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TPS360Report

**Sample Co.**

# Turn-key Processing Solutions



Providing the Highest Value; Safely, On Time & On Budget GUARANTEED.

**Proposal for Project:**

**Processing Plant**

Sample Customer Logo



## Turnkey Processing Solutions, LLC

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Providing the Highest Value; Safely, On Time, & on budget GUARANTEED

Proposal No. 00000-01

Proposal Date: April 1<sup>th</sup>, 2011

### Sample Plant Project

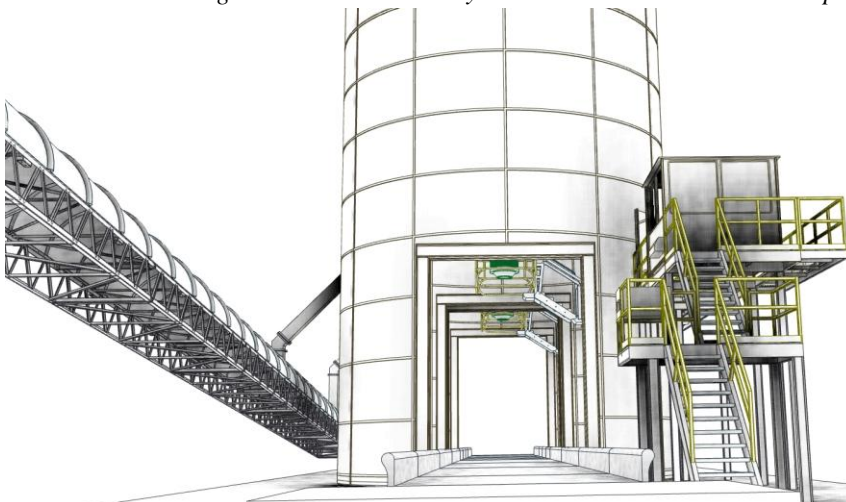
#### About Turnkey Processing Solutions:

- TPS has a vast amount of erection and equipment installation experience. We put an extraordinary amount of effort into ensuring that the engineering and fabrication is right before we ship the equipment to the job site. This extra effort on the front end of the process insures that the equipment fits in the field. This dramatically reduces the cost of equipment rental and labor costs.
- Safety is of paramount importance when erecting processing plants. To insure that all mining codes, and your company safety procedures and guidelines are followed, we work with your management personnel to develop a safety plan before we begin the project. TPS personnel not only know what they are building, they know how to operate and maintain the equipment as well. This reduces the stress, effort, and costs required to startup and tune the plant.
- Planning projects requires careful and diligent attention to detail. Ensuring that equipment deliveries, parts and supplies, manpower, cranes, and all of the required resources are made available in the proper sequence is vital to staying on track and meeting project timelines. Our project management team is very good at building these project timelines and making sure that they are achieved.

*Turnkey Processing Solutions appreciates the opportunity to provide this proposal for your application. We are committed to provide the highest quality products and services available. It's our goal to provide **Sample Co.** with excellent service at every stage of the project.*

*If you have any questions concerning the scope of this proposal, we are available to meet with you in your office, over the phone, or via email exchange. Please advise us at your earliest convenience on our proposal and how we can further assist you.*

*Team TPS*



*Confidential*

**Project:** Sample Plant Project  
**Customer:** Sample Customer

Proposal No. 00000-01

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**I. Plant Project Plant Scope:**

*This section will provide you with descriptions and specifications on the equipment used in the proposed Plant and shall include all of the Equipment and Structures required in completing this process.*

**Wet Plant Scope and Descriptions.**

**FH01, F01 & CR01-Feed Hopper, Feeder and Crusher Support.**

*The feed hopper, feeder and crusher system is made up of a loader charging hopper, a feeder and a crusher support structure for the jaw crusher. The system will allow material to be fed by a front end loader into the primary crusher as described below. Feed hopper, feeder and crusher support structure will be supplied, installed and commissioned by TPS.*

- Heavy-duty feed hopper includes structural steel support legs and heavy-duty V type hopper. Hopper fabricated from 3/4" mild steel plate. Hopper sidewalls to be fabricated from 3/4" mild steel plate. Hopper includes 1/2" A.R liners in wear areas and extension wings to control spillage from the loader. Hopper shall be supported using structural steel column members bolted to the concrete footings.
- Feeder Structure shall include a heavy-duty structural steel support structure for a Lippmann 51" x 20' Vibrating Grizzly Feeder. Structure will include a 40 H.P. electric motor for the feeder drive and a grizzly by-pass type chute made from 1/2" thick plate and include a large access door. This will allow for the bypass of material onto undercrusher conveyor.
- 51" x 20' heavy-duty grizzly feeder. Twin shafted mechanism with (4) 110 MM bearings having self contained oil lubrication. Mechanism is located below the vibrating body attached by removable assembly mount plates. Side frame consists of 26 " wide formed side plates with bent flanges at the top & bottom. Sub-deck pan cross members 8" formed channels on 14" spacing with (5) rows of 1/2" x 5" filler bars to form an "egg crate" design. 14' of pan, 1/2" thick hot rolled steel plate, 11" deep. Side liners are 1/2" thick Hardox 450 AR steel plate. Bottom liners are 1/2" thick Hardox AR 450 steel plate. 5' long grizzly deck section having adjustable openings. Openings to be advised at time of order. Vertical coil springs with spring base plates for a horizontal setting. V-belt drive parts consisting of the machine & motor sheaves with bushing suitable for a 40 H.P. T-frame motor, v-belts, independently mounted pivoted-type motor base, and belt guard.
- Heavy-duty crusher support structure made to fit the 3048 jaw crusher. Support includes Heavy-duty support beams and columns with angle and channel cross bracing, motor mounts, drive sheaves, drive belts, v-belt guards and access platform around three sides of crusher including stair access from ground. Structure is supported from concrete.
- 3048 Lippmann heavy duty jaw crushers have an extra heavily ribbed steel frame-stress relieved after welding and before machining; One-piece steel pitman; Heat-treated forged alloy steel eccentric shaft; Oversized tapered roller bearings in both the pitman and frame. Tapered roller bearings exhibit a greater load-carrying capacity than equal size spherical roller bearings that are used in most machines. Reversible manganese steel jaw dies and extensions; Manganese steel cheek plates; Manual hydraulic toggle adjustment; Two heavy-duty flywheels, one grooved for v-belts. Bolt in replaceable toggle bearings. Swing jaw barrel protector. Replaceable wear plate behind the swing jaw die & stationary jaw die. Replaceable bolt in toe liners. One (1) 200 hp, NEMA C high starting and breakdown torque 1200 rpm TEFC electric motor.
- V-belt drive, including motor sheave and 8V belts of nominal length. Crusher also includes the Hydraulic Toggle Assembly allowing for easy on the fly adjustment of the toggle settings.
- Included is an Automatic Oil Lubrication System which delivers a metered flow of filtered oil to each bearing. The Auto-lube system includes a low oil pressure alarm system, a 30 gallon reservoir, 1/2 gpm oil pump with a 3/4 hp, 230/460 volt electric motor (starter and wiring not included), flow regulating valve, pressure gauge, piping, flow sights for return lines, immersion heater, and controls
- Undercrusher chute made from 3/4" thick plate. Chute shall receive material from the crusher and discharge it onto the undercrusher conveyor.



- All structure steel and chutes excluding drive components and equipment have standard paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

### **C01-Conveyor**

*The conveyor will transfer material discharging from the above grizzly feeder by-pass chute and the material discharging from the jaw crusher. The material placed on this conveyor will be fed onto the C02 conveyor. The conveyor supply, install and commissioning will be by TPS.*

#### ***1ea. 48" x 38'(121cm x 11.5m) Channel Frame Conveyor.***

- Heavy Duty Channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- 1ea Impact beds located in loading area.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 3'-6" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports from above crusher structure using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed and distribute material on to the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C02 -Conveyor**

*The conveyor will transfer material discharging from the above C01 conveyor. The material placed on this conveyor will be fed onto the SCR01screen. The conveyor supply, install and commissioning will be by TPS.*

#### ***1ea. 48" x 120'(121cm x 36.5m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 40 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 24" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley

- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 20" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 20" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20 deg, Impact Idlers located in loading area.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 3'-6" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the screen.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Walk-around Head end service platform.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SCR01 -5'x16' (1.5m x 4.8m) DD screen and support structure.**

*The screen will accept feed from the C02 screen feed conveyor and size it accordingly. The screen, chutes and structure supply, installation and commissioning will be by TPS.*

- Double deck, linear motion vibrating screen with the following general specifications: Low noise vibrating motors or oil splashed geared exciter mechanism for linear motion excitation. Rated for continuous duty. Adjustable weight settings for variation to amplitude of vibration and vibrating force.
- Screen feed chute made from 3/8" plate steel with 1/2" bolt in A.R. liners. Chute made to accept feed from the C02 conveyor and direct the material onto the screens feed plate.
- Screen structure shall be made from heavy-duty structural steel members. The structure shall include the following- stair access from the ground to the screen area, there will be access walkways around the screens including around the discharge hood. The structure shall also include ladder with access to the C02 conveyor head end platform. The above shall be supported using structural steel members bolted to the concrete footings.
- The Top Deck Chute shall be made from 3/8" plate with 1/2" A.R. liners in the wear areas. The chute will include dead box rock shelves when transferring into the crusher feed box. The Bottom Deck Chute shall also be made from 3/8" plate with 1/2" A.R. liners in wear areas. The chute will include dead box rock shelves into the crusher feed box.
- The Material that passes through the bottom deck will be fed into the underscreen chute made from 3/8" plate and lined with 1/2" A.R. liners. The underscreen chute shall include an access doors for maintenance. This chute shall make the transition onto the C03 conveyor.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**CR02- H4800 Cone Crusher and support structure.**

*The cone crusher will accept feed from the SCR01 screen. The crusher, chutes and structure supply, installation and commissioning will be by TPS.*

- Sandvik H4800 Crusher, complete machine shipped fully assembled with concaves backed with Plastic-Pack. Crusher feed hopper. Hydroset mechanism, including motor driven high pressure pump and motor, solenoid valve Hydroset pressure gauge and damper. Automatic motor driven circulating lubrication system, with air-to-oil heat exchanger and immersion oil heater, mounted on unit base. Electricals are 3 phase, 60 Hertz, Integral mainshaft assembly. Manganese steel arm shield and rim liners. Rubber compression mounts, special tools. Flared bottom shell with liners. Standard crusher sheave and crusher sheave bushing. Includes ASRi Automation System. Includes 300 H.P. electric motor.
- Crusher feed chute made from 3/8" plate steel with 1/2" bolt in A.R. liners. Chute made to accept feed from the Screen chutes and direct the material onto the crusher.
- The structure shall be made to support the Crusher. Heavy-duty crusher support structure made to fit the Sandvik H4800 cone crusher. Support includes motor mounts, drive sheaves, drive belts, v-belt guards and access platform around three sides of crusher including stair access from ground to the crusher area and up to the screen area. The above shall be supported using structural steel members bolted to the concrete footings.
- Crusher discharge chute made from 3/8" plate steel with rock on rock design. Chute made to accept feed from the crusher and direct the material onto the C03 undercrusher conveyor.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

### **C03 -Conveyor**

*The conveyor will transfer material discharging from the above screen chute and the material discharging from the cone crusher. The material placed on this conveyor will be fed onto the C04 conveyor. The conveyor supply, install and commissioning will be by TPS.*

#### ***1ea. 48" x 38' (121cm x 11.5m) Channel Frame Conveyor.***

- Heavy Duty Channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- 1ea Impact beds located in loading area.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 3'-6" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports from above crusher structure using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed and distribute material on to the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**C04-Conveyor**

*The conveyor will transfer material discharging from the above CR02 crusher. The material placed on this conveyor will be fed onto the SCR02A screen (and the Phase II SCR02B screen. In the future). The conveyor supply, install and commissioning will be by TPS.*

***Iea. 36" x 120' (91cm x 36.5m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 40 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 24" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 18" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20 deg, Impact Idlers located in loading area.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the splitter chute.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Walk-around Head end service platform.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SP01 –Two Way Splitter Chute:**

*The SP01 Splitter Chute will transfer material from the C4 Conveyor and will have split by % onto the SCR01A screen or the future Phase II SCR02B Screen. Chute will be supplied, installed and commissioned by TPS.*

- The two way splitter chute is made from 3/8" plate with bolt in A.R. liner in wear areas. Discharge chute shall be made to feed and distribute material on to the SCR01A and/ the future Phase II SCR02B with a flop gate type control. Chute shall include a heavy duty support structure with walkway access around three sides and access to SCR01 screen structure.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**SCR02A -8' x 20' (2.4m x 6m) Double Deck Screen and Screen Structure:**

*The SCR02A Screen will receive material from the SP4 chute as described above. The screen will Size the material accordingly; Top deck shall feed onto the C10 conveyor. The Bottom Deck through will be placed in a fine material washer. Screen and Screen Structure will be supplied, installed and commissioned by TPS.*

- Deister triple deck, 8' x 20' Heavy Duty Inclined Vibrating Screen: adjustable trunnion type spring support mounts on each corner, baked epoxy coated support springs, snubbers (friction checks) - spring loaded, 3/8" thick sideplates with 5/8" x 3-1/2" vertical braces, with 3/4" thick steel reinforcing plates bolted to sideplates between bearing housing and sideplates, 5/8" thick steel-flanged access ports, removable back plates, rubber flap and steel combination, modular rubber support panels, discharge lips protected by 3/8" thick AR steel replaceable wear plates, the triple-shafted two bearing type vibrating mechanisms are located between the top and middle decks and equipped with 130 mm. spherical roller vibrating screen bearings, two of the above shafts are driven by motors which drive the third center shaft via two timing belts, steel-flanged vibrating mechanism tubes bolted to the sideplates, oil fill and drain plugs located on the outside surface of the bearing housings and the oil level gauges located on the outside surface of the sideplate, Deister "slinger mist" oil bath lubrication system, with labyrinth type dust and oil seals requiring approximately 4 gallons of oil in each vibrating mechanism tube acting as the oil reservoir and requiring only oil changes every 500 hours, each vibrating mechanism tube is protected by a 1/2" thick steel-backed rubber shield tack welded to the tube, 10" dia. eccentric shafts with external counterweighted flywheels equipped with removable plates for stroke adjustment, bronze sleeve between bearing and shaft, 18" feed box with 3/8" AR steel replaceable wear plate in the bottom, Deister heavy duty pivoted rubber torsion motor bases, "C" section wideband V-belts, 4 groove "C" section motor sheaves and flywheel guard and belt guards less mounting brackets and motor supports, inclined at 20 degrees, operating at approximately 780 RPM and with approximately 7/16" stroke, with a preliminary estimated weight of 32,500 lbs. Above unit includes two (2) 30 H.P., 1800 RPM, 3/60/220/440, TEFC, electric motors .
- 820 DD Screen structure shall be made from heavy-duty structural steel members. The structure shall include the following- stair access from the ground to the screen area, there will be access walkways around the screens including around the discharge hood. The structure shall also include spray bar system on the top deck. The above shall be supported using structural steel members bolted to the concrete footings
- The top deck and middle chute shall be made from 3/8" plate with 1/2" A.R. liners in the wear areas. They both shall feed onto the C05 conveyor.
- The Material that passes through the bottom deck will be fed into the underscreen hopper made from 3/8" plate and lined with A.R. liners. The underscreen chute shall be made with 10 degree sloped sides and include an access door for maintenance. This chute shall make the transition onto the FMW01A Fine material washer.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**Phase II**

**SCR02B -8' x 20' Double Deck Screen and Screen Structure:**

*The SCR02B Screen will receive material from the SP4 chute as described above. The screen will Size the material accordingly; Top deck shall feed onto the C10 conveyor. The Bottom Deck through will be placed in a fine material washer. Screen and Screen Structure will be supplied, installed and commissioned by TPS.*

- Deister triple deck, 8' x 20' Heavy Duty Inclined Vibrating Screen: adjustable trunnion type spring support mounts on each corner, baked epoxy coated support springs, snubbers (friction checks) - spring loaded, 3/8" thick sideplates with 5/8" x 3-1/2" vertical braces, with 3/4" thick steel reinforcing plates bolted to sideplates between bearing housing and sideplates, 5/8" thick steel-flanged access ports, removable back plates, rubber flap and steel combination, modular



rubber support panels, discharge lips protected by 3/8" thick AR steel replaceable wear plates, the triple-shafted two bearing type vibrating mechanisms are located between the top and middle decks and equipped with 130 mm. spherical roller vibrating screen bearings, two of the above shafts are driven by motors which drive the third center shaft via two timing belts, steel-flanged vibrating mechanism tubes bolted to the sideplates, oil fill and drain plugs located on the outside surface of the bearing housings and the oil level gauges located on the outside surface of the sideplate, Deister "slinger" oil bath lubrication system, with labyrinth type dust and oil seals requiring approximately 4 gallons of oil in each vibrating mechanism tube acting as the oil reservoir and requiring only oil changes every 500 hours, each vibrating mechanism tube is protected by a 1/2" thick steel-backed rubber shield tack welded to the tube, 10" dia. eccentric shafts with external counterweighted flywheels equipped with removable plates for stroke adjustment, bronze sleeve between bearing and shaft, 18" feed box with 3/8" AR steel replaceable wear plate in the bottom, Deister heavy duty pivoted rubber torsion motor bases, "C" section wideband V-belts, 4 groove "C" section motor sheaves and flywheel guard and belt guards less mounting brackets and motor supports, inclined at 20 degrees, operating at approximately 780 RPM and with approximately 7/16" stroke, with a preliminary estimated weight of 32,500 lbs. Above unit includes two (2) 30 H.P., 1800 RPM, 3/60/220/440, TEFC, electric motors .

- 820 DD Screen structure shall be made from heavy-duty structural steel members. The structure shall include the following- stair access from the ground to the screen area, there will be access walkways around the screens including around the discharge hood. The structure shall also include spray bar system on the top deck. The above shall be supported using structural steel members bolted to the concrete footings
- The top deck and middle chute shall be made from 3/8" plate with 1/2" A.R. liners in the wear areas. They both shall feed onto the C05 conveyor.
- The Material that passes through the bottom deck will be fed into the underscreen hopper made from 3/8" plate and lined with A.R. liners. The underscreen chute shall be made with 10 degree sloped sides and include an access door for maintenance. This chute shall make the transition onto the FMW01B Fine material washer.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**FMW01A -Fine material washer and Structure:**

*The FMW01A fine material washer will receive material from the SCR02A Screen as described above. Fine material washer will Size the material accordingly; Discharge from screw shall feed onto the C10 conveyor. The flow over the weir will be placed into the UFR01 circuit. Fine material washer and Structure will be supplied, installed and commissioned by TPS.*

- McLanahan Fine Material Double Screw Washer, complete with fabricated steel Washer Box, ribbed and flanged. Adjustable overflow weirs on sides & end. Removable baffle plate in front of pool area. Water manifold inlets beneath the pool area. Extra heavy steel pipe shaft(s) flanged at both ends. Spiral steel flights welded to shafts. Renewable hard iron wearing shoes. Twin Seal Pak bearing package units at feed end. Self aligning, anti-friction roller bearings at discharge end. Reducer gearboxes. Adjustable motor bases with two 15 H.P. motors, motor sheaves, V-belts and drive guards.
- Fine material washer structure shall be made from heavy-duty structural steel members. The structure shall include the following- stair access from the ground to the washer area. The structure shall also include a discharge chute made from 3/8" plate. The above shall be supported using structural steel members bolted to the concrete footings.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**Phase II**

**FMW01B- Fine material washer and Structure:**

*The FMW01B fine material washer will receive material from the SCR02B Screen as described above. Fine material washer will Size the material accordingly; Discharge from screw shall feed onto the C10 conveyor. The flow over the weir will be placed into the UFR01 circuit. Fine material washer and Structure will be supplied, installed and commissioned by TPS.*

- McLanahan Fine Material Double Screw Washer, complete with fabricated steel Washer Box, ribbed and flanged. Adjustable overflow weirs on sides & end. Removable baffle plate in front of pool area. Water manifold inlets beneath the pool area. Extra heavy steel pipe shaft(s) flanged at both ends. Spiral steel flights welded to shafts. Renewable hard iron wearing shoes. Twin Seal Pak bearing package units at feed end. Self aligning, anti-friction roller bearings at discharge end. Reducer gearboxes. Adjustable motor bases with two 15 H.P. motors, motor sheaves, V-belts and drive guards.
- Fine material washer structure shall be made from heavy-duty structural steel members. The structure shall include the following- stair access from the ground to the washer area. The structure shall also include a discharge chute made from 3/8" plate. The above shall be supported using structural steel members bolted to the concrete footings.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**C05 -Conveyor**

*The conveyor will transfer material discharging from the above screen chute. The material placed on this conveyor will be fed onto the C06 conveyor. The conveyor supply, install and commissioning will be by TPS.*

***1ea. 36" x 80" (91cm x 24.3m) Channel Frame Conveyor.***

- Heavy Duty Channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports from above crusher structure using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed and distribute material on to the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**C06 -Conveyor**

*The conveyor will transfer material discharging from the above C05 conveyor. The material placed on this conveyor will be fed into the SP02 splitter chute. The conveyor supply, install and commissioning will be by TPS.*

***Iea. 36" x 110'(91cm x 33.5m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 18" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the splitter chute.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Walk-around Head end service platform.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**C07 -Conveyor**

*The conveyor will transfer material discharging from the SC01 screen. The material placed on this conveyor will be fed into the C08 conveyor. The conveyor supply, install and commissioning will be by TPS.*

***Iea. 36" x 80' (91cm x 24.3m) Channel frame Conveyor.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.

- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 20 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Walk-around Head end service platform.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C09 -Conveyor**

*The conveyor will transfer material discharging from the C07 conveyor. The material placed on this conveyor will be fed into the SP02 splitter chute. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 36" x 100' (91cm x 30.4m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the splitter chute.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Walk-around Head end service platform.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

#### **SP02 –Two Way Splitter Chute:**

*The SP02 Splitter Chute will transfer material from the C06 Conveyor and will have split by % onto the CR03A crusher or the future Phase II CR03B crusher. Chute will be supplied, installed and commissioned by TPS.*

- The two way splitter chute is made from 3/8" plate with bolt in A.R. liner in wear areas. Discharge chute shall be made to feed and distribute material into the *CR03A crusher and/ the future Phase II CR03B* with a flop gate type control. Chute shall include a heavy duty support structure with walkway access around three sides and access to *CR03* structure.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**CR03A- SandMax 800 REMco VSI Crusher and support structure.**

*The VSI crusher will accept feed from the SP02 splitter chute. The crusher, chutes and structure supply, installation and commissioning will be by TPS.*

- REMco SandMax Model 800-ST (5080 Series), Dual Drive Vertical Shaft Impact Crusher. Crusher includes the following standard equipment: Crusher is all steel, HD fabricated construction. Circular receiving hopper with feed diverter plate. Heavy duty cast feed tube assembly. Autogenetic crushing chamber with deep well pockets and gusset protectors. One (1) 37" 4-port 14", Hi-cap., open-sided rotor complete with all wear parts. Oil lubricated main shaft and bearing cartridge assembly. Oil lubrication system including oil pump, electric motor, oil tank and safety interlocks. Integral HD fabricated motor support base with motor mount and easy ratchet v-belt tensioning. Hydraulically lifted feed hopper assembly with lift cylinder and hydraulic ram. Hydraulic pump, motor and tank assembly with all hydraulic lines and controls. HD crusher support base plate with four (4) vibration isolation mounts for motor protection. Crusher control pkg. consisting of vibration switch, hour meter, drive guard and lid, safety switches, and main shaft bearing temperature sensors with digital display. Crusher tools including rotor balancing machine, lifting plate, eye bolt and two manuals. This crusher is for single drive with up to two 400 hp motors. Shipping weight is approximately 45,000 pounds
- Crusher feed chute made from 3/8" plate steel with 1/2" bolt in A.R. liners. Chute made to accept feed from the splitter chute and direct the material onto the crusher.
- The structure shall be made to support the Crusher. Heavy-duty crusher support structure made to fit the REMco SandMax crusher. Support includes access platform around three sides of crusher including stair access from ground to the crusher area and up to the screen area. The above shall be supported using structural steel members bolted to the concrete footings.
- Crusher discharge chute made from 3/8" plate steel with rock on rock design. Chute made to accept feed from the crusher and direct the material onto the C09 undercrusher conveyor.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**Phase II**

**CR03A- SandMax 800 REMco VSI Crusher and support structure.**

*The VSI crusher will accept feed from the SP02 splitter chute. The crusher, chutes and structure supply, installation and commissioning will be by TPS.*

- REMco SandMax Model 800-ST (5080 Series), Dual Drive Vertical Shaft Impact Crusher. Crusher includes the following standard equipment: Crusher is all steel, HD fabricated construction. Circular receiving hopper with feed diverter plate. Heavy duty cast feed tube assembly. Autogenetic crushing chamber with deep well pockets and gusset protectors. One (1) 37" 4-port 14", Hi-cap., open-sided rotor complete with all wear parts. Oil lubricated main shaft and bearing cartridge assembly. Oil lubrication system including oil pump, electric motor, oil tank and safety interlocks. Integral HD fabricated motor support base with motor mount and easy ratchet v-belt tensioning. Hydraulically lifted feed



hopper assembly with lift cylinder and hydraulic ram. Hydraulic pump, motor and tank assembly with all hydraulic lines and controls. HD crusher support base plate with four (4) vibration isolation mounts for motor protection. Crusher control pkg. consisting of vibration switch, hour meter, drive guard and lid, safety switches, and main shaft bearing temperature sensors with digital display. Crusher tools including rotor balancing machine, lifting plate, eye bolt and two manuals. This crusher is for single drive with up to two 400 hp motors. Shipping weight is approximately 45,000 pounds

- Crusher feed chute made from 3/8" plate steel with 1/2" bolt in A.R. liners. Chute made to accept feed from the splitter chute and direct the material onto the crusher.
- The structure shall be made to support the Crusher. Heavy-duty crusher support structure made to fit the REMco SandMax crusher. Support includes access platform around three sides of crusher including stair access from ground to the crusher area and up to the screen area. The above shall be supported using structural steel members bolted to the concrete footings.
- Crusher discharge chute made from 3/8" plate steel with rock on rock design. Chute made to accept feed from the crusher and direct the material onto the C09 undercrusher conveyor.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

#### **C09 -Conveyor**

*The conveyor will transfer material discharging from the above CR03A crusher or the future Phase II CR03B crusher. The material placed on this conveyor will be fed into the C04 conveyor for recirculation to the screen(s). The conveyor supply, install and commissioning will be by TPS.*

##### **Iea. 36" x 100' (91cm x 30.4m) Truss frame Conveyor.**

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Walk-around Head end service platform.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.

- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C10 -Conveyor**

*The conveyor will transfer material discharging from the FMW01A fine material washer or the future Phase II FMW01B material washer. The material placed on this conveyor will be fed into the C11 conveyor. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 36" x 40' (91cm x 12.1m) Channel frame Conveyor.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 20 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C11 -Conveyor**

*The conveyor will transfer material discharging from the C10 conveyor. The material placed on this conveyor will be fed into the C12 radial stacker. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 36" x 80' (91cm x 24.3m) Channel frame Conveyor.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 10 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards. V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.

- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 20 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SP03 –Two Way Splitter Chute:**

*The splitter chute will transfer material from the C11 Conveyor and will have split by % onto the C12 telestacker conveyor and/or onto the C13 Jumper conveyor. Chute will be supplied, installed and commissioned by TPS.*

- The two way splitter chute is made from 3/8" plate with bolt in A.R. liner in wear areas. Discharge chute shall be made to feed and distribute material into the C12 telestacker conveyor *and /or* C13 jumper conveyor with a flop gate type control. Chute shall include a heavy duty support structure with walkway access around three sides and access to grade.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**C12 -Telestacker Conveyor:**

*The Conveyor will transfer material from the SP03 splitter chute and build a stockpile over the decanting tunnel. Conveyor will be supplied, installed and commissioned by TPS.*

- Main Conveyor made from Heavy Duty 52" Deep Truss Conveyor Frame made using 1/4" x 4" x 4" Cord Angle.
- Stinger made from Heavy Duty 36" Deep Truss Conveyor Frame made using 1/4" x 4" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- Main Conveyor Drive 40 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- Stinger Conveyor Drive 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 400 FPM average belt speed on the main conveyor and 600 FPM on the stinger.
- 16" diameter, Lagged Head pulley, Q.D. Hubs & Pillow block bearings.
- Heavy Duty C1045 Shaft.
- Replaceable blade Primary Cleaner.
- 14" diameter, Tail Pulley, Q.D. Hubs & Take up bearings.
- Heavy Duty C1045 Shaft.
- Heavy duty 24" Take-ups.
- Standard 5ft long radial receiving Hopper complete with rubber skirts and nip guards.
- CEMA-C 5" 20 deg, Troughing Idlers in transition areas.
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Heavy Duty V-plow.
- Zero Speed Switch.
- 36" Belt 330 series 3-ply heavy duty belt with a vulcanized splice.
- Heavy duty tubular design with square tube axle.
- 10-hold budd wheels with four 11:00 x 22.5" 14-ply tires.
- Heavy duty tubular telescopic support.
- Single shielded cylinder, with wet kit and dual safety pin locks. With 10 H.P. Hydraulic drive for Power Up and Down.
- ELECTRIC RADIAL WHEEL DRIVE. (2 HP)

- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C13 -Conveyor**

*The conveyor will transfer material discharging from the above SP03 splitter chute. The material placed on this conveyor will be fed either to another jumper conveyor C14-C16 or the C17teletackler conveyor or the conveyor can be used in the reclaim mode and be used to feed material back onto the C11 conveyor feeding the C12 teletackler conveyor to the decanting pile. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 36" x 100' (91cm x 30.4m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Tail support with tow hitch for easy movement.
- Heavy duty undercarriage made from square tubing and includes heavy duty axle with 11.22.5 tires and wheels.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C14 -Conveyor**

*The conveyor will transfer material discharging from the above Jumper conveyor. The material placed on this conveyor will be fed either to another jumper conveyor or the C17teletackler conveyor or the conveyor can be used in the reclaim mode and be used to feed material back onto the C11 conveyor feeding the C12 teletackler conveyor to the decanting pile. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 36" x 100' (91cm x 30.4m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.

- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Tail support with tow hitch for easy movement.
- Heavy duty undercarriage made from square tubing and includes heavy duty axle with 11.22.5 tires and wheels.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C15 -Conveyor**

*The conveyor will transfer material discharging from the above Jumper conveyor. The material placed on this conveyor will be fed either to another jumper conveyor or the C17teletackler conveyor or the conveyor can be used in the reclaim mode and be used to feed material back onto the C11 conveyor feeding the C12 teletackler conveyor to the decanting pile. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 36" x 100' (91cm x 30.4m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Tail support with tow hitch for easy movement.
- Heavy duty undercarriage made from square tubing and includes heavy duty axle with 11.22.5 tires and wheels.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.



**C16 -Conveyor**

*The conveyor will transfer material discharging from the above Jumper conveyor. The material placed on this conveyor will be fed either to another jumper conveyor or the C17telestacker conveyor or the conveyor can be used in the reclaim mode and be used to feed material back onto the C11 conveyor feeding the C12 telestacker conveyor to the decanting pile. The conveyor supply, install and commissioning will be by TPS.*

**Iea. 36" x 100' (91cm x 30.4m) Truss frame Conveyor.**

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Tail support with tow hitch for easy movement.
- Heavy duty undercarriage made from square tubing and includes heavy duty axle with 11.22.5 tires and wheels.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**C17 -Telestacker Conveyor:**

*The Conveyor will transfer material from the any of the above jumper conveyors (C13-C16) and build the winter stockpile. Conveyor will be supplied, installed and commissioned by TPS.*

- Main Conveyor made from Heavy Duty 52" Deep Truss Conveyor Frame made using 1/4" x 4" x 4" Cord Angle.
- Stinger made from Heavy Duty 36" Deep Truss Conveyor Frame made using 1/4" x 4" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- Main Conveyor Drive 40 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- Stinger Conveyor Drive 20 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 400 FPM average belt speed on the main conveyor and 600 FPM on the stinger.
- 16" diameter, Lagged Head pulley, Q.D. Hubs & Pillow block bearings.
- Heavy Duty C1045 Shaft.
- Replaceable blade Primary Cleaner.
- 14" diameter, Tail Pulley, Q.D. Hubs & Take up bearings.
- Heavy Duty C1045 Shaft.
- Heavy duty 24" Take-ups.
- Standard 5ft long radial receiving Hopper complete with rubber skirts and nip guards.

- CEMA-C 5" 20 deg, Troughing Idlers in transition areas.
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Heavy Duty V-plow.
- Zero Speed Switch.
- 36" Belt 330 series 3-ply heavy duty belt with a vulcanized splice.
- Heavy duty tubular design with square tube axle.
- 10-hold budd wheels with four 11:00 x 22.5" 14-ply tires.
- Heavy duty tubular telescopic support.
- Single shielded cylinder, with wet kit and dual safety pin locks. With 10 H.P. Hydraulic drive for Power Up and Down.
- ELECTRIC RADIAL WHEEL DRIVE. (2 HP)
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**UFR01 –Ultra Fine Recovery unit and Structure:**

*The ultra fines recovery unit will receive material from the SCR02A Screen. Ultra fines recovery unit will size the material accordingly; Discharge from ultra fines recovery unit shall feed onto the C18 conveyor. The flow over will be pumped to the slurry pond. Ultra fines recovery unit and Structure will be supplied, installed and commissioned by TPS.*

- McLanahan Ultra fines recovery 30-315-4, including: Three (3) Hydrocyclones Model HSE1510B4 fabricated from mild steel & rubber lined. Feed distributor with three (3) ports, rubber lined. Dewatering Screen Model VD-12 with two 4 hp motors. Feed collection sump model E-3000M. 10"x8" slurry pump with 150 hp motor .Suction hose. Discharge hose from pump discharge to inlet of Hydrocyclone feed manifold
- Ultra fines recovery structure shall be made from heavy-duty structural steel members. The structure shall include the following- stair access from the ground to the dewatering screen area. The structure shall also include a discharge chute. The above shall be supported using structural steel members bolted to the concrete footings.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**C18 -Conveyor**

*The conveyor will transfer material discharging from the UFR01 ultra fines recovery unit. The material placed on this conveyor will be fed into the C19 stacking conveyor. The conveyor supply, install and commissioning will be by TPS.*

**1ea. 30" x 40'(76.2cm x 12.1m) Channel frame Conveyor.**

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.

- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 20 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C19 –Stacking Conveyor**

*The stacking conveyor will transfer material discharging from the C18 conveyor (product from the ultra fines recovery unit). The material placed on this conveyor will be stockpiled. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 30" x 75' (76.2cm x 22.8m) Stacking Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 4" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 15 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 16" dia. Snub- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 16" dia. Wing type Tail- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 3'-6" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Heavy duty undercarriage made from square tubing and includes heavy duty telescoping axle with swivel boxes, 11.22.5 tires and wheels with Manual up and down.
- Anchor pivot plate, maintains tail end during radial travel.
- Manual Up and Down and Travel.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **DT01 –Decanting Tunnel**

*The decanting reclaim tunnel shall consist of a corrugated 12ft dia. Half-round tunnel by approximately 320ft long. The tunnel shall have three feeder hoppers. The material discharged from the feeders will be placed onto the C20 conveyor. The tunnel system supply, concrete design and install, tunnel installation and commissioning will be by TPS.*

- Half-round Pipe, Hot Dipped Galvanized 12ft dia. includes three hopper holes and concrete floor

- Three feeder hoppers made from 3/8" thick plate with 1/2" A.R. 400 bolt in liners includes tunnel reinforcement and support system.

**BF01-Feeder Belt**

*Feeder BF01 will transfer material fed from the tunnel live zone above the feeder. The material placed on this feeder will be fed into the C20 conveyor. The feeder supply, concrete design and install, feeder installation and commissioning will be by TPS.*

***Iea. 36" x 8' (91cm x 2.4m) Feeder Belt.***

- Heavy Duty Conveyor Frame made using 8"channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 0 to 50 FPM average belt speed.
- 12" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 12" dia. Wing type Tail- PPI MD Pro pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- UHMW slider bed.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supported from the Feed Hopper using heavy-duty channel angle iron.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**BF02-Feeder Belt**

*Feeder BF02 will transfer material fed from the tunnel live zone above the feeder. The material placed on this feeder will be fed into the C20 conveyor. The feeder supply, concrete design and install, feeder installation and commissioning will be by TPS.*

***Iea. 36" x 8' (91cm x 2.4m) Feeder Belt.***

- Heavy Duty Conveyor Frame made using 8"channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 0 to 50 FPM average belt speed.
- 12" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 12" dia. Wing type Tail- PPI MD Pro pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- UHMW slider bed.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.

- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supported from the Feed Hopper using heavy-duty channel angle iron.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**BF03-Feeder Belt**

*Feeder BF03 will transfer material fed from the tunnel live zone above the feeder. The material placed on this feeder will be fed into the C20 conveyor. The feeder supply, concrete design and install, feeder installation and commissioning will be by TPS.*

***Iea. 36" x 8' (91cm x 2.4m) Feeder Belt.***

- Heavy Duty Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 0 to 50 FPM average belt speed.
- 12" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 12" dia. Wing type Tail- PPI MD Pro pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- UHMW slider bed.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supported from the Feed Hopper using heavy-duty channel angle iron.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**C20-Conveyor**

*The conveyor will transfer material discharging from the above decanting tunnel. The material placed on this conveyor will be fed onto the SCR03 screen. The conveyor supply, install and commissioning will be by TPS.*

***Iea. 36" x 350' (91cm x 106m) Channel Truss frame Conveyor.***

- Heavy Duty Channel/Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle and 8' channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 75 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 24" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 24" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley

- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 24" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 24" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the SCR04 screen.
- Outside of tunnel 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Walk-around Head end service platform with access to screen structure.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SCR03 -4' x 10' (1.2m x 2.4m) Single Deck Screen and Screen Structure:**

*The SCR04 Screen will receive material from the C20 conveyor as described above. The screen will Size the material accordingly; Top deck shall feed onto the C10 conveyor. The Bottom Deck through will be placed in FH01. Screen and Screen Structure will be supplied, installed and commissioned by TPS.*

- 4' x 10' Single deck screen. 10hp T.E.F.C. Electric motor, 1800 rpm, 3 phase, 60Hz, 230/460 Volts. Motor mount and V-belt drive with drive guard. Dodge S-2000 Roller Bearing matched to screen size and fitted to the main vibrating shaft. Heavy-duty coil springs. Heat-treated screen box. Cast iron Eccentric Fly Wheel with removable weights for fine stroke adjustments.
- 410SD Screen structure shall be made from heavy-duty structural steel members. The structure shall include the following- stair access from the ground to the screen area. There will be access walkways around the screen. The above shall be supported using structural steel members bolted to the concrete footings
- The top deck and middle chute shall be made from 3/8" plate with 1/2" A.R. liners in the wear areas. It shall feed onto the ground.
- The Material that passes through the bottom deck will be fed into the FH01 feed hopper.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**FH01-Feed Hopper**

*The feed hopper shall be made to accept feed from SCR03 screen. The material discharged from the feed hopper via the BF04 belt feeder will be placed onto the C21 conveyor. The feed hopper supply, hopper installation and commissioning will be by TPS.*

- Feed Hopper shall be made from 1/4" plate using flat bar and channels as reinforcement.
- Shall include 1/4" A.R. liners.
- The hopper shall be approximately 10' x 12'.
- Hopper shall be supported using structural steel members bolted to the concrete footings.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**BF04-Feeder Belt**

*Feeder BF04 will transfer material fed from the above the feed hopper. The material placed on this feeder will be fed into the C21 conveyor. The feeder supply, concrete design and install, feeder installation and commissioning will be by TPS.*

**Iea. 36" x 8' (91cm x 2.4m) Feeder Belt.**

- Heavy Duty Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 0 to 50 FPM average belt speed.
- 12" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 12" dia. Wing type Tail- PPI MD Pro pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- UHMW slider bed.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supported from the Feed Hopper using heavy-duty channel angle iron.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**C21 -Conveyor**

*The conveyor will transfer material discharging from the above BF04 belt feeder. The material placed on this conveyor will be fed to the dryer inlet. The conveyor supply, install and commissioning will be by TPS.*

**Iea. 36" x 100' (91cm x 30.4m) Truss frame Conveyor.**

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 25 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Tail support with tow hitch for easy movement.
- Heavy duty undercarriage made from square tubing and includes heavy duty axle with 11.22.5 tires and wheels.



- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**Belt Scale.**

*The belt scale will be located on the C21 conveyor and produce a tonnage rate for the dryer feed. The belt scale supply, installation and commissioning will be by TPS.*

- Weighbridge: Single idler -type weighbridges feature full-floating unitized assemblies with no pivots and non-moving parts. All are constructed of structural steel tubing and are factory pre-assembled with check rods to facilitate fast and easy field installation. Only eight bolts are required to mount the unit to conveyor stringers. One environmentally-sealed precision strain gauge loadcell assemblies are applied in tension to support the weighbridge.
- The Belt Speed Sensor: Digital Belt Speed Sensor is the most reliable and accurate speed-sensing device ever developed for belt scale service. Direct-coupling the sensor to the conveyor tail pulley, snubbing roll, or a large diameter return roller ensures accurate belt-travel readout. No wheels ride on the belt, which eliminates problems related to material build-up and slippage.

**Winter Stockpile Reclaim.**

*The Reclaim system is used to reclaim stockpiled material from the winter pile. The system shall re-use the jumper conveyors (C13-C16) and shall include the following items.*

**FH02-Feed Hopper**

*The feed hopper shall be made to accept feed from a loader reclaiming the winter pile. The material discharged from the feed hopper via the BF05 belt feeder will be placed onto one of the jumper conveyors (C13-C16). The feed hopper supply, hopper installation and commissioning will be by TPS.*

- Portable chassis made using heavy-duty I-beam construction and including a single axle suspension, four 11.00 X 22.5 tires mounted on 10 hole Budd wheels, air brakes, four cribbing supports.
- 8' wide x 16' long Hopper made using 1/4" thick plate construction with channel and angle iron reinforcing and I-beam support columns with doors for access to the feeder area. The hopper shall also include 3/8" thick A.R. liners in cone area and have rubber flashing and flashing holders to form a tight seal to belt feeder. Hopper shall also have a manual slide gate to control the bed depth of material on the feeder belt.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**BF05-Feeder Belt**

*Feeder BF05 will transfer material fed from the above the feed hopper. The material placed on this feeder will be placed onto one of the jumper conveyors (C13-C16). The feeder supply, concrete design and install, feeder installation and commissioning will be by TPS.*

**Iea. 36" x 23' (91cm x 7m) Feeder Belt.**

- Heavy Duty Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 25 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 0 to 50 FPM average belt speed.

- 12" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 12" dia. Wing type Tail- PPI MD Pro pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- UHMW slider bed.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Supported from the Feed Hopper using heavy-duty channel angle iron.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

## **Dry Plant Scope and Descriptions.**

### **DR01- Counter-flow Sand Dryer**

*The dryer will receive feed from the C21 conveyor feeding material from the decanting reclaim pile. Counter-flow dryers give you lower fuel costs (over parallel flow dryers) due to 100<sup>0</sup> F lower exit gas temperatures from the dryer. This dryer is capable of 200 tons per hour at 7,000 ft elevation, 6% moisture removal. The burner is a gas/oil capable Starjet with a gas manifold. Gas volume out of the dryer is estimated at 34,347 ACFM at 250 degrees F. BTU required by the burner is 58,000,000 per hour. The diameter is 8', which will give an estimated gas velocity of 683 feet per minute. Smaller diameter dryers will work, but the carryout of the fines will increase. An example would be a 7' dryer having a gas velocity of 892 feet per minute, a 24% velocity increase. A 24 percent increase in velocity would increase fines pull-out from the dryer by 50%. The dryer shell is ½" mild steel and the flights are 3/8" thick mild steel. Flights in the dryer include two (2) rows of combustion flights and (3) rows of adjustable saw tooth drying flights. The dryer is slinger fed to improve sand flow into the dryer vs. a chute feed. Includes duct to a cyclone, a cyclone, and a baghouse with a 5.2:1 air to cloth ratio with 6,624 square feet of cloth. The dryer, duct to a cyclone and baghouse supply, installation and commissioning will be by TPS.*

- 8' x 30 Counter flow dryer and burner.
- TARMAC counter-flow dryer constructed of heavy ½" steel plate with environmentally clean counter flow design.
- 3/8" thick dryer flights consists of two rows, 24 combustion zone flights per row, and three rows, 16 flights per row adjustable saw tooth bucket flights.
- Drum tires with flex plate attachment.
- Solid trunnions shrink-fitted to shafts. Trunnions are supported by pillow block bearings mounted to a common base plate.
- Trunnions are machined to close tolerances to interface properly with the drum tires.
- Massive twin thrust rollers with bearings, over-sized thrust rollers are equal to the task of protecting the dryer from "walking" off the trunnion rollers.
- Drive system is powered by (4) 20 HP motor with shaft-mounted reducer.
- HDT drive sheaves and belts provide more positive drive to trunnions than conventional belts and sheaves.
- Main support frame
- Discharge housing and burner faceplate constructed of steel plate.
- Large discharge housing facilitates particulate fallout, which saves wear on downstream pollution control equipment.
- Discharge housing designed with sweep discharge, which keeps drum-mixer close to the ground and minimizes erection height required on set-up.
- Slinger feed
- Hauck 360 Starjet burner, blower. Oil/Gas capable. Natural gas flange on burner head

- 7' diameter cyclone with structural.
- Baghouse, fan, duct to fan and stack.
- Reverse jet pulse cleaning skid-mounted baghouse is sized for 35,000 ACFM, with 270 bags, bag length is 15'.
- Nomex bags with 6,624 ft<sup>2</sup> of cloth, 6.24" diameter bags, at a 6:1 air-to-cloth ratio.
- Galvanized 10 wire cages with built-in venture.
- Venturi does not protrude down into the bag/cage assembly, which can reduce the effective cloth area of the total baghouse by up to 6%.
- 10 wire cages are not as prone to damage as are mesh cages.
- Caged ladder to baghouse top, handrails around baghouse top.
- 3/16 " tube sheet with stiffening bars from above (in the clean air plenum) every third row and from below (in the filtration plenum) every ninth row.
- Double diaphragm valves have dual quick connect dresser couplings
- Double diaphragm valves provide more cleaning action than single diaphragm valves.
- Dual dresser couplings eliminate rubber hose connections, a constant repair point.
- Hopper auger with hard iron internal bearing(s) and flanged external bearings on hopper ends.
- Tarmac exclusive pulse valve pulsing control board with pulsing control for up to 64 valves, each pulsed individually. Each valve circuit is fused and has an on-line operation light.
- This board pulses each valve and bag row individually to reduce the tendency for stack "puffing" which is noticed on pulsing multiple bag rows at one time.
- Each circuit is fused to protect the pulse board should a pulse valve short.
- Fan, split housing, skid mounted, inverter duty motor, drives, drain
- Pulse controller is mounted on the baghouse frame and pre-wired to pulsing valves.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

#### **SC01 –Screw Conveyor**

*The screw conveyor will transfer material discharging from the above cyclone. The material placed in this screw conveyor will be fed to the dryer inlet. The screw conveyor supply, install and commissioning will be by TPS.*

##### ***Iea. 12" x 25' (30.4cm x 7.6m) Screw Conveyor.***

- Fabricated from 14" diameter tube housing with hanger bearings on 12' centers.
- 5'-0" half pitch flighting at the feed end and the balance of Flighting is full pitch.
- Flighting is 12" helicoids with 3/16" tip x 3/8" base fabricated from mild steel.
- Screw mounted on 3" schedule 40 pipe with 2.4375" coupling and stub shaft.
- 12.75" diameter inlet pipe with bolting flange.
- 12.75" diameter discharge outlet pipe x 12" long.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- Screw conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

#### **SC02 –Screw Conveyor**

*The screw conveyor will transfer material discharging from the above baghouse. The material placed in this screw conveyor will be blown to the fines tank. The screw conveyor supply, install and commissioning will be by TPS.*

##### ***Iea. 12" x 25'(30.4cm x 7.6m) Screw Conveyor.***

- Fabricated from 14" diameter tube housing with hanger bearings on 12' centers.
- 5'-0" half pitch flighting at the feed end and the balance of Flighting is full pitch.
- Flighting is 12" helicoids with 3/16" tip x 3/8" base fabricated from mild steel.
- Screw mounted on 3" schedule 40 pipe with 2.4375" coupling and stub shaft.

**Project:** Sample Plant Project  
**Customer:** Sample Customer

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- 12.75" diameter inlet pipe with bolting flange.
- 12.75" diameter discharge outlet pipe x 12" long.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- Screw conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C22-Conveyor**

*The conveyor will transfer material discharging from the above DR01 dryer. The material placed on this conveyor will be fed onto the FH03 feed hopper or by-pass into the FT01 fines tank. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 36" x 350' (91cm x 106.6m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 75 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 30" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 4" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 24" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 24" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the FH03 feed hopper and include a by-pass chute to the 100 mesh tank. This is done when processing ultra fines in the dryer.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **FT01 Fines Tank.**

*The Fines tank shall receive material discharging from the C22 conveyor and feed from all baghouse fines. The material will be feed blown by equipment provided by the customer to the existing fine grind system. Tank supply, install and commissioning will be by TPS.*

- Tank is made from rolled steel with a diameter of 12'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- All structure steel and chutes are painted standard factory paint.

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- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

### **Dry Screen Building.**

*The dry screen building shall be an enclosure around the dry screens structure and shall include the structural steel for supporting the items as described below.*

- The screen building shall include the structural steel members required to support the feed hopper, screens, belt feeders, conveyors and bucket elevators.
- It shall also include access (stairs, walkways and handrails) to all of the equipment included in the building.
- The Roof panels are 24 ga. standing seem with a 1:12 pitch. Includes 2" insulation.
- Frames clear span with tapered columns and exterior mounted girts.
- The building shall include steel siding 24 ga. and exterior mounted girts.
- Base angle for attachment to concrete.
- Gutters and down spouts will be 26 ga steel.
- Porthole frames for conveyor openings.
- 12' x 12' insulated 26 ga steel overhead door with vertical lift track.
- Two standard access doors.
- Concrete pad for all above.
- All painted standard factory paint.
- Handrails are painted safety yellow.

### **FH02-Feed Hopper**

*The feed hopper shall be made to accept feed from SCR04 screen. The material discharged from the feed hopper via the BF04 belt feeder will be placed onto the C21 conveyor. The feed hopper supply, hopper installation and commissioning will be by TPS.*

- Feed Hopper shall be made from 1/4" plate using flat bar and channels as reinforcement.
- Shall include 1/4" A.R. liners.
- The hopper shall be approximately 10' x 12'.
- Hopper shall be supported using structural steel members included in the screen structure.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

### **BF06-Feeder Belt**

*Feeder BF06 will transfer material fed from the above the feed hopper. The material placed on this feeder will be placed onto SCR05A screen. The feeder supply, concrete design and install, feeder installation and commissioning will be by TPS.*

#### ***Iea. 24" x 18' (60cm x 5.4m) Feeder Belt.***

- Heavy Duty Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 0 to 50 FPM average belt speed.
- 12" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 12" dia. Wing type Tail- PPI MD Pro pulley, Hubs & Pillow block bearings.

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- Heavy Duty Shafting.
- Manual Screw Take-up.
- UHMW slider bed.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supported using structural steel members included in the screen structure.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**BF07-Feeder Belt**

*Feeder BF07 will transfer material fed from the above the feed hopper. The material placed on this feeder will be placed onto SCR05B screen. The feeder supply, concrete design and install, feeder installation and commissioning will be by TPS.*

***Iea. 24" x 18' (60cm x 5.4m) Feeder Belt.***

- Heavy Duty Conveyor Frame made using 8"channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 0 to 50 FPM average belt speed.
- 12" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 12" dia. Wing type Tail- PPI MD Pro pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- UHMW slider bed.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supported using structural steel members included in the screen structure.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SCR04A-Dry Screen:**

*The SCR05A Screen will receive material from the BF06 belt feeder as described above. The screen will Size the material accordingly. Screen and Screen Structure will be supplied, installed and commissioned by TPS.*

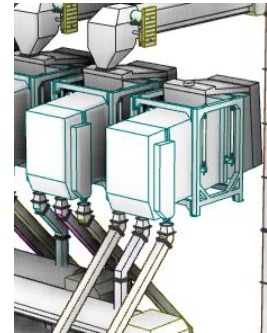
- Model 6022S2 Super-Deck Screen - Primary Frac Sand screen.
- Parallel flow Super-deck Construction Primary Frac Sand screen application each 2-deck construction with (8) 60 ft<sup>2</sup> individual elements total, single piece elements for zero leakage.
- (4) Four parallel screen decks with (2) two element per deck. 480 ft<sup>2</sup> of screen element total area.
- Frac sand construction with A.R. steel wear surfaces A.R. is 450 Brinell hardness for excellent wear resistance.
- In-feed flow distribution box assembly. Designed to ensure all elements are fed evenly, all the time. Assembly acts as a vibrating conveyor/spreader. All A.R Steel construction.

- Tensioned Screen Elements are included: - 40 Mesh and 70 Mesh T304SS Woven Wire.
- Single piece elements for zero leakage and easy removal.
- Over-sized Steel 2" Ball deck frames below the screen for self cleaning.
- High abrasion resistant balls.
- Eccentric Weight Drive System. Maintenance-free drive bearing lubricated for life.
- Sheaves, Belt and Guard 10 HP motor, 1800 RPM, TEFC.
- Discharge chutes arranged in a configuration to suit the installation.
- Assembly has A.R. steel construction in flow areas.
- Bottom pan assembly is a bolted design made of A.R. steel for wear resistance.
- Enclosed construction for dust control.
- Dust control ports included.
- Chute work shall be made from 1/4" plate with AR liners in wear areas. The chute flow shall be accordingly; Top deck material shall feed to the C25 collection conveyor. The middle deck material shall feed the C26 collection conveyor. The bottom deck material shall feed into its appropriate cycle tank.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**SCR04B-Dry Screen:**

*The SCR04B Screen will receive material from the BF07 belt feeder as described above. The screen will size the material accordingly. Screen and Screen Structure will be supplied, installed and commissioned by TPS.*

- Model 6022S2 Super-Deck Screen - Primary Frac Sand screen.
- Parallel flow Super-deck Construction Primary Frac Sand screen application each 2-deck construction with (8) 60 ft<sup>2</sup> individual elements total, single piece elements for zero leakage.
- (4) Four parallel screen decks with (2) two element per deck. 480 ft<sup>2</sup> of screen element total area.
- Frac sand construction with A.R. steel wear surfaces A.R. is 450 Brinell hardness for excellent wear resistance.
- In-feed flow distribution box assembly. Designed to ensure all elements are fed evenly, all the time. Assembly acts as a vibrating conveyor/spreader. All A.R. Steel construction.
- Tensioned Screen Elements are included: - 40 Mesh and 70 Mesh T304SS Woven Wire.
- Single piece elements for zero leakage and easy removal.
- Over-sized Steel 2" Ball deck frames below the screen for self cleaning.
- High abrasion resistant balls.
- Eccentric Weight Drive System. Maintenance-free drive bearing lubricated for life.
- Sheaves, Belt and Guard 10 HP motor, 1800 RPM, TEFC.
- Discharge chutes arranged in a configuration to suit the installation.
- Assembly has A.R. steel construction in flow areas.
- Bottom pan assembly is a bolted design made of A.R. steel for wear resistance.
- Enclosed construction for dust control.
- Dust control ports included.
- Chute work shall be made from 1/4" plate with AR liners in wear areas. The chute flow shall be accordingly; Top deck material shall feed to the C23 collection conveyor. The middle deck material shall feed the C26 collection conveyor. The bottom deck material shall feed into its appropriate cycle tank.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.





### **C23 -Conveyor**

*The conveyor will transfer material discharging from the both the primary dry screens. The material placed on this conveyor will be fed into the BC01 bucket elevator. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 24" x 52' (60cm x 15.8m) Channel frame Conveyor.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports in screen structure steel.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the bucket elevator.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **BE01 –Bucket Elevator**

*The Bucket elevator will transfer material discharging from the C23 conveyor. The material placed on this elevator will be fed into the SCR05. The elevator supply, install and commissioning will be by TPS.*

#### ***Iea. 12" x 7' x 68' (30.4cm x 17.7cm x 20.2m) bucket elevators.***

- 11 gauge intermediate sections x 20' high with flanged joints and ribbed stiffeners.
- Shaft mounted Gear Reducer with Internal Backstop.
- 25 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- 3/16" steel plate construction at the discharge end.
- 3/16" steel plate construction at the tail end.
- Large removable access section at the tail pulley.
- 12" x 7" inlet with feed hopper. (3/16" plate construction).
- 14 gauge dust hood / bonnet at the discharge pulley.
- Service platform around head end (3 sided).
- Ladder and safety cage. With access to roof.

- Supports in screen structure steel.
- Elevator and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SCR05-Dry Screen:**

*The SCR05 Screen will receive material from the BE01 elevator as described above. The screen will Size the material accordingly. Screen and Screen Structure will be supplied, installed and commissioned by TPS.*

- Model 6022S2 Super-Deck Screen – Secondary Frac Sand screen.
- Parallel flow Super-deck Construction Secondary Frac Sand screen application each 2-deck construction with (8) 60 ft<sup>2</sup> individual elements total, single piece elements for zero leakage.
- (4) Four parallel screen decks with (2) two element per deck. 480 ft<sup>2</sup> of screen element total area.
- Frac sand construction with A.R. steel wear surfaces A.R. is 450 Brinell hardness for excellent wear resistance.
- In-feed flow distribution box assembly. Designed to ensure all elements are fed evenly, all the time. Assembly acts as a vibrating conveyor/spreader. All A.R. Steel construction.
- Tensioned Screen Elements are included: - 20 Mesh and 40 Mesh T304SS Woven Wire.
- Single piece elements for zero leakage and easy removal.
- Over-sized Steel 2" Ball deck frames below the screen for self cleaning.
- High abrasion resistant balls.
- Eccentric Weight Drive System. Maintenance-free drive bearing lubricated for life.
- Sheaves, Belt and Guard 10 HP motor, 1800 RPM, TEFC.
- Discharge chutes arranged in a configuration to suit the installation.
- Assembly has A.R. steel construction in flow areas.
- Bottom pan assembly is a bolted design made of A.R. steel for wear resistance.
- Enclosed construction for dust control.
- Dust control ports included.
- Chute work shall be made from 1/4" plate with AR liners in wear areas. The chute flow shall be accordingly; Top deck material shall feed to the BE02 elevator. The middle deck material shall feed either the C24 conveyor or the SC03 screw conveyor. The bottom deck material shall feed into its appropriate cycle tank.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**BE02 –Bucket Elevator**

*The Bucket elevator will transfer material discharging from the secondary screen top deck chute. The material placed on this elevator will be fed into the Magnetic Separator supplied by the customer. The elevator supply, install and commissioning will be by TPS.*

***Iea. 12" x 7" x 45' (30.4cm x 17.7cm x 13.7m) bucket elevators.***

- 11 gauge intermediate sections x 20' high with flanged joints and ribbed stiffeners.
- Shaft mounted Gear Reducer with Internal Backstop.
- 15 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- 3/16" steel plate construction at the discharge end.
- 3/16" steel plate construction at the tail end.
- Large removable access section at the tail pulley.

- 12" x 7" inlet with feed hopper. (3/16" plate construction).
- 14 gauge dust hood / bonnet at the discharge pulley.
- Service platform around head end (3 sided).
- Ladder and safety cage. With access to roof access area.
- Supports in screen structure steel.
- Elevator and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

#### **C24-Conveyor**

*The conveyor will transfer material discharging from the oversize cycle tank. The material placed on this conveyor will be fed onto the OT01 Tank. The conveyor supply, install and commissioning will be by TPS.*

##### **Iea. 24" x 185' (60cm x 56.3m) Truss frame Conveyor.**

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 25 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 20" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 18" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the OT01 Tank.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

#### **SC03 –Screw Conveyor**

*The screw conveyor will transfer material discharging from the above oversize cycle tank. The material placed in this screw conveyor will be fed onto the C27 cycle collection conveyor. The screw conveyor supply, install and commissioning will be by TPS.*

##### **Iea. 12" x 25' (30.4cm x 7.6m) Screw Conveyor.**

- Fabricated from 14" diameter tube housing with hanger bearings on 12' centers.
- 5'-0" half pitch flighting at the feed end and the balance of Flighting is full pitch.
- Flighting is 12" helicoids with 3/16" tip x 3/8" base fabricated from mild steel.
- Screw mounted on 3" schedule 40 pipe with 2.4375" coupling and stub shaft.

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- 12.75" diameter inlet pipe with bolting flange.
- 12.75" diameter discharge outlet pipe x 12" long.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- Screw conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

#### **OT01 Oversize Tank.**

*The oversize tank shall receive material discharging from the C24 conveyor. The material will be feed ether to the CR04 crusher or can discharge into a truck for sales of removal from the system. Tank supply, install and commissioning will be by TPS.*

- Tank is made from rolled steel with a diameter of 12'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Diverter chute with gate. Allows for feed to crusher or feed to the screw conveyor.
- Hopper shall be supported using structural steel members bolted to the concrete footings with enough clearance for a truck to drive through.
- All structure steel and chutes are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

#### **CR04- VSI Crusher and support structure.**

*The VSI crusher will accept feed from the above OT01 tank. The crusher is supplied by the customer. Crusher rebuild, chutes and structure supply, installation and commissioning will be by TPS.*

- Existing Vertical Shaft Impact Crusher.
- The structure shall be made to support the Crusher. Heavy-duty crusher support structure made to fit the REMco SandMax crusher. Support includes access platform around three sides of crusher including stair access from ground to the crusher area and up to the screen area. The above shall be supported using structural steel members bolted to the concrete footings.
- Crusher discharge chute made from 3/8" plate steel with rock on rock design. Chute made to accept feed from the crusher and direct the material onto the C25 conveyor.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

#### **C25-Conveyor**

*The conveyor will transfer material discharging from the CR04 crusher. The material placed on this conveyor will be fed onto the C22 conveyor for re-feed to the dry screens. The conveyor supply, install and commissioning will be by TPS.*

##### ***Iea. 24" x 90' (60cm x 27.4m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 15 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley

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- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 18" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the C22 conveyor.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **C26 -Conveyor**

*The conveyor will transfer material discharging from the both the primary dry screens. The material placed on this conveyor will be fed into the BC03 bucket elevator. The conveyor supply, install and commissioning will be by TPS.*

#### ***Iea. 24" x 52' (60cm x 15.8m) Channel frame Conveyor.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports in screen structure steel.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the bucket elevator.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**BE03 –Bucket Elevator**

*The Bucket elevator will transfer material discharging from the C26 conveyor. The material placed on this elevator will be fed into the SCR06. The elevator supply, install and commissioning will be by TPS.*

***1ea. 12" x 7" x 68' (30.4cm x 17.7cm x 20.2m) bucket elevators.***

- 11 gauge intermediate sections x 20' high with flanged joints and ribbed stiffeners.
- Shaft mounted Gear Reducer with Internal Backstop.
- 25 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 18" dia. Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Manual Screw Take-up.
- 3/16" steel plate construction at the discharge end.
- 3/16" steel plate construction at the tail end.
- Large removable access section at the tail pulley.
- 12" x 7" inlet with feed hopper. (3/16" plate construction).
- 14 gauge dust hood / bonnet at the discharge pulley.
- Service platform around head end (3 sided).
- Ladder and safety cage. With access to roof access area.
- Supports in screen structure steel.
- Elevator and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SCR06-Dry Screen:**

*The SCR06 Screen will receive material from the BE03 elevator as described above. The screen will Size the material accordingly. Screen and Screen Structure will be supplied, installed and commissioned by TPS.*

- Model 6033S1 Super-Deck Screen –Polishing Frac Sand screen.
- Parallel flow Super-deck Construction Polishing Frac Sand screen application each 2-deck construction with (8) 60 ft2 individual elements total, single piece elements for zero leakage.
- (6) Six parallel screen decks with (1) one element per deck. 360 ft2 of screen element total area.
- Frac sand construction with A.R. steel wear surfaces A.R. is 450 Brinell hardness for excellent wear resistance.
- In-feed flow distribution box assembly. Designed to ensure all elements are fed evenly, all the time. Assembly acts as a vibrating conveyor/spreader. All A.R Steel construction.
- Tensioned Screen Elements are included: - 70 Mesh T304SS Woven Wire.
- Single piece elements for zero leakage and easy removal.
- Over-sized Steel 2" Ball deck frames below the screen for self cleaning.
- High abrasion resistant balls.
- Eccentric Weight Drive System. Maintenance-free drive bearing lubricated for life.
- Sheaves, Belt and Guard 10 HP motor, 1800 RPM, TEFC.
- Discharge chutes arranged in a configuration to suit the installation.
- Assembly has A.R. steel construction in flow areas.
- Bottom pan assembly is a bolted design made of A.R. steel for wear resistance.
- Enclosed construction for dust control.
- Dust control ports included.
- Chute work shall be made from 1/4" plate with AR liners in wear areas. The chute flow shall be accordingly; Top deck material shall feed into its appropriate cycle tank. The bottom deck material shall feed into its appropriate cycle tank.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.

- All guards and handrail are painted safety yellow.

### **Cycle Tanks.**

*The Cycle tanks are used to hold material discharging from the dry screens until the automation system is ready to cycle the product up into the storage/load out tanks. The cycle tanks also allow for blending products together and feed it into the batch tank for loadout. The cycle tanks are made up of seven tanks each with the ability to discharge onto the C27 conveyor for transport to the storage/load out area. Tanks supply, install and commissioning will be by TPS.*

- 2ea 40/70 Tanks is made from rolled steel with a diameter of 9'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Hopper shall be supported using structural steel members bolted to the concrete footings.
- 2ea 100mesh Tanks are made from rolled steel with a diameter of 9'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Hopper shall be supported using structural steel members bolted to the concrete footings.
- 1ea 100mesh Tank is made from rolled steel with a diameter of 9'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Hopper shall be supported using structural steel members bolted to the concrete footings.
- 1ea 20/40 Tank is made from rolled steel with a diameter of 9'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Hopper shall be supported using structural steel members bolted to the concrete footings.
- 1ea +20 Tank is made from rolled steel with a diameter of 9'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Hopper shall be supported using structural steel members bolted to the concrete footings
- All structure steel and Tanks are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

### **Storage/Loadout Scope and Descriptions.**

#### **C27 -Conveyor**

*The conveyor will transfer material discharging from above cycle tanks. The material placed on this conveyor will be fed into the C28 conveyor. The conveyor supply, install and commissioning will be by TPS.*

#### ***1ea. 42" x 82' (106cm x 24.9m) Channel frame Conveyor.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 15 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.



- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports in screen structure steel.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

#### **C28 -Conveyor**

*The conveyor will transfer material discharging from the C27 conveyor. The material placed on this conveyor will be fed into the C29 conveyor. The conveyor supply, install and commissioning will be by TPS.*

##### ***1ea. 42" x 50' (106cm x 15.2m ) Channel frame Conveyor.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 15 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports on 20 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the next conveyor.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

##### **SP07 –Two Way Splitter Chute:**

*The splitter chute will transfer material from the C28 Conveyor and will have split by % onto the C29 stacker conveyor or onto the C30 conveyor. Chute will be supplied, installed and commissioned by TPS.*

- The two way splitter chute is made from 3/8" plate with bolt in A.R. liner in wear areas. Discharge chute shall be made to feed and distribute material into the C29 stacker conveyor *or* C30 conveyor with a flop gate type control. Chute shall include a heavy duty support structure with walkway access around three sides and access to grade.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**C29 –Stacking Conveyor**

*The stacking conveyor will transfer material discharging from the SP07 Splitter Chute. The material placed on this conveyor will be stockpiled or put into a truck. The conveyor supply, install and commissioning will be by TPS.*

***Iea. 36" x 75' (91cm x 22.8m) Stacking Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 4" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 15 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 16" dia. Snub- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 16" dia. Wing type Tail- MD pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 35 deg, Troughing Idlers spaced on 3'-6" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers.
- Zero Speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Heavy duty undercarriage made from square tubing and includes heavy duty telescoping axle with swivel boxes, 11.22.5 tires and wheels with Manual up and down.
- Anchor pivot plate, maintains tail end during radial travel.
- Manual Up and Down and Travel.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**C30-Conveyor**

*The conveyor will transfer material discharging from the above SP07 splitter. The material placed on this conveyor will be fed up to the storage /load out tanks. The conveyor supply, install and commissioning will be by TPS.*

***Iea. 42" x 345' (106cm x 105.1m )Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.
- Shaft mounted Gear Reducer with Internal Backstop.
- 75 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 30" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 4" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.

- 24" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 24" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the SP08 splitter.
- 2 ft. wide Gripstrut type walkways including 1 1/4" dia. Pipe handrails, Angle type walkway supports and safety pull cords and switches. Includes stair access to grade.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

**SP08 –Three Way Splitter Chute:**

*The splitter chute will transfer material from the C30 Conveyor and will have split by % onto the C31 conveyor or into the batch tank or the 40/70 tank for load out on the truck system or the rail system. Chute will be supplied, installed and commissioned by TPS.*

- The three way splitter chute is made from 3/8" plate with bolt in A.R. liner in wear areas. Discharge chute shall be made to feed and distribute material into the C31 conveyor *or* the batch tank or the 40/70 tank with a flop gate type control. Chute shall include a heavy duty support structure with walkway access around three sides and access to grade.
- All structure steel and chutes excluding drive components are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**C31 -Conveyor**

*The conveyor will transfer material discharging from the SP08 splitter. The material placed on this conveyor will be fed into the 100 mesh tank. The conveyor supply, install and commissioning will be by TPS.*

**Iea. 42" x 35' (106cm x 10.6m ) Channel frame Conveyor.**

- Heavy Duty channel Conveyor Frame made using 8" channel.
- Shaft mounted Gear Reducer with Internal Backstop.
- 5 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 18" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 18" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Manual Screw Take-up.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.

- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports on top of the tanks.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the 100 mesh tank.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **STK01-Batch Tank**

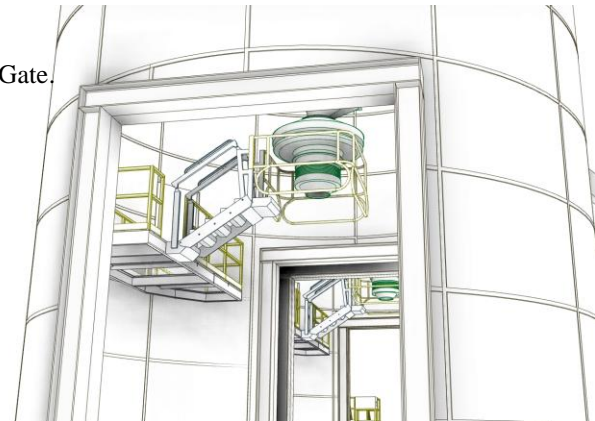
*The batch tank will accept feed from the splitter chute. The tank shall have a 500 tons capacity and hold blended products or other specialty products staging for shipment. Tank can be unloaded by gravity type into a tank truck or sent to the rail car loading system. The Tank supply, install and commissioning will be by TPS.*

- Tank is made from rolled steel with a diameter of 21'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Diverter chute with gate. Allows for feed to Truck or feed to the rail loadout collection conveyor.
- Air vent filter Module.
- Vent Exhaust Fan.
- Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate.
- Wave Radar Level System & High Level Indicator.
- Carbis Gangway.
- Walkway inside tank.
- Hopper shall be supported using structural steel members bolted to the concrete footings with enough clearance for a truck to drive through.
- All structure steel and chutes are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

### **STK02-40/70 Tank**

*The 40/70 tank will accept feed from the splitter chute. The tank shall have a 1500 tonnes capacity and hold the 40/70 product staging it for shipment. Tank can be unloaded by gravity type into a tank truck or sent to the rail car loading system. The Tank supply, install and commissioning will be by TPS.*

- Tank is made from rolled steel with a diameter of 29'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Diverter chute with gate. Allows for feed to Truck or feed to the rail loadout collection conveyor.
- Air vent filter Module.
- Vent Exhaust Fan.
- Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate.
- Wave Radar Level System & High Level Indicator.
- Carbis Gangway.
- Walkway inside tank.
- Hopper shall be supported using structural steel members bolted to the concrete footings with enough clearance for a truck to drive through.
- All structure steel and chutes are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.



**STK03-100 mesh Tank**

*The 100 mesh tank will accept feed from the C31 conveyor. The tank shall have a 1500 tonnes capacity and hold the 100 mesh product staging it for shipment. Tank can be unloaded by gravity type into a tank truck or sent to the rail car loading system. The Tank supply, install and commissioning will be by TPS.*

- Tank is made from rolled steel with a diameter of 29'.
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Diverter chute with gate. Allows for feed to Truck or feed to the rail loadout collection conveyor.
- Air vent filter Module.
- Vent Exhaust Fan.
- Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate.
- Wave Radar Level System & High Level Indicator.
- Carbis Gangway.
- Walkway inside tank.
- Hopper shall be supported using structural steel members bolted to the concrete footings with enough clearance for a truck to drive through.
- All structure steel and chutes are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.

**TS01-Truck Scale System**

*The truck scale will be located underneath the three storage tanks described above. The scale system will provide truck loadout ticketing. The truck scale system supply, install and commissioning will be by TPS.*

***Iea. Model 7562 120 FT Truckmate® Scale.***

- Heavy Duty channel Conveyor Frame made using 8" channel.
- 120' Long X 11' Wide.
- Superior Orthotropic Steel Deck Design
- 80,000 Lb. Concentrated Load Capacity
- 200,000Lb. Scale Capacity
- Minimum Increment Size, 20 Lb.
- Ntep Cc: 93-108a3
- Cycle Duty (Up To 250 Cycles Per Day, Average)
- Factory Assembled Modules
- Side rails and mounting brackets
- 300 ft Stainless Steel Sheathed Cables
- Stainless Steel Junction Boxes
- (10) 6" riser plates
- Installation Kit Of Parts
- 5-Year Guarantee and **Strikeshield™** Lightning Protection System.
- 45t Powercell® Mtx® Load Cells
- ADI310 Scoreboard to be mounted on load out
- 8' x 8' control room with ticket printer
- Control room to tank loadout access.

**C32-Conveyor**

*The conveyor will transfer material discharging from the any of the above storage tanks. The material placed on this conveyor will be fed up to the Rail Car loadout System. The conveyor supply, install and commissioning will be by TPS.*

***Iea. 42" x 220' (106cm x 67m) Truss frame Conveyor.***

- Heavy Duty Truss Conveyor Frame made using 1/4" x 3" x 4" Cord Angle.

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- Shaft mounted Gear Reducer with Internal Backstop.
- 50 HP.1800 RPM TEFC Electric motor. Drive Sheaves and belts are enclosed in a Drive Guard.
- 350 FPM average belt speed.
- 24" dia. Lagged Drive- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Replaceable blade Primary Cleaner.
- Replaceable blade Secondary Cleaner.
- 24" dia. Wing type Tail- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- Receiving hopper complete with rubber skirts and nip guards.
- V-plow near the tail pulley and take-up pulley
- Gravity Take-up vertical type Take-up frame including Weight Box and perimeter guarding.
- 24" dia. plain type Bends- Mine Duty type pulley, Hubs & Pillow block bearings.
- Heavy Duty Shafting.
- 24" dia. wing type plain type Take-up- Mine Duty type pulley, Hubs & Pillow block bearings.
- CEMA-C 5" 20/35 deg, Troughing Idlers located at transitions (head and Tail).
- CEMA-C 5" 45 deg, Troughing Idlers spaced on 4'-0" centers.
- CEMA-C 5" Return Idlers spaced on 10'-0" centers. Include PPI Return guards on all return idlers.
- Zero speed Switch.
- Heat resistant 3 PLY. 330 P.I.W. belting with 3/16" top and 1/16" bottom covers, vulcanized splice.
- Galvanized hinged hood cover in 4' sections.
- Supports on 40 ft spacing Supports are H-frame and A-frame type made using heavy-duty channel angle iron.
- Discharge hood made from 1/2" plate with bolt in A.R. liner in wear areas. Discharge hood shall be made to feed onto the rail car loading system.
- Conveyor and steel accessories excluding drive components are painted standard factory paint.
- Tail pulley cover, all nip guards and handrail are painted safety yellow.

### **Belt Scale.**

*The belt scale will be located on the C32 conveyor and produce a tonnage rate for rail car loading. The belt scale supply, installation and commissioning will be by TPS.*

- Weighbridge: Three or four idler suspension-type Ramsey 10-14 weighbridges feature full-floating unitized assemblies with no pivots and non-moving parts. All Ramsey weighbridges from Thermo are constructed of structural steel tubing and are factory pre-assembled with check rods to facilitate fast and easy field installation. Only eight bolts are required to mount the unit to conveyor stringers. Four environmentally-sealed precision strain gauge loadcell assemblies are applied in tension to support the weighbridge.
- The Belt Speed Sensor: Ramsey 61-12C Digital Belt Speed Sensor is the most reliable and accurate speed-sensing device ever developed for belt scale service. Direct-coupling the sensor to the conveyor tail pulley, snubbing roll, or a large diameter return roller ensures accurate belt-travel readout. No wheels ride on the belt, which eliminates problems related to material build-up and slippage.

### **RL01- Rail Car Loading System**

*The loading system shall receive feed from the C32 conveyor. The product will be fed into chute with a discharge spout acceptable to feeding a rail car. The system supply, install and commissioning will be by TPS.*

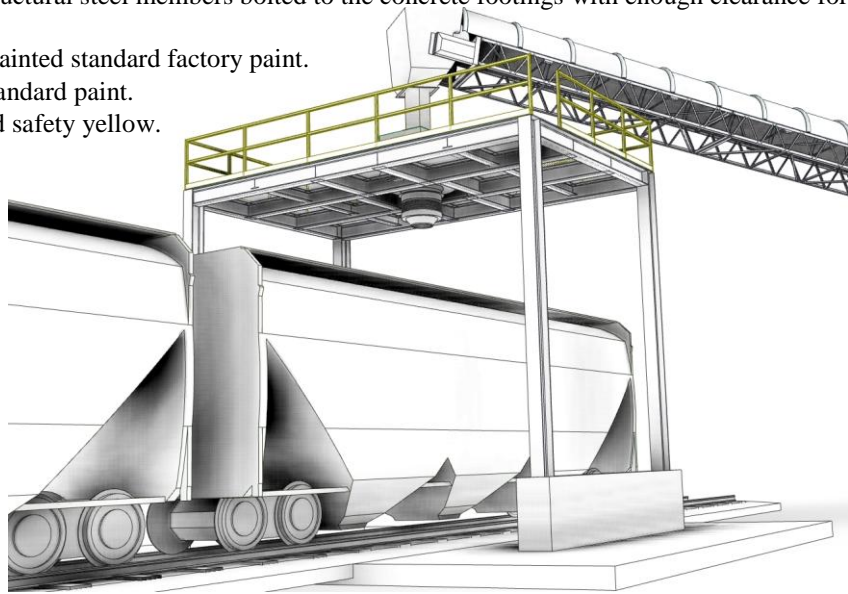
- 45 deg hopper slope terminating with a 14" dia flanged outlet.
- Air vent filter Module.
- Vent Exhaust Fan.
- Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate.
- Walkway access to top of train cars and to the chute transition area.

*Confidential*

**Project:** Sample Plant Project  
**Customer:** Sample Customer

Proposal No. 00000-01

- Above shall be supported using structural steel members bolted to the concrete footings with enough clearance for the rail cars to roll through.
- All structure steel and chutes are painted standard factory paint.
- All equipment will have factory standard paint.
- All guards and handrail are painted safety yellow.





# Sample Company

## Processing Plant

Project: Sample Plant Site

## II. Project Cost Report



Equipment	Cost
Equipment-Wet Plant	\$1,362,076
Equipment-Dry Plant	\$1,293,321
Equipment-Dust Control	\$303,037
Equipment-Storage/Loadout	\$998,911
Equipment-Buildings	\$80,000
<b>Total</b>	<b>\$4,037,345</b>

Conveyors	Cost
Conveyors -Wet Plant	\$1,509,571
Conveyors -Dry Plant	\$782,504
Conveyors -Storage/Loadout	\$473,587
<b>Total</b>	<b>\$2,765,662</b>

Structures	Cost
Structures-Wet Plant	\$948,723
Structures-Dry Plant	\$752,794
Structures-Dust Control	\$20,000
<b>Total</b>	<b>\$1,721,517</b>

Concrete	Cost
Structures Concrete	\$793,000
Conveyors Concrete	\$174,000
Concrete Embedment's	\$52,000
<b>Total</b>	<b>\$1,019,000</b>

Installation	Cost
Equipment Rentals	\$204,000
Installation of Equipment, Structures	\$821,600
Belt Vulcanize and training	\$176,520
<b>Total</b>	<b>\$1,202,120</b>

Freight In	Cost
Freight in on Equipment, Structures and Conveyors	\$470,400
<b>Total</b>	<b>\$470,400</b>

Electrical	Cost
	\$3,325,500
<b>Total</b>	<b>\$3,325,500</b>

Project Management	Cost
Engineering, Procurement, Project Management	\$2,500,000
<b>Total</b>	<b>\$2,500,000</b>

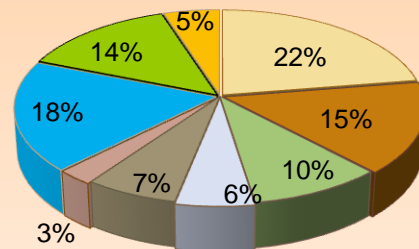
Project Contingency	Cost
	\$900,000
<b>Project Contingency Total</b>	<b>\$900,000</b>

Project Cost	Cost
<b>Total Project Cost</b>	<b>\$17,941,545</b>

### Actual Cost Breakdown

**\$17,941,545 USD**

- Equipment
- Conveyors
- Structures
- Concrete
- Installation
- Freight In
- Electrical
- Project Management
- Project Contingency



### Our Mission

We are committed to being the most trusted, respected, and preferred provider of services and processing facilities in the industry.

# Sample Company

## Processing Plant

## Equipment Summary

Project: Sample Plant Site

Equipment-Wet Plant		H.P.	Cost
F01	Lippmann 51" X 20' Vibrating Grizzly Feeder	40	\$35,600
CR01	Lippmann 30" x 48" Jaw Crusher	200	\$210,510
	AutoLube		\$7,050
	Hydraulic Toggle		\$45,000
SCR01	5' x 16' Screen	30	\$28,610
	Media		\$15,000
CR02	Sandvik H4800 Cone Crusher		\$350,000
	Main Drive Motor	300	
	Cooling fan (4.6kw)	10	
	Hydro-set (2.5kw)		
	Oil heater		
	Lube oil pump (3.4kw)	5	
	Over pressure blower (.45kw)	0.5	
	Pinion pump (.29kw)	0.5	
SCR02A	8x20 Screen		\$112,358
	Motor 1	30	\$1,620
	Motor 2	30	\$1,620
	Media		\$30,000
SCR02B	8x20 Screen		\$0
	Motor 1	30	\$0
	Motor 2	30	\$0
	Media		\$0
FMW01A	McLanahan Twin 44" x33' Fine Material Washer		\$82,231
	Motor 1	15	\$1,338
	Motor 2	2	\$1,338
	Top Covers		\$11,562
	Polyurethane wear shoes		\$4,954
FMW01B	McLanahan Twin 44" x33' Fine Material Washer		\$0
	Motor 1	15	\$0
	Motor 2	15	\$0
	Top Covers		\$0
	Polyurethane wear shoes		\$0
UFR01	McLanahan Ultrafines Recovery Plant		\$144,495
	Hydrocyclone Stack with 3 Model HSE1510B4		
	Feed Distributor		
	Dewatering Screen		
	Motor 1	4	
	Motor 2	4	
	Feed Collection Sump Box		
	Slurry Pump	150	
CR03A	Structure Package		
	REMco SandMax 800 ST		\$209,800
	Dual Drive Assembly		\$9,975
	Motor 1	400	\$15,000
	Motor 2	400	\$15,000
	Spare Rotor		\$13,900
	Heat Exchanger		\$2,445
	Lube Heat system		\$670
CR03B	REMco SandMax 800 ST		\$0
	Dual Drive Assembly		\$0
	Motor 1	400	\$0
	Motor 2	400	\$0
	Spare Rotor		\$0
	Heat Exchanger		\$0
	Lube Heat system		\$0
			\$0
SCR03	4' x 10' SD Screen	7.5	\$12,000
<b>Equipment-Wet Plant Total</b>			<b>\$1,362,076</b>

Equipment-Dry Plant		H.P.	Cost
DR01	8' x 30' Counter Flow Dryer		\$247,292
	Motor 1	20	
	Motor 2	20	
	Motor 3	20	
	Motor 4	20	
	Cyclone		\$25,949
	Baghouse		\$145,368
FN01	Supply Fan	150	
	Duct Work..Includes Ducting, airlocks and etc..		\$32,650
SCR04A	6022S2 BM&M Screen	10	\$200,000
SCR04B	6022S2 BM&M Screen	10	\$200,000
SCR05	6022S2 BM&M Screen	10	\$200,000
SCR06	6033S1 BM&M Screen	10	\$200,000
MGS01	Magnet Seperator..... supply by CUSTOMER		\$0
	Motor 1	5	
	Motor 2	5	
	Motor 3	5	
CR04	Rebuilt VSI.....supply by CUSTOMER	100	\$42,062
<b>Equipment-Dry Plant Total</b>			<b>\$1,293,321</b>
Equipment-Dust Control		H.P.	Cost
BH01	Bag House		\$85,950
	Duct Work..Includes Ducting, airlocks and etc..		\$135,125
FN02	Exhaust Fan	300	\$42,010
AC01	Air Compressor	60	\$35,662
	piping		\$4,290
<b>Equipment-Dust Control Total</b>			<b>\$303,037</b>
Equipment-Storage/Loadout		H.P.	Cost
STK01	500 ton Storage Tank		\$115,695
Batch	Air vent filter Module		\$7,094
	Vent Exhaust Fan	5	\$1,875
Product	Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate		\$31,477
Storage	Wave Radar Level System & High Level Indicator		\$2,851
	Carbis Gangway		\$8,820
	Tank fittings		\$2,000
	Walkway inside tank		\$4,000
STK02	1500 ton Storage Tank		\$270,310
40x70	Air vent filter Module		\$7,094
	Vent Exhaust Fan	5	\$1,875
Product	Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate		\$31,477
Storage	Wave Radar Level System & High Level Indicator		\$2,851
	Carbis Gangway		\$8,820
	Tank fittings		\$2,000
	Walkway inside tank		\$4,000
STK03	1500 ton Storage Tank		\$270,310
100 Mesh	Air vent filter Module		\$7,094
	Vent Exhaust Fan	5	\$1,875
Product	Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate		\$31,477
Storage	Wave Radar Level System & High Level Indicator		\$2,851
	Carbis Gangway		\$8,820
	Tank fittings		\$2,000
	Walkway inside tank		\$4,000
RL01	Rail Loadout		
	Filter Module, Loading Spout, Control Pendant, Manual Gate & Pneumatic Gate		\$31,477
	Wave Radar Level System & High Level Indicator		\$2,851
	Carbis Gangway		\$8,820
TS01	Truck Scale and Ticketing Model 7562 150 FT Truckmate Scale		\$110,600
CH01	Ticketing Control House 8x8		\$14,500
<b>Equipment-Storage/Loadout</b>			<b>\$998,911</b>
Equipment-Buildings		H.P.	Cost
OF01	24x56 Office Building		\$20,000
	Warehouse		\$10,000

Maintenance Shop	\$30,000
Employee Washroom	\$20,000
<b>Equipment-Laboratory Total</b>	<b>\$80,000</b>

Equipment H.P. Requirement	Total
	3,279

Equipment Cost	Total
	\$4,037,345



## SAFETY:

Safety is of paramount importance when erecting processing plants. To insure that all M.S.H.A., O.S.H.A., and your company safety procedures and guidelines are followed, we work with your management personnel to develop a safety plan before we begin the project. TPS personnel not only know what they are building, they know how to operate and maintain the equipment as well. This reduces the stress, effort, and costs required to startup and tune the plant.



# Sample Company

## Conveyor Summary

### Processing Plant

Project: Sample Plant Site

Conveyors -Wet Plant			H.P.	Cost
BF01	36" X 8'	Belt Feeder	5	\$20,689
BF02	36" X 8'	Belt Feeder	5	\$20,689
BF03	36" X 8'	Belt Feeder	5	\$20,689
BF04	36" X 8'	Belt Feeder	5	\$20,689
BF05	48" X 20'	Belt Feeder	25	\$31,800
C01	48" X 38'	Belt Conveyor Channel Frame	20	\$28,675
C02	48" x 120'	Belt Conveyor Truss Frame	40	\$69,344
C03	48" X 38'	Belt Conveyor Channel Frame	20	\$31,861
C04	36" x 120'	Belt Conveyor Truss Frame	40	\$66,239
C05	36" x 80'	Belt Conveyor Channel Frame	5	\$41,789
C06	36" x 110'	Belt Conveyor Truss Frame	20	\$64,948
C07	36" x 80'	Belt Conveyor Channel Frame	5	\$41,789
C08	36" x 100'	Belt Conveyor Truss Frame	20	\$64,578
C09	36" X 100'	Belt Conveyor Channel/Truss Frame	20	\$66,278
C10	36" x40'	Belt Conveyor Channel Frame	5	\$39,569
C11	36" x 80'	Belt Conveyor Truss Frame	10	\$44,272
C12	36" 150'	Radial Stacker Telescoping	40	\$165,450
		Stinger	20	
		Power up & Down	10	
		Power travel	2	
		Winch	40	
C13	36" X 100'	Belt Conveyor Truss Frame Jumper	20	\$38,472
C14	36" X 100'	Belt Conveyor Truss Frame Jumper	20	\$38,472
C15	36" X 100'	Belt Conveyor Truss Frame Jumper	20	\$38,472
C16	36" X 100'	Belt Conveyor Truss Frame Jumper	20	\$38,472
C17	36" 150'	Radial Stacker Telescoping	40	\$165,450
		Stinger	20	
		Power up & Down	10	
		Power travel	2	
		Winch	40	
C18	30" x 40'	Belt Conveyor	5	\$39,201
C19	30" x 75'	Radial Stacker Truss Frame	15	\$39,510
C20	36" X 350'	Belt Conveyor Channel/Truss Frame	75	\$223,918
C21	36" X 100'	Belt Conveyor Truss Frame	25	\$41,056
		Belt Scale		\$7,200
<b>Conveyors -Wet Plant Total</b>				<b>\$1,509,571</b>
Conveyors -Dry Plant			H.P.	Cost
BF06	24" X 18'	Belt Feeder	5	\$25,011
BF07	24" X 18'	Belt Feeder	5	\$25,011
BE01	12 X 7 X 68'	Bucket Elevator	25	\$138,800
BE02	12 X 7 X 45'	Bucket Elevator	15	\$53,567
BE03	12 X 7 X 68'	Bucket Elevator	25	\$138,800
C22	30' X 285'	Belt Conveyor Truss Frame	40	\$178,917
C23	24" x 52'	Belt Conveyor Channel Frame	5	\$30,622
C24	24" x 185'	Belt Conveyor Truss Frame	25	\$105,244
C25	24" x 90'	Belt Conveyor Truss Frame	15	\$5,230
C26	24" x 52'	Belt Conveyor Channel Frame	5	\$30,622
C27	42" x 82'	Belt Conveyor Channel Frame	15	\$50,680
SC01		Screw Conveyor	5	
SC02		Screw Conveyor	5	
SC03		Screw Conveyor	5	
<b>Conveyors --Dry PlantTotal</b>				<b>\$782,504</b>

Conveyors -Storage/Loadout					Cost
C28	42" x 50'	Belt Conveyor Channel Frame	15		\$34,678
C29	36" X 75'	Radial Stacker Truss Frame	15		\$41,623
C30	42' X 345'	Belt Conveyor Truss Frame	75		\$214,722
C31	42" X 35'	Belt Conveyor Truss Frame	5		\$20,389
C32	42" X 220'	Belt Conveyor Channel/Truss Frame	50		\$129,556
		Belt Scale			\$32,620
<b>Conveyors -Storage/Loadout</b>					<b>\$473,587</b>

Conveyor H.P. Requirement	Total
	1,029

Conveyor Cost	Total
	\$2,765,662



# Sample Company

## Structures Summary

### Processing Plant

Project: Sample Plant Site

Structures-Wet Plant		Cost
F01/CR01	Primary Feeder and Crusher Support Structure	\$146,906
	Feed hopper Extensions	\$28,889
SCR01/CR02	Secondary Screen and Crusher Support Structure	\$161,800
SP01	Splitter Chute	\$15,818
SCR02A/FMW01A	Rinse Screen and Fine Material Washer Support Structure	\$147,344
SCR02B/FMW01B	Rinse Screen and Fine Material Washer Support Structure	\$0
SP02	Splitter Chute	\$11,467
CR03A	Tertiary Crusher Support Structure	\$35,556
CR03B	Tertiary Crusher Support Structure	\$0
UFR01	Ultrafines Recovery Plant Support Structure	included in McLanahan Equipment cost
SP03	Splitter Chute	\$13,722
FH02	Portable Feed Hopper (Winter pile Reclaim)	\$48,356
WT01	144" dia Corrugated Multi-plate type Tunnel 230 ft	\$140,444
	Hopper inserts from Contech @ \$5,700 each.	\$19,000
	Water proofing, drainage, Heat and etc	\$13,333
	Tunnel insert hoppers, Gates and Swivel Chutes	\$80,556
SCR03/FH01	Trash Screen and Feed Hopper Support Structure	\$56,289
	Enclose screen structure	\$29,244
<b>Structures-Wet Plant Total</b>		<b>\$948,723</b>
Structures-Dry Plant		Cost
SP04	Splitter Chute	\$15,247
FH01/BF06/BF07	Dry Screen Structure includes cycle tanks	\$398,321
SCR04A/SCR04B	Enclose Structure	\$148,148
SCR05/SCR06		
CT01/CT02/CT03		
CT04/CT05/CT06		
SP05/SP06		
FT01	200 ton Fines Tank	\$83,756
OT01	100 ton Oversize Tank	\$47,011
CR04	Oversize Crusher Support Structure	\$29,911
EH01	E-house Structure	\$15,200
EH02	E-house Structure	\$15,200
<b>Structures-Dry Plant Total</b>		<b>\$752,794</b>
Structures-Dust Control		Cost
	8x8 Compressor Building	\$20,000
<b>Structures-Dust Control Total</b>		<b>\$20,000</b>
Structures-Storage/Loadout		Cost
SP07	Splitter Chute	\$9,144
SP08	Splitter Chute	\$7,656
SP09	Splitter Chute	\$7,756
CH01	Ticketing and Control Room Structure	\$20,256
RL01	Rail Loadout Structure	\$36,233
	Enclose Structure	\$17,122
<b>Structures-Storage/Loadout Total</b>		<b>\$98,167</b>
Structures-Buildings		Cost
	24x56 Office Building	\$65,000
	Warehouse	\$50,000
	Maintenance Shop	\$100,000
	Employee Washroom	\$45,000



Structures-Laboratory Total		\$260,000

Structure Cost	Total
	\$2,079,684





# Sample Company

## Concrete Summary

Project: Sample Plant Site

**\$500** per cubic yard, engineering, concrete, steel, forms and labor.

Structures Concrete			Cubic Yrds	Cost
F01/CR01	Primary Feeder and Crusher Support Structure		35	\$17,500
SCR01/CR02	Secondary Screen and Crusher Support Structure		25	\$12,500
SCR02A/FMW	Rinse Screen and Fine Material Washer Support Structure		32	\$16,000
SCR02B/FMW	Rinse Screen and Fine Material Washer Support Structure		0	\$0
CR03A	Tertiary Crusher Support Structure		20	\$10,000
CR03B	Tertiary Crusher Support Structure		0	\$0
UFR01	Ultrafines Recovery Plant Support Structure		22	\$11,000
SP03	Splitter Chute		6	\$3,000
WT01	144" dia Corrugated Multi-plate type Tunnel		150	\$75,000
DR01	8' x 30' Counter Flow Dryer		160	\$80,000
	Cyclone		30	\$15,000
	Baghouse		90	\$45,000
	Supply Fan		10	\$5,000
SCR03/FH01	Trash Screen and Feed Hopper Support Structure		15	\$7,500
FH01/BF06/BF	Dry Screen Structure		320	\$160,000
FT01	200 ton Fines Tank		20	\$10,000
OT01	100 ton Oversize Tank		15	\$7,500
CR04	Oversize Crusher Support Structure		18	\$9,000
EH01	E-house Structure		14	\$7,000
	8x8 Compressor Building		4	\$2,000
SP07	Splitter Chute		6	\$3,000
STK01	1500 ton Storage Tank			
STK02	1500 ton Storage Tank			
STK03	500 ton Storage Tank			
TS01	Truck Scale			
CH01	Ticketing and Control Room Structure		580	\$290,000
RL01	Rail Loadout Structure		14	\$7,000
<b>Structures Concrete Total</b>				<b>\$793,000</b>
Conveyors Concrete			Cubic Yrds	Cost
C02	48" x 120'	Belt Conveyor	8	\$4,000
C03	48" X 38'	Belt Conveyor	2	\$1,000
C04	36" x 120'	Belt Conveyor	8	\$4,000
C05	36" x 80'	Belt Conveyor	6	\$3,000
C06	36" x 110'	Belt Conveyor	6	\$3,000
C07	36" x 80'	Belt Conveyor	6	\$3,000
C08	36" x 100'	Belt Conveyor	6	\$3,000
C09	36" X 100'	Belt Conveyor	6	\$3,000
C10	36" x40'	Belt Conveyor	4	\$2,000
C11	36" x 80'	Belt Conveyor	6	\$3,000
C12	36" 150'	Radial Stacker Telescoping	200	\$100,000
C18	30" x 40'	Belt Conveyor	4	\$2,000
C20	36" X 350'	Belt Conveyor	8	\$4,000
C21	36" X 100'	Belt Conveyor	6	\$3,000
C22	30' X 285'	Belt Conveyor Truss Frame	16	\$8,000
C23	24" x 185'	Belt Conveyor Truss Frame	10	\$5,000
C24	24" x 90'	Belt Conveyor Truss Frame	6	\$3,000
C28	42" x 50'	Belt Conveyor Channel Frame	4	\$2,000
C30	42' X 345'	Belt Conveyor Truss Frame	22	\$11,000
C33	42" X 220'	Belt Conveyor Channel/Truss Frame	14	\$7,000
<b>Conveyor Concrete Total</b>				<b>\$174,000</b>
Concrete Embedment's				Cost
Embedment's				\$52,000

Concrete Embedment's Total

\$52,000

Project Concrete Requirement

Total

1,934

Concrete Cost

Total

\$1,019,000

Custom Engineered



Concrete Foundations



Reinforced Concrete Foundations



# Sample Company

## Installation Summary

Project: Sample Plant Site

Typical Rates.		M/Hr
Millwrights/Operators Labor Rate (average)	\$120	Per Hour
Man Lift Rental Rate	\$5,000	Per Month
Crane 1 Rental Rate	\$9,000	Per Month
Crane 2 Rental Rate	\$6,000	Per Day
Crane 3 Rental Rate	\$5,000	Per Day
Lull Rental	\$6,000	Per Month



Installation Rentals	Units	M/Hr	Total
Man Lift Rental	2	4	\$40,000
Crane 1	2	4	\$72,000
Crane 2	1	4	\$24,000
Crane 3	Specialty		\$20,000
Lull Rental	2	4	\$48,000
Tank Jack Rental	12	1	\$14,000
<b>Installation Rentals Total</b>			<b>\$204,000</b>

Installation Other Cost	Units	M/Hr	Total
Tank Installation Supervisor			\$52,000
Other Rentals and supervisory support			\$100,000
<b>Installation Other Cost Total</b>			<b>\$152,000</b>

Installation Labor	Men	Hours	Days	Total
Millwrights	16	8,396	151	\$669,600
<b>Installation Labor Total</b>				<b>\$669,600</b>

Belt Vulcanization				Total
<b>Conveyors -Wet Plant</b>				
BF01	36" X 8'	Belt Feeder		2200
BF02	36" X 8'	Belt Feeder		2200
BF03	36" X 8'	Belt Feeder		2200
BF04	36" X 8'	Belt Feeder		2200
BF05	48" X 20'	Belt Feeder		3260
C01	48" X 38'	Belt Conveyor		3500
C02	48" x 120'	Belt Conveyor		4200
C03	48" X 38'	Belt Conveyor		3500
C04	36" x 120'	Belt Conveyor		4200
C05	36" x 80'	Belt Conveyor		3800
C06	36" x 110'	Belt Conveyor		4200
C07	36" x 80'	Belt Conveyor		3800
C08	36" x 100'	Belt Conveyor		4000
C09	36" X 100'	Belt Conveyor		4000
C10	36" x40'	Belt Conveyor		2800
C11	36" x 80'	Belt Conveyor		3800
C12	36" 150'	Radial Stacker Telescoping		7200
C13	36" X 100'	Belt Conveyor Truss Frame Jumper		4000
C14	36" X 100'	Belt Conveyor Truss Frame Jumper		4000
C15	36" X 100'	Belt Conveyor Truss Frame Jumper		4000
C16	36" X 100'	Belt Conveyor Truss Frame Jumper		4000
C17	36" 150'	Radial Stacker Telescoping		7200
C18	30" x 40'	Belt Conveyor		2800
C19	30" x 75'	Radial Stacker Truss Frame		3500
C20	36" X 350'	Belt Conveyor Channel/Truss Frame		8200
C21	36" X 100'	Belt Conveyor Truss Frame		4000
<b>Conveyors -Dry Plant</b>				
BF06	24" X 18'	Belt Feeder		1500
BF07	24" X 18'	Belt Feeder		1500
BE01	14 X 7 X 68'	Bucket Elevator		6230

BE02	14 X 7 X 68'	Bucket Elevator	6230
BE03	12 X 5 X 45'	Bucket Elevator	4800
C22	30' X 285'	Belt Conveyor Truss Frame	8500
C23	24" x 185'	Belt Conveyor Truss Frame	5200
C24	24" x 90'	Belt Conveyor Truss Frame	3800
C25	24" x 52'	Belt Conveyor Channel Frame	2800
C26	24" x 52'	Belt Conveyor Channel Frame	2800
C27	42" x 82'	Belt Conveyor Channel Frame	3800

#### Conveyors -Storage/Loadout

C28	42" x 50'	Belt Conveyor Channel Frame	3100
C29	36" X 75'	Radial Stacker Truss Frame	2500
C30	42' X 345'	Belt Conveyor Truss Frame	8500
C31	42" X 35'	Belt Conveyor Truss Frame	2500
C32	42" X 30'	Belt Conveyor Truss Frame	2500
C33	42" X 220'	Belt Conveyor Channel/Truss Frame	7500

#### Belt Vulcanization Total

**\$176,520**

Installation labor Detail		Men	Hours	Days	Total
<b>Equipment-Wet Plant</b>		<b>36</b>	<b>972</b>	<b>27</b>	<b>\$76,800</b>
F01	Lippmann 51" X 20' Vibrating Grizzly Feeder	2	10	1	\$2,400
CR01	Lippmann 30" x 48" Jaw Crusher	2	10	2	\$4,800
	AutoLube	2	10	2	\$4,800
	Hydraulic Toggle	2	10	2	\$4,800
SCR02A	5' x 16' Screen	4	10	1	\$4,800
	Media	2	10	2	\$4,800
CR02	Sandvik H4800 Cone Crusher	2	10	2	\$4,800
	Main Drive Motor	2	10	1	\$2,400
SCR02A	8x20 Screen	4	10	1	\$4,800
	Media	2	10	3	\$7,200
SCR02B	8x20 Screen				\$0
	Media				\$0
FMW01A	McLanahan Twin 44" x33' Fine Material Washer	2	10	3	\$7,200
	Top Covers	2	10	1	\$2,400
FMW01B	McLanahan Twin 44" x33' Fine Material Washer				\$0
	Top Covers				\$0
UFR01	McLanahan Ultrafines Recovery Plant	4	10	3	\$14,400
CR03A	REMco SandMax 800 ST	2	10	2	\$4,800
CR03B	REMco SandMax 800 ST				\$0
SCR03	4' x 10' SD Screen	2	10	1	\$2,400
<b>Equipment-Dry Plant</b>		<b>22</b>	<b>1012</b>	<b>46</b>	<b>\$184,800</b>
DR01	8' x 30' Counter Flow Dryer	5	10	12	\$72,000
	Cyclone	2	10	3	\$7,200
FN01	Baghouse	4	10	6	\$28,800
	Supply Fan	2	10	3	\$7,200
	Duct Work..Includes Ducting, airlocks and etc..	5	10	10	\$60,000
SCR04A	6022S2 BM&M Screen	2	10	2	\$4,800
SCR04B	6022S2 BM&M Screen	2	10	2	\$4,800
SCR05	6022S2 BM&M Screen	2	10	2	\$4,800
SCR06	6033S1 BM&M Screen	2	10	2	\$4,800
MGS01	Magnet Seperator.....supply by Heemskirk Canada LTD	2	10	2	\$4,800
CR04	Rebuilt VSI.....supply by Heemskirk Canada LTD	2	10	2	\$4,800

#### Equipment-Dust Control

**2 44 22 \$4,800**

BH01	Bag House	2	10	2	\$4,800
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	Duct Work..Includes Ducting, airlocks and etc..	4	10	12	\$57,600
FN02	Exhaust Fan	2	10	2	\$4,800
AC01	Air Compressor	2	10	2	\$4,800
	piping	2	10	4	\$9,600
<b>Equipment-Storage/Loadout</b>		<b>28</b>	<b>2436</b>	<b>87</b>	<b>\$297,600</b>
STK01	1500 ton Storage Tank	7	10	16	\$134,400
40x70	Air vent filter Module	2	10	1	\$2,400
	Vent Exhaust Fan	2	10	1	\$2,400
Product	Filter Module, Loading Spout, Control Pendant, Manual Gate	2	10	2	\$4,800
Storage	Wave Radar Level System & High Level Indicator	2	10	2	\$4,800
	Carbis Gangway	2	10	3	\$7,200
	Tank fittings	2	10	2	\$4,800
	Walkway inside tank	2	10	1	\$2,400
STK02	1500 ton Storage Tank	7	10	16	\$134,400
100 Mesh	Air vent filter Module	2	10	1	\$2,400
	Vent Exhaust Fan	2	10	1	\$2,400
Product	Filter Module, Loading Spout, Control Pendant, Manual Gate	2	10	2	\$4,800
Storage	Wave Radar Level System & High Level Indicator	2	10	2	\$4,800
	Carbis Gangway	2	10	3	\$7,200
	Tank fittings	2	10	2	\$4,800
	Walkway inside tank	2	10	1	\$2,400
STK03	500 ton Storage Tank	7	10	10	\$84,000
Batch	Air vent filter Module	2	10	1	\$2,400
	Vent Exhaust Fan	2	10	1	\$2,400
Product	Filter Module, Loading Spout, Control Pendant, Manual Gate	2	10	2	\$4,800
Storage	Wave Radar Level System & High Level Indicator	2	10	2	\$4,800
	Carbis Gangway	2	10	2	\$4,800
	Tank fittings	2	10	1	\$2,400
	Walkway inside tank	2	10	1	\$2,400
RL01	Rail Loadout				
	Filter Module, Loading Spout, Control Pendant, Manual Gate	2	10	2	\$4,800
	Wave Radar Level System & High Level Indicator	2	10	2	\$4,800
	Carbis Gangway	1	10	2	\$2,400
TS01	Truck Scale and Ticketing	2	10	3	\$7,200
CH01	Ticketing Control House	2	10	2	\$4,800
<b>Structures-Wet Plant</b>		<b>13</b>	<b>1352</b>	<b>104</b>	<b>\$48,000</b>
F01/CR01	Primary Feeder and Crusher Support Structure	3	10	4	\$14,400
	Feed hopper Extensions	2	10	1	\$2,400
SCR01/CR02	Secondary Screen and Crusher Support Structure	3	10	4	\$14,400
SP01	Splitter Chute	2	10	1	\$2,400
SCR02A/FMW	Rinse Screen and Fine Material Washer Support Structure	3	10	4	\$14,400
SCR02B/FMW	Rinse Screen and Fine Material Washer Support Structure				\$0
SP02	Splitter Chute	2	10	1	\$2,400
CR03A	Tertiary Crusher Support Structure	4	10	3	\$14,400
CR03B	Tertiary Crusher Support Structure				
UFR01	Ultrafines Recovery Plant Support Structure	2	10	3	\$7,200
SP03	Splitter Chute	2	10	1	\$2,400
FH02	Portable Feed Hopper (Winter pile Reclaim)	2	10	2	\$4,800
WT01	144" dia Corrugated Multi-plate type Tunnel	5	10	12	\$72,000
	Water proofing, drainage, Heat and etc	2	10	12	\$28,800
	Tunnel insert hoppers, Gates and Swivel Chutes	2	10	5	\$12,000
SCR03/FH01	Trash Screen and Feed Hopper Support Structure	2	10	4	\$9,600

	Enclose screen structure	2	10	5	\$12,000
<b>Structures-Dry Plant</b>		<b>2</b>	<b>2</b>	<b>1</b>	<b>\$2,400</b>
SP04	Splitter Chute	2	10	1	\$2,400
FH01/BF06/BF	Dry Screen Structure includes cycle tanks	4	10	21	\$100,800
	Enclose Structure	2	10	4	\$9,600
FT01	200 ton Fines Tank	2	10	2	\$4,800
OT01	100 ton Oversize Tank	2	10	2	\$4,800
CR04	Oversize Crusher Support Structure	2	10	3	\$7,200
EH01	E-house Structure	2	10	2	\$4,800
<b>Structures-Dust Control</b>		<b>2</b>	<b>6</b>	<b>3</b>	<b>\$7,200</b>
	8x8 Compressor Building	2	10	3	\$7,200
<b>Conveyors -Wet Plant</b>		<b>35</b>	<b>1820</b>	<b>52</b>	<b>\$130,800</b>
BF01	36" X 8' Belt Feeder	2	10	1	\$2,400
BF02	36" X 8' Belt Feeder	2	10	1	\$2,400
BF03	36" X 8' Belt Feeder	2	10	1	\$2,400
BF04	36" X 8' Belt Feeder	2	10	1	\$2,400
BF05	48" X 20' Belt Feeder	2	10	1	\$2,400
C01	48" X 38' Belt Conveyor	2	10	3	\$7,200
C02	48" x 120' Belt Conveyor	2	10	5	\$12,000
C03	48" X 38' Belt Conveyor	2	10	3	\$7,200
C04	36" x 120' Belt Conveyor	2	10	5	\$12,000
C05	36" x 80' Belt Conveyor	2	10	4	\$9,600
C06	36" x 110' Belt Conveyor	2	10	4	\$9,600
C07	36" x 80' Belt Conveyor	2	10	4	\$9,600
C08	36" x 100' Belt Conveyor	2	10	4	\$9,600
C09	36" X 100' Belt Conveyor	2	10	4	\$9,600
C10	36" x40' Belt Conveyor	2	10	2	\$4,800
C11	36" x 80' Belt Conveyor	2	10	4	\$9,600
C12	36" 150' Radial Stacker Telescoping	3	10	5	\$18,000
C13	36" X 100' Belt Conveyor	1	10	3	\$3,600
C14	36" X 100' Belt Conveyor	1	10	3	\$3,600
C15	36" X 100' Belt Conveyor	3	10	3	\$10,800
C16	36" X 100' Belt Conveyor	2	10	3	\$7,200
C17	36" 150' Radial Stacker Telescoping	2	10	5	\$12,000
C18	30" x 40' Belt Conveyor	2	10	2	\$4,800
C19	30" x 75' Radial Stacker	2	10	3	\$7,200
C20	36" X 350' Belt Conveyor	4	10	8	\$38,400
C21	36" X 100' Belt Conveyor	2	10	2	\$4,800
	Belt Scale	2	10	2	\$4,800
<b>Conveyors -Dry Plant</b>		<b>10</b>	<b>400</b>	<b>40</b>	<b>\$33,600</b>
BF06	24" X 18' Belt Feeder	2	10	1	\$2,400
BF07	24" X 18' Belt Feeder	2	10	1	\$2,400
BE01	14 X 7 X 68' Bucket Elevator	3	10	4	\$14,400
BE02	14 X 7 X 68' Bucket Elevator	3	10	4	\$14,400
BE03	12 X 5 X 45' Bucket Elevator	3	10	3	\$10,800
C22	30' X 285' Belt Conveyor	3	10	7	\$25,200
C23	24" x 185' Belt Conveyor Truss Frame	3	10	5	\$18,000
C24	24" x 90' Belt Conveyor Channel Frame	2	10	2	\$4,800
C25	24" x 52' Belt Conveyor Channel Frame	2	10	2	\$4,800
C26	24" x 52' Belt Conveyor Channel Frame	2	10	2	\$4,800

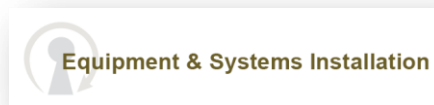
C27	42" x 82'	Belt Conveyor Channel Frame	2	10	3	\$7,200
SC01		Screw Conveyor	2	10	2	\$4,800

SC02		Screw Conveyor	2	10	2	\$4,800
SC03		Screw Conveyor	2	10	2	\$4,800

<b>Conveyors -Storage/Loadout</b>			<b>11</b>	<b>352</b>	<b>32</b>	<b>\$68,400</b>
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C28	42" x 50'	Belt Conveyor	3	10	3	\$10,800
C29	36" X 75'	Radial Stacker	3	10	4	\$14,400
C30	42' X 345'	Belt Conveyor	3	10	10	\$36,000
C31	42" X 35'	Belt Conveyor	2	10	3	\$7,200
C32	42" X 30'	Belt Conveyor	3	10	3	\$10,800
C33	42" X 220'	Belt Conveyor	3	10	7	\$25,200
		Belt Scale	2	10	2	\$4,800

<b>Installation Cost</b>		<b>Total</b>
		<b>\$1,202,120</b>





# Sample Company

## Site Preparations

Project: Sample Plant Site

Estimated Site Preparations	Cost
Installatation project site access & lay down areas	\$75,500
site prep materials for project site.	\$220,000
Excavation & compaction Structure foundation	\$80,000
Excavation & compaction Silo foundation	\$60,000
Excavation and compaction of RR area	\$30,000

Site Preparations Total Cost	Total
	<b>\$465,500</b>





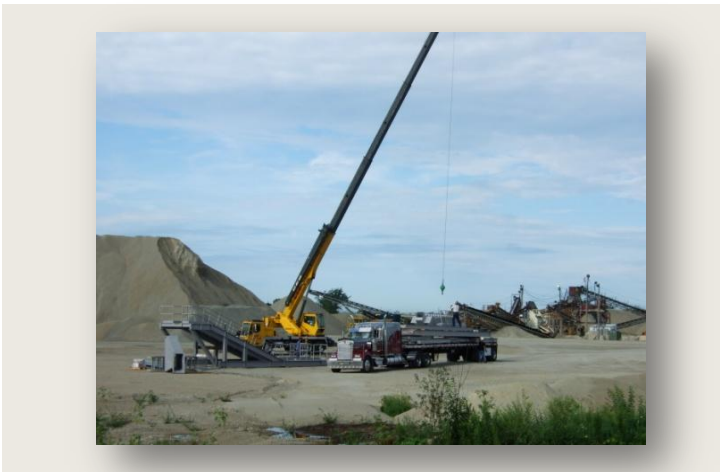
# Sample Company

## Freight Summary

## Project: Sample Plant Site

Estimated Freight rates from Suppliers	Cost
Lippmann	\$8,200
American Bin & Conveyor	\$135,000
Tank Connection	\$85,000
McLanahan	\$14,500
Midwest Processing	\$25,000
Deister Machine	\$12,000
Tristate	\$4,200
REMco	\$6,500
Tarmac International	\$60,000
Miscellaneous	\$120,000

Structure Cost	Total
	\$470,400



# Sample Company

## Electrical Summary

Project: Sample Plant Site

Plant Electrical	Cost
	\$2,169,500
<b>Plant Electrical Total</b>	<b>\$2,169,500</b>

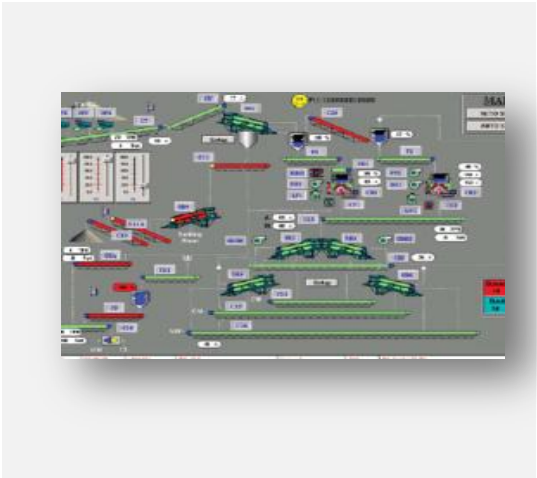
Plant Automation	Cost
	\$1,156,000
<b>Plant Automation Total</b>	<b>\$1,156,000</b>

Total H.P.	Total
	<b>4,308</b>

Electrical Cost	Total
	<b>\$3,325,500</b>



Open Architecture



# Sample Company

## Preliminary Project Schedule

Project: Sample Plant Site

Task	Days	Start Date	End Date	March	April	May	June	July	Aug	Sept	Oct
Total Project	240										
Pre-engineering	20	3/1/2011	3/20/2011								
Order Equipment	10	3/1/2011	3/25/2011								
Detailed Engineering	60	3/1/2011	5/30/2011								
Fabrication	120	3/1/2011	6/30/2011								
Concrete Installation	60	3/1/2011	4/30/2011								
Receive Equipment	60	4/1/2011	5/30/2011								
Install Equipment	105	5/1/2011	10/5/2011								
Electrical	60	8/1/2011	10/5/2011								
Commission Plant	14	10/5/2011	10/30/2011								

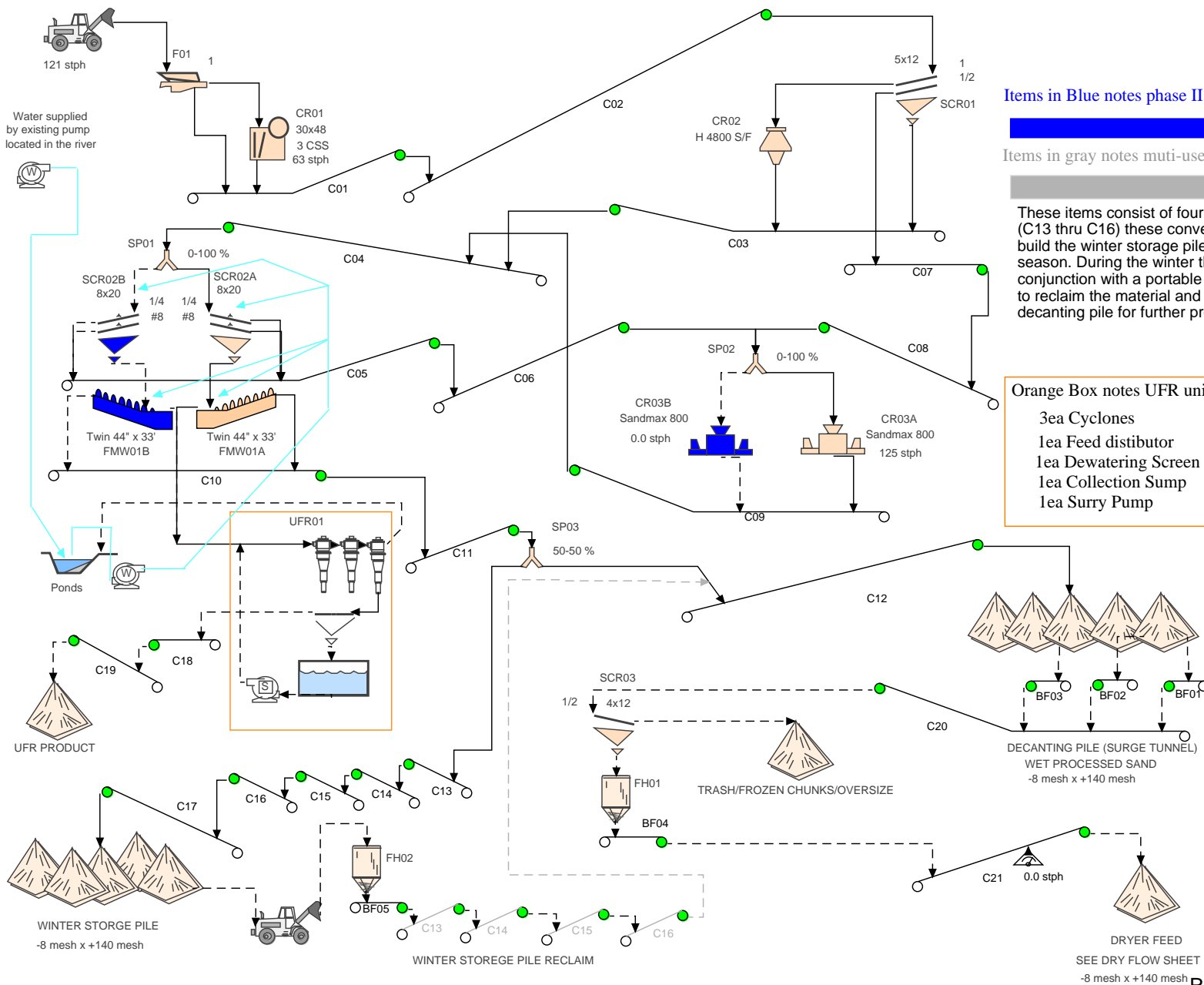
Project Management is absolutely critical to the success of any project. We provide experienced project managers who have a proven track record of safely completing projects on time, and on budget.



### Project Management



- ✓ All have over 20 years of experience
- ✓ Define the complete scope of the project
- ✓ Create realistic timelines and Gantt charts
- ✓ Develop and execute a project plan
- ✓ Determine the capabilities of all of the required resources
- ✓ Directly manage all subcontractors
- ✓ Track progress of all project activities
- ✓ Develop and track budget versus actual costs
- ✓ Clearly communicate with all stakeholders
- ✓ Provide daily onsite support for the duration of the project
- ✓ Provide leadership throughout the project



Items in Blue notes phase II Equipment items

Items in gray notes multi-use equipment items

These items consist of four jumper conveyors (C13 thru C16) these conveyors will be used build the winter storage pile during the crush season. During the winter they will be used in conjunction with a portable feed hopper (FH0) to reclaim the material and feed it back to the decanting pile for further processing.

Orange Box notes UFR unit consisting of

- 3ea Cyclones
- 1ea Feed distributor
- 1ea Dewatering Screen VD-12
- 1ea Collection Sump
- 1ea Surry Pump

Run: 1/13/11 22:08:46

Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.

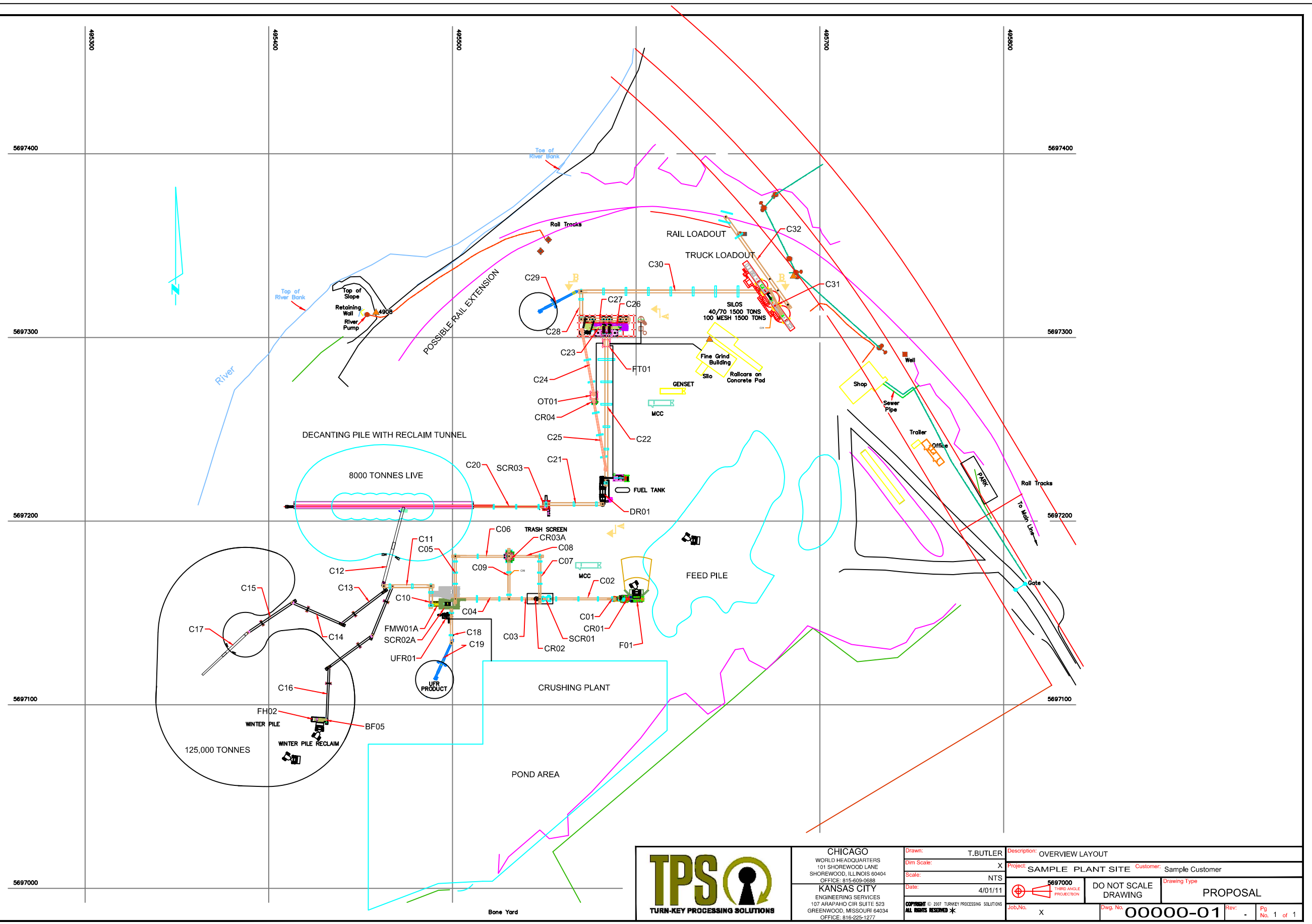
All calculations performed by AggFlow. <http://www.AggFlow.com>

Sample Company  
Sample Site  
Wet Flow Sheet  
Date: April/21/2011

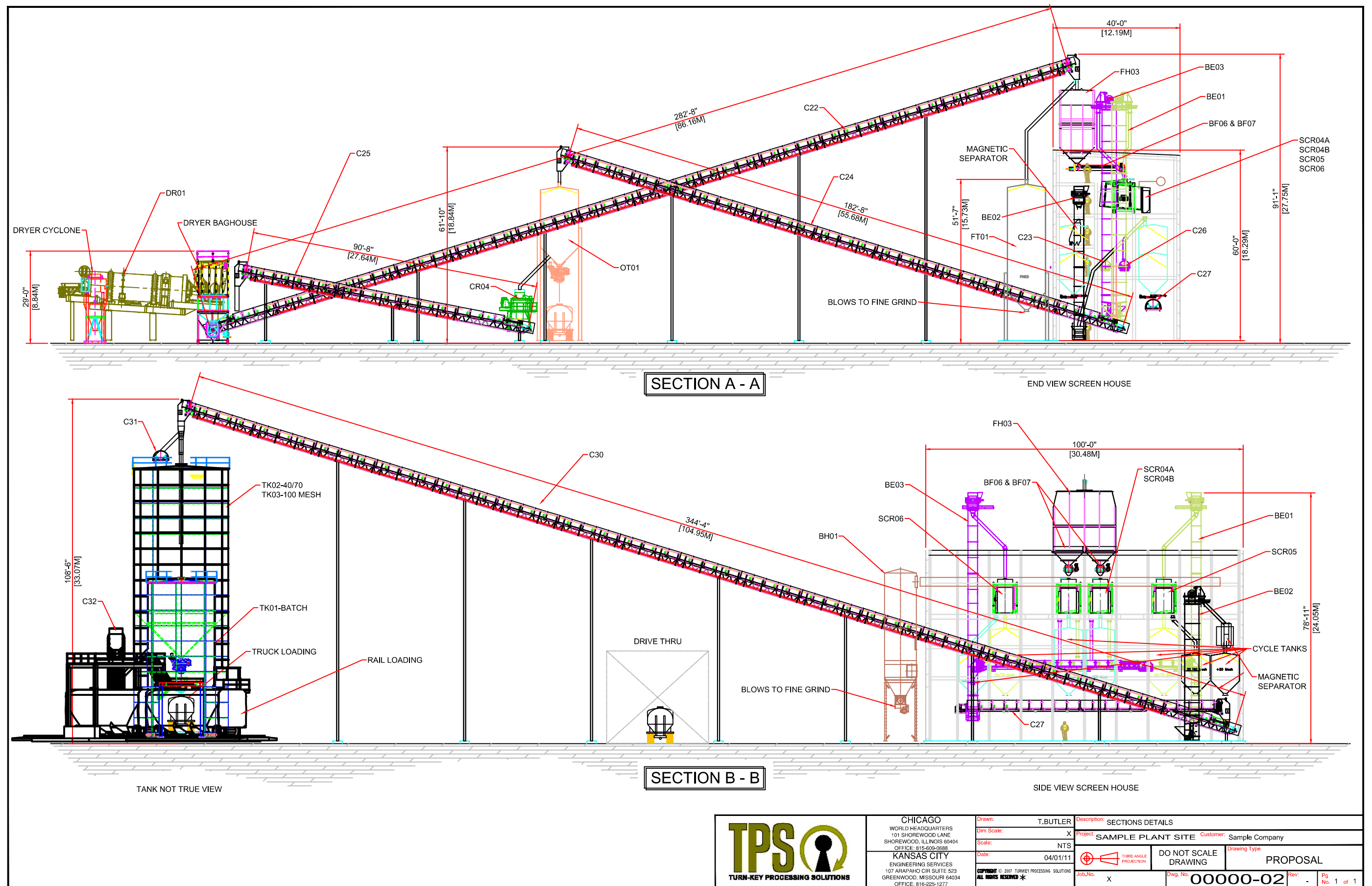
TPS



T.Butler



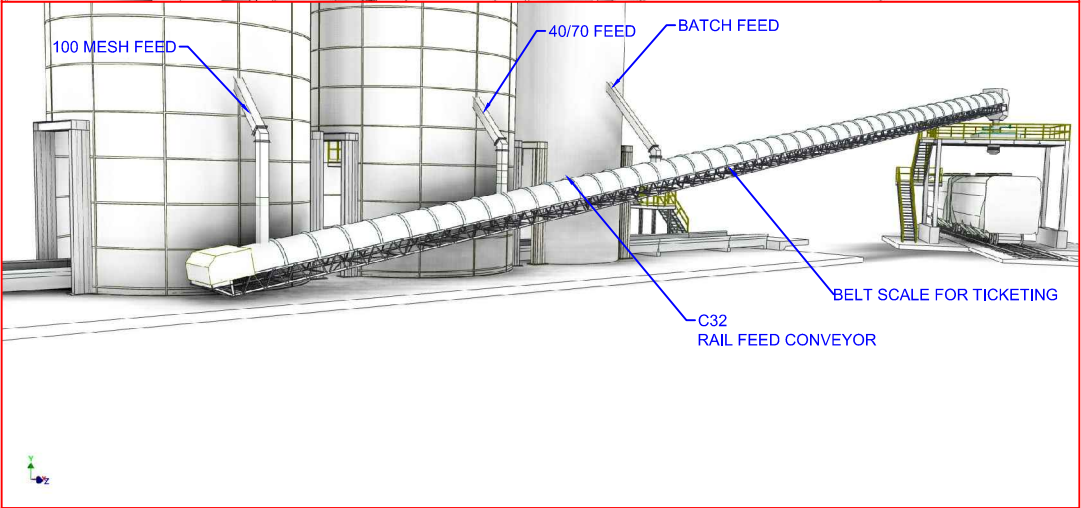
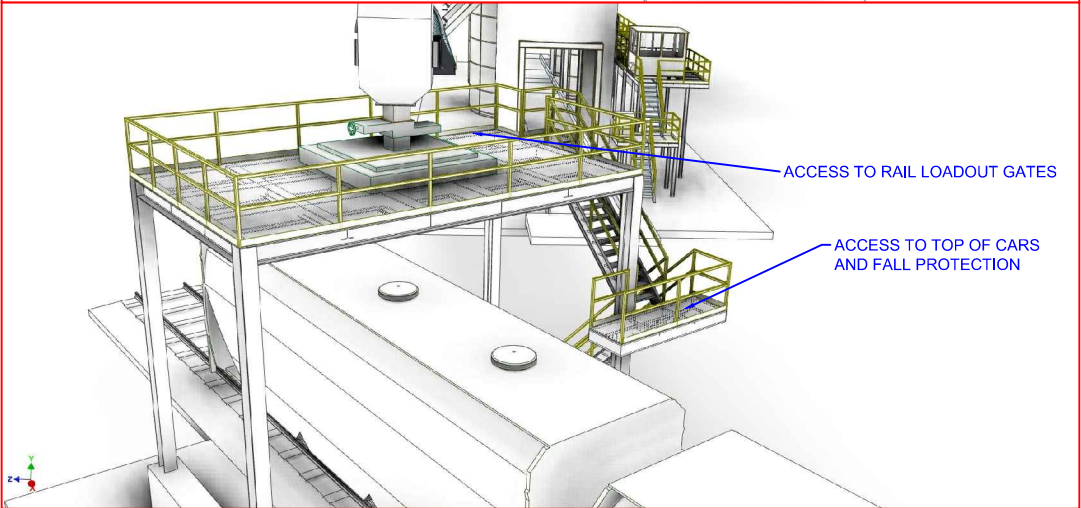
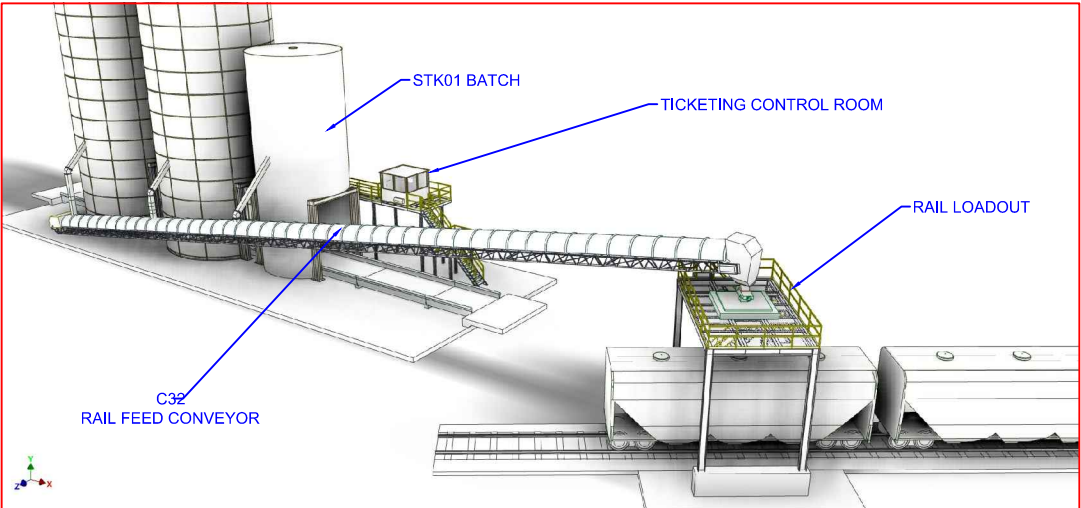
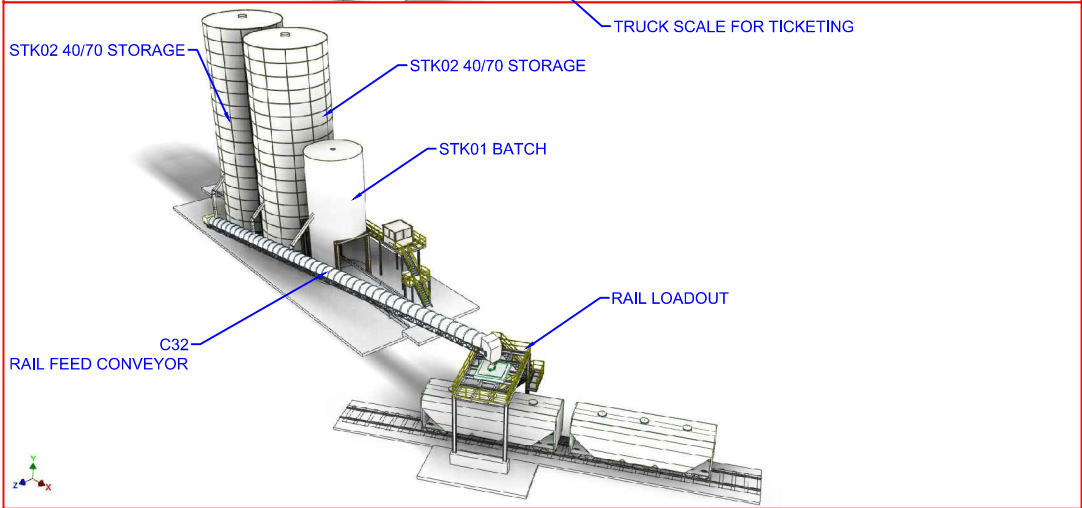
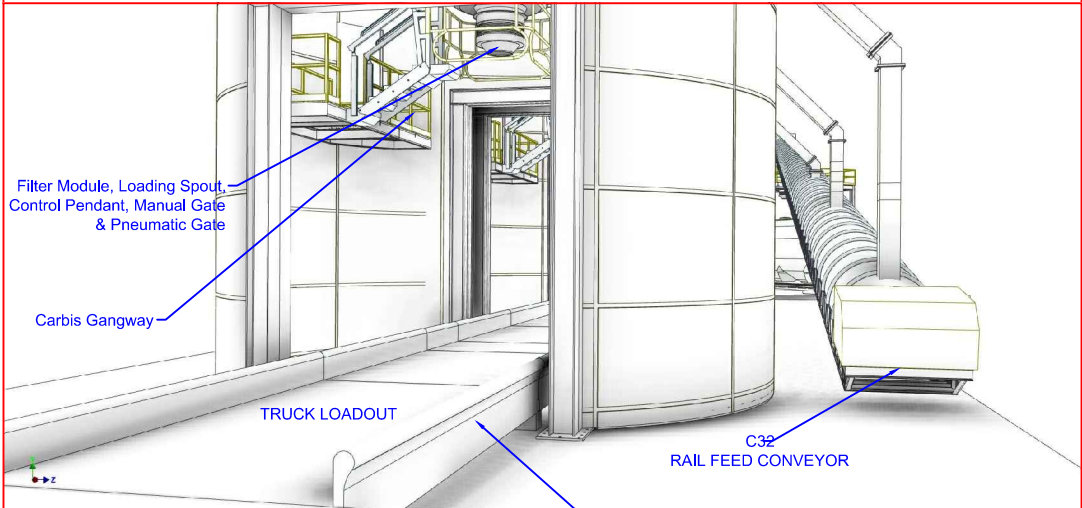
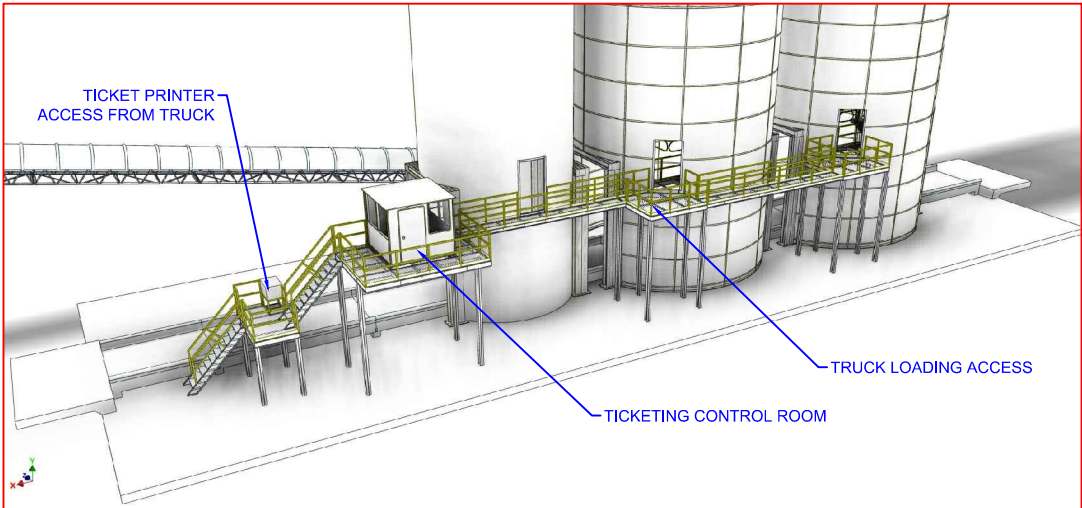




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	KANSAS CITY ENGINEERING SERVICES 107 ARAPAHO CIR SUITE 523 GREENWOOD, MISSOURI 64034 OFFICE: 816-225-1277		Dim Scale: X	Project: SAMPLE PLANT SITE Customer: Sample Customer			
			Scale: NTS	Job No. 5697000			
			Date: 4/01/11	Drawing Type: PROPOSAL			
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			Dwg. No. 00000-01 Rev. - Pg. No. 1 of 1				



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	KANSAS CITY ENGINEERING SERVICES 107 ARAPAHO CIR SUITE 523 GREENWOOD, MISSOURI 64034 OFFICE: 816-225-1277		Dim Scale: X	Project: SAMPLE PLANT SITE Customer: Sample Company		Drawing Type	
			Scale: NTS				
	Date: 04/01/11	 THIRD ANGLE PROJECTION		DO NOT SCALE DRAWING		PROPOSAL	
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			Scale: NTS	Drawing Type			
			Date: 04/01/11	 THIRD ANGLE PROJECTION	DO NOT SCALE DRAWING		PROPOSAL
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Dwg. No. 00000-03			Rev: -		Pg No. 1 of 1		