



Date Issued: Thursday, September 12th, 2024

Bid Date: N / A

MODEL-H CONVEYOR QUOTATION NO.: ECM5823.2 Rev0

for

Riverside, CA II

* *Revision-0 (9.12.2024) = initial release to client.*

MODEL-H CONVEYOR CONFIGURATION & APPLICATION DATA

In general accordance with our quotation drawing #Q5823.2 Rev0

PLEASE NOTE: The quote drawing is 85% representation of proposed systems – elevations at the loading area are needing to be provided & the client informed Serpentix that the two silos are to be increased in height for additional storage capacity; a revised full mechanical layout drawing will be provided to review with the client prior to full bill-of-materials submittal drawings. See EQUIPMENT APPROVAL TIME SCHEDULE within this quotation for more details.

Conveyor Number / Name:	Conveyor #1 – North/West	Conveyor #2 – South/East
Centerline Length:	~125'-0" * exact length TBD	~175'-0" * exact length TBD
Belt Width:	32 Inches	32 Inches
Belt Speed:	50 ft./min.	50 ft./min.
Elevation Change:	~65'-0" * exact elevation gain TBD	~65'-0" * exact elevation gain TBD
Incline Angle:	~37° minimum * exact angle TBD	~28° minimum * exact angle TBD
Material:	Sludge	Sludge
Density:	65 lbs./ft ³	65 lbs./ft ³
Capacity:	50.0 Tons/hr.	50.0 Tons/hr.

SCOPE OF SUPPLY

Components not specifically included below are to be provided by the purchaser.

CONVEYING SURFACE

Modular MPR belt pans, with 1½" high convolutions, and 20 degree trough at edges of the belt – factory pre-assembled in 4'-0" sections (6 pans per section). Belt pan washers to connect belting are **304 stainless steel**.

CONVEYOR CHAIN

Closed-link, hardened alloy steel chain, 4-inch pitch – 35,000 lbs breaking strength – factory pre-assembled in 401 link strands. NOTE: *The main chain is only available in hardened alloy steel; some surface corrosion should be expected but the breaking strength will NOT be affected.*

CONVEYOR TRACK SECTION

Fabricated track with top and bottom guide rails, minimum ¼" thick **A36 structural steel, hot dipped galvanized (HDG)**. Upon installation, track flanges are to be field welded, ground smooth and cold-spray galvanized or epoxy coated. All shop welding shall conform to the latest standards of the American Welding Society.



ROLLER CARRIAGE ASSEMBLIES

Aluminum carriages to be installed every 24" on the chain. The inside load bearing rollers shall be **Nylatron NSM [gray]**, and outside guide rollers shall be **Nylatron NSM [gray]**, mounted on **304 stainless steel** bolts with brass oilite bushings.

DRIVE STATION

Fully assembled, with a **10 HP general purpose**, 230 / 460Volt, 3 Phase, 60 Hertz, 1750 RPM, TEFC, standard efficiency motor. **NOTE: A soft-starter is REQUIRED for warranty and to prolong conveyor design life; the soft-starter is included if Serpentix is providing the control panel.**

TENSION STATION

Fully assembled, with a constant pressure spring chain tensioner, adjustable by a single star wheel.

MECHANICAL BACK STOP ASSEMBLIES

Mechanical back stop will be provided along the inclined section of the conveyor to prevent chain fall back.

SUPPORT STRUCTURES

As generally indicated on quotation drawing; **ASTM A572 Grade-50 structural steel, hot dipped galvanized (HDG)**.

- **NOTE: tower support locations and quantity of supports is subject to change based on seismic design calculations; seismic design calculations will be submitted AFTER the conveyor layout is approved in writing by design engineer. See EQUIPMENT APPROVAL TIME SCHEDULE in this quotation for outlined details.**

DUAL BLADE BELT SCRAPER

Dual (set of 2x) pre-tensioned bar scrapers (1/4" thick) located at discharge to remove most material.

SKIRTBOARDS [AT LOADING AREA]

Located at the loading areas of the conveyor as shown on the quote drawing, angled skirtboards will be provided to direct material to the center of belting. Skirtboards are constructed out of 3/8" thick HDPE x 11-7/8" tall, **304 stainless steel** back-mounted angles, with **304 stainless steel** brackets.

DRIP PANS

18 gauge, **304 stainless steel** sheet open-end drip pans, with **304 stainless steel** hanger brackets, shall be provided below the conveyor and shall be sloped and terminate at base of incline as indicated on the drawings.

- **NOTE: Drip pans to terminate at base of incline near tension station**

HALF-MOON COVERS

18 gauge **304 stainless steel** half-moon covers, with 10 gauge **304 stainless steel** cover bands, with **304 stainless steel** brackets located as shown on the quotation drawing. Covers are shipped flat, to be bowed and fastened into position by the installing contractor. All helical, horizontal and vertical covers must be cut and fit onsite by the installing contractor.

MANUALLY OPERATED PAN LEG SELECTOR CHUTE

Located at the loading area of the conveyors, the pant leg chute will sit under the existing flat belt conveyor that leaves the dewatering building that directs sludge material onto either Serpentix Model-H conveyor. This chute is fabricated from minimum 14 gauge, **304 stainless steel**, with **hot dipped galvanized** supports, and pivot rotate to engage as needed.

HARDWARE

Nuts and bolts assembly hardware shall be type **304 stainless steel**.



SAFETY STOP SWITCH

NEMA 7 (Explosion Proof), 20 Amp, flag arm safety pull-cord switches on each side of the conveyor with protective coated orange cable running the entire length of the conveyor.

ZERO MOTION SPEED SWITCH

Located on the tension station, the zero speed sensor is to be hardwired to the conveyor control circuit. NEMA 7 (Explosion Proof), 120 VAC, 5amps, isolated contact, 10-second start delay. It should be an Electro Sensors SCP 1000 pre-settable speed switch in an explosion proof housing with a PVC split collar magnet pulsar wrap, or equal.

SOLENOID CHAIN OILER

Located at the on horizontal track section, a 120VAC solenoid oiler will lubricate the conveyor chain when the conveyor operates. The solenoid will be hardware wire to the control panel and is energized ON (to open) when the conveyor motor is operating.

SPARE PARTS

One set of spare parts TO BE SHARED BETWEEN THE TWO CONVEYORS, consisting of: 20 belt pans w/ hardware, 24 rubber scraper blades, 20 roller carriages, 40 guide roller assemblies, and 40 load roller assemblies.

STRUCTURAL DESIGN CALCULATIONS

Electronically stamped drawings & calculations will be supplied by a professional structural engineer licensed in the State of California. **NOTE: Anchor bolt embedment and edge distance are NOT included. *It is the responsibility of the foundation engineer to design for anchor bolt embedment and edge distance which is governed by the American Concrete Institute (ACI) building codes and regulations.* **NOTE:** tower support locations and quantity of supports is subject to change based on seismic design calculations; seismic design calculations will be submitted **AFTER** the final conveyor layout is approved in writing by design engineer. See EQUIPMENT APPROVAL TIME SCHEDULE in this quotation for outlined details.**

ELECTRONIC SUBMITTALS [.PDF FORMAT]

In the conscious effort to reduce paper waste, submittals are compiled in only .PDF format and sent via email / file transfer service; purchaser is responsible to print hard copies if required by reviewing client. ***Any hard copy submittals (either for approval or final for-record) by Serpentix are an additional cost of \$250 each***

OPERATION & MAINTANCE (O&M) MANUALS – Electronic Versions Only

Standard assembly, operating and maintenance instruction manuals are written in English only.

- Preliminary O&M manual is submitted electronically in only .PDF file format via email only.
- After approval, two (2x) final copies are sent for-record on a USB flash drive or CD-ROM.
- ***In the continuing perseverance to save paper and the environment, NO hard copies will be printed.***

Any hard copy manuals (either for approval or final for-record) are an additional cost of \$250 each +shipping.

CONTROL PANEL

Custom control panel for incline conveyor; the proposed control panels would include, at a minimum, the following design features:

- (2x– CONVEYOR MAIN CONTROL PANEL [CMCP]) **NOTE: 1x CMCP FOR EACH CONVEYOR** - NEMA 4X **304 stainless steel** Rated Wall-Mount Enclosure, Main Fused Disconnect Switch w/ Door Interlocked Operator, Softstarter Sized for the Following Load: Qty (1x) **10HP** 480VAC 3PH Incline Conveyor Motor, Conveyor Running Indicator Light; Motor Overload Fault Indicator Light, Conveyor Zero Speed Fault Indicator Light; Emergency Stop Fault Indicator Light, System Fault Reset Pushbutton; Conveyor Elapsed Run Time Meter, Conveyor Auto Run Timer; Interface Relays & SCADA Status Contacts, Fused 120V Control Transformer; Terminal Blocks for Field Connections



- (2x– CONVEYOR LOCAL CONTROL STATION [CLCS]) **NOTE:** 1x CLCS FOR EACH CONVEYOR - NEMA 7 Rated Wall-Mount Enclosure, w/ Hand-Off-Auto selector switch, Conveyor Start/Stop pushbutton, E-Stop Mushroom button, conveyor fault light.
- Layout & Schematic Diagrams (.pdf Format), Continuity & Functional Testing Upon Completion of Assembly, UL508A Listed Assembled Control Panel
- **NOTE:** all installation / hanging hardware / anchors for controls are the responsibility of others, and **NOT** included in scope.

SHOP FINISH

All fabricated mild steel components are hot dipped galvanized to ASTM 123-892 specification. All fabricated stainless steel components shall retain their mill finish and any stainless welds are mechanically cleaned with stainless brushes. All OEM supplied equipment incorporated into the conveyor design, e.g. motor, gear reducer, bearings, will be furnished with their factory-applied finish. Any additional coatings are the responsibility of the purchaser.

WARRANTY

One (1x) year limited warranty is provided against defects in materials and workmanship, with the start date beginning at equipment start-up - aside from abuse, negligence, or lack of regular & preventative maintenance as outlined in the O&M Manual. **NOTE:** the CONTRACTOR is responsible for the “gap” between equipment start-up date and the ‘substantial completion date’ regarding warranty. **Warranty excludes** the related time & labor required to replace warrantable items. Installation of warrantable items is the responsibility of the CONTRACTOR or OWNER.

FIELD SERVICES – MECHANICAL EQUIPMENT, ELECTRICAL OPERATION & TRAINING

Two (2x) trips for two (2x) days per trip **OR** four (4x) total days on-site – trip(s) may be combined to complete required days / milestones / action items, for the following details:

- Mechanical Installation Checkout & Field Testing of Conveyor (1 visit @ 2 days).
- Start-Up / Initial Operations & Plant Personnel Training (1 visit @ 2 days).

NOTE: Once travel arrangements are confirmed, additional travel cost, if any, incurred due to requested advancement or postponement of agreed upon scheduled trips(s), shall, with the submittal of applicable documentation, be accepted and paid for by the purchaser of the equipment. Unused services will not be credited. Any additional trips will be at an additional cost. Any additional days on-site during an existing field trip are \$2500 per day (8-hours, non-prorated).

EXCEPTIONS & CLARIFICATIONS TO THE SPECIFICATIONS

- Serpentix is quoting as independently from any written or implied specification; **all other provisions, additions or modifications are subject to pricing change.**
- O&M manual is submitted electronically in .PDF file format for approval; once approved, two (2x) final copies are sent for-record on a USB flash drive or CD-ROM. **In the continuing perseverance to save paper and the environment, NO hard copies will be printed.** **NOTE:** Any hard copy manuals (either for approval or final for-record) are an additional cost of **\$250 each.**
- One (1x) Year Warranty start date begins at equipment start-up (*see WARRANTY on sheet 4 for complete details*), and **excludes** the related time & labor required to replace warrantable items.
- Client to provide any / all current jobsite CAD (in 2D AutoCAD format) for Serpentix to create layout drawings.
- Two-Dimensional (2D) AutoCAD drawingw in a .DWG / .DXF format is available upon request from Serpentix for client coordination purposes; 3D CAD model(s) are **NOT** available or provided.
- **NOTE:** general contractor / installer is responsible to review the submittal and ensure the conveyor profile & supports fit accordingly with both interacting equipment and building structure(s).
- Field survey, checking field dimensions or site services is required by others and is **NOT** included.
- Field assembly is required by others and assistance or supervision is **NOT** included.
- Wire, conduit, wiring of electrical devices and integration with other equipment is **NOT** included.
- Anti-Seize for field assembly stainless hardware are **NOT** included.



- Lubricants & grease are **NOT** included in this quotation.
- Seismic Calculations for structural supports effected by wind and seismic are included (per IBC 2018 [ASCE 7-10]), **but ANCHOR BOLT EMBEDMENT & EDGE DISTANCE** are **NOT** included.
 - It is the responsibility of the foundation engineer to design for anchor bolt embedment and edge distance which is governed by the American Concrete Institute (ACI) building codes and regulations.
- Anchor bolts for equipment installation are **NOT** included.
- Special insurance requirements such as being added as an additional insured and/or waiver of subrogation to our policy are subject to additional costs and is **NOT** included in this quotation.
- See Typical "Purchaser to Furnish" Items in Attachment-A.
- See Typical Terms and Conditions (TC1 & TC2) attached to this quotation.

INSTALLATION/ASSEMBLY MAN HOUR ESTIMATE

- Conveyor(s) are shipped unassembled. Field assembly is required. Minimum estimated installation / assembly time is **6-7 man-hours per linear foot** [due to height elevation climb]. Actual time will vary with field conditions, equipment used, installation experience and methods used by the installation contractor.
- After dry-fitting track together and ensure track splices are level / matching, field welding track flanges and grinding for smooth transitions of track splices for roller assemblies is required; this is to be complete **PRIOR** to installing all other components.
- Field welding (2 pipes per support, (2x) 1.0" welds on each pipe, spaced 180-degrees apart; total of 4" of weld) **OR** drilling & bolting (purchaser supplied 3/8" x 3.5" LG. bolt) of supports to conveyor pipes is required during installation.

EQUIPMENT APPROVAL TIME SCHEDULE

- I. FULL MECHANICAL LAYOUT DRAWINGS:**
 - Allow 4 to 5 weeks to submit **full mechanical layout drawings** after our receipt of a formal purchase order; client to provide any / all current jobsite CAD (in 2D AutoCAD format) for Serpentix to create said drawings.
 - This layout drawing is to be used by the client and/or field install contractor to review the field conditions of the jobsite, hard verification of elevation(s) of support foundations & silos, confirm / advise placement of supports, remedy any interferences or clearance issues with existing equipment and/or structures.
 - Allow at least 2 to 3 weeks for purchaser review and the mechanical layout drawings. **NOTE:** These approximations of time **DO NOT** include any time increase due to documented layout changes, conveyor revisions, or required resubmittals as needed.
- II. FORMAL SUBMITTAL GENERAL ARRANGEMENT DRAWINGS & CUTSHEETS:**
 - After written approval of full mechanical layout drawings, allow 3 to 4 weeks to **formal submittal general arrangement drawings & cutsheets**.
 - Allow at least 2 to 3 weeks for purchaser review and the return of the approval drawings. **NOTE:** These approximations of time **DO NOT** include any time increase due to documented layout changes, conveyor revisions, or required resubmittals as needed.
- III. SEISMIC DESIGN CALCULATIONS:**
 - Once formal submittal general arrangement drawings are approved in writing, allow 7 - 8 weeks to submit **seismic design calculations**.
 - Allow at least 1 - 2 weeks for purchaser review and the return of the approval designs calculations. **NOTE:** These approximations of time **DO NOT** include any time increase due to required resubmittals as needed.

- Continued on following Page -



IV. FABRICATION & DELIVERY TIME LIME:

- Upon our receipt of all drawings, submittal data and design calculations are approved by the purchaser, fabrication will begin and this equipment will be shipped in 40 to 48 weeks, *+1.5 week transit time*.
- Total approximate time from received purchase order to ship date: 59 – 73 weeks; (*assuming quick turn around on from reviewing purchaser / reviewing engineer*); *please schedule accordingly*.

PAYMENT TERMS AND CONDITIONS

- Quoted prices are firm for acceptance up to **90 days from ISSUE DATE** (see sheet 1).

NOTE: pricing is based on current market rates and material costing.

- Payment Milestone #1 = Ten percent (10%) [Net 30-days] at first **full mechanical layout drawing** is provided.
- Payment Milestone #2 = Thirty percent (30%) [Net 30-days] at approved **formal submittal general arrangement drawings & cutsheets**.
- Payment Milestone #3 = Fifty-five percent (55%) [Net 30-days] from the equipment ship date.
- Payment Milestone #3 = Five percent (5%) retainage, with final payment due within 180 days of the equipment ship date.
- These payment terms are independent of those the purchaser / contractor may have with the owner, and are subject to the purchaser’s credit approval. Other payment terms may apply.
- Serpentix acknowledges the terms and conditions of the Contract Documents.
- Enclosed forms TC1, TC2 & Attachment-A are part of this quotation.



TOTAL PRICE \$ 2,769,350.00 USD

- Federal, state, local or other taxes are **not** included.
- Freight on board (FOB) Westminster, CO - forward freight agreement (FFA) Jobsite

Please refer all questions concerning this quotation to our local representative, or to our office.

Respectfully,

Erik C. Melander
Director of Engineering

REGIONAL REPRESENTATIVE:

Mr. Gabriel Zink c/o
MISCOWater
6440 Oak Canyon - Suite #150
Irvine, CA 92618
(949) 322-1551
gzink@miscowater.com

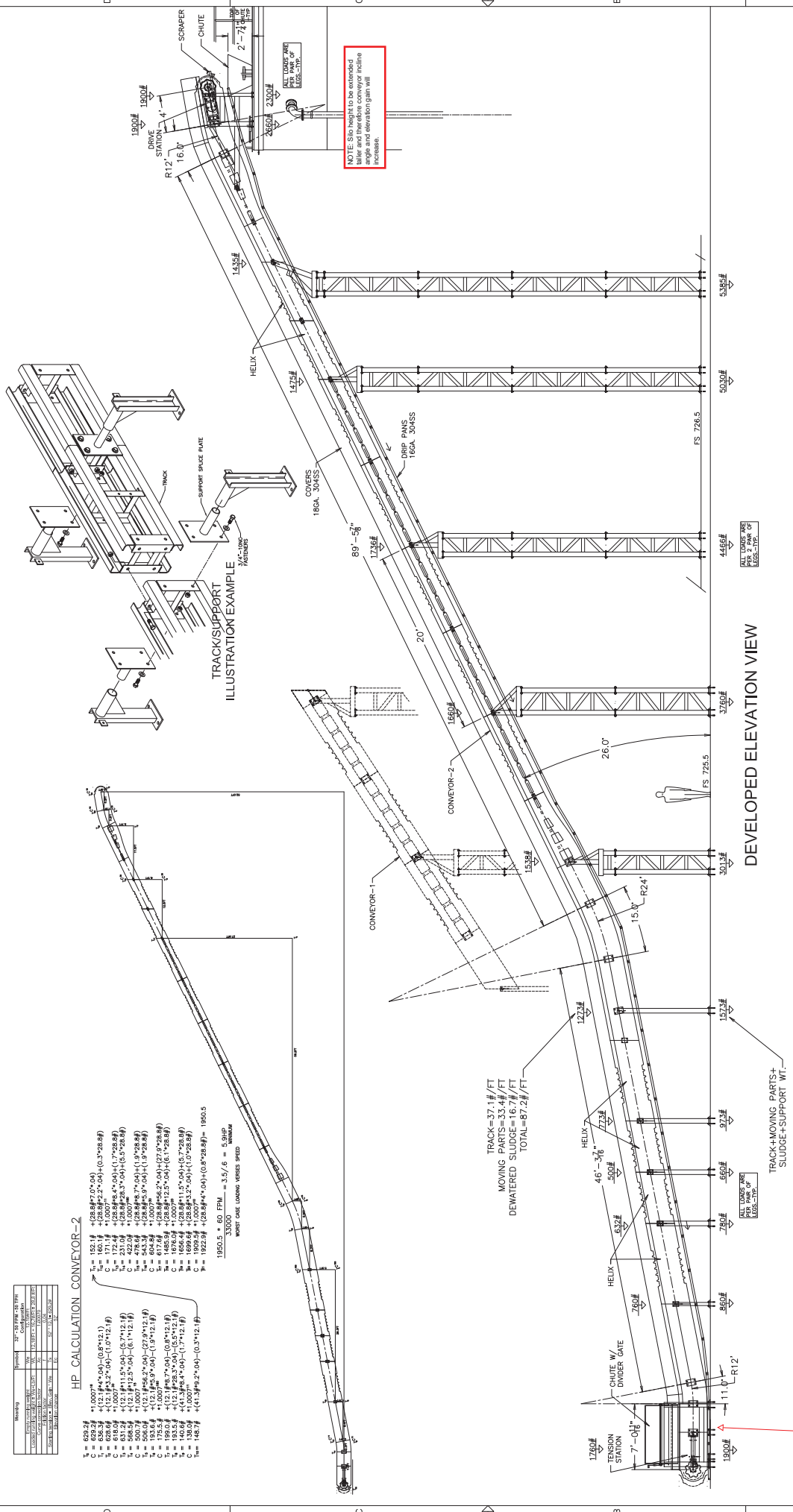
- Enclosures:
- **Quotation Dwg. #Q5823.2 Rev0**
 - Attachment A (Standard Purchaser to Furnish Items)
 - TC1 (Standard Terms & Conditions)
 - TC2 (Standard Terms & Conditions)

REVISION	DATE	BY	DESCRIPTION
1	12/15/19	MD	ISSUED FOR PERMIT
2	12/15/19	MD	REVISED PER COMMENTS
3	12/15/19	MD	REVISED PER COMMENTS
4	12/15/19	MD	REVISED PER COMMENTS

HP CALCULATION CONVEYOR-2

$T_1 = 628.2 \text{#} + (12.1 \text{#} \times 4.00') - (0.8 \times 12.1)$
 $T_2 = 638.3 \text{#} + (2.2 \times 0.4) - (0.3 \times 28.8 \text{#})$
 $T_3 = 160.1 \text{#} + (28.8 \text{#} \times 2.00') - (1.0 \times 12.1 \text{#})$
 $T_4 = 172.4 \text{#} + (28.8 \text{#} \times 4.00') - (1.7 \times 28.8 \text{#})$
 $T_5 = 231.0 \text{#} + (28.8 \text{#} \times 3.00') - (0.9 \times 5.5 \times 28.8 \text{#})$
 $T_6 = 478.6 \text{#} + (28.8 \text{#} \times 7.00') - (1.9 \times 28.8 \text{#})$
 $T_7 = 617.8 \text{#} + (28.8 \text{#} \times 5.9 \times 0.4) - (1.9 \times 28.8 \text{#})$
 $T_8 = 864.3 \text{#} + (28.8 \text{#} \times 2.00') - (27.9 \times 28.8 \text{#})$
 $T_9 = 1656.4 \text{#} + (28.8 \text{#} \times 1.57 \times 0.4) - (5.7 \times 28.8 \text{#})$
 $T_{10} = 1868.4 \text{#} + (28.8 \text{#} \times 1.2 \times 0.4) - (1.0 \times 28.8 \text{#})$
 $T_{11} = 1922.3 \text{#} + (28.8 \text{#} \times 1.0007) - (0.8 \times 28.8 \text{#}) = 1950.5$

$1950.5 \times 60 \text{ FPM} = 3.57 \text{ s} = 5.3 \text{ SHIP MINIMUM}$
 33000
 MINIMUM OPERATING SPEED



DESIGN: H	DATE: 12/15/19	SCALE: 3/8" = 1'-0"	SHEET: 50	TOTAL SHEETS: 10
PROJECT: H	DATE: 12/15/19	SCALE: 3/8" = 1'-0"	SHEET: 50	TOTAL SHEETS: 10
DESIGNER: MD	DATE: 12/15/19	SCALE: 3/8" = 1'-0"	SHEET: 50	TOTAL SHEETS: 10
CHECKER: MD	DATE: 12/15/19	SCALE: 3/8" = 1'-0"	SHEET: 50	TOTAL SHEETS: 10

DRAWING NOT FOR REVIEW OR CONSTRUCTION - ONLY FOR QUOTE ILLUSTRATION

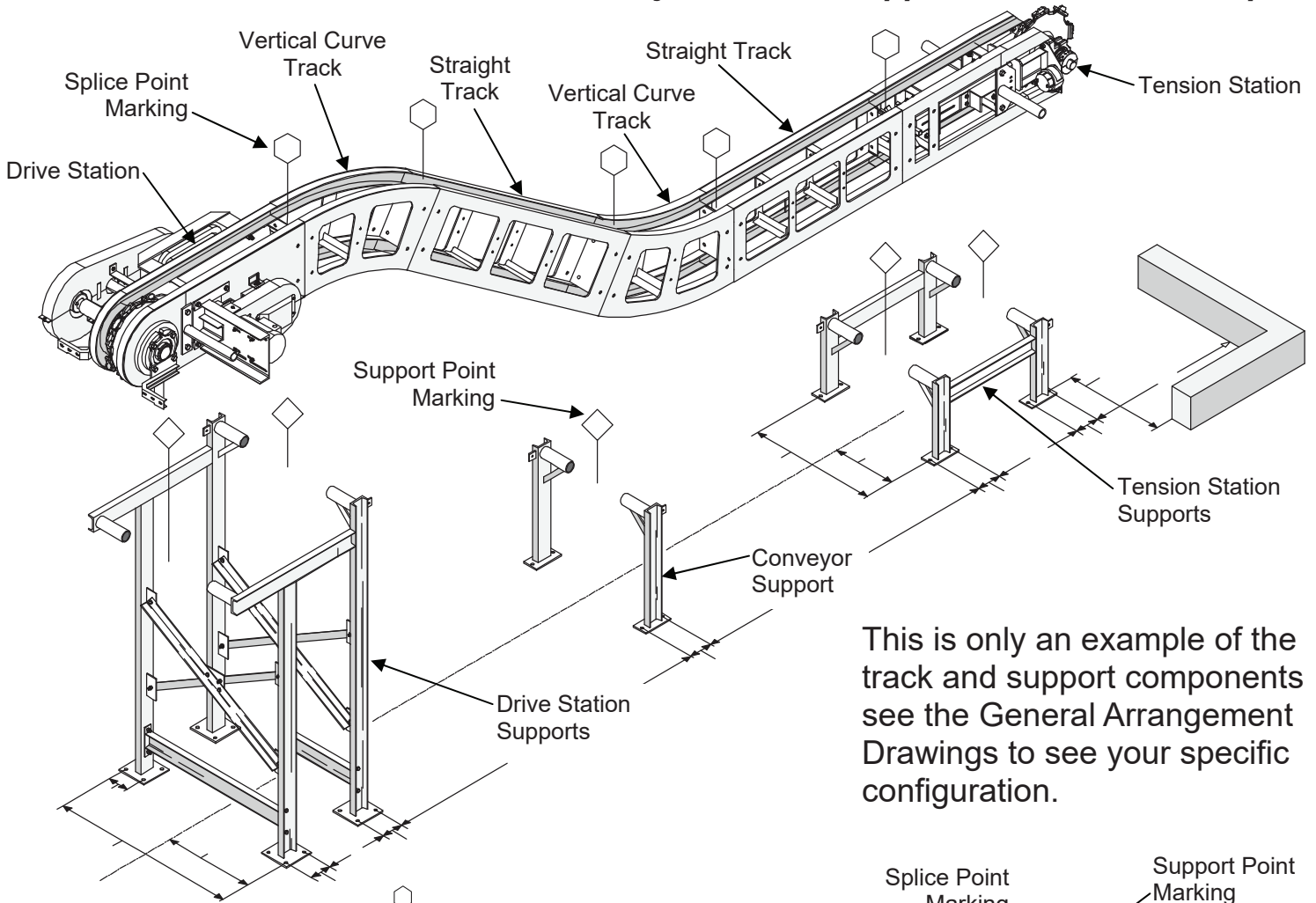
CITY OF RIVERSIDE, CA
DEWATERED SLUDGE CONVEYOR-2

DRAWN BY: MIKE DOLAN
 SCALE: 3/8" = 1'-0"
 CHECKED BY: MD
 SHEET NO: Q5823
 SHEET 4 OF 4

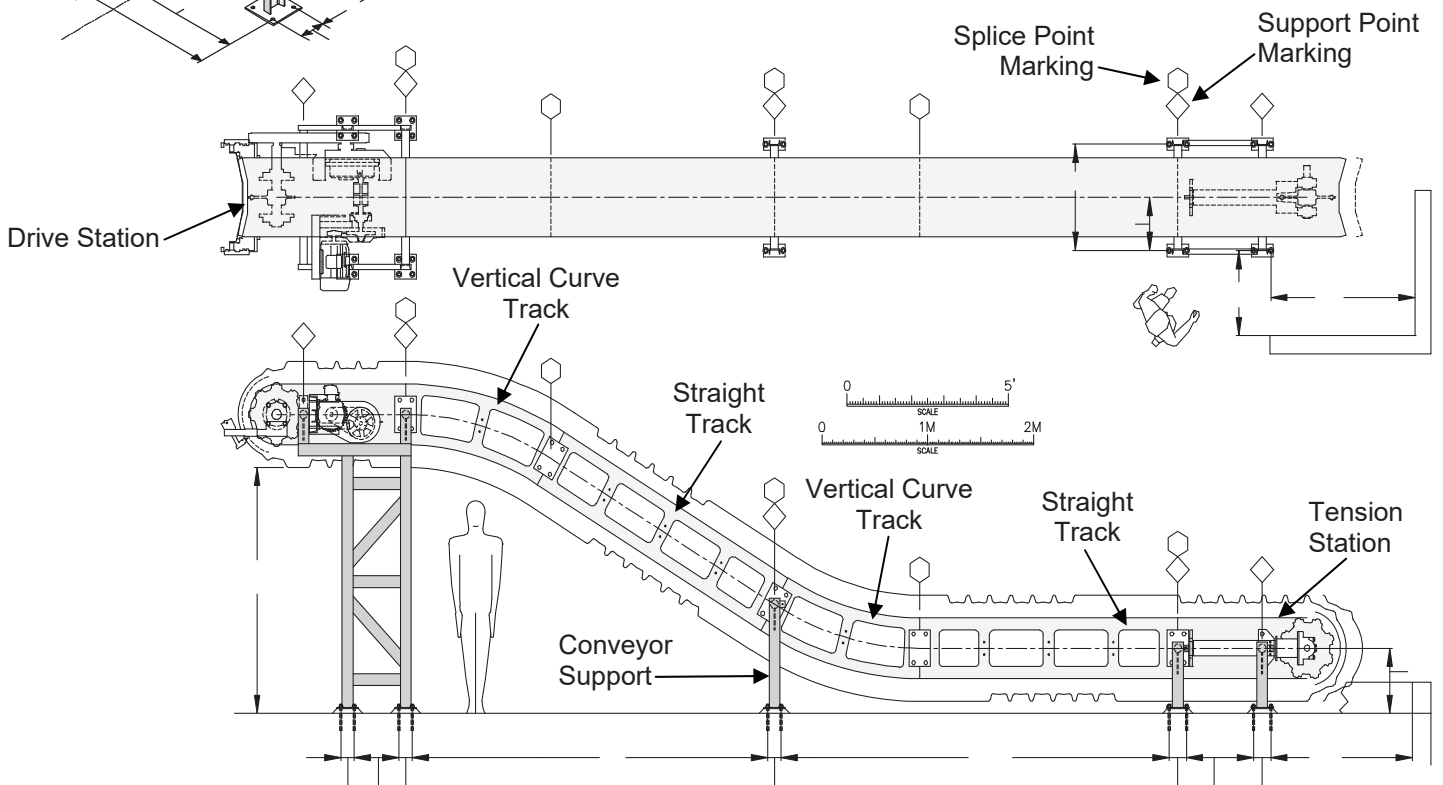
THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED AND IS BEING RELEASED TO THE PUBLIC. IT IS THE POLICY OF THE U.S. GOVERNMENT TO MAKE AVAILABLE TO THE PUBLIC INFORMATION THAT IS NOT OTHERWISE RESTRICTED BY FEDERAL LAWS.



Conveyor Track & Support Installation Example




This is only an example of the track and support components see the General Arrangement Drawings to see your specific configuration.

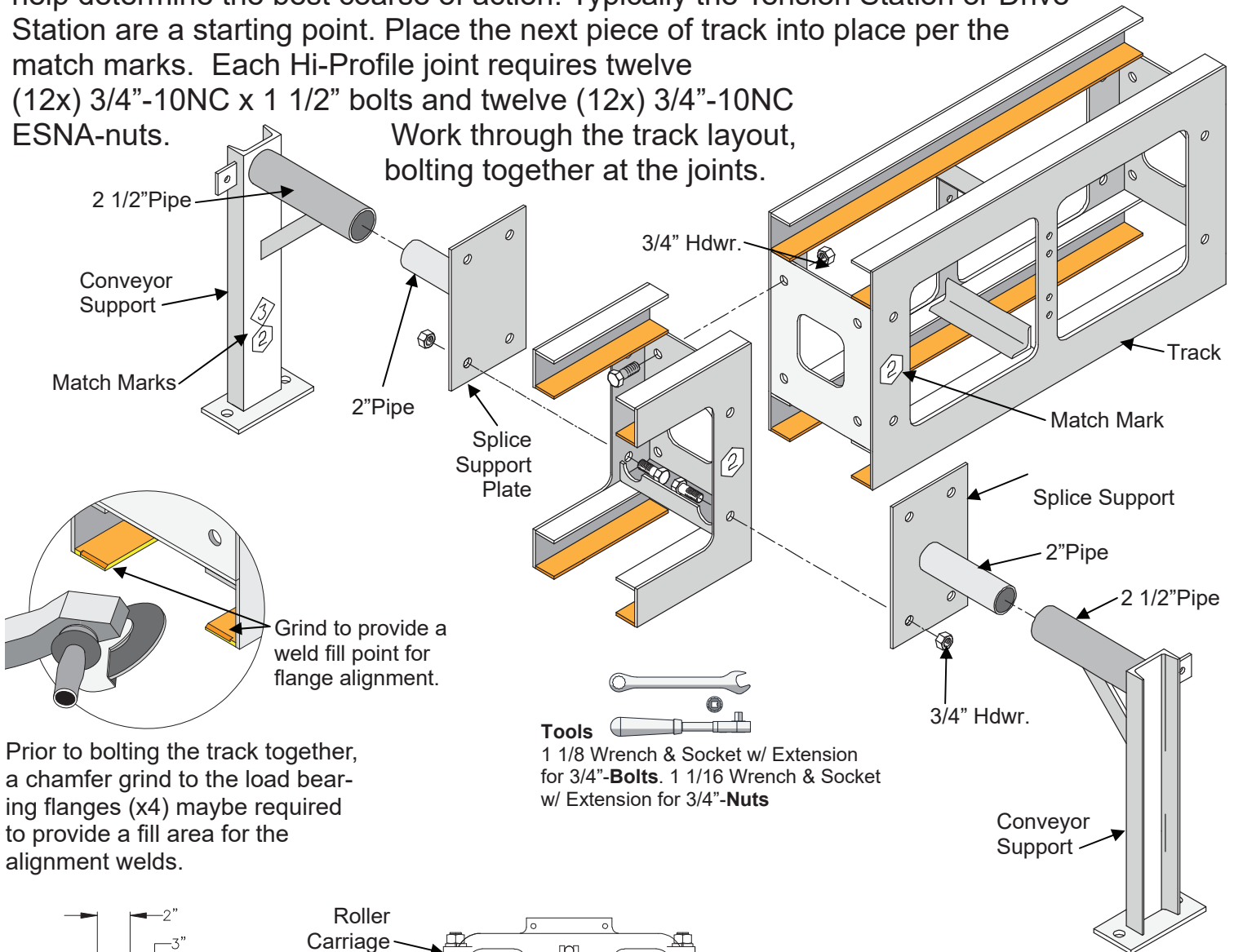




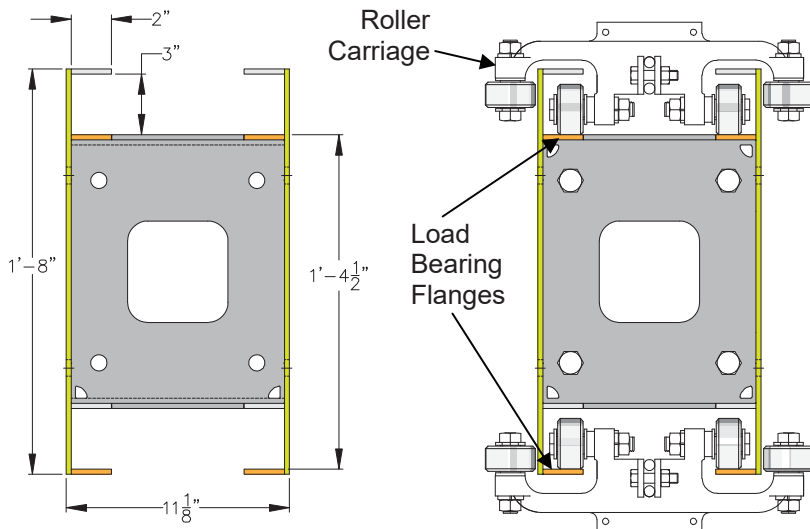
Hi-Profile Track Connection Assembly

Find the starting point  on the GA drawings. If there isn't one call Serpentix to help determine the best course of action. Typically the Tension Station or Drive Station are a starting point. Place the next piece of track into place per the match marks. Each Hi-Profile joint requires twelve (12x) 3/4"-10NC x 1 1/2" bolts and twelve (12x) 3/4"-10NC ESNA-nuts.

Work through the track layout, bolting together at the joints.



Prior to bolting the track together, a chamfer grind to the load bearing flanges (x4) maybe required to provide a fill area for the alignment welds.



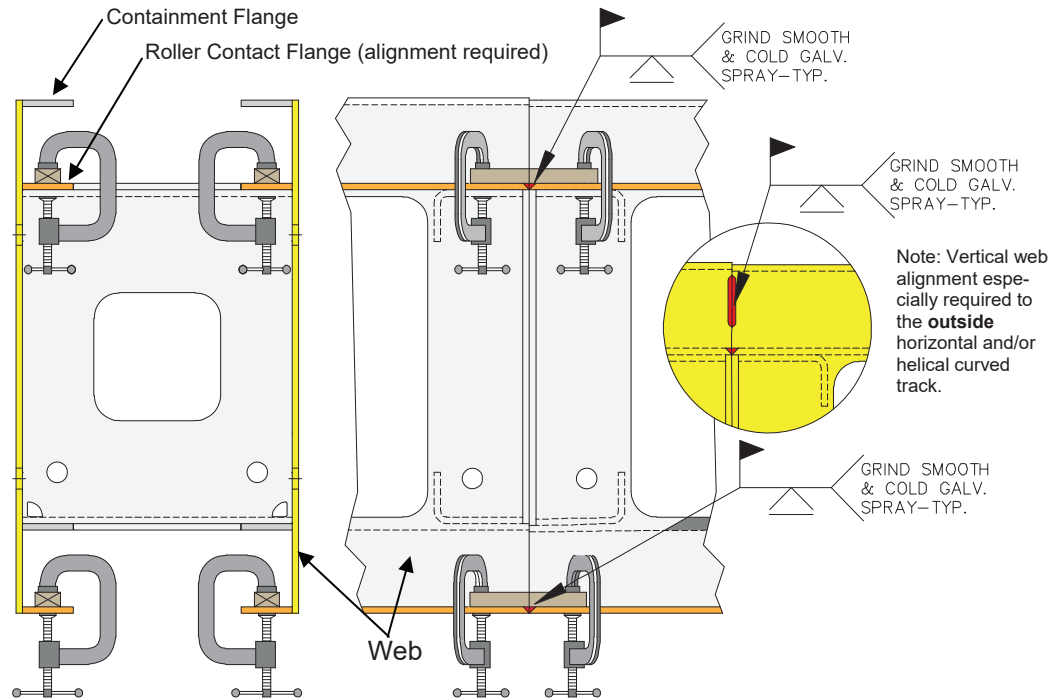
Hi-Profile Track Dimensions

Install the splice support plate where indicated on the General Arrangement drawings. Insert the 2 1/2" pipe conveyor support into the 2" pipe splice support plate. This provides freedom to slight variations in support locations.

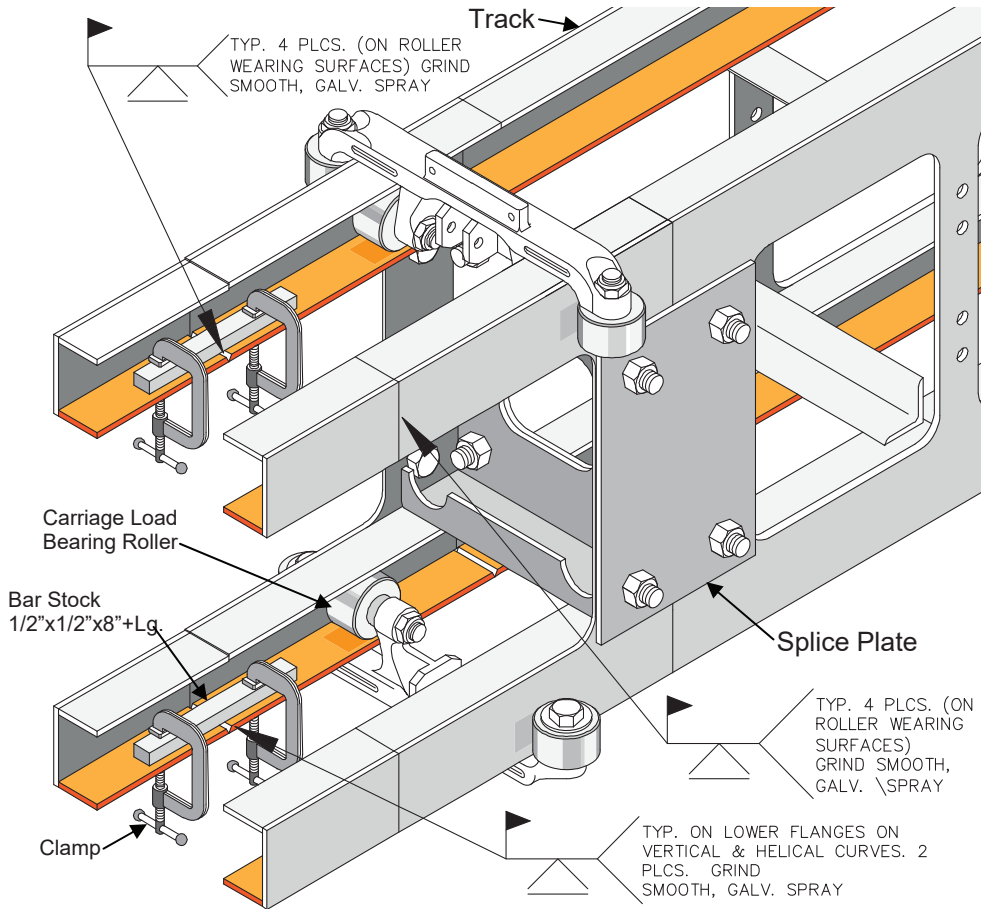


Hi-Profile Track Flange Alignment Instructions

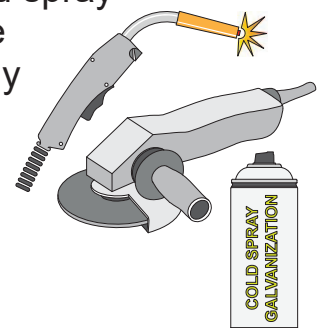
When the complete track arrangement and support legs have been bolted in place, check the layout against the drawings. Field adjustments may be made at this time to bring the conveyor track into alignment. Each splice load bearing roller flange joint should be aligned to allow the rollers in the track to make a smooth transition thru the splice joint.



Load Bearing Roller Flange specific Alignment and Welding



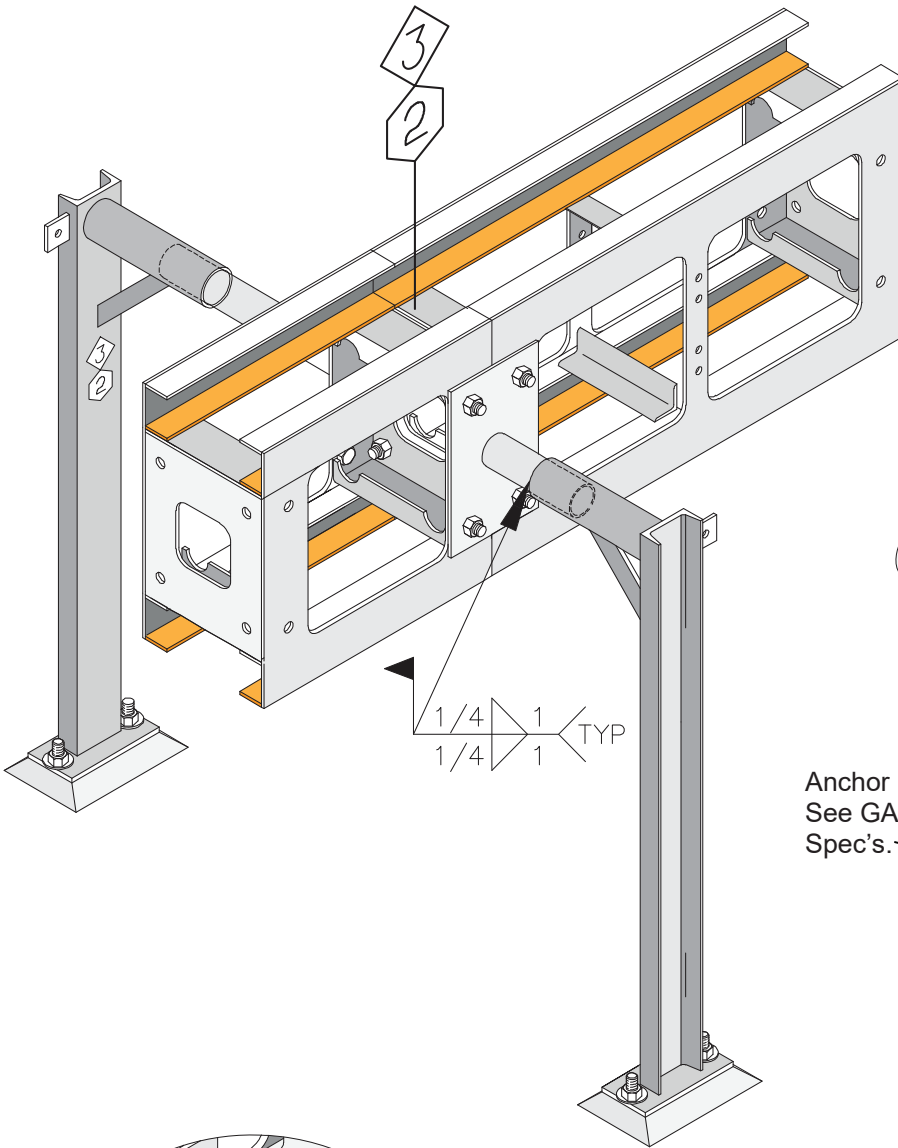
When the track is correctly aligned at each splice joint, field welding of the joints and support legs is required. The track joints must be lined up and then the gap welded over. Grind the finished joint smooth so that the rollers will smoothly roll from section to section. Then cold spray galvanize the freshly welded surfaces.



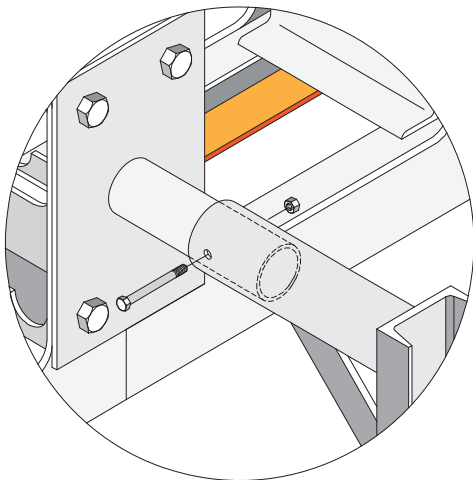
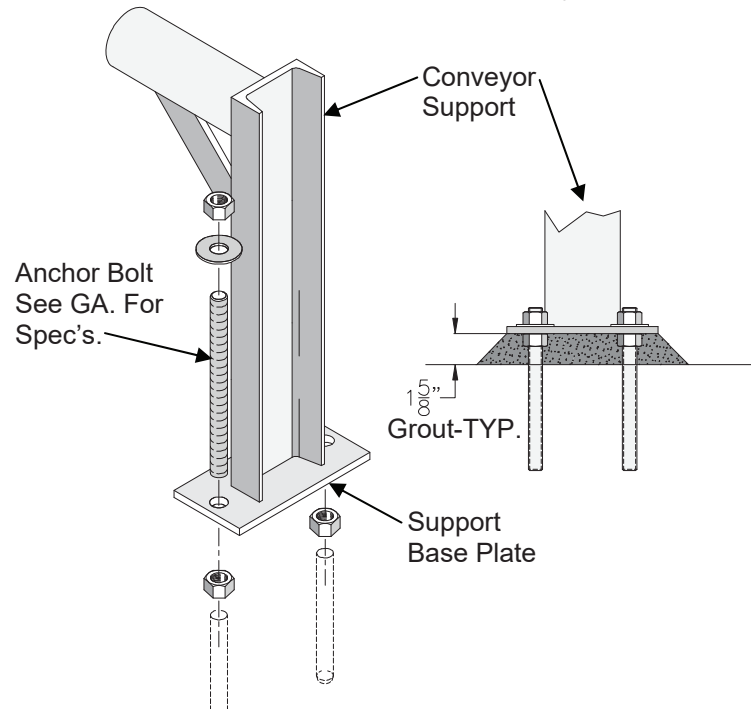
Note: The splice flange clamping illustration above does not show bolting frame area for clarity.



Hi-Profile Track Pipe Support Connection Assembly




Placing anchor bolts into the floor and grouting under support legs should be performed as the next step. Finally, dress the welds and prime paint the welded areas along with any areas where the factory paint has been damaged. If the conveyor is to receive a finish paint coat, it will be easier to apply it now.



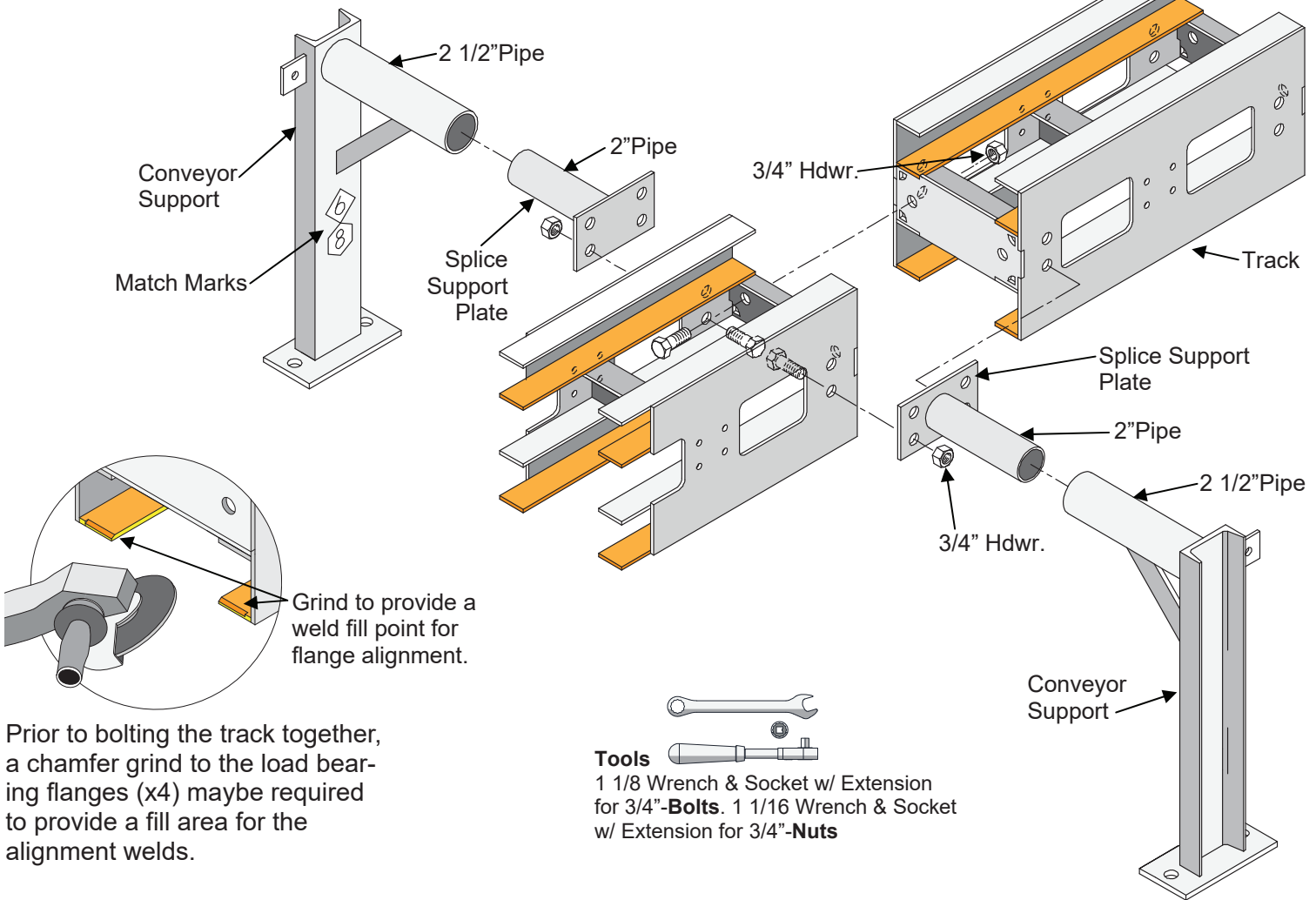
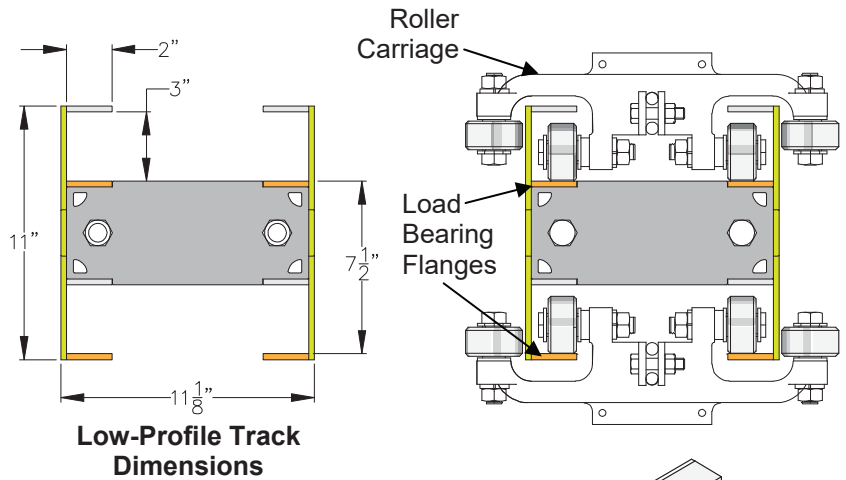
Optional bolting the pipe supports together. Field Drill 7/16" hole and use a 3/8" x 3 1/2" Lg. bolt

Prepare for the installation of the conveyor chain by disconnecting electrical power so that the drive station pulley can be rotated by hand. Place a shipping container of chain at the tension stations so that the chain can be pulled out of the container and roller carriages progressively installed while feeding the assembly into the tracks. At this time everyone associated with handling the chain must be instructed to use care that the chain is not to be dropped or hit with hard objects, or upon hard surfaces. This caution is necessary because the chain is case hardened and any such blows can create a stress rise point that will weaken the chain.



Find the starting point  on the GA drawings. If there isn't one call Serpentix to help determine the best course of action. Typically the Tension Station or Drive Station are a starting point. Place the next piece of track into place per the match marks. Each Hi-Profile joint requires twelve (10x) 3/4"-10NC x 1 1/2" bolts and twelve (10x) 3/4"-10NC ESNA-nuts. Work through the track layout, bolting together at the joints.

Low-Profile Track Connection Assembly



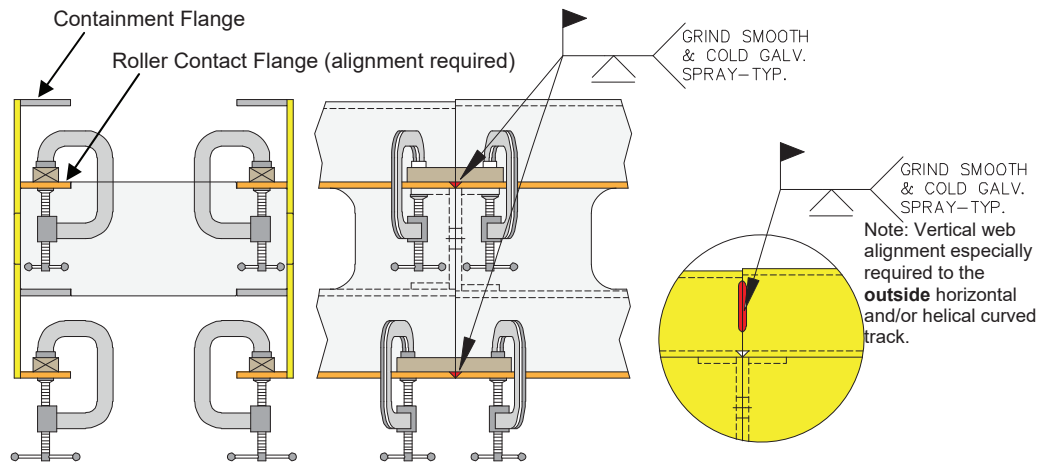
Prior to bolting the track together, a chamfer grind to the load bearing flanges (x4) maybe required to provide a fill area for the alignment welds.

Install the splice support plate where indicated on the General Arrangement drawings. Insert the 2 1/2" pipe conveyor support into the 2" pipe splice support plate. This provides freedom to slight variations in support locations.

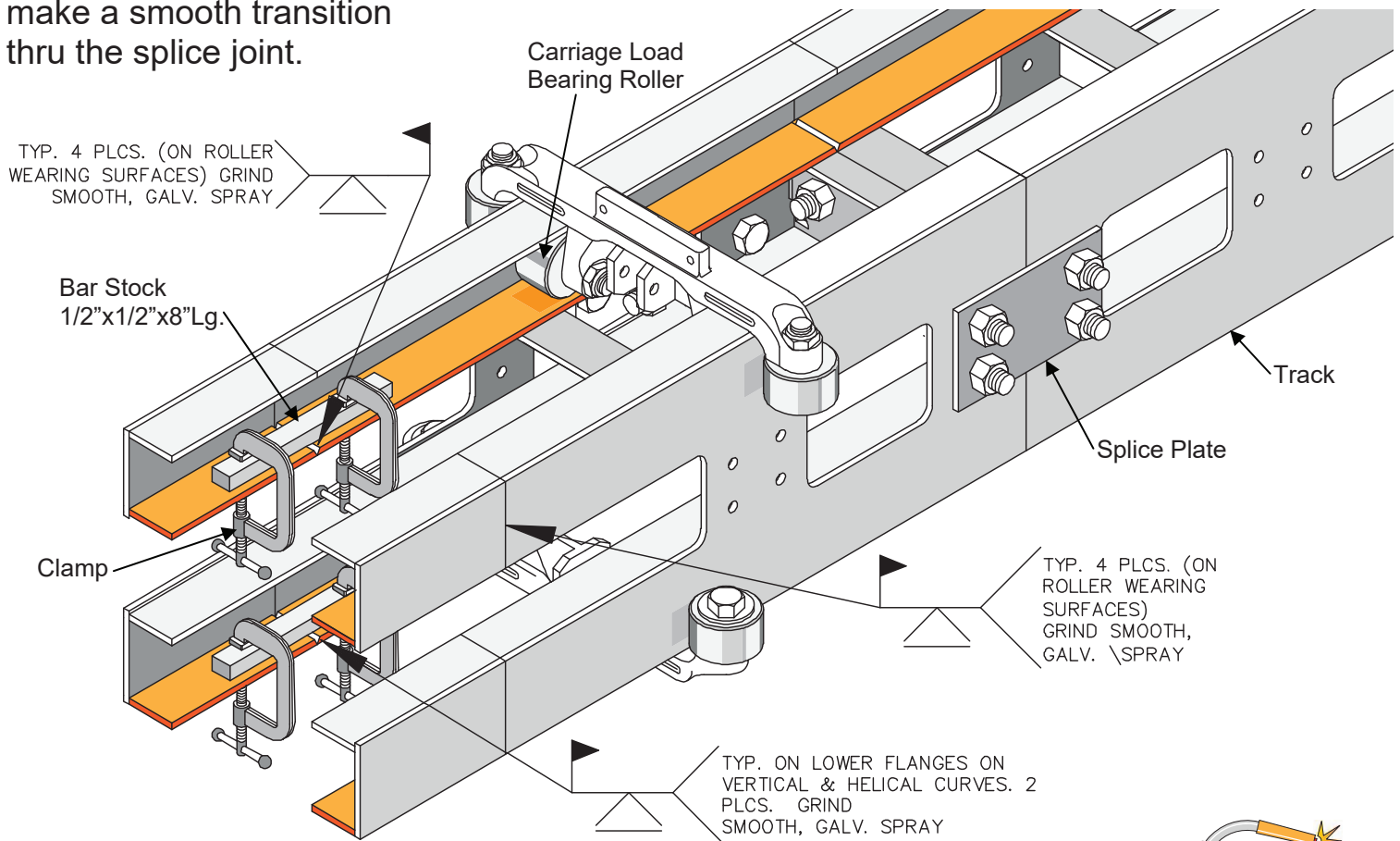


Low-Profile Track Flange Alignment Instructions

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Load Bearing Roller Flange specific Alignment and Welding

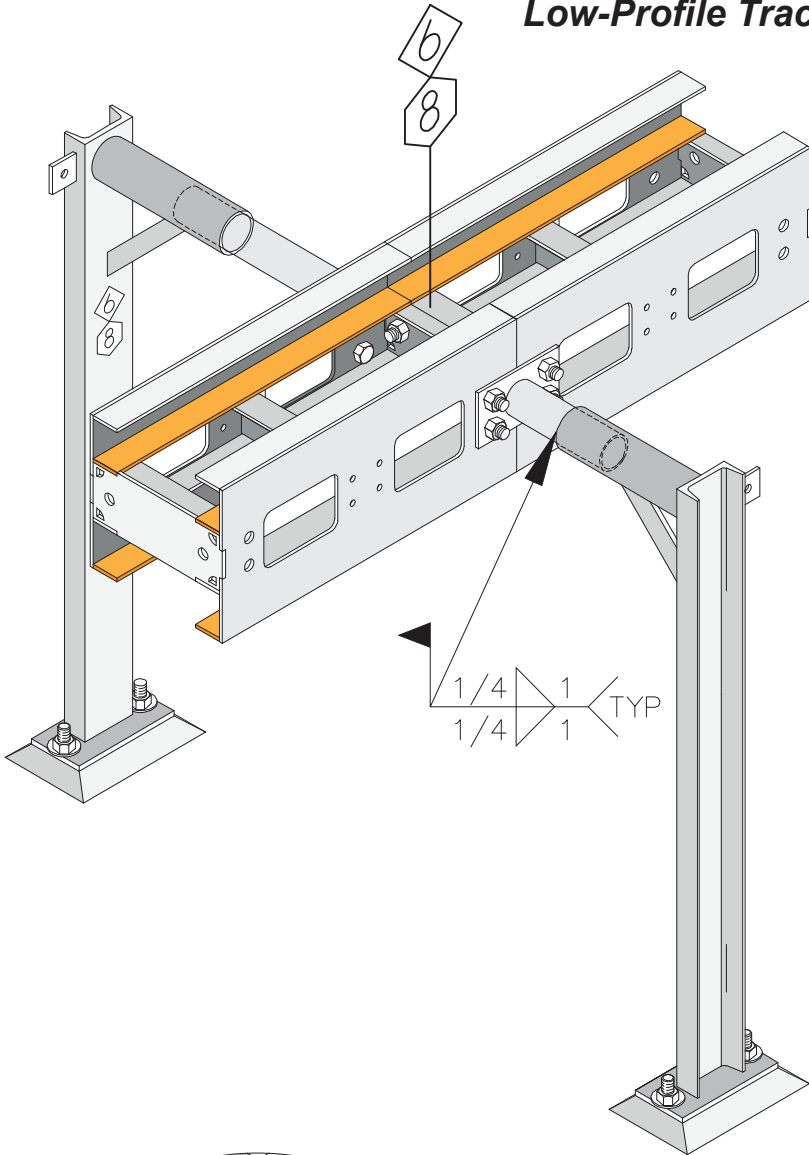


When the track is correctly aligned at each splice joint, field welding of the joints and support legs is required. The track joints must be lined up and then the gap welded over. Grind the finished joint smooth so that the rollers will smoothly roll from section to section. Then cold spray galvanize the freshly welded surfaces.

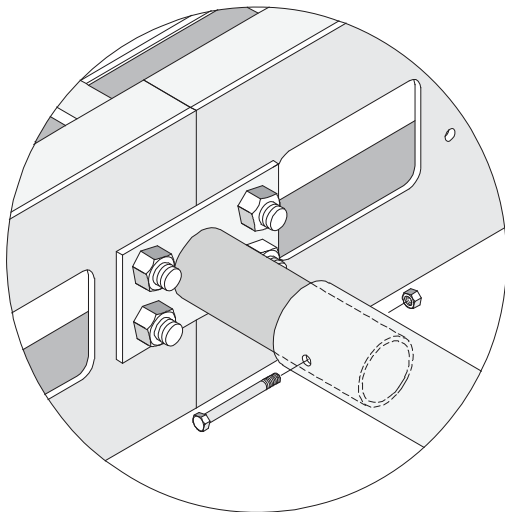
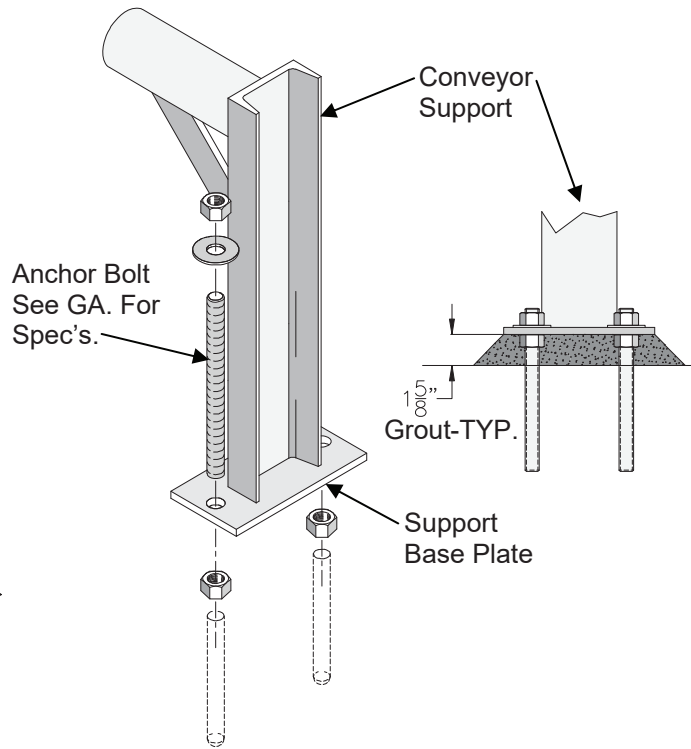




Low-Profile Track Pipe Support Connection Assembly



Placing anchor bolts into the floor and grouting under support legs should be performed as the next step. Finally, dress the welds and prime paint the welded areas along with any areas where the factory paint has been damaged. If the conveyor is to receive a finish paint coat, it will be easier to apply it now.



Optional bolting the pipe supports together. Field Drill 7/16" hole and use a 3/8" x 3 1/2" Lg. bolt

Prepare for the installation of the conveyor chain by disconnecting electrical power so that the drive station pulley can be rotated by hand. Place a shipping container of chain at the tension stations so that the chain can be pulled out of the container and roller carriages progressively installed while feeding the assembly into the tracks. At this time everyone associated with handling the chain must be instructed to use care that the chain is not to be dropped or hit with hard objects, or upon hard surfaces. This caution is necessary because the chain is case hardened and any such blows can create a stress rise point that will weaken the chain.



ATTACHMENT A

SERPENTIX CONVEYOR CORP. - STANDARD “PURCHASER TO FURNISH” ITEMS

This proposal does not include the following items unless specifically listed in the quotation, or for any other items not specifically mentioned within this quotation:

1. Federal, state and local, or other taxes.
2. Cost of performance/supply, or any type, bonds and/or special insurance coverage.
3. Insurance coverage naming others as primary or additional insured.
4. Licenses, fees and/or permits.
5. Import/export fees, taxes or tariffs.
6. Microfilming of drawings and product data sheets/brochures.
7. Drive and tension station personnel guards or railings.
8. Warning and caution signs.
9. Videotapes or videotaping of O&M instructional services.
10. Special finishes on OEM supplied components.
11. Special equipment identification signs.
12. Special O&M manual binders and labels.
13. O&M manuals in any language, other than English.
14. O&M manuals on computer disk or CD format. If the manuals are provided on disk, it will be in a .pdf format only. Other formats are not available.
15. Field assembly, including field erection expendables and required handling equipment (see Terms and Conditions, form TC2).
16. Unloading upon delivery; storage and storage protection.
17. Access facilities: Walkways; stairways and ladders.
18. Electrical: Control panels; local control function, starters; conduit and wiring; alarm systems; instrumentation and lighting.
19. Intermediate or finish painting, when applicable.
20. Lubricants, lubrication line extensions, grease guns, the initial lubrication of the equipment, and all lubricants required during warranty period.
21. Wall opening weather closure or partial sealing curtains, or similar accessories, when applicable.
22. Covers and enclosure material is shipped flat, to be bowed and fastened into position during assembly. Cutting and fitting may be required onsite as part of the equipment assembly.
23. Material discharge chutes or loading hoppers.
24. Storage boxes for spare parts, other than cardboard.
25. Foundations, foundation design, anchor bolts; seismic analysis.



TC1

SERPENTIX CONVEYOR CORP. - STANDARD TERMS AND CONDITIONS OF SALE

- Definitions** - Seller is Serpentix Conveyor Corporation (also called Serpentix®), incorporated under the laws of the State of Colorado, USA. Buyer shall be the individual, partnership, corporation, or government agency with whom a contract of sale for one or more of Seller's products or services is in force. **Sales Representative** is an individual, partnership, or corporation representing Seller in order to supply Seller's information to potential Buyers and solicit order on behalf of Seller. **Engineer or Architect-Engineer** is an engineer or architect, either individual, partnership, or corporation, representing Buyer or ultimate owner of the equipment being purchased from Seller.
- Authority** - All contracts and agreements require approval and acceptance by Seller. Acceptance and/or agreements by Sales Representatives shall not be binding upon Seller.
- Shipment** - Unless specifically agreed between Buyer and Seller shipment will be made F.O.B. point of manufacture or Seller's plant in Westminster, Colorado, whichever is closer to destination. In the absence of specific shipping instructions, the method of shipment will be determined by Seller.
- Shipping Schedule and Delivery** - Seller shall not be responsible for delays in delivery resulting from causes beyond its control, or the control of its suppliers, including, but not limited to, any casualty, acts of Buyer, strikes or other labor difficulties, shortage of labor, supplies, and transportation facilities. In the event a binding delivery date is agreed upon between Seller and Buyer, Buyer's exclusive remedy for any and all losses or damages (whether direct, indirect, special or consequential) stemming from Seller's failure to meet such binding delivery date shall be a claim for actual damages, but not consequential damages, not to exceed the purchase price of the products delivered subsequent to such delivery date.
- Quotations** - All quotations, offers and/or bids expire sixty (60) days from the date of the quotation, offer, or bid, unless withdrawn sooner or specifically stipulated otherwise.
- Warranty** - Seller warrants that the products manufactured by seller conform to applicable drawings and specifications accepted in writing by Seller, will be free from defects in material and workmanship, will be merchantable and will perform in accordance with the detailed specifications and design/operating requirement established by the customer and accepted in writing by Seller. These warranties extend from a period of **twelve months** from the date when the equipment is put into service, provides beneficial use, upon owner acceptance, or upon substantial project completion, whichever occurs first. Buyers exclusive remedy and Sellers sole duty under these warranties is to repair or replace the product. Normal wear and tear on Seller's product shall not constitute a warranty defect. **There are no other warranties, express or implied, which extend beyond those set forth above. The warranty of merchantability is limited to the time period above.** These warranties are contingent upon the product being stored, installed, maintained and operated in accordance with the detailed specifications, good engineering practices and the instructions contained in the Operating and Maintenance Manual supplied by Seller. These warranties shall apply to the original customer/owner only.
- Patent Indemnity** - Seller agrees to indemnify Buyer for all damages or costs resulting from any suit or demand alleging infringement of any United States Patent which claims the structure of the apparatus or any part thereof manufactured by the Seller under this proposal, if the Seller is notified promptly in writing of such a suit of demand and given adequate authority, information and assistance for the defense of same. Provided, however, that Seller at its own option and expense shall have the right to settle such suit or demand either by procuring for the Buyer the right to continue using the apparatus or part thereof furnished by Seller; or by replacing same with noninfringing apparatus; or by modifying same so that it becomes noninfringing; or by removing the alleged infringing apparatus and refunding the contract price. This indemnification clause does not apply on any apparatus or part thereof made to the Buyer's design or the design of which has been modified by the Buyer. Seller's sole responsibility and the Buyer's exclusive remedy for any such suit or demand shall be as set forth in this paragraph.
- Payment** - All overdue invoices will bear a 1 1/2% per month interest penalty until paid. If legal action becomes necessary to force collection, the total amount due Seller shall be the amount originally invoiced, all subsequent interest and penalties, and all court costs and attorney fees incurred by Seller for collection.
- Taxes** - Seller's price does not include any applicable sales, use, excise or similar taxes. If, under any law or regulation in effect, the Seller is required to pay or collect any tax upon the products, whether directly or indirectly, the contract price shall be increased by the amount of any such tax.
- Limitation Of Liability** - Seller's total responsibility of damages, whether arising out of or relating to its performance of this contract or the products covered hereunder, shall be limited to the contract price for the product. In no event shall Seller be liable for any incidental or consequential damages such as lost profits, loss of use of productive facilities or equipment, expenses or damages incurred in reliance on Seller's performance hereunder or lost production whether suffered by Buyer or any third party.
- Default** - If Buyer fails to fulfill the terms of payment of the contract, Seller may defer further shipments, if any, until such payments are made, or may, at its option, cancel, rescind, or terminate this agreement. The Seller reserves the right to require, at any time, from the Buyer, satisfactory security for performance of the Buyer's obligations; failure to furnish such security will entitle the Seller to suspend shipment until such security is furnished, or to cancel, rescind, or terminate this agreement, in which event all unpaid invoices immediately become due and payable, and Seller shall have the right to repossess such of the materials remaining in Buyer's possession and apply the then value thereof as a payment upon any balance due from the Buyer to the Seller. Should the Seller fail to exercise any right accruing from any default of the Buyer, such action shall not impair or affect the Seller's rights, in case such default continues or in case of any subsequent default of the Buyer.
- Entire Agreement** - An agreement shall become binding and effective upon Buyer's acceptance of Seller's proposal. The proposal and these conditions of sale constitute the entire agreement between the parties relative to the sale and purchase of the products covered, and the Seller shall not be bound by, or liable to, the Buyer for any affirmation of fact, promise, representation or inducement made by any representative, agent or person in Seller's employ which is not embodied in the agreement or a written supplemental agreement executed by a duly authorized representative of Seller. Modification of these terms and conditions shall not be affected by the use of any purchase order or similar form by Buyer unless such modification is contained in the agreement or supplemental agreement as stated above.
- Terms To Govern** - The provisions of the agreement and these terms and conditions shall constitute the entire agreement and understanding of the parties and shall supersede all prior communication agreements and understandings from or between the parties. By acceptance of any offer or acknowledgment containing these terms or by failure of Buyer to reject these terms within ten (10) days after notification thereof, or by acceptance of the products or service described in the agreement, Buyer shall be deemed to have accepted these terms without reservation or condition. All stenographic or clerical errors or omissions are subject to correction and will not alter any of the terms and/or conditions stated herein. Any contract or sale made hereunder shall be governed by the laws of the State of Colorado.
- Ownership of Proposal** - Proposals submitted by Serpentix® remain the property of Serpentix® and are subject to return at Serpentix's® request. Proposals contain confidential information. Anyone accepting custody of a proposal agrees that such information will not be disclosed to anyone not engaged in evaluation of proposal or reproduced in whole or in part.
- Indices Of Ownership** - Risk of loss transfers to Buyer upon shipment by Seller. Seller, however, retains title and right to possession until the purchase price has been paid in full. Purchaser agrees to comply with local requirements for maintaining Seller's security interest in the equipment and will carry sufficient insurance to protect same. Should Buyer breach any of the terms of this Agreement or file or allow to be filed against it, a petition in bankruptcy or any assignment for the benefit of creditors, Seller may declare the entire balance due and at its option, repossess the equipment. Should Seller resell any repossessed equipment the outstanding balance will be credited by the amount realized on the sale less any expenses reasonably incurred in repossessing and selling the equipment and collecting the remaining balance.
- Delay, Suspension Or Cancellation** - Delay, suspension or cancellation may only be accomplished by a written request from the Buyer and Seller's written acceptance. Seller will estimate the value of its services already performed based on percentage of job completion for purposes of invoicing cancellation charges. In addition, in cases of suspension, cancellation, delays occasioned by Buyer's failure to forward engineering or manufacturing approvals, or delays of over thirty (30) days in forwarding shipping instructions from date of notification of readiness to ship, Seller may set new delivery dates, or when applicable, place equipment in public or private storage at Buyer's expense. If Seller stores the equipment on its premises, the storage fee will be one per cent (1%) of the contract price per month. In cases of suspension and/or cancellation, Buyer will pay twenty-five per cent (25%) of the contract price or Seller's estimate of value of its services, whichever is greater, plus storage charges, if any.
- Repair Parts** - Seller shall not be responsible for failure of parts to fit properly due to deterioration of, or modification by other than Seller to Buyer's existing equipment (or structure) for which such parts are furnished. Seller makes no warranty or guarantee that the equipment or parts supplied hereunder will comply with any existing performance of Buyer's equipment. Seller reserves the right to furnish substitutes as Seller determines for material not available or whose use is restricted, provided substitute material is of equal quality and performance.
- Design Changes** - Seller reserves the right to implement design and component changes in its products without notification to Buyer. These changes will utilize component and material improvements to increase equipment performance. These changes will not affect previously agreed to operation or installation provisions. Seller to make retrofit at Seller's option only.



19. **OSHA And Safety** - The Occupational Safety and Health Act and other regulations require that employers provide their employees with a safe place to work. Seller offers options designed to assist the Buyer in those areas for which Buyer is responsible, by reason of the regulations and the Buyer's knowledge of the actual circumstances, namely operation, control, maintenance, and service of the Seller's equipment by the Buyer and his employees in the Buyer's plant. Seller observes those specific OSHA standards which are published as of the date of this proposal on the equipment which it manufactures. Standards such as "noise levels" which depend on the construction and contour of the Buyer's plant and the proximity of working areas to equipment are not the Seller's responsibility. Modifications to the Seller's equipment necessitated by the imposition or interpretation of a specific OSHA standard, published after the date of this proposal, or a state or local standard are not included in this proposal. A supplemental proposal on such items will be submitted on request. In the event Buyer refuses to accept a modification which in Seller's judgment is required for safety, Seller reserves the right to cancel the entire agreement between the parties, pursuant to the cancellation provision of these terms and conditions. Unless expressly specified in the agreement and/or Seller's offer, Seller is not obligated to furnish safety devices for the equipment.
20. **Drawings & Manuals** - General arrangement drawings showing Seller's equipment in relation to Buyer's equipment and building will be furnished to Buyer for approval and dimensional check. Seller is not responsible for incorrect or, exact dimensions regarding building and equipment layout after approval of general arrangement drawings. Buyer is solely responsible for submitting correct data to Seller for the proper engineering and fitting of Seller's equipment in Buyer's facility. Proprietary drawings dealing with the equipment and schematics of Seller's fabrication and assembly are termed "shop drawings." Shop drawings will not be furnished to Buyer for approval. Buyer's drawing check is also required so Buyer will be acquainted with the equipment prior to Seller's fabrication and Buyer's installation.
21. **Buyer's Act Voiding Warranties and Guarantees** - The mechanical and performance warranties furnished by Seller herein will be rendered void by: unauthorized alterations or modifications; damage to the equipment caused by improper storage, deterioration or wear resulting from chemical, abrasive or corrosive actions; and improper operation beyond contracted operating conditions.
22. **Use By Third Party** - If Buyer intends that the equipment under this agreement will ultimately be used by a third party, Buyer represents that the third party has or will be made aware of this agreement and all of its terms and conditions, that the third party has or will agree to be bound by this agreement and its terms and conditions and to be bound by the knowledge, representations, and agreements of Buyer with respect to this agreement and the services, equipment, and information relating to it, and that Buyer will protect, defend, and hold harmless Seller from all claims of ultimate users or others in excess of those allowed under this agreement.
23. **Back Charge Policy** - The conditions here in, Warranties, stipulate remedies available to Buyer, period and scope of warranty coverage. Implicit in said conditions is that Buyer may have occasion to accomplish in behalf of Seller repairs, replacements, modifications, corrections which may qualify as warranty work, the cost of which is subject to reimbursement of Buyer by Seller. The cost of alleged warranty work will be considered for reimbursement if/when the following conditions are met:
 - A. Buyer notifies Seller within twenty-four (24) hours after discovery of the condition allegedly requiring correction and his intent to undertake the work at Seller's expense. All Verbal notifications shall be confirmed in writing.
 - B. Buyer submits cost, adequately documented, for alleged warranty work by the end of the month following the month during which the work was accomplished.
 - C. The cause of the condition requiring warranty work is determined to be defects in design, materials or workmanship. Allowable costs under these conditions shall be direct out-of-pocket cost only, which are defined as follows:
 - (1) Materials and components at invoiced cost.
 - (2) Subcontracted work at invoiced cost.
 - (3) Buyer's direct labor cost including the cost of fringe benefits strictly applicable to direct labor.
 - (4) Specifically excluded are allocation of fixed overhead, sales, general and administrative expense, and profit.
24. **Installation** - The following items and assembly work are not included in the sale price of a Serpentix® conveyor (unless specifically stated within proposal; please also refer to Attachment A in the proposal for a listing of "Purchaser To Furnish" items).
 - A. Assembly and erection of the conveyor, including limited field track fitting, drilling, necessary track and support welding, anchor bolt supply and installation, and dressing of field welds.
 - B. Installation and assembly of chain, roller carriages, belt pans, and any chain or belt pan attachments and hardware.
 - C. Installation and adjustment of **any** accessories (typically including, but not limited to, drip pans, covers, skirt boards, and belt scrapers.
 - D. Electrical hookup; wiring and conduit; controls or switches; motor starters; alarm systems; instrumentation; and lighting.
 - E. Field alignment of take-up and drive terminals, or any final adjustment of limit switches, chain tension devices, or motor drive components or belts.
 - F. Necessary priming and painting of field welds, and the repair to the hot-dipped galvanized finish, if provided.
25. **Controls** - Unless specifically included in the contract, Serpentix Conveyor Corporation accepts no responsibility for designing or providing components for any control schemes, circuitry, starters, relays, switches, etc.
26. **Access** - Unless specifically included in the contract, Serpentix® is not responsible for providing or installing necessary walkways and platforms for maintenance of the conveyor. Also not included are any necessary heaters or warming equipment necessary for cold-weather exposure installations.
27. **Flood Damage** - Serpentix® will not be responsible for damage to the conveyor or components caused by flooding or filling of any pit or similarly confined area into which the conveyor is installed. Buyer shall be responsible for adequate level alarms, drainage of liquids or sludges, or removal of solids from any pit or similarly confined areas.
28. **Loading Conditions** - Serpentix® will not be responsible for damage caused by sudden imposition of loads to the conveyor or loads dropped from heights not disclosed to Serpentix® before design of the conveyor. Loads and capacities stated in terms of weights per time period are assumed to be evenly loaded within the time periods, within plus or minus ten per cent (10%) of stated loading.
29. **Load Bypass** - Buyer shall be responsible for providing appropriate load bypasses or load stopping means to provide adequate downtime of the conveyor for inspection and maintenance. Buyer shall be responsible for providing appropriate bypasses or load stopping means for conditions where load material characteristics change in a manner detrimental to conveyor loading or maintenance procedures.
30. **O&M Schedule** - Buyer shall be responsible for developing and executing an adequate inspection and maintenance plan, including full inspection of the conveyor and checking of adjustments for chain tension and belt scraping; all in accordance with recommended procedures and schedules states with the Operation and Maintenance Manual.
31. **Field Services** - Included in each contract is a provision for Seller's personnel to travel one or more times to a field site to perform requested services for Buyer. Seller shall charge for any additional services at the following rates:
 - A. **Field Service Repairman** - \$1,500.00 per eight (8) hour day or part thereof, overtime rate \$150.00 per hour.
 - B. **Field Engineer** - \$2,500.00 per day or part thereof, overtime rate \$200.00 per hour.
 - C. **Service Supervisory Personnel** - \$1,500.00 per day.
 - D. **Specific Personnel** - including Service Manager, Chief Design Engineer, Design Consultants - \$2,750.00 per day - travel time included.
 - E. The cost of air and ground travel from Seller's plant to the point of installation and return, together with all reasonable living expenses during the period of service.
 - F. The above charges, including service and engineering time, shall be made for time involved and any delays, including those from causes beyond the Seller's control.
32. **Design Tolerances** - Serpentix® conveyors are designed to tolerances normally necessary for machinery that must be field assembled and welded in position within and/or upon other structures. If Seller is responsible for supplying supports, they will be built to tolerances required. Seller **does not** accept any liability or responsibility where building conditions and dimensions of the Buyer are not suitable for the proper and safe fitting and installation of the conveyor and its supports.
33. **Operation** - Seller shall not be liable for damage or expenses caused by: sudden stops, jamming of the conveyor; passage of foreign material between chain and sprocket or between chain and slide surface; the conveyor being rubbed against other stationary equipment; or, for problems of loading onto or discharging from the conveyor.



TC2

SERPENTIX CONVEYOR CORP. - STANDARD TERMS AND CONDITIONS OF QUOTATION

- Field Services** - Unless otherwise noted, equipment inspection, start-up and/or operational instruction, is included within the price. A minimum two-week notice prior to any visit is required for scheduling purposes. This service will be provided, when required, following initial payment of the contracted terms of payment by the Buyer (also refer to "Payment Terms and Conditions" within the quotation). Once travel arrangements are confirmed, additional travel cost, if any, incurred due to requested advancement or postponement of agreed upon scheduled trips(s), shall, with the submittal of applicable documentation, be accepted and paid for by the purchaser of the equipment.
- Fabrication and Installation** - All equipment furnished shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with detailed drawings, specifications, engineering data, instructions, and recommendations furnished by Serpentix. Final assembly of the entire conveyor unit may require the cutting and re-drilling of some of the track sections, drip pans, covers, etc. in order to conform with any site and/or installation deviations (this work shall be performed by the contractor on site). Note that, except for the fully assembled drive station and tension station sections, the conveyor to be furnished is shipped in a knocked-down condition (i.e. the modular track sections, supports, belt pans, drip pans, belt scraper, etc. are typically shipped as components) and not as a fully assembled conveyor. Components such as drip pans and covers may require some field modification, by installing contractor, due to conveyor configuration and varying site conditions. Field assembly and erection of the conveyor is the responsibility of the installing contractor (also refer to "Installation" in TC1, Standard Terms and Conditions of Sale).
- Freight and Transportation** – Equipment is typically shipped via common carrier, in an enclosed truck. The purchaser is responsible for providing the necessary equipment to remove the freight from the truck. The purchaser is responsible for counting the individual pieces of freight, and insuring the quantity delivered matches the bill of lading. The purchaser is responsible for noting any damage or shortages on the bill of lading. All equipment is shipped FOB our dock, unless otherwise noted in the quotation.
- Operation and Maintenance Manuals** - This equipment will be provided with detailed operation and maintenance manuals that fully describe the assembly and maintenance procedures. The manuals also include detailed drawings, bills of material, OEM literature and a spare parts list. Any special data sheets or other items not typically supplied within the manual shall be provided by the purchaser. Manuals are provided with standard Serpentix Conveyor Corporation three-ring binders and labels. If special binders or labels are required, they shall be provided by the purchaser.
- Special Paint Finishes** - When special paint finishes are applicable, in lieu of the standard finish, any remaining paint will be packed and shipped with the conveyor(s).
- Electrical** - Furnished components do not include coordination or design for switch functions and electrical hook-up, with or without interconnections to other electrical components. This is the responsibility of the purchaser or installing electrical contractor (also refer to "Purchaser to Furnish" Items in Attachment A).
- Pricing Adjustments** - The firm price is contingent upon acceptance of the equipment at jobsite within twelve (12) months from date of this quotation. Thereafter, the price is subject to an escalation rate of one per cent (1%) of the quoted price for each succeeding calendar month. In the event the Buyer defaults on any of the contracted terms of payments, the full amount then remaining unpaid shall, at the option of the Seller, immediately become due and payable including actual cost of collection, attorneys fees and interest of twelve per cent (12%) per annum on all unpaid and past due monies.
- Notice of Serpentix Patent Rights**- This conveyor is manufactured under United States Patent Nos. 4,205,745; 4,438,842; 4,461,378; and 4,927,006; other United States, Canadian and foreign patents existing or pending.