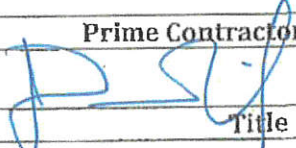
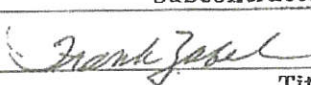


**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	FRANK ZABEL
Title	Date
PRESIDENT	10-19-15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name G2 METAL FAB		Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address 6954 PRESTON AVE., LIVERMORE, CA 94551			
Telephone No. 925-443-7903		Email Address kh@g2metalfab.com	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
Bid Item #2	MISC. METALS	113,645
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="radio"/> Other: MBE		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

VON # 15030033

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

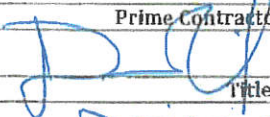
² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

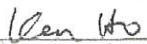


OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	KGN Ho
Title	Date
ESTIMATOR	10/22/2015

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name Hooven & Co., Inc.		Project Name McKinleyville CSD Wastewater MFI
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact David Hooven
Address 3445 Central Ave McKinleyville, CA 95519		
Telephone No. 707-839-1291		Email Address david@hoovenco.com
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
2	Earth work	1,269,723
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="radio"/> Other: <u>SBE</u>		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

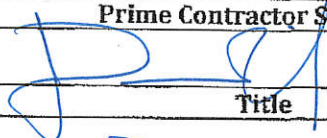
² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

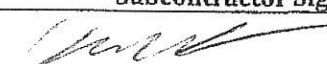


OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	David Hooven
Title	Date
Vice President	10-16-15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name <u>Humboldt Fence Co.</u>		Project Name <u>McKinleyville CSD Wastewater MFI</u>
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact <u>Russ Renner</u>
Address <u>564 Hwy 36 Fortuna CA 95540</u>		
Telephone No. <u>707-822-9511</u>	Email Address <u>ann@humboldt-fence.co</u>	
Prime Contractor Name <u>Auburn Constructors, Inc</u>		Issuing/Funding Entity: <u>Clean Water State Revolving Fund Program</u>

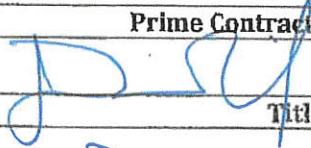
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
<u>Bid Item #2</u>	<u>Installation / demo of fence and gates per plans and specifications</u>	<u>54,150</u>
DBE Certified By: <input type="radio"/> DOT <input checked="" type="radio"/> SBA <input type="radio"/> Other: <u>* P0602064</u>		Meets/ exceeds EPA certification standards? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> Unknown

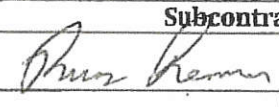
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Russ Renner
Title	Date
President	10-16-15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractor's bid or proposal package.

Subcontractor Name James Long Construction Services, Inc.		Project Name McKinleyville CSD Wastewater MFI	
Bld/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Brad Tucker	
Address 8560 Younger Creek Dr., Sacramento, CA 95828			
Telephone No. 916-379-9524		Email Address btucker@jameslongconstruction.com	
Prime Contractor Name <i>Arthur Constructors</i>		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

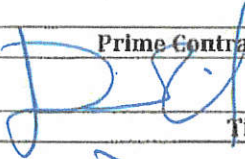
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
08900, 15800	Louvers, Heating and Ventilating Systems	\$40,010.00
DBE Certified By: <input type="radio"/> DOT <input checked="" type="radio"/> SBA <input type="radio"/> Other: SB (Micro) 1003880		Meets/ exceeds EPA certification standards? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> Unknown

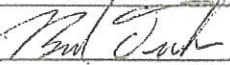
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Brad Tucker
Title	Date
Estimator	10/21/15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name <i>Jeffco Painting and Coating</i>		Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No. <i>Contract No. C0594</i>	Assistance Agreement ID No. (if known)	Point of Contact <i>Todd Anderson</i>	
Address <i>1260 Railroad Avenue, Bldg 750, Vallejo, Ca 94582</i>			
Telephone No. <i>707-562-1900</i>		Email Address <i>toddanderson@jeffcoptg.com</i>	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

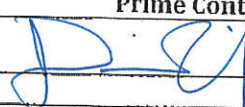
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
<i>Brd Item 2</i>	<i>Field Painting per the specifications</i>	<i>197,845</i>
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="radio"/> Other: <i>DBE</i>		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

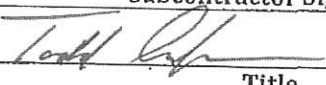
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Todd Anderson
Title	Date
Vice President	10/22/15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name <i>Kernen Construction</i>		Project Name <i>McKinleyville CSD Wastewater MFI</i>	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact <i>Bruce McIntosh</i>	
Address <i>P.O. Box 1340, BLUE LAKE CA 95525</i>			
Telephone No. <i>707-826-8686</i>		Email Address <i>bmcintosh@kernenconstruction.com</i>	
Prime Contractor Name <i>Auburn Constructors, Inc</i>		Issuing/Funding Entity: <i>Clean Water State Revolving Fund Program</i>	

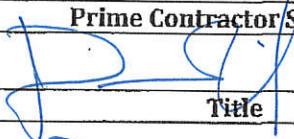
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
<i>2</i>	<i>Paving site work Rock and sand</i>	<i>141,158 50,000</i>
DBE Certified By: <input type="radio"/> DOT <input checked="" type="radio"/> SBA <input checked="" type="radio"/> Other: <i>? SBE</i>		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

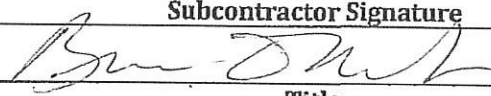
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Bruce McIntosh
Title	Date
Project Manager	10/19/2015

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name <i>LABORATORY By Design, Inc.</i>		Project Name <i>McKinleyville CSD Wastewater MFI</i>	
Bid/ Proposal No. <i>13277</i>	Assistance Agreement ID No. (if known)	Point of Contact <i>Michele Sempronio</i>	
Address <i>450 Technology Way, Napa, CA 94558</i>			
Telephone No. <i>707-252-8218</i>	Email Address <i>Michele@laboratorybydesign.com</i>		
Prime Contractor Name <i>Auburn Constructors, Inc</i>		Issuing/Funding Entity: <i>Clean Water State Revolving Fund Program</i>	

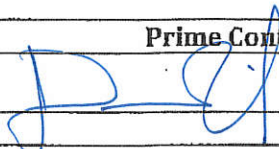
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
<i>Section 12346</i> <i>2</i>	<i>Furnish & install lab casework & epoxy tops</i>	<i>36,855</i>
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="radio"/> Other: <i>SBE</i>		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

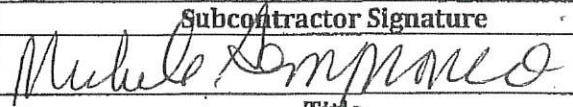
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Michele Sempronio
Title	Date
Cont. Admin / Est.	10-20-15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030

Approved: 8/13/2013

Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name Mason Painting Inc.		Project Name McKinleyville CSD Wastewater MFI	
Bld/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Bill Chapman	
Address 3242 Luyung dr. Rancho Cordova, Ca. 95742			
Telephone No. 916-852-8060		Email Address wjchap@msn.com	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
09900/09960 2	Painting and Coating of structural steel, concrete, CMU, wood, miscellaneous items and equipment as specified.	208,075
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="checkbox"/> Other: <u>SB (micro)</u>		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="checkbox"/> Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

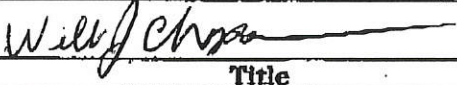


OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	William J Chapman
Title	Date
Estimator	10-20-15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name McMurray & Sons, Inc.	Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Sachio Tanuma
Address P.O. Box 1111, Eureka, CA 95502		
Telephone No. 707.443.3088	Email Address sachio@mcMurrayandsons.com	
Prime Contractor Name Auburn Constructors, Inc	Issuing/Funding Entity: Clean Water State Revolving Fund Program	

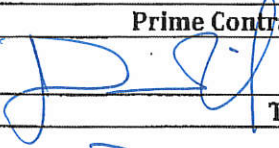
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
2	Roofing	5,570
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="radio"/> Other: SBE		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

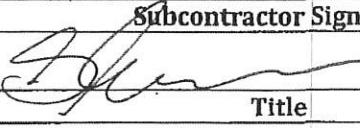
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Sachio Tanuna
Title	Date
Estimator	10/19/15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030

Approved: 8/ 13/ 2013

Approval Expires: 8/ 31/ 2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name Miller Farms Nursery, Inc.		Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Ross Miller	
Address P O Box 2145 McKinleyville, CA 95519			
Telephone No. 707-839-1571x14		Email Address rmiller@millerfarmsnursery.com	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

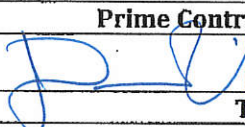
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services , Equipment or Supplies	Price of Work Submitted to the Prime Contractor
3	Fencing and gates	54,986.00
DBE Certified By: <input type="radio"/> DOT <input checked="" type="radio"/> SBA <input type="radio"/> Other: _____		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

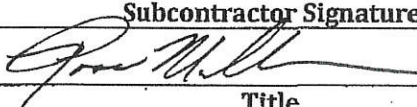
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Ross Miller
Title	Date
V. P. Landscape	10-20-15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030

Approved: 8/ 13/ 2013

Approval Expires: 8/ 31/ 2015

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name National Coating & Lining Co.		Project Name McKinleyville CSD WMF Improvements	
Bid/ Proposal No. 2015-01	Assistance Agreement ID No. (if known)	Point of Contact Anton Anstett	
Address 26713 Madison Ave, Murrieta, CA 92562			
Telephone No. 951-471-3388		Email Address info@nc-lc.co	
Prime Contractor Name Auburn Constructors		Issuing/Funding Entity: McKinleyville Community Services District	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
2	Field Painting, Concrete Coating, Anti-Graffiti	\$ 210,576
DBE Certified By: <input checked="" type="radio"/> DOT <input checked="" type="radio"/> SBA <input type="radio"/> Other: _____		Meets/ exceeds EPA certification standards? <input checked="" type="radio"/> YES <input checked="" type="radio"/> NO <input type="radio"/> Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



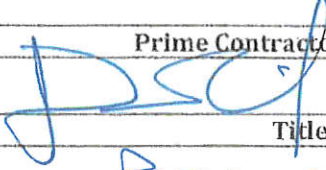
OMB Control No: 2090-0030

Approved: 8/13/2013

Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

 Prime Contractor Signature	Print Name DEAN BAILEY
Title PRESIDENT	Date 10/22/15

 Subcontractor Signature	Print Name ANTON ANSTETT
Title PRESIDENT	Date 10/19/15

ATTACH PROOF OF DBE CERTIFICATION FROM ONE OF THE FOLLOWING:

- * US Environmental Protection Agency (USEPA)
- * Small Business Administration(SBA)
- * Department of Transportation's State implemented DBE Certification Program (with U.S. citizenship)
- * Tribal, State and Local governments
- * Independent private organization certification

PROOF OF DBE CERTIFICATION MUST BE ATTACHED WITH THIS DOCUMENT AT TIME OF BID

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name Pacific Watershed Associates		Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Kathy Moley	
Address P.O. Box 4433, Arcata, CA 95518			
Telephone No. 707-839-5130		Email Address kathym@pacificwatershed.com	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

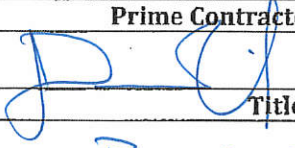
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
01140	Environmental Planning Documents: Development of SWPPP	\$5,400
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="radio"/> Other: <u>SBE</u>		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown

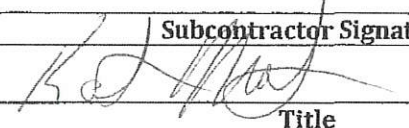
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Kathy Moley
Title	Date
Environmental Division Manager	10/19/15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name <u>Shasta Wood Products</u>		Project Name <u>Wastewater Mgmt Facility</u>	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact <u>Jeff Aboud, Chris Bell,</u>	
Address <u>19751 Hirsch Ct., Anderson, CA 96007 Donna miles</u>			
Telephone No. <u>530-378-6880</u>		Email Address <u>donna@shastawoodproducts.com</u>	
Prime Contractor Name <u>Auburn Constructors, Inc.</u>		Issuing/Funding Entity:	

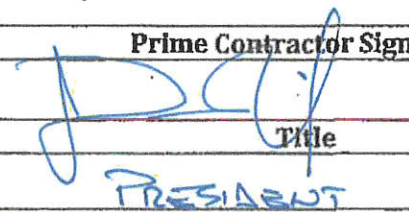
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
<u>Bid Item #2</u>	<u>See attached estimate</u>	<u>\$29,699.12</u>
DBE Certified By: <input type="radio"/> DOT <input checked="" type="radio"/> SBA <input type="radio"/> Other: _____		
Meets/ exceeds EPA certification standards? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> Unknown		

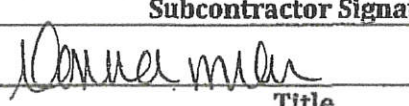
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Don Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Donna miles
Title	Date
Office mgr	10/22/15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name SHN Engineers & Geologists		Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Gwen Erickson	
Address 812 w. Wabash Eureka, CA			
Telephone No. 707-441-8855		Email Address gerickson@shn-engr.com	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
1	Stormwater compliance including developing SWPPP, SMARTS account management, QSP services, annual reporting, LUP required photo management, and filing the NOT.	\$20,800

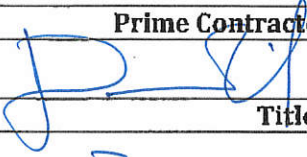
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input checked="" type="radio"/> Other: <u>SBE</u>	Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input checked="" type="radio"/> Unknown
---	--

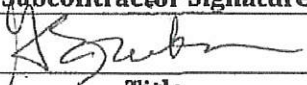
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Gwen Erickson
Title	Date
Project Manager	10-16-2015

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name SJR MASONRY & CONSTRUCTION		Project Name MCSO WASTEWATER MANAGEMENT FACILITY	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact STEVEN J RODRIGUEZ	
Address PO BOX 2233 MCKINLEYVILLE, CA 95519			
Telephone No. 707-839-2103		Email Address srmasonry@comcast.com	
Prime Contractor Name AUBURN CONTRACTORS, INC		Issuing/Funding Entity: CLEAN WATER STATE REVOLVING FUND PROGRAM	

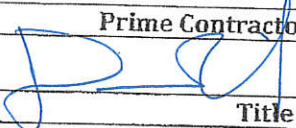
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
PORTION OF ITEM #2	MASONRY ON BLOWER, ELECTRICAL & MAINTENANCE BUILDING	95,163
DBE Certified By: <input checked="" type="checkbox"/> DOT <input checked="" type="checkbox"/> SBA <input type="checkbox"/> Other: _____		Meets/ exceeds EPA certification standards? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown

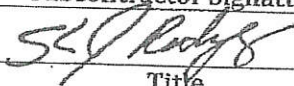
¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	DEAN BAILEY
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	STEVEN J RODRIGUEZ
Title	Date
OWNER	10/22/2015

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name The Smith Co Inc		Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Greg Boom	
Address 3341 Swetzer Court, Loomis, CA 95650			
Telephone No. 916-772-3777		Email Address gregboom@smithcodoors.com	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
Bid Item #2	Supply/Install Overhead Coiling Door	\$15,885.00
DBE Certified By: <input type="radio"/> DOT <input checked="" type="radio"/> SBA <input checked="" type="radio"/> Other: SBE #0011982		Meets/ exceeds EPA certification standards? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



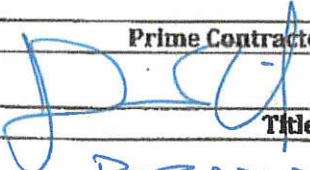
OMB Control No: 2090-0030

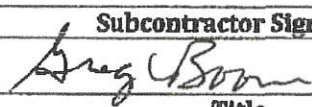
Approved: 8/13/2013

Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Greg Boom
Title	Date
ESTIMATOR	10/22/15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2000-0030
 Approved: 8/13/2013
 Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
 DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name SWPPP Solutions, Inc.		Project Name McKinleyville CSD Wastewater MFI	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact Dave Burns	
Address 2205 Hilltop Dr. # 8006, REDDING, CA 96002			
Telephone No. 530-222-4339		Email Address dave@swpppsolutions.com	
Prime Contractor Name Auburn Constructors, Inc		Issuing/Funding Entity: Clean Water State Revolving Fund Program	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
1	Prepare SWPPP	\$ 2200.00

DBE Certified By: <input checked="" type="checkbox"/> DOT <input type="checkbox"/> SBA	Meets/ exceeds EPA certification standards?
<input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

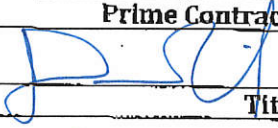
² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

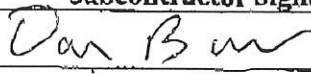


OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	Dean Bailey
Title	Date
PRESIDENT	10/22/15

Subcontractor Signature	Print Name
	Dave Burns
Title	Date
Vice-President	10-20-15

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name Auburn Constructors, Inc.		Project Name McKinleyville CSD Wastewater Management Facility Improvements	
Bid/ Proposal No. 2015-01	Assistance Agreement ID No. (if known)	Point of Contact Dean Bailey	
Address 730 W. Stadium Lane, Sacramento, CA 95834			
Telephone No. 916-924-0344		Email Address dbailey@auburnconstructors.com	
Issuing/Funding Entity: Clean Water State Revolving Fund Program			

I have identified potential DBE certified subcontractors	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name Auburn Constructors, Inc.		Project Name McKinleyville CSD Wastewater Management Facility Improvements	
Bid/ Proposal No. 2015-01	Assistance Agreement ID No. (if known)	Point of Contact Dean Bailey	
Address 730 W. Stadium Lane, Sacramento, CA 95834			
Telephone No. 916-924-0344		Email Address dbailey@auburnconstructors.com	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?
FOX LOOMIS	6901 Mc COMBER ST. SACRAMENTO, CA. 95828 916-383-2140 AZE FOX LOOMIS INC.	\$4,555	YES
HOOVEN & CO.	3445 CENTRAL AVE. MCKINLEYVILLE, CA 95519 707-839-1291 DAVID@HOOVENCO.COM	\$1,269,723	YES
LAB BY DESIGN	450 TECHNOLOGY WAY NAPA, CA. 94558 707-252-8218 MICHELE@LABORATORYBYDESIGN.COM	\$36,855	YES

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name Auburn Constructors, Inc.		Project Name McKinleyville CSD Wastewater Management Facility Improvements	
Bid/ Proposal No. 2015-01	Assistance Agreement ID No. (if known)	Point of Contact Dean Bailey	
Address 730 W. Stadium Lane, Sacramento, CA 95834			
Telephone No. 916-924-0344		Email Address dbailey@auburnconstructors.com	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?
MEMURRAY SONS	P.O. Box 1111 EUREKA, CA 95502 707-443-3088 SACHID MEMURRAYANDSONS.COM	\$ 5,570	YES
SJR MASONRY	P.O. Box 2233 MCKINLEYVILLE, CA. 707-839-2103 SJRMASONRY@OUTLOOK.COM	\$ 95163	YES
HUMBOLDT FENCE CO.	564 Hwy 36 FORTUNA, CA. 95540 707-822-9511 ANNEHUMBOLDTFENCECO.COM	\$ 54,140	YES

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name Auburn Constructors, Inc.		Project Name McKinleyville CSD Wastewater Management Facility Improvements
Bid/ Proposal No. 2015-01	Assistance Agreement ID No. (if known)	Point of Contact Dean Bailey
Address 730 W. Stadium Lane, Sacramento, CA 95834		
Telephone No. 916-924-0344		Email Address dbailey@auburnconstructors.com
Issuing/Funding Entity:		

I have identified potential DBE certified subcontractors	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?
CISCO AIR SYSTEMS	214 27TH STREET SACRAMENTO, CA 95816 916-444-2525 TAD BARRETT @CISCOAIR.COM	\$7,021	YES
CRANWORKS, INC.	2585 NICHOLSON ST. SAN LEANDRO, CA 94577 510-857-4000 ELM@CRANWORKSINC.COM	\$25,050	YES
DESIGN HEATING & AIR	2039 EICH RD. EUREKA, CA 95503 707-442-1484 DESIGNAIRHEATING@ESRGLOBAL.COM	\$35,252	YES

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name Auburn Constructors, Inc.		Project Name McKinleyville CSD Wastewater Management Facility Improvements	
Bid/ Proposal No. 2015-01	Assistance Agreement ID No. (if known)	Point of Contact Dean Bailey	
Address 730 W. Stadium Lane, Sacramento, CA 95834			
Telephone No. 916-924-0344		Email Address dbailey@auburnconstructors.com	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?
KERNAN CONSTRUCTION	P.O. Box 1340 BLUE LAKE, CA. 95525 707-826-9880 Bmcintosh@KERNANCONSTRUCTION.COM	\$50,000	YES
SWAPP SOLUTIONS INC.	2205 Hilltop Dr #1 9006 Reading, CA. 96002 530-222-4339 JAVEE@SWAPPSOLUTIONS.COM	\$2,200	YES
GZ METAL FAB	6954 PRESTON AVE. LIVERMORE, CA. 94551 925-443-7903 KTH@GZMETALFAB.COM	\$113,645	YES

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name Auburn Constructors, Inc.		Project Name McKinleyville CSD Wastewater Management Facility Improvement	
Bid/ Proposal No. 2015-01	Assistance Agreement ID No. (if known)	Point of Contact Dean Bailey	
Address 730 W. Stadium Lane, Sacramento, CA 95834			
Telephone No. 916-924-0344		Email Address dbailey@auburnconstructors.com	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est Dollar Amt	Currently DBE Certified?
THE SMITH COMPANY	3341 SWETZER COURT LOOMIS, CA 95650 916-772-3777 GREG@SMITHCDOORS.COM	\$15,005	YES
JEFFCO PAINTING	1260 RAILROAD AVE VALLEJO, CA 94590 707-562-1900 TORDA@JEFFCOPAINTING.COM	\$197,845	YES

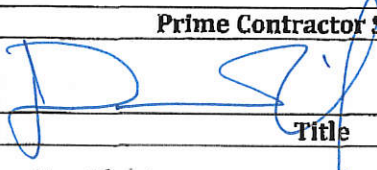
Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

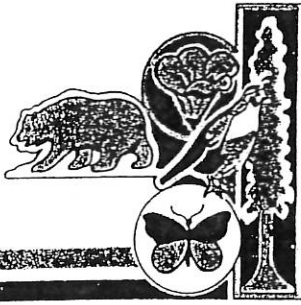
² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
	J. Dean Bailey
Title	Date
President	10/22/2015

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



State of California

OFFICE OF THE SECRETARY OF STATE

CORPORATION DIVISION

I, *MARCH FONG EU*, Secretary of State of the State of California, hereby certify:

That the annexed transcript has been compared with the corporate record on file in this office, of which it purports to be a copy, and that same is full, true and correct.

IN WITNESS WHEREOF, I execute
this certificate and affix the Great
Seal of the State of California this

OCT 11 1990



March Fong Eu

Secretary of State

ENDORSED
FILED
In the office of the Secretary of State
of the State of California

OCT 11 1990

MARCH FONG EU, Secretary of State

ARTICLES OF INCORPORATION
OF
AUBURN CONSTRUCTORS, INC.

ONE: The name of the corporation is AUBURN CONSTRUCTORS, INC..

TWO: The purpose of the corporation is to engage in any lawful act or activity for which a corporation may be organized under the General Corporation Law of California other than the banking business, the trust company business, or the practice of a profession permitted to be incorporated by the California Corporations Code.

THREE: The name and address in this State of the corporation's initial agent for service of process in accordance with subdivision (b) of Section 1502 of the General Corporation Law is:

David Ewing
969 East El Macero
El Macero, CA 95618

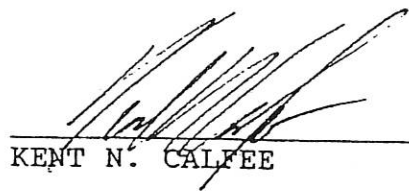
FOUR: The corporation is authorized to issue only one class of shares, and the total number of shares which the corporation is authorized to issue is 10,000.

IN WITNESS WHEREOF, the undersigned Incorporator has executed the foregoing Articles of Incorporation on October 11, 1990.


KENT N. CALFEE

I declare that I am the person who executed the foregoing Articles of Incorporation and that this instrument is my act and deed.

DATED: October 11, 1990


KENT N. CALFEE


ADOPTION OF BYLAWS
AND ELECTION OF DIRECTORS
BY INCORPORATOR OF
AUBURN CONSTRUCTORS, INC.

The undersigned, sole incorporator of AUBURN CONSTRUCTORS, INC., a California corporation, hereby takes the following action to perfect the organization of the corporation pursuant to section 210 of the California Corporations Code:

1. Adoption of Bylaws. The bylaws of the corporation as presented to the incorporator are adopted. The incorporator's signature has been affixed to the bylaws, which have been placed in the minute book of the corporation.

2. Election of Directors. The following persons are elected directors of the corporation, to hold office until the next annual meeting and until their successors have been elected and qualified: David B. Ewing, Robert D. Henderson, Richard J. Stimpel, Andrew P. Granner, and William N. Wiebelhaus.

Dated: 10/14/70



Kent N. Calfee, Incorporator



State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE



License Number **606405** Entity **CORP**
Business Name **AUBURN CONSTRUCTORS INC**

Classification(s) **A B C10**

Expiration Date **11/30/2016**

www.cslb.ca.gov

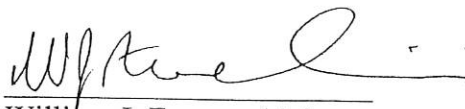



J. DEAN BAILEY, PRESIDENT

CORPORATE RESOLUTION – SIGNATURE AUTHORITY
AUBURN CONSTRUCTORS, INC.

The special meeting of the Board of Directors of Auburn Constructors was held at Sacramento, CA on March 28, 2014 at 2:00 p.m., all directors present, J. Dean Bailey presided over the meeting and Secretary William Franceschini acted as such.

RESOLVED, that J. Dean. Bailey, as President, shall be duly authorized to sign all legal documents on behalf of Auburn Constructors, Inc.

A handwritten signature in dark ink, appearing to read 'WJ Franceschini', written over a horizontal line.

William J. Franceschini
Secretary



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
10/2/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher & Co. Insurance Brokers of CA Inc LIC #0726293 1255 Battery Street #450 San Francisco CA 94111		CONTACT NAME: PHONE (A/C, No, Ext): 415-391-1500 E-MAIL ADDRESS: gcssfcerts@ajg.com FAX (A/C, No): 415-391-1882	
INSURED Auburn Constructors, Inc. 730 West Stadium Lane Sacramento, CA 95834-1130		INSURER(S) AFFORDING COVERAGE INSURER A: Travelers Property Casualty Co of A INSURER B: Hartford Fire Insurance Company INSURER C: Hartford Insurance Company of MidWe INSURER D: INSURER E: INSURER F:	
		NAIC # 25674 19682 37478	

COVERAGES

CERTIFICATE NUMBER: 784126848

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	Y	Y	57UENQI0455	10/1/2015	10/1/2016	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$100,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	Y	Y	57UENQI0456	10/1/2015	10/1/2016	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Comp Ded:\$1,000 \$Coll Ded:\$1,000
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000	Y		ZUP15R0625915	10/1/2015	10/1/2016	EACH OCCURRENCE \$20,000,000 AGGREGATE \$20,000,000 \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y	N/A	57WEQI0457	10/1/2015	10/1/2016	<input checked="" type="checkbox"/> PER STATUTE E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Evidence of coverage in force.

CERTIFICATE HOLDER

CANCELLATION

Evidence of Coverage

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

Auburn Constructors, Inc.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:

- ☐ Individual/sole proprietor or single-member LLC
☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____
Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.
☐ Other (see instructions) ▶ _____
- ☐ C Corporation ☒ S Corporation ☐ Partnership ☐ Trust/estate

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____
Exemption from FATCA reporting code (if any) _____
(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)

730 West Stadium Lane

6 City, state, and ZIP code

Sacramento, CA 95834

Requester's name and address (optional)

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number

____ - ____ - ____

or

Employer identification number

6 8 - 0 2 3 0 5 7 5

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign
Here

Signature of
U.S. person ▶

Date ▶ 10/21/15

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

• Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)

• Form 1099-C (canceled debt)

• Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.



October 21, 2015

Kennedy Jenks Consultants
240 Country Club Road, Suite A
Eugene, OR 97401

Attn: Monty Hazlehurst, P.E.

Re: McKinleyville WWTP Improvements Bid
SCADA Services Coordination

Monty:

Auburn Constructors acknowledges that contact was made with Mr. Dave Fry of SCADA Support Group and a discussion took place regarding their role for services to be provided to McKinleyville Community Services District for the upcoming facility improvement project.

These services have been outlined in a two page document drafted by SSG and were included as part of the bid documents for the purpose of this coordination effort.

We have a clear understanding as to the agreement between the District and SSG as to their role for this project.

Thank you,

A handwritten signature in blue ink, appearing to read "Barry Evans", is written over the "Thank you," text.

Barry Evans
Electrical Division Manager
barry@auburnconstructors.com

Exhibit 3
BUY AMERICAN IRON AND STEEL DESIGNATION OF EQUIPMENT
OR MATERIAL MANUFACTURERS
(To be submitted by the 2 apparent low bidders within 4 Calendar Days of Bid)

Project: MCKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER
MANAGEMENT FACILITY IMPROVEMENTS
MCSO PROJECT NO. 2015-01

The Bidder must include in the space provided, the name of the equipment or material manufacturer he has used in determining his Base Bid which will be used by the Successful Bidder in constructing the project. If the Bidder does not fill in all of the spaces, the Bid will be deemed non-responsive and rejected.

The Bidder must comply with the Buy American Iron and Steel provisions of the Consolidated Appropriations Act of 2014 ("AIS"), which requires all iron, steel, and manufactured goods be made in the United States of America, unless a waiver is obtained. If the Bidder is unable to comply with the Buy American provision, the Bidder must state on what grounds the waiver will be sought. Pursuant to the Consolidated Appropriations Act, a waiver may be available under one of three circumstances: (1) applying the Buy American provisions would be against the public interest, (2) iron, steel and manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality, or (3) using iron, steel and manufactured goods produced in the United States will increase the cost of the overall project by more than twenty-five (25) percent.

After submitting the Designation of Equipment or Material Manufacturers, no changes or substitutions from those listed manufacturers will be allowed without the express written approval of the Engineer. If such change is permitted by the Engineer, it will be evaluated in accordance with provisions of the Contract Documents pertaining to Specified Items/Proposed Equivalents.

Circumstances which will justify changes to the above listing are limited to the following:

1. Manufacturer is unable to meet specifications.
2. Manufacturer fails to honor original quotation upon which the Contractor's bid was based.
3. Manufacturer goes out of business or ceases to make the specified product.
4. The contractor is no longer seeking a waiver for iron, steel, or manufactured goods and has found a domestic supplier or manufacturer to provide the goods.

It is the responsibility of the Contractor to furnish materials and equipment meeting the requirements of the Specifications, and acceptance of the bid does not constitute nor imply favorable review or approval of items proposed. The Owner reserves the right to deny approval or acceptance of any equipment or materials which do not comply with Specifications even though listed herein.

Matl/Item	Description	Spec. Section	American Made (Yes/No)	Reason for Waiver	Equipment/Material Manufacturer (Do not show Dealer or Supplier)
1	Precast Manholes	02080	YES		JENSEN PRECAST
2	Precast Utility Vaults	02085	YES		JENSEN PRECAST
3	Fencing and Gates	02820	YES		SOUTHWEST WIRE
4	Reinforcing Steel	03200	YES		CAMBLIN STEEL
5	Metal Framing	05100	YES		GZ METAL FAB
6	Metal Wall System	07412	YES		CENTRIA
7	Hollow Metal Work	08110	YES		STEELCRAFT
8	Access Hatches	08307	YES		USF
9	Overhead Coil Doors	08330	YES		CORNELL
10	Louvers	08900	YES		RUSKIN
11	Metal Support Systems	09110	YES		STEELER
12	Black Steel Pipe/Fittings	15050	YES		WHEATLAND TUBE / BONNEY FORGE
13	Ductile Iron Pipe/Fittings	15050	YES		US PIPE / TYLER / STAR / FORD
14	Galvanized Steel Pipe/Fittings	15050	YES		WHEATLAND TUBE / WARD
15	Stainless Steel Pipe/Fittings	15050	YES		WISCO
16	Welded Steel Pipe/Fittings	15050	- NONE -		- NONE -
17	Gate Valves	15050	YES		CLOW VALVE
18	Ball Valves	15050	YES		APOLLO
19	Check Valves	15050	YES		VAL-MATIC
20	Butterfly Valves	15050	YES		BRAY
21	Plug Valves	15050	YES		VAL-MATIC

END OF BID FORM

**AGREEMENT BETWEEN THE MCKINLEYVILLE
COMMUNITY SERVICES DISTRICT AND AUBURN CONSTRUCTORS,
INC. PROVIDING FOR CONSTRUCTION SERVICES ASSOCIATED
WITH MCKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY IMPROVEMENTS**

This AGREEMENT BETWEEN THE MCKINLEYVILLE COMMUNITY SERVICES DISTRICT AND AUBURN CONSTRUCTORS, INC. PROVIDING FOR CONSTRUCTION SERVICES ASSOCIATED WITH *MCKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY IMPROVEMENTS* (this “Agreement”), is entered into as of _____, 2015 (the “Effective Date”), between the McKinleyville Community Services District, a duly formed community services district pursuant to California Government Code § 6100, et seq. (hereinafter referred to as “District”, “Owner” or “MCSD”), and AUBURN CONSTRUCTORS, INC. (hereinafter “Contractor”). For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, MCSD and Contractor agree as follows:

AGREEMENT

1. Scope of Work and Contract Documents

Contractor shall furnish to the District, upon its request, the Work set forth in the “Scope of Work” (hereinafter “Work”) described in “**Attachment A**”, which is attached hereto and incorporated by reference. The Work shall be performed in accord with the “Plans, Specifications and Drawings”, as further described in “**Attachment B**”, as well as the “General Conditions of the Construction Contract (Document Number 00700), appended hereto as “**Attachment C**” (the “General Conditions”). This Agreement, the Scope of Work, (Attachment A), the Plans and Specifications (Attachment B) and the General Conditions (Attachment C), as well as all documents recited in General Conditions at Article 1, Section 1.2, collectively constitute the “Contract Documents” as said term is used in this Agreement. In the event of any contradiction between the terms and conditions of this Agreement and the General Conditions, the applicable provisions of the General Conditions shall control. Requests by the District to Contractor to perform under this Agreement will be made by the General Manager of the District, or an authorized representative thereof. Work provided at the District’s request by Contractor under this Agreement will be performed in a manner consistent with the requirements and standards established by applicable federal, state and county laws, ordinances, regulations, and resolutions. Such laws, ordinances, regulations, and resolutions include, but are not limited to, those to which reference is made in this Agreement.

2. Term and Progress Schedule

The term of this Agreement shall be from _____, 2015, through _____, 2015, unless sooner terminated as provided below. The Work shall be weather-tight by _____, 2015, and completed within ____ days of the date following the District's provision of written Notice to Proceed to Contractor.

3. Standard of Care in Performing the Work

Contractor represents and warrants to the District each of the following:

- (i) Contractor is knowledgeable and experienced in providing services comparable to the Work, and will maintain all necessary licensure pursuant to Section 7 of this Agreement when performing the Work;
- (ii) The Work will be performed in a manner consistent with the level of care and skill ordinarily exercised by other professional contractors under similar circumstances in accordance with customarily accepted good and sound professional practices and procedures;
- (iii) Contractor and its agents, subordinates, and employees and any subcontractors performing Work under this Agreement shall perform every part of the Work hereunder in strict accordance with this Agreement, applicable federal, state, county and municipal laws, orders, rules, regulations and directives, including, but not limited to, EPA and OSHA regulations, environmental, health and safety laws, and laws pertaining to wages and other conditions of employment, as further set forth in this Agreement;
- (iv) Contractor shall be strictly responsible for the proper performance of the Work and for any loss or damage to the District or to others by reason of Contractor's failure to properly perform the Work;
- (v) The Contractor has carefully examined the Specifications, Plans and Drawings, and such Specifications, Plans and Drawings set forth in Attachment A2 are full and complete, and are sufficient to have enabled the Contractor to determine the cost of the work therein in order to enter into this Agreement;
- (vi) The Specifications, Plans and Drawings are sufficient to enable Contractor to construct the Work outlined therein in accordance with applicable laws, statutes, building codes and regulations, and otherwise to fulfill all Contractor's obligations hereunder; and

(vii) The Contractor has visited the site, examined all conditions affecting the Work, and is fully familiar with all of the conditions thereon and affecting the same.

4. Contract Price

Twelve Million Three Hundred Twenty Seven Thousand Three Hundred
(\$12,327,300.00)

A. Compensation and Progress Payments.

Compensation and progress payments shall be paid to Contractor in accordance with a Schedule of Values established pursuant to Article 13 and other applicable provisions of the General Conditions.

B. Travel and Per Diem.

Unless otherwise agreed by the parties, Contractor will not be paid or reimbursed for travel expenses or per diem which Contractor incurs in providing the Work requested by the District under this Agreement.

C. No Additional Consideration Absent Written Change Order.

Except as expressly provided in pursuant to written change orders agreed to and duly executed by the Contractor and the District in accord with Article 9 of the General Conditions and applicable provisions of the Contract Documents and California Public Contract Code, Contractor shall not be entitled to, nor receive from the District, any additional consideration, compensation, salary, wages, or other type of remuneration in excess of the Contract Price.

D. Billing and Payment.

Contractor shall submit to the District billing and payment application requests in accord with the procedure set forth in Article 13 of the General Conditions.

E. Federal and State Taxes.

(1) The District will not withhold any federal or state income taxes or social security from any payments made by the District to Contractor under the terms and conditions of this Agreement.

(2) The District shall withhold California State income taxes from payments made under this Agreement to non-California resident independent contractors when it is

anticipated that total annual payments to Contractor under this Agreement will exceed one thousand four hundred ninety-nine dollars (\$1,499.00).

(3) Except as set forth above, the District has no obligation to withhold any taxes or payments from sums paid by the District to Contractor under this Agreement. Payment of all taxes and other assessments on such sums is the sole responsibility of Contractor. The District has no responsibility or liability for payment of Contractor's taxes or assessments.

(4) The total amounts paid by the District to Contractor, and taxes withheld from payments to non-California residents, if any, will be reported annually by the District to the Internal Revenue Service and the California State Franchise Tax Board.

F. Changes to Scope of the Work.

If at any time during the progress of the Work the District desires to make any additions to, alterations of, deviations or omissions from the Work, District shall have the right to do so to the extent permitted by the California Public Contract Code and the same shall in no way affect or make void this Agreement. All Change Orders will be in writing and signed by the District and the District's Engineer and issued in accord with Article 9 and other applicable provisions of the General Conditions.

Contractor shall not be entitled to compensation for any extra Work unless the District has issued a written Change Order designating in advance the amount of additional compensation to be paid for the extra Work prior to Contractor incurring the expense or performing the extra Work in accord with the General Conditions.

5. Work Schedule

Upon the issuance of a formal written "Notice to Proceed" from the District, Contractor's obligation is to perform, in a timely manner, the Work identified in the Scope of Work which are requested by the District. It is understood by Contractor that the performance of the Work will require a varied schedule. Contractor, in arranging its own schedule, will coordinate with the District to ensure that all Work requested by the District under this Agreement and in accord with the General Conditions will be performed within the time frames set forth by the District in the Critical Path schedule established pursuant to Article 5, Section 5.16 and related provisions of the General Conditions. Contractor shall endeavor to perform the Work during normal business hours in order to limit the impacts of construction traffic and noise on surrounding property owners.

6. Guaranties and Warranties

A. Manufacturer's Specifications and Warranties—Assignment.

Unless otherwise specified in the General Conditions (in which case said specifications shall control), Contractor shall assemble for the District's Architect and/or Engineer's approval and transmittal to the District three (3) complete copies in looseleaf binders of all operating and maintenance data from all manufacturers whose equipment is installed in the Work. The Contractor shall also prepare a checklist or schedule showing the type of lubricant to be used at each point of application, the intervals between lubrication for each item of equipment, and the routine maintenance tasks necessary to maintain each item of equipment. In addition, the Contractor shall secure and deliver to the District written warranties and guaranties from subcontractors, sub-subcontractors and suppliers bearing the date of Substantial Completion or some other date as may be agreed to by the District and stating the period of warranty.

B. Contractor's Warranty.

Contractor guarantees all equipment, material, supplies and Work furnished on the job against defective construction or workmanship for a period of one (1) year following recordation of a Notice of Completion on the Work for patent defects and for a period of ten (10) years following recordation of a Notice of Completion on the Work for latent defects, except when a longer guaranty is provided by the supplier or manufacturer of any equipment, material or supplies incorporated into the Work. Upon receipt of written notification from District that any Work is defective, Contractor shall immediately remedy, repair, or replace, without cost to District and to District's entire satisfaction, all such defective construction or workmanship. Contractor expressly agrees to act as coguarantor of any such equipment, material or supplies incorporated into the Work for the period during which any guaranty is effective. Contractor shall supply District with all warranty and guaranty documents relative to equipment and materials incorporated in the Work and guaranteed by the suppliers or manufacturers of such equipment and materials.

7. Required Licenses, Certificates and Permits

Any licenses, certificates, or permits required by federal, state, county, or municipal governments for Contractor to provide the Work described in [Attachment A](#) must be procured by Contractor and be valid at the time Contractor enters into this Agreement. Further, during the term of this Agreement, Contractor must maintain such licenses, certificates, and permits in full force and effect. Licenses, certificates, and permits may include, but are not limited to, driver's licenses, professional licenses or certificates, contractor's licenses, and business licenses. Such licenses, certificates, and permits will be procured and maintained in force by Contractor at no expense to the District. Contractor will provide the District, upon execution of this Agreement, with

evidence of current and valid licenses, certificates and permits which are required to perform the Work identified in Attachment A. Where there is a dispute between Contractor and the District as to what licenses, certificates, and permits are required to perform the Work identified in Attachment A, District reserves the right to make such determination for purposes of this Agreement.

8. Office Space, Supplies, Equipment, Etc.

Contractor shall provide such office space, supplies, equipment, vehicles, reference materials, support services, and telephone service as is necessary for Contractor to provide the Work identified in Attachment A to this Agreement. The District is not obligated to reimburse or pay Contractor for any expense or cost incurred by Contractor in procuring or maintaining such items. The costs and expenses incurred by Contractor in procuring and maintaining such items is the sole responsibility and obligation of Contractor. Rental costs associated with these items may be compensated in accord with any allowances specifically included in the Contract Price and Schedule of Values.

9. District Property

A. Personal Property of District.

Any personal property such as, but not limited to, protective or safety devices, badges, identification cards, keys, uniforms, etc., provided to Contractor by the District pursuant to this Agreement are, and at the termination of this Agreement remain, the sole and exclusive property of the District. Contractor will use reasonable care to protect, safeguard, and maintain such items while they are in Contractor's possession. Contractor will be financially responsible for any loss or damage to such items, partial or total, which is the result of Contractor's negligence.

B. Products of Contractor's Work and Services.

Any and all compositions, publications, plans, designs, specifications, blueprints, maps, formulas, processes, photographs, slides, video tapes, computer programs, computer disks, computer tapes, memory chips, films, audio-visual presentations, exhibits, reports, studies, patents, trademarks, copyrights, or intellectual properties of any kind which are created, produced, assembled, compiled by, or are the result, product or manifestation of, Contractor's services or work under this Agreement are, and at the termination of this Agreement remain, the sole and exclusive property of the District. At the termination of the Agreement, Contractor will convey possession and title to all such properties to District.

10. Workers' Compensation Insurance

Contractor shall provide workers' compensation insurance coverage, in the legally required amount, for all Contractors' employees utilized in providing Work pursuant to this Agreement. By executing a copy of this Agreement, Contractor acknowledges its obligations and responsibilities to its employees under the California Labor Code, and warrants that Contractor has complied and will comply during the term of this Agreement with all provisions of the California Labor Code with regard to its employees. Contractor, at the time of execution of this Agreement, will provide the District with evidence of the required workers' compensation insurance coverage.

11. Public Work

A. Determination.

The Work to be provided by Contractor under this Agreement constitute a Public Work within the meaning of California Labor Code Sections 1720 and 1720.3. Accordingly, and as required by Section 1771 of the California Labor Code, Contractor and any subcontractor under him, shall pay not less than the general prevailing rate of per diem wages, and not less than the general prevailing rate of per diem wages for holiday and overtime work, to all workers employed in the execution of those Work items described in Attachment A of this Agreement.

B. Prevailing Wage Rate.

The general prevailing rate of per diem wages applicable to each class of worker employed in the execution of the Work that constitute a Public Work described in this Agreement has been determined by the Director of the California Department of Industrial Relations (hereinafter referred to as "Director"). The Director's determination is available through a link to CA Dept of Industrial Relations website (2015): <http://www.dir.ca.gov/OPRL/PWD/index.htm>

C. Apprentices.

Pursuant to Section 1777.5 of the California Labor Code, properly registered apprentices performing services and work that constitute a Public Work, if any, shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered..

D. Penalty for Non-Payment of Prevailing Wages.

Pursuant to Section 1775 of the California Labor Code, Contractor, and any subcontractor under him, shall as a penalty to the District, forfeit not more than fifty dollars (\$50.00) for each calendar day, or portion thereof, for each worker paid less than the general rate of per diem wages for the performance of services and work that constitute a Public Work, as determined by the Director of Industrial Relations, for the work or craft for which the worker is employed in the performance of the Work provided under this Agreement that constitute a Public Work, except as provided by subdivision (b) of Section 1775, of the California Labor Code.

E. Payroll Records.

Pursuant to Section 1776 of the California Labor Code, Contractor, and any subcontractor under him, shall keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the performance of the Work requested by the District, as described in the Scope of Work of this Agreement.

F. Inspection of Payroll Records.

Contractor, and any subcontractor under him, shall comply with each of the additional requirements set forth in California Labor Code Section 1776, regarding: (1) the form of records; (2) the provision of records upon request to the District, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the California Department of Industrial Relations; and, (3) the inspection of records by the public.

G. Posting of Prevailing Wages at Job Sites.

Pursuant to California Labor Code Section 1773.2, Contractor shall post at each job site in connection with this Agreement a copy of the Director's determination of the general prevailing rate of per diem wages for each classification of work required in the execution of the Work described in **Attachment A** of this Agreement that constitute a Public Work.

H. Hours.

Pursuant to Section 1810 of the California Labor Code, the time of services of any worker employed by Contractor, or by any subcontractor under him, in the performance of the Work described in the Scope of Work of this Agreement that constitute a Public Work, is limited and restricted to eight hours during any one calendar day, and 40 hours

during any one calendar week, except as otherwise provided by the California Labor Code.

I. Overtime.

Pursuant to California Labor Code Section 1815, the performance of the Work, as described in the Scope of Work of this Agreement that constitute a Public Work, by employees of Contractor, or employees of any subcontractor under him, in excess of eight hours per calendar day at not less than one and one-half (1 ½) times the basic rate of pay..

J. Records of Hours.

Contractor, and any subcontractors under him, shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by him or her in connection with the performance of the Work requested by the District, as described in the Scope of Work of this Agreement. The record shall be kept open at all reasonable hours to the inspection of the District and to the Division of Labor Standards Enforcement as required by Labor Code Section 1812.

K. Penalty for Violation of Work Hours.

Pursuant to California Labor Section 1813, Contractor, and any subcontractors under him, shall, as a penalty to the District, forfeit twenty-five dollars (\$25.00) for each worker employed by the respective contractor or subcontractor in the execution of the Work requested by the District that constitute a Public Work, as described in the Scope of Work of this Agreement, for each calendar day during which the worker is required or permitted to work more than eight hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of the California Labor Code.

12. Insurance

A. General Liability.

Contractor shall procure, and maintain during the entire term of this Agreement, a policy of general liability insurance complying with the requirements set forth in Article 4 of the General Conditions.

B. Business Vehicle.

Contractor shall procure and maintain in force throughout the duration of this Agreement, a business auto liability insurance policy with minimum coverage levels of

one million dollars (\$1,000,000) per occurrence, combined single limit for bodily injury liability and property damage liability. The coverage shall include all Contractor-owned, non-owned, and hired vehicles employed by the Contractor in the performance of the Work requested by the District, as described in the Scope of Work ([Attachment A](#)). A certificate of insurance shall be provided to the District by Contractor prior to commencing any work under this Agreement. The policy shall maintain a provision prohibiting the cancellation or modification of said policy except upon thirty (30) days' written notice to the District.

C. Deductibles and Self-Insured Retentions.

Any deductibles or self-insured retentions must comply with the requirements set forth in Article 4 of the General Conditions.

D. Subcontractors.

Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein for Contractor.

E. Unemployment, Disability, and Liability Insurance.

Contractor shall maintain, if so required by law, unemployment, disability and liability insurance in an amount to be determined by the State which is reasonable to compensate any person, firm, or corporation who may be injured or damaged by the Contractor in performing work associated with this Agreement.

13. Bonds

Contractor shall furnish and maintain a performance and payment bonds which satisfy the conditions set forth in Article 4 of the General Conditions.

14. Status of Contractor

Contractor, its agents, officers, employees, and subcontractors shall constitute independent contractors, and not agents, officers, or employees of the District. Contractor, by virtue of this Agreement, has no authority to bind or incur any obligation on behalf of, or exercise any right or power vested in, the District, except as expressly provided by law or set forth in [Attachment A](#) of this Agreement. No agent, officer, or employee of the District is to be considered an employee of Contractor. It is understood by both Contractor and the District that this Agreement shall not under any circumstances be construed or considered to create an employer-employee relationship or joint venture.

As an independent contractor, Contractor: (1) shall determine the method, details, and means of performing the Work to be provided by Contractor under this Agreement (unless otherwise specified herein); (2) shall be responsible to the District only for the requirements and results specified in this Agreement and, except as expressly provided in this Agreement, shall be not be subjected to the District's control with respect to the physical action or activities of Contractor in fulfillment of this Agreement; and (3) Contractor, its agents, officers and employees are, and at all times during the term of this Agreement shall, represent and conduct themselves as independent contractors, and not as employees of District.

15. Defense and Indemnification

Contractor shall defend, indemnify, and hold harmless the District, its agents, officers, and employees, the Design Engineer and Engineer in accord with and subject to the terms and conditions recited in, without limitation, Article 5, Sections 5.32 through 5.35 of the General Conditions.

16. Records and Audit

A. Records.

Contractor shall prepare and maintain all records required by the various provisions of this Agreement, and federal, state, county, and municipal law, ordinances, regulations, and directions. Contractor shall maintain these records for a minimum of four (4) years from the termination or completion of this Agreement. Contractor may fulfill its obligation to maintain records as required by this paragraph by substitute photographs, micrographs, or other authentic reproduction of such records.

B. Inspections and Audits.

Any authorized representative of the District shall have access to any books, documents, papers, and records, including, but not limited to, financial records of Contractor, which the District determines to be pertinent to this Agreement, for the purposes of making audit, evaluation, examination, excerpts, and transcripts during the period such records are to be maintained by Contractor. Further, the District has the right, at all reasonable times, to audit, inspect, or otherwise evaluate the work performed or being performed under this Agreement.

17. Non-Discrimination

During the performance of this Agreement, Contractor, its agents, officers, employees, and subcontractors shall not unlawfully discriminate in violation of any federal, state, or local law, against any employee, or applicant for employment, or person receiving services under this Agreement, because of race, religion, color, ancestry, national origin, physical handicap, medical condition, marital status, age, or sex. Contractor and its agents, officers, employees, and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code section 12900, et seq.), and the applicable regulations promulgated thereunder in the California Code of Regulations. Contractor shall also abide by the Federal Civil Rights Act of 1964 (P.L. 88-352) and all amendments thereto, and all administrative rules and regulations issued pursuant to said act.

18. District Termination and Cancellation Rights

This Agreement may be canceled by the District without cause, and at will, for any reason by giving to Contractor seven (7) days' written notice ("Termination Notice") pursuant to the protocol stated in Article 14, Section 14.7 of the General Conditions.

19. Assignment

This is an agreement for the services of Contractor. The District has relied upon the skills, knowledge, experience, and training of Contractor as an inducement to enter into this Agreement. Contractor shall not assign or subcontract this Agreement, or any part of it, without the express written consent of the District. Further, Contractor shall not assign any monies due or to become due under this Agreement without the prior written consent of the District.

20. Default

If Contractor abandons the Work, or fails to proceed with the Work requested by the District in a timely manner, or fails in any way as required to conduct the Work as required by this Agreement or the Contract Documents, the District may declare Contractor in default and proceed to exercise any and all rights and remedies available to it at law and/or under the Contract Documents, including, without limitation, those stated in Article 14 of the General Conditions.

21. Waiver of Default

Except as expressly provided in the Contract Documents, no action or failure to act by the District, Engineer, Design Engineer or Contractor shall constitute a waiver of a right afforded or duty imposed under the Contract Documents.

22. Confidentiality

Contractor agrees to comply with various provisions of the federal, state, and county laws, regulations, and ordinances providing that information and records kept, maintained, or accessible by Contractor in the course of providing the Work under this Agreement, shall be privileged, restricted, or confidential. Contractor agrees to keep confidential all such privileged, restricted or confidential information and records. Disclosure of such information or records shall be made by Contractor only with the express written consent of the District.

23. Conflicts

Contractor agrees that it has no interest, and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of the Work under this Agreement. Contractor agrees to complete and file a conflict of interest statement.

24. Post-Agreement Confidences

Contractor agrees not to use any confidential, protected, or privileged information which is gained from the District in the course of providing the Work under this Agreement, for any personal benefit, gain, or enhancement.

25. Severability

If any portion of this Agreement or application thereof to any person or circumstance shall be declared invalid by a court of competent jurisdiction, or if it is found in contravention of any federal, state, or local statute, ordinance, or regulation, the remaining provisions of this Agreement, or the application thereof, shall not be invalidated thereby, and shall remain in full force and effect to the extent that the provisions of this Agreement are severable.

26. Funding Limitations

The ability of the District to enter into this Agreement is based upon available funding from various sources. In the event that such funding fails, is reduced, or is modified, from one or more sources, the District has the option to terminate, reduce, or modify this Agreement, or any of its terms, within ten (10) days of its notifying Contractor of the termination, reduction, or modification of available funding, except, however, the District can not reduce Contractor's right(s) to recover payments due for work performed prior to the notification. Any reduction or modification of this

Agreement made pursuant to this provision must comply with the requirements (except the requirement of mutual consent) of paragraph 28 below.

27. Venue

This Agreement shall be governed under the laws of the State of California and venue for any litigation under this Agreement shall be the county of Humboldt, State of California.

28. Amendment

This Agreement may be extended, modified, amended, changed, added to, or subtracted from, by the mutual consent of the parties hereto, if such amendment or change is in written form, signed by authorized representatives of the parties, in full compliance with the Public Contract Code, and attached to the original Agreement to maintain continuity.

29. Notice

Any notice, communication, amendments, additions, deletions to this Agreement, including change of address of either party during the term of this Agreement, shall be in writing and may be personally serviced, or sent by prepaid first class mail to the respective parties as follows:

McKinleyville Community Services District:

Attention: Gregory Orsini, General Manager
1656 Sutter Rd.
McKinleyville, CA 95519
Phone: (707) 839-3251
Fax: (707) 839-8456

Contractor:

Auburn Constructors, Inc.
730 W. Stadium Lane
Sacramento, California 95834
(916) 924-0344

30. Entire Agreement

This Agreement, along with **Attachments A, B and C**, contain the entire agreement of the parties, and no representations, inducements, promises, or agreements

otherwise between the parties not embodied herein or incorporated herein by reference, shall be of any force or effect. Further, no term of provision hereof may be changed, waived, discharged, or terminated, unless the same be in writing executed by the parties hereto.

Signatures

MCKINLEYVILLE COMMUNITY SERVICES DISTRICT

By: _____

Name: Gregory Orsini

Title: General Manager

Date: _____

CONTRACTOR

By: _____

Name: _____

Title: _____

Date: _____

SECTION 01010

SUMMARY OF WORK AND CONTRACT CONSIDERATIONS

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work includes the furnishing of the labor, materials, equipment, and temporary facilities for construction of the McKinleyville Community Services District Wastewater Management Facility Improvements Project. The main components of the project include the following items: new headworks with screening, vector waste receiving station, calcium hydroxide metering station, new aeration basins, new blower/electrical/maintenance building, new secondary clarifiers, new biosolids storage basin, tank drain/supernatant pump station, secondary effluent flow metering structure, utility water pump station, improvements to the existing control building, new standby generator, miscellaneous structures, electrical work, instrumentation, paving and grading, yard piping, painting, and demolition.

1.02 WORK SEQUENCE

- A. The existing treatment facility must remain fully functional during the construction period. Modification or demolition of certain project elements must be sequenced to allow the treatment process to function uninterrupted and without deterioration of effluent quality or reduction of standby capacity. Temporary pumping, piping, and other facilities may be required and shall be provided as needed to complete the Work. The Contractor's Progress Schedule shall clearly indicate the critical path of construction events with close attention paid to modification or demolition of project elements that are essential for the operation of the existing treatment plant. Work involving existing treatment plant components that are essential to treatment plant operation must be approved by the Engineer and Owner at least 7 days prior to commencement of the work.

- B. To permit continuous treatment of wastewater and compliance with effluent quality requirements, the Contractor's Progress Schedule shall provide for the following specific conditions:

1. Pond 1A Preparation: Any remaining biosolids shall be removed and hauled off-site. A minimum of 6 inches of material below the biosolids layer shall be excavated prior to placing imported fill.
2. Secondary Clarifiers: After the clarifier walls are constructed, imported fill can be brought in to raise the grade to the required elevation for the new structures.
3. Biosolids Storage Basin: Excavated material produced when deepening the existing basin can be used as fill where specified.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

Summary of Work and
Contract Considerations

01010 - 1

4. Aeration Basins: The grade shall be raised to construct the aeration basins.
5. Headworks: Once the grade is raised, the new Headworks can be constructed.
6. Blower/Electrical/Maintenance Building: Once the grade is raised, the Blower/Electrical/Maintenance Building can be constructed.

7. Secondary Effluent Flow Metering Vault: The Secondary Effluent Flow Metering Vault, its associated valve vaults, and the new 18-inch diameter SE piping shall be constructed adjacent to the existing 18-inch diameter FE piping as shown on the Drawings. The existing 18-inch diameter FE piping shall be protected during construction and shall be kept in service until flow can be diverted to the new 18-inch SE piping. After the 18-inch SE piping is placed in service, the existing 18-inch FE piping shall be demolished as shown on the Drawings. The new 18-inch SE piping shall be protected during demolition.

8. Chlorine Contact Basins: Only one of the two existing chlorine contact basins can be taken out of service at any one time. Chlorine Contact Basin 2 shall only be taken out of service during times when the plant is discharging to the Mad River (October 1 through May 14 when flow of Mad River exceeds values shown in NPDES permit). The length of time a chlorine contact basin is taken out of service shall be limited to 4 days without prior Owner approval to allow the plant to meet all discharge requirements.

9. Site Electrical Power: The existing electrical service is rated at 277/480 volts, 3-phase and is served from a utility-owned pad mounted transformer via underground conduits to the existing Control Building. The Contractor must maintain electrical service to all existing equipment as long as it is required for the operation of the plant.

The Contractor will construct a new underground service from a new utility-provided pad mount transformer to the electrical room of the new Blower/Electrical/Maintenance Building which must be functional prior to the startup of the new facilities. Once the new facilities are commissioned, electrical service to existing structures shall be demolished and/or replaced in accordance with the Contract Documents.

10. Existing Control Building: Once the new Blower/Electrical/Maintenance Building and new engine generator are in operation, rehabilitation of the existing Control Building (including removal of electrical equipment) can take place.

11. Hiller Lift Station: Once the new Blower/Electrical/Maintenance Building and new engine generator are in operation, the power feed to the Hiller Lift Station can be transferred to be fed from the plant, including the emergency generator for backup power.

12. Once the new treatment facilities within Pond 1A are commissioned, the existing Headworks can be demolished and Pond 1B, Pond 2 and Pond 3 can then be converted to effluent polishing ponds. The existing floating aerators and biosolids at the bottom of the ponds can be removed.

Summary of Work and
Contract Considerations

01010 - 2

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

- 1.03 CONTRACTOR'S USE OF SITE AND OWNER'S CONTINUED OPERATIONS
- A. The Contractor shall confine his use of the site for work and storage to the Work Area Limits shown on the Contract Drawings. The Contractor's use of adjacent lands and roads for access to move onto and off of the site and for daily access of workers, material and equipment shall be arranged and scheduled to minimize interference with the Owner's continued operations.
 - B. The Owner must continue operation of the existing facility which is currently and continuously receiving and treating wastewater. Those functions shall not be interrupted except as specified herein. The Contractor shall plan and schedule its work to minimize impacting the Owner's continued operations and shall, at all times, maintain safe access for the Owner's operating personnel and equipment.
 - C. The Contractor shall be responsible for maintaining safe emergency exiting for the Owner's and Contractor's personnel in all areas affected by the Contractor's work.
 - D. If operation of the Owner's existing facility is adversely affected by the Contractor's work, the Owner may suffer a financial loss and may make a claim against the Contractor to recovery its loss.
 - E. Bypassing of untreated or partially treated wastewater to surface waters or drainage courses is prohibited during construction. In the event accidental bypassing is caused by the Contractor's operations, the Owner shall immediately be entitled to employ others to stop the bypassing without giving written notice to the Contractor. Penalties imposed on the Owner as a result of any bypass caused by the actions of the Contractor, his employees, or subcontractors, shall be borne in full by the Contractor, including legal fees and other expenses to the Owner resulting directly or indirectly from the bypass.
 - F. Contractor shall not modify or manipulate the continuous and ongoing process operation at the treatment facility. Changes to the treatment process may only be conducted by the Owner.
- 1.04 DOCUMENTING EXISTING CONDITIONS
- A. Prior to commencing the Work, the site shall be toured with the Contractor, Owner and the Engineer. Examine and document photographically and in writing the condition of existing buildings, equipment, improvements, and landscape planting on or adjacent to the site. This record shall serve as a basis for determination of subsequent damage due to the Contractor's operations and shall be signed by all parties making the tour. Video record existing conditions and provide Owner with two copies in electronic format.
- 1.05 SHUTDOWN OF EXISTING UTILITIES, SERVICES OR OPERATIONS
- A. Obtain the Owner's and Utility's approval at least 21 days prior to the shutdown of any utility, service or operation of any existing facility. Give required notice and make appropriate arrangements with utility owners and other affected parties prior
- McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants
- 01010 - 3
- Summary of Work and
Contract Considerations

- to shutdown of any utility service. The Contractor's Bid shall include the cost of premium time to perform work requiring utility shutdowns on weekends or outside of normal working hours.
- B. Schedule utility service or operations shutdowns for periods of minimum use and at the Owner's convenience. Have all required material, equipment and workers on site prior to beginning any work involving a possible shutdown. Perform work as required to reduce shutdown time to the minimum. In some cases, this may require increased numbers of workers and/or premium time night or weekend work. The Contract Price shall include the cost of additional workers and premium time work required to minimize the impact of utility service or operations shutdowns.
 - C. Coordinate any shutdown with the Owner, service utility, and the Engineer. Submit a detailed plan for proposed shutdown with estimated time to the Engineer for favorable review at least 28 days before shutdown.
 - D. The Owner will be responsible to drain and clean existing facilities. Requests from the Contractor to drain and clean existing facilities must be received by the Owner not less than 48 hours prior (business days).
- 1.06 SCHEDULE OF VALUES
- A. Additional provisions are described in the General Conditions.
 - B. The Contractor's Schedule of Values shall be in a form acceptable to the Engineer and have at least the following level of detail: a separate line item for each technical specification section, for site mobilization, for Construction Scheduling, for bonds and insurance, for final cleanup and for final deliverables. Subdivide final deliverables into: Record Drawings; Operation and Maintenance Manuals with Parts Lists; and Special Guarantees. Include the appropriate Specification Section and paragraph number for each line item. Subdivide major trades or portions of the work into multiple line items that relate to observable milestones to aid monthly progress evaluations in accordance with the following example:
Concrete Work:
Foundations
Slab on grade
First floor walls and columns
Second floor beams and slabs
Second floor walls and columns, etc.
- 1.07 APPLICATION FOR PAYMENT
- A. Applications for Payment shall be made on the form included with the Contract Documents and in accordance with General Conditions. Line items on the Application for Payment shall be the same as those used on the Schedule of Values.
- 1.08 CONTRACT MODIFICATIONS
- A. Methods of modifying the Contract Documents are covered in General Conditions.
- Summary of Work and
Contract Considerations
- 01010 - 4
- McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

B. The following documents may be used by the Engineer:

1. Request for Quotation: Issued by the Engineer, a Request for Quotation is used to describe a proposed change and request a cost quotation from the Contractor but does not authorize a change in the Work or in the Contract Time or Price.
2. Change Order: Signed by the Engineer signifying its recommendation, and signed by the Contractor and Owner signifying their acceptance, a Change Order changes the Scope of Work and possibly the Contract Price and/or Contract Time.
3. Work Directive Change: Signed by the Owner (and in some cases by the Contractor) signifying their acceptance and issued by the Engineer, a Work Directive Change is used: (1) to direct the Contractor to do extra work on a cost accounting basis with a fixed maximum sum when the Owner and Contractor have not agreed on the price and time for the change, and (2) to direct the Contractor to do work that the Contractor contends is not included in the contract scope. Work done under case 1 will be converted to a Change Order when the Contractor and Owner agree on the change in price and time. The Contractor may make a claim under the General Conditions for recovery of cost and time extension for work done under case 2; but if the claim is denied because the work is determined to be included in the contract scope, then the Contract Time and Price will not be changed. Work done under both cases 1 and 2 shall be done in accordance with the requirements for work done on a cost accounting basis described in the General Conditions.
4. Response to Request for Information: Issued by the Engineer, a Response to Request for Information is used to order or document minor changes in the work consistent with the intent of the Contract Documents and NOT involving a change in price or time. Information issued on a Response to Request for Information shall NOT authorize a change in Contract Price or Contract Time and shall not be considered a Constructive Change Order. If the Contractor considers that a Response to Request for Information would cause a change in Contract Price or Time, it shall notify the Engineer in writing within 15 days of receipt of the Response to Request for Information and shall not proceed with the work.
5. The Contractor hereby expressly waives any claim or right to make a claim for an increase in contract time or price without written notice to the Engineer of the Contractor's intent to make a claim 5 days prior to proceeding to execute the work or portion thereof giving rise to such claim. See General Conditions.
6. The Contractor agrees that it shall not consider any Response to Request for Information, order, instruction, clarification, suggestion or any other communication either written or oral, given intentionally or unintentionally by the Engineer, Owner or any other person as authorization or direction to do any work that would cause a change in Contract Time or Price unless it is a formal written Change Order or Work Directive Change signed by the Owner.

1.09 REGULATORY REQUIREMENTS

- A. The codes and regulations adopted by the State and other governmental authorities having jurisdiction shall establish minimum requirements for this project. This project shall comply with the following:
1. California Building Code (CBC)

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

Summary of Work and
Contract Considerations

01010 - 5

2. International Fire Code (IFC)
3. International Mechanical Code (IMC)
4. Uniform Plumbing Code (UPC)
5. National Electric Code (NEC)
6. California Code of Regulations

- B. The latest edition of the requirements in effect at the date of submission of bids shall apply.
- C. General Conditions cover the Contractor's responsibility to comply with laws and codes applicable to Means and Methods for performing the Work.
- D. General Conditions cover the Contractor's responsibility to report code deficiencies in the design to the Engineer prior to proceeding with the Work.
- E. Paragraphs addressing Pre-Engineered Systems and Performance Specifications in other Sections cover the Contractor's responsibility to comply with code requirements when (1) performance specifications are used to describe all or portions of Work or items and (2) when pre-engineered (contractor designed) systems are specified.
- F. In cases where the Contract Documents are more restrictive than applicable codes, the Contractor shall comply with the Contract Documents.

1.10 REFERENCES

- A. When these specifications state that Work or tests shall conform to specific provisions in a referenced standard, specification, code, recommendation or manual published by an association, organization, society or agency the referenced provisions, as they apply to the Work of the Contractor only shall be considered a part of these specifications as fully as if included in total. When these specifications or applicable codes contain higher or more restrictive requirements than those contained in reference standards these specifications or applicable codes shall govern.
- B. The latest edition of a referenced standard published at the time of submission of bids shall apply unless a specific date for the referenced standard is cited in these specifications.
- C. General provisions in referenced standards, specifications, manuals or codes shall not change the specific duties and responsibilities between any of the parties involved in this work from those described in the General Conditions. Provisions in referenced standards with regard to measurement and payment shall not apply to this Work unless specifically cited. See General Conditions.

Summary of Work and
Contract Considerations

01010 - 6

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

1.11 SPECIFICATION LANGUAGE AND STYLE

- A. Many parts of the Specifications as well as notes on the Drawings are written in the active voice and are addressed to the Contractor.
- When words or phrases requiring an action or performance of a task are used, it means that the Contractor shall provide the action or perform the task. For example: provide, perform, install, furnish, erect, connect, test, operate, adjust or similar words mean that the Contractor shall perform the action or task referred to.
 - When words or phrases requiring selection, acceptance, approval, review, direction, designation or similar actions are referred to, it means that such actions are the Owner's or the Engineer's prerogative and that the Contractor must obtain such action before proceeding.
- B. Requirements in the Specifications and Drawings apply to all work of a similar type, kind or class even though the word "all" or "typical" may not be stated.

1.12 DEFINITIONS

- A. The following terms, when used in the Contract Documents, shall have the meanings listed:
- | | |
|--------------|--|
| ACCEPTABLE | "acceptable to the Engineer" |
| PERFORM | "perform all operations required to complete the work referred to in accordance with the intent of the Contract Documents" |
| PROVIDE | "furnish and install the work referred to including proper anchorage, connection to required utilities or other work, testing, adjustment and startup ready to put in service and perform the intended function" |
| REQUIRED | "required by the Contract Documents or required to complete the Work and produce the intended results" |
| SATISFACTORY | "acceptable to the Engineer" |
| SHOWN | "as indicated on the Drawings" |
| SITE | "geographical location of the Project and land within the work area shown on the contract drawings and within which the Work will be installed or built" |
| SPECIFIED | "as written in the Contract Documents including the Specifications and the Drawings" |
| SUBMIT | "submit to the Engineer" |

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

01010 - 7

Summary of Work and
Contract Considerations

1.13 ABBREVIATIONS

- A. The following acronyms or abbreviations are used in these specifications for the organizations listed.

Abbreviation	Stands for
AASHTO	American Association of State Highway and Transportation Officials
AAMA	Architectural Aluminum Manufacturers Association
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ADC	Air Diffusion Council
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AI	Asphalt Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standard Institute (formerly United States of America Standards Institute)
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	ASTM International
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
CAGI	Compressed Air and Gas Institute
CAL/OSHA	State of California Department of Industrial Relations, Division of Industrial Safety
CAL TRANS	California Department of Transportation
CBC	California Building Code
CBM	Certified Ballast Manufacturers
CBR	California Bearing Ratio
CI	Chlorine Institute
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CPSC	Consumer Products Safety Commission
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards for the U.S. Department of Commerce
CTI	Cooling Tower Institute
DFPA	Douglas Fir Plywood Association

Summary of Work and
Contract Considerations

01010 - 8

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

Abbreviation	Stands for
EIA	Electronic Industries Association
EPA	U.S. Environmental Protection Agency
ETL	Electronic Testing Laboratory
FM	Factory Mutual Insurance Company
FPS	Fluid Power Society
FS	Federal Specifications
GO 95	General Order No. 95, California Public Utilities Commission Rules for Overhead Electric Line Construction
GO 128	General Order No. 128, California Public Utilities Commission Rules for Underground Electrical Construction
HI	Hydraulic Institute
HMI	Holst Manufacturers Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IGCC	Insulating Glass Certification Council
IPCE	International Power Cable Engineers Association
ISA	Instrument Society of America
NAAMM	National Association of Architectural Metal Manufacturers
NBS	National Bureau of Standards
NCPI	National Clay Pipe Institute
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NETA	International Electrical Testing Association
NFPA	National Fire Protection Association
NGVD	National Geodetic Vertical Datum
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Act
PCA	Portland Cement Association
REA	Rural Electrification Administration
SAMA	Scientific Apparatus Makers Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Structural Steel Painting Council
TCA	Tile Council of America
UBC	Uniform Building Code
UFC	Uniform Fire Code
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
USDC	U.S. Department of Commerce
UL	Underwriters Laboratories
WCLIB	West Coast Lumber Inspection Bureau
WIC	Woodwork Institute of California
WQCB	Water Quality Control Board (Regional)
WRCB	Water Resources Control Board

END OF SECTION

Summary of Work and
Contract Considerations

01010 - 9

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set

1368004*00

© 2014 Kennedy/Jenks Consultants

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY IMPROVEMENTS



PREPARED FOR:
**McKINLEYVILLE
COMMUNITY
SERVICES
DISTRICT**
1656 SUTTER ROAD
McKINLEYVILLE, CA 95519

MCSD CONTRACT NO. 2015-01
K/J PROJECT NO. 1368004

FEBRUARY 2015

SPECIFICATIONS
DIVISIONS 11-17

Kennedy/Jenks Consultants
Engineers & Scientists

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY IMPROVEMENTS

SPECIFICATIONS

TABLE OF CONTENTS

DIVISION 0: BIDDING REQUIREMENTS, CONTRACT FORMS, CONTRACT CONDITIONS

Title Page
Table of Contents

BIDDING REQUIREMENTS

00010	Invitation to Bid
00100	Instructions to Bidders
00300	Bid Form
00410	Bid Security
00414	Security for Compensation Certificate
00416	Bidder's References
00420	Bidder's Qualifications
00430	Subcontractor List
00480	Noncollusion Affidavit
00490	Clean Water State Revolving Fund (CWSRF) Program Disadvantaged Business Enterprise (DBE) Requirements

CONTRACT FORMS

00500	Agreement
00550	Notice to Proceed
00560	Notice of Completion
00610	Performance Bond
00620	Payment Bond

CONTRACT CONDITIONS

00700	General Conditions
00800	Supplementary Conditions
00805	Prevailing Wage Rates

SPECIFICATIONS

DIVISION 1: GENERAL REQUIREMENTS

01010 Summary of Work and Contract Considerations
 01015 Archaeological Finds
 01025 Measurement and Payment
 01040 Coordination and Project Requirements
 01140 Environmental Protection
 01190 Seismic Requirements
 01300 Submittals
 01311 CPM Construction Schedule
 01500 Construction Facilities and Temporary Controls
 01550 Traffic Regulation
 01650 Facility Startup
 01700 Contract Closeout
 01730 Operation and Maintenance Manuals

DIVISION 2: SITEWORK

02050 Demolition
 02055 Biosolids Removal and Disposal
 02065 Controlled Low Strength Material
 02080 Precast Concrete Sectional Manholes
 02085 Precast Concrete Utility Vaults
 02200 Site Preparation
 02301 Earthwork
 02705 Paving and Resurfacing
 02712 Flexible Membrane Liner System
 02775 Concrete Curbs, Gutters, and Sidewalks
 02820 Chain Link Fence and Gates
 02920 Hydroseeding

DIVISION 3: CONCRETE

03100 Concrete Formwork and Formwork Accessories
 03150 Concrete Joints and Accessories
 03200 Concrete Reinforcement and Reinforcement Supports
 03300 Cast-In-Place Concrete
 03305 Hot Weather Concreting
 03306 Cold Weather Concreting
 03330 Concrete Curing and Protection
 03340 Hydrostatic Testing of Concrete Structures
 03350 Concrete Finishing
 03600 Grouts
 03935 Repair of Defective Concrete

DIVISION 4: MASONRY

04050 Basic Masonry Materials and Methods
 04220 Concrete Masonry Units

McKinleyville Community Services District
 Wastewater Management Facility Improvements
 Bid Set
 1368004*00
 © 2014 Kennedy/Jenks Consultants

Table of Contents

TC - 2

DIVISION 5: METALS

05090 Structural Metal Fasteners
 05100 Structural Metal Framing
 05500 Metal Fabrications (Miscellaneous Metal)
 05724 Aluminum Component Railing System

DIVISION 6: WOOD AND PLASTICS

06100 Rough Carpentry
 06178 Metal Plate Connected Wood Trusses
 06200 Finish Carpentry

DIVISION 7: THERMAL AND MOISTURE PROTECTION

07190 Water Repellent Sealer
 07200 Insulation
 07311 Asphalt Shingle Roofing
 07410 Metal Roof System
 07600 Flashing and Sheet Metal
 07700 Roof Accessories
 07900 Joint Sealants

DIVISION 8: DOORS AND WINDOWS

08110 Hollow Metal Work
 08220 Fiberglass Reinforced Plastic (FRP) Doors and Fiberglass Resin Transfer Molded Door Frames
 08305 Access Doors
 08307 Access Hatches
 08330 Overhead Coiling Doors
 08410 Aluminum Windows
 08700 Finish Hardware
 08800 Glazing
 08900 Louvers

DIVISION 9: FINISHES

09110 Metal Support Systems
 09250 Gypsum Wallboard
 09350 Ceramic Tile
 09500 Acoustic Treatment
 09650 Resilient Flooring
 09900 Painting and Coating
 09920 Graffiti Resistant Coating
 09960 High Performance Coatings

McKinleyville Community Services District
 Wastewater Management Facility Improvements
 Bid Set
 1368004*00
 © 2014 Kennedy/Jenks Consultants

TC - 3

Table of Contents

DIVISION 10: SPECIALTIES

10050 Building Specialties
10170 Solid Polymer Resin Toilet Partitions
10400 Identifying Devices
10500 Lockers
10800 Toilet Room Accessories

DIVISION 11: EQUIPMENT

11001 General Equipment and Mechanical Requirements
11002 Electric Motor Drives
11120 Screening Equipment
11190 Equipment for Secondary Clarifiers
11201 Sluice Gates and Slide Gates
11215 Vertical Turbine Pumps
11217 Submersible Turbine-Type Pumps
11225 Aeration System
11240 Calcium Hydroxide Metering System
11303 Submersible Wastewater Pumps
11320 Packaged Sewage Ejectors
11372 Air Compressors and Receivers
11374 High Speed Turbo Blowers
11385 Rotary Lobe Pumps
11880 Hydropneumatic Tanks
11903 Life Ring Stations
11920 Automatic Samplers

DIVISION 12: FURNISHINGS

12346 Metal Laboratory Casework

DIVISION 13: SPECIAL CONSTRUCTION

13418 Fiberglass Enclosures

DIVISION 14: CONVEYING SYSTEMS

14625 Davit Cranes
14627 Portable Gantry Cranes

DIVISION 15: MECHANICAL

15050 Piping, Valves, and Accessories
15400 Plumbing
15800 Heating and Ventilating Systems

DIVISION 16: ELECTRICAL

16010 General Electrical Requirements
16110 Conduit, Raceways, and Fittings
16120 Low Voltage Wire and Cable
16124 Signal Cable
16130 Boxes
16140 Wiring Devices
16180 Panelboards
16180 Protective Devices and Switches
16205 Standby Diesel Engine-Generator Set
16250 Automatic Transfer Switch
16280 Surge Protective Devices
16402 Underground Electrical Work
16405 Switchboard
16450 Electrical Grounding
16460 Dry Type Transformers
16500 Lighting
16722 Fire Alarm Devices
16920 Motor Control Center
16924 Adjustable Frequency Drives (AFDs)
16955 Control Devices

DIVISION 17: INSTRUMENTATION

17010 Instrumentation and Controls, General Requirements
17010A Instrument Schedule
17110 Analytical Instruments
17120 Flow Measurement
17120 Level Measurement
17150 Pressure Measurement
17330 Programmable Logic Controller
17330A Control Strategies
Common Control Strategies
221 – Influent Screening and Sampling
411 – Calcium Hydroxide Storage and Metering
421 – Aeration Basins
431 – Aeration Air Blowers
441 – Secondary Clarifiers and Scum Pumping
442 – Secondary Effluent Pumping
451 – RAS and WAS Pumping
831 – Tank Drain/Supernatant Pumping
832 – Utility Water Pumping
833 – Ejector Pumping
17330B PLC Input/Output
17510 Panels

REFERENCE INFORMATION: FOUND ON ENCLOSED CD

1. Past drawings for the McKinleyville Community Services District Wastewater Management Facilities including:
 - a. Wastewater Management Facilities Stage 1 – June 1982
 - b. Wastewater Management Facilities Stage 2 – June 1983
 - c. Sewer Capacity Expansion Project – March 1995
 - d. Sewer Capacity Expansion Project Phase 2 – April 1997
 - e. WWMF Headworks Modifications & Hiller Road Lift Station – 2002
 - f. Sewage Treatment Facility Wetlands – June 2005
2. Geotechnical investigation report by LACO Associates, Inc. dated 11 September 2013.
3. Topographic survey of the bottom of Pond 1A by LACO Associates, Inc. dated ???.
4. Hazardous Materials Survey, McKinleyville Wastewater Management Facility – Control Building by Vista Environmental dated September 15, 2014.
5. Pacific Gas and Electric scope of services and price quote for the upgraded power service.
6. SCADA Support Group proposal including scope.
7. American Iron and Steel Requirement Guidance.
8. American Iron and Steel De Minimis Waiver issued on April 15, 2014.

END OF TABLE OF CONTENTS

McKinleyville Community Services District Wastewater Management Facility Improvements Bid Set 1368004*00 © 2014 Kennedy/Jenks Consultants	TC - 6	Table of Contents
---	--------	-------------------

SECTION 11001

GENERAL EQUIPMENT AND MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: The general requirements for all of the Equipment and Mechanical work in the scope of the Project, included in Divisions 11, 12, 13, 14 and 15, and elsewhere wherever specifically mentioned in these Specifications.
- B. Related Sections:
 1. Section 05090: Structural Metal Fasteners
 2. Section 05100: Structural Metal Framing
 3. Section 05500: Metal Fabrications (Miscellaneous Metal)
 4. Section 09900: Painting
 5. Section 09960: High Performance Coatings
 6. Section 11002: Electric Motor Drives
- C. Direct the attention of all subcontractors and suppliers of equipment and related appurtenances for the work to the applicable provisions in the Contract Documents wherever they may occur.

1.02 REFERENCES

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

- A. American Gear Manufacturers Association (AGMA).
- B. American Institute of Steel Construction (AISC).
- C. California Code of Regulations, Title 8 Industrial Relations (CAL/OSHA).

McKinleyville Community Services District Wastewater Management Facility Improvements Bid Set 1368004*00 © 2014 Kennedy/Jenks Consultants	11001 - 1	General Equipment and Mechanical Requirements
---	-----------	--

- D. Hydraulic Institute.
- E. National Electrical Manufacturers Association (NEMA).
- F. Occupational Safety and Health Act (OSHA)

1.03 STANDARDS FOR THE WORK

- A. Complete Systems: Provide pipe, fittings, wiring and supports to produce complete, operable systems with all elements properly interconnected. If a specific dimensioned location is not shown for interconnections or smaller system elements, select appropriate locations and show them on Shop Drawing submittals for review.
- B. Provide equipment and material new and without imperfections. Erect in a neat and workmanlike manner; aligned, leveled, cleaned and adjusted for satisfactory operation; installed in accordance with the recommendations of the manufacturers and the best standard practices for this type of work so that connecting and disconnecting of piping and accessories can be readily made and so that all parts are easily accessible for inspection, operation, maintenance and repair. Locate oil and lubrication fittings clear of and away from guards, base, and equipment and within reach from the operating floor. Coordinate location of all motor connections in order to properly orient encased electrical conduits. In order to meet these requirements with equipment as furnished, minor deviation from the Drawings may be made as favorably reviewed by the Engineer.
- C. The recommendations and instructions of the manufacturers of products used in the work are hereby made part of these Specifications, except as they may be superseded by other requirements of these Specifications.

1.04 SUBMITTALS

- A. The following information shall be submitted in accordance with Section 01300:
 1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

General Equipment and
Mechanical Requirements

11001 - 2

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

© 2014 Kennedy/Jenks Consultant

- 2. Where applicable, a copy of the contract document control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the drawing or drawings shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.

- B. Shop Drawings: Submit Shop Drawings to the Engineer and receive favorable review prior to fabrication, construction or delivery to the project site in accordance with Section 01300 of these Specifications. Show sizes and arrangement of equipment, foundations and anchor bolts required, performance characteristics, fan curves and pump curves, control diagrams, wiring diagrams, motor data sheets, methods of assembly, pipe hanging details, ductwork layouts and connections to other work. Date and sign drawings as certified for use in construction of this project. The arrangement of mechanical equipment and appurtenant piping shown on the Drawings may be varied as necessary to fit the favorably reviewed certified manufacturer's installation drawings. However, manufacturers' drawings shall not deviate in substance from the Contract Drawings and Specifications as to location, size, type and design of equipment. The following minimum requirements shall accompany all equipment submissions:
 1. Overall dimensions.
 2. Mounting arrangement and dimensions.
 3. Description of materials.
 4. Connection sizes and orientation.
 5. Capacity and location of lifting eyes.
 6. Motor arrangement showing location of electrical connections.
 7. Rating data - Mechanical and Electrical as applicable.
 8. Detail electrical wiring diagrams, showing component designation and rating.
 9. Seismic design certifications and anchorage descriptions as required by Section 01190.
 10. Motor data as specified in Section 11002.
 11. List of special tools and/or spare parts to be furnished, if any.

- C. Each piece of equipment, for which certified witnessed or non-witnessed performance tests are required, shall be accompanied by a completed form containing at least the following information:

1. Owner's name and location of project.
2. Contractor's name and subcontractor if applicable.
3. Name of item being submitted.
4. Specification reference by section, paragraph and page.
5. Data on item (manufacturer, general descriptive data, dimensions, size of connections, speeds, performance curves, serial number). A specific list of the test results plus a list, which shows the values that differ from Specifications.
6. Motor data, type, voltage, frequency, phase, full load amperes, starting method, frame size, enclosure insulation type (NEMA Code letter), dimensions, service factor, serial number.
7. Date and signature of person certifying the performance.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

11001 - 3

General Equipment and
Mechanical Requirements

© 2014 Kennedy/Jenks Consultants

- D. Instruction Manuals: Prepare and submit instruction manuals covering installation, operation and maintenance of all equipment and machinery specified in Divisions 11, 12, 13, 14 and 15. Refer to Section 01300.
- E. Manufacturers' Affidavits: Where called for in the Specifications, each equipment manufacturer, or his authorized representative, shall submit an affidavit conforming to the requirements of Section 01650.
- 1.05 RESPONSIBILITY AND CARE OF EQUIPMENT
- A. The Contractor shall be responsible for the equipment included in this Contract until it has been finally inspected, tested and accepted in accordance with the requirements of these Specifications.
- B. The Contractor shall make his own provisions for properly storing and protecting all material and equipment against theft, injury or damage from any and all causes. Damaged material and equipment shall not be used in the work.

PART 2 - PRODUCTS

2.01 DESIGN

- A. General: Design all equipment for the service intended, of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection and during continuous or intermittent operation. Adequately stay, brace and anchor, and install equipment in a neat and workmanlike manner. Give consideration to appearance and safety, as well as utility, in the design of details. Use cathodically compatible materials of construction.
- B. Seismic: Refer to Section 01190 of the Specifications for the seismic design criteria.
- C. Controls: Unless noted otherwise, the design of the electric control of any equipment system and/or equipment package shall be the responsibility of the manufacturer of the equipment system and/or equipment package. The elementary control diagrams as shown on the Electrical Drawings and the diagrams shown on the Instrumentation Drawings are illustrative of control and monitoring requirements pertaining to various equipment of this project. The manufacturers shall design their own functional electric control devices and circuitry, in consultation with the specific elementary control diagrams and other project specifications, to meet the equipment control requirements. All such systems and package controls shall be furnished by the equipment manufacturer, except that controls shown in motor control centers and process controllers, remote control devices, and their interconnecting wiring shall be provided under Divisions 16 and 17. Provide heating, ventilating and air conditioning controls, both 24-volt and line voltage type, by a HVAC controls specialist.

General Equipment and
Mechanical Requirements

11001 - 4
McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultant

2.02 MATERIALS AND STANDARD SPECIFICATIONS

- A. Materials: Design, fabricate and assemble equipment and systems with new materials and in accordance with acceptable modern engineering and shop practices. Manufacture individual parts to standard sizes and gauges so repair parts can be installed in the field.
- B. Uniformity: Unless otherwise specified, equipment or material of the same type or classification used for the same purpose shall be the product of the same manufacturer and shall be the same model.

2.03 LUBRICATION

- A. Provide lubricants of types recommended by equipment manufacturers, in quantities sufficient for consumption prior to completion, testing and final acceptance.

2.04 STRUCTURAL METAL FRAMING

- A. Details of fabrication shall be in accordance with Section 05500.
- B. Weld submerged steel surfaces which butt or bear against each other, to seal the surfaces against the penetration of the liquid. Weld all gaps between adjacent submerged steel surfaces less than 1/32 inch wide to seal the surfaces. Weld size shall be not less than the thickness of the thinnest member of the lapped or joined assembly.

2.05 EQUIPMENT BASES AND BEDPLATES

- A. Mount equipment assemblies on a single heavy cast iron or welded steel bedplate unless otherwise shown or specified. Provide bases and bedplates with machined support pads, tapered dowels for alignment or mating of adjacent items, adequate openings to facilitate grouting, and openings for electrical conduits. Round or chamfer and grind smooth all corners. Continuously weld seams and contact edges between steel plates and shapes, and grind welds smooth. Do not support machinery or piping on bedplates other than that which is factory installed. Provide jacking screws in equipment bases and bedplates to aid in leveling prior to grouting. Mount all equipment bases and baseplates on reinforced concrete pads at least 3 inches high.

2.06 ANCHORS

- A. Each equipment manufacturer shall furnish an anchor bolt pattern and the required anchor bolts, nuts and washers of adequate design for securing bases and bedplates to concrete bases. Provide anchor bolts of length to allow for 1½ inches of grout under baseplates and adequate anchorage into structural concrete unless otherwise shown or specified.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

11001 - 5
General Equipment and
Mechanical Requirements

- B. Provide anchor and assembly bolts and nuts of ample size and strength for the purpose intended. All bolts shall be standard machine bolts, with cold pressed hexagon nuts. Provide suitable degauling compounds for bronze and stainless steel threaded components. Any space wholly or partially underground, or having a wall or ceiling forming part of a water channel, is classified as a moist location. Unless otherwise specified or noted on the Drawings, provide materials as follows:
1. Bolts and nuts in submerged locations or submerged and embedded in concrete or buried in earth: Type 316 stainless steel.
 2. Bolts and nuts for supports or equipment in dry or moist locations: Galvanized steel (hot-dipped), with oversize nuts.
 3. Use other bolting materials where specifically called for in the Specifications or on the Drawings.
 4. See structural specifications for additional requirements.
- C. Anchor all motor-driven equipment with cast-in-place anchor bolts or drilled-in anchors set with epoxy adhesive. Do not provide expansion type anchors for motor-driven equipment.
- D. Anchor all non-motor-driven equipment with cast-in-place anchor bolts or drilled-in anchors set with epoxy adhesive except that, where specifically allowed by note on the Drawing, expansion type anchors may be used.
- E. Refer to Section 05090 for technical specification requirements of drilled-in anchors set in epoxy adhesive, expansion bolt anchors, and cast-in-place anchors.
- 2.07 SAFETY GUARDS
- A. Cover belt or chain drives, fan blades, couplings, nip points, exposed shafts and other moving or rotating parts on all sides with safety guards conforming to all Federal, State, and local codes and regulations pertaining; conform to the most restrictive requirement. Design guards for easy installation and removal, complete with necessary supports, accessories, and fasteners, all hot-dip galvanized. Design guards in outdoor locations to prevent entrance of rain and dripping water. Provide tachometer test opening in line with ends of shafts. Typically guards shall be expanded metal on a structural steel frame except that outdoor guards may be of solid material. Provide hinged doors with latch for service and lubrication access.
- B. Cover all pipes, manifolds, heaters, and other surfaces which have a surface temperature sufficient to burn human tissue with a thermal insulating material or otherwise guard against contact.
- C. Guards to comply with CAL/OSHA 3940 through 3944.
- 2.08 LIFTING EYES
- A. Supply all equipment weighing over 100 pounds with lifting eyes. Parts of equipment assemblies which are normally serviced separately, such as motors, to have lifting eyes of their own.

General Equipment and Mechanical Requirements 11001 - 6 McKinleyville Community Services District Wastewater Management Facility Improvements Bid Set 1368004*00 © 2014 Kennedy/Jenks Consultant

2.09 DRIVES

McKinleyville Community Services District 11001 - 7 General Equipment and Mechanical Requirements Wastewater Management Facility Improvements Bid Set 1368004*00 © 2014 Kennedy/Jenks Consultants

- B. Factory Painting: On pumps, motors, drives, starters, control panels and other similar self-contained or enclosed components, apply a factory protective paint system unless otherwise noted. Paint or otherwise protect surfaces that are inaccessible after assembly by a method which provides protection for the life of the equipment.
- C. Shop Priming: Except where field sandblasting is required, apply one or more shop coats of metal primer on surfaces to be finish painted at the site, of sufficient thickness to protect surfaces until finished. Primer shall be compatible with finish coat.
- D. Rust Preventive: Coat machined, polished, other ferrous surfaces, and non-ferrous surfaces which are not to be painted with rust preventive compound.

2.14 NOISE AND VIBRATION

- A. Mechanical and electrical equipment, as installed in this project, shall not create sound levels that are in excess of that permitted by CAL/OSHA for 8 hours per day worker exposure unless otherwise noted for the specific piece of equipment involved. If the required sound level cannot be achieved by bare equipment in its designated environment, provide sound attenuating enclosures. Sound attenuating enclosures shall have necessary ventilation to prevent equipment overheating and shall be constructed for easy removal to permit maintenance. Devices necessary for day-to-day operation shall pierce the enclosure or otherwise be accessible without need to remove the enclosure.

- B. Equipment which when operating has obvious excessive vibrations shall be repaired or replaced as directed by the Engineer. Baseline vibration measurements shall be made where specified.

2.15 FACTORY TESTS

- A. Perform factory tests for each piece of equipment where specifically called for in the section specifying that equipment. Note that factory tests are inherent in many reference standards. The requirement for a factory test in a referenced standard is hereby made a part of these Specifications. Conduct factory tests at the same speeds and other conditions at which the equipment will operate in the field, except as noted.
- B. Where specifically noted, performance tests may be witnessed by the Engineer or his representative. Inform the Engineer in sufficient time to allow arrangements to be made for witness of such tests. When non-witnessed tests are performed, supply certified results.
- C. Perform factory testing of pumps in accordance with the requirements and standards of the Hydraulic Institute.
- D. Tests of other equipment shall conform to the requirements set forth in these Specifications.

General Equipment and Mechanical Requirements 11001 - 8 McKinleyville Community Services District Wastewater Management Facility Improvements Bid Set 1368004*00 © 2014 Kennedy/Jenks Consultant

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Inspect each item of equipment for damage, defects, completeness, and correct operation before installing.

3.02 PREPARATION

- A. Prior to installing equipment, ensure that the areas are clean. Maintain the areas in a broom-clean condition during installation operations. Clean, condition, and service equipment in accordance with the approved instruction manuals and specific recommendations of the equipment manufacturer.

3.03 INSTALLATION

- A. Structural Fabrications: Conform to the AISC Code and Specification referenced in Article "Structural Steel Fabrications," and conform to Section 05500.

- B. Equipment: Conform to approved Instruction Manuals. Employ skilled craftsmen experienced in installation of the types of equipment specified. Use specialized tools and equipment, such as precision machinist levels, dial indicators, gauges, and micrometers, as applicable. Produce acceptable installations free of vibration or other defects. Align and pin to common bedplate equipment and drivers connected by flexible couplings.

- C. Anchor Bolts: Deliver bolts with templates or setting drawings and verify that bolts are correctly located before structural concrete is placed.

- D. Base and Bedplate Grouting: Do not place grout until initial fitting and alignment of connected piping is completed. Level and align equipment on the concrete foundations, then entirely fill the space under base or bedplates with grout. Bevel exposed grout at 45 degree angle, except round exposed grout at horizontal surfaces for drainage. Trowel or point exposed grout to a smooth, dense finish and damp cure with burlap for 3 days. When grout is fully hardened, remove jacking screws and tighten nuts on anchor bolts. Check the installation for alignment and level, and perform approved corrective work as required to conform to the tolerances given in the applicable Instruction Manual.

1. Make an allowance of at least 1½ inches for grout under the equipment bases, whether or not shown on the Drawings. Use steel shims to level and adjust the bases. Shims may be left embedded in the grout, in which case they shall be installed neatly and so as to be as inconspicuous as possible in the completed work. Unless otherwise approved, all grout shall be a favorably reviewed non-shrink, non-metallic grout.
2. Grout: Dimensionally stable, inorganic, premixed and resistant to acids, alkalis, and salt water, and unaffected by water and oil. It shall have high strength even when used as a pourable mixture, and shall bond well with steel and cured concrete or be compatible with a suitable bonding agent which shall then be used to affect the bond. Use in strict accordance with the manufacturer's recommendations. Provide Five Star Grout as manufactured

McKinleyville Community Services District 11001 - 9 General Equipment and Wastewater Management Facility Improvements Mechanical Requirements Bid Set 1368004*00 © 2014 Kennedy/Jenks Consultants

by U.S. Grout Corporation; Bonsal Construction Grout as manufactured by Bonsal Company; or equal. Submit for favorable review by the Engineer prior to use.

3. Where practicable, place the grout through the grout holes in the equipment base and work outward and under the edges of the base and across the rough top of the concrete foundation to a peripheral form so constructed as to provide a suitable chamfer around the top edge of the finished foundation.

E. Architectural Metals: Handrails, guardrails, stairs, and other architectural metals furnished as a part of equipment shall conform to the requirements of Section 05500.

3.04 EQUIPMENT STARTUP AND ADJUSTMENT

- A. Arrange for an authorized factory-trained representative of the company or companies supplying the various items of equipment to check the installation and adjust and test the equipment furnished before the acceptance of the work by the Owner. Said representative shall be experienced and knowledgeable of the equipment being tested. Furthermore, he shall assist and instruct the operating staff in adjusting and operating the equipment during the initial plant operation period.
1. Provide initial lubrication for all equipment.
 2. Test and demonstrate to the Engineer that all equipment operates properly and specified performance has been attained. For pumps, include measurement of suction and discharge pressure at the pump and measurement of pumping rate by volumetric means or through a suitably calibrated meter for two points on the performance curve. For adjustable-speed pumps, conduct tests at a minimum of two speeds. Furnish any test equipment or measuring devices required which are not part of the permanent installation.
 3. In addition, demonstrate that the entire facility is in full operating condition prior to the acceptance of the work. Should any equipment or part thereof fail to operate as intended, immediately remove and replace it, all at the Contractor's expense. Pay for all tests involved in this Section.
 4. Pressure test equipment and connections thereto as required by these Specifications.

3.05 PERFORMANCE TESTS

- A. Upon completion of the work, and after all systems are set and balanced, conduct performance tests in accordance with Division 1 and other applicable sections of these Specifications. Submit test conditions, test data and results to the Engineer for review.

3.06 SOUND LEVEL TESTING

- A. Measure the sound level developed by all mechanical and electrical equipment provided. Perform testing in all rooms and spaces containing such equipment during the final operation test program with all equipment operating. Use OSHA approved instrument and record the highest sound level developed when measured according to OSHA standards in each room and space. Deliver a copy of records to the Owner.

General Equipment and Mechanical Requirements
11001 - 10
McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultant

3.07 TOOLS, LOOSE PARTS, AND LUBRICANTS

- A. Tools and Loose Parts Supplied: Provide an inventory of tools and loose parts required to be supplied under the project. Turn over inventory and parts to the Owner. The Owner's written acknowledgment of receipt is required for project completion. Loose parts are defined as items such as special tools, keys, safety equipment, and portable equipment. Refer to Section 01700 and relevant technical sections of these Specifications for additional instructions.
- B. Recommended Spare Parts: Furnish a complete list of recommended spare parts and supplies for each equipment furnished with current prices and a source of supply.
- C. Provide a list of all recommended lubricants not listed in the O&M Manuals.

END OF SECTION

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants
11001 - 11
General Equipment and Mechanical Requirements

SECTION 11002
ELECTRIC MOTOR DRIVES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Provide motors to drive equipment specified in other sections and Divisions, including, but not limited to, Divisions 11, 12, 13, 14, 15, and 16. Refer to driven equipment sections for additional requirements. Requirements of the driven equipment Specifications shall take precedence over the requirements of this Section, where conflict occurs. This Section applies to all electric motors furnished for this project, unless otherwise noted.

B. Related Sections:

1. Section 11001: General Equipment and Mechanical Requirements
2. Section 16010: General Electrical Requirements
3. Section 16920: Motor Control Center
4. Section 16924: Adjustable Frequency Drives (AFDs)

1.02 REFERENCES

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

- A. National Electrical Manufacturers Association (NEMA) Standard:
1. MG 1 Motors and Generators
- B. Institute of Electrical and Electronics Engineers (IEEE) Standard:
1. 112 Test Procedure for Polyphase Induction Motors and Generators
- C. Underwriters Laboratories (UL) Publication: Recognized Component Directory

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

Electric Motor Drives

11002 - 1

THIS PAGE INTENTIONALLY BLANK

1.03 SUBMITTALS

- A. The following information shall be submitted in accordance with Section 01300:
1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
 2. Where applicable, a copy of the contract document control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the drawing or drawings shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
- B. For each motor, include the following data in the shop drawing submittal for the driven equipment:
1. Manufacturer's name.
 2. Manufacturer's type and frame designation.
 3. Horsepower output.
 4. Time rating.
 5. Maximum ambient temperature rating.
 6. Insulation system designation.
 7. Rpm at full load.
 8. Voltage, number of phases, frequency and full load amperes.
 9. Code letter for locked rotor kVA.
 10. Service factor at 40°C ambient.
 11. NEMA design letter.
 12. Enclosure type.
 13. Lubrication requirements, including type and frequency.
 14. KW input power and power factor at 75% and 100% of rated horsepower output.
 15. Guaranteed minimum efficiency and nominal efficiency per MG1-12.55.
 16. Nominal efficiency.

Electric Motor Drives

11002 - 2

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

- C. Provide installation, operation and maintenance instructions, and renewal parts list as required for maintenance manuals under Section 01300.
- D. Shop Drawings: Submit signed and sealed structural calculations and detailed drawings for the attachments and anchorage to the structure of the equipment and appurtenances in this Section. Calculations shall conform to the requirements of Section 01190.
- E. Submit Level 1 Certification from the manufacturer that the equipment is capable of resisting seismic loads. Loading shall be as described in Section 01190.

1.04 COORDINATION

- A. General: Coordinate motors with driven equipment requirements. Unless otherwise specified, equipment manufacturers or suppliers shall select and provide motors for their equipment in conformance with these Specifications. Give particular attention to coordination of requirements for:
 1. Power.
 2. Starting torque.
 3. Speed.
 4. Bearing load.
 5. Ambient temperature.
 6. Frequency of starting.
 7. Moisture exposure.
 8. Adjustable speed control, where applicable.
- B. Suppliers of motors to be used with adjustable speed systems shall:
 1. Provide all relevant motor data to the adjustable speed control manufacturer for analysis. Provide motors in conformance with and compatible with the adjustable speed control manufacturer's equipment and requirements.
 2. Provide all relevant motor data to the pump manufacturer for vibration, read critical frequency and other required analyses.

1.05 SPECIFIC REQUIREMENTS

- A. The following motor characteristics are specified with the driven equipment in all cases:
 1. Speed.
 2. Horsepower or supplier responsibility to determine.
 3. Horizontal or vertical arrangement.
 4. Indoor or outdoor location.
- B. Additional motor characteristics are specified with the driven equipment only where the required motor differs from the typical characteristics described below or where additional properties or characteristics are required that are not specified in this Section.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

Electric Motor Drives

11002 - 3

PART 2 - PRODUCTS

2.01 GENERAL

- A. Motors shall be designed, built, and installed in the driven equipment, to provide long, trouble-free life in industrial service and shall be rated in conformance with NEMA MG1. Motors rated 100 horsepower or less and rated 600V or less shall be listed in UL Recognized Component Directory or shall be listed and labeled by other organizations acceptable to the authority having code enforcement jurisdiction.
- B. Unless otherwise specified with the driven equipment, provide motors with the following typical characteristics:
1. Motors shall be single speed, and designed for continuous duty and full voltage starting. Motors shall provide standard starting torque.
 2. Voltage Ratings:
 - a. 1/2 horsepower or less: 115 volts, single phase, 60 Hz, capacitor start. Small fan motors may be split phase or shaded pole type if standard for the equipment.
 - b. Above 1/2 horsepower: 460 volts, three phase, 60 Hz, squirrel cage induction motors.
 3. All motors shall have a service factor of 1.15 in an ambient temperature of 40°C.
 - a. Exceptions: Motors, which have special enclosures or winding configurations, may carry a Unity (1.0) Service Factor. Examples are totally enclosed, explosion proof, or submersible motors.
 4. Windings shall be copper.
 5. Provide ground lug inside the terminal box.
 6. Provide lifting eye on each motor weighing more than 50 pounds.
 7. Each motor shall be suitable for six starts per hour (5 minutes on and 5 minutes off, continuously) when powering the specific driven equipment required for this project.
 8. Each motor shall have an overall sound power level at no load not greater than given in NEMA MG1-12.49.
 9. Motors, which have special operating characteristics such as multi-speed, high torque/high slip, short time intermittent ratings shall be nameplated to show how these characteristics differ from standard design.
- C. Motors used with adjustable frequency drives shall have inverter duty complying with NEMA MG-1, Section IV, Part 31.

2.02 NAMEPLATE

- A. Provide stainless steel nameplate for each motor, attached to the motor by stainless steel screws or drive pins. Nameplates shall indicate clearly the information required by NEMA MG1, Part 10 and Part 12.

Electric Motor Drives

11002 - 4

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

© 2014 Kennedy/Jenks Consultants

2.03 ENCLOSURE TYPE BY LOCATION

- A. Unless otherwise specified with the driven equipment, provide motors with the following typical enclosures:
1. Indoors: Horizontal motors shall be open, drip-proof; vertical motors shall be drip-proof with guard.
 2. Outdoors: Vertical motors shall be weather-protected Type 1. Horizontal motors shall be totally enclosed, fan cooled. All motors shall have the following features:
 - a. Bearing protection.
 - b. Anti-corrosion treatment of external hardware and internal metal parts.
 - c. Weatherproof terminal box with gaskets between the motor, terminal box and terminal box cover.
 - d. Guard screens on ventilation openings.
 - e. Moderate moisture resistant insulation, specified hereinafter.
 - f. Interior and exterior corrosion protection coatings.
 - g. Special attention to leads into terminal box.
- B. When specifically called for in the Specifications for the driven equipment or required by Code, provide the following enclosure types:
1. Hazardous locations: Motors shall be explosion-proof and shall be UL listed for Class I, Division 1, Groups C and D locations; motors shall bear the UL label.
 2. Severe duty: Motors shall have the following features:
 - a. Totally enclosed, fan cooled enclosure.
 - b. Stainless steel nameplate.
 - c. Cast iron housing, bearing brackets and fan guard.
 - d. Cast iron conduit box with threaded conduit entrance.
 - e. Corrosion resistant fan.
 - f. Corrosion resistant hardware.
 - g. Automatic breather/drain.
 - h. Ground lug.
 - i. Regreaseable bearings.
 - j. Provision for excluding water and dust from bearings.
 - k. Class F insulation.
 - l. Service factor of 1.15.
 - m. Epoxy coating on all external surfaces.
 3. Submersible: Submersible motors shall comply with the following:
 - a. Air filled or oil filled squirrel cage induction type.
 - b. Service factor of 1.15 or better.
 - c. Class F insulation, Class B temperature rise.
 - d. Rated for six starts per hour.
 - e. Listed by either UL or FM for Class 1, Division 1, Groups C and D hazardous locations.
 - f. Suitable for operating in free air continuously (i.e., not submerged in sewage).
 - g. Bearing B10 life 18,000 hours minimum.
 - h. Tungsten carbide seals.
 - i. Lower bearings of either the ball or roller type.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

11002 - 5

Electric Motor Drives

© 2014 Kennedy/Jenks Consultants

- j. If required by the manufacturer to not void the motor warranty, provide a moisture detection system and a motor winding thermostat system. These systems shall be complete, including all necessary interfaces, control panels, conduits, and wires, even though these may not be shown on the Drawings.

2.04 INSULATION

- A. Unless otherwise specified with the driven equipment, provide motors with Class F insulation, non-hygroscopic. In motors to be used with adjustable frequency drives, provide Class F insulation with Class B temperature rise. In single phase motors 1/2 horsepower or smaller, provide Class A insulation or better.
- B. Where called for in the Specifications for the driven equipment, provide the following type of insulation:
- Moderate Moisture Resistant: Provide extra dip and bake of epoxy or polyester varnish to resist somewhat higher than normal moisture in the atmosphere.

2.05 MOTOR HORSEPOWER

- A. The maximum permissible motor loading:
- Motors with service factor 1.15 or greater: 100% of nameplate horsepower.
 - Motors with service factor less than 1.15: 90% of nameplate horsepower.

TABLE 11002-1

MOTOR NOMINAL EFFICIENCIES AT FULL LOAD

HP	900 RPM	1,200 RPM	1,800 RPM	3,600 RPM
Open Drip-Proof and Weather Protected Type 1 Motors				
1	78.5	78.5	82.5	80.0
1.5	80.0	80.0	84.0	81.5
2	85.5	82.5	82.5	85.5
3	85.5	82.5	82.5	84.0
5	86.5	86.5	85.5	86.5
7.5	87.5	89.5	87.5	88.5
10	90.2	90.2	89.5	86.5
15	90.2	91.7	90.2	89.5
20	91.7	91.7	91.0	90.2
25	91.7	92.4	91.7	90.2
30	92.4	93.0	92.4	92.4
40	91.7	93.0	93.6	93.6
50	93.0	93.0	93.6	93.6
60	93.6	93.6	94.1	94.1
75	94.1	93.6	94.1	93.6
100	94.5	94.5	94.5	94.1
125	94.5	95.0	95.0	94.1
150	95.0	94.5	95.0	94.1

Electric Motor Drives

11002 - 6
McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

HP	900 RPM	1,200 RPM	1,800 RPM	3,600 RPM
200	95.0	95.0	95.0	94.1
250	94.5	95.0	95.0	94.5
300-500	95.0	95.8	95.8	94.5
Total Enclosed Fan Cooled Motors				
1	78.5	78.5	82.5	80.0
1.5	80.0	80.0	84.0	81.5
2	85.5	82.5	82.5	85.5
3	86.5	86.5	82.5	84.0
5	88.5	87.5	85.5	86.5
7.5	89.5	90.2	87.5	88.5
10	90.2	91.0	89.5	90.2
15	90.2	92.4	91.0	91.7
20	91.7	92.4	91.0	91.7
25	91.7	93.0	92.4	92.4
30	92.4	93.0	93.0	93.0
40	92.4	93.6	94.1	94.1
50	93.6	93.6	94.1	94.1
60	93.6	94.1	94.1	94.1
75	94.1	94.1	94.1	94.5
100	94.5	95.0	95.0	94.5
125	94.5	95.0	95.4	95.0
150	94.5	95.0	95.4	95.4
200	95.0	95.0	95.4	95.4
250	95.0	95.4	95.8	95.8
300-500	95.0	95.8	95.8	95.8

- B. Probable motor horsepower ratings have been specified or shown on the Drawings. Changes from the specified horsepower may be accepted, if necessary to assure that motors do not exceed their maximum permissible loading, as defined above, under normal operation. Motor horsepower shall not be less than those specified in driven equipment sections. If a larger horsepower rating is required by the driven equipment, provide all changes required to motor starting and control equipment and to the conduit and wiring system without any additional cost to the Owner.

2.06 EFFICIENCY

- A. For motors 1 Horsepower and Larger:
- Provide premium efficiency motors unless otherwise specified. Premium efficiency motors shall have nominal efficiencies at full load not less than those listed in Table 11002-1.
 - Guaranteed minimum efficiencies of premium efficiency motors shall correspond to nominal values as tabulated in NEMA MG-1, Table 12-8.
- B. Efficiencies shall be determined by using the IEEE 112, Test Method B using segregated loss determination.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

11002 - 7
Electric Motor Drives

SECTION 11120
SCREENING EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide a perforated basket-type fine screen for removing floating, particulate, or fibrous material as shown on the Drawings. The fine screen shall include a concentric conveyor/dewatering screw, screen basket, transport tube, spray washer, press zone assembly, discharge section, flexible discharge chute, drive system, pivot stand, controls, and appurtenances. The unit shall be complete with electrical control panel and motor starter.

1.02 REFERENCES

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

- A. American Institute of Steel Construction (AISC)
B. ASTM International (ASTM)
C. American Welding Society (AWS)
D. Steel Structures Painting Council (SSPC).

1.03 SYSTEM DESCRIPTION

- A. Design Requirements: The equipment provided under this Section shall meet the following design requirements:

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

11120 - 1

Screening Equipment

- C. Single-phase fractional horsepower motors 1/4 HP through 3/4 HP motors shall be high-efficiency split-capacitor types having minimum efficiency ratings of not less than 64% and power factors of not less than 94.5%.

2.07 LOCKED ROTOR KVA - CODE LETTER

- A. Provide motors with locked rotor KVA values less than or equal to those corresponding to the following:

Horsepower	Code Letter
≤5	M
7-1/2-10	H
≥15	G

2.08 WOUND ROTOR MOTORS

- A. Wound rotor motors are not allowed.

2.09 THERMAL PROTECTION

- A. In each motor to be used with adjustable speed drives, in all motors 60 horsepower and larger, or where called for in the Specifications for the driven equipment, provide integral thermostats or other approved devices to protect the motor from overheating. Thermostats or other devices shall be normally closed and rated 125 Vac, 1 amp.

2.10 SPACE HEATERS

- A. Where called for in the Specifications for the driven equipment, provide space heaters or solid state motor winding heating systems for motors. Heaters shall be 120 volts, single phase, as required by the control circuit voltage. Heater wattage and voltage ratings shall be indicated on motor nameplate.

2.11 FACTORY TESTS

- A. Conduct factory tests on all motors in conformance with NEMA MG 1-12.55. All tests shall be made in accordance with IEEE Standard 112.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install motors in driven equipment in conformance with motor manufacturer's recommendations and requirements. Motor nameplate shall be visible when installed on the driven equipment.

END OF SECTION

Electric Motor Drives
11002 - 8
McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

Item	Equipment Number	Value
		SCN-2210
Peak design flow, MGD		4.00
Maximum allowable headloss at peak flow, inches ^(a)		7
Downstream water depth, 18 inches		16
Screen perforation diameter, 10 inches		0.25
Channel width, inches		24
Channel depth, inches		54
Equipment length		Note ^(b)
Maximum motor power, horsepower		1

Notes:

- (a) Clean water headloss.
 (b) Total equipment length and location of pivoting support bracket shall be as shown on the Drawings such that the screenings discharge chute will be clear of the headworks structure.

1.04 SUBMITTALS

- A. The following information shall be submitted in accordance with Section 01300:
1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
 2. Where applicable, a copy of the contract document control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the drawing or drawings shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
 3. Product data fully describing all items proposed for use to demonstrate that the equipment conforms to the specifications.
 4. Motor Data as specified in Section 11002.
 5. Anchor design per requirements of Sections 01190 and 11001.

Screening Equipment 11120 - 2 McKinleyville Community Services District
 Wastewater Management Facility Improvements
 Bid Set 1368004*00
 © 2014 Kennedy/Jenks Consultants

6. Submit Level 1 certification from the manufacturer that the equipment is capable of resisting seismic loads. Loading shall be as described in Section 01190.
 7. System layout and schematic.
 8. Data from three separate tests proving compliance of the screen with the "Paint Filter Test" as described in EPA Publication SW-486 Method 9095.
 9. Hydraulic performance curves showing the relationship of headloss versus the full range of downstream liquid depths for the peak design flow, 50 percent of the peak design flow, and 25 percent of the peak design flow. Curves based upon other manufacturer's data will not be acceptable for this project.
 10. Vendor data shall be furnished to confirm the torque and thrust rating of the drive.
 11. Control panel information.
- B. Manuals: Furnish manufacturer's installation, lubrication, operation and maintenance manuals, bulletins, and spare parts list.
- C. Affidavits: Submit affidavits from the manufacturer stating that the equipment has been properly installed, adjusted, and tested and is ready for full-time operation.

1.05 QUALITY CONTROL

- A. Qualifications: Equipment furnished under this Section shall be supplied by a single manufacturer who has been regularly engaged in the design and manufacture of the equipment for at least 5 years. Demonstrate to the satisfaction of the Engineer that the quality is equal to equipment made by those manufacturers named herein.
- 1.06 DELIVERY, STORAGE, AND HANDLING**
- A. Immediately upon delivery to the job site, place materials in an area protected from weather. Use non-marring slings for loading, unloading, and handling units to prevent rope or cable damage to surfaces and protective wrappings.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Screens shall be as manufactured by Huber, Parkson, WestTech or equal, modified to meet specified requirements.

2.02 EQUIPMENT

- A. Screen
1. The screen shall be designed and built to withstand static hydraulic forces exerted by the liquid to the screen. All structural and functional parts shall be sized to prevent deflections or vibrations, which may impair the screening, conveying, and pressing operations. All submerged components and all components of the screen in contact with the screened solids shall be of stainless steel construction, except that the screw conveyor can be made of corrosion-resistant and abrasion-resistant carbon steel.

McKinleyville Community Services District 11120 - 3 Screening Equipment
 Wastewater Management Facility Improvements
 Bid Set 1368004*00
 © 2014 Kennedy/Jenks Consultants

2. The screen basket shall be of a semi-cylindrical shape and installed in the housing in-line to the direction of liquid flow.
 3. The screen basket shall be constructed of minimum 14 gauge Type 304 stainless steel perforated plate.
 4. Stainless steel seal plates or rubber side seals shall be provided with a profile conforming to the channel to prevent flow from bypassing the screen.
 5. The upper end of the screenings basket shall have a stainless steel mating flange suitable for bolting to the screenings conveyor transport tube.
- B. Screenings Conveyor and Screenings Dewatering Press
1. The screen shall be cleaned by a shaftless screw conveyor, at least throughout the screen basket area, with flights designed to operate and to convey screened material. The spiral will be constructed of two concentric flights formed continuously from bar stock welded together. The outer spiral will have a minimum thickness of 0.6 inches and with the inner spiral having a minimum thickness of 0.4 inches. Total flight height shall be a minimum of 4.7 inches within the basket and 3 inches in the transport tube. The shaftless screw conveyor flights for cleaning the screen shall be fabricated with ½ inch minimum corrosion-resistant and abrasion-resistant carbon steel or stainless steel plate. Carbon steel screw conveyor designs, which are not corrosion-resistant and abrasion-resistant, will not be acceptable for this project.
 2. Attached to the shaftless screw conveyor flights the full length of the perforated screen shall be either a stainless steel backed brush composed of water-resistant bristles or the brush shall have nylon bristles molded into a plastic core. The brush shall be attached to the shaftless screw conveyor with either stainless steel holder clips and stainless steel fasteners, or the brush will be attached to the screw with stainless steel fasteners without clips.
 3. As material is conveyed into the enclosed transport tube there shall be a transition section from the screen to the screenings transport tube. The transport transition zone and transport tube shall be of minimum 11-gauge Type 304 stainless steel. Both the transition zone and transport tube shall be fitted with a minimum of 3, Type 304 stainless steel wear bars with minimum thickness of 3/16 inches.
 4. The compaction zone shall be an integral part of the screenings screw conveyor and transport tube design. The compaction zone shall be of minimum 7-gauge Type 304 stainless steel and shall be designed to return water released from the screened material back to the wastewater channel via a flexible reinforced rubber hose. Drain design shall allow for removal and cleaning of the drain hose should it ever become plugged without removing the drive, discharge head or screw conveyor. Compaction zone housing shall be furnished with appropriate access to the screw conveyor should the compaction zone ever become plugged. Designs, which require removal of the drive assembly, discharge head or screw conveyor to gain access to the compaction zone will not be acceptable. When required by the manufacturer, a reverse flight spiral with a serrated cutter shall be provided to cut off the compacted material plug causing it to drop through the flexible discharge chute into the receiving receptacle. Length of flexible discharge chute shall be as shown.
 6. The screen shall be provided with a pivoting support bracket allowing rotation of the unit out of the channel for maintenance purposes. Bracket shall be located as shown.

Screening Equipment 11120 - 4 McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set 1368004-00
© 2014 Kennedy/Jenks Consultants

- C. Drive
1. The spiral drive system shall consist of a single-speed motor direct connected to the gear reducer.
 2. The gear reducer shall be bolted to the upper end of the transport tube shaft.
 3. The gear reducer shall be driven by a TEFC, 3 phase, 60 hertz, 460 volt motor suitable for use in Class I, Division 2, Group D environments meeting the requirements of Section 11002.
- D. Spray Wash Systems
1. Spray wash systems shall be furnished with a control solenoid valve, ball valve, stainless steel piping and fittings, flexible reinforced PVC hose, ball valve, and stainless steel nozzles. Piping, fittings and valves shall be ¾ inch diameter minimum. A Y-strainer shall be provided for the incoming plant water supply.
 2. The screenings spray wash system shall be located in the upper section of the transport tube (or in the press zone to flush the drain area) to break up and return organic materials to the flow stream. The screenings spray wash system and screenings screw conveyor shall be designed to prevent washing screenings down the center of the screw conveyor.
 3. The solenoid valves shall be normally operated via the control panel, but allow for manual operation.
 4. Solenoid valves shall be ½ inch minimum, brass body, 2-way, and designed for 120 Vac operation with a NEMA 4X rating. Solenoid valves shall be normally closed and rated for up to 100 psig.
 5. Ball valves shall be in accordance with Section 15050.
 6. Y-strainer shall be ¾-inch-diameter bronze body with stainless steel internals.
 7. Conduit, junction boxes and fittings between the solenoid valves and junction boxes, shall be provided by the installing electrical contractor.

2.03 CONTROL SYSTEM

- A. All controls necessary for the fully automatic operation of the screen shall be provided meeting the requirements of this Section, Division 16 and Division 17.
- B. The electrical control system shall provide for automatic control of the screen via a high liquid level using a liquid level control system using two level indicating transmitters as shown on the Drawings, in connection with an adjustable timer to provide a variable time between cleaning operations.
- C. The local-mounted control panel shall include the following items:
1. Disconnect switch with door handle.
 2. Control transformer.
 3. Reversing starter (if screw conveyor is not shaftless through the transport tube).
 4. Programmable controller or relays and timers to monitor equipment and perform logic functions.
 5. Elapsed time meter.
 6. Overload protection in addition to motor thermal overload.
 7. Transient voltage surge suppressor.
 8. Power on pilot light.
 9. Screen running pilot light.
 10. Fault and fault reset push button light.
 11. Emergency stop pushbutton.

McKinleyville Community Services District 11120 - 5 Screening Equipment
Wastewater Management Facility Improvements
Bid Set 1368004-00
© 2014 Kennedy/Jenks Consultants

12. Screen hand-off-auto switch with discrete output to monitor switch position.
13. Spray wash system hand-off-auto switch.
14. Screen Forward-Reverse-Off switch, spring return Reverse to off (only included with reversing starter).
15. 600 Vac terminal blocks.
16. Type 316 stainless steel NEMA 4X enclosure.
17. Dry contacts for run and fault outputs for remote monitoring.
18. Two ultrasonic level transmitters, Siemens Hydromat 200 with compatible transducer, or equal
19. Two additional field wiring terminals for a pass-through connection of the upstream high level switch.
- 2.04 ANCHORS**
- A. Anchor design per requirements of Sections 01190 and 11001.
- 2.05 SPARE PARTS**
- A. The following spare parts shall be provided: One brush set complete with all mounting hardware.
- 2.06 SHOP SURFACE PREPARATION AND PAINTING**
- A. Painting: Apply manufacturer's standard factory paint finish.
- B. Clean all stainless steel surfaces and provide glass bead blast or chemically treat all external non-wetted stainless steel to a uniform finish.
- 2.07 SOURCE QUALITY CONTROL**
- A. All welding in the factory shall use shielded arc, inert gas, MIG or TIG method. Add filler wire to all welds to provide for a cross section equal to or greater than the parent metal. Fully penetrate butt welds to the interior surface and provide gas shielding to interior and exterior of the joint.
- B. Field welding of stainless steel will not be permitted.
- C. Bolts, nuts and washers shall be Type 304 stainless steel furnished in accordance with ASTM A193.
- D. All surfaces that are specified to be machined shall be designed and fabricated to provide a runout of not more than 0.005 inches and a concentricity to within 0.005 inches.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install equipment in strict conformance to the manufacturer's installation instructions.

Screening Equipment 11120 - 6 McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants

3.02 FIELD TESTING AND TRAINING

- A. The manufacturer shall supply a competent field service engineer to thoroughly check and inspect the equipment after installation, place the equipment in operation, make necessary adjustments, calibrate instruments, and conduct field tests. Startup and testing shall meet the requirements of this Section and Sections 01650 and 11001. The services required shall also include on-the-job training of operators including safety procedures, operating instructions, and preventive maintenance procedures. A minimum of 8 hours of training shall be provided.
- B. Prior to final acceptance of the screen, three tests shall be conducted according to the EPA Paint Filter Test as described in method 9095 of EPA Publication SW-486.
- C. Should the system fail to produce screenings capable of passing the "EPA Paint Filter Test", the manufacturer shall, at its own expense, make all necessary modifications to the equipment until such tests can be passed.

END OF SECTION

McKinleyville Community Services District 11120 - 7 Screening Equipment
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants

SECTION 11190
EQUIPMENT FOR SECONDARY CLARIFIERS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide secondary clarifier tank equipment including sludge and scum collection equipment, scum troughs, drive equipment, bridges for access to the drive equipment, and miscellaneous appurtenances as shown and specified.
The equipment shall be suitable for use in the gravity separation of mixed liquor solids from the activated sludge process and for installation in circular secondary clarifier tanks. The equipment shall have an energy dissipating center feedwell supplied from the center column and suction type sludge collectors.

1.02 REFERENCES

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

- A. American Bearing Manufacturers Association (ABMA):
1. 9-90 Load Ratings and Fatigue Life for Ball Bearings
- B. American Gear Manufacturers Association (AGMA):
1. 2001-D Fundamental Rating Factors and Calculation Methods for Involute Spur and Helical Gear Teeth
 2. 6010-E Standard for Spur, Herringbone, and Bevel Enclosed Drives
 3. 6019-E Gearmotors Using Spur, Helical, Herringbone, Straight Bevel or Spiral Bevel Gears
 4. 6034-B Enclosed Cylindrical Worm Gear Speed Reducers and Gear Motors

- C. American Institute of Steel Construction (AISC):
1. Manual of Steel Construction, Allowable Stress Design, 9th Edition
- D. American Iron and Steel Institute (AISI)
- E. ASTM International (ASTM):
1. ASTM A36/A36M
 2. ASTM A48-REV A
 3. ASTM A276
 4. ASTM A536
 5. ASTM B247
 6. ASTM E18
- F. American Welding Society (AWS):
1. D1.1 Structural Welding Code – Steel
- G. National Electrical Manufacturers Association (NEMA):
1. 250 Enclosures for Electrical Equipment
- 1.03. DEFINITIONS
- A. The following definitions shall apply:
1. Continuous operating torque: The continuous operating torque is defined as the AGMA design torque which is the torque load that is assumed to be continuously applied on the drive system through a 24-hour operating period, 365 days per year for a 20-year life.
 2. Alarm torque: The torque at which an alarm sounds to serve as a warning of increased torque loading. The alarm torque is defined to be equal to 100 percent of the continuous operating torque.
 3. Cutout torque: The torque load at which a motor cutout switch is activated to shut down the unit. The cutout torque is defined to be not less than 120 percent of the continuous operating design torque.
 4. Shear pin torque: A backup shear pin in a hub mounted device on the output shaft of the gear motors to break when the load on the mechanism achieves 140 percent of the continuous operating design torque. A switch shall alarm the shear pin torque event. A third limit switch will also be acceptable.
 5. Momentary peak torque: The maximum or peak torque of the drive unit assumed to be equal to twice the calculated AGMA torque rating of the spur gear set or three times the calculated AGMA torque rating of the worm gear set, whichever is lower.
- 1.04 SYSTEM DESCRIPTION
- A. Performance and Design Requirements:
1. All structural members shall be designed in accordance with AISC standards and shall be capable of transmitting the momentary peak torque without undue
- deflection. AISC recommended slenderness limits shall not be exceeded for the design of all members. In addition to the specified operating loads, each member shall be designed to withstand a point load of 200 pounds applied perpendicular to its weak axis at the midpoint between its support areas.
2. Mixed liquor will be conveyed to the secondary clarifier through a 20-inch-diameter pipe. Mixed liquor from the aeration basins will be distributed between the two clarifiers by cut throat flumes.
 3. Kinetic energy available at the outlet of the secondary clarifier's center column inlet ports shall be dissipated through the dual effects of hinged, adjustable baffle gates at the periphery of the tank's influent distribution tub and a deep secondary baffle. The system shall be arranged to direct the flow entering the tank into a spiral flow pattern within the influent distribution tub to achieve nearly zero kinetic energy when it passes the secondary baffle.
 4. Sludge accumulations shall be removed from the floor of the tank through the combined operation of the continuously rotating sludge collection mechanism and the return sludge pumping system. The header and orifice design shall achieve hydraulic balance through the sludge collection mechanism and uniform removal of sludge from the floor of the tank through the application of controlled head loss at the orifices.
 5. The orifices in the sludge collection mechanism shall be spaced at not more than 30 inch intervals. With two headers, orifice spacing may be increased provided orifice spacing is staggered on each header and the combined orifice spacing of both headers does not exceed 30 inch intervals along the tank diameter. Orifices shall be spaced along the header or adjusted in size such that the orifices withdraw sludge volumes proportional to their respective swept areas of the tank. The minimum orifice size shall be 2 inches in diameter. A fluidizing vane shall be provided on the bottom of the header to direct sludge on the floor of the tank to the area of influence of each orifice. Calculations shall be provided under Product Data, which demonstrate achievement of these requirements taking into account the criteria set forth in this paragraph and in paragraph 1.04B. The calculations shall be complete, with adjustments for changing orifice driving head along the length of the header, the tank area served by each orifice, changes in orifice size, the effect of velocity head in the header, and changes in sludge viscosity.
 6. The central influent pier and column assembly shall be designed to support the drive mechanism, the sludge collection mechanism, scum removal system components, utility piping, access bridge beams and walkway. No vertical thrust load shall be placed on any underwater bearing. All drive gears shall be located above water level and all gearing shall be completely enclosed and oil lubricated. The drive cage, each sludge collector arm, and associated supports and connecting members shall be designed to withstand application of 200 percent of the continuous operating torque at the AISC allowable stresses.
 7. The access bridge and operating platform shall be designed for a live load of 100 pounds per square foot. Deflection under full live load and dead load shall not exceed 1/360 of the span. The influent distribution tub and its supports shall be designed for stable, safe, distortion free operation when full of water and the tank empty, and vice versa.

8. Other specific design requirements are as follows:

a. Number of secondary clarifiers	2
b. Internal tank diameter, feet	50
c. Sidewater depth, feet	16
d. Freeboard at maximum flow, feet	5
e. Influent column internal diameter, inches	20
f. Secondary baffle:	
Diameter, feet	16
Depth below water surface, feet	7.5
g. Influent distribution tub:	
Diameter, feet	6
Depth below water surface, feet	5
h. Sludge collection header, number	1
i. Counterweight to sludge collection header	1
j. Continuous operating torque, minimum, ft-lbs. applied at output of drive unit	6,300
k. Nominal minimum bearing race diameter, inches	30
l. Motor output, horse power	0.5

B. Operating Conditions:

1. The equipment shall be designed and operable for the following conditions per clarifier:	
a. Maximum inlet flow, MGD (peak flow with maximum sludge return)	3.48
b. Minimum inlet flow, MGD (minimum flow with minimum return sludge return)	0.87
c. Maximum return sludge flow, MGD	1.59
d. Minimum return sludge flow, MGD	0.52
e. Maximum overflow, MGD	1.89
f. Minimum overflow, MGD	0.35
g. Maximum center column mixed liquor inlet port headloss at maximum inlet flow, feet	0.3
h. Maximum headloss through collector orifices and arms to sludge collection sump at center column, feet	3
i. Minimum velocity through sludge collection header at minimum return sludge flow, feet per second	0.5
j. Mixed liquor suspended solids; concentration range, mg/l	800-5,000
k. Maximum sludge collector peripheral speed, feet per minute	8
l. Sludge viscosity, N-sec/m ²	0.001-0.01

1.05 SUBMITTALS

- A. The following information shall be submitted in accordance with Section 01300:
1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole.

If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

2. Where applicable, a copy of the contract document control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the drawing or drawings shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
3. Product data fully describing all items proposed for use to demonstrate that the equipment conforms to the Specifications.
4. Motor data as specified in Section 11002.
5. System layouts and/or schematics.
6. Elementary and connection wiring diagrams clearly showing external connections to other equipment.
7. General arrangement drawings showing the entire assembly. This shall include a materials list and descriptions of all major components such as all gears, structural members, sludge collection members, and the scum removal system (sizes, piping connections, ASTM designations where appropriate, thicknesses and construction).
8. Rating, AGMA, and ASTM designations, construction, and detailed descriptions of all gears, reducers and drives.
9. Calculations substantiating the torque rating of the gear assembly as specified. Bearing manufacturer, bearing model, and ABMA L-10 life data.
10. Proposed onsite testing and startup procedures including sketches and calculations for torque test as specified.
11. Signed and sealed structural calculations and detailed drawings for the access walkway, influent column assembly, drive cage, collector arms, associated supports, and connecting members, scum trough supports and anchorage specified in this Section. Calculations shall conform to the requirements of Section 01190.
13. Submit Level 1 certification from the manufacturer that the equipment is capable of resisting seismic loads. Loading shall be as described in Section 01190

- B. Manuals: Furnish manufacturer's installation, lubrication, operation and maintenance manuals, bulletins, and spare parts lists.

- C. Affidavits: Submit affidavits from the manufacturer stating that the equipment has been properly installed, adjusted, and tested and is ready for full-time operation.

1.06 QUALITY CONTROL

A. Qualifications: Equipment furnished under this Section shall be supplied by a single manufacturer who has been regularly engaged in the design and manufacture of the equipment for at least 5 years. Demonstrate to the satisfaction of the Engineer that the quality is equal to equipment made by those manufacturers named herein.

B. Standards:

1. Structural Steel and Welds: All structural steel used for equipment fabrication shall conform to the requirements of the Standard Specifications for Steel for Bridges and Buildings, ASTM A36 and ASTM A276. All welding shall conform to the latest standards of the American Welding Society (AWS). Continuous seal welds shall be provided at all welded joints. Skip welds will not be permitted.
2. Structural Design: All steel structural components shall be so designed that the stresses developed under the specified conditions will not exceed the allowable stresses defined by the AISC standards and the aforementioned standards. Except where specifically indicated otherwise, all plate and structural members designed for submerged service shall be steel, with a minimum thickness of ¼ inch. AISC recommended limits for slenderness shall not be exceeded on any steel member.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Immediately upon delivery to job site, place materials in area protected from weather. Use non-marring slings for loading, unloading and handling units to prevent rope or cable damage to surfaces and protective wrappings.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Secondary clarifier equipment shall be Ovivo; Envirex; Walker Process Equipment; West Tech; or equal, modified to provide the specified features and to meet the specified operating conditions.

2.02 MATERIALS

A. Materials of construction shall be as follows:

Component	Material
1. Support/influent column	ASTM A283/A53, Painted Steel
2. Steel plate	ASTM A283, Painted Steel
3. Structural steel shapes	ASTM A36, Painted Steel
4. Sludge collection header	ASTM A123, Hot-Dip Galvanized Steel
5. Scum collection box	ASTM A283, Painted Steel

Equipment for Secondary Clarifiers

11190 - 6

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

© 2014 Kennedy/Jenks Consultants

6. Scum skimmer arm
ASTM A283/A36, Painted Steel
7. Squeegees
Neoprene
8. Drive cage
ASTM A36, Painted Steel, ¼ -inch minimum
9. Main spur gear
a. Ductile iron
ASTM A536 100-70-03
b. Forged steel
AISI 4140, 4150 or 4340
10. Worm
Through hardened AISI 41L50, 4140 or 8620 alloy steel
11. Worm gear
ASTM B247, gear bronze alloy casting
12. Pinion
AISI 4140, 4142, 4150 or 4340
13. Main bearing balls
SAE 52100, Rockwell C64
14. Submerged fastening hardware including fastener bolts
ASTM A276, Type 316 Stainless Steel
15. Scum trough
ASTM A276, Type 316 Stainless Steel
16. Scum wiper blades
Neoprene

2.03 EQUIPMENT

A. Influent Structure:

1. The tank influent structure shall consist of a center influent and the influent diffusion well. The influent column shall be a hollow steel cylinder with its base flanged for fixing to the concrete floor of the tank, capable of conveying the mixed liquor flow to the clarifier. The influent will be flanged and stiffened for supporting the sludge collection mechanism, the drive mechanism, and the access bridge beams. Ports shall be provided for discharging the mixed liquor from the influent column into the influent diffusion well. The influent structure shall be designed to provide even distribution of flow into the tank and shall consist of an inner distribution tub and an outer concentric secondary baffle. The distribution tub and the secondary baffle shall be fabricated of minimum ¼-inch-thick steel plate.
2. The distribution tub shall be fitted with openings with adjustable multiple hinged steel diffuser gates. The gates shall be designed to direct the flow to move in the same tangential direction to provide for energy control and flocculation of inflow solids. The gates shall be hinged to the tub with stainless steel piano hinges. Gates pivoted on their vertical centerline shall not be allowed. The adjustable feature shall be accomplished using stainless steel chain connected to the end of the gate and tethered to the distribution tub by a pin on the tub. A neoprene seal shall be provided at the bottom of the tub between the rotating bottom and the stationary center column to prevent the passage of mixed liquor into the secondary clarifier at this location.
3. Equally spaced slots shall be provided in the secondary baffle to allow for scum removal from the annular space between the influent distribution tub and the secondary baffle. Dimensions and numbers shall be as shown on the Contract Drawings.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

11190 - 7

Equipment for Secondary Clarifiers

© 2014 Kennedy/Jenks Consultants

B. Drive Cage:

1. Torque shall be transmitted from the drive unit to the sludge collection arms and scum skimmers by a drive cage. The drive cage shall encompass the center column and shall be fabricated of structural steel shapes of sufficient strength to transmit and/or carry all loads and stresses associated with 200 percent of the continuous operating torque. Drive cages shall be capable of accepting the specified design loads resulting from operation in the clockwise direction. Calculations shall be provided showing the related stresses developed in the drive cage at the continuous operating torque and 200 percent of the continuous operating torque.

C. Sludge Collector Mechanism:

1. The sludge collector shall consist of a rotating fabricated steel center outlet manifold, with a hot-dipped galvanized fabricated steel header located parallel to the tank bottom. The steel header shall be complete with a series of inlet orifices and a fluidizing vane designed to sweep the entire tank bottom clean every revolution. The fluidizing vane shall be attached to the steel header and shall extend to the bottom of the tank. The mechanism shall collect the sludge from the tank bottom and carry it through the header to the outlet manifold and to the opening of the sludge withdrawal conduit. The complete sludge collection mechanism shall be capable of handling the return sludge as specified in this Section.
2. The fabricated steel center outlet manifold shall encompass the center column. The manifold shall be rigidly attached to the drive cage and be provided with seals to prevent passage of liquid between the tank and the outlet manifold. The inside bottom of the manifold shall be open and completely cover the opening into the sludge withdrawal conduit at all times.
3. Sludge collectors shall be designed to operate continuously or intermittently. To provide for uniform sludge drawoff velocities throughout, steel headers, consisting of rectangular shaped tapered tubes, shall vary in size from a maximum near the tank center to a minimum at the outer end. The headers shall be fabricated of minimum 1/4-inch-thick steel plate. Standard or fabricated incremental pipe sizes will not be acceptable for use in the sludge withdrawal header.
4. The collectors shall be supported from the drive cage by steel truss arms to hold the header in alignment in a vertical and horizontal plane. The sludge collector arms shall be designed to withstand 200 percent of the continuous operating torque developed from uniform loads applied to all arms. In addition, each arm shall be designed to withstand a point load applied at its extreme end that produces cutout torque. Uniform loads and the point loading shall be applied separately. Calculations shall be provided showing the related stresses developed in the sludge collection arms under both conditions. Turnbuckles, guy cables and similar arrangements will not be allowed for support of the collector arms. The truss arm shall be of box or triangular truss construction, fabricated from rolled structural steel angles or sections having a minimum thickness of 1/4 inch.
5. To trap the lower sludge layer and minimize agitation, the longitudinal cross-sectional axis of rectangular headers shall be mounted at an angle of 45 degrees with the tank bottom. The leading edge of each rectangular header shall extend forward and down 2 inches at an angle of 45 degrees to provide

an equalizing vane as an integral part of the header and to direct the sludge into the orifice's area of influence. A neoprene squeegee with a steel backing plate shall be attached to the vane. The squeegee shall have slotted holes for 1-inch vertical adjustment. Inlet orifices shall vary in size from a minimum near the tank center to a maximum at the outer end and shall be accurately drilled in each header. A flange shall be provided at the inner end of each header for connecting to the fabricated steel center outlet manifold.

D. Drive Mechanism:

1. General: The drive assembly shall include an electric gear motor, cycloidal speed reducer or worm gear (if used) and worm gear reducer, pinion gear, turntable type main spur gear, drive base, shear pin hub coupling (if used), steel roller drive chain (if used), and torque overload protection system. The spur gear set shall be designed in accordance with AGMA 2001-D. The cycloidal speed reducer or worm gears or shall be designed in accordance with AGMA 6034-B for a service factor of 1.25 applied to the continuous operating torque. The drive mechanism shall be mounted on the influent column with the top of the spur gear housing capable of supporting the total access bridge load by means of equally loaded, removable bridge supports. Drive mechanism components shall be designed for the rated torque as specified. Calculations shall be provided that substantiate the torque rating (including momentary peak torque) of the gear assembly. Numerical values shall be shown for all terms used in the AGMA rating equations.
2. Gear Motor: The drive motor shall be 1,800 rpm conforming to Section 11002. The motor shall be designed for continuous duty Class II applications in accordance with AGMA 6019-E. Motor bearings shall be rated for a minimum L-10 life of 100,000 hours. Power transmission through the use of a direct coupled cycloidal speed reducer which has been keyed to the pinion is the preferred option. Power transmission between the gear motor and a special, single-reduction worm gear reducer through a roller chain and sprocket drive assembly is the second acceptable option. The chain drive shall be enclosed by a removable chain guard, constructed of a minimum 14-gauge hot-dip galvanized steel or molded polyethylene and conform to OSHA requirements.
3. Gear Reducer:
 - a. Cycloidal Speed Reducer (Preferred Option): The cycloidal speed reducer shall consist of a cycloidal speed reducer directly coupled to a motor without the use of chains or v-belts, and shall be keyed to the pinion.
 - b. Worm Gear (Option 2): The special worm assembly shall consist of a hardened and ground alloy steel worm and a ductile iron or centrifugally cast bronze worm gear. The worm gear assembly shall be self-contained and enclosed in a cast iron gear case and provided complete with oil fill, level, and drain fittings and a sight gage. The drain shall be at the lowest point of the oil reservoir and shall be accessible. The worm gear torque capacity shall be determined according to AGMA 6034-B for service factor of 1.25 applied to the continuous operating torque.
4. Pinion Gear: The pinion and pinion shaft which drive the internal spur gear shall be made from heat treated forged alloy steel and designed in accordance with AGMA 6010-E. The pinion shall be rigidly supported by bearings located above and below the pinion gear. Overhung pinions shall not be acceptable.

5. **Spur Gear Assembly:** The spur gear shall be AGMA Quality 5 and shall be designed and rated in accordance with AGMA 2001-D. If the spur gear is of a split gear design, the two halves shall be provided with precision mating surfaces with self-registering and indexed fits. The spur gear housing shall be made of cast iron. A felt or neoprene seal and dust shield shall be included with each spur gear housing in two locations; a lower seal located between the stationary drive base and main gear and an upper seal located between the main gear and stationary drive cover. The spur gear housing shall be designed to allow submergence of the gear face in the oil bath sufficient to provide complete lubrication of the gear assembly. When the main spur gear is manufactured from forged steel, a minimum 75 percent of the gear face shall be submerged in oil. The gear case shall be complete with an oil fill and drain components. Drain piping shall tap the lowest point in the oil reservoir for removal of oil and condensate, shall be valved, and shall be conveniently accessible. An extension operator shall be provided for operation of the drain valve from the walkway level above. A dip stick extending from the walkway level to the bottom of the drain or oil level sight glasses at gear and bearing housings shall be provided to indicate oil level and the presence of condensate. The drive assembly shall be firmly mounted to a cast iron turntable base with a minimum wall thickness of 1/2 inch; ASTM A36 fabricated steel housings are also acceptable. The drive base shall be mounted on the center column and be provided with a positive leveling feature. The drive base shall be suitable for supporting the entire load of the drive mechanism and access bridge. To permit inspection and maintenance of components in the interior of the drive unit housing, each assembly shall have an access opening. The base shall be formed to provide a sump with a valved drain and sight glass not less than 1-5/16 inches deep to allow for the collection and disposal of condensate. The sump shall be designed to trap condensate before it comes in contact with bearing housings.
6. **Main Bearing:** The entire sludge collector mechanism shall be suspended from the turntable which in turn shall be supported on a ball bearing assembly that uses hardened carbon corrected, vacuum degassed alloy steel bearing balls. The bearing balls shall run in an oil bath on replaceable carbon corrected, high carbon steel liners hardened to 38-46 Rockwell C as specified in ASTM E18 and placed in annular raceways in the gear and turntable bases. Precision bearings utilizing a fully contoured raceway hardened to 58-60 Rc will also be acceptable.
7. **Torque Overload Protection:** The drive mechanism for the sludge collector shall be provided with an overload protection device and an overload alarm system. The overload protection device shall be directly actuated from the pinion when a cycloidal reducer is used or be designed to measure thrust of the worm gear shaft when worm gears are used and be provided with an indicator showing the load on the mechanism. The indicator shall be visible from the access bridge, shall read in ft-lbs torque or percent continuous operating torque and shall cover the range of torques specified up to 200 percent of the continuous operating torque. The torque overload protection system shall be fully functional in forward rotation of the mechanism. The overload device shall be enclosed in a watertight cast iron or aluminum housing. The overload devices shall be factory calibrated to activate the alarm switch when the torque load on the mechanism reaches 110 percent of continuous operating torque and

Equipment for Secondary Clarifiers 11190 - 10 McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants

activate the cutoff switch at 120 percent of the continuous operating torque. The switches shall be NEMA 4X with Form-C contacts rated at 10 amps and 250 volts AC. The overload devices shall include two switches. One switch will activate a local and remote alarm at 110 percent torque and the second switch will shut down the unit and provide local and remote alarm at 120 percent torque. A backup shear pin shall be provided in a shear pin hub mounted on the output shaft of the gear motors. The shear pin shall be selected to break when the load on the mechanism achieves 140 percent of the continuous operating torque specified. The shear pin device shall be capable of protecting the collector mechanism regardless of the direction of collector rotation. A NEMA 4X Form-C limit switch shall be provided to activate when shear pin breaks for local and remote alarm. A third switch will also be acceptable in lieu of a shear pin.

E. Scum Removal System:

1. The mechanism shall be provided with components to remove surface scum from both the inner annular space between the influent distribution tub and the secondary baffle and the outer annular space between the secondary baffle and the scum baffle. Scum shall move from the inner annular space to the outer annular space through ports located in the secondary baffle as specified. Refer to the Drawings for the location and details of the opening. All surface scum in the outer annular space shall be moved to an outer scum trough for removal from the secondary clarifier by gravity flow.
2. A skimmer assembly shall be provided for both the inner and the outer annular spaces. The arms shall collect and remove surface scum from the entire surface of both annular spaces. Flexible wipers shall be located at the ends of the skimming arms to assure continuous contact with both sides of the secondary baffle and with the scum baffle adjacent to the inboard effluent weir. The portion of the flexible wiper that contacts the scum beach shall have vertical spring steel stiffeners to assure continuous contact with the scum beach to eliminate backflow of scum down the scum beach.
3. A stationary antirotation arm shall be suspended at the water line in the outer annular space to prevent the surface scum from rotating. The arm shall act in conjunction with the rotating skimmer to "wedge" the surface scum outward toward a port in the secondary baffle and outward the scum trough. The antirotation and skimming arms shall be offset and angled with respect to tank radii as required to optimize the wedging effect. Provisions shall be incorporated into the design of the antirotation and skimming arms to permit adjustment of their position with respect to penetration into the liquid within the tank. Rigid, non-adjustable arms are permitted provided they can effectively remove scum for all water surface elevations. See Drawings for range of water surface elevations.
4. A hinged assembly forming a pocket to trap the scum shall be located at the outer end of the skimming arm in the outer annular space. The assembly shall transport the trapped scum up the scum trough beach, deposit it in the trough, and then be lowered back to the liquid surface by return guides.
5. A scum trough shall be provided as shown for the outer annular space. It shall include a box fabricated from 1/4-inch minimum Type 316 stainless steel plate, a beach, skimmer assembly return guides and a connection for the scum piping specified. The scum beach shall project not less than 6 vertical inches below

McKinleyville Community Services District 11190 - 11 Equipment for Secondary Clarifiers
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants

the minimum water surface elevation and shall project 0.5 vertical inches above the maximum water surface elevation.

6. The scum trough shall be provided with a flush valve that is triggered by the scum skimmer arm after it passes the trough. The flush valve is to open momentarily allowing water into the hopper to flush residual scum into the scum piping.

F. Weirs and Scum Baffles:

1. Effluent weirs shall be 9 inches high and a minimum of ¼-inch-thick fiberglass-reinforced polyester (FRP) as shown on the drawings. The rectangular-notches shall be 1½ inches deep, 1¼ inches wide, and spaced as shown on the Drawings. The weir sections shall be flat to fit the inside of the launder walls. They shall be fastened to the walls with Type 316 stainless steel anchor bolt, nuts and washers, allowing for vertical adjustment. The launder wall shall be coated with mastic to prevent leakage between surfaces.
2. Scum baffles shall be a minimum of ¼-inch-thick painted steel and be 12 inches high. The scum baffle shall be supported from the tank wall by Type 316 stainless steel angle brackets secured with Type 316 stainless steel cinch anchor bolts and hex nuts allowing for vertical and radial adjustments. At the scum box, the baffle shall be 18 inches deep 6 feet out on either side.

- G. Stamford Baffles: Stamford baffles with integral vents shall be provided around the base of the cantilevered launders as shown on the Contract Drawings. Stamford baffles shall be FRP, minimum ¼-inch wall thickness, with a minimum 20 mil thick gel coat on each surface. Stamford baffles shall be Warminster Fiberglass, NEFCO; or equal.

H. Walkway and Operating Platform:

1. Access bridges shall be provided as shown for the sludge collector mechanism and shall consist of painted steel beams and truss sections. All walkway surfaces shall be at the same elevation. The access bridge shall be supported on the main spur gear housing which in turn shall be supported by the center column support structure. Minimum clearance of 24 inches shall be provided around the drive. The bridge shall span from tank wall to the center of the tank, as shown. The bridge shall include a 36-inch-wide aluminum I-bar grating walkway complete with 3/16-inch by 4-inch-high toe plates. Removable sections of grating shall be provided to cover all wells or depressed areas in the walkway and access platform to provide a single plane for all walking surfaces. The operating platform shall include a similarly constructed walkway encircling the exposed portion of the drive unit. Metal access stairs shall be provided as shown. Riser height shall be constant over the full length of stairs and shall be no more than 7 inches. Grating shall be as specified in Section 05500 and on the Drawings.

2. Structural steel beams sections shall be provided to support the scum spray system. The walkway, operating platform, and stairs shall be provided with guardrailling/handrailing conforming to the requirements of Section 05724 and the Drawings.

- I. Anchors: Anchors and anchor design, including seismic requirements, shall be provided per Sections 01190 and 11001.

Equipment for Secondary Clarifiers 11190 - 12 McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants

2.04 FINISHES

- A. All aluminum shall be mill-finished.
- B. Stainless steel components require no coating.
- C. All fabricated steel or ferrous metal shall be fully prepared with shop-applied prime and field-applied final coats in accordance with the requirements of Section 09960.
- D. Sludge collection header shall be hot dip galvanized with exterior surfaces fully prepared and coated with paint system per requirements of Section 09960.

2.05 SPARE PARTS

- A. The following spare parts shall be provided:
 1. One set of all bearings and bearing seal rings for drive unit, except the main turntable bearing.
 2. One set of all gaskets for drive unit.
 3. One set of spur gear seal and replaceable bearing races (if used).
 4. One set of Neoprene seals rings for sludge withdrawal manifold.
 5. One set of shear pins (if used).
 6. One set of any special tools required to assemble, disassemble, or maintain the equipment.

- B. Spare parts shall be tagged and stored in accordance with Section 11001.

2.06 PRODUCT DATA

- A. The following information shall be provided in accordance with Section 01300:
 1. Calculations sizing the orifices and headers for uniform sludge withdrawal and other data as specified.
 2. Calculations sizing and locating the center column mixed liquor inlet ports.
 3. Calculations showing stresses in the drive cage and sludge collection arms as specified.
 4. Shop primer and coating data for all shop-coated components.
 5. Applicable operation and maintenance data.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install equipment in strict conformance with the manufacturer's installation instructions.
- B. Floor Clearance: The mechanism shall be used to screed the finish of the floor of the clarifier to a clearance tolerance of not less than 0.25 inch or more than 0.5 inches between the collector squeegee and the finished floor surface.

McKinleyville Community Services District 11190 - 13 Equipment for Secondary Clarifiers
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants

3.02 FIELD PAINTING

- A. Stainless steel and mill finished aluminum components do not require priming or painting. For all other materials, apply a final color coat in the field in accordance with Section 09960.

3.03 FIELD TESTING AND STARTUP

- A. General: In addition to the installation and acceptance tests specified in other portions of the project manual, the equipment furnished under this section shall be subject to the following field performance tests. All performance tests shall be performed under the onsite supervision of personnel trained by the manufacturer. All equipment and instrumentation necessary to complete the testing procedures outlined below shall be provided by the Contractor. Performance testing shall include operating seals, and torque load testing. Failure to complete the testing program, as outlined in the following paragraphs, shall be sufficient cause for rejection. In addition, a factory representative shall start up the equipment and train plant personnel in operating and maintenance procedures for no less than 8 hours.

B. Operating Tests:

1. Each secondary sedimentation tank shall be filled with potable water to its operating level and the mechanism shall be operated continuously at its maximum speed for a period of no less than 48 hours. At no time during the operating test shall the equipment fail on torque overload or exhibit indications of binding or uneven operation. The Contractor shall record torque values as resisted on the drive mechanism torque indicator and motor amperage (all three phases) at 3-hour intervals.
2. If the mechanism should fail on torque overload or, in the opinion of the Engineer, the mechanism should exhibit indications of binding or improper adjustment; the Contractor shall immediately halt the tests and remedy the problem. After completion of necessary repairs or adjustments, the tests shall be repeated. Failure to successfully complete the test in six attempts shall be considered sufficient cause for rejection.

- C. Sludge Collector Seal Tests: As part of the installed test program, each secondary sedimentation tank sludge collector shall be given a sludge collector seal test. The test shall be performed by establishing and maintaining a differential head of 5 feet between the water surface elevation in the tank and the water surface elevation in the RAS pump inlet piping. The Contractor shall furnish equipment and personnel to monitor the water levels at all times for a period of 24 hours and to measure the volume of water added to the tank to maintain the specified differential head. Leakage through the seal over the 24 hour period shall not exceed 1 percent of the maximum return sludge flow as specified. Should leakage through the seal exceed this rate, the Contractor shall adjust, replace or modify the seal and repeat the test. Failure to successfully complete the test after six successive attempts shall be considered sufficient to require the Contractor to replace the collector mechanism with one which will meet the requirement. The cost of all retest work, including water, shall be borne by the Contractor.

Equipment for Secondary Clarifiers

11190 - 14

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

© 2014 Kennedy/Jenks Consultants

- D. Torque Test: The Contractor shall load test the entire collector mechanism by anchoring collector arms individually. Each arm of the collector mechanism shall be tested individually by using a single attachment point at the end of the arm to achieve a point load condition during the test. In successive tests, the Contractor shall demonstrate the sludge collection mechanism's (including drive unit, cage, gears, and structures) capability to withstand all loads and stresses associated with the cut-out torque. Prior to initiating the test, the Contractor shall furnish the Engineer with sketches and calculations illustrating the test procedure and demonstrating how the specified torque will be applied to satisfy this requirement.

3.04 FIELD SERVICE

- A. The equipment manufacturer shall supply a competent field service engineer to thoroughly check and inspect the equipment after installation, place the equipment in operation, make necessary adjustments, calibrate instruments, and conduct field tests. The services required shall also include on-the-job training of operators including safety procedures, operating instructions, and preventive maintenance procedures. Furnish a minimum of 3 person-days of field services.

END OF SECTION

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00

11190 - 15

Equipment for Secondary Clarifiers

© 2014 Kennedy/Jenks Consultants

SECTION 11201
SLUICE GATES AND SLIDE GATES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Furnish and install complete, tested and operating, the equipment as shown on the Drawings and as specified herein.
- B. Work Included in this Section:
 - 1. Sluice gates with operators.
 - 2. Slide gates with operators.

1.02 SUBMITTALS

- A. The following information shall be submitted in accordance with Section 01300:
 - 1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
 - 2. Where applicable, a copy of the contract document control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the drawing or drawings shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
 - 3. Product data fully describing all items proposed for use to demonstrate that the equipment conforms to the Specifications.
 - 4. Motor data as specified in Section 11002.
 - 5. Certification with related drawings that equipment anchors have been designed per the requirements of Sections 01190 and 11001.

THIS PAGE INTENTIONALLY BLANK

B. Manuals: Furnish manufacturer's installation, lubrication, and maintenance manuals, bulletins, and spare parts lists.

C. Affidavits: Furnish affidavits from the manufacturer stating that the gates and operators have been properly installed and tested and are ready for full time operation.

1.03 QUALITY CONTROL

A. All equipment furnished under this Section shall be of a manufacturer who has been regularly engaged in the design and manufacture of the equipment for at least 5 years. Demonstrate to the satisfaction of the Engineer that the quality is equal to equipment made by those manufacturers specifically named herein.

1.04 SEISMIC CERTIFICATION

A. Seismic anchorage certifications and descriptions are required.

PART 2 - PRODUCTS

2.01 SLUICE GATES, HEAVY DUTY

A. General:

1. Provide sluice gates complete with wall thimbles, operators, stems, guides, and all appurtenances to provide complete and operational sluice gates as shown in the Sluice Gate Schedule and as specified herein.
2. All sluice gates shall be of the same manufacturer. The complete system comprising the wall thimble, gate, stem, stem guides, operator and appurtenances shall be furnished by the gate manufacturer, who shall be responsible for the suitability and compatibility of components, particularly that the operator is adequately sized to move the gate under specified operating conditions and that stem and stem guides are of adequate strength to transmit the required forces.
3. The gates as a whole and all their components shall be suitable for service in raw sewage. The gates shall be designed to operate at all times even after long periods of inactivity.
4. All sluice gates installed in new openings should be bolted to a new cast-in-place thimble or pipe flange as shown or specified.
5. Sluice gates shall conform to AWWA Specification C560 except as modified by the requirements in this Section.

B. Sluice Gate Type: Sluice gates shall be of the full flanged back type, cast iron or stainless steel, as shown in the Sluice Gate Schedule, for bolting to a cast-in-place wall thimble of cast iron or flanged pipe. The gates shall be of the standard or flush bottom type with rising stems. Cast iron gates shall be as manufactured by Hydrogate Corporation "Heavy Duty"; Waterman; or equal. Stainless steel gates shall be as manufactured by Fontaine Ltd; Golden Harvest, Inc.; or equal.

Sluice Gates and Slide Gates

11201 - 2
McKinleyville Community Service District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

C. Cast Iron Sluice Gate Construction:

1. Materials:

Part	Material	ASTM
Slide, Frame, Guides, Thimble, and Yoke	Cast Iron	A-126 Class B
Stem Coupling, Wedges, and Thrust Nut	Silicon Bronze	B584 Alloy C873
Seating Faces and Stem Guide Liners	Naval Bronze	ASTM B21
Seating Faces and Stem Guide Liners	Stainless Steel	A276 Type 304
Anchor Bolts and Fasteners	Stainless Steel	F593/F594 Type 316
Stems	Stainless Steel	A276 Type 316

2. Gate frames and guides: Gate Frames and Guides shall be cast iron, cast in one piece and shall be flanged back type, all with side wedges and with top and bottom wedges required for heads specified in the Sluice Gate Schedule. Frames shall be provided with round or rectangular openings as specified. The back of the frame shall be machined and drilled to attach to the wall thimble or pipe flange with stainless steel bolts. The guides shall be cast integrally with the frame and shall be of sufficient length to support the slide for a minimum of one-half its full height when fully open. The groove to match the tongue of the slide and the mounting pads for side wedges shall be fully machined. Each side wedge block shall be attached with a minimum of two stainless steel assembly bolts. Guides shall be capable of taking the full thrust due to water pressure and pumping action.
3. Gate slides: The slide shall be cast iron, of one piece construction with vertical and horizontal ribs to withstand full pressure without distortion and shall be fitted with fully adjustable wedges matching those of the frame. The sides, bottom, and top of the gate shall have a continuous seat securely fixed in dovetail grooves machined into the face of the slide and into the front face of the frame.
 - a. Guide grooves shall be accurately machined for smooth operation; surface finish shall be 32 micro-inches or better on slide contact surfaces.
 - b. A thrust nut pocket shall be provided above the horizontal centerline of the gate and shall be cast with sufficient reinforcing ribs to withstand the thrust developed during opening and closing of the gate under the operating heads specified. A one-piece cast bronze nut, threaded and pinned to the stem, shall be provided for connecting the lower end of the stem to the gate slide.
4. Wedging devices: All sluice gates shall be provided with bronze adjustable side wedging devices. The wedging surface shall be accurately machined at the correct angle to provide firm wedging action at each wedge location. The mounting face for the wedge attaching screw shall be inclined in the opposite direction of the wedge surface.

11201 - 3
McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

Sluice Gates and Slide Gates

5. Stems: Stem assemblies shall be stainless steel, including threaded and bolted stem splices. Threads shall be left hand for standard valve operation and shall have a smooth finish of 32-micro-inch or better. It shall be the manufacturer's responsibility to determine the appropriate stem diameter and guide spacing for each specific installation, but in no case shall the stem L/R ratio exceed 200. In those locations where the gate stem is located too far from the wall, fabricated Type 304 stainless steel wall brackets with adjustable cast iron guide collars may be used in lieu of cast iron brackets. Wall brackets shall be close-grained cast iron and of ample strength to withstand loads placed on them by the gate operator. Anchor bolts shall be Type 316 stainless steel.
6. Stem guides: Stem guides shall be cast iron with two-piece bronze-bushed collars, cast iron guide brackets, and shall be fully adjustable. Locations shall be per Drawings or manufacturer's recommendations, without causing interference during gate travel.
7. Wall thimbles: Wall thimbles shall be heavy one-piece castings with square, rectangular or round openings as called for in the Sluice Gate Schedule and shall not weigh less than shown on Sluice Gate schedule.
- a. The front flange shall be machine surfaced and have tapped holes for sluice gate attaching studs and metal stamped vertical centerlines with the word "top" for correct alignment. Corrosion-resistant studs and nuts shall be provided for attaching the gate. Wall thimbles shall be set integrally into adjacent concrete walls. The sealant between the wall thimble face and the gate back shall be mastic provided by the gate manufacturer.
- b. Temporary bracing to prevent distortion of the wall thimble during transportation and concrete placement shall be provided.
- c. The length of each thimble shall be as recommended by the gate manufacturer or as shown on the Drawings, whichever is longer.
- d. The required number of studs, bolts, and nuts shall be provided with each wall thimble.
8. Self-contained sluice gates:
- a. Those gates so indicated in the Sluice Gate Schedule shall be the self-contained type. Self-contained gates shall be provided with a cast iron (or carbon steel, per ASTM A36) yoke, extended guide bars and lift mounted on the yoke. The cast iron yoke shall be of sufficient section to withstand the maximum thrust developed during opening and closing of the gate under an unbalanced head of 25 feet. It shall be machined on the top face to receive the proper operator. Pads on the bottom of the yoke shall be machined where they make contact with the extended guide bars.
- b. The guide bars shall be as specified above, except they shall be extended to allow for full gate opening. They shall be of sufficient section to withstand the full thrust developed during opening and closing of the gate under the maximum unbalanced head. They shall have pads at the top. The pads shall be machined to match the pads on the yoke. Both the pads on the yoke and on the guide bar extensions shall be drilled and bolted to take the thrust specified above.

- D. Stainless Steel Sluice Gate Construction:
1. Materials:

Part	Material	ASTM
Frame, Yoke, Stem Guides, Slide, Stem Extension, Rails, and Thimble	Type 316L Stainless Steel	A-240
Guide Bar	Ultra High Molecular Weight Polyethylene (UHMWPE)	D-4020
Top and Side Seals	EPDM or UHMWPE	D-2000
Bottom Seal	Neoprene or EPDM	D-2000
Threaded Stem	Type 316 Stainless Steel	A-276
Anchor Bolts and Fasteners	Type 316 Stainless Steel	F-593/F-594
Gasket Between Frame and Wall	EPDM	D-2000
Stem Cover	Polycarbonate	D-3935
Lift Nut, Couplings	Manganese Bronze	B-584

2. Gate Frame: The gate frame shall be made of structural members or formed plate welded to form a rigid one-piece frame. The frame shall be of the flange back design and allow mounting directly on a concrete wall or a wall thimble. The seating face of the frame shall be at an angle to the plane of the mounting flange. The frame shall support at least two-thirds of the vertical height of the slide in the fully open position.
3. Gate Slide: The slide shall consist of a flat plate reinforced with formed plates or structural members to limit its deflection to 1/720 of the span of the gate under the design head.
4. Guides and Seals: The guide bar shall be attached to the slide or frame by means of bolts. The guide bar shall be adjustable to change compression of the seals on seating surfaces or with the self-adjusting compression cord.
5. Stems and Couplings: The operating stem shall be of stainless steel designed to transmit in compression at least ten times the rated output of the operating manual mechanism with a 40 pound effort on the crank or handwheel.
- a. The stem shall have a slenderness ratio (L/r) less than 200. The threaded portion of the stem shall have machine cut threads of the Acme type.
- b. Where electric operator is specified, the stem design force shall be not less than 1.25 times the output thrust of the electric motor in the stalled condition.
- c. For stems in more than one piece and with a diameter of 1.75 inches and larger, the different sections shall be joined together by solid bronze couplings. Stems with a diameter smaller than 1.75 inches shall be pinned to an extension tube.
- d. The couplings shall be grooved and keyed and shall be of greater strength than the stem.
- e. Gates having a width equal to or greater than two times their height shall be provided with two lifting mechanisms connected by a tandem shaft.

6. Stem guides: Stem guides shall be fabricated from stainless steel. The guides shall be equipped with ultra-high molecular weight polyethylene bushings. Guides shall be adjustable and spaced in accordance with the manufacturer's recommendations to limit the L/r ratio to less than 200.
7. Wall thimbles: Wall thimbles shall have square, rectangular, or round openings as called for in the Sluice Gate Schedule.
 - a. The front flange shall be machine surfaced and have tapped holes for sluice gate attaching studs and metal stamped vertical centerlines with the word "top" for correct alignment. Corrosion-resistant (Type 316 stainless steel) studs and nuts shall be provided for attaching the gate. Wall thimbles shall be set integrally into adjacent concrete walls. The sealant between the wall thimble face and the gate back shall be mastic or EPDM provided by the gate manufacturer.
 - b. Temporary bracing to prevent distortion of the wall thimble during transportation and concrete placement shall be provided.
 - c. The length of each thimble shall be as recommended by the gate manufacturer or as shown on the Drawings, whichever is longer.
 - d. The required number of studs, bolts, and nuts shall be provided with each wall thimble.
8. Self-contained sluice gates:
 - a. Those gates so indicated in the Sluice Gate Schedule shall be the self-contained type. Self-contained gates shall be provided with a yoke made of structural members or formed plates. The maximum deflection of the yoke shall be 1/360 of the gate's span.

2.02 SLIDE GATES

- A. General: Provide fabricated stainless steel or aluminum slide gates complete with slide guides, seals, stems, operators and all appurtenances to provide complete operational slide gate as shown in the Slide Gate Schedule and as specified herein.
 1. The complete system comprising the gate, slide, guides and appurtenances shall be furnished by the gate manufacturer, who shall be responsible for the compatibility of components and functional integrity. The size of each slide gate shall be suitable for the clear opening shown on the Drawings.
 2. The slide gate as a whole and all their components shall be suitable for service in raw sewage. The gate shall be designed for manual operation with heads as shown on the Slide Gate Schedule.
 3. Slide gates shall conform to AWWA C513 and C561 except as modified herein.
- B. Slide Gate Type: Slide gates shall be self-contained type and mounted as shown on the Drawings and Slide Gate Schedule. Gates shall be by Fontaine Ltd; Golden Harvest; Hydrogate Corporation; Waterman; or equal.
- C. Slide Gate Construction:
 1. Frame and guides: The gate frame shall be a rigid unit made of plates and structural shapes. The yoke supporting the operator shall not deflect more than 1/360th of the yoke span under the design thrust. The frame shall be constructed of aluminum (ASTM B221 6061-T6) for aluminum gates and Type 316 stainless steel (ASTM A276) for stainless steel gates.

Sluice Gates and Slide Gates 11201 - 6 McKinleyville Community Service District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

2. Slide (Disk): The slide shall be plate reinforced with structural shapes welded to the plate. The slide shall not deflect more than 1/360th of the maximum dimension of the gate under the heads indicated in the Slide Gate Schedule. The slide shall be constructed of aluminum (ASTM B209 6061-T6) for aluminum gates and Type 316 stainless steel (ASTM A276) for stainless steel gates.
3. Fasteners and anchor bolts: ASTM F593/594, Type 316 stainless steel.
4. Stem: The stem shall be ASTM A276, Type 316 stainless steel with a diameter capable of withstanding in compression twice the rated output of the operator at 40-pound pull. The stem shall be supported so that the unsupported L/R ratio does not exceed 200.
5. Seals: Provide UHMW and neoprene seating faces and seals along the invert and sides of the gate. Mount side seals to the frame guides. Bottom seal may be mounted on the slide or the frame.
6. Slide gates shall be unpainted.
7. Leakage: Leakage shall be less than 0.1 gpm/ft of seating perimeter under design seating and unseating heads.

2.03 MANUAL OPERATORS

- A. Manually operated lifts shall be of the handwheel pedestal type or single speed, removable crank type as shown in the gate schedules included in this Section, conforming to applicable provisions of AWWA Standard C560 or C561 as amended herein. After the gate has been "cracked" from its wedging devices, a maximum hand pull of 40 pounds shall be required to open the gate under the specified operating heads.
- B. Provide handwheel lift units with cast iron cap, handwheel and pedestal and a cast bronze lift nut. The lift nut shall be flanged and shall have ball thrust bearings above and below it to take the thrust developed during opening and closing of the gate. Adequate grease fittings shall be provided to lubricate the bearings and other moving parts. The rim of the handwheel shall be cast smooth and be free of sharp edges. An arrow shall be cast in the rim of the handwheel with the word "open" to indicate direction of rotation to open the gate.
- C. Hand cranks shall have a maximum 15-inch operating radius and shall be provided with a revolving sleeve. All gears, sprockets and pinions shall be of steel and have cut teeth. Sufficient grease fittings shall be provided to allow lubrication of all moving parts, such as bearings, gears, etc. Ball thrust or roller bearings shall be provided above and below the flange on the lift nut to take the normal thrust developed during opening and closing of the gate under the maximum specified operating heads. All other bearings shall be provided with bronze sleeves. An arrow shall be cast in the lift housing to indicate the direction of opening. It shall be readily visible to the operator. Lift nuts shall be of cast bronze.
- D. All lifts shall be equipped with a transparent rigid butyrate stem cover with permanent marking to indicate full open, full closed, and gate level in 1-inch graduations. Lift nut shall be threaded with left hand threads for standardized valve operation.

McKinleyville Community Services District 11201 - 7 Sluice Gates and Slide Gates
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

2.04 MOTORIZED GATE OPERATORS

- A. Motorized gate operators where called for in the gate schedules shall be electric motor driven.
1. All gearing shall be enclosed. Operator shall be equipped with auxiliary hand operator (side handwheel), stem cover, and shall be installed on a floor mounted operating pedestal. Each operator shall be designed with ample strength and power to operate the sluice gate under maximum heads as shown in the gate schedule, at a minimum speed of 1 foot per minute, without overloading the motor, and shall be for indoor service.
 2. Provide integral electric controls for open-close service including reversing starter, limit switches, torque switch, indicating lights and local-off-remote switch. Comply with AWWA C540. The motor shall be reversible, squirrel cage induction rated for 460 volts, 3 phase, 60 Hz with Class "F" insulating system. The motor shall be totally enclosed and nonventilated with all leads terminating within the limit switch compartment. The motor shall be of sufficient size to open or close the valve at 200 percent of maximum required breakaway torque. The motor shall operate at ± 10 percent of rated voltage and shall be sufficient for one complete cycle without exceeding its temperature rating.
 3. Units shall be equipped with hammer blow device to assist in opening the gate and permit motor to reach full speed before delivering torque.
 4. Provide auxiliary contacts for remote monitoring of position and "ready" indication. Ready indication shall be indicated when the valve selector is in the "remote" position. At a minimum, contacts shall be provided for remote confirmation of the fully open and fully closed positions.
 5. Manufacturer: Auma; Limitorque; Rotork; EIM; or equal.

2.05 ANCHORS

- A. Provide all needed anchors and anchor design per requirements of Sections 01190 and 11001.

2.06 SHOP PAINTING

- A. Shop painting: All machined or bearing surfaces, including drilled and tapped holes, shall be coated with water-resistant protective grease and shall not be painted. All submerged ferrous metals shall be shop painted in accordance with System 3 of Section 09960. All unsubmerged ferrous metal shall be painted in the field, as set forth in Section 09960.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Equipment shall be installed in strict conformance with the manufacturer's installation instructions. Installation of sluice gates and operators, and slide gates shall be in accordance with the requirements of AWWA C560 and C561 and as amended herein. The manufacturer of the sluice gates shall furnish all gates, suitably designed, so that anchorage to thimble can be performed at the designed locations.

Sluice Gates and Slide Gates

11201 - 8
McKinleyville Community Service District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

- B. Channel embedded slide gate frames shall be embedded in the cast-in-place concrete structure and shall not require block-outs.

3.02 FIELD SERVICE

- A. The manufacturer of the gates shall supply a competent field service engineer to thoroughly check and inspect the slide, sluice, and flap gates after installation, place the gates in operation and make necessary adjustments, and instruct plant personnel in proper operating and maintenance procedures.

3.03 FIELD PAINTING

- A. Non-submerged ferrous metal shall be painted in accordance with Section 09960. Submerged surfaces need not be field painted but shall be touched up if required.

3.04 FIELD LEAKAGE TESTS

- A. All gates shall be given a field leakage test under the head conditions listed in the gate schedules on the Drawings or in these specifications. A qualified representative of the manufacturer shall be present to direct any adjustments required to reduce leakage to the specified amounts.

- B. Allowable Leakage:

1. The permitted leakage for sluice gates shall not exceed 0.1 gpm per foot of seating perimeter at the specified design seating head called for in the Schedule. The leakage shall not exceed 0.2 gpm per foot of seating perimeter at the specified design unseating head called for in the Schedule for heads of 20 feet or less.
2. The leakage for slide gates shall not exceed 0.1 and 0.2 gpm per foot of seating or unseating perimeter, respectively, at the design heads shown in the Schedule.

- C. For individual gates, the absence of a leakage test requirement for either seating or unseating head in the Schedule or the fact that the test heads are lower than the expected operating heads shall not relieve the requirement for satisfactory functioning at operating conditions. The tests and test levels are limited by expected limitations on water levels that will be available at the time the tests must be performed.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

11201 - 9

Sluice Gates and Slide Gates

Sluice Gates and Slide Gates

END OF SECTION
11201 - 11

Legend:
Gate mounting:
C - Channel
W - Wall
E - Embedded
S - Surface mounted
M - Electrical motor
HC - Hand crank
HW - Handwheel
Type of operator:
BS - Bench stand
OP - Offset pedestal
P - Pedestal
S - Slab or deck
WB - Wall bracket
SC - Self contained
Type of operator mounting:
C - Channel
W - Wall
E - Embedded
S - Surface mounted
M - Electrical motor
HC - Hand crank
HW - Handwheel

*GT-2710 is a downward opening weir type gate.

Gate Number	Width (inches)	Height (inches)	Closed (feet)	Open (feet)	TOW Elevation (feet)	Gate Mounting	Type	Operator Mounting	Seating (feet)	Unseating (feet)
GT-2211	18	36	65.75	68.75	70.25	C/E	HC	SC	3	3
GT-2212	18	36	65.75	68.75	70.25	C/E	HC	SC	3	3
GT-2221	24	22	66.90	68.73	70.25	C/E	HC	SC	1.5	1.5
GT-2710	12	24	66.08	64.08	71.83	S	HC	BS	1.5	1.5
GT-4411	18	18	61.15	63.15	67.75	W/S	HC	P/WB	2	2
GT-4421	18	18	61.15	63.15	67.75	W/S	HC	P/WB	2	2

SLIDE GATE SCHEDULE

SLUICE GATE SCHEDULE

Gate Number	Size			Gate Material	Frame Mounting	Head		Operator			Thimble Type	Bottom Type
	Diameter (inches)	Width (inches)	Height (inches)			Seating (feet)	Unseating (feet)	Type	Mounting	Rising Stem		
GT-2231		18	18	CI or SS	WM	15	15	HC	P/WB	Yes	n/a	FSB
GT-2232		18	18	CI or SS	WM	15	15	HC	P/WB	Yes	n/a	FSB
GT-4251		20	20	CI or SS	WM	15	15	HC	P/WB	Yes	n/a	FSB
GT-4252		20	20	CI or SS	WM	15	15	HC	P/WB	Yes	n/a	FSB
GT-4412		6	6	CI or SS	WM	20	20	HW	P/WB	Yes	n/a	FSB
GT-4422		6	6	CI or SS	WM	20	20	HW	P/WB	Yes	n/a	FSB
GT-4450		18	18	CI or SS	WM	20	20	M	P/WB	Yes	n/a	STD
GT-6041		18	18	CI or SS	WM	15	15	HC	P/WB	Yes	n/a	STD
GT-6042		18	18	CI or SS	WM	15	15	HC	P/WB	Yes	n/a	STD
GT-8302	6			CI or SS	FP	20	20	TW	S	Yes	n/a	STD
GT-8303	6			CI or SS	FP	20	20	TW	S	Yes	n/a	STD

Legend:

Gate material:
CI - Cast Iron
SS - Stainless steel
Frame mounting:
FP - Flanged pipe
WM - Wall Mount
WT - Wall thimble
Type of operator:
HC - Hand crank
HW - Handwheel
M - Electrical motor
TW - T-wrench

Type of operator mounting:

BS - Bench stand
OP - Offset pedestal
P - Pedestal
S - Slab or deck
SC - Self contained
WB - Wall bracket

Type of thimble:

B - Bell thimble
E-shaped thimble
F-shaped thimble
MJ - Mechanical joint thimble
PF - Pipe flange

Bottom type:

FSB - Flush bottom
STD - Standard

Sluice Gates and Slide Gates

11201 - 10

McKinleyville Community Service District
Wastewater Management Facility Improvements
Bid Set
1368004*00

SECTION 11215
VERTICAL TURBINE PUMPS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Provide complete, tested and operating vertical turbine pumps as shown on the Drawings and as specified herein.

1.02 REFERENCES

THIS PAGE INTENTIONALLY BLANK

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

- A. ASTM International (ASTM):
1. ASTM A743 Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
 2. ASTM A108 Specification for Steel Bars, Carbon, Cold Finished, Standard Quality
- B. Hydraulic Institute
- C. American Water Works Association (AWWA):
1. AWWA E101 Vertical Turbine Pumps - Line Shaft and Submersible Types

1.03 SUBMITTALS

- A. The following information shall be submitted in accordance with Section 01300:
1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole.

McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set
1368004*00
© 2014 Kennedy/Jenks Consultants

11215- 1 Vertical Turbine Pumps

- If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
2. Where applicable, a copy of the contract document control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the drawing or drawings shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
 3. Product data fully describing all items proposed for use to demonstrate that the equipment conforms to the Specifications.
 4. Motor data as specified in Section 11002.
 5. Pump layouts and dimensions.
 6. Pump performance curves.
 7. Materials of construction.
 8. Certification with related drawings that equipment anchors are designed per requirements of Sections 01190 and 11001.
 9. Provide Pump Performance Curve with the system operating points plotted. For variable speed pumps, show the family of curves for every 10 Hz interval with system operating points plotted.
 10. Where required, submit certification that pumps and motors are suitable for adjustable speed service.
 11. Shaft deflection calculations showing that the equipment meets the requirements of this Section and bearing life calculations.
 12. Critical speed calculations for bowl shaft and line shafts.
- B. Performance Testing: Submit certified non-witnessed factory performance tests in accordance with Hydraulics Institute Standards. Obtain favorable review from the Engineer prior to shipment of the pumps.
 - C. Manuals: The Contractor shall furnish a hardcopy and electronic version of the manufacturer's installation, lubrication, operation and maintenance manuals, bulletins, and spare parts lists. See Section 01730 for additional requirements.
 - D. Affidavits: The Contractor shall furnish affidavits from the manufacturer stating that the pumps have been properly installed and tested, and each is ready for full time operation.

Vertical Turbine Pumps 11215 - 2 McKinleyville Community Services District
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants

1.04 QUALITY CONTROL

- A. Equipment furnished under this Section shall be supplied by manufacturers who have been regularly engaged in the design and manufacture of the equipment for at least 5 years. Demonstrate to the satisfaction of the Engineer that the quality is equal to equipment made by those manufacturers named herein.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Pumps: Fairbanks-Morse; Peerless; Goulds; or equal.

2.02 PERFORMANCE AND DESIGN REQUIREMENTS

- A. Pump Schedule:

Pump Title	Secondary Effluent Pumps 1 and 2
Tag Number	P-4451 and P-4452
Pump Type	Open Line Shaft
Rated Condition A @ Maximum Speed	1,080 gpm @ 32.5 feet TDH
Condition B @ Maximum Speed	1,520 gpm @ 21.5 feet TDH
Condition C @ Reduced Speed	540 gpm @ 19.5 feet TDH
Condition D @ Reduced Speed	800 gpm @ 4.5 feet TDH
Maximum NPSH Required @ Maximum Capacity	11 feet
Maximum Speed	1200 RPM
Adjustable Speed Range	30 to 60 Hz
Maximum Motor Horsepower	15
Minimum Guaranteed Efficiency @ Rated Condition	74 Percent
Minimum Column Diameter	10 inch
Minimum Discharge Size	6 inch

Pump TDH shall be measured between wet well level and discharge head outlet. Efficiencies listed are for complete pumps not including motors.

- B. Pumps shall operate without excessive noise or vibration over the full operating range indicated in the Pump Schedule. Vibration shall meet Hydraulic Institute standards.
- C. Bowl shaft and lineshaft shall have their first critical shaft speeds at least 125 percent of full operating speed.

McKinleyville Community Services District 11215- 3 Vertical Turbine Pumps
Wastewater Management Facility Improvements
Bid Set 1368004*00
© 2014 Kennedy/Jenks Consultants