2016

City of San Luis

SUPPLEMENT TO
MAG UNIFORM STANDARD SPECIFICATIONS
For
PUBLIC WORKS CONSTRUCTION
And To The
CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS

EFFECTIVE October 26, 2016

2016 CITY OF SAN LUIS SUPPLEMENT TO THE 2015 MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND TO THE CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS

The City of San Luis Supplement to the 2015 Maricopa Association of Governments (MAG) Uniform Standard Specifications for Public Works Construction is a Supplement to MAG Uniform Standard Specifications as published by the Maricopa Association of Governments and is also a supplement to the City of Yuma Construction Standard Detail Drawings as published by the City of Yuma.

The Specifications and Standard Details should be thoroughly reviewed by the professional engineers and architects in responsible charge prior to incorporating them into project plans and specifications. The Specifications are not a substitute for good engineering judgment. Unique conditions will arise that are outside of the scope of this document. Professional engineers and architects are required to use their judgment to develop special provisions to properly adjust the Specifications to best meet site-specific needs. Professional engineers and architects are required to provide professional services in accordance with the statutes of the State of Arizona and the rules of the Arizona State Board of Technical Registration. Not all specifications and standard details will apply to all projects.

All public works construction contracts advertised and all permits issued shall be governed by the **2016 edition.** A copy of the **2016 edition** is available from the City of San Luis.

CONSTRUCTION SPECIFICATIONS

TABLE OF CONTENTS

PARTS 100,200,300,400,500,600&700

PART 100 – GENERAL CONDITIONS

Section	Title	
101	Abbreviations and Definitions	101-1
102	Bidding Requirements and Conditions	102-1
103	Award and Execution of Contract	103-1
104	Scope of Work	104-1
105	Control of Work	105-1
106	Control of Materials	N/C
107	Legal Regulations and Responsibility to Public	107-1
108	Commencement, Prosecution and Progress	108-1
109	Measurements and Payments	109-1
110	Notification of Changed Conditions and Dispute Resolution	110-1
111	Health & Safety	111-1

PART 200 – EARTHWORK

PART 300 - STREETS AND RELATED WORK

Section	Title	
301	Subgrade Preparation	301-1
306	Mechanically Stabilized Subgrade-Geogrid Reinforcement	N/C
309	Lime Slurry Stabilization or Modification of Subgrade	N/C
310	Placement and Construction of Aggregate Base Course	310-1
311	Placement and Construction of Cement Treated Subgrade	N/C
312	Cement Treated Base	N/C
315	Bituminous Prime Coat	N/C
317	Asphalt Milling	N/C
320	Road-mixed Surfacing	N/C
321	Placement and Construction of Asphalt Concrete Pavement	321-1
324	Portland Cement Concrete Pavement (PCCP)	N/C
325	Placement and Construction of Asphalt-Rubber Asphalt Concrete	N/C
327	Hot In-Place Recycling	N/C
329	Tack Coat	329-1
330	Asphalt Chip Seal	N/C
331	Microsurfacing Specifications	N/C
332	Placement and Construction of Asphalt Emulsion Slurry Seal Coat	N/C
333	Fog Seal Coats	N/C
334	Preservative Seal for Asphalt Concrete	N/C
335	Placement and Construction of Hot Asphalt-Rubber Seal	N/C

336	Pavement Matching and Surfacing Replacement	336-1
337	Crack Sealing	N/C
340	Concrete Curb, Gutter, Sidewalk, Curb Ramps, Driveway and Alley Entrance	340-1
342	Decorative Pavement Concrete Paving Stone	N/C
343	Exposed Aggregate Paving	N/C
345	Adjusting Frames, Covers, Valve Boxes Meter Boxes and Pull Boxes	345-1
350	Removal of Existing Improvements	350-1
355	Utility Potholes-Keyhole Method	N/C
360	Telecommunications Installation	N/C

PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL

Section	Title	
401	Traffic Control	401-1
405	Survey Monuments	405-1
410	Precast Safety Curbs	N/C
415	Flexible Metal Guardrail	N/C
420	Chain Link Fences	N/C
424	Parkway Grading	N/C
425	Topsoils	N/C
430	Landscaping and Planting	N/C
440	Sprinkler Irrigation System Installation	N/C

PART 500 – STRUCTURES

Section	Title	
505	Concrete Structures	N/C
506	Precast Prestressed Concrete Members	506-1
510	Concrete Block Masonry	N/C
511	Brick Masonry	N/C
515	Steel Structures	N/C
520	Steel and Aluminum Handrails	N/C
525	Pneumatically Placed Mortar	N/C
530	Painting	N/C

PART 600 – WATER, SEWER, STORM DRAIN AND IRRIGATION

Section	Title	
601	Trench Excavation, Backfilling and Compaction	601-1
602	Trenchless Installation of Steel Casing	N/C
604	Placement of Controlled Low Strength Material	604-1
605	Subdrainage	N/C
607	Trenchless Installation of Smooth Wall Jacking Pipe	N/C
610	Water Line Construction	610-1
611	Water, Sewer and Storm Drain Testing	611-1

615	Sanitary Sewer Line Construction	N/C
616	Reclaimed Water Line Construction	N/C
618	Storm Drain Construction	618-1
~~620~~	~~Cast-in-place Concrete Pipe~~	DELETED
621	Corrugated Metal Pipe and Arches	N/C
625	Manhole Construction and Drop Sewer Connections	625-1
630	Tapping Sleeves, Valves and Valve Boxes on Water Lines	630-1
631	Water Taps and Meter Service Connections	631-1

PART 700 – MATERIALS

Section	Title	
701	Aggregate	N/C
702	Base Materials	N/C
703	Riprap	N/C
705	Portland Cement Treated Base	N/C
708	Asphalt Pavement Core Bonding Materials	N/C
710	Asphalt Concrete	710-1
711	Paving Asphalt	N/C
712	Liquid Asphalt	N/C
713	Emulsified Asphalts Materials	N/C
714	Microsurfacing Materials	N/C
~~715~~	~~Slurry Seal Materials~~	DELETED
716	Cover Material	N/C
717	Asphalt-Rubber Asphalt Concrete	N/C
718	Preservative Seal for Asphalt Concrete	N/C
725	Portland Cement Concrete	725-1
726	Concrete Curing Materials	N/C
727	Steel Reinforcement	N/C
728	Controlled Low Strength Material	N/C
729	Expansion Joint Filler	N/C
735	Reinforced Concrete Pipe	N/C
~~736~~	~~Non-reinforced Concrete Pipe~~	DELETED
738	High Density Polyethylene Pipe and Fittings for Storm Drain and Sanitary Sewer	738-1
739	Steel Reinforced Polyethylene Pipe & Fittings for Storm Drain, Irrigation & Sanitary Sewer	N/C
740	Polypropylene Pipe & Fittings for Storm Drain, Irrigation & Sanitary Sewer	N/C
~~741~~	~~Lining for Reinforced Concrete Sanitary Sewer Pipe~~	DELETED
742	Precast Manhole	742-1
742A	Polymer Concrete Manhole	742A-1
~~743~~	~~Vitrified Clay Pipe~~	DELETED
744	ABS Truss Pipe and Fittings	N/C
745	PVC Sewer Pipe and Fittings	N/C
~~750~~	~~Iron Water Pipe and Fittings~~	DELETED

~~752~~	~~Asbestos-Cement Water Pipe and Fittings~~	DELETED
~~753~~	~~Galvanized Pipe and Fittings~~	DELETED
~~754~~	~~Copper Pipe, Tubing and Fittings~~	DELETED
~~755~~	~~Polyethylene Pipe for Water Distribution~~	DELETED
756	Dry Barrel/Fire Hydrants	N/C
757	Sprinkler Irrigation System	N/C
758	Concrete Pressure Pipe - Steel Cylinder Type	N/C
759	Steel Pipe	N/C
760	Coating Corrugated Metal Pipe and Arches	N/C
761	Structural Plate Pipe, Arches, and Pipe Arches	N/C
770	Structural and Rivet Steel, Rivets, Bolts, Pins, and Anchor Bolts	N/C
771	Galvanizing	N/C
772	Chain Link Fence	N/C
775	Brick and Concrete Masonry Units (Blocks)	N/C
776	Masonry Mortar and Grout	N/C
778	Lumber	N/C
779	Wood Preservatives	N/C
787	Gray Iron Castings	N/C
790	Paint	N/C
792	Dust Palliative	N/C
795	Landscape Material	N/C
796	Geosynthetics	N/C

N/C – No change to the Specification

DELETED – This Section deleted in its entirety

CONSTRUCTION SPECIFICATIONS

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109	Measurements and Payments	109-1
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N/C – No change to the Specification

Deleted – This Section deleted in its entirety

SECTION 101 – ABBREVIATIONS AND DEFINITIONS

If there are any discrepancies between this document and the City code, the City code will govern.

SUBSECTION 101.2 DEFINITIONS AND TERMS add the following definition:

Solicitation: The book or pamphlet pertaining to a specific project, containing proposal forms, special provisions and other information necessary for and pertinent to the preparation of the proposal or bid.

REPLACE THE FOLLOWING DEFINITIONS:

County: Yuma County, organized and existing under and by virtue of the laws of the State of Arizona

Contracting Agency: The City of San Luis

Major Item: The total of any item of work and/or materials specified in the bid form that exceeds the amount established in Table 109-1.

SECTION 102 – BIDDING REQUIREMENTS AND CONDITIONS

SUBSECTION 102.8 PROPOSAL GUARANTEES delete subsection in its entirety and replace with the following:

As required by A.R.S. § 34-201, as amended, each bid must be accompanied by a certified check, cashier's check, or surety bond payable to the City of San Luis for at least ten percent (10%) of the total bid price as a guarantee that the bidder enter into a contract to perform the Project in accordance with the Plans and Project Manual, within ten (10) days after the Notice of Award. The surety bond must be issued by a company authorized to transact surety business in the State of Arizona.

If a surety bond is used, the surety bond shall be executed solely by a surety company or companies holding a certificate of authority pursuant to Transact surety business in the State of Arizona issued by the Director of the Department of Insurance. The surety bond shall not be executed by an individual surety or sureties. In addition, said company or companies shall be rated "Best A-" or better as required by the Contracting Agency, as currently listed in the most recent Best Key Guide, published by the A.M. Best Company

SUBSECTION 102.9 SUBMISSION OF PROPOSAL delete subsection in its entirety and replace with the following:

Proposals (Bid) and bid guarantee (Bid Bond) must be received in a sealed envelope identifying on the outside of the envelope the contractor name, contactors complete address, solicitation number and title. The sealed envelope must be received by the City of San Luis by the specified date and time in the solicitation or as indicated in addenda**.**

Any proposal received after the stated deadline identified (unless changed by addendum), will not be considered and will be returned unopened to the sender at sender's expense if sender wants the proposals to be returned. No oral or electronically transmitted proposal will be considered*.*

SUBSECTION 102.10 WITHDRAWAL OR REVISION OF PROPOSAL delete subsection in its entirety and replace with the following:

Any bidder may withdraw or revise a proposal after it has been deposited with the Contracting Agency, provided the bidder's request is received by the Contracting Agency, in writing, before the time specified for opening proposals or as stipulated herein.

SUBSECTION 102.13 SUCCESSFUL BIDDERS delete subsection in its entirety and replace with the following:

Unless otherwise specified in the solicitation, the successful bidder may obtain three (3) sets of plans and special provisions for the project from the Contracting Agency at no cost.

SECTION 103 – AWARD AND EXECUTION OF CONTRACT

SUBSECTION 103.1 CONSIDERATION OF PROPOSAL delete last paragraph in its entirety

SUBSECTION 103.2 RETURN OF PROPOSAL GUARANTEE delete subsection in its entirety and replace with the following:

All proposal guarantees)except Bid Bonds) will be returned immediately after the contract documents have been executed by all parties. If a check has been received in lieu of a bid bond, the City of San Luis will issue a check to refund the Contractor. Bid bonds will be kept in bid file.

SUBSECTION 103.6.1 GENERAL (A) MINIMUM LIMITS OF LIABILITY delete subsection in its entirety and replace with the following:

The following limits are typical minimum requirements, but may be subject to change depending on project size/type requirements.

A. General.

(1) Insurer Qualifications. Without limiting any obligations or liabilities of the Contractor, the Contractor shall purchase and maintain, at its own expense, hereinafter stipulated minimum insurance with insurance companies duly licensed by the State of Arizona with an AM Best, Inc. rating of A- or above with policies and forms satisfactory to the City. Failure to maintain insurance as specified herein may result in termination of this Agreement at the City's option.

(2) Additional Insured. All insurance coverage and self-insured retention or deductible portions, except Workers' Compensation insurance and Professional Liability insurance, if applicable, shall name, to the fullest extent permitted by law for claims arising out of the performance of this Agreement, the City, its agents, representatives, officers, directors, officials and employees as Additional Insured as specified under the respective coverage Parts of this Agreement.

(3) Coverage Term. All insurance required herein shall be maintained in full force and effect until all work or services required to be performed under the terms of this Agreement are satisfactorily performed, completed and formally accepted by the City, unless specified otherwise in this Agreement.

(5) Primary Insurance. The Contractor's insurance shall be primary, non-contributory insurance with respect to performance of this Agreement and in the protection of the City as an Additional Insured.

(6) Waiver. All policies, except for Professional Liability, including Workers' Compensation insurance, shall contain a waiver of rights of recovery (subrogation) against the City, its agents, representatives, officials, officers and employees for any claims arising out of the work or services of the Contractor. The Contractor shall arrange to have such

subrogation waivers incorporated into each policy via formal written endorsement thereto.

(7) Policy Deductibles and/or Self-Insured Retentions. The policies set forth in these requirements may provide coverage that contains deductibles or self-insured retention amounts. Such deductibles or self-insured retention shall not be applicable with respect to the policy limits provided to the City. The Contractor shall be solely responsible for any such deductible or self-insured retention amount.

(8) Use of Subcontractors. If any work under this Agreement is subcontracted in any way, the Contractor shall execute written agreements with its subcontractors containing the indemnification provisions set forth in the Contract and insurance requirements set forth herein protecting the City and the Contractor. The Contractor shall be responsible for executing any agreements with its subcontractors and obtaining certificates of insurance verifying the insurance requirements.

(9) Evidence of Insurance. Prior to commencing any work or services under this Agreement, the Contractor will provide the City with suitable evidence of insurance in the form of certificates of insurance and a copy of the declaration page(s) of the insurance policies as required by this Agreement, issued by the Contractor's insurance insurer(s) as evidence that policies are placed with acceptable insurers as specified herein and provide the required coverages, conditions and limits of coverage specified in this Agreement and that such coverage and provisions are in full force and effect. Confidential information such as the policy premium may be redacted from the declaration page(s) of each insurance policy, provided that such redactions do not alter any of the information required by this Agreement. The City shall reasonably rely upon the certificates of insurance and declaration page(s) of the insurance policies as evidence of coverage but such acceptance and reliance shall not waive or alter in any way the insurance requirements or obligations of this Agreement. In the event any insurance policy required by this Agreement is written on a "claims made" basis, coverage shall extend for two years past completion of the Services and the City's acceptance of the Contractor's work or services and as evidenced by annual certificates of insurance. If any of the policies required by this Agreement expire during the life of this Agreement, it shall be the Contractor's responsibility to forward renewal certificates and declaration page(s) to the City 30 days prior to the expiration date. All certificates of insurance and declarations required by this Agreement shall be identified by referencing the RFP number and title of this Agreement. Additionally, certificates of insurance and

declaration page(s) of the insurance policies submitted without referencing the appropriate RFP number and title or reference to this Agreement, as applicable, will be subject to rejection and may be returned or discarded. Certificates of insurance and declaration page(s) shall specifically include the following provisions:

i. The City, its agents, representatives, officers, directors, officials and employees are Additional Insureds as follows:

1. Commercial General Liability - Under Insurance Services Office, Inc., ("ISO") Form CG 20 10 03 97 or equivalent.

2. Auto Liability - Under ISO Form CA 20 48 or equivalent.

3. Excess Liability - Follow Form to underlying insurance.

ii. The Contractor's insurance shall be primary insurance as respects performance of the Agreement.

iii. All policies, except for Professional Liability, but including Workers' Compensation, waive rights of recovery (subrogation) against the City, its agents, representatives, officers, officials and employees for any claims arising out of work or services performed by the Contractor under this Agreement.

iv. A 30-day advance notice cancellation provision. If ACORD certificate of insurance form is used, the phrases in the cancellation provision "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" shall be deleted. Certificate forms other than ACORD form shall have similar restrictive language deleted.

(9) Umbrella/Excess Liability. The Contractor must carry Umbrella/Excess Liability insurance with an unimpaired limit of not less than $5,000,000 per occurrence combined limit Bodily Injury and Property Damage that "follows form" and applies in excess of the Commercial General Liability, Commercial/Business Automobile Liability and Employer's Liability, as required above.

If the City requires testing of equipment or other similar operations, the Contractor is responsible for providing appropriate insurance as may be deemed necessary by the City.

B. Required Insurance Coverage.

(1) Commercial General Liability. The Contractor shall maintain "occurrence" form Commercial General Liability insurance with an unimpaired limit of not less than $1,000,000 for each occurrence, $2,000,000 Products and Completed Operations Annual Aggregate and a $2,000,000 General Aggregate Limit. The policy shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury. Coverage under the policy will be at least as broad as ISO policy form CG 00 010 93 or equivalent thereof, including but not limited to, separation of insured's clause. To the fullest extent allowed by law, for claims arising out of the performance of this Agreement, the City, its agents, representatives, officers, officials and employees shall be cited as an Additional Insured under ISO, Commercial General Liability Additional Insured Endorsement form CG 20 10

(2) 03 97, or equivalent, which shall read "Who is an Insured (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you." If any excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

(3) Vehicle Liability. The Contractor shall maintain Business Automobile Liability insurance with a limit of $1,000,000 each occurrence on the Contractor's owned, hired and non-owned vehicles assigned to or used in the performance of the Contractor's work or services under this Agreement. Coverage will be at least as broad as ISO coverage code "1" "any auto" policy form CA 00 01 12 93 or equivalent thereof. To the fullest extent allowed by law, for claims arising out of the performance of this Agreement, the City, its agents, representatives, officers, directors, officials and employees shall be cited as an Additional Insured under ISO Business Auto policy Designated Insured Endorsement form CA 20 48 or equivalent. If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

(4) Professional Liability. If this Agreement is the subject of any professional services or work, or if the Contractor engages in any professional services or work adjunct or residual to performing the work under this Agreement, the Contractor shall maintain Professional Liability insurance covering negligent errors and omissions arising out of the Services performed by the Contractor, or anyone employed by the Contractor, or anyone for whose negligent acts, mistakes, errors and omissions the Contractor is legally liable, with an unimpaired liability insurance limit of $2,000,000 each claim and $2,000,000 annual aggregate. In the event the Professional Liability insurance policy is

written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of the Services, and the Contractor shall be required to submit certificates of insurance and a copy of the declaration page(s) of the insurance policies evidencing proper coverage is in effect as required above.

(5) Workers' Compensation Insurance. The Contractor shall maintain Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction over the Contractor's employees engaged in the performance of work or services under this Agreement and shall also maintain Employers Liability Insurance of not less than $500,000 for each accident, $500,000 disease for each employee and $1,000,000 disease policy limit.

C. Cancellation and Expiration Notice. Insurance required herein shall not expire, be canceled, or materially change without 30 days' prior written notice to the City.

If the City of San Luis requires testing of equipment or other similar operations, the CONTRACTOR is responsible for providing appropriate insurance as may be deemed necessary by the City.

SECTION 104 – SCOPE OF WORK

SUBSECTION 104.1.1 GENERAL delete subsection in its entirety and replace with the following:

The Contractor shall perform all work necessary to complete the contract in a satisfactory and acceptable manner in full compliance with the plans, specifications and terms of the contract.

In the event a conflict exists between Contract Documents the order of precedence listed in descending order shall be as follows:

Change Orders
Addenda
Special Provisions
Project Plans/Drawings
City of San Luis supplement to the MAG Uniform Standard Specifications and Details
MAG Uniform Standard Specifications
City of Yuma Standard Details

Unless otherwise specified in the special provisions, the Contractor shall furnish all labor, materials, equipment, transportation, utilities, services and facilities required to perform all work for the construction of the project within the time specified.

SUBSECTION 104.1.4 CLEANUP AND DUST CONTROL delete third paragraph in its entirety and replace with the following:

The Contractor shall take whatever steps, procedures or means required preventing any dust nuisance due to the Contractor's construction operations. The dust control measures shall be maintained at all times to the satisfaction of the Engineer and in accordance with the requirements of the Yuma County Air Quality Rules and Regulations.

SUBSECTION 104.2.2*(A) DUE TO PHYSICAL CONDITIONS delete subsection in its entirety and replace with the following:

***(A) Should the Contractor encounter or discover prior to or during the process of the work, subsurface or latent physical conditions at the site differing materially from those indicated in the contract, or unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract, the Contractor shall promptly notify the Engineer in writing of such conditions before they are disturbed. The Engineer will thereupon promptly investigate the conditions and, if the Engineer finds such conditions do so materially differ and cause an increase or decrease in the cost of or the time required for performance of the contract, an equitable adjustment will be made and the contract modified in writing accordingly.

SUBSECTION 104.2.6 AS-BUILTS add the following subsection:

No later than 14 Calendar Days the Engineer will provide AutoCAD files of the Design Plans to the Contractor for use in developing the As-built Plans. The Contractor shall, in separate and readily identifiable "As-built" layer(s), reflect all cases where the Construction Work changes, adds to, or differs from the As Designed Plans.

The Contractor shall submit one large set of Mylar As-Built Plans, one reduced set of As-Built Plans, two CDs of the As-Built PDF file and two CDs of the As-Built AutoCAD file to the Engineer upon completion of the Project.

The Final Project Payment will not be processed until the As-Built Plans have been reviewed and accepted by the Engineer.

SECTION 105 – CONTROL OF WORK

SUBSECTION 105.8 CONSTRUCTION STAKES, LINES AND GRADES delete subsection in its entirety and replace with the following.

The Contractor shall provide all Construction Staking on the Project.

The basic reference lines, bench marks and control points from which the Contractor shall establish all points and controls needed to construct the Project are identified in the Plans.

Construction Staking shall consist of performing all Construction Staking essential for the control and completion of the Project, in accordance with the specifications and in conformity with the lines, grades, and details shown on the plans or as established by the Engineer. The Contractor shall establish and lay out the necessary project control points, and shall perform all staking necessary to properly complete and control the work.

Using the data and information provided in the plans, the Contractor shall verify the accuracy of the plans by checking the vertical and horizontal alignments and the plan details. This verification shall be accomplished prior to starting any construction operations and, as a minimum, shall include the verification of all elevations, grades, stationing, distances, offsets, dimensions and any other information shown on the plans.

Any errors, discrepancies or omissions discovered by the Contractor shall immediately be brought to the attention of the Engineer.

SECTION 107 – LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

SUBSECTION 107.5 SAFETY, HEALTH AND SANITATION PROVISIONS delete first paragraph in its entirety and replace with the following:

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Arizona State Department of Health or as specified by the Yuma County Health Department, Sanitary Code.

SECTION 107.6.3 CONSTRUCTION NOTICE add the following subsection:

The Contractor, at least seven days prior to starting any construction activities or phases, shall distribute Construction Notice Flyers to all affected residences, businesses and other interests in the immediate vicinity of the Project. The Contractor shall furnish a copy of the Construction Notice to the Engineer for approval prior to issuing the notice.

The Construction Notice shall include the Project name and description, the Contractor's name, a brief description of the work, the anticipated duration of the work in the immediate area, and the name(s) of the Contractor's contact(s) with phone number(s) where the Contractor can be contacted 24 hours, seven days per week. The Construction Notice shall be written in both English and Spanish.

The Contractor shall maintain a written log of all public inquiries and concerns, including a brief description of the concern, how the issue was resolved, and the day and time of the resolution. Copies of the written log shall be available for review as requested by the Engineer.

All costs associated with the Construction Notices shall be considered incidental to completion of the Project, and no direct payment will be made for this work.

SUBSECTION 107.7 BARRICADES AND WARNING SIGNS delete last paragraph in its entirety and replace with the following:

The Contractor shall erect warning signs in advance of any place on the project where operations may interfere with the use of the road by traffic, and at all intermediate points where the new work crosses or coincides with an existing road. Such warning signs shall be constructed and erected in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) as adopted by the Contacting Agency which is hereby made a part of these specifications.

SUBSECTION 107.9 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE delete third and fourth paragraphs in their entirety and replace with the following:

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, directive, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at no cost to the Contracting Agency, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner. Such damage will include but not be limited to landscaped areas. The Contractor shall regrade the disturbed area as directed and restore the surface material to match existing in type and quality.

The Contractor shall restore all disturbed areas to a condition equal to or better than the existing improvements. Such restoration shall include but not be limited to asphalt, walkways, fences, lights, sprinklers, landscaping, etc. In the case of landscaping, the Contractor may remove and store sod and plant material. If in the determination of the Engineer, the sod and/or plant material did not survive the transplanting in good condition, the Contractor shall replace the sod and/or plant material to match in type and quality. Also, the Contractor may salvage any sprinkler system materials, lighting materials, etc. In the event that it is not feasible to reinstall the salvaged material, new material shall be installed.

SECTION 108 – COMMENCEMENT, PROSECUTIONS AND PROGRESS

SUBSECTION 108.2 SUBLETTING OF CONTRACT add the following:

(F) The contractor shall submit affidavits of payment from each sub-contractor before final payment is made.

SUBSECTION 108.4.1 PRE-CONSTRUCTION AND POST CONSTRUCTION MEETINGS add this subsection:

Pre-Construction Meeting

The Contractor shall attend the Pre-Construction Project Meeting on the date and time scheduled by the Engineer.

The Contractor, at the Pre-Construction Meeting, shall submit the following documents for review and approval:

1. Name and Phone Number of Project Superintendent
2. Name of Person(s) authorized to execute Extra Work Orders and Change Orders.
3. Project Construction Schedule
4. Proposed Project Materials
5. Copy of the Notice of Intent (NOI) form filed with ADEQ
6. Traffic Control Plans (TCP), if a TCP has not been established in the plans

Post-Construction Meeting

The Contractor shall attend the Post-Construction Project Meeting on the date and time as scheduled by the Engineer. The Engineer will schedule the meeting no later than 14 days after Contractor addresses all issues on the Project Walk-Thru Inspection List.

At the Post-Construction Meeting the Contractor shall, if not already submitted, provide the following documents:

1. Consent of Surety
2. Contractor's Affidavit Regarding Settlement of Claims
3. As-Built Plans
4. Copy of the Notice of Termination (NOT) form filed with ADEQ
5. SWPPP Inspection Reports
6. Project Test Reports

All costs associated with the Pre-Construction and Post Construction Meetings shall be considered incidental to completion of the Project, and no direct payment will be made for this work.

The Contractor shall attend all Project Public Information Meetings and all Construction Progress Meeting as scheduled by the Engineer.

The Contractor shall conduct Public Information Meetings as deemed necessary by the Engineer for public involvement.

Unless otherwise determined by the Engineer, Weekly Project Construction Progress Meetings will be conducted during the life of the Project. The Contractor, at the Progress Meetings, shall provide a Project Schedule identifying the work that will be performed the coming week.

All costs associated with the Public Information and weekly Construction Progress Meetings shall be considered incidental to completion of the Project, and no direct payment will be made for this work.

SUBSECTION 108.5 LIMITATION OF OPERATIONS delete second paragraph in its entirety and replace with the following:

All traffic affected by the construction will be regulated in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) adopted by the Contracting Agency.

SUBSECTION 108.9 FAILURE TO COMPLETE ON TIME delete Table 108-1 in its entirety and replace with the following:

SCHEDULE OF LIQUIDATED DAMAGES			
ORIGINAL CONTRACT AMOUNT		LIQUIDATED DAMAGES PER DAY	
From More Than	To and Including	Calendar Day or Fixed Date	Working Day
$ 0	$ 100,000	$ 350	$ 500
$ 100,000	$ 500,000	$ 490	$ 700
$ 500,000	$ 1,000,000	$ 840	$ 1,200
$ 1,000,000	$ 2,000,000	$ 910	$ 1,300
$ 2,000,000	$ 5,000,000	$ 1,190	$ 1,700
$ 5,000,000	$ 10,000,000	$ 1,540	$ 2,200
$ 10,000,000	$	$ 2,380	$ 3,400

SECTION 109 – MEASUREMENTS AND PAYMENTS

SUBSECTION 109.2.2 BID FORM CONTINGENCY AMOUNT add the following subsection:

The Contingency Amount, if, any, constituting the percentage shown on the Bid Form, will be used to cover the cost of item overruns and/or extra work that may be required during construction of the Project. The Contingency Funds will be used as directed and approved by the Engineer, and any Contingency Funds remaining at the end of the Project will be deleted from the Contract as part of the Final Change Order.

SUBSECTION *109.7 PAYMENTS FOR BOND ISSUE AND BUDGET PROJECTS (A)(1) delete subsubsection 109.7 (A)(1) in its entirety and replace with the following:

(1) No payment will be processed until the material or equipment has been observed, reviewed or verified by the Contracting Agent representative. Only the material or equipment meeting the requirements of the plans and specifications will be paid. Payment for material or equipment does not constitute final acceptance.

SECTION 110 – NOTIFICATION OF CHANGED CONDITIONS AND DISPUTE RESOLUTION

SUBSECTION 110.3.1 GENERAL add the following information to each Level:

Level I. (Representative reviewed by: *Project Manager*)
Level II. (Representative reviewed by: *City Public Works Director*)
Level III. (Representative reviewed by: *City Manager*)

SUBSECTION 110.3.3 PROCESS delete the first two paragraphs and subsubsection (B) in their entirety and replace with the following:

The Contracting Agency's Level I Representative will render a written decision regarding the matter in dispute within five (5) working days of receipt of the Contractor's notification that the dispute resolution process should begin.

The Contractor shall, upon receipt of the decision by the Level I Representative, either accept or reject the decision in writing. If the Contractor does not reject the Level I Representative's decision within five (5) working days of its receipt, the Contractor will be deemed to have accepted the decision, the dispute will be considered withdrawn from the administrative process, and there will be no further remedy.

DELETE SUBSUBSECTION (B) AND REPLACE WITH THE FOLLOWING:

(B) Arbitration**:** The decision of the Level III Representative in relation to the claim shall be final unless the dispute review board or arbitration is chosen as follows:

SUBSECTION 110.5 DISPUTE REVIEW BOARD delete this subsection in its entirety.

SECTION 111 – HEALTH & SAFETY add the following section:

111.1 CONFINED SPACE ENTRY

No entry shall be made into a confined space, tank, vat or pit without prior notification and approval by the City of San Luis and completion of a confined space entry permit

111.2 ELECTRICAL LOCK/OUT (TAG/OUT) STANDARD

The contractor shall not enter any electrical substation nor shut off any power without authorization of the City of San Luis Project Manager.

111.3 NOISE AND AIR POLLUTION

Noise - the contractor will inform the City of San Luis Project Manager of any operations that will create consistent sound level/s in excess of 90 decibels (A scale) at or around the work site.

Air Pollution - The contractor will inform the City of San Luis Project Manager of any potential air contamination that may be generated by the contractors(s) operation(s) such as dust, fumes, vapors, generators, etc. The contractor will take all reasonable precautions to minimize emissions of any air contaminant(s).

111.4 EXPECTATIONS

Ensure all Material Safety Data Sheets for chemicals intended for use on City of San Luis premises are available upon request.

Designate and identify one spokesperson to address any environmental health and safety questions that may arise during the service. The spokesperson shall be available whenever work is being performed.

Maintain an accurate record of all accidents resulting in death, traumatic injury, occupational disease, or damage to any property whether or not that of the City of San Luis and promptly report any of the same to the City of San Luis Project Manager.

Take immediate action upon identification of any health or safety issue that affects City of San Luis personnel, the public, property, or could result in an injury to any worker.

Immediately inform the City of San Luis Project Manager upon receipt of any notice of violation, notice to comply, citation, or other enforcement document received from any regulatory agency.

111.5 PROJECT INFORMATION SIGNS

Project Information Signs shall be placed at each end of the Project prior to starting Construction Operations, and shall be in accordance with City of Yuma Standard No. 8-100 Work Zone Identification Sign and with the details in the Plans. Project Information Signs will be considered incidental to the work and no separate payment will be made.

CONSTRUCTION SPECIFICATIONS

PART 300 - STREETS AND RELATED WORK

Section	Title	
301	Subgrade Preparation	301-1
306	Mechanically Stabilized Subgrade-Geogrid Reinforcement	N/C
309	Lime Slurry Stabilization or Modification of Subgrade	N/C
310	Placement and Construction of Aggregate Base Course	310-1
311	Placement and Construction of Cement Treated Subgrade	N/C
312	Cement Treated Base	N/C
315	Bituminous Prime Coat	N/C
317	Asphalt Milling	N/C
320	Road-mixed Surfacing	N/C
321	Placement and Construction of Asphalt Concrete Pavement	321-1
324	Portland Cement Concrete Pavement (PCCP)	N/C
325	Placement and Construction of Asphalt-Rubber Asphalt Concrete	N/C
327	Hot In-Place Recycling	N/C
329	Tack Coat	329-1
330	Asphalt Chip Seal	N/C
331	Microsurfacing Specifications	N/C
332	Placement and Construction of Asphalt Emulsion Slurry Seal Coat	N/C
333	Fog Seal Coats	N/C
334	Preservative Seal for Asphalt Concrete	N/C
335	Placement and Construction of Hot Asphalt-Rubber Seal	N/C
336	Pavement Matching and Surfacing Replacement	336-1
337	Crack Sealing	N/C
340	Concrete Curb, Gutter, Sidewalk, Curb Ramps, Driveway and Alley Entrance	340-1
342	Decorative Pavement Concrete Paving Stone	N/C
343	Exposed Aggregate Paving	N/C
345	Adjusting Frames, Covers, Valve Boxes Meter Boxes and Pull Boxes	345-1
350	Removal of Existing Improvements	350-1
355	Utility Potholes-Keyhole Method	N/C
360	Telecommunications Installation	N/C

N/C – No change to the Specification

Deleted – This Section deleted in its entirety

SECTION 301 – SUBGRADE PREPARATION

SUBSECTION 301.3 RELATIVE COMPACTION delete item (B) in its entirety and replace with the following:

(B) Below detached sidewalk not subject to vehicular traffic 95%

ADD THE FOLLOWING:

Compaction test every 300 linear feet per lift for roadways, curb and gutter and sidewalks.

Compaction test every 500 square feet for driveways.

SECTION 310 – PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE

SUBSECTION 310.3 COMPACTION delete item (C) from this section in its entirety. **SUBSECTION**

310.5 PAYMENT delete subsection in its entirety and replace with the following:

Payment for aggregate base course will be made on the basis of the contract unit price per ton or square yard unless an alternate basis of payment is provided in the proposal.

SECTION 321 – PLACEMENT AND CONSTRUCTION OF ASPHALT CONCRETE PAVEMENT

SUBSECTION 321.6 MIX PRODUCTION delete first paragraph in its entirety and replace with the following:

All materials shall be proportioned by weight in a hot mix asphalt plant in the proportions required by the mix design to provide a homogenous and workable mass. All measuring devices shall be calibrated at least annually by a technician licensed by the Arizona Bureau of Weights & Measures. Mixing plants shall conform to the requirements of AASHTO M-156, except as modified herein. If WMA technology is being used, any equipment associated with the production of hot mix asphalt shall be calibrated and in proper working order according to the WMA equipment specifications. If there are any deviations in the production or compacting temperatures of the hot mix asphalt with WMA technology, the mix design shall state the difference.

SUBSECTION 321.8.6 ASPHALT CONCRETE OVERLAY delete eighth (second to last) paragraph in its entirety and replace with the following:

Frames and covers of manholes, survey monuments, valve boxes, clean-outs and other existing structures shall be adjusted in accordance with Section 345 to set 3/8 of an inch below the finished surface of the new pavement. See City of Yuma Standard Details 4-040, 4-050, 4-080, 5-010, 5-044, 5-140, 5-142, 5-150, 5-210. During adjustment if pavement or base materials are removed or disturbed, they shall be replaced with approved materials installed in a manner acceptable to the Engineer.

SECTION 329 – TACK COAT

SUBSECTION 329.7 PAYMENT delete subsection in its entirety.

Tack coat is incidental to the asphalt concrete pavement.

SECTION 336 – PAVEMENT MATCHING AND SURFACING REPLACEMENT

SUBSECTION 336.1 DESCRIPTION delete second paragraph in its entirety and replace with the following:

Asphalt concrete roadway pavement replacement shall be constructed in accordance with City of Yuma Construction Standard Details 5-070, 5-075, 5-080, 5-081.

SUBSECTION 336.3 TYPES AND LOCATIONS OF PAVEMENT AND SURFACING REPLACEMENT delete first paragraph in its entirety and replace with the following:

The type of pavement replacement and backfill required will be noted on the plans or specified in other portions of the contract documents and construction shall be in accordance with City of Yuma Standard Details 5-070, 5-075, 5-080, 5-081. If a type is not noted on the plans or specified in the special provisions, the following criteria will govern:

SUBSECTION 336.3 TYPES AND LOCATIONS OF PAVEMENT AND SURFACING REPLACEMENT delete paragraphs 2, 3, 4, and 5.

SECTION 340 – CONCRETE, CURB, GUTTER, SIDEWALK, CURB RAMPS, DRIVEWAY AND ALLEY ENTRANCE

SUBSECTION 340.3.1 SUBGRADE PREPARATION delete first two paragraphs and table 340.1 in their entirety and replace with the following:

The subgrade shall be constructed and compacted true to grades and lines shown on the plans and as specified in Section 301. All soft or unsuitable material will be removed to a depth of not less than 4 inches below subgrade elevation and replaced with material satisfactory to the Engineer.

SUBSECTION 340.3.4.1 EXPANSION JOINTS delete third paragraph in its entirety and replace with the following:

Sidewalk, curbs, and gutter expansion joints shall be installed at all radius points, at both sides of each driveway, at both sides of each alley entrance. The maximum distance between expansion joints shall be 20 feet.

SECTION 345 – ADJUSTING FRAMES, COVERS, VALVE BOXES, METER BOXES AND PULL BOXES

SUBSECTION 345.3 ADJUSTING FRAMES delete second paragraph in its entirety and replace with the following:

Frames shall be set to 3/8" lower than pavement or the elevation established by the Engineer. Manhole frames shall be firmly blocked in place with masonry or metal supports. Spaces between the frame and the facility shall be sealed on the inside to prevent any concrete from entering the hand hole or manhole. A Class AA concrete collar shall be placed around and under the frames to provide a seal and properly seat the frame at the required elevation and slope. Concrete shall be struck off flush with the top of the existing pavement.

SUBSECTION 345.4 ADJUSTING VALVE BOXES delete section in its entirety and refer to COY valve box installation standard 5-210 for adjusting valve boxes.

SUBSECTION 345.5 ADJUSTING MANHOLE AND VALVE COVERS WITH ADJUSTMENT RINGS delete subsection in its entirety and replace with the following:

Adjusting rings may be used to raise manhole covers in asphalt pavements when deemed acceptable by the Engineer. The amount of adjustment, thickness of seal or overlay, and cross slope will be considered when using adjusting rings. Each location where an adjusting ring is used must have a sufficient depth of asphalt to assure the proper installation and operation of the ring. The rings shall be made of a polymer concrete per Section 742 and installed per the manufacturer's specifications. The rings shall be approved by the Engineer.

The concrete collar ring around the frame or valve box shall be circular, and shall be a minimum of eight (8) inches thick, placed 3/8" below adjacent pavement surface. Concrete shall be a minimum of Class AA on all paved streets. All concrete shall be obtained from plants approved by the Engineer.

Each concrete ring shall be scored radially at quarter-circle points. Score lines shall be $^1/_4$ -inch wide by $^1/_2$ - inch deep. The concrete collar surface shall be rough broom finished.

Traffic shall not be allowed on the concrete collars until the concrete had reached a minimum compressive strength of 3000 psi.

SECTION 350 – REMOVAL OF EXISTING IMPROVEMENTS

SUBSECTION 350.2.1 UTILITIES delete the last paragraph in its entirety and replace with the following:

When Utilities are encountered that are not shown on the plans, the Engineer shall be notified and such utilities shall be included in the As-built drawings.

CONSTRUCTION SPECIFICATIONS

PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL

Section	Title	
401	Traffic Control	401-1
405	Survey Monuments	405-1
410	Precast Safety Curbs	N/C
415	Flexible Metal Guardrail	N/C
420	Chain Link Fences	N/C
424	Parkway Grading	N/C
425	Topsoils	N/C
430	Landscaping and Planting	N/C
440	Sprinkler Irrigation System Installation	N/C

N/C – No change to the Specification

Deleted – This Section deleted in its entirety

SECTION 401 – TRAFFIC CONTROL

SECTION 401.2.1TYPE III (HIGH INTENSITY) REFLECTIVE SIGN SHEETING add the following subsection:

The Contractor shall use Type III High Intensity Sheeting on all temporary Traffic Control Signs and Detour Signs that are placed on this Project. The Sheeting shall comply with the ASTM D4956 designation for Type III High Intensity Retroreflective Sheeting Material.

SECTION 401.5 GENERAL TRAFFIC REGULATIONS add the following:

The Contractor shall inspect all Traffic Control Devices at least twice daily to assure that they are in compliance with the approved Traffic Control Plan and to ensure that they are in good condition. The Traffic Control Plan and Devices shall be inspected at the start of each work day and during holidays, weekends and other non-working days. The Contractor shall keep a log of all inspections and any corrective action taken, and the log shall be available for review upon request by the Engineer or the Engineer's representative.

The current progress payment for Traffic Control bid item will not be processed until all corrective actions have been taken to the satisfaction of the Engineer.

The Contractor shall provide the name and telephone number of the person(s) assigned to inspect and maintain the Traffic Control Plan and Devices to the Engineer and they shall be available and on-call 24 hours a day.

The Contractor is further advised that during construction the Traffic Engineer may determine that the in-place Traffic Control must be modified or that additional traffic control is required. Any such modifications or additions to the existing Traffic Control shall be accomplished by the Contractor at no additional cost.

SECTION 401.7 PAYMENT add the following:

Payment, as requested by the Contractor for this item, will be effected as follows:

1. 30% of the bid item amount will be paid with the first invoice.

2. 30% of the bid item amount will be paid with the second invoice.

3. 40% of the bid item amount will be paid with the Final Invoice.

SECTION 405 – SURVEY MONUMENTS

SECTION 405.3 CONSTRUCTION add the following:

The Contractor shall contract with a Registered Land Surveyor registered in the State of Arizona who shall set the Survey Monuments in accordance with the plans and with the following City of Yuma Construction Standard Detail Drawings, as applicable:

Standard No. 4-010 Survey Monument Specifications
Standard No. 4-020 Typical Subdivision Monuments
Standard No. 4-080 Survey Monument and Placement
Standard No. 4-090 Survey Frame & Cover
Standard No. 4-100 Survey Monument Stamping

The Contractor's Surveyor shall record the Survey Monuments.

CONSTRUCTION SPECIFICATIONS

PART 500 - STRUCTURES

Section	Title	
505	Concrete Structures	N/C
506	Precast Prestressed Concrete Members	506-1
510	Concrete Block Masonry	N/C
511	Brick Masonry	N/C
515	Steel Structures	N/C
520	Steel and Aluminum Handrails	N/C
525	Pneumatically Placed Mortar	N/C
530	Painting	N/C

N/C – No change to the Specification

Deleted – This Section deleted in its entirety

SECTION 506 – PRECAST PRESTRESSED CONCRETE MEMBERS

SECTION 506.2 CONCRETE delete the third paragraph and replace with the following:

The compressive strength of the concrete will be determined from concrete test cylinders cured per ASTM C32/C31M-15 Standard Practice for Making and Curing Concrete Test Specimens in the Field.

CONSTRUCTION SPECIFICATIONS

PART 600 - WATER AND SEWER

Section	Title	
601	Trench Excavation, Backfilling and Compaction	601-1
602	Trenchless Installation of Steel Casing	N/C
604	Placement of Controlled Low Strength Material	604-1
605	Subdrainage	N/C
607	Trenchless Installation of Smooth Wall Jacking Pipe	N/C
610	Water Line Construction	610-1
611	Water, Sewer and Storm Drain Testing	611-1
615	Sanitary Sewer Line Construction	N/C
616	Reclaimed Water Line Construction	N/C
618	Storm Drain Construction	618-1
~~620~~	~~Cast-in-place Concrete Pipe~~	DELETED
621	Corrugated Metal Pipe and Arches	N/C
625	Manhole Construction and Drop Sewer Connections	625-1
630	Tapping Sleeves, Valves and Valve Boxes on Water Lines	630-1
631	Water Taps and Meter Service Connections	631-1

N/C – No change to the Specification

Deleted – This Section deleted in its entirety

SECTION 601 - TRENCH EXCAVATION, BACKFILLING AND COMPACTION

SUBSECTION 601.2.11 OPEN TRENCH SAFETY add the following:

Trench safety is the Contractor's responsibility and shall be the responsibility of the Contractor's "Competent Person" per 29CFR part 1926.32(f). All excavations shall be made in accordance with OSHA regulations. Trench walls shall be firmly braced in contact with the shoring equipment or shall be sloped, both in accordance with OSHA requirements.

Open trenches are to be properly protected throughout the workday in order to protect workers, pedestrians, vehicles, equipment and materials. Protection includes, but is not limited to, the use of shoring, barricades, cones, flaggers, signs, vehicular-rated steel plates, etc., in accordance with applicable OSHA regulations. Trenches are not allowed to be left unattended or unprotected for any duration of time during the workday.

The Contractor shall submit to the Engineer, the name and credentials of the "Competent Person" in charge of trench safety prior to start of construction. The "Competent Person" shall be onsite during all excavation and pipeline installation activities. The Engineer may stop all work if the "Competent Person" is not onsite.

SUBSECTION 601.4.2 BEDDING delete subsection in its entirety and replace with the following:

Bedding is the material upon which a pipe is to be placed.

The bedding material type shall be clean sand unless otherwise specified.

SUBSECTION 601.4.3 HAUNCHING delete subsection in its entirety and replace with the following:

Haunching is the material placed between the bedding and springline. If placed in lifts, the lift thickness shall not exceed 2 feet (1 foot for flexible pipe) and shall be deposited and compacted to the specified density uniformly on each side of the pipe to prevent lateral displacement of the pipe.

The haunching material shall be clean sand. With Agency approval an alternative granular material or CLSM may be used.

SUBSECTION 601.4.4 INITIAL BACKFILL delete subsection in its entirety and replace with the following:

601.4.4 BACKFILL: Trench backfill within City of San Luis rights-of-way may be obtained from trench excavation and should be clean and free from objectionable material. If clay, caliche, or rock is encountered in the trench excavation it shall be separated and removed and replaced with material meeting the backfill gradation requirements. All earth backfill shall be compacted to at least 95% of maximum dry density as measured by the Standard Proctor Method in accordance with the ASTM D 698.

Water settlement is prohibited at all times as a method of trench backfill compaction. In place moisture density tests, concrete testing, ABC slurry testing, and asphalt testing shall be ordered by the Engineer to ensure that all materials comply with the specified requirements.

For trench backfill above pipe bedding and below pavement section aggregate base course, the Contractor shall use clean material from trench excavation meeting the following gradation and PI requirements:

SCREEN SIZE	PERCENT PASSING
1 Inch	100
$^{3}/_{4}$ Inch	90
$^{1}/_{2}$ Inch	75
$^{1}/_{4}$ Inch	60
#30	50-100
#200	<12

PI maximum of 2.

For pipe bedding to 6 inches over the top of the pipe the Contractor shall use clean sand backfill meeting the following gradation and PI requirements:

SCREEN SIZE	PERCENT PASSING
#4	100
#30	50-100
#200	<12

PI maximum of 2.

If re-compaction is necessary, additional tests shall be performed at the Contractor's expense. Retesting costs shall be deducted from monies due or to become due the Contractor. The Contractor shall be required to fill all trenches that settle. If repaved areas settle, the Contractor shall perform all work necessary, at no additional cost to the City, to remove the asphalt, correct the settlement, repave, and re-stripe the affected trench locations.

The Contractor shall submit sand slurry mix designs, CLSM mix designs, concrete mix designs, and asphalt mix designs to the Engineer for approval. Submittal shall be at least 30 days prior to the incorporation of the materials into the work. The Contractor shall make plant facilities available in the event the Engineer elects to sample materials at the source.

Slurry placed as backfill shall be vibrated in place to provide consolidation and uniformity of the slurry material.

Imported sand bedding, embedment, cover, slurry, CLSM and backfill utilized for the waterlines and sanitary sewer lines construction shall not be measured and paid for separately.

SUBSECTION 601.4.5 FINAL BACKFILL delete subsection in its entirety

SUBSECTION 601.4.6 COMPACTION DENSITIES replace table 601-2 with the following:

TABLE 601-2
MINIMUM TRENCH COMPACTION DENSITIES

Backfill Type	Location	From Surface to 2 feet below Surface	From 2 feet below Surface to 1 foot above Top of Pipe	From 1 foot above Top of Pipe to Bottom of Trench
I	Under any existing or proposed pavement, curb, gutter, attached sidewalk, roadway shoulders, and other areas within right-of-way subject to vehicular traffic, or when any part of the trench excavation is within 2-feet of the existing pavement, curb, or gutter.	100%	95%	95%
II	On any utility easement or right-of-way outside limits of Type I backfill.	95%	95%	95%
III	Around any structures (manholes, etc.) or exposed utilities outside limits of Type I Backfill.	95% in all cases		

SUBSECTION 601.4.7 WATER CONSOLIDATION delete this subsection in its entirety:

SUBSECTION 601.4.9 RIGHTS-OF-WAY BELONGING TO OTHERS delete subsection in its entirety and replace with the following:

Backfill and compaction for irrigation lines in other entity's right-of-way outside the limits of the Contracting Agency shall be accomplished in accordance with their permit and/or specifications.

SUBSECTION 601.5 CONTRACTOR CERTIFICATION OF INSTALLATION PROCEDURES delete the first paragraph in its entirety and replace with the following:

When requested in the Special Provisions or by the Engineer prior to installation, the Contractor shall furnish to the Contracting Agency an affidavit (certification) from the pipe manufacturer (or his designee) stating that the Contractor is familiar with the manufacturer's suggested installation methods and procedures and the manufacturer's suggested installation methods and procedures are consistent with City of San Luis requirements.

SECTION 604 – PLACEMENT OF CONTROLLED LOW STRENGTH MATERIAL

SUBSECTION 604.1 DESCRIPTION delete last paragraph in its entirety and replace with the following:

1 SACK: Structural backfill under foundations and as thermal fill and/or mechanical protection of duct banks and conduits.

SECTION 610 – WATER LINE CONSTRUCTION

SUBSECTION 610.3 MATERIALS delete subsection in its entirety and replace with the following:

All pipes for water lines shall be of the classes shown on the plans or as specified below.

(A) Pipe 4-inch through 12-inch diameter shall be AWWA C900 PVC or ductile iron, except where a particular material is specified by the City of San Luis or the contract documents. All pipes shall be minimum pressure class 235 unless otherwise specified. All exposed or above ground pipe shall be ductile iron.

(B) Pipe 16 inch through 20 inch diameter shall be AWWA C905 PVC or ductile iron, except where a particular material is specified by the City of San Luis or the contract documents. All pipes shall be minimum pressure class 235 unless otherwise specified. All exposed or above ground pipe shall be ductile iron.

(C) Pipe Size 20 inch and larger shall be Ductile Iron Pipe, minimum pressure class 250 unless otherwise specified.

Ductile iron water pipe and fittings per: Section 750. PVC pipe per: AWWA C900 or AWWA C905.

Service material containing brass or bronze must comply with the current NSF 61-8 standards at the time the project begins.

All brass or bronze service material must meet the current AWWA C-800 standards.

Any product used in water line construction containing brass or bronze that comes in contact with potable water shall meet the current NSF standards and federal law.

SUBSECTION 610.4.1 TRENCHING/COVER delete first three paragraphs in their entirety and replace with the following:

All water mains shall have a minimum cover of 42 inches over the top of the pipe.

SUBSECTION 610.4.3 BLOCKING AND RESTRAINTS delete subsection in its entirety and replace with the following:

All pipe lines, valves and fittings 16 inches and smaller in diameter shall be blocked with concrete thrust blocks in accordance with standard details. Thrust block areas for pipe, valves and fittings larger than 16 inches in diameter shall be installed per details shown on the plans. The areas stipulated in the standard details are minimums and shall not be decreased.

If irregular soil or pressure conditions are encountered, a thrust block design revision or an alternate joint restraint system may be required by the Engineer.

When restrained/welded joints are specified to resist thrust forces, blocking is required.

SUBSECTION 610.5.5 EXTRA PROTECTION delete subsection in its entirety and replace with the following:

New water lines that require extra protection from new sewer lines shall have extra protection provided by using AWWA C909 PVC pipe for both lines. Lines of standard pipe length shall be centered at the point of crossing so that no joints exist within seven (7) feet horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal.

New water lines that require extra protection from sewer lines shall have identification wrap and/or tape installed on the water and sewer lines for the length that requires extra protection for each line.

New water lines that require extra protection from existing sewer lines shall be constructed using the extra protection specified for new water lines, and the existing sewer line:

(1) shall be reconstructed using a standard length of AWWA C909 PVC pipe centered at the point of crossing so that no joints exist within seven (7) feet horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal, or

Existing water lines that require extra protection from new sewer lines shall provide for extra protection by:

(1) constructing the new sewer line and reconstructing the existing water line using AWWA C909 PVC pipe for both lines with standard pipe lengths centered at the point of crossing so that no joints exist within six (feet) horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or

(2) Extra protection for existing ductile iron water lines can be met by the installation of restrained or mechanical joints on the existing water line within ten (10) feet horizontal of the crossing:

(a) construction of new sewer line using a standard pipe length of AWWA C909 PVC pipe centered at the point of crossing so that no joints exist within seven (7) feet horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or

SUBSECTION 610.7 VALVES delete butterfly valves from this section

SUBSECTION 610.8 MANHOLES AND VAULTS delete cast iron steps from this section

SUBSECTION 610.10 COUPLINGS, JOINTS, GASKETS AND FLANGES delete subsection in its entirety and replace with the following:

Couplings: The couplings used to join the pipe to flanged valve adapters shall have a minimum working pressure of 150 psi, and shall have a fusion-bonded epoxy finish. The coupling sleeves shall be stainless steel Type 316 with a minimum yield of 30,000 psi. The flanges shall have a minimum yield of 30,000 psi and be stainless steel Type 316.

Joints: The joints and fitting shall conform to Sections 750 and 752.
Bolts and Nuts:

(1) Bolts, studs, and nuts used in underground field flanged connections or for connecting fittings shall be minimum stainless steel Type 304. All bolt diameters shall nominally be 1/8 inch smaller than the bolt hole diameter. All bolts shall be hexagonal heads.

(2) The minimum requirement for underground mechanical joint connections using T-head bolts shall meet the requirements of AWWA C111 using a high strength stainless steel manufactured for atmospheric corrosion resistance per ASTM A242.

These bolted joints shall be protected as follows: Following installation and before backfilling, all couplings, steel flanges, bolts, nuts, anchor bolts and rods, bolting of all flanged valves, and all exposed

steel shall be protected from corrosion by not less than 10 mils of polyethylene wrap or by the method outlined below.

Gaskets: Except as otherwise provided, all gaskets for pipe lines shall be one piece full faced gaskets from one-ply cloth inserted SBR rubber material. Gaskets for flanges 20 inches and smaller shall be from 1/16 inch thick material. Gaskets for flanges 24 inches and larger shall be from 1/8 inch thick material. Gasket material shall be J-M 109 as manufactured by Johns-Manville Corporation or an approved equal. Physical characteristics of the rubber compound shall meet ASTM D2000, Class 4AA805A13.

Flanges: Cast iron flanges shall conform to AWWA C-110 as to material, diameter, thickness, drilling, etc. Steel flanges shall be ring or hub type, and shall conform to AWWA C-207, Class D. All flanges shall be drilled and have flange diameters and bolt circles conforming to AWWA C-110, except bolt holes will be 1/8 inch larger than the bolts given for the various sizes. All bolts shall be as specified above and all flanges shall have a flat facing.

SUBSECTION 610.12 FIRE LINE SERVICE CONNECTIONS delete subsection in its entirety and replace with the following:

Fire line service connections shall be installed in accordance with standard details.

The fire line from the control valves at the main to the detector check valve shall be constructed of C900 PVC pipe. Any exposed pipe portion or at a proximity of 5’ or smaller from the exterior face of the structural footing shall be of ductile iron.

SUBSECTION 610.13 METER SERVICE CONNECTIONS delete subsection (A) in its entirety and replace with the following:

(A) Schedule 40 PVC pipe shall be used to connect or extend service pipes.

SECTION 611 – WATER, SEWER AND STORM DRAIN TESTING

SUBSECTION 611.1 HYDROSTATIC TESTING (A) Pressure Testing delete subsection in its entirety and replace with the following:

(A) **Pressure Testing:** Unless otherwise noted in the contract documents, the minimum prescribed test pressure shall be at least 150 psi for distribution lines and 200 psi for fire lines, not to exceed 5 psi over the minimum prescribed test pressure, as measured at the lowest end of the section under test. The duration of each pressure test shall be at least 2 hours, during which time the test section shall not drop below the minimum prescribed test pressure. If the pressure in the pipe test section has not stabilized by the end of the testing period, a hydrostatic retest will be required.

Each section of a new line between sectionalizing valves or between the last sectionalizing valve and the end of the project shall be tested separately as required in AWWA C-600, and/or as modified in these specifications, except that any such section less than 500 feet in length may be tested with the adjacent section, if both sections of line have the same pipe class rating. No section greater than 1/2 mile in total pipe length shall be tested without special written permission of the Engineer.

SUBSECTION 611.4 POST INSTALLATION INSPECTION OF NEW MAINLINE STORM DRAINS (A) Video Inspection: delete subsection (A) in its entirety

SECTION 615 – SANITARY SEWER LINE CONSTRUCTION

SUBSECTION 615.4 SEPARATION delete last paragraph:

SECTION 618 – STORM DRAIN CONSTRUCTION

SUBSECTION 618.1 DESCRIPTION delete subsection in its entirety and replace with the following:

This section covers pipe line construction used for the conveyance of irrigation water and storm drainage in streets, easements, and alley right of ways, under low hydrostatic heads.

Installation of pipe in rights-of-ways of other agencies shall conform to the specifications and permit of the respective agency.

Installation of pipe in State Highways shall conform to the specifications and permit of the Arizona Department of Transportation.

Installation of pipe under railways shall conform to the specifications and permit of the respective railway agency.

SECTION 625 – MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS

SUBSECTION 625.2 MATERIALS delete subsection in its entirety and replace with the following:

Unless otherwise shown on the plans or specified in the special provisions, materials to be used shall conform with the following:

Concrete for cast in place sanitary sewer manhole bases shall be Class A, for drop sewer connection shall be Class C, per Section 725. Sanitary Sewer manholes shall be per Section 742.

Pipe used in sanitary sewer manholes or drop sewer connections shall comply with pipe requirements of Section 615.

Manhole frame and cover per Section 787 and cast in accordance with standard details.

Manhole steps shall not be used.

SUBSECTION 625.3.1 MANHOLES delete subsection in its entirety and replace with the following:

Manholes for storm drains shall be constructed of lined precast concrete sections or cast in place concrete. Manholes of sanitary sewers shall be constructed of polymer concrete. The invert channels shall be smooth and semi-circular in shape, conforming to the inside of the adjacent sewer sections. Changes in direction of flow shall be made with a smooth curve, having a consistent radius as large as the manhole will permit with no angle points. Changes in size and grade of the channels shall be made gradually, evenly, and uniformly throughout the manhole base.

Invert channels may be formed of concrete having a smooth mortared surface, may be half tile laid in concrete, or may be constructed by laying full section of sewer pipe through the manhole and breaking out the top half after the surrounding concrete has hardened. The floor of the manhole outside the channels shall be smoothed and shall slope towards the channels.

The excavation shall be in such a manor, access is maintained around the manhole base before, during, and after placement of the manhole.

For cast-in-place manhole bases, a foundation of Class A concrete shall be constructed in accordance with the standard details and Section 505.

All machined surfaces on the frame and cover shall be such that the cover will lie flat in any position in the frame and have a uniform bearing through its entire circumference. Any frame and cover which creates any noise when passed over by automobiles shall be replaced. Frames shall be set firmly in a bed of mortar true to line and grade, all as shown on the plans and as called for in these specifications.

Backfilling shall be done in accordance with the requirements for trench backfilling as stated in Section 601.

SECTION 630 – TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATER LINES

SUBSECTION 630.3.2 GENERAL (D) delete subsection in its entirety and replace with the following:

(D) Valves 24 inches and larger:

Valves shall be resilient wedge

Valves shall be for operation in the horizontal position and equipped with bronze tracks, rollers and scrapers. Valves shall have bevel gears. The gears and stuffing box shall be enclosed in a watertight iron case, for operation in a buried location. Bolts, nuts, studs, etc., used with the gear case shall conform to the requirements for Bonnet Bolting in AWWA C-500. The case shall be filled with grease to the factory.

By-pass valves shall be furnished and installed on each valve unless otherwise indicated on the approved plans. See Table 630-1 for by-pass valve sizes.

SUBSECTION 630.5 BUTTERFLY VALVES delete this subsection in its entirety

SECTION 631 – WATER TAPS AND METER SERVICE CONNECTIONS

Shall conform to the City of Yuma Construction Standards

SUBSECTION 631.1 DESCRIPTION delete subsection in its entirety and replace with the following:

This specification covers work by Contractors installing water services in new subdivisions by Permit and in projects under Contract. All the materials used shall comply with applicable standard specifications and the work performed in accordance with these specifications and standard details. The service connections shall be complete and all material shall be furnished by the Contractor except for the water meter.

All water service connections shall be constructed of Schedule 40 PVC pipe.

All new subdivision water lines shall be staked for line and grade at 100 foot intervals by the Developer's Engineer prior to construction. All meter locations shall be staked by setting two stakes for line and marking one of the stakes for grade.

SUBSECTION 631.2 MATERIALS delete this subsection in its entirety and replace with the following:

All 1” and 2” service connections shall be constructed of Schedule 40 PVC.

SUBSECTION 631.3.4 POLYETHYLENE PIPE delete this subsection in its entirety

SUBSECTION 631.3.5 SERVICE TAPS delete subsection in its entirety and replace with the following:

One inch service taps to new meter mains may be made with a saddle, or tapped coupling, connections 4” and larger require service saddle in accordance with the following provisions:

The Developer may use heavy tapped couplings for meter service connections on all sizes of pipe. Bronze corporation stops must be installed in the tapped couplings prior to pressure testing or disinfection of the water main.

Saddles shall be used on all 6 inch pipe and larger. All service connections on major and collector streets shall be made with saddles or heavy duty tapped couplings regardless of the water main size or service pipe size. All taps on pipe smaller than 6 inches must be made by either a saddle or heavy tapped coupling with bronze insert.

All wet taps must be made by the Mueller Type B-100 tapping machine or approved equal. A sharp tapping bit must be used in order to obtain clean sharp threads. In general, each tapping tool should be resharpened or discarded after making 6 taps. The minimum distance between taps, saddles, and tapped couplings shall be 3feet.

CONSTRUCTION SPECIFICATIONS

PART 700 - MATERIALS

Section	Title	
701	Aggregate	N/C
702	Base Materials	N/C
703	Riprap	N/C
705	Portland Cement Treated Base	N/C
708	Asphalt Pavement Core Bonding Materials	N/C
710	Asphalt Concrete	710-1
711	Paving Asphalt	N/C
712	Liquid Asphalt	N/C
713	Emulsified Asphalts Materials	N/C
714	Microsurfacing Materials	N/C
~~715~~	~~Slurry Seal Materials~~	DELETED
716	Cover Material	N/C
717	Asphalt-Rubber Asphalt Concrete	N/C
718	Preservative Seal for Asphalt Concrete	N/C
725	Portland Cement Concrete	725-1
726	Concrete Curing Materials	N/C
727	Steel Reinforcement	N/C
728	Controlled Low Strength Material	N/C
729	Expansion Joint Filler	N/C
735	Reinforced Concrete Pipe	N/C
~~736~~	~~Non-reinforced Concrete Pipe~~	DELETED
738	High Density Polyethylene Pipe and Fittings for Storm Drain and Sanitary Sewer	738-1
739	Steel Reinforced Polyethylene Pipe & Fittings for Storm Drain, Irrigation & Sanitary Sewer	N/C
740	Polypropylene Pipe & Fittings for Storm Drain, Irrigation & Sanitary Sewer	N/C
~~741~~	~~Lining for Reinforced Concrete Sanitary Sewer Pipe~~	DELETED
742	Precast Manhole	742-1
742A	Polymer Concrete Manhole	742A-1
~~743~~	~~Vitrified Clay Pipe~~	DELETED
744	ABS Truss Pipe and Fittings	N/C
745	PVC Sewer Pipe and Fittings	N/C
~~750~~	~~Iron Water Pipe and Fittings~~	DELETED
~~752~~	~~Asbestos-Cement Water Pipe and Fittings~~	DELETED

~~753~~	~~Galvanized Pipe and Fittings~~	DELETED
~~754~~	~~Copper Pipe, Tubing and Fittings~~	DELETED
~~755~~	~~Polyethylene Pipe for Water Distribution~~	DELETED
756	Dry Barrel/Fire Hydrants	N/C
757	Sprinkler Irrigation System	N/C
758	Concrete Pressure Pipe - Steel Cylinder Type	N/C
759	Steel Pipe	N/C
760	Coating Corrugated Metal Pipe and Arches	N/C
761	Structural Plate Pipe, Arches, and Pipe Arches	N/C
770	Structural and Rivet Steel, Rivets, Bolts, Pins, and Anchor Bolts	N/C
771	Galvanizing	N/C
772	Chain Link Fence	N/C
775	Brick and Concrete Masonry Units (Blocks)	N/C
776	Masonry Mortar and Grout	N/C
778	Lumber	N/C
779	Wood Preservatives	N/C
787	Gray Iron Castings	N/C
790	Paint	N/C
792	Dust Palliative	N/C
795	Landscape Material	N/C
796	Geosynthetics	N/C

N/C – No change to the Specification

Deleted – This Section deleted in its entirety

SECTION 710 – ASPHALT CONCRETE

SUBSECTION 710.3 MIX DESIGN REQUIREMENTS add the following:

An approved mix design can be included in the City approved product list for an additional year from the date the mix was formulated, sealed and signed upon receiving evidence that the type of bituminous material, the type of mineral admixture, and the source and methods of the producing mineral aggregate have not changed since the formulation of the previous mix design. The submittal shall include the above noted evidence and also provide test results for the aggregates and the mix, to include; gradations and specific gravity of the coarse and fine aggregates, maximum theoretical (Rice) density, Marshall Data and void calculations at the optimum oil content.

SUBSECTION 710.3.1 GENERAL delete first paragraph and item (7) in its entirety and replace with the following:

The mix design for asphalt concrete shall be prepared by a laboratory that is accredited through the AASHTO Accreditation Program (AAP) in Hot Mix Asphalt Aggregates and Hot Mix Asphalt. The laboratory shall be under the direct supervision of a Civil Engineer, registered by the State of Arizona. The date of the design shall not be older than one year of submittal, unless supportive documentation is provided and approved by the Engineer.

(7) The results of all testing, determinations, etc., such as: specific gravity and gradation of each component, water absorption, sand equivalent, loss on abrasion, fractured coarse aggregate particles, Tensile Strength Ratio (ASTM D4867) or Compressive Strength of Bituminous Mixtures (ASTM D 1074) and Effects of Water on Compressive Strength of Compacted Bituminous mixtures (ASTM D1075). Marshall stability and flow, asphalt absorption, percent air voids, voids in mineral aggregate, and bulk density. Historical abrasion values may be supplied on existing sources. The submittal should include a plot of the gradation on the Federal Highway Administration's 0.45 Power gradation Chart, plots of the compaction curves and the results of moisture sensitive testing.

SUBSECTION 710.3 MIX DESIGN REQUIREMENTS add the following to Table 710-3:

5a Min. Dry Strength of 250psi per ASTM D1075

5b Min. Retained Wet Strength of 70% of the dry strength.

SECTION 725 – PORTLAND CEMENT CONCRETE

SUBSECTION 725.6 MIX DESIGN PROPORTIONING add the following:

An approved mix design can be extended for an additional year from the date the mix was formulated, sealed and signed upon receiving supporting data from the approved laboratory, including but not limited to aggregate test results and concrete strength testing records not more than 24 month old. The mix design requires the signature of a P.E. and will be reviewed in accordance with ACI 318 Chapter 5.

SUBSECTION 725.8.2 CONCRETE CYLINDER TEST delete first paragraph in its entirety and replace with the following:

A cylinder strength test shall consist of three 6x12 cylinders or three 4x8 cylinders made from the same sample of concrete. One cylinder will be tested at 7 days and the average of two will be tested at 28 days.

SECTION 738 – HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS FOR STORM DRAIN AND SANITARY SEWER

SUBSECTION 738.1 GENERAL delete first paragraph in its entirety and replace with the following:

This specification covers the requirements of profile-reinforced and corrugated (Type S or Type D) high density polyethylene (HDPE) pipe manufactured per ASTM F894, AASHTO M-252 or AASHTO M-294 for gravity flow, low pressure storm drain and sanitary sewer systems. When noted on the plans or in the special provisions, gravity flow, low pressure storm drains and sanitary sewers may be constructed using HDPE pipe. The HDPE pipe will be of the sizes 12 inch diameter through 120 inch diameter. For the purpose of this specification, low pressure is defined as the test pressures of 3.5 psi of air or 4 feet of water as specified in Section 615.11.

SECTION 742 – PRECAST MANHOLE

SUBSECTION 742.1 GENERAL delete first paragraph in its entirety and replace with the following paragraphs:

This specification covers requirements for precast manhole sections for use in Storm Drain Systems only. For precast manholes for Sanitary Sewer Systems see Section 742A – Polymer Concrete Manhole.

All precast manhole manufacturers shall be NPCA (National Precast Association) certified and shall provide all NPCA certifications upon request. Loading criteria for the precast manholes shall meet or exceed the AASHTO H20 loading requirements. All precast manhole risers shall be monolithically cast to ensure water tightness and have a certified structural design and the manhole shall be cast in a fashion to achieve water tightness. This shall include a monolithic cast manhole or a multi section cast manhole which also shall have a certified structural design.

SECTION 742A – POLYMER CONCRETE MANHOLE

PART 1 GENERAL

This specification covers requirements for precast manhole sections constructed of acid resistant polymer concrete for use in sanitary sewer system. All precast manhole risers shall be monolithically cast to ensure water tightness and have a certified structural design and the manhole shall be cast and constructed in a fashion to achieve water tightness.

1.01 SCOPE

This specification covers acid resistant polymer manholes intended for use in sanitary sewers, storm sewers and water lines.

1.02 REFERENCES

ASTM C 478 (most current) Standard Specification for Precast Reinforced Concrete Manhole Sections.

ASTM C 857 (most current) Standard Practice for Minimum Structural Design Loading for Underground Utility Structures.

ASTM D 648 (most current) Test Method for Deflection Temperature of Plastics Under Flexural Load in Edgewise Position.

ASTM D 6783 (most current) Standard Specification for Polymer Concrete Pipe.

ASTM D 2584 (most current) Test Method for Ignition Loss of Cured Reinforced Resins.

ASTM C 923 (most current) Standard Specifications for Resilient Connectors between Concrete Manholes Structures and Pipe.

ASTM C 990 (most current) Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections using Preformed Flexible Joint Sealants

ASTM C 497 (most current) Test Methods for Concrete Pipe, Manhole Sections, or Tile.

AASHTO LRFD Bridge Design Specifications

1.03 SUBMITTALS

A. Conform to bid document requirements.

B. Submit manufacturer's data and details of following items for approval:

1. Shop drawings of manhole sections, base units and construction details, jointing methods, materials and dimensions

2. Summary of criteria used in manhole design including, as minimum, material properties, loadings, load combinations, and dimensions assumed. Include certification from manufacturer that acid resistant polymer manhole

design meets or exceeds the load and strength requirements of ASTM C 478 and ASTM C 857

3. Frames, grates, rings and covers

4. Materials to be used in fabricating drop connections

5. Materials to be used for pipe connections at manhole walls

6. Materials to be used for stubs and stub plugs, if required

7. Proof of independent Chemical Resistance testing conducted in accordance with the Standard Specifications for Public Works Construction (California Greenbook) Section 211-2.

C. Submitted sealed drawings by a registered Professional Engineer

PART 2 PRODUCTS

2.01 ACID RESISTANT POLYMER MANHOLES

A. Provide acid resistant polymer manhole sections, base sections and related components conforming to ASTM C 478. ASTM C 478 material and manufacturing is allowed compositional and dimensional differences required by a polymer product.

B. Provide base riser section with monolithically poured floors, unless shown otherwise and approved by the Engineer.

C. Provide riser sections joined with bell and spigot / ship-lap design seamed with butyl mastic or gaskets (ASTM C 990) so that on assembly, manhole base, riser and top section make a continuous and uniform manhole.

D. Construct riser sections for polymer manholes from standard polymer manhole sections of the diameter indicated on drawings.

E. Use various lengths of manhole sections in combination to provide correct height with the fewest joints.

F. Design wall sections for depth and loading conditions with wall thickness as required by polymer manufacturer.

G. Provide tops to support HL-93 vehicle loading and receiving cast iron frame covers, as indicated on drawings.

H. Where polymer transition slabs are required provide precast base sections with flat polymer slab top sections used to transition to 48-inch diameter manhole access riser sections. Transition can be concentric or eccentric as shown on drawings. Locate transition to provide minimum of 7-foot head clearance from base to underside of transition unless otherwise approved by the Engineer.

2.01-1 DESIGN CRITERIA:

Manhole risers, transition slabs, conical tops, grade rings and manhole base sections shall be designed, by manufacturer, to meet the intent of ASTM C 478 with allowable compositional and sizing differences required by a polymer product.

1. AASHTO LRFD HL-93 design live loading applied to manhole cover and transition and base slabs

2. Polymer manholes will be designed based upon live and dead load criteria in ASTM C 857

3. Unit soil weight of 120 pcf located above portions of manhole, including base slab projections

4. Internal liquid pressure based on unit weight of 63 pcf

5. Dead load of manhole sections fully supported by transition and base slabs

2.01-2 DESIGN:

Manhole risers, transition slabs, conical tops, grade rings and manhole base sections shall be designed by manufacture to requirements of ASTM C 478 and ASTM C 857 as modified to accept polymer construction in lieu of concrete as follows:

1. Polymer Mixture - the mixture shall consist solely of thermosetting resin sand and aggregate. No cementitious materials shall be allowed as part of the mix design matrix. All sand and aggregate shall be nonreactive in an acid environment. Proof of independent Chemical Resistance testing conducted in accordance with the Standard Specifications for Public Works Construction (California Greenbook) Section 211- shall be submitted.

2. Required wall thickness for all members will be that stated by polymer manhole manufacturer based upon loading conditions and material properties. The wall thickness of risers and conical tops shall be not less than that prescribed by the manufacturer's design by more than 5%. A wall greater than the prescribed design shall not be cause for rejection.

3. Thermosetting Resin - The resin shall have a minimum of deflection temperature of 158° F when tested at 264 psi (1.820 mPa) following Test Method D 648. The resin content shall not be less than 7% of the weight of the sample as determined by test method D 2584. Resin selection shall be suitable for applications in the corrosive conditions to which the structures will be exposed.

4. Each manhole component shall be free of all defects, including indentations, cracks, foreign inclusions and resin starved areas that, due to their nature and degree or extent, detrimentally affect the strength and serviceability of the component part. The internal diameter of manhole

components shall not vary more than 1%. Variations in height of two opposite sides of risers and conical tops shall not be more the 5/8 inch. The under run in height of a riser or conical top shall not be more than 1/4in./ft of height with a maximum of $^{1}/_{2}$ inch in any one section.

5. Marketing and Identification - Each manhole shall be marked on the inside and outside with the following information - Manufacturer's name or trademark, Manufacturer's location and Production Date.

6. Manhole joints shall be assembled with a bell/spigot or shiplap butyl mastic or gasketed joint so that on assembly, manhole base, riser and top section make a continuous and uniform manhole. Joint sealing surfaces shall be free of dents, gouges and other surface irregularities that would affect joint integrity.

7. Minimum clear distance between two wall penetrations shall be a minimum of 6" on 48" to 72" diameter manholes and a minimum of 8" on larger diameter manholes. A clearance of 3" is required between wall penetration and joint.

8. Construct invert channels to provide smooth flow transition waterway with no disruption of flow at pipe-manhole connections. Invert slope through manhole is as indicated on drawings. All precast base sections to be cast monolithically. Provide curves for side inlets and smooth invert fillets for flow transition between pipe inverts. Polymer bench and channel are to be constructed with all resin aggregate material – no alternative fill material is allowed. Extended base footer requirements for buoyancy concerns can be addressed with cementitious concrete material.

9. Provide resilient connectors conforming to requirements of ASTM C 923 or as a required by owner. All connectors are to be water tight. Install approved resilient connectors at each pipe entering and exiting manholes in accordance with manufacturer's instructions.

10. Exceptions to ASTM C 478- components shall be designed for the intended combinations of manufacturing materials. Component designs may be as fiberglass rebar reinforced members as recommended by the manufacturer. Other forms of reinforcing may be approved by the Engineer.

2.01-3 QUALITY CONTROL

Facility Quality Control should be maintained by adhering to ISO 9001:2008 for manufacturing. All fabricators will be ISO 9001:2008 Certified. Fabricator is also to provide references of 5 previous projects in the last 5 years performed with both owner and contractor for reference and review by owner.

2.01-4 GROUTING & REPAIR

All materials needed for grouting and patching will be a polyester mortar compound provided by the manufacturer or an approved equal by the manufacturer. Cosmetic patching, done in the field or at facility prior to shipment, shall not be cause for rejection. Structural repairs shall be recommended and approved by owner and manufacturer together.

CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NUMBER	***DESCRIPTION***	
1-000's	***SHEET SIZES & SYMBOLS***	
1-010	Standard Drawing Sizes	N/C
1-030	Standard Drawing Symbols(3 Sheets)	N/C
2-000's	***ROADWAY CLASSIFICATIONS***	
2-005	Expressway	N/C
2-010	Principal Arterial Street	N/C
2-020	Minor Arterial Street	N/C
2-030	Collector Street	N/C
2-031	Residential Collector Street	N/C
2-032	Constrained Collector Street	N/C
2-050	Local Two Lane Street	N/C
2-060	Local Commercial/Industrial Street	N/C
2-085	Bikeway Standards	N/C
2-094	Speed and Intersection Control, New & Replaced Residential Streets (2 sheets)	N/C N/C
2-096	Schematic Street Layout Requirements	N/C
2-100	Guidelines for Traffic Impact Studies	N/C
3-000's	***ENGINEERING DESIGN STANDARDS***	
3-010	Depth of Aggregate Base Course for Local Two Lane Streets	N/C
3-025	Depth of Aggregate Base Course for Collector Streets	N/C
3-026	Depth of Aggregate Base Course for Principal, Expressway and Minor Arterial Streets	N/C N/C
3-030	Typical Alley	N/C
3-031	Access Gate	N/C
3-060	Parkway Grading	N/C
3-080	Cul-de-sac	N/C
3-100	Standard Local Street Knuckle	N/C
3-110	Median Options	N/C
3-112	Safety Nose Median	N/C
3-120	Vertical Curb and Gutter	N/C
3-130	A.D.O.T. Type Vertical Curb and Gutter	N/C
3-140	Roll Curb and Gutter	N/C
3-150	Vertical Curb and Typical Curb Termination	N/C
3-160	Residential Addressing for Vertical and Roll Curb	N/C
3-170	Cross Gutter Layout	N/C
3-180	Cross Gutter	N/C
3-181	Intersection with Standard Cross Gutters	N/C
3-190	Transition from A.D.O.T. Type Curb & Gutter to City Curb & Gutter (2 Sheets)	N/C

3-210	Driveway Entrance with Sidewalk Adjacent to Curb	N/C
3-211	Driveway Entrance with Parkway	N/C
3-212	Residential Driveway with Roll Curb and Gutter	N/C
3-225	Driveway Entrances with Curb Returns	N/C
3-250	Driveway Entrance Locations	N/C
3-251	Trash Enclosures	N/C
3-252	Trash Enclosure Access	N/C
3-260	Sidewalk and Parkway Locations	N/C
3-270	Sidewalks	N/C
3-271	Sidewalk Handicapped Passing Zone	N/C
3-280	Sidewalk Ramp (2 Sheets)	N/C
3-290	Sidewalk Ramp (Straight Section)	N/C
3-291	Sidewalk Ramp Detectable Warning Strip (2 Sheets)	N/C
3-292	Curb Ramp and Island Passageway Details	N/C
3-300	Non-Retaining 8’ Tall CMU Site Wall (2 Sheets)	N/C
3-310	Non-Retaining Concrete Block Wall	N/C
3-320	6' Chain Link Fence and Gate (Industrial Use Only)	N/C
3-321	Steel Tube Fencing	N/C
3-330	Reverse Curves	N/C
3-340	Angle of Intersections	N/C
3-350	Local Street Jogs	N/C
3-351	Hammerhead Tee Turnaround	N/C
3-352	Turn Lane Treatment (3 Sheets)	N/C
3-355	Right Turn Channelizations with Separate Turn Lane (2 Sheets)	N/C
3-357	Driveway Channelization (7 sheets)	N/C
3-360	Type III Barricade	N/C
3-391	Bus Bay Design	N/C
3-400	Clear Sight Triangles at Typical Stop Intersections	N/C
3-500	Speed Table (2 Sheets)	N/C
4-000’s	***MONUMENTATION***	N/C
4-010	Survey Monument Specifications	N/C
4-020	Typical Subdivision Monuments	N/C
4-030	Boundary Monument	N/C
4-040	Survey Monument with Frame and Cover -Type “A”	N/C
4-050	Survey Monument with Frame and Cover -Type “B”	N/C
4-060	Monument Referencing Standard	N/C
4-070	Reference Point Monument	N/C
4-080	Street Monument Placement	N/C
4-090	Survey Monument with Frame and Cover-Type “C”	N/C
4-100	Street Monuments	N/C
5-000’s	***DRAINAGE AND UTILITIES***	
5-010	Sanitary Sewer Cleanout	N/C
5-015	Forcemain Pressure Cleanout	N/C
~~5-020~~	~~Lateral Connection to Wastewater System with 45 Degree Bend~~	DELETED
5-021	Lateral Connection to Wastewater System with Sanitary Wye	5-021

5-022	Typical Water & Sewer Crossings	N/C
5-029	Pre-Cast Concrete Manhole	5-029
5-030	Pre-Cast Concrete Manhole (15'-40' Deep)	5-030
~~5-031~~	~~Adjusting Techite Manhole Liners or Brick Manholes to Finished Grade~~	DELETED
~~5-032~~	~~Techite Manhole Liner Top Collar~~	DELETED
5-040	Standard Manhole Frame and Cover	N/C
5-041	Type "A" Drop Sewer Connection	N/C
5-042	Type "B" Drop Sewer Connection	N/C
5-044	Adjusting Manholes to Final Grade	N/C
5-050	Sanitary Sewer Lift Station (2 Sheets)	5-050
5-051	Storm Sewer Lift Station (2 Sheets)	N/C
5-052	Stormwater Well Gate Detail	N/C
~~5-060~~	~~Typical Water & Sewer Crossings~~	DELETED (See 5-020)
5-070	Pavement Replacement	N/C
5-075	Pavement Repair Longitudinal Utility Cut Next to Curb or Gutter	N/C
5-080	Typical Water & Sewer Main Trench Backfill	N/C
5-081	Typical Water & Sewer Service Line Trench Backfill	N/C
5-090	Typical Thrust Block Installation	N/C
5-100	Thrust Block Data	N/C
5-101	Concrete Base for Valves 20" and Larger	N/C
5-110	Valve Anchors	N/C
5-112	Temporary Construction Anti-Backflow Assembly	N/C
5-113	Air Gap Separation Backflow Prevention	N/C
5-114	Double Check Valve (D.C.V.A.) Backflow-Prevention Assembly for 3" and Smaller Water Line	N/C
5-115	Double Check Valve (D.C.V.A.) Backflow-Prevention Assembly for 4" and Larger Water Line	N/C
5-116	Reduced Pressure Assembly (R.P.A.) for 3" and Smaller Water Line	N/C
5-117	Reduced Pressure Assembly (R.P.A.) for 4" and Larger Water Line	N/C
5-118	Pressure Vacuum Breaker Assembly (All Sizes)	N/C
5-120	Utility Locations for Principal Arterial Street Fire Hydrants	N/C
5-125	Fire Hydrant Street Markers	N/C
5-130	Fire Hydrant and Flexstake Locations	N/C
5-131	Fire Line Valving	N/C
5-132	Private Fire Sprinkler Line Installation	N/C
5-133	Fire Department Connections	N/C
5-140	Watermain Blowoff	N/C
5-142	Air Release Valve Manhole	N/C
5-148	Approved Water Service Components	N/C
5-149	Water Meter Installation 1" & Smaller	N/C
5-150	2" Water Service	N/C
5-152	Concrete Water Meter Box for 1" Meter and Smaller	N/C
5-153	Concrete Water Meter Box for 1-1/2" and 2" Meter and 3" Turbine Meter	N/C
5-154	Water Meter Vault 4" through 8" Meters	N/C
5-160	Utility Locations for Principal Arterial Streets	N/C
5-170	Utility Location for Minor Arterial Streets	N/C
5-180	Utility Location for Collector Streets	N/C

5-190	Utility Location for Local Two Lane Streets	N/C
5-200	Valve Box Cover, Drop In	N/C
5-210	Valve Box Installation	N/C
5-211	8" Cast Iron Frame and Cover	N/C
5-212	Steel Casing end Seals with 2” Schedule 80 PVC Vent Pipe	N/C
5-225	Type "A" Catch Basin -For Use without Curb and Gutter	N/C
5-230	Type "B" Catch Basin -5' to 6’ Curb Opening with Access	N/C
5-240	Type "C" Catch Basin -8' Curb Opening with Access	N/C
5-250	Type "D" Catch Basin	N/C
5-260	Type "E" Catch Basin -Single/Triple Grate)	N/C
5-270	Type "F" Catch Basin -Curb Opening with Single/Triple Grate	N/C
5-275	Catch Basin with HDPE Structure	N/C
5-280	Cover for Access Opening Type “B” and “C” Catch Basins	N/C
5-290	Curb Opening Inlet and Pipe Entry Detail	N/C
5-310	Drain Under Sidewalk	N/C
5-320	Concrete Scupper	N/C
5-350	Concrete Pipe Collar	N/C
5-360	End Section -Reinforced Concrete Pipe	N/C
5-370	Spillway Inlet and Outlet	N/C
5-390	Erosion Protection/Riprap	N/C
5-500	Irrigation Sprinkler System (3 Sheets)	N/C
5-510	Cage for Backflow Preventer	N/C
5-520	Two Stage Grease Interceptor	N/C
6-000’s	***TRAFFIC SIGNALS***	N/C
6-005	Type “O” Controller Cabinet Layout (2 sheets)	N/C
6-006	Electric Service Enclosure on Controller Cabinet (2 sheets)	N/C
6-010	Traffic Signal Control Cabinet Foundation	N/C
6-030	Pull Box Installation	N/C
6-031	Pull Box for Fiber Optic Cable, Type FO 6-040 Cabinet, Pole and Pedestal Grounding	N/C
6-100	Internally Illuminated Street Name Signs (2 sheets)	N/C
6-101	Location of Internally Illuminated Street Name Signs (2 sheets)	N/C
6-102	Mast Arm Signal Mounting Assembly, 3 to 5 Section, Straight	N/C
6-103	Mast Arm Signal Mounting Assembly, 5 Section Cluster Mount	N/C
6-104	Signal Mounting Assemblies for Poles and Pedestals (4 sheets)	N/C
6-105	Illuminated Sign Mounting Bracket (2 sheets)	N/C
6-200	Signal Pole Foundations (2 sheets) 6-201 Type SP-1A and SP-1B Traffic Signal Pole and Mast Arm (4 sheets)	N/C
6-202	Type I and Type II Traffic Signal Pole and Mast Arm (4 sheets)	N/C
6-203	Type III Traffic Sign Pole and Mast Arm (4 sheets)	N/C
6-210	Pedestrian Push-button on Street Name Sign Assembly	N/C
6-300	Traffic Signal Phase Assignments	N/C
6-301	Traffic Signal Set-up Design for 2-Phase Intersection with Advance Detection (2 sheets)	N/C
6-310	Conduits and Pull Boxes at Controller Cabinet	N/C
6-350	Traffic Signal Fiber Optic Cable Connections	N/C

6-351	Schematic Traffic Signal Fiber Optic Channel Connections	N/C
6-352	Typical Traffic Signal Fiber Optic Channel Complex Splices	N/C
6-400	Loop System Installation (5 sheets)	N/C
6-610	Example of Traffic Signal Layout for Conduit and Electrical Connections Design (4 sheets)	N/C
6-700	Wi-fi installation on Traffic Signal (2 sheets)	N/C
6-900	Speed Limit Beacon Assembly	N/C
6-910	Temporary Traffic Signal Assembly-Typical Span	N/C

7-000's STREET LIGHTS

7-010	Street Light Assembly 8'x36' Mast Arm for Wood Pole	7-010
7-020	Street Light Assembly 8'x8' High Rise Mast Arm for Wood Pole	7-010
7-030	Street Light Assembly 72"x20" Mast Arm for Wood Pole	7-010
7-040	Street Light Assembly 8'x8' Hi-Rise Mast Arm(s) on Self Supporting or Non-Self-Supporting on 32" Steel Pole	7-010
7-050	Street Light Assembly 72"x20" Mast Arm and 25' Steel Pole	7-010
7-060	Street Light Assembly Architectural Square Brown Steel Pole with 8' High Rise Arm (Single or Double)	7-010
7-070	Street Light Assembly Architectural Square Brown Steel Pole with 2' Arm (Single or Double)	7-010
7-080	Street Light Assembly Architectural 28' Square Brown Steel Pole	7-010
7-090	Street Light Assembly Colonial 18' Square Brown Steel Pole	7-100
7-100	Street Lighting Design Standards	
7-101	Typical Street Light Layout Configuration	N/C
7-110	Street Light Assembly Detail Internal Pole Wiring for Underground Circuit	N/C
7-120	Transitions Secondary, Underground Circuit to Street Light on Wood Pole	N/C
7-125	Protective Coating for Steel Light Poles	N/C
7-130	Street Light Fixtures High Pressure Sodium Luminaries	7-130
~~7-131~~	~~Street Light Luminaries List~~	DELETED
7-140	Street Light Details Lamps and Photoelectric Controllers	N/C
7-150	Junction Box Heavy Duty Polymer for Street Light Service	N/C
7-160	Street Light Material Specifications Mast Arm Connection Detail	N/C
7-170	Street Light Material Specifications Round Pole Hand Hole Detail	N/C
7-180	Street Light Material Specifications Square Pole Hand Hole Detail	N/C
7-190	Street Light Material Specifications Base Plate Display	N/C
7-200	Street Light Material Specifications Pole Step-Down Detail	N/C
7-210	Street Light Material Specifications Structural Notes	N/C
7-220	Street Light Material Specifications Pole Footing Detail	N/C
7-230	Street Light Material Specifications Wood Pole Mast Arm Connection Detail	N/C
7-240	Street Light Material Specifications Mast Arm Details (4 sheets)	N/C
7-250	Street Light Material Specifications 32' Steel Pole	N/C
7-260	Street Light Material Specifications 25' Steel Pole	N/C
7-270	Street Light Material Specifications Architectural Square Brown Steel Pole	N/C

8-000's TRAFFIC SIGNING

8-010	Minimum Placement Requirements for Traffic Signs (2 sheets)	N/C

8-011	Stop Sign and Street Name Sign Placement	N/C
8-012	All-way STOP to Normal 2-way STOP Transition	N/C
8-020	Traffic Sign Mounting (4 sheets)	N/C
8-021	Street Name Sign Mounting Brackets (2 sheets)	N/C
8-040	Guidelines for Warning Sign Replacement	N/C
8-041	Stop Sign Visibility and Advance Warning	N/C
8-042	Signing of One-way Exit Driveways	N/C
8-100	Work Zone Identification Sign (2 sheets)	N/C
8-200	Street Name Sign Layout and Design (6 sheets)	N/C
8-205	Pedestrian Push-button Identification Sign (SP-1)	N/C
8-210	Parking Regulation Signs (2 sheets)	N/C
8-215	Ground-mounted Lane Use Signs (2 sheets)	N/C
8-230	Ground-mounted Work Zone Lane Use Signs (4 sheets)	N/C
8-350	Cross Street Closed Ahead Sign (W20-3YS)	N/C
8-352	Parade Ahead Sign (W50-1Y)	N/C
8-370	Advance Detour Sign (M4-9Y)	N/C
9-000's	***PAVEMENT MARKING***	
9-010	Taper Lengths for Use in Pavement Marking and Work Zone/ Special Event Traffic Control	N/C
9-020	Approach End Treatment for Medians (2 sheets)	N/C
9-021	Lane Drop Signing and Marking	N/C
9-022	School Crossing Signing and Marking (13 sheets)	N/C
9-100	Intersection Pavement Markings	N/C
9-110	Pavement Marking Definitions	N/C
10-000's	***DRAINAGE EROSION CONTROL***	
10-010	Stabilized Construction Exit/ Entrance	N/C
10-020	Silt Fence	N/C
10-030	Sediment Logs (Wattles)	N/C
10-040	Gravel Filter Bern	N/C
10-050	Pipe Outlet Protection	N/C
10-060	Temporary Diversion Dike	N/C
10-070	Temporary Drainage Swale	N/C
10-080	Standard Concave Median	N/C
10-090	Inlet Protection	N/C
10-110	Inlet Protection	N/C
10-120	Concrete Wash Area	N/C
11-000's	***OVERHEAD UTILITIES***	
11-010	Overhead Wire and Cable Clearance at Significant Intersections (3 sheets)	N/C

N/C – No change to the Standard Detail Drawing

Deleted – This Section deleted in its entirety

STANDARD DETAIL 5-021 – LATERAL CONNECTION TO WASTEWATER SYSTEM WITH SANITARY WYE modify as follows:

The cleanout shown in the drawing shall be located within the property no further than five feet from the property line or public utility easement and shall be constructed in addition to such other cleanouts as may be required by the Building Regulations of the City of San Luis as adopted at Chapter 150 of the Code of Ordinances of the City of San Luis.

STANDARD DETAIL 5-029 – PRECAST CONCRETE MANHOLE modify as follows:

Precast manholes constructed of Portland Cement Concrete are solely for use in Storm Drainage systems. Precast manholes constructed of acid resistant polymer concrete are required for use in Sanitary Sewer systems. See Specification Section 742A.

STANDARD DETAIL 5-030 – 15' – 40' DEEP PRECAST CONCRETE MANHOLE modify as follows:

Precast manholes constructed of Portland Cement Concrete are solely for use in Storm Drainage systems. Precast manholes constructed of acid resistant polymer concrete are required for use in Sanitary Sewer systems. See Specification Section 742A.

STANDARD DETAIL 5-050 – SANITARY SEWER LIFT STATION on Sheet 1 delete items 22 and 24 of the Material List for Lift Station and on Sheet 2 delete Note 8 of the General Notes in their entirety and replaced with the following:

Sheet 1 – Material List

22. 96-inch (inside diameter) polymer concrete structure with base and cover.

Sheet 2 – General Notes

8. Sanitary sewer lift station shall be constructed of acid resistant polymer concrete per Specification 742A.

STANDARD DETAILS 7-010, 7-020, 7-030, 7-040, 7-050, 7-060, 7-070, 7-080,7-090 – STREET LIGHT ASSEMBLY (VARIOUS TYPES) modify as follows:

Luminaires shall be LED (Light Emitting Diode) fixtures of the type (A, B or C per Standard Detail Drawing No. 7-130) as shown. The LED luminaires shall be selected to be of the wattage and lumens necessary to provide illumination of the minimum average foot candles shown for the various roadways types as per Standard Detail Drawing No. 7-100 – Street Lighting Design Standards.

STANDARD DETAIL 7-100 – STREET LIGHTING DESIGN STANDARDS delete Note 4 in its entirety and replace it with the following:

4. All fixtures are to be LED (Light Emitting Diode) fixtures of the wattage and lumens necessary to provide illumination of the minimum average foot candles shown for the various roadways types. Each fixture to be provided with a photo-electric control as per Standard Detail No. 7-130.

STANDARD DETAIL 7-130 – STREET LIGHT FIXTURES – HIGH PRESSURE SODIUM LUMINAIRES modify as follows:

Luminaires to be LED (Light Emitting Diode) fixtures of the wattage and lumens necessary to provide illumination of the minimum average foot candles shown for the various roadways types as per Standard Detail Drawing No. 7-100 – Street Light Design Standards.