CARSON CITY PUBLIC WORKS

CARSON CITY, NEVADA

ADDENDUM NO. 1

TO

ADVERTISED BID NO. 1011-157
PUBLIC WORKS PROJECT NO. 5.0609

WASTEWATER RECLAMATION PLANT
NORTH LIFT PUMP STATION IMPROVEMENTS

The following are changes and/or clarifications to the specification, contract documents and drawings for the above-referenced project. The contents of this Addendum may affect pricing in the proposal; therefore, notification of receipt of all Addenda must appear in the space provided in the Bid Proposal on page BP-2.

CARSON CITY PUBLIC WORKS
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TO
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PUBLIC WORKS PROJECT NO. 5.0609
NOVEMBER 22, 2010

ATTACHMENT C Technical Specifications (VOLUME 1 OF 2):

1. SECTION 01140 (PAGES C-15 through C-21) :

Revise Part 3.03 as follows:

B. Proposed North Lift Pump Station Modifications (Milestone 1) Sequence:

25. ~~Install 18" RW from existing 18" FM to 24"x18"x24" Wye. Install 24" RW from Wye to 5th Street influent structure and remove portions of existing 18" as needed. Install 24" cap on end of Wye facing north Lift Pump Station.~~ ***Remove portions of existing 18" RW as needed and install new 18" RW and 24" RW as indicated on the Drawings and based on whether or not Bid Alternate 'A' is included with the Work.***

34. Bid Alternate 'B' - Install ***new*** manhole over existing 8" RW ***and provide protective coating per Section 09960***. Install ***new*** 8" RW from manhole to 5th Street Influent Structure and remove portions of existing 8" RW as needed.

2. SECTION 07722 (PAGES C-325 through C-326)

Revise Part 2.01 as follows:

A. Manufacturers: One of the following or equal:

1. The Bilco Company ~~Model JD-3~~, New Haven, CT.

2. Babcock-Davis Associates ~~equivalent model~~, Arlington, MA.

~~E. Curbs: Minimum 12-inches high, minimum 14-gauge galvanized steel, covering one inch thick rigid glass fiber insulation on inside only, with integral metal cap flashing, minimum 3-1/2 inch flange with holes for fasteners, and welded, weathertight corners.~~

3. SECTION 11332 (PAGES C-363 through C-374)

Reissue SECTION 11332 in its entirety. Reissued SECTION 11332 attached.

4. SECTION 11395 PACKAGED ODOR SCRUBBER SYSTEM (PAGES C-375 through C-386):

Revise Part 1.01 as follows:

B. Related Sections:

~~6. Section 13410 – Basic Measurement and Control Instrumentation Materials and Methods.~~

~~7. Section 13411 – Process Control Strategies.~~

~~8~~***6***. Section 15050 - Basic Mechanical Methods and Materials.

7. Section 15052 - Basic Piping Materials and Methods

~~9~~***8***. Section 15958 - Mechanical Equipment Testing.

9. Section 16050 - Basic Electrical Materials and Methods

10. Section 16222 – Motors

11. Section 17050 - Process Control and Instrumentation Systems General

12. Section 17100 - Control Strategies

13. Section 17101 - Specific Control Strategies

~~11~~***14***. Section 17710 - Control Systems - Panels, Enclosures, and Panel Components.

Revise Part 1.06 as follows:

B. General Design Criteria:

PARAMETER	**VALUE**
Operating Temperature, deg Fahrenheit	0 to 150
Air Flow Rate, cfm	~~500~~ ***300***
Internal Positive Pressure, in. WC	~~10~~ ***15***
Average H_2S inlet concentration, ppm	50
Peak H_2S inlet concentration, ppm	100

C. Foul air Fan Design Criteria:

PARAMETER	**VALUE**
Tag Number	01-OS-203
~~Minimum~~ ***Design*** Air Flow Rate, cfm	300
~~Maximum Air Flow Rate, cfm~~	~~500~~
Total Losses to Fan Inlet, in WC	***1.0***
~~Minimum~~ ***Design*** Operating Pressure, in WC	10
Maximum Speed, rpm	3,600
Inlet Diameter, inches	12

F. Piping and Ducting:

4. Duct and fittings shall be Schedule 10S stainless steel~~, Type 304~~ ***as scheduled in Section 15052***.

Revise Part 1.07 as follows:

A. The odor scrubber system shall be furnished with a ~~2-speed~~ ***constant speed*** fan and appropriate controls to enable the system to operate at ~~either of~~ the following ~~2~~ ~~performance~~ conditions.

~~1. Performance Condition 1 with the Fan on Low Speed:~~

~~Foul air flow, cfm~~	~~300~~
~~Average H_2S inlet concentration, ppm~~	~~50~~
~~Peak H_2S inlet concentration, ppm~~	~~100~~
~~Outlet H_2S concentration, ppm~~	~~< 0.1~~

2. ~~Performance Condition 2, the~~ Rated Design Condition~~, with the Fan on High Speed~~:

Foul air flow, cfm	~~500~~ ***300***
Average H_2S inlet concentration, ppm	~~6~~ ***50***
Peak H_2S inlet concentration, ppm	~~12~~ ***100***
Outlet H_2S concentration, ppm	< 0.1

Revise 2.04 as follows:

F. Provide a ~~2-speed~~ ***constant speed*** motor with dual motor windings. The manufacturer shall determine the motor horsepower to match the specified conditions.

5. SECTION 15052 BASIC PIPING MATERIALS AND METHODS (PAGES C-409 through C-418):

Revise 3.07, PIPING SCHEDULE as follows:

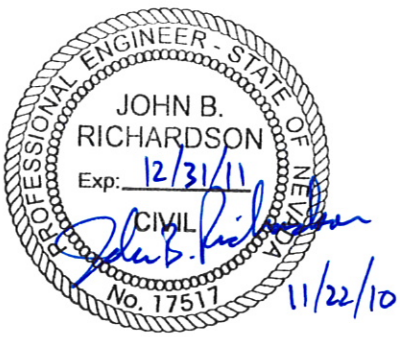
Identifier For All Piping	Diameter (Inches)	Material	Thickness or Schedule	Test Pressure (psig)	Test Method	Joints	Lining	Protective Coating	Remarks
Drain (D)									
Underground	All	DIP	Cl 51	20 ft	GR	MJ C-150	Per Section 15251	Per Section 15251	***WT;*** Encase in concrete under slabs.
~~Under Slab~~	~~All~~	~~Acid Resist. CISP~~	~~Standard~~	~~20 ft~~	~~GR~~	~~Bell & Spigot~~	~~BL~~	~~–~~	~~Encase in concrete under structures.~~

Identifier For All Piping	Diameter (Inches)	Material	Thickness or Schedule	Test Pressure (psig)	Test Method	Joints	Lining	Protective Coating	Remarks
Raw Water (RW)									
Underground (gravity)	36" and ~~over~~ ***under***	PVC	DR 35	20	LH	RPO	--	--	WT
Sanitary Sewer (SS)									
Exposed	All	DIP	Cl 53	20 ft	GR	Flg	Per Section 15251	Per Section 15251	--
Underground	All	~~Acid Resist. Cl~~SP***DIP***	~~Standard per ASTM A74~~ ***Cl 51***	25 ft	GR	~~No Hub~~ ***MJ C-150***	Per Section 15251	Per Section 15251	WT; Encase in concrete under slabs.

Addendum No. 1 pages AD1-1 through AD1-5, and all attachments, shall become part of CONTRACT and all provisions of CONTRACT shall apply thereto.

The time provided for completion of CONTRACT is not changed.

Bidders shall acknowledge receipt of all Addenda in the space provided in the Bid Proposal on page BP-2.



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ATTACHMENTS TO

CARSON CITY PUBLIC WORKS

CARSON CITY, NEVADA

ADDENDUM NO. 1

TO

ADVERTISED BID NO. 1011-157
PUBLIC WORKS PROJECT NO. 5.0609

WASTEWATER RECLAMATION PLANT
NORTH LIFT PUMP STATION IMPROVEMENTS

List of Attachments

Reissued Specifications (VOLUME 1 OF 2)

11332	MECHANICAL SCREEN AND WASHER COMPACTOR SYSTEM

Revised Drawings (VOLUME 2 OF 2)

C-3	REVISION TO DRAWING C-3.
C-5	REVISION TO SECTION B/C-5.
C-6	REVISION TO DRAWING C-6.
C-10	REVISION TO SECTION B/C-10.
C-11	REVISION TO SECTION B/C-11.

SECTION 11332

MECHANICAL SCREEN AND WASHER COMPACTOR SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. The CONTRACTOR shall provide a complete and functional mechanical screen with integral washer screw compactor system for capturing, washing and compacting screenings from raw wastewater at the North Lift Pump Station. The equipment and accessories shall be enclosed to contain odors and suitable for outdoor, cold weather conditions.

B. Equipment shall consist of one (1) enclosed link driven, front-cleaning mechanical screen, one (1) enclosed shafted washer screw compactor with inlet hopper.

C. The CONTRACTOR shall provide the mechanical screen and the washer compactor equipment, which shall be manufactured by one manufacturer.

D. The CONTRACTOR shall be responsible to coordinate installation with the manufacturer and for compliance with all OSHA, local, state, and federal codes and regulations. Compliance includes components suitable for Class 1 Division 1 service per NFPA 820.

1.02 REFERENCES

A. National Electric Manufacturers Association (NEMA): MG1.

B. National Electric Code (NEC).

C. National Fire Protection Association (NFPA) 820.

D. American Institute of Steel Construction (AISC).

E. American Society of Mechanical Engineers (ASME).

F. American National Standard Institute (ANSI).

G. American Society of Testing Materials (ASTM).

H. American Welding Society (AWS).

I. Conveyor Equipment Manufacturer’s Association (CEMA).

J. International Building Code (IBC) 2006 with Northern Nevada Amendments.

1.03 WARRANTY

A. The CONTRACTOR shall provide a manufacturer’s warranty for the mechanical screen and washer compactor as follows:

1. Warranty period against defects shall be not less than 5 years from the date of final acceptance by the ENGINEER.
2. Warranty period shall not be less than 5 years from the date of final acceptance by ENGINEER for all rotating parts, which includes but is not limited to:
    a. Bearings
    b. Gearmotor
    c. Drive head
    d. Link or chain system
    e. Castings, pins and retaining rings.

B. The warranty shall include parts, field service, travel expenses for any repairs or maintenance within the warranty period at no cost to the OWNER or ENGINEER.

1.04 QUALITY ASSURANCE

A. Qualifications:
1. Qualified suppliers shall have a minimum of 5 years experience. The CONTRACTOR shall provide a list of locations, contact names, contact telephone numbers and dates of installations for verification by the ENGINEER or OWNER.

1.05 SUBMITTALS

A. Submit product data and shop drawings, operation and maintenance manuals, and test reports as specified in Section 01330, and as detailed herein.

B. Product Data and Shop Drawings:
1. Shop drawings shall consist of a cover sheet indicating the drawing number and specification page and number to which referenced, intended use and data summary, outline drawings, cut-away drawings, parts lists, material specification lists, and all information required to substantiate that the proposed equipment meets the specifications. Shop drawings submittals will not be considered complete if cut-away or assembly drawings with part and material specification lists are not included.
2. The manufacturer of the equipment specified herein shall provide an installation list of completed and operating wastewater installations of not less than five (5) separate installations. Each installation shall employ a mechanical screen with integral washer compactor units of similar size and type in the United States.
3. General arrangement drawings showing the complete assembly, part number, and material list.
4. Calculations: Detailed calculations and design data to verify conformance with the Drawings and Specifications, which includes seismic design.
    a. Structural calculations and details signed and sealed by a Professional Engineer licensed in the state of Nevada.
    b. Mechanical calculations and details signed and sealed by a Professional Engineer licensed in the state of Nevada.
5. Detailed Drawings:
    a. Mechanical Screen with dimensions, enclosures, supports, proposed materials type and thicknesses, and welding details.

b. Washer compactor with dimensions, enclosures, supports, proposed materials type and thicknesses, and welding details.
c. Certified motor data sheets.
d. Gear reducers.
e. Shop primer and coating data, where applicable.
f. Control system data, schematics, and wiring diagrams.
g. Spare parts lists with current list prices.
h. Operator training course outlines.
i. Manufacturer's installation and reference list as indicated.

C. Manufacturer's Installation Instructions including anchor bolt layouts and details, support details, and other drawings required for proper installation.

D. Reference List: Include the following information at a minimum:
1. Name and location of installation
2. Name and telephone number of the person in direct responsible charge of the equipment.
3. Month and year the equipment was placed in operation.
4. Size of equipment.
5. Number of units installed.
6. Service.

E. Operation and Maintenance Manuals:
1. Operation and maintenance manual submittals shall be complete in one comprehensive submittal. Individual submittals for components of the system will not be accepted for review.
2. Submit operation and maintenance manuals in accordance with Section 01782. Start-up of the system will not be permitted until O&M manuals have been submitted and approved by the ENGINEER. The submittal shall include the following:
a. Operation and maintenance instruction bulletins for each equipment item.
b. Complete parts list.
c. Schematic, physical wiring diagrams, and any as-built field modifications.

F. Certificates: Manufacturer's certification that the equipment was installed in accordance with the manufacturer's instructions, inspected by the manufacturer, serviced with the proper lubricants, and equipped with applicable safety equipment and controls as required in Section 01756.

G. Technician's Qualifications Resume: Submit resume of technician to perform Manufacturers Field Service.

1.06 SYSTEM DESCRIPTION

A. The mechanical screen shall be specifically designed to capture and remove debris from raw wastewater by means of a rotating link and scraper system, which retains and lifts material against vertical bars. The rotating link and scraper system shall operate continuously without an operator and conform with the following:
1. The links shall be direct-driven, connected to the drivehead. The mechanical screen shall be equipped with a head sprocket with no sprocket, bearings or drive components submerged.
2. The link system shall bend in one direction, which allow it to function as a lower sprocket and frame.

3. The link system shall have the ability to flex around objects such as rocks, wood debris, to avoid shutting down the unit.
4. The dead plate shall span the entire width of the screen and transition from bar screen to discharge point.

B. The rotating links and scraper system shall transport the screenings vertically to be discharged into an inlet hopper associated with the washer compactor. The screenings shall be washed vigorously within the washer compactor with plant utility water to liquefy and remove organic matter from the screenings. The screenings shall then be compacted through the screw compactor and conveyance tube to produce a compacted screenings product that is discharged from the end of the conveyance tube.

C. The CONTRACTOR shall provide liquid level sensors and other instrumentation required for system operation as indicated on the P&IDs and as specified in Division 17.

1.07 ENVIRONMENTAL CONDITIONS

A. Site Operating Conditions:
1. Installation in a wastewater plant serving residential, commercial, and industrial waste.
2. Raw wastewater will be composed of fecal matter, rocks, rags, sand/grit, stringy material, hair, bits of plastic and paper, and grease from screened sewage and may contain minor concentrations of industrial solvents and petroleum products.
3. Ambient Air Temperatures:
   a. Maximum: 120°F.
   b. Minimum: -10°F.
4. Raw wastewater characteristics:
   a. Water pH: 5 to 9.
   b. Total suspended solids (TSS): 50 to 1,000 mg/L (and other debris)
   c. Temperatures:
      1) Maximum: 90°F.
      2) Minimum: 50°F.
5. Site Elevation: Approximately 4,630 feet above mean sea level.

1.08 IDENTIFICATION

A. Each unit of equipment shall be identified with a stainless steel nameplate, securely affixed in a conspicuous place. Nameplate information shall include equipment model number, serial number, tag number, supplier's name, and location.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. The mechanical screen and washer compactor system shall be in compliance with these specifications and Drawings and shall be supplied by one of the following manufacturers:
1. Duperon Corp. Flexrake
2. No known equal.

B. Manufacturers requesting to be selected as an ‘or equal’ manufacturer shall be indicated on the Base Bid Schedule included in the Bid Proposal. The CONTRACTOR shall submit certified documentation showing compliance of the proposed equal with these specifications a minimum of ten (10) days prior to bid opening.

2.02 MATERIALS

A. All wetted parts, including fasteners and hardware, anchors shall be Type 316 stainless steel.

B. Bar Rack: 1/4-inch thick Type 316 stainless steel.

C. Scrapers: UV Stable UHMW Scrapers with Type 316 stainless steel teeth with full penetration scrapers spaced per the manufacturer to facilitate screenings removal.

D. Link System and Pins: Type 316 stainless steel.

E. Chain Slides: UV Stable UHMW and Type 316 stainless steel.

F. Dead Plate: 1/4-inch thick Type 316 stainless steel.

G. Discharge Chute: 1/8-inch thick Type 316 stainless steel.

H. Side Fabrication: 1/4-inch thick Type 316 stainless steel bent plate; horizontal members shall be of Type 316 stainless steel tube or pipe.

I. Closeouts: Type 316 stainless steel, incorporated into the side fabrication framework.

J. Return Guides: 1/4-inch thick minimum Type 316 stainless steel.

K. Channel Bottom Plate: 1/4-inch thick minimum Type 316 stainless steel.

L. Stripper Assembly: 1/4-inch thick minimum Type 316 stainless steel equipped with Type 316 stainless steel stripper arm and replaceable UV stable UHMW wear strips.

M. Drive Shaft: AISI 1018 steel, solid design.

N. Drive Sprocket: CL40 cast iron with 80-55-06 ductile cast iron.

O. Gear Reducer Housing: Cast iron.

2.03 MECHANICAL SCREEN

A. General:
   1. The mechanical screen shall be link driven, front cleaning, self-contained, enclosed type designed to capture and transport wastewater debris to a washing compactor.
   2. The screen consists of bars with a rectangular or tear-drop cross section, spaced to create a fabricated and stiffened grid, which is carried on supports spanning the channel.

3. The bar rack shall extend from the invert of the channel to at least 12 inches above the maximum water level.
4. The screenings are mechanically cleaned from the scrapers with a stripper assembly that incorporates a return guide proportional to the speed of the traveling scrapers.
5. The link system shall be driven by a shaft mounted motorized gear unit.
6. The screen shall be constructed for a channel of width and depth as indicated on the Drawings.

B. Design Summary:

PARAMETER	VALUE
Tag Number	01-MS-200
Design Peak Flow, mgd	15
Design Average Annual Flow, mgd	5.9
Maximum headloss with 30% blockage, feet	1.0
Maximum differential headloss across screen at design peak flow, inches	6
Channel Width, feet	Indicated on the Drawings
Maximum upstream water depth, feet	4.5
Design Average Water depth, feet	1.5
Clear space between bars, inches	1/2
Minimum scraper speed, inches per minute	28
Maximum scraper speed, inches per minute	112
Bar size, nominal thickness (inches) x depth (inches)	1/4 x 3/4
Maximum overall height, feet	24
Discharge height above floor, feet	Indicated on the Drawings

C. Mechanical Screen Components:
1. Bar Rack:
   a. Bars shall be tear drop type bars with indicated size fastened top and bottom.
   b. The bar rack shall span the full width of the channel and extend above the maximum water depth in the channel a minimum of 2 feet.
   c. The bar rack will be anchored to the channel floor and walls as required by the manufacturer.
2. Dead Plate
   a. The dead plate shall extend from the bar rack to the operating floor.
   b. The dead plate section connecting to the bar screen shall be removable without removing the screen. All other dead plate sections shall be stationary.
3. Link System:
   a. Rotating dual link system attached to multiple scrapers operates continuously.
   b. Designed to eliminate need for submerged bearings or submerged sprockets.

c. Designed such that link system can climb or flex/pivot over and remove objects.
d. Both links connected directly to drive sprockets as they clamp onto drive clevis pin and propel the unit forward.
e. The structural member that connects the link system to the drive shaft shall be designed to handle all anticipated loads.
f. The mechanism shall be designed such that the rake can pivot out over an object that is encountered on its downward travel. Positive overtorque protection against an object that is too large to be bypassed will be provided. If the load on the rake mechanism increases beyond a predetermined value, the drive and linkage will stop the drive via magnetic limit switch or speed control device. When the overtorque condition has been corrected, the drive may again be operated. Designs employing the use of shear pins, belt slippage, torque clutches and/or speed switches or overload protection are not acceptable. .
g. The drive assembly will be supported by the drive shaft, which will have a diameter of at leat 2-inches and reinforced with 8-inch center support tube for additional strength. The use of a base plate with pillow block bearings to support the drive assembly and rack arms will not be accepted.
h. In addition to the overtorque protection stated above, the screen motor will also include an electrical overload feature designed so that if any part of the link system becomes jammed, the unit will automatically stop based on thermal overload of the motor. Use of a limit switch only to detect an overload condition is not acceptable.
i. The link system will be supported by the main drive shaft and clamp to the drive clevis pin on the drive sprocket as it is propelled around the drivehead.
j. Lifting capacity of at least 1,000 lbs.

4. Scraper System:
   a. Multiple scrapers operate to penetrate the bar rack to continuously clean debris from three surfaces of the bar rack.
   b. Scrapers shall be easily changed out in the field as needed to accommodate changes in the influent screening characteristics.
   c. Designed such that the scrapers can climb over or flex/pivot and remove objects.
   d. Proper alignment of scraper assembly will be accomplished by return guides.
5. Stripper System:
   a. The stripper system operates to remove debris from the scrapers and convey it to the washer compactor system.
   b. The stripper system shall be designed to pivot to allow efficient cleaning of the scrapers on each pass.
6. Drive Assemblies:
   a. Electric motor drive with closed-coupled gear reducer.
   b. Drive and motor shall be suitable for outdoor service and conform to Class 1, Division 1, Group D with a 1.15 service factor.
   c. Drive shaft speed: Not greater than 0.5 revolutions per minute at normal operating speed and not greater than 2.2 revolutions per minute at maximum speed.
   d. Motor Enclosure: NEMA design B with EPNV enclosure and Class F insulation for the ambient temperatures indicated.

e. The drive assembly shall be a shaft mounted reducer with an electric drive motor, constant speed, continuous duty, squirrel-cage induction type, rated TEFC-XP, maximum 1.0 hp, 460 volts, 3 ph, 60 Hz.
f. Drive Coating: Primed and epoxy coated per Section 09960.
g. Gear Reducer:
   1) As specified in Section 15050 and herein.
   2) Helical-worm, helical-bevel, or cycloidal and spiral beveling type.
   3) Heavy-duty cast-iron housing.
   4) Service Factor Rating: 1.5 based on full load.
   5) Maximum Design Output Torque: Not less than 4,700 inch-pounds at the normal output shaft speed of 10 revolutions per minute.
   6) Bearings: Antifriction with oil bath or grease lubrication.

7. Discharge Chute and Horn:
   a. An enclosed discharge chute shall transport the discharge to the screenings washer compactor.
   b. The height of the discharge chute horn shall be as indicated on the Drawings.
8. Foul Air Enclosure:
   a. The mechanical screen shall be completely enclosed with Type 316 stainless steel, removable panels that are suitable for the containment and treatment of foul air.
   b. Enclosures shall include hinged doors to allow access to maintenance areas.
   c. Enclosures shall be equipped with neoprene gaskets as needed to maintain a negative pressure inside the mechanical screen.
   d. A Type 316 stainless steel flanged foul air connection shall be provided at the top of the screen of the size indicated.

2.04 SCREENINGS WASHER COMPACTOR

A. General:
1. The screenings washer compactor shall be designed to wash and separate the soft organics from the screenings.
2. The screenings shall be compacted, de-watered, and discharged as a cake from the transport casing.
3. Equipment that involves grinding or comminuting screenings is not acceptable.

B. Design Summary

PARAMETER	VALUE
Tag Number	01-MS-201
Maximum Screenings, cf/hr	50
Average Screenings, cf/hr	7
Conveyor Type	Dual Shafted
Minimum Auger Thickness, inches	3/8
Minimum Auger Diameter, inches	9
Maximum Auger Tip Speed, fpm	24
Washwater supply	3W (Treated Plant Effluent)
Maximum Washwater flow, gpm	30

Washwater supply pressure, psig	80

C. Components:
1. The screenings washer shall include the inlet hopper,tank, auger, washwater system, and conveyor discharge tube.

D. Inlet Hopper:
1. Hopper shall be 11-gauge (0.1196-inch) thick, Type 316 stainless steel.
2. The hopper shall include supports for the mounting of a washwater system.
3. The inlet hopper shall be completely enclosed to contain odors with Type 316 stainless steel panels or latched doors for access and maintenance.

E. Tank and Trough:
1. Shall be 11-gauge (0.1196-inch) thick, Type 316 stainless steel and meet applicable CEMA standards. The tank shall include supports for the mounting of a wash water system.
2. Pipe connections shall be flanged in accordance with ANSI B16.1.
3. The tank shall have a 4-inch NPT drain with a 4-inch flush port.
4. The tank shall include a design that allows for lifting of the system by forklift or similar device.
5. The tank shall include hinged inspection covers with latches as required for access to the auger as well as gears and bearings.
6. The wash water assembly shall consist of a minimum 1-inch diameter wash water manifold, solenoid operated valve located in the wash zone, manually operated ball valve, and Y-strainer.
7. The wash water manifold and fittings shall be Type 316 stainless steel.
8. The solenoid valve shall be Type 316 stainless steel and explosion proof construction per Class I Division 1 Group D, housing a 120 VAC coil.
9. The manually operated washwater ball valve shall be of the diameter indicated and Type 316 stainless steel and shall provide adjustment for the wash water flow.
10. The Y-strainer shall be of Schedule 80 PVC or equivalent material, with a 20-mesh stainless steel screen and a plugged blow-off outlet.
11. A washwater drain connection with Schedule 80 PVC drain piping shall be provided as indicated.

F. Auger:
1. The conveyor shall be equipped with dual rotating augers, which shall provide particle capture and transport to the discharge segment outlet.

    a. Particles shall be washed both by the highly-agitated passing wastewater or by flood washing method as well as by the discharge of a wash water system. Dewatering shall occur as the rotating auger conveys the washed screenings through the compaction zone prior to the discharge horn.
    b. The auger shall be welded to 2-inch diameter shaft constructed of solid 316 stainless steel or Schedule 80, Type 316 stainless steel pipe.
    c. Bearings for the screw auger shall be anti-friction with grease lubrication rated for a minimum B-10 life of 500,000 hours at standard operating speeds.
2. The auger shall be made of Type 316 stainless steel.

3. The screen segment trough shall be a replaceable, perforated 316 stainless steel assembly. The screen trough perforations shall be 1/4-inch (6 mm) for separation of the liquids from the solids.
4. The drive segment shall be comprised of a drive shaft with speed reducer, and electric motor.
    a. The speed reducer shall have a reduction ratio of 809:1.
    b. The electric motor shall be:
        1) 1.0 hp maximum (2.24 kW)
        2) TEFC-XP
        3) 1,800 rpm maximum
        4) 460 VAC, 3-phase, 60 Hz
        5) Suitable for Class 1 Division 1 Group D service.

G. Transport Discharge Segment:
1. The transport horn shall taper with 9-inch inlet diameter and 10.5-inch outlet diameter and include a straight segment, a 60-degree elbow, and a tapered transport.
2. The discharge horn shall have a minimum inside diameter of 12 inches made of 10-gauge Type 316 stainless steel.

2.05 CONTROL PANELS

A. The manufacturer shall provide a Local Control Panel (LCP) for manual and automatic control of the mechanical screen and screenings washer compactor system in accordance with Section 17710.

B. General:
1. The LCP shall be NEMA 4X and Type 316 Stainless steel.
2. The LCP shall be climate controlled to maintain suitable service temperatures for operation of speed control devices such as VFDs.
3. The LCP shall be powered by a single 480 VAC, 3-phase, 60Hz feeder circuit.
    a. All other control voltages for the system shall be derived from this single 480 VAC feed.
    b. Provide separate circuit breakers with lockout provisions for all 480-volt equipment.
    c. Provide a main circuit breaker and sub-breakers for 120-volt systems.

C. Controls:
1. The mechanical screen and washer compactor system shall be equipped with a Programmable Logic Controller (PLC) system and operate per Division 17, and as indicated on P&ID N-4.
2. The LCP shall have the following features at a minimum:
    1) Screen rotating speed controller
    2) Main control breaker with thru-door handle
    3) Control power transformer
    4) Lockout STOP pushbutton
    5) Common emergency STOP pushbutton
    6) Screen forward run green light
    7) Screen reverse run green light
    8) Screen alarm red light
    9) Conveyor rotation potentiometer in ‘rpm’
    10) Washwater solenoid valve for washer/compactor

11) High channel level alarm
12) Elapsed Time Meter
13) Washer/compactor conveyor alarm horn activated on high channel level, screen motor overload, conveyor motor overload
14) Alarm silence pushbutton
15) Overload protection for all motors through an overload relay mounted directly on the motor starters.

3. Provide the following signals from the LCP to the Plant PLC:
   1) Channel Upstream level 4-20 mA signal.
   2) Wet well (Downstream) level 4-20 mA signal.
   3) Rotating Screen run status.
   4) Washer/compactor conveyor run status.
   5) Rotating Screen system fail alarm.
   6) Washer/compactor conveyor fail alarm.
4. LCP Enclosure:
   a. Enclosure shall be NEMA 4X, fabricated of Type 316 stainless steel, and shall be suitable for wall mounting. Doors shall have Type 316 stainless steel hinges and latches.
   b. Enclosure shall house the PLC, control devices, relays, level transmitters, terminal blocks, and reversing motor starters and speed controllers.
5. Control Devices:
   a. Pilot devices shall be mounted on the enclosure inner panel door and have a dead-front lockable outer door to prevent unauthorized access.
   b. The LCP shall have indicator lights as specified .
   c. Indicator lights shall be light-emitting diode (LED) type lamps.
   d. Lamps and the selector switches shall be heavy duty NEMA 4X type.
   e. Control transformer shall be protected by two primary fuses and one secondary fuse. The 120-volt secondary shall have one leg grounded.
6. Speed Controller:
   a. Provide a VFD speed control device to vary rotating speed of fine screen and washer/compactor based on differential water level.
   b. The manufacturer shall size the VFD appropriately to drive all motors in the system.
   c. The manufacturer shall be responsible for integrating the VFD into the manual and automatic operational modes of the equipment.
7. Instrumentation:
   a. Provide upstream and downstream ultrasonic level sensors and transmitters as shown on P&ID drawings.
   b. Ultrasonic sensors and transmitter shall be per Section 17206.

2.06 SOURCE QUALITY CONTROL

A. Each system and controller shall be factory tested to ensure satisfactory operation.

PART 3 EXECUTION

3.01 INSTALLATION

A. Screen system and motor controller shall be installed in accordance with the supplier’s installation instructions, and in compliance with all OSHA, local, state, and federal codes and regulations.

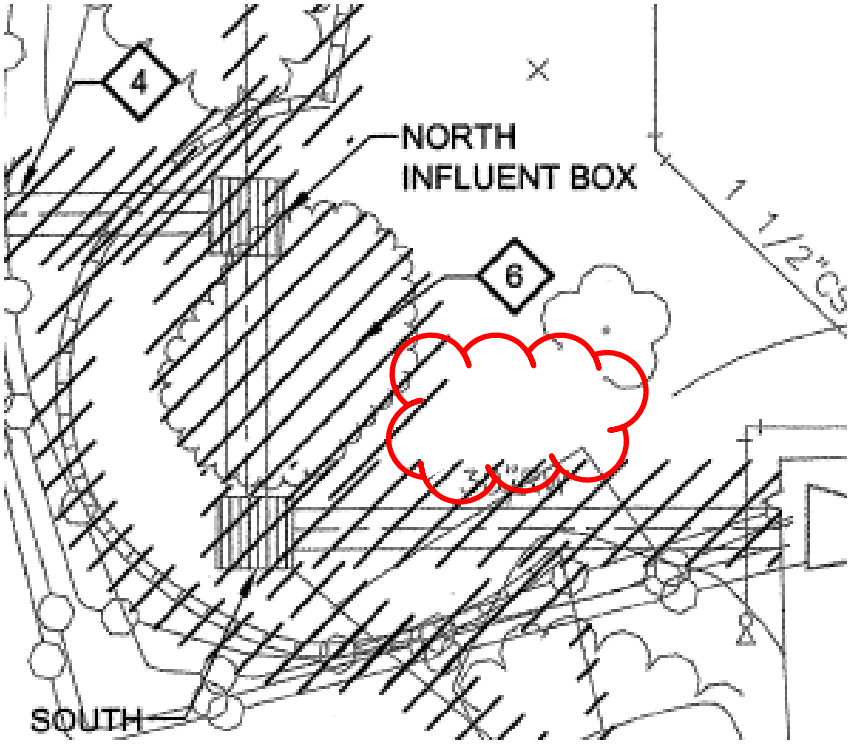
3.02 MANUFACTURER'S SERVICES

A. The CONTRACTOR shall provide the services of a factory-trained representative to check the installation and to start up each screen system and controller. The factory representative shall have complete knowledge of proper installation, operation, and maintenance of equipment supplied. Representative shall inspect the final installation and supervise a start-up test of the equipment.

B. Installation and training services shall include four trips that include all labor and expenses for a factory-trained representative to complete the following services at a minimum:
   1. One 8-hour day onsite for installation inspection and certification.
   2. Two 8-hour days onsite for start-up services.
   3. One 8-hour session onsite for operator training.

C. CONTRACTOR shall provide certifications of installation, start-up and performance tests in accordance with Section 01756.

END OF SECTION



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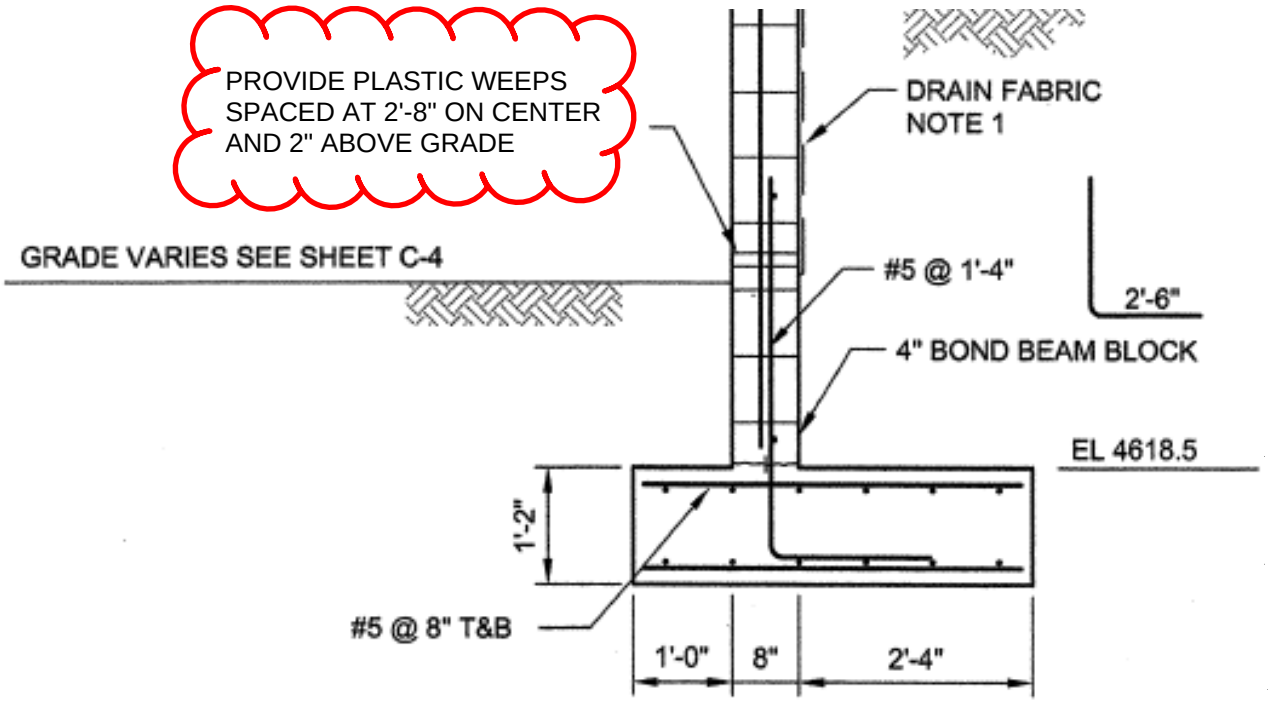
				ADDENDUM NO. 1
REVISION	BY	APPROVED	DATE	REVISION TO DRAWING C-3
1	JBR		11/19/10	SHEET 1 OF 1



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REVISION TO SECTION B/C-5

11 **BID ALTERNATE "B":**
8" RW AND MANHOLE

12 CONNECT TO EXISTING 18" RW. PROVIDE UP TO 50 LINEAR FEET OF 18" DIA DUCTILE IRON PIPE, UP TO 4 X BENDS AND UP TO 50 LINEAR FEET OF 24" DIA DUCTILE IRON PIPE.

13 REMOVE AC PIPE TO NEAREST JOINT, OR COUPLING. ALL CUTTING REMOVAL AND DISPOSAL METHODS SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS FOR ASBESTOS ABATEMENT. SNAP CUTTERS, MASONRY BLADES OR OTHER METHODS THAT RELEASE ASBESTOS AND DUST ARE NOT ALLOWED.

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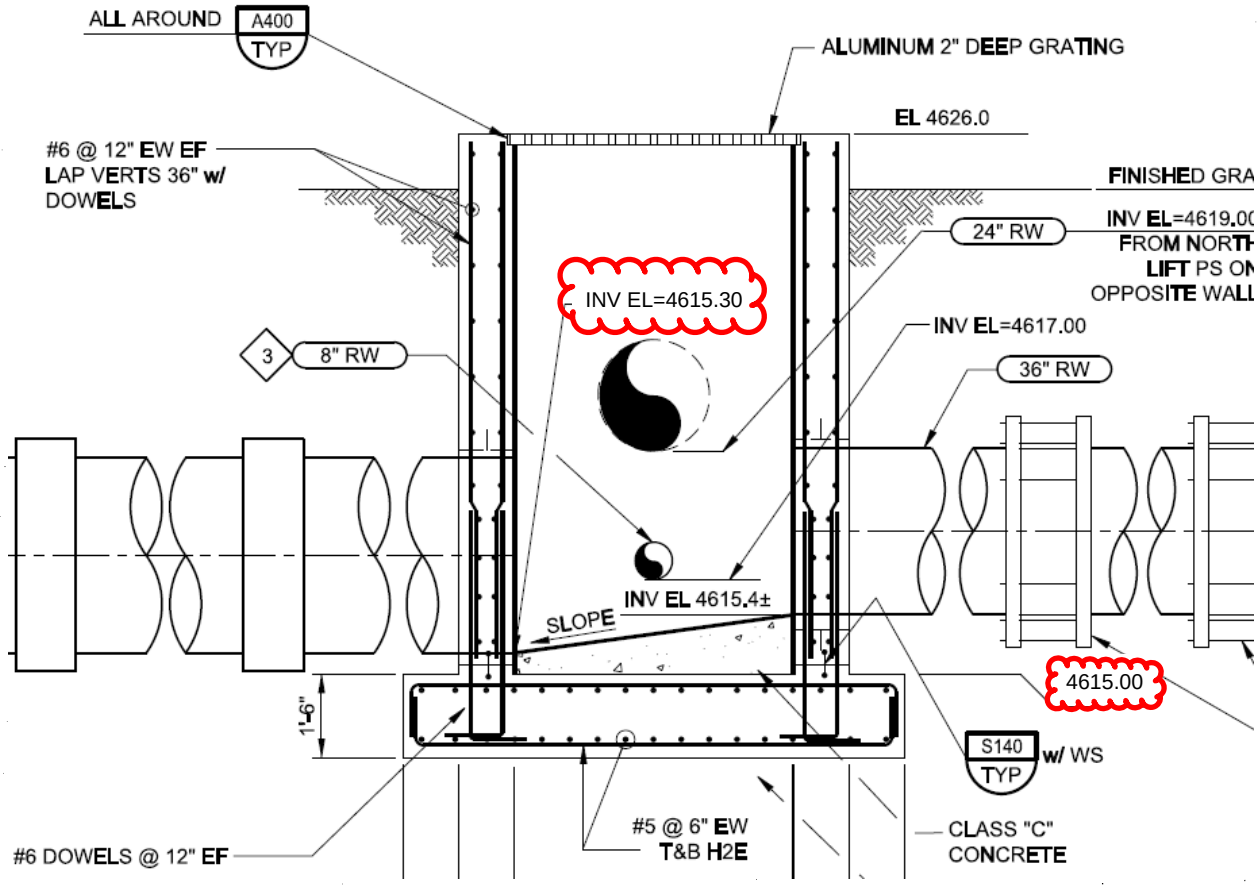
1	JBR		11/19/10

REVISION TO DRAWING C-6

SHEET 1 OF 1



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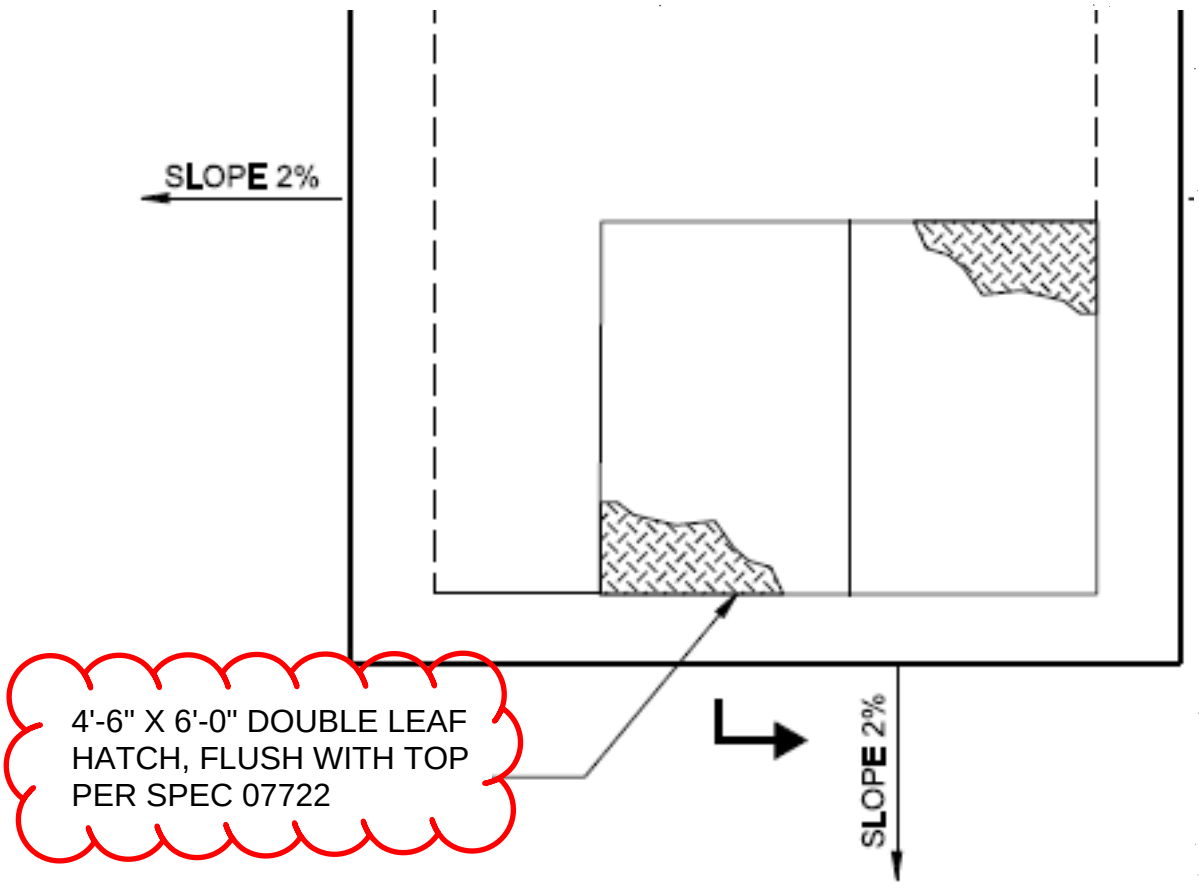
			REVISION TO SECTION B/C-10
			SHEET 1 OF 1



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REVISION TO SECTION B/C-11