD THE FOLLOWING SECTION TO DIVISION II – CONSTRUCTION DETAILS**SECTION 695 – DIVERSION OF SEWAGE FLOW****DESCRIPTION****695.01.01 GENERAL**

- A. This section describes the existing conditions for temporary bypassing and dewatering of sewers during internal television inspection (CCTV), cleaning operations, rehabilitation and removal and/or replacement or point repairs of the pipes and manholes.
- B. The Contractor is responsible for the design of all pump equipment, piping, power, collection and distribution elements to achieve the bypassing of existing sewage from intake point to discharge point.
- C. The quantity of sewage to be bypassed from point to point shall be the sum of all flows entering the pipeline before the point of discharge.

695.01.02 REQUIREMENTS

- A. The actual design of the bypass arrangement shall be prepared by the Contractor, and shall be submitted to the Engineer to determine conformance to project objectives. Design for maintaining access will be prepared by the Contractor and submitted to the controlling agency for approval. Lay flat hoses may not be authorized at all locations. Above ground installations will require ramps for these purposes.
- B. Contractor shall provide labor, materials, and supervision to temporarily bypass flow around the Contractor's work in accordance with the specific needs of the work being performed.
- C. The Contractor shall be required to prepare a traffic control plan for the bypass equipment and piping in accordance with Section 624 "Accommodations for Public Traffic". Pedestrian access and handicapped accessible routes must be maintained.
- D. Requirements for temporary bypass pumping or flow diversion within City of Las Vegas (CLV) rights of way for purposes of installing bypass equipment including, but not limited to, bypass piping shall comply with the requirements of CLV. CLV permit requirements apply.
- E. Requirements for temporary bypass pumping or flow diversion within Nevada Department of Transportation (NDOT) rights of way for purposes of installing bypass equipment including, but not limited to, bypass piping shall comply with the requirements of NDOT. NDOT encroachment permit requirements apply.
- F. Requirements for temporary bypass pumping or flow diversion within Clark County (CC) rights of way for purposes of installing bypass equipment including, but not limited to, bypass piping shall comply with the requirements of CC. CC permit requirements apply.
- G. Requirements for temporary bypass pumping or flow diversion within City of North Las Vegas (CNLV) rights of way for purposes of installing bypass equipment including, but not

limited to, bypass piping shall comply with the requirements of CNLV. CNLV permit requirements apply.

- H. The Contractor's bypass plan must consider existing speed limits and allowable reductions in determining the location of piping and reduce speed at each location where the piping crosses perpendicular to lanes of traffic by 10 mph.
- I. Contractor shall keep all driveway access to adjoining properties accessible to the public and fire and emergency vehicles. Final designs for maintaining access will be prepared by the Contractor and submitted to the controlling agency for approval as part of the Traffic Control Plan.
- J. At each project site the Contractor shall have the entire bypassing system in place and tested before bypassing any sewage.
- K. The Contractor shall notify the Engineer 48 hours prior to shutting down or bypassing any of the pipelines or lift stations.
- L. The bypassed flow shall be continuously metered. The bypass equipments shall be continuously monitored to ensure proper operation at all times.
- M. For purposes of bypass pumping lateral flows, right of entry onto private property is not permitted without property owner/homeowner association permission. Contractor shall be responsible to acquire this permission. Laterals shown on Drawings are from best available documents. Internal inspection may identify additional laterals not shown on the Drawings that may require bypass pumping.

695.01.03 DEFINITIONS

- A. Average Flow: flow values based upon equivalent residential units (ERU) or mean flow value as determined by a 7-day flow monitoring.
- B. Cumulative Average Flow: the summation of tributary average flow values contributing to flow at a given point.
- C. Peak Flow: a product of Cumulative Average Flow and the corresponding Peak Flow Factor.

MATERIALS

695.02.01 SUBMITTALS

- A. The Contractor shall submit drawings and complete design data showing methods and equipment he proposes to utilize in diversion of sewage flow of each project site for approval by the Engineer.
- B. The submittal shall include the following information:
 - 1. Drawings indicating the following:

- a. Scheme and location of temporary sewer plugs and bypass discharge lines for each of the project sites.
 - b. Method and location for discharging the bypass lines.
2. Capacities and sizes of pumps, prime movers, and standby equipment.
3. Design calculations proving adequacy of the system and selected equipment, including static lift, friction losses, fitting losses, flow velocity, pump curves showing operating range, and pipe thickness calculations. Pipe thickness calculations shall assume an H2O live loading.
4. Sewer plugging method and type of plug.
5. Method of noise control for each pump and generator.
6. Standby power source.
7. Staffing plan including name and telephone number of attendant.
8. Spillage containment and cleanup plan.
9. Odor control plan.
10. Traffic control plan for bypass piping.

695.02.02 PRODUCTS

- A. Contractor shall provide temporary pumps, conduits, and other equipment to bypass sewer flow around the Contractor's work area as required by the work, and during CCTV inspection and cleaning activities.
 1. Contractor shall furnish all necessary labor and supervision to set up and operate the pumping and bypass system.
 2. Engines shall be equipped with devices such as (but not limited to) mufflers and/or plywood/Styrofoam noise panels enclosing the engines to keep the noise level within limits specified by the Owner.
 3. Pumps and bypass lines shall be of adequate capacity and size to handle the Peak Flow.
 4. Bypass lines, fittings and all accessories shall withstand twice the maximum pressure of the system or 50 psi whichever is greater.
- B. Contractor shall maintain on site, sufficient equipment and materials to ensure continuous and successful operation of the bypass and dewatering systems.
 1. The Contractor shall have redundant bypass pumps, generator and pipe on site, manifold, connected and ready to operate immediately..
 2. The Contractor shall have standby pumps on site for 100% redundancy of the bypass system design flow or Peak Flow, whichever is greater.
 3. Standby pumps shall be plumbed, fueled and operational at all times.
 4. The Contractor shall maintain on site a sufficient number of valves, tees, elbows, connections, tools, sewer plugs, piping, and other parts or system hardware to ensure immediate repair or modification of any part of the system as necessary.
 5. In order to determine bypass pipe capacity, the Contractor shall use a maximum velocity of 10 feet/second.
- C. All pumps, generators and other equipment shall be placed on a new containment unit to protect against spills of petroleum products used by the equipment.
- D. Odor control during bypass operations shall be in accordance with Section 696 "Environmental Control Sanitary Sewer Rehabilitation".

CONSTRUCTION

695.03.01 AVAILABLE FLOW DATA

- A. Estimated flow data for the sewers to be rehabilitated in the project sites is located on the Plans.
- B. Flow data for service laterals, when available, is shown on the Plans.
- C. The Contractor shall determine flow data for the service laterals not available or not shown.
- D. It is anticipated that the work may be performed during the months when the Las Vegas valley experiences monsoon seasonal rain events.
 - 1. It is likely that these events will influence the quantity of flow in the sewer lines.
 - 2. Evidence exists suggesting that the sewer lines proposed for rehabilitation have flowed full in the past. The Contractor must consider this possibility when planning his diversion operations.

695.03.02 OPERATIONS

- A. In areas where flows are bypassed, all bypass flows shall be discharged as approved by the Engineer.
- B. No bypassing to the ground surface, receiving waters, storm drains, or bypassing which results in soil or groundwater contamination or any potential health hazards shall be permitted.
- C. In the event of any sewage spill the Contractor will be responsible for the prompt cleanup and disinfecting of the spill as called for in his spillage cleanup plan.
- D. The Contractor shall compensate the Owner for the cost of any fines levied as the result of a spill or unauthorized discharge.

695.03.03 LEAKAGE TESTING AND INSPECTION

- A. The bypass pumping system shall be tested prior to being placed in service to insure there are no leaks.
- B. The Contractor shall inspect the entire bypass pumping and piping system for leaks or spills on an hourly basis. The Contractor shall also create an inspection log and shall enter the time of the inspections, the condition of the piping, and the name of the inspector into the log for review by the Engineer.
- C. The testing procedure shall be as follows:
 - 1. The test shall run for a period of 24 hours.
 - 2. The Contractor shall fill the line with water.
 - 3. The line shall be sealed on the discharge end.
 - 4. The Contractor shall pressurize the line to twice the maximum pressure of the system or 50 psi whichever is greater.
 - 5. The Contractor shall walk the line every hour and keep a log of the findings.

6. The line may be put in service if after the 24 hour period the pressure has been maintained and there are no observable leaks.

695.03.04 DISMANTLING OF BYPASS PUMPING SYSTEM

- A. The bypass pumping system shall be cleaned and disinfected prior to being dismantled.
 1. The Contractor shall alternate flushing and purging of the system to remove all loose material.
 2. After the Contractor has cleaned the pipe, and prior to dismantling of the piping, the Contractor shall disinfect the pipe with 10% chlorine and water solution.
- B. Disturbed Areas: Upon completion of bypass pumping operation, clean disturbed areas, restoring to original condition, including, but not limited to, pavement restoration, restoration of the striping and traffic control devices, landscaping, and private property improvements restoration, at least equal to that which existed prior to start of Work.

695.03.05 SCHEDULING

- A. The bypassing system shall not be shut down between shifts, on holidays or weekends, or during work stoppages without written permission from the Engineer.
- B. The bypass system shall have a trained and qualified attendant 24 hours per day, 7 days per week, whose only duty is to maintain the bypass pumping system until the bypassing of the specific pipeline is no longer required. The attendant shall be qualified to both operate and repair any and all problems that may occur.
- C. The attendant shall have a cellular phone for communication between the Engineer and the site in the event of emergencies. The cellular phone number shall be provided to the Engineer at the beginning of the project.

695.03.06 FLOW CONDITIONS

- A. The Contractor is responsible for intercepting the flows at locations suitable to achieve the goal of dewatering the sewer lines scheduled for work.
- B. The Owner may allow diversion of sewer flow that will reduce the amount entering the system.
 1. The Contractor shall obtain permits from the Owner in order to install plugs and pumps and other equipment at specified locations to accomplish the diversions.
 2. Flow values shown on the Plans reflect monitored or estimated flow.

METHOD OF MEASUREMENT

695.04.01 MEASUREMENT

No direct measurement shall be made for DIVERSION OF SEWAGE FLOW.

BASIS OF PAYMENT

695.05.01 PAYMENT

Unless otherwise provided in the Special Provisions, no payment will be made for DIVERSION OF SEWAGE FLOW as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which DIVERSION OF SEWAGE FLOW is required.

END OF SECTION 695

SECTION 714 – PAINT AND PAVEMENT MARKINGS

REQUIREMENTS

714.02.01 CERTIFICATIONS

DELETE PARAGRAPH “C” OF THIS SUBSECTION AND REPLACE WITH THE FOLLOWING:

- C. Manufacturer’s lab test results must be supplied upon request of the Engineer. No pavement marking material shall be used which is not on the Qualified Products List established by the Nevada Department of Transportation.

END OF SECTION 714

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SECTION 726 – ROADSIDE MATERIALS

REQUIREMENTS

726.02.01 CERTIFICATES AND SAMPLES

ADD THE FOLLOWING TO PARAGRAPH A:

3. Topsoil. Obtain from the County Weed Control Agency or the State Quarantine Officer a written certification that the area from which the topsoil is to be obtained is free from noxious weeds. Topsoil that has been treated with herbicides or sterilants shall be tested by the State Department of Agriculture to determine the residuals in the soil.

Before imported topsoil is brought on the jobsite, furnish a current report from a recognized testing laboratory indicating the particle size, clay content, the pH factor, and electrical conductivity of the sample.

ADD THE FOLLOWING TO PARAGRAPH B:

The State Department of Agriculture shall sample the fertilizer before use on the project.

ADD THE FOLLOWING TO PARAGRAPH C:

3. Humus. Before bulk humus is brought to the jobsite, furnish a current report from a recognized testing laboratory indicating the moisture retention capacity, organic matter (based on dry mass), nitrogen (based on dry mass), pH factor, and the amount of Douglas Fir bark.

ADD THE FOLLOWING TO PARAGRAPH D:

6. Plants. Plants shall comply with Federal and State laws requiring inspection for plant diseases and infestations. Furnish inspection certificates required by law shall with each shipment of plants.

ADD THE FOLLOWING TO PARAGRAPH F:

3. Irrigation Materials. Ascertain that all required tests have been made by approved qualified testing laboratories. Furnish a written certification that all required tests have been satisfactorily completed and that materials and fabrication thereof comply with all the requirements.

PHYSICAL PROPERTIES AND TESTS

726.03.02 FERTILIZER

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Provide fertilizer of a standard commercial grade of organic or inorganic fertilizer of the kind and quality specified in the contract documents. Fertilizer may be separate or in a mixture container the percentage of total nitrogen, available phosphoric acid and water-soluble potash in the amounts specified. All fertilizers shall be furnished in standard unopened containers with mass, name of plant nutrients and manufacturer's guaranteed statement of analysis clearly marked, all in accordance with State and Federal laws.
- B. Acceptable commercial fertilizer and agricultural minerals will be specified in one of the following forms:
- 1) A dry free-flowing granular material suitable for application by agricultural fertilizer spreaders.
 - 2) A soluble fertilizer ground to a fineness that will permit complete suspension of insoluble particles in water, suitable for application by power sprayers.
 - 3) A granular or pelleted fertilizer and agricultural mineral suitable for application by blower equipment.
 - 4) A non-volatile liquid fertilizer or agricultural mineral.
- C. Commercial fertilizer (tablets) shall be tightly compressed tablets weighting approximately 21 g designed for the establishment of trees and shrubs. Fertilizer tablets shall conform to the following chemical analysis:

	Minimum Percentage
Organic Nitrogen (derived from Urea-Form).....	20.00
Available Phosphoric Acid (derived from calcium phosphate).....	10.00
Soluble Potash (derived from potassium sulfate).....	5.00
Combined Sulfur (derived from ferrous ammonium and potassium sulfate).....	1.60
Iron (expressed as metallic, derived from ferrous ammonium sulfate).....	0.35

With written permission, commercial fertilizer tablets designed for the same purpose with a quantitative analysis that deviates from that listed above may be used.

Commercial fertilizer (tablets) to be applied at a rate of three per 5-gallon plant and (15) per 36-inch box trees.

726.03.06 PLANTS

ADD THE FOLLOWING PARAGRAPHS TO THIS SUBSECTION:

- C. Trees, Plants, and Ground Cover: Species and size identifiable in plant schedule, grown in climatic conditions similar to those in locality of the work. At least 10% of all plant varieties to have nursery identification tags attached.
- D. Plants to be in compliance with the *Arizona Nursery Association Recommended Tree Specification* (1989) standards. If plant is not on that list then it will be in compliance with the *USA Standard for Nursery Stock* current edition and/or *Hortus Third*.
- E. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae and shall have healthy, well-developed root systems. They shall be free from physical damage or adverse conditions that would prevent thriving growth. Soil in the containers shall be free of disease and pathogens.

- F. Plants shall be true to species and variety and conform to the measurements specified plants larger than the specified size may be used if approved by Owner's Representative. Use of such plants shall not increase Contract price. If larger plants are approved, the ball of earth shall be increased in proportion to the size of the plant. Plants shall be measured when branches are in their normal position. Height and spread dimensions specified refer to main body of plant and not branch tip to tip. Caliper measurement shall be taken at a point on the trunk 6 inches above natural ground line for trees up to 4 inches in caliper and at a point 12 inches above the natural ground line for trees over 4 inches in caliper. If a range of size is given, no plant shall be less than the minimum size and not less than 40% of the plants shall be as large as the maximum size specified. The measurements specified are the minimum size acceptable and are the measurements after pruning, where pruning is required. Plants that meet the measurements specified, but do not possess a normal balance between height and spread, shall be rejected.
- G. Container stock shall have grown in the containers in which delivered for at least six months, but not over two years. Samples must prove that no root bound conditions exist. No container plants that have cracked or broken balls of earth when taken from container shall be planted except upon special approval by Owner's Representative.
- H. Plants shall not be pruned before delivery. Trees, which have damaged or crooked trunks and or leaders, or multiple leaders, unless specified, will be rejected. Trees with abrasions of the bark, sunscald, disfiguring knots, or fresh cuts of limbs over 3/4 inches, which have not completely calloused, will be rejected.

726.03.09 PIPES AND FITTINGS

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

- A. Steel Pipe shall be standard weight, hot dipped galvanized pipe, conforming to ASTM A53 (A120). Thread and couple pipe, and furnish in standard lengths. All pipe fittings shall be standard threaded galvanized malleable iron fittings.
- B. Plastic pipe, except soaker lines, shall be polyvinyl chloride (PVC) 1120 or 1220 pressure pipe as shown in the irrigation system legend on the plans, and shall conform to ASTM D2241. Extrude PVC pipe form 100% virgin material, approved by the National Sanitation Foundation (NSF). All plastic pipe, except soaker lines, shall be pressure rated at 1.38 Mpa (200 psi) (Class 200) minimum. Bell and spigot PVC pipe may be used in lieu of plain end pipe and couplings.

Fittings for PVC plastic pipe shall conform to ASTM D2466.
- C. Polyethylene used in the manufacture of polyethylene fittings shall conform to ASTM D1248, for Type III. Polyethylene fittings used in assembling swing joint risers shall be schedule 80 conforming to ASTM D3261.
- D. Plastic pipe for soaker lines shall be flexible PVC conforming to ASTM D2287, Cell-type 6640400.

Wall thickness of soaker lines shall conform to the following when determined according to ASTM D2122:

Hose Size-Nominal mm (in.)	Minimum * mm (in.)	Range (%)
15 (1/2)	2.25 (0.090)	12
20 (3/4)	3.75 (0.150)	12
25 (1)	3.95 (0.158)	12

* As measured at any point on the cross section

The plastic pipe for soaker lines shall also contain a proven effective, algae resistant ingredient. Furnish certification to the effectiveness of the algae resistant ingredient upon request. Acceptable certification shall be the results of eight:

1. Field test for at least 2 years under actual operating conditions or
2. Laboratory testing which closely approximates the full range of climatic conditions that would exist during any full calendar year, including exposure to algae under warm climatic conditions for a duration of 30 days.

Provide PVC plastic pipe, which is homogeneous throughout, smooth inside and outside, free from cracks, holes, foreign materials, dents, wrinkles, and blisters.

ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:

726.03.14 TOPSOIL

- A. Topsoil shall consist of fertile, friable soil of loamy character, and shall contain an amount of organic matter normal to the region. Obtained topsoil from well-drained arable land and shall be free from subsoil, refuse, roots, heavy or stiff clay, stones larger than one (1) inch (25 mm) in largest dimension, coarse sand, sticks, brush, litter, and other deleterious substances. Topsoil shall be capable of sustaining healthy plant life.

- B. Requirements for planting soil shall be as follows:

Imported 1/16 inch minus topsoil: Provide sandy base topsoil for all turf areas, groundcover areas and plant backfill mix. Topsoil shall meet the following specifications:

Organic Matter.....	0.1 to 1.0% by dry weight of soil
Particle Size.....	1/16 inch maximum
Clay and Silt Content.....	8% maximum (by weight)
pH Factor.....	8.0 to 8.5
Electrical Conductivity.....	Maximum of 3.0 MMHOS per centimeter of the saturation paste extract
Salts.....	Less than 2.0 MMHOS/CM
Boron.....	Less than 1.0 PPM
Percolation Rate.....	Greater than 2 inches per hour

726.03.15 HUMUS

- A. Humus shall be processed, composted, fine ground bark of White Fir, Pine, or Redwood, or a mixture of these in any proportion. Supply humus free of lumps or clods. The humus shall pass a 12.5 mm (1/2 in.) sieve, and 85% shall pass a 3.35 mm (No. 6) sieve.

B. Humus shall also conform to the following requirements:

Moisture Retention Capacity.....	35% minimum
Organic Matter (based on dry weight)	95% minimum
Nitrogen (based on dry weight)	1.5% minimum
pH Value (based on 1:5 solution)	6.5 to 8.0
Douglas Fir Bark.....	0%

726.03.16 ROCK MULCH

- A. The Rock Mulch shall be the type and size specified on Landscape Plans.
- B. The Rock Mulch shall not contain lumps or balls of clay, caliche, organic matter or calcareous coating. Rock Mulch shall be placed in all planting areas shown on plans.
- C. Provide documentation that sufficient quantity is available to complete the project from a single source.

726.03.17 LANDSCAPE BOULDERS

- A. The Landscape Boulders shall be granite and round in shape.
- B. The Landscape Boulders shall be the type and size specified on Landscape Plans.

726.03.18 DRAIN GRAVEL

- A. 1/4-inch diameter pea gravel.

726.03.19 STAKING MATERIALS

- A. Tree Stakes: All stakes shall be Lodge pole pine with 10 inch tapered driving point and chamfered top; treated with copper naphthanate or pentachlorophenol to heartwood; green in color, 2 inches in diameter by 8 feet in length for 15 gallon trees and 2 inches in diameter by 10 feet in length for 24 inch and 30 inch box trees. If tree is staked, 24 inches of stake shall be driven into soil. Staking shall be by industry standards and landscape detail drawings.
- B. All standard tree staking shall be done with GCS Treestaps manufactured by GCS, Inc., 230 Center Street, North Wales, PA 19454, (800) 360-3584. Install 2 GCS Treestaps per tree in accordance with manufacturer's specifications, except instead of nails, use four 1 1/4 inch, 10 gauge zinc-plated screws per brace for final attachment. Nursery tape or rope will not be considered an adequate substitute.

METHOD OF MEASUREMENT

726.04.01 MEASUREMENT

No direct measurement shall be made for ROADSIDE MATERIALS.

BASIS OF PAYMENT

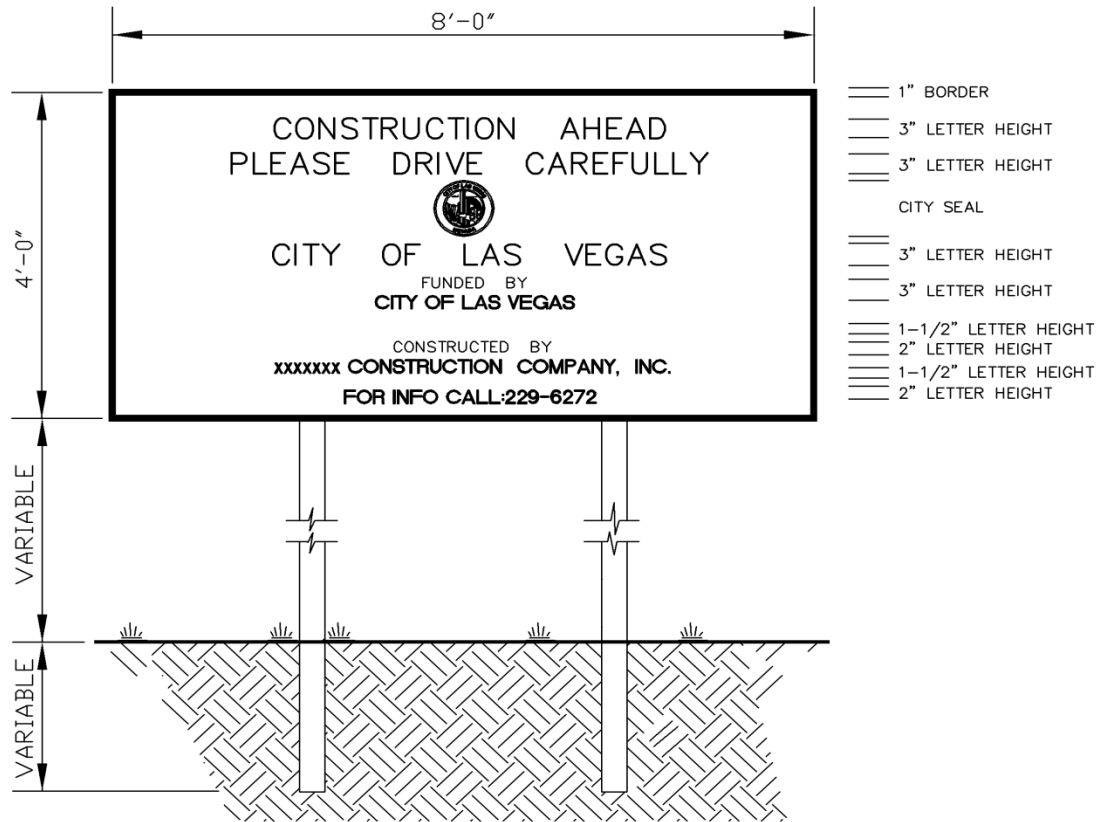
695.05.01 PAYMENT

Unless otherwise provided in the Special Provisions, no payment will be made for ROADSIDE MATERIALS as such. The cost thereof shall be considered as included in the price bid for construction or installation of items in Section 212 – Landscaping and Section 213 – Irrigation Systems.

END OF SECTION 726

APPENDIX A – PROJECT SIGNS

Front of sign information for City of Las Vegas funded projects:



PROJECT SIGN

NOTES:

1. SIGN SHALL BE PAINTED WHITE WITH 1" BLACK BORDER. ALL LETTERING TO BE BLACK EXCEPT TOP ONE WHICH SHALL BE RED.
2. SIGN SHALL BE PLACED SO AS NOT TO OBSTRUCT SAFE STOPPING SIGHT DISTANCE AND SHALL NOT OBSTRUCT ANY PEDESTRIAN WAY.
3. FINAL SIGN LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

Back of sign information:

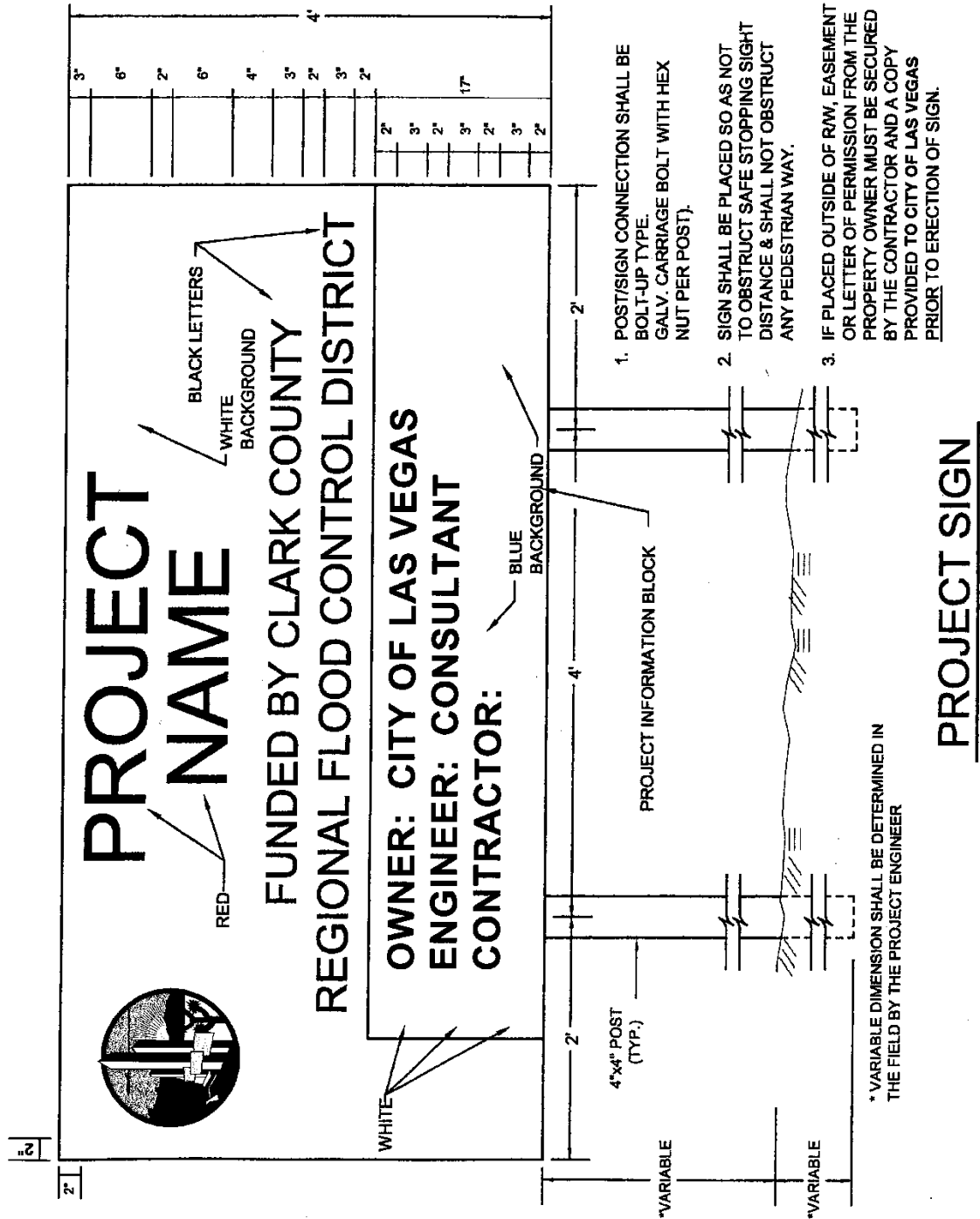
The hourly rates for this project are determined by the state of Nevada. Information on the rates can be obtained by calling the office of Labor commissioner at (702) 486-2650.
Reference PWP# 07.1730.XXX.

El salario labor correspondiente por hora es determinado por Estado de Nevada. Informacion acerca los salarios puede ser obtenida llamando a la Comision laboral al (702) 486-2650.
Numero PWP de referencia 07.1730.XXX.

== 1" BORDER

== 1-1/2" LETTER HEIGHT

Sign information for RFCD funded projects:



Back of sign:

REVERSE SIDE OF PROJECT SIGN
(Use Minimum 3-inch High Letters)

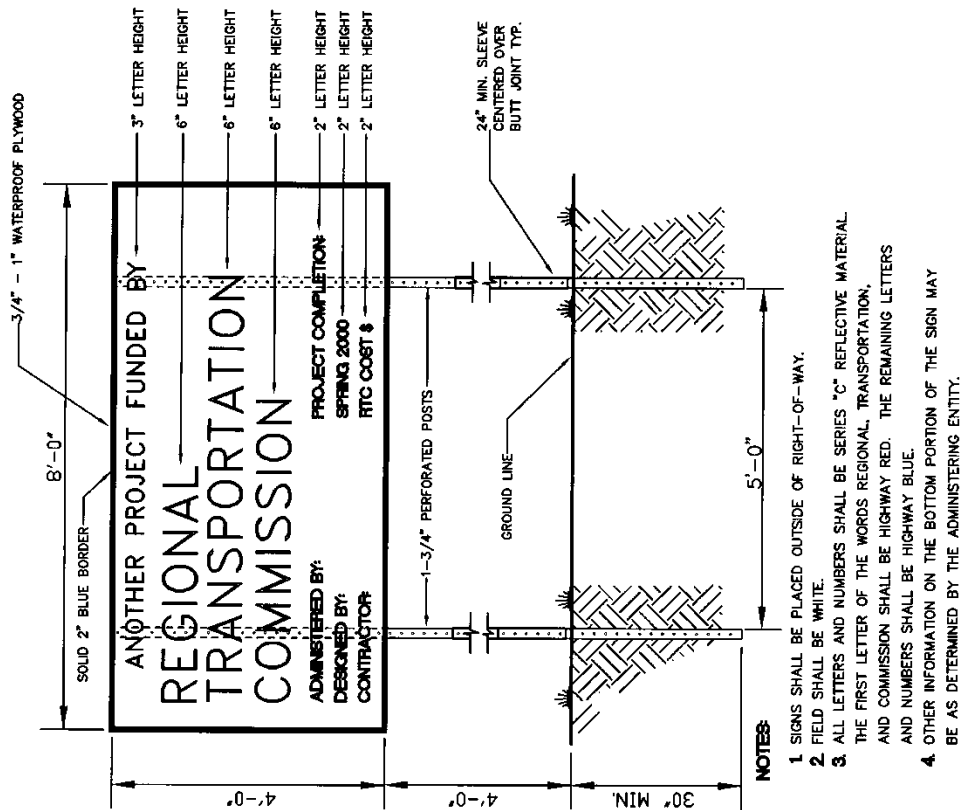
THIS IS A PREVAILING WAGE PROJECT

The hourly labor rates for this project are determined by the State of Nevada. Information on the rates can be obtained by calling the Office of the Labor Commissioner at (702) 486-2650.
Reference PWP# _____.

ESTE ES UN PROYECTO DE SALARIOS DETERMINADOS

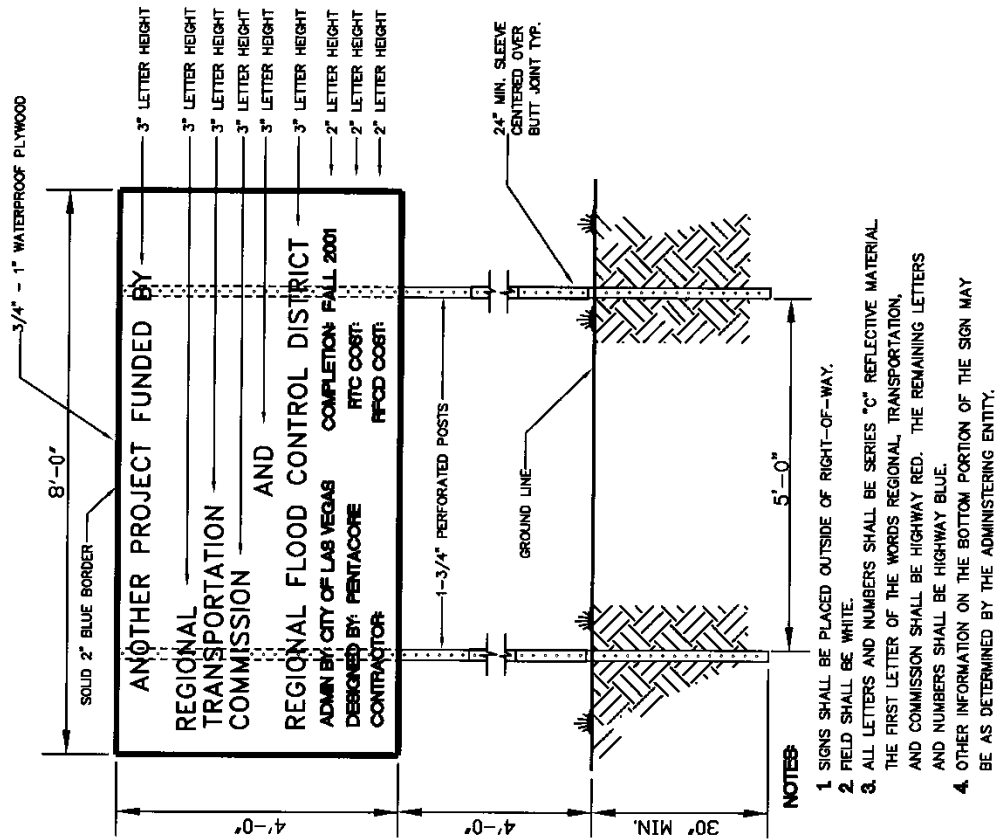
El salario laboral correspondiente por hora es determinado por El Estado de Nevada. Información acerca de los salarios puede ser obtenida llamando a la Comisión Laboral al (702) 486-2650.
Numero PWP de referencia _____.

Sign information for RTC funded projects:



PROJECT SIGN
NOT TO SCALE

Sign information for RTC and RFCD funded projects:



PROJECT SIGN

NOT TO SCALE

APPENDIX B – CITY OF LAS VEGAS TRENCH PLATE REQUIREMENTS

Trench plates placed on City of Las Vegas right of way with speeds of 45 m.p.h. or greater shall be placed with one of the following options.

1. The surface of the roadway around the trench will be taken down to allow the plate to lay flush with the top of the roadway. Any voids will be filled with cold mix and compacted to ensure that the roadway has a smooth drivable surface. The integrity of the plate placement is the responsibility of the contractor, who must take necessary precautions to ensure anchoring, strength and side supports are adequate to prevent collapse and/or plate movement. (PROFILE VIEW OPTION #1)
2. The trench plates will be placed over the trench with at least 18 inches of cold mix placed around the trench plate on every side to ensure a smooth transition. When checked with a 12" straight edge, vertical deviations must be less than $\frac{3}{4}$ ". The integrity of the plate placement is the responsibility of the contractor, who must take necessary precautions to ensure anchoring, strength and side supports are adequate to prevent collapse and/or plate movement. There will be a buffer plate added to each side of the plate covering the trench within the travel lane to create a more drivable surface. The entire lane will be addressed, no half lane plating will be allowed. Bump Ahead signage will be placed in advanced of the plates. They will be placed in accordance with the M.U.T.C.D. and/or all Municipal Codes. (PLAN VIEW OPTION #2)

Trench plates placed on City of Las Vegas right of way with speeds of 40 m.p.h. or less shall be placed with one of the following options.

The trench plates will be placed over the trench with at least 18 inches of cold mix placed around the trench plate on every side to ensure a smooth transition. When checked with a 12" straight edge, vertical deviations must be less than $\frac{3}{4}$ ". The integrity of the plate is the responsibility of the contractor, who must take all necessary precautions to ensure anchoring, strength and side supports are adequate to prevent collapse and/or plate movement. The entire travel lane will be addressed, no half lane plating will be allowed. Bump Ahead signage will be placed in advanced of the plates. They will be placed in accordance with the M.U.T.C.D. and/or all Municipal Codes. (PLAN VIEW OPTION #2)

