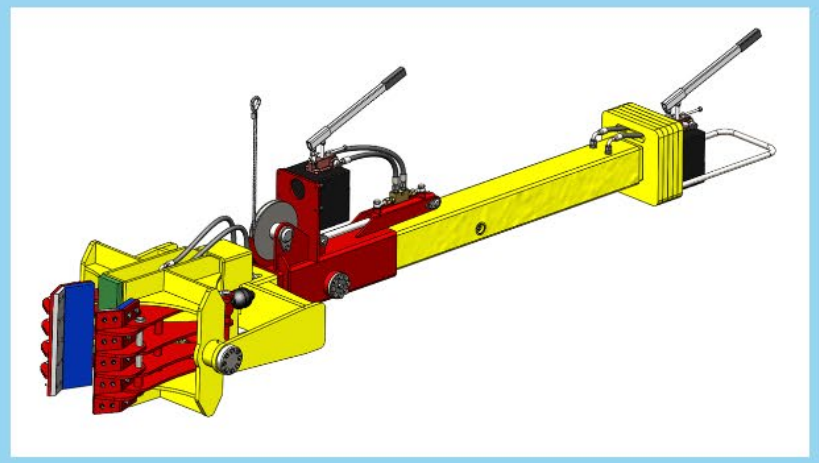
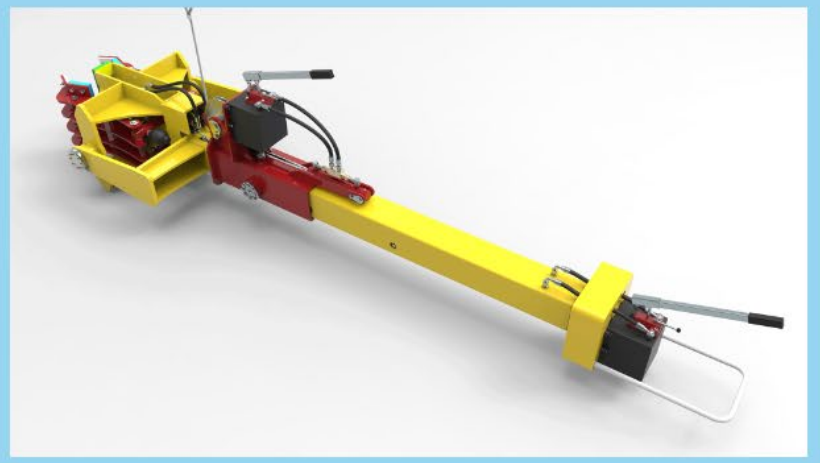
KeyShot in the Back Room

David Thomson



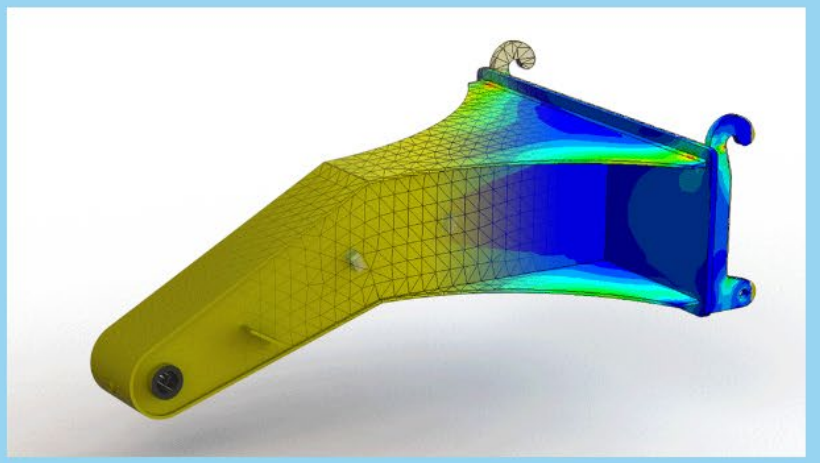
Make it Work

3d modelling allows us to see how all the parts fit together, how mechanisms will work and what parts will clash. Click the image to learn more about this powerful technique and how it aids the whole design, engineering and documentation process.



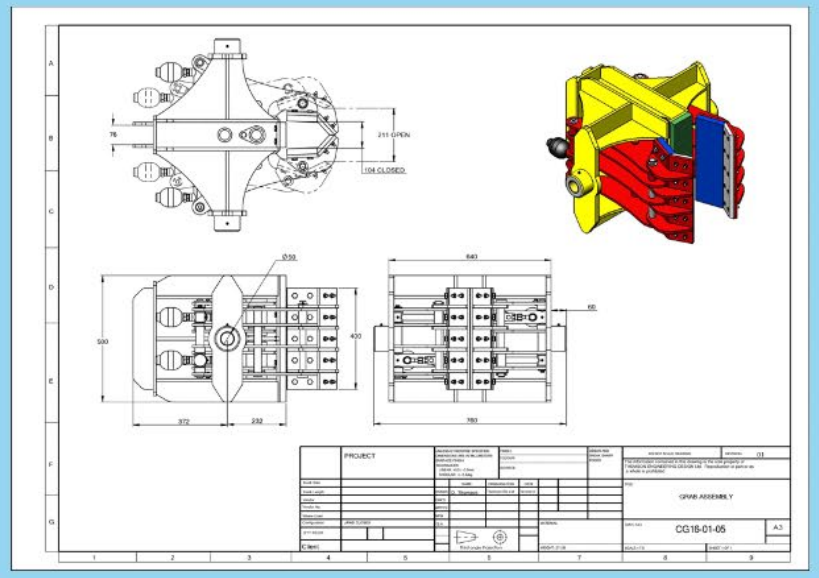
Make it Real

Turning your models into photo-realistic images and animations to provide assets for marketing, documentation and training. Click the image to find out more.



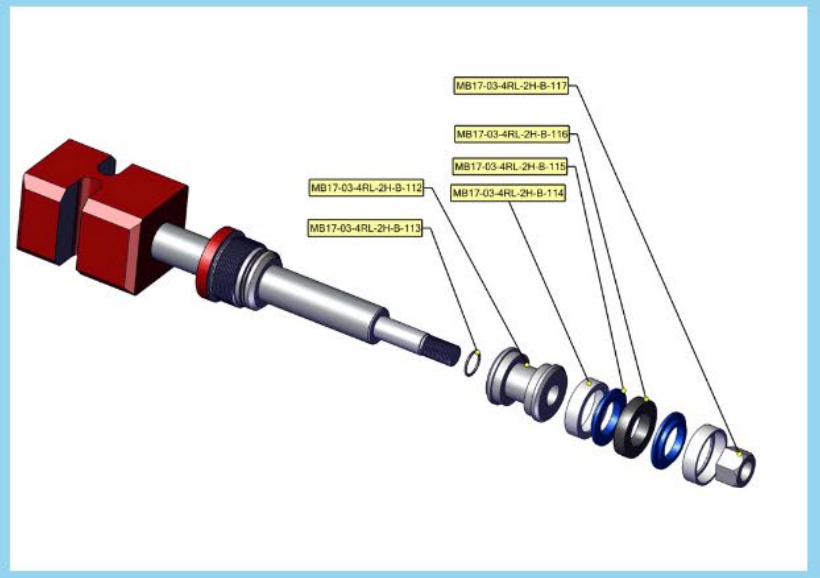
Make it Safe

Virtual prototyping systems - including Finite Element Analysis, Tolerance Stack Analysis, Physical Dynamic Analysis and others - allow us to check that designs are strong, robust and safe. Click the image to find out more.



Make it Right

Fully detailed and toleranced engineering drawings produced directly from the models ensure that every detail of the design is clearly presented for manufacture.



Make it Clear

Frangus technical authors can produce all kinds of technical publications including assembly and test procedures, marketing and technical brochures.

CE

Make it Legal

Frangus can assist with the CE marking of mechanical products. please click the image to find out more.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SOLIDWORKS
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V


Ai


FESTO
FluidSIM


STORY
TARE 1125KG


DO NOT CARRY MACHINE
BY ATTACHMENT HEAD
USE LIFTING EYES PROVIDED
DANGER
Moving
Machinery


LIEBHERR
LR 41


DANGER - KEEP CLEAR

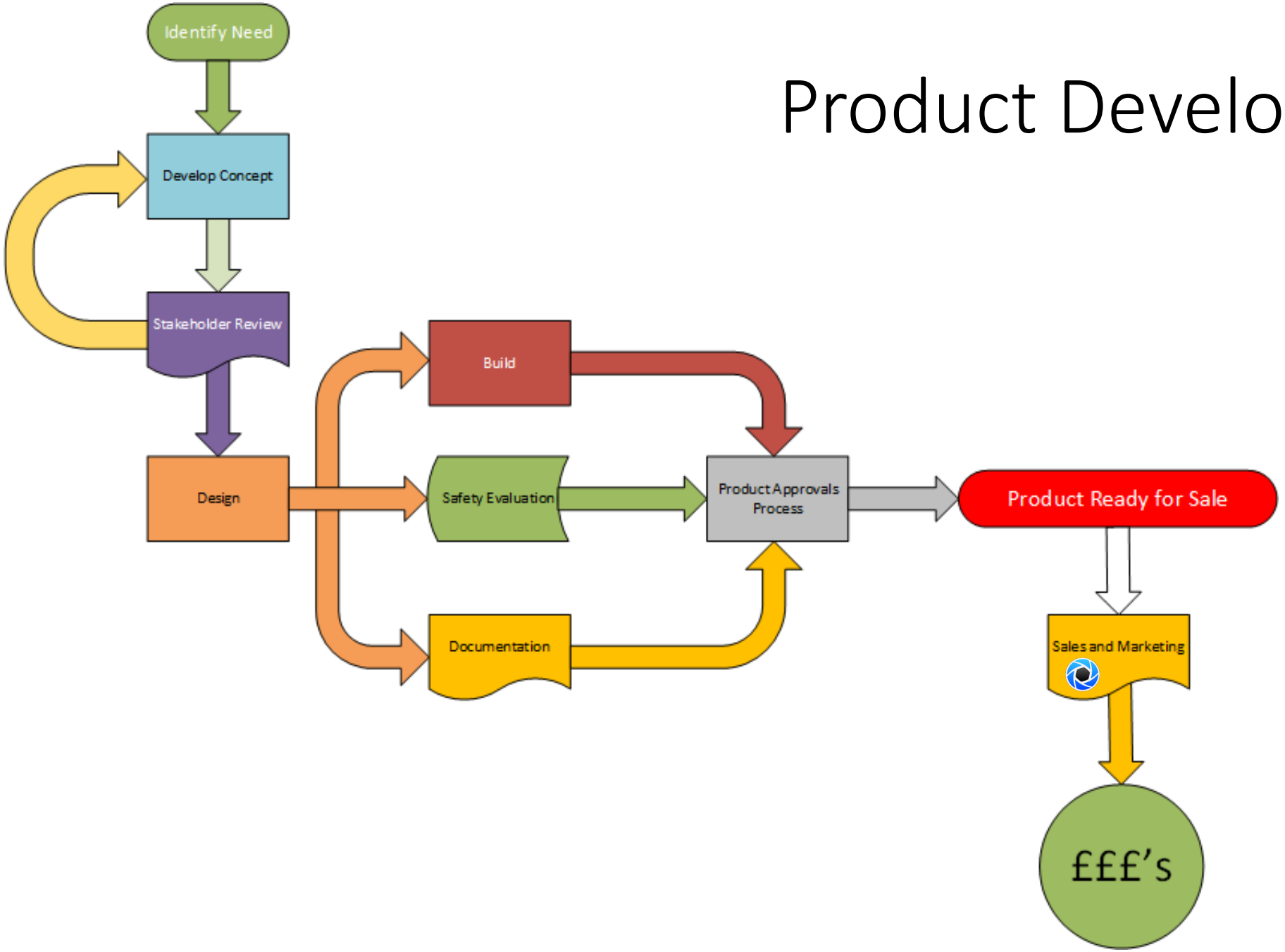
Product Documentation

- Operating Instruction
- Maintenance Instruction
- Training Plan

Sales Documentation

- Brochure
- Catalogue
- Specification Document

Product Development



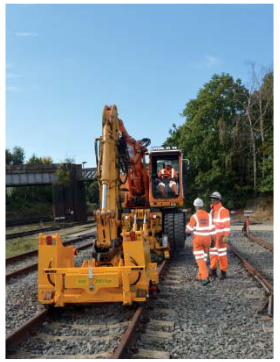
5.2 EDC15 E-Clip De-Clipper

Our E-Clip De-Clipper is the ideal solution for the rapid removal of Pandrol E and PR clips.

Spring loaded hooks snatch out the clips as the machine is propelled along the track.

The machine incorporates fail-safe brakes, automatic marker lights and a hydraulic hook raising mechanism for rail travel.

Adapter heads are available to suit all types of road rail machine.



Features

- Adjustable for rail height and wear
- Twin hydraulic circuit - de-clip one rail or both
- Rubber baffles to prevent clips flying
- Heavy duty construction
- Full range of adapter heads
- Full Factory Parts Backup
- CE Marked

A HEAVY DUTY DEVICE FOR THE RAPID REMOVAL OF PANDROL E AND PR CLIPS.

Specifications(typical)

Weight	1990 kg
Operating Speed	5 kph
Brake Test Load	125 kg
Mechanism	Hydraulic
O/A Height	1,357mm
O/A Width	1,919mm
O/A Length	2,119mm
Max. Hyd. Pressure	210 Bar
Min. Hyd. Pressure	90 Bar
Body Colour	08E51 Yellow
Moving Parts	Signal Red
Handles	Black / White

Documentation

Operator's Manual
Parts Manual
Maintenance Plan
EA Certificate

Benefits

Remove up to 2.5 km of clips per hour

De-clip one rail or both

Reduced manpower, increased safety

Specifications given may be subject to change due to our policy of continuous improvement

Options and Ordering Information

The EDC15 E-Clip De-Clipper is available with either fixed or tipping adapter heads.

The tipping adapter head should be specified where the host machine is fitted with a Miller Bug or Geith Quick Coupler as these types have to be fully crowded under the machine boom in order to release the attachment.

EDC15 E-Clip De-Clippers are fitted with hydraulic pressure control as standard.

PRODUCT ACCEPTANCE

Product Acceptance has been applied for under Application Number PA05/06677

Example: EDC15-02 E-Clip De-Clipper with tilting adapter head

The tipping head allows easier detaching of the De-Clipper with some quick couplers

Model Numbers for Ordering

When ordering this product please use the ordering code below to specify the correct options.

EDC15-□□

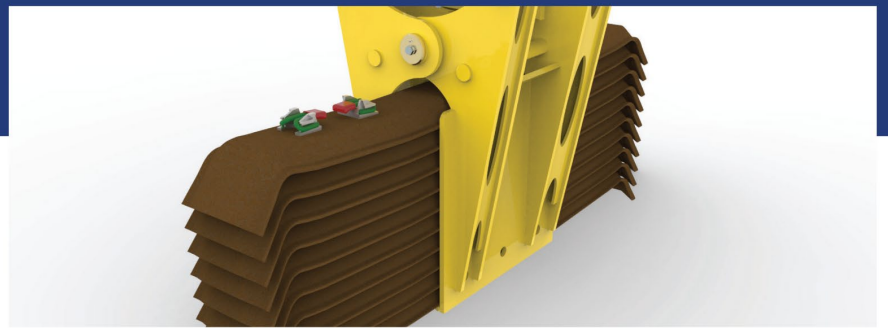
Adapter Head Type	Code
Fixed Adapter Head	01
Tipping Adapter Head	02

NOTE

When ordering this machine we will need to know the adapter head dimensions of your host machine.

Please see Section 10 for details of the dimensions we require for a Type 04 head

PG14-800 PLATE GRAB



KEY FACTS

The largest plate grab in our range, the PG14-800 has an 800mm (31.5”) jaw depth allowing it to handle the tallest bundles of steel sleepers.

Grip load is controlled by a factory-set pressure reducing valve which eliminates the risk of crushing the sleepers and polyurethane pads can be fitted for safely handling concrete sleepers.

As standard a 6,000kg (13,000lb) capacity rotator is fitted but this can be uprated to a 10,000kg (22,000lb) capacity unit for very heavy-duty applications.

ALTERNATIVE PRODUCTS

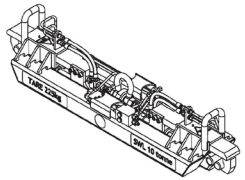
The PG14-400 and PG14-600 models offer the same functionality and the same options in a more compact form.

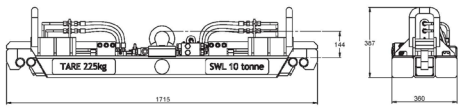
The SM12 Sleeper Manipulator has a more powerful worm-drive rotator and a rigid coupling to the host vehicle for use in sleeper changing operations.

For full details contact sales@thomsondesignuk.com

LPB20-02 Low Headroom Panel Beam

THOMSON ENGINEERING DESIGN





SPECIFICATION		CONSTRUCTION		KEY FEATURES
Tare Weight	225 kg (495 lbs)	Frame	All-steel, fully welded	Heavy duty Construction
Adapter Head	12 tonne rated shackle	Jaws	All-steel, fully welded	Built-in Pressure Control
Max. Load Capacity	10,000kg (22,000lbs)	Pipework	12mm steel	Check Valves on Cylinders
Operation	Fully Hydraulic	Hoses	3/8" BSP	Parachute Valve Protection
Services Required	1 reversible	Burst Protection	Pilot Operated Check Valves	High Grip Force
Design Gauge	1435mm (std. gauge)	Pressure Reducing Valve	Aluminium Body	Low Headroom Design
Maximum Inlet Pressure	300 Bar (4,350psi)	Options	Broad gauge version available	
System Pressure	90 Bar (1,350 psi)			
Minimum Inlet Pressure	90 Bar (1,303 psi)			
Grip Force	2,598kgf (5,720lbs) per jaw			

Work Smarter not Harder

All Thomson attachments are designed to help you get more out of your investment.

Strength, ruggedness, reliability and - when things get really tough - ease of repair and maintenance are how we build our reputation and yours.

With Thomson attachments your machines can do more and earn more, in safety.

Thomson Engineering Design has been designing and building top quality equipment since 1999 and is the UK's premier supplier of attachments for Road Rail machines of all types.

Find more details on our website: *www.thomsonrail.com* or contact our sales office on +44 1594 826 621 or by email to *sales@thomsondesignuk.com*.

With its hitch point only a few millimetres above rail head height the Low Headroom Panel Beam maximises the number of panels which can be loaded when working under OLE.

The design incorporates a full suite of safety features including pressure control valves, parachute valve protection and cylinder mounted check valves.

White painted grab handles and a flat base make it easy to load and transport LPB20-02 beams.

The low headroom design places the attachment point at least 400mm lower than any other hydraulic panel beam - that's at least one more panel on every load.

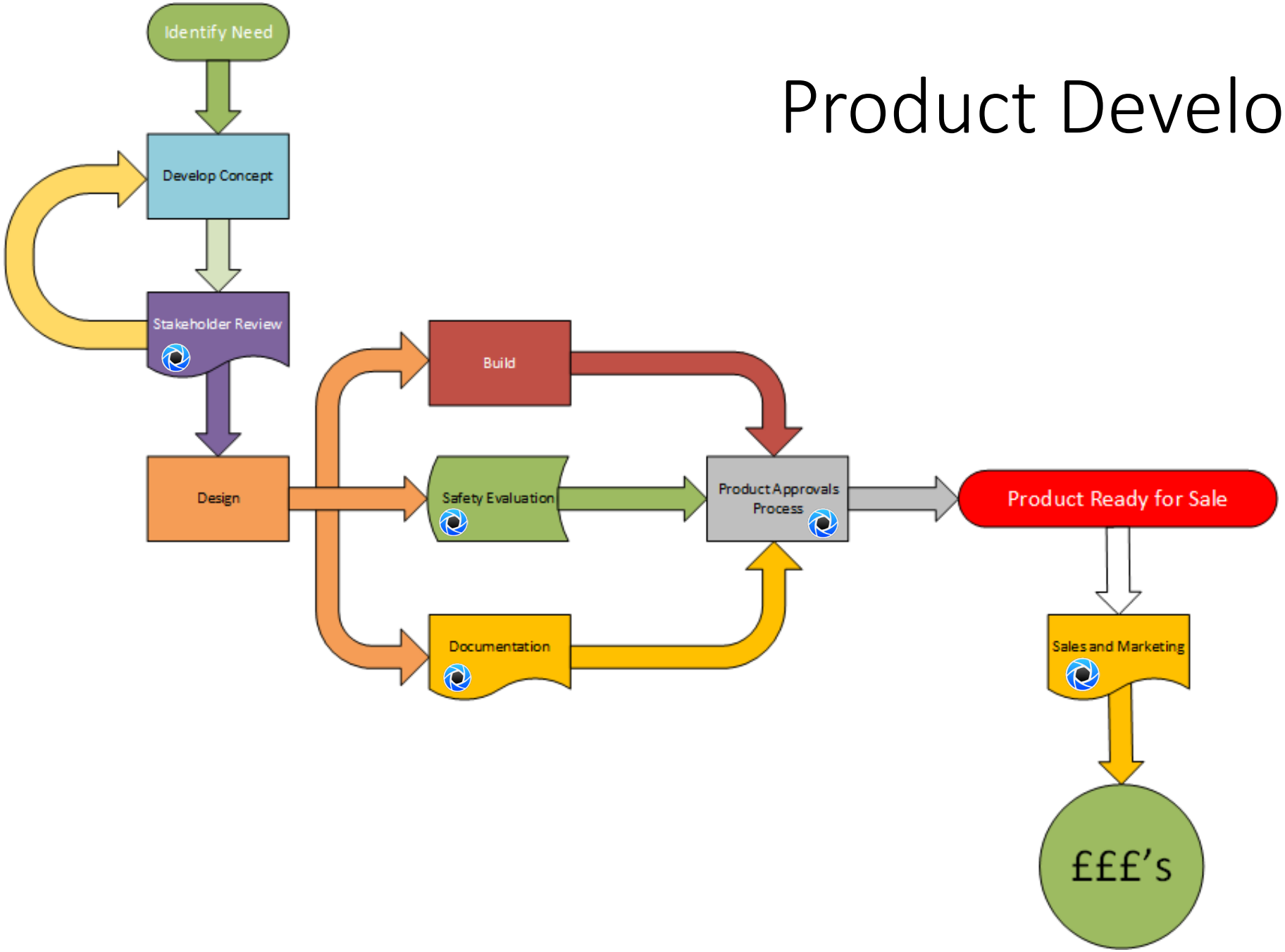
The Thomson Low Headroom Panel Beam has full Network Rail Product Acceptance under certificate number PA05/07340 and has been used extensively on tram infrastructure.

Robust, Reliable and Efficient

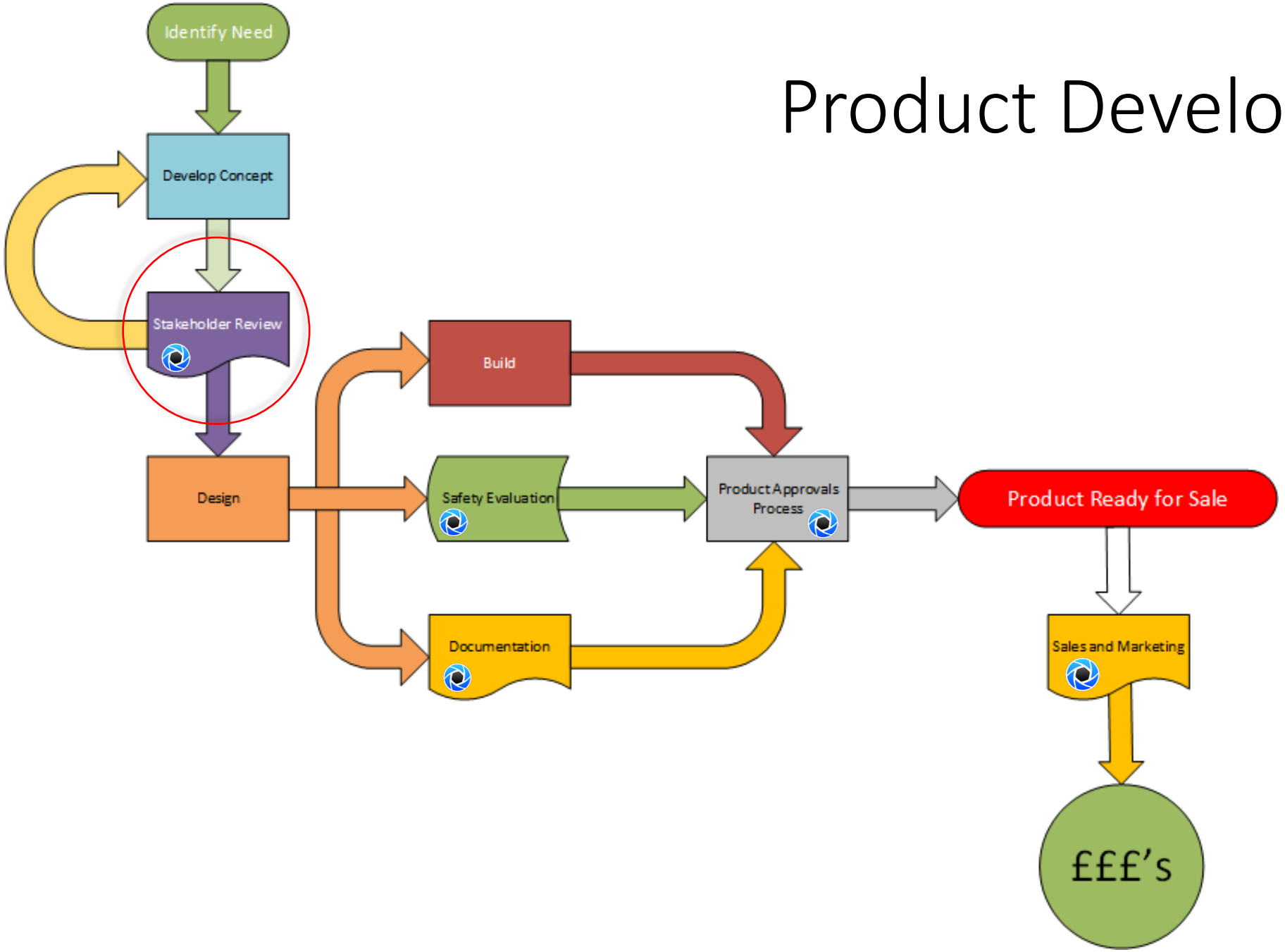
With the increasing electrification of our rail network, more and more renewals work must be carried out under overhead electrification equipment.

Where redundant track panels must be lifted onto engineering trains the Low Headroom Panel Beam is the ideal solution.

Product Development



Product Development

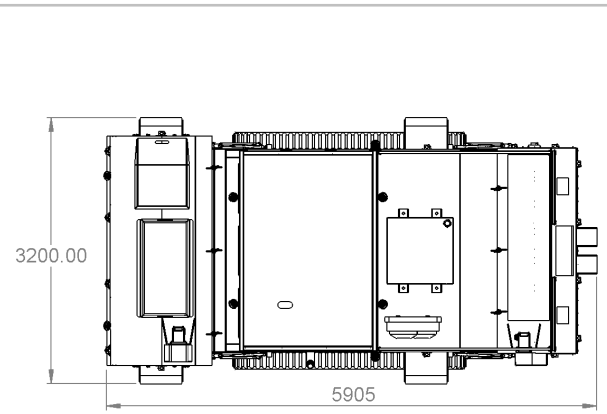


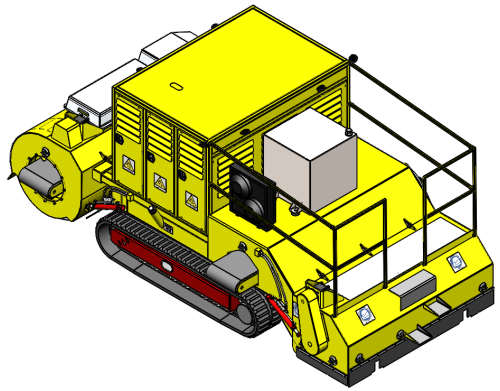
Stakeholder Review

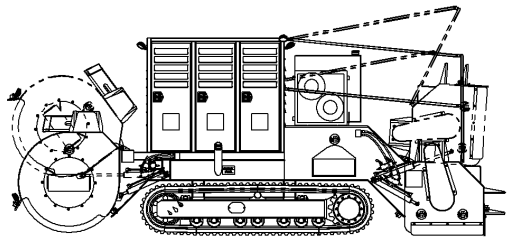
Civil and Mechanical Engineers
Health and Safety Professionals
Machine Operators
Road Hauliers
Management Representatives
Marketing Personnel
Financiers

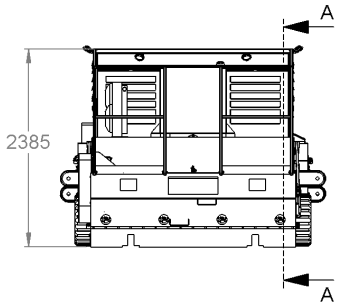
Day in the Life of (DITLO) evaluation

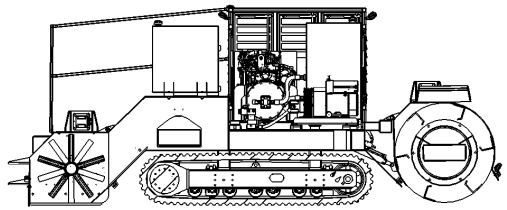
Stakeholder Review







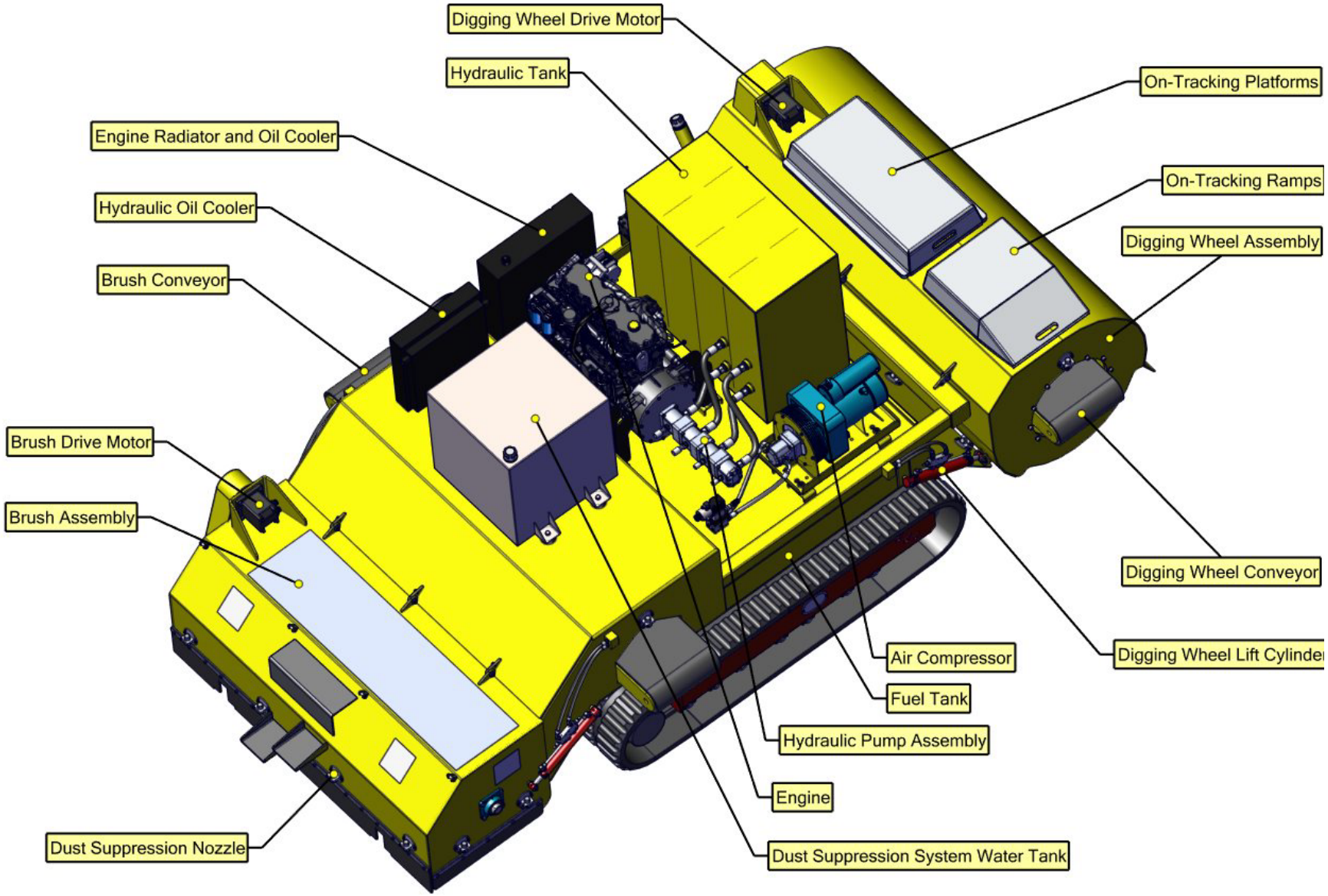




SECTION A-A

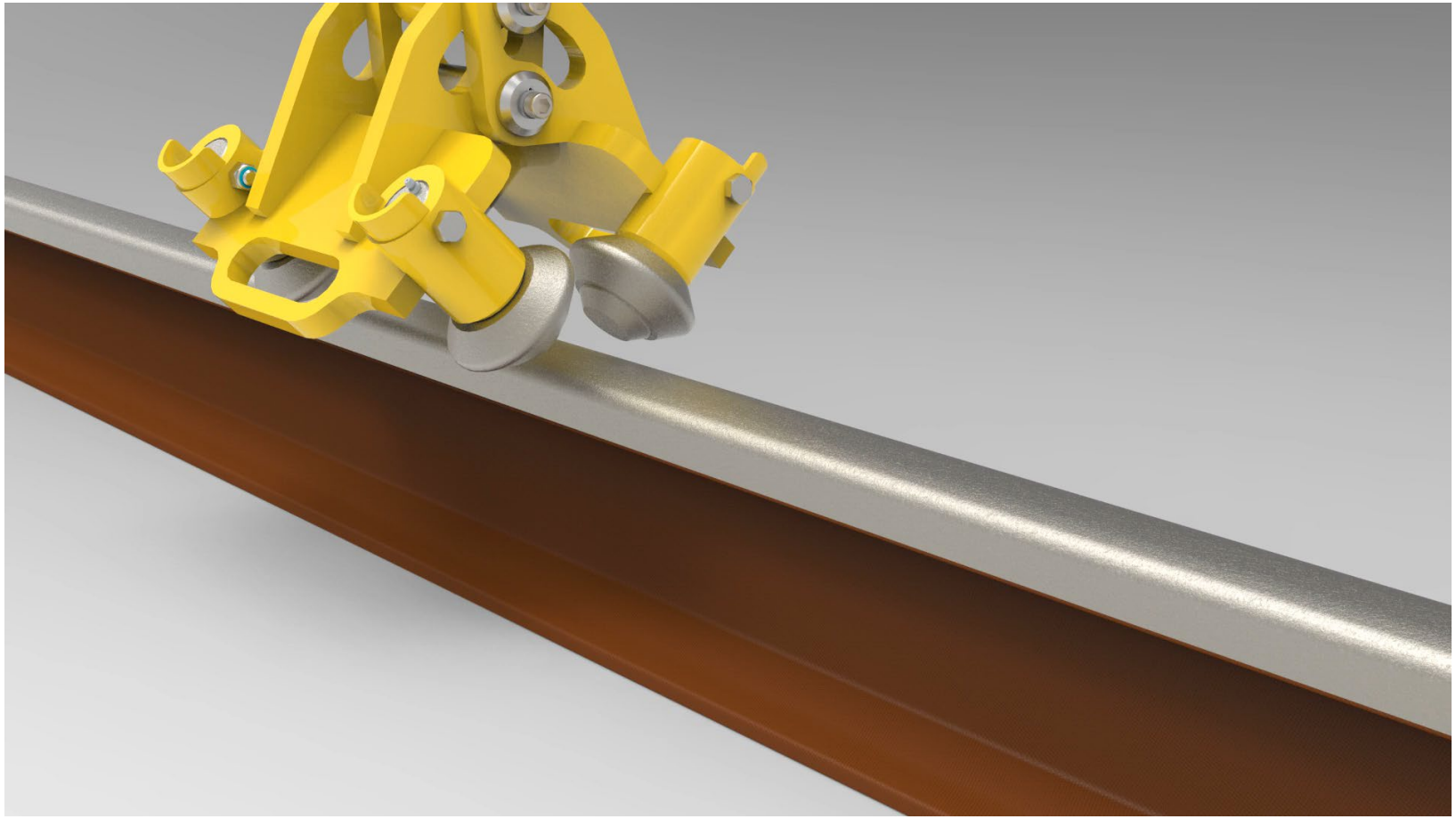
	PROJECT BBR23-03 BALLAST BRUSH	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: +0.5 / -0.5mm ANGULAR: +/- 0.5deg	FINISH: COLOUR: SOURCE:	DEBUR AND BREAK SHARP EDGES					DO NOT SCALE DRAWING	REVISION	
									The information contained in this drawing is the sole property of FRANGUS Ltd. Reproduction in part or as a whole is prohibited		
Stock Size			NAME	ORGANISATION	DATE				TITLE:		
Stock Length		DRAWN	D. Thomson	FRANGUS LTD	29/08/2023				GENERAL ARRANGEMENT - travel		
Vendor		CHK'D									
Vendor No.		APPV'D									
Where Used		MFG									
Configuration	Default	QA				MATERIAL:			DWG NO.		A3
Q'TY REQ'D	1			Third angle Projection					BBR23-03-001a		
Client						WEIGHT: 8027.31			SCALE:1:50	SHEET 1 OF 1	

Stakeholder Review

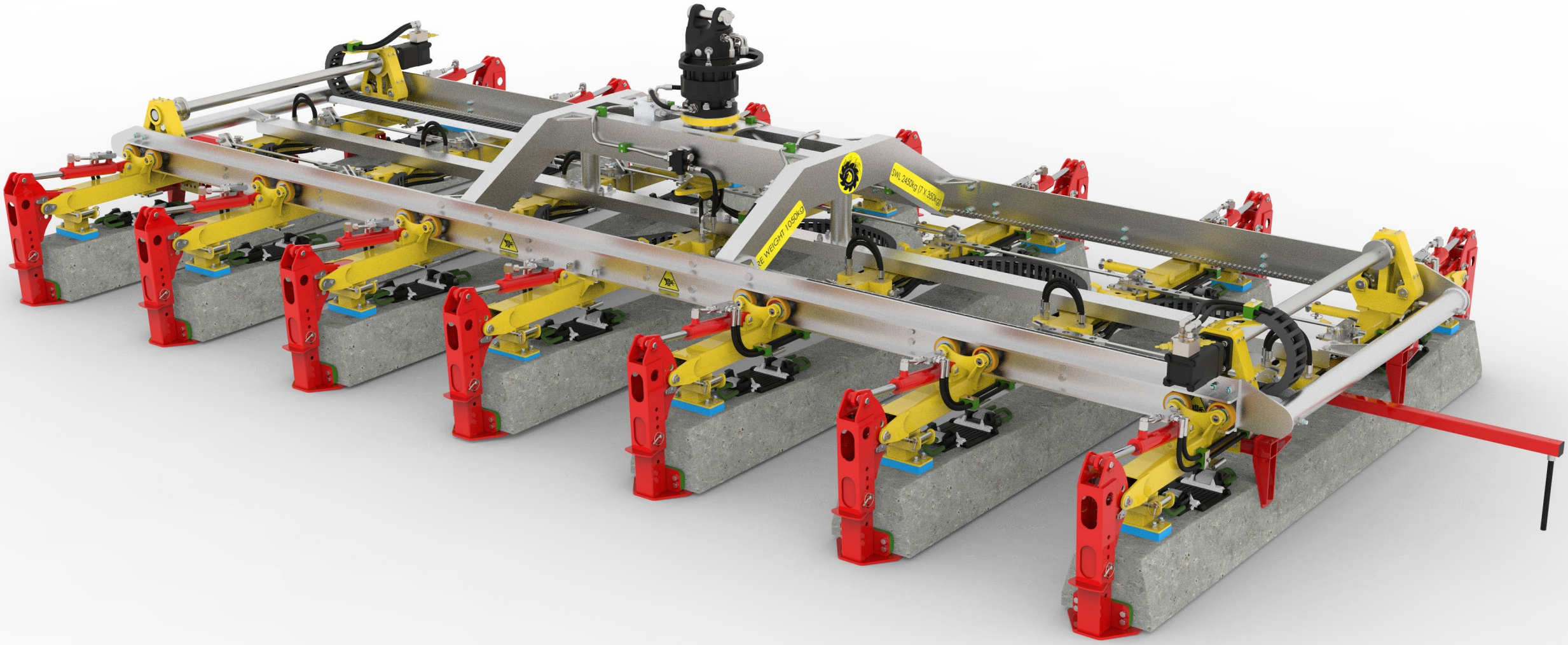


Stakeholder Review

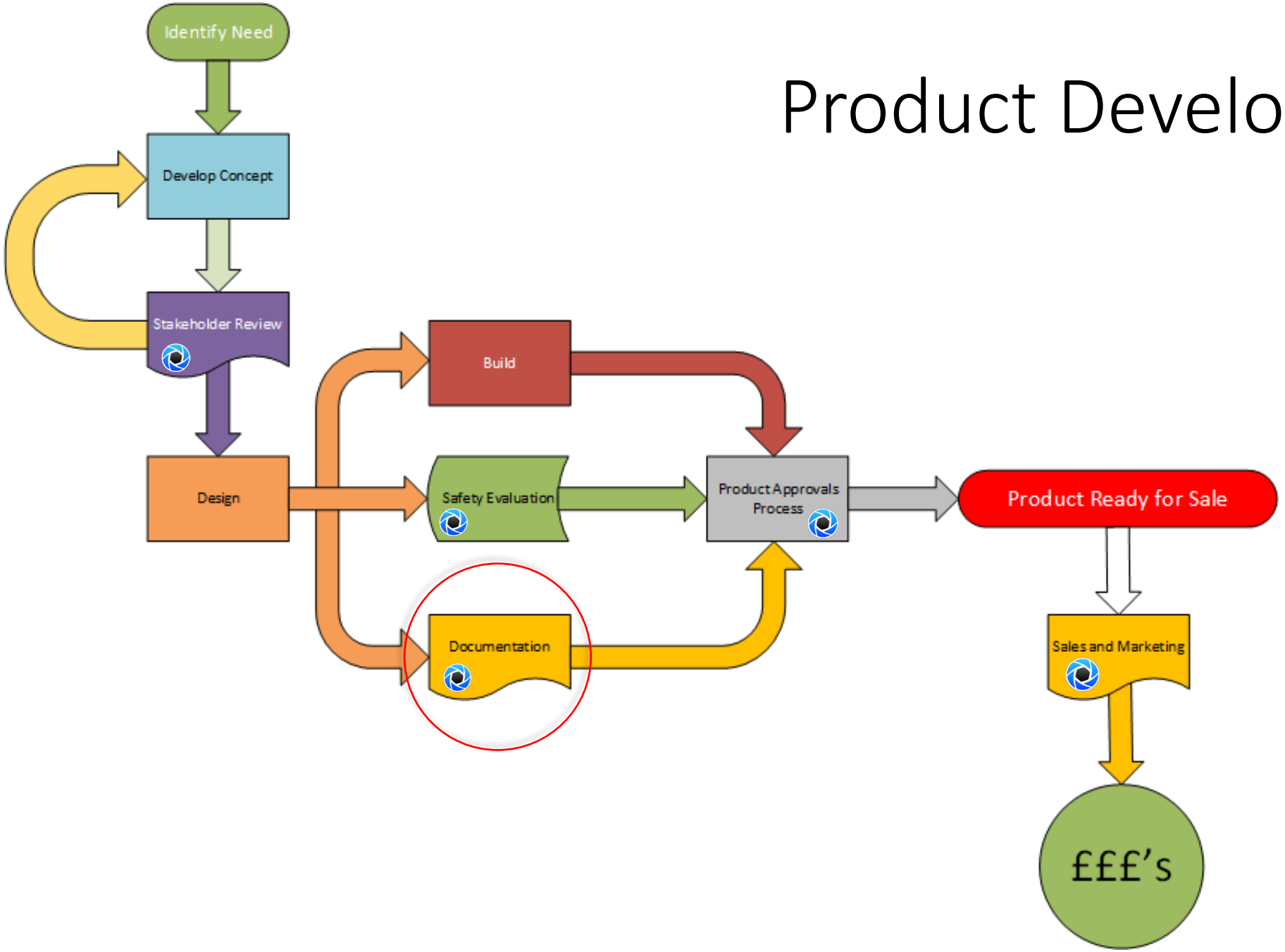
Stakeholder Review



Stakeholder Review



Product Development



Key Features

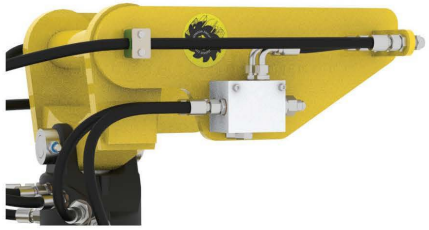
Documentation

A purpose designed transport / storage stillage is supplied as standard.

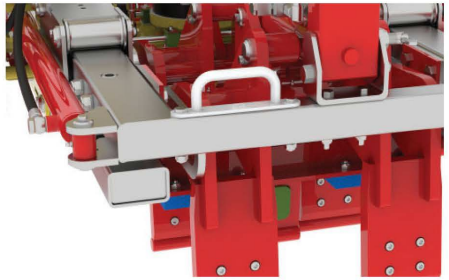
The device should be placed on the stillage whenever it is not attached to the host machine to protect the grab jaws from damage.

The LUL-5SSB-21-02 Sleeper Spreader does not require the host machine hydraulics to be adjusted to suit. Instead, pressure reducing valves on the adapter head factory set to 100 Bar, control the pressure fed to the grab and spreader systems.

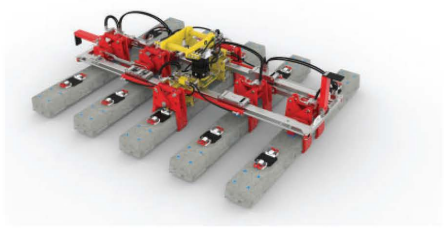
This means that the device can safely be swapped onto another host machine at any time.



Two conveniently placed, grab handles are provided allowing the machine controller to help guide the sleepers into position.

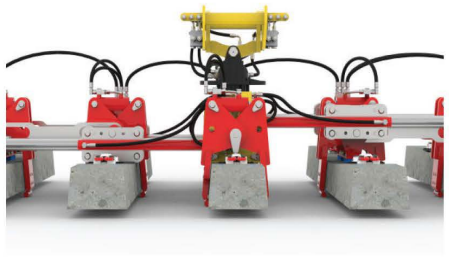


When carrying sleepers a 'parachute valve' automatically disconnects the grab jaw control so that sleepers cannot be accidentally released before they are placed safely on the ballast bed.

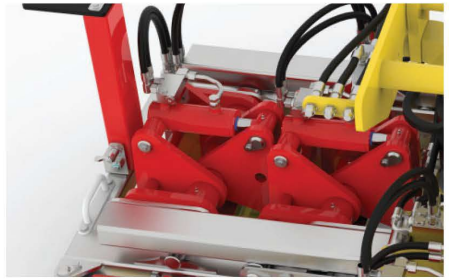


Jaws are lined with polyurethane pads to prevent damage to the sleepers and to ensure a high friction grip.

Steel bars on the bottom edge of the jaws catch the sleeper if the grip of the urethane pads should ever fail.

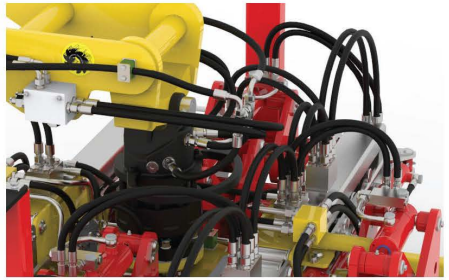


Every jaw cylinder is fitted with a pilot operated check valve which locks the cylinder in the event of a hydraulic failure such as a burst hose.

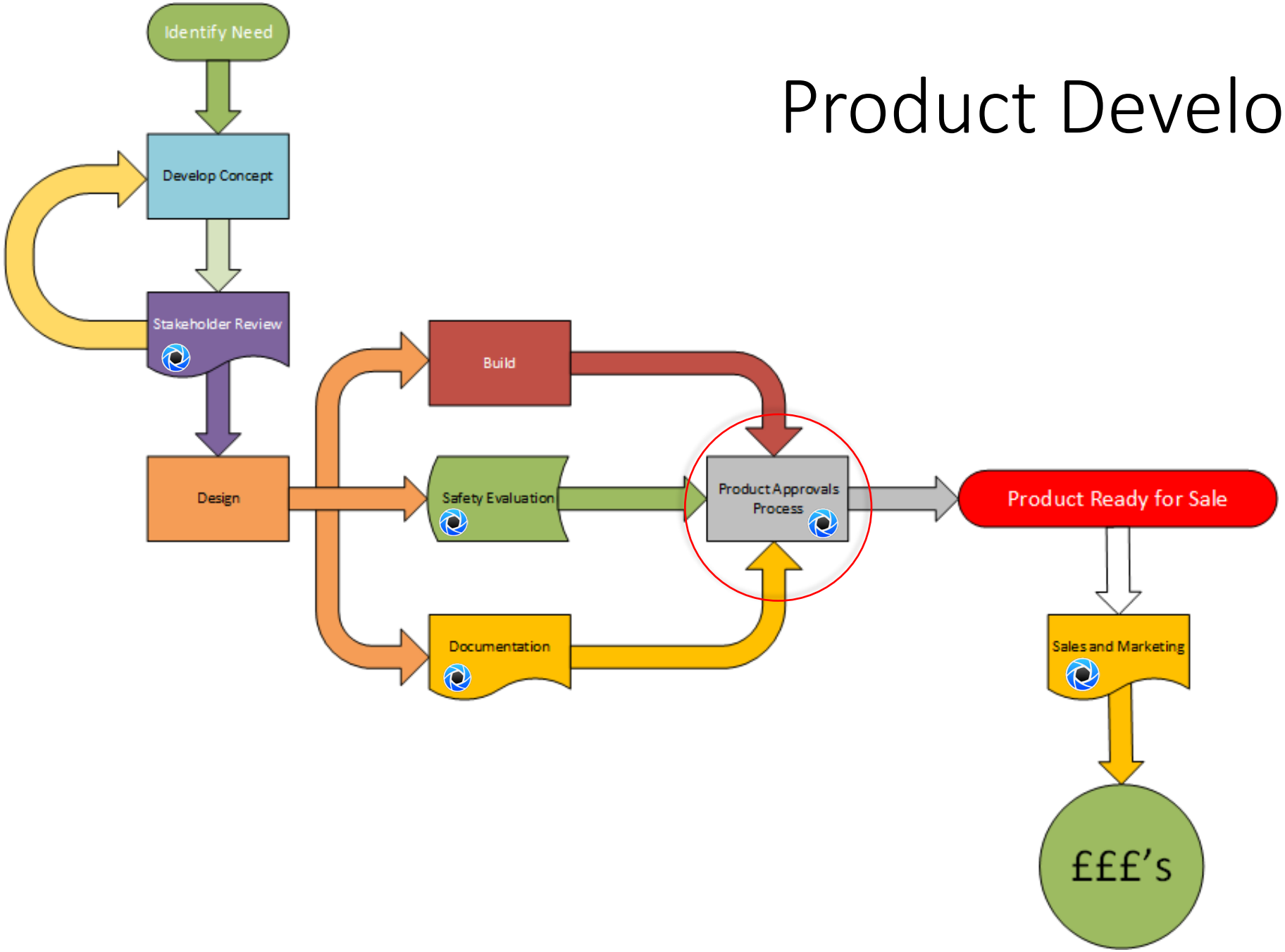


A powerful hydraulic rotator allows the operator to align the device with the sleepers when collecting them from the delivery vehicle and then to align them with the track.

A bypass system built into the hydraulic system prevents sudden acceleration and sudden stopping of the rotator but also allows the device to be manually rotated by the machine controller for the most accurate sleeper placement.



Product Development



Approvals

Certificate of Acceptance PA05/06744

Manufacturer:
Thomson Engineering and Design Ltd

Issue : 1
Valid From : 28/03/18

Thomson UK7SB16-02 7 Sleeper Spreader Beam

Product Description

The Thomson UK7SB16-02 seven sleeper spreader beam is hydraulically operated attachment which can handle all United Kingdom sleeper variants.

The intended purpose of the equipment is to lift railway sleepers (track ties) from lorries or wagons, separate them to the correct spacing and lay them onto a pre-formed track bed. The device is an attachment suspended from the boom of an excavator and incorporates hydraulic systems powered by the host machine auxiliary hydraulic circuits (figure 1).

A purpose built transport stillage is available from the manufacturer for safely stowing and transporting the sleeper spreader beam. This stillage is fitted with hydraulic hose attachment points to help prevent the hose connections becoming contaminated. The stillage also features fork pockets and lifting eyes for handling and loading the device. The lifting eyes may also be used for securing the device in transit (figure 2).

Product Image

Figure 2

Scope of Acceptance: Full Acceptance

The use of the Thomson UK 7SB16-02 7 sleeper spreader beam must be in accordance with the conditions and limitations specified on this certificate and any associated reference documentation.

Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager under the ROGS regulations.

Reviewed by:

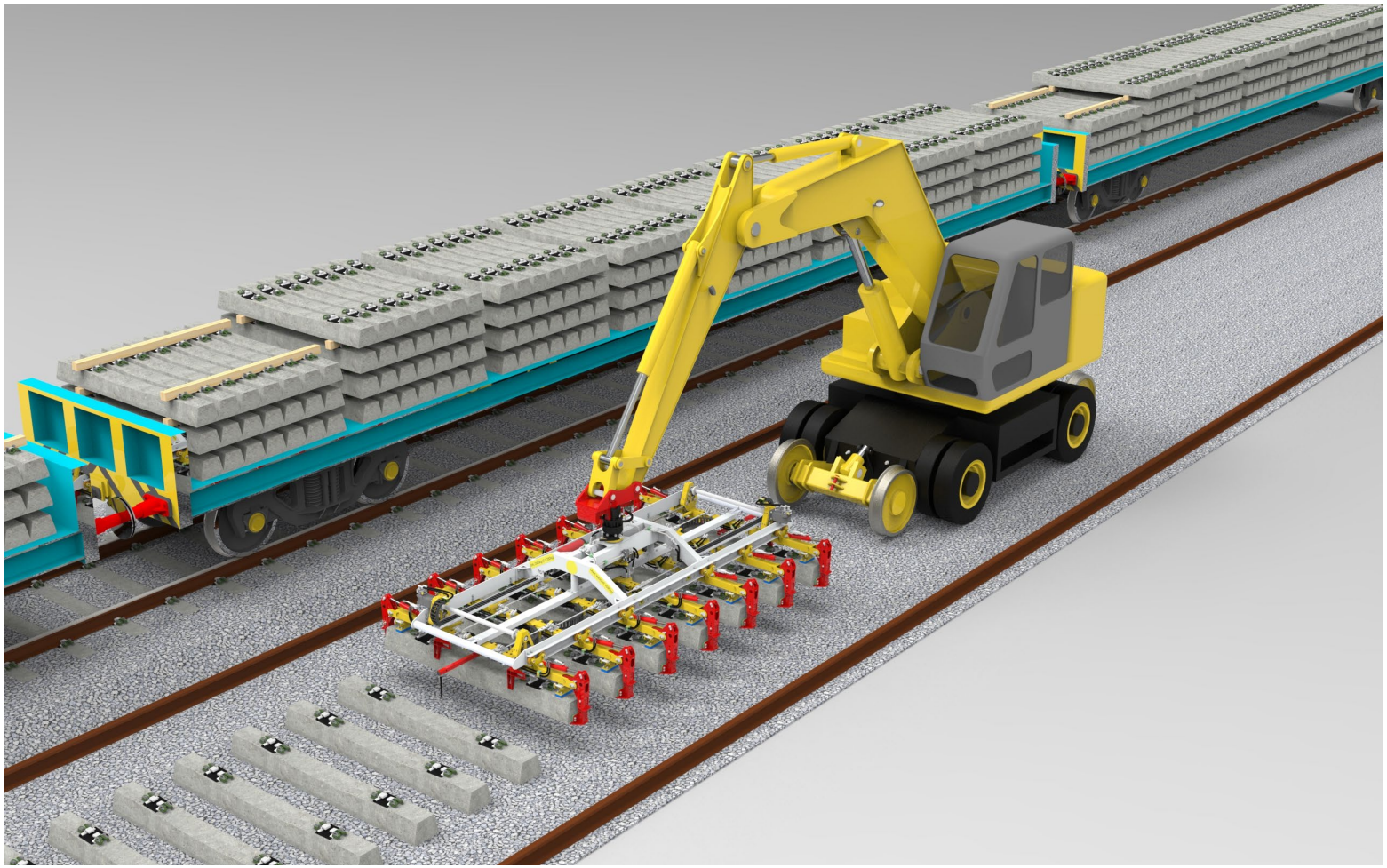
Tom Riley
Product Acceptance Co-ordinator

Authorised by:

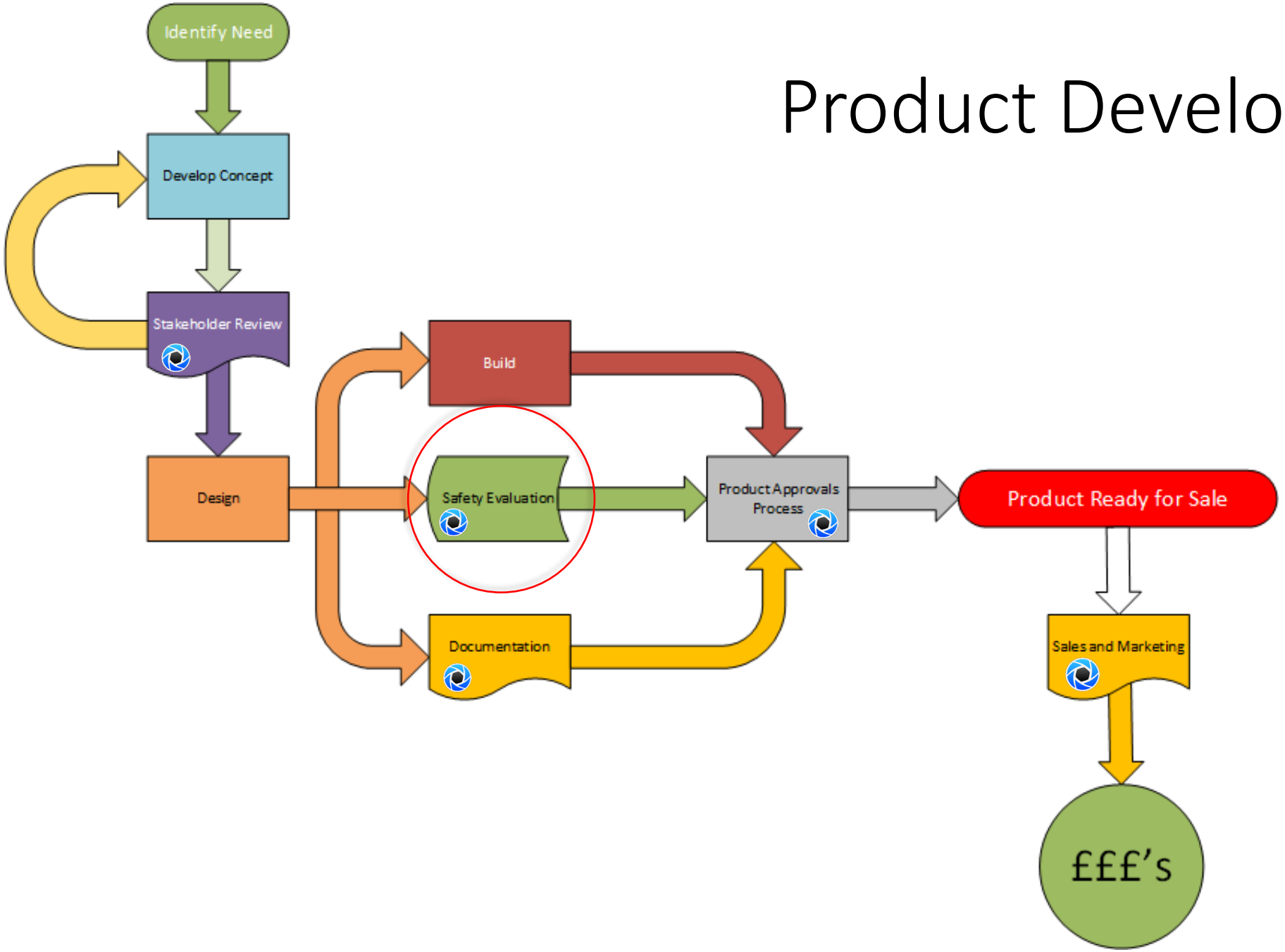
Malcolm Miles
Professional Head of Plant

Please contact technologyintroduction@networkrail.co.uk

Network Rail Infrastructure Ltd Registered Office: Network Rail, 1 Eversholt Street, London, NW1 2DN Registered in England and Wales No. 2904587 www.networkrail.co.uk
Version 7.0 October 2015



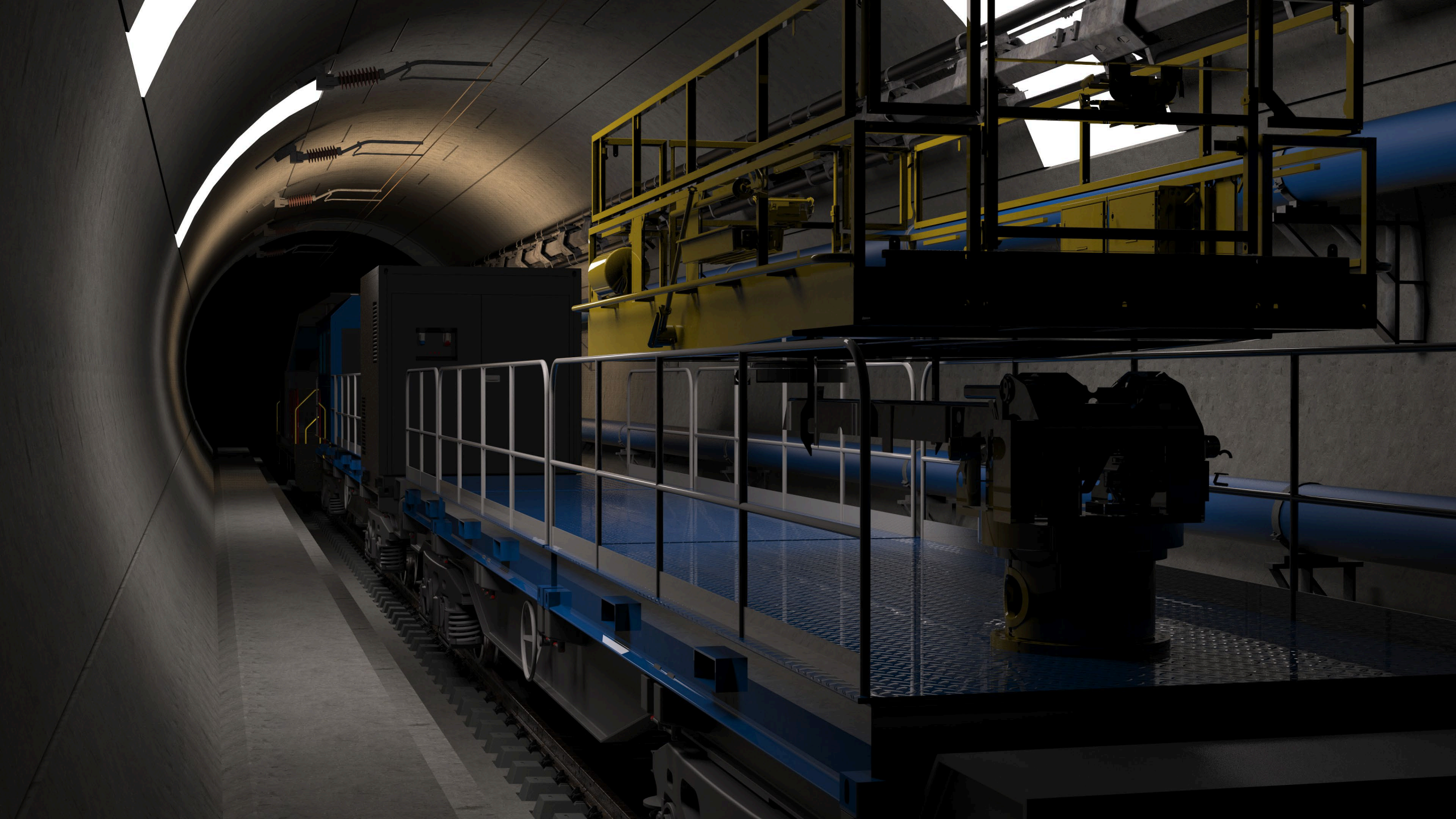
Product Development

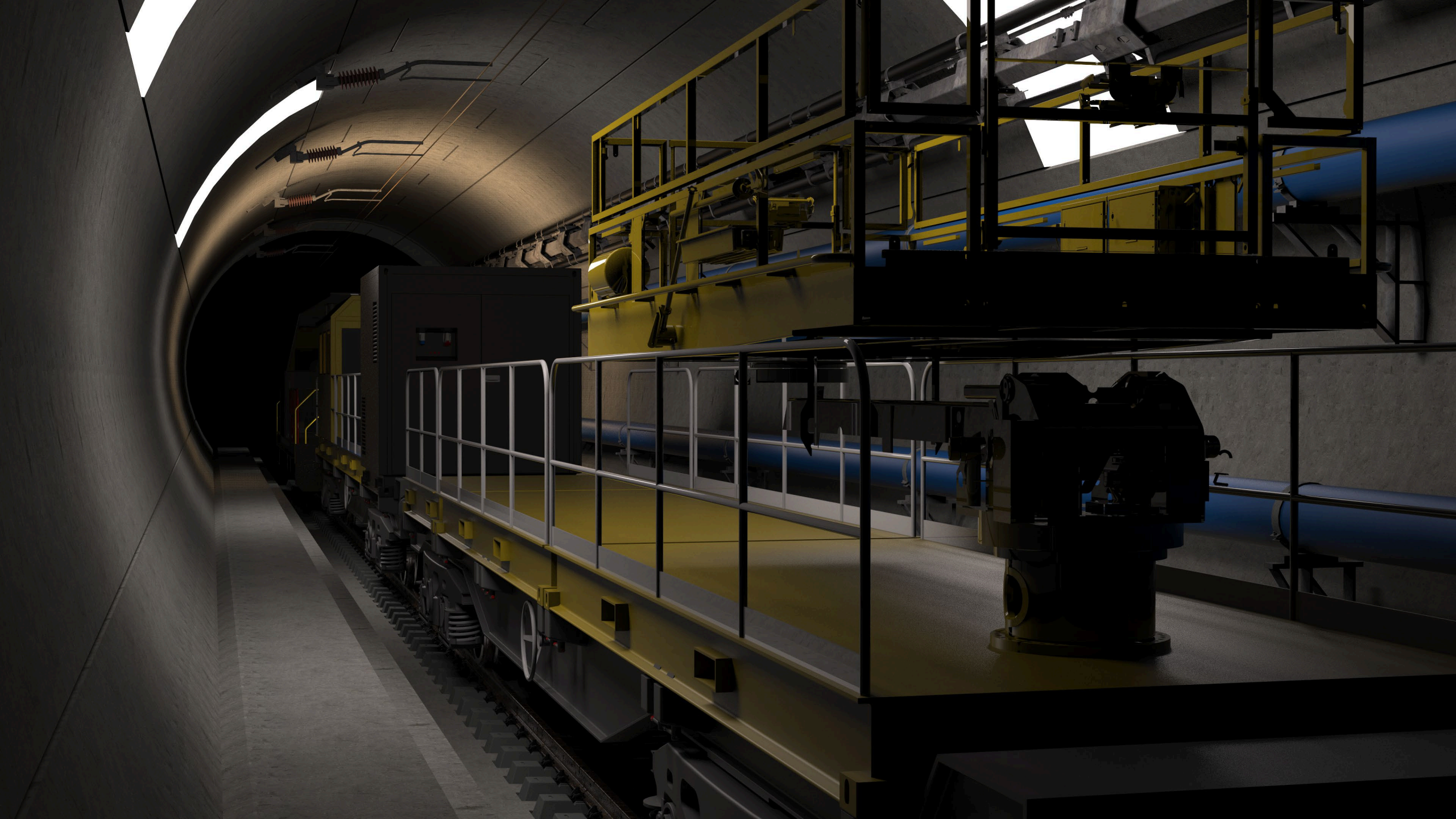


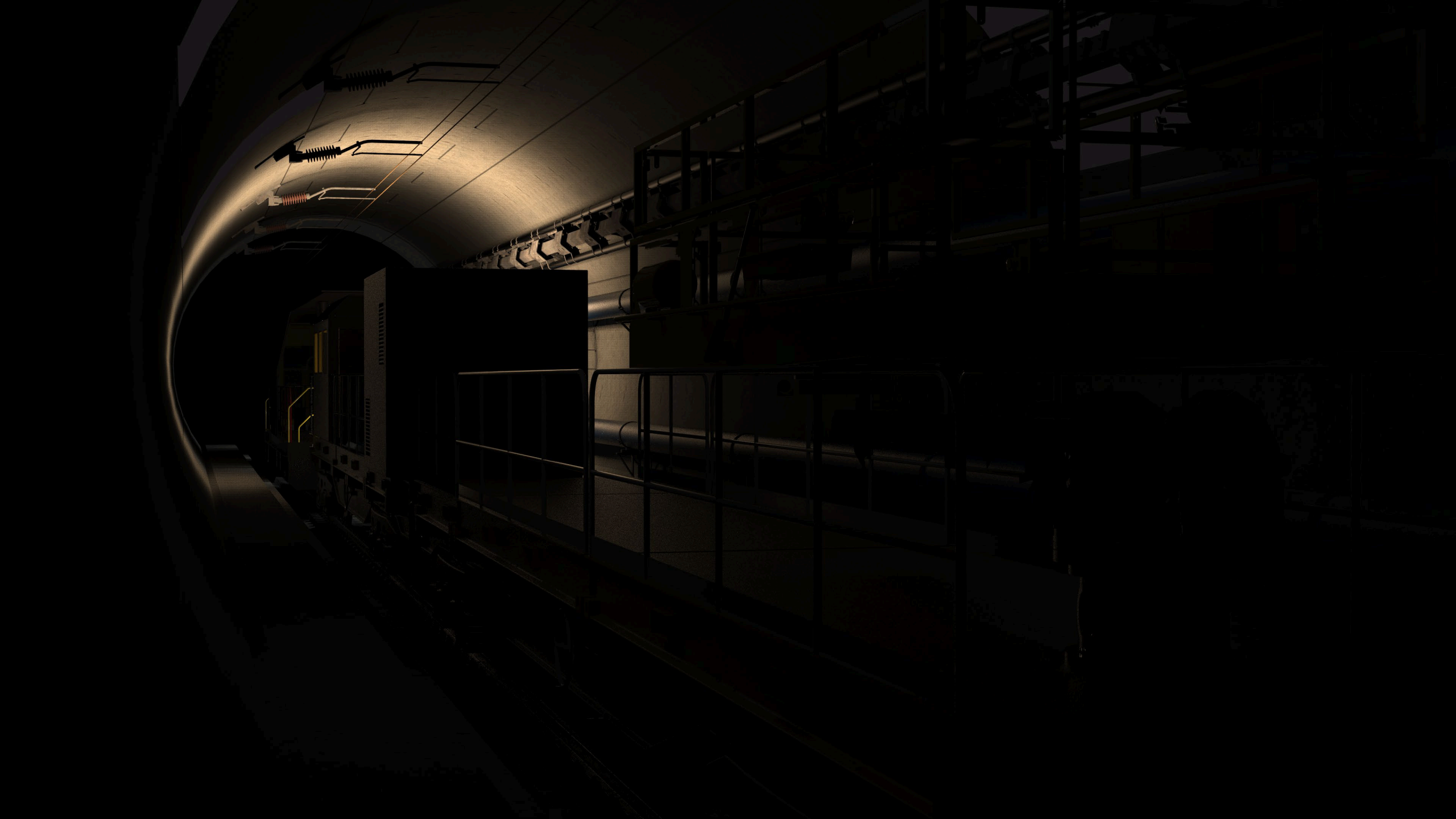
Safety Evaluation

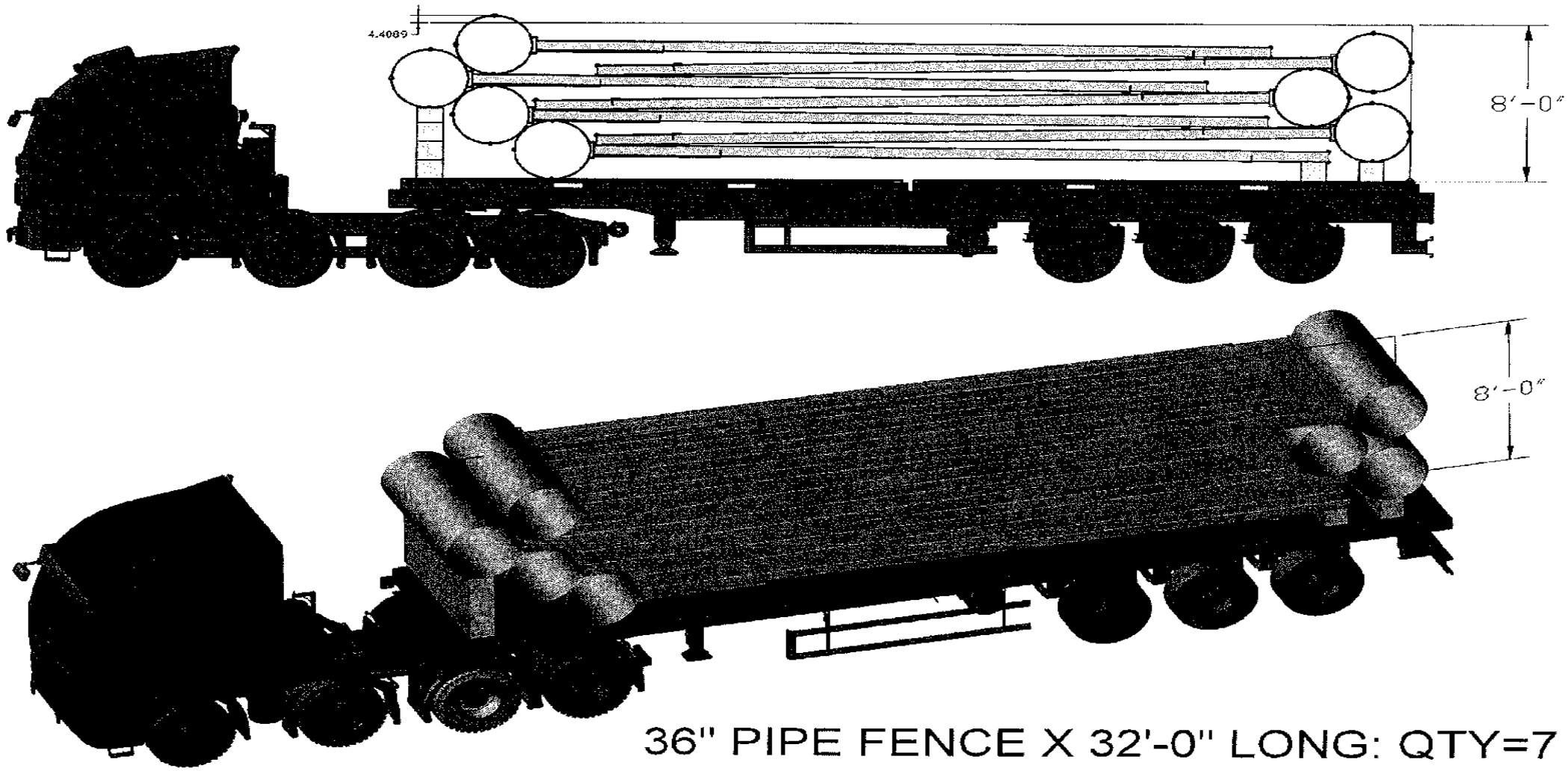
Safety Evaluation

Safety Evaluation

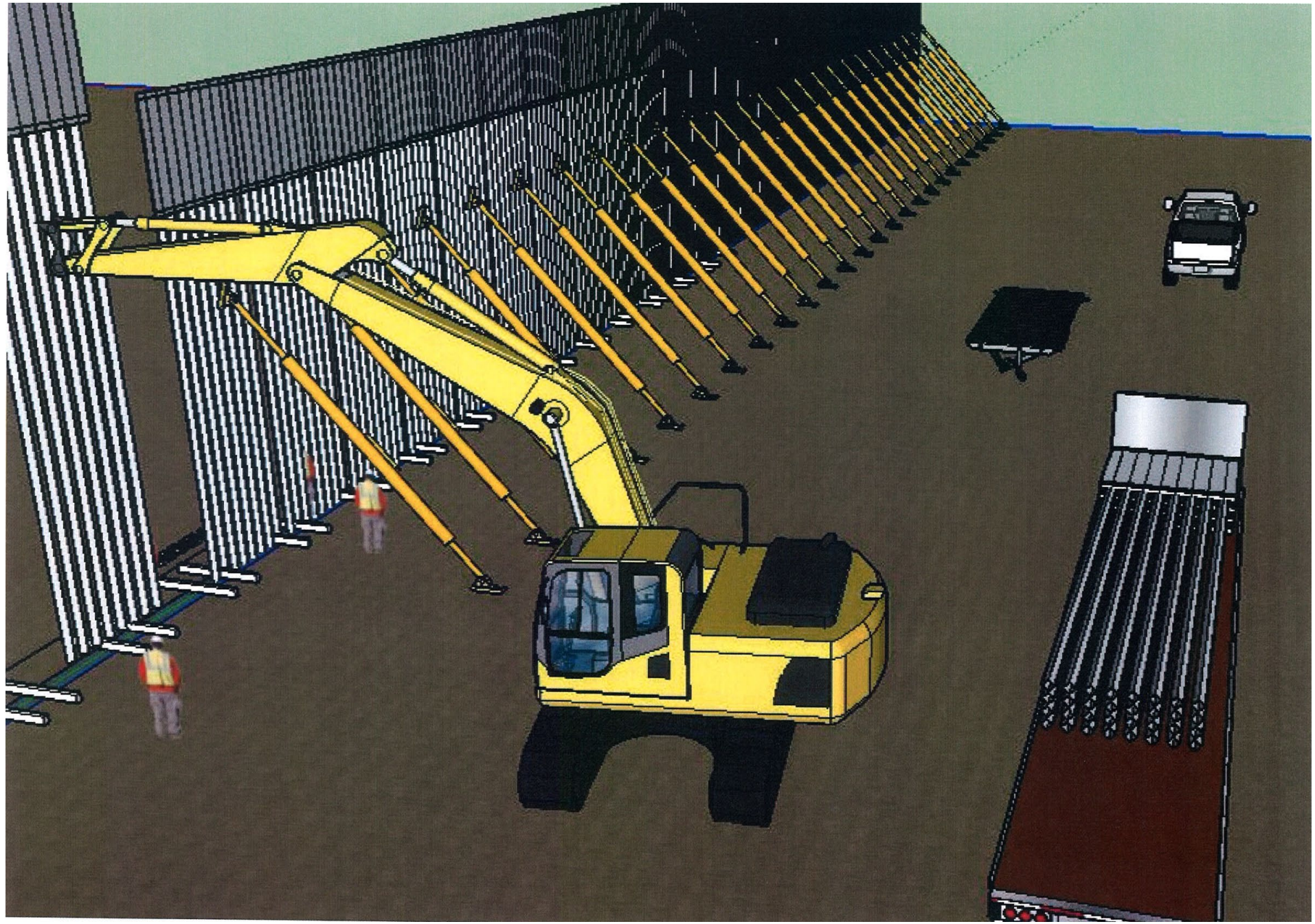


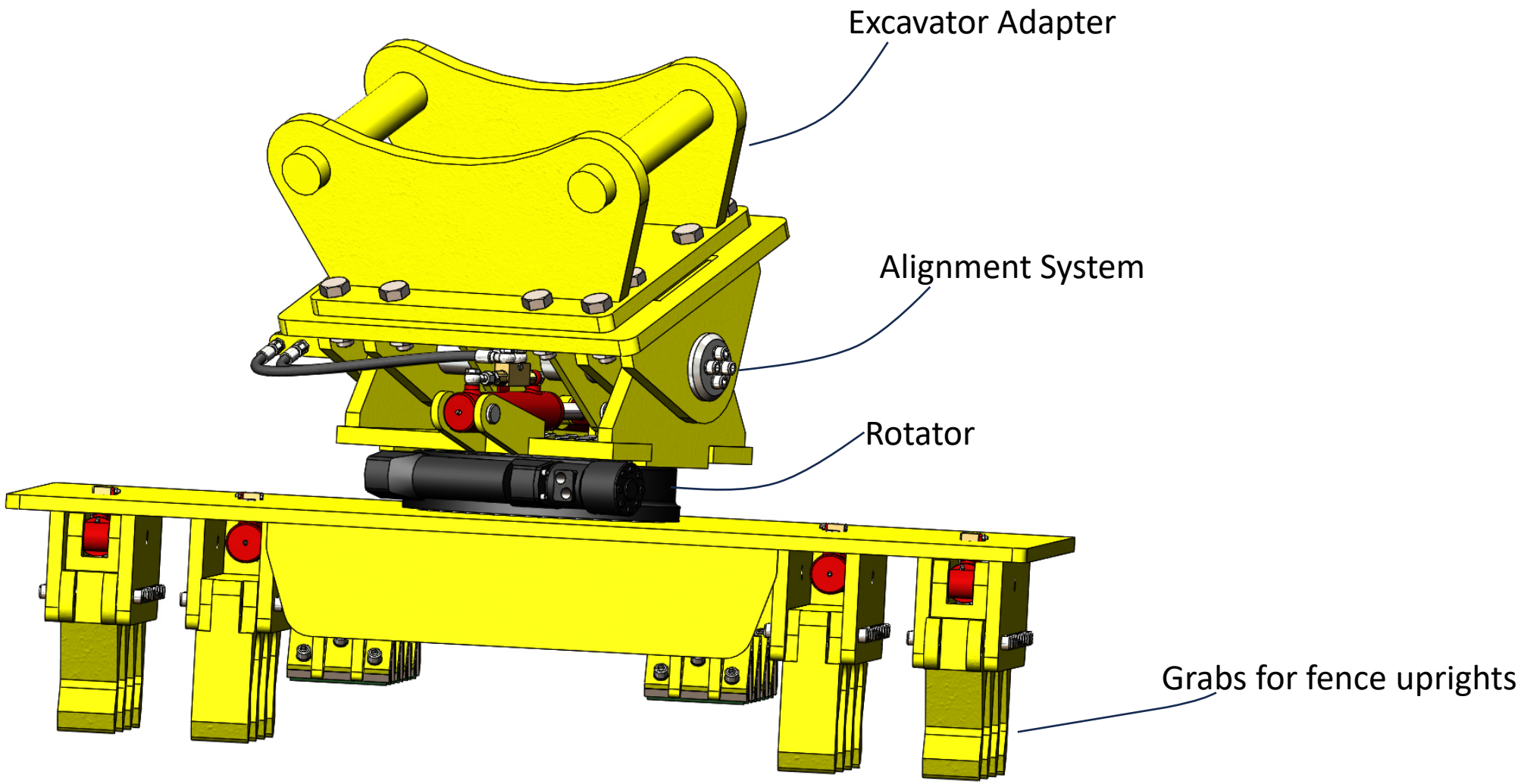


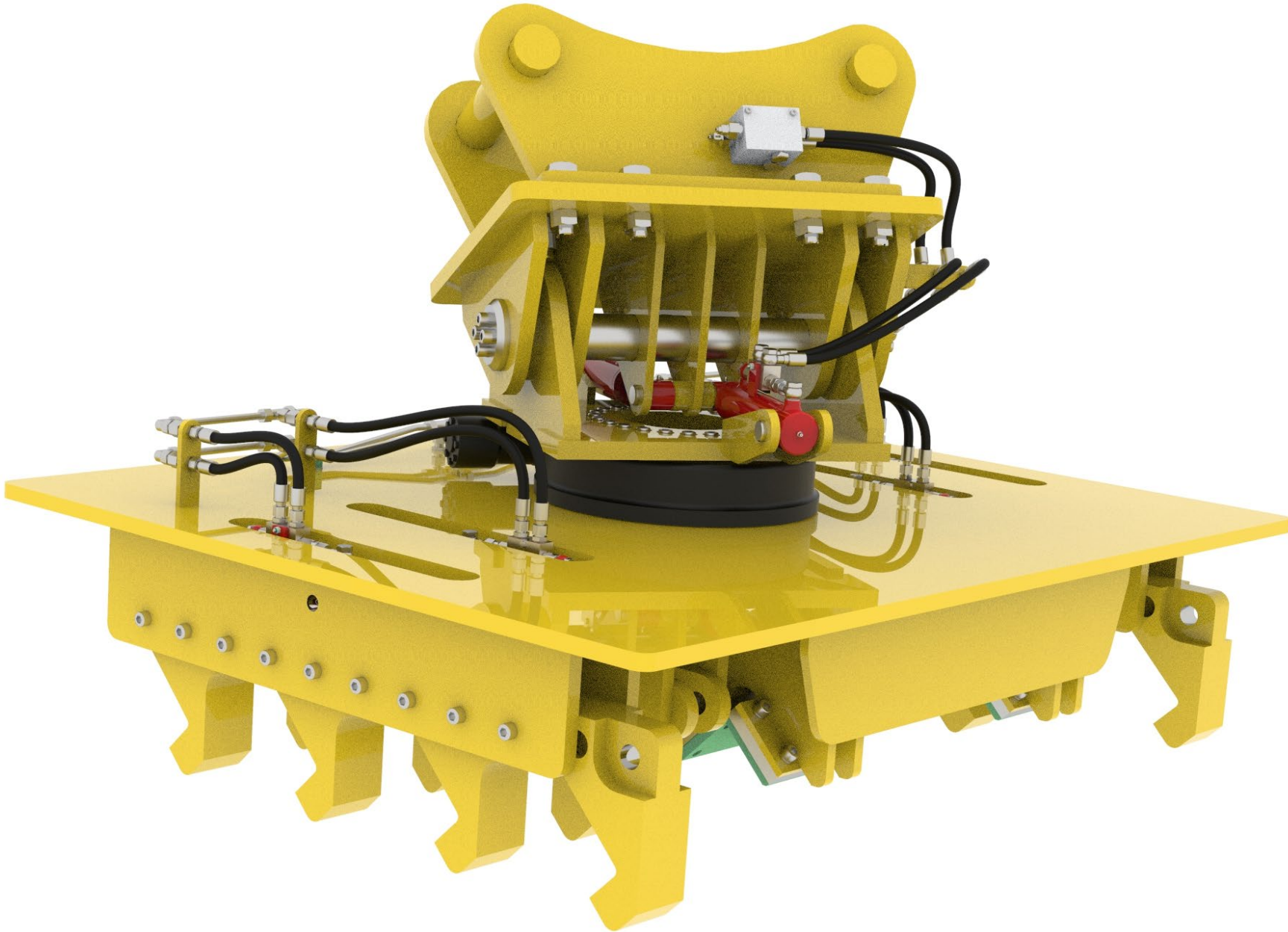


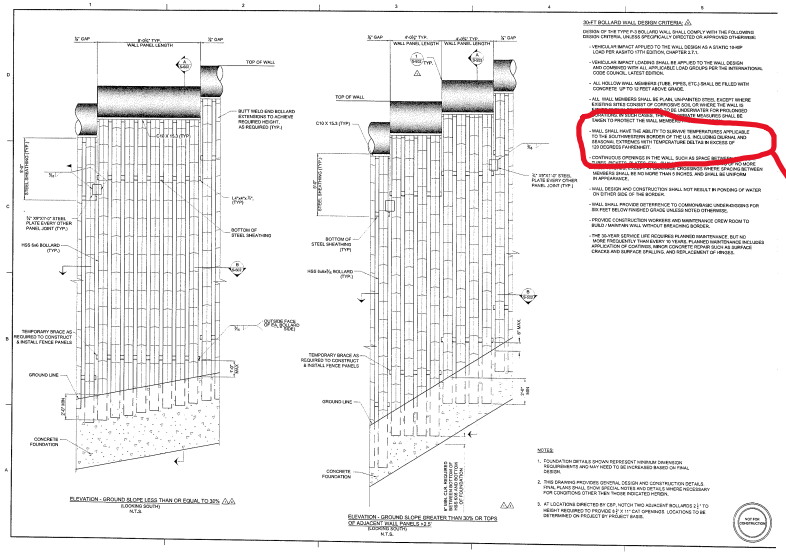


36" PIPE FENCE X 32'-0" LONG: QTY=7




Excavator Adapter
Alignment System
Rotator
Grabs for fence uprights





30-FT BOLLARD WALL DESIGN CRITERIA

DESIGN OF THE TYPE P-3 BOLLARD WALL SHALL COMPLY WITH THE FOLLOWING DESIGN CRITERIA, UNLESS SPECIFICALLY DIRECTED OR APPROVED OTHERWISE:

- VEHICULAR IMPACT APPLIED TO THE WALL DESIGN AS A STATIC 19-KIP LOAD PER AASHTO-1779 EDITION, CHAPTER 2.7.1.
- VEHICULAR IMPACT LOADING SHALL BE APPLIED TO THE WALL DESIGN AND COMBINED WITH ALL APPLICABLE LOAD GROUPS PER THE INTERNATIONAL CODE COUNCIL, LATEST EDITION.
- ALL HOLLOW WALL MEMBERS (TUBE, PIPES, ETC.) SHALL BE FILLED WITH CONCRETE UP TO 12 FEET ABOVE GRADE.
- ALL WALL MEMBERS SHALL BE PLAIN, UNPAINTED ST500, EXCEPT WHERE EXISTING SITES CONSIST OF CORROSIVE SOIL OR WHERE THE WALL IS [redacted] OR WHERE THE WALL MEMBERS [redacted] SHALL BE USED TO PROTECT THE WALL MEMBERS FROM CORROSION.
- WALL SHALL HAVE THE ABILITY TO SURVIVE TEMPERATURES APPLICABLE TO THE SOUTHWESTERN BORDER OF THE U.S. INCLUDING DIURNAL AND SEASONAL EXTREMES WITH TEMPERATURE DELTAS IN EXCESS OF 120 DEGREES FAHRENHEIT.
- CONTINUOUS OPENINGS IN THE WALL, SUCH AS SPACE BETWEEN [redacted] SHALL BE NO MORE THAN 5 INCHES WHERE SPACING BETWEEN MEMBERS SHALL BE NO MORE THAN 5 INCHES, AND SHALL BE UNIFORM IN APPEARANCE.
- WALL DESIGN AND CONSTRUCTION SHALL NOT RESULT IN PONDING OF WATER ON EITHER SIDE OF THE BORDER.
- WALL SHALL PROVIDE DETERRENCE TO COMMON BASIC UNDERMINING FOR SIX FEET BELOW FINISHED GRADE UNLESS NOTED OTHERWISE.
- PROVIDE CONSTRUCTION WORKERS AND MAINTENANCE CREW ROOM TO BUILD / MAINTAIN WALL WITHOUT BREACHING BORDER.
- THE 30-YEAR SERVICE LIFE REQUIRES PLANNED MAINTENANCE, BUT NO MORE FREQUENTLY THAN EVERY 10 YEARS. PLANNED MAINTENANCE INCLUDES APPLICATION OF CONTINUOUS MIRROR CONCRETE COATING TO SURFACE CRACKS AND SURFACE SPALLING, AND REPLACEMENT OF HINGES.

ELEVATION - GROUND SLOPE LESS THAN OR EQUAL TO 30%

ELEVATION - GROUND SLOPE GREATER THAN 30% OR TOPS OF ADJACENT WALL PANELS ≥ 2.5"

NOTES:

1. FOUNDATION DETAILS SHOWN REPRESENT MINIMUM DIMENSION REQUIREMENTS AND MAY NEED TO BE INCREASED BASED ON FINAL DESIGN.
2. THIS DRAWING PROVIDES CONCEPTUAL DESIGN AND CONSTRUCTION DETAILS. FINAL PLANS SHALL SHOW SPECIAL NOTES AND DETAILS WHERE NECESSARY FOR CONDITIONS OTHER THAN THOSE INDICATED HEREIN.
3. AT LOCATIONS DIRECTED BY CBP, NOTCH THIS ADJACENT BOLLARDS 2 ½" TO HEIGHT REQUIRED TO PROVIDE 6.5" X 11" CAT OPENINGS. LOCATIONS TO BE DETERMINED ON PROJECT BY PROJECT MGRS.

NOT FOR CONSTRUCTION

- WALL SHALL HAVE THE ABILITY TO SURVIVE TEMPERATURES APPLICABLE TO THE SOUTHWESTERN BORDER OF THE U.S. INCLUDING DIURNAL AND SEASONAL EXTREMES WITH TEMPERATURE DELTAS IN EXCESS OF 120 DEGREES FAHRENHEIT.

Frangus

Any questions?

Thank you!