RFQ - 2026 - 03

Request For Quote

CHUUK TERMINAL:
PIPELINE RISK ASSESSMENT AND INTEGRITY MANAGEMENT SERVICES

Tender Submission Date: 17 April 2026

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1 BACKGROUND

1.1 About Federal States of Micronesia (FSM)

FSM is an independent, sovereign island nation, made up of four states from west to east: Yap, Chuuk, Pohnpei and Kosrae. The FSM is located approximately 4,000 km southwest of the main islands of Hawaii and about 2,900 km north of eastern Australia, and east of Palau and the Philippines.

Figure 1 - Vital Energy FSM Operations

1.2 About FSM Petroleum Corporation (VITAL ENERGY)

FSM Petroleum Corporation (d/a Vital or VITAL ENERGY or the Corporation) is a state-owned energy services company with an experienced, qualified and trained workforce of over 120 people with combined petroleum and aviation fuel handling team experience exceeding 150 years. Vital is the largest energy supplier in the FSM.

In addition, Vital is an independent terminal operator who owns, operates and/or leases over seven fuel terminals, thirty-seven storage tanks and pipeline systems, and a fleet of fourteen bulk trucks and aviation fuellers across Micronesia.

Operations conducted by Vital include:

- Road tanker deliveries and drum filling services from Vital's four Bulk Terminals;
- Marine bunkering at each main port in Pohnpei, Chuuk, Yap and Kosrae;
- Plane re-fueling operations in four of the eight international airports of the region (Yap, Chuuk, Pohnpei and Kosrae); and
- Sale of a variety of lubricants and chemical solvents.
- Nauru Terminal Operations.

Vital was formed after it acquired the operations and assets of Mobil Oil Micronesia Incorporated in the Federated States of Micronesia ("FSM") in June 2008. Vital took over a business which had operations, existence and experience in Micronesia of over 50 years.

2 OBJECTIVES

Vital Energy is inviting interested in conducting Pipeline Integrity Management Plan (PIMP), and Pipeline Risk Based Assessment (RBA).

2.1 Tendering Phases

The entire tendering process will consist of single phases; all bidders shall provide complete documents as requested:

1. Submission of Proposal
2. Review and shortlist reputable contractors
3. Award and Contracting

2.2 Pre-Qualification

The Bidder's Proposals in response to the RFQ will be evaluated on a technical basis, which includes the following:

- Proven records of previous similar PIMP and RBA works.
- Technical understanding of AS2885 or ASME B31.3 Standards and requirements.
- Safety Management System (may include audit);
- Quality Management System (including forms and templates)
- Completed projects including projects of similar type;
- References;
- Last 3 years financial statements;
- Organization Structure and Management Team;
- Technical capabilities;
- Existing litigations disclosures;
- Regional presence;

3 DEFINITIONS

For the Purpose of this RFQ, the following terms shall have the meanings set out below:

3.1 ALARP

As Low As Reasonably Practicable (ASARP), meaning the level at which risk is reduced to a level that is tolerable and can be further reduced only at disproportionate cost or effort.

3.2 Control

Any measure implemented to prevent, reduce, or mitigate the likelihood and/or consequence of a risk event.

3.3 Inherent Risk

The risk level assessed before consideration of any existing controls or safeguards.

3.4 Pipeline Integrity Management Program (PIMP)

A structured framework of procedures, inspections, monitoring, maintenance, and mitigation measures established to manage the integrity of assets throughout their operating life.

3.5 Probability of Failure (PoF)

The likelihood that a specific failure mechanism or threat will lead to loss of containment or functional failure within a defined period.

3.6 Consequence of Failure (CoF)

The severity of the outcome arising from a failure event, including safety, environmental, operational, and financial impacts.

3.7 Risk Assessment

A structured process of identifying, analyzing, and evaluating risks using a defined risk matrix and documented assessment criteria.

3.8 Risk Value

A numerical value ranging from 0 to 25, derived from the risk assessment matrix and professional judgment.

3.9 Risk Assessment Matrix

A Vital Energy risk matrix used to evaluate risk based on the combination of probability and consequence.

3.10 Risk-Based Inspection (RBI)

A methodology for prioritizing inspection activities based on the assessed risk of equipment degradation and failure.

3.11 Residual Risk

The risk remaining after implementation of existing and/or recommended controls.

3.12 Thickness Monitoring Location (TML)

A designated location on piping or equipment identified for periodic wall thickness measurement and corrosion monitoring.

3.13 Written Scheme of Examination (WSE)

A documented inspection scheme that defines the scope, method, frequency, and acceptance criteria for examination of the asset.

4 SCOPE OF WORK AND DELIVERABLES

The CONTRACTOR shall provide the services and deliverables described in this section for the Chuuk Fuel Terminal.

4.1 SCOPE OF WORK

The CONTRACTOR shall develop a comprehensive Integrity Management Program (IMP) for the Chuuk Fuel Terminal covering transportation pipelines, terminal piping systems, and associated pressure equipment.

4.2 ASSETS WITHIN SCOPE

The following assets shall be included in the scope of services:

4.2.1 Transportation Pipelines

The CONTRACTOR shall assess and develop integrity management requirements for the following pipelines:

- CHK-PL-001-CL150-DN150 (ADO/ULP)
- CHK-PL-002-CL150-DN150 (Jet A1)

4.2.2 Terminal Piping Systems

The CONTRACTOR shall include all terminal piping systems comprising piping lines used for product transfer across the terminal, including but not limited to the following service groups.:

- Automotive Diesel Oil (ADO)
- Jet A1

- Unleaded Petrol (ULP)
- Common/shared service lines (ADO/Jet A1)

All piping listed in the provided schedule shall form part of the scope.

4.2.3 Equipment

- One (1) Vertical Coalescer Separator Filter Vessel

4.3 METHODOLOGY

4.3.1 Transportation Pipelines – Risk Assessment and Integrity Management Program

The CONTRACTOR shall carry out a Pipeline Risk Assessment (PRA) in accordance with recognized international standards and industry best practices, including AS/NZS 2885.6.

The assessment shall adopt a structured, workshop-based methodology supported by a systematic evaluation tool.

The CONTRACTOR shall, as a minimum:

4.3.1.1 Assess the Entire Pipeline System

- Evaluate the full pipeline network, including segmentation where required, such as above-ground and below-ground sections
- Consider applicable environmental, operational, and degradation conditions

4.3.1.2 Identify hazards and evaluate risk

- Identify all credible threats and failure mechanisms
- Evaluate:
    - Probability of Failure (PoF)
    - Consequence of Failure (CoF)
    - Existing safeguards and mitigation measures

4.3.1.3 Develop Risk Mitigation and Integrity Strategies

- Develop risk control measures to ensure risks are maintained at ALARP (As Low As Reasonably Practicable)
- Recommendation:

- Inspection techniques, scope, and intervals
- Maintenance and repair strategies
- Monitoring and investigation requirements
- Practical risk mitigation actions, where necessary

4.3.1.4 Deliverable

- Pipeline Risk Assessment Report for Chuuk Fuel Terminal

4.3.2 Terminal Piping and Pressure Vessel – RBI Assessment and Inspection Planning

The CONTRACTOR shall perform a Risk-Based Inspection (RBI) study for all terminal piping systems and the pressure vessel using proprietary RBI software, in accordance with API RP 581 and other recognized standards, as applicable.

The CONTRACTOR shall, as a minimum:

- Conduct RBI analysis for all in-scope assets
- Develop asset-specific degradation mechanisms and damage models
- Establish inspection strategies based on risk ranking
- Define inspection intervals and techniques
- Develop a Written Scheme of Examination (WSE) covering:
  - Inspection scope
  - Methods and frequencies
  - Acceptance criteria
- Identify and mark Thickness Monitoring Locations (TMLs) on piping isometrics to support future corrosion monitoring

Deliverables:

- RBI Assessment Report (for piping and vessel)
- Inspection Plan / Written Scheme of Examination
- Updated piping isometrics with TML locations

4.3.3 Terminal Piping Inventory Volume Calculation

The CONTRACTOR shall calculate the internal inventory volume of the terminal piping systems based on available design information.

The CONTRACTOR shall, as a minimum:

- Determine piping dimensions from approved drawings
- Apply standard engineering calculation methods to estimate the internal fluid volume

Deliverable:

- Piping Inventory Volume incorporated within the RBI report
- Volume data clearly indicated on P&IDs

4.3.4 Pipeline Procedures and Guidelines

The CONTRACTOR shall review and prepare the following pipeline procedures and guidelines for the Chuuk Fuel Terminal:

- Pipeline Inspection Procedures
- Maintenance and Repair Procedures
- Cathodic Protection Monitoring and Maintenance

Deliverable:

- Procedures and guidelines tailored for Chuuk Fuel Terminal

4.3.5 REFERENCE DOCUMENTS

The CONTRACTOR shall execute the scope of work in accordance with the latest editions of applicable codes, standards, and project documents, including but not limited to:

- Chuuk Terminal Pipeline Replacement Dossier (Asset Records and Reports Register)
- AS 2885.3 – Pipelines—Gas and Liquid Petroleum: Operation and Maintenance
- AS 2885.6 – Pipelines—Gas and Liquid Petroleum: Pipeline Safety Management
- API 1160 – Managing System Integrity of Hazardous Liquid Pipelines
- ASME B31.8S – Managing System Integrity of Gas Pipelines
- DNV-RP-F116 – Integrity Management of Submarine Pipeline Systems
- API 570 – Piping Inspection Code
- API 581 – Risk-Based Inspection Methodology

5 FINAL REVIEW AND NOTICE OF AWARD

At the end of the Bid Assessment phase, VITAL ENERGY shall release a Notice of Award (NOA) in discussion with the successful Bidder.

The NOA shall be released and successful bidder to provide the following,

- Project Schedule detailed in line with the WBS Template.

6 GENERAL CONDITIONS OF THE CONTRACT

The Conditions of Contract comprise the "General Conditions", which form part of the "**Conditions of Contract for Chuuk Terminal PIMP and RBA**" AS 4920 -2003 General conditions of conduct for the provisions of services.

Please refer to **Appendix A** for Sub-Clauses of the General Conditions which need to be commented by Bidders in response to the RFQ as part of the submission due on as stated in the Timelines and Milestones table.

6.1 Timeline and Milestones

The contracting timeline and milestones are summarized below:

	Subject	**Indicative Due Date**
1	Release of RFQ	6 April 2026
2	Queries from Bidders	10 April 2026
6	Submission of the Tender	17 April 2026
7	Notice of Award	30 April 2026
8	Signing of Contract Agreement	10 May 2026

7 PAYMENT TERMS

The proposed payment for the works shall be as follows,

- 50% upon draft acceptance
- 50% upon completion and acceptance of the report

8 INSTRUCTION TO BIDDERS

1.1. VITAL ENERGY Contact Officer

a. All enquiries regarding this RFQ should be directed via email to: rfp@fsmpc.com

b. Addressed to:

PO Box 1762, Kolonia, Pohnpei FM 96941
Email subject: **"RFQ for Pipeline Risk Assessment and Integrity Services"**

c. Any contact with any other VITAL ENERGY staff member relating to this RFQ other than through the Vital Energy Contact Officer may, at the absolute discretion of the Chief Executive Officer, invalidate the RFQ submission.

8.1 Documents to be Lodged

a. All documents which form part of this RFQ dossier shall be considered explanatory of each other. Potential ambiguities in the documents and/or contradictions among them can be resolved by written instructions of the VITAL ENERGY.

b. Bidders are required to fully complete and return the following documents:
   i. Cover sheet;
   ii. Application form;
   iii. Response statements;
   iv. A technical proposal;
   v. References (relevant);
   vi. Last 3 years financial statements;
   vii. Organisation structure and management team;
   viii. Technical capabilities;
   ix. Existing litigations along with current status;
   x. Regional presence;

8.2 Lodgement Requirements

a. Please provide one (1) pdf electronic copy of your proposal via email as follows:
   i. Email subject: **"RFQ for Pipeline Risk Assessment and Integrity Services"**
   ii. Proposals are to be received by: rfp@fsmpc.com no later than 5:00pm, GMT +11, 17 April 2026.
   iii. Proposals received after the above due date and time will not be considered

9 VITAL ENERGY'S RIGHTS

Vital Energy may:

a. amend this RFQ;
b. require additional information or clarification from Bidders;

c. provide additional information or clarification to Bidders;
d. negotiate with any one or more Bidders including terminating any negotiations being conducted from time to time;
e. not release a RFQ;
f. change the structure and timing of tendering process at any time, VITAL ENERGY can terminate the RFQ process if:
g. it is in the public's interest to do so;
h. no response meets the minimum content and format requirements (e.g. Mandatory requirements about responses);
i. no Bidders meets the conditions for participation (e.g. mandatory requirements about Bidders (such as the Bidders holding a particular license);
j. no Bidder is fully capable of undertaking the services; or
k. no Proposal represents value for money.

If it terminates the RFQ process, VITAL ENERGY may:

a. negotiate with any one or more of the Bidders or any other person for the supply of all, or any, of the services;
b. call for new proposals;
c. engage in any other selection process for the supply of the services;
d. add to, alter, delete or exclude any services;
e. short list Bidders;
f. negotiate with any person who is not a Bidder and enter into a contract with that person on terms determined by VITAL ENERGY;
g. allow or not allow a related body corporate or other entity to take over a response in substitution for the original Bidder;
h. enter into any arrangements which will best meet VITAL ENERGY's needs;
i. allow a Bidder to correct an unintentional error or form in a response; and
j. suspend the RFQ (on the same basis as termination).

Nothing in this RFQ or arising from the RFQ process shall give rise to any contractual obligations binding VITAL ENERGY (including a process contract). No proposal will be taken to have been accepted unless and until a contract is executed between the relevant vendor and VITAL ENERGY. Any conduct or statement by VITAL ENERGY whether prior to or subsequent to the issue of the RFQ is not, and must not be deemed to be:

a. An offer to enter into a contract; or
b. A binding undertaking of any kind by VITAL ENERGY (including, without limitation, an undertaking that could give rise to quasi-contractual rights, promissory estoppels or rights with a similar legal basis).

10 CONFIDENTIALITY

All information submitted with a Bidder's submission will be treated as confidential to VITAL ENERGY and its consultants.

11 CONFLICT OF INTEREST

Bidders, at the time of lodging their proposal, must declare any conflict of interest that exists, or is likely to arise, which would affect the performance of their obligations, if the Bidder were to enter into a contract with VITAL ENERGY.
In the event of a conflict of interest being identified, VITAL ENERGY may, at its discretion, exclude the proposal from further consideration.

12 PROHIBITIONS

Bidders must not:

a. make false or misleading statements;
b. receive improper assistance from VITAL ENERGY employees;
c. engage in collusive tendering or anti-competitive conduct; or
d. attempt to improperly influence VITAL ENERGY's employees.

13 DOCUMENTATION REQUIREMENTS

Bidders are to be aware that the tender and subsequent contract documentation requirement for each project is inclusive of plans and other documents to satisfy both VITAL ENERGY and the processes of all relevant authorities.

Vital Energy requires all additional documentation from the contractor within 30 working days from the Notice of award, the following shall be submitted,

14 BIDDERS TO NOTE

The issue of this RFQ, or any Proposal to it, does not commit, obligate or otherwise create a legal relationship between VITAL ENERGY and a Bidder in respect of:

a. an obligation on VITAL ENERGY to issue an RFQ to a Bidder;
b. VITAL ENERGY entering into a contract with a Bidder; or
c. the process to be followed in handling any responses.

In no event will VITAL ENERGY be liable for any cost, expense, loss, claim or damage arising out of a Bidder's participation in this RFQ process or any subsequent RFQ.

15 EVALUATION

The decision to approve or reject a submission for evaluation is at the absolute discretion of VITAL ENERGY, who shall not be held liable for any costs incurred or damages arising out of such discretion.
The evaluation may involve discussions with some or all Bidders to seek further clarification of their submissions, requests to some or all Bidders to provide written clarification of various aspects of their submissions and discussions with and visits to, customers of some or all Bidders

and their subcontractors, whether or not those customers are listed as referees in the Bidder's submission.
The providers submitting a Proposal will be assessed against the following evaluation criteria.
VITAL ENERGY may make independent enquiries about any matters that may be relevant to the evaluation of a submission.
Submissions will be evaluated against the following criteria, which are not specified in any order of importance:

a. **Criterion 1**: Demonstrated capability and capacity to undertake these sections for VITAL ENERGY;
b. **Criterion 2**: The suitability of the Bidder's Proposal to meet VITAL ENERGY's requirements;
c. **Criterion 3**: Demonstrated ability to complete projects on time, on budget and to agreed quality standards; and
d. **Criterion 4**: Demonstrated financial capacity and capability to undertake projects for the duration.

16 CONSULTANTS

To assist VITAL ENERGY with the evaluation process VITAL ENERGY may employ the services of consultants to assist in all or part of the evaluation. All information will be treated as Commercial-in-Confidence.

17 EVALUATION PROCEDURES

VITAL ENERGY will appoint an evaluation committee to evaluate the proposals received.
Each Bidder grants to VITAL ENERGY the right to:

a. seek clarification from the Bidder in relation to any information contained in its proposal;
b. obtain information from any referee nominated in its proposal;
c. conduct its own inquiries in relation to the Bidder or the Bidder's past performance; and
d. make independent enquiries about any matter that may be relevant to the evaluation of any response.

Where VITAL ENERGY requests any clarification from a Bidder, VITAL ENERGY:

a. may nominate a time for any response by the Bidder; and shall be entitled to:
    i. rely on the information provided in the proposal where a response is not provided within the time nominated by VITAL ENERGY; and
    ii. reject any information.

Where VITAL ENERGY believes that more than one Bidder is able to satisfy its requirements, VITAL ENERGY may:

a. develop a short list;

b. seek additional information from one or more Bidders to enable it to complete its evaluation; and
c. request one or more Bidder to make a formal presentation.

RFQs are to be assessed on the basis of Value for Money as between VITAL ENERGY and the Bidders. Value for money is a comprehensive assessment that takes into account both the representations made by Bidder against the evaluation criteria, in the context of the risk profile presented by each response.

17.1 Evaluation Matrix

The evaluation matrix below reflects the obtainable score specified for each evaluation criterion which indicates the relative significance or weight of the items in the overall evaluation process.

Evaluation criteria	Score Weight (%)	Points obtainable
Mandatory Requirements		
1. **Evidence of experience with similar projects and referee contacts** 2. **Proposed workplan and design of the system**	**Mandatory requirements.** Bidders will be disqualified if any of the requirements are not met	
Requirements		
• **Experience-** Evidence of previous work, certifications, and relevant qualifications of key staff and on-site team. Review of the contractor's experience in successfully completing similar projects.	30%	300
• **Technical –** Evidence of good quality management system established in the organization. Having good knowledge and able to demonstrate in documentation how the team work with requirements of applicable Standards such as ASME B31.3 and AS2885.6	30%	300

• **Project Delivery.** Understanding of the project scope, challenges, and requirements. This includes the ability to identify key design risks, stakeholder management risks and provide clear mitigation strategies or experiences in addressing them. Availability of resources to be deployed to island to manage and deliver the Project through its phases. Demonstrating familiarity with local – Pacific island – limitations, poor documentation and records management systems, and regulations and best practices and approaches.	20%	200
• **Compliance with Environmental and Safety Standards. E**vidence of contractors Evaluation of the contractor's commitment to safety and environmental practices, including risk assessments, health and safety protocols, waste management, and adherence to environmental regulations during installation	10%	100
• **Pricing –** Evidence of contractor's good financial stability and able to successfully execute the project from start to completion, ability to finish the project within proposed budget. Has a team to successfully price and complete the project within budget.	10%	100
Total	**100%**	1000

18 SELECTION DECISION

All successful Bidders will be informed in writing of the outcome of the bidding process at its conclusion and will be offered the opportunity for a presentation to VITAL ENERGY.

19 APPLICATION FORM AND DECLARATION

Bidder's Legal Name:	
Bidder's Business or Trading Name:	

Date when Business Commenced Operation:			
Legal entity of above for Registration/Contracting (Tick as applicable)			
Evidence of Legal Entity attached			
Business Address:			
Postal Address:			
Contact Person:			
Contact Number (s):	**Bus:**	**Cell:**	
Facsimile Number:			
Email Address:			
Preferred Method of Delivery of Information:	**Email**	**Fax**	**Postal**
Membership Details of Industry Association(s) (if applicable):			
Licence No. & Type			
Copy of License Attached			

COMPANY DETAILS (to be completed by Companies only):

Date of Registration: *A copy of registration documents must be submRFQed on initial registration and if name change occurs*	
Is company involved in any trust relationships?	

If yes, give full details	
If a subsidiary company, state name of holding company.	
If a holding company, state names of divisions, and/or subsidiaries	
State Trading Name	

BUSINESS DETAILS (to be completed by Sole Traders and Partnerships only):

State whether a Sole Trader, or Partnership	
State names and address of all members of business.	
State Trading Names	

ADDITIONAL DETAILS

Have you, or any business you have been managing, ever failed to complete a construction contract?	Yes/No (If yes, please provide details)
Have you, or any business you have been managing, been declared bankrupt or been subject to repossession proceedings over the last 7 years?	Yes/No (If yes, please provide details)
Are there any judgment debts or court orders against the Bidder?	

20 DECLARATION BY BIDDER

I/ We have noted and accept all the conditions contained in this Request for Expressions of Interest.

I/ We hereby submit the Expression of Interest with the Federated States of Micronesia Petroleum Corporation (VITAL ENERGY) and declare that to the best of my/our knowledge the particulars shown herein are true and correct.

Date:	
Signed for the Bidder by:	
In the Officer Bearer capacity of:	
Name *(IN BLOCK LETTERS)*:	

21 RESPONSE STATEMENTS

- Bidders are required to demonstrate, to VITAL ENERGY's satisfaction, that they have the capability, capacity, experience and financial standing to manage and deliver the construction services required by VITAL ENERGY.
- Bidders must provide Response Statements to the evaluation criteria that are identified in the RFQ, which incorporate as a minimum the following information:

Response Statement 1: Demonstrated capability and capacity to undertake Tank upgrade projects for VITAL ENERGY

21.1 Availability of Professional Staff

- Bidders are to provide details of all senior tank construction staff, showing their qualifications and experience, including any membership of relevant professional associations, and providing details of current and anticipated project commitments.
- Bidders are to provide the details of workers that are still in the organisation from the past and some recent projects.
- All Welders on the project shall hold current ASME Boiler and Pressure Code Section 9 for qualifications with approved weld procedures.

21.2 Key Management Personnel

- Bidders should provide a list of all Directors, Partners, and Executives, and indicate any relevant cross-directorships that could potentially either support or be in conflict with a contractual relationship with VITAL ENERGY.

21.3 Use of Subcontractors

- Bidders are to nominate the work proposed to be subcontracted and provide details of the intended businesses to do this work. Only parts of the work such as protective coating and any of their internal inspection shall be contracted out.
- Details are to include the qualifications and experience of the personnel intended to undertake the VITAL ENERGY projects, including membership of relevant professional/ trade associations.

21.4 Quality Management

- Bidders are to provide details, and where possible examples, of their quality management system and the status of implementation.
- Written quality plan to be submitted 30 days after the Notice of Award.

21.5 Risk Management

- Bidders are to provide details, and where possible examples, of their risk management policies and approach to risk management, together with details and copies of current insurance coverage. Insurance policy details should include the type of policy, the name of the insurer, the amount of cover and the expiry date as a minimum.
- Successful Bidders may be required to carry current Indemnity Insurance, Public Liability and Workers Compensation with a reputable and secure insurance provider.

21.6 OH&S and Industrial Relations Policies

- Bidders are to provide details, and where possible examples, on the establishment and implementation of OH&S Plans both generally and on specific projects. Bidders are also to provide details of any of the following to which it is a party or for which it has arrangements in place:
    a. Enterprise agreements, together with expiry dates;
    b. Superannuation Agreements;
    c. Redundancy Schemes; and
    d. long Service Leave.
- Bidder are to provide HSSE Plan for the project 30 days after the Notice of Award. Within the plan, the following must be clearly outlined,
    a. Site barricade system.
    b. Site Access Control for authorized workers and visitors
    c. Emergency Response
    d. Medical Evacuation

Response Statement 2: Demonstrated ability to complete construction projects on time, on budget and to agreed quality standards

21.7 Current Projects

- Bidders are to provide details of all residential construction work currently in hand, providing:
  a. project name and description;
  b. contract sum; and
  c. start dates and expected completion dates.

21.8 Completed Projects

- Bidders are to provide the following details of relevant Tank projects completed within the last 24 months.
  a. the initial contract sum;
  b. the end contract sum;
  c. an explanation of the variation in the contract sum (eg. client-initiated variations, disputes leading to claims etc);
  d. details of any claims (other than progress claims) over $50,000 made by either party to the contract;
  e. details of any issues which arose and how they were resolved; and
  f. any added value for money achieved on those projects.

21.9 Contract Administration

- Bidders should provide details, and where possible examples, of their approach to contract administration, including quality control, risk management, cost control, programming, timely completion and standards compliance.

21.10 Defect and Warranty Performance

- Bidders should provide details, and where possible examples, of their approach to defect and warranty performance during warranty periods and contract finalization.
- There shall be 10% retention held for period of 12months for this project.

21.11 Referees

- Bidders are to nominate and provide contact details of at least three referees who can verify or provide information from a client perspective regarding previous experience, quality of work, performance and timely completion of projects.

Response Statement 3: Demonstrated financial capacity and capability to undertake housing construction projects for the duration of the Panel of Builders' arrangements

21.12 Financial Capacity & Capability

- Bidders are required to submit full and comprehensive financial information e.g. Annual Reports and Financial Statements for a formal financial assessment, which may be carried out by VITAL ENERGY's independent financial consultant. The financial information provided is to be in respect of the legal entity of the Bidder, but corporate relationships that may be relevant should be stated. When the Bidder is a subsidiary, the information provided is to be in respect of the Subsidiary and not its Holding Company.
- Note that if a Subsidiary does not have sufficient financial capability in its own right, assessment may be sought in the name of the Holding company, or in the name of Holding and Subsidiary Companies, joint and severally. It should be noted that pre-qualification of an entity or entities, if achieved, will not extend to other associated or subsidiary entities owned or controlled by the Bidder.

Response Statement 4: Additional Information

- Bidders should provide any additional information they consider relevant in support of their Tender Document.

DATE: _____

SIGNATURE: _____

22 ATTACHMENTS

Appendix A	*Contract Form*
Appendix B	*Drawings*

AS 4122 2010
(Incorporating Amendment No.1)

AS 4122—2010

Australian Standard®

General Conditions of Contract for Consultants

This Australian Standard® was prepared by Committee LL-001, General Conditions of Contract for Consultants. It was approved on behalf of the Council of Standards Australia on 15 October 2010.
This Standard was published on 22 November 2010.

The following are represented on Committee LL-001:

- Association of Consulting Architects Australia
- Australasian Procurement and Construction Council
- Australian Constructors Association
- Australian Institute of Architects
- Consult Australia
- Master Builders Australia

This Standard was issued in draft fonm for comment as DR AS 4122.

Standards Australia wishes to acknowledge the participation of the expert indMduals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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AS 4122-2010
(Incorporating Amendment No. 1)

Australian Standard®

General Conditions of Contract for Consultants

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Preface

This Standard was prepared by the Standards Australia Committee LL-001, General Conditions of Contract for Consultants, to supersede AS 4122-2000, *General conditions of contract for engagement of consultants.* The previous edition of this Standard was developed and published by Standards Australia Committee OB-010, Construction Industry Practice.

It is anticipated that the Standard will generate net benefit to the Australian community by providing greater access to a standard form of contract to purchasers and providers of services, particularly in the building and construction industry, by:

- providing fair, reasonable, commercial terms to facilitate widespread utilization of the Standard by all stakeholders;
- reducing time and resources spent negotiating contractual terms and conditions of engagement;
- streamlining the process of engagement of consultants;
- improving clarity and certainty of contractual terms and conditions between clients and consultants; and
- reducing disputes between clients and consultants based on contractual terms.

Users of this Standard are advised of the importance of completing the Annexures, as in some cases completion of the *Item* is necessary for the operation of the corresponding clause.

The following warnings should be noted:

(i) This Standard has not been developed specifically for use:

- in a design and construct context; and/or
- where the *Client* intends to novate this *Contract* with the *Consultant* to another party.

Parties intending to use this Standard in those circumstances should seek advice as to when an alternative contract such as AS 4904-2009, *Consultants agreement-Design and Construct,* may be used.

(ii) Legislation has come into force in some jurisdiction on dealing with security of payments. Parties intending to use this Standard should seek expert advice as to their rights and obligations under such legislation.

This Standard incorporates Amendment No. 1 (Month Year). *The changes required by the Amendment are indicated in the text by* a *marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

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NOTES

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this *Contract,* except where the context otherwise requires:

Approvals means certificates, licenses, consents, permits, approvals and requirements made or authorized by a Commonwealth, State, Territory or local government, or by a *Legislative Requirement,*

Business Day means calendar day but excludes public holidays as defined by the governing law of this *Contract* and weekends;

Client means the person identified in *Item* 1;

Client Information means all information supplied to the *Consultant* in a *Document* for the purposes of this *Contract,*

Consultant means the person identified in *Item* 2;

Contract means the agreement recorded in the *Contract Documents;*

Contract Documents means the *Documents* listed in *Item* 3;

Deliverables means those *Documents* and things required under this *Contract* to be handed over to the *Client* by the *Consultant,*

Direction means any agreement, approval, assessment, authorization, decision, determination, explanation, instruction, order, permission, rejection, request or requirement given or made by the *Client,*

Documents includes information stored by electronic and other means;

Fee means the money payable under this *Contract* for the performance of the *Services* as adjusted in accordance with this *Contract* (excluding disbursements) and includes any amount payable stated in *Item* 20;

Force *Majeure* means an event or circumstance which:

(a) is beyond the reasonable control of either party;

(b) is not caused by either party;

(c) can occur with or without human intervention; and

(d) was not reasonably foreseeable by the parties at the time of entering into this *Contract,*

the consequences of which could not have been reasonably prevented by the party affected;

GST means the tax payable on a taxable supply under *A New Tax System (Goods and Services Tax) Act 1999* (Cth) and any related legislation;

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Intellectual Property Right	means any statutory and other proprietary right in respect of inventions, innovations, patents, utility models, designs, circuit layouts, mask rights, copyright (including future copyright), confidential information, trade secrets, know-how, trademarks and any other right in respect of intellectual property;
Insolvency Event	means any of the events set out in clause 31;
Item	means an *Item* in Annexure Part A;
Legislative Requirements	means legislation and subordinate legislation of the Commonwealth of Australia or the State or Territory applicable to the *Services,* and any instruments made under such legislation or subordinate legislation;
Moral Right	means the rights defined as 'Moral Rights' in the *Copyright* Act *1968* (Cth);
Scope	is described in *Item* 4 (as varied from time to time in accordance with this *Contract);*
Services	means the *Services* described in or reasonably inferred from the *Scope,* including the supply of the *Deliverables;*
Variation	means a change to the *services* whether or not it is a change to the *Scope.*

1.2 Interpretation

In this *Contract,* except where the context otherwise requires,

(a) 'person' includes an individual, the estate of an individual, a body politic, a corporation, a statutory or other authority, an association or a joint venture (whether incorporated or unincorporated), a partnership and a trust.

(b) 'includes' is not a word of limitation;

(c) a reference to *Legislative Requirements* includes all amendments, re-enactments and replacements to *Legislative Requirements;*

(d) if a word is defined, another part of speech or grammatical form of that word has a corresponding meaning; and

(e) words in the singular include the plural and words in the plural include the singular, according to the requirements of the context.

1.3 Contra Proferentem

In the interpretation of this *Contract,* no rule of construction applies to the disadvantage of one party on the basis that the party put forward or drafted this *Contract* or any provision in it.

1.4 Joint and Several

To the extent permitted by law, if either party consists of one or more persons, this *Contract* binds such persons and their respective executors, administrators, successors and permitted assigns jointly and severally and this *Contract* must be read and construed accordingly.

1.5 Headings and guidance notes are provided for information or convenience and do not form part of this *Contract.*

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2 CONSULTANT TO PERFORM SERVICES

The *Consultant* must perform the Services in accordance with this *Contract.*

3 CLIENT TO PAY

The *Client* must pay the *Consultant* in accordance with this *Contract.*

4 STANDARD OF CARE

The *Consultant* must perform the *Services* to the standard of skill, care and diligence expected of a skilled and competent professional practicing in the particular fields relevant to the Services, or such higher standard as the *Consultant* has represented in writing to the *Client* in relation to this *Contract.*

5 SCOPE

5.1 The *Consultant,* exercising skill, care and diligence to the standard of care required in clause 4, has examined the Scope and agrees that the *Services* will be suitable, appropriate and adequate for the purpose stated in */tam* 5, except to the extent that, prior to commencement of work on the *Deliverables:*

(a) the *Consultant* notified the *Client* in writing of any ambiguity, error, omission, discrepancy, insufficiency or inconsistency in the *Scopa* which would prevent the *Services* from being suitable, appropriate and adequate for the purpose stated in *Item* 5, and its proposed solution; and

(b) the *Client* has not amended the *Scopa* to the extent necessary, if at all, to address the concern notified under clause 5.1(a).

5.2 After commencement of work on the *Deliverables,* the *Consultant* must promptly notify the *Client* if and to the extent the *Consultant* becomes aware that any *Client Information* contains an ambiguity, error, omission, discrepancy, insufficiency or inconsistency or is otherwise insufficient to enable the *Consultant* to perform the *Services.*

5.3 If the *Consultant* gives notice under clause 5.2, the *Client* must either:

(a) direct an appropriate amendment to the *Scope;* or

(b) direct the *Consultant* to proceed notwithstanding its advice.

5.4 The *Consultant is* entitled to an adjustment to the *Fee* and/or time for performing the services in relation to a *Direction* under clause 5.3:

(a) where the *Consultant* has given notice under clause 5.2; and

(b) it was not reasonably practicable for the *Consultant* to identify any ambiguity, error, omission, discrepancy, insufficiency, or inconsistency necessitating amendment to the *Scope* prior to commencement of work on the *Deliverables.*

6 CLIENT'S REPRESENTATIVE AND CONSULTANT'S REPRESENTATIVE

6.1 The *Client* appoints the person named in */tam* 6 to act as the *Client's* representative to exercise the *Client's* functions under this *Contract.*

6.2 The *Consultant* appoints the person named in *Item 7* to act as the *Consultant's* representative to exercise the *Consultant's* functions under this *Contract.*

6.3 Either party may terminate the appointment of its representative by notice in writing to the other party. The notice must identify and provide contact details for the party's new representative.

6.4 Unless the *Client* objects to the *Consultant's* proposed representative on reasonable grounds in writing, within 3 *Business Days,* or as otherwise agreed in writing, the termination and new appointment will take effect 4 *Business Days* after service of the notice.

7 INFORMATION

The *Client* must promptly provide the Consultant with Client *Information* sufficient to enable the *Consultant* to perform the *Services.*

8 DIRECTIONS

8.1 The *Client* may give *Directions* to the *Consultant* at any time.

8.2 A *Direction* may be given orally by the *Client* except where this *Contract* Otherwise provides.

8.3 The *Client* must give the *Consultant Directions* necessary f o r the performance of the Services in a timely manner.

8.4 The *Consultant* must comply with all *Directions* given under this *Contract.*

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8.5 If the *Consultant* in writing requests the *Client to* confirm an oral *Direction,* the *Consultant* is not bound to comply with the *Direction* until the *Client* confirms it in writing.

9 VARIATIONS

9.1 The Client *may* direct the Consultant *to* perform a Variation. All such
Directions must be in writing and specify that they direct a *Variation.*

9.2 If the *Consultant* considers any *Direction* requires a *Variation* but the *Direction* is not in writing or does not specify that it directs a *Variation,* then the *Consultant* must promptly notify the *Client* in writing setting out why the *Consultant* considers the *Direction* requires a *Variation.* In that case the *Consultant* must not comply with the *Direction* unless the *Consultant* receives a written:

(a) *Direction* specifying a *Variation;* or

(b) notice that the *Client* disagrees, stating its reasons.

If a notice is issued under clause 9.2(b), the *Consultant* must comply with the *Direction* but may, within 20 *Business Days,* dispute the *Client's* notice under clause 9.2(b) by notice given under clause 32.

9.3 The Fee must be adjusted for each *Variation.* Unless the amount of the adjustment is agreed, the adjustment must be calculated by the *Client* on the basis of applicable rates or fees in this *Contract* or, if none, then reasonable rates or fees.

9.4 The *Consultant* is not obliged to perform a *Variation* that is outside the general *Scope* of the *Services.*

10 PAYMENT

10.1 The basis for payment to the *Consultant* is stated in *Item* 8.

10.2 The *Consultant* is only entitled to payment for disbursements set out in *Item* 9, and any other disbursement if approved in writing by the *Client* (such approval not to be unreasonably withheld or delayed) prior to the disbursement being incurred.

10.3 The *Consultant* must claim payment in writing at the times stated in *Item* 10, or if no times are stated, by the last *Business Day* of each month. If no time is stated, only one payment claim may be made each month.

10.4 The payment claim must:

(a) in respect of the *Services:*

(i) identify the *Services* to which the payment claim relates;

(ii) separately identify each *Variation;*

(iii) separately identify any other claim for payment under this *Contract* including a payment stated in *Item* 20; and

(iv) set out the amount of the Fee claimed, and how that amount was determined;

(b) in respect of disbursements:

(i) identify each disbursement claimed;

(ii) state the amount of the disbursement claimed;

(iii) be accompanied by relevant invoices and receipts for payment;

and

(c) be in the form of a valid tax invoice.

10.5 The *Client* must either:

(a) pay the whole amount claimed in the payment claim; or

(b) within 10 *Business Days* of service of a payment claim issue a statement stating the lesser amount the *Client* proposes to pay together with the reasons.

10.6 The *Client* must pay the amount specified in clause 10.5(a) or 10.5(b) within the period specified in *Item* 11 or, if no period is specified, within 30 calendar days after service of the payment claim under clause 10.3.

10.7 Payment by the *Client* is on account and is not evidence of the value of work completed, an admission of liability nor evidence that the *Services* have been executed satisfactorily.

10.8 If the *Client* fails to make the payment that is due and payable in accordance with clause 10.6, the *Consultant* may notify the *Client* in writing that it will suspend performance of the Services, after expiry of at least 5 *Business Days* written notice to the *Client.* Unless the payment has been made, the *Consultant* may suspend performance of the *Services* any time after expiration of the notice period. The *Consultant* must promptly lift the suspension after the *Client* has made the payment.

10.9 If the *Client* fails to make the payment that is due and payable in accordance with clause 10.6, the *Consultant* may notify the *Client* in writing that interest is payable on any overdue payments at the rate stated in *Item* 12 from the date of the notice. If so, the *Consultant* must promptly issue an amended tax invoice and the Fee must be adjusted to include the amount of interest paid.

10.10 Nothing in this clause 1O limits the *Consultant's* rights under clause 27.

11 GST

If the *Fee* is stated to be *GST* exclusive, the *Client* must pay the *Fee* plus the applicable *GST.*

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12 TIME

12.1 Subject to clause 12.2, the *Consultant* must complete the *Services* by the time stated in *Item* 13.

12.2 The *Client* must grant the *Consultant* a reasonable extension of time for any delay to completion of the *Services* caused by:

(a) an act or omission of the *Client* or its officers, employees, agents or other consultants or contractors (including a *Variation* directed by the *Client);*

(b) a *Force Majeure;*

(c) any event or circumstance set out in *Item* 14; or

(d) any event or circumstance for which another provision of this *Contract* provides that the *Consultant* may be entitled to an extension of time,

provided that the *Consultant* notifies the *Client* of the delay and its cause promptly after the *Consultant* becomes aware of the delay or its cause, and provides reasonable evidence of the cause and duration of the delay.

12.3 The *Client* must pay the *Consultant's* reasonable costs of and incidental to delay (valued as a *Variation)* caused by any of the following events for which an extension of time has been granted under clause 12.2:

(a) any breach of this *Contract* or negligent or unlawful act or omission of the *Client* or its officers, employees, agents or other consultants or contractors;

(b) a *Variation* directed by the *Client,*

(c) any event or circumstance set out in *Item* 14; or

(d) any event or circumstance that occurs for which another provision of this *Contract* provides that the *Consultant* may be entitled to an extension of time with costs.

13 LAW AND APPROVALS

13.1 The *Consultant* must comply with all *Legislative Requirements* and *Approvals* in carrying out the *Services.*

13.2 The *Consultant* must obtain the *Approvals,* if any, stated in *Item* 15.

13.3 If a new *Legislative Requirement* or *Approval,* or a change in a *Legislative Requirement* or *Approval:*

(a) occurs after agreement of the *Fee;*

(b) causes the *Consultant* to incur more or less cost or time than otherwise would have been incurred or expended; and

(c) could not have been reasonably anticipated by the *Consultant* exercising the standard of care in clause 4 as at the date the *Fee* was submitted to the *Client* (or, if the *Fee* was amended after it was submitted, the date of that amendment) prior to the 15th *Business Day* before agreement of the *Fee,*

Then the difference in cost will be valued as a *Variation* and an extension of time may be granted in accordance with clause 12.

14 CONSULTATION AND MEETINGS

The *Consultant* must consult regularly with the *Client* and attend meetings and briefings reasonably required by the *Client* in connection with the *Services.*

15 REVIEW AND ACCEPTANCE

15.1 The *Consultant* must allow the *Client* to review and discuss the *Documents* and *Deliverables* (whether complete or in progress) produced by the *Consultant* in performing the *Services.*

15.2 The *Consultant* remains responsible for the *Services* despite any review or acceptance of any of the *Services* by the *Client.*

16 ADVERSE EVENT

Each party must, as soon as practicable after becoming aware of any matter or circumstance (including any change in *Legislative Requirement* or *Approval)* which may adversely affect or has adversely affected the performance of the *Services,* notify the other party. The notice must include reasonable detail describing the matter or circumstances and its anticipated effect on the *Services.*

17 COOPERATION WITH OTHERS

The *Consultant* must use reasonable endeavors to liaise, cooperate and confer with contractors and other consultants of the *Client* in order to coordinate its *Services* with the services of those contractors and consultants to produce the *Deliverables.*

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18 KEY PERSONNEL

The *Consultant* must provide the key personnel (if any) stated in *Item* 16 to perform the *Services* stated in *Item* 16. If any key person is not available due to circumstances beyond the reasonable control of the *Consultant,* the *Consultant* must promptly notify the *Client* and arrange a replacement approved by the *Client* (such approval not to be unreasonably withheld or delayed).

19 CONFLICT OF INTEREST

1g_1 a conflict of interest in connection with this *Contract includes* a conflict between a duty owed by the *Consultant* to a person and a duty owed by the *Consultant* to the *Client.*

1g_2 The *Consultant* represents that to the extent reasonably ascertainable at commencement of this *Contract,* after making all reasonable enquiries, no conflict of interest exists or is likely to arise except as set out in *Item* 17.

19.3 The *Consultant* must monitor and, unless the *Client* gives prior written consent to the conflict of interest, avoid the occurrence of any conflict of interest.

19.4 The *Consultant* must notify the *Client* immediately on becoming aware of a conflict of interest or a significant risk of a conflict.

19.5 Where a conflict of interest arises or is likely to arise, the *Client* may proceed under clause 27.

20 SUBCONTRACTING AND ASSIGNMENT

20.1 Subject to clause 20.2 neither party may, without the prior written approval of the other (which must not be unreasonably withheld or delayed), transfer any of its rights or obligations under this *Contract.*

20.2 The *Client* may assign its rights under this *Contract* without notice to the *Consultant.*

20.3 The *Consultant* must not subcontract any part of the *Services* without the prior written approval of the *Client* (which must not be unreasonably withheld or delayed). In granting the approval the *Client* may impose reasonable conditions.

20.4 Subcontracting does not relieve the *Consultant* of any obligation under this *Contract.*

21 COPYRIGHT AND OTHER INTELLECTUAL PROPERTY RIGHTS

21.1 The *Client* licenses to the *Consultant* such *Intellectual Property Rights* in *Client Information* as are necessary to enable the *Consultant* to perform the Services in accordance with this *Contract.*

21.2 The *Consultant* retains the *Intellectual Property Rights* created outside the terms of this *Contract* and used in performing the *Services.* Subject to clause 21.4, the *Consultant* grants to the *Client* a royalty-free non-exclusive irrevocable license to use such *Intellectual Property Rights* for any purpose for which the *Services* are provided.

21.3 The Alternative stated in *Item* 18 applies.

Alternative 1

Subject to clause 21.4, on creation the *Consultant* grants to the *Client* an irrevocable, royalty-free license to use, adapt, reproduce, amend, publish and sublicense on the same terms, the *Deliverables* created by the *Consultant* for any purpose for which the Services are provided, including any subsequent repairs, maintenance or servicing.

Alternative 2

Subject to clause 21.4, on creation all *Intellectual Property Rights* in the *Deliverables* created by or for the *Consultant* vest in the *Client.*

The *Client* grants to the *Consultant* an irrevocable, royalty-free license to use, adapt, reproduce, amend, publish and sublicense those *Intellectual Property Rights.*

To the extent the *Intellectual Property Rights* in or relating to the *Deliverables* are not capable of being vested in the *Client* because the *Consultant* does not own the *Intellectual Property Rights,* the *Consultant* must obtain an irrevocable license for the *Client* to use those *Intellectual Property Rights,* except for those rights stated in *Item* 19.

21.4 The rights created by clause 21.3 are revocable by the *Consultant* if the *Client* does not pay the amount payable under this *Contract* including the amount stated in *Item* 20, within 40 *Business Days* after completion of the Services, termination of this Contract or determination of any dispute regarding the *Consultants* entitlement to payment.

21.5 The Consultant *must* not infringe any Intellectual *Property Rights in* performing the *Services.*

21.6 The *Client* must not infringe any *Intellectual Property Rights* in providing *Client Information.*

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22 MORAL RIGHTS*

22.1 This clause applies if *Item* 21 states that it applies.

22.2 The *Consultant* has or must obtain a consent from each of its officers and employees and use its best endeavors to obtain such consent from its agents, sub consultants and subcontractors (and their respective employees) in connection with the *Services* in substantially the same form as the consent set out in Annexure Part C, or such other form as is acceptable to the *Client.*

22.3 In relation to the *Services:*

(a) the *Consultant* must be attributed as the author of the physical product of the *Services* as stated in *Item* 21 when the *Client* considers it reasonable and practicable, or as otherwise agreed in writing;

(b) the *Client* need not advise the *Consultant* of any intended alteration to or demolition of any project, building or structure related to the *Services* unless otherwise agreed in writing;

(c) the *Consultant* has the right to give consent on behalf of its employees and its consultants (if any); and

(d) Where requested, the *Consultant* must provide the *Client* with copies of all relevant consents in the form of Annexure Part C, or another form as agreed, within a reasonable time.

23 CONFIDENTIALITY

23.1 The parties must treat as confidential:

(a) the information stated in *Item* 22; and

(b) all other information which of its nature is confidential or which the parties ought reasonably to know is confidential.

23.2 The obligation of confidentiality does not apply to the extent:

(a) that the information is in the public domain otherwise than as a result of a breach of this Contract,

(b) disclosure is required by law;

(c) disclosure is necessary to procure goods or services in connection with the *Services,* provided that the recipient of the information is also subject to an obligation of confidentiality; or

(d) Disclosure is agreed in writing by the parties.

• These provisions do not derogate from the rights and obligations set out in Part IX of the *Copyright Act 1968* (Cth).

23.3 The *Consultant* must not publish or enable others to publish any information in connection with the *Services* without the prior written consent of the *Client* (which must not be unreasonably withheld or delayed).

23.4 The *Consultant* must ensure that its officers, employees, agents, Sub consultants and subcontractors comply with the *Consultant's* obligations under this clause 23.

24 SUSPENSION BY THE CLIENT

24.1 The *Client* may suspend the performance of the *Services* at any time by notice in writing to the *Consultant.*

24.2 Unless the suspension has been directed due to the *Consultant's* wrongful conduct, the *Client* must pay the *Consultant* any costs and expenses reasonably incurred by the *Consultant* as a result of the suspension.

24.3 The *Consultant* must recommence the *Services* when reasonably directed to do so by the *Client.*

24.4 If the suspension lasts longer than the period stated in *Item* 23 the *Consultant* may terminate this *Contract.*

24.5 The *Client* is not liable to the *Consultant* for any indirect or consequential loss suffered or incurred as a result of the exercise by the *Client* of its rights under this clause 24.

25 SUSPENSION BY THE CONSULTANT

25.1 If a risk to the health or safety to any person arises where the *Services* are being performed (other than at any premises owned or controlled by the *Consultant),* the *Consultant* may suspend the performance of the *Services* to the extent necessary to protect affected persons.

25.2 The *Consultant* must give prompt notice to the *Client* of the suspension, the reason for the suspension and, if known by the *Consultant,* its likely duration.

25.3 The *Consultant* must recommence the *Services* as soon as possible and give prompt notice to the *Client.*

25.4 The *Consultant's* right to suspend the performance of the *Services* following the *Client's* failure to make a payment is set out in clause 10.8.

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26 TERMINATION WITHOUT CAUSE

26.1 This *Contract* may be terminated:

(a) at any time by mutual agreement; or

(b) by the *Client* for any reason after giving reasonable written notice to the *Consultant.*

26.2 If this *Contract* is terminated under clause 26.1, the *Client* must pay to the *Consultant*

(a) the applicable portion of the *Fee* for the *Services* performed prior to the date of termination;

(b) all disbursements incurred by the *Consultant* prior to the date of the termination which would have been payable had this *Contract* not been terminated; and

(c) any costs and expenses reasonably incurred by the *Consultant* by reason of termination.

The *Client* is not liable to the *Consultant* under this clause 26 for any amount greater than the amount that the *Client* would have paid to the *Consultant* had this *Contract* been completely performed.

26.3 The *Client* is not liable to the *Consultant* for any indirect or consequential loss arising out of the termination under clause 26.1.

26.4 Upon termination and payment of the amount due to the *Consultant* under clause 26.2, the *Consultant* must deliver to the *Client* all *Deliverables* and all *Documents* which, on completion, would be *Deliverables.* The *Consultant* is not liable in respect of the *Documents* which it has not completed due to the termination of this *Contract.*

27 TERMINATION DUE TO DEFAULT BY EITHER PARTY

27.1 If either party commits a substantial breach of this *Contract,* the other party may give to the party who committed the breach a written notice to show cause. A notice to show cause must:

(a) state it is a notice given under this clause 27;

(b) specify the alleged breach with reasonable details;

(c) require the party who committed the breach to show cause in writing why the party giving the notice should not exercise a right referred to in this clause 27; and

(d) Specify a date (which must not be less than 5 *Business Days* after the notice is served) by which the party who committed the breach must show cause.

27.2 Substantial breaches include but are not limited to:

(a) suspension of work other than as permitted in clauses 10.8, 24 and 25;

(b) failure to proceed with due diligence and without delay;

(c) failure to provide evidence of insurance in accordance with clause 30.5; and

(d) failure of the *Client to* pay the *Consultant* under clause 10.

27.3 If the recipient of a notice to show cause fails to show reasonable cause why the other party should not exercise a right under clause 27.3 within the time specified in the notice, the other party may, by further written notice:

(a) terminate this *Contract;* or

(b) if the breach is a failure of the *Client* to pay the *Consultant* under clause 10, the *Consultant* may suspend performance of the *Services* until payment is made.

27.4 If the *Consultant* suspends performance of this Contract under clause 27.3(b), the *Consultant* must promptly lift the suspension after the *Client* remedies the breach, unless the *Consultant* has terminated the *Contract.*

28 INDEMNITY

28.1 To the extent permitted by law, the *Consultant* indemnifies the *Client* from and against all liability, losses, damages, costs and expenses (including legal expenses), due to:

(a) loss of, damage to, or destruction of any property (including the *Deliverables);* or

(b) personal injury (including psychological injury) or death,

to the extent contributed to by any breach of this *Contract* by the *Consultant* or negligent or unlawful act or omission of the *Consultant,* its officers, employees, agents, subconsultants or subcontractors in connection with this *Contract.*

28.2 Clause 28.1 does not apply to the extent that:

(a) the liability, loss, damage, cost or expense is contributed to by any breach of this *Contract* by the *Client* or negligent or unlawful act or omission of the *Client* or its officers, employees, agents, other consultants or contractors, and/or

28.3

(b) the *Client* fails to act reasonably to mitigate the liability, loss, damage, cost or expense.

Clauses 28.1 and 28.2 do not exclude any other right of the *Client* at law.

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29 LIMITATION OF LIABILITY

29.1 The liability of the *Consultant* to the *Client* arising under or in connection with this *Contract* including:

(a) in tort (including for negligence);

(b) under statute; or

(c) otherwise,

to the extent permitted by law, is limited in the aggregate to the amount specified in *Item* 24 if any.

29.2 Clause 29.1 does not apply to liability arising from:

(a) personal injury (including psychological injury) or death;

(b) infringement of *Intellectual Property Rights;*

(c) fraudulent, malicious or criminal conduct;

(d) willful default;

(e) conduct with reckless disregard for the consequences;

of or by the *Consultant* or its officers, employees, agents, subconsultants and subcontractors.

30 INSURANCE

30.1 Except if the *Client* has agreed to effect relevant insurance under clause 30.7, the *Consultant* must effect and maintain the following insurances:

(a) public liability insurance;

(b) workers' compensation insurance; and

(c) Professional indemnity insurance.

30.2 The public liability insurance must be for an amount not less than that set out in *Item* 25 and must be maintained for the entire duration of this *Contract.*

30.3 The workers' compensation insurance must be effected and maintained in accordance with the applicable Australian, State or Territory legislation.

30.4 The professional indemnity insurance must be for an amount not less than that set out in *Item* 26 and must be maintained for not less than the period set out in *Item* 27. The policy must include provision for one automatic reinstatement of the sum insured.

30.5 Before the *Consultant* commences work and whenever requested in writing by the *Client,* the *Consultant* must provide to the *Client* a certificate of currency in respect of each insurance policy required under clause 30.1, showing:

(a) the insurance policy numbers;

(b) the expiry date of each policy; and

(c) the amount of insurance cover required to be held under this *Contract.*

30.6 Without limiting the *Consultant s* other obligations under this *Contract,* if the *Consultant* fails to promptly provide evidence when required under clause 30.5, the *Client* may give the *Consultant* a written notice requiring the *Consultant* to provide the evidence required within a specified period of not less than 5 *Business Days* from when the notice is served and specifying the *Client's* intent to exercise its rights under this clause 30.6 if the *Consultant* does not comply. If the *Consultant* does not comply, the *Client* may effect and maintain the insurance, pay the premiums and deduct these payments from moneys due or to become due to the *Consultant* from the *Client* or otherwise treat the failure as a breach of contract.

30.7 The *Client* must effect and maintain the insurances (if any) specified in *Item* 28. Each policy must name the *Consultant* as an insured. The *Client* must maintain the insurances for not less than the period set out in *item* 28. The *Client* must provide a copy of the policies and certificates of currency to the *Consultant* before the *Consultant* is required to commence the *Services.*

31 INSOLVENCY

31.1 Either party may terminate this *Contract* without notice if the other party is subject to an *Insolvency Event.* This right is in addition to any other rights under this *Contract.*

31.2 *Insolvency Event* means:

(a) a party informs the other in writing, or creditors generally, that the party is insolvent or is financially unable to proceed with the *Contract,*

(b) execution is levied against a party by a creditor;

(c) a party is an individual person or a partnership including an individual person, and if that person:

(i) commits an act of bankruptcy;

(ii) has a bankruptcy petition presented against him or her or presents his or her own petition;

(iii) is made bankrupt;

(iv) makes a proposal for a scheme of arrangement or a composition; or

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(v) has a deed of assignment or deed of arrangement made, accepts a composition, is required to present a debtor's petition, or has a sequestration order made, under Part X of the *Bankruptcy* Act *1966* (Cth) or like provision under the law governing the *Contract,*

or

(d) in relation to a party being a corporation:

(i) notice is given of a meeting of creditors with a view to the corporation entering a deed of company arrangement;

(ii) it enters a deed of company arrangement with creditors;

(iii) a controller or administrator is appointed;

(iv) an application is made to a court for its winding up and not stayed within 14 days;

(v) a winding up order is made in respect of it;

(vi) it resolves by special resolution that it be wound up voluntarily (other than a voluntary winding up by members for the purpose of reconstruction or amalgamation); or

(vii) a mortgagee of any of its property takes possession of that property.

32 DISPUTE RESOLUTION

32.1 If a dispute between the parties arises in connection with this *Contract,* then either party may give the other party a written notice of the dispute in accordance with clause 33, adequately identifying and providing details of the dispute.

32.2 Notwithstanding the existence of a dispute in relation to any matter other than the exercise of a right to terminate this *Contract,* the parties must continue to perform the *Contract* unless permitted to suspend performance under clauses 10.8, 24, 25 or 27.

32.3 Within 10 *Business Days* after service of a notice of dispute, the parties must confer at least once to resolve the dispute or to agree on methods of doing so. Each party must be represented by a person having authority to agree to such resolution or methods of resolution. All conferences under this clause 32.3 must be conducted in good faith and without prejudice.

32.4 If the dispute has not been resolved within 20 *Business Days* of service of the notice of dispute, either party may commence legal proceedings or, if agreed in writing by the parties, commence alternative dispute resolution proceedings.

33 SERVICE OF NOTICES

33.1 Subject to clause 33.2, notices under this *Contract* must be served:

(a) by hand, mail, fax or email, at the address, fax number or email address, set out in *Item* 29, or, if notice of a change in address, fax number or email address is given, at the last such notified address, fax number or email address;

(b) by such other means as the parties agree in writing.

33.2 Any *Document* given under clauses 24, 25, 26, 27, 31 or 32 must be served by hand or registered mail.

33.3 A *Document* is served:

(a) by mail, 3 *Business Days* after posting;

(b) by fax, when the sender receives an error-free transmission report from the correct fax number;

(c) by email or other electronic means, when it becomes capable of being retrieved by the addressee at the relevant email or other electronic address.

33.4 Any notice served after 5 pm on any *Business Day* or on a weekend or a public holiday is deemed to be served on the next Business *Day.*

34 SURVIVAL OF TERMINATION

Clauses 10, 21, 22, 23, 26, 28, 29, 30, 32, 33 and 35 will survive the completion or earlier termination of this Contract.

35 GOVERNING LAW

The law governing this *Contract* and its interpretation is the law of the State or Territory stated in *Item* 30 or, if the State or Territory is not stated, the law of the State or Territory where the Services are to be substantially performed and each party irrevocably submits to the exclusive jurisdiction of courts exercising jurisdiction in that State or Territory.

36 STANDARD FORM NATURE OF CONTRACT

Apart from completed Annexures Part A and Part C, this Contract *is* AS 4122-2010 in its original form, unless *Item* 31 specifies otherwise, in which case Annexure Part B states the amendments.

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EXECUTION (IF REQUIRED)

NOTE: If a formal execution of this *Contract* is required, the following form or another form may be used.

This *Contract* is dated: _____

If a party is a company, use the following execution clause.

Executed in accordance with section 127 of the *Corporations Act 2001* (Cth) by the persons named below for the entity named opposite:

_____
Insert name of *Client* Company

Signed by a Director:	Signed by a Director/Secretary:
_____	_____
Print name of Director:	Print name of Director/Secretary:
_____	_____

Executed in accordance with section 127 of the *Corporations Act 2001* (Cth) by the persons named below for the entity named opposite:

_____
Insert name of *Consultant* Company

Signed by a Director: President	Signed by a Director/Secretary:
_____	_____
Print name of Director: President	Print name of Director/Secretary:
_____	_____

If a party is not a company, then any person with authority to bind the party can execute the *Contract* by signing it in the place allocated below. If you do so as agent for another person please write after your name "as agent for ...." and insert that person's name.

Signed:	Print name:
Signed:	Print name:

Part A

Annexure to the Australian Standard
General Conditions of Contract for Consultants
AS 4122-2010

The parties are encouraged to review AS 4121-1994, *Code of ethics and procedures for the selection of consultants,* prior to completing Annexure Part A.

Item		
Item 1 (clause 1.1)	The *Client* is: .	
Item 2 (clause 1.1)	The *Consultant* is**:**	
Item 3 (clause 1.1)	The *Contract Documents* are: .	3.1.1 See Annexure PART C
Item 4 (clause 1.1)	The *Scope* is described in the following *Documents,* or the *Scope* is:	4.1.1 See Annexure PART C

Item 5 (clause 5.1)	The purpose(s) for which the Services will be suitable is/are:	
Item 6 (clause 6.1)	The *Client's* representative is:	
Item 7 (clause 6.2)	The *Consultants* representative:	
Item 8 (clause 10.1)	Claims for payment must be made on the following basis:	As per Deliverable Option 2 Lumpsum and Schedule of rates as per proposal
	Specify whether the basis is inclusive or **exclusive of *GST*.**	*GST* inclusive Yes No
Item 9 (clause 10.2)	Disbursements for which the *Consultant* may claim payment:	

Item 10 (clause 10.3)	Time to claim payment is no later than:	
Item 11 (clause 10.6)	The time for payment is no later Than:	calendar days after service of a payment claim.
Item 12 (clause 10.9)	The rate of interest for overdue payment is:	N/A
Item 13 (clause 12.1)	Alternative 1: The date or the period after commencement of this *Contract,* by which the *Services* must be completed is: Alternative 2: Under the program attached.	Alternative 1: Alternative 2:
Item 14 (clause 12.3 (c))	other causes of delay for which the *Consultant* may notify an extension of time:	
Item 15 (clause 13.2)	The *Approvals* to be obtained by the *Consultant* are:	
Item 16 (clause 18)	The key personnel are: **Refer Part C**	
Item 17 (clause 19.2)	Existing conflicts of interest: None	

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Item 18 (clause 21.3)	Copyright and other *Intellectual Property Rights,* the Alternative that applies is: **Guidance Note:** **Identify whether Alternative 1 or Alternative 2 applies.**
Item 19 (clause 21.3 Alternative 2)	List excluded *Intellectual Property Rights:* **Guidance Note:** **For example, maps referenced from**
Item 20 (clause 21.4, Alternative 2)	The additional amount payable to the *Consultant* for granting of *Intellectual Property Rights* to the *Client* is: **Guidance Note:** If Alternative 2 applies, state the **additional amount payable to the *Consultant* to vest the *Intellectual* *Property Rights*** in the *Client.*
Item 21 (clause 22.1)	Does clause 22 (Mora*l Rights)* apply? If yes, the author is:
Item 22 (clause 23.1)	The following *Documents* are confidential:
Item 23 (clause 24.4)	Maximum period for which *Client* may suspend the *Services* at any one time, after which the *Consultant* may terminate:
Item 24 (clause 29.1)	The *Consultant's* liability is limited to Yes ~~No~~

Item 25
(clause 30.2)

Item 26
(clause 30.4)

Item 27
(clause 30.4)

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The amount of public liability insurance is: N/A

The amount of the professional indemnity insurance is: Not more than

The professional indemnity insurance must be maintained for the following period:

Item 28 (clause 30.7)	The *Client* must effect the following insurances and maintain them for the following periods: refer to Item 26 & 27	Insurance:	Period:
Item 29 (clause 33.1)	The address for the service of notices is: FSM Petroleum Corporation		
	:		
	.		
Item 30 (clause 35)	The law governing this *Contract* is:		
Item 31	Has this *Contract* been amended from its original form?	No	

Part B

Annexure to the Australian Standard
General Conditions of Contract for Consultants
AS 4122-2010

DELETIONS, AMENDMENTS AND ADDITIONS

1. The following clauses or parts of clauses have been deleted from the General Conditions in AS 4122-2010:

2. The following clauses have been amended and differ from the corresponding clauses in AS 4122-2010:

3. The following clauses have been added to those of AS 4122-2010:

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Part C

Annexure to the Australian
Standard General Conditions of Contract for
Consultants
AS 4122-2010

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SAi Gobal United
Phone: 13 1242
Fax: 1SOO 85 49 49
Email: salesOsaiglobal.com

Chuuk Terminal Pipeline Replacement Project

Project Sponsor:	Savenaca Tamani
Project Manager:	Abdul Saheem
Terminal Manager:	Wilton Masaichy
Site Supervisor:	Eneriko Volau
Design Consultant:	Pryzm Consultants, Hawaii
Fabrication Design:	Plant & Platform
Contractor:	Martin Engineering Pty Ltd, NZ
NDT:	SGS New Zealand

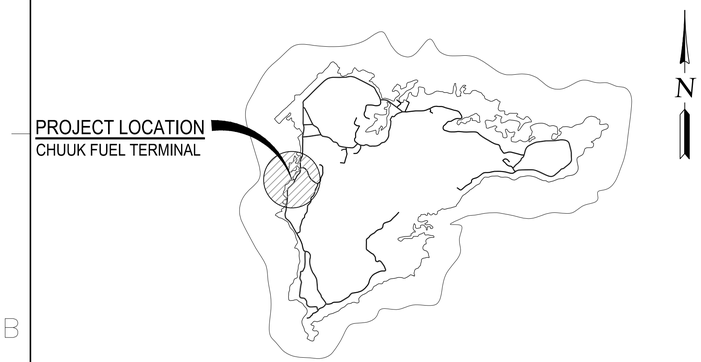
CONCEPTUAL DESIGN DRAWING

CONSTRUCTION PLANS

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT PROJECT

FEDERATED STATES OF MICRONESIA
WENO, CHUUK STATE

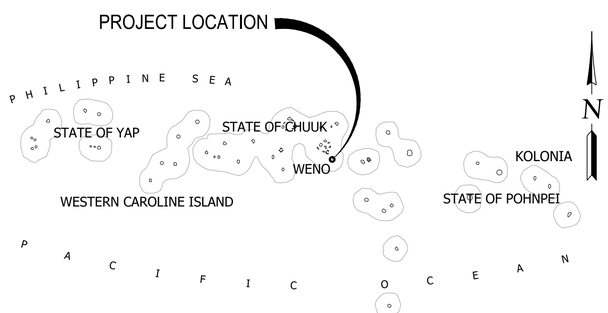
VICINITY MAP



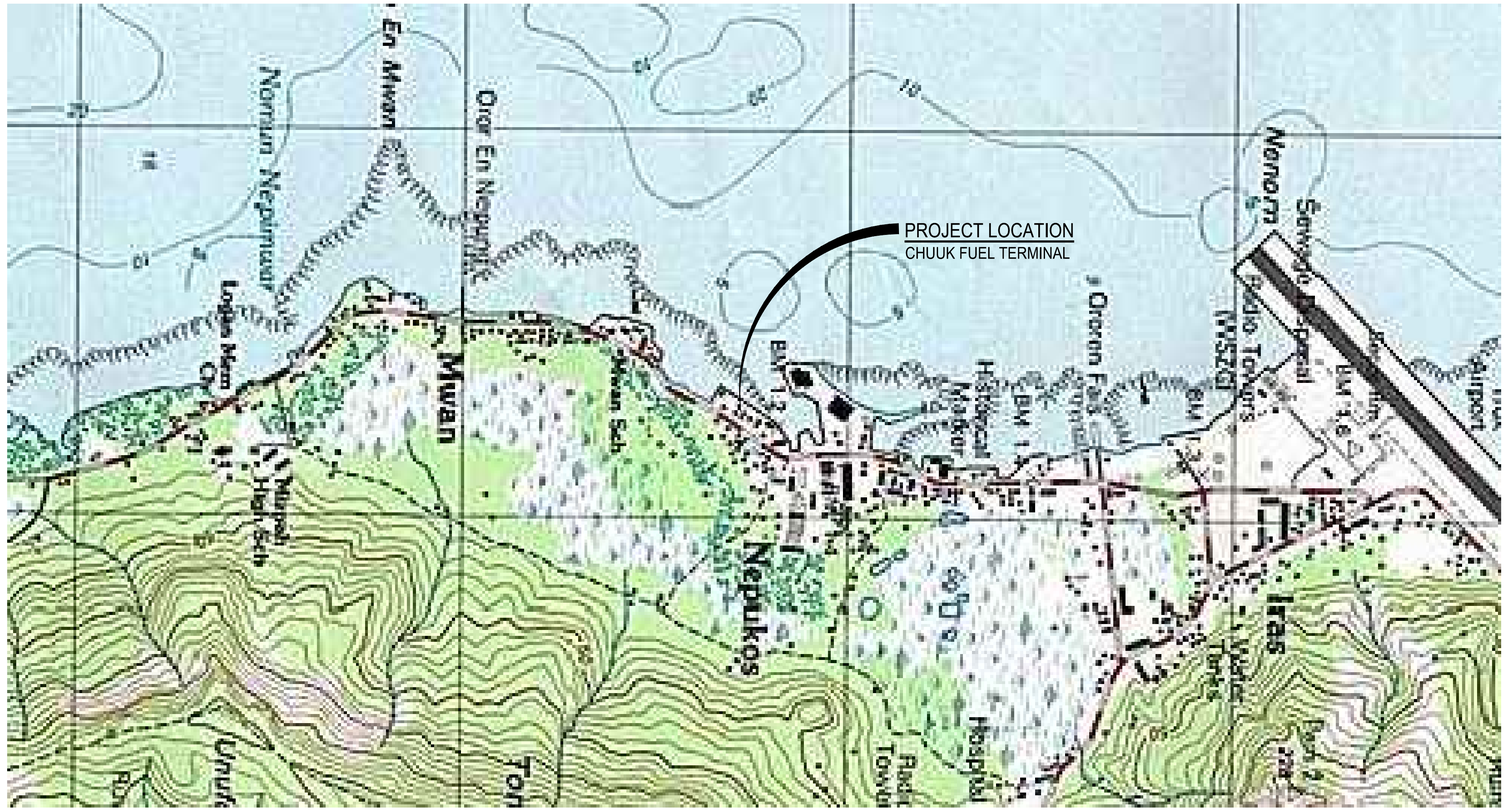
ISLAND OF CHUUK
FEDERATED STATES OF MICRONESIA

SCALE: NTS

FSM ISLAND MAP



LOCATION MAP



REVISION	BY	DESCRIPTION	DATE	APPROVED

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

TITLE SHEET

DATE:	08/13/2019
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

G-1

SHEET 1 OF 38

SHEET NO.	DISCIPLINE DWG. NO.	SHEET TITLE	REVISION NO.	DESCRIPTION	DATE
GENERAL					
1	G-1	TITLE SHEET			
2	G-2	INDEX OF DRAWINGS			
CIVIL					
3	C-1	SITE PLAN - CIVIL			
MECHANICAL					
4	M0-0	MECHANICAL COVER SHEET			
5	M0-1	MECHANICAL EQUIPMENT SCHEDULES			
6	M0-2	VERTICAL COALESCER SEPARATOR DETAIL			
7	M0-3	TERMINAL PIPELINE-SCHEMATIC DIAGRAM			
8	MO-3a	P & ID DIAGRAM - GASOLINE			
9	MO-3b	P & ID DIAGRAM - DIESEL (ADO)			
10	MO-3c	P & ID DIAGRAM - JET - A1			
11	MO-3d	SEQUENCE OF OPERATIONS - TRUCK FILLING			
12	M0-4	MECHANICAL DETAILS			
13	M0-5	MECHANICAL DETAILS			
14	M1-0	SITE PLAN - PIPING DEMOLITION			
15	M1-1	PARTIAL SITE PLAN NORTH - DEMOLITION			
16	M1-2	PARTIAL SITE PLAN SOUTH - DEMOLITION			
17	M2-0	SITE PLAN - MECHANICAL PIPING			
18	M2-1	PARTIAL SITE PLAN NORTH - MECHANICAL PIPING			
19	M2-2	PARTIAL SITE PLAN SOUTH - MECHANICAL PIPING			
20	M2-3	ENLARGED PLAN - TANK 2 - MECHANICAL PIPING			
21	M2-4	ENLARGED PLAN - PUMPS - MECHANICAL PIPING			
ELECTRICAL					
22	E0-1	ELECTRICAL COVER SHEET			
23	E1-0	OVERALL SITE PLAN - ELECTRICAL			
24	E1-1	PARTIAL SITE PLAN NORTH - ELECTRICAL			
25	E1-2	PARTIAL SITE PLAN SOUTH - ELECTRICAL			
26	E5-0	ONE - LINE DIAGRAMS - ELECTRICAL			
STRUCTURAL					
27	S-001	STRUCTURAL COVER SHEET			
28	S-101	STRUCTURAL PLANS			
29	S-201	STRUCTURAL ELEVATIONS			
30	S-301	STRUCTURAL SECTIONS			
31	S-401	STRUCTURAL DETAILS			
32	S-402	PIPE SUPPORT DETAILS			
33	S-403	ROOF STRUCTURE DETAILS			
ISOMETRIC					
34	ISO-1	ISOMETRIC - PROPOSED MECHANICAL PIPING			

REVISION	BY	DESCRIPTION	DATE	APPROVED

PRYZM CONSULTING

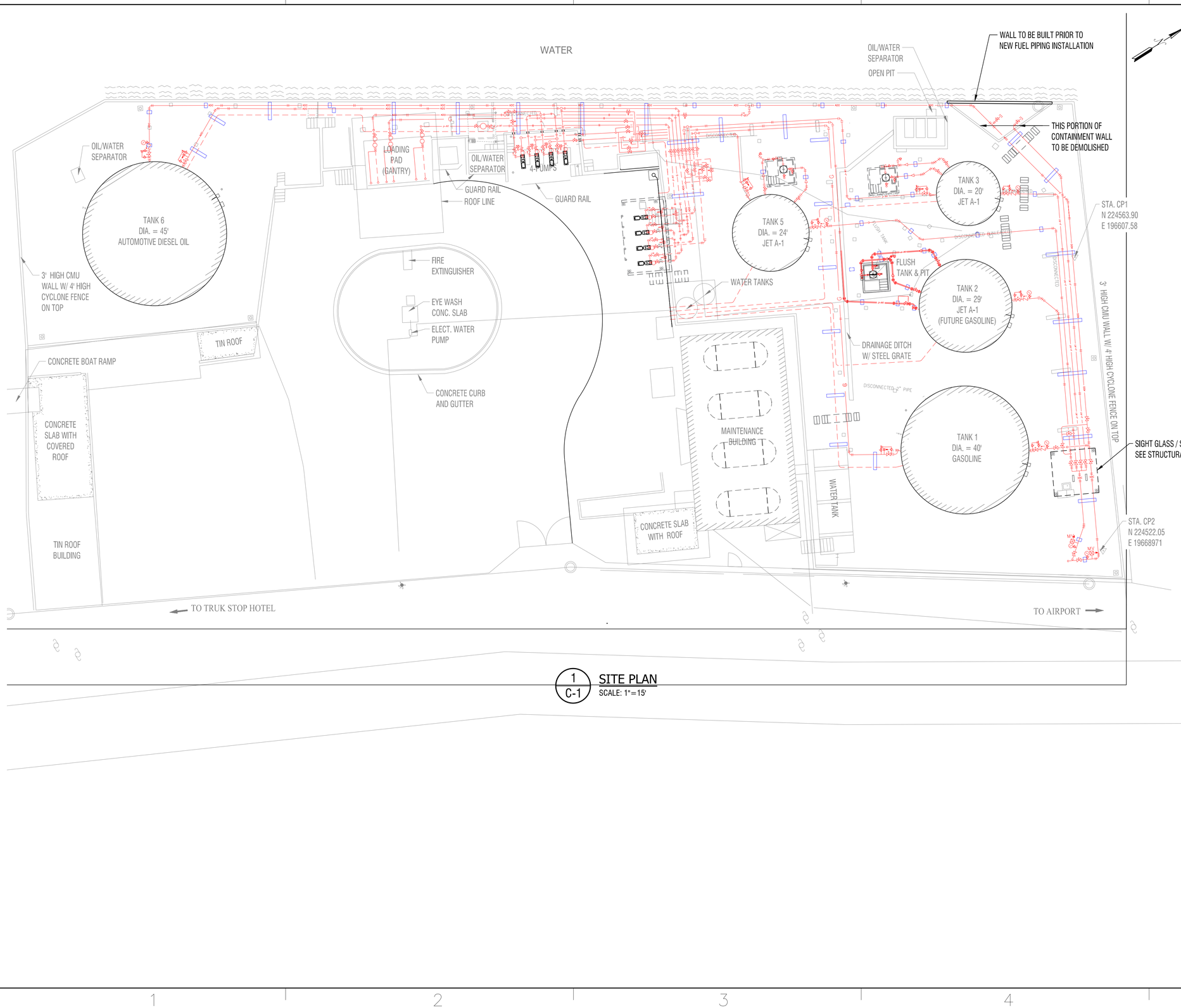
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

INDEX OF DRAWINGS

DATE:	XX-XX-XXXX
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

G-2

SHEET 2 OF 38



1 C-1 **SITE PLAN**
SCALE: 1"=15'

LEGEND:

- EXISTING
- PROPOSED
- FUTURE (N.I.C.)
- FUTURE FOAM FIRE PROTECTION PIPING (NOT IN CONTRACT)

GRAPHICAL SCALE:

15' 0 15' 30' 45'
SCALE: 1"=15'

REVISION	BY	DATE	APPROVED

DESCRIPTION

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

SITE PLAN

DATE:	
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

C-1

SHEET 3 OF 38

PIPING SPECIFICATIONS

1. GENERAL: ALL EXISTING FUEL PIPING, VALVES, ACCESSORIES, AND SUPPORTS SHALL BE REMOVED AND REPLACED WITH NEW PIPING, VALVES, ACCESSORIES, AND PIPE SUPPORTS. SEE DEMOLITION AND PHASING DRAWINGS FOR MORE INFORMATION.
   a. WORK WILL NEED TO BE PHASED AROUND OWNERS' FUEL OPERATIONS. ALL RECEIVING PIPING (FROM SHIP–TO–SHORE) WITHIN THE TERMINAL MAY BE REMOVED PRIOR TO INSTALLATION OF NEW PIPING. ALL EXISTING FUEL SUPPLY PIPING FROM EXISTING STORAGE TANKS TO PUMPS, AND TO THE GANTRY, MUST REMAIN IN OPERATION AT ALL TIMES WHILE NEW PIPING IS BEING INSTALLED.
   b. SUBMITTALS: COMPLETE DIMENSIONED (TO JIG STANDARDS) PIPING SHOP DRAWINGS OF ALL NEW WORK SHALL BE SUBMITTED FOR OWNERS' AND ENGINEERS' REVIEW PRIOR TO START OF CONSTRUCTION. INCLUDE DETAILS AND DIMENSIONS FOR ALL PIPE SUPPORTS, AND COMPLETELY LABEL PIPING ISOMETRICS FOR ALL NEW WORK.
      SUBMIT ALL NEW PIPING, VALVES, PUMPS, RECEIVERS, AND ACCESSORIES FOR OWNERS' AND ENGINEERS' REVIEW WITHIN 30 DAYS AFTER AWARD OF CONTRACT. ALL SUBMITTALS AND SHOP DRAWINGS SHALL BE IN ENGLISH LANGUAGE AND IN US UNITS (INCH–POUNDS).
2. MATERIAL SPECIFICATIONS: CHANGES IN MATERIAL GRADE, OR MANUFACTURER/MODEL NUMBER, SHALL BE SUBMITTED TO THE OWNERS AND ENGINEERS FOR REVIEW PRIOR TO ORDERING ANY MATERIAL.
   a. JET A–1 PIPING SPECIFICATIONS: SCHEDULE 40, API 5L 316L STAINLESS STEEL PIPE AND FITTINGS. ANSI 150# WELD NECK 316L STAINLESS STEEL FLANGES WITH RAISED FACE THROUGHOUT.
   b. GASOLINE AND ADO PIPING SPECIFICATIONS: SCHEDULE 40, API 5L HOT DIPPED GALVANIZED STEEL PIPE AND FITTINGS. ANSI 150# WELD NECK HOT DIPPED GALVANIZED STEEL FLANGES WITH RAISED FACE THROUGHOUT.
   c. GATE VALVES: MATCH MATERIAL OF PIPING (316L STAINLESS STEEL FOR STAINLESS STEEL PIPE, AND HOT DIPPED GALVANIZED OR PAINTED DUCTILE IRON FOR ADO AND GASOLINE). CLASS 150, 250 PSI NON–SHOCK COLD WORKING PRESSURE. API 600, VALVE INSPECTION AND TESTING API 598, OUTSIDE SCREW AND YOKE, BOLTED BONNET, SOLID WEDGE, STAINLESS STEEL TRIM, 150 PSI RAISED FLANGED ENDS.
   d. CHECK VALVES: 316L STAINLESS STEEL, GLOBE CENTER GUIDED SILENT DURABLE METAL TO METAL SEATS, THERMAL EXPANSION RELIEF AT 25 PSI, 200 PSI COLD NON–SHOCK PRESSURE LIMIT, 150# RAISED FACE. INTERNAL COMPONENTS 316L STAINLESS STEEL, TEFLON GASKET, AND VITON EXPANSION VALVE RAISED FLANGE CONNECTIONS.
   e. BALL VALVES: MANUAL GEAR OPERATED, CLASS 300 STAINLESS STEEL RAISED FLANGE BALL VALVES, ANTI–STATIC, UNIBODY DESIGN, BLOW–OUT PROOF STEM, 316L STAINLESS STEEL TRIM, 720 PSI NON–SHOCKING, COLD WORKING PRESSURE. CONFORMS TO ASME/ANSI B163, B16.5, API 607 4TH EDITION, API 608, AND API 598.
   f. BASKET STRAINERS: 316L STAINLESS STEEL, 0.125" DIAMETER, 316L STAINLESS STEEL SCREEN 150# RAISED FLANGES, BOLTED TOP ACCESS.
   g. DOUBLE BLOCK AND BLEED VALVES: CLASS 150 ANTI–STATIC DEVICE BUILT–IN, ASME B16.34 AND API 60, API 607 AND API SPEC 6FA FIRE SAFE TESTED, MSS–SP 25 NAMEPLATE WITH VALVE RATING, SIZE, BODY AND TRIM MATERIAL, AND CUSTOMER TAG. 150# RAISED FLANGES.
3. INSTALLATION: ALL PIPING WILL BE PRE–FABRICATED IN 20 AND 40 FOOT SECTIONS WITH FLANGED ENDS AND SHIPPED TO THE PROJECT SITE IN CONTAINERS FOR FIELD ASSEMBLY.
   a. OFF–SITE MANUFACTURING AND WELDING OF PIPE SHALL TAKE PLACE IN CHINA. PRIOR TO ACCEPTANCE OF THE WORK THE CHINESE CONTRACTOR SHALL SUBMIT COMPLETE WELDING CERTIFICATIONS OF ALL WELDERS TO PERFORM THE WORK FOR OWNERS' AND ENGINEERS' APPROVAL. CERTIFICATION SHALL BE IN ACCORDANCE WITH ASME SECTION IX WELDING AND BRAZING QUALIFICATIONS.
   b. ALL WELDING SHALL CONFORM TO STEEL MANUFACTURER'S WRITTEN INSTRUCTIONS. PARTICULAR ATTENTION SHALL BE REQUIRED TO BE SURE FILLER MATERIAL IS APPLIED AT AN APPROPRIATE TEMPERATURE AND COMPATIBLE WITH PIPE MATERIAL.
   c. SUBMIT COMPLETE DESCRIPTION OF WELDING METHODS, MATERIALS, AND WELDER QUALIFICATIONS FOR OWNERS' AND ENGINEERS' REVIEW PRIOR TO BEGINNING ANY ASSEMBLY WORK.
   d. OWNERS AND ENGINEERS WILL VISIT THE PIPE ASSEMBLY SHOP IN CHINA TO REVIEW QUALIFICATIONS OF WELDERS AND OBSERVE ASSEMBLY WORK.
   e. ALL PIPING SHALL BE HYDROSTATICALLY TESTED AT THE FACTORY TO 200 PSIG. CERTIFIED TESTS MATCHED TO EACH PIPE SECTION SHALL BE SUBMITTED TO OWNER FOR HIS REVIEW.
   f. PROVIDE STATIC GROUNDING CABLE LOOPS AT ALL FLANGED CONNECTIONS. SUBMIT MATERIAL PROPOSED FOR REVIEW BY ENGINEER.

PIPING – LEGEND

- DIRECTION OF FLOW
- SUPPLY OR RETURN ELBOW SECTION UP
- SUPPLY OR RETURN ELBOW SECTION DOWN
- SUPPLY OR RETURN TEE SECTION UP
- SUPPLY OR RETURN TEE SECTION DN
- EXISTING PIPING
- NEW PIPING
- FLANGED BALL VALVE
- FLANGED GATE VALVE (GV)
- FLANGED CHECK VALVE (CV)
- RELIEF VALVE
- FLANGED FLOW METER
- FLOOR DRAIN
- FLANGED SIGHT GLASS
- FLANGED BASKET STRAINER
- UNION
- PLUG AND/OR CAP
- PRESSURE GAUGE
- FLUSH CLEANOUT
- MV — MANUAL AIR VENT
- AAV — LINE SIZE AIR ELIMINATOR
- J–A1 — JET A–1 FUEL PIPING
- ADO — AUTOMOTIVE DIESEL OIL PIPING
- G — GASOLINE PIPING
- HIGH LEVEL ALARM
- ALARM CONTROL BOX
- FUTURE FOAM FIRE PROTECTION PIPING (NIC)
- ADJUSTABLE PIPE STAND
- DOUBLE BLOCK & BLEED VALVE (DBB)
- DRAIN VALVE

PIPING – ABBREVIATIONS

ADO	AUTOMOTIVE DIESEL OIL	M	METER
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MAX	MAXIMUM
		MIN	MINIMUM
API	AMERICAN PETROLEUM INSTITUTE	N/A	NOT APPLICABLE
		NIC	NOT IN CONTRACT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	OC	ON CENTER
		P&ID	PLUMBING AND INSTRUMENTATION DIAGRAM
DEG F OR °F	DEGREES FAHRENHEIT		
DIA OR ø	DIAMETER		
EL.	ELEVATION	PH	PHASE
FF	FUEL FILTER	PSI	POUNDS PER SQUARE INCH
FLA	FULL LOAD AMPS		
FT OR '	FOOT OR FEET	PSIG	PSI GAUGE
FTP	FUEL TRANSFER PUMP	RPM	REVOLUTIONS PER MINUTE
GAL	GALLONS		
GALV	GALVANIZED	SC	SEPARATOR COALESCER
GPM	GALLONS PER MINUTE	SCH	SCHEDULE
GV	GATE VALVE	SS	STAINLESS STEEL
IN OR "	INCHES	TDH	TOTAL DYNAMIC HEAD
JIG	JOINT INSPECTION GROUP	TYP	TYPICAL
HLA	HIGH LEVEL ALARM		
HP	HORSEPOWER		
LBS OR #	POUNDS		

GENERAL MECHANICAL NOTES

1. FIELD MEASURE ALL CRITICAL PIPING DIMENSIONS PRIOR TO OFFSITE FABRICATION. SUBMIT COMPLETE DIMENSIONED PIPING SHOP DRAWINGS FOR ENGINEER'S REVIEW PRIOR TO FABRICATION.
2. NEW PIPING INSTALLATION AND EXISTING PIPING REMOVAL SHALL CONFORM TO THE SEQUENCES AND PHASING AS INDICATED ON SHEETS M1–0, M1–1, AND M1–2.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS LISTED BELOW.
4. ALL PIPE SUPPORTS SHALL BE G–90 HOT DIPPED GALVANIZED STEEL.
5. ALL TANKS ARE EXISTING TO BE RE–USED AS PART OF THIS WORK.

PIPING MASTER FILE:
AS BUILT DRAWINGS
API 653 REPORTS
INSPECTION AND TEST PLANS
PROJECT COMPLETION REPORT
STANDARDS:
AS 1940 – THE STORAGE AND HANDLING OF FLAMMABLE & COMBUSTIBLE PRODUCTS
API 570 – PIPING INSPECTOR CERTIFICATION
API 574 – INSPECTION PRACTICES FOR PIPING SYSTEM COMPONENTS
API 577 – WELDING INSPECTION AND METALLURGY
API 608 – METAL BALL VALVES – FLANGED, THREADED, AND WELDED ENDS
API 653 – TANK INSPECTION, REPAIR, ALTERATION & RECONSTRUCTION
API 2350 – OVERFILL PROTECTION FOR STORAGE TANKS IN PETROLEUM FACILITIES
ASME IX – BOILER & PRESSURE VESSEL CODE – WELDING QUALIFICATION (ALL WELDERS SHALL BE QUALIFIED ACCORDING TO THIS STANDARD)
API RP 576 – INSPECTION OF PRESSURE RELIEVING DEVICES
ASME B16.5 – PIPE FLANGES AND FLANGED FITTINGS
ASME B31.3 – PROCESS PIPING
REPORTS:
MATERIAL CERTIFICATIONS
WELDING & INSPECTION TEST PLAN
JIG COMPLIANCE DRAWINGS
RAIN DAYS DATA
MAN–HOURS / EQUIPMENT HOURS
PROJECT INVENTORY LIST

DRAWING INDEX

SHEET #	SHEET TITLE
M0–0	MECHANICAL COVER SHEET
M0–1	MECHANICAL EQUIPMENT SCHEDULES
M0–2	VERTICAL COALESCER SEPARATOR DETAIL
M0–3	TERMINAL PIPELINE – SCHEMATIC DIAGRAM
M0–3a	P&ID DIAGRAM – GASOLINE
M–03b	P&ID DIAGRAM – DIESEL (ADO)
M–03c	P&ID DIAGRAM – JET–A1
M–03d	SEQUENCE OF OPERATIONS – TRUCK FILLING
M0–4	MECHANICAL DETAILS
M0–5	MECHANICAL DETAILS
M1–0	SITE PLAN – PIPING DEMOLITION
M1–1	PARTIAL SITE PLAN – NORTH – DEMOLITION
M1–2	PARTIAL SITE PLAN – SOUTH – DEMOLITION
M2–0	SITE PLAN MECHANICAL PIPING
M2–1	PARTIAL SITE PLAN – NORTH – MECH PIPING
M2–2	PARTIAL SITE PLAN – SOUTH – MECH PIPING
M2–3	ENLARGED PLAN – TANK 2 – MECH PIPING
M2–4	ENLARGED PLAN – PUMPS – MECH PIPING

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

MECHANICAL COVER SHEET

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0–0

SHEET 1 OF 18

EXISTING FUEL PUMP SCHEDULE

TAG	MAKE AND MODEL	SERVICE	TYPE	FLOW	TDH	CONNECTIONS (IN)		60 HERTZ ELECTRICAL				UNIT SIZE	OPERATING	NOTES
				GPM	FT	SUCTION	DISCHARGE	VOLTS/PH	FLA	RPM	HP	L x W x H (IN)	WEIGHT (LBS)	
FTP-1	EXISTING/UNKNOWN	JET A	HORIZONTAL CENTRIFUGAL			4	3	220 / 3	-	3600	15			1
FTP-2	EXISTING/UNKNOWN	DIESEL	HORIZONTAL CENTRIFUGAL			4	3	220 / 3	-	3600	15			1
FTP-3	EXISTING/UNKNOWN	UNLEADED	HORIZONTAL CENTRIFUGAL			4	3	220 / 3	-	3600	15			1
FTP-4	EXISTING/UNKNOWN	DIESEL	HORIZONTAL CENTRIFUGAL			4	3	220 / 3	-	3600	15			1

NOTES:

1 EXISTING PUMPS TO REMAIN AS-IS.

EXISTING FUEL TANK SCHEDULE

TAG	DESCRIPTION	CURRENT USE	FUTURE USE	CAPACITY (GALLONS)	CONNECTIONS (IN)		SIZE (FEET)	NOTES
					INLET	OUTLET		
1	FIXED ROOF, VERTICAL TANK, INTERNAL FLOATING BLANKET	UNLEADED GASOLINE	UNLEADED	338,000	6	4	40 DIA	1
2	FIXED ROOF, VERTICAL TANK, INTERNAL FLOATING BLANKET	JET A1	SWING TANK	187,000	6	4	29 DIA	1 AND 2
3	FIXED ROOF, VERTICAL TANK, INTERNAL FLOATING BLANKET	EMPTY	JET A1	82,000	6	4	20 DIA	1 AND 2
4	HORIZONTAL	FIRE WATER	FIRE WATER	22,000	-	-	-	NOT IN SCOPE
5	FIXED ROOF, VERTICAL TANK, INTERNAL FLOATING BLANKET	EMPTY	SWING TANK	110,000	6	VERIFY	24 DIA	1 AND 2
6	FIXED ROOF, VERTICAL TANK, INTERNAL FLOATING BLANKET	DIESEL	DIESEL	426,000	6	VERIFY	45' DIA	1

NOTES:

1 PROJECT DOES NOT INCLUDE ANY SCOPE AT THE TANKS, OTHER THAN RECONNECTION OF SERVICE PIPING AT EXISTING FLANGES.

2 PROVIDE WITH QUICK FLUSH TANK (FUEL RECOVERY UNIT).

FUEL RECOVERY UNIT SCHEDULE (QUICK FLUSH TANK)

TAG	MANUFACTURER AND MODEL	LOCATION	SUMP SIZE (GALLONS)	PUMP SIZE	FUEL TYPE	MAX GPM	PRESSURE (PSIG)	NOTES
SC-1	EXISTING	TANK 2	300	2"	JET A-1	75	50	1, 2
SC-2	SCHULTZ SC9000	TANK 3	300	2"	JET A-1	75	50	1
SC-3	SCHULTZ SC9000	TANK 5	300	2"	JET A-1	75	50	1
SC-4	SCHULTZ SC9000	BRIDGER	300	2"	JET A-1	75	50	1

NOTES:

1 U/L LISTED, AIR OPERATED, DIAPHRAGM PUMP. INGERSOLL RAND MODEL 650719-C, ONE FOR EACH FUEL RECOVERY UNIT.

2 REMOVE EXISTING SC-1 AFTER TANK 3 IS CONVERTED TO GASOLINE.

NEW FUEL FILTER SEPARATOR SCHEDULE

TAG	MAKE AND MODEL	SERVICE	TYPE	MAX INLET DESIGN PRESSURE	API GPM	MAX DELTA P (PSIG)	CONNECTIONS (IN)		UNIT SIZE DIA X H (IN)	OPERATING WEIGHT (LBS)	NOTES
							INLET	OUTLET			
FF-1	FACET VCS-433-224 STYLE A	JET A1	VERTICAL	150 PSI	333.00	15	4	4	22 x 80.5	990	1 TO 4

NOTES:

1 SPACE FOR FUTURE CLA-VAL CONTROL VALVE.

2 CONFORMING TO ASME SECTION VIII, DIVISION 1, AND API-1581 5TH EDITION, STAMPED WITH CODE PLATE AND NAMEPLATE.

3 SEE DETAILS ON SHEET M0-2 FOR ADDITIONAL INFORMATION.

4 REUSE EXISTING FILTER, REPLACE ALL FILTER COALESCER AND FILTER SEPARATOR ELEMENTS WITH NEW API/EI 1581, 5TH EDITION COMPLIANT PARTS.

EXISTING FUEL PUMP SEQUENCE OF OPERATION:

1. OPEN TANK OUTLET VALVE.
2. MANUALLY OPEN GATE VALVES BEFORE AND AFTER THE PUMP.
3. SWITCH ON PRODUCT PUMP FROM OFFICE.
4. MONITOR METER AND VOLUME TO BE DISPENSED.
5. STOP PUMP AFTER FILLING OPERATIONS, WHEN PRE-SET METERS STOP FILLING.
6. CLOSE ALL MANUAL GATE VALVES THAT WERE PREVIOUSLY OPENED DURING FILLING OPERATIONS.
7. ONLY ONE TRUCK/PRODUCT CAN BE FILLED AT A TIME.

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

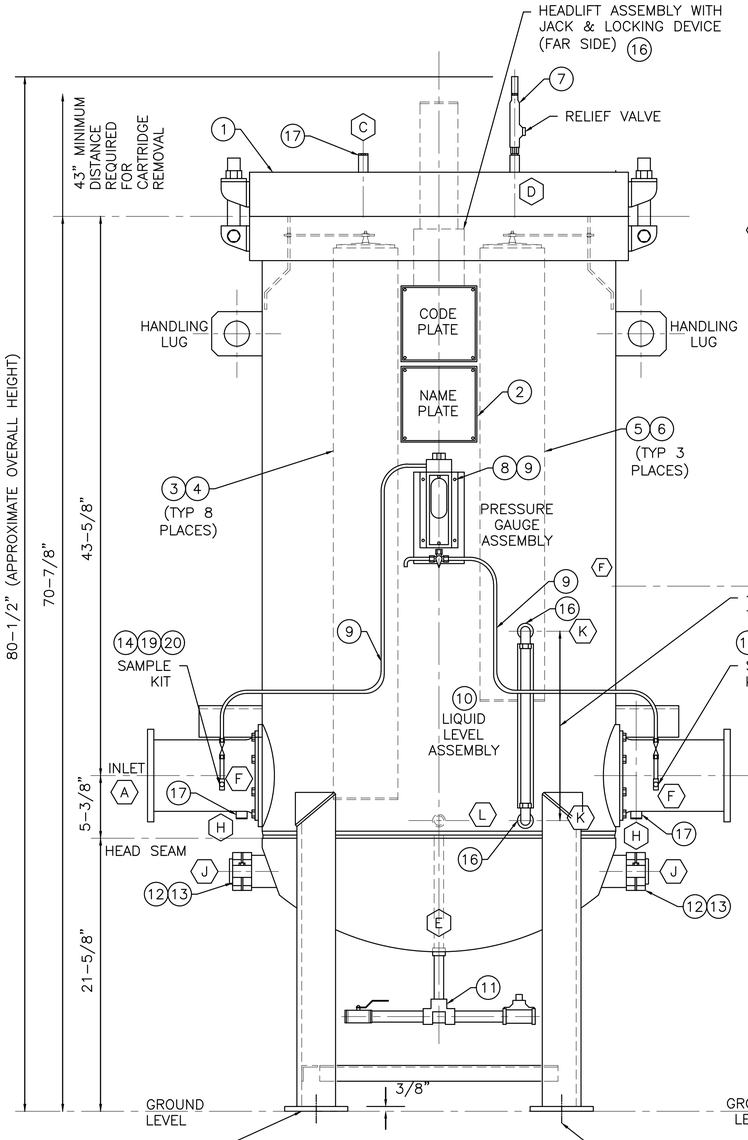
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

MECH EQUIPMENT SCHEDULES

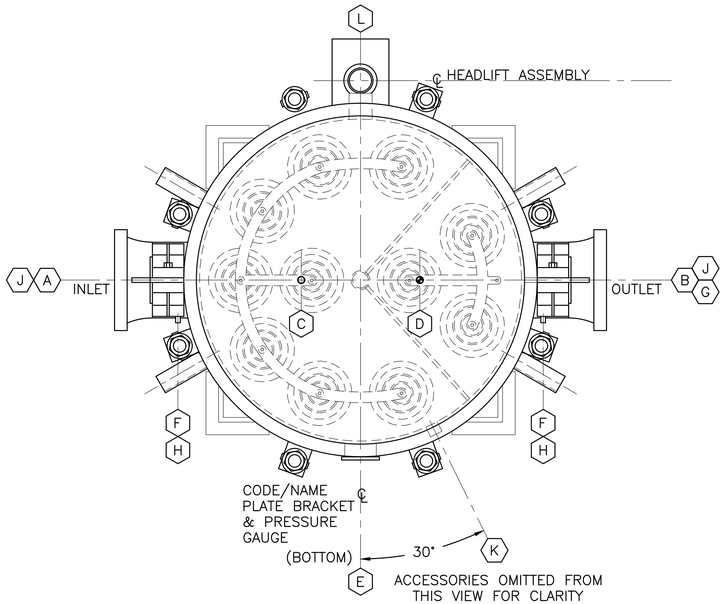
DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0-1

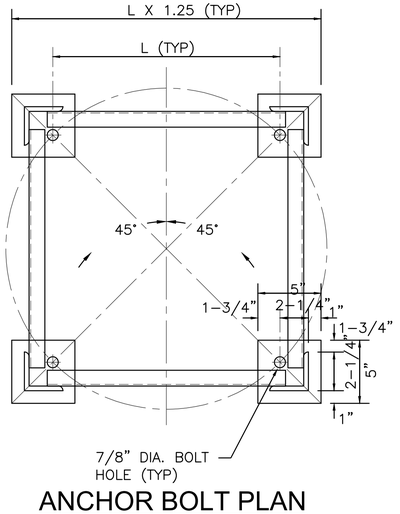
SHEET 2 OF 18



ELEVATION VIEW



ORIENTATION VIEW



ANCHOR BOLT PLAN

BILL OF MATERIAL

ITEM NO:	QTY	DESCRIPTION	MATERIAL OR DWG.#
25			
24			
23			
22			
21			
20	2	PIPE NIPPLE 1/4" STD. WT. X 3" LG. (TBE)	304 SS
19	1	CROSS 1/4" 3000# NPT (OUTLET SIDE)	304 SS
18	1	TEE 1/4" 3000# NPT (INLET SIDE)	304 SS
17	3	PIPE PLUG 3/4" 3000# HEX. HD.	SA-105
16	2	BSHG 3/4" X 1/2" 3000# NPT	SA-105
**15	1	JACK HYDRAULIC 2 TON (BOX SEPARATELY)	609149
**14	2	SAMPLE KIT GAMMON #5	681492
**13	2	VICT CAP 4" STYLE 60	608643
**12	2	VICT CPLG 4" STYLE 75	608642
10	1	LIQUID LEVEL GAUGE ASSEMBLY PER DWG.	A685295
9	1	PRESSURE GAUGE ASSEMBLY STNL. STL. W/ 3-WAY VALVE	A683809
**8	1	DIFF PRESS GAUGE GAMMON #GTP-534-30A 0-30# RANGE	671790
**7	1	VALVE RELIEF 3/4" TAYLOR #8200 (SET @ 150 PSI)	683821
6	3	SEPARATOR CARTRIDGE MOUNTING HARDWARE	A686676
**5	3	SEPARATOR CARTRIDGE SS636FD	SS636FD
4	8	COALESCER CARTRIDGE MOUNTING HARDWARE	A677453
**3	8	COALESCER CARTRIDGE CA43-3SB	CA43-3SB
**2	1	NAMEPLATE STAMP PER DWG. F6132 S/3	677762
1	1	22" OD VERTICAL HOUSING	F6132 S/2

ITEMS DENOTED BY (**) FURNISHED BY FACET TO FABRICATOR

STANDARD EQUIPMENT

BID TO INCLUDE SPARE PARTS INDICATED BY (*)

*	QTY	NAME	DESCRIPTION	PART NO.
	1	VESSEL HOUSING	28" OD VERTICAL HOUSING	F6132 S/2
*	1	CLOSURE GASKET	BUNA-N O-RING	601299
*	8	FILTER ELEMENT - COAL.	CA43-3SB	CA43-3SB
	8	ELEMENT MTG. HDW.		677453
*	3	FILTER ELEMENT - SEP.	SS636FD	SS636FD
	3	ELEMENT MTG. HDW.		686676
	2	VICTAULIC CPLG 4"	W/GASKET & BOLTING	608642
	2	VICTAULIC CAP 4"		608643
	1	SPIDER PLATE	FOR CARTRIDGE SUPPORT	686468
	1	2 TON HYDRAULIC JACK	FOR HEADLIFT	609149

BILL OF MATERIAL

MK.	SIZE	RATING	TYPE	QTY.	SERVICE
A	4"	150#	RFWN	1	INLET
B	4"	150#	RFWN	1	OUTLET
C	3/4"	3000#	NPT	1	VENT
D	3/4"	3000#	NPT	1	RELIEF
E	3/4"	3000#	NPT	1	SUMP DRAIN
F	1/4"	3000#	NPT	2	PRESSURE GAUGE/SAMPLE
G	8" OD	1-1/2" THK. PLATE		1	PILOT MOUNTING FLANGE
H	3/4"	3000#	NPT	2	IN / OUT FUEL DRAINS
J	4"	--	VICT.	2	CLEAN-OUT
K	3/4"	3000#	NPT	2	LIQUID LEVEL GAUGE
L	1"	3000#	NPT	1	SUMP HEATER W/PLUG

1 / M0-2 EXISTING VERTICAL SEPARATOR COALESCER DETAIL
NO SCALE

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

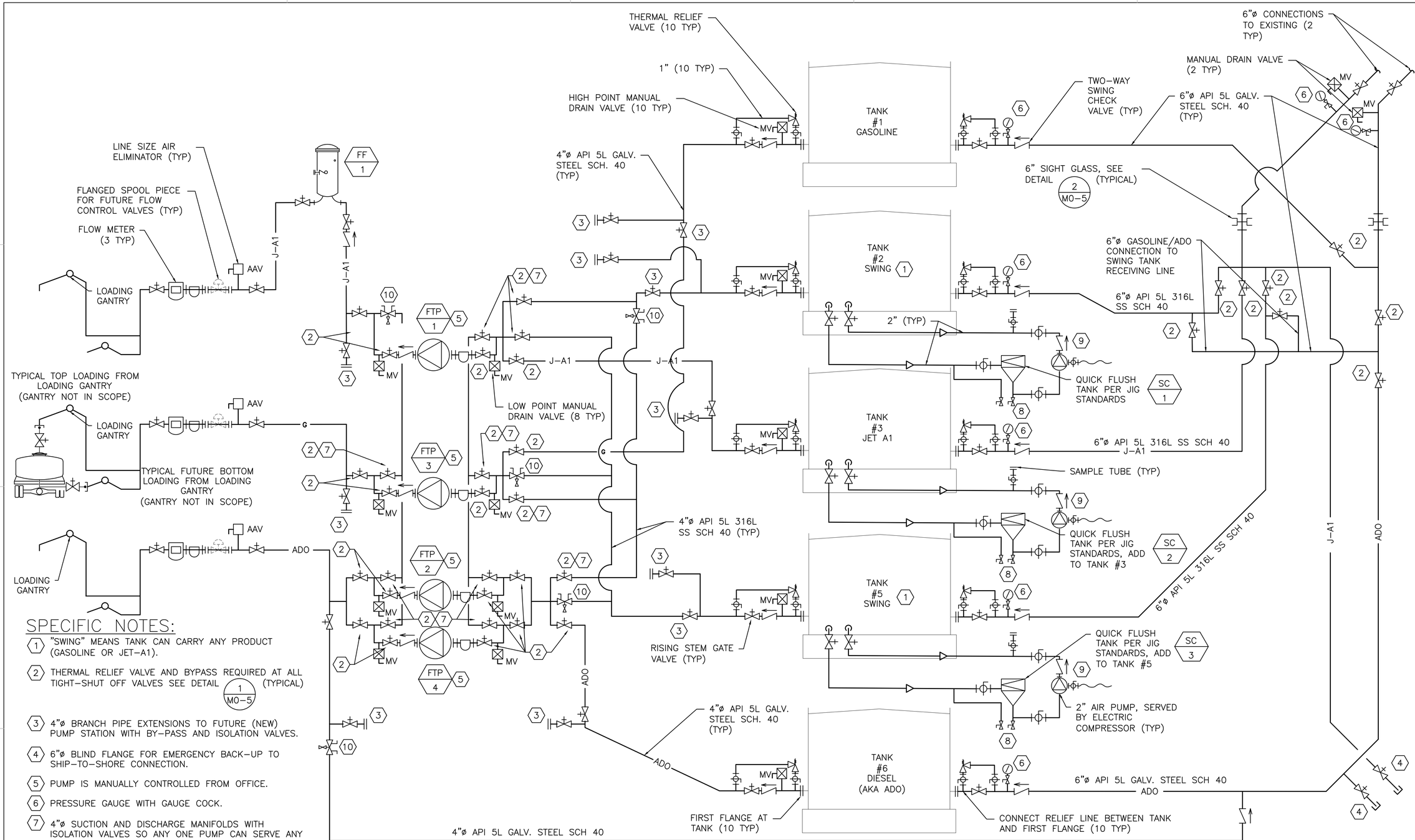
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

VERTICAL COALESCER SEPARATOR DETAIL

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0-2

SHEET 3 OF 18



SPECIFIC NOTES:

1. "SWING" MEANS TANK CAN CARRY ANY PRODUCT (GASOLINE OR JET-A1).
2. THERMAL RELIEF VALVE AND BYPASS REQUIRED AT ALL TIGHT-SHUT OFF VALVES SEE DETAIL 1 M0-5 (TYPICAL)
3. 4"ø BRANCH PIPE EXTENSIONS TO FUTURE (NEW) PUMP STATION WITH BY-PASS AND ISOLATION VALVES.
4. 6"ø BLIND FLANGE FOR EMERGENCY BACK-UP TO SHIP-TO-SHORE CONNECTION.
5. PUMP IS MANUALLY CONTROLLED FROM OFFICE.
6. PRESSURE GAUGE WITH GAUGE COCK.
7. 4"ø SUCTION AND DISCHARGE MANIFOLDS WITH ISOLATION VALVES SO ANY ONE PUMP CAN SERVE ANY INDIVIDUAL PRODUCT (ADO, GASOLINE, JET A-1).
8. 3/4" BALL-TYPE DRAIN VALVE WITH PIPE TO SLOPS TANK (TYPICAL).
9. 2" SWING CHECK VALVE DOWNSTREAM OF AIR/PNEUMATIC PUMP.
10. PROVIDE DOUBLE BLEED AND BLOCK VALVE AT INTERCONNECTION BETWEEN JET-A1 FUEL AND OTHER FUELS AT THE PIPING MANIFOLD AND AT THE MANIFOLD LOCATED AT THE OUTLET OF THE JET-A1 PUMP.

1 M0-3 TERMINAL PIPELINE - SCHEMATIC DIAGRAM

NO SCALE

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

TERMINAL PIPELINE - SCHEMATIC DIAGRAM

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0-3

SHEET 4 OF 18

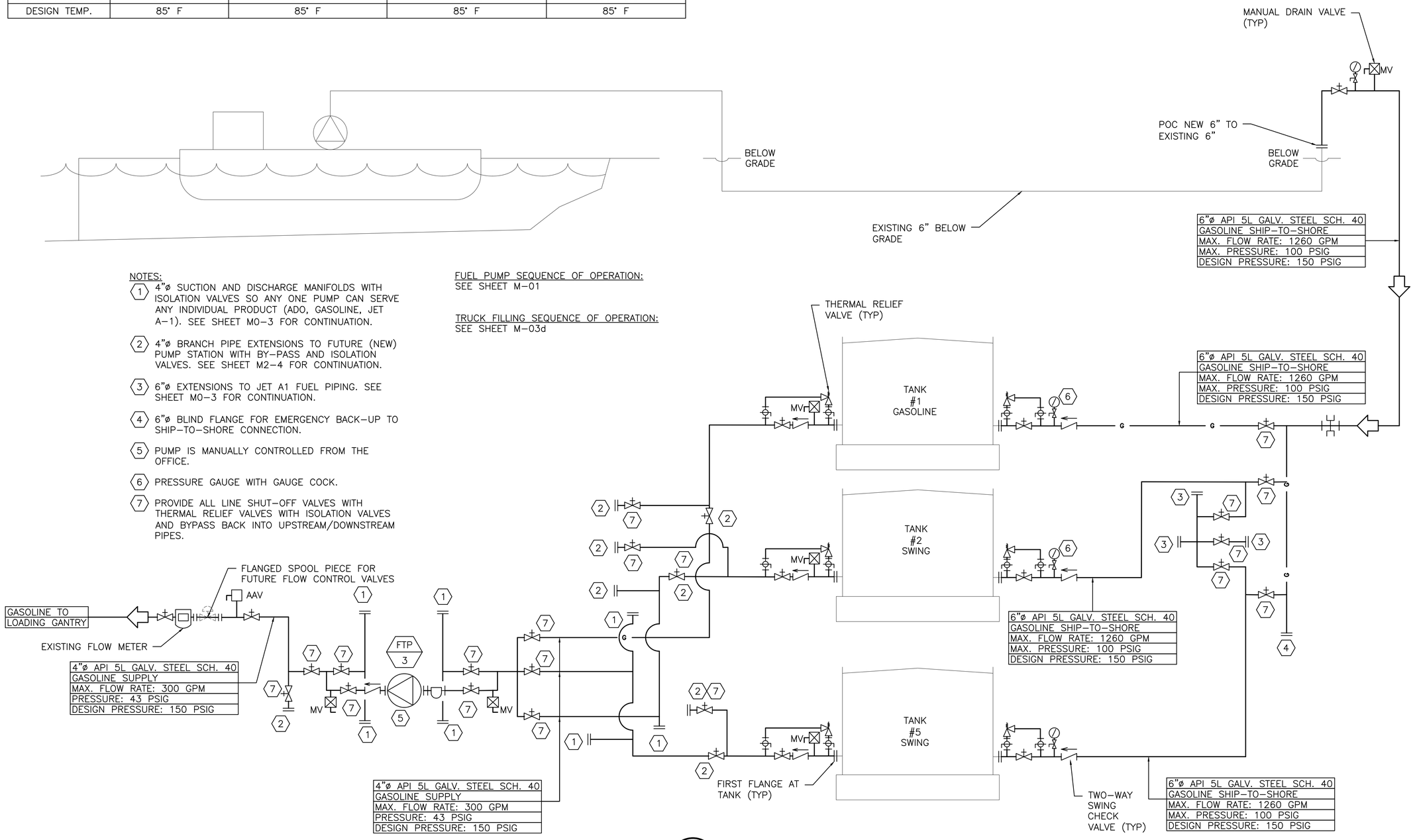
	TANK #1	TANK #2 SWING	TANK #5 SWING	FTP-3
SERVICE	GASOLINE STORAGE	GASOLINE OR JET A1 STORAGE	GASOLINE OR JET A1 STORAGE	GASOLINE PUMP
DATA	DIAMETER: 40'	DIAMETER: 29'	DIAMETER: 24'	FLOW RATE: 300 GPM
	HEIGHT: 35.81'	HEIGHT: 37.85'	HEIGHT: 32.51'	DIFF. PRESSURE: 43 PSIG
	CAPACITY: 388,000 GAL	CAPACITY: 187,000 GAL	CAPACITY: 110,000 GAL	
DESIGN PRESSURE	5 PSIG	5 PSIG	5 PSIG	150 PSIG
DESIGN TEMP.	85° F	85° F	85° F	85° F

NOTES:

1. 4"ø SUCTION AND DISCHARGE MANIFOLDS WITH ISOLATION VALVES SO ANY ONE PUMP CAN SERVE ANY INDIVIDUAL PRODUCT (ADO, GASOLINE, JET A-1). SEE SHEET M0-3 FOR CONTINUATION.
2. 4"ø BRANCH PIPE EXTENSIONS TO FUTURE (NEW) PUMP STATION WITH BY-PASS AND ISOLATION VALVES. SEE SHEET M2-4 FOR CONTINUATION.
3. 6"ø EXTENSIONS TO JET A1 FUEL PIPING. SEE SHEET M0-3 FOR CONTINUATION.
4. 6"ø BLIND FLANGE FOR EMERGENCY BACK-UP TO SHIP-TO-SHORE CONNECTION.
5. PUMP IS MANUALLY CONTROLLED FROM THE OFFICE.
6. PRESSURE GAUGE WITH GAUGE COCK.
7. PROVIDE ALL LINE SHUT-OFF VALVES WITH THERMAL RELIEF VALVES WITH ISOLATION VALVES AND BYPASS BACK INTO UPSTREAM/DOWNSTREAM PIPES.

FUEL PUMP SEQUENCE OF OPERATION:
SEE SHEET M-01

TRUCK FILLING SEQUENCE OF OPERATION:
SEE SHEET M-03d



1 M0-3a **P&ID - GASOLINE**
NO SCALE

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

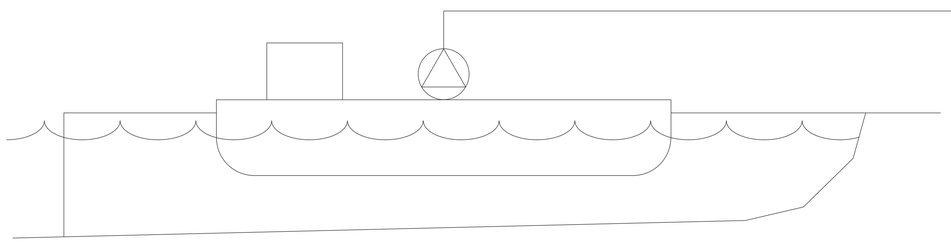
P&ID - GASOLINE

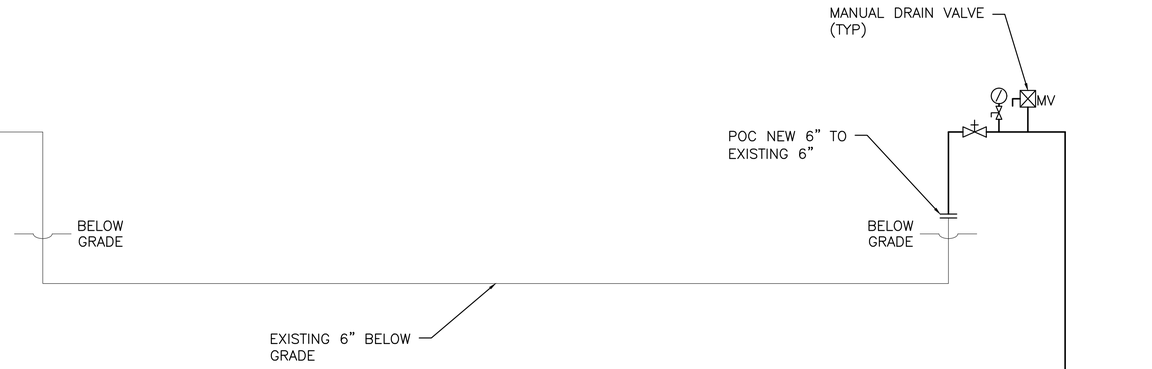
DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0-3a

SHEET 5 OF 18

	TANK #6	FTP-2	FTP-4
SERVICE	DIESEL (ADO) STORAGE	DIESEL PUMP	DIESEL PUMP
DATA	DIAMETER: 45'	FLOW RATE: 300 GPM	FLOW RATE: 300 GPM
	HEIGHT: 35.96'	DIFF. PRESSURE: 43 PSIG	DIFF. PRESSURE: 43 PSIG
	CAPACITY: 426,000 GAL		
DESIGN PRESSURE	5 GPM	150 PSIG	150 PSIG
DESIGN TEMP.	85°F	85°F	85°F



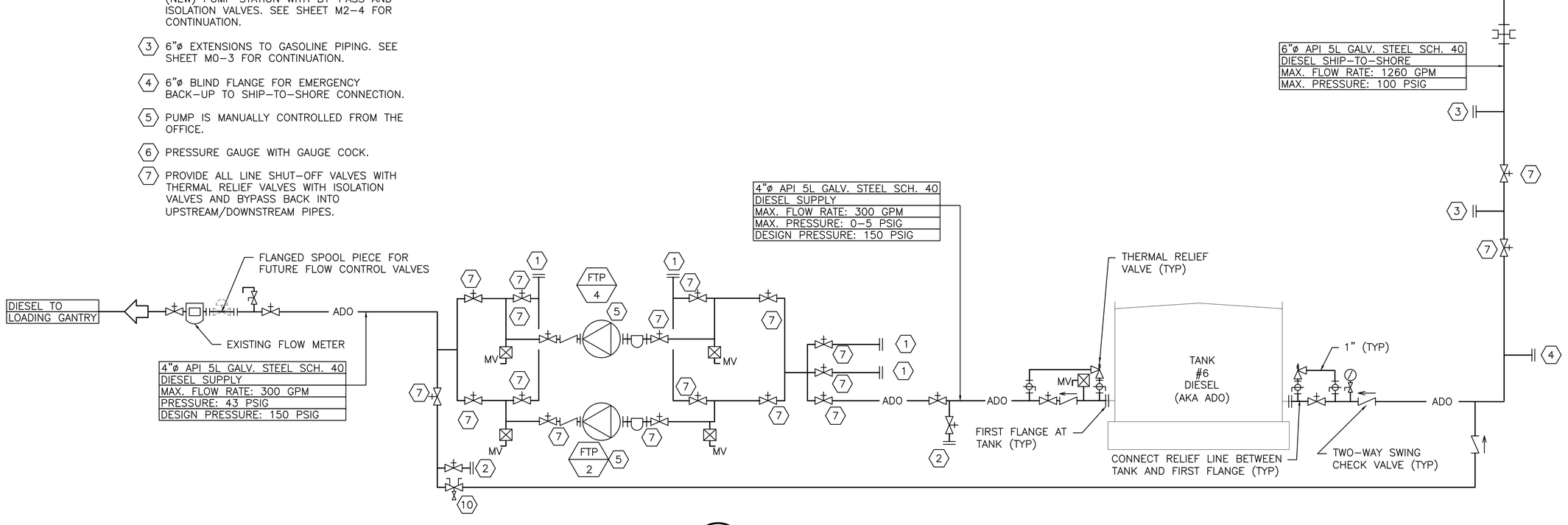


NOTES:

1. 4"ø SUCTION AND DISCHARGE MANIFOLDS WITH ISOLATION VALVES SO ANY ONE PUMP CAN SERVE ANY INDIVIDUAL PRODUCT (ADO, GASOLINE, JET A-1). SEE SHEET M0-3 FOR CONTINUATION.
2. 4"ø BRANCH PIPE EXTENSIONS TO FUTURE (NEW) PUMP STATION WITH BY-PASS AND ISOLATION VALVES. SEE SHEET M2-4 FOR CONTINUATION.
3. 6"ø EXTENSIONS TO GASOLINE PIPING. SEE SHEET M0-3 FOR CONTINUATION.
4. 6"ø BLIND FLANGE FOR EMERGENCY BACK-UP TO SHIP-TO-SHORE CONNECTION.
5. PUMP IS MANUALLY CONTROLLED FROM THE OFFICE.
6. PRESSURE GAUGE WITH GAUGE COCK.
7. PROVIDE ALL LINE SHUT-OFF VALVES WITH THERMAL RELIEF VALVES WITH ISOLATION VALVES AND BYPASS BACK INTO UPSTREAM/DOWNSTREAM PIPES.

FUEL PUMP SEQUENCE OF OPERATION:
SEE SHEET M-01

TRUCK FILLING SEQUENCE OF OPERATION:
SEE SHEET M-03d



1 M0-3b **P&ID - DIESEL (ADO)**
NO SCALE

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

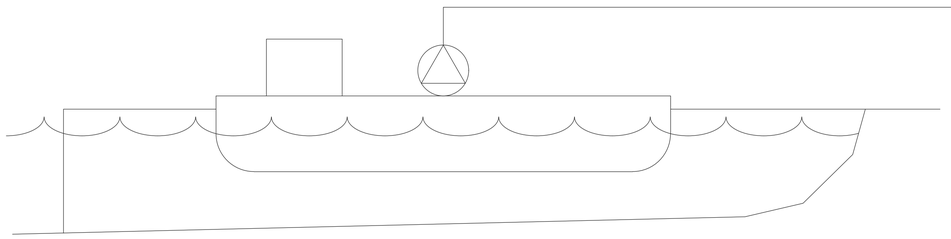
P&ID - DIESEL (ADO)

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0-3b

SHEET 6 OF 18

	TANK #2 SWING	TANK #3 JET A1	TANK #5 SWING	FTP–1	SC–1	SC–2	SC–3	FF–1
SERVICE	GASOLINE OR JET A1 STORAGE	JET A1 FUEL	GASOLINE OR JET A1 STORAGE	JET A1 PUMP	SEPARATOR COALESCER	SEPARATOR COALESCER	SEPARATOR COALESCER	FUEL FILTER NO. 1
DATA	DIAMETER: 29'	DIAMETER: 20'	DIAMETER: 24'	FLOW RATE: 300 GPM	FLOW RATE: 75 GPM	FLOW RATE: 75 GPM	FLOW RATE: 75 GPM	FLOW RATE 333 GPM
	HEIGHT: 37.85'	HEIGHT: 34.89'	HEIGHT: 32.51'	DIFF. PRESSURE: 43 PSIG	CAPACITY: 300 GAL	CAPACITY: 300 GAL	CAPACITY: 300 GAL	DIFF. PRESSURE: 43 PSIG
	CAPACITY: 187,000 GAL	CAPACITY: 82,000 GAL	CAPACITY: 110,000 GAL					
DESIGN PRESSURE	5 PSIG	5 PSIG	5 PSIG	150 PSIG	50 PSIG	50 PSIG	50 PSIG	150 PSIG
DESIGN TEMP.	85° F	85° F	85° F	85° F	85° F	85° F	85° F	85° F



BELOW GRADE

EXISTING 6" BELOW GRADE

MANUAL DRAIN VALVE (TYP)

MV

POC NEW 6" TO EXISTING 6"

BELOW GRADE

4"ø API 5L STAINLESS STEEL SCH. 40
JET A1 SUPPLY
MAX. FLOW RATE: 300 GPM
MAX. PRESSURE: 43 PSIG
DESIGN PRESSURE: 150 PSIG

4"ø API 5L STAINLESS STEEL SCH. 40
JET A1 SUPPLY
MAX. FLOW RATE: 300 GPM
MAX. PRESSURE: 43 PSIG
DESIGN PRESSURE: 150 PSIG

6"ø API 5L STAINLESS STEEL SCH. 40
JET A1 SHIP–TO–SHORE
MAX. FLOW RATE: 1260 GPM
MAX. PRESSURE: 100 PSIG
DESIGN PRESSURE: 150 PSIG

THERMAL RELIEF VALVE (TYP)

FLANGED SPOOL PIECE FOR FUTURE FLOW CONTROL VALVES

JET A1 FUEL TO LOADING GANTRY

EXISTING FLOW METER

AAV

FF 1

FTP 1

J–A1

MV

TANK #2 SWING

TANK #3 JET A1

TANK #5 SWING

1" (TYP)

FIRST FLANGE AT TANK (TYP)

TWO–WAY SWING CHECK VALVE (TYP)

4"ø API 5L STAINLESS STEEL SCH. 40
JET A1 SUPPLY
MAX. FLOW RATE: 300 GPM
MAX. PRESSURE: 43 PSIG
DESIGN PRESSURE: 150 PSIG

NOTES:

1. 4"ø SUCTION AND DISCHARGE MANIFOLDS WITH ISOLATION VALVES SO ANY ONE PUMP CAN SERVE ANY INDIVIDUAL PRODUCT (ADO, GASOLINE, JET A–1). SEE SHEET M0–3 FOR CONTINUATION.
2. 4"ø BRANCH PIPE EXTENSIONS TO FUTURE (NEW) PUMP STATION WITH BY–PASS AND ISOLATION VALVES. SEE SHEET M2–4 FOR CONTINUATION.
3. 6"ø EXTENSIONS TO GASOLINE FUEL PIPING. SEE SHEET M0–3 FOR CONTINUATION.
4. 6"ø BLIND FLANGE FOR EMERGENCY BACK–UP TO SHIP–TO–SHORE CONNECTION.
5. PUMP IS MANUALLY CONTROLLED IN OFFICE.
6. PRESSURE GAUGE WITH GAUGE COCK.
7. PROVIDE ALL LINE SHUT–OFF VALVES WITH THERMAL RELIEF VALVES WITH ISOLATION VALVES AND BYPASS BACK INTO UPSTREAM/DOWNSTREAM PIPES.
8. 3/4" BALL–TYPE DRAIN VALVE WITH PIPE TO SLOPS TANK (TYPICAL).
9. 2" SWING CHECK VALVE DOWNSTREAM OF AIR/PNEUMATIC PUMP.
10. PROVIDE DOUBLE BLEED AND BLOCK VALVE AT INTERCONNECTION BETWEEN JET–A1 FUEL AND OTHER FUELS AT THE PIPING MANIFOLD AND AT THE MANIFOLD LOCATED AT THE OUTLET OF THE JET–A1 PUMP.

FUEL PUMP SEQUENCE OF OPERATION:
SEE SHEET M–01

TRUCK FILLING SEQUENCE OF OPERATION:
SEE SHEET M–03d

1 M0-3c P&ID - JET-A1
NO SCALE

REVISION	BY	DATE	APPROVED
FOR CONSTRUCTION		9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

P&ID – JET–A1

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0–3c

SHEET 7 OF 18

TRUCK FILLING SEQUENCE OF OPERATION:

1. RECEIVE DELIVERY DOCUMENTS AND SEALS
   - A. RETRIEVE LOAD AUTHORIZATION, METER TICKET, AND TRUCK SEALS FROM DRIVER'S BOX (SHELF OR BOX FOR EACH DRIVER TO RECEIVE DOCUMENTS AND SEALS FROM ORDER AND BILLING CLERK). PRODUCT CANNOT BE LOADED WITHOUT THE CORRECT AUTHORIZATION AND SEALS.
   - B. CHECK FOR ANY SPECIAL DELIVERY INSTRUCTIONS OR UNUSUAL DELIVERY ON STATUS BOARD (WHITEBOARD).
   - C. ALL DOCUMENTS TO BE PUT INTO DRIVER'S CLIPBOARD.
2. FILL IN LOADING DOCUMENTS AND DETERMINE PRODUCT AND QUANTITY
   - A. FILL IN LOAD AUTHORIZATION WITH REQUIRED INFORMATION.
     - – SAFE FILL LEVEL
     - – QUANTITY LOADED AND PRODUCT GRADE
     - – METER READINGS
     - – FUEL TEMPERATURE
   - B. FILL IN METER TICKET WITH REQUIRED INFORMATION.
     - – FUEL TEMPERATURE
     - – SEAL NUMBERS
3. PARK TRUCK UNDER TOP LOADING GANTRY
   - A. DRIVE AND PARK TRUCK UNDER TOP LOADING ARM, ENSURING ALIGNMENT WITH CORRECT TANKER TRUCK COMPARTMENT.
   - B. ENGAGE BRAKES AND STOP ENGINE.
   - C. PLACE WHEEL CHOCKS.
4. CONNECT BONDING CABLE
   - A. CONNECT THE BONDING CABLE TO THE TANK TRUCK USING THE PROPER BONDING POINT PROVIDED.
5. CHECK COMPARTMENT VALVES ARE CLOSED
   - A. CHECK ALL HOSE CONNECTORS AND EMERGENCY VALVES ARE CLOSED.
   - B. CHECK INTERNAL COMPARTMENT VALVES ARE CLOSED.
6. INSERT METER TICKET INTO PUMP METER
   - A. INSERT METER TICKET AND PRESET PUMP METER TO QUANTITY REQUIRED ON LOAD AUTHORIZATION.
   - B. CHECK TO ENSURE PRESET VOLUME DOES NOT EXCEED CAPACITY OF COMPARTMENT TO BE LOADED.
7. TURN ON PUMP
   - A. OPEN CORRECT PRODUCT PUMP BY TURNING CIRCULAR HANDLE CLOCKWISE
8. CLIMB TRUCK AND CONNECT HARNESS
   - A. PUT ON SAFETY HARNESS.
   - B. PUT ON RUBBER GLOVES AND ENSURE ALL OTHER PPE IS WORN.
   - C. SAFELY CLIMB ON TOP OF TRUCK USING TRUCK LADDER.
   - D. ATTACH SAFETY HARNESS TO SAFETY LINE AT TOP OF GANTRY.
9. CHECK COMPARTMENTS TO BE LOADED
   - A. OPEN DOME COVER TO BE LOADED (KEEP OTHER DOME COVERS CLOSED)
   - B. LOOK INSIDE TO ENSURE COMPARTMENT IS EMPTY
     NOTE: CHECK TANK COMPARTMENTS AS TO PRODUCT PREVIOUSLY DELIVERED AND NOTIFY SUPERVISOR IF A SWITCH LOADING PROCEDURE MAY BE REQUIRED (REFER: W4–DEL–020 ASSESS SWITCH LOADING REQUIREMENTS)
10. LOAD PRODUCT
    - A. OPEN DOME COVER (KEEP OTHER DOME COVERS CLOSED).
    - B. POSITION YOURSELF UPWIND (ENSURE WIND IS BEHIND YOU).
    - C. MOVE CORRECT PRODUCT GRADE LOADING ARM ASSEMBLY INTO POSITION.
    - D. INSERT THE LOADING ARM FULLY INTO THE COMPARTMENT UNTIL IT IS RESTING ON THE BOTTOM OF THE COMPARTMENT (THIS IS TO PREVENT SPLASHING OF THE PRODUCT AND BUILD–UP OF STATIC CHARGE).
    - E. TURN ON PRODUCT PUMP.
    - F. OPEN THE MANUALLY OPERATED LOADING VALVE AND START TO LOAD SLOWLY UNTIL THE DROP TUBE IS SUBMERGED.
      - a. FOR 3 INCH OUTLET – 70 GPM
      - b. FOR 4 INCH OUTLET – 120 GPM

      NOTE: LOADING VALVE MUST BE OPENED MANUALLY AND ATTENDED AT ALL TIMES. DO NOT USE STRING, WIRE OR OTHER MEANS TO KEEP THE SPRING LOADED VALVE OPEN.
    - G. THEN OPEN THE LOADING VALVE TO FULL FLOW. IF FITTED, MANUALLY HOLD LOADING ARM IN CONSTANT CONTACT WITH THE TANK DOME.
    - H. WHEN PRODUCT HAS STOPPED PUMPING, WAIT AT LEAST 2 MINUTES FOR THE DISSIPATION OF STATIC ELECTRICAL CHARGES.
    - I. CLOSE VALVE ON LOADING ARM
    - J. REMOVE DROP TUBE FROM COMPARTMENT. ENSURE DROP TUBE IS FULLY DRAINED BEFORE RETURNING IT TO STOWED POSITION.
    - K. TURN OFF PRODUCT PUMP.
    - L. TO LOAD ADDITIONAL COMPARTMENTS REPEAT STEPS A THRU K ABOVE.
11. CHECK PRODUCT TEMPERATURE
    - A. CONNECT BONDING CABLE ATTACHED TO THERMO PROBE TO THE TRUCK.
    - B. WAIT AT LEAST 2 MINUTES FOR THE PRODUCT TO SETTLE
    - C. INSERT THERMO PROBE INTO TANK COMPARTMENT
    - D. RECORD LOADED PRODUCT TEMPERATURE FROM DIGITAL THERMOMETER TO THE METER TICKET AND LOAD AUTHORIZATION.
    - E. CLOSE DOME COVER.

    NOTE: TANK COMPARTMENTS NEED TO HAVE A DIP READING TAKEN BEFORE CLOSING. FOR DETAILED STEPS, REFER TO W4–DEL–060 DIP TANK TRUCK AFTER LOADING. DOME COVERS (AND OTHER VALVES) WILL NEED TO BE SEALED AFTER CLOSING FOR DETAILED STEPS REFER TO W4–DEL–070 SEAL TANK TRUCK AND PRODUCT IDENTIFICATION.
12. CHECK FOR SPILLS

IF ...	THEN...
MINOR SPILL OCCURS	– STOP ALL LOADING – TURN OFF ALL POWERED EQUIPMENT – CLEAN UP CONTAMINATED AREA – REPORT INCIDENT TO TERMINAL MANAGER
MAJOR SPILL OCCURS	– FOLLOW APPROPRIATE EMERGENCY PROCEDURE – REPORT INCIDENT TO TERMINAL MANAGER

13. CLIMB DOWN FROM TRUCK
    NOTE: BEFORE CLIMBING DOWN FROM TRUCK, SEALS WILL NEED TO BE APPLIED TO TOP DOMES. (REFER: W4–DEL–070 SEAL TANK TRUCK AND PRODUCT IDENTIFICATION)
    - A. DISCONNECT SAFETY HARNESS.
    - B. SAFELY CLIMB DOWN FROM TOP OF TRUCK USING TRUCK LADDER. DO NOT JUMP DOWN FROM LADDER OR DESCEND FACING OUTWARDS.
14. DISCONNECT BONDING CABLE
    - A. DISCONNECT BONDING CABLE FROM TRUCK AND RETURN TO REEL.
15. COMPLETE DELIVERY DOCUMENTS
    - A. REMOVE METER TICKET FROM PUMP METER
    - B. COMPLETE INFORMATION ON LOAD AUTHORIZATION AND METER TICKET (METER READINGS, PRODUCT TEMPERATURE, QUANTITY LOADED, SAFE FILL LEVEL)
16. REMOVE WHEEL CHOCKS
    - A. REMOVE WHEEL CHOCKS
    - B. DRIVER IS NOW READY TO DRIVE TRUCK FROM GANTRY TO DEPARTURE GATE.
17. PERFORM QUALITY CHECK FOR AVIATION FUEL ONLY
    NOTE: THIS APPLIES WHERE PRODUCT QUALITY TESTS ARE REQUIRED FOR DELIVERIES COVERED BY PRODUCT TRANSFER RELEASE ADVICE (PTRA) – IE. AVIATION FUELS.
    - A. CONDUCT PRODUCT QUALITY TESTS ON THE LOAD.
    - B. RECORD THE RESULTS ON THE APPROPRIATE PRODUCT QUALITY CERTIFICATE FORM.
    - C. IF THE RESULTS OF THE TESTS CONDUCTED ON THE LOAD ARE NOT WITHIN THE SPECIFICATIONS, HOLD THE LOAD AND CONTACT THE DISPATCHER OR THE FACILITY MANAGER OR SUPERVISOR FOR FURTHER INSTRUCTIONS.

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

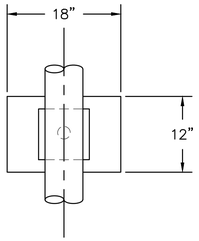
PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

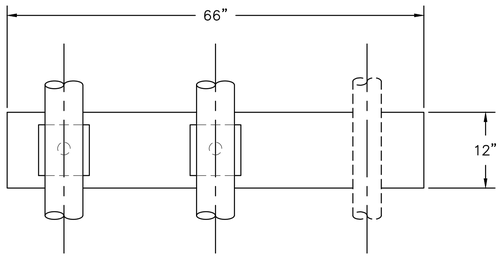
SEQUENCE OF OPERATIONS – TRUCK FILLING

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0–3d



TYPE "A" PLAN



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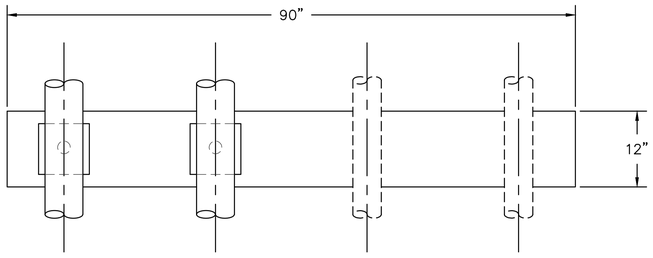

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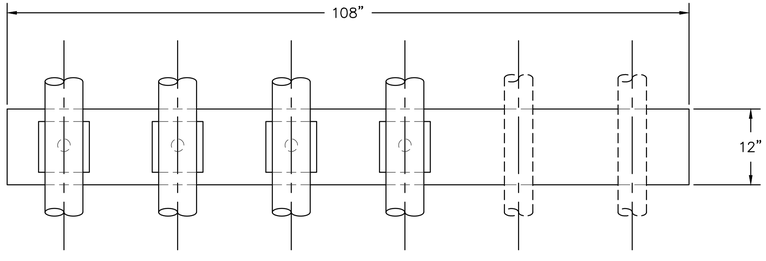

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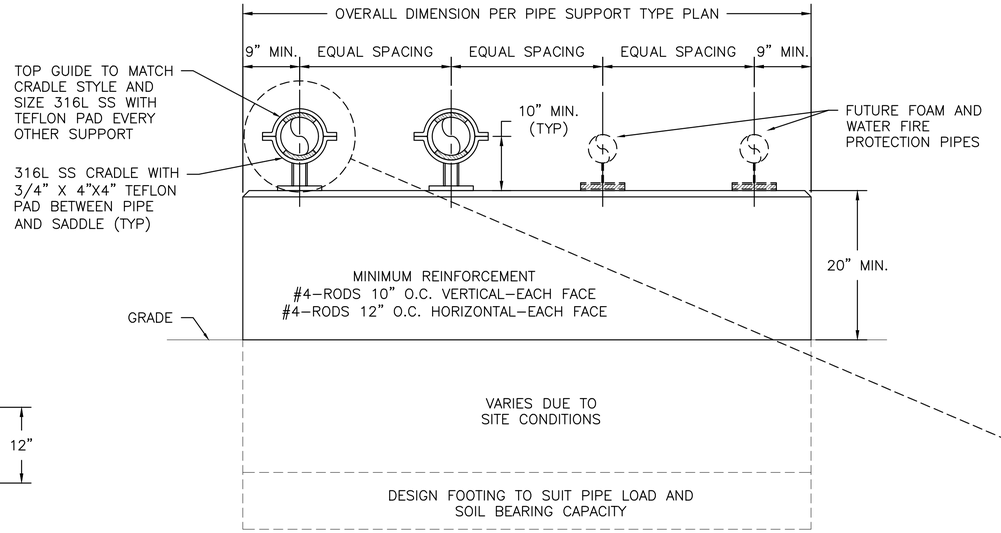
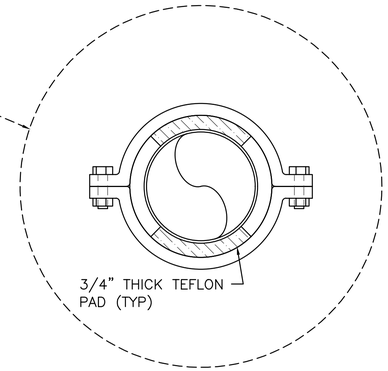
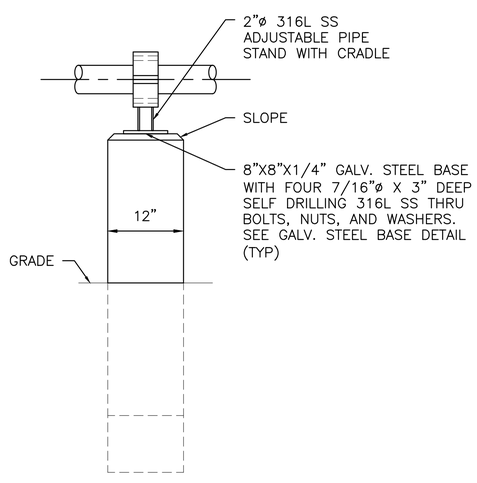
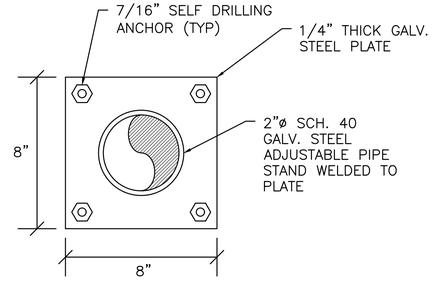


TYPICAL SECTION





TYPICAL ELEVATION



TYPICAL GALV. STEEL BASE DETAIL

1 / M0-4 PIPE SUPPORT DETAILS
NO SCALE

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

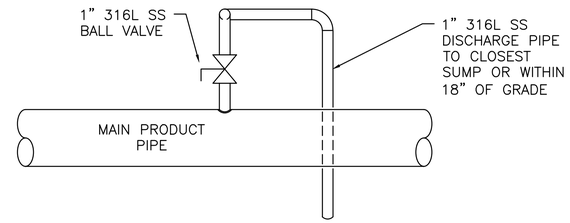
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

MECHANICAL DETAILS

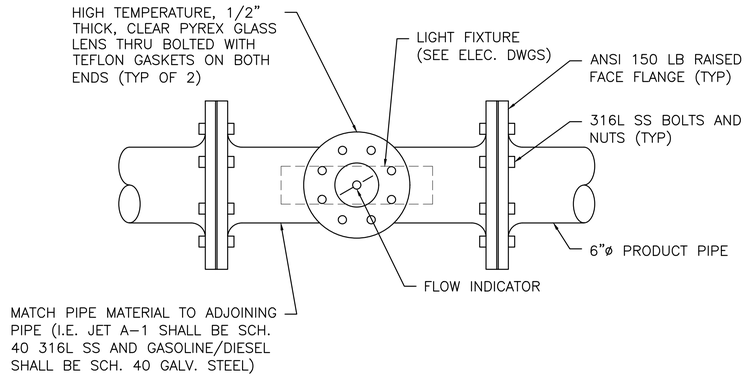
DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0-4

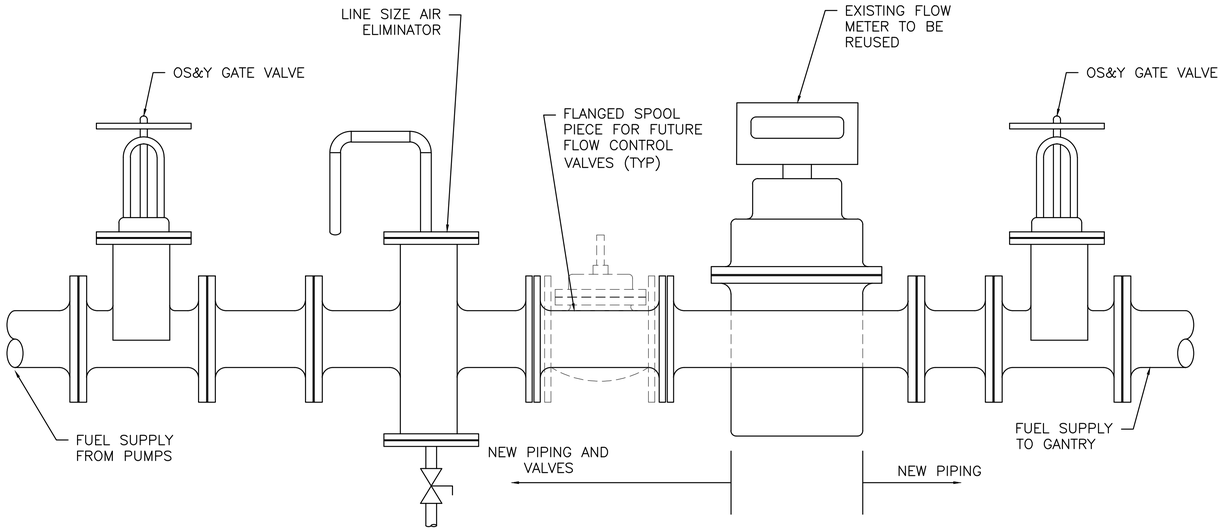
SHEET 9 OF 18



4 M0-5 **TYPICAL MANUAL AIR VENT DETAIL**
NO SCALE

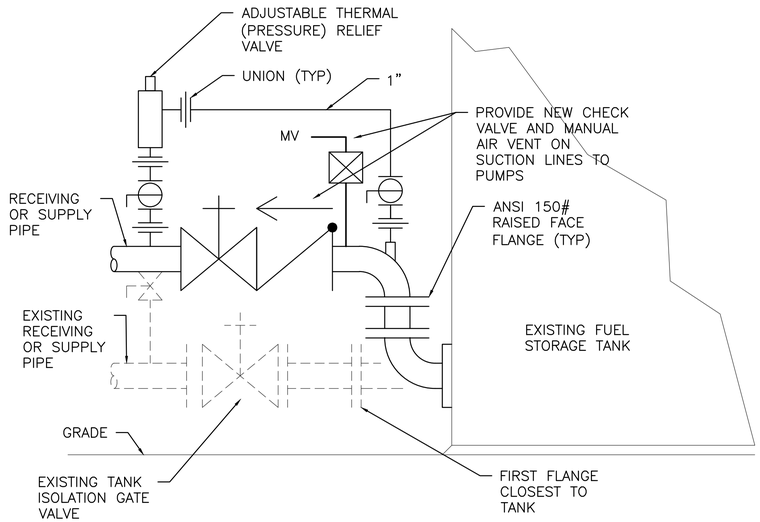


2 M0-5 **TYPICAL SIGHT GLASS DETAIL**
NO SCALE



NOTE:
DETAIL IS TYPICAL OF THREE FLOW METERS: GASOLINE, JET A-1 AND ADO.

3 M0-5 **TYPICAL FLOW METER DETAIL**
NO SCALE



1 M0-5 **TYPICAL THERMAL RELIEF DETAIL**
NO SCALE

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

MECHANICAL DETAILS

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M0-5

SHEET 10 OF 18

SEA

0' 8' 16' 32'
SCALE: 1/16" = 1'-0"

HAZARDOUS AREA
CLASS 1, ZONE 2
(TYPICAL)

HAZARDOUS AREA
CLASS 1, ZONE 1
(TYPICAL)

TANK 6
45'ø
ADO

EXISTING OIL
WATER
SEPARATOR

EXISTING QUICK
FLUSH

TANK 5
24'ø
JET A-1 FUEL
FUTURE SWING

TANK 3
20'ø
JET A-1

TANK 2
29'ø
JET A-1 FUEL
FUTURE SWING

TANK 1
40'ø
GASOLINE

DISCONNECTED 2" PIPE

4" PIPE

REFER TO M1-2
FOR ENLARGED VIEW

REFER TO M1-1
FOR ENLARGED VIEW

TO TRUK STOP HOTEL

TO AIRPORT

SITE PLAN - PIPING DEMOLITION AND PHASING
SCALE: 1/16" = 1' - 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

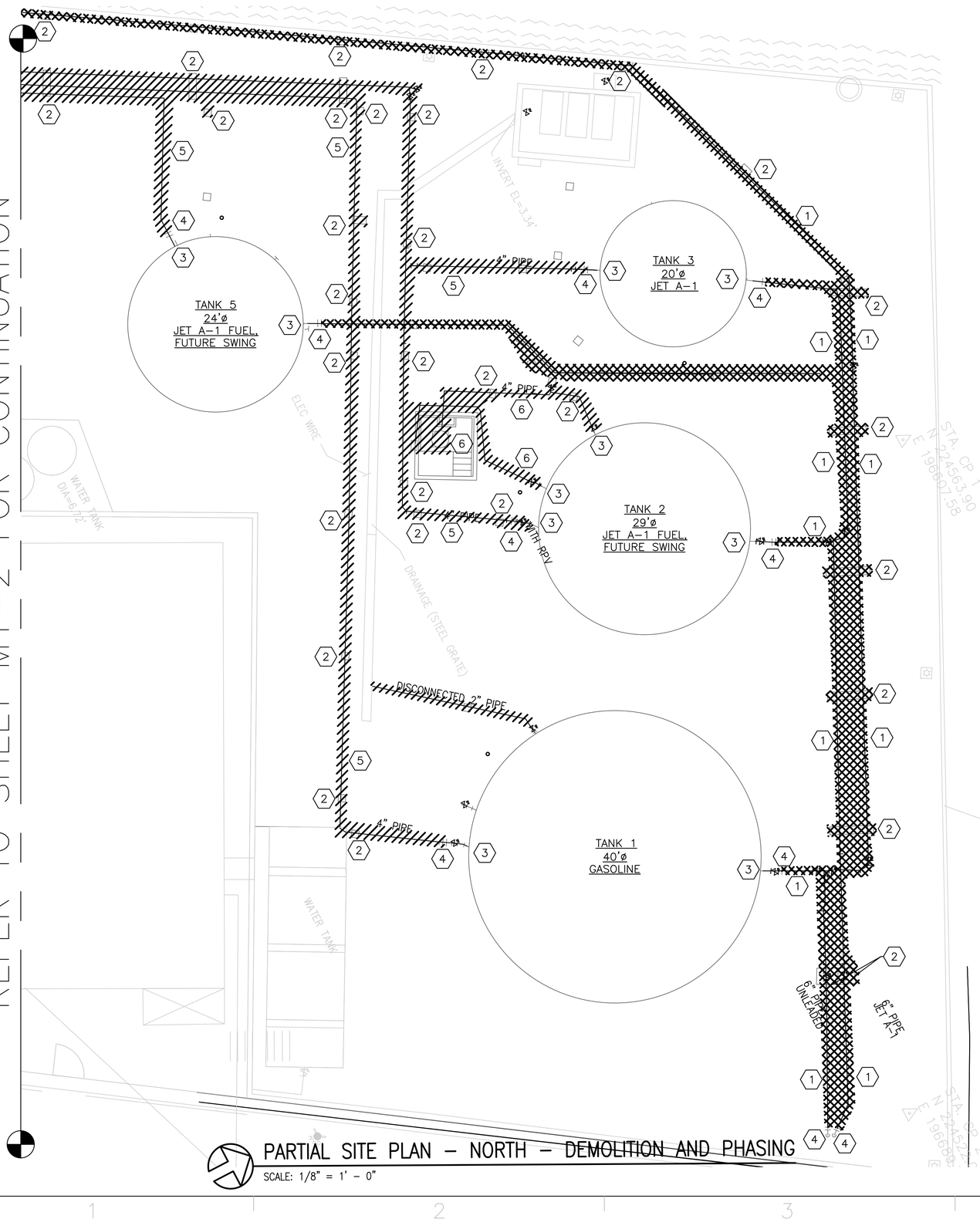
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

SITE PLAN - MECHANICAL
PIPING DEMOLITION

DATE:	07-30-2019
SCALE:	1/16"=1'
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M1-0

SHEET 11 OF 18



PARTIAL SITE PLAN – NORTH – DEMOLITION AND PHASING

SCALE: 1/8" = 1' – 0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

PHASING AND DEMOLITION NOTES:

1. EXISTING 6" DIAMETER SHIP MULTI AND JET A1 LINES CAN BE REMOVED RIGHT AFTER THE LAST SHIP DELIVERY TO MAKE ROOM FOR NEW PIPING AND PIPE SUPPORTS. ALL NEW SUPPLY LINES NEED TO BE COMPLETED AND TESTED PRIOR TO NEXT SHIP DELIVERY (APPROXIMATELY 60 DAYS TOTAL INTERVAL FOR DELIVERIES).
2. REMOVE EXISTING CONCRETE PIPE SUPPORTS WHEN EXISTING PIPING IS REMOVED.
3. ISOLATE EXISTING PIPING AT ALL EXISTING TANK SHUT–OFF VALVES SO NO FUEL IS LOST IN REMOVAL PROCESS. THOROUGHLY DRAIN AND RECOVER ALL EXISTING FUEL PIPING PRIOR TO REMOVING FROM SERVICE.
4. PROVIDE BLIND FLANGES AT ALL POINTS OF CONNECTION TO EXISTING FUEL LINES THAT ARE TO REMAIN.
5. KEEP ALL EXISTING TANK TO PUMP SUPPLY LINES AND PUMP TO GANTRY SUPPLY LINES OPERATIONAL DURING NEW PIPING INSTALLATION.
6. REMOVE EXISTING FLUSH PIPING AND FLUSH TANK TO MAKE ROOM FOR THE NEW ONE.

PHASING AND DEMOLITION LEGEND:

EXISTING TANK SUPPLY LINES TO BE DEMOLISHED PRIOR TO INSTALLATION OF NEW SUPPLY LINES

EXISTING TANK AND PUMP DISCHARGE LINES TO BE DEMOLISHED AFTER INSTALLATION OF NEW DISCHARGE LINES.

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

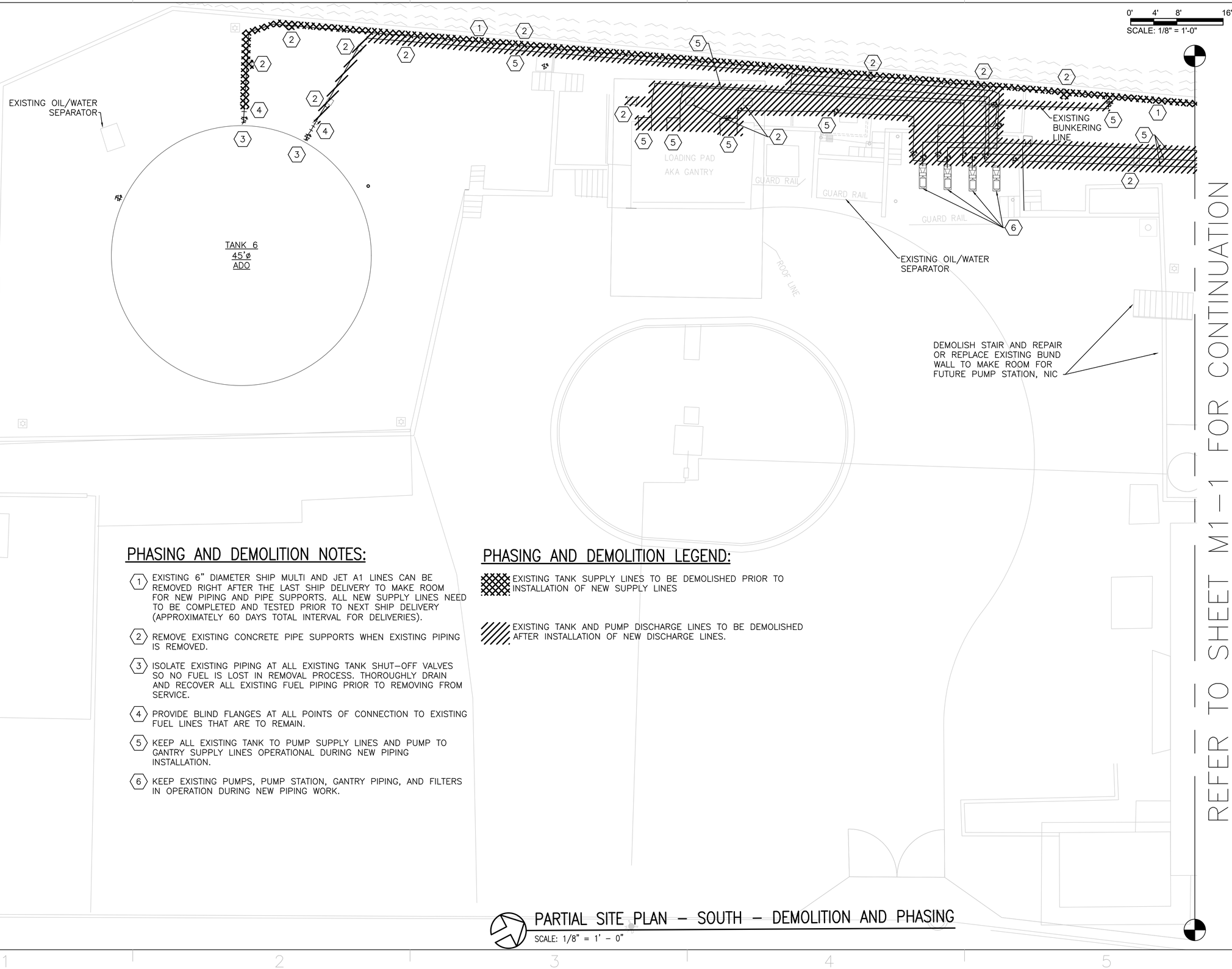
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

PARTIAL PLAN NORTH – DEMOLITION

DATE:	07-30-2019
SCALE:	1/8"=1'–0"
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M1–1

SHEET 12 OF 18



PHASING AND DEMOLITION NOTES:

1. EXISTING 6" DIAMETER SHIP MULTI AND JET A1 LINES CAN BE REMOVED RIGHT AFTER THE LAST SHIP DELIVERY TO MAKE ROOM FOR NEW PIPING AND PIPE SUPPORTS. ALL NEW SUPPLY LINES NEED TO BE COMPLETED AND TESTED PRIOR TO NEXT SHIP DELIVERY (APPROXIMATELY 60 DAYS TOTAL INTERVAL FOR DELIVERIES).
2. REMOVE EXISTING CONCRETE PIPE SUPPORTS WHEN EXISTING PIPING IS REMOVED.
3. ISOLATE EXISTING PIPING AT ALL EXISTING TANK SHUT–OFF VALVES SO NO FUEL IS LOST IN REMOVAL PROCESS. THOROUGHLY DRAIN AND RECOVER ALL EXISTING FUEL PIPING PRIOR TO REMOVING FROM SERVICE.
4. PROVIDE BLIND FLANGES AT ALL POINTS OF CONNECTION TO EXISTING FUEL LINES THAT ARE TO REMAIN.
5. KEEP ALL EXISTING TANK TO PUMP SUPPLY LINES AND PUMP TO GANTRY SUPPLY LINES OPERATIONAL DURING NEW PIPING INSTALLATION.
6. KEEP EXISTING PUMPS, PUMP STATION, GANTRY PIPING, AND FILTERS IN OPERATION DURING NEW PIPING WORK.

PHASING AND DEMOLITION LEGEND:

EXISTING TANK SUPPLY LINES TO BE DEMOLISHED PRIOR TO INSTALLATION OF NEW SUPPLY LINES

EXISTING TANK AND PUMP DISCHARGE LINES TO BE DEMOLISHED AFTER INSTALLATION OF NEW DISCHARGE LINES.

PARTIAL SITE PLAN – SOUTH – DEMOLITION AND PHASING

SCALE: 1/8" = 1' – 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

PARTIAL PLAN SOUTH – DEMOLITION

DATE:	07-30-2019
SCALE:	1/8"=1'–0"
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M1–2

SHEET 13 OF 18

SEA

0' 8' 16' 32'
SCALE: 1/16" = 1'-0"

HAZARDOUS AREA
CLASS 1, ZONE 2
(TYPICAL)

HAZARDOUS AREA
CLASS 1, ZONE 1
(TYPICAL)

TANK 6
45'ø
ADO

TANK 5
24'ø
SWING

TANK 3
20'ø
JET A-1

TANK 2
29'ø
SWING

TANK 1
40'ø
GASOLINE

FUTURE PUMP
LOCATION, SEE
SHEET M2.4

REFER TO M2-2
FOR ENLARGED VIEW

FUTURE BULLET
TANKS, 5,000
GALLONS EACH
FOR JET A-1
FUEL, NOT IN
CONTRACT.

REFER TO M2-1
FOR ENLARGED VIEW

TO TRUK STOP HOTEL

TO AIRPORT

SITE PLAN – MECHANICAL PIPING
SCALE: 1/16" = 1' – 0"

REVISION	BY	DATE	APPROVED
FOR CONSTRUCTION		9/24/2019	

PRYZM CONSULTING

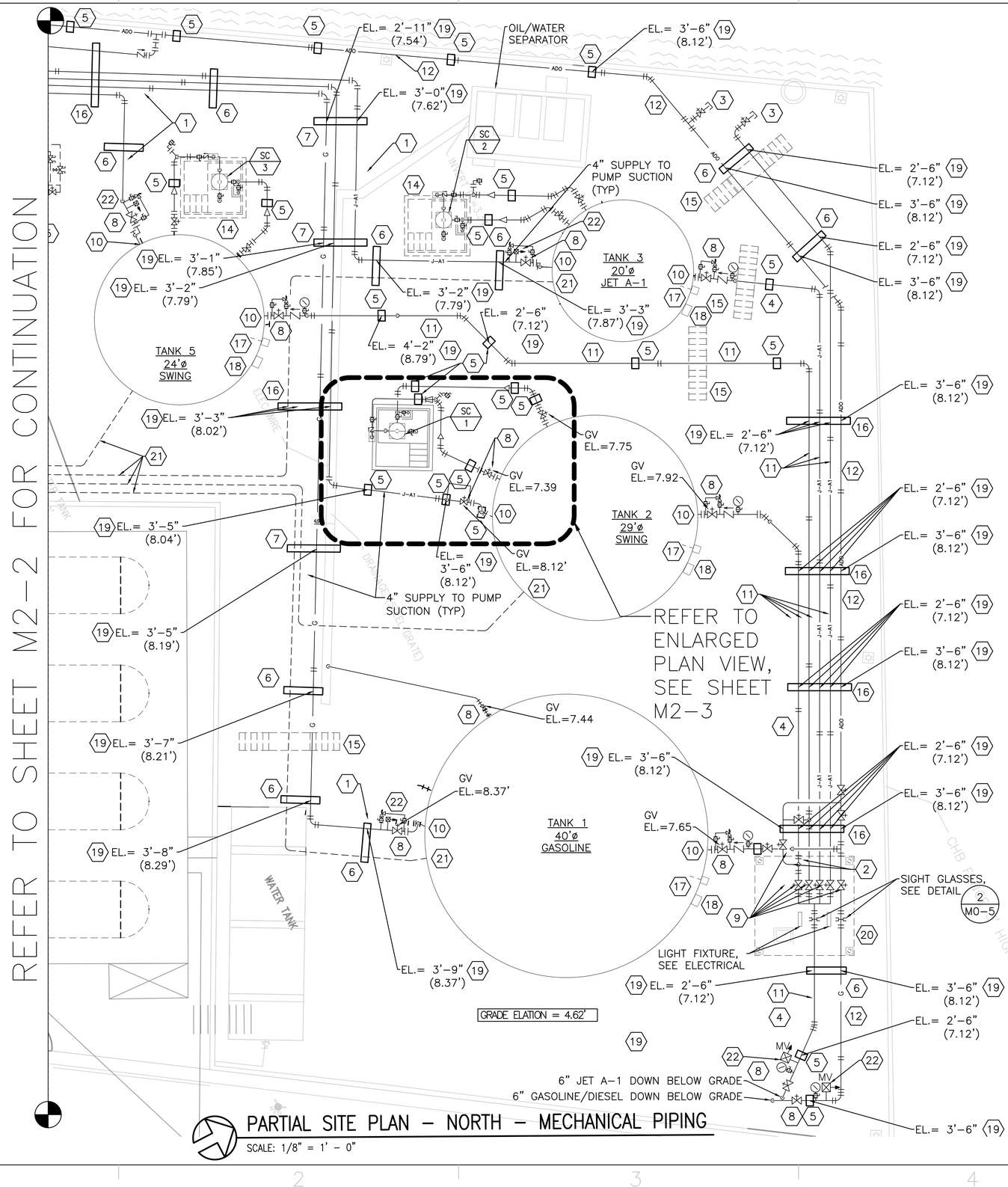
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

SITE PLAN – MECHANICAL PIPING

DATE:	07-30-2019
SCALE:	1/16"=1'
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M2-0

SHEET 14 OF 18



PARTIAL SITE PLAN – NORTH – MECHANICAL PIPING

SCALE: 1/8" = 1' – 0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

KEYED NOTES (APPLY TO THIS SHEET ONLY):

1. EXISTING PUMP SUCTION LINES TO BE ACTIVE UNTIL NEW LINES ARE OPERATIONAL TO PUMPS (TYPICAL).
2. TANK #2 & 5 GASOLINE/ADO CONNECTION FOR SWING TANKS.
3. 6"ø BLIND FLANGE FOR EMERGENCY BACK–UP TO SHIP–TO–SHORE HOOK UP.
4. REMOVE EXISTING 6"ø TANK SUPPLY LINES TO MAKE ROOM FOR NEW PIPING. SEE DEMOLITION DRAWINGS SHEETS M1–0 THROUGH M1–2.
5. TYPE "C" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS 1/MO–4.
6. TYPE "B" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS 1/MO–4.
7. TYPE "A" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS 1/MO–4.
8. LINE SIZE RISING STEM GATE VALVE WITH THERMAL RELIEF BYPASS, SEE BYPASS DETAIL 1/MO–5.
9. LINE SIZE BALL VALVE.
10. NEW PIPING CONNECTING TO EXISTING 6" TANK FLANGE (TYPICAL).
11. 6"ø SCH. 40 316L STAINLESS STEEL API 5L PIPE IN 20'9" RAISED FACE FLANGE SECTIONS.
12. 6"ø SCH. 40 GALV. STEEL, API 5L PIPE IN 20'9" RAISED FACE FLANGE SECTIONS.
13. 4"ø SCH. 40 GALV. STEEL, API 5L PIPE IN 20'9" RAISED FACE FLANGE SECTIONS.
14. NEW 84"X56"X36" CONCRETE PIT FOR NEW FLUSH TANK (TYPICAL).
15. CONCRETE STAIRS WITH RAILING FOR ACCESS TO BOTH SIDES OF PIPING OR BUND WALL.
16. TYPE "D" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS 1/MO–4.
17. TANK HIGH LEVEL ALARM, SET 12" ABOVE NORMAL TANK HIGH LEVEL CUT–OFF.
18. TANK HIGH LEVEL ALARM CONTROL BOX, SET +60" ABOVE FINISHED GRADE.
19. PIPE SLOPED 1/16" PER FOOT TO PUMP. THE DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS FROM GRADE TO ℄ OF PIPE. (DIMENSION IN PARENTHESIS IS FROM DATUM TO ℄ OF PIPE).
20. NEW 14'–0"X14'–0"X9'–0" HIGH (MIN.) ROOF COVER OVER VALVES AND SIGHT GLASSES (TYPICAL).
21. FUTURE FOAM FIRE PROTECTION PIPING SHOWN FOR INFORMATION ONLY. NOT IN CONTRACT.
22. 1" MANUAL AIR VENT, SEE DETAIL 4/MO–5 (TYPICAL).

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/24/2019	

PRYZM CONSULTING

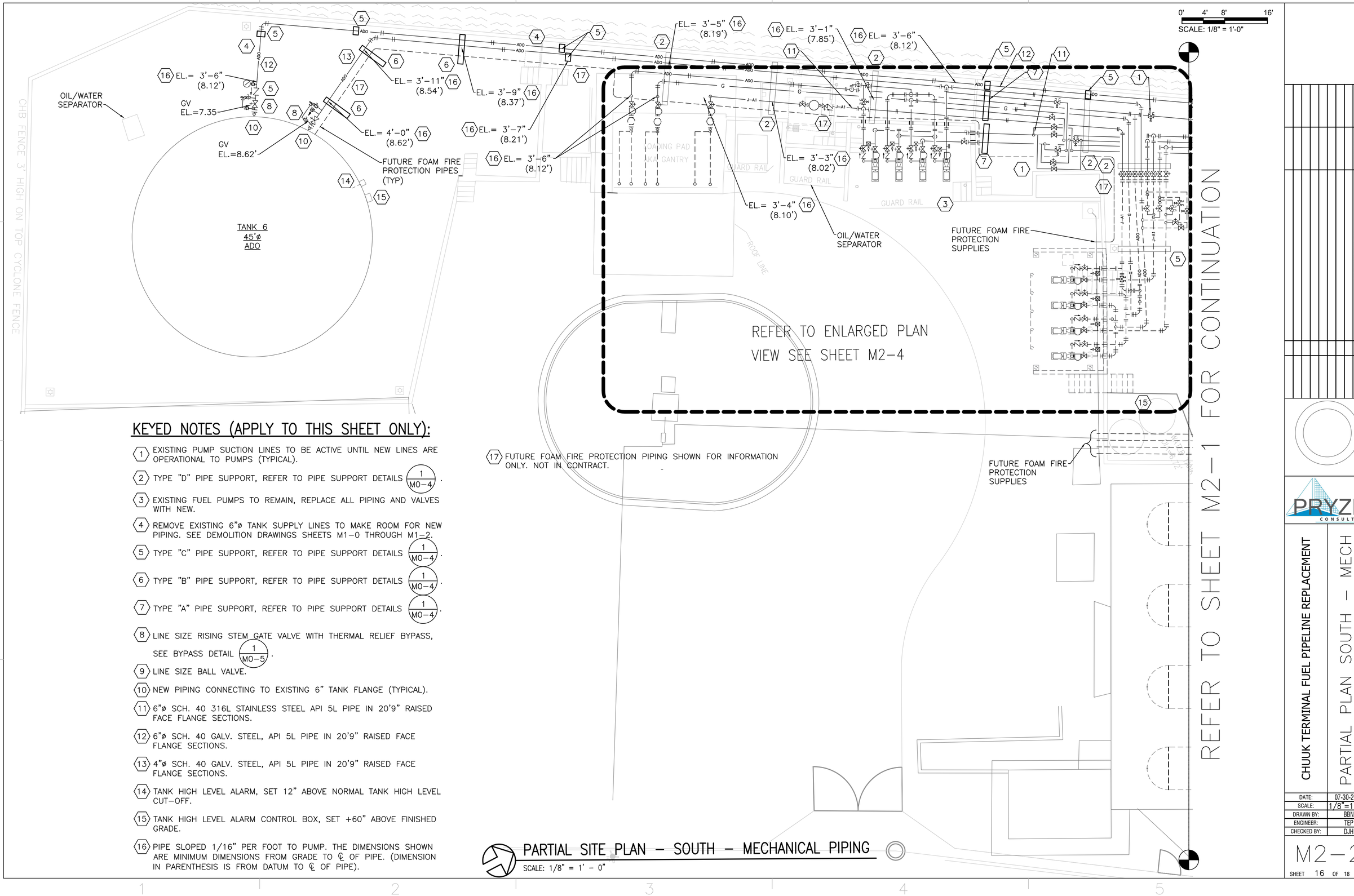
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

PARTIAL PLAN NORTH – MECH

DATE:	07-30-2019
SCALE:	1/8"=1'–0"
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M2–1

SHEET 15 OF 18



KEYED NOTES (APPLY TO THIS SHEET ONLY):

1. EXISTING PUMP SUCTION LINES TO BE ACTIVE UNTIL NEW LINES ARE OPERATIONAL TO PUMPS (TYPICAL).
2. TYPE "D" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS (1/M0-4).
3. EXISTING FUEL PUMPS TO REMAIN, REPLACE ALL PIPING AND VALVES WITH NEW.
4. REMOVE EXISTING 6"ø TANK SUPPLY LINES TO MAKE ROOM FOR NEW PIPING. SEE DEMOLITION DRAWINGS SHEETS M1-0 THROUGH M1-2.
5. TYPE "C" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS (1/M0-4).
6. TYPE "B" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS (1/M0-4).
7. TYPE "A" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAILS (1/M0-4).
8. LINE SIZE RISING STEM GATE VALVE WITH THERMAL RELIEF BYPASS, SEE BYPASS DETAIL (1/M0-5).
9. LINE SIZE BALL VALVE.
10. NEW PIPING CONNECTING TO EXISTING 6" TANK FLANGE (TYPICAL).
11. 6"ø SCH. 40 316L STAINLESS STEEL API 5L PIPE IN 20'9" RAISED FACE FLANGE SECTIONS.
12. 6"ø SCH. 40 GALV. STEEL, API 5L PIPE IN 20'9" RAISED FACE FLANGE SECTIONS.
13. 4"ø SCH. 40 GALV. STEEL, API 5L PIPE IN 20'9" RAISED FACE FLANGE SECTIONS.
14. TANK HIGH LEVEL ALARM, SET 12" ABOVE NORMAL TANK HIGH LEVEL CUT-OFF.
15. TANK HIGH LEVEL ALARM CONTROL BOX, SET +60" ABOVE FINISHED GRADE.
16. PIPE SLOPED 1/16" PER FOOT TO PUMP. THE DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS FROM GRADE TO ℄ OF PIPE. (DIMENSION IN PARENTHESIS IS FROM DATUM TO ℄ OF PIPE).
17. FUTURE FOAM FIRE PROTECTION PIPING SHOWN FOR INFORMATION ONLY. NOT IN CONTRACT.

PARTIAL SITE PLAN – SOUTH – MECHANICAL PIPING

SCALE: 1/8" = 1' – 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/24/2019	

PRYZM CONSULTING

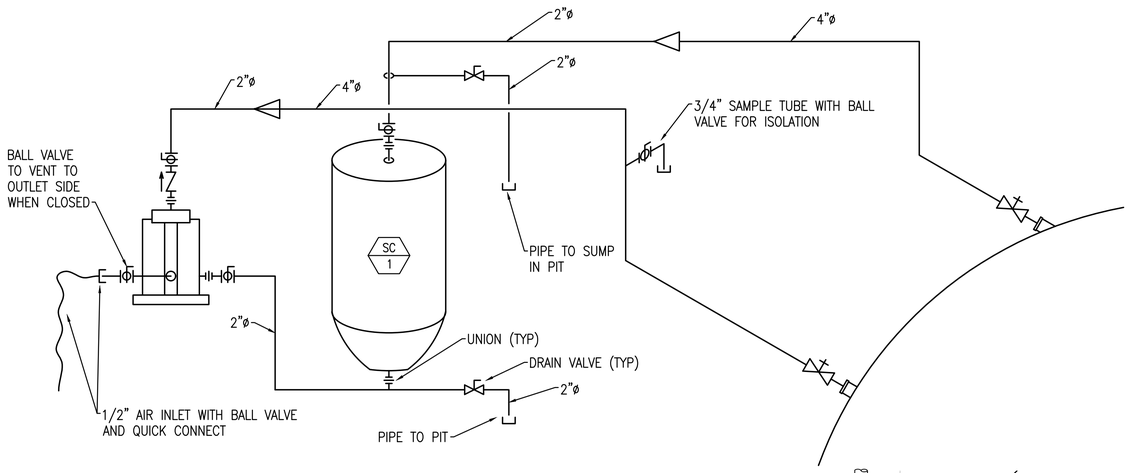
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

PARTIAL PLAN SOUTH – MECH

DATE:	07-30-2019
SCALE:	1/8"=1'-0"
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M2-2

SHEET 16 OF 18



NOTE:
ALL PIPING SHALL BE SCH. 40 SYAINLESS STEEL 316L API 5L.
ALL VALVES TO BE BALL VALVES, EXCEPT VALVES AT EXISTING FUEL STORAGE TANK SHALL BE GATE VALVES.

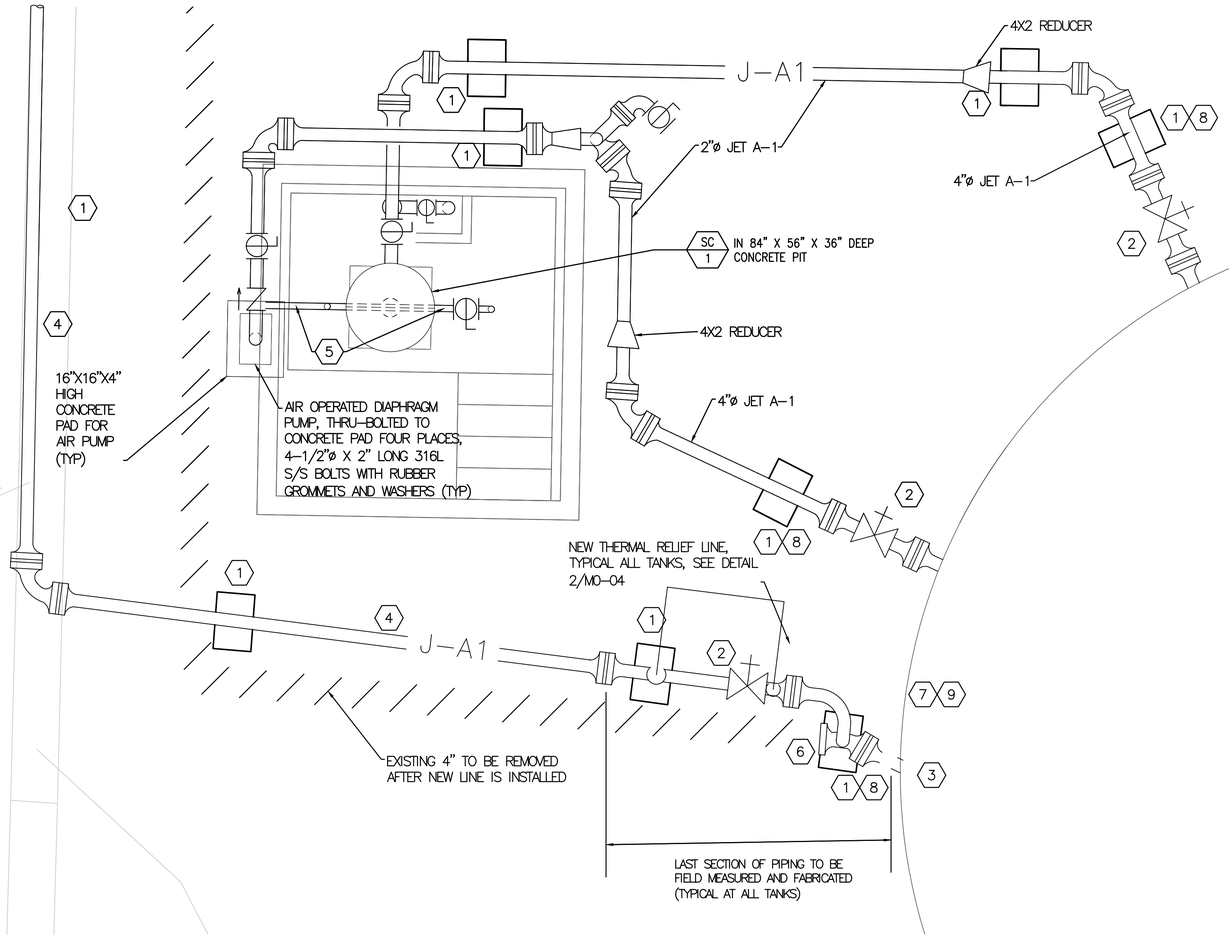
1/M1-3 FUEL RECOVERY UNIT SCHEMATIC

SCALE:NTS SC-2, SC-3, AND SC-4 SIMILAR

0' 1' 2' 4'
SCALE: 1/2" = 1'-0"

KEYED NOTES (APPLY TO THIS SHEET ONLY):

1. TYPE "C" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAIL 1/MO-4 .
2. LINE SIZE RISING STEM GATE VALVE WITH THERMAL RELIEF BYPASS, SEE BYPASS DETAIL 1/MO-5 .
3. NEW PIPING CONNECTING TO EXISTING 6" TANK FLANGE (TYPICAL).
4. 4"ø SCH. 40 316L STAINLESS STEEL API 5L PIPE WITH RAISED FACE FLANGES.
5. 2"ø SCH. 40 316L STAINLESS STEEL API 5L PIPE WITH RAISED FACE FLANGES.
6. BLIND FLANGE.
7. 90° ANSI 150# 316L STAINLESS STEEL FLANGE.
8. PROVIDE PIPE SUPPORTS WITHIN 4 FT OF ALL TANK CONNECTIONS (TYPICAL).
9. NEW PIPE OFFSET APPROXIMATELY 24" MINIMUM ABOVE EXISTING PIPE (TYPICAL).



ENLARGED PLAN - TANK 2 - MECHANICAL PIPING

SCALE: 1/2" = 1' - 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/24/2019	

PRYZM CONSULTING

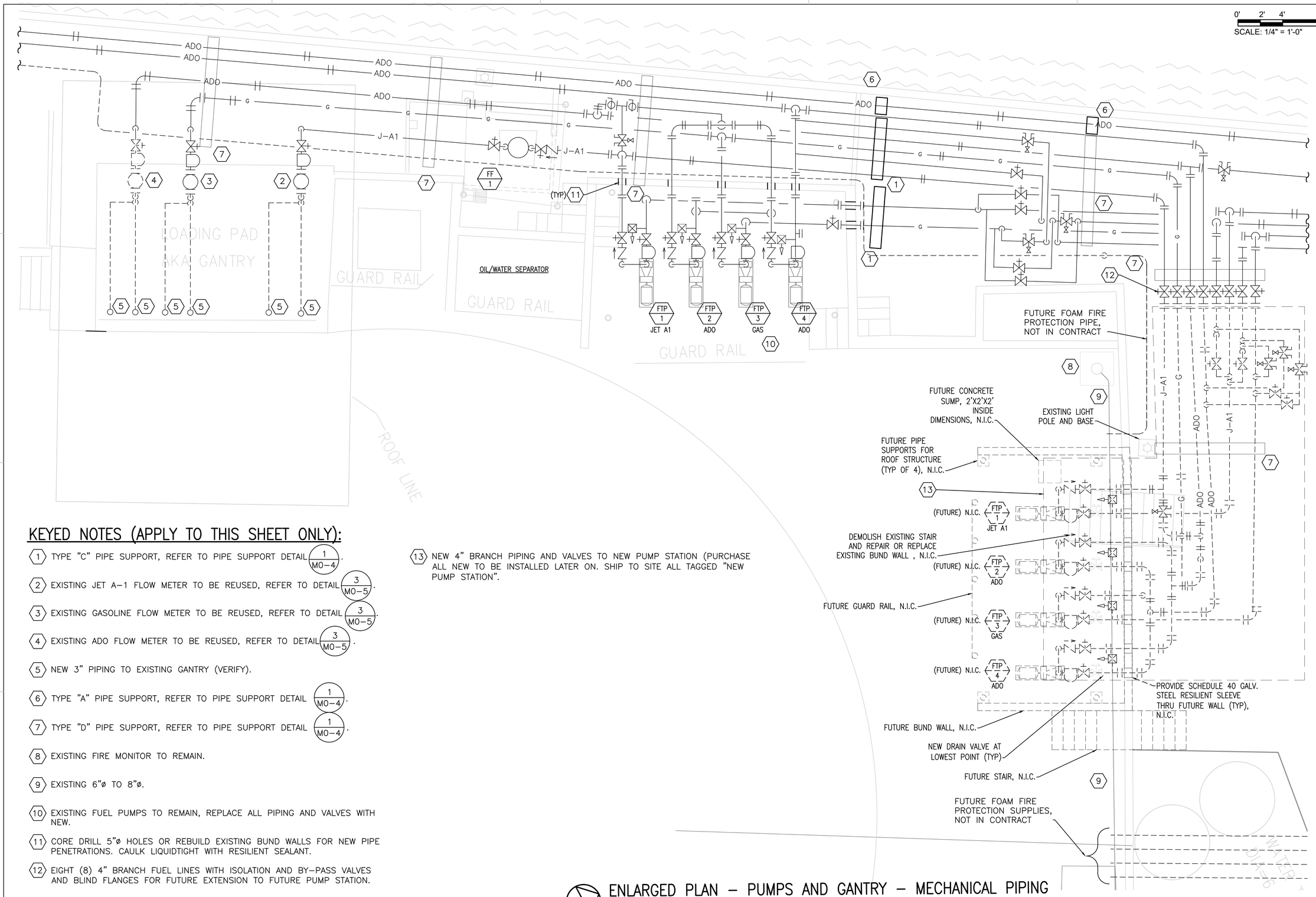
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ENLARGED TANK 2 - MECH

DATE:	07-30-2019
SCALE:	1/2"=1'-0"
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M2-3

SHEET 17 OF 18



KEYED NOTES (APPLY TO THIS SHEET ONLY):

1. TYPE "C" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAIL 1/MO–4.
2. EXISTING JET A–1 FLOW METER TO BE REUSED, REFER TO DETAIL 3/MO–5.
3. EXISTING GASOLINE FLOW METER TO BE REUSED, REFER TO DETAIL 3/MO–5.
4. EXISTING ADO FLOW METER TO BE REUSED, REFER TO DETAIL 3/MO–5.
5. NEW 3" PIPING TO EXISTING GANTRY (VERIFY).
6. TYPE "A" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAIL 1/MO–4.
7. TYPE "D" PIPE SUPPORT, REFER TO PIPE SUPPORT DETAIL 1/MO–4.
8. EXISTING FIRE MONITOR TO REMAIN.
9. EXISTING 6"ø TO 8"ø.
10. EXISTING FUEL PUMPS TO REMAIN, REPLACE ALL PIPING AND VALVES WITH NEW.
11. CORE DRILL 5"ø HOLES OR REBUILD EXISTING BUND WALLS FOR NEW PIPE PENETRATIONS. CAULK LIQUIDTIGHT WITH RESILIENT SEALANT.
12. EIGHT (8) 4" BRANCH FUEL LINES WITH ISOLATION AND BY–PASS VALVES AND BLIND FLANGES FOR FUTURE EXTENSION TO FUTURE PUMP STATION.
13. NEW 4" BRANCH PIPING AND VALVES TO NEW PUMP STATION (PURCHASE ALL NEW TO BE INSTALLED LATER ON. SHIP TO SITE ALL TAGGED "NEW PUMP STATION".

ENLARGED PLAN – PUMPS AND GANTRY – MECHANICAL PIPING

SCALE: 1/4" = 1' – 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/24/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ENLARGED PUMPS – MECH

DATE:	07-30-2019
SCALE:	1/4"=1'–0"
DRAWN BY:	BBN
ENGINEER:	TEP
CHECKED BY:	DJH

M2–4

SHEET 18 OF 18

GENERAL NOTES

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL MEET THE REQUIREMENTS OF THE NEC, THE LOCAL ELECTRIC AND COMMUNICATION UTILITIES AND ALL APPLICABLE LOCAL CODES. ALL WORK SHALL BE PERFORMED BY PERSONNEL SKILLED IN THE PARTICULAR TRADE. WORKMANSHIP SHALL CONFORM TO THE CURRENT STANDARDS OF THE NEC. THE PRIME CONTRACTOR SHALL TAKE OUT AND PAY FOR ALL PERMITS REQUIRED, AND PAY FOR ALL FEES, INSPECTION CHARGES, AND OTHER SIMILAR COSTS ASSOCIATED WITH THE ELECTRICAL WORK.
2. THE CONTRACTOR SHALL COORDINATE ALL ASPECTS OF THE REVISED ELECTRICAL SERVICE. THIS INCLUDES PROPER COORDINATION, NOTIFICATION AND SCHEDULING BETWEEN THE UTILITY, THE OWNER, ELECTRICAL INSPECTOR AND ANY OTHER AFFECTED PARTY(S). ALL SERVICE ENTRANCE EQUIPMENT SHALL MEET THE STANDARDS AND REQUIREMENTS OF THE LOCAL UTILITY. OBTAIN LOCAL UTILITY APPROVAL PRIOR TO EQUIPMENT MANUFACTURE AND/OR PURCHASE. ALL CHANGE–OVER WORK SHALL BE SCHEDULED TO BE ACCOMPLISHED WITH THE LEAST POSSIBLE INTERRUPTION TO THE OWNER. OWNER SHALL APPROVE INTERRUPTIONS OF SERVICES AT LEAST 24 HOURS IN ADVANCE.
3. ALL WORK SHALL COMPLY WITH THE MINIMUM REQUIREMENTS FOR THE HAZARD AREAS AND CLASSIFICATIONS THAT ARE NOTED ON SHEET E1–0. IN GENERAL, ALL WORK INSIDE THE BUND WALLS SHALL BE CLASS 1, ZONE 1.
4. ALL CONTRACTOR–SUPPLIED EQUIPMENT SHALL BE PROVIDED WITH PHENOLIC NAMEPLATES 1/8" HIGH LETTERING, DESCRIBING ITS FUNCTION AND/OR AREA OF CONTROL. EQUIPMENT INCLUDES PANELS, PANELBOARDS, HVAC UNITS, ETC. ATTACH NAMEPLATES TO EQUIPMENT WITH STAINLESS STEEL SCREWS.
5. THE CONTRACTOR SHALL FURNISH ALL POWER, LABOR, MATERIAL, INSTRUMENTS AND TOOLS TO MAKE ALL CONNECTIONS FOR TESTING OF THE ELECTRICAL AND INSTRUMENTATION INSTALLATION. ALL EQUIPMENT SHALL BE DEMONSTRATED AS OPERATING PROPERLY PRIOR TO THE ACCEPTANCE OF THE WORK. ALL TEST RESULTS SHALL BE SUBMITTED IN WRITING TO THE OWNER.
6. WHENEVER PRACTICAL, INSETS, OR SLEEVES SHALL BE INSTALLED PRIOR TO COVERING WORK. PROVIDE GROUTING AROUND RACEWAYS WHERE PENETRATING FLOOR SLABS, CONCRETE OR MASONRY. USE CEMENT OR NON–SHRINK GROUT. PLASTER PATCH AROUND ALL WALLBOARD OPENINGS AND MATCH EXISTING PAINT. FIRE RATING OF ALL CEILINGS, WALLS AND FLOORS MUST BE MAINTAINED. PROVIDE UL APPROVED FIRE–STOPPING MATERIALS TO ACHIEVE REQUIRED RATINGS.
7. CONDUIT SHALL BE RIGID GALVANIZED STEEL WITH THREADED GALVANIZED STEEL FITTINGS. WIRE AND CABLE SHALL BE OF THE TYPE AND SIZE AS REQUIRED BY THE NEC. FLEXIBLE CONDUIT COMPLYING WITH NEC 501.10 (A) FOR CLASS 1, DIV. 1 OR (B) FOR CLASS 1, DIV. 2 SHALL BE USED FOR FINAL CONNECTION TO ALL VIBRATING OR ROTATING EQUIPMENT (SEAL–TITE IN EXTERIOR LOCATIONS). ALL CONDUIT TO PANELBOARD ENCLOSURES SHALL HAVE INSULATING GROUNDING BUSHINGS CONNECTED TO THE GROUND BUS. ALL WIRES TO BE COPPER AND IN CONDUIT. PROVIDE WP HUBS FOR OUTDOOR AREAS AND SEALING FITTINGS IN NEC HAZARDOUS LOCATIONS.
8. PROVIDE ANY BACKING REQUIRED TO PROPERLY SUPPORT ALL FIXTURES AND EQUIPMENT INSTALLED UNDER THIS CONTRACT. PROVIDE SEISMIC BRACING AND EQUIPMENT SUPPORTS PER LOCAL CODE REQUIREMENTS. PROVIDE FIRE RESISTANT MATERIALS.
9. ALL CONDUIT, EQUIPMENT, PANELS, ETC. SHALL BE PAINTED WITH TWO COATS OF MARINE GRADE PAINT. COLOR AS SELECTED BY THE OWNER.
10. GROUND EACH TANK WITH MINIMUM OF 2 EACH #4/0 BARE CU. CONNECT TO A DRIVEN 10'–0" LONG X 3/4" DIAMETER COPPER CLAD GROUND ROD. ALL PIPING SHALL BE ELECTRICALLY CONTINUOUS OR BONDED TOGETHER WITH JUMPERS.
11. ALL RACEWAYS SHALL BE MINIMUM 3/4" DIAMETER CONDUIT.
12. ALL CONDUCTORS SHALL BE COPPER WITH XHHW INSULATION.
13. ALL RACEWAYS SHALL INCLUDE A GROUND WIRE, SIZED PER NEC, BUT MIN #12 AWG.
14. ALL WORK SHALL BE CAREFULLY REVIEWED. PROVIDE WIRING METHODS, INSTALLATIONS AND EQUIPMENT TO COMPLY WITH CODE REQUIREMENTS FOR HAZARDOUS LOCATIONS WHERE REQUIRED. COMPLY WITH LATEST PUBLICATIONS OF NFPA 30 AND NFPA 70. PROVIDE SEALING FITTINGS IN LOCATIONS PRESCRIBED BY ALL APPLICABLE CODES AND STANDARDS.
15. ALL EXPOSED WORK SHALL BE LAID OUT NEATLY, MINIMIZE LENGTHS OF RACEWAYS AND NUMBER OF EXPOSED BOXES, FITTINGS AND SUPPORTS. RUN RACEWAYS PARALLEL TO BUILDING LINES AND AT RIGHT ANGLES. ACTUAL ROUTING AND INSTALLATION SHALL BE SUBJECT TO APPROVAL. INSTALLATIONS DEEMED UNACCEPTABLE SHALL BE REPLACED WITH APPROVED INSTALLATIONS. NO CONDUIT RUN SHALL HAVE MORE THAN 360° TOTAL CHANGE IN DIRECTION. PROVIDE PULL BOXES WHERE REQUIRED.
16. ALL INSTALLATIONS AND EQUIPMENT SHALL BE LIQUIDTIGHT AND CORROSION–RESISTANT WITH UL LABELS SUITABLE FOR THE APPLICATION.
17. ALL STAINLESS STEEL SHALL BE 316 OR HIGHER CORROSION RESISTANCE.
18. MINIMUM SIZE BRANCH CIRCUIT SHALL BE 2 #12 + 1 #12 GND, 3/4" C. CONNECTED TO 20/1 CIRCUIT BREAKER, UNLESS OTHERWISE NOTED.
19. ALL WORK IN AREAS CLASSIFIED BY NFPA AS HAZARDOUS SHALL BE PERFORMED IN THE MANNER PRESCRIBED BY NFPA FOR THE CLASSIFICATION DETERMINED FOR THAT AREA.

LIGHTING

#	LIGHTING FIXTURE DESIGNATION
	POLE–MOUNTED LUMINAIRES
	SURFACE MOUNTED OR PENDANT LUMINAIRE

GENERAL

—— UG ——	UNDERGROUND ELECTRICAL
—— UC ——	UNDERGROUND COMMUNICATIONS
J	JUNCTION BOX
XXX / XXX	REFERENCE TARGET, UPPER HALF INDICATES DETAIL'S NUMBER, LOWER HALF INDICATES DETAIL'S SHEET NO.
XXX / XXX	MECHANICAL EQUIPMENT (SEE MECHANICAL SCHEDULES)

NOTES:
1. SOME SYMBOLS IN THIS LEGEND MAY NOT APPEAR ON THE ACTUAL DRAWINGS.
2. CIRCUIT NUMBERS ARE INDICATED USING SUBSCRIPT OR SUPERSCRIPT ADJACENT TO FIXTURE, DEVICE OR EQUIPMENT, WHERE SHOWN.

ABBREVIATIONS

+#"	ELEVATION AFF OR AFG
3P	THREE–PHASE
A, AMP	AMP OR AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
ESD	FUEL SYSTEM/PUMPS EMERGENCY SHUT DOWN INTERLOCKS
EXIST OR (E)	EXISTING
G, GRD, GND	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
HD	HEAVY DUTY
HH	HANDHOLE
HP	HORSEPOWER
J–BOX	JUNCTION BOX
KVA	KILOVOLT AMPS
KW	KILOWATT
MPH	MILES PER HOUR
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
OD	OUTSIDE DIAMETER
PH OR Φ	PHASE
PNL	PANEL
RECEPT	RECEPTACLE
RI	ROUGH–IN
SPECS	SPECIFICATIONS
SW	SWITCH
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
XP	EXPLOSION PROOF
W	WATTS OR WIRE
WP	WATERPROOF

ELECTRICAL SYMBOLS AND LEGEND

POWER

SYMBOL PLAN	SYMBOL DIAGRAM	DESCRIPTION
T		TRANSFORMER
		PANEL BOARD
$WP		SWITCH – SINGLE POLE: WP= WEATHER PROOF XP= EXPLOSION PROOF
		MOTOR CONNECTION
	M	MOTOR STARTER – MAGNETIC
$M		MANUAL STARTER
		DISCONNECT SWITCH – NON–FUSIBLE, HD
F		FUSED DISCONNECT SWITCH, HD OVERCURRENT PROTECTION AS INDICATED OR REQUIRED
		COMBINATION MOTOR STARTER DISCONNECT SWITCH, HD
CKT WP		DUPLEX RECEPTACLE. SUB OR SUPERSCRIPT INDICATES CIRCUIT DESIGNATION. WP=WEATHERPROOF WITH GFCI RECEPTACLE
		GROUND CONNECTION
XP		HOME RUN, EXPLOSION PROOF CONSTRUCTION
LS #		LIQUID LEVEL SENSOR, EXPLOSION PROOF # = QUANTITY
FS		FLOW SWITCH
PS		PRESSURE SWITCH
CB	30/3	CIRCUIT BREAKER NUMBER INDICATES TRIP SETTING AND NUMBER OF POLES
		MOTOR THERMAL OVERLOADS
		NORMALLY OPEN CONTACT
		2–POSITION SELECTOR SWITCH

ELECTRICAL DRAWING INDEX

E0–1	ELECTRICAL COVER SHEET
E1–0	OVERALL SITE PLAN – ELECTRICAL
E1–1	PARTIAL SITE PLAN NORTH – ELECTRICAL
E1–2	PARTIAL SITE PLAN SOUTH – ELECTRICAL
E5–0	ONE–LINE DIAGRAMS – ELECTRICAL

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ELECTRICAL COVER SHEET

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	JRP
CHECKED BY:	TEP

E0–1

SHEET 1 OF 5

LIGHTING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER AND MODEL NUMBER	LAMP(S)	WATTS/VOLTS	REMARKS
A	SURFACE MOUNTED EXPLOSION PROOF LINEAR LED, 4 TUBES, 10,000 LUMENS 53"L X 6.8"H X 23.2"W UL LISTED MARINE OUTDOOR UL WET LOCATION LISTED AND LABELED	HOLOPHANE HXPL10L44TAS WITH MOUNTING KIT AND OTHER ACCESSORIES TO SUIT APPLICATION	4 TUBES	93.6/120	EXPLOSION PROOF
B	SURFACE MOUNTED EXPLOSION PROOF LINEAR LED, 2 TUBES, 3,000 LUMENS 29"L X 6.5"H X 11.5"W UL LISTED MARINE OUTDOOR UL WET LOCATION LISTED AND LABELED	HOLOPHANE HXPL3L223TAS WITH MOUNTING KIT AND OTHER ACCESSORIES TO SUIT APPLICATION	2 TUBES	26.6/120	EXPLOSION PROOF

GENERAL SHEET NOTES:

1. ALL DIMENSIONS ARE PROVIDED IN FEET AND INCHES UNLESS NOTED OTHERWISE.
2. ALL INTERCEPTOR DRAINAGE PITS AND SEPARATOR PITS SHALL BE CLASSIFIED AS FOLLOWS:

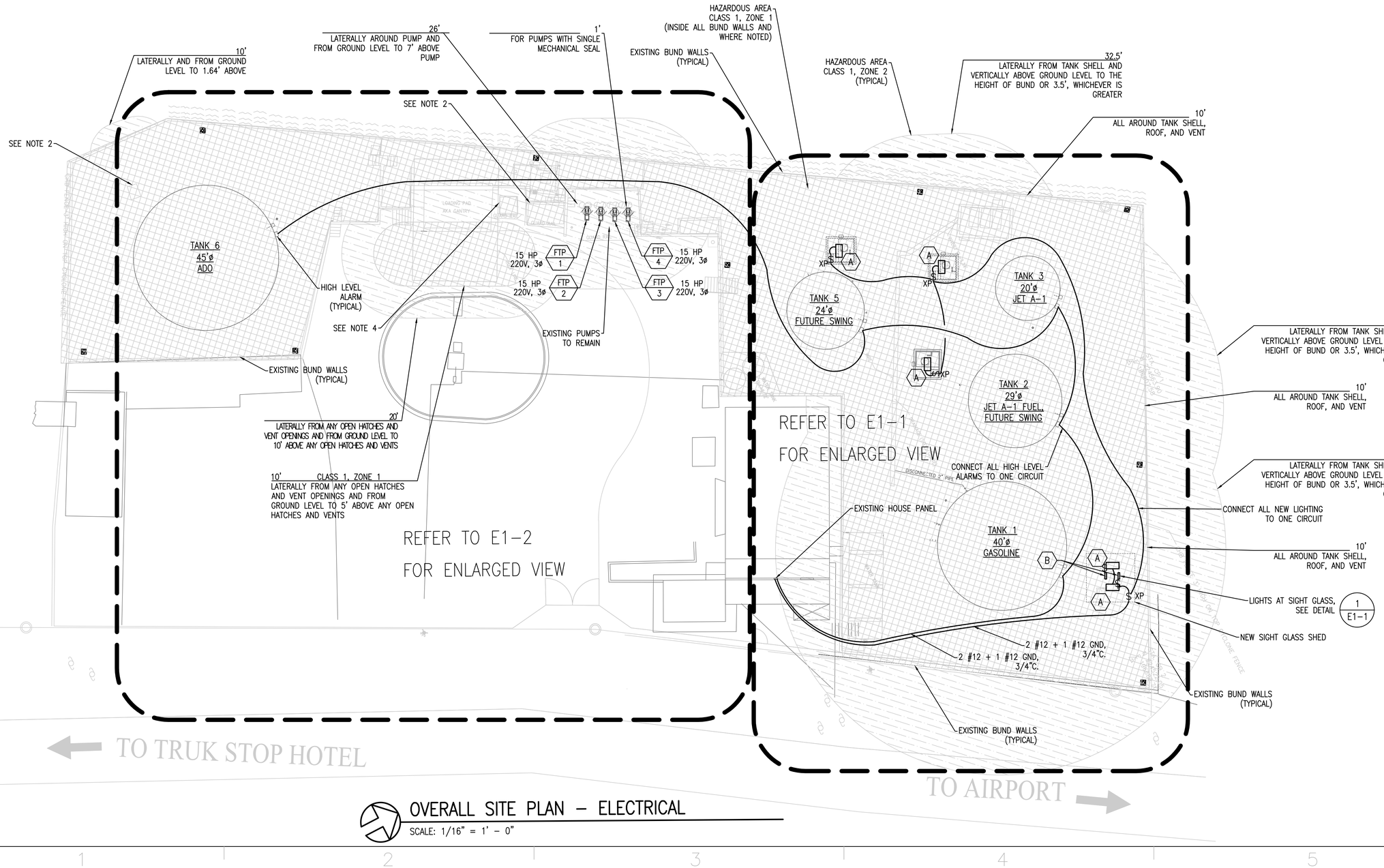
   CLASS 1, ZONE 1 – INTERIOR TO GROUND LEVEL.

   CLASS 1, ZONE 2 – FOR 10 FEET EXTENDING ALL DIRECTIONS AT 1.64 FEET ABOVE GROUND LEVEL.
3. ANY OPEN PITS, DRAINS OR UNDERGROUND ENCLOSURES (eg CONDUITS) WITHIN THE HAZARDOUS AREA SHALL BE CLASSIFIED AS ZONE 1 FOR THE ENTIRE LENGTH.
4. ANY WASTE COLLECTION PITS AND SUMPS DOWNSTREAM OF FLAMMABLE LIQUID FACILITIES SHALL BE CLASSIFIED AS FOLLOWS:

   CLASS 1, ZONE 1 – INTERIOR TO GROUND LEVEL.

   CLASS 1, ZONE 2 – FOR 1.64 FEET EXTENDING ALL DIRECTIONS AT 1.64' ABOVE GROUND LEVEL.

SCALE: 1/16" = 1'-0"



OVERALL SITE PLAN – ELECTRICAL

SCALE: 1/16" = 1' – 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

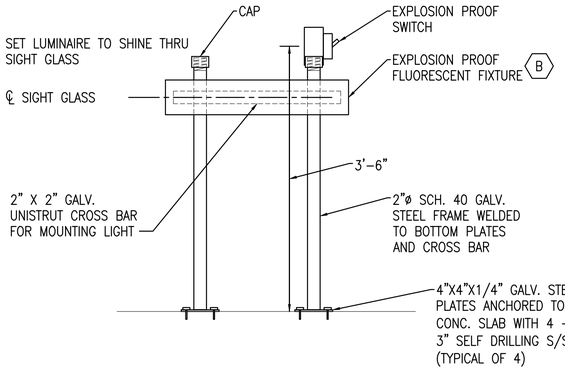
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

OVERALL SITE PLAN -ELECTRIC

DATE:	07-30-2019
SCALE:	1/16"=1'
DRAWN BY:	BBN
ENGINEER:	JRP
CHECKED BY:	TEP

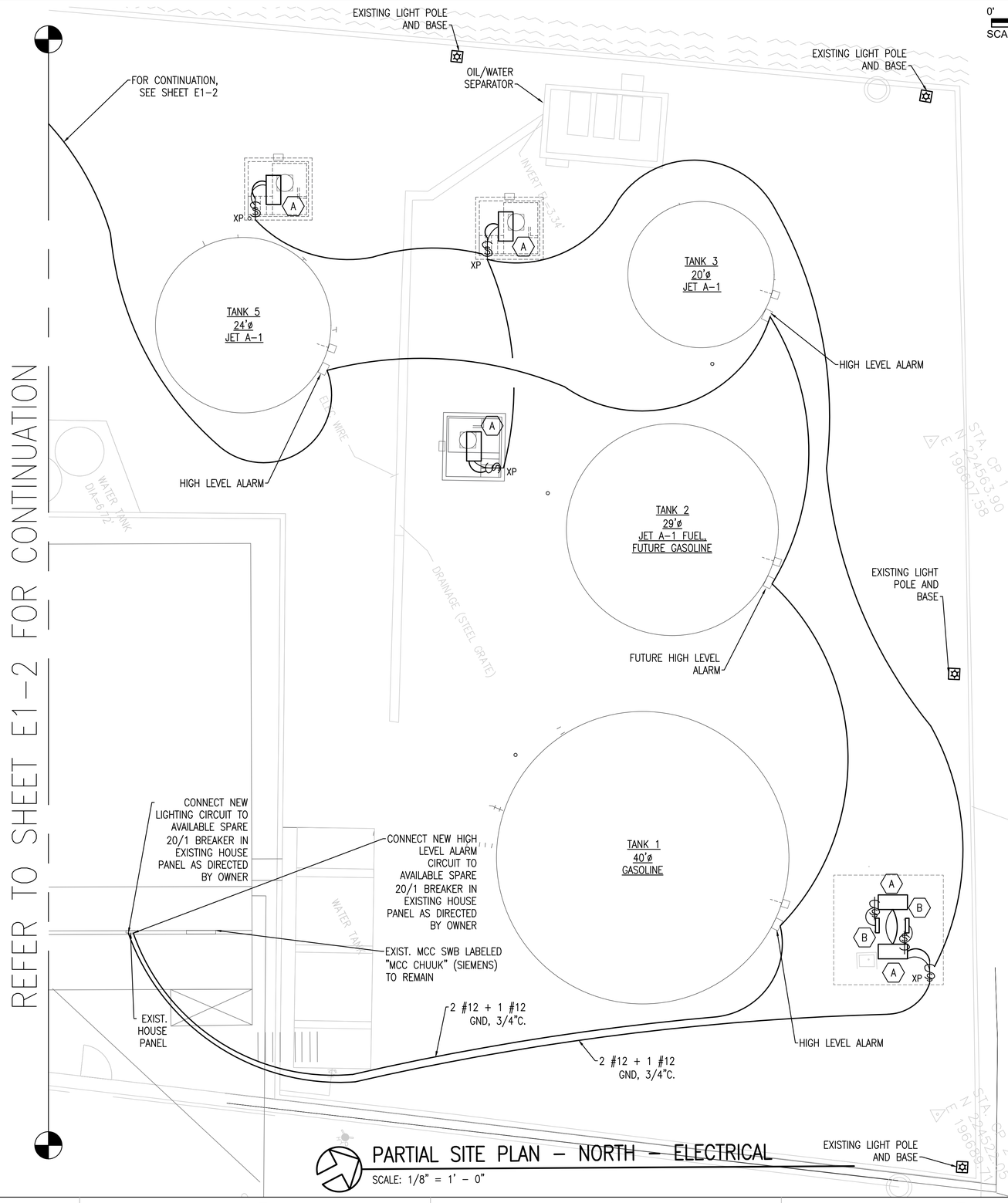
E1-0

SHEET 2 OF 5



1 / E1–1 SIGHT GLASS LIGHT DETAIL

SCALE:NO SCALE



PARTIAL SITE PLAN – NORTH – ELECTRICAL

SCALE: 1/8" = 1' – 0"

REVISION	BY	DATE	APPROVED
FOR CONSTRUCTION DESCRIPTION		9/4/2019	

PRYZM CONSULTING

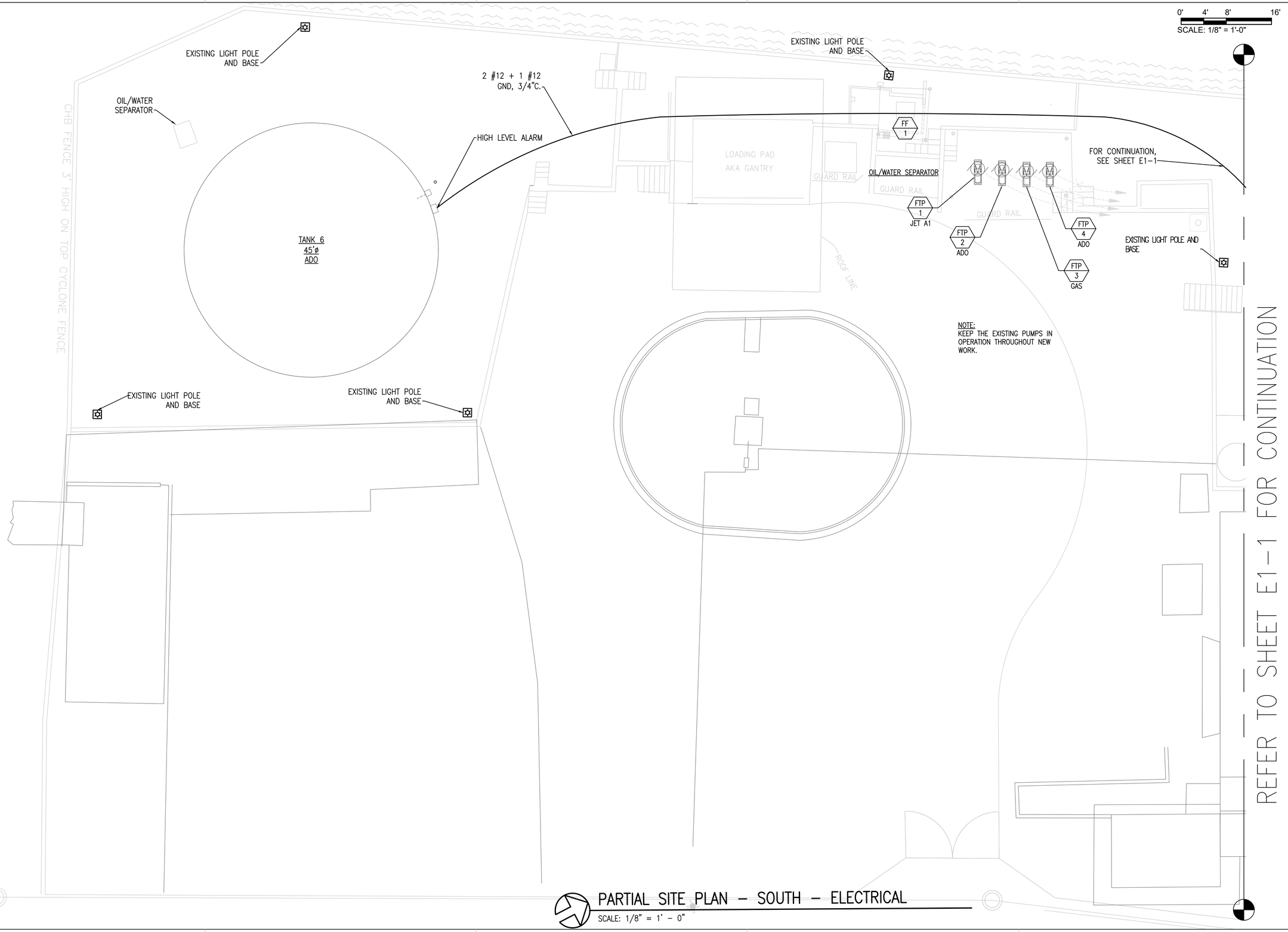
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

PARTIAL PLAN NORTH – ELEC

DATE:	07-30-2019
SCALE:	1/8"=1'–0"
DRAWN BY:	BBN
ENGINEER:	JRP
CHECKED BY:	TEP

E1–1

SHEET 3 OF 5



PARTIAL SITE PLAN – SOUTH – ELECTRICAL

SCALE: 1/8" = 1' – 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

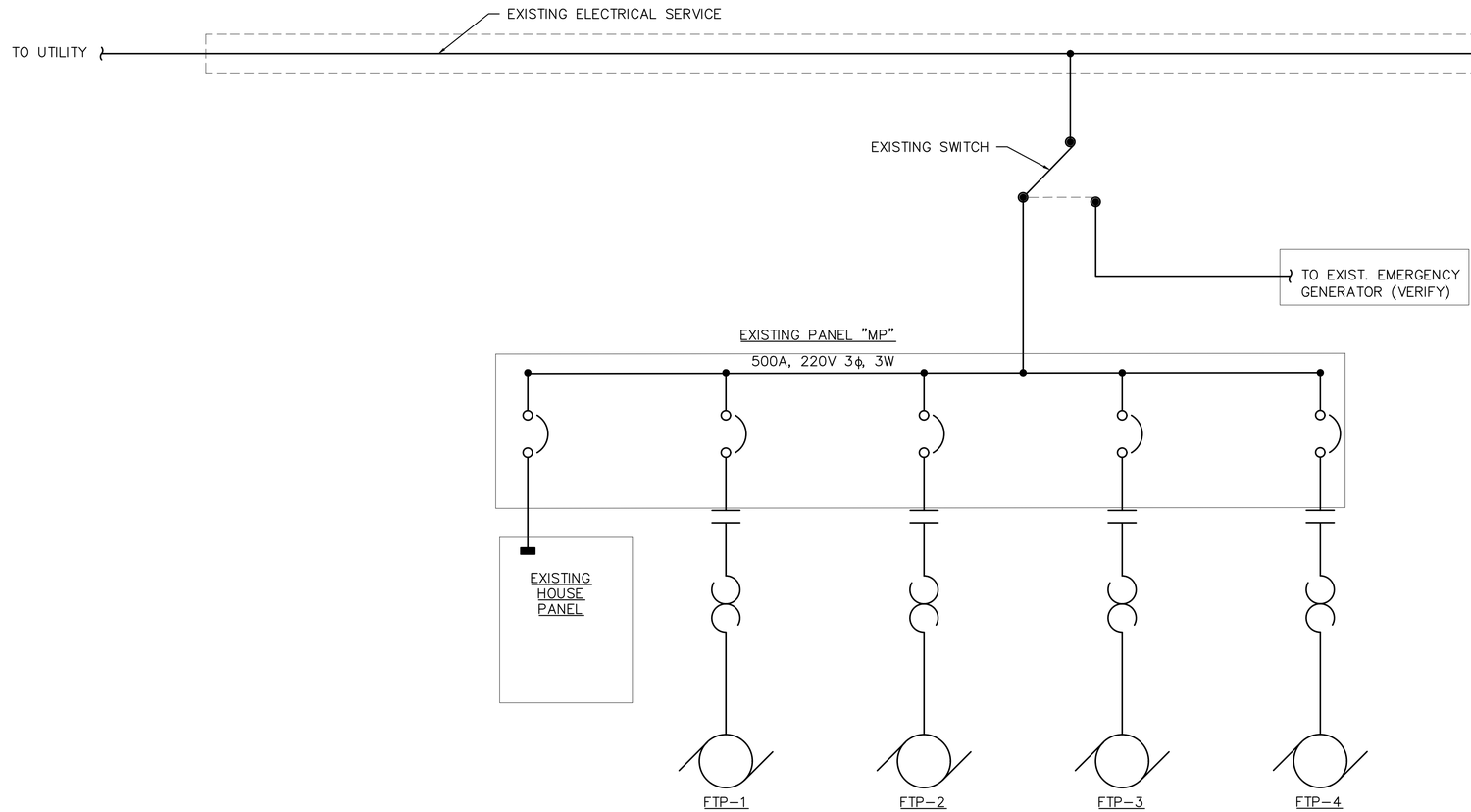
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

PARTIAL PLAN SOUTH – ELEC

DATE:	07-30-2019
SCALE:	1/8"=1'-0"
DRAWN BY:	BBN
ENGINEER:	JRP
CHECKED BY:	TEP

E1-2

SHEET 4 OF 5



NOTE: KEEP EXISTING PUMPS IN OPERATION THROUGHOUT ELECTRICAL WORK..

1 / E5-0 TANK FARM ONE-LINE DIAGRAM

NO SCALE

REVISION	BY	DESCRIPTION	DATE	APPROVED
		FOR CONSTRUCTION	9/4/2019	

PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ONE-LINE DIAGRAMS - ELECTRICAL

DATE:	07-30-2019
SCALE:	N/A
DRAWN BY:	BBN
ENGINEER:	JRP
CHECKED BY:	TEP

E5-0

SHEET 5 OF 5

STRUCTURAL NOTES

GENERAL

1. The Contractor shall verify all dimensions and conditions at the job site prior to starting construction and notify the Engineer immediately if any discrepancies or inconsistencies are found.

2. Details shown on the Structural drawings are typical. Similar details apply to similar conditions. In the event certain aspects of the work are not fully detailed on the drawings or specified in these structural notes, the construction shall be of the same character as for similar conditions that are shown or specified and shall be reviewed by the Engineer.

3. Existing conditions on these drawings are to be field verified by the Contractor as the work progresses. The Contractor shall notify the Engineer immediately if existing conditions are discovered to be different from those shown. The Contractor shall not proceed with construction until he receives written instructions from the Engineer to do so.

4. Notes and details on the drawings shall take precedence over these general notes and typical details. Dimensions shown on the drawings shall take precedence over scale.

5. These Structural drawings and notes represent the finished structure. Unless otherwise indicated, they do not specify the method of construction. The Contractor shall provide all measures necessary to protect the structure, workmen, and other persons during construction. Such measures shall include, but not be limited to, bracing of sufficient strength and stiffness to resist all loads, including wind and seismic loads, imposed on all elements of the structure, shoring for the building, construction equipment, earth embankments, retaining walls, formwork, scaffolding and planking. These protective measures are the sole responsibility of the Contractor and site visits by the Engineer shall not include observation of the same. Construction materials placed on framed roofs shall be spread out and the resulting loads shall not exceed the design live load for each level.

6. Openings, pockets, etc. shall not be placed in slabs, foundations, walls, beams, columns, joists, etc. unless specifically detailed on the structural drawings.

7. All phases of the work shall conform to the latest edition of the International Building Code (IBC), these structural notes and all local ordinances.

8. All ASTM specifications noted on these drawings or Structural notes shall be of the latest revision.

9. Special Inspection in accordance with Section 1704 of the IBC Shall be provided by a qualified person who is acceptable to the Engineer for the following types of work:

   a. Concrete placement in drilled piers per IBC Table 1704.9
   b. Reinforcing steel placement in drilled piers per IBC Table 1704.4
   c. Bolts installed in concrete per IBC Table 1704.4
   d. Structural masonry per IBC 1704.5
   e. High-strength bolting per IBC 1704.3.3
   f. All welding not performed in the shop of a Engineer approved fabricator in accordance with IBC 1704.3
   g. Drilling concrete piers per IBC Table 1704.9

10. The Contractor shall contact the Engineer a minimum of 24 hours prior to commencing the following phases of work:
    a. Placement of concrete
    b. All Structural work completed.

FOUNDATIONS

1. Foundation design is based on minimum values set forth in the 2015 edition of the IBC.

2. Allowable soil bearing values and foundation design are based on assumptions of undisturbed native soil. Actual soil conditions which deviate appreciably from these assumptions, or buried structures found during earthwork operations shall be reported to the Engineer immediately.

3. Excavations for foundations shall conform to the lines and dimensions shown on the drawings. Remove all loose material and debris from excavations and de-water excavations as required to maintain dry working conditions. The Engineer shall approve all sitework and foundation excavations prior to installing reinforcing steel or placing concrete.

5. The Engineer of Record shall approve all backfill materials prior to placement and observe backfill operations as directed by the Engineer of Record.

CONCRETE

1. All concrete work shall be performed in accordance with the latest edition of the ACI Building Code (ACI 318) and the latest edition of the ACI Manuals of Concrete Practice.

2. Contractor shall submit concrete mix designs to Engineer for review. Mix designs shall be prepared under the supervision of a registered Civil Engineer and bear his stamp and signature.

3. Concrete 28 day strength:

   a. Foundations: 4,000 psi
   b. Slabs-on-grade: 4,000 psi
   c. Walls: 2,500 psi
   d. Columns: 5,000 psi
   e. Elevated slabs: 4,000 psi

4. Minimum cement content: 5.3 sacks per yard.

5. Maximum water-cement ratio: 7 gal. per sack.

6. Aggregate size: 1". Provide the maximum ratio of coarse aggregate to fine aggregate consistent with placing requirements.

7. Maximum slump: 4-1/2" per ASTM C143.

8. Concrete materials:
   a. Cement: Portland Type II, ASTM C150.
   b. Coarse aggregate: ASTM C33.
   c. Fine aggregate: ASTM C33 Reactivity ratio Sc/Rc shall not exceed one (1) per ASTM C289.
   d. Water: Potable.
   e. Ready mixed concrete: ASTM C94.
   f. Water reducing admixture: Pozzolith 300R at the rate of 5 oz. per sack, WRDA-79 at the rate of 8 oz. per sack, or Polyheed at the maximum dosage recommended by the manufacturer. When the average daily temperature is below 55 degrees F. use Pozzolith 322N at the rate of 7 oz. per sack.
   g. Air entraining admixture: MBVR or Darex of strength required to provide between 3-1/2% and 5% of entrained air.

9. Reinforcing materials:
   All reinforcing steel shall conform to A775 requirements for epoxy coated reinforcement.
   a. #4 bars and smaller: ASTM A615 Grade 40 or Grade 60.
   b. #5 bars and larger: ASTM A615 Grade 60.
   c. Reinforcing for welded bars: ASTM A706.
   All bars to be welded shall be stamped with a **W** to designate weldability.

10. Miscellaneous materials:
    a. Construction joint from: The Burke Company's Keyed Kold Joint or approved equal.
    b. Plastic pull top control join: The Burke Company's Zip Strip or approved equal.
    c. Sand base under slab on grade: Clean sand with less than 3% passing the #200 sieve and no deleterious material content.
    d. Capillary break base under slab on grade: Clean, coarse sand and/or gravel with 100% passing the 1" sieve, 0-20% passing the #16 sieve and 0-3% passing the #200 sieve, and no deleterious material content.
    e. Vapor barrier: 9 mil Visqueen or approved equal.
    f. Non shrink grout and/or drypack: MinWax Por-Rok or approved equal. Mix with the minimum amount of water required to obtain the consistency necessitated by the placing conditions.
    g. Epoxy connections: All epoxy adhesives and dowels shall be installed per manufacturer's specifications. Epoxy adhesives that are acceptable in solid base materials for this project are:
       i. Simpson: SET ADHESIVE (ESR 1722)
       ii. Burke: BURKEPOXY PISTOL PACK
       iii. Hilti-Hit: HY-150
       iv. Ramset: EPCON
       Holes for epoxy anchors shall be sized (diameter and embedment) per manufacturer's specifications, and shall be thoroughly cleaned after drilling by blowing out all dust and debris with oil-free compressed air and extension nozzle, followed by reaming with a wire or nylon brush. loose material. Do not apply epoxy to a wet surface. Epoxy adhesive shall be applied to the end (bottom) of the hole with a gun nozzle or other approved procedure prior to installation of the anchor. Anchors shall be free of any rust, petroleum product residue, or deleterious material and installed per manufacturer's specifications.
    h. Curing compounds: Water based liquid membranes conforming to ASTM C309 when tested in accordance with ASTM C156. Euco Aqua-Cure or approved equal.

11. Welding of reinforcing steel: Reinforcing steel shall not be welded unless specifically detailed on the drawings or directed by the Engineer. All welding of reinforcing steel shall be in accordance with the latest edition of "Recommended Practices for Welding Reinforcing Steel, Metal Inserts, and Connections in Reinforced Concrete Construction" by the AWS (AWS D1.4). Use low hydrogen E70xx electrodes for welding of reinforcing steel.

12. Lap Splices: 48 bar diameters or 1'-6", whichever is greater.

13. Cover to Bars:
    a. When concrete is placed against ground: 3"
    b. When concrete is placed against forms and will be in contact with ground or weather after form removal:
       #5 bars and smaller: 1-1/2"
       #6 bars and larger: 2"
    c. All others: 1-1/2"

14. Concrete curing: Concrete shall be kept continuously wet for 7 days or curing compound shall be applied in strict accordance with the manufacturer's printed instructions.

15. Form removal: Contractor shall remove forms in accordance to the following schedule:
    a. Side forms of footings: Minimum 2 days.
    b. Edge forms of slab-on-grade strips: Minimum 1 day.
    c. Side forms of joists, beams and girders: Minimum 3 days.
    d. Wall and column forms: Minimum 10 days.
    e. Suspended slab forms: Minimum 10 days provided specified strength has been reached. Reshoring may be required where slab is used to support construction above.
    f. Soffit forms of suspended joists, beams and girders: Minimum 21 days provided specified strength is reached. Reshoring may be required where slab is used to support construction above.

16. Consolidation: All in-place concrete shall be consolidated with a mechanical vibrator operated by experienced personnel.

17. Shop drawings: Submit to the Engineer for review and approval. No reinforcing shall be placed until approved shop drawings have been received on the job. Shop drawings shall consist of both cut and placing sheets. Placing sheets shall contain all information required to position all reinforcing steel without having to refer to the structural drawings.

18. Outside diameter of conduit or pipe embedded in slab shall not exceed 30% of slab thickness, or 1-1/2", whichever is smaller, unless specifically detailed otherwise. All conduits or pipes larger than the 1-1/2" or 30% slab thickness (O.D.) shall be placed under the slab. Conduits can be grouped in pairs. Minimum clear distance between single conduits of pairs shall be 6".

19. Projecting corners of walls, beams, columns, etc, shall be formed with a ¾" chamfer unless detailed otherwise.

20. Testing:
    a. Laboratory: The owner shall retain and pay for the services of a testing Laboratory where samples will be tested in accordance with these structural notes and the applicable standards of the ASTM. Work under this division (to be performed by the Contractor) includes the taking and storage of samples and their delivery to the laboratory.
    b. Samples: A minimum of 3 test cylinders shall be prepared for each day's pour.
    c. Testing of samples: Test each batch of test cylinders as follows: 1 at 7 days and 2 at 28 days.
    d. Test reports: A copy of all test reports shall be submitted to the Engineer.

CONCRETE MASONRY UNITS (CMU)

1. Concrete Block Masonry Units: Hollow lightweight aggregate single or double open end bond beam units conforming to ASTM C90. Minimum f'm = 2,000 psi.

2. Mortar:
   a. Strength: 2,500 psi @ 28 days (ASTM C270).
   b. Composition: Type M Mortar with Portland cement in accordance with Articles 2.1 and 2.6A of TMS 602/ACI 530.1/ASCE 6.
   c. Admixture: Admixture; Euco Delaz, used in strict accordance with the printed instructions of the Euclid Chemical Company.
   d. Slump: 2-1/2" to 3".

3. Grout: Transit mix
   a. Strength: 2,500 psi @ 28 days.
   b. Composition: Contractor shall submit a mix design to the Architect for review, minimum 7 sacks of Portland cement per cubic yard.
   c. Admixture: Sika Grout Aid, Type 2, used in accordance with the manufacturer's instructions.
   d. Consistency: Flowable

4. Reinforcing materials:
   All reinforcement shall conform to A775 requirements for epoxy coated reinforcement.
   a. #4 bars and smaller: ASTM A615 Grade 40 or Grade 60.
   b. #5 bars and larger: ASTM A615 Grade 60.
   c. Reinforcing for welded inserts: ASTM A706. All bars to be welded shall be stamped with a **W** to designate weldability.

5. Grouting operation: All masonry walls grouted in excess of 5'-0" shall be grouted using high lift grouting procedures reviewed and approved by the Engineer of Record. Masonry units shall be dry at the time of grouting. Indicator tape shall be wrapped around the vibrator shaft at the start of each lift such that the tape will be even with the top of the wall being grouted when the vibrator has penetrated half way into the previous lift.

6. Lap splices of reinforcing steel: 48 bar diameters or 2'-0". Whichever is greater.

7. Shop drawings: Contractor shall submit reinforcing steel shop drawings to the Engineer for review. No reinforcing shall be placed until reviewed and approved shop drawings have been received on the job. Shop drawings shall consist of both cut and placing sheets. Placing sheets shall contain all information required to position all reinforcing steel without having to refer to the structural drawings.

STRUCTURAL STEEL AND MISCELLANEOUS METALS

1. Materials:
   a. Structural steel: ASTM A572, Grade 50
   b. Pipe columns: ASTM A53, Grade B
   c. Tubular shapes: ASTM A500, Grade B
   d. Nuts and bolts: ASTM A307
   e. Welded headed studs: ASTM A108
   f. High strength nuts and bolts: ASTM A325
   g. Welding rod: heavily coated, low hydrogen, E70xx conforming to American Welding Society (AWS) "Specification for Arc Welding Electrodes".

2. Installation of high strength bolts: In accordance with AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts" turn of nut method.

3. Galvanizing: All structural steel members, miscellaneous iron angles, clips, and other elements shall be hot-dipped galvanized.

4. Painting: At all steel elements not galvanized or embedded in concrete, clean by mechanical means such as sandblasting or wire brushing as required to remove rust, scale, etc, and with mineral spirit as required to remove oil, grease, etc. Paint with one coat of zinc chromate primer. Field touch-up any damaged areas.

5. Shop drawings: Contractor shall submit shop drawings to the Engineer for review. Shop and erection drawings shall contain all information required to install all structural steel without having to refer to the structural drawings.

DESIGN CRITERIA

1. The governing code for the design of this project is the **2015 International Building Code (IBC)**, with all applicable referenced codes and standards. Design Loads were calculated per the **2010 ASCE 7** *Minimum Design Loads for Buildings and Other Structures.*
2. Seismic Design Parameters:
   Equivalent Lateral Force Formula: $V = C_S \cdot W$
   Occupancy Category: I-2
   Importance Factor I: 1.0
   Assumed Soil Classification: D
   Seismic Design Category: D
   Seismic Force-Resisting System: H
   S_{DS} : 0.7
   S_{D1}: 0.51
3. Wind Design Parameters:
   Basic Wind Formula: $P_S = \lambda \cdot K_{zt} \cdot I_w \cdot P_{S30}$
   Assumed Soil Classification: D
   Basic 3-Second Gust Wind Speed: 180 mph
   Wind Exposure Category: C

STRUCTURAL DRAWINGS

DRAWING	SHEET
STRUCTURAL NOTES	S-001
STRUCTURAL PLANS	S-101
STRUCTURAL ELEVATIONS	S-201
STRUCTURAL SECTIONS	S-301
STRUCTURAL DETAILS	S-401
PIPE SUPPORT DETAILS	S-402
ROOF STRUCT. DETAILS	S-403

GENTRY ENGINEERING
7337 HILLSBORO ST.
GOLETA, CA 93117
(619)453-2514 jgentry2003@yahoo.com

REVISION	BY	DESCRIPTION	DATE	APPROVED

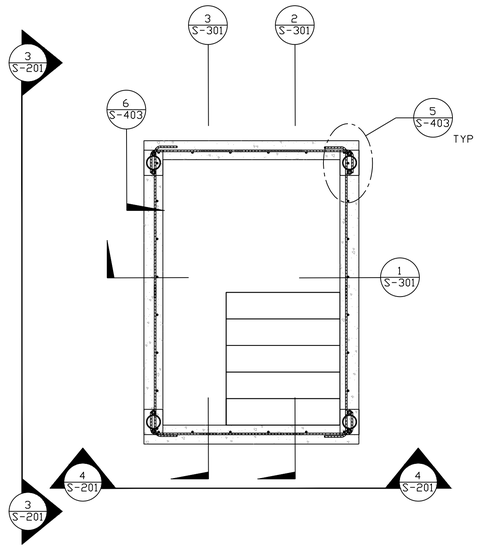
CHUUK TERMINAL FUEL FACILITY IMPROVEMENTS
STATE OF CHUUK

STRUCTURAL NOTES

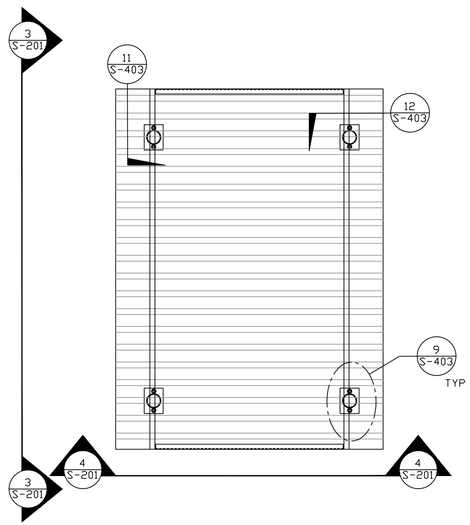
DATE:	08/13/2019
SCALE:	N/A
DRAWN BY:	JG
ENGINEER:	JG
CHECKED BY:	JG

S-001

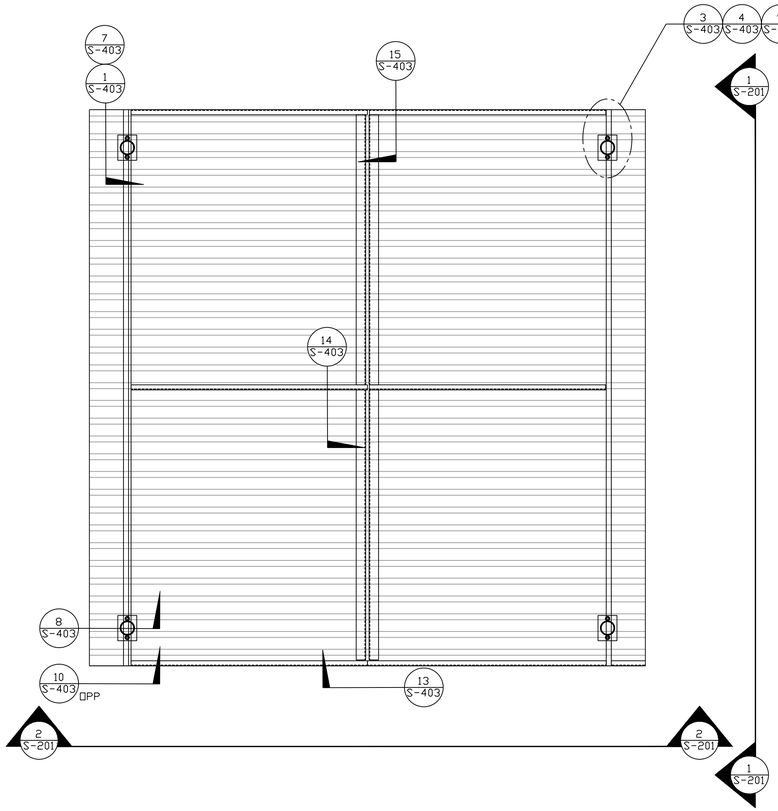
SHEET 27 OF 34



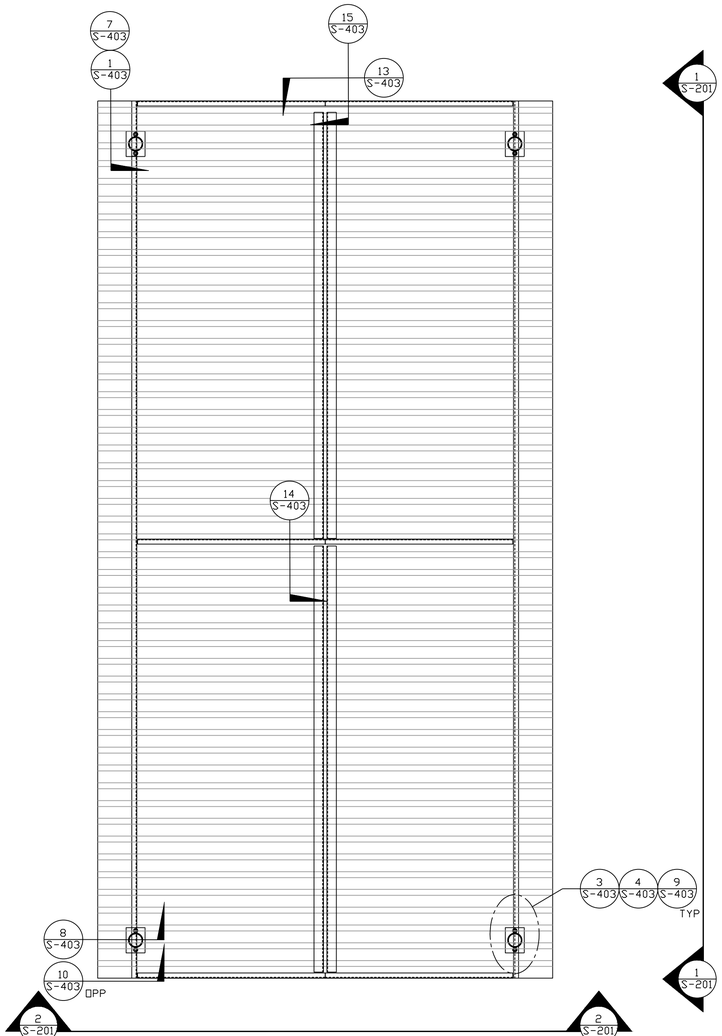
4 FLUSH TANK PIT PLAN 1/2" = 1'-0"



3 FLUSH TANK PIT ROOF PLAN 1/2" = 1'-0"



2 SHUTOFF VALVE ROOF PLAN 1/2" = 1'-0"



1 PUMP STATION ROOF PLAN 1/2" = 1'-0"

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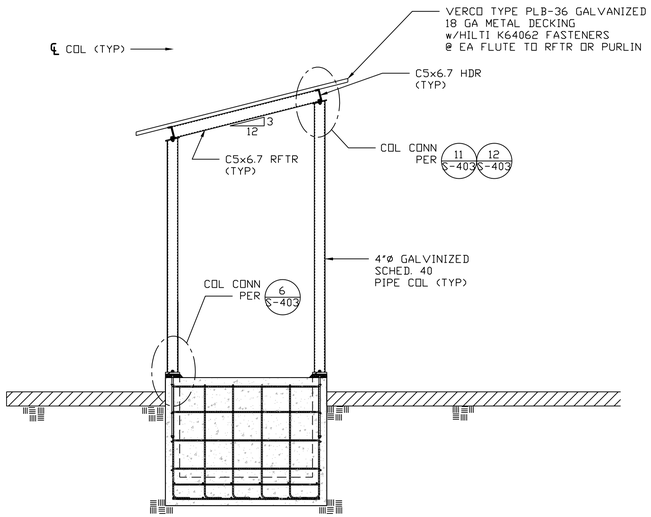
CHUJK TERMINAL FUEL FACILITY IMPROVEMENTS
STATE OF CHUJK

STRUCTURAL PLANS

DATE:	08/13/2019
SCALE:	N/A
DRAWN BY:	JG
ENGINEER:	JG
CHECKED BY:	JG

S-101

SHEET 28 OF 34

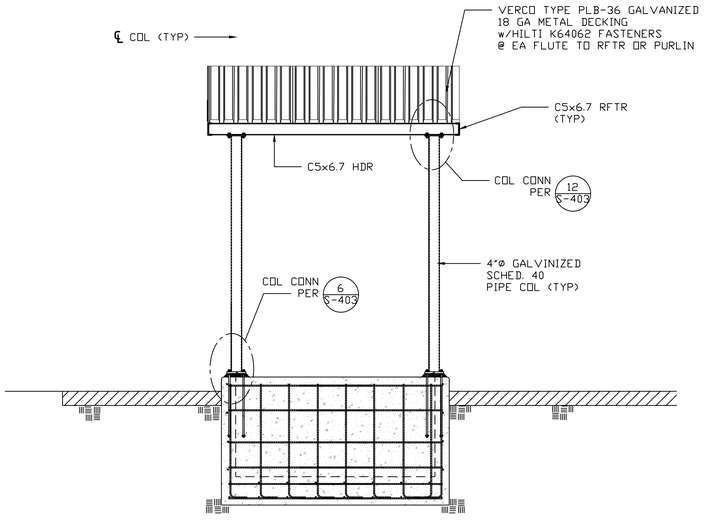


4 SHED STRUCTURE
FRONT 3/8"=1'-0"

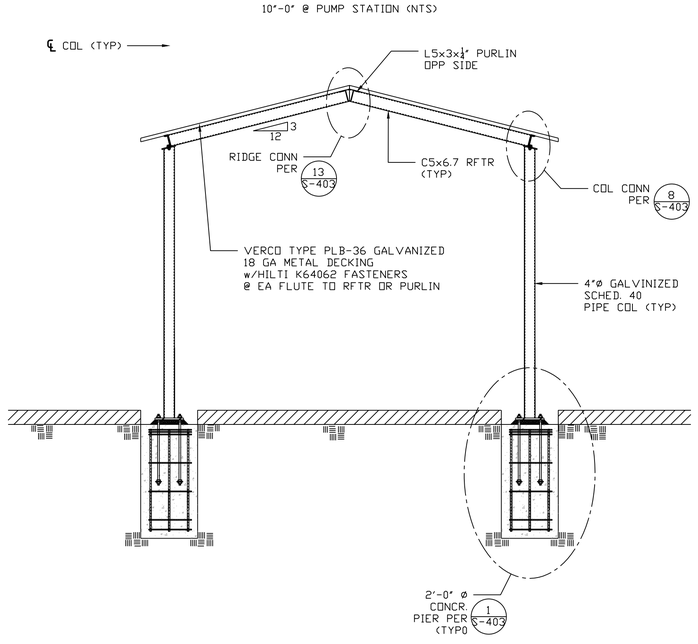
NOTES:

1. ALL STRUCTURAL STEEL MEMBERS, MISC. STEEL, NUTS AND BOLTS SHALL BE HOT DIPPED GALVANIZED

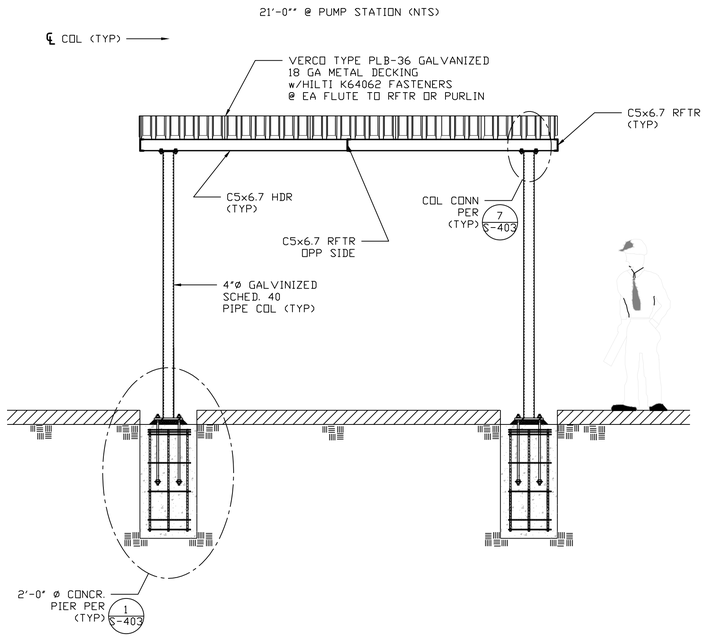
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED PER ASTM A775.



3 SHED STRUCTURE
SIDE 3/8"=1'-0"



2 GABLE STRUCTURE
SIDE 3/8"=1'-0"



1 GABLE STRUCTURE
FRONT 3/8"=1'-0"

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REVISION	BY	DESCRIPTION	DATE	APPROVED

PRYZM CONSULTING

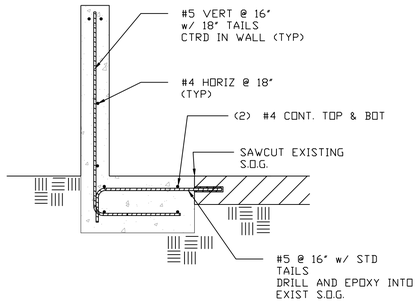
CHUUK TERMINAL FUEL FACILITY IMPROVEMENTS
STATE OF CHUUK

STRUCTURAL ELEVATIONS

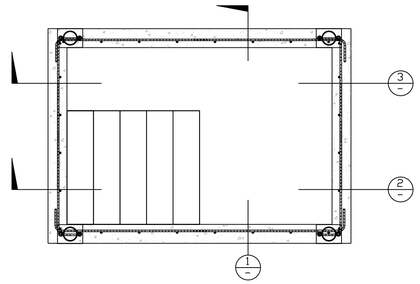
DATE:	08/13/2019
SCALE:	N/A
DRAWN BY:	JG
ENGINEER:	JG
CHECKED BY:	JG

S-201

SHEET 29 OF 34



5 CONTAINMENT WALL SECTION 1/2"=1'-0"



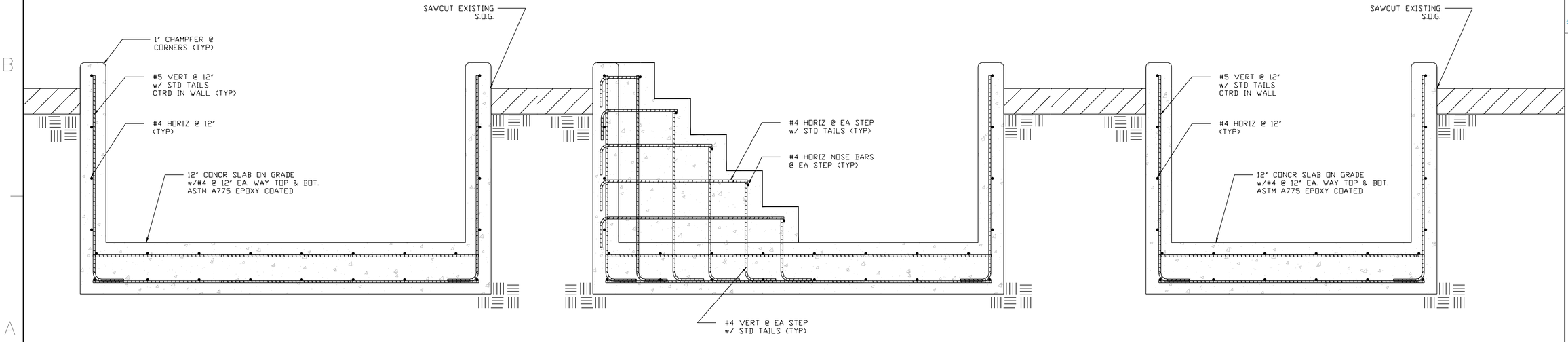
4 FLUSH TANK PIT PLAN 1/2"=1'-0"

NOTES:

1. ALL STRUCTURAL STEEL MEMBERS, MISC. STEEL, NUTS AND BOLTS SHALL BE HOT DIPPED GALVANIZED

2. ALL REINFORCING STEEL SHALL BE EPOXY COATED PER ASTM A775.

3. SEE MECHANICAL DRAWINGS FOR PIPE SIZES, PIPE SUPPORT SPACINGS AND ADDT'L INFO.



FOR ADDT'L INFO SEE 2/-

3 FLUSH TANK PIT SECTION 1"=1'-0"

2 FLUSH TANK PIT SECTION @ STAIR 1"=1'-0"

1 FLUSH TANK PIT SECTION 1"=1'-0"

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CHUUK TERMINAL FUEL FACILITY IMPROVEMENTS
STATE OF CHUUK

STRUCTURAL SECTIONS

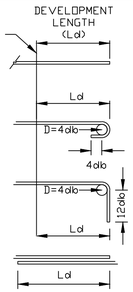
DATE:	08/13/2019
SCALE:	N/A
DRAWN BY:	JG
ENGINEER:	JG
CHECKED BY:	JG

S-301

SHEET 30 OF 34

REINFORCED BAR SPLICE SCHEDULE

BAR SIZE	SPLICE LENGTH			
	CLASS A		CLASS B	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	24"	18"	32"	24"
#4	31"	24"	41"	31"
#5	39"	30"	51"	39"
#7	55"	42"	72"	55"



STRAIGHT & HOOKED BARS

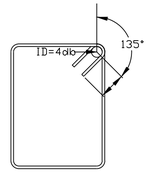
BAR SIZE	DIA. (db)	STRAIGHT BARS	HOOKED BARS
		DEVELOPMENT LENGTH	DEVELOPMENT LENGTH
#3	3/8"	18"	13"
#4	1/2"	24"	17"
#5	5/8"	30"	21"
#7	7/8"	42"	30"

NOTE:

ALL REINFORCING STEEL SHALL BE EPOXY COATED PER ASTM A775. (TYP)

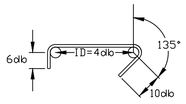
NOTE:

STIRRUPS OR HOOPS CALLED OUT ON THE DRAWINGS MAY NEED TO BE INSTALLED IN PIECES TO ACCOMODATE FIELD CONDITIONS. IN SUCH CASES, EACH PIECE SHALL HAVE HOOKED ENDS PER THIS DETAIL.

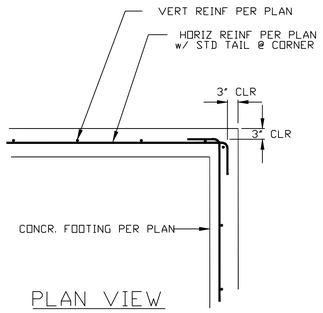


HOOP HOOKS

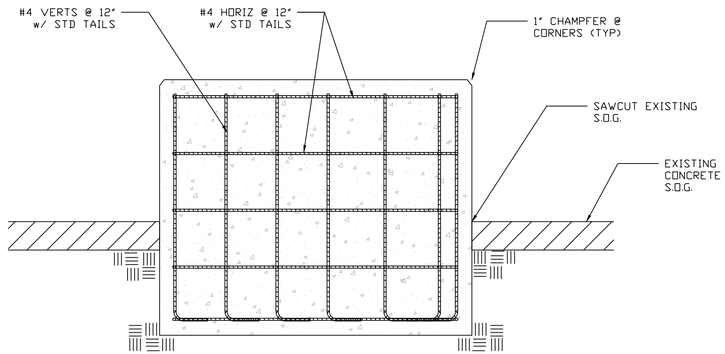
db=BAR DIAMETER
ID=INSIDE DIAMETER



CROSSTIE HOOKS



PLAN VIEW



A PUMP PAD SECT.

NOTES:

1. PUMPS SHALL BE CENTERED ON CONCRETE PADS WITH MOUNTING HARDWARE PER MECHANICAL DRAWINGS

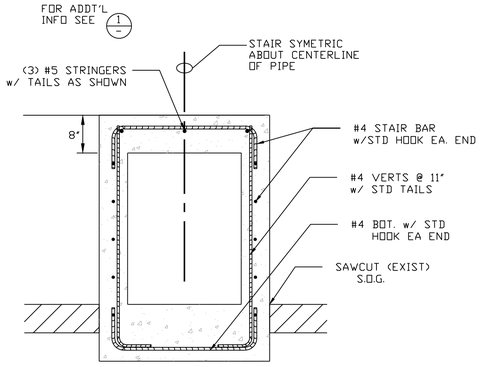
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED PER ASTM A775. (TYP)

PLAN VIEW

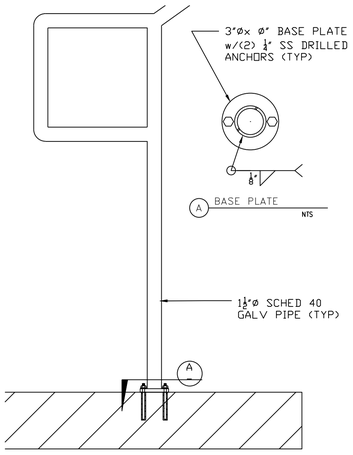
8 REINF. DETAILS TYP

9 REINF. BENDS TYP

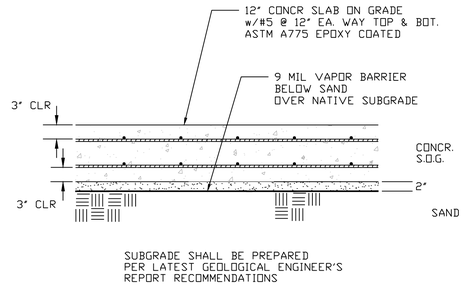
10 CONCR CORNER DET TYP



4 CONCR STAIR SECT. 3/4"=1'-0"

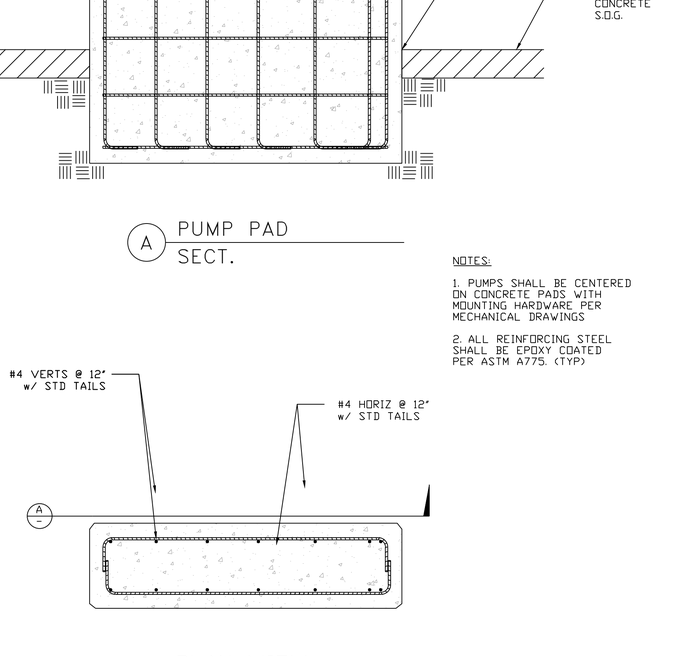


5 HANDRAIL 3/4"=1'-0"

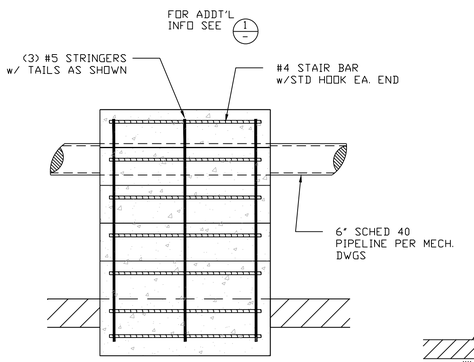


SUBGRADE SHALL BE PREPARED PER LATEST GEOLOGICAL ENGINEER'S REPORT RECOMMENDATIONS

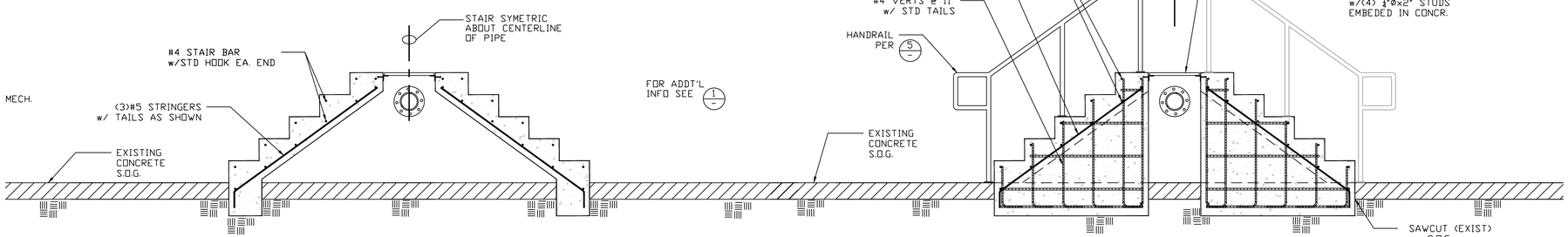
6 SLAB ON GRADE TYP 3/4"=1'-0"



7 PUMP PAD FTGS TYP 3/4"=1'-0"



3 CONCR STAIR 3/4"=1'-0"



2 CONCR STAIR OVER PIPELINE MID SECT. 1/2"=1'-0"

1 CONCR STAIR OVER PIPELINE END WALLS 1/2"=1'-0"

GENTRY ENGINEERING
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GOLETA, CA 93117
(619)433-2514 jgentry2003@yahoo.com

REVISION	BY	DESCRIPTION	DATE	APPROVED

PRYZM CONSULTING

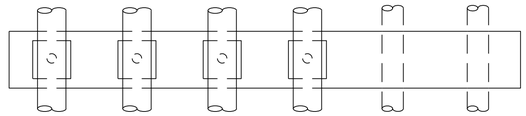
CHUUK TERMINAL FUEL FACILITY IMPROVEMENTS
STATE OF CHUUK

STRUCTURAL DETAILS

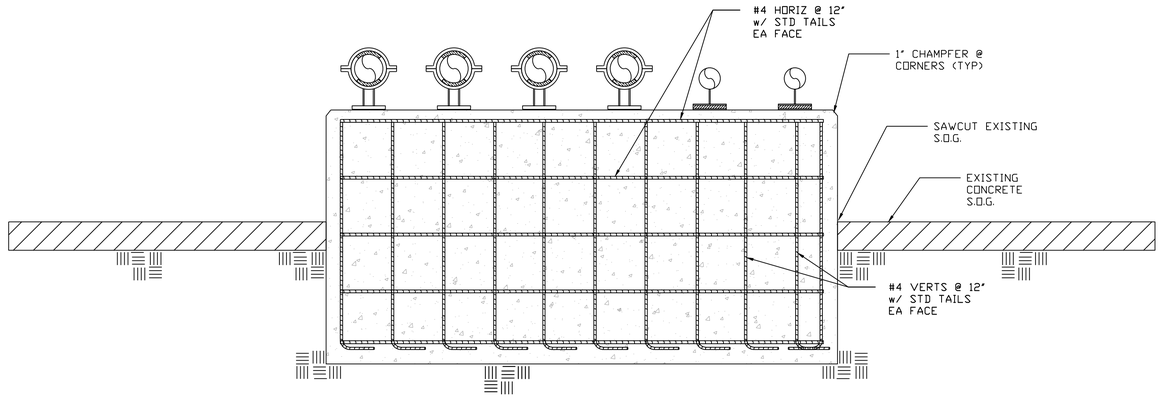
DATE:	08/13/2019
SCALE:	N/A
DRAWN BY:	JG
ENGINEER:	JG
CHECKED BY:	JG

S-401

SHEET 31 OF 34

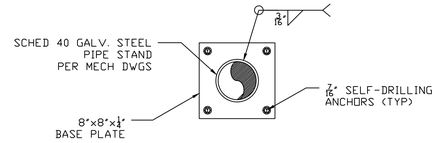


TYPE "D" PLAN

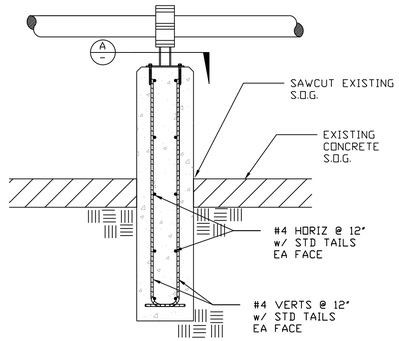


TYPE "D" ELEV

4 CONCR PIPE SUPPORT
TYPE "D" 3/4"=1'-0"



A PIPE SUPPORT
BASE PLATE N.T.S.



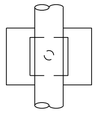
5 CONCR PIPE SUPPORT
SECT 3/4"=1'-0"

NOTES:

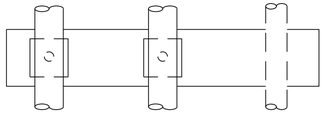
1. ALL STRUCTURAL STEEL MEMBERS, MISC. STEEL, NUTS AND BOLTS SHALL BE HOT DIPPED GALVANIZED

2. ALL REINFORCING STEEL SHALL BE EPOXY COATED PER ASTM A775.

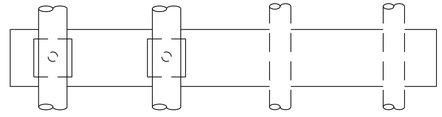
3. SEE MECHANICAL DRAWINGS FOR PIPE SIZES, PIPE SUPPORT SPACINGS AND ADDT'L INFO.



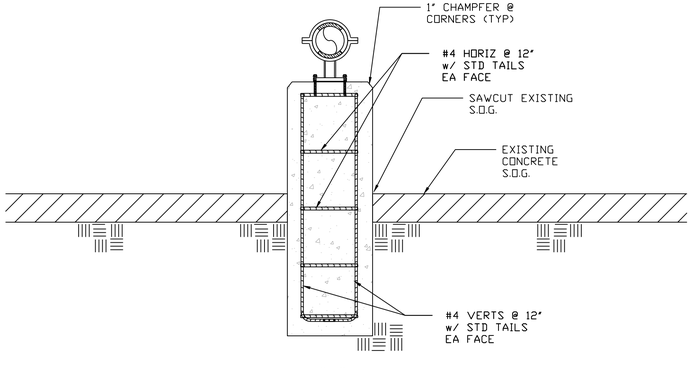
TYPE "C" PLAN



TYPE "B" PLAN

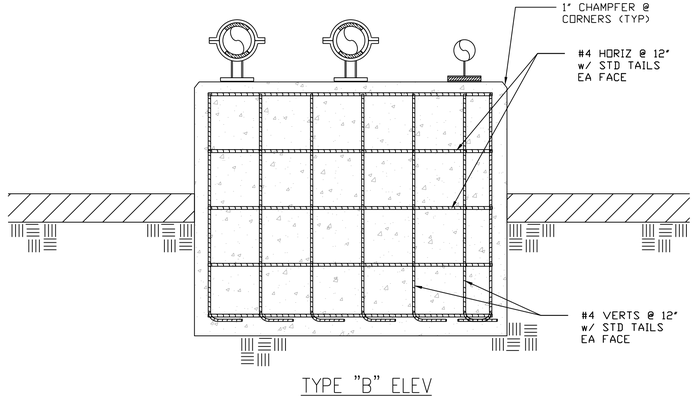


TYPE "A" PLAN



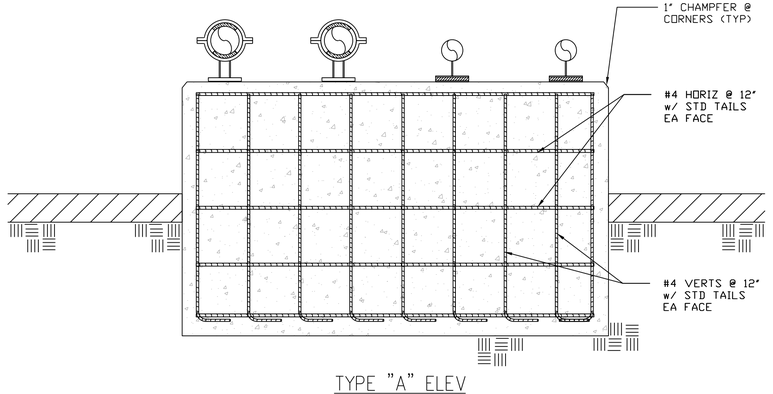
TYPE "C" ELEV

3 CONCR PIPE SUPPORT
TYPE "C" 3/4"=1'-0"



TYPE "B" ELEV

2 CONCR PIPE SUPPORT
TYPE "B" 3/4"=1'-0"



TYPE "A" ELEV

1 CONCR PIPE SUPPORT
TYPE "A" 3/4"=1'-0"

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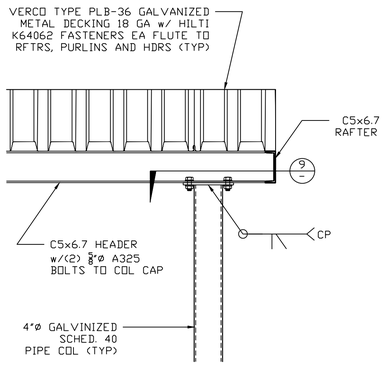
CHUUK TERMINAL FUEL FACILITY IMPROVEMENTS
STATE OF CHUUK

PIPE SUPPORT DETAILS

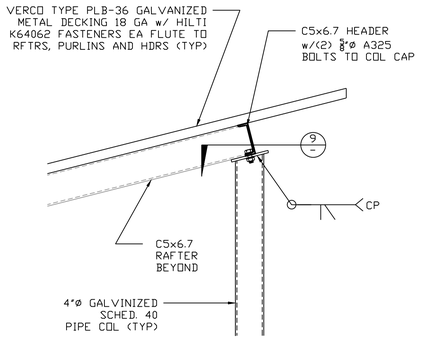
DATE:	08/13/2019
SCALE:	N/A
DRAWN BY:	JG
ENGINEER:	JG
CHECKED BY:	JG

S-402

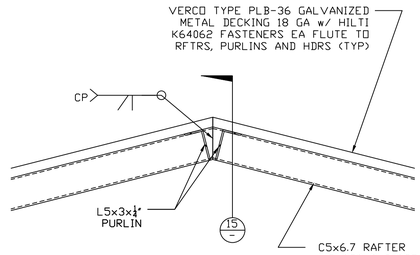
SHEET 32 OF 34



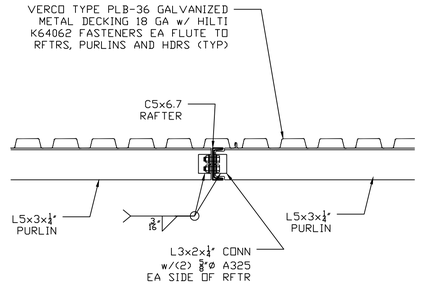
11 PIPE COL CAP @ SHED 1"=1'-0"



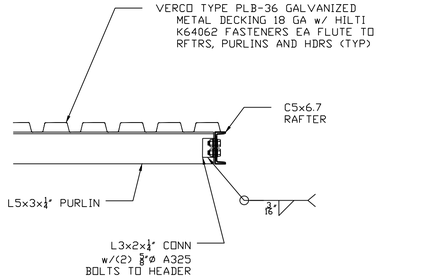
12 PIPE COL CAP @ SHED 1"=1'-0"



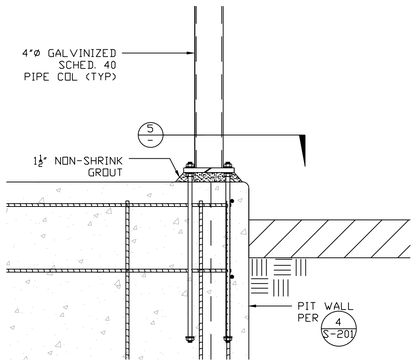
13 RIDGE CONN. @ GABLE 1"=1'-0"



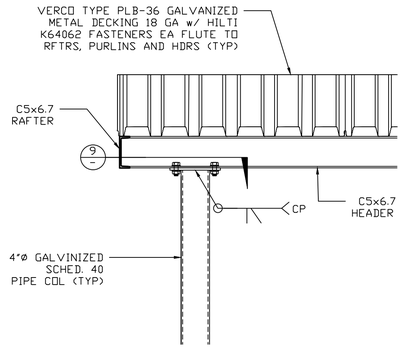
14 PURLIN TO RAFTER @ RIDGE 1"=1'-0"



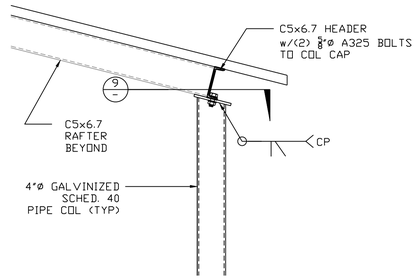
15 PURLIN TO RAFTER @ END 1"=1'-0"



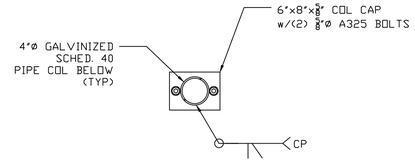
6 PIPE COL BASEPLATE @ SHED 1"=1'-0"



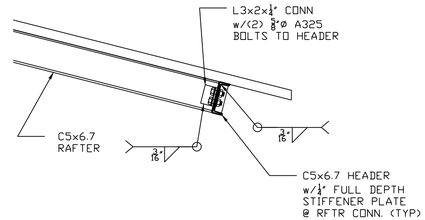
7 PIPE COL CAP @ GABLE 1"=1'-0"



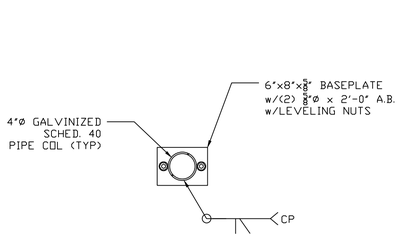
8 PIPE COL CAP @ GABLE 1"=1'-0"



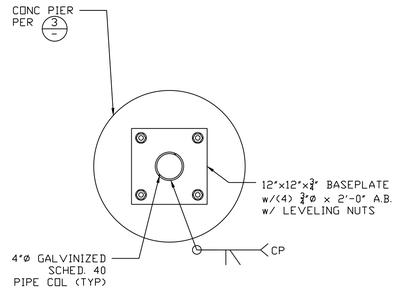
9 COL CAP PLAN TYP 1"=1'-0"



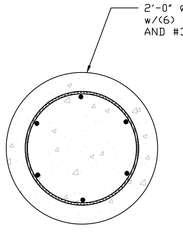
10 RAFTER TO HEADER 1"=1'-0"



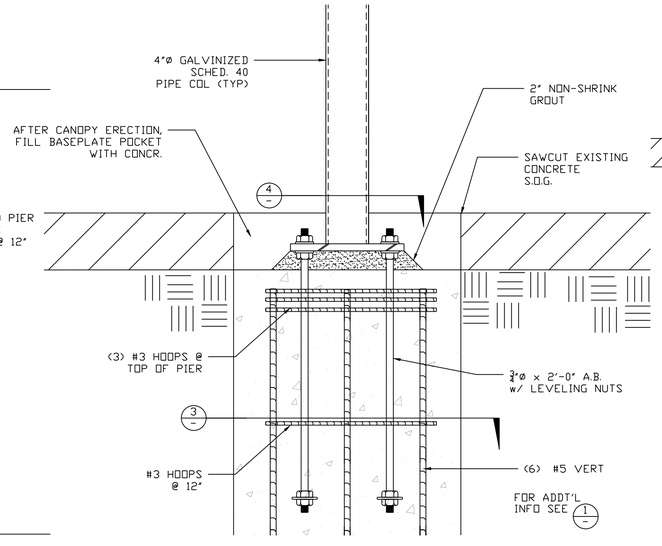
5 PIPE COL BASEPLATE @ SHED 1"=1'-0"



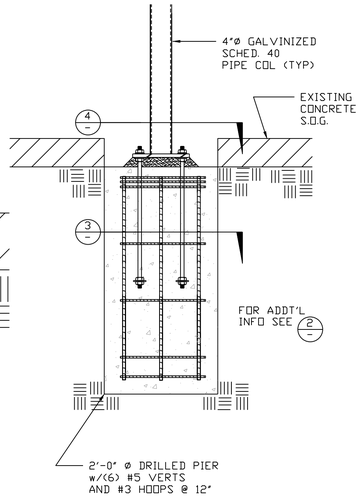
4 PIPE COL BASEPLATE @ GABLE 1"=1'-0"



3 PIPE COL PIER @ GABLE 1"=1'-0"



2 PIPE COL BASEPLATE @ GABLE 1-1/2"=1'-0"



1 PIER FDN @ PIPE COL @ GABLE 3/4"=1'-0"

GENTRY ENGINEERING
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GOLETA, CA 93117
(619)453-2514 jgentry2003@yahoo.com

REVISION	BY	DESCRIPTION	DATE	APPROVED

PRYZM CONSULTING

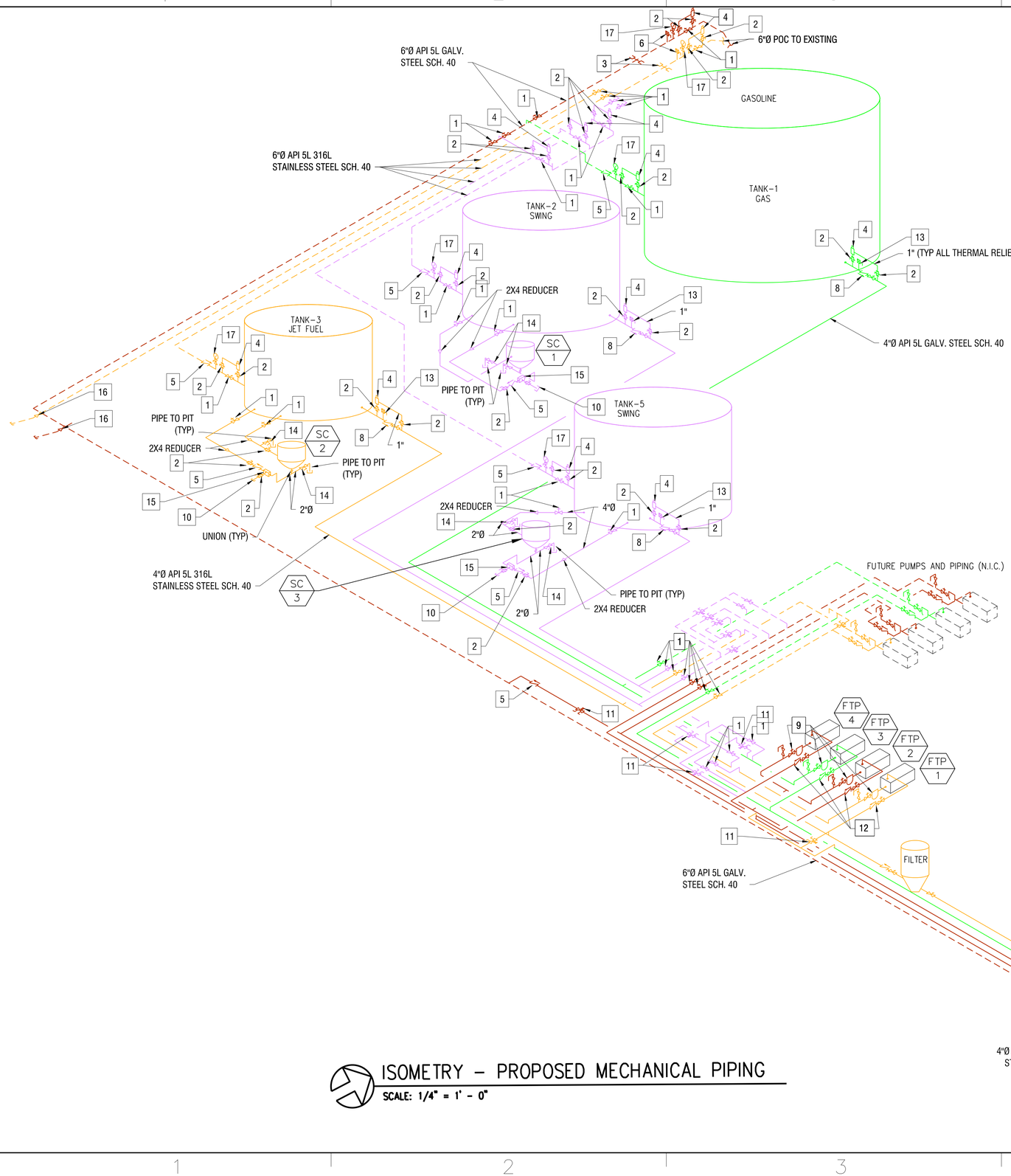
CHUUK TERMINAL FUEL FACILITY IMPROVEMENTS
STATE OF CHUUK

ROOF STRUCTURE DETAILS

DATE:	08/13/2019
SCALE:	N/A
DRAWN BY:	JG
ENGINEER:	JG
CHECKED BY:	JG

S-403

SHEET 33 OF 34



ISOMETRY – PROPOSED MECHANICAL PIPING

SCALE: 1/4" = 1' - 0"

LEGEND:

1. GATE VALVE (GV)
2. SHUTOFF BALL VALVE (SV)
3. SIGHT GLASS
4. THERMAL RELIEF VALVE
5. CHECK VALVE
6. MANUAL AIR VALVE
7. SHUTOFF VALVE, FLOW METER, FLANGED SPOOL PIECE, LINE SIZE AIR ELIMINATOR & ISOLATION VALVE
8. GATE VALVE, CHECK VALVE & MANUAL DRAIN VALVE
9. BASKET STRAINER, GATE VALVE, AND MANUAL DRAIN VALVE ON PUMP INLET
10. 1/2" AIR INLET WITH BALL VALVE AND QUICK CONNECT
11. DOUBLE BLOCK AND BLEED (DBB) VALVE
12. CHECK VALVE AND GATE VALVE ON PUMP DISCHARGE
13. 1"Ø 316L STAINLESS STEEL DISCHARGE PIPE TO CLOSEST SUMP OR WITHIN 18" OF GRADE
14. DRAIN VALVE
15. AIR PUMP
16. SHUTOFF BALL VALVE (SV) WITH A BLIND FLANGE FOR SHIP-TO-SHORE BACKUP
17. PRESSURE GAUGE

REVISION	BY	DESCRIPTION	DATE	APPROVED

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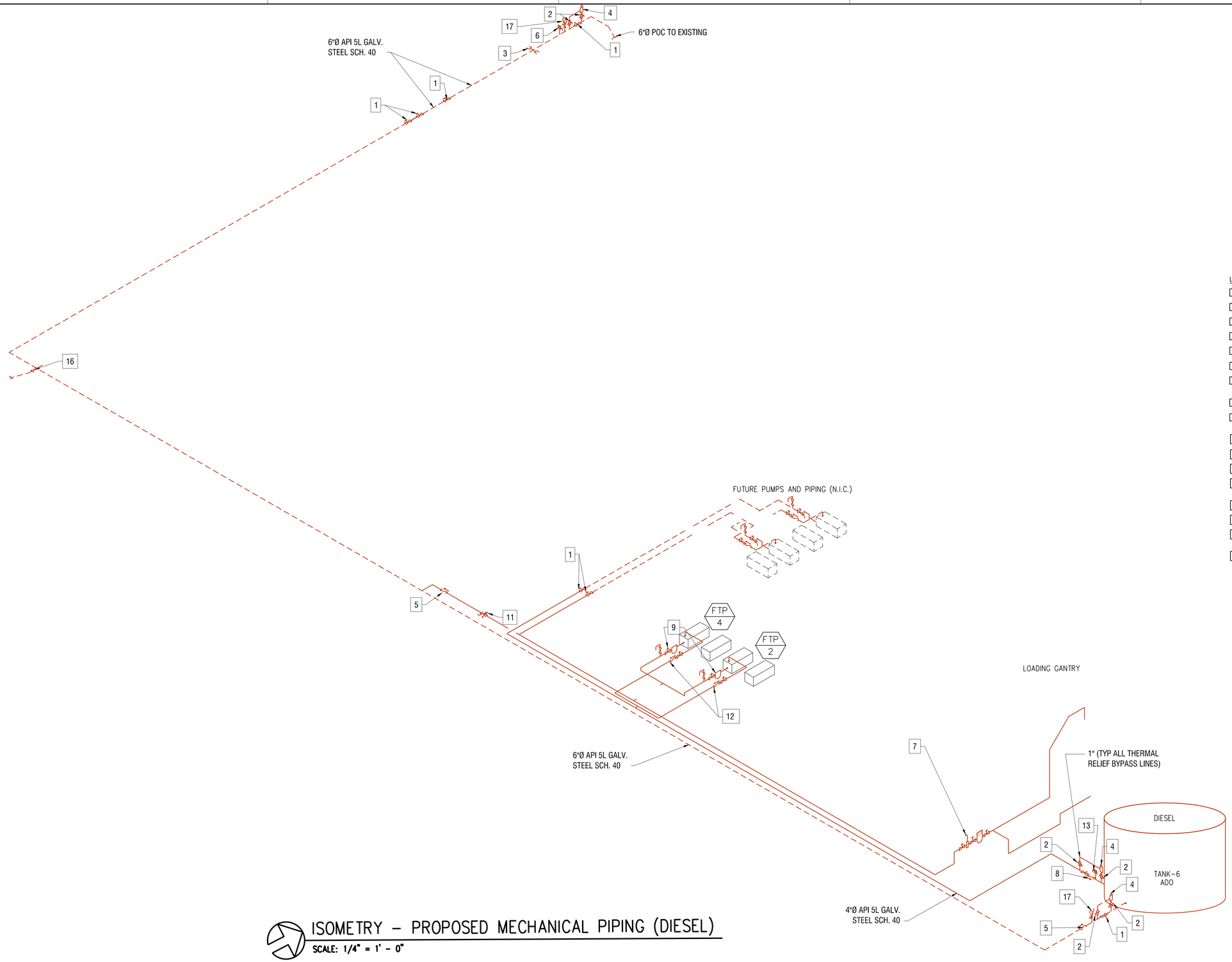
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ISOMETRIC - PROPOSED MECHANICAL PIPING

DATE:	08/13/2019
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

ISO-1



ISOMETRY - PROPOSED MECHANICAL PIPING (DIESEL)

SCALE: 1/4" = 1' - 0"

LEGEND:

1. GATE VALVE (GV)
2. SHUTOFF BALL VALVE (SV)
3. SIGHT GLASS
4. THERMAL RELIEF VALVE
5. CHECK VALVE
6. MANUAL AIR VALVE
7. SHUTOFF VALVE, FLOW METER, FLANGED SPOOL PIECE, LINE SIZE AIR ELIMINATOR & ISOLATION VALVE
8. GATE VALVE, CHECK VALVE & MANUAL DRAIN VALVE
9. BASKET STRAINER, GATE VALVE, AND MANUAL DRAIN VALVE ON PUMP INLET
10. 1/2" AIR INLET WITH BALL VALVE AND QUICK CONNECT
11. DOUBLE BLOCK AND BLEED (DBB) VALVE
12. CHECK VALVE AND GATE VALVE ON PUMP DISCHARGE
13. 1"Ø 316L STAINLESS STEEL DISCHARGE PIPE TO CLOSEST SUMP OR WITHIN 18" OF GRADE
14. DRAIN VALVE
15. AIR PUMP
16. SHUTOFF BALL VALVE (SV) WITH A BLIND FLANGE FOR SHIP-TO-SHORE BACKUP
17. PRESSURE GAUGE

REVISION	BY	DESCRIPTION	DATE	APPROVED

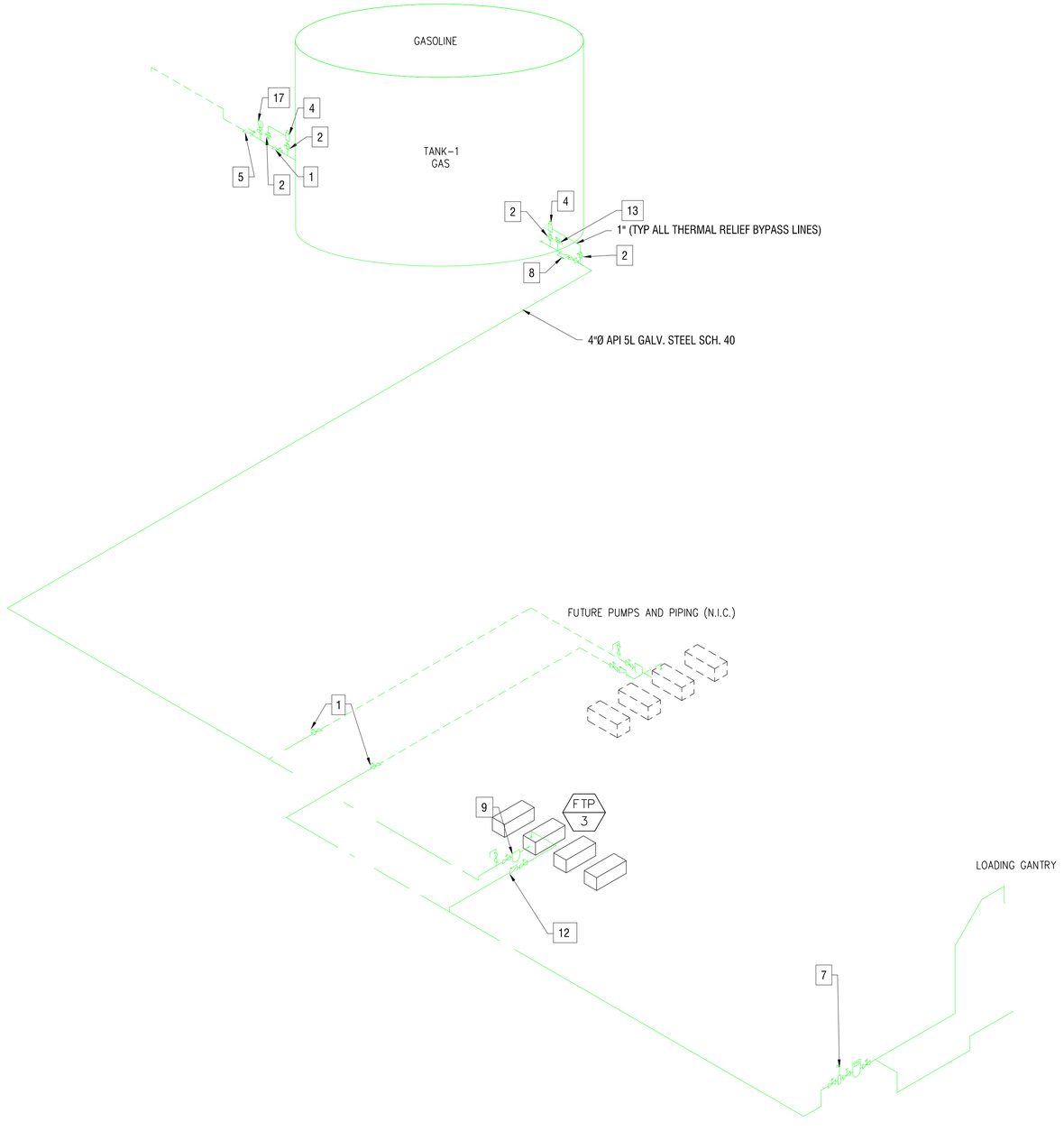
PRYZM CONSULTING

CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ISOMETRIC - PROPOSED MECHANICAL PIPING

DATE:	08/13/2019
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

ISO-2



LEGEND:

1. GATE VALVE (GV)
2. SHUTOFF BALL VALVE (SV)
3. SIGHT GLASS
4. THERMAL RELIEF VALVE
5. CHECK VALVE
6. MANUAL AIR VALVE
7. SHUTOFF VALVE, FLOW METER, FLANGED SPOOL PIECE, LINE SIZE AIR ELIMINATOR & ISOLATION VALVE
8. GATE VALVE, CHECK VALVE & MANUAL DRAIN VALVE
9. BASKET STRAINER, GATE VALVE, AND MANUAL DRAIN VALVE ON PUMP INLET
10. 1/2" AIR INLET WITH BALL VALVE AND QUICK CONNECT
11. DOUBLE BLOCK AND BLEED (DBB) VALVE
12. CHECK VALVE AND GATE VALVE ON PUMP DISCHARGE
13. 1"Ø 316L STAINLESS STEEL DISCHARGE PIPE TO CLOSEST SUMP OR WITHIN 18" OF GRADE
14. DRAIN VALVE
15. AIR PUMP
16. SHUTOFF BALL VALVE (SV) WITH A BLIND FLANGE FOR SHIP-TO-SHORE BACKUP
17. PRESSURE GAUGE

ISOMETRY – PROPOSED MECHANICAL PIPING (GAS)

SCALE: 1/4" = 1' - 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED

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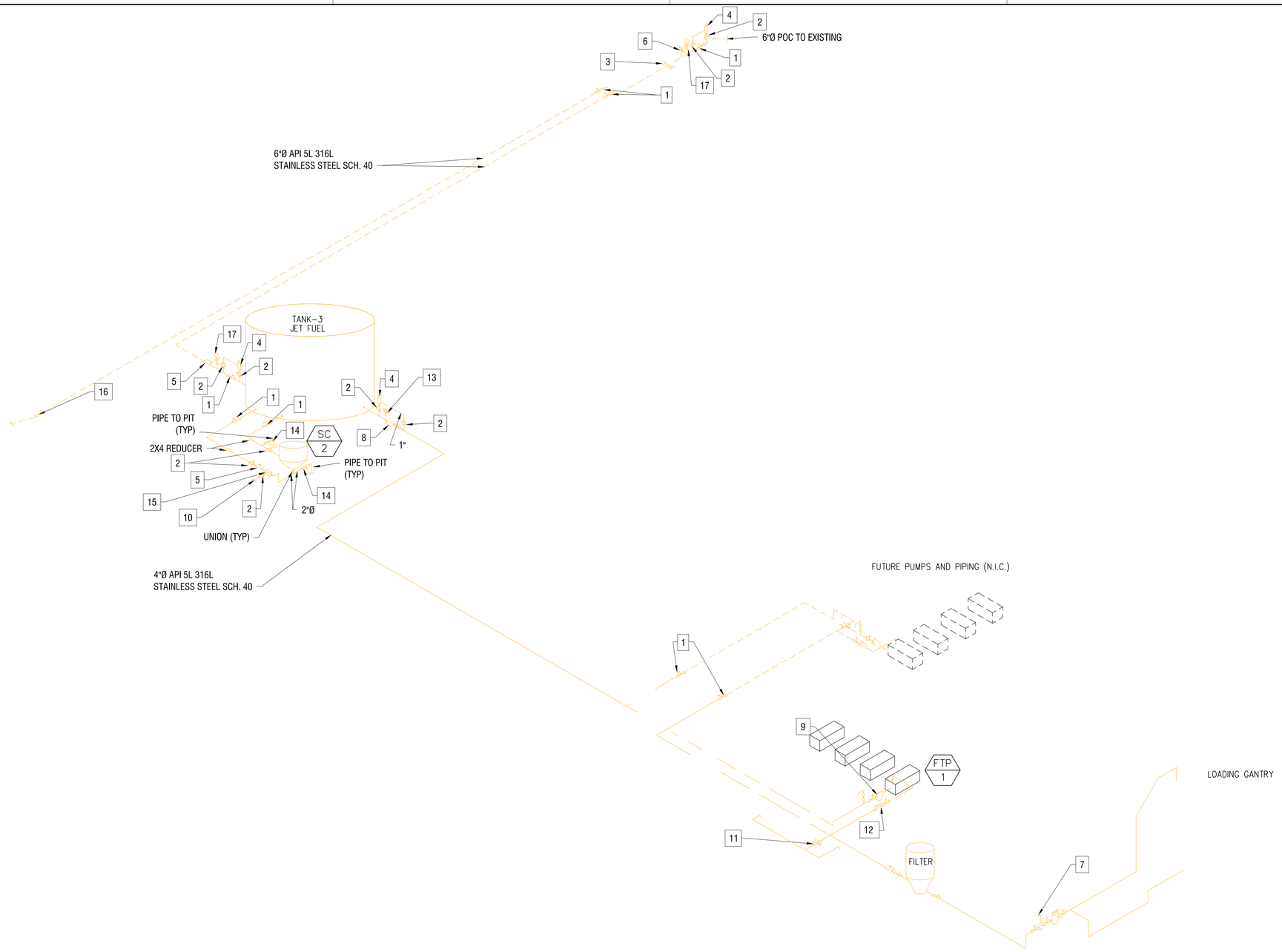
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ISOMETRIC - PROPOSED MECHANICAL PIPING

DATE:	08/13/2019
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

ISO-3



LEGEND:

1. GATE VALVE (GV)
2. SHUTOFF BALL VALVE (SV)
3. SIGHT GLASS
4. THERMAL RELIEF VALVE
5. CHECK VALVE
6. MANUAL AIR VALVE
7. SHUTOFF VALVE, FLOW METER, FLANGED SPOOL PIECE, LINE SIZE AIR ELIMINATOR & ISOLATION VALVE
8. GATE VALVE, CHECK VALVE & MANUAL DRAIN VALVE
9. BASKET STRAINER, GATE VALVE, AND MANUAL DRAIN VALVE ON PUMP INLET
10. 1/2" AIR INLET WITH BALL VALVE AND QUICK CONNECT
11. DOUBLE BLOCK AND BLEED (DBB) VALVE
12. CHECK VALVE AND GATE VALVE ON PUMP DISCHARGE
13. 1"Ø 316L STAINLESS STEEL DISCHARGE PIPE TO CLOSEST SUMP OR WITHIN 18" OF GRADE
14. DRAIN VALVE
15. AIR PUMP
16. SHUTOFF BALL VALVE (SV) WITH A BLIND FLANGE FOR SHIP-TO-SHORE BACKUP
17. PRESSURE GAUGE

ISOMETRY – PROPOSED MECHANICAL PIPING (JET–A1)

SCALE: 1/4" = 1' - 0"

REVISION	BY	DESCRIPTION	DATE	APPROVED

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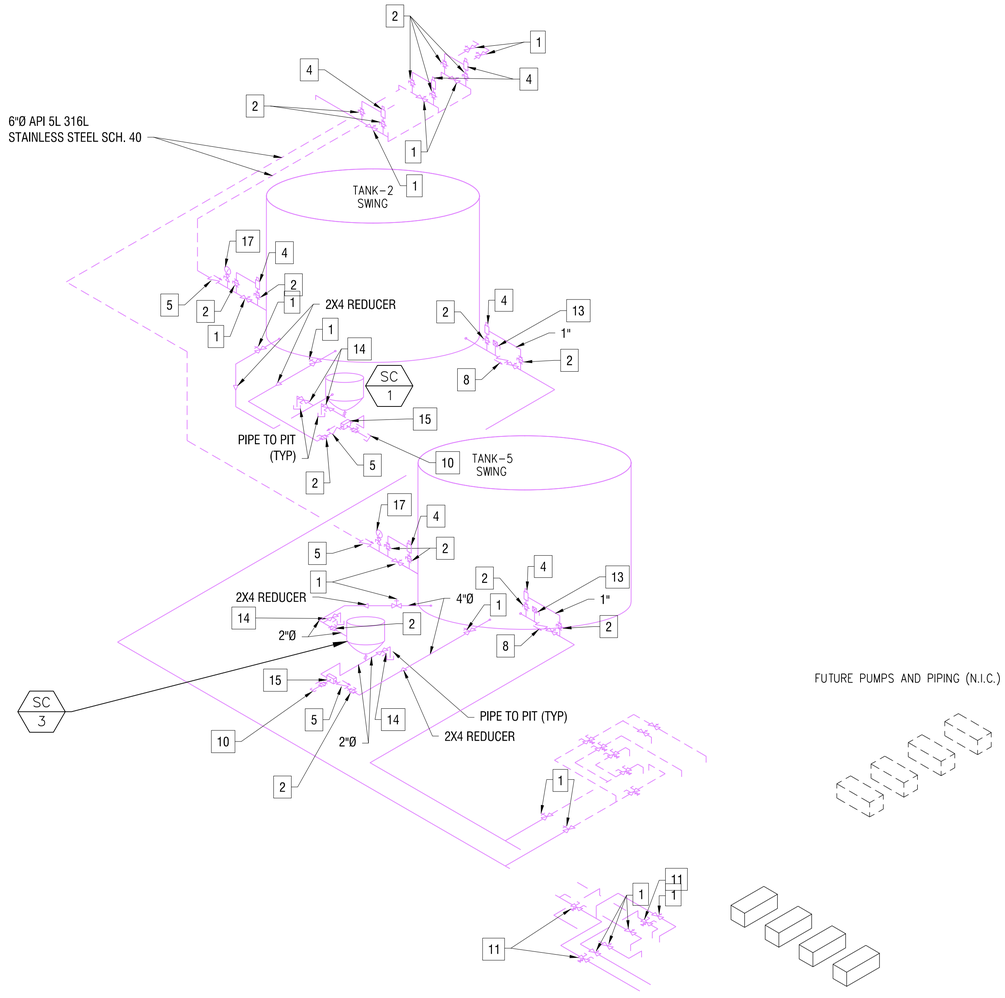
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ISOMETRIC - PROPOSED MECHANICAL PIPING

DATE:	08/13/2019
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

ISO-4



LEGEND:

1. GATE VALVE (GV)
2. SHUTOFF BALL VALVE (SV)
3. SIGHT GLASS
4. THERMAL RELIEF VALVE
5. CHECK VALVE
6. MANUAL AIR VALVE
7. SHUTOFF VALVE, FLOW METER, FLANGED SPOOL PIECE, LINE SIZE AIR ELIMINATOR & ISOLATION VALVE
8. GATE VALVE, CHECK VALVE & MANUAL DRAIN VALVE
9. BASKET STRAINER, GATE VALVE, AND MANUAL DRAIN VALVE ON PUMP INLET
10. 1/2" AIR INLET WITH BALL VALVE AND QUICK CONNECT
11. DOUBLE BLOCK AND BLEED (DBB) VALVE
12. CHECK VALVE AND GATE VALVE ON PUMP DISCHARGE
13. 1"Ø 316L STAINLESS STEEL DISCHARGE PIPE TO CLOSEST SUMP OR WITHIN 18" OF GRADE
14. DRAIN VALVE
15. AIR PUMP
16. SHUTOFF BALL VALVE (SV) WITH A BLIND FLANGE FOR SHIP-TO-SHORE BACKUP
17. PRESSURE GAUGE

ISOMETRY – PROPOSED MECHANICAL PIPING (SWING)

SCALE: 1/4" = 1' - 0"

REVISION	BY	DATE	APPROVED

PRYZM CONSULTING

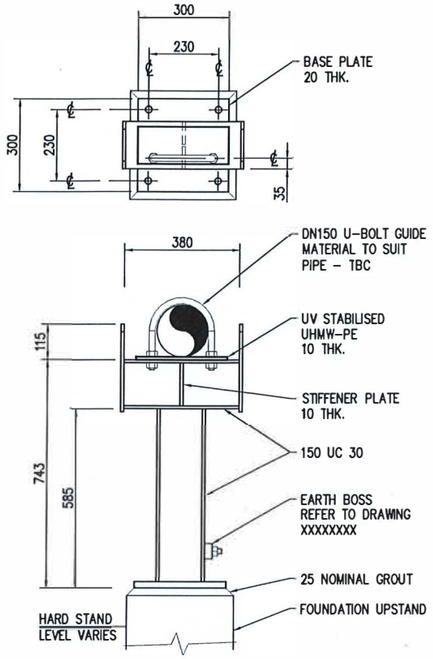
CHUUK TERMINAL FUEL PIPELINE REPLACEMENT

ISOMETRIC - PROPOSED MECHANICAL PIPING

DATE:	08/13/2019
SCALE:	AS NOTED
DRAWN BY:	GN
ENGINEER:	MT
CHECKED BY:	GC

ISO-5

SHEET 34D OF 38



PS TYPE 1A
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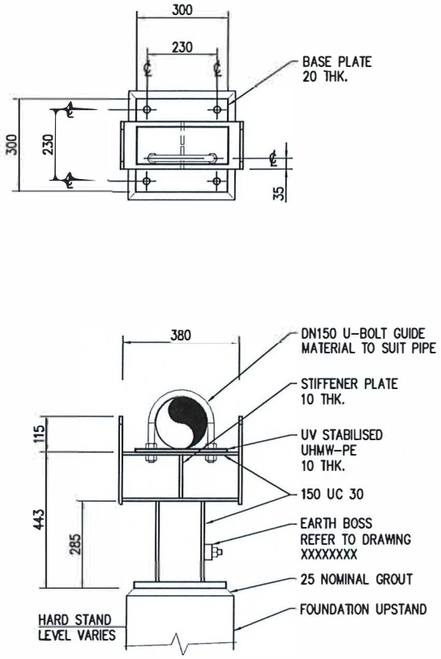

PS TYPE 1B
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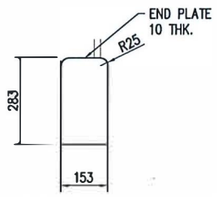
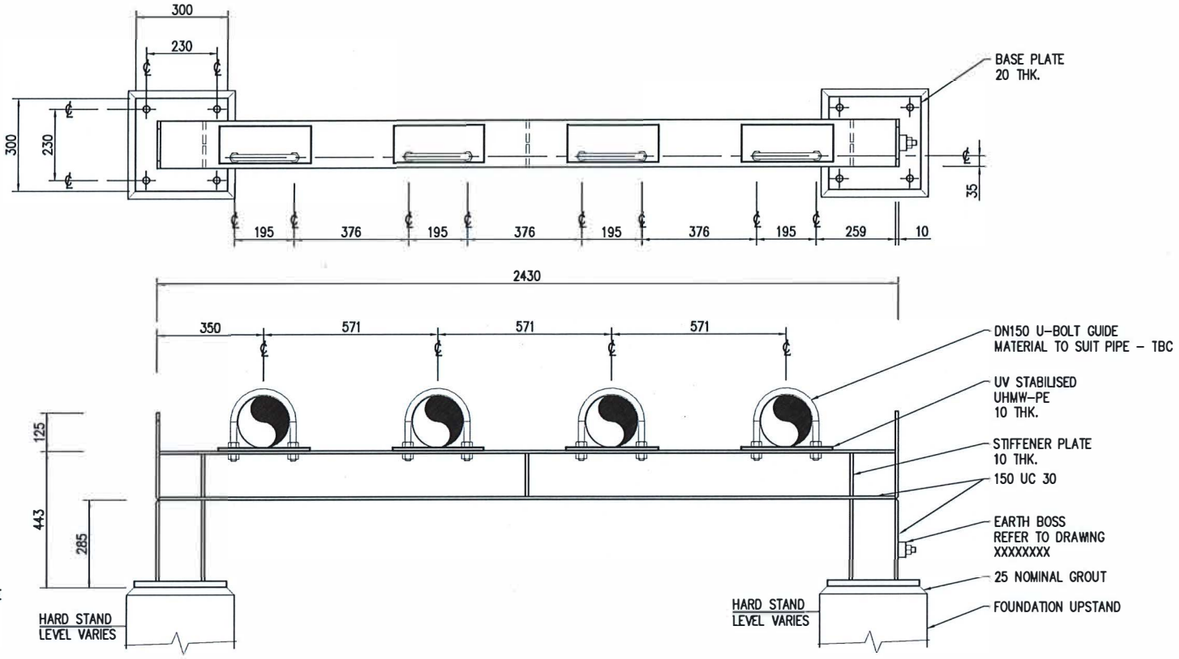


END PLATE
SCALE 1:10
TYPICAL 2-OFF PER SUPPORT



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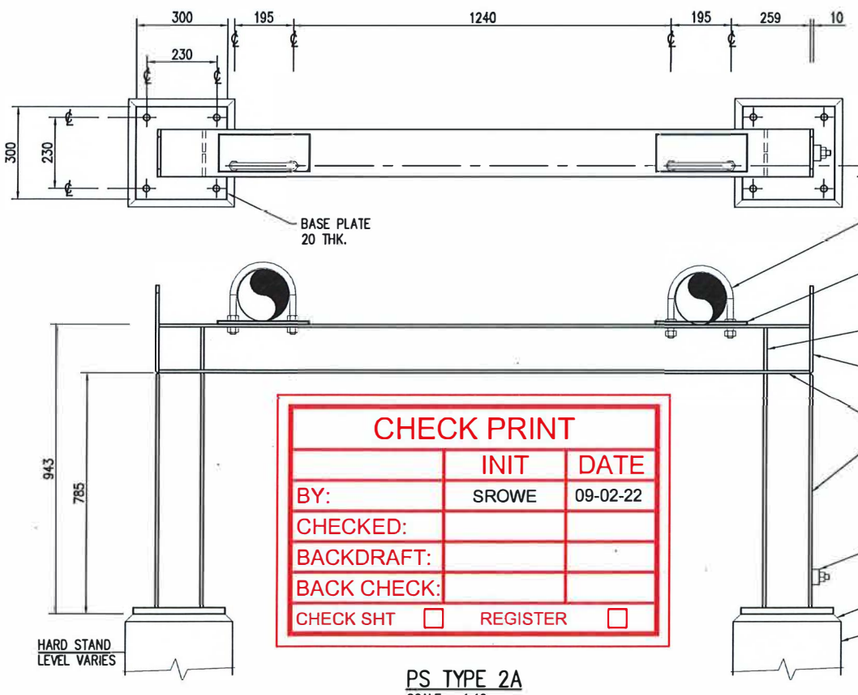
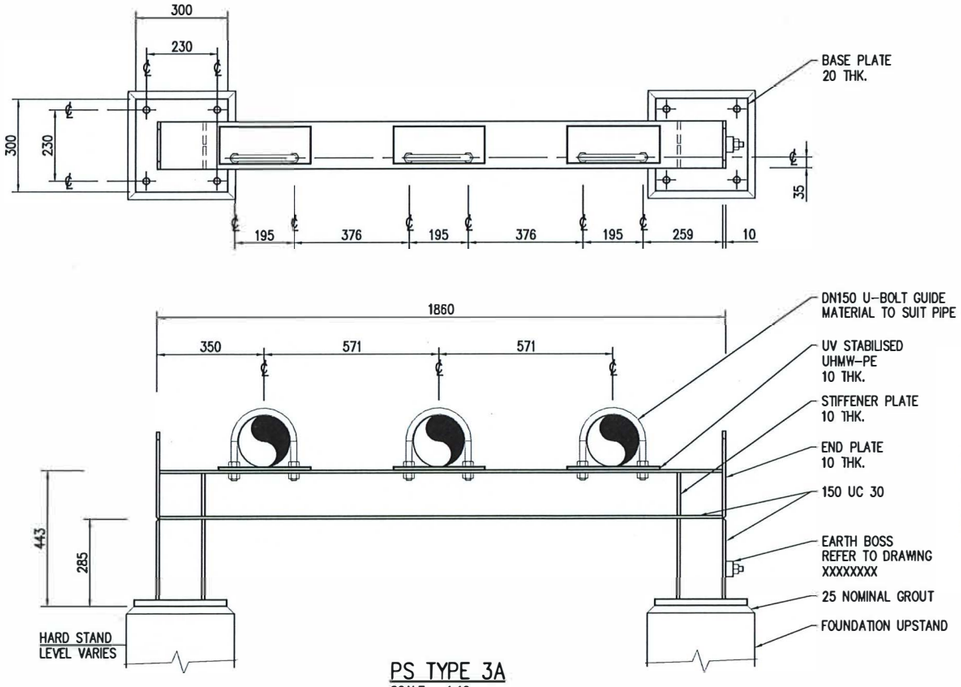


PS TYPE 2A
SCALE 1:10

CHECK PRINT		
	INIT	DATE
BY:	SROWE	09-02-22
CHECKED:		
BACKDRAFT:		
BACK CHECK:		
CHECK SHT ☐	REGISTER ☐	



PS TYPE 3A
SCALE 1:10

REGISTERED PROFESSIONAL ENGINEER
JOHN H. GENTRY
No. C 59247
Exp. 12/31/2023
CIVIL
STATE OF CALIFORNIA

GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. FOR U-BOLT GUIDE LOCATION REFER TO PIPING PLAN XXXXXX
3. WHERE U-BOLTS ARE NOT USED FIX UHMW-PE TO SUPPORT VIA M20x45 Lg Gr 4.6 HOT DIPPED GALV. BOLT.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth New Zealand
12732-SK-CS-411.dwg
09 Feb 2022 - 11:57am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	REVISIONS DESCRIPTION
A	02/22	SAR	.	.	WDO	BOB	ISSUED FOR REVIEW

REFERENCE DRAWINGS NUMBER	TITLE
XXXX-XX-XX-XXX	.

LOCATION	CHUUK STATE		
PROJECT No	12732		
SCALE	N. TS.		
CLIENT	Vital Energy for life		

DRAWN	S.ROWE	02/22	
CHECKED	.	.	
ENGINEERED	B.WALKER	02/22	
APPROVED	W.DOUGAN	03/22	
CLIENT	BOB	04/22	
A1 BOR	SIGN	DATE	

ORIGINAL SIZE A1

TITLE
CHUUK STORAGE TERMINAL
TYPICAL PIPE SUPPORTS
DN150 PIPING

DRAWING No 12732-SK-CS-411-01

REVISION A

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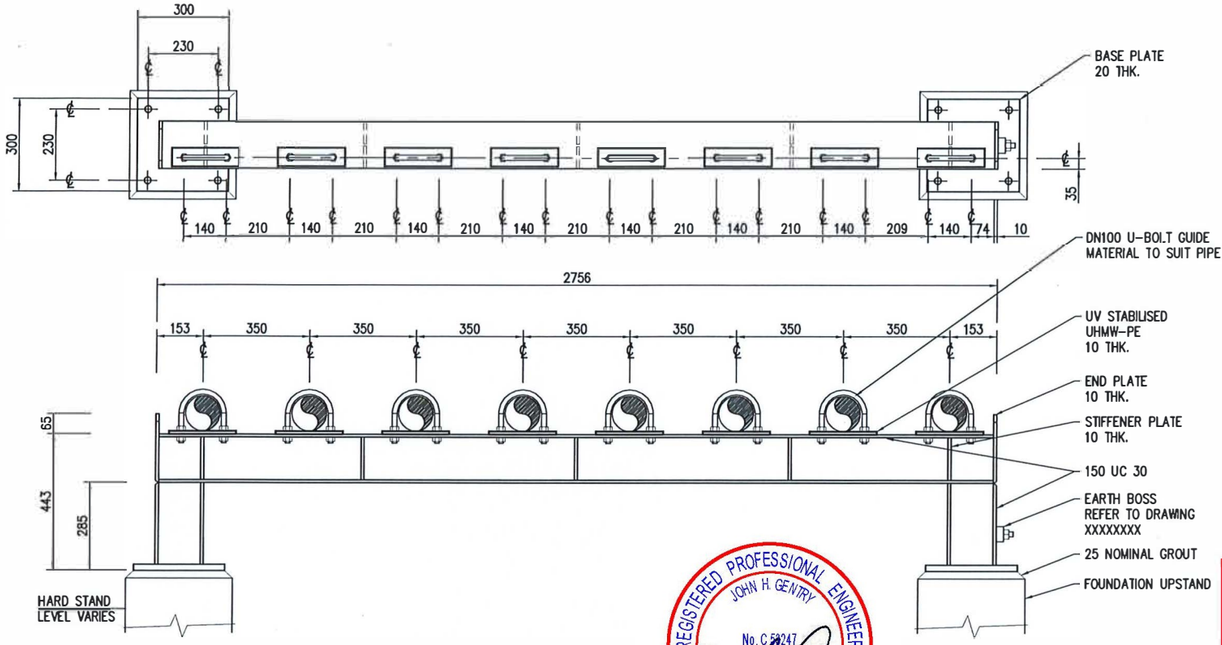
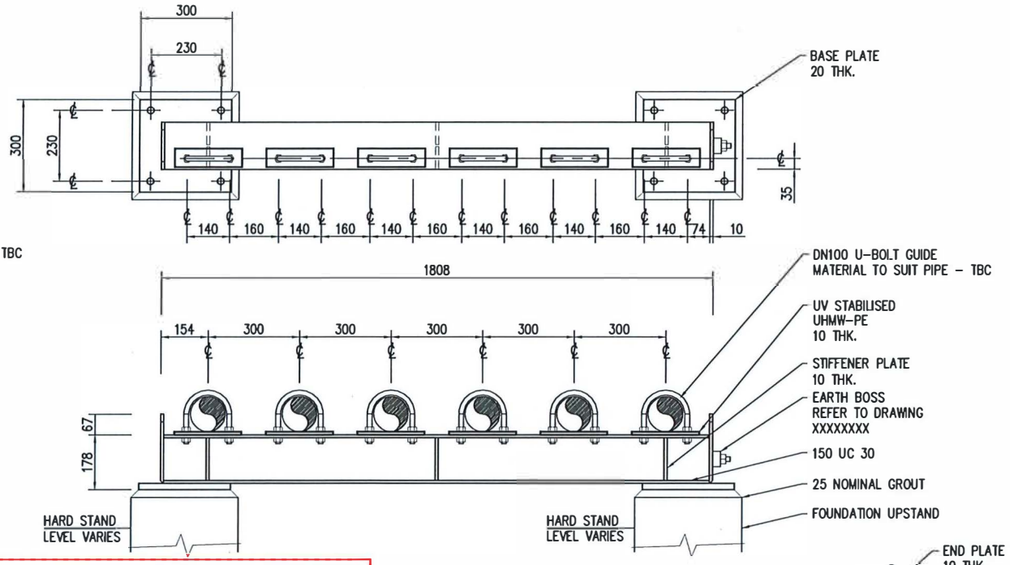
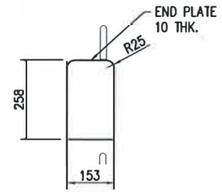
PIPE SUPPORT FOUNDATION DRAWINGS



PS TYPE 8A
SCALE 1:10

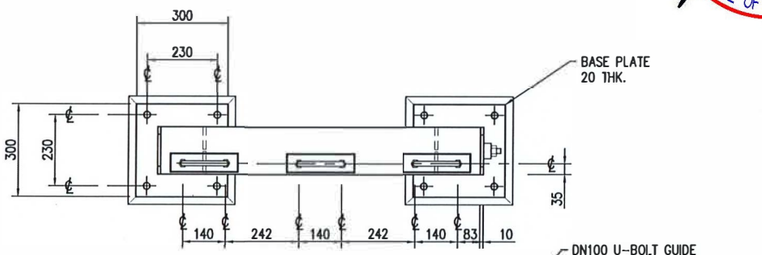


PS TYPE 6A
SCALE 1:10

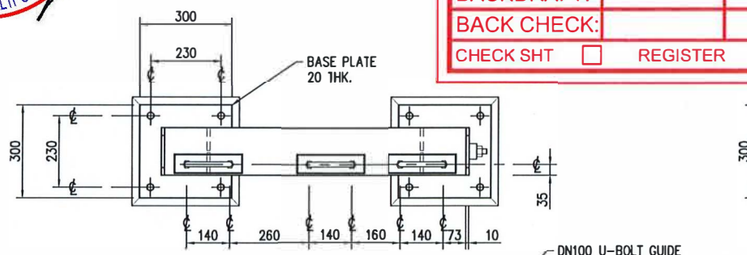


END PLATE
SCALE 1:10
TYPICAL 2-OFF PER SUPPORT

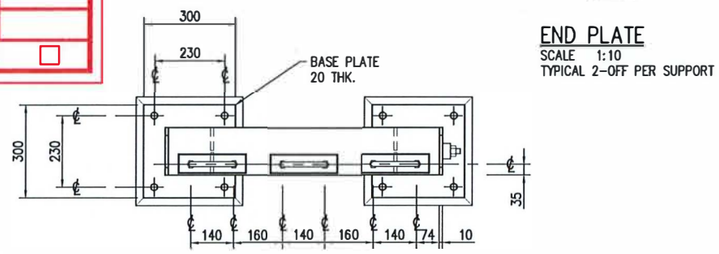
CHECK PRINT		
	INIT	DATE
BY:	SROWE	09-02-22
CHECKED:		
BACKDRAFT:		
BACK CHECK:		
CHECK SHT ☐	REGISTER ☐	



PS TYPE 3B
SCALE 1:10



PS TYPE 3C
SCALE 1:10



PS TYPE 3D
SCALE 1:10

GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. FOR U-BOLT GUIDE LOCATION REFER TO PIPING PLAN XXXXXX
3. WHERE U-BOLTS ARE NOT USED FIX UHMW-PE TO SUPPORT VIA M20x45 Lg Gr 4.6 HOT DIPPED GALV. BOLT.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS
12732-SK-CS-411.dwg
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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION	NUMBER
A	02/22	SAR	.	.	WOD	BOB	ISSUED FOR REVIEW	XXX-XX-XX-XXX

REVISIONS — REFERENCE DRAWINGS

LOCATION: CHUUK STATE
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: ital Energy for life

DRAWN	S. ROWE	9/22
CHECKED	.	.
ENGINEERED	B.WALKER	02/2 2
APPROVED	W.DOUGAN	03/2 2
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
TYPICAL PIPE SUPPORTS
DN100 PIPING

DRAWING No: 12732-SK-CS-411-02
REVISION: A

REGISTERED PROFESSIONAL ENGINEER
JOHN H. GENTRY
No. C 58247
Exp. 6/30/2023
CIVIL
STATE OF CALIFORNIA

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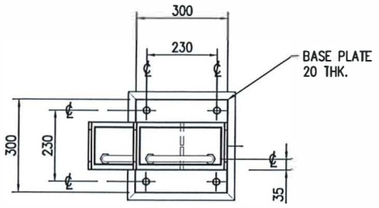

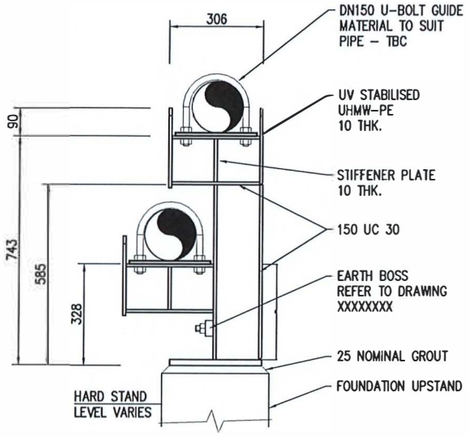

PS TYPE 2C
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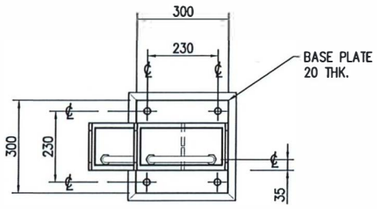
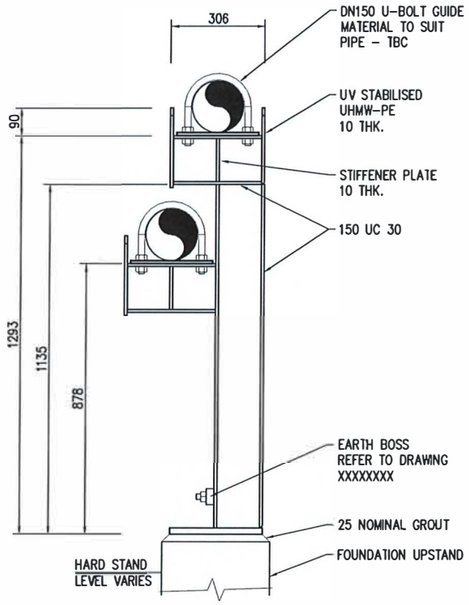
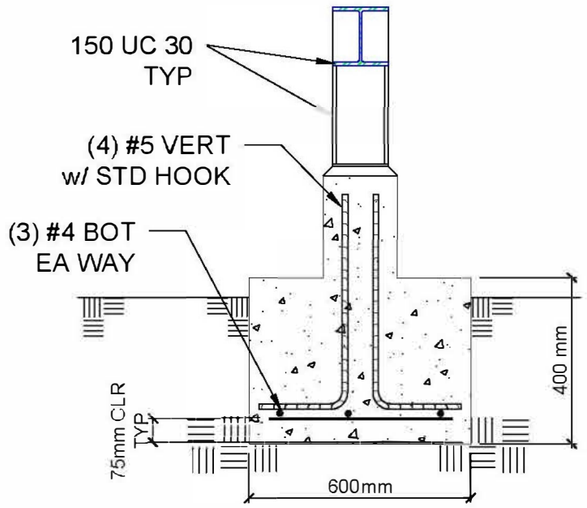
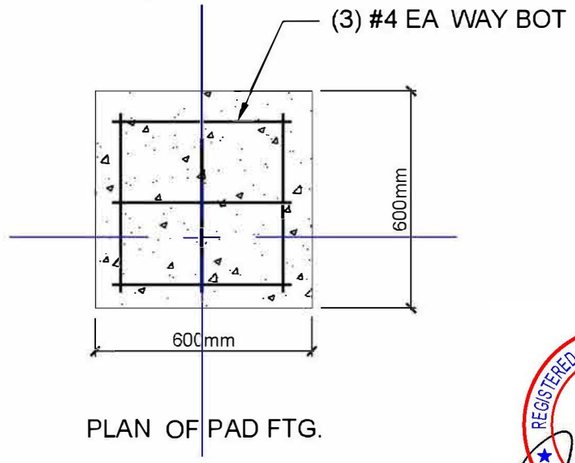




PS TYPE 2D
SCALE 1:10



SECT. OF SQUARE PAD FTG.



PLAN OF PAD FTG.

REGISTERED PROFESSIONAL ENGINEER
JOHN H. GENTRY
No. C 59247
Exp. 06/30/2023
CIVIL
STATE OF CALIFORNIA

CHECK PRINT		
	INIT	DATE
BY:	SROWE	09-02-22
CHECKED:		
BACKDRAFT:		
BACK CHECK:		
CHECK SHT ☐	REGISTER ☐	

GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. FOR U-BOLT GUIDE LOCATION REFER TO PIPING PLAN XXXXXX
3. WHERE U-BOLTS ARE NOT USED FIX UHMW-PE TO SUPPORT VIA M20x45 Lg Gr 4.6 HOT DIPPED GALV. BOLT.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth New Zealand
12732-SK-CS-411.dwg
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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	02 '22	SAR	.	.	WDD	BOB	ISSUED FOR REVIEW

REVISIONS

XXXX-XX-XX-XXX
NUMBER

TITLE
REFERENCE DRAWINGS

LOCATION: CHUUK STATE
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: vital Energy for life

DRAWN	S.ROWE	02/22
CHECKED	.	
ENGINEERED	B.WALKER	02/22
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE
CHUUK STORAGE TERMINAL
TYPICAL PIPE SUPPORTS
DN150 COMBINED ADO & FW PIPING

DRAWING No: 12732-SK-CS-411-03
REVISION: A

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PIPE FABRICATION DRAWINGS

CHUUK TERMINAL PIPING - DETAILED DESIGN
12732-4000

CIVIL/ STRUCTURAL / PIPING / MECHANICAL PACK
ISSUED FOR CONSTRUCTION

12 Sep 2022

PLANT & PLATFORM
CONSULTANTS LTD

P.O. Box 660, 5th Floor, Atkinson Building,
Devon Street West, New Plymouth, New Zealand
Phone: 0064 6 759 2199
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PO Box 660, 141 Devon Street West, New Plymouth, New Zealand manager@pandp.co.nz

ENGINEERING CONSULTANTS

DRAWING LIST

Client: Vital FSM

Project: Chuuk Terminal Piping Replacement

Date: 16/09/2022

Client Ref: 99

Coordinator: René D'Ath

P&P Job No: 12732

DRAWING NO:	SHT	REV	QTY	DESCRIPTION
12732-SK-CS-302-11		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN TANK CHK-T-001
12732-SK-CS-302-08		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN TANK CHK-T-002
12732-SK-CS-302-02		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN LOADOUT AREA
12732-SK-CS-302-01		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN TANK CHK-T-006
12732-SK-CS-302-07		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN TANK CHK-T-007
12732-SK-CS-301		1		CHUUK STORAGE TERMINAL CIVIL/STRUCTURAL KEY PLAN
12732-SK-CS-302-04		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN EMERGENCY INLET AREA
12732-SK-CS-302-03		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN OILY WATER SEPARATOR
12732-SK-CS-302-12		1		CHUUK STORAGE TERMINAL FOUNDATION PLAN INLET AREA
12732-SK-CS-411-01		1		CHUUUK STORAGE TERMINAL TYPICAL PIPE SUPPORT
12732-SK-PID-001-		1		PIPING & INSTRUMENTATION DIAGRAM JET -A1 IMPORT & STORAGE
12732-SK-PID-002-01		1		PIPING & INSTRUMENTATION DIAGRAM JET - A1, ADO&ULP LOADOUT PUMPS & GANTRY
12732-SK-CS-411-02		1		CHUUK STORAGE TERMINAL TYPICAL PIPE SUPPORT
12732-SK-CS-411-03		1		CHUUK STORAGE TERMINAL TYPICAL PIPE SUPPORT DN150 COMBINED ADO & FW PIPING
12732-SK-CS-413-01		1		CHUUK STORAGE TERMINAL TYPICAL STILE DETAILS TYPE C STILE
12732-SK-CS-412-01		1		CHUUK STORAGE TERMINAL TYPICAL STILE DETAILS TYPE A AND B STILE
12732-SK-CS-414-01		1		CHUUK STORAGE TERMINAL TYPICAL STILE DETAILS TYPE D STILE
12732-SK-PID-001-01		1		PIPING & INSTRUMENTATION DIAGRAM ADO & ULP IMPORT & STORGAE
12732-SK-PM-502-15		1		CHUUK STORAGE TERMINAL PIPING PLAN TANK CHK-T-001-INLET
12732-SK-PM-502-03		1		CHUUK STORAGE TERMINAL PIPING PLAN TRANSFER PUMP AREA
12732-SK-PM-502-04		1		CHUUK STORAGE TERMINAL PIPING PLAN PIPING RACK LOW POINT DRAINS
12732-SK-PM-502-09		1		CHUUK STORAGE TERMINAL PIPING PLAN TANK CHK-T-005
12732-SK-PM-502-05		1		CHUUK STORAGE TERMINAL PIPING PLAN EMERGENCY INLET AREA
12732-SK-PM-502-14		1		CHUUK STORAGE TERMINAL PIPING PLAN TANK CHK-T-001 OUTLET
12732-SK-PM-502-10		1		CHUUK STORAGE TERMINAL PIPING PLAN TANK CHK-T-003
12732-SK-PM-502-20		1		CHUUK STORAGE TERMINAL PIPING PLAN PIPELINE INLET AREA
12732-SK-PM-950-02		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT LOADOUT AREA
12732-SK-PM-501-01		1		CHUUK SOTRAGE TERMINAL PIPING KEY PLAN
12732-SK-PM-950-01		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT TANK CHK-T-006
12732-SK-PM-502-01		1		CHUUK STORAGE TERMINAL PIPING PLAN TANK CHK-T-006
12732-SK-PM-502-02		1		CHUUK SOTRAGE TERMINAL PIPING PLAN LOADOUT AREA
12732-SK-PM-950-03A		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT TRANSFER PUMP AREA A
12732-SK-PM-950-20		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT PIPELINE INLET AREA
12732-SK-PM-950-03B		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT TRANSFER PUMP AREA B
12732-SK-PM-950-04		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT PIPING RACK LOW POINT DRAINS
12732-SK-PM-950-05		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT EMERGENCY INLET AREA
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12732-SK-PM-950-14		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT TANK CHK-T-001 OUTLET
12732-SK-PM-950-15		A		CHUUK STORAGE TERMINAL SPOOL SET-OUT TANK CHK-T-001 INLET
CHK-ADO-061-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-061-A TO C
CHK-ADO-061-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-061-D TO F
CHK-ADO-061-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-061-G TO K
CHK-ADO-061-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-061-L TO M
CHK-ADO-061-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-061-N TO O
CHK-ADO-062-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-062-A
CHK-ADO-062-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-062-B
CHK-ADO-062-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-062-C TO D
CHK-ADO-062-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-062-E TO F
CHK-ADO-062-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-062-G TO J
CHK-ADO-063-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO. CHK-ADO-063-J

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PO Box 660, 141 Devon Street West, New Plymouth, New Zealand manager@pandp.co.nz

ENGINEERING CONSULTANTS

DRAWING LIST

Client: Vital FSM

Project: Chuuk Terminal Piping Replacement

Coordinator: René D'Ath

Date: 16/09/2022

Client Ref: 99

P&P Job No: 12732

DRAWING NO:	SHT	REV	QTY	DESCRIPTION
CHK-ADO-066-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-066-A TO C
CHK-ADO-064-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-064-A TO C
CHK-ADO-062-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-062-K TO M
CHK-ADO-065-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-065-A TO C
CHK-ADO-062-07		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-062-N TO O
CHK-ADO-062-08		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-062-P TO Q
CHK-ADO-062-09		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-062-S TO U
CHK-ADO-062-10		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-062-T
CHK-ADO-063-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-063-A TO B
CHK-ADO-063-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-063-C TO I
CHK-ADO-070-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-070-C
CHK-ADO-067-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-067-02 -E TO H
CHK-ADO-066-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-066-02 -E TO H
CHK-ADO-067-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-067-01 -A TO C
CHK-ADO-068-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-068-01 -A TO C
CHK-ADO-068-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-068-03 -A TO C
CHK-ADO-068-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-068-03 -D TO E
CHK-ADO-069-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-069-01 -A
CHK-ADO-070-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ADO-070-01 -A TO B
CHK-JET-032-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-032-A TO B
CHK-JET-032-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-032-C
CHK-JET-032-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-032-D
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CHK-JET-031-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-031-E TO I
CHK-JET-031-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-031-J
CHK-JET-031-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-031-K
CHK-JET-031-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-031-L TO M
CHK-JET-031-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-031-XA TO XJ
CHK-JET-033-07		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-L TO O
CHK-JET-034-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-034-A TO D
CHK-JET-035-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-035-A TO B
CHK-JET-032-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-032-F TO J
CHK-JET-032-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-032-K
CHK-JET-033-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-A TO B
CHK-JET-033-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-C TO E
CHK-JET-033-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-F TO G
CHK-JET-033-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-H TO J
CHK-JET-033-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-K TO L
CHK-JET-033-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-L TO M
CHK-JET-036-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-036-G TO K
CHK-JET-036-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-036-S
CHK-JET-036-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-036-A TO F
CHK-JET-036-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-036-Q TO R
CHK-JET-034-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-034-A TO D
CHK-JET-033-07		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-033-L TO O
CHK-JET-035-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-035-A TO B
CHK-JET-035-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-035-C TO D
CHK-JET-036-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-036-O TO P
CHK-JET-036-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-036-L TO M
CHK-PL-001-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-A TO D
CHK-PL-001-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-G TO I
CHK-PL-001-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-J
CHK-PL-001-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-E TO F
CHK-PL-001-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-K TO L
CHK-PL-001-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-M
CHK-PL-001-07		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-M TO N
CHK-PL-001-08		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-O TO P
CHK-JET-037-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-JET-038-A TO B
CHK-PL-001-09		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-Q TO V
CHK-PL-002-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-002-K
CHK-PL-002-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-002-L
CHK-SW2-021-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-021-A TO C
CHK-SW2-021-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-021-G TO L
CHK-SW2-021-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-021-D TO F
CHK-SW2-021-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-021-M
CHK-PL-001-10		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-001-W TO X

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PO Box 660, 141 Devon Street West, New Plymouth, New Zealand manager@pandp.co.nz

ENGINEERING CONSULTANTS

DRAWING LIST

Client: Vital FSM

Project: Chuuk Terminal Piping Replacement

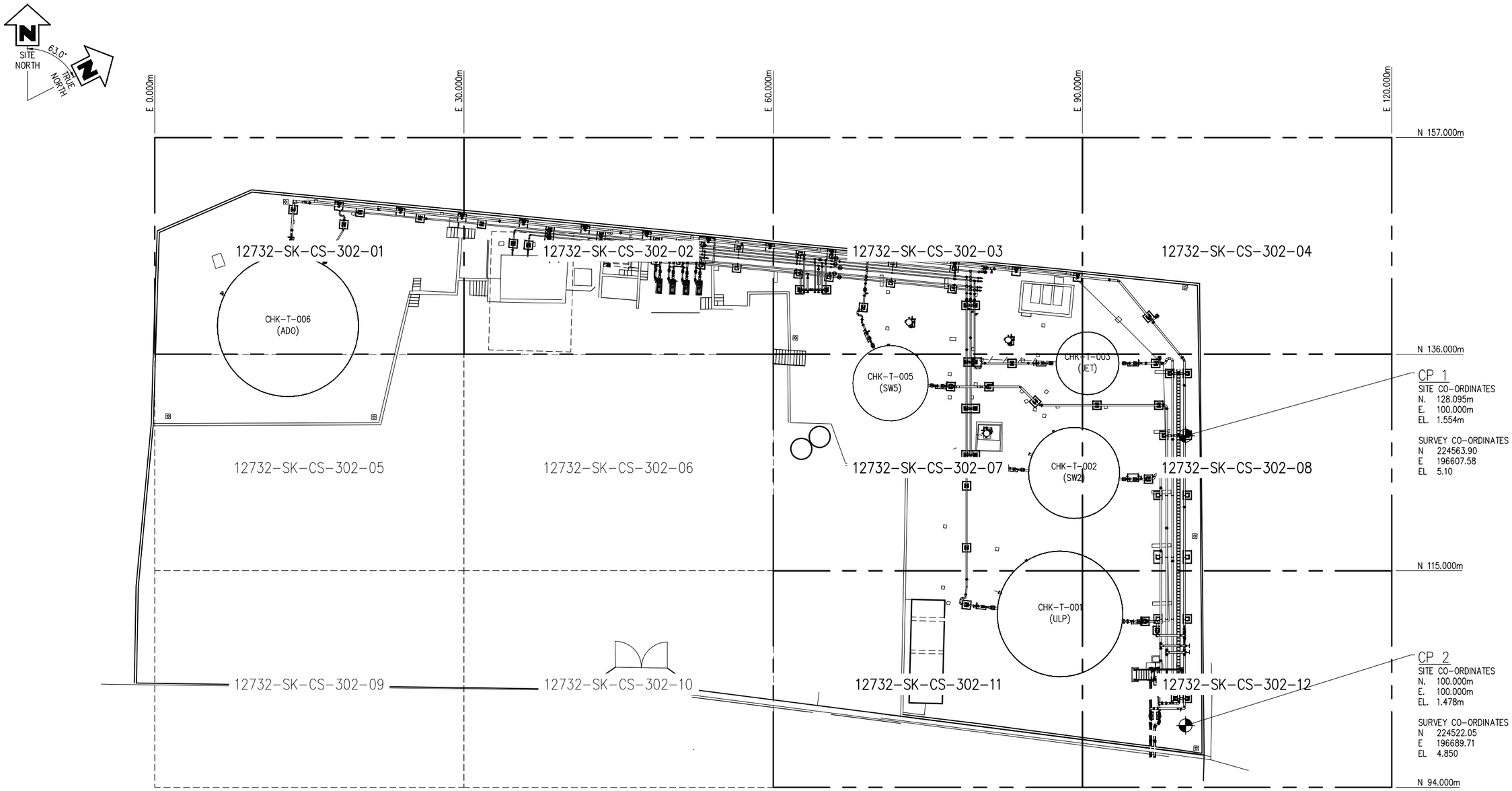
Coordinator: René D'Ath

Date: 16/09/2022

Client Ref: 99

P&P Job No: 12732

DRAWING NO:	SHT	REV	QTY	DESCRIPTION
CHK-PL-002-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-002-A TO E
CHK-PL-002-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-002-G TO I
CHK-PL-002-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-PL-002-J
CHK-SW2-021-07		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-021-P
CHK-SW2-021-08		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-021-Q
CHK-SW2-022-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-022-A TO B
CHK-SW2-022-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-022-C TO D
CHK-SW2-022-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-022-E
CHK-SW2-022-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-022-F
CHK-SW2-022-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-022-G TO L
CHK-SW5-051-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-A
CHK-SW5-051-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-B TO E
CHK-SW5-051-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-F TO K
CHK-SW5-051-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-N
CHK-SW2-021-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW2-021-O
CHK-SW5-051-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-L TO P
CHK-SW5-051-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-Q
CHK-SW5-051-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-R TO S
CHK-SW5-051-07		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-051-T
CHK-SW5-052-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-052-A TO B
CHK-SW5-052-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-052-D
CHK-SW5-052-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-052-C
CHK-SW5-052-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-052-H TO M
CHK-SW5-052-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-SW5-052-G
CHK-ULP-011-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-011-A
CHK-ULP-011-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-011-B
CHK-ULP-011-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-011-C TO E
CHK-ULP-012-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-012-B
CHK-ULP-012-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-012-C
CHK-ULP-012-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-012-D
CHK-ULP-011-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-011-F
CHK-ULP-011-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-011-G TO H
CHK-ULP-012-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-012-A
CHK-ULP-011-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-012-I
CHK-ULP-012-06		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-012-J TO N
CHK-ULP-013-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-013-D TO F
CHK-ULP-013-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-013-A TO C
CHK-ULP-012-05		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-012-F TO I
STD-46302-01		0		STANDARD DRAWING PIPE SUPPORT FURNITURE W2 - MILD STEEL WEAR PAD / PACKER
CHK-ULP-013-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-013-G TO J
CHK-ULP-014-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-014-A TO C
CHK-ULP-015-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-015-A TO B
CHK-ULP-016-01		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-016-A TO C
CHK-ULP-015-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-015-D TO E
CHK-ULP-016-02		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-016-D TO E
CHK-ULP-016-03		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-016-F TO L
CHK-ULP-016-04		1		CHUUK TERMINAL PIPING ISOMETRIC SPOOL NO.CHK-ULP-016-M
STD-46203-01		0		STANDARD DRAWING PIPE SUPPORT FURNITURE - LIGHT DUTY U3 - U -BOLT FULL GIRP & MS. PACKER
STD-46204-01		0		STANDARD DRAWING PIPE SUPPORT FURNITURE - LIGHT DUTY U4 - U -BOLT NON GIRP & WEAR PAD
STD-46301-014		0		STANDARD DRAWING PIPE SUPPORT FURNITURE W1 - WEAE PLATE - UHMW-PE



GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:200 @ A1
CLIENT: Vital Energy Services Ltd

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

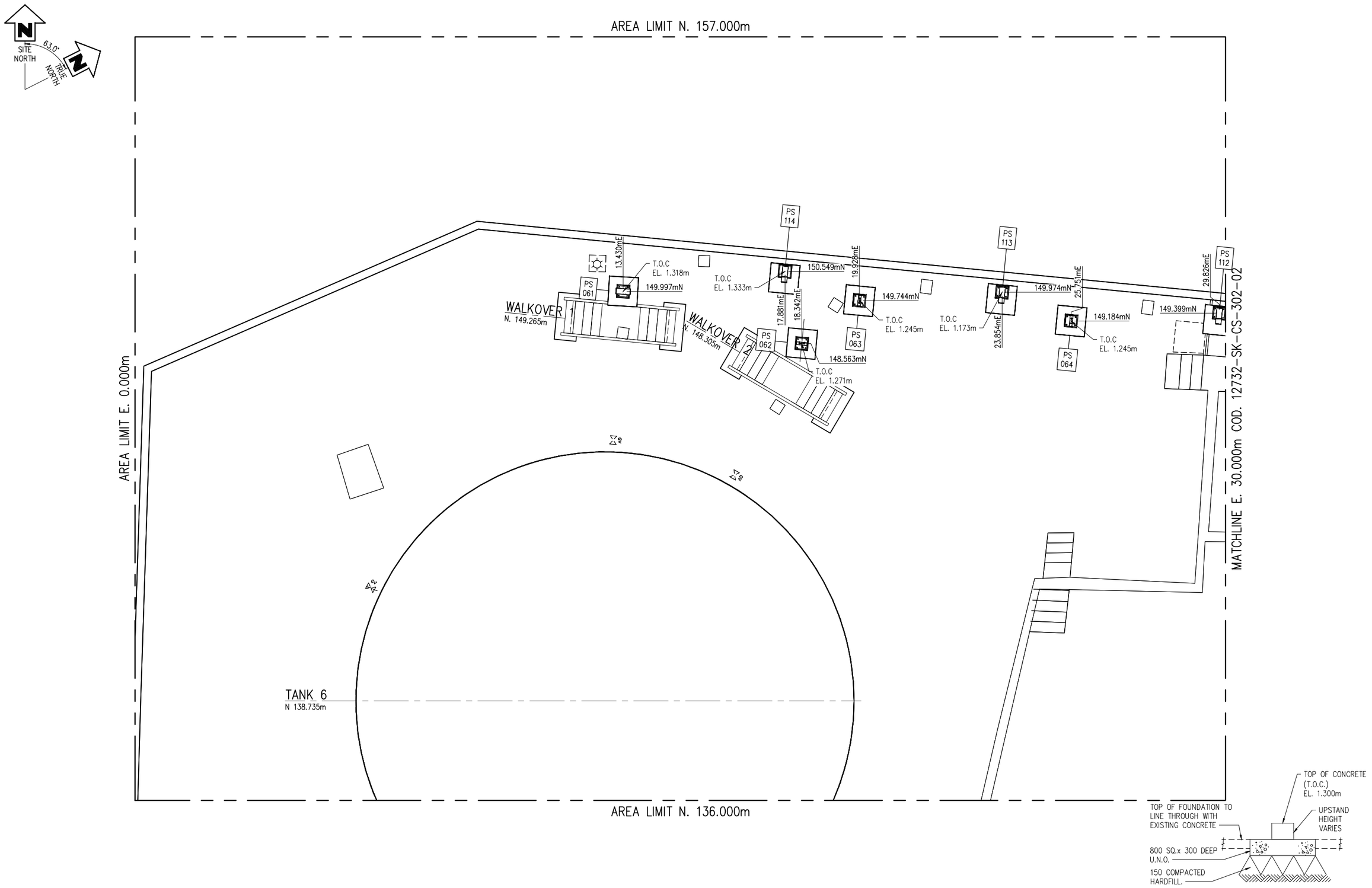
ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
CIVIL/STRUCTURAL KEY PLAN

DRAWING No: 12732-SK-CS-301

REVISION: 1

Z:\Vital FSM PetroCorp\12732\Acad\CS\12732-SK-CS-301.dwg Sep 15, 2022 - 8:30am



GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:50 @ A1
CLIENT: vital

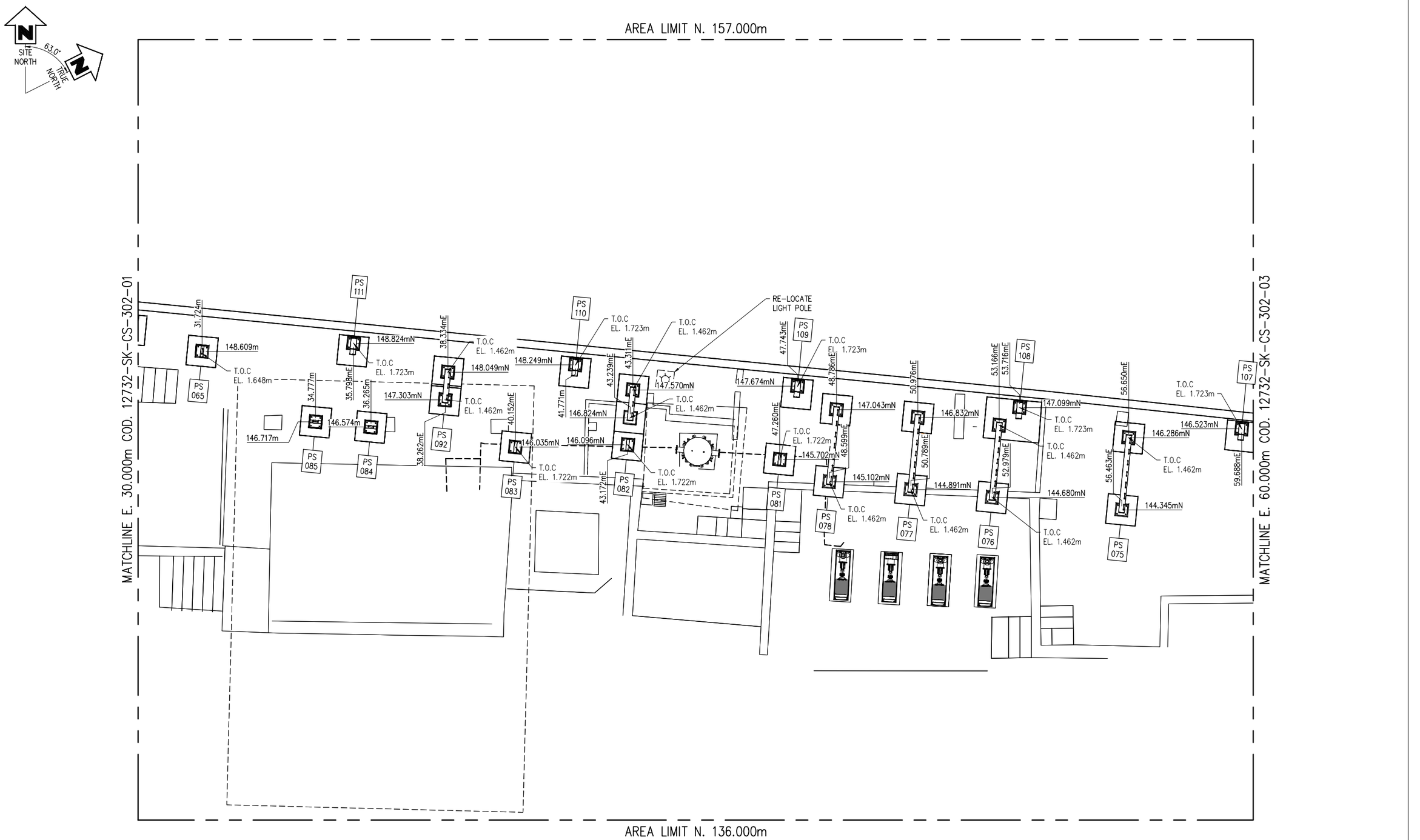
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
FOUNDATION PLAN
TANK CHK-T-006

ORIGINAL SIZE: A1

DRAWING No: 12732-SK-CS-302-01

REVISION: 1



GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:50 @ A1
CLIENT: ital

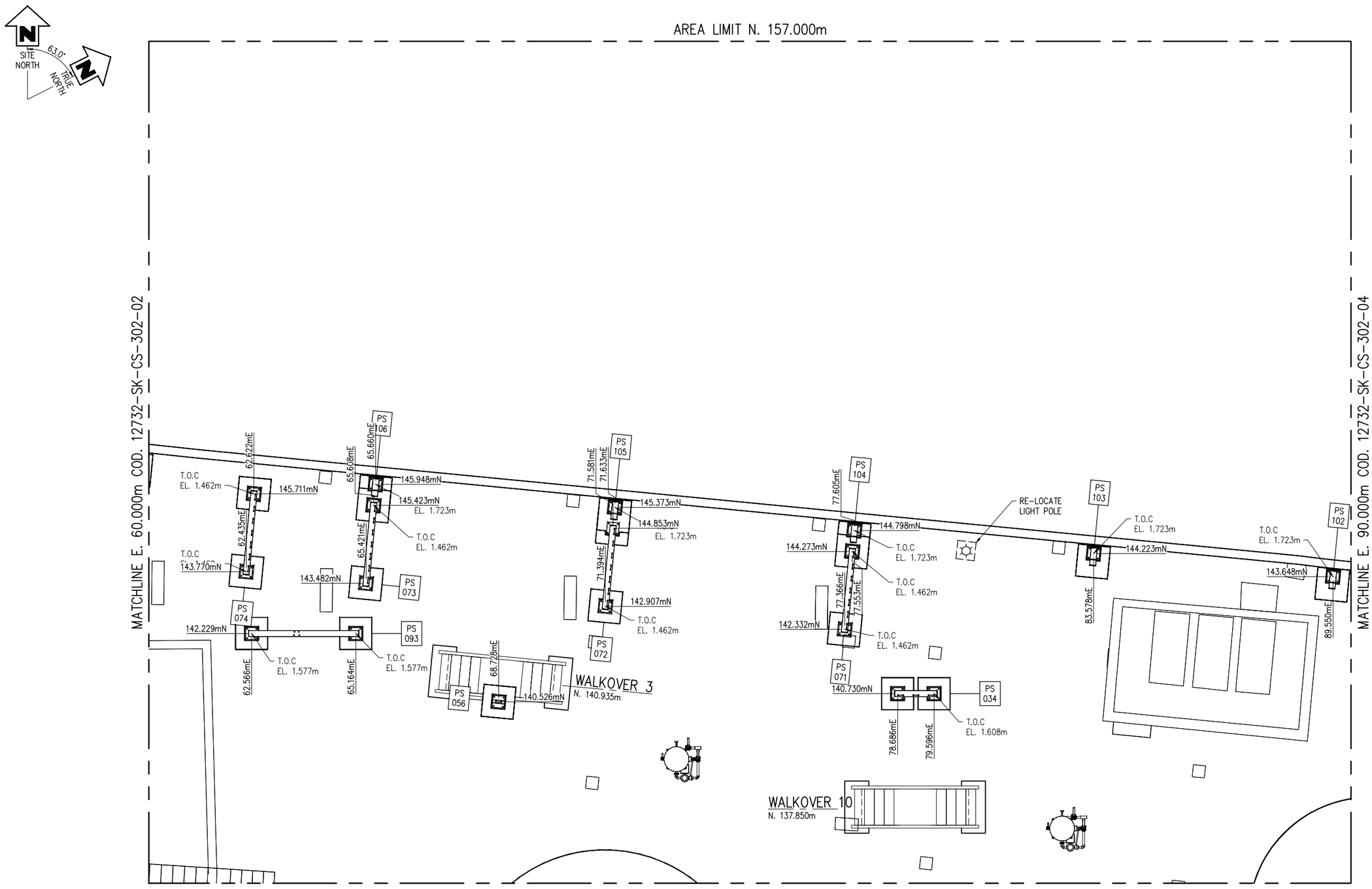
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
FOUNDATION PLAN
LOADOUT AREA

DRAWING No: 12732-SK-CS-302-02

REVISION: 1



GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

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New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

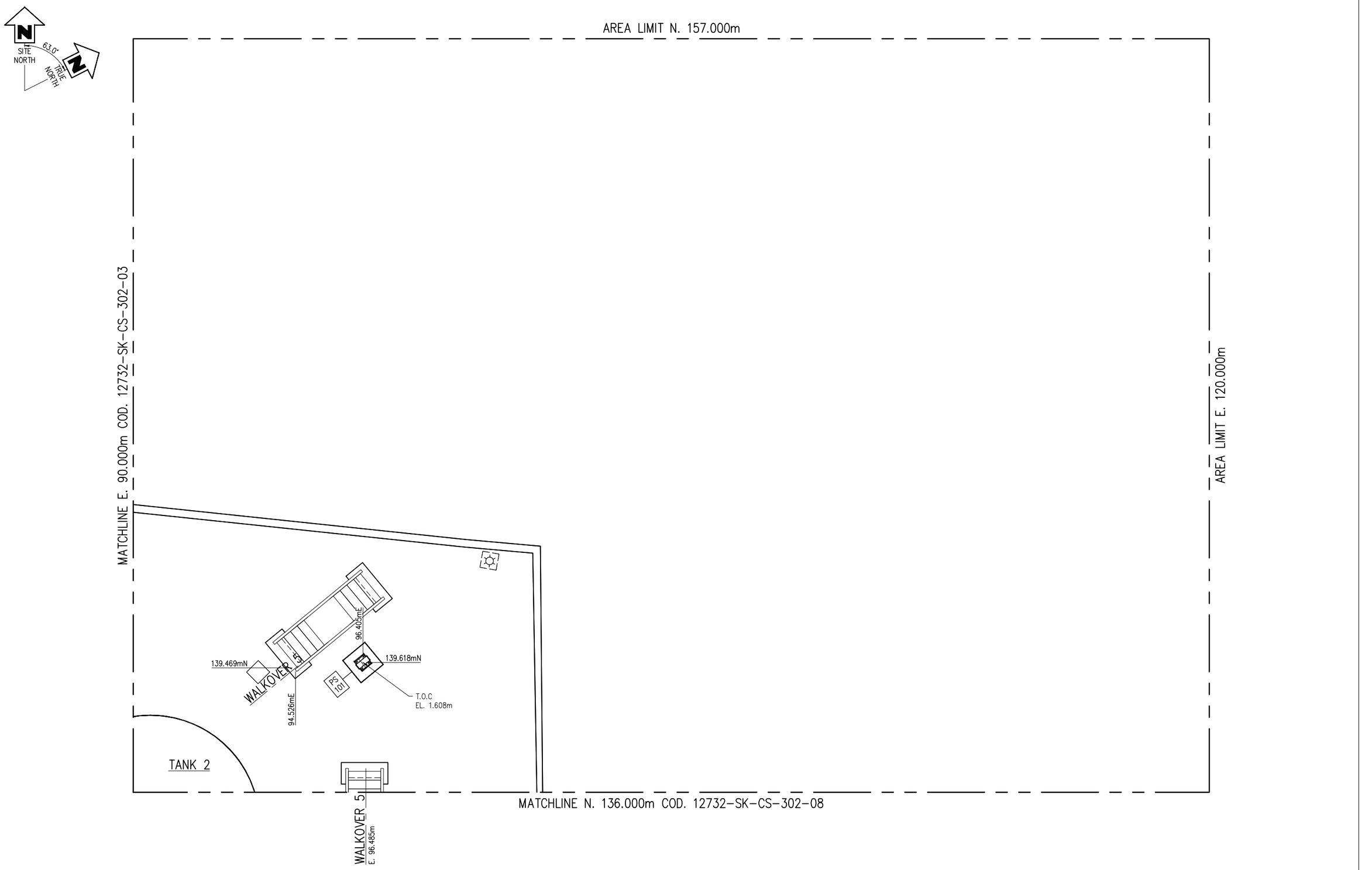
REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:50 @ A1
CLIENT: vital

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE
CHUUK STORAGE TERMINAL
FOUNDATION PLAN
OILY WATER SEPARATOR

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-CS-302-03
REVISION: 1



GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION	NUMBER	TITLE
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)	12732-SK-CS-301	CIVIL KEY PLAN

REVISIONS | REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:50 @ A1
CLIENT: Vital Energy Services Ltd

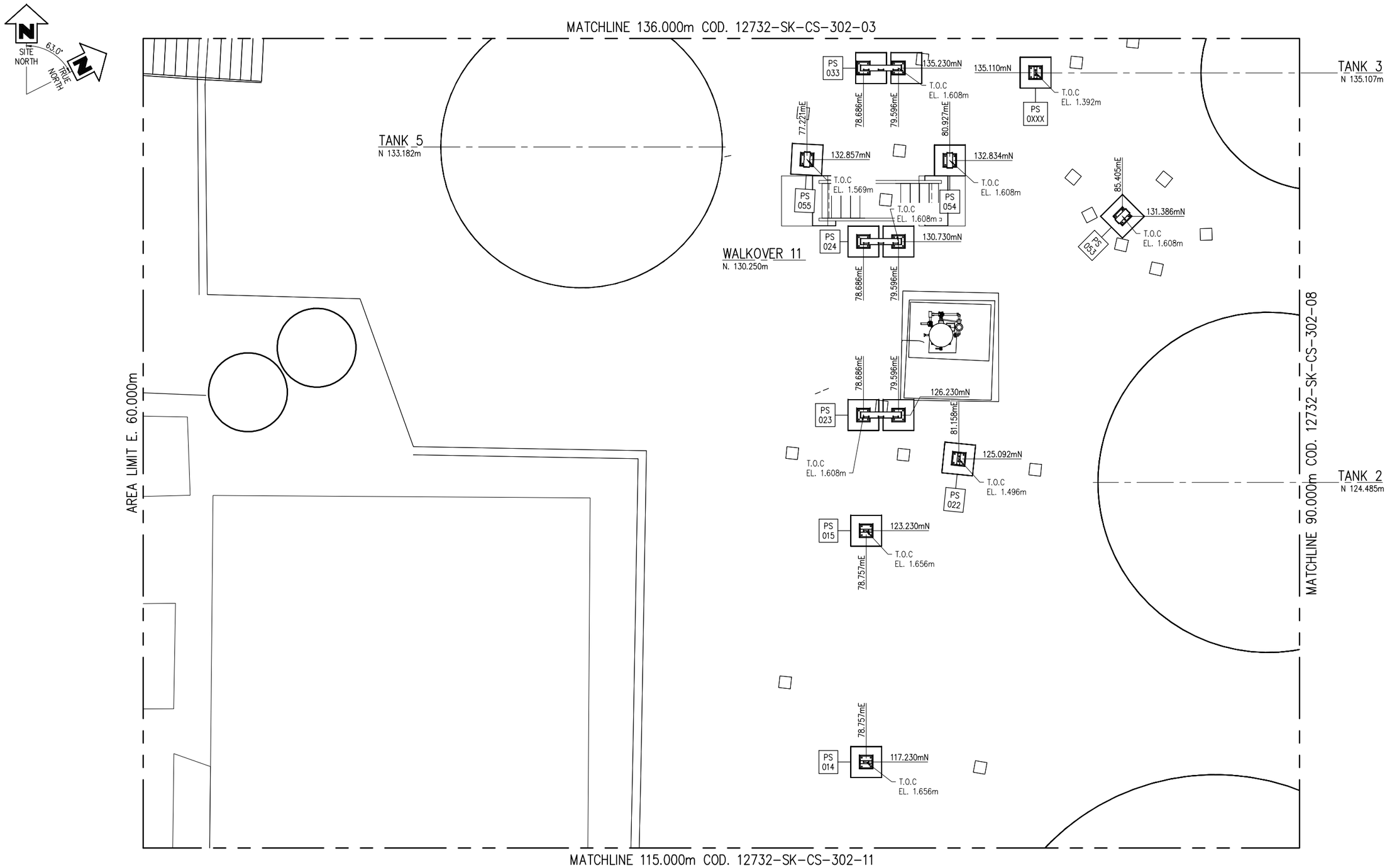
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
FOUNDATION PLAN
EMERGENCY INLET AREA

DRAWING No: 12732-SK-CS-302-04

REVISION: 1



GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:50 @ A1
CLIENT: Vital

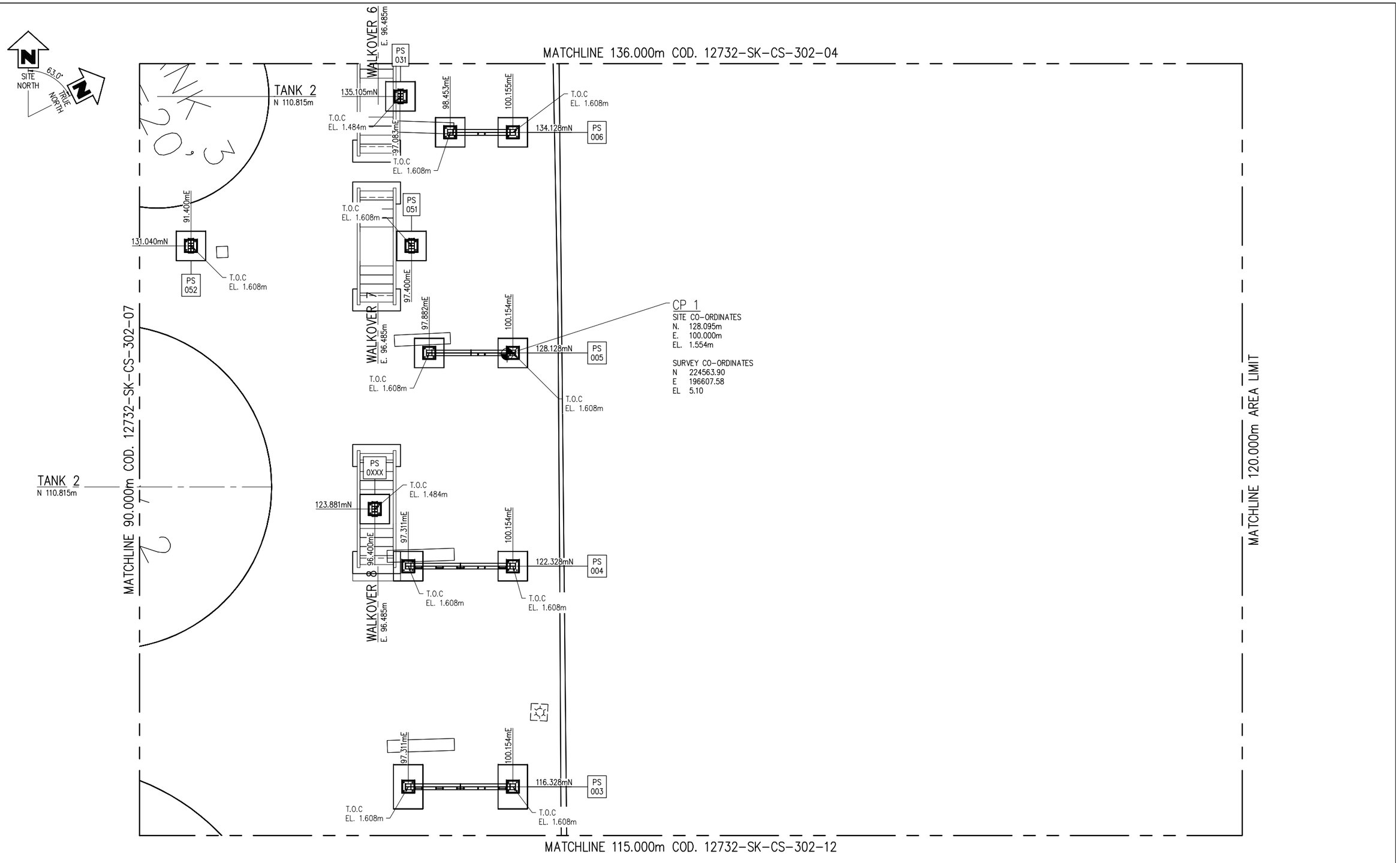
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
FOUNDATION PLAN
TANK CHK-T-005

DRAWING No: 12732-SK-CS-302-07

REVISION: 1



GENERAL NOTES
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3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:50 @ A1
CLIENT: Vital Energy for life

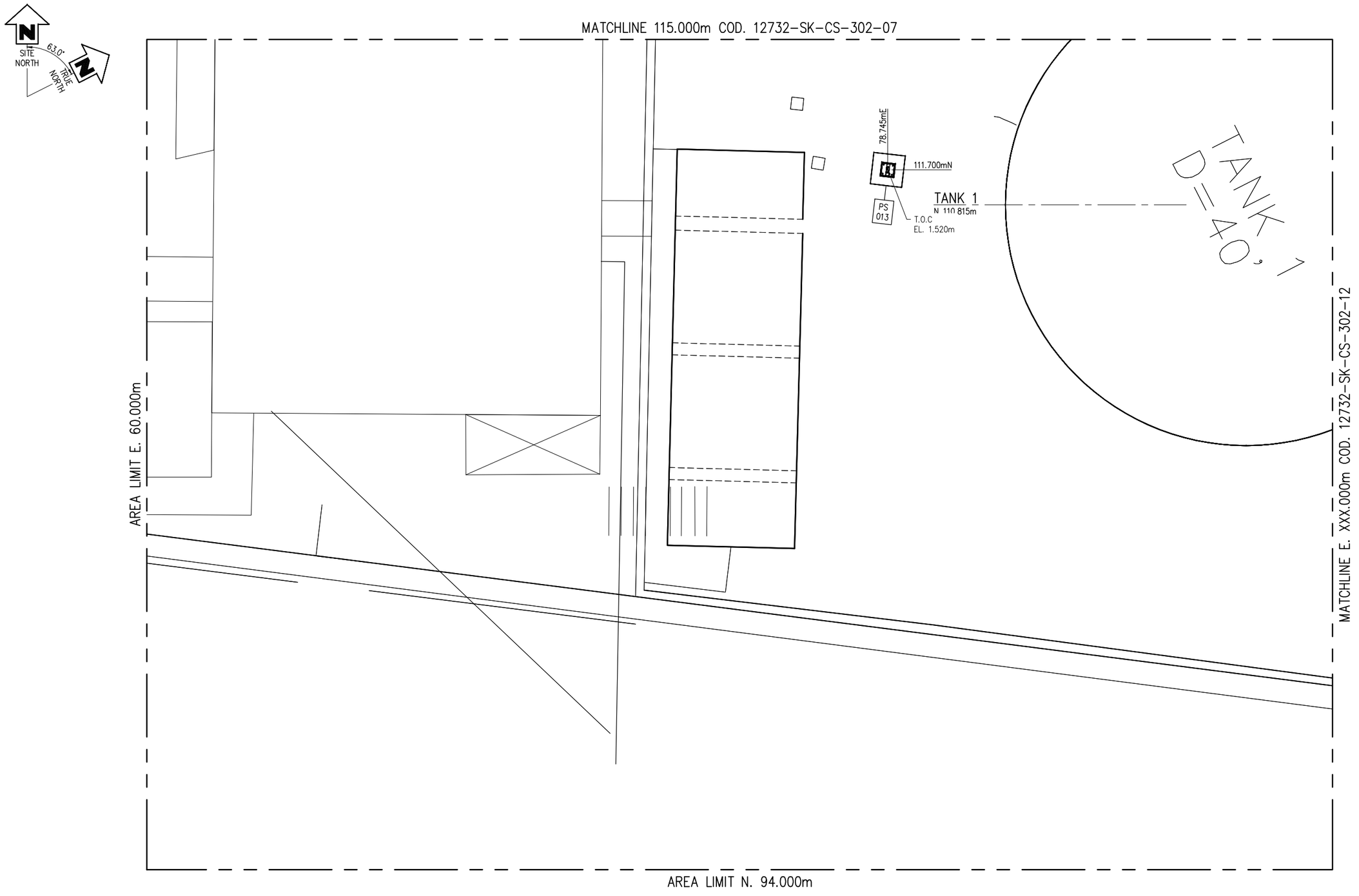
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
FOUNDATION PLAN
TANK CHK-T-002

DRAWING No: 12732-SK-CS-302-08

REVISION: 1



GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-CS-302.dwg
15 Sep 2022 - 8:29am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND

PROJECT No: 12732

SCALE: 1:50 @ A1

CLIENT: Vital Energy for life

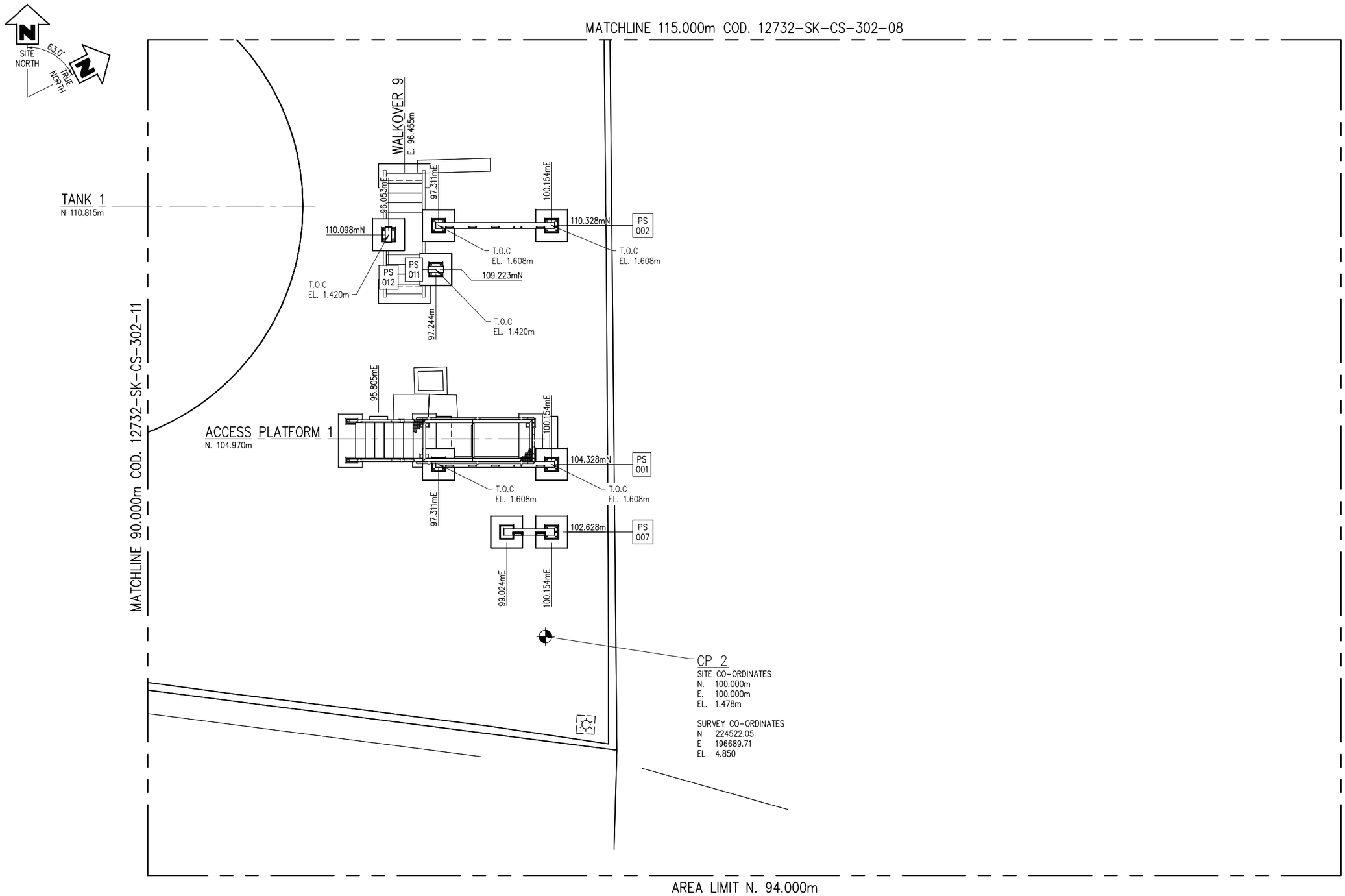
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
FOUNDATION PLAN
TANK CHK-T-001

DRAWING No: 12732-SK-CS-302-11

REVISION: 1



GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS
New Plymouth New Zealand

12732-SK-CS-302.dwg
15 Sep 2022 - 8:29am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:50 @ A1
CLIENT: Vital Energy for life

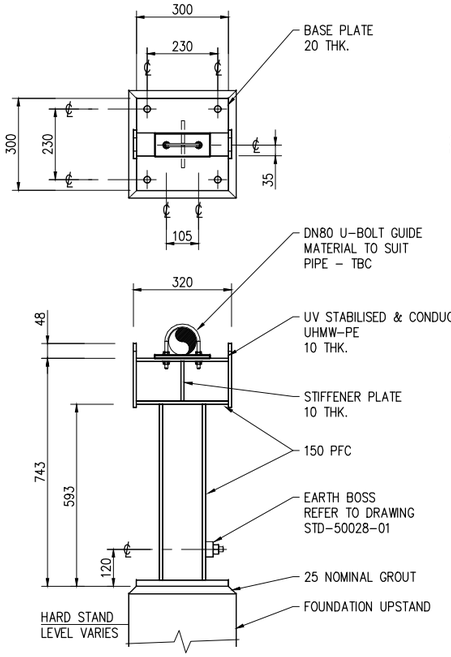
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
FOUNDATION PLAN
INLET AREA

DRAWING No: 12732-SK-CS-302-12

REVISION: 1



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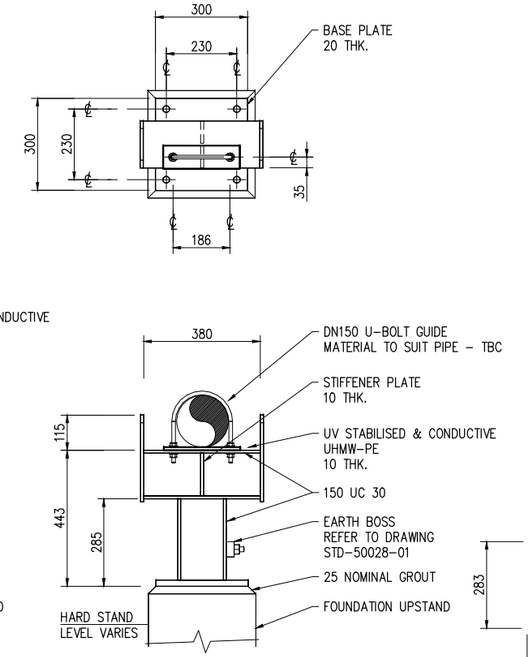

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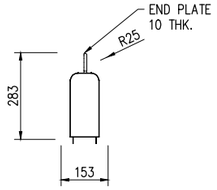
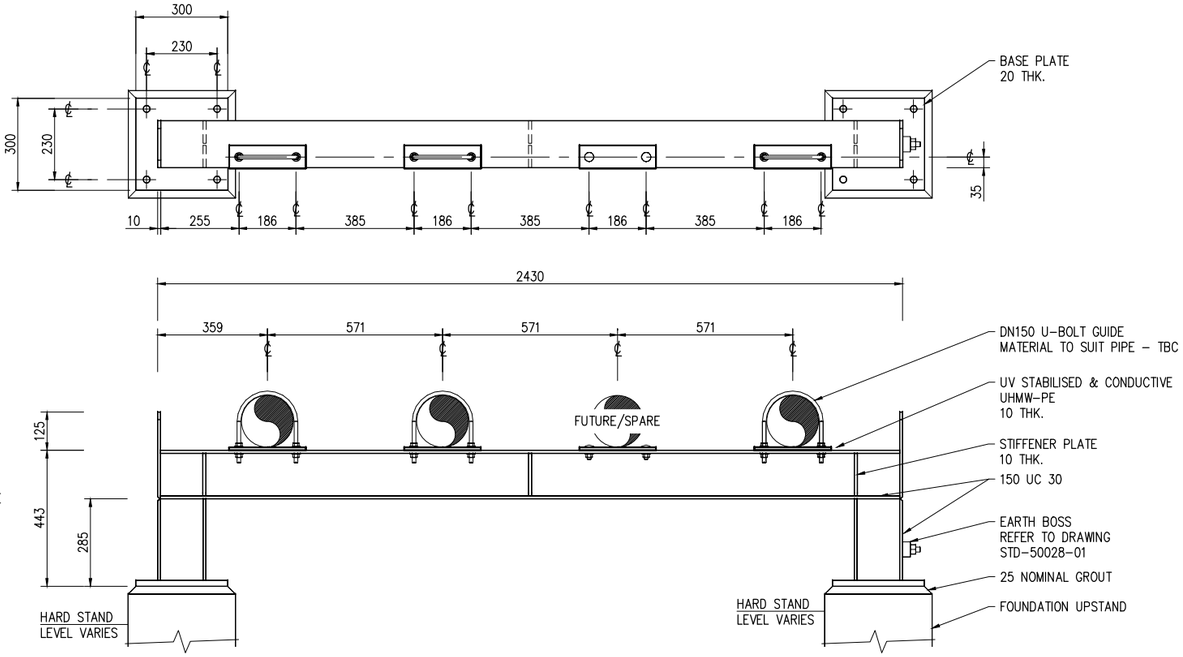


END PLATE - PFC

SCALE 1:10

TYPICAL 2-OFF PER SUPPORT



PS TYPE 4A - PS-005

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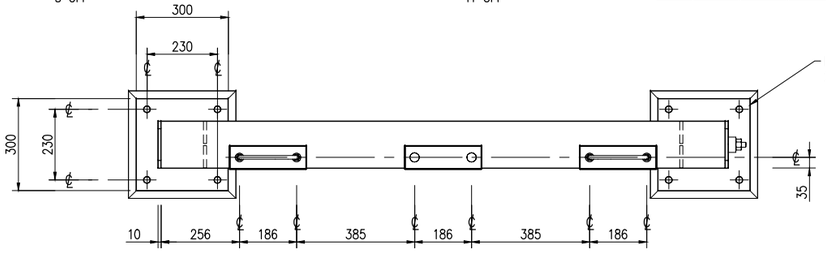
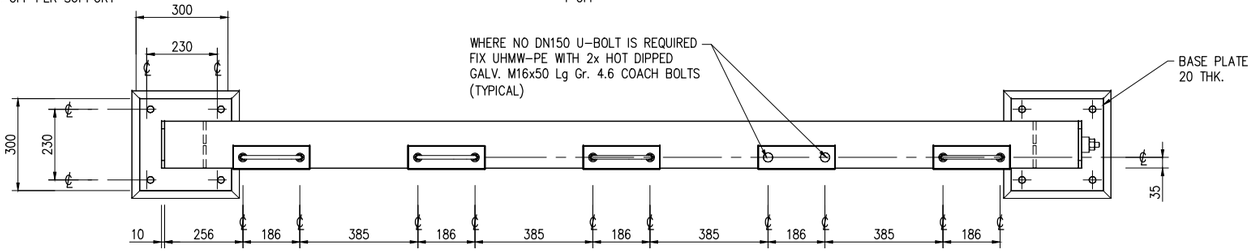
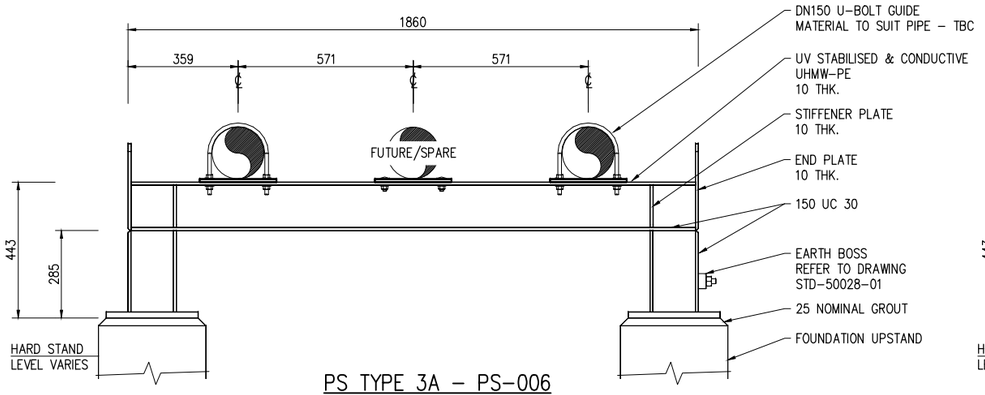


PS TYPE 3A - PS-006

SCALE 1:10





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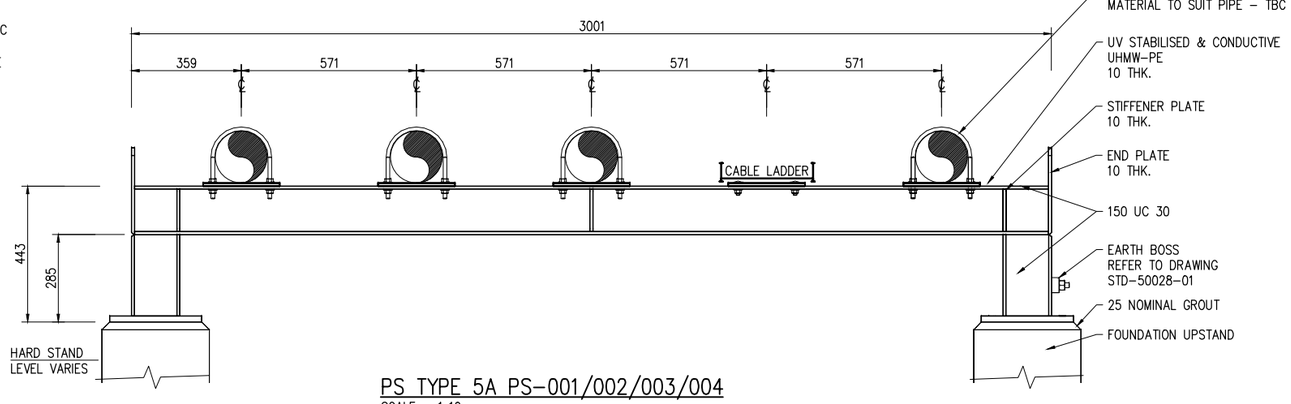

PS TYPE 5A PS-001/002/003/004

SCALE 1:10

4 OFF

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. FOR U-BOLT GUIDE LOCATION REFER TO PIPING PLANS & ISOMETRIC DRGS
3. WHERE U-BOLTS ARE NOT USED FIX UHMW-PE TO SUPPORT VIA M20x45 Lg Gr 4.6 HOT DIPPED GALV. PAN HEAD BOLT.
4. U-BOLT AND WEAR PAD & PACKER DIMENSIONS TO STANDARD DRAWINGS STD-46203, STD-46204, STD-46301 & STD-46302 ANY DEVIATIONS WILL NEED REVISED BOLT HOLE LOCATIONS TO SUPPORTS.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth New Zealand

12732-SK-CS-411.dwg
15 Sep 2022 - 9:40am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK STATE

PROJECT No: 12732

SCALE: N.T.S.

CLIENT: Vital Energy for life.

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	B.WALKER	02/22
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
TYPICAL PIPE SUPPORTS

ORIGINAL SIZE: A1

DRAWING No: 12732-SK-CS-411-01

REVISION: 1

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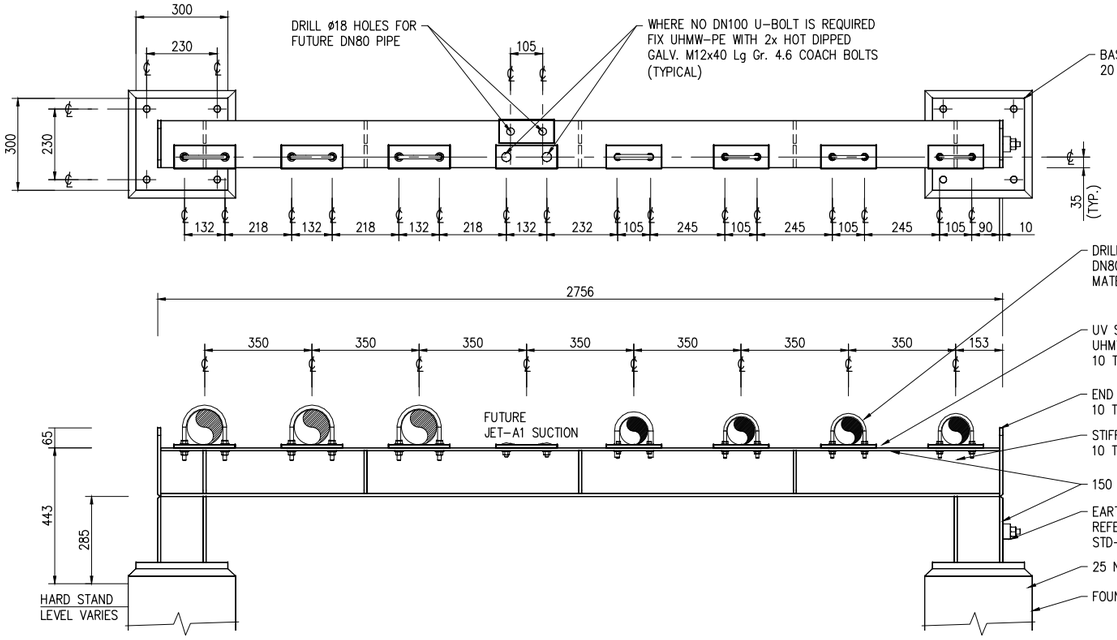
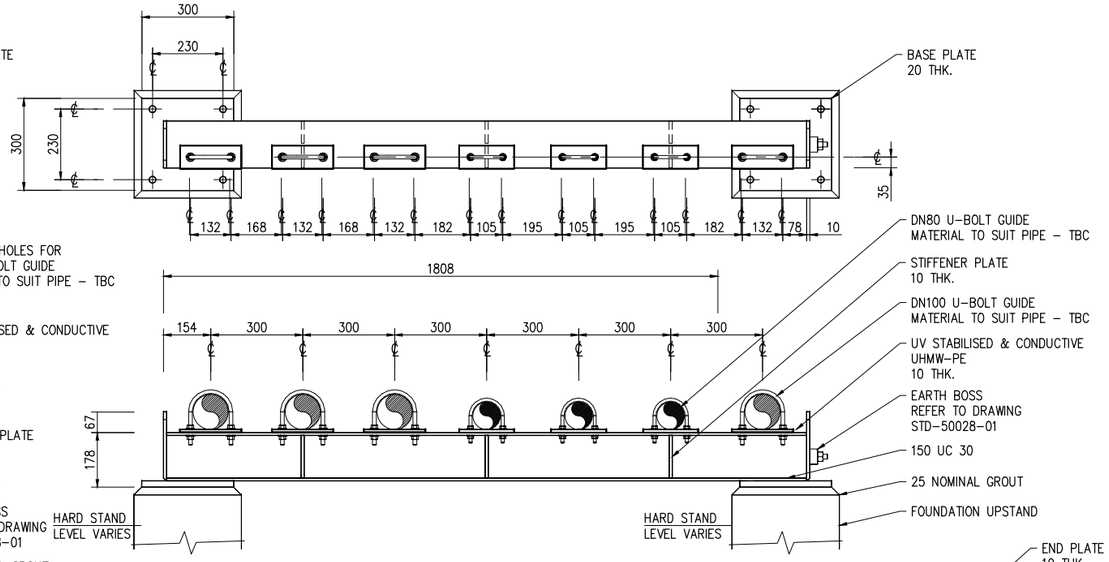


PS TYPE 8A - PS-093

SCALE 1:10



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SCALE 1:10
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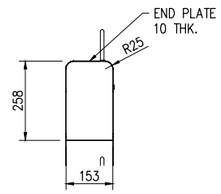
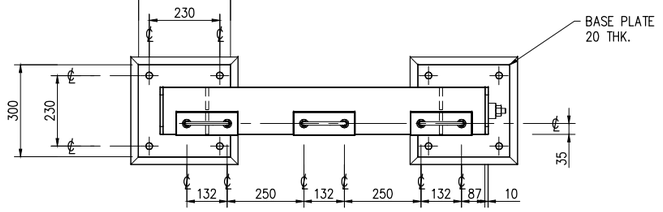
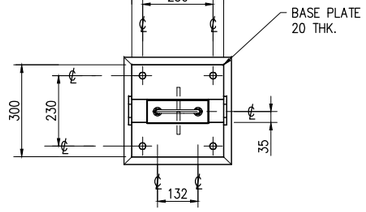
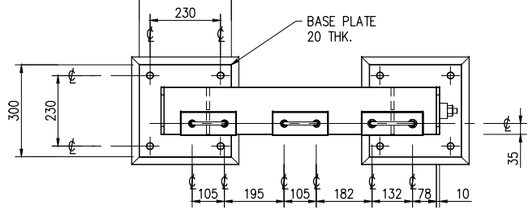


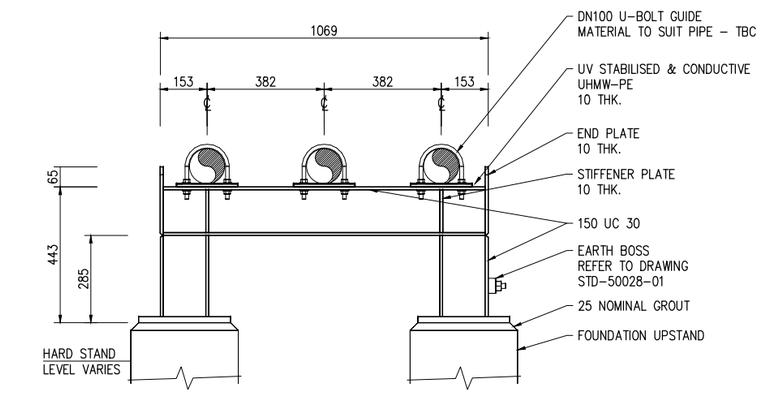
END PLATE - UC

SCALE 1:10
TYPICAL 2-OFF PER SUPPORT









PS TYPE 3B - PS-023/024/033

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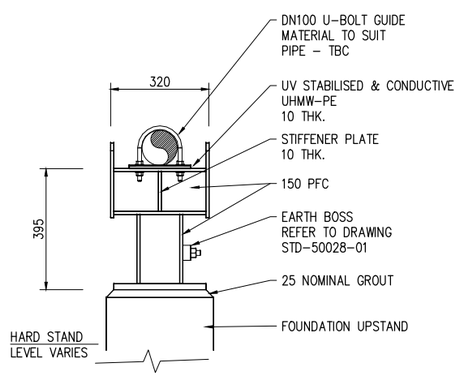

PS TYPE 1C - PS-011/012/021/031/052/053/054/056/061/101

SCALE 1:10
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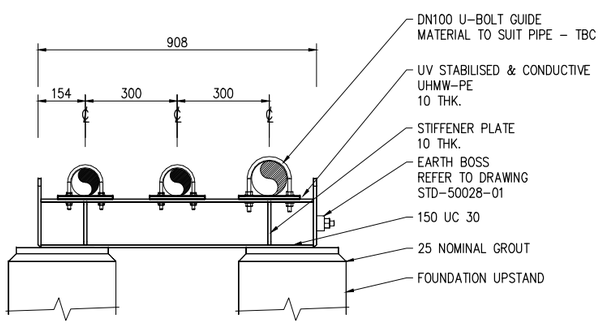

PS TYPE 3D - PS-091/092

SCALE 1:10
2 OFF

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. FOR U-BOLT GUIDE LOCATION REFER TO PIPING PLANS & ISOMETRIC DRGS
3. WHERE U-BOLTS ARE NOT USED FIX UHMW-PE TO SUPPORT VIA M20x45 Lg Gr 4.6 HOT DIPPED GALV. PAN HEAD BOLT.
4. U-BOLT AND WEAR PAD & PACKER DIMENSIONS TO STANDARD DRAWINGS STD-46203, STD-46204, STD-46301 & STD-46302 ANY DEVIATIONS WILL NEED REVISED BOLT HOLE LOCATIONS TO SUPPORTS.

PROJ NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand

12732-SK-CS-411.dwg
15 Sep 2022 - 9:39am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK STATE
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: Vital Energy for life.

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	B.WALKER	02/22
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
TYPICAL PIPE SUPPORTS

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-CS-411-02
REVISION: 1

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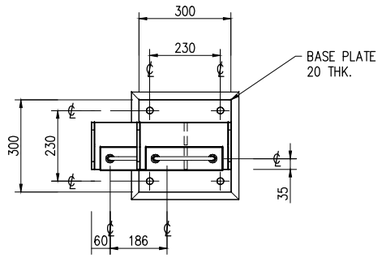
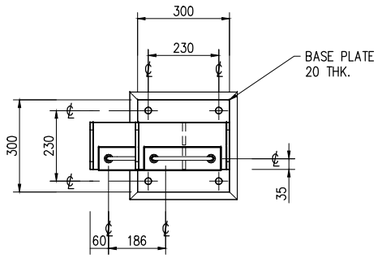
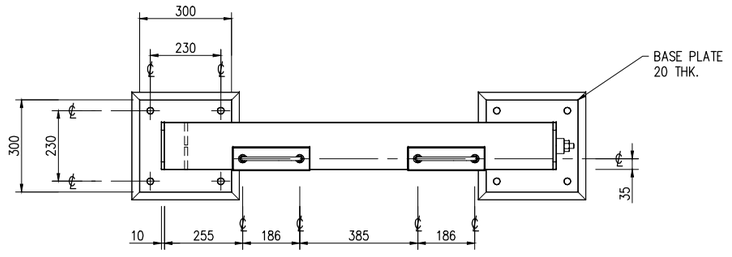
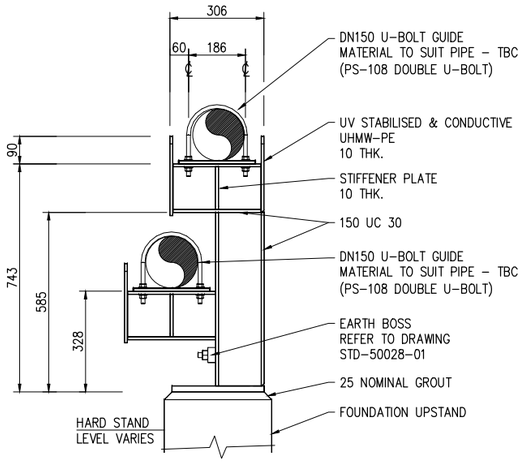




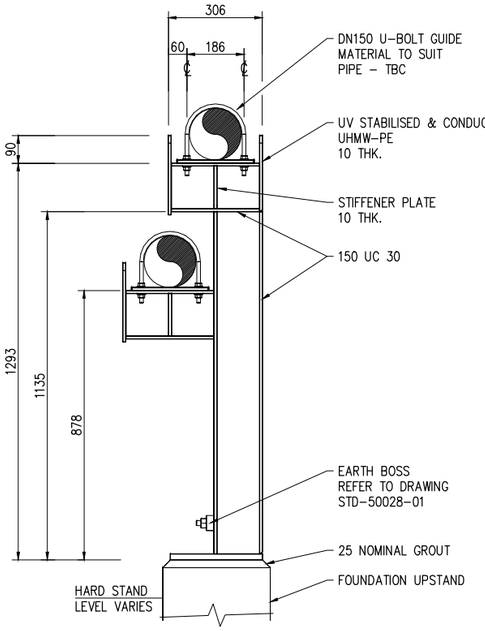




PS TYPE 2C - PS-102/103/104/105/106/107/
108/109/110/111/112/113

SCALE 1:10

12 OFF, PS-108 DOUBLE U-BOLT



PS TYPE 2D - PS-114

SCALE 1:10

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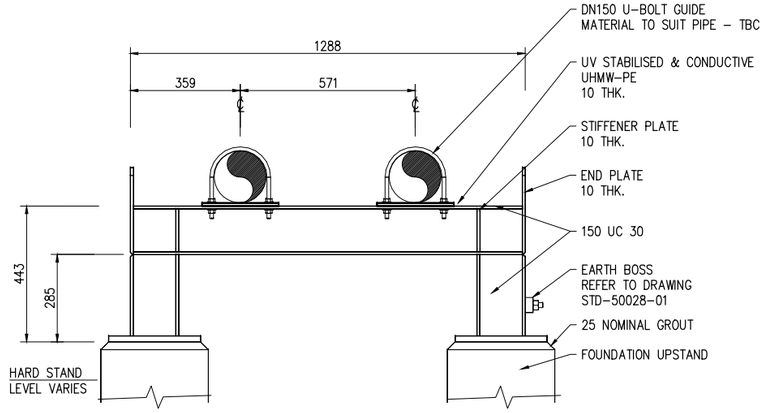

PS TYPE 2E PS-007

SCALE 1:10

1 OFF

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. FOR U-BOLT GUIDE LOCATION REFER TO PIPING PLANS & ISOMETRIC DRGS
3. WHERE U-BOLTS ARE NOT USED FIX UHMW-PE TO SUPPORT VIA M20x45 Lg Gr 4.6 HOT DIPPED GALV. PAN HEAD BOLT.
4. U-BOLT AND WEAR PAD & PACKER DIMENSIONS TO STANDARD DRAWINGS STD-46203, STD-46204, STD-46301 & STD-46302 ANY DEVIATIONS WILL NEED REVISED BOLT HOLE LOCATIONS TO SUPPORTS.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-CS-411.dwg
15 Sep 2022 - 9:38am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	08/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-CS-301	CIVIL KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK STATE

PROJECT No: 12732

SCALE: N.T.S.

CLIENT: Vital Energy for Life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	B.WALKER	02/22
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

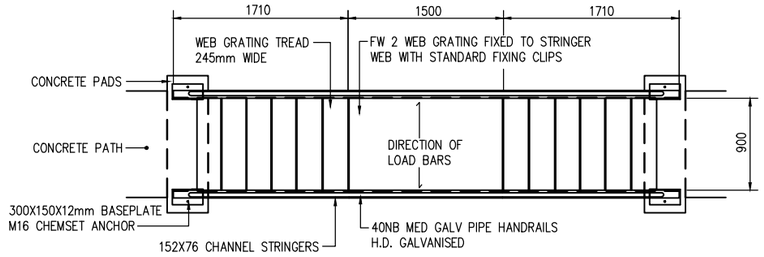
ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
TYPICAL PIPE SUPPORTS
DN150 COMBINED ADO & FW PIPING

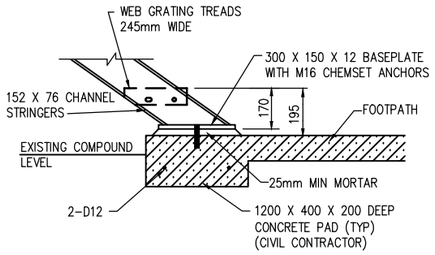
DRAWING No: 12732-SK-CS-411-03

REVISION: 1

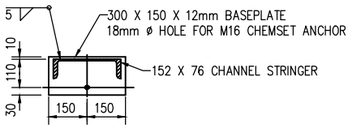
2:\Vital P&M Petrofac\12732\Acad\CS\12732-SK-CS-411.dwg Sep 15, 2022 - 9:39am



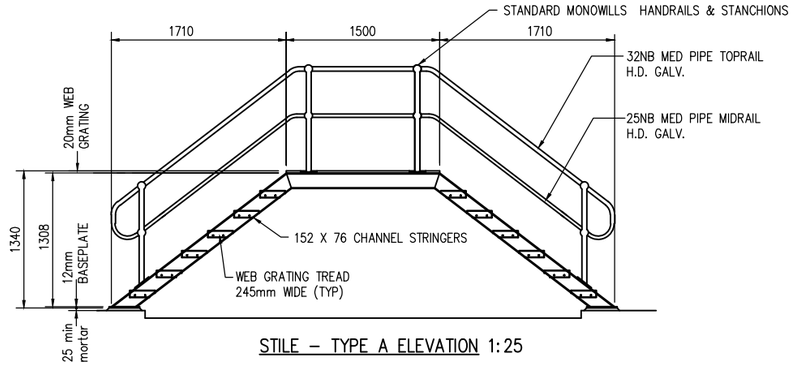
STILE – TYPE A PLAN 1:25



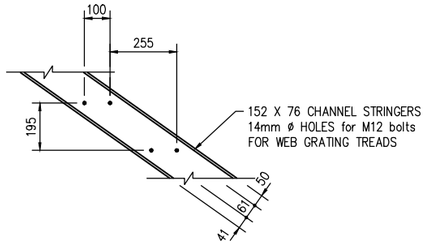
FOOTING DETAIL 1:10
(INSTALLATION BY CIVIL CONTRACTOR)



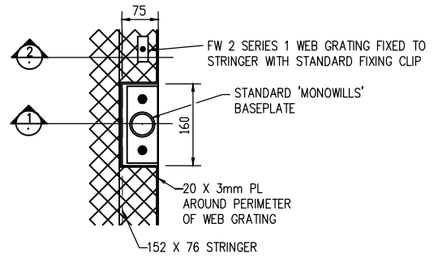
BASEPLATE DETAIL 1:10



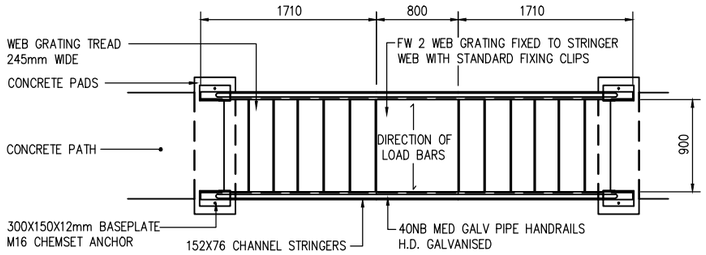
STILE – TYPE A ELEVATION 1:25



TYPICAL STRINGER DETAIL 1:10



WEB GRATING DETAIL 1:5



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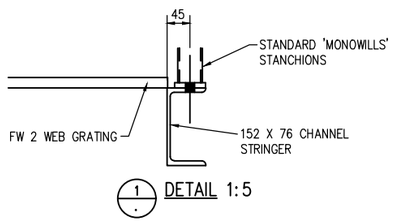
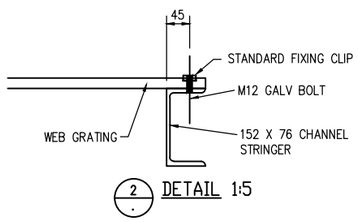
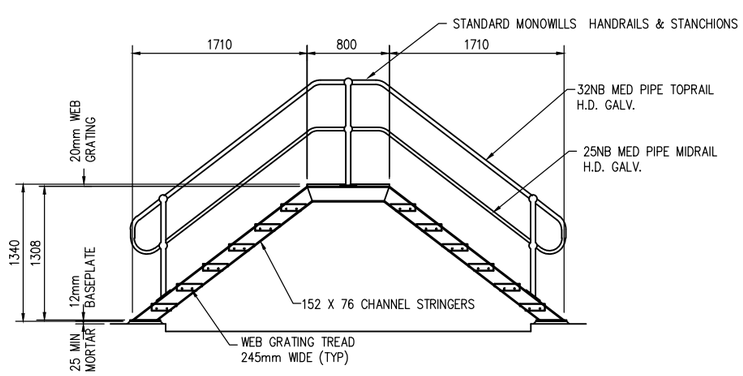


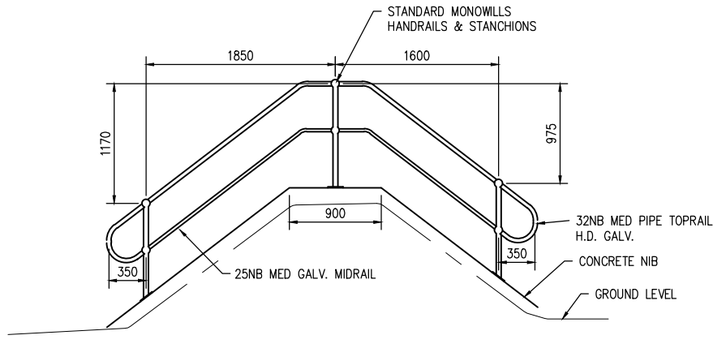
1 DETAIL 1:5



2 DETAIL 1:5



STILE – TYPE B ELEVATION 1:25



BUND STAIR HANDRAIL DETAILS 1:25

GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK OR PREPARING SHOP DRAWINGS.
3. ALL STEELWORK TO BE HOT DIP GALVANISED AFTER FABRICATION.

JOB NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	RE-ISSUED FOR CONSTRUCTION – (12732)
0	02/22	PJB	WDD	.	WDD	AS	ISSUED FOR CONSTUCTION

REVISIONS

NUMBER	TITLE

REFERENCE DRAWINGS

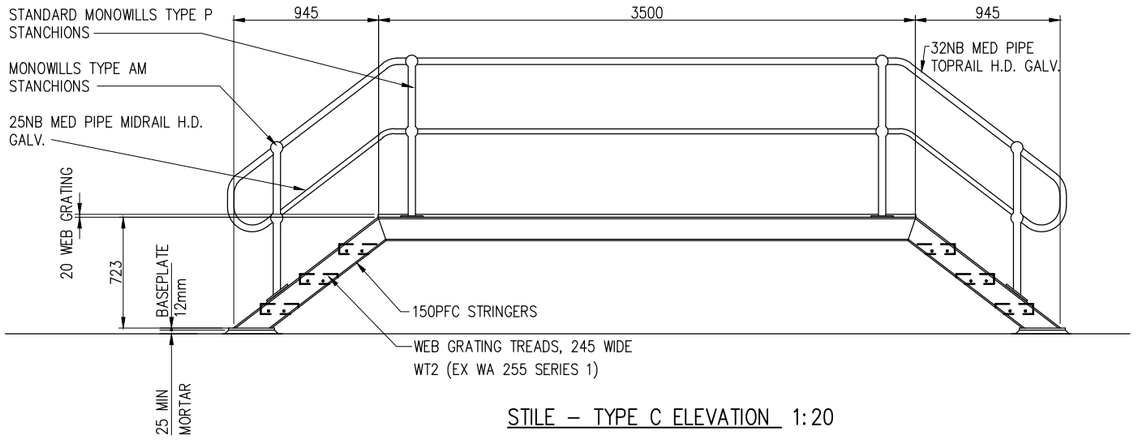
LOCATION: CHUUK STATE
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: Vital Energy for life

DRAWN	.	.
CHECKED	.	.
ENGINEERED	B.WALKER	.
APPROVED	W.DOUGAN	03/22
CLIENT	AS	04/22
A1 BDR	SIGN	DATE

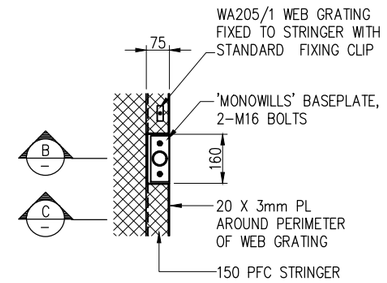
ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
TYPICAL STILE DETAILS
TYPE A AND B STILE

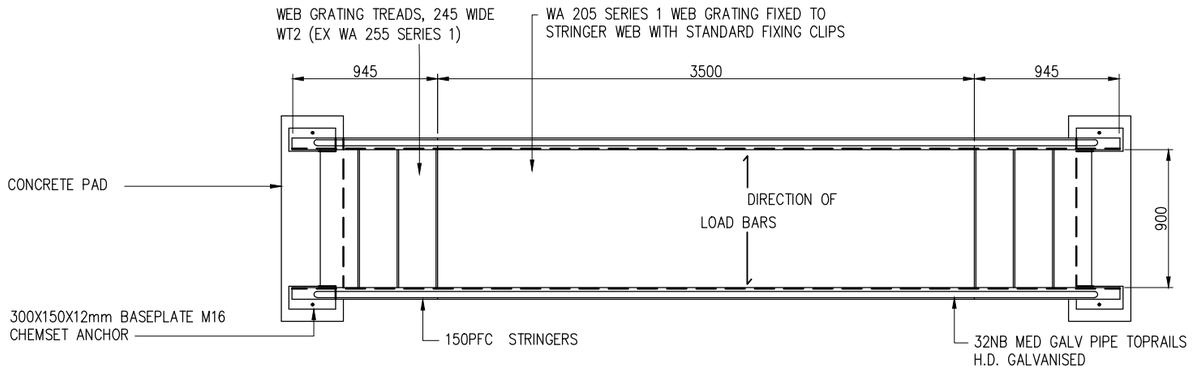
DRAWING No: 12732-SK-CS-412-01
REVISION: 1



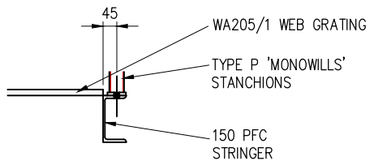
STILE – TYPE C ELEVATION 1:20



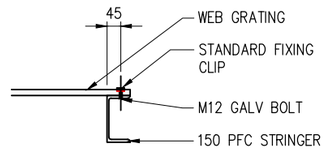
TYPICAL WEB GRATING DETAIL 1:10



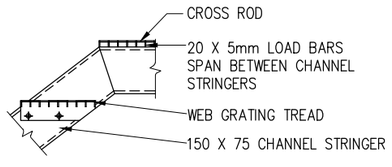
STILE – TYPE C PLAN 1:20



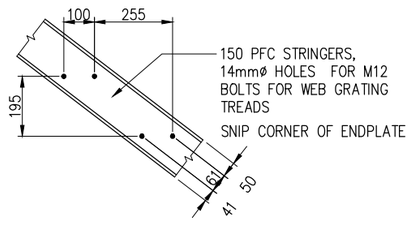
B SECTION AT STAUNCHION 1:10



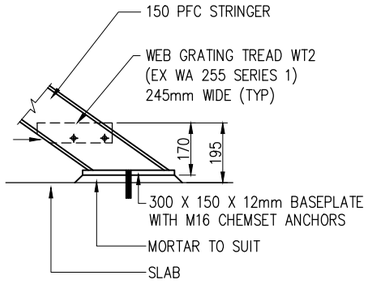
C LANDING SECTION 1:10



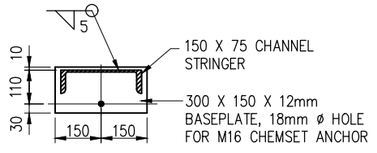
LANDING / STRINGER DETAIL 1:10



TYPICAL STRINGER DETAIL 1:10



TYPICAL FOOTING DETAIL 1:10



TYPICAL BASEPLATE DETAIL 1:10

GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK OR PREPARING SHOP DRAWINGS.
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JOB NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	RE-ISSUED FOR CONSTRUCTION – (12732)
0	02/22	PJB	WDD	.	WDD	AS	ISSUED FOR CONSTUCTION

REVISIONS

NUMBER	TITLE

REFERENCE DRAWINGS

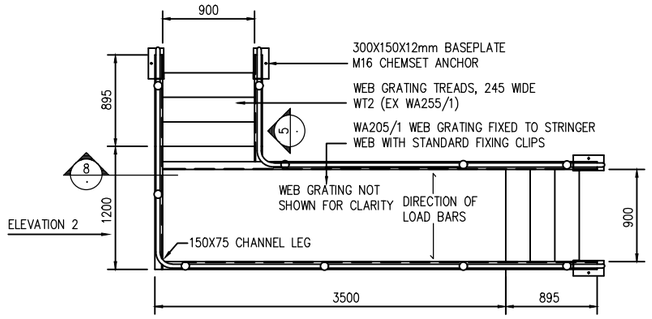
LOCATION: CHUUK STATE
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: Vital Energy for life

DRAWN	.	.
CHECKED	.	.
ENGINEERED	B.WALKER	02/22
APPROVED	W.DOUGAN	02/22
CLIENT	AS	02/22
A1 BDR	SIGN	DATE

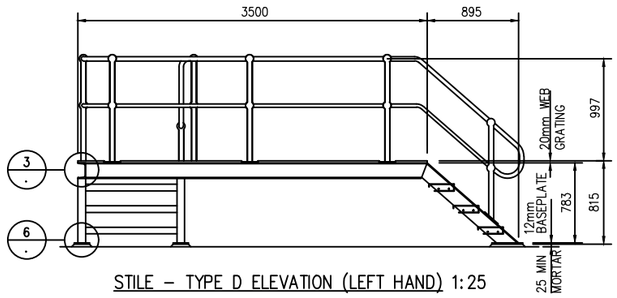
ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
TYPICAL STILE DETAILS
TYPE C STILE

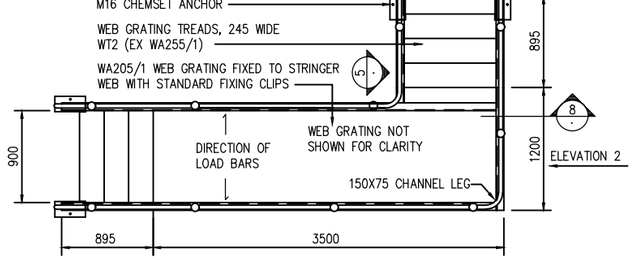
DRAWING No: 12732-SK-CS-413-01
REVISION: 1



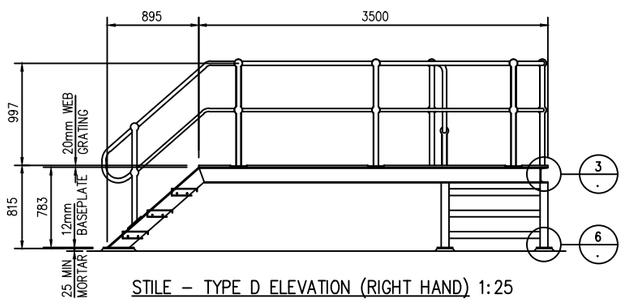
STILE – TYPE D PLAN (LEFT HAND) 1:25



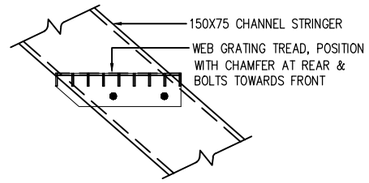
STILE – TYPE D ELEVATION (LEFT HAND) 1:25



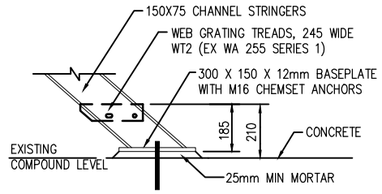
STILE – TYPE D PLAN (RIGHT HAND) 1:25



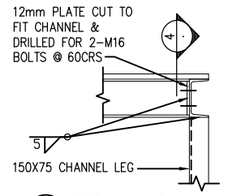
STILE – TYPE D ELEVATION (RIGHT HAND) 1:25



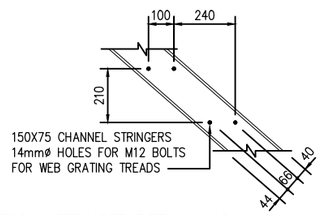
TREAD FIXING 1:5



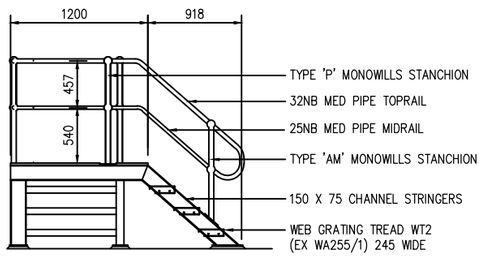
FOOTING DETAIL 1:10



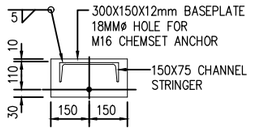
3 DETAIL 1:10



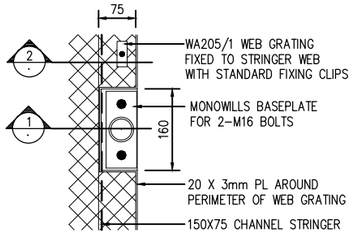
TYPICAL STRINGER DETAIL 1:10



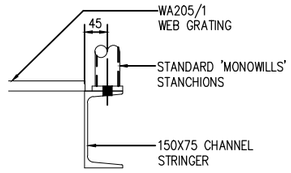
ELEVATION 2 1:25



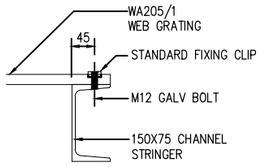
STRINGER BASEPLATE DETAIL 1:10



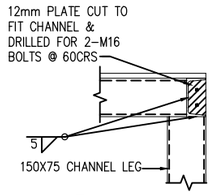
WEB GRATING DETAIL 1:5



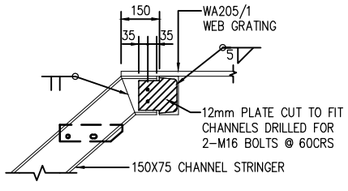
1 DETAIL 1:5



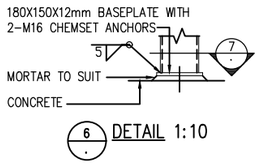
2 DETAIL 1:5



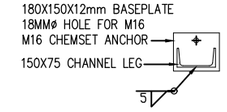
4 DETAIL 1:10



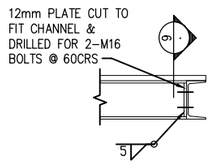
5 DETAIL 1:10



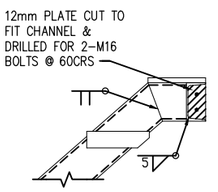
6 DETAIL 1:10



7 LEG BASEPLATE 1:10



8 DETAIL 1:10



9 DETAIL 1:10

GENERAL NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNO.
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3. ALL STEELWORK TO BE HOT DIP GALVANISED AFTER FABRICATION.

JOB NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	RE-ISSUED FOR CONSTRUCTION – (12732)
0	02/22	PJB	WDD	.	WDD	AS	ISSUED FOR CONSTUCTION

REVISIONS

REFERENCE DRAWINGS

NUMBER	TITLE

LOCATION: CHUUK STATE
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: ital

DRAWN	.	.
CHECKED	.	.
ENGINEERED	B.WALKER	02/22
APPROVED	W.DOUGAN	02/22
CLIENT	AS	02/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
TYPICAL STILE DETAILS
TYPE D STILE

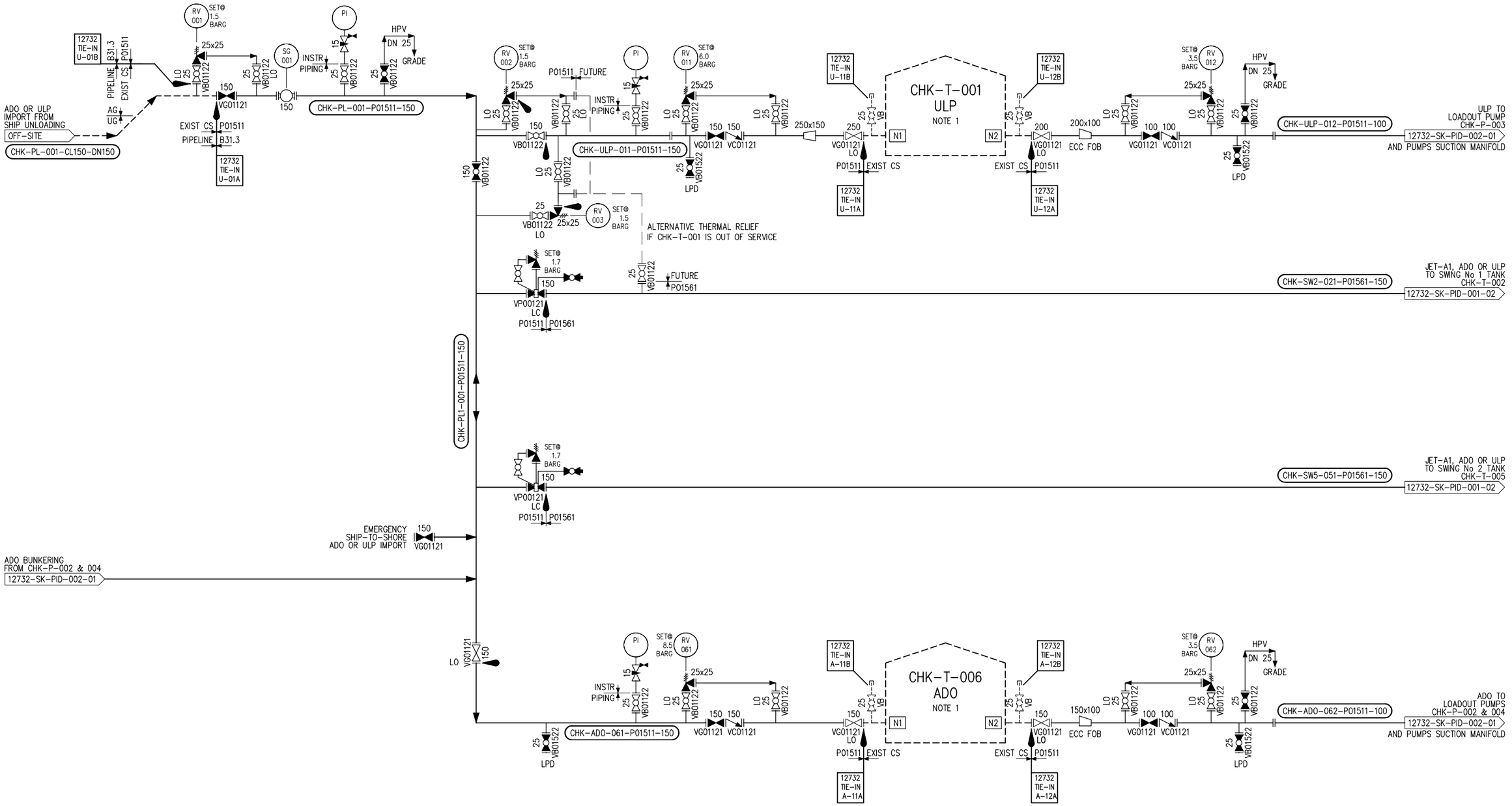
DRAWING No: 12732-SK-CS-414-01

REVISION: 1

ITEM TAG No:
ITEM NAME:
ITEM SIZE:

CHK-T-001
ULP STORAGE TANK
ø12192mm x ?

CHK-T-006
ADO STORAGE TANK
ø13716mm x ?



PROJ No 12732
ALL NEW WORK SHOWN SOLID

1

GENERAL NOTES

1. THIS DRAWING DEVELOPED TO REPRESENT PROJ No 12732 SCOPE OF WORK.
   NOT ALL EXISTING FUEL TERMINAL FACILITIES SHOWN.
   EXISTING FACILITIES SHOWN AS DASHED LINE - - - - - - - - - - - - - -
   NEW FACILITIES SHOWN AS SOLID LINE ————————————

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	DB	.	.	.	.	ISSUED FOR CONSTRUCTION – PROJ No 12732
A1	05/22	.	.	.	.	.	APPROVED FOR DESIGN – PROJ No 12732
A0	03/22	CSM	SAR	.	WDD	AS	APPROVED FOR DESIGN – PROJ No 12732

REVISIONS

NUMBER	TITLE
12732-SK-PID-002-01	P&ID LOADOUT PUMPS & GANTRIES
12732-SK-PID-001-02	P&ID JET-A1 IMPORT & STORAGE

REFERENCE DRAWINGS

LOCATION: CHUUK FUEL TERMINAL
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: vital Energy for life

DRAWN	CS MacKINNON	01/22
CHECKED	SA ROWE	01/22
ENGINEERED	.	.
APPROVED	WD DOUGAN	01/22
CLIENT	A SAHEEM	01/22
A1 BDR	SIGN	DATE

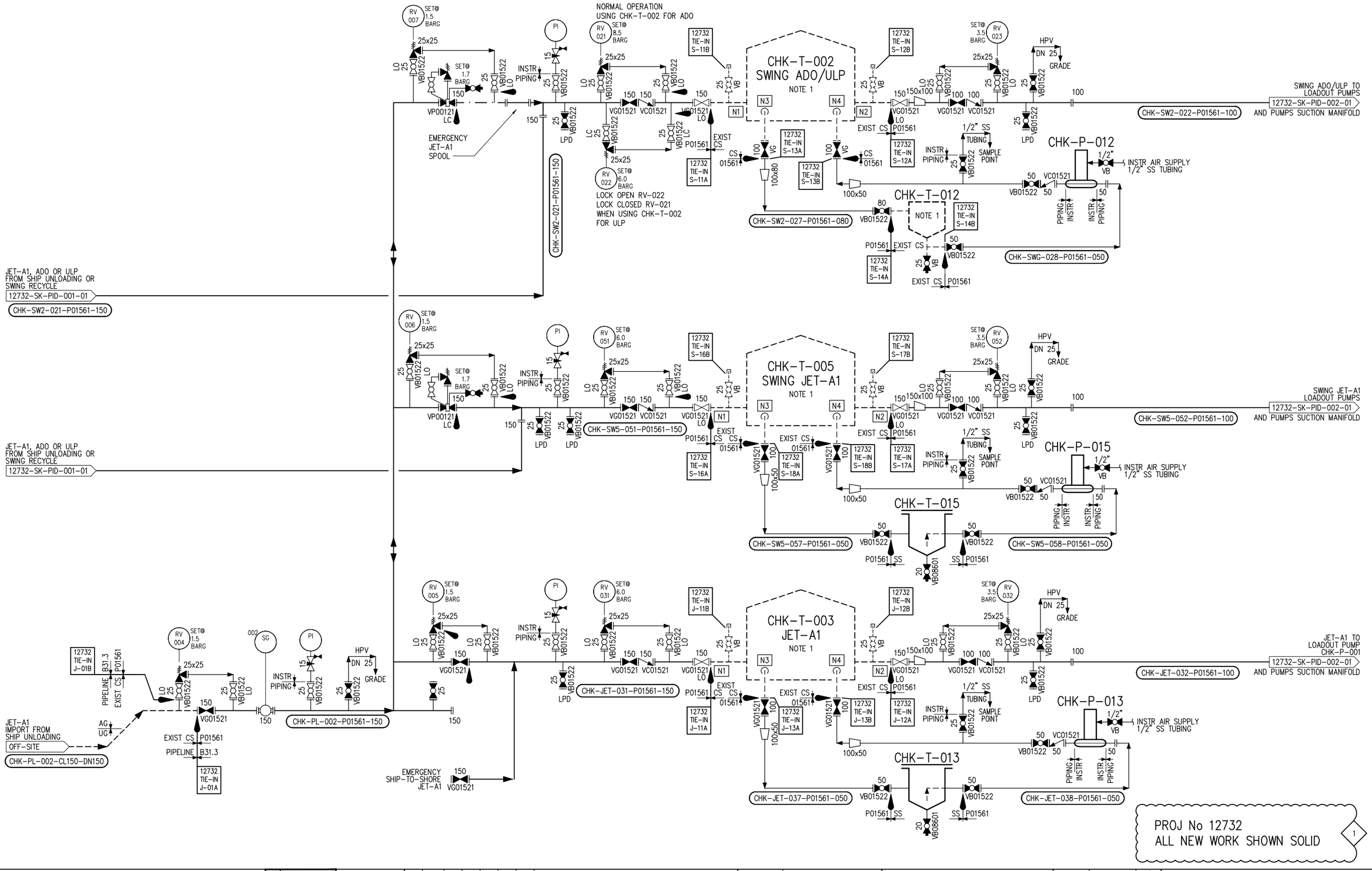
ORIGINAL SIZE: A1

TITLE: PIPING & INSTRUMENTATION DIAGRAM
ADO & ULP
IMPORT & STORAGE

DRAWING No: 12732-SK-PID-001-01

REVISION: 1

ITEM TAG No:	CHK-T-002	CHK-T-012	CHK-P-012	CHK-T-003	CHK-T-013	CHK-P-013	CHK-T-005	CHK-T-015	CHK-P-015
ITEM NAME:	SWING ADO/ULP STORAGE TANK	SWING ADO/ULP QFT	SWING ADO/ULP QF PUMP	JET-A1 STORAGE TANK	JET-A1 QFT	JET-A1 QF PUMP	SWING JET-A1 STORAGE TANK	SWING JET-A1 QFT	SWING JET-A1 QF PUMP
ITEM SIZE:	ø8840mm x ?	?	DN 50x50 NPTF	ø6096mm x ?	?	DN 50x50 NPTF	ø7315mm x ?	?	DN 50x50 NPTF



GENERAL NOTES

1. THIS DRAWING DEVELOPED TO REPRESENT PROJ No 12732 SCOPE OF WORK. NOT ALL EXISTING FUEL TERMINAL FACILITIES SHOWN. EXISTING FACILITIES SHOWN AS DASHED LINE ---------- NEW FACILITIES SHOWN AS SOLID LINE ——————

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	DB	.	.	.	.	ISSUED FOR CONSTRUCTION – PROJ No 12732
A1	05/22	.	.	.	.	.	APPROVED FOR DESIGN – PROJ No 12732
A0	03/22	CSM	SAR	.	WDD	AS	APPROVED FOR DESIGN – PROJ No 12732

REVISIONS

NUMBER	TITLE
12732-SK-PID-002-01	P&ID LOADOUT PUMPS & GANTRIES
12732-SK-PID-001-01	P&ID ADO & ULP IMPORT & STORAGE

REFERENCE DRAWINGS

LOCATION: CHUUK FUEL TERMINAL
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: ital Energy for life

DRAWN	CS MacKINNON	01/22
CHECKED	SA ROWE	01/22
ENGINEERED	.	.
APPROVED	WD DOUGAN	01/22
CLIENT	A SAHEEM	01/22
A1 BDR	SIGN	DATE

TITLE: PIPING & INSTRUMENTATION DIAGRAM
JET-A1
IMPORT & STORAGE

ORIGINAL SIZE: A1

DRAWING No: 12732-SK-PID-001-02

REVISION: 1

ITEM TAG No:	CHK-P-001	CHK-P-003	CHK-P-002	CHK-P-004
ITEM NAME:	JET-A1 TRANSFER PUMP	ULP TRANSFER PUMP	ADO TRANSFER PUMP No 1	ADO TRANSFER PUMP No 2
ITEM SIZE:	DN 100x80 CL 150	DN 100x80 CL 150	DN 100x80 CL 150	DN 100x80 CL 150

CHK-F-001
JET-A1 FILTER SEPARATOR
ø711mm x 1245mm FOF / TAN

ULP FROM CHK-T-001
12732-SK-PID-001-01
CHK-ULP-012-P01511-100
VG01521 VB01522 LPD
CHK-ULP-013-P01511-100 ULP SUCTION MANIFOLD
CHK-ULP-014-P01511-100
CHK-P-003
CHK-ULP-015-P01511-080
ULP DISCHARGE MANIFOLD
CHK-ULP-016-P01511-080
ULP LOADING GANTRY

SWING JET-A1 FROM CHK-T-005
12732-SK-PID-001-02
CHK-SW5-052-P01561-100

SWING ADO/ULP FROM CHK-T-002
12732-SK-PID-001-02
CHK-SW2-022-P01561-100

JET-A1 FROM CHK-T-003
12732-SK-PID-001-02
CHK-JET-032-P01561-100

CHK-JET-033-P01561-100 JET SUCTION MANIFOLD
CHK-JET-034-P01561-100
CHK-P-001
CHK-JET-035-P01561-080
CHK-JET-036-P01561-080 JET DISCHARGE MANIFOLD
CHK-JET-037-P01561-080
CHK-F-001 NOTE 1
JET-A1 LOADING GANTRY

ADO FROM CHK-T-006
12732-SK-PID-001-01
CHK-ADO-062-P01511-100
CHK-ADO-063-P01511-150 ADO SUCTION MANIFOLD
CHK-ADO-065-P01511-100
CHK-P-004
CHK-ADO-067-P01511-080
CHK-ADO-064-P01511-100
CHK-P-002
CHK-ADO-066-P01511-080
CHK-ADO-068-P01511-80 ADO BUNKERING MANIFOLD
CHK-ADO-069-P01511-080
CHK-ADO-070-P01511-80
ADO BUNKERING TO PORT
12732-SK-PID-001-01
CHK-PL-001-P01511-150
ADO LOADING GANTRY

PROJ No 12732
ALL NEW WORK SHOWN SOLID
1

GENERAL NOTES
1. THIS DRAWING DEVELOPED TO REPRESENT PROJ No 12732 SCOPE OF WORK. NOT ALL EXISTING FUEL TERMINAL FACILITIES SHOWN.
EXISTING FACILITIES SHOWN AS DASHED LINE ----------
NEW FACILITIES SHOWN AS SOLID LINE ——————

PROJ NO. 12732

ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	DB	.	.	.	.	ISSUED FOR CONSTRUCTION – PROJ No 12732
A1	05/22	.	.	.	.	.	APPROVED FOR DESIGN – PROJ No 12732
A0	03/22	CSM	SAR	.	WDD	AS	APPROVED FOR DESIGN – PROJ No 12732

REVISIONS

NUMBER	TITLE
12732-SK-PID-001-02	P&ID JET-A1 IMPORT & STORAGE
12732-SK-PID-001-01	P&ID ADO & ULP IMPORT & STORAGE

REFERENCE DRAWINGS

LOCATION: CHUUK FUEL TERMINAL
PROJECT No: 12732
SCALE: N.T.S.
CLIENT: Vital Energi

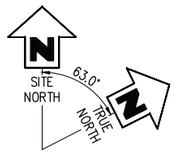
DRAWN	CS MacKINNON	01/22
CHECKED	SA ROWE	01/22
ENGINEERED	.	.
APPROVED	WD DOUGAN	01/22
CLIENT	A SAHEEM	01/22
A1 BDR	SIGN	DATE

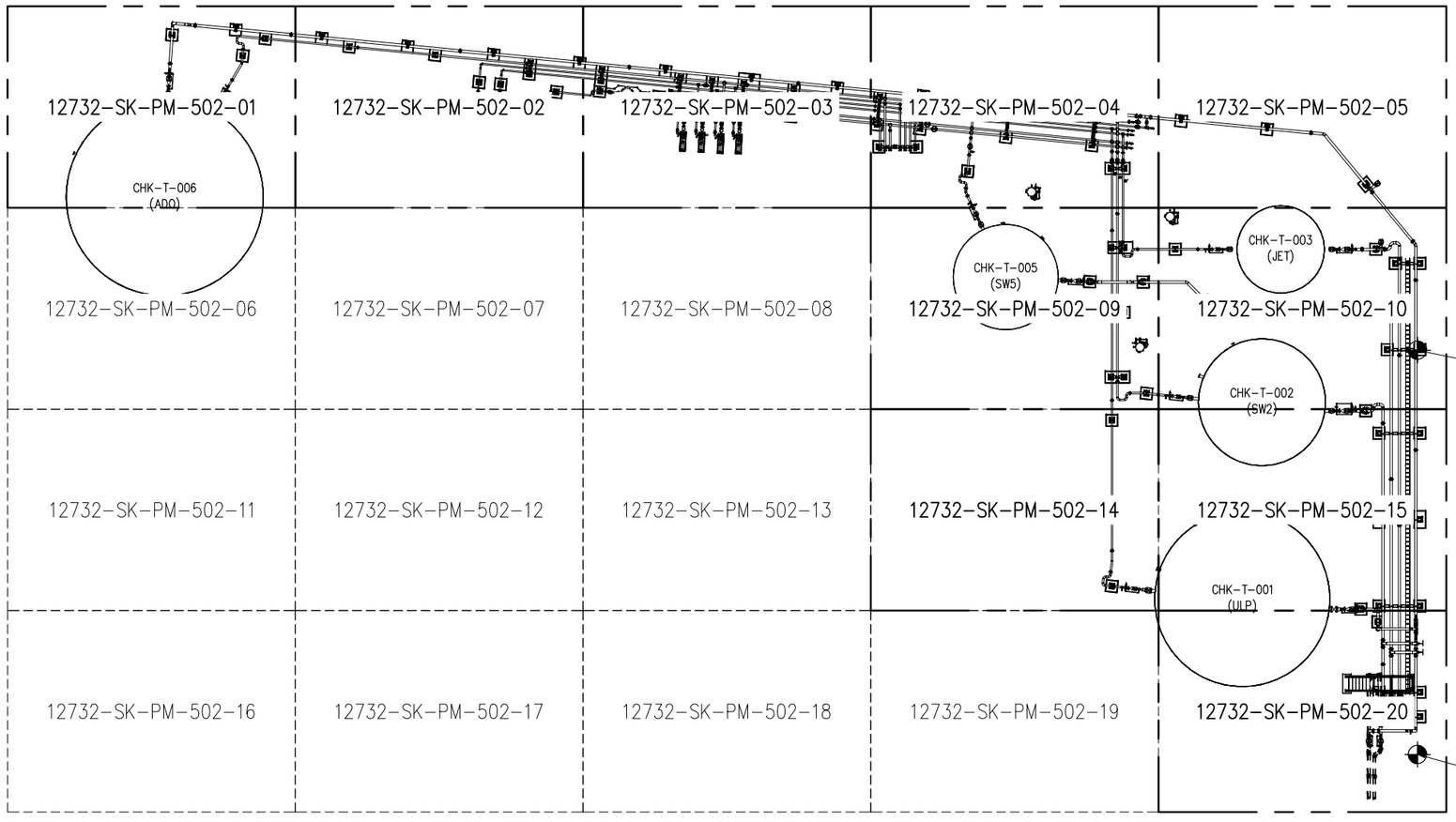
ORIGINAL SIZE: A1

TITLE: PIPING & INSTRUMENTATION DIAGRAM JET-A1, ADO & ULP LOADOUT PUMPS & GANTRIES

DRAWING No: 12732-SK-PID-002-01

REVISION: 1





CP 1
SITE CO-ORDINATES
N. 128.095m
E. 100.000m
EL. 1.554m

SURVEY CO-ORDINATES
N 224563.90
E 196607.58
EL 5.10

CP 2
SITE CO-ORDINATES
N. 100.000m
E. 100.000m
EL. 1.478m

SURVEY CO-ORDINATES
N 224522.05
E 196689.71
EL 4.850

GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-PM-501-01.dwg
12 Sep 2022 - 8:43am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

REVISIONS

NUMBER	TITLE
XXXX-XX-XX-XXX	.

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:200 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL PIPING KEY PLAN

DRAWING No: 12732-SK-PM-501-01

REVISION: 1

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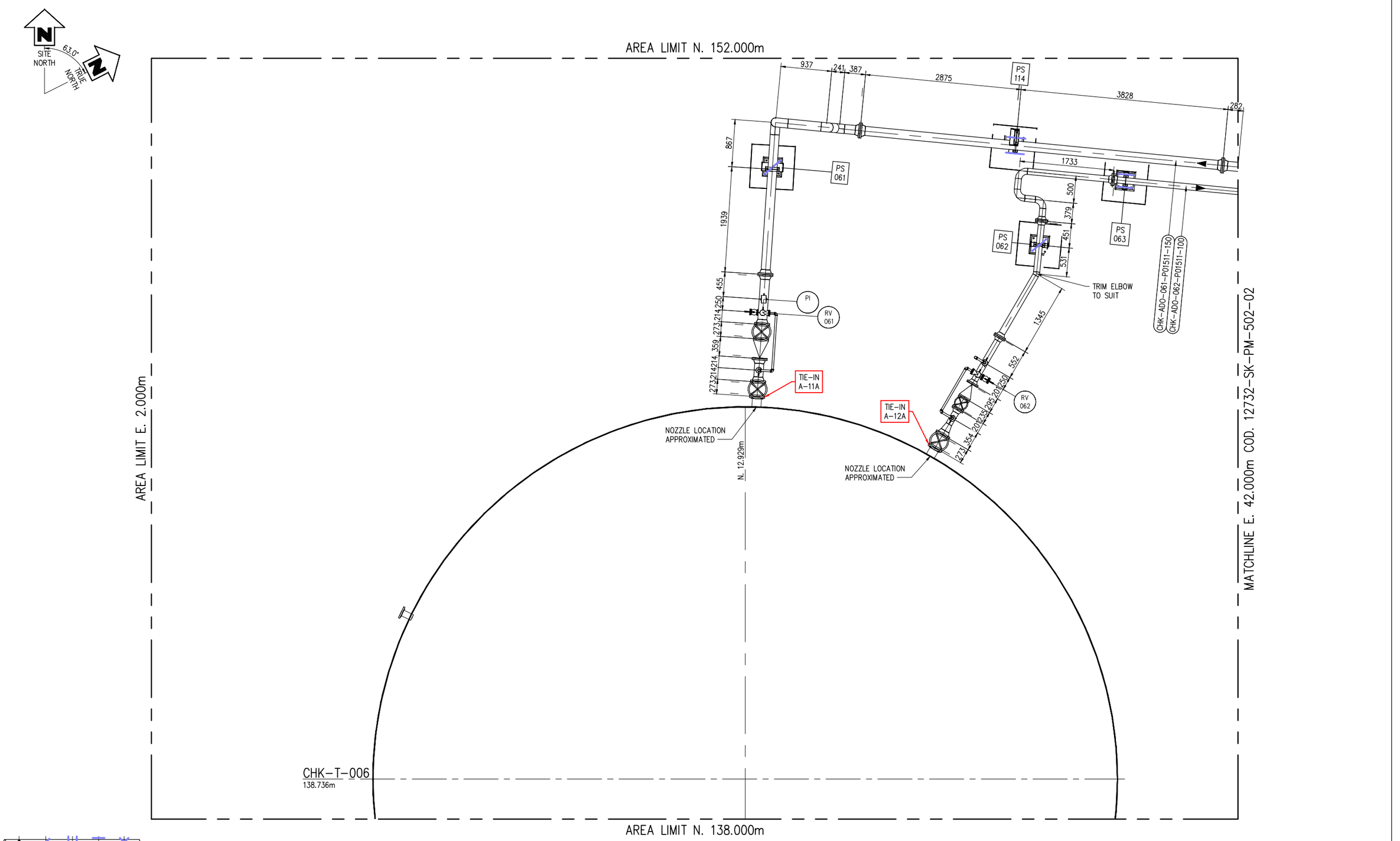

GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-PM-502.dwg
13 Sep 2022 - 4:41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: ital

DRAWN	S.ROWE	02/22
CHECKED	-	-
ENGINEERED	-	-
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
TANK CHK-T-006

DRAWING No: 12732-SK-PM-502-01
REVISION: 1

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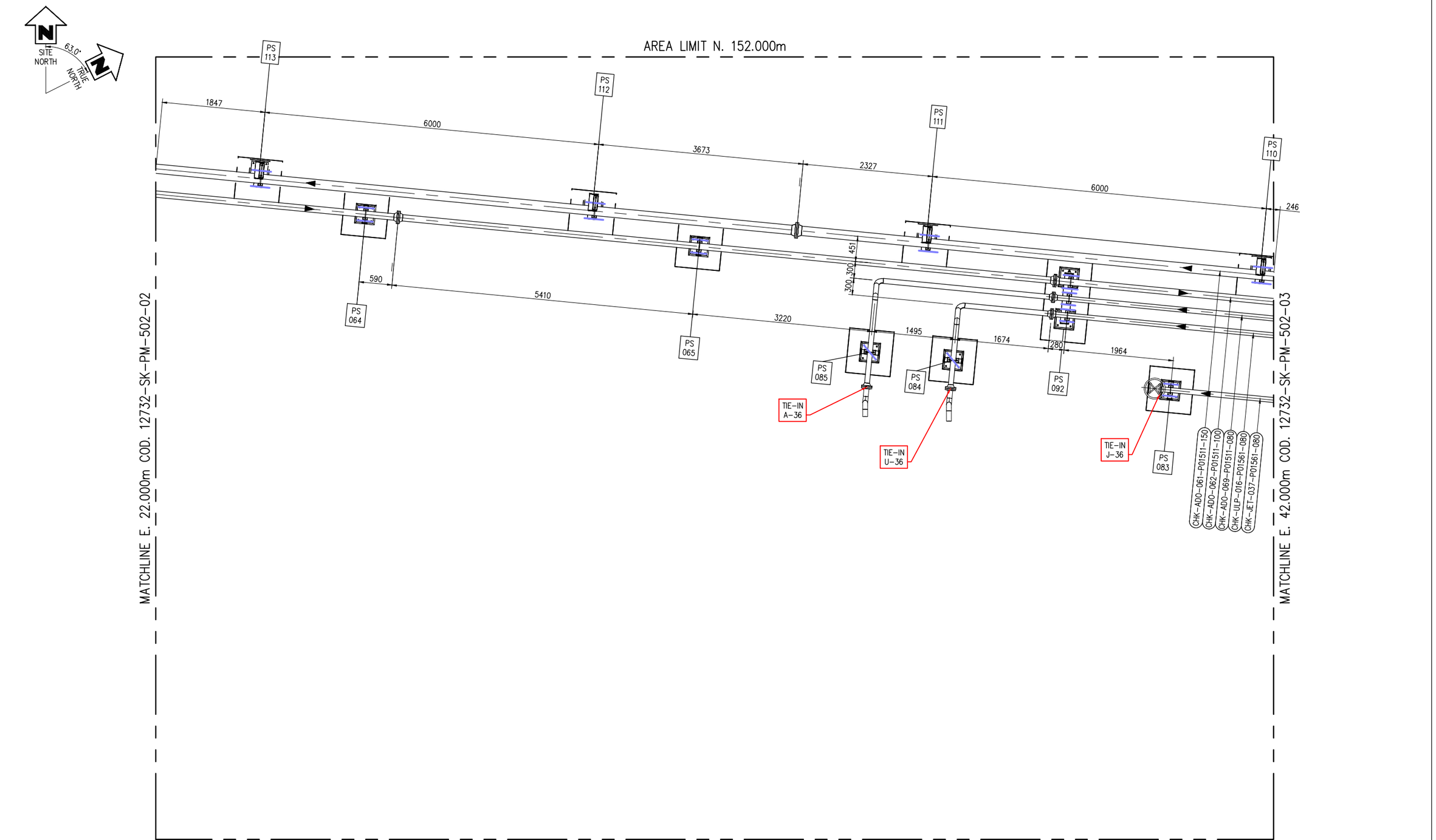

PIPE SUPPORT LEGEND

GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth New Zealand

12732-SK-PM-502.dwg
13 Sep 2022 - 4:41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	REVISIONS
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
LOADOUT AREA

ORIGINAL SIZE: A1

DRAWING No: 12732-SK-PM-502-02

REVISION: 1

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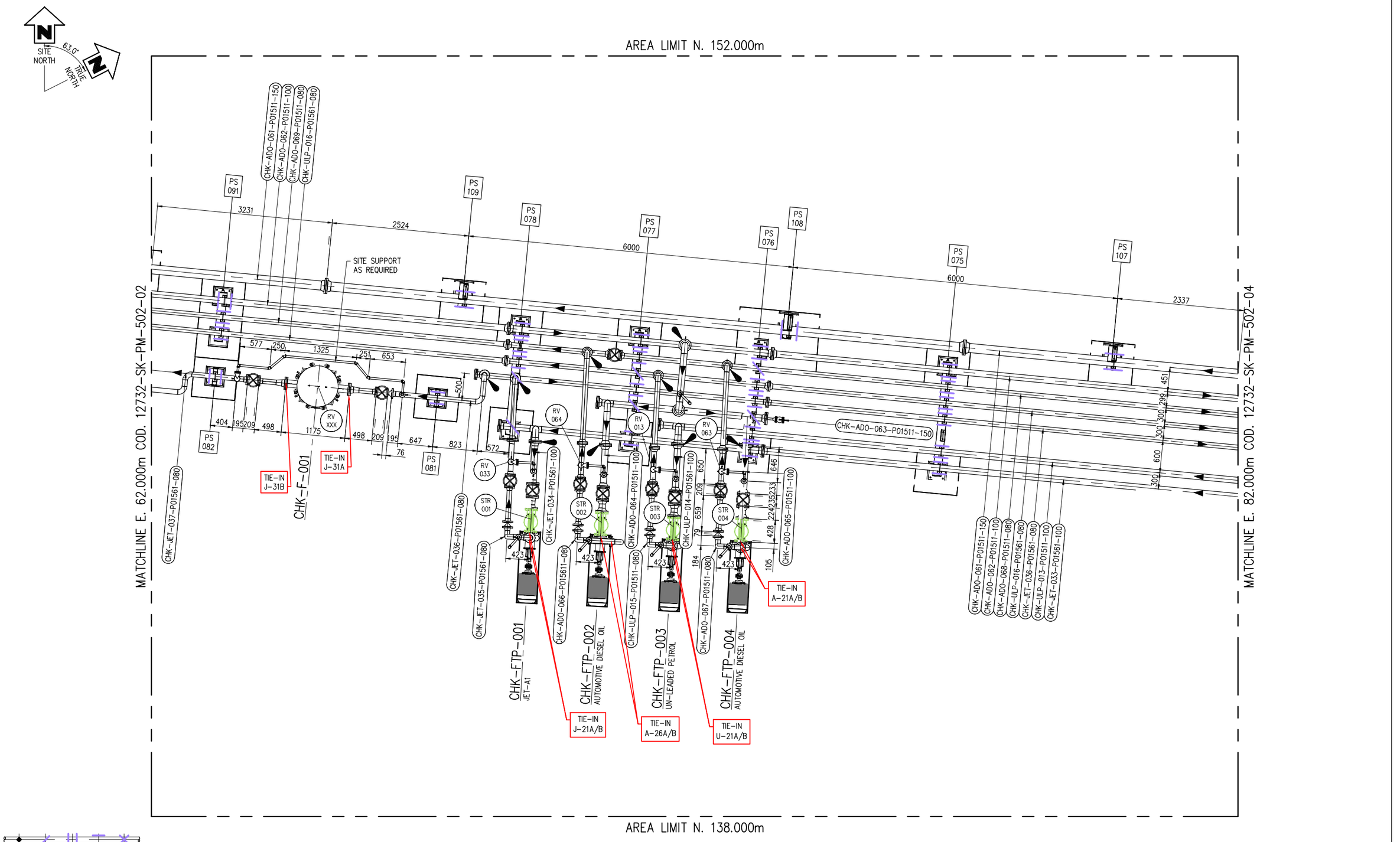

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GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-PM-502.dwg
13 Sep 2022 - 4:41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy (NZ) Ltd

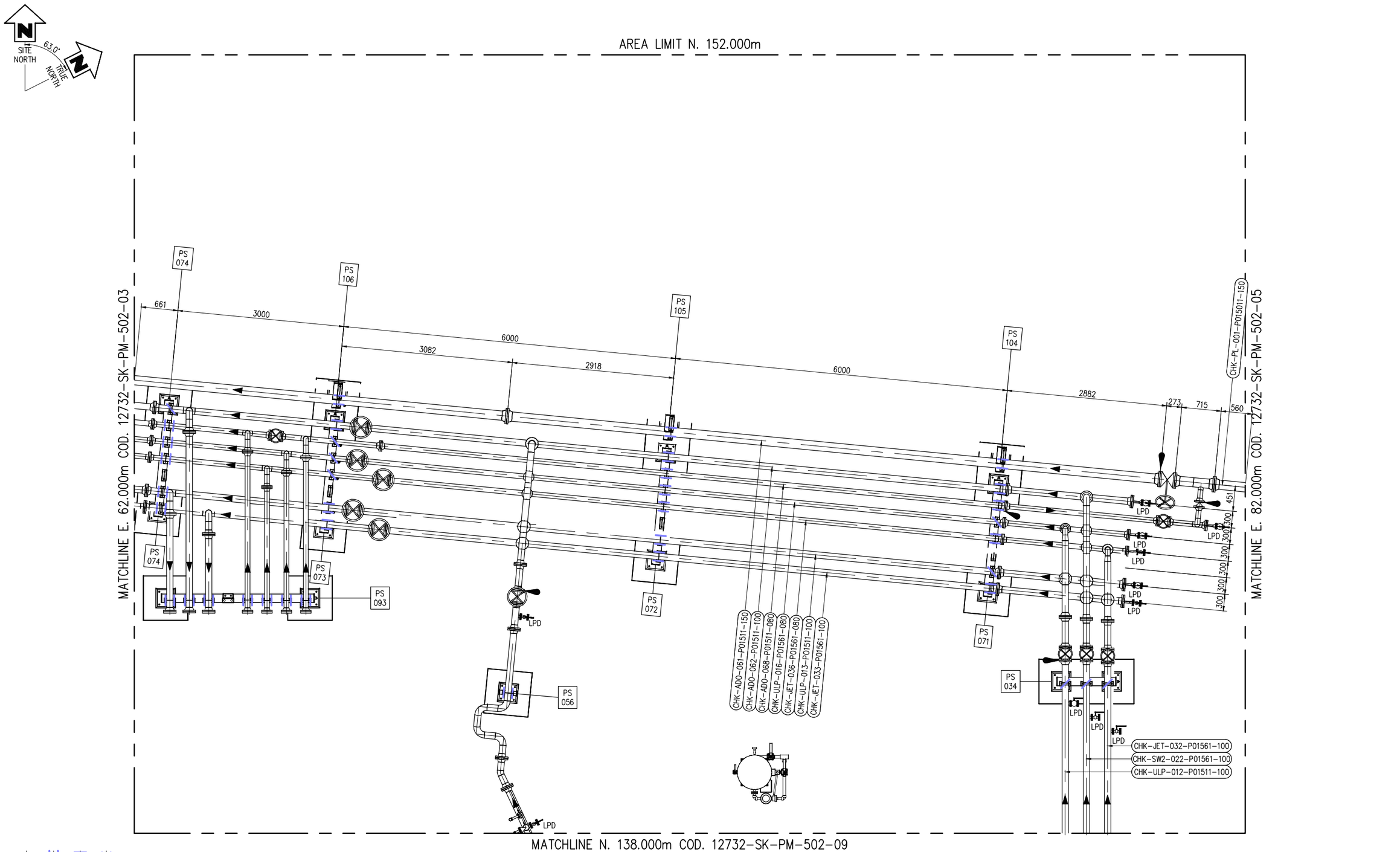
DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
TRANSFER PUMP AREA

DRAWING No: 12732-SK-PM-502-03

REVISION: 1



PIPE SUPPORT LEGEND

PIPE SHOE · V-STOP · LINESTOP · GUIDE · ANCHOR

GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
PIPING RACK LOW POINT DRAINS

ORIGINAL SIZE: A1

DRAWING No: 12732-SK-PM-502-04

REVISION: 1

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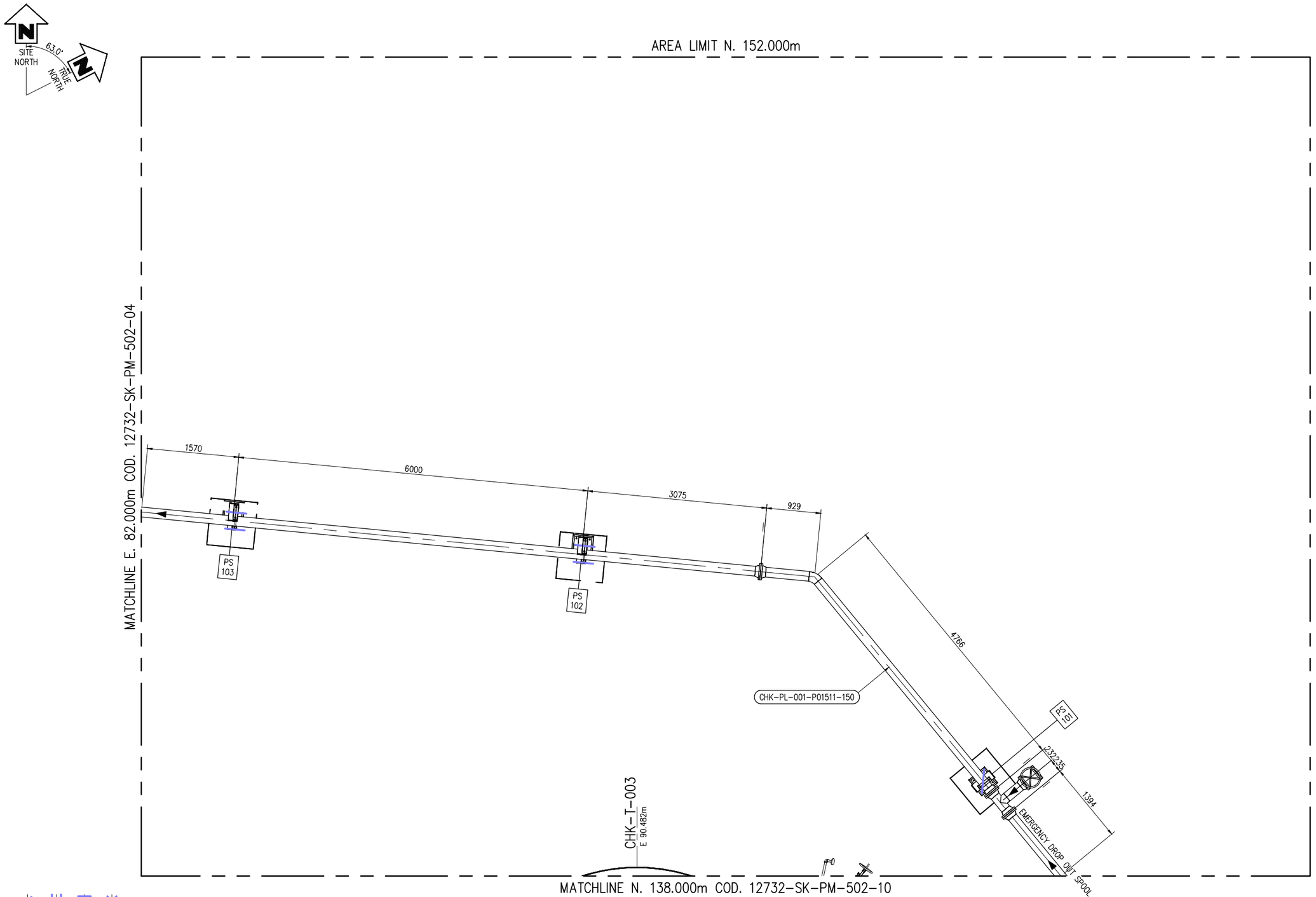

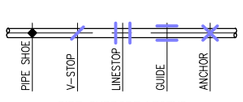

PIPE SUPPORT LEGEND

GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth, New Zealand

12732-SK-PM-502.dwg
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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
EMERGENCY INLET AREA

DRAWING No: 12732-SK-PM-502-05
REVISION: 1

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SITE NORTH
63.0°
TRUE NORTH

MATCHLINE N. 138.000m COD. 12732-SK-PM-502-04

AREA LIMIT E. 62.000m

CHK-SW5-052-P01561-100

TIE-IN S-17B

NOZZLE LOCATION UNKNOWN

CHK-T-005
N 133.182m

E. 71.374m

TIE-IN S-16B

NOZZLE LOCATION UNKNOWN

PS 033 N. 135.230m

PS 055

PI XXX

PS 054

E. 80.927m

CHK-JET-032-P01561-100
CHK-SW2-022-P01561-100
CHK-ULP-012-P01511-100

CHK-SW5-051-P01561-150

PS 024 N. 130.730m

PS 023 N. 126.230m

PS 022

MATCHLINE E. 82.000m COD. 12732-SK-PM-502-10

MATCHLINE N. 124.000m COD. 12732-SK-PM-502-14

PIPE SUPPORT LEGEND
PIPE SHOE · V-STOP · LINESTOP · GUIDE · ANCHOR

GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth New Zealand

12732-SK-PM-502.dwg
13 Sep 2022 - 4.41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION - (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: vital

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
TANK CHK-T-005

ORIGINAL SIZE: A1

DRAWING No: 12732-SK-PM-502-09

REVISION: 1

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SITE NORTH
63.0°
TRUE NORTH

MATCHLINE N. 138.000m COD. 12732-SK-PM-502-05

MATCHLINE E. 82.000m COD. 12732-SK-PM-502-09

MATCHLINE E. 102.000m AREA LIMIT

MATCHLINE N. 124.000m COD. 12732-SK-PM-502-15

PS 032
CHK-JET-032-P01561-100
TIE-IN J-12A
N. 135.107m
NOZZLE LOCATION UNKNOWN
CHK-T-003
E. 90.482m
TIE-IN J-11A
PI XXX
PS 031
NOZZLE LOCATION UNKNOWN
3036
321
623
457
666
313
1281
PS 006
1508
1922
320
2594
390
3398
340
1152
1576
1000
250
295
235
201
354
214
214
359
273
211
253
455
959
358
1966
1785
2079
445
PS 053
PS 051
290
5359
6000
444
318
571
1141
PS 052
E. 89.182m
CP 1
SITE CO-ORDINATES
N. 128.095m
E. 100.000m
EL. 1.554m
SURVEY CO-ORDINATES
N 224563.90
E 196607.58
EL 5.10
PS 005
CHK-SW5-051-P01561-150
CHK-JET-031-P01561-150
CHK-PL-001-P01511-150
CHK-SW2-022-P01561-100
TIE-IN XXX
NOZZLE LOCATION APPROXIMATED
CHK-T-002
N 124.485m

PIPE SUPPORT LEGEND
PIPE SHOE
V-STOP
LINESTOP
GUIDE
ANCHOR

GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732
PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand
12732-SK-PM-502.dwg
13 Sep 2022 - 4:41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: vital Energy for life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
TANK CHK-T-003

DRAWING No: 12732-SK-PM-502-10
REVISION: 1

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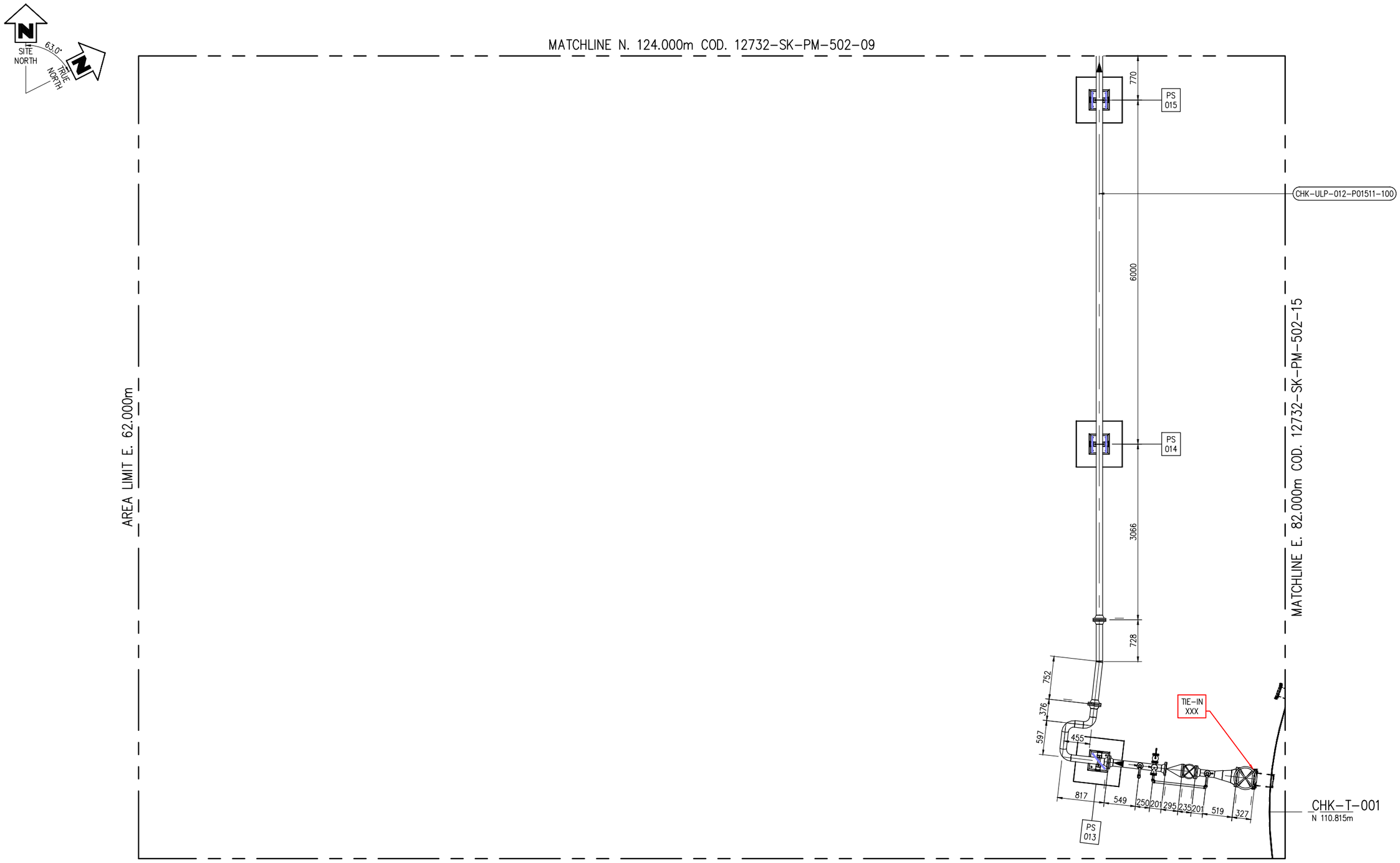

PIPE SUPPORT LEGEND

PIPE SHOE | V-STOP | LINESTOP | GUIDE | ANCHOR

GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-PM-502.dwg
13 Sep 2022 - 4:41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: vital Energy for Life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
TANK CHK-T-001 OUTLET

DRAWING No: 12732-SK-PM-502-14

REVISION: 1

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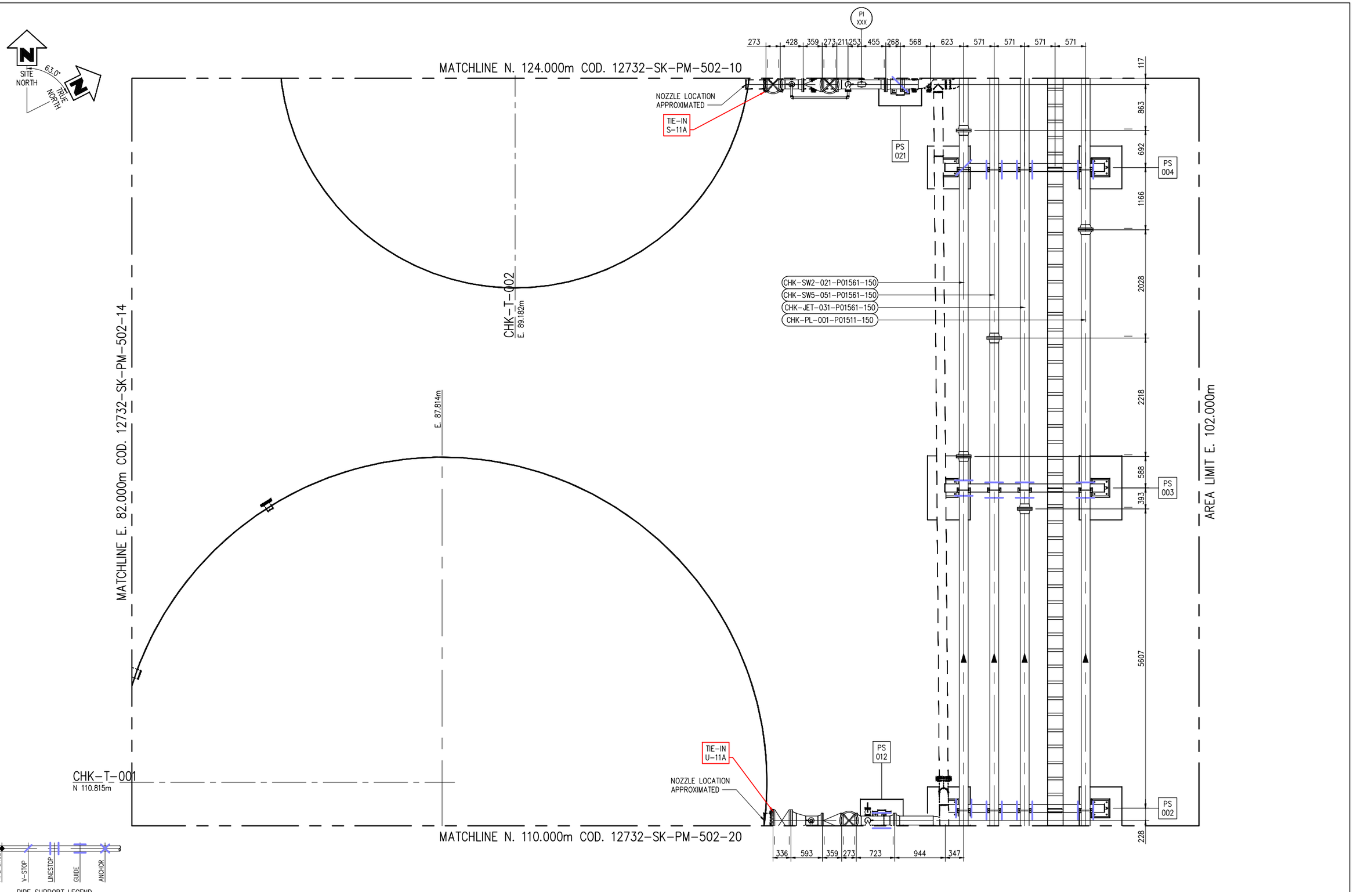

GENERAL NOTES

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2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

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13 Sep 2022 - 4:41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for Life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
TANK CHK-T-001 INLET

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-PM-502-15
REVISION: 1

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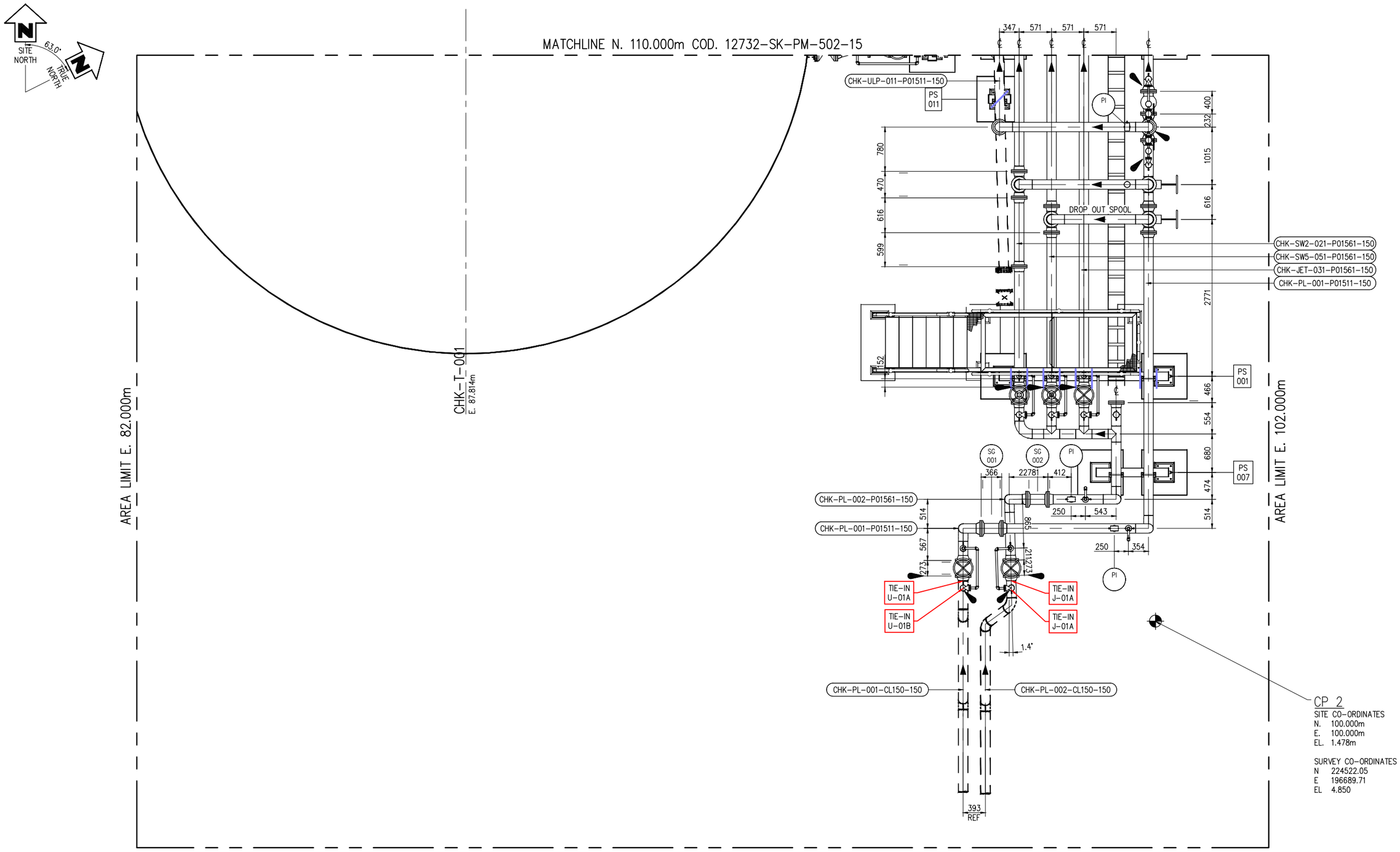

GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth New Zealand

12732-SK-PM-502.dwg
13 Sep 2022 - 4.41pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
1	09/22	SAR	MAW	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION – (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	02/22
CHECKED	.	.
ENGINEERED	.	.
APPROVED	W.DOUGAN	03/22
CLIENT	BOB	04/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
PIPING PLAN
PIPELINE INLET AREA

DRAWING No: 12732-SK-PM-502-20
REVISION: 1

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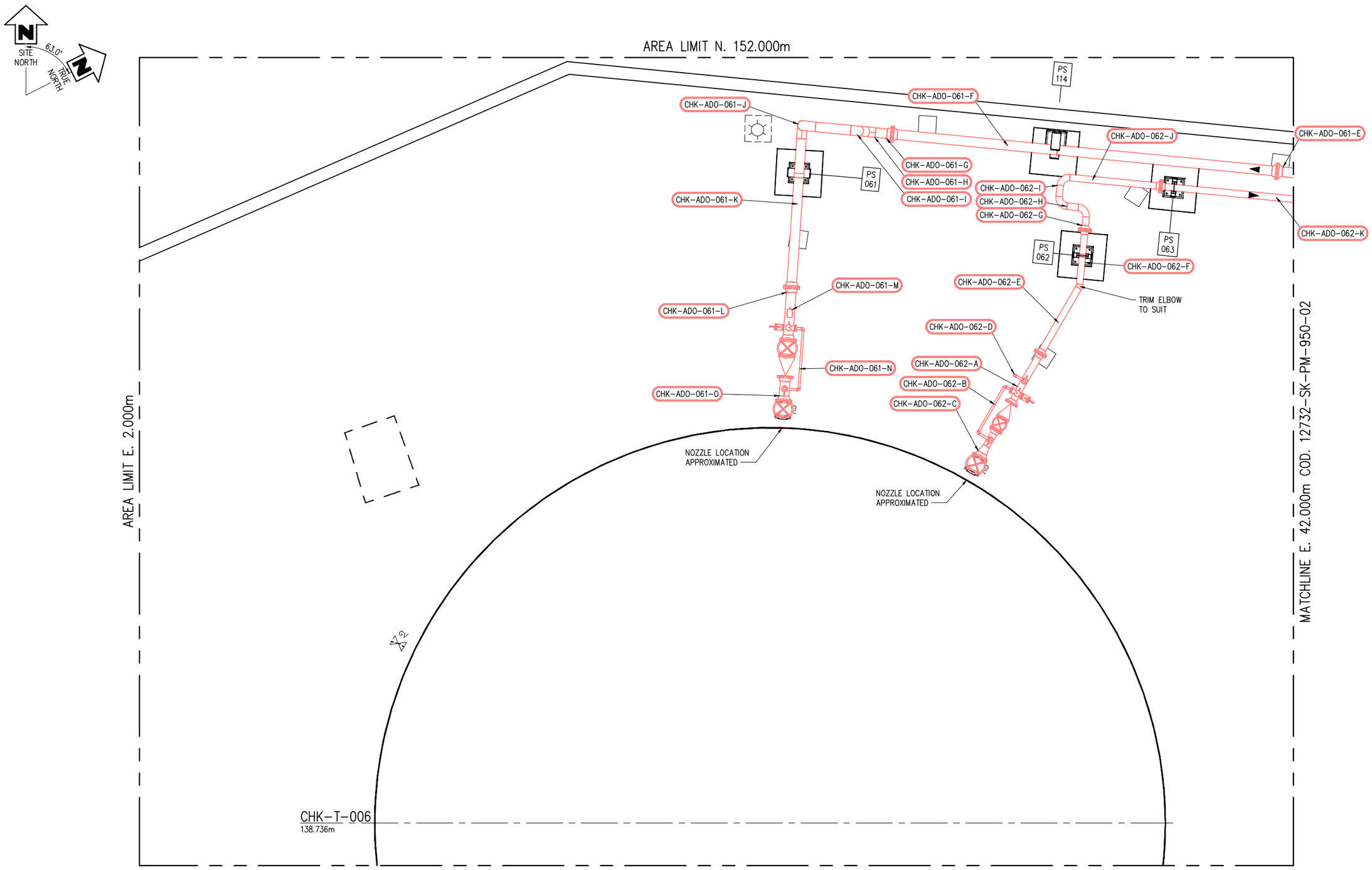

GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-PM-950.dwg
15 Sep 2022 - 8:23am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND

PROJECT No: 12732

SCALE: 1:33.333 @ A1

CLIENT: vital Energy for Life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
TANK CHK-T-006

DRAWING No: 12732-SK-PM-950-01

REVISION: A

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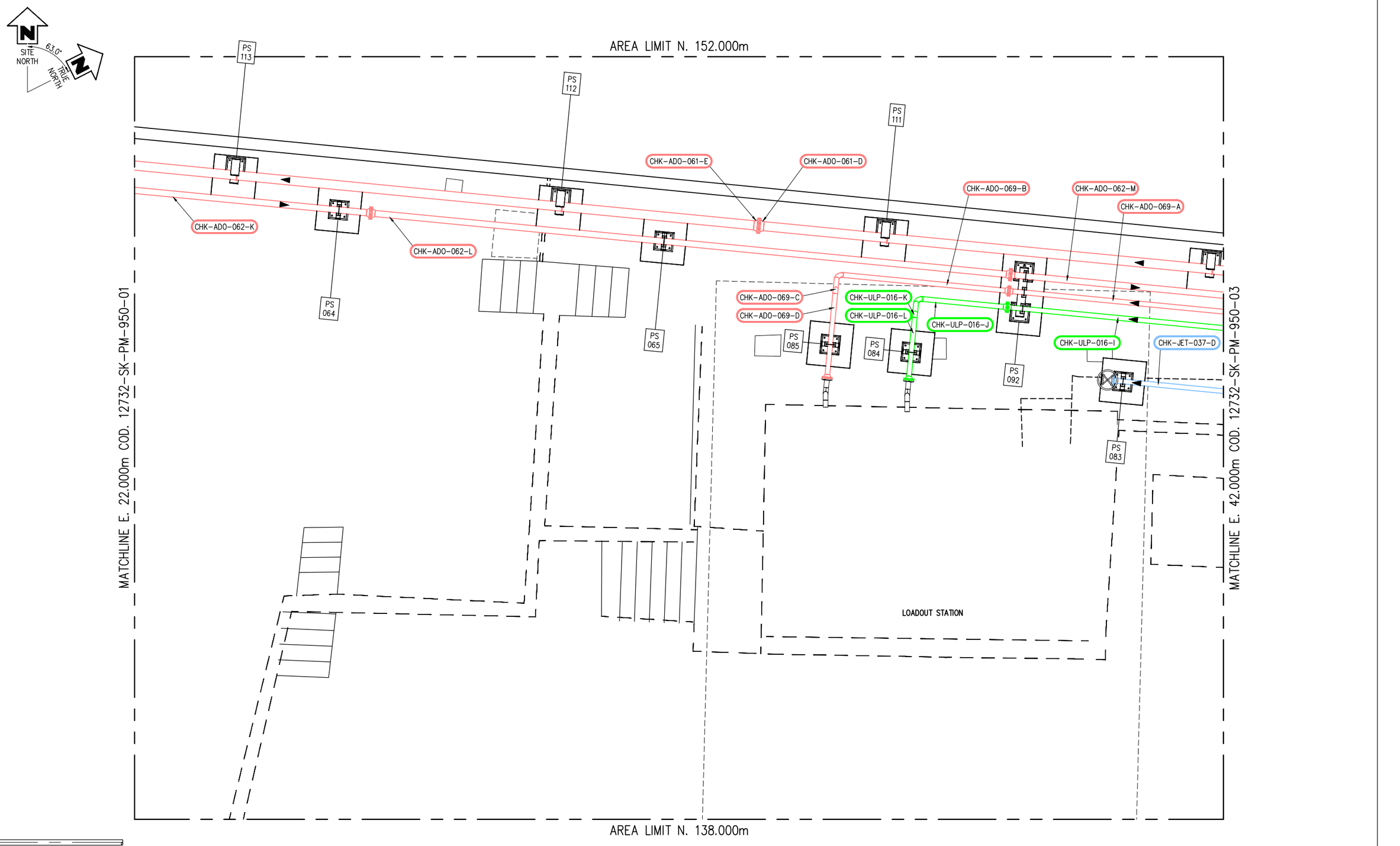

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GENERAL NOTES

1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM CONSULTANTS LTD
New Plymouth New Zealand

12732-SK-PM-950.dwg
15 Sep 2022 - 8:23am

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

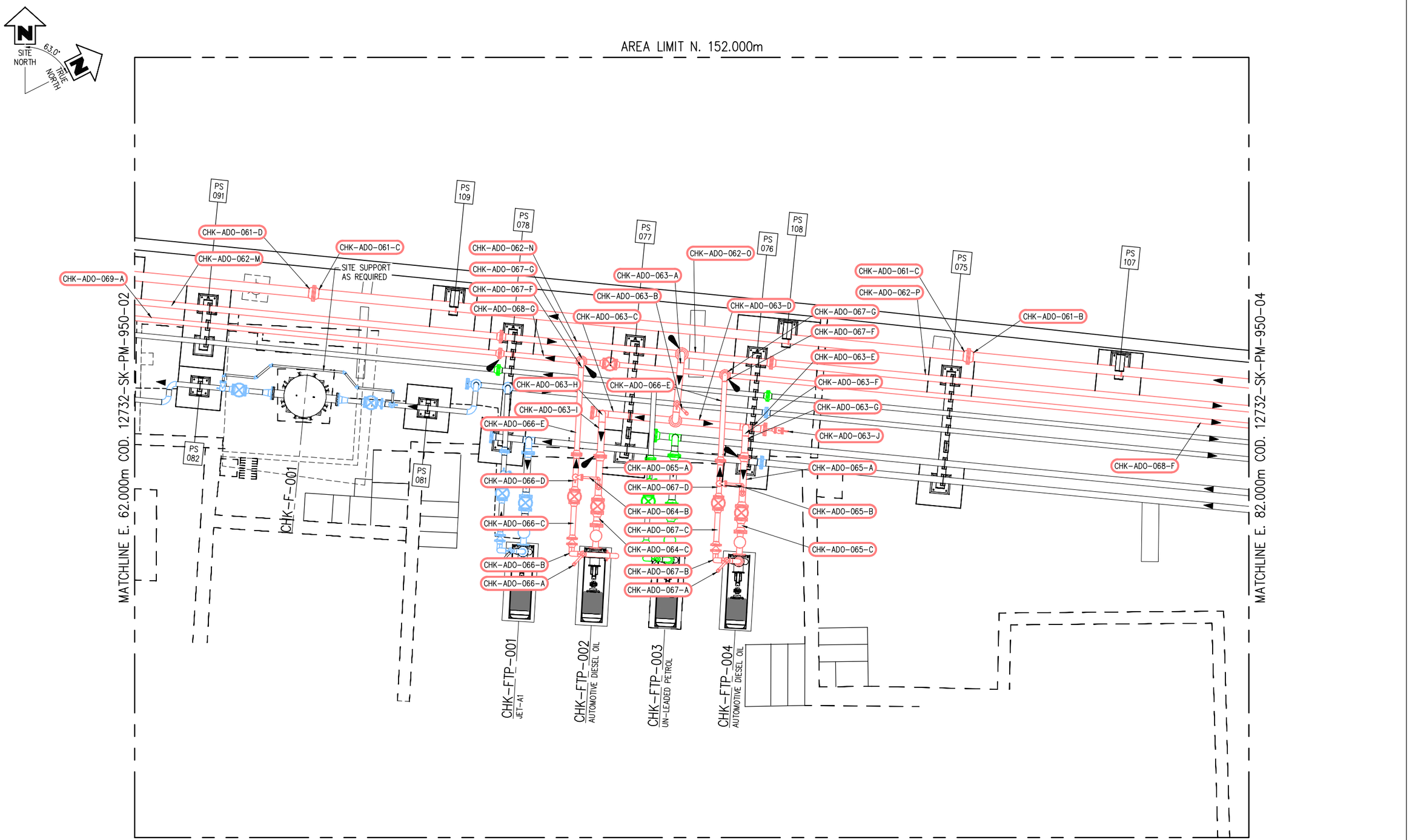
REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
LOADOUT AREA

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-PM-950-02
REVISION: A



GENERAL NOTES

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3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND

PROJECT No: 12732

SCALE: 1:33.333 @ A1

CLIENT: vital

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

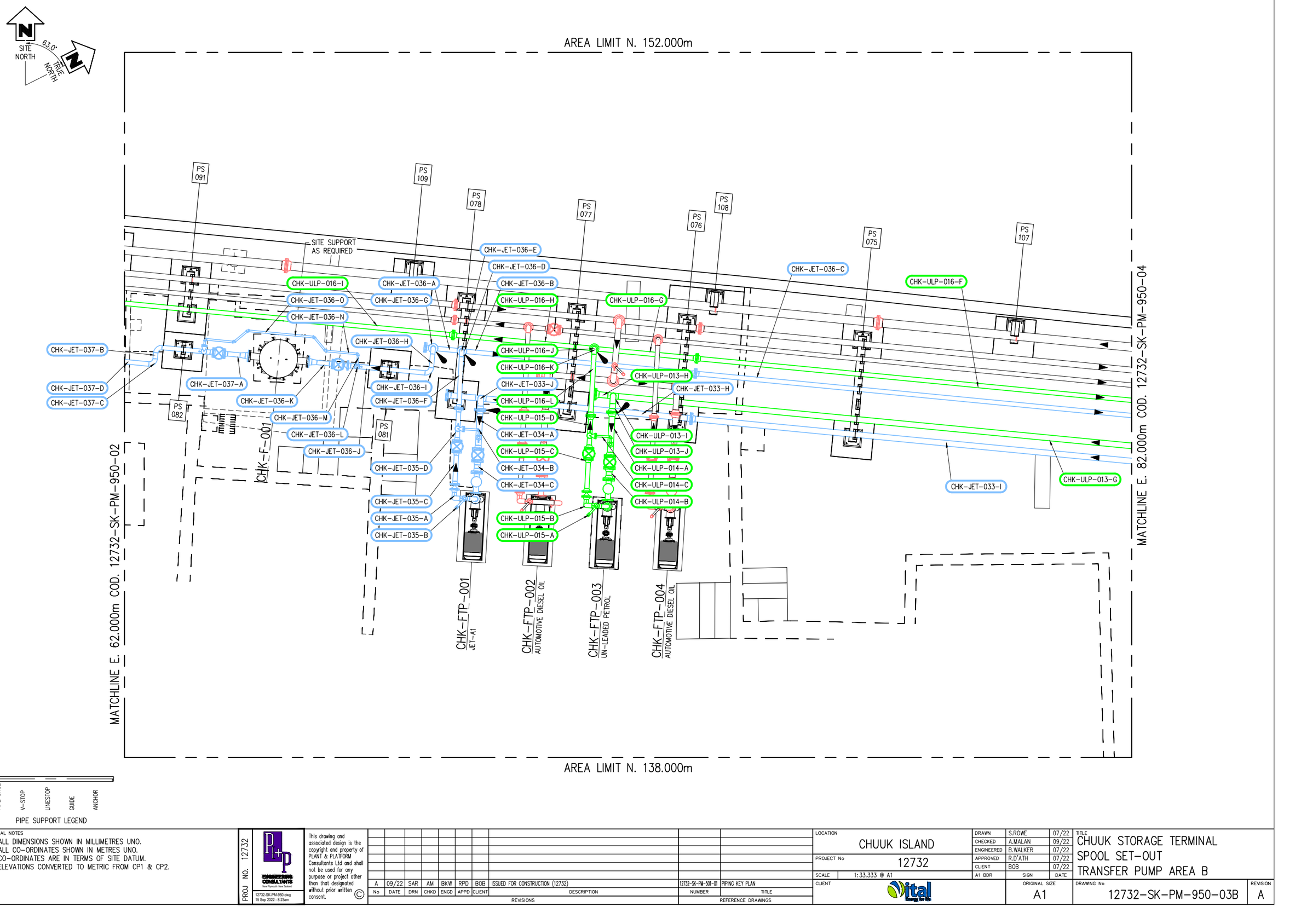
TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
TRANSFER PUMP AREA A

ORIGINAL SIZE: A1

DRAWING No: 12732-SK-PM-950-03A

REVISION: A

Z:\Vital FSM PetroCorp\12732\Acad\PM\12732-SK-PM-950.dwg Sep 15, 2022 - 8:23am



GENERAL NOTES

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2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
TRANSFER PUMP AREA B

DRAWING No: 12732-SK-PM-950-03B
REVISION: A

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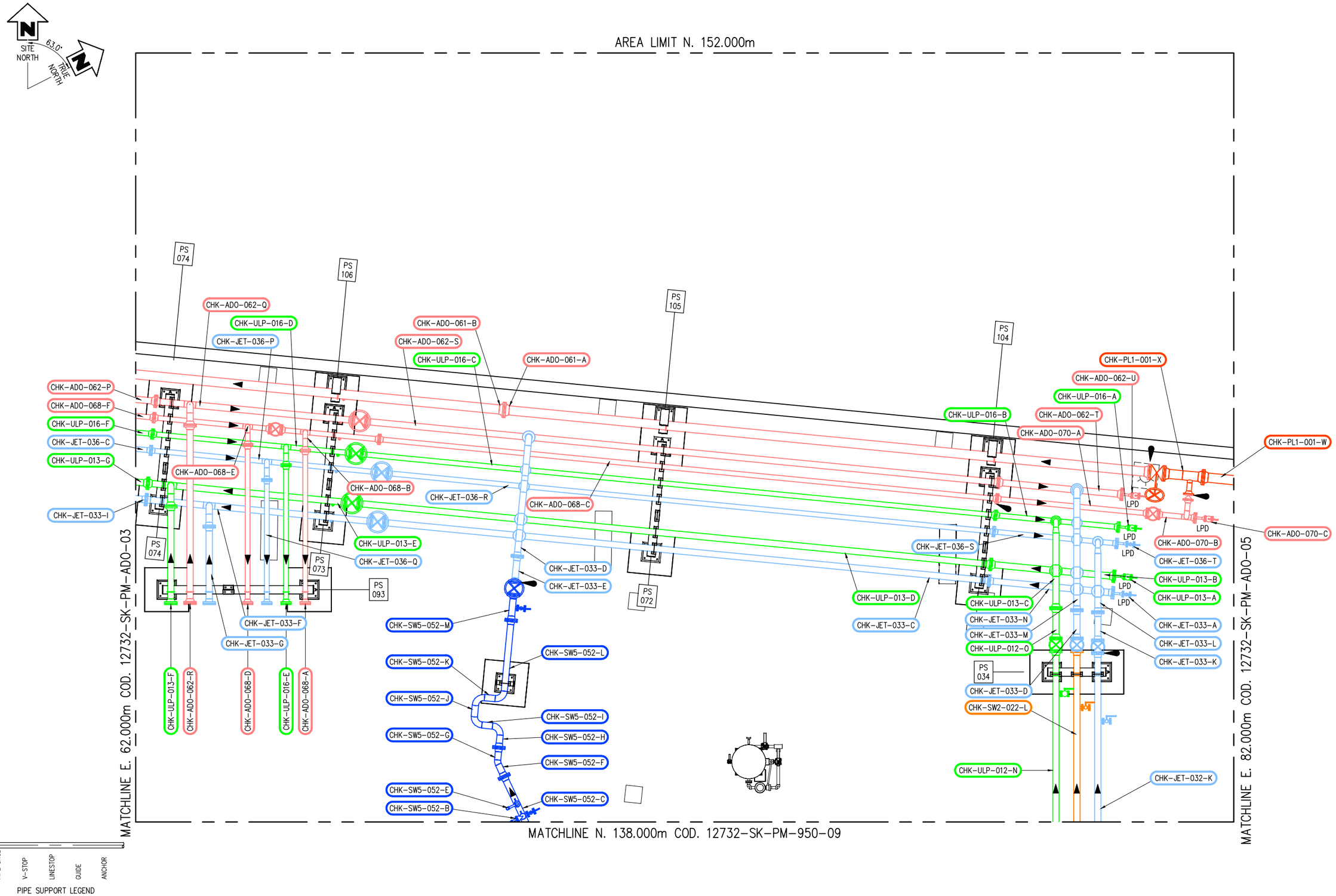

GENERAL NOTES

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2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
PIPING RACK LOW POINT DRAINS

DRAWING No: 12732-SK-PM-950-04
REVISION: A

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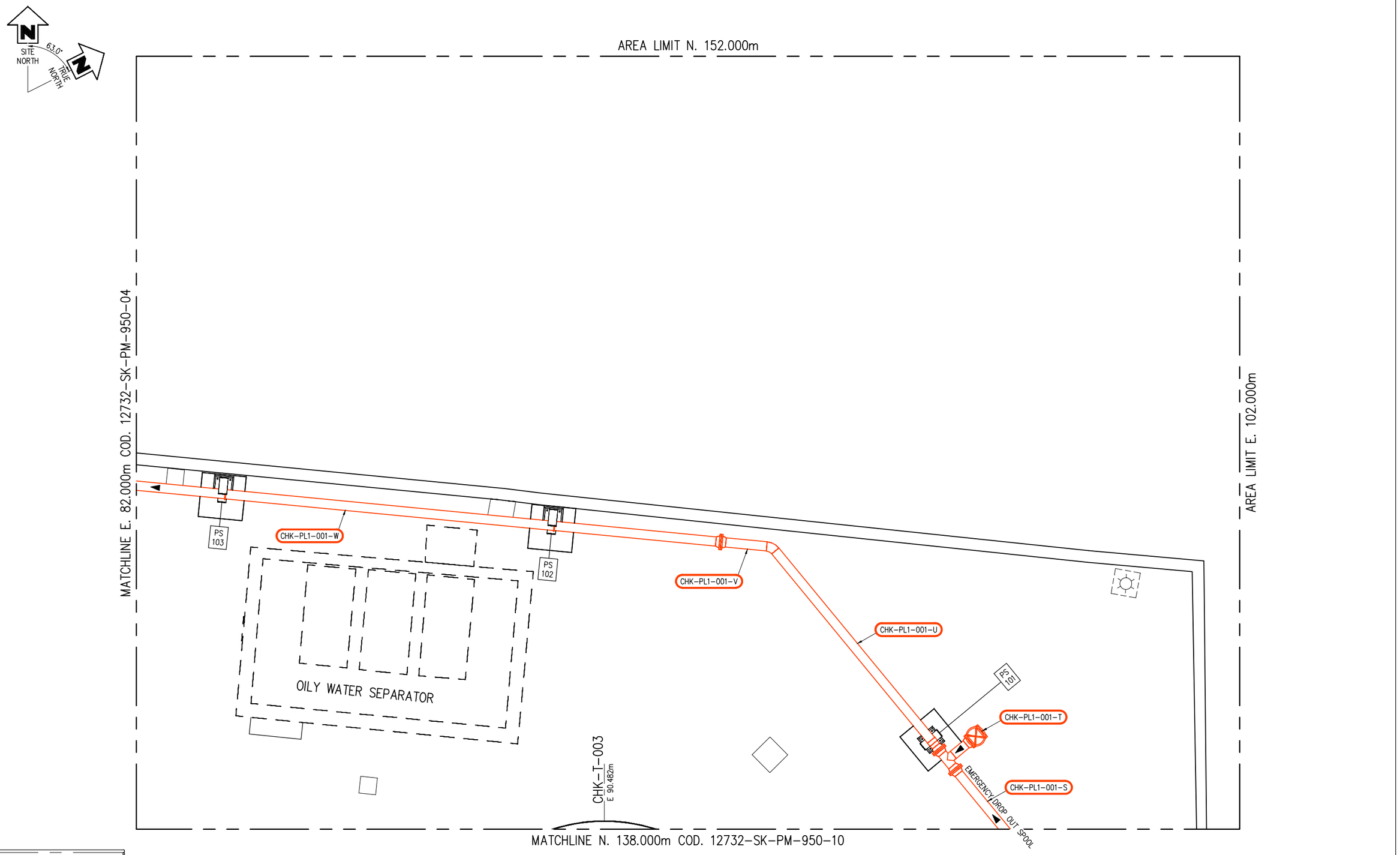

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GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM CONSULTANTS ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
EMERGENCY INLET AREA

DRAWING No: 12732-SK-PM-950-05

REVISION: A

SITE NORTH
63.0°
TRUE NORTH

MATCHLINE N. 138.000m COD. 12732-SK-PM-950-04

AREA LIMIT E. 62.000m

MATCHLINE E. 82.000m COD. 12732-SK-PM-950-10

MATCHLINE N. 124.000m COD. 12732-SK-PM-950-14

CHK-SW5-052-B
CHK-SW5-052-A
NOZZLE LOCATION UNKNOWN
NOZZLE LOCATION UNKNOWN
CHK-SW2-022-L
CHK-JET-032-K
CHK-ULP-012-N
CHK-JET-032-G
CHK-JET-032-J
CHK-JET-032-F
PS 033
CHK-JET-032-E
PS 055
CHK-JET-032-I
CHK-JET-032-H
PS 054
CHK-SW5-051-R
CHK-SW5-051-Q
CHK-SW5-051-N
CHK-SW5-051-L
CHK-SW5-051-T
CHK-SW5-051-M
CHK-SW5-051-K
CHK-SW5-051-S
CHK-SW5-051-O
CHK-SW5-051-P
PS 024
CHK-SW2-022-K
CHK-ULP-012-M
PS 023
PS 022
CHK-SW2-022-G
CHK-SW2-022-J
CHK-ULP-012-L
CHK-SW2-022-F
CHK-SW2-022-H
CHK-SW2-022-I

PIPE SUPPORT LEGEND

PIPE SHOE | V-STOP | LINESTOP | GUIDE | ANCHOR

GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

ENGINEERING CONSULTANTS
New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

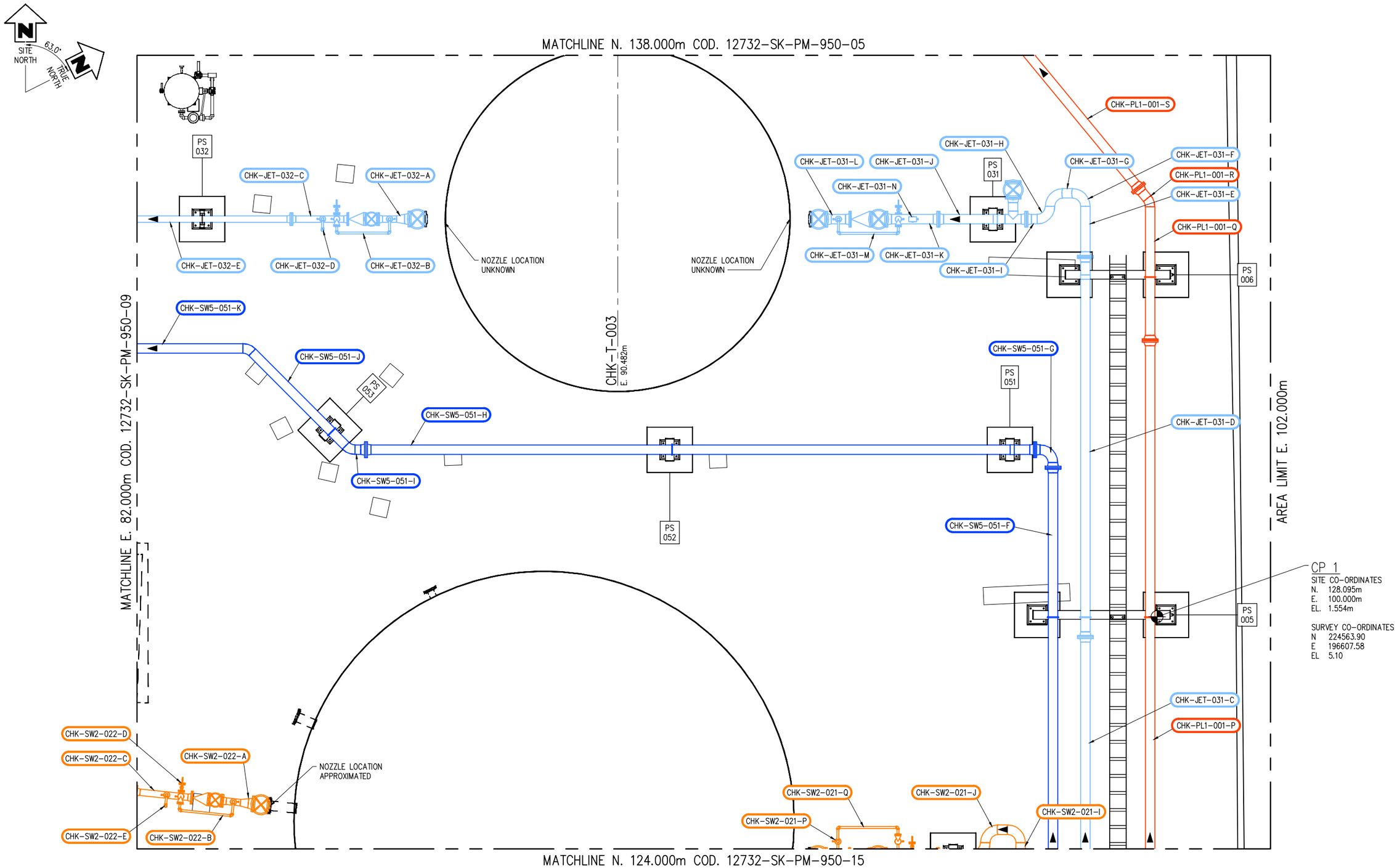
LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
TANK CHK-T-005

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-PM-950-09
REVISION: A

Z:\Vital FSM PetroCorp\12732\Mod\PM\12732-SK-PM-950.dwg Sep 15, 2022 - 8:23am



GENERAL NOTES
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2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

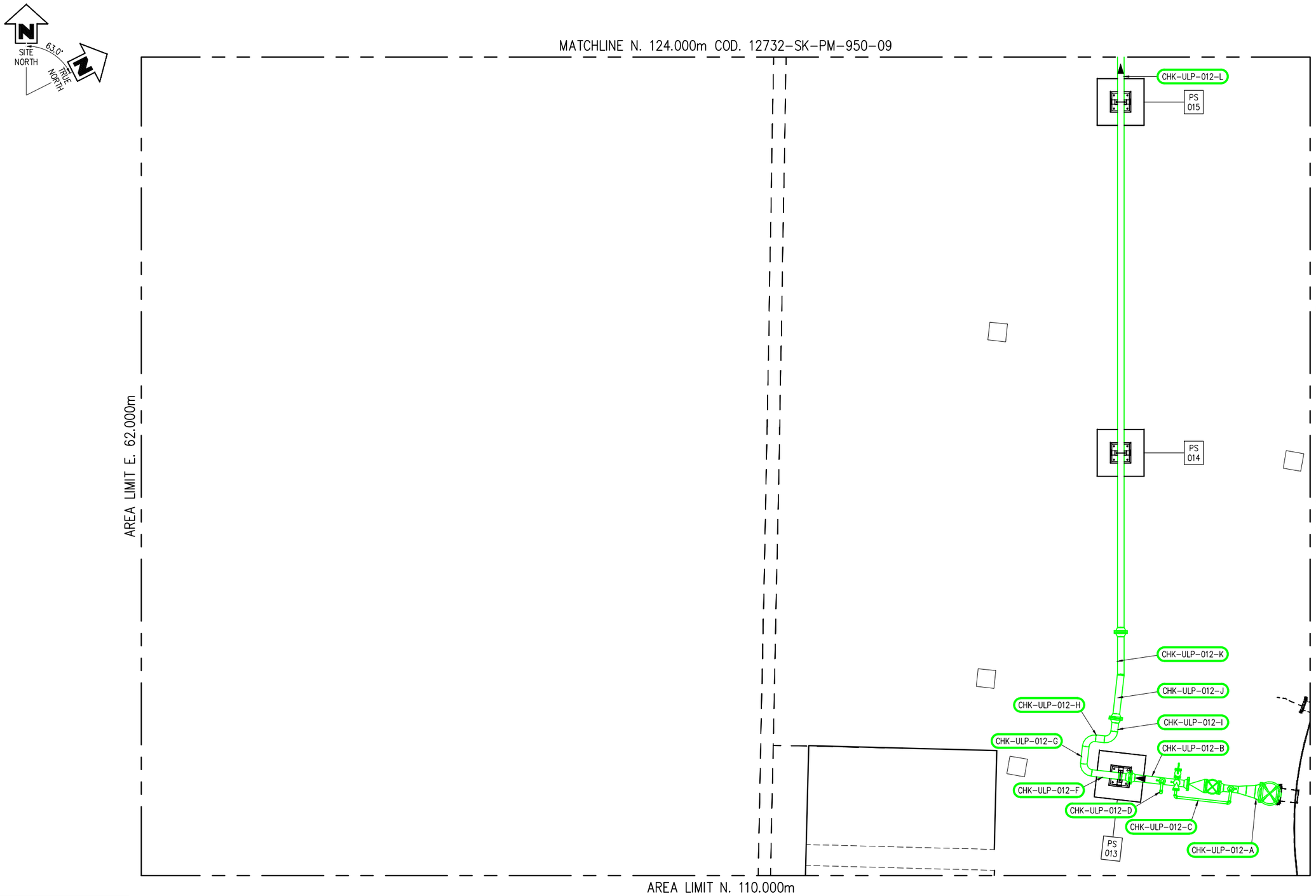
LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
TANK CHK-T-003

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-PM-950-10
REVISION: A

Z:\Vital FSM Petrocorp\12732\Acad\PM\12732-SK-PM-950.dwg Sep 15, 2022 - 8:23am



PIPE SHOE V-STOP LINESTOP GUIDE ANCHOR

PIPE SUPPORT LEGEND

GENERAL NOTES
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNO.
2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy (NZ) Ltd

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

TITLE
CHUUK STORAGE TERMINAL
SPOOL SET-OUT
TANK CHK-T-001 OUTLET

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-PM-950-14
REVISION: A

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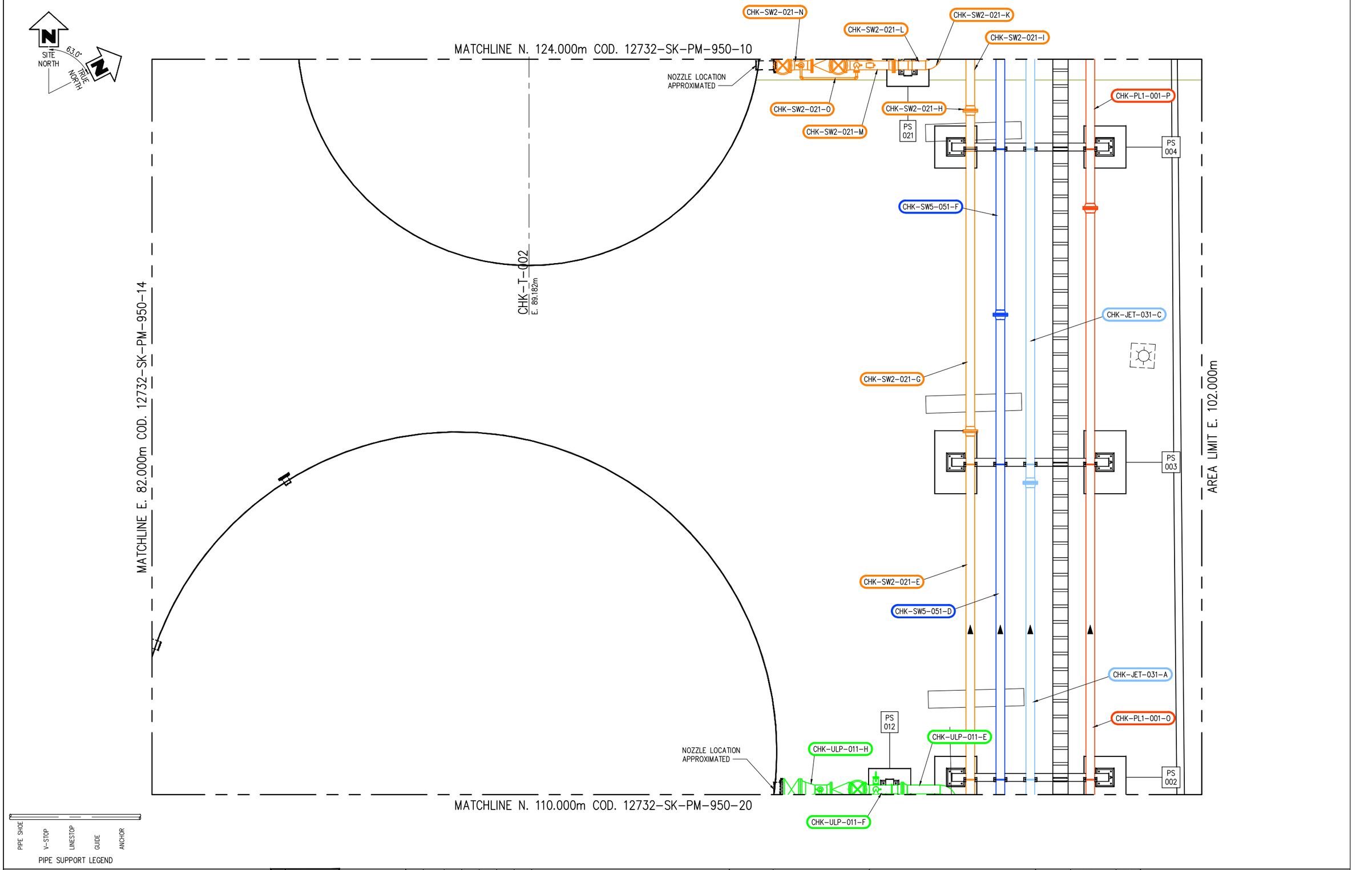

GENERAL NOTES
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PROJ NO. 12732

P+P ENGINEERING CONSULTANTS New Plymouth, New Zealand

12732-SK-PM-950.dwg
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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: Vital Energy for Life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
TANK CHK-T-001 INLET

ORIGINAL SIZE: A1
DRAWING No: 12732-SK-PM-950-15
REVISION: A

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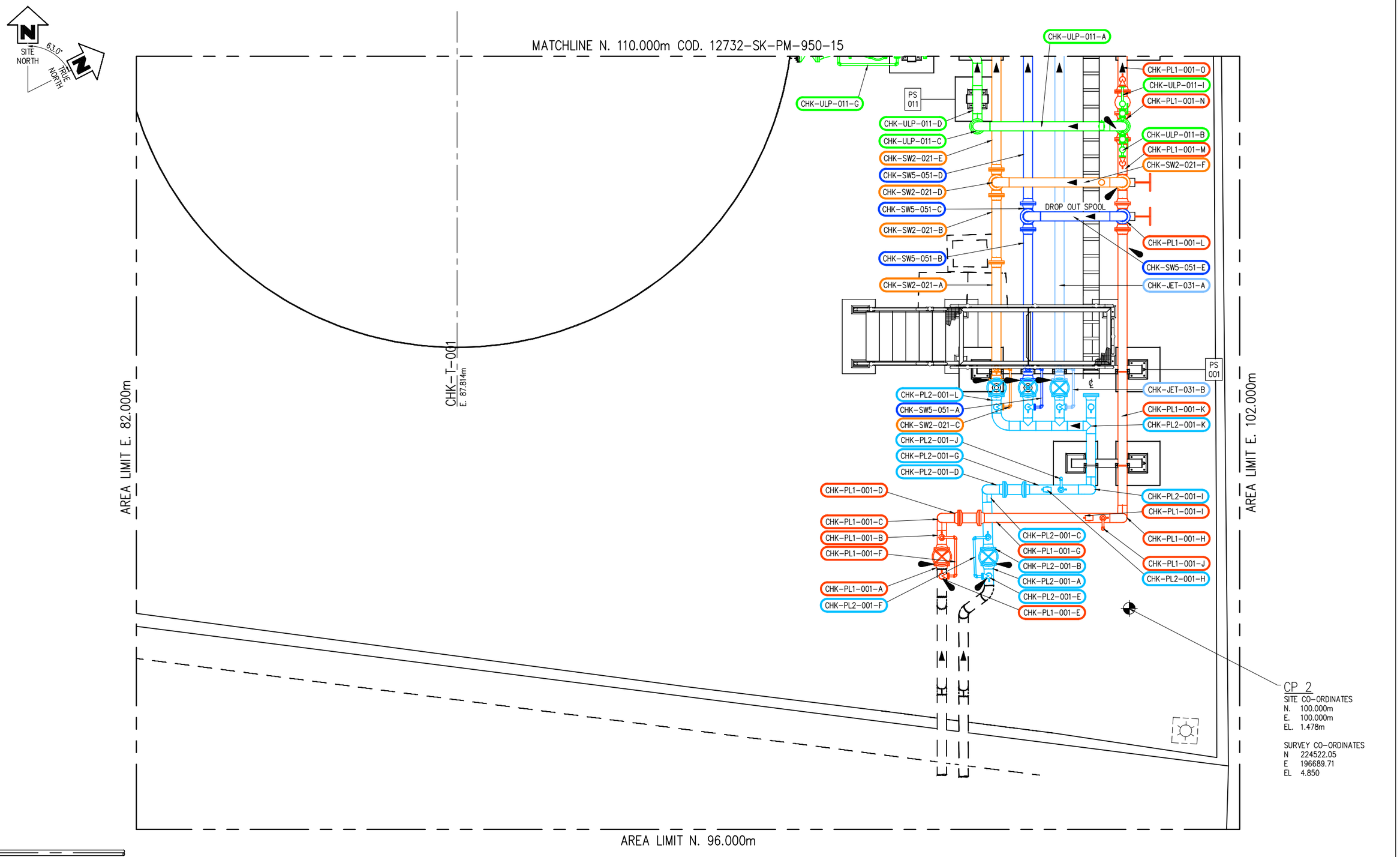

GENERAL NOTES

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2. ALL CO-ORDINATES SHOWN IN METRES UNO.
3. CO-ORDINATES ARE IN TERMS OF SITE DATUM.
4. ELEVATIONS CONVERTED TO METRIC FROM CP1 & CP2.

PROJ NO. 12732

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
A	09/22	SAR	AM	BKW	RPD	BOB	ISSUED FOR CONSTRUCTION (12732)

REVISIONS

NUMBER	TITLE
12732-SK-PM-501-01	PIPING KEY PLAN

REFERENCE DRAWINGS

LOCATION: CHUUK ISLAND
PROJECT No: 12732
SCALE: 1:33.333 @ A1
CLIENT: vital Energy for life

DRAWN	S.ROWE	07/22
CHECKED	A.MALAN	09/22
ENGINEERED	B.WALKER	07/22
APPROVED	R.D'ATH	07/22
CLIENT	BOB	07/22
A1 BDR	SIGN	DATE

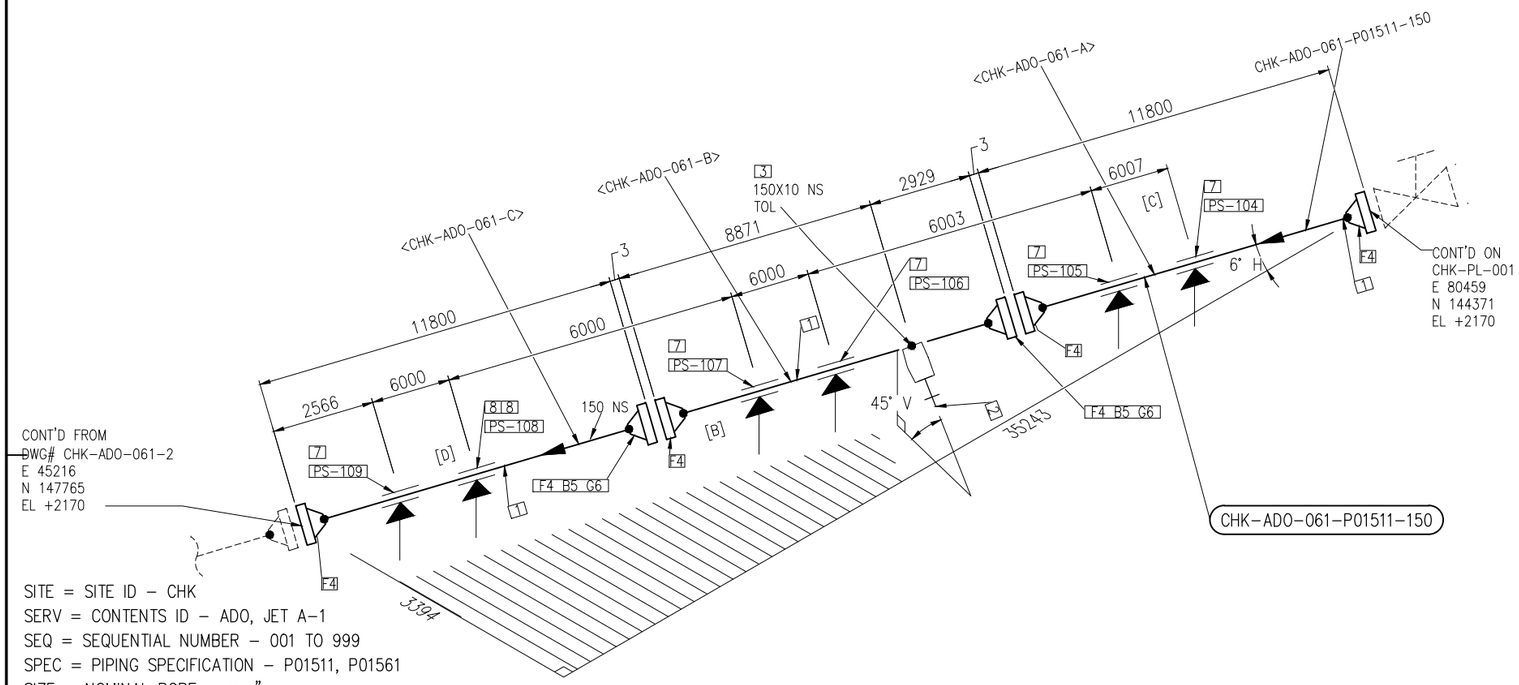
ORIGINAL SIZE: A1

TITLE: CHUUK STORAGE TERMINAL
SPOOL SET-OUT
PIPELINE INLET AREA

DRAWING No: 12732-SK-PM-950-20

REVISION: A

Z:\Vital FSM PetroCorp\12732\Acad\PM\12732-SK-PM-950.dwg Sep 15, 2022 - 8:23am



SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-061-P01511-150

DRG NUMBER = CHK-ADO-061-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-061-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	150	P01201D150	34.9M
2	EARTH BOSS STUD (REFER DRG 000-50028-01)	10		0.1M
	OLETS			
3	EARTH BOSS (REFER DRG STD-50028-01)	150X10	EB000000HE	1
	FLANGES			
4	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	6
	FASTENERS			
5	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	16
6	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	PIPE SUPPORTS			
7	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	5
8	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01 NOTE DOUBLE U BOLT)	150	U346203150	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A				
B	11623MM	150	BEVEL	BEVEL
C	11623MM	150	BEVEL	BEVEL
D	11623MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-061-A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-061-P01511-150
SHEET No. 01 OF 05
DRG No. CHK-ADO-061-01 REV. 1

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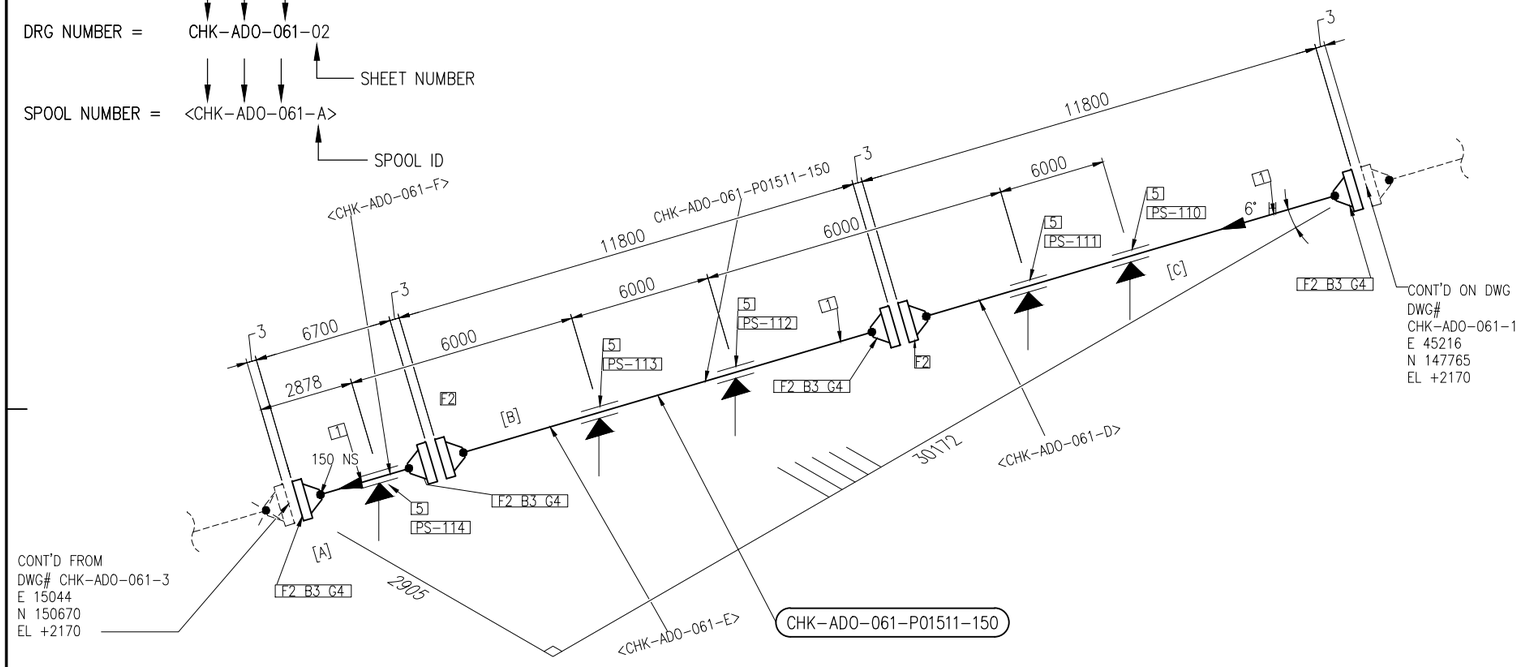
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-061-P01511-150

DRG NUMBER = CHK-ADO-061-02 ← SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-061-A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	150	P01201D150	29.8M
	FLANGES			
2	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	6
	FASTENERS			
3	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	32
4	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	PIPE SUPPORTS			
5	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	5

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	6522MM	150	BEVEL	BEVEL
B	11623MM	150	BEVEL	BEVEL
C	11623MM	150	BEVEL	BEVEL

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-061-D TO F

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-061-P01511-150
SHEET No. 02 OF 05
DRG No. CHK-ADO-061-02 REV. 1

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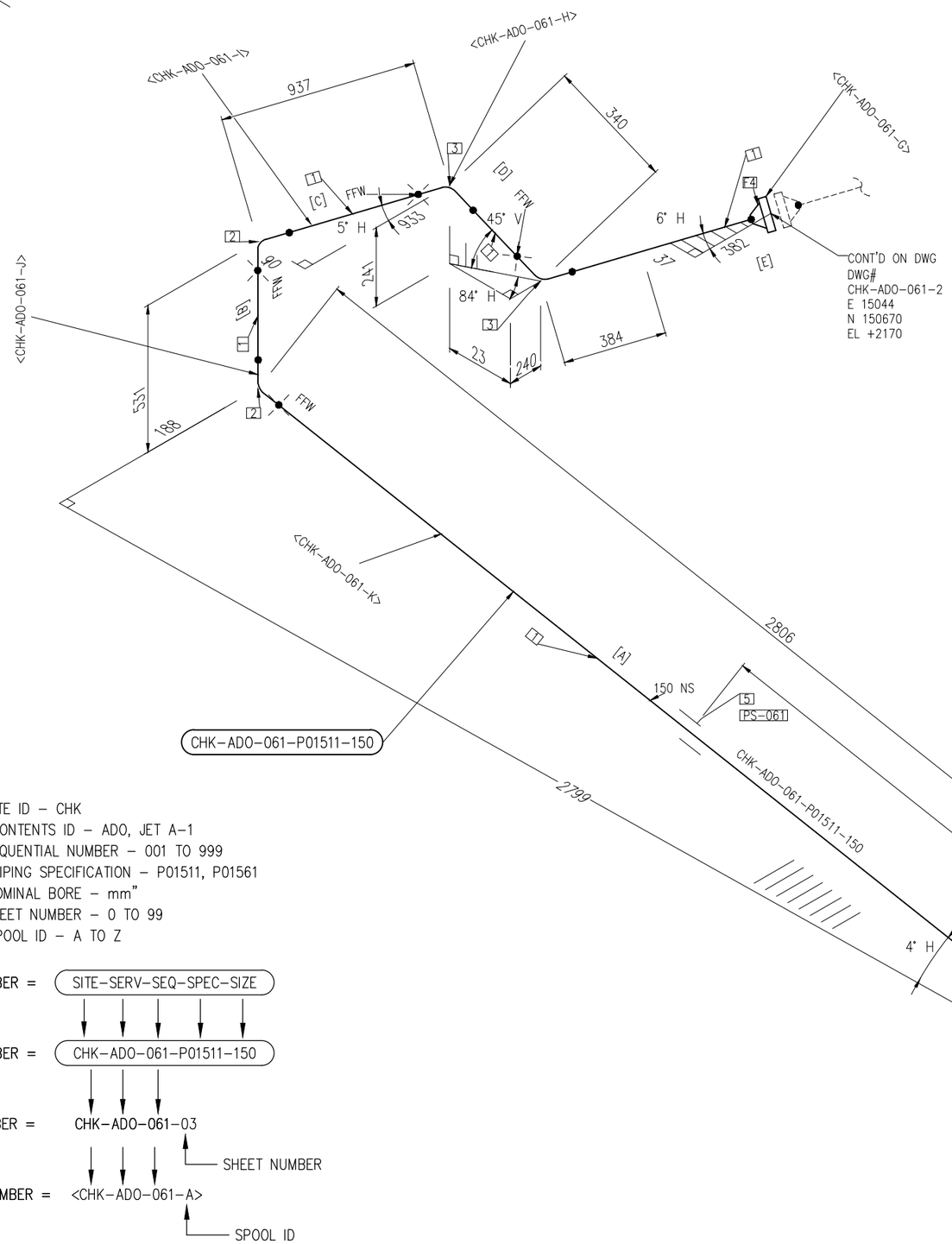

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-061-P01511-150

DRG NUMBER = CHK-ADO-061-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-061-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	150	P01201D150	4.2M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	150	P02001D150	2
3	ELBOW 45 DEG LR BW SCH 40 A234 WPB	150	P02201D150	2
	FLANGES			
4	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	2
	PIPE SUPPORTS			
5	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	150	W146301150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	2639MM	150	BEVEL	
B	224MM	150	BEVEL	
C	764MM	150	BEVEL	
D	300MM	150	BEVEL	
E	201MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-061-G TO K

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-061-P01511-150
SHEET No. 03 OF 05
DRG No. CHK-ADO-061-03 REV. 1

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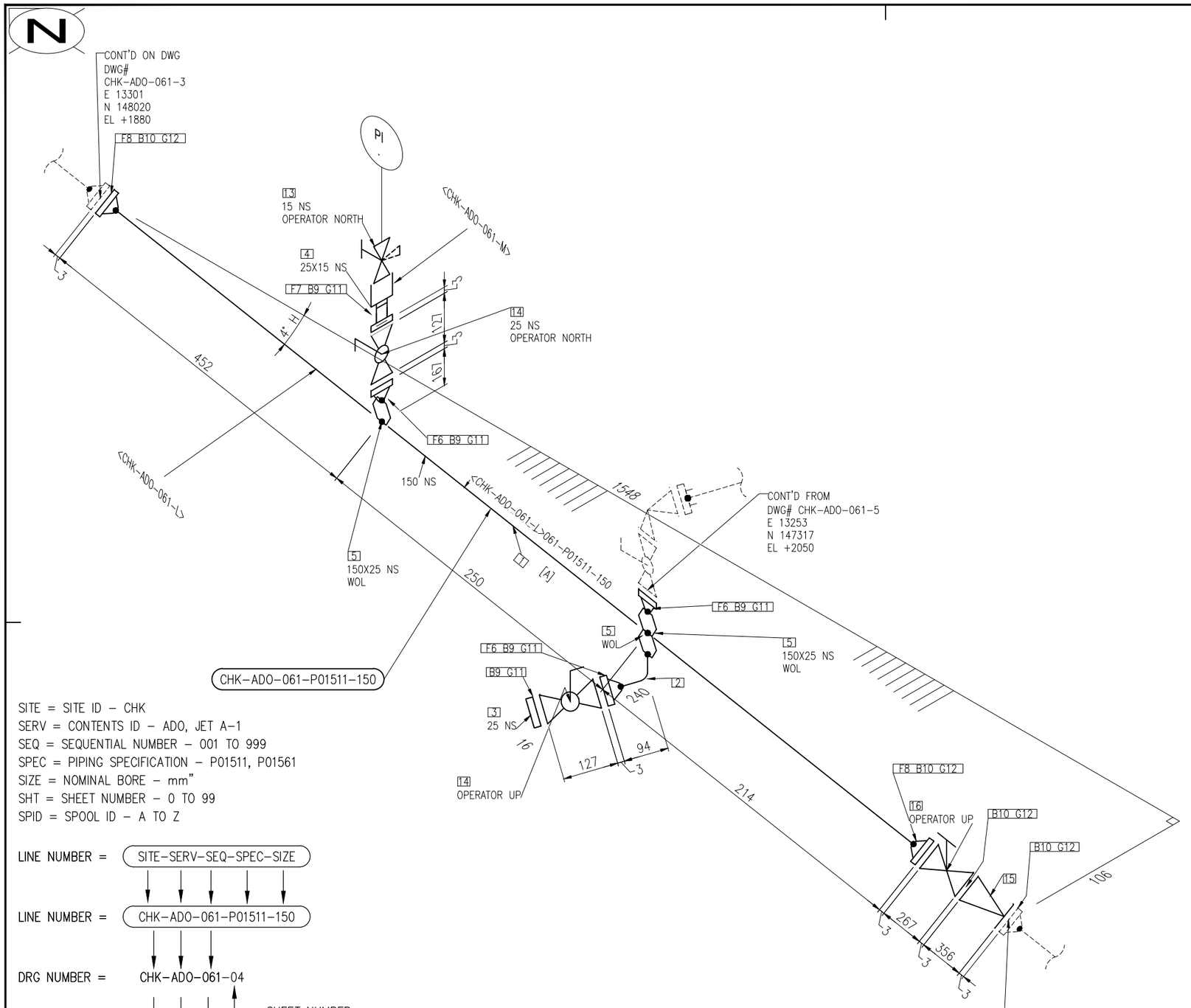

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-061-P01511-150

DRG NUMBER = CHK-ADO-061-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-061-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	0.8M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80 A234 WPB	25	P02001F025	1
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
4	HEX BUSH RED NPT CL3000 A182 F316L	25X15	P4535630CA	1
	OLETS			
5	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	3
	FLANGES			
6	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	3
7	FLANGE SCRD RF NPT CL150 A105	25	P2310AX025	1
8	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	2
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	20
10	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	32
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
13	VALVE NEEDLE SCRD MXFNPT CL6000 AISI 316	15	INSTRUMENT	1
14	VALVE BALL FB RF CL150 VB01122	25	VB01122025	2
15	VALVE CHECK SWING RF CL150 VC01121	150	VC01121150	1
16	VALVE GATE RF CL150 CS VG01121	150	VG01121150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	739MM	150	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-061-L TO M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-061-P01511-150
SHEET No. 04 OF 05
DRG No. CHK-ADO-061-04 REV. 1

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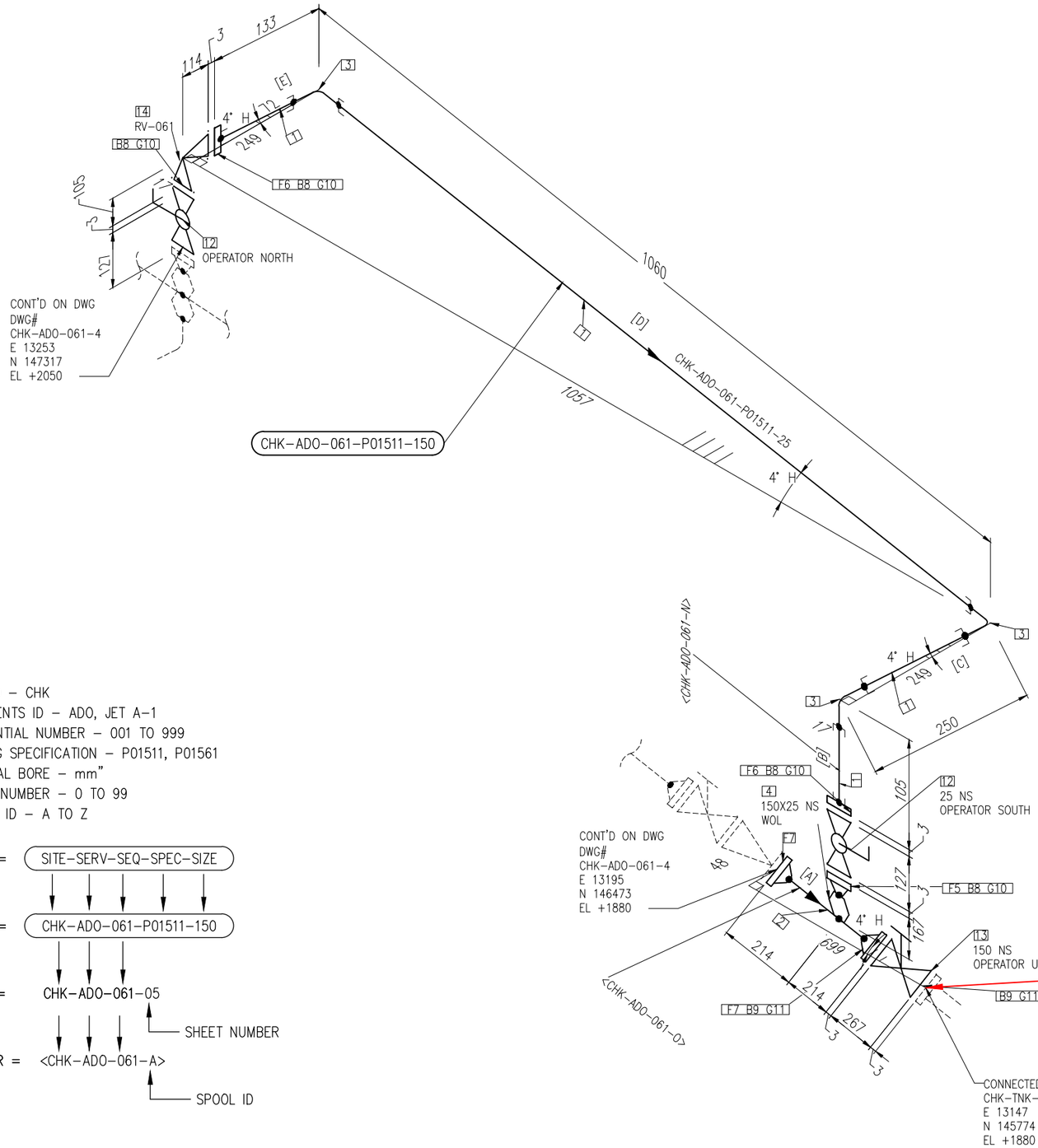

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ADO–061–P01511–150

DRG NUMBER = CHK–ADO–061–05 (SHEET NUMBER)

SPOOL NUMBER = <CHK–ADO–061–A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.5M
2	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	3
	OLETS			
4	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	1
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
6	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
7	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	2
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	16
9	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	16
10	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	4
11	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	150	P82261A150	2
	VALVES			
12	VALVE BALL FB RF CL150 VB01122	25	VB01122025	2
13	VALVE GATE RF CL150 CS VG01121	150	VG01121150	1
14	VALVE RELIEF RF CL150 CHK–RV–061	25	MECHNICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	251MM	150	BEVEL	BEVEL
B	79MM	25	SQUARE CUT	SQUARE CUT
C	206MM	25	SQUARE CUT	SQUARE CUT
D	1016MM	25	SQUARE CUT	SQUARE CUT
E	107MM	25	SQUARE CUT	SQUARE CUT

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–01
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ADO–061–N TO 0

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ADO–061–P01511–150
SHEET No. 05 OF 05
DRG No. CHK–ADO–061–05 REV. 1

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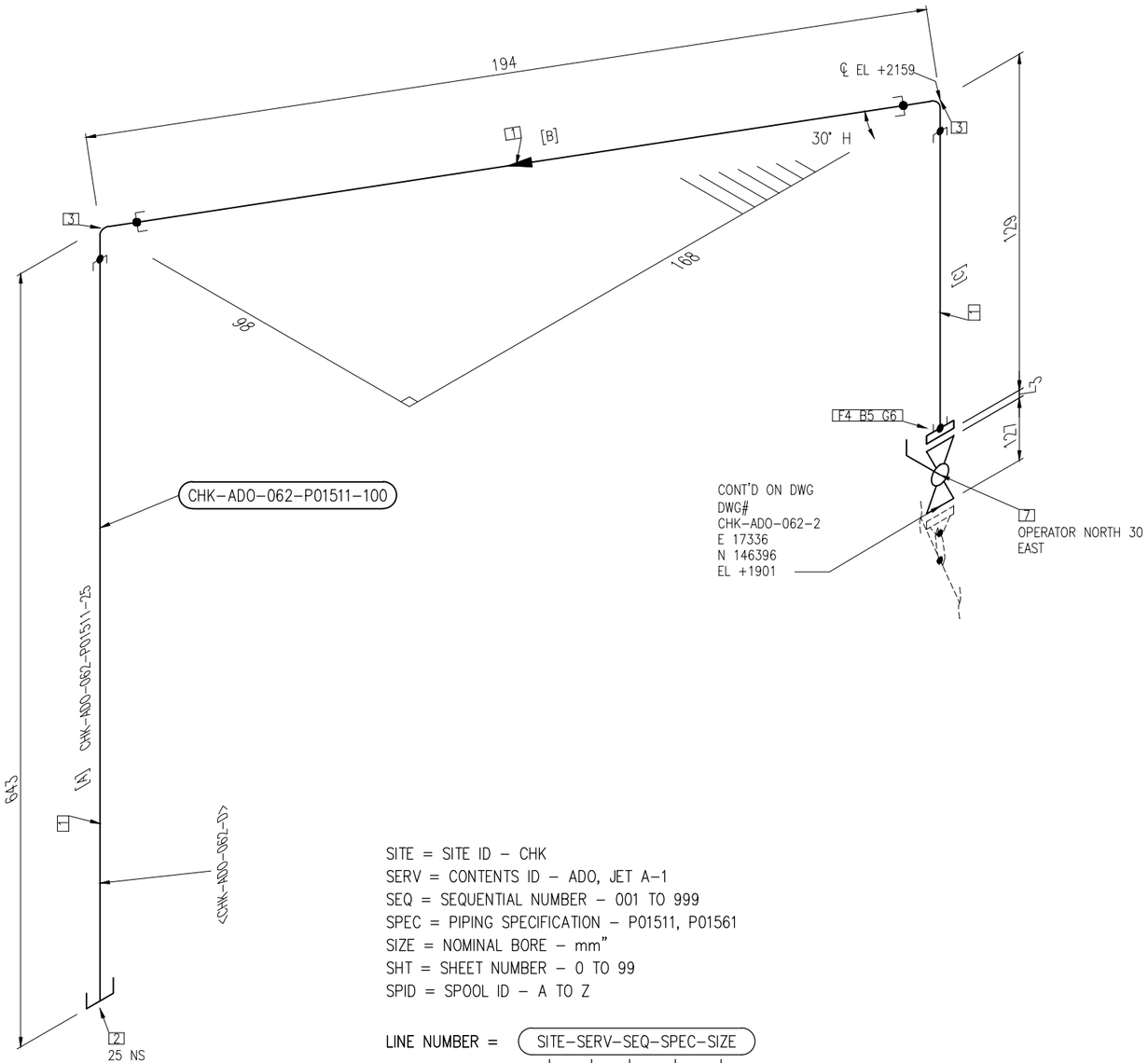

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ADO–062–P01511–100

DRG NUMBER = CHK–ADO–062–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–ADO–062–A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	0.9M
	FITTINGS			
2	CAP SCRD NPT CL3000 A105	25	P450713025	1
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
	FLANGES			
4	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	1
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	4
6	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	1
	VALVES			
7	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	580MM	25	SCREWED	SQUARE CUT
B	151MM	25	SQUARE CUT	SQUARE CUT
C	102MM	25	SQUARE CUT	SQUARE CUT

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732–SK–PM–502–01
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ADO–062–A

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ADO–062–P01511–100
SHEET No. 01 OF 10
DRG No. CHK–ADO–062–01 REV. 1

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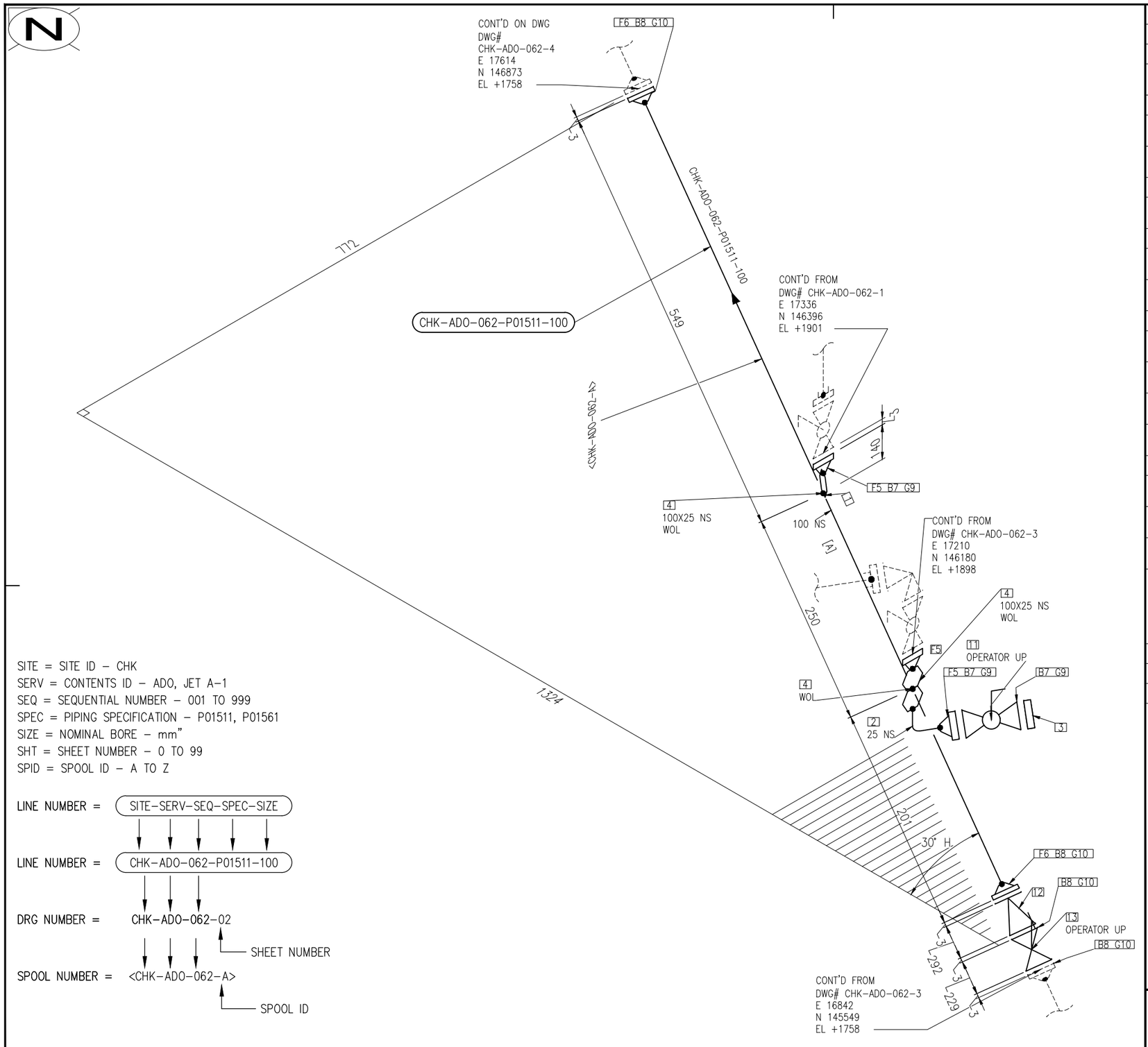

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-062-P01511-100

DRG NUMBER = CHK-ADO-062-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	100	P01201D100	0.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80 A234 WPB	25	P02001F025	1
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
	OLETS			
4	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	3
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	3
6	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
8	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	32
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	4
	VALVES			
11	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
12	VALVE CHECK SWING RF CL150 VC01121	100	VC01121100	1
13	VALVE GATE RF CL150 CS VG01121	100	VG01121100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	848MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 02 OF 10
DRG No. CHK-ADO-062-02 REV. 1

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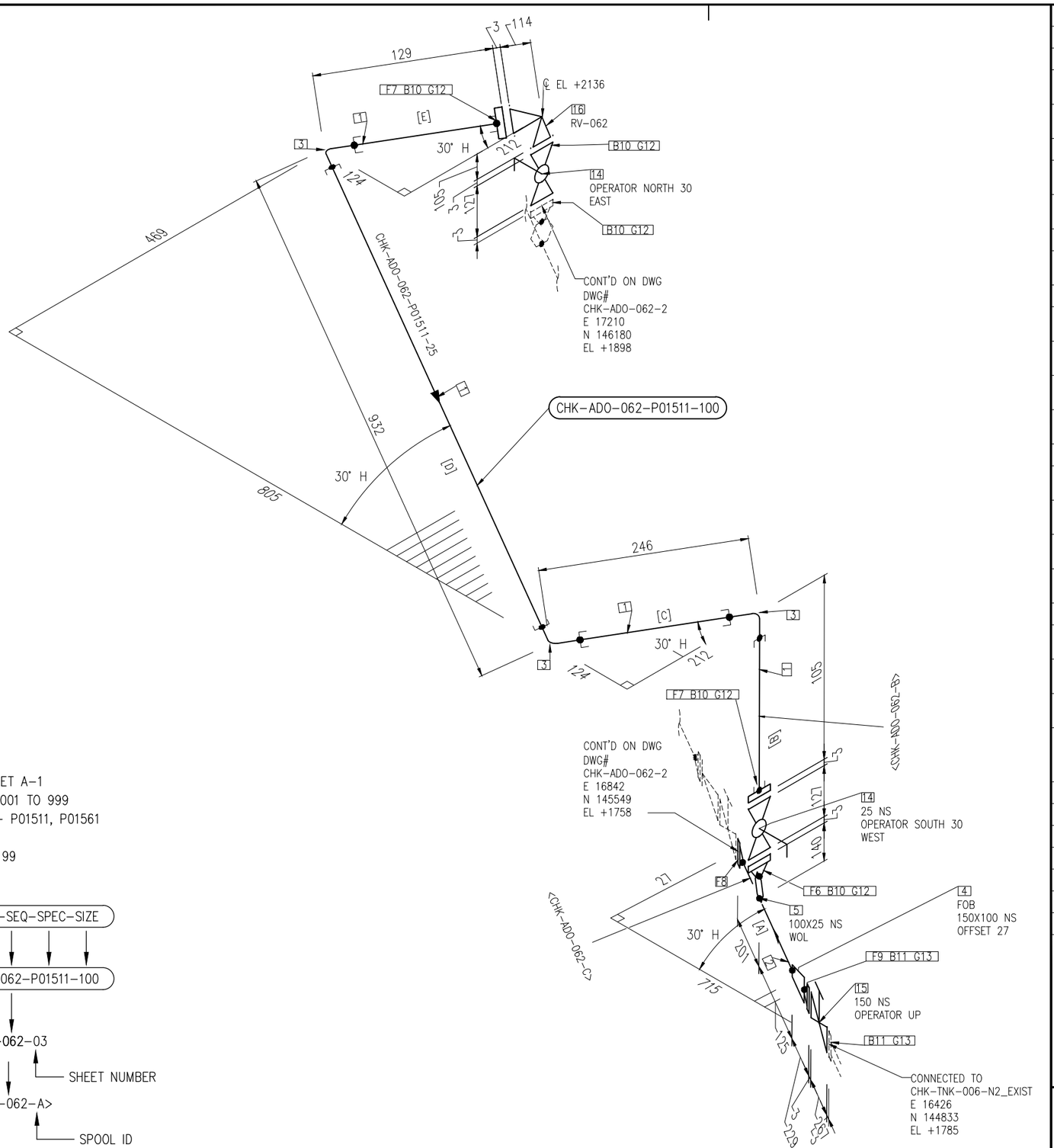

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-062-P01511-100

DRG NUMBER = CHK-ADO-062-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.3M
2	PIPE SMLS SCH 40 A106 B	100	P01201D100	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	3
4	REDUCER ECC BW SCH 40 A234 WPB	150X100	P07001DDHG	1
	OLETS			
5	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	1
	FLANGES			
6	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
7	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
8	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	1
9	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	1
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	20
11	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	16
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
13	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	VALVES			
14	VALVE BALL FB RF CL150 VB01122	25	VB01122025	2
15	VALVE GATE RF CL150 CS VG01121	150	VG01121150	1
16	VALVE RELIEF RF CL150 CHK-RV-062	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	250MM	100	BEVEL	BEVEL
B	79MM	25	SQUARE CUT	SQUARE CUT
C	202MM	25	SQUARE CUT	SQUARE CUT
D	888MM	25	SQUARE CUT	SQUARE CUT
E	102MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-C TO D

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 03 OF 10
DRG No. CHK-ADO-062-03 REV. 1

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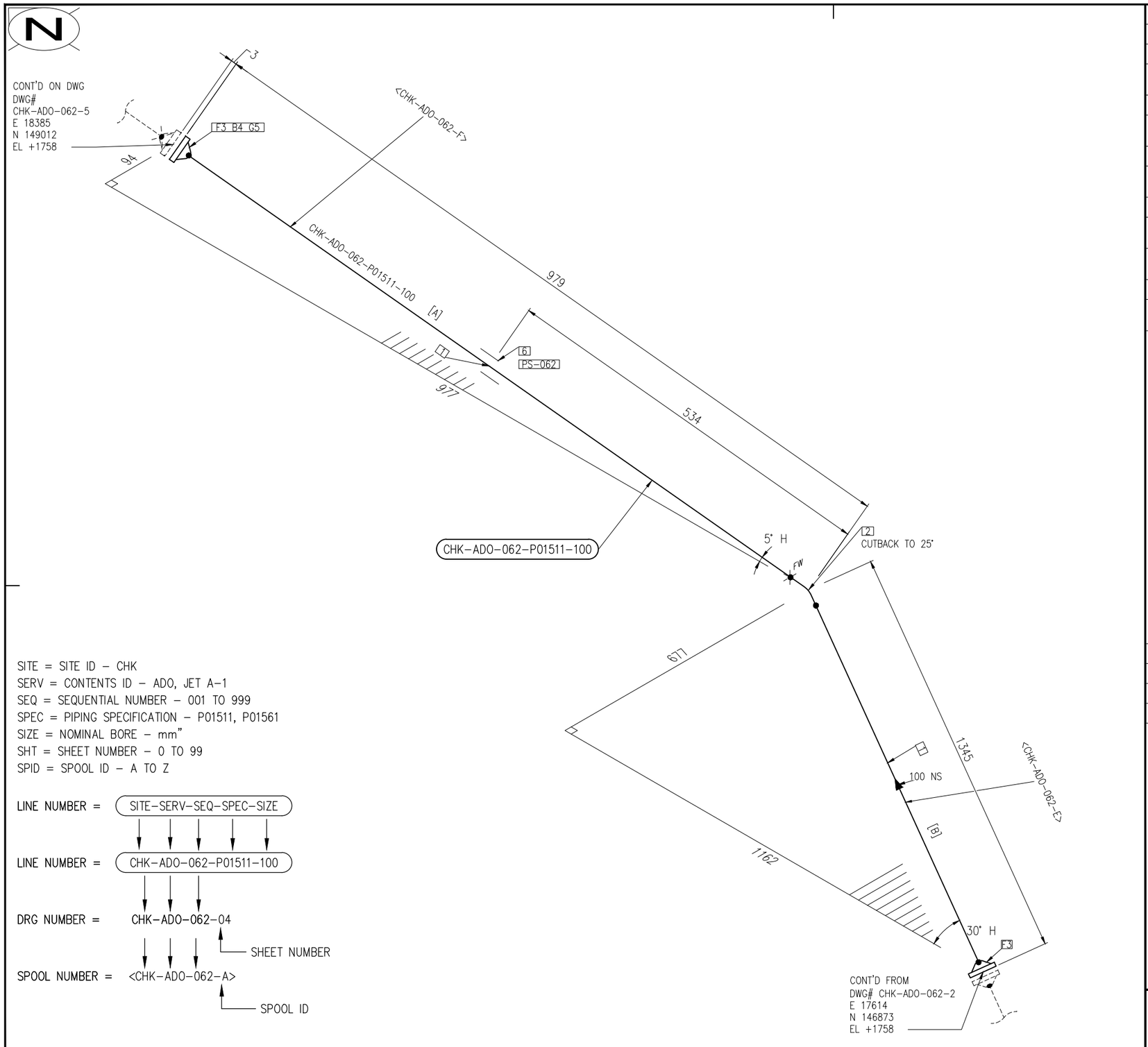

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-062-P01511-100

DRG NUMBER = CHK-ADO-062-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	2.2M
	FITTINGS			
2	ELBOW 45 DEG LR BW SCH 40 A234 WPB– CUTBACK TO 25 DEG.	100	P02201D100	1
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	2
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	8
5	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	1
	PIPE SUPPORTS			
6	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	100	W146301100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	869MM	100	BEVEL	BEVEL
B	1235MM	100	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-E TO F

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 04 OF 10
DRG No. CHK-ADO-062-04 REV. 1

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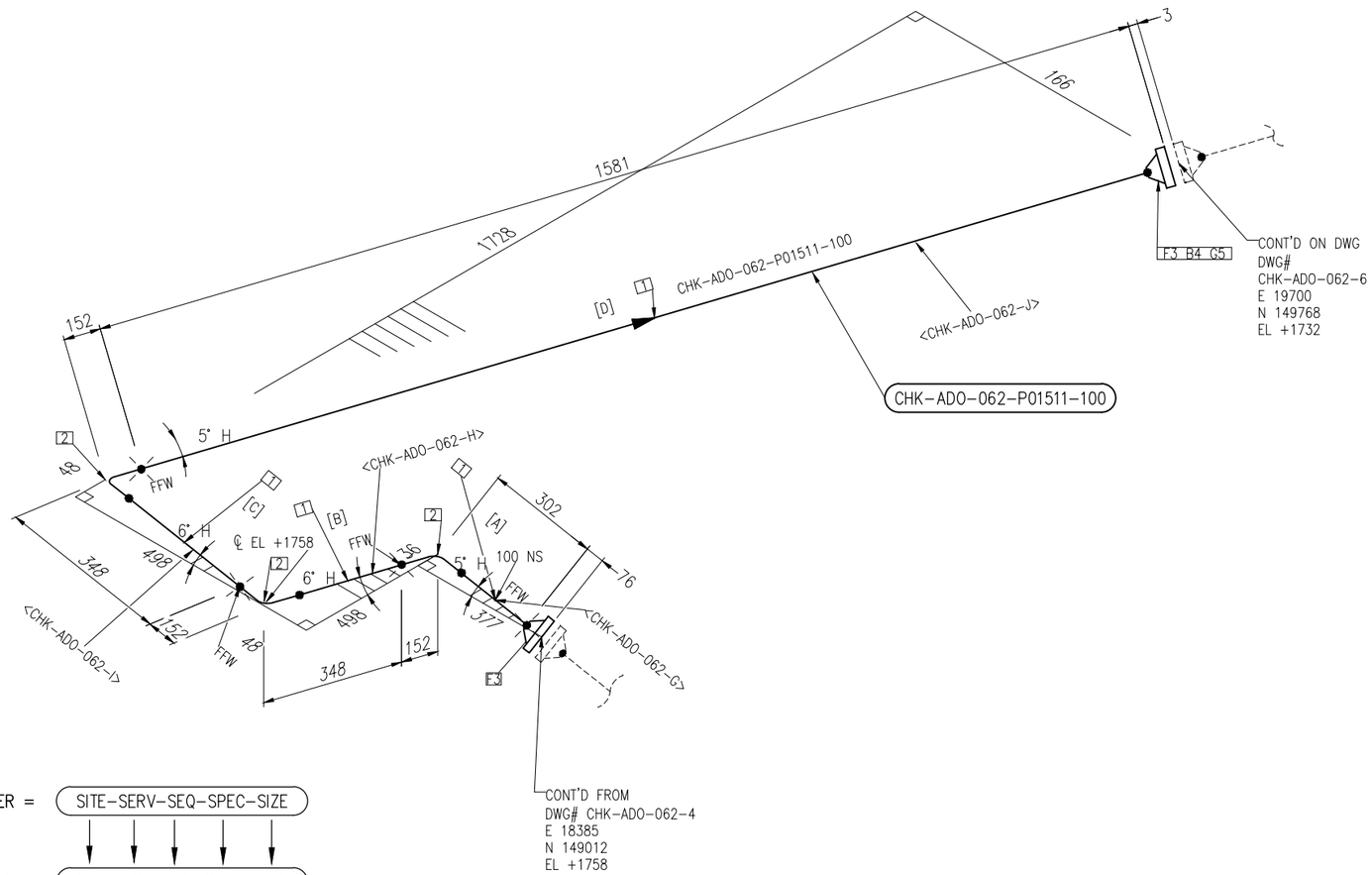
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-ADO-062-P01511-100
DRG NUMBER = CHK-ADO-062-05 — SHEET NUMBER
SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	2.7M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	3
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	2
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	8
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	301MM	100		BEVEL
B	346MM	100		BEVEL
C	346MM	100		BEVEL
D	1655MM	100		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD
AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-G TO J

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 05 OF 10
DRG No. CHK-ADO-062-05 REV. 1

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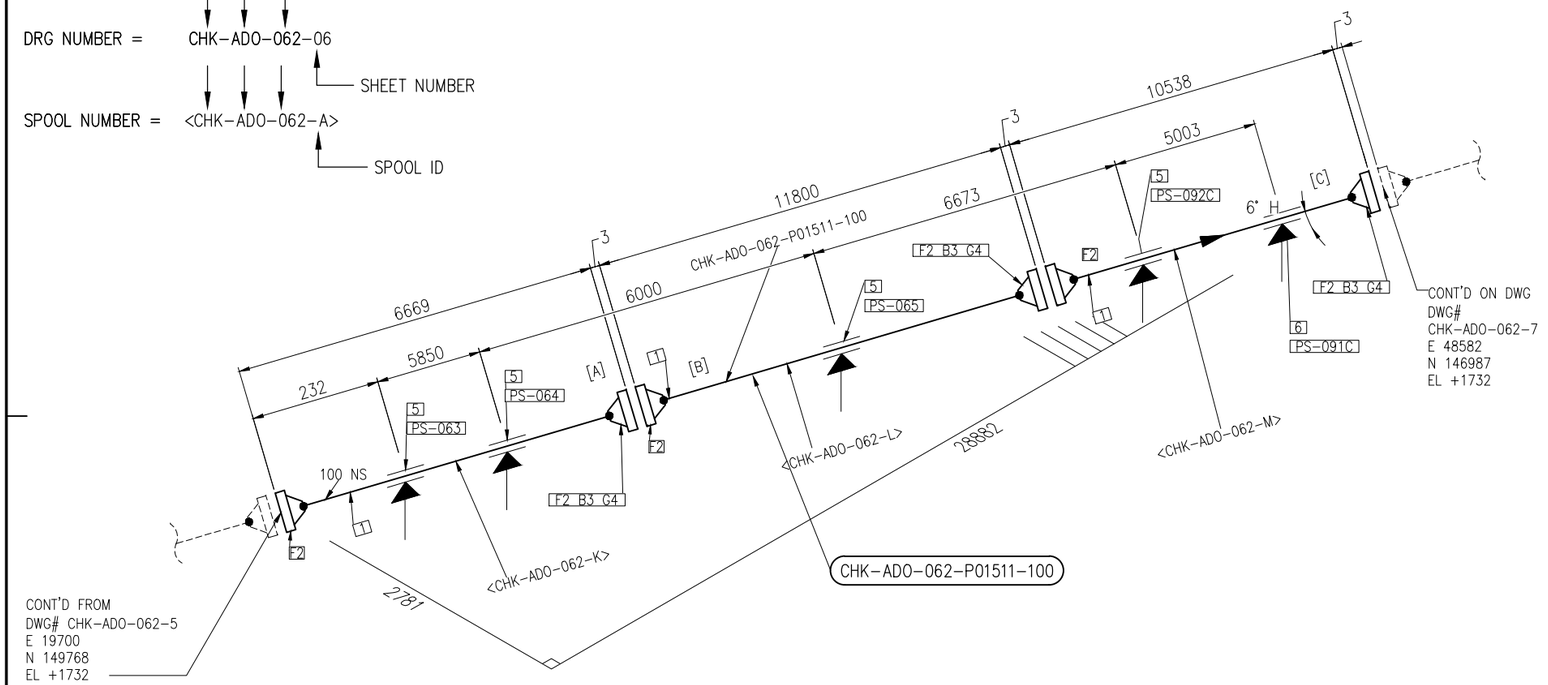
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-062-P01511-100

DRG NUMBER = CHK-ADO-062-06 ← SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-062-A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	28.6M
	FLANGES			
2	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	6
	FASTENERS			
3	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	24
4	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	3
	PIPE SUPPORTS			
5	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	4
6	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	100	U346203100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	6517MM	100	BEVEL	BEVEL
B	11648MM	100	BEVEL	BEVEL
C	10386MM	100	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. / CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-01
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-K TO M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 06 OF 10
DRG No. CHK-ADO-062-06 REV. 1

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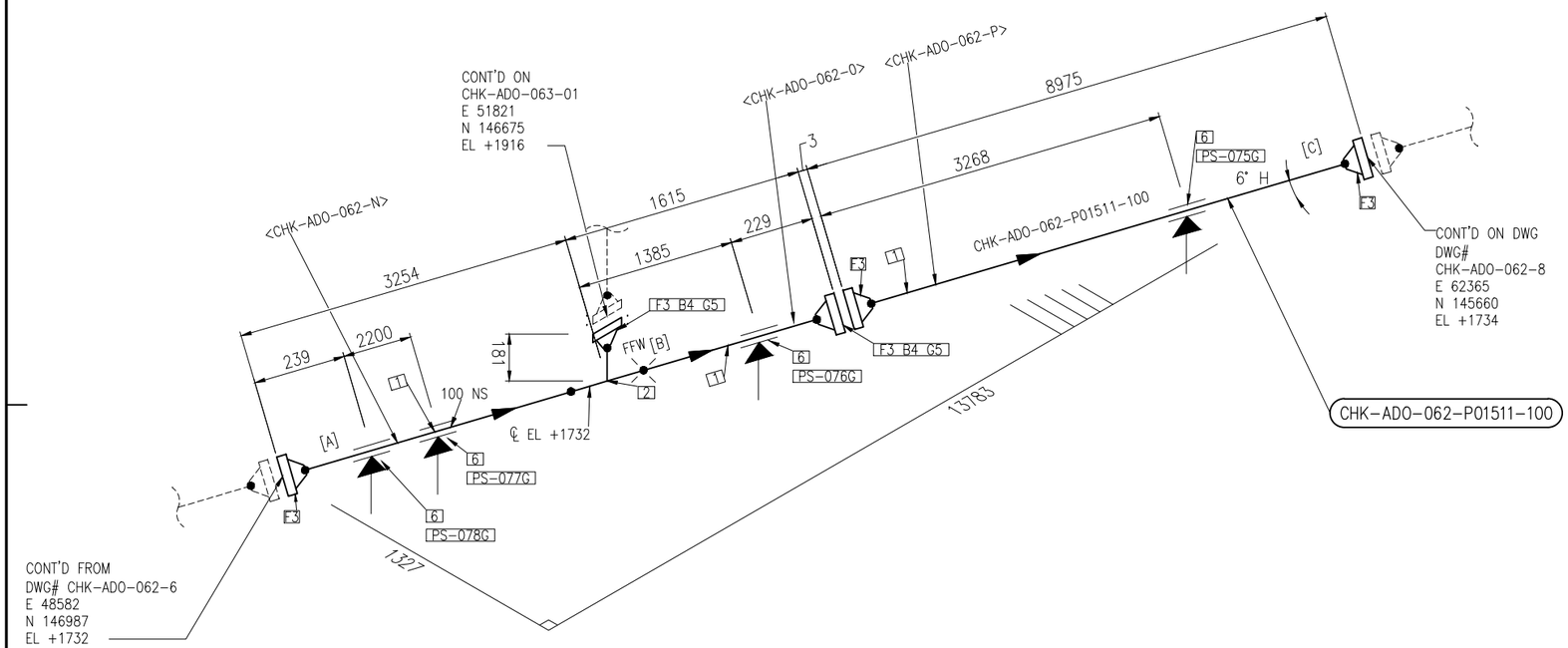
N

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-062-P01511-100

DRG NUMBER = CHK-ADO-062-07 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	13.5M
	FITTINGS			
2	TEE EQUAL BW SCH 40 A234 WPB	100	P03001D100	1
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	5
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	16
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	2
	PIPE SUPPORTS			
6	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	4

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	3073MM	100	BEVEL	BEVEL
B	1584MM	100	BEVEL	
C	8823MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-02
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-N TO 0

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 07 OF 10
DRG No. CHK-ADO-062-07 REV. 1

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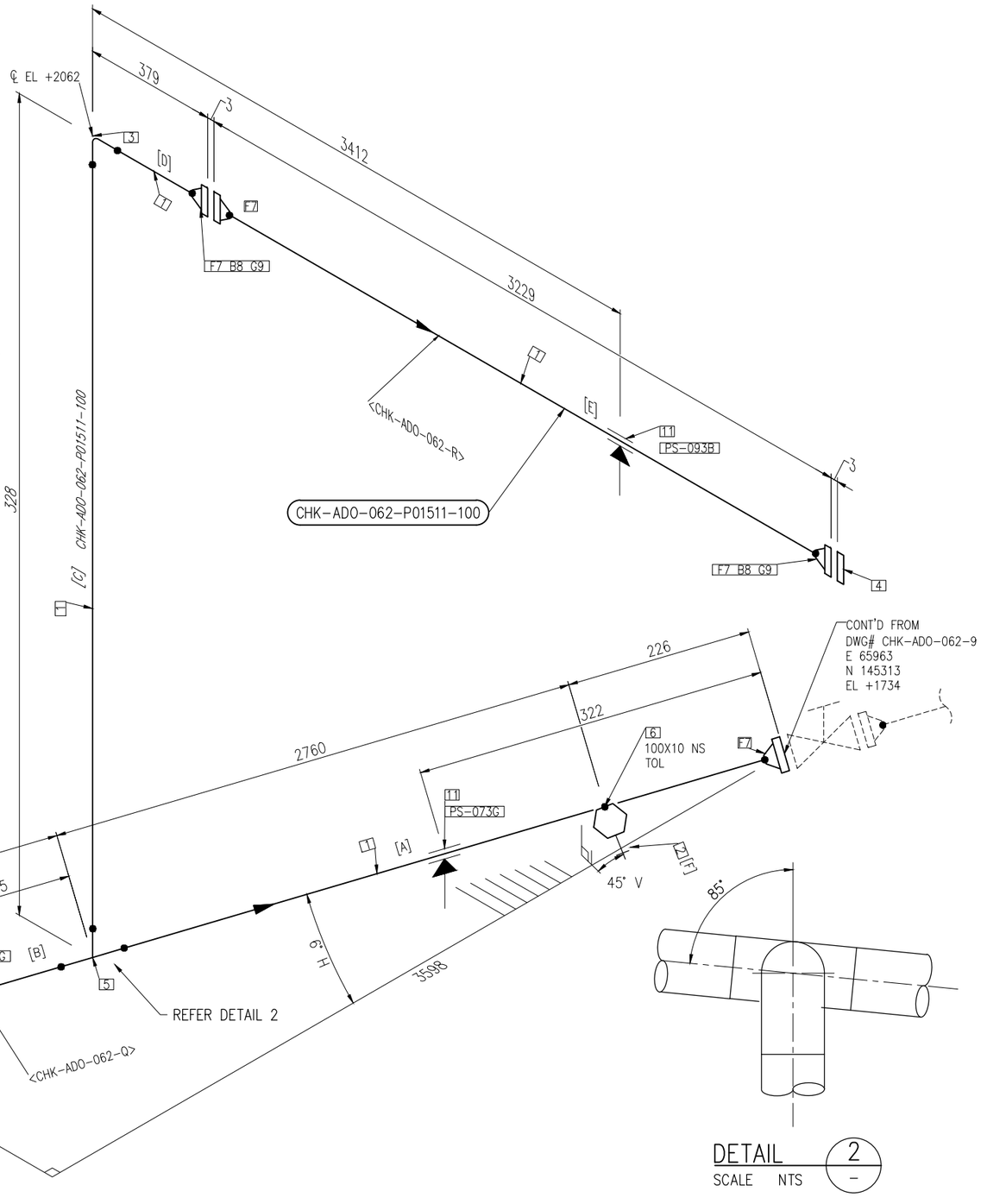
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-062-P01511-100

DRG NUMBER = CHK-ADO-062-08 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID



DETAIL 2
SCALE NTS –

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	6.6M
2	EARTH BOSS STUD (REFER DRG 000-50028-01)	10		0.1M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	1
4	FLANGE BLIND RF CL150 A105	100	P2610AX100	1
5	TEE EQUAL BW SCH 40 A234 WPB	100	P03001D100	1
	OLETS			
6	EARTH BOSS (REFER DRG STD-50028-01)	100X10	EB000000GE	1
	FLANGES			
7	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	5
	FASTENERS			
8	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	24
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	3
	PIPE SUPPORTS			
10	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	100	W146301100	1
11	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	2

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	2806MM	100	BEVEL	BEVEL
B	445MM	100	BEVEL	BEVEL
C	71MM	100	BEVEL	BEVEL
D	150MM	100	BEVEL	BEVEL
E	3077MM	100	BEVEL	BEVEL
F	40MM	10	SCREWED	SCREWED

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-P TO Q

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 08 OF 10
DRG No. CHK-ADO-062-08 REV. 1

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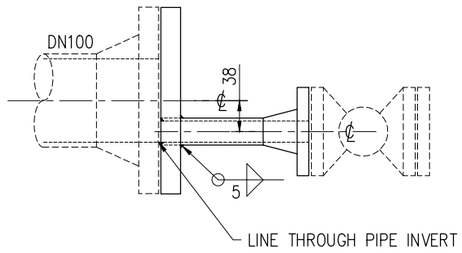
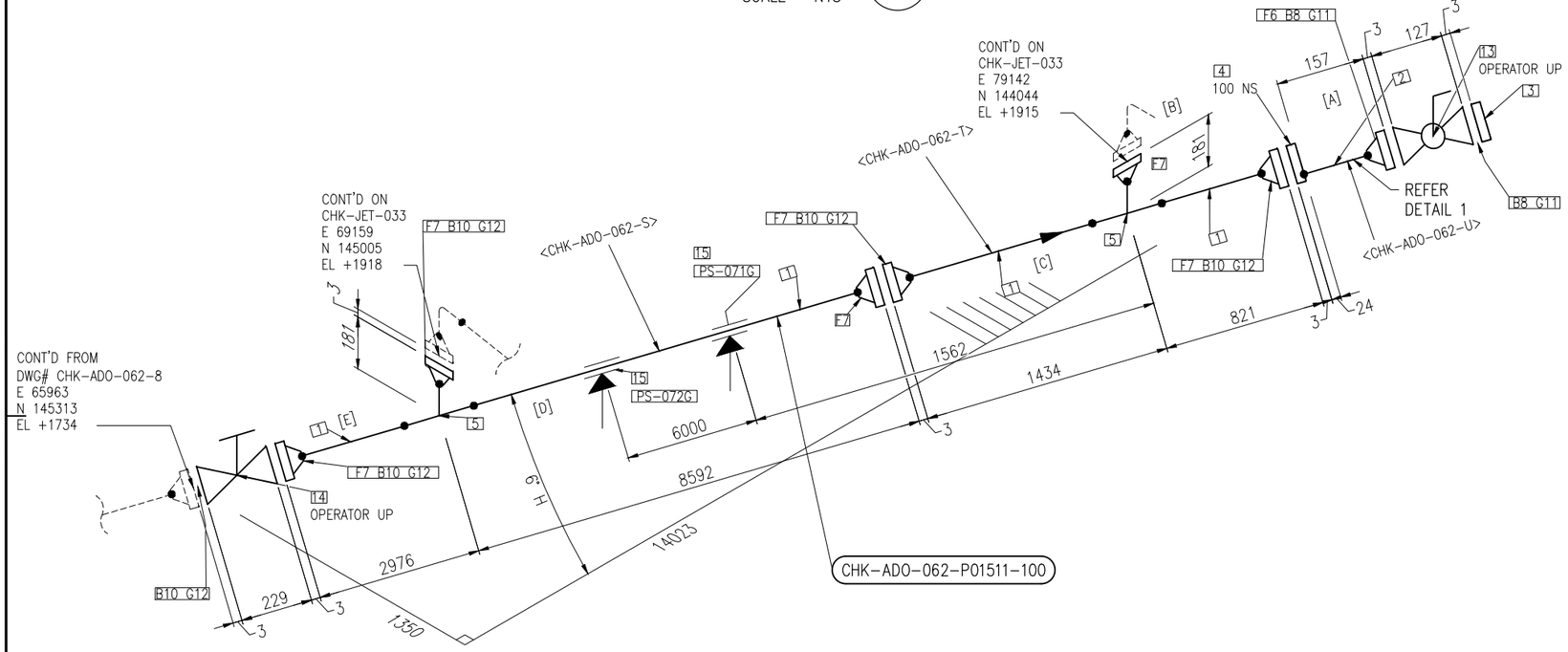
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



DETAIL 1
SCALE NTS –



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-ADO-062-P01511-100
DRG NUMBER = CHK-ADO-062-09 — SHEET NUMBER
SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	13.1M
2	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	1
	FITTINGS			
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
4	FLANGE BLIND RF CL150 A105	100	P2610AX100	1
5	TEE EQUAL BW SCH 40 A234 WPB	100	P03001D100	2
	FLANGES			
6	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
7	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	6
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
9				
10	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	40
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	5
	VALVES			
13	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
14	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
	PIPE SUPPORTS			
15	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	100MM	25	PL	PL
B	641MM	100	BEVEL	BEVEL
C	1253MM	100	BEVEL	BEVEL
D	8412MM	100	BEVEL	BEVEL
E	2796MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL
PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-S TO U

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-062-P01511-100
SHEET No. 09 OF 10
DRG No. CHK-ADO-062-09 REV. 1

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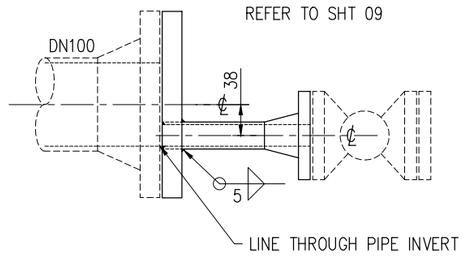
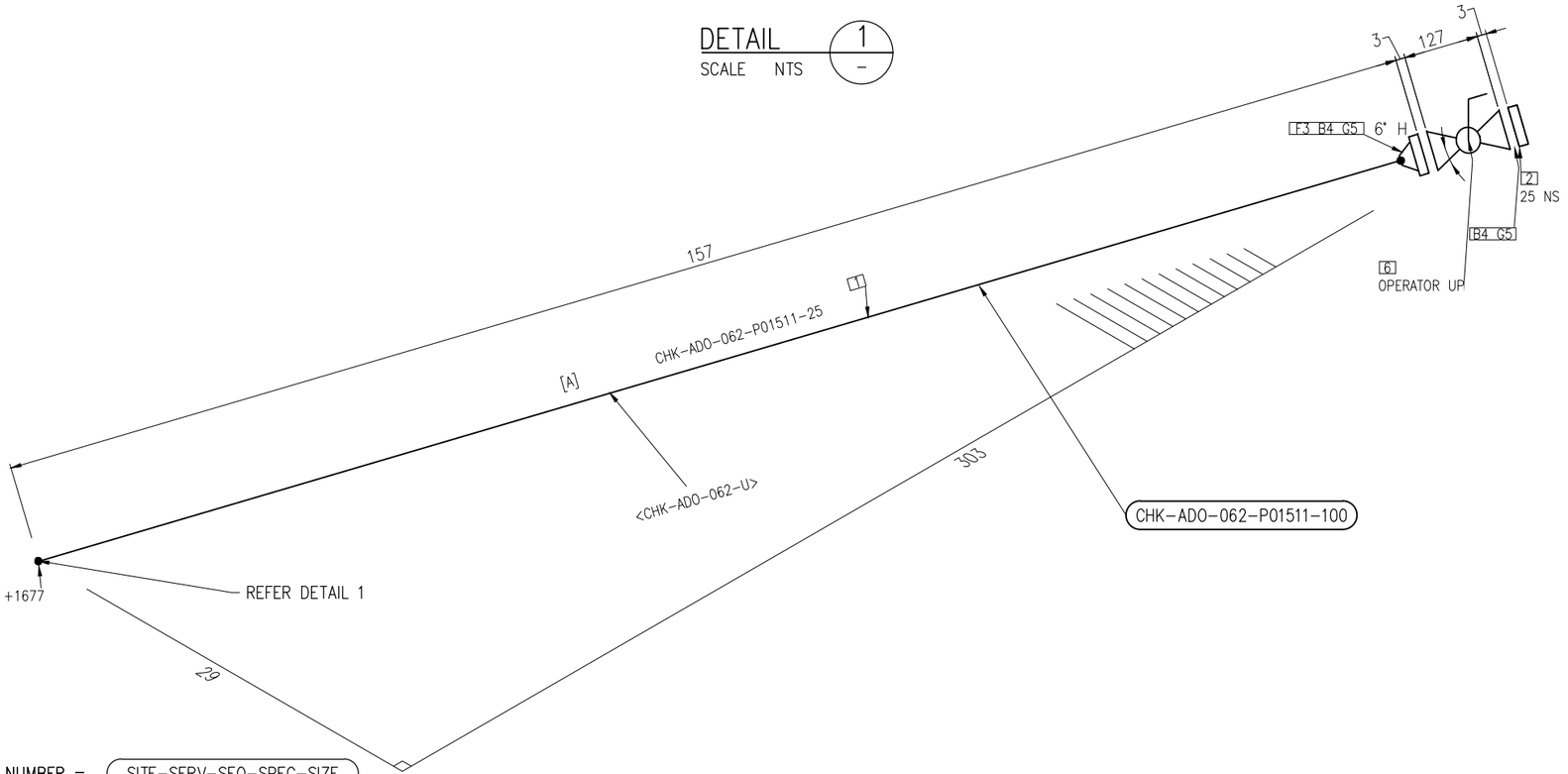
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



DETAIL 1
SCALE NTS –



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-ADO-062-P01511-100
DRG NUMBER = CHK-ADO-062-10 — SHEET NUMBER
SPOOL NUMBER = <CHK-ADO-062-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	1
	FITTINGS			
2	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
	FLANGES			
3	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
	VALVES			
6	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-062-T

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-ADO-062-P01511-100
CHKD	M.WEST	06/22	SHEET No. 10 OF 10
APPD	·	06/22	DRG No. CHK-ADO-062-10 REV. 1
APPD	W.DOUGAN	06/22	

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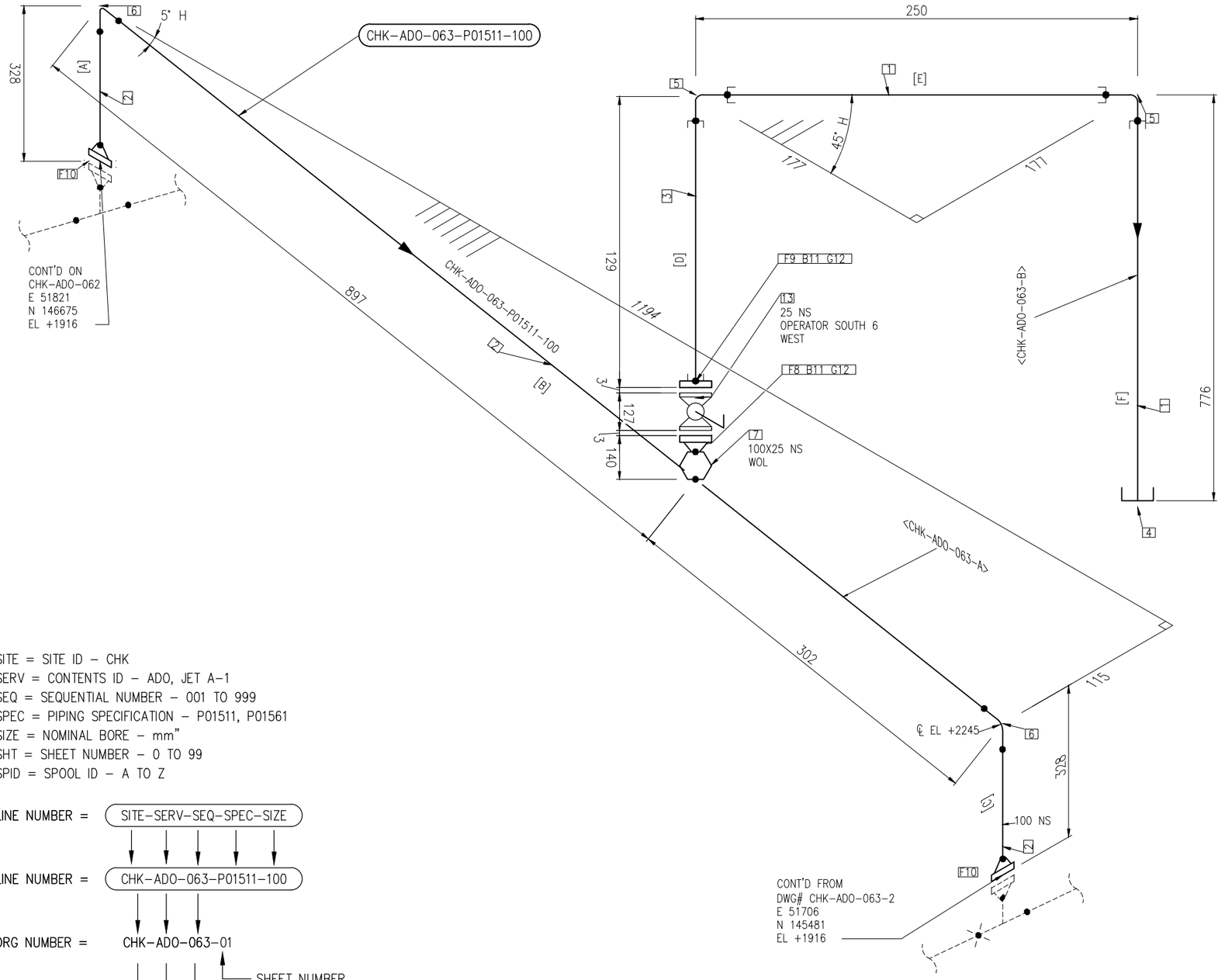

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.0M
2	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	1.1M
3	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	1
	FITTINGS			
4	CAP SCRD NPT CL3000 A105	25	P450713025	1
5	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
6	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	2
	OLETS			
7	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	1
	FLANGES			
8	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
9	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	1
10	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	2
	FASTENERS			
11	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
	VALVES			
13	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	100MM	100	BEVEL	BEVEL
B	895MM	100	BEVEL	BEVEL
C	100MM	100	BEVEL	BEVEL
D	102MM	25	PL	PL
E	206MM	25	SQUARE CUT	SQUARE CUT
F	713MM	25	SCREWED	SQUARE CUT

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-063-P01511-100

DRG NUMBER = CHK-ADO-063-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-063-A> — SPOOL ID

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-063-A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-063-P01511-100
SHEET No. 01 OF 03
DRG No. CHK-ADO-063-01 REV. 1

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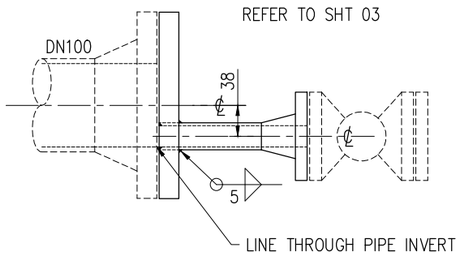
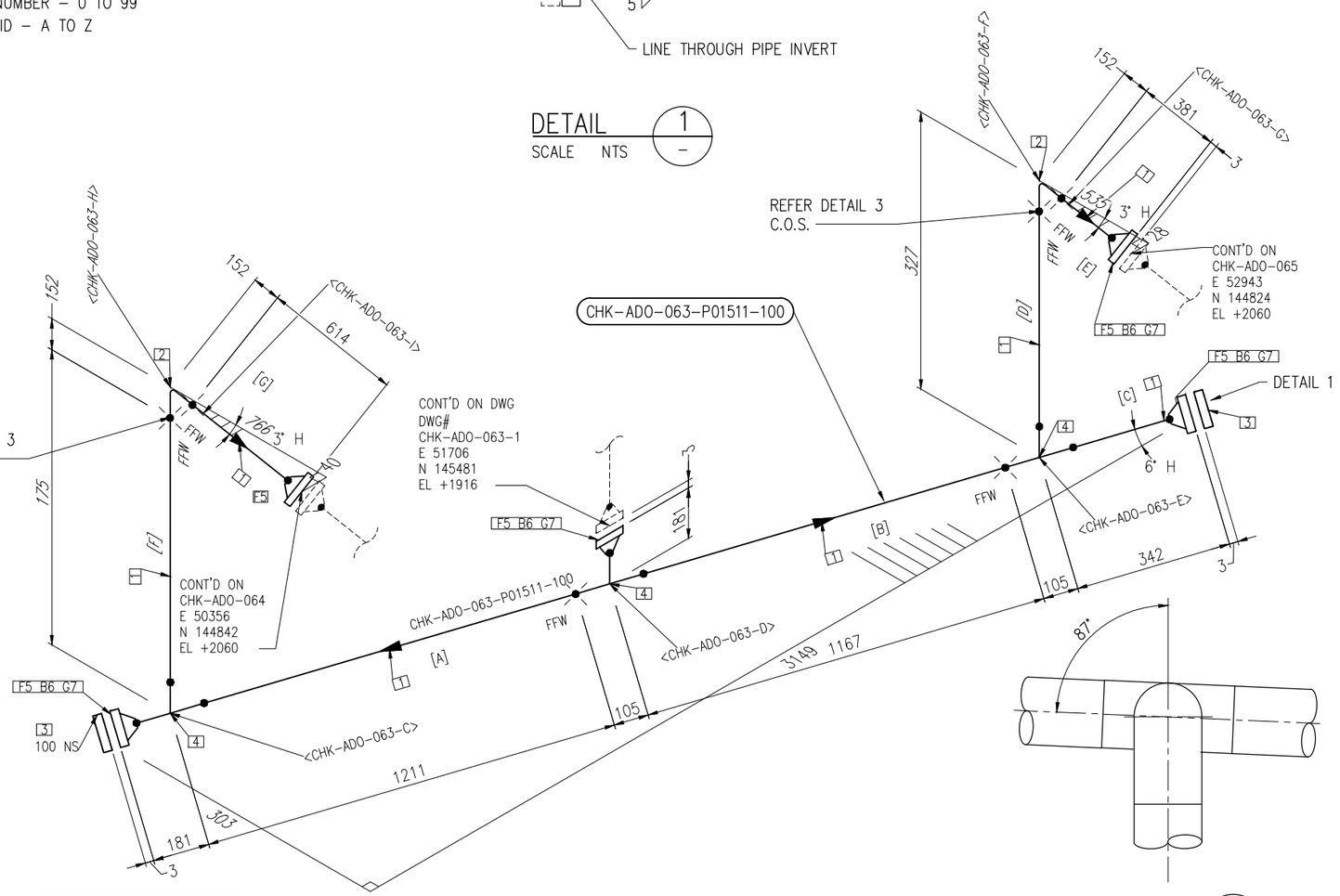
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



DETAIL 1 – SCALE NTS



DETAIL 3 – SCALE NTS

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-ADO-063-P01511-100
DRG NUMBER = CHK-ADO-063-02 — SHEET NUMBER
SPOOL NUMBER = <CHK-ADO-063-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	100	P01201D100	4.3M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	2
3	FLANGE BLIND RF CL150 A105	100	P2610AX100	2
4	TEE EQUAL BW SCH 40 A234 WPB	100	P03001D100	3
	FLANGES			
5	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	5
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	32
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	4

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1257MM	100	BEVEL	
B	1212MM	100	BEVEL	
C	162MM	100	BEVEL	BEVEL
D	221MM	100	BEVEL	
E	455MM	100		BEVEL
F	221MM	100	BEVEL	
G	688MM	100		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-063-C TO I

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-063-P01511-100
SHEET No. 02 OF 03
DRG No. CHK-ADO-063-02 REV. 1

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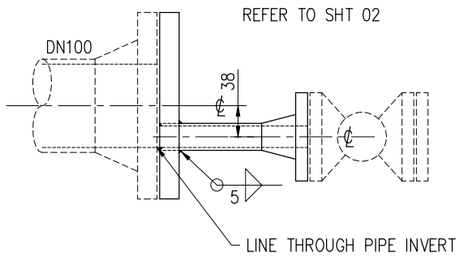
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

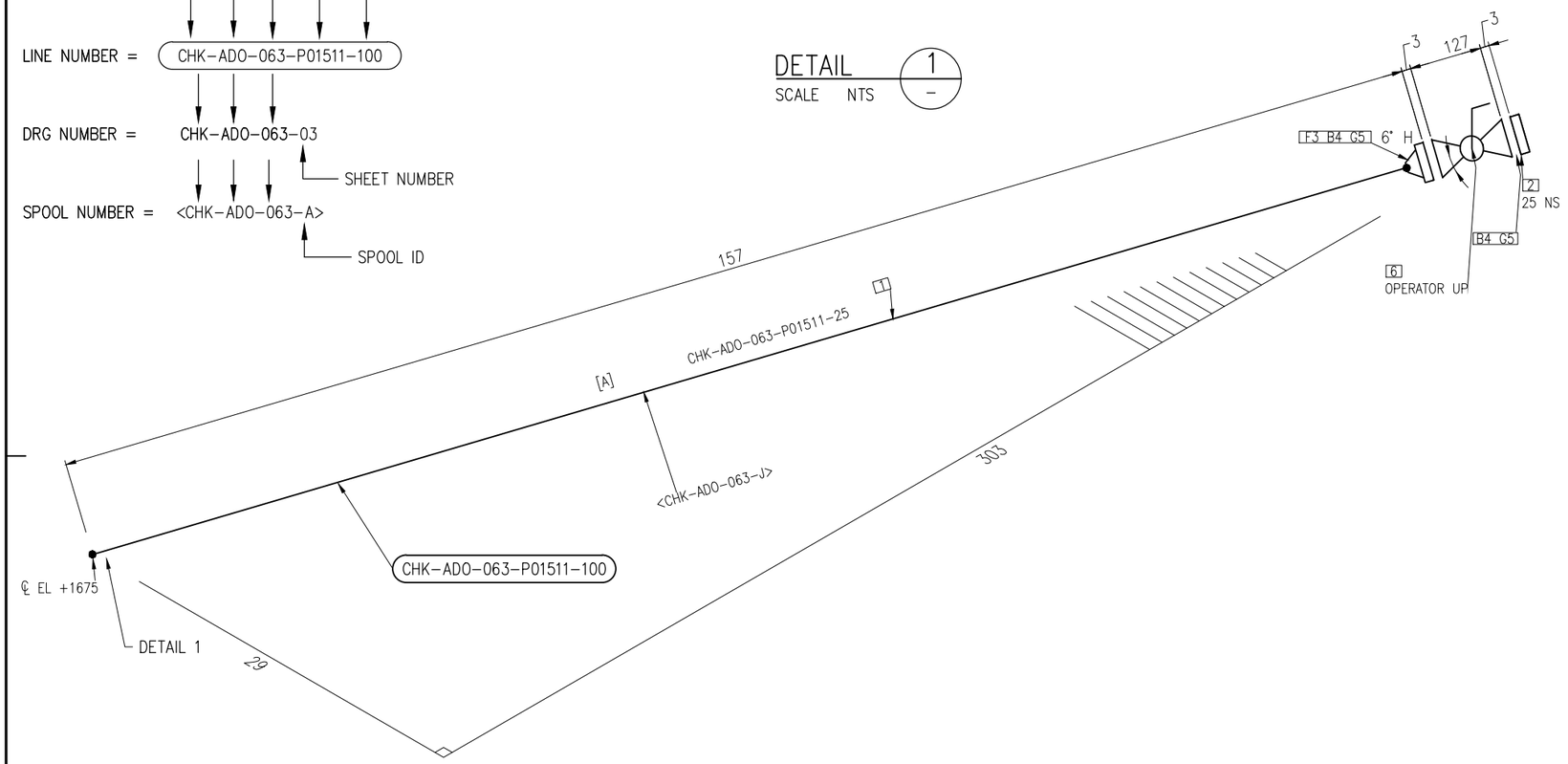
LINE NUMBER = CHK–ADO–063–P01511–100

DRG NUMBER = CHK–ADO–063–03 — SHEET NUMBER

SPOOL NUMBER = <CHK–ADO–063–A> — SPOOL ID



DETAIL 1 SCALE NTS



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	1
	FITTINGS			
2	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
	FLANGES			
3	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
5	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
	VALVES			
6	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–03
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ADO–063–J

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ADO–063–P01511–100
SHEET No. 03 OF 03
DRG No. CHK–ADO–063–03 REV. 1

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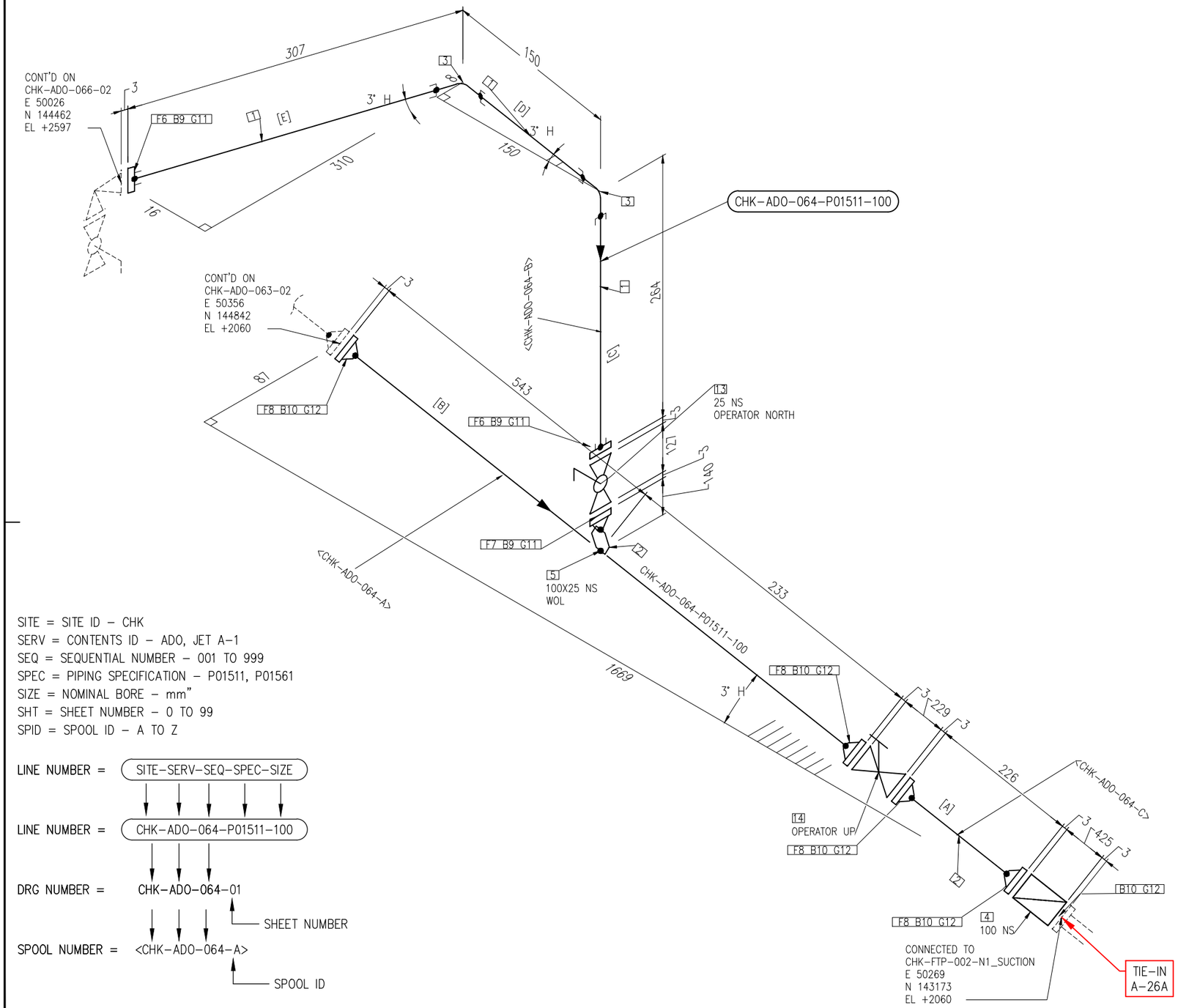

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-064-P01511-100

DRG NUMBER = CHK-ADO-064-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-064-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	0.7M
2	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	0.7M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
4	BASKET STRAINER CL150 RF CS c/w DRAIN VALVE & PLUG CHK-ST-002	100	STRB0CS100	1
	OLETS			
5	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	1
	FLANGES			
6	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
7	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
8	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	4
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
10	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	40
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	5
	VALVES			
13	VALVE BALL RB RF CL150 VB01121	25	VB01121025	1
14	VALVE GATE RF CL150 CS VG01121	100	VG01121100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	74MM	100	BEVEL	BEVEL
B	624MM	100	BEVEL	BEVEL
C	238MM	25	SQUARE CUT	SQUARE CUT
D	106MM	25	SQUARE CUT	SQUARE CUT
E	281MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

DRAWING REVISIONS

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-064-A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-064-P01511-100
SHEET No. 01 OF 01
DRG No. CHK-ADO-064-01 REV. 1

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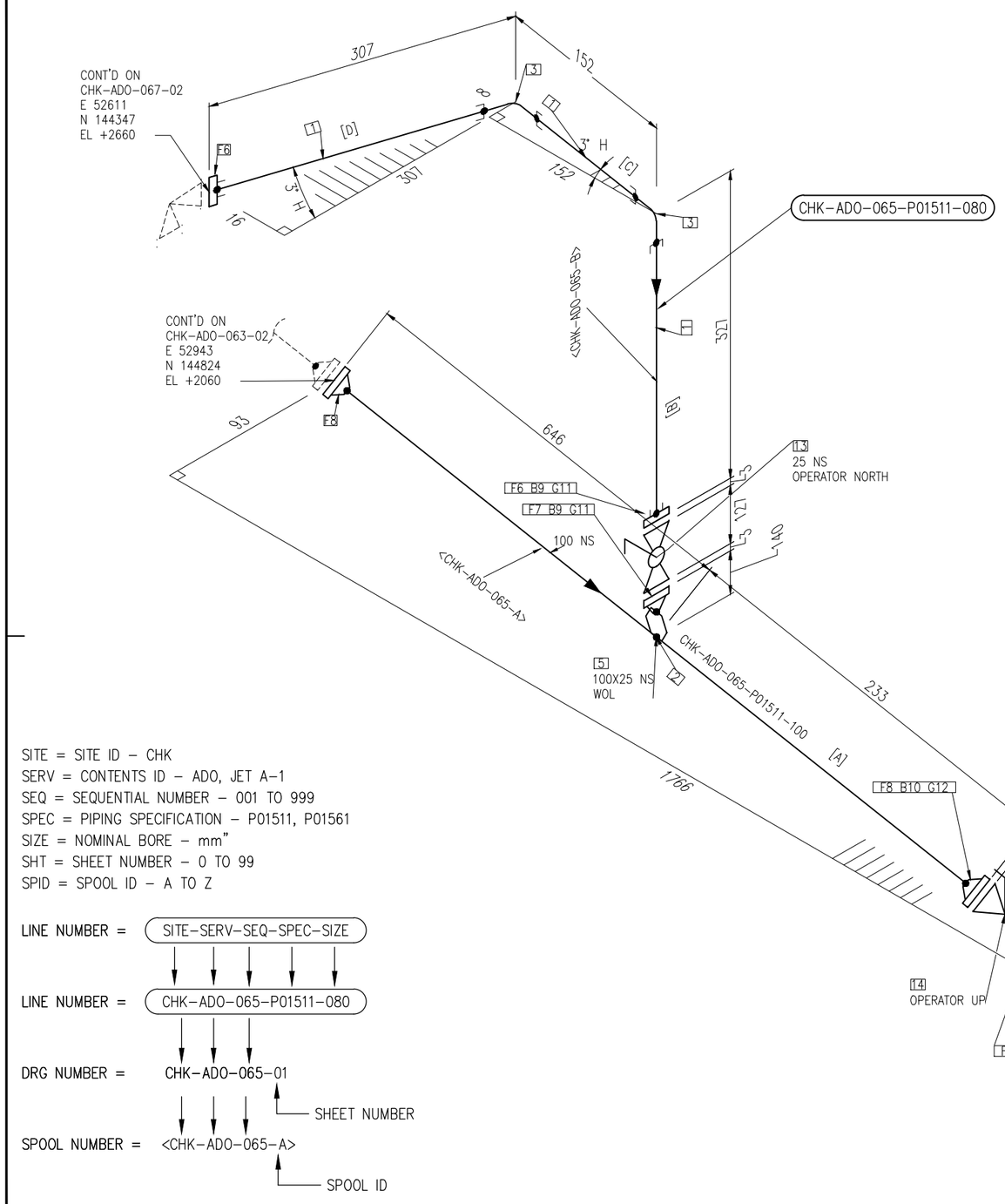

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-065-P01511-080

DRG NUMBER = CHK-ADO-065-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-065-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	0.7M
2	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	0.8M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
4	BASKET STRAINER CL150 RF CS c/w DRAIN VALVE & PLUG	100	STRB0CS100	1
	OLETS			
5	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	1
	FLANGES			
6	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
7	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
8	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	4
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
10	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	32
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	4
	VALVES			
13	VALVE BALL RB RF CL150 VB01121	25	VB01121025	1
14	VALVE GATE RF CL150 CS VG01121	100	VG01121100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	727MM	100	BEVEL	BEVEL
B	301MM	25	SQUARE CUT	SQUARE CUT
C	108MM	25	SQUARE CUT	SQUARE CUT
D	281MM	25	SQUARE CUT	SQUARE CUT
E	72MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-065-A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-065-P01511-080
SHEET No. 01 OF 01
DRG No. CHK-ADO-065-01 REV. 1

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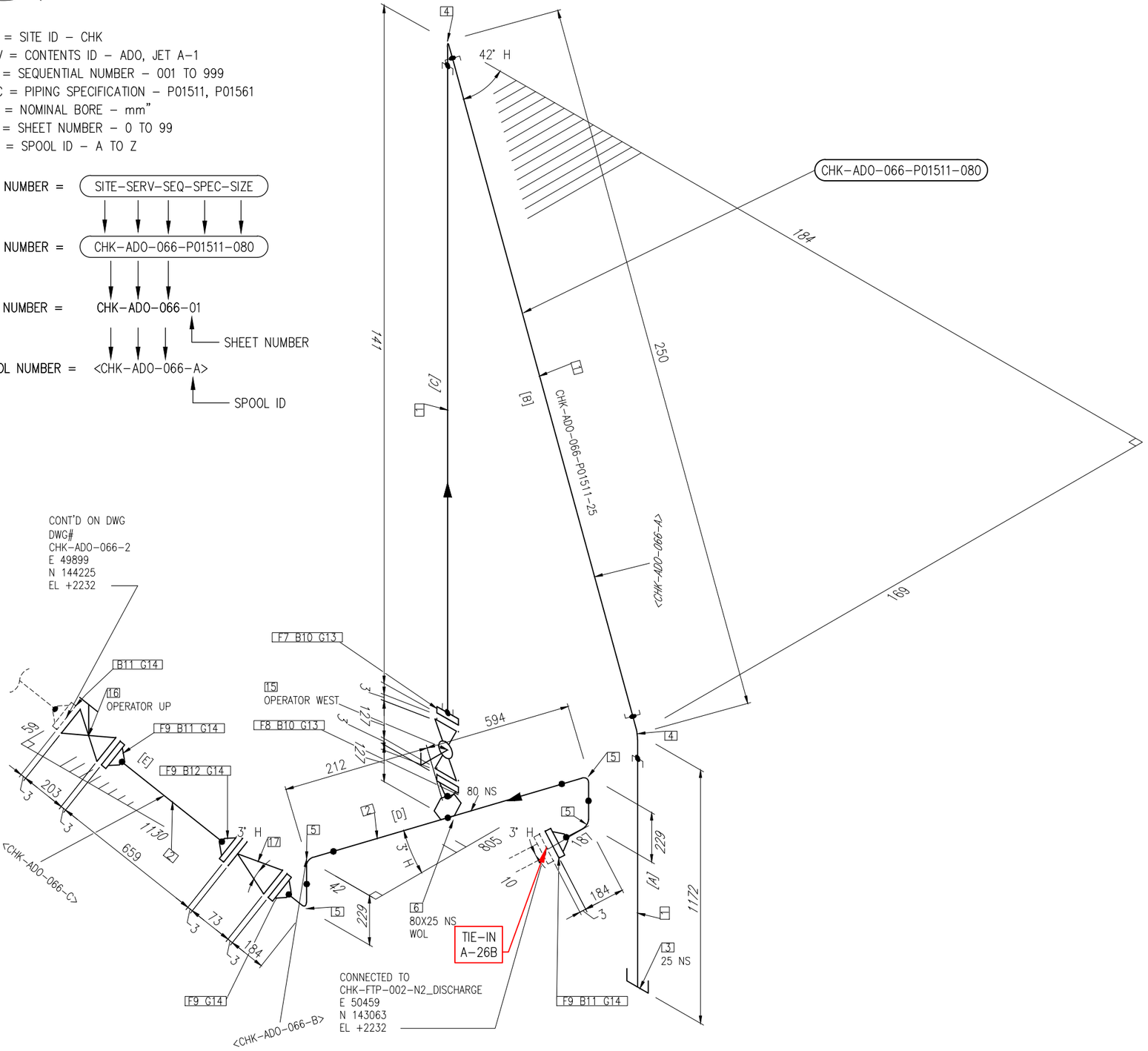
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ADO–066–P01511–080

DRG NUMBER = CHK–ADO–066–01 ← SHEET NUMBER

SPOOL NUMBER = <CHK–ADO–066–A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.5M
2	PIPE SMLS SCH 40 A106 B FL	80	P01201D080	1.1M
	FITTINGS			
3	CAP SCRD NPT CL3000 A105	25	P450713025	1
4	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
5	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	4
	OLETS			
6	WELDOLET SCH 40X80 A105N	80X25	P50001DFFC	1
	FLANGES			
7	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	1
8	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
9	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	4
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
11	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	12
12	STUDBOLT 5/8" UNC X180 B7/2H SPUN GALV	16X180	P902105180	4
13	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
14	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	5
	VALVES			
15	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
16	VALVE GATE RF CL150 CS VG01121	80	VG01121080	1
17	VALVE CHECK WAFER RF CL150 VC01124	80	VC01124080	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1109MM	25	SCREWED	SQUARE CUT
B	206MM	25	SQUARE CUT	SQUARE CUT
C	115MM	25	SQUARE CUT	SQUARE CUT
D	578MM	80	BEVEL	BEVEL
E	520MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS NO.	NA.		
PIPING PLAN	12732–SK–PM–502–03		
P&ID	12732–SK–P&ID–002–01		

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ADO–066–A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ADO–066–P01511–080
SHEET No. 01 OF 02
DRG No. CHK–ADO–066–01 REV. 1

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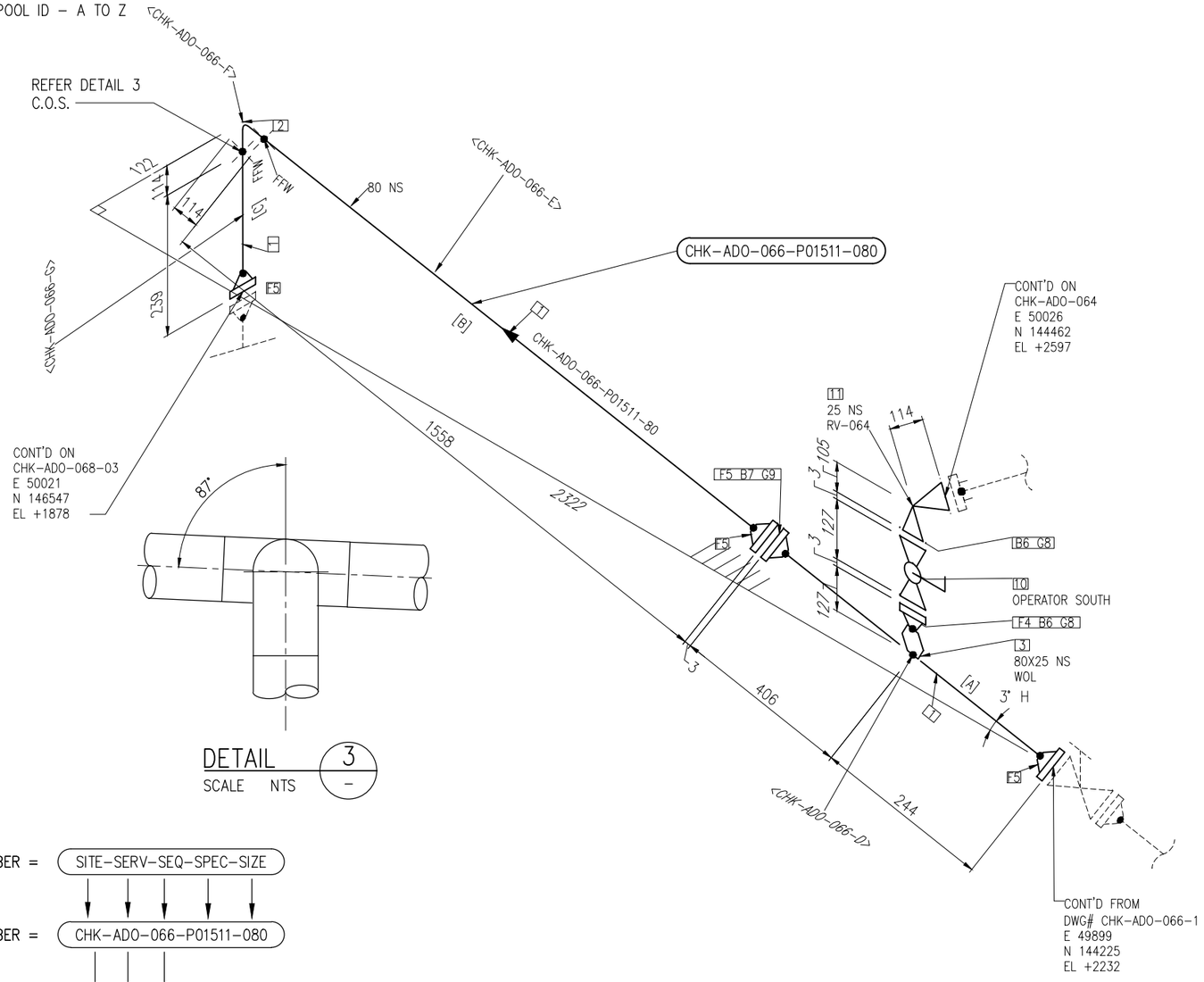
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



DETAIL 3
SCALE NTS –

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-ADO-066-P01511-080
DRG NUMBER = CHK-ADO-066-02 — SHEET NUMBER
SPOOL NUMBER = <CHK-ADO-066-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	2.5M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
	OLETS			
3	WELDOLET SCH 40X80 A105N	80X25	P50001DFFC	1
	FLANGES			
4	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
5	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	4
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
7	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	4
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	1
	VALVES			
10	VALVE BALL RB RF CL150 VB01121	25	VB01121025	1
11	VALVE RELIEF RF CL150 CHK-RV-064	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	511MM	80	BEVEL	BEVEL
B	1639MM	80	BEVEL	
C	320MM	80		BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

DRAWING REVISIONS

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-XX
P&ID	12732-SK-P&ID-002-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-066-E TO H

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-066-P01511-080
SHEET No. 02 OF 02
DRG No. CHK-ADO-066-02 REV. 1

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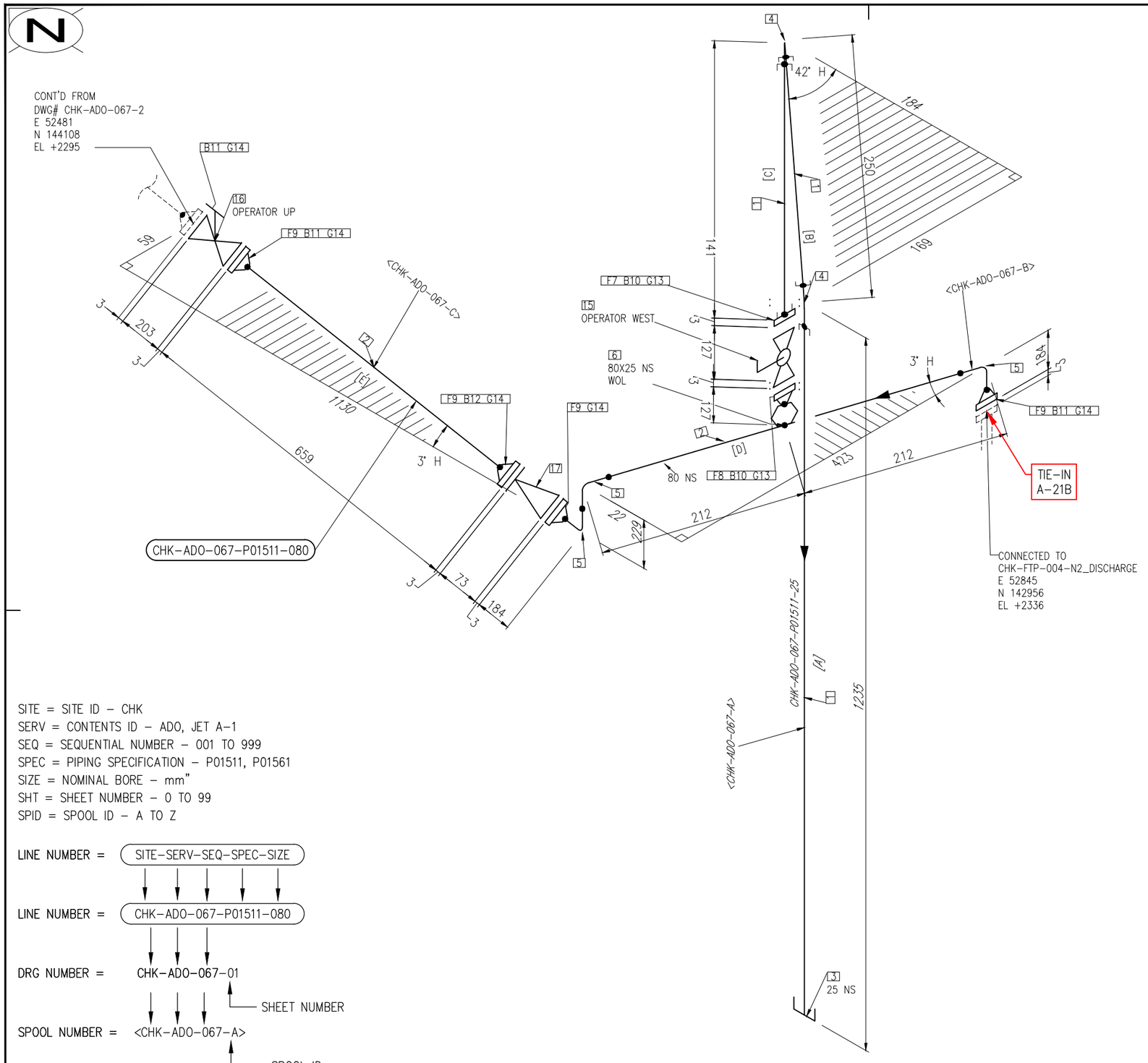

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-067-P01511-080

DRG NUMBER = CHK-ADO-067-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-067-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.5M
2	PIPE SMLS SCH 40 A106 B	80	P01201D080	0.8M
	FITTINGS			
3	CAP SCRD NPT CL3000 A105	25	P450713025	1
4	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
5	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	3
	OLETS			
6	WELDOLET SCH 40X80 A105N	80X25	P50001DFFC	1
	FLANGES			
7	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	1
8	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
9	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	4
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
11	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	12
12	STUDBOLT 5/8" UNC X180 B7/2H SPUN GALV	16X180	P902105180	4
13	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
14	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	5
	VALVES			
15	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
16	VALVE GATE RF CL150 CS VG01121	80	VG01121080	1
17	VALVE CHECK WAFER RF CL150 VC01124	80	VC01124080	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1172MM	25	SCREWED	SQUARE CUT
B	206MM	25	SQUARE CUT	SQUARE CUT
C	115MM	25	SQUARE CUT	SQUARE CUT
D	196MM	80	BEVEL	BEVEL
E	520MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-067-A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

UNE No. CHK-ADO-067-P01511-080
SHEET No. 01 OF 02
DRG No. CHK-ADO-067-01 REV. 1

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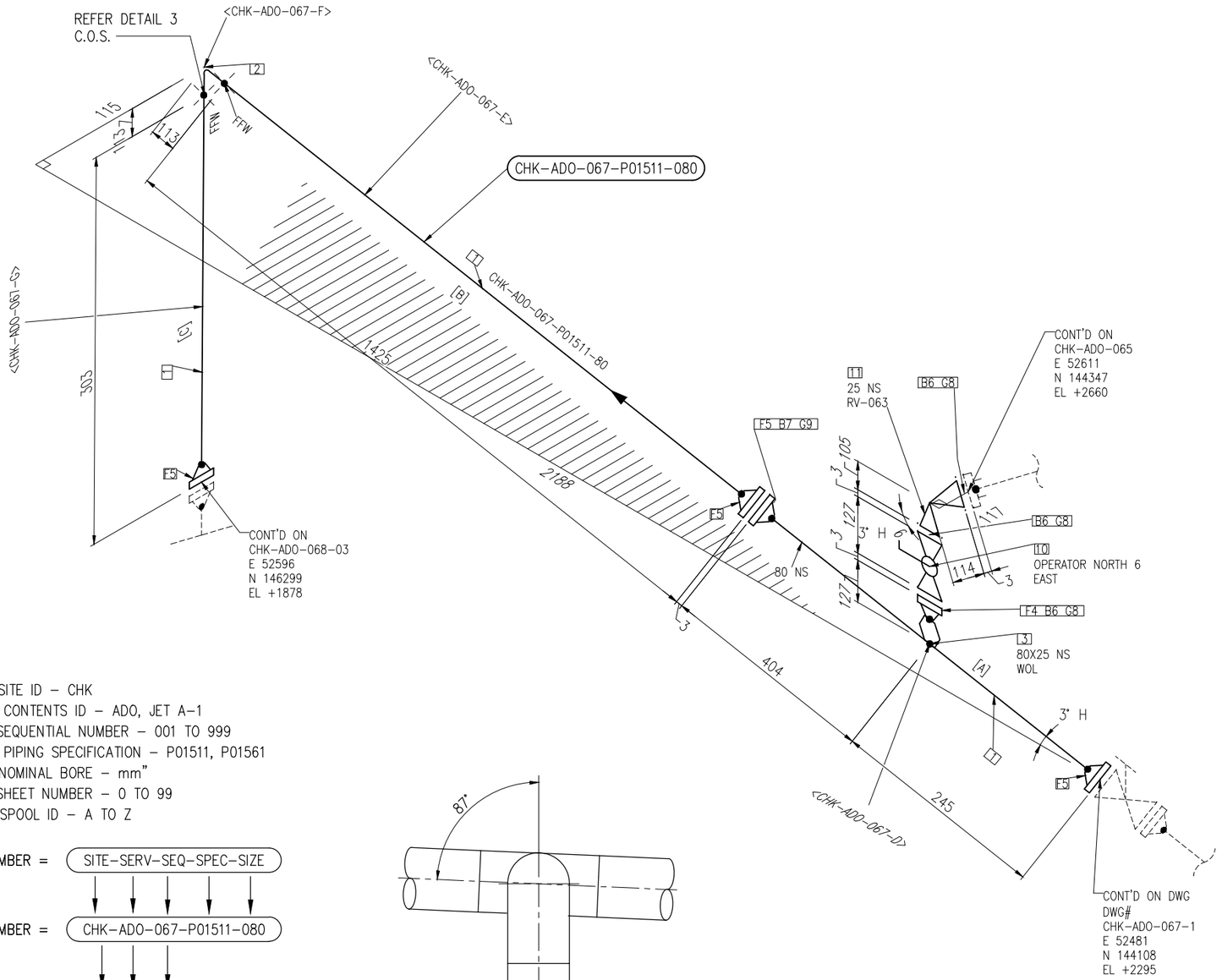


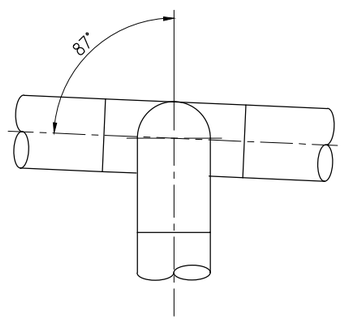
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-067-P01511-080

DRG NUMBER = CHK-ADO-067-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-067-A> — SPOOL ID



DETAIL 3
SCALE NTS

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	2.4M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
	OLETS			
3	WELDOLET SCH 40X80 A105N	80X25	P50001DFFC	1
	FLANGES			
4	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
5	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	4
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
7	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	4
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	1
	VALVES			
10	VALVE BALL RB RF CL150 VB01121	25	VB01121025	1
11	VALVE RELIEF RF CL150 CHK-RV-063	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	511MM	80	BEVEL	BEVEL
B	1506MM	80		BEVEL
C	384MM	80	BEVEL	

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD
AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-067-E TO H

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-067-P01511-080
SHEET No. 02 OF 02
DRG No. CHK-ADO-067-02 REV. 1

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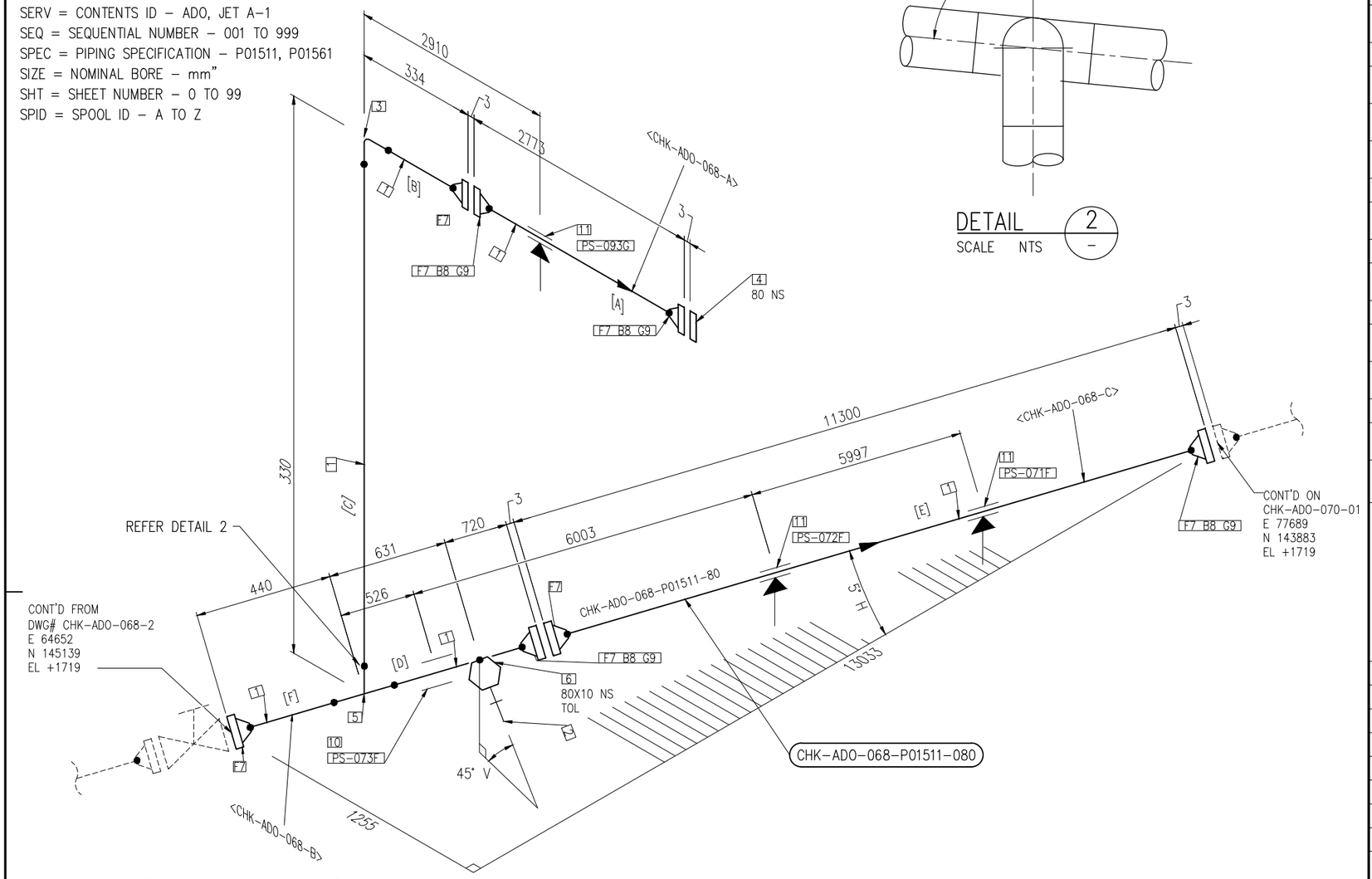
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ADO–068–P01511–080

DRG NUMBER = CHK–ADO–068–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–ADO–068–A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	15.6M
2	EARTH BOSS STUD (REFER DRG 000–50028–01)	10		0.1M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
4	FLANGE BLIND RF CL150 A105	80	P2610AX080	1
5	TEE EQUAL BW SCH 40 A234 WPB	80	P03001D080	1
	OLETS			
6	EARTH BOSS (REFER DRG STD–50028–01)	80X10	EB000000FE	1
	FLANGES			
7	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	7
	FASTENERS			
8	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	16
9	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	4
	PIPE SUPPORTS			
10	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	80	W146301080	1
11	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	80	U446204080	3

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	2633MM	80	BEVEL	BEVEL
B	150MM	80	BEVEL	BEVEL
C	130MM	80	BEVEL	BEVEL
D	1196MM	80	BEVEL	BEVEL
E	11661MM	80	BEVEL	BEVEL
F	285MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

DRAWING REVISIONS

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732–SK–PM–502–03
P&ID	12732–SK–P&ID–002–01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ADO–068–A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ADO–068–P01511–080
SHEET No. 01 OF 03
DRG No. CHK–ADO–068–01 REV. 1

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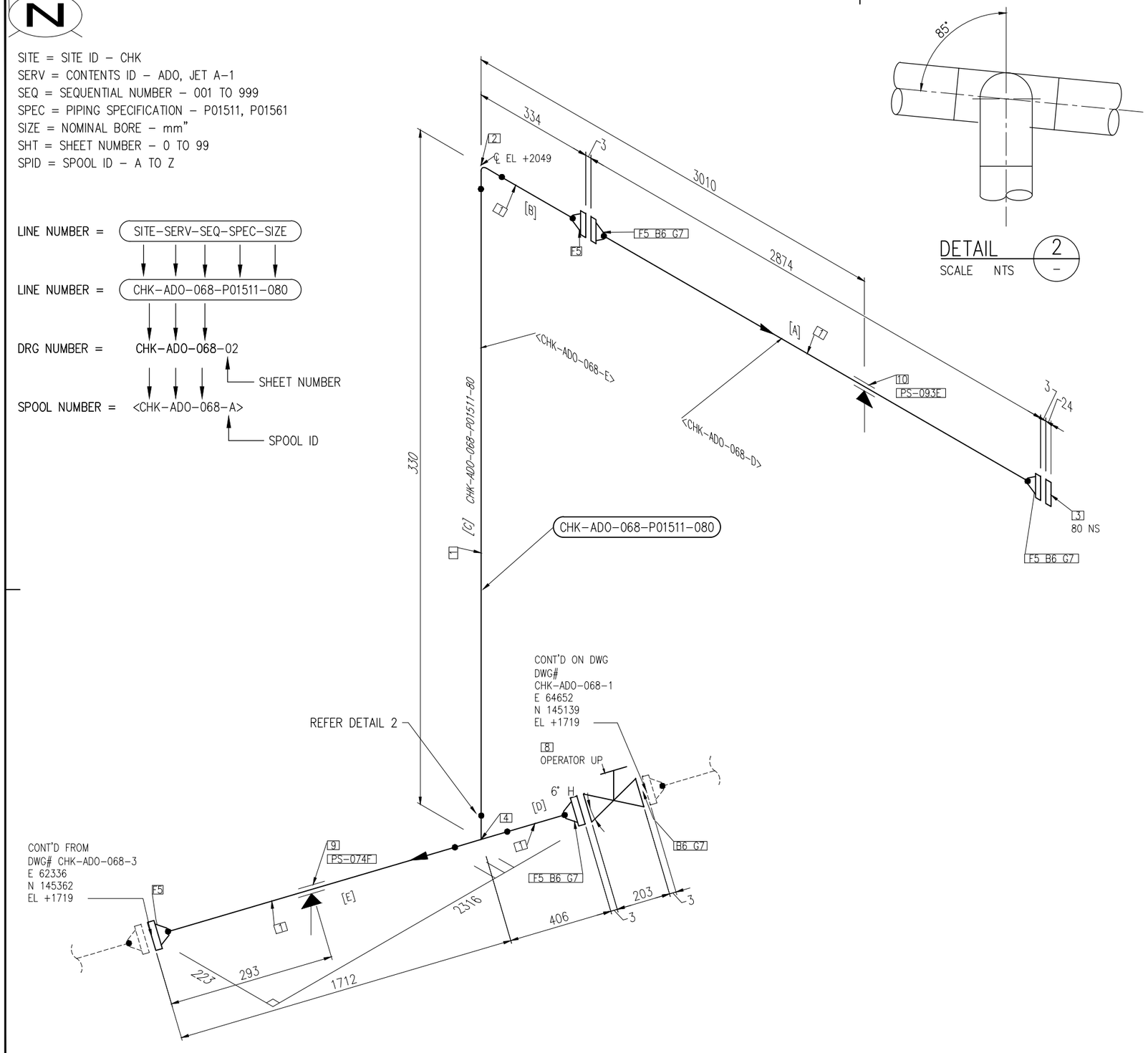
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ADO-068-P01511-080

DRG NUMBER = CHK-ADO-068-02 ← SHEET NUMBER

SPOOL NUMBER = <CHK-ADO-068-A> ← SPOOL ID



DETAIL 2 / – SCALE NTS

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	80	P01201D080	4.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
3	FLANGE BLIND RF CL150 A105	80	P2610AX080	1
4	TEE EQUAL BW SCH 40 A234 WPB	80	P03001D080	1
	FLANGES			
5	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	5
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	16
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	4
	VALVES			
8	VALVE GATE RF CL150 CS VG01121	80	VG01121080	1
	PIPE SUPPORTS			
9	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	80	U346203080	1
10	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	80	U446204080	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	2734MM	80	BEVEL	BEVEL
B	150MM	80	BEVEL	BEVEL
C	130MM	80	BEVEL	BEVEL
D	250MM	80	BEVEL	BEVEL
E	1557MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-068-D TO E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-068-P01511-080
SHEET No. 02 OF 03
DRG No. CHK-ADO-068-02 REV. 1

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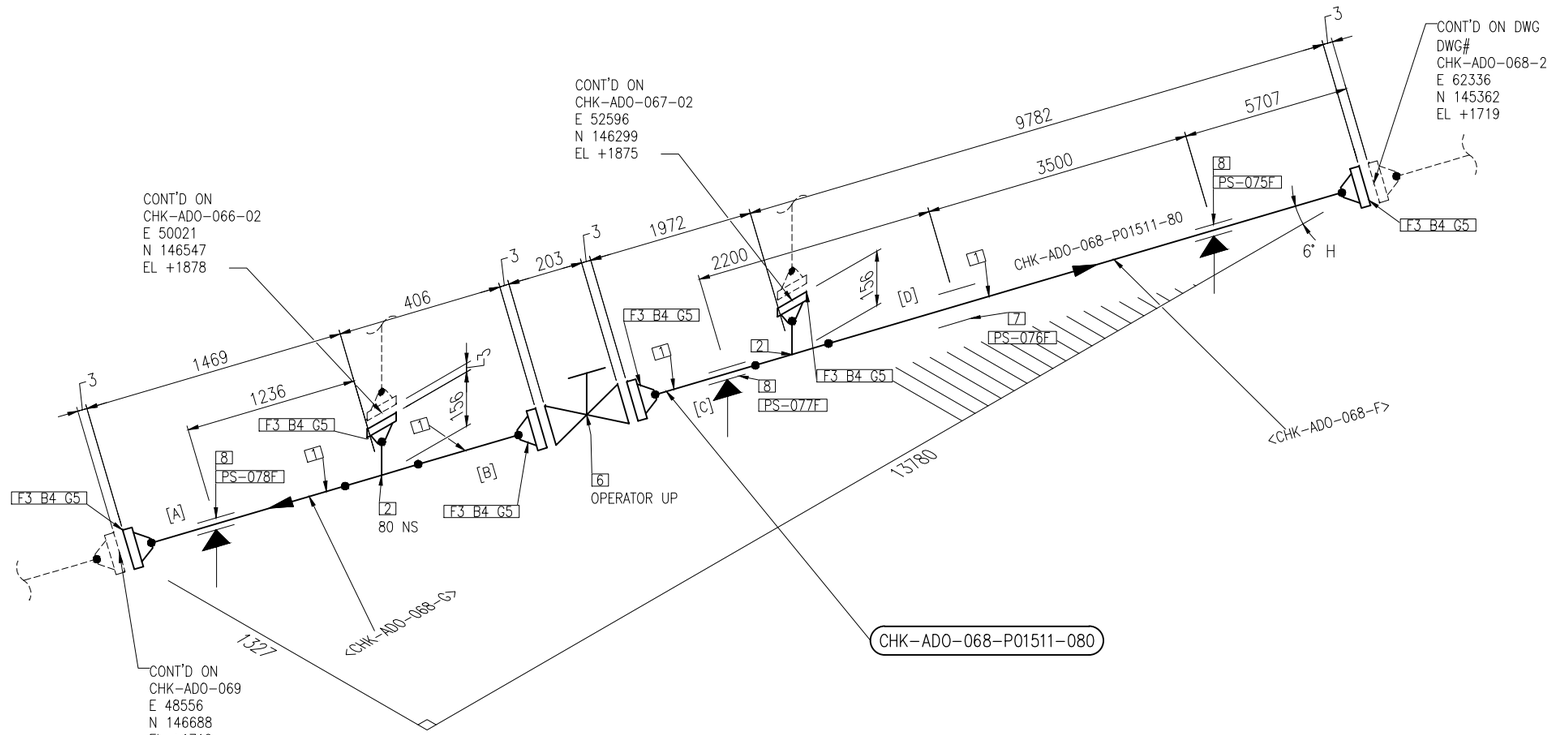
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-ADO-068-P01511-080
DRG NUMBER = CHK-ADO-068-03 (SHEET NUMBER)
SPOOL NUMBER = <CHK-ADO-068-A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	13.1M
	FITTINGS			
2	TEE EQUAL BW SCH 40 A234 WPB	80	P03001D080	2
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	6
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	24
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	6
	VALVES			
6	VALVE GATE RF CL150 CS VG01121	80	VG01121080	1
	PIPE SUPPORTS			
7	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	80	W146301080	1
8	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	80	U446204080	3

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1314MM	80	BEVEL	BEVEL
B	251MM	80	BEVEL	BEVEL
C	1817MM	80	BEVEL	BEVEL
D	9627MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

DRAWING REVISIONS

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-068-F TO G

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-068-P01511-080
SHEET No. 03 OF 03
DRG No. CHK-ADO-068-03 REV. 1

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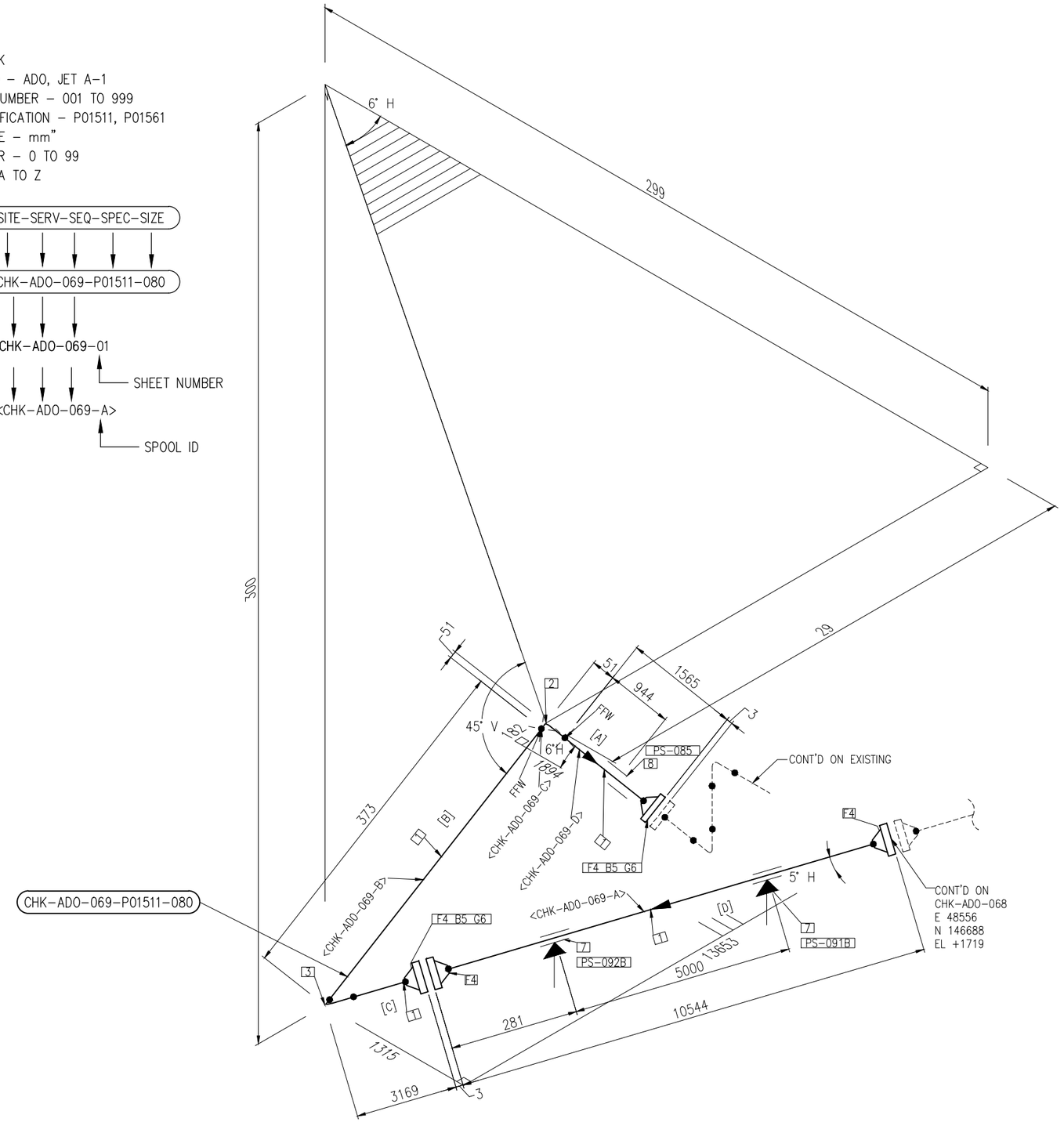
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ADO–069–P01511–080

DRG NUMBER = CHK–ADO–069–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–ADO–069–A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	80	P01201D080	16.4M
	FITTINGS			
2	ELBOW 45 DEG LR BW SCH 40 A234 WPB	80	P02201D080	1
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
	FLANGES			
4	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	4
	FASTENERS			
5	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV		P902105100	8
6	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	2
	PIPE SUPPORTS			
7	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	80	U446204080	2
8	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	80	W146301080	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	2000MM	80	BEVEL	SQUARE CUT
B	760MM	80	SQUARE CUT	BEVEL
C	2985MM	80	BEVEL	BEVEL
D	10405MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–02
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ADO–069–A

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ADO–069–P01511–080
SHEET No. 01 OF 01
DRG No. CHK–ADO–069–01 REV. 1

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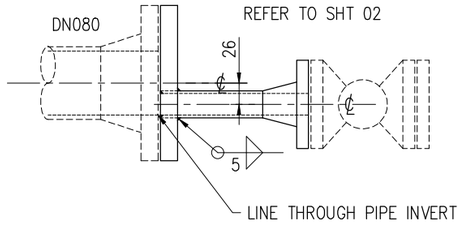
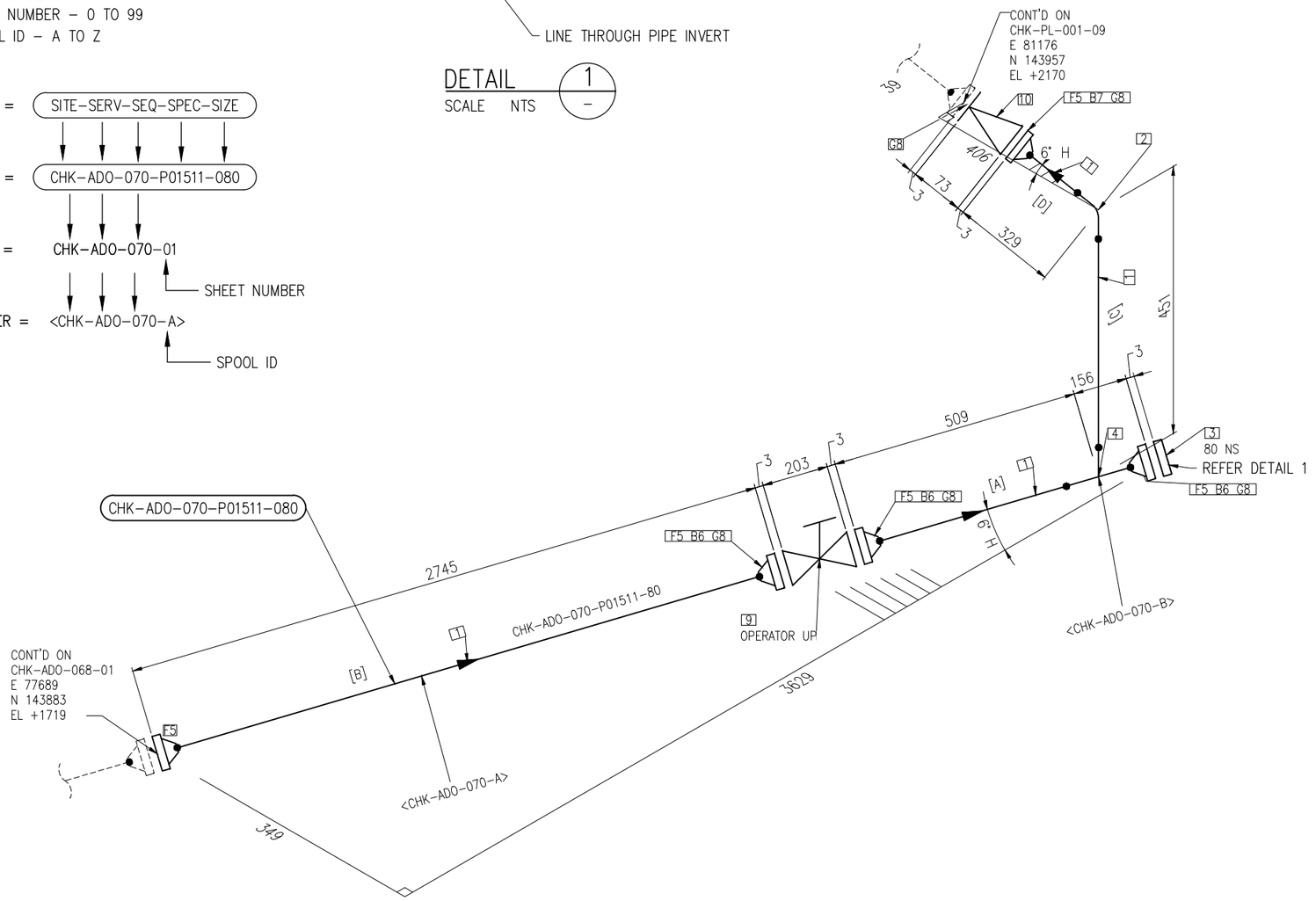
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-ADO-070-P01511-080
DRG NUMBER = CHK-ADO-070-01 — SHEET NUMBER
SPOOL NUMBER = <CHK-ADO-070-A> — SPOOL ID



DETAIL 1
SCALE NTS –



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	3.4M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
3	FLANGE BLIND RF CL150 A105	80	P2610AX080	1
4	TEE EQUAL BW SCH 40 A234 WPB	80	P03001D080	1
	FLANGES			
5	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	5
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	12
7	STUDBOLT 5/8" UNC X180 B7/2H SPUN GALV	16X180	P902105180	4
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	5
	VALVES			
9	VALVE GATE RF CL150 CS VG01121	80	VG01121080	1
10	VALVE CHECK WAFER RF CL150 VC01124	80	VC01124080	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	354MM	80	BEVEL	BEVEL
B	2606MM	80	BEVEL	BEVEL
C	251MM	80	BEVEL	BEVEL
D	145MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ADO-070-A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ADO-070-P01511-080
SHEET No. 01 OF 02
DRG No. CHK-ADO-070-01 REV. 1

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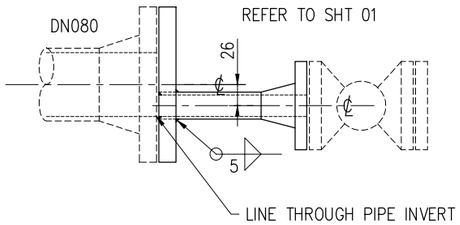
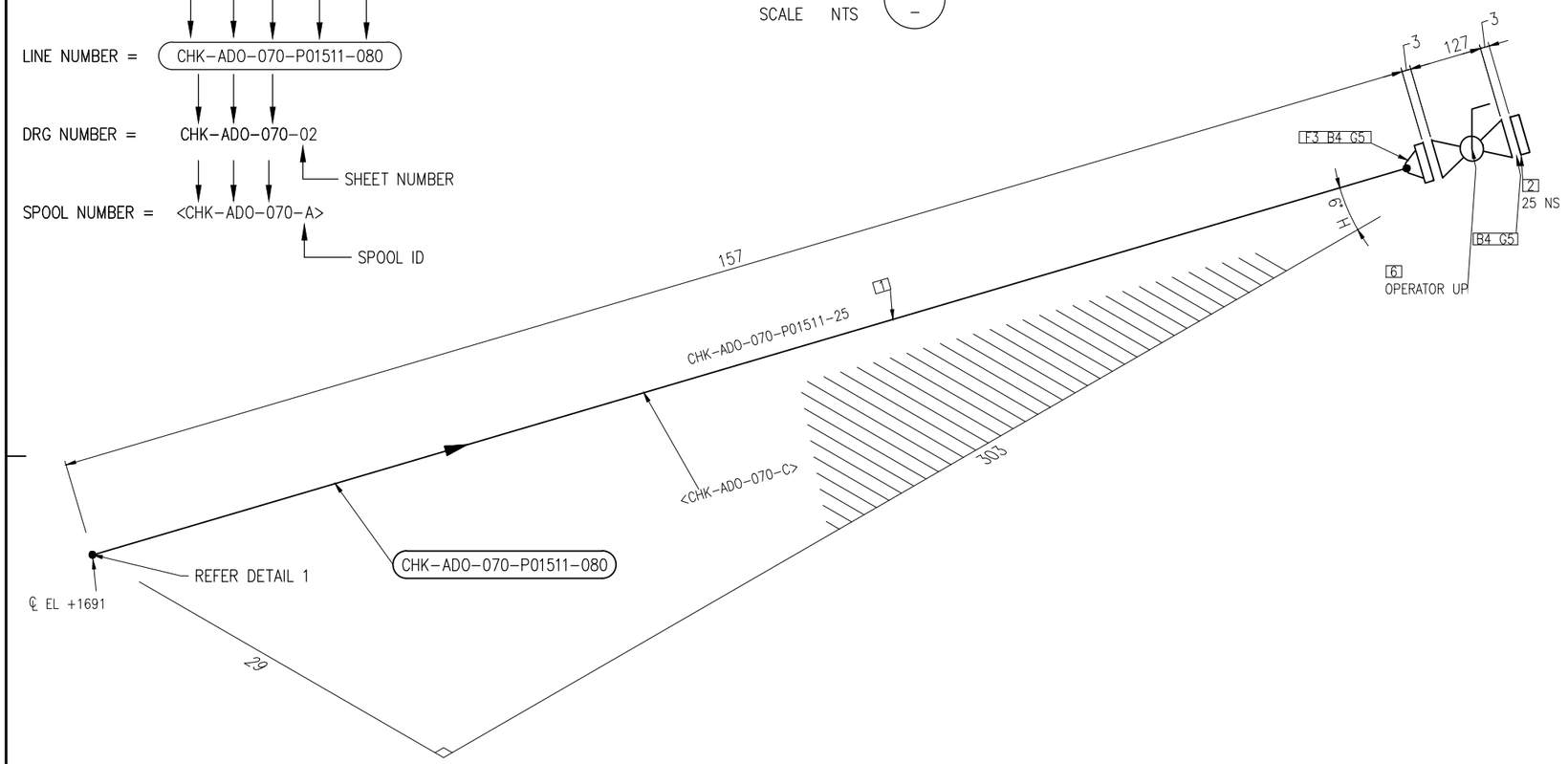
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE
LINE NUMBER = CHK–ADO–070–P01511–080
DRG NUMBER = CHK–ADO–070–02 — SHEET NUMBER
SPOOL NUMBER = <CHK–ADO–070–A> — SPOOL ID



DETAIL 1 – SCALE NTS



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	1
	FITTINGS			
2	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
	FLANGES			
3	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
5	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
	VALVES			
6	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63"

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–04
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ADO–070–C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ADO–070–P01511–080
SHEET No. 02 OF 02
DRG No. CHK–ADO–070–02 REV. 1

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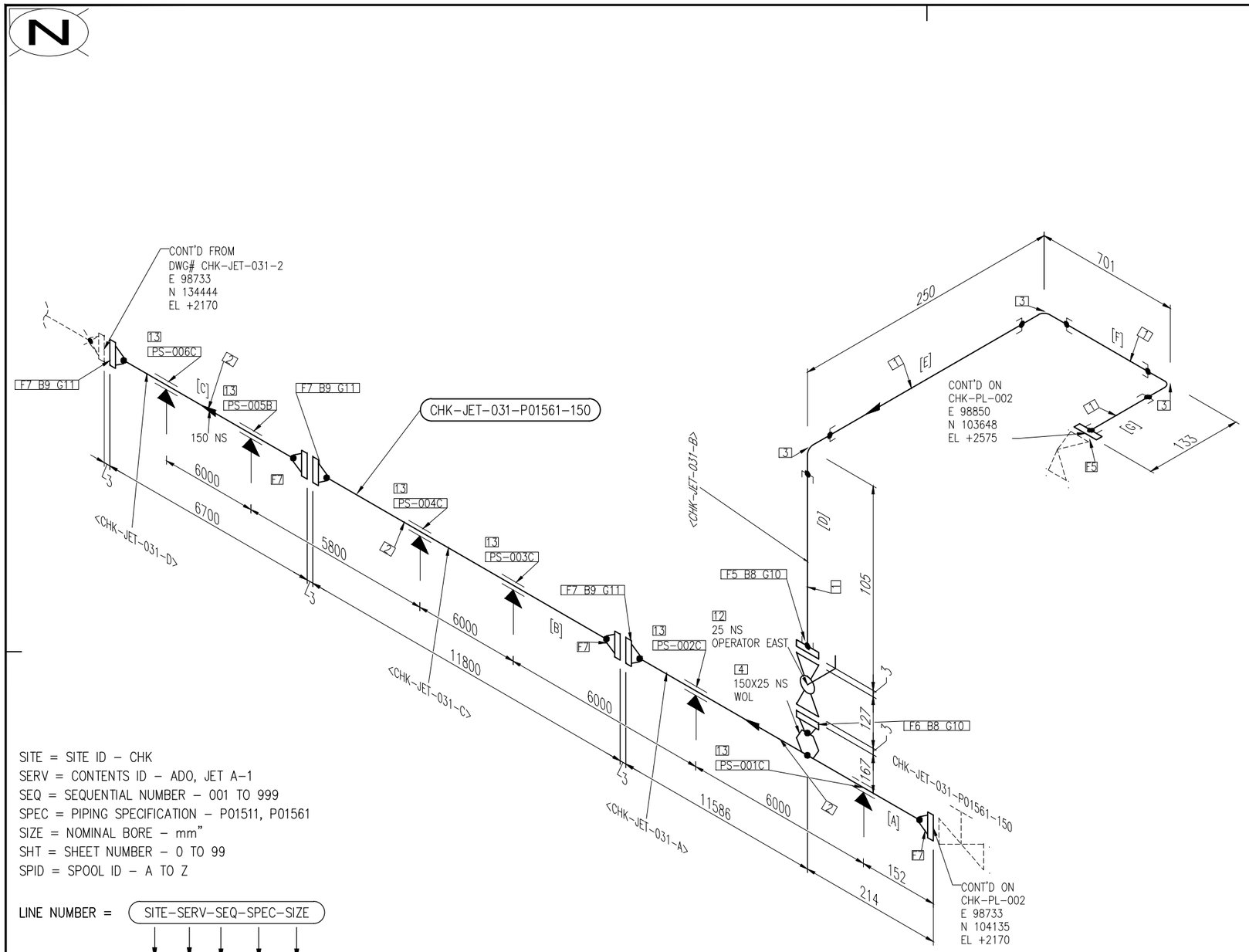

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-031-P01561-150

DRG NUMBER = CHK-JET-031-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-031-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.1M
2	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	29.8M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
5	FLANGE SW RF CL150 A182 F316	25	P2516AX025	2
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	6
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
9	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	24
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	3
	VALVES			
12	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
	PIPE SUPPORTS			
13	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	6

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	11623MM	150	BEVEL	BEVEL
B	11623MM	150	BEVEL	BEVEL
C	6523MM	150	BEVEL	BEVEL
D	79MM	25	SQUARE CUT	SQUARE CUT
E	206MM	25	SQUARE CUT	SQUARE CUT
F	657MM	25	SQUARE CUT	SQUARE CUT
G	107MM	25	SQUARE CUT	SQUARE CUT

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-031-A TO D

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-031-P01561-150
SHEET No. 01 OF 06
DRG No. CHK-JET-031-01 REV. 1

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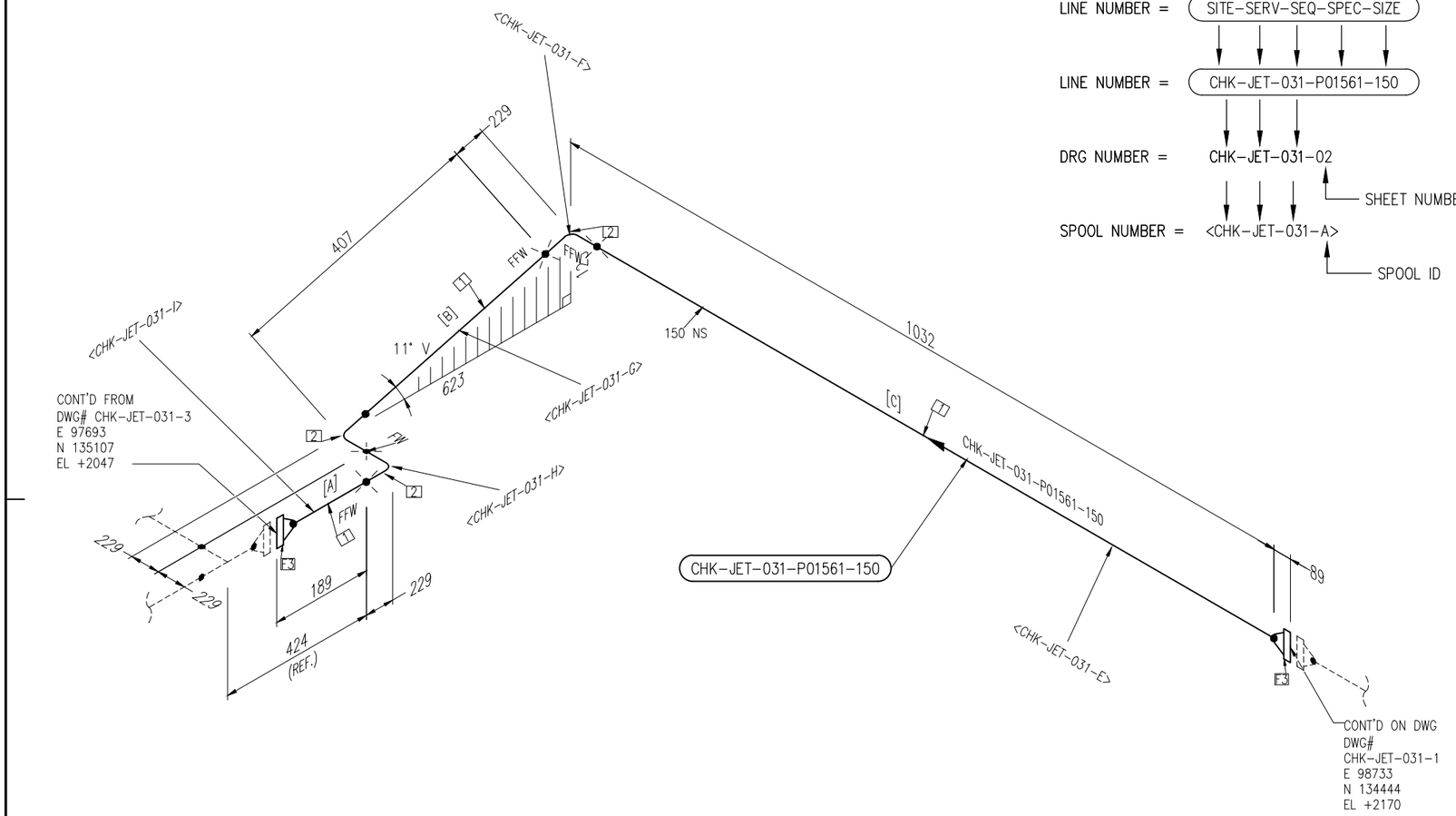
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-031-P01561-150

DRG NUMBER = CHK-JET-031-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-031-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	1.6M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	3
	FLANGES			
3	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	250MM	150	BEVEL	
B	328MM	150	BEVEL	
C	953MM	150	BEVEL	

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-031-E TO I

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-031-P01561-150
SHEET No. 02 OF 06
DRG No. CHK-JET-031-02 REV. 1

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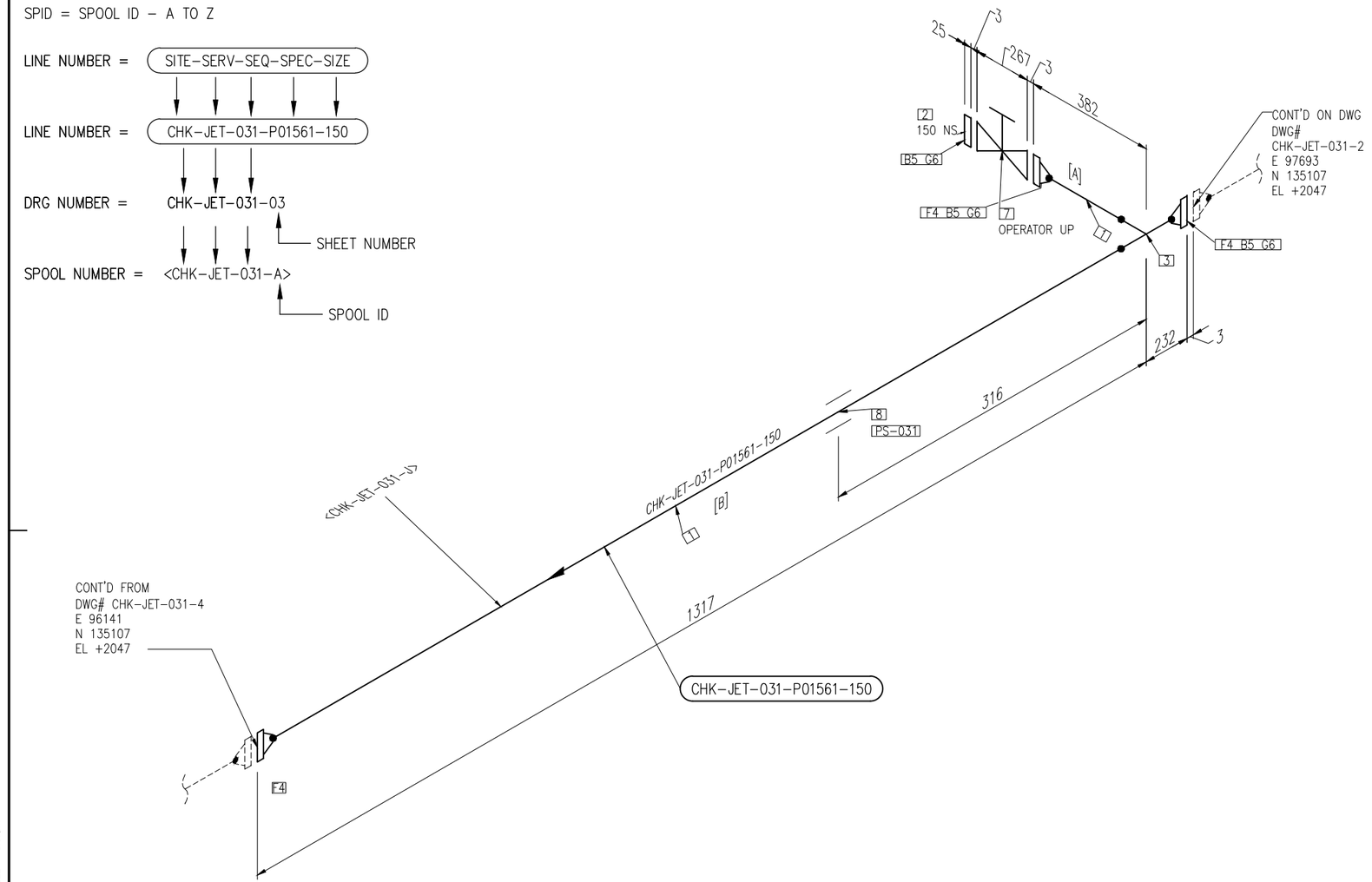
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-031-P01561-150

DRG NUMBER = CHK-JET-031-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-031-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	1.3M
	FITTINGS			
2	FLANGE BLIND RF CL150 A182 F316L	150	P2616AX150	1
3	TEE EQUAL BW SCH 40S A403 WP316L	150	P03006S150	1
	FLANGES			
4	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	3
	FASTENERS			
5	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	24
6	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	3
	VALVES			
7	VALVE GATE RF CL150 SS VG01521	150	VG01521150	1
	PIPE SUPPORTS			
8	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	150	W146301150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	150MM	150	BEVEL	BEVEL
B	1086MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-031-J

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-JET-031-P01561-150
CHKD	M.WEST	06/22	SHEET No. 03 OF 06
APPD	·	06/22	DRG No. CHK-JET-031-03 REV. 1
APPD	W.DOUGAN	06/22	

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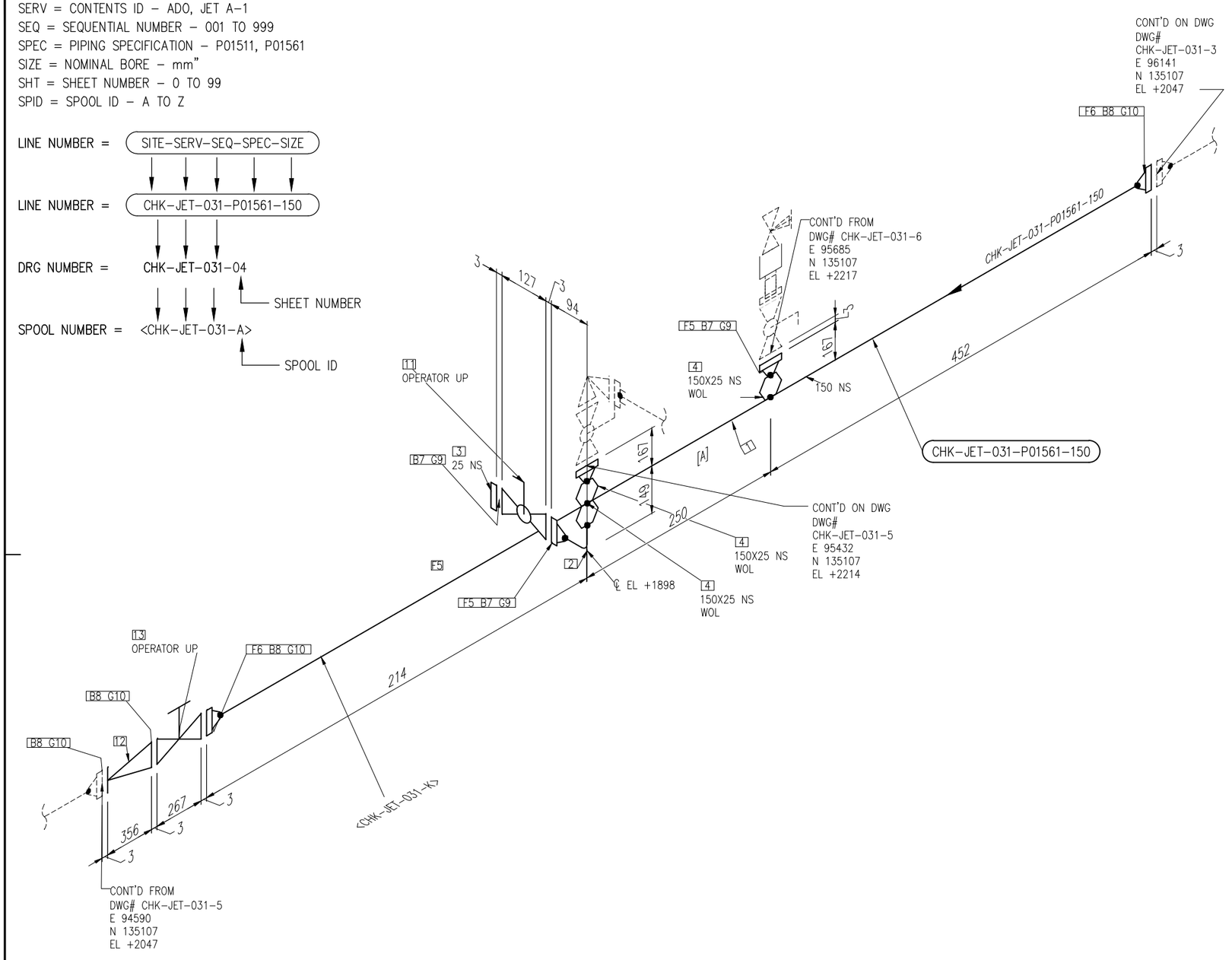
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-031-P01561-150

DRG NUMBER = CHK-JET-031-04 ← SHEET NUMBER

SPOOL NUMBER = <CHK-JET-031-A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	0.8M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	3
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	3
6	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	12
8	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	32
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
12	VALVE CHECK SWING RF CL150 VC01521	150	VC01521150	1
13	VALVE GATE RF CL150 VG01521	150	VG01521150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	739MM	150	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS NO.	NA.		
PIPING PLAN	12732-SK-PM-502-15		
P&ID	12732-SK-P&ID-001-02		

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-031-K

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-031-P01561-150
SHEET No. 04 OF 06
DRG No. CHK-JET-031-04 REV. 1

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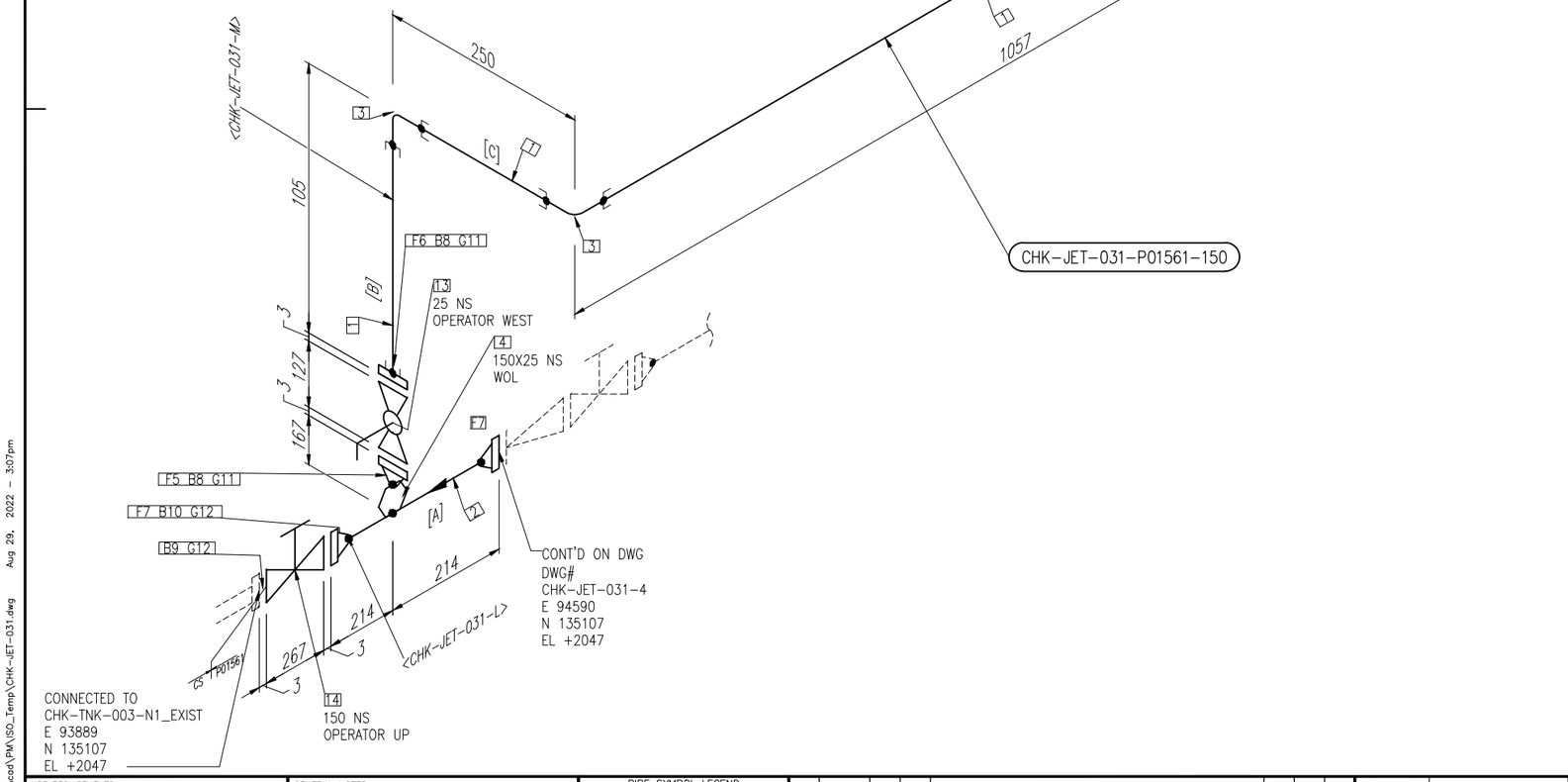
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-031-P01561-150

DRG NUMBER = CHK-JET-031-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-031-A> — SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.5M
2	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
6	FLANGE SW RF CL150 A182 F316	25	P2516AX025	2
7	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	20
9	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
10	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	VALVES			
13	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
14	VALVE GATE RF CL150 SS VG01521	150	VG01521150	1
15	VALVE RELIEF RF CL150 CHK-RV-031	25	MECHANICAL	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	251MM	150	BEVEL	BEVEL
B	79MM	25	SQUARE CUT	SQUARE CUT
C	206MM	25	SQUARE CUT	SQUARE CUT
D	1013MM	25	SQUARE CUT	SQUARE CUT
E	107MM	25	SQUARE CUT	SQUARE CUT

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT — WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-031-L TO M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-031-P01561-150
SHEET No. 05 OF 06
DRG No. CHK-JET-031-05 REV. 1

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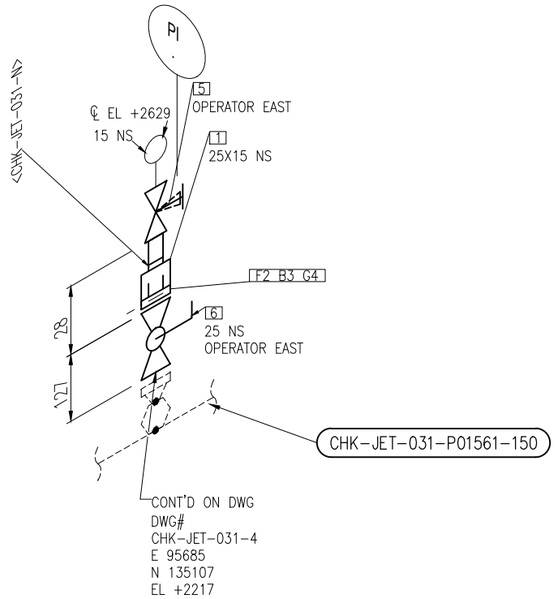
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–JET–031–P01561–150

DRG NUMBER = CHK–JET–031–06 ← SHEET NUMBER

SPOOL NUMBER = <CHK–JET–031–A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	FITTINGS			
1	HEX BUSH RED NPT CL3000 A182 F316L	25X15	P4535630CA	1
	FLANGES			
2	FLANGE SCRD RF NPT CL150 A182 F316L	25	P2316AX025	1
	FASTENERS			
3	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	4
4	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	1
	VALVES			
5	VALVE NEEDLE MXFNPT CL6000 AISI 316	15	INSTRUMENT	1
6	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.

REFERENCE DRAWINGS	
PIPING PLAN	12732–SK–PM–502–15
P&ID	12732–SK–P&ID–001–02

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–JET–031–XA TO XJ

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–JET–031–P01561–150
SHEET No. 06 OF 06
DRG No. CHK–JET–031–06 REV. 1

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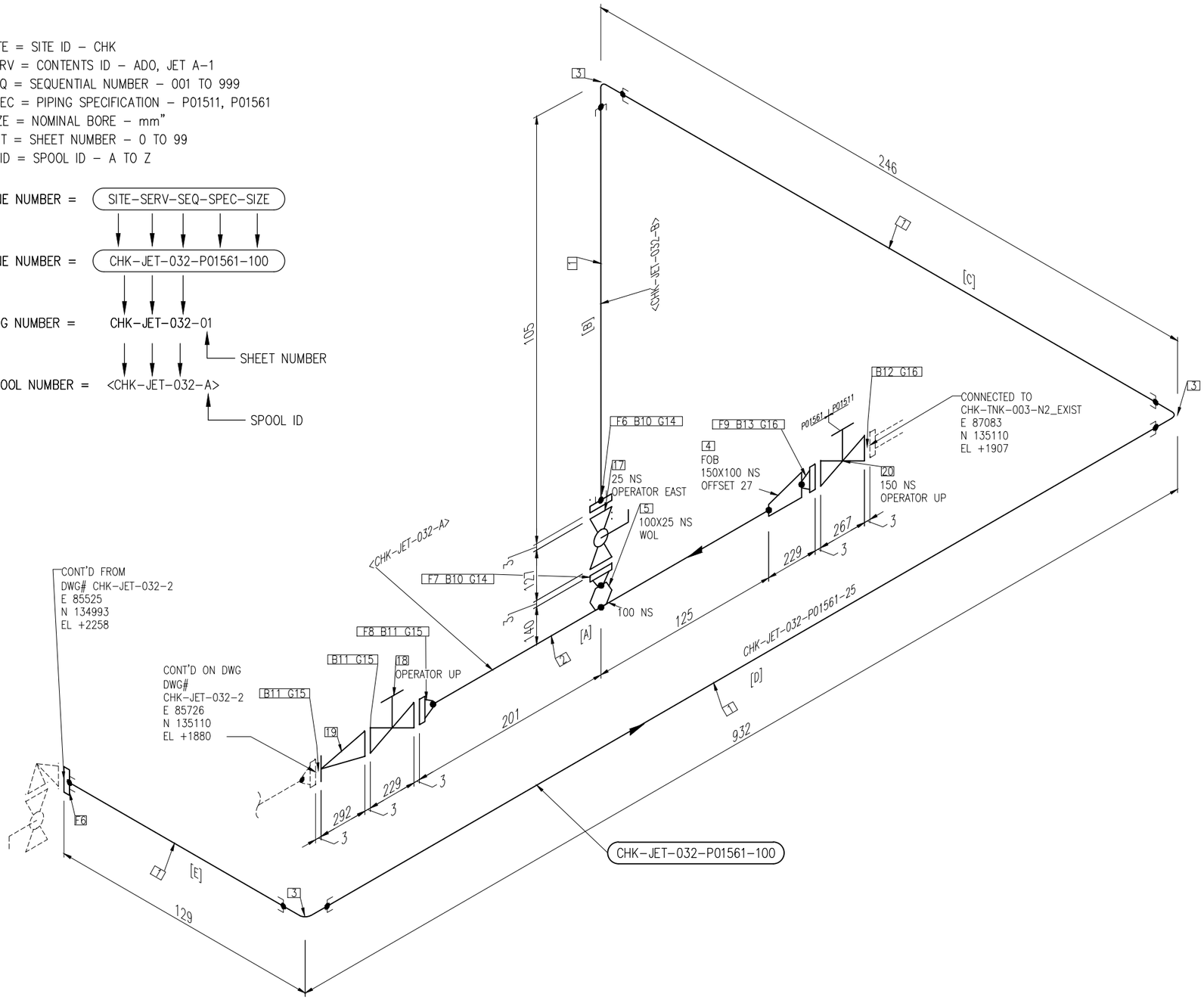
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–JET–032–P01561–100

DRG NUMBER = CHK–JET–032–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–JET–032–A> — SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.3M
2	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
4	REDUCER ECC BW SCH 40S A403 WP316L	150X100	P07006SSHG	1
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	1
	FLANGES			
6	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
7	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
8	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	1
9	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	1
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
11	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	24
12	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
13	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
14	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
15	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	3
16	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	150	P82261A150	2
	VALVES			
17	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
18	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
19	VALVE CHECK SWING RF CL150 VC01521	100	VC01521100	1
20	VALVE GATE RF CL150 SS VG01521	150	VG01521150	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	250MM	100	BEVEL	BEVEL
B	79MM	25	SQUARE CUT	SQUARE CUT
C	202MM	25	SQUARE CUT	SQUARE CUT
D	888MM	25	SQUARE CUT	SQUARE CUT
E	102MM	25	SQUARE CUT	SQUARE CUT

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–10
P&ID	12732–SK–P&ID–001–02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–JET–032–A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOOGAN		06/22

LINE No. CHK–JET–032–P01561–100
SHEET No. 01 OF 05
DRG No. CHK–JET–032–01 REV. 1

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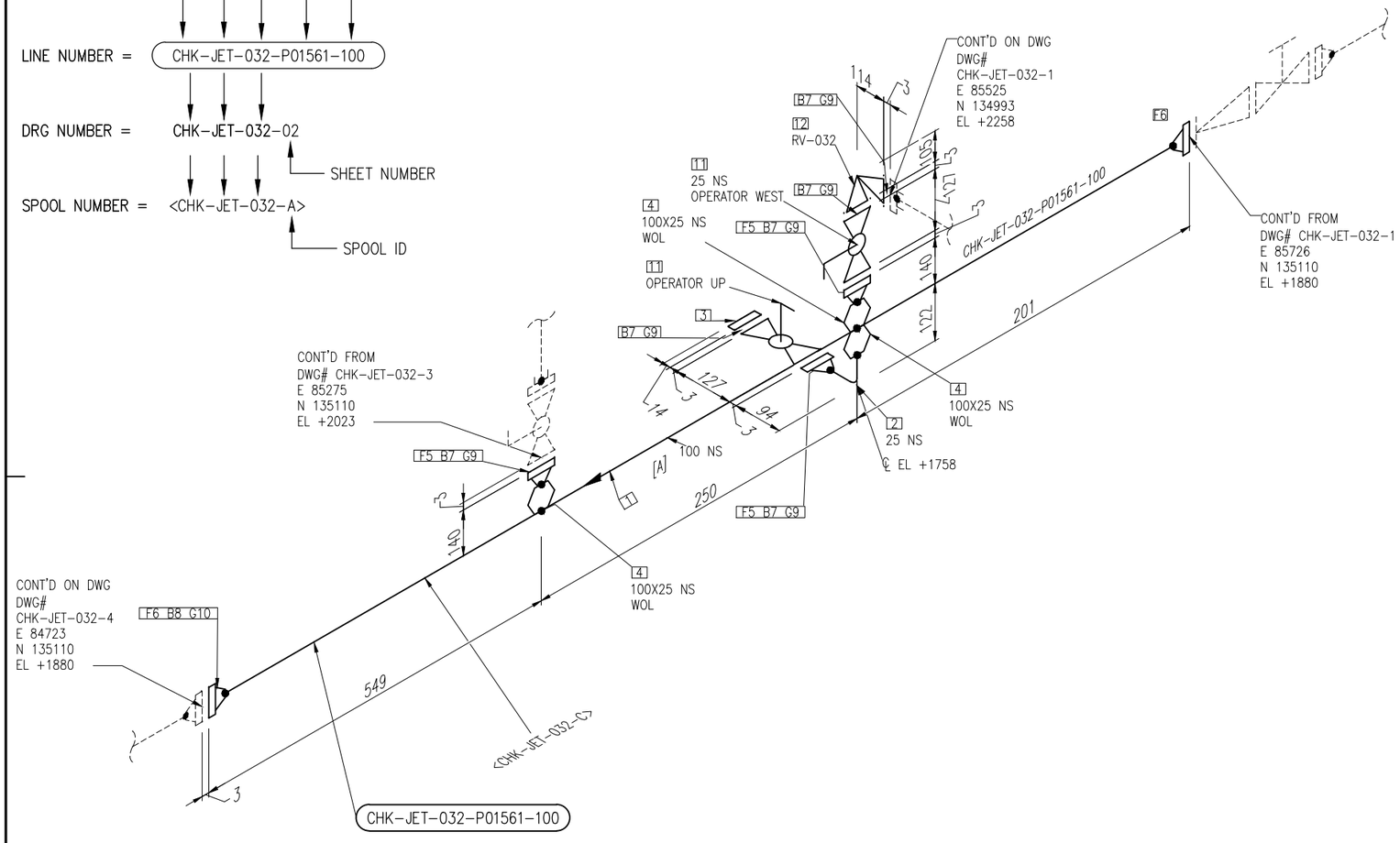
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-032-P01561-100

DRG NUMBER = CHK-JET-032-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-032-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	3
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	3
6	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	24
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	8
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	6
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	1
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
12	VALVE RELIEF RF CL150 CHK-RV-032	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	848MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-10
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD
AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-032-C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOOGAN		06/22

LINE No. CHK-JET-032-P01561-100
SHEET No. 02 OF 05
DRG No. CHK-JET-032-02 REV. 1

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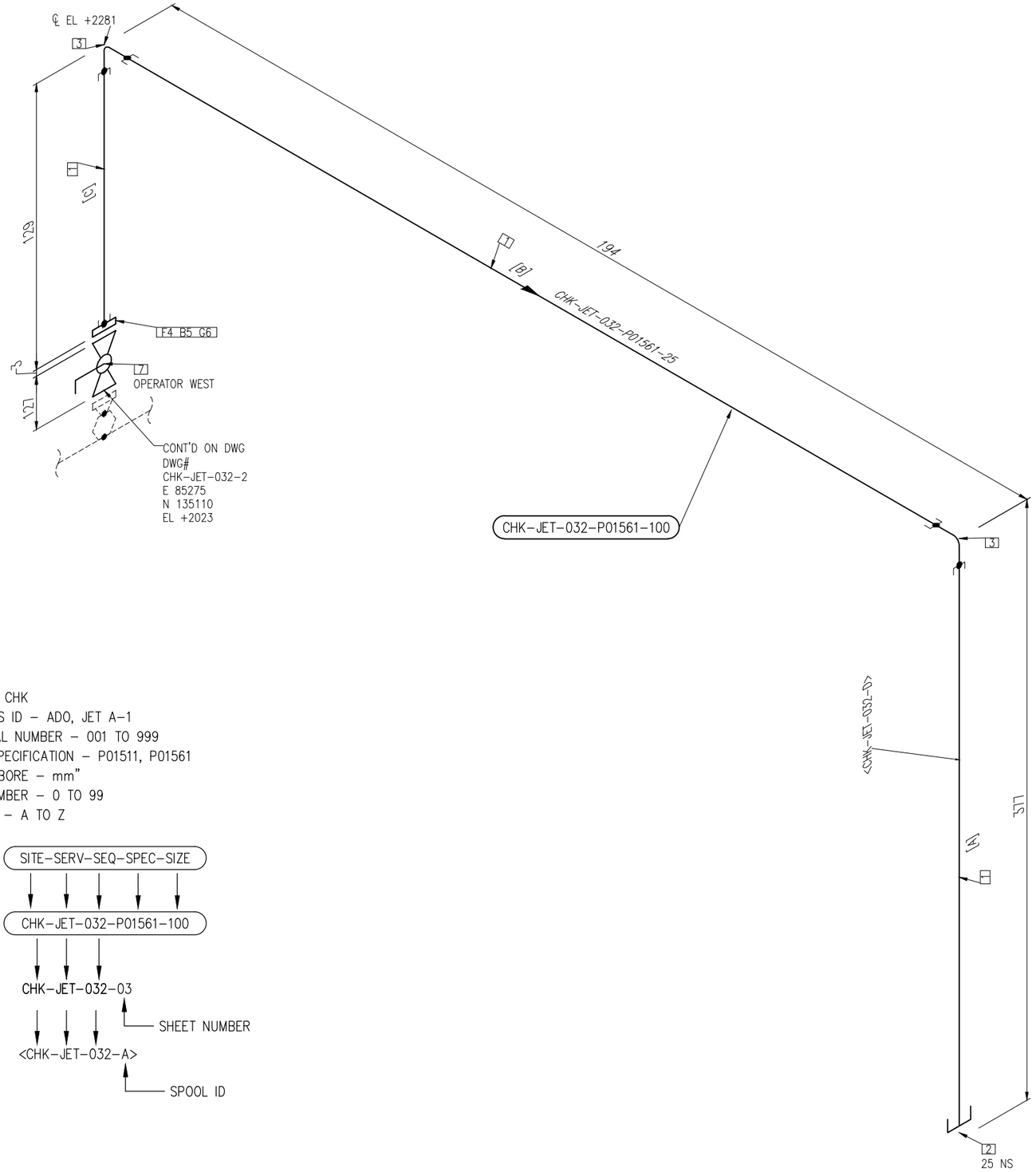
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3
1
1
1

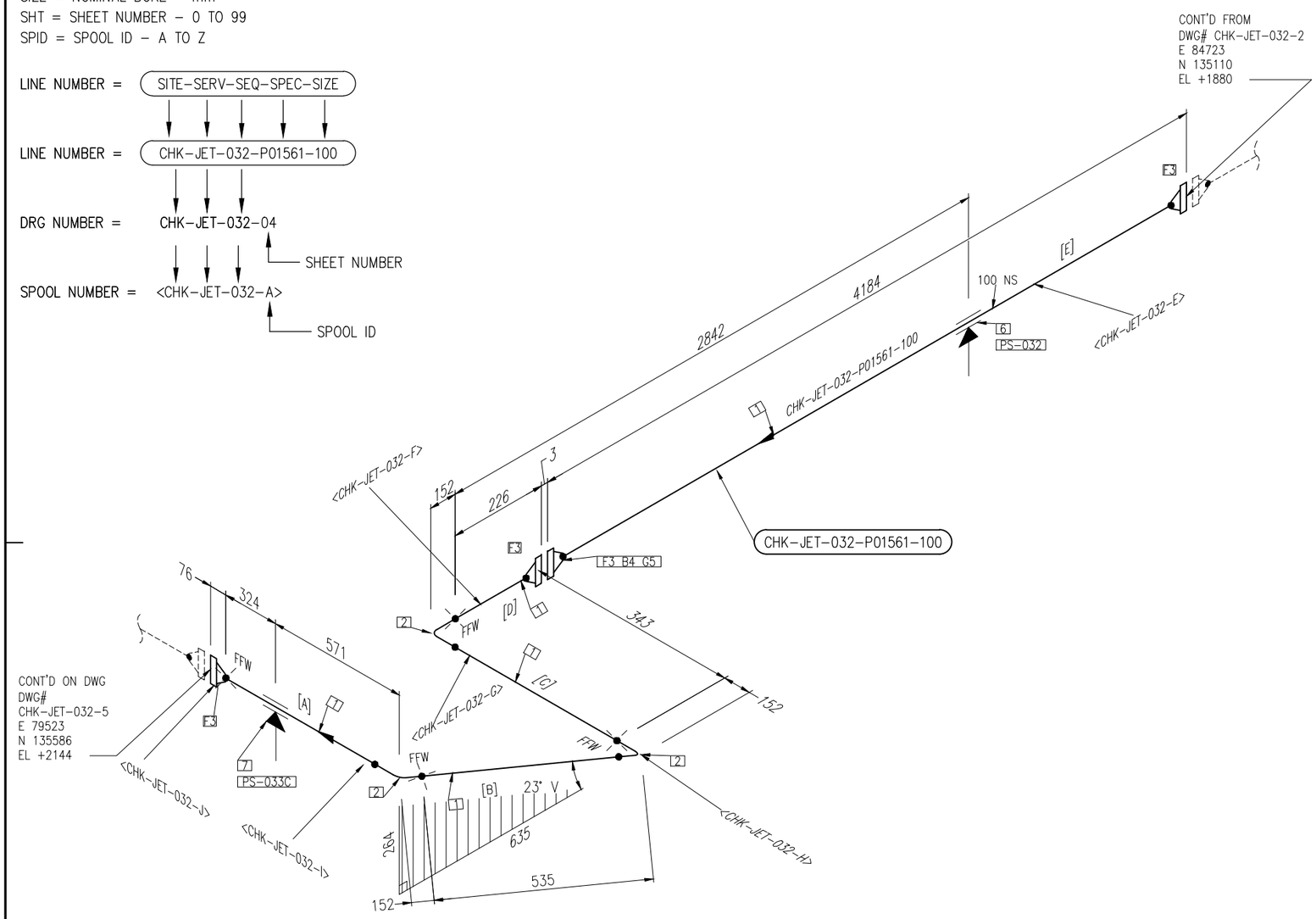
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-032-P01561-100

DRG NUMBER = CHK-JET-032-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-032-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	6.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	100	P02006S100	3
	FLANGES			
3	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	4
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	8
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	1
	PIPE SUPPORTS			
6	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	1
7	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	100	U346203100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	893MM	100	BEVEL	
B	533MM	100	BEVEL	
C	341MM	100	BEVEL	
D	300MM	100	BEVEL	
E	4032MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-032-F TO J

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOOGAN		06/22

LINE No. CHK-JET-032-P01561-100
SHEET No. 04 OF 05
DRG No. CHK-JET-032-04 REV. 1

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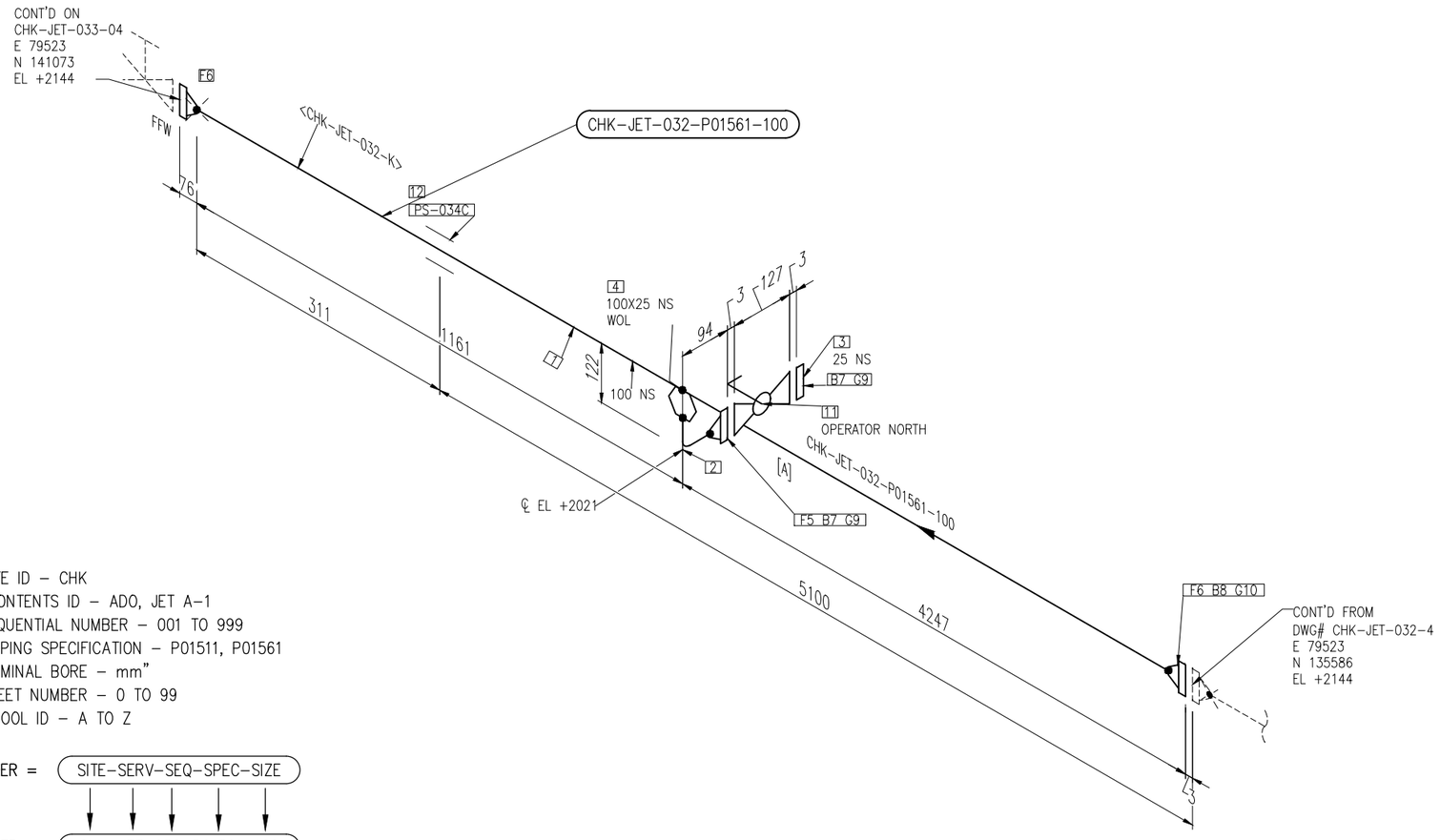

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-032-P01561-100

DRG NUMBER = CHK-JET-032-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-032-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	5.5M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	1
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
6	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	8
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	1
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
	PIPE SUPPORTS			
12	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	100	W146301100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	5482MM	100	BEVEL	

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-032-K

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOOGAN		06/22

LINE No. CHK-JET-032-P01561-100
SHEET No. 05 OF 05
DRG No. CHK-JET-032-05 REV. 1

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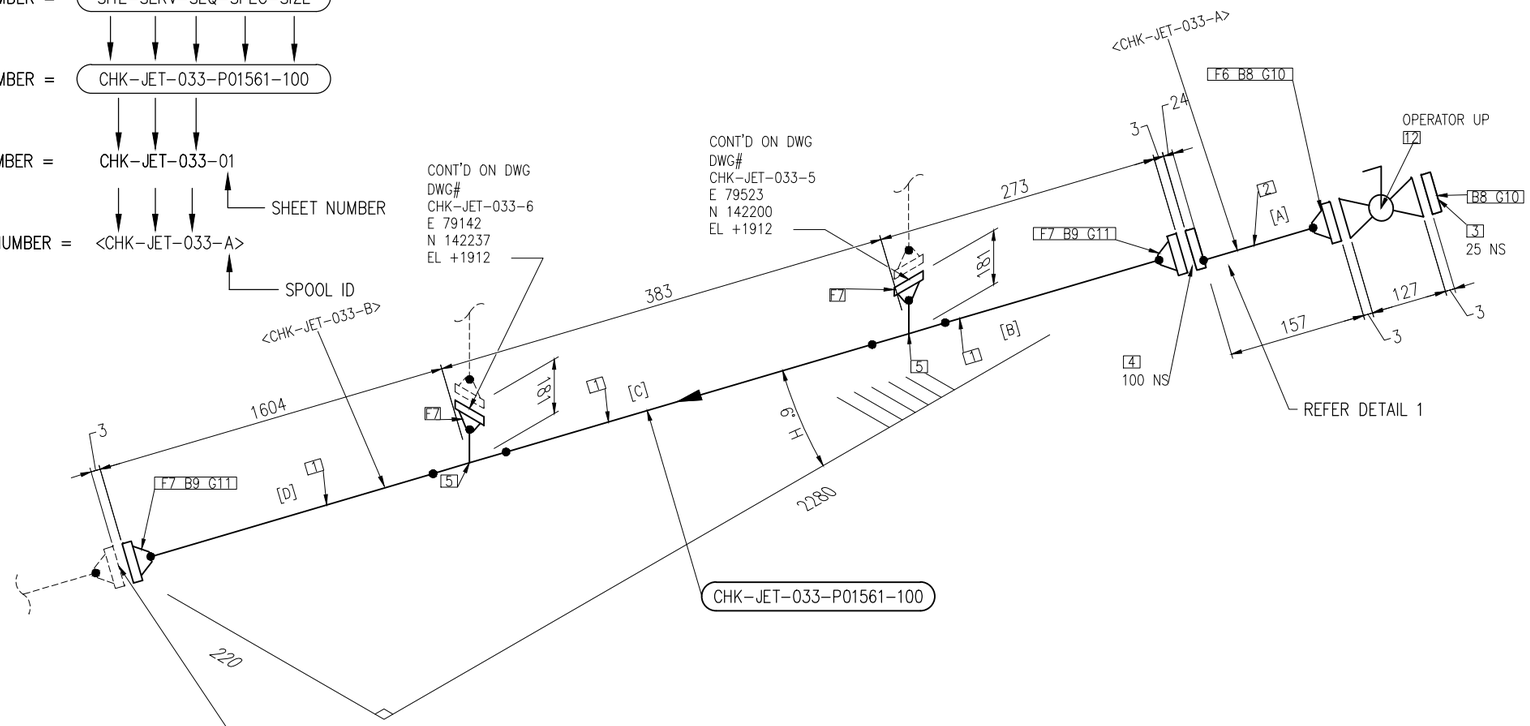
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

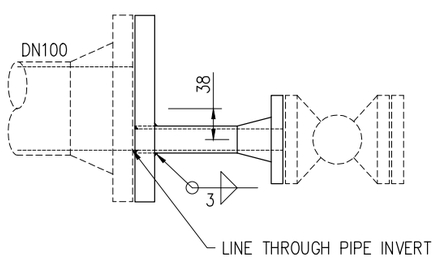
LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–JET–033–P01561–100

DRG NUMBER = CHK–JET–033–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–JET–033–A> — SPOOL ID





DETAIL 1
SCALE NTS –

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	1.7M
2	NIPPLE SMLS PBE SCH 80S X100LG A312 TP316L	25	P60306TC10	0.2M
	FITTINGS			
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
4	FLANGE BLIND RF CL150 A182 F316L	100	P2616AX100	1
5	TEE EQUAL BW SCH 40S A403 WP316L	100	P03006S100	2
	FLANGES			
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	4
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
9	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
10	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
11	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	2
	VALVES			
12	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	100MM	25	PL	PL
B	93MM	100	BEVEL	BEVEL
C	174MM	100	BEVEL	BEVEL
D	1424MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732–SK–PM–502–04
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–JET–033–A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–JET–033–P01561–100
SHEET No. 01 OF 07
DRG No. CHK–JET–033–01 REV. 1

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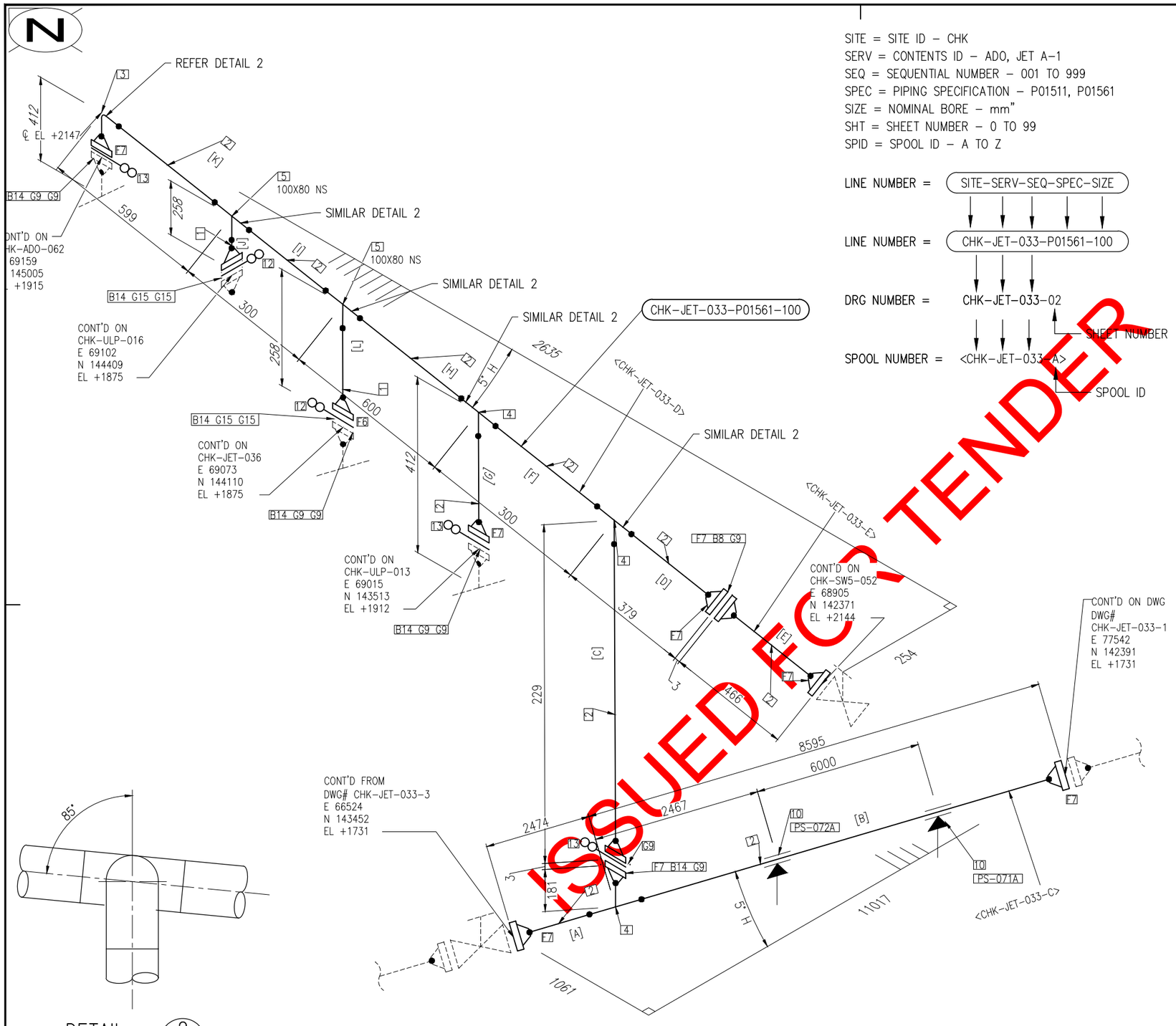

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–JET–033–P01561–100

DRG NUMBER = CHK–JET–033–02 (SHEET NUMBER)

SPOOL NUMBER = <CHK–JET–033–A> (SPOOL ID)

ISSUED FOR TENDER

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	0.2M
2	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	12.3M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	100	P02006S100	1
4	TEE EQUAL BW SCH 40S A403 WP316L	100	P03006S100	3
5	TEE RED BW SCH 40S A403 WP316L	100X80	P04006SSGF	2
	FLANGES			
6	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	2
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	9
	FASTENERS			
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	8
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	7
	PIPE SUPPORTS			
10	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100		2
11				
	MISC			
12	SPECTACLE BLIND THICKNESS TO ASME B16.48	80	PROPRIETARY	2
13	SPECTACLE BLIND THICKNESS TO ASME B16.48	100	PROPRIETARY	3
14	STUDBOLT 5/8" UNC X115 B8M CL2/8MA NUTS	16X115		32
15	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80		4

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	2293MM	100	BEVEL	BEVEL
B	8414MM	100	BEVEL	BEVEL
C	49MM	100	BEVEL	BEVEL
D	198MM	100	BEVEL	BEVEL
E	314MM	100	BEVEL	BEVEL
F	91MM	100	BEVEL	BEVEL
G	49MM	100	BEVEL	BEVEL
H	391MM	100	BEVEL	BEVEL
I	91MM	100	BEVEL	BEVEL
J	102MM	80	BEVEL	BEVEL
K	343MM	100	BEVEL	BEVEL
L	102MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-033-C TO E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-033-P01561-100
SHEET No. 02 OF 07
DRG No. CHK-JET-033-02 REV. 1

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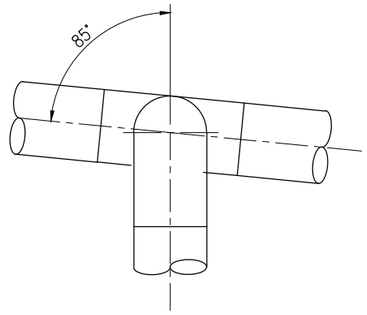
LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–JET–033–P01561–100

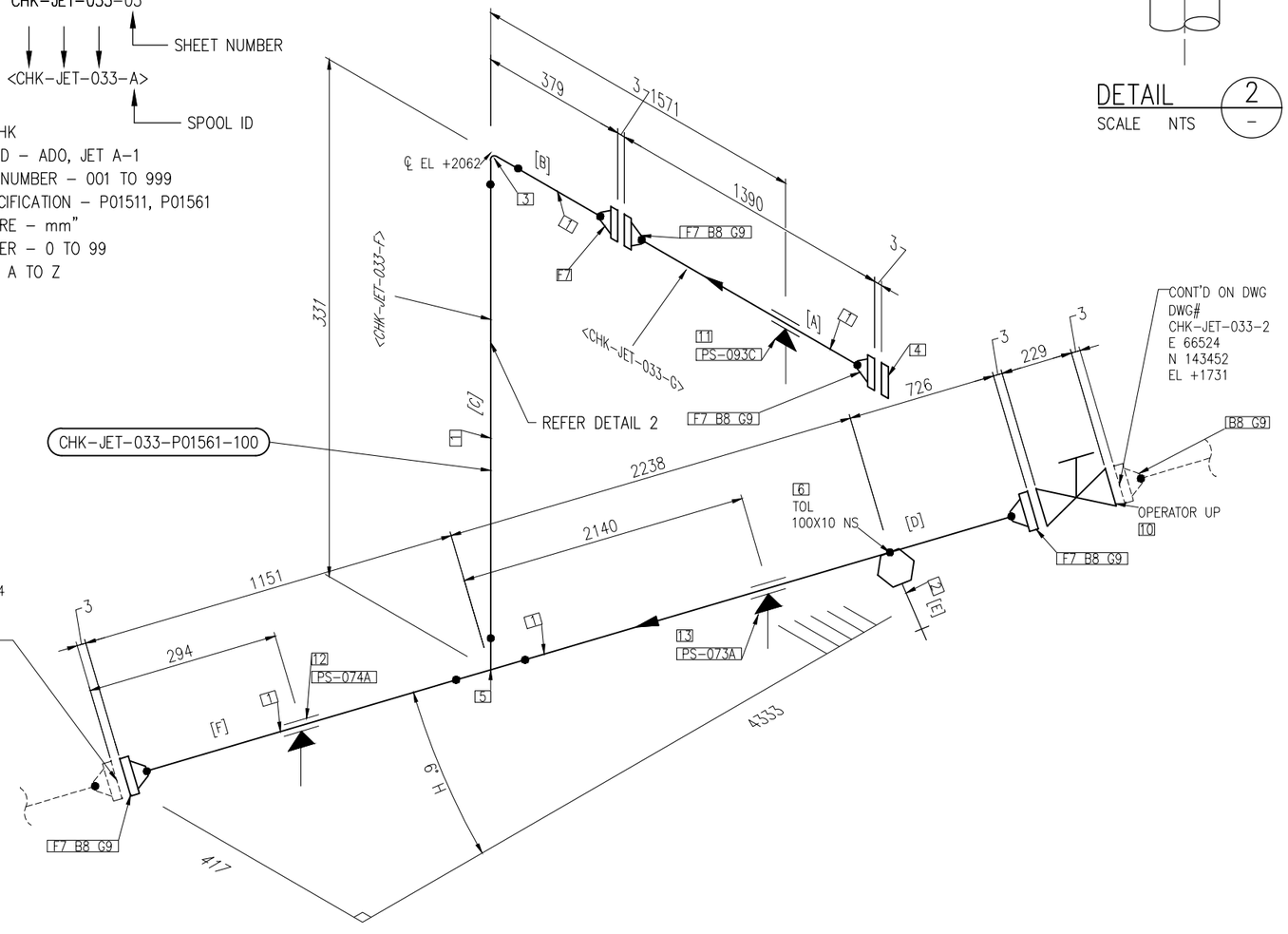
DRG NUMBER = CHK–JET–033–03 — SHEET NUMBER

SPOOL NUMBER = <CHK–JET–033–A> — SPOOL ID

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A–1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



DETAIL 2
SCALE NTS



CONT'D FROM
DWG# CHK–JET–033–4
E 62191
N 143869
EL +1731

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	5.3M
2	EARTH BOSS STUD (REFER DRG 000–50028–01)	10		0.1M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	100	P02006S100	1
4	FLANGE BLIND RF CL150 A182 F316L	100	P2616AX100	1
5	TEE EQUAL BW SCH 40S A403 WP316L	100	P03006S100	1
	OLETS			
6	EARTH BOSS (REFER DRG STD–50028–01)	100X10	EB000000GE	1
	FLANGES			
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	5
	FASTENERS			
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	40
9	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	5
	VALVES			
10	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
	PIPE SUPPORTS			
11	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	100	U446204100	1
12	U–BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD–46203–01)	100		1
13	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	100	U446204100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1238MM	100	BEVEL	BEVEL
B	150MM	100	BEVEL	BEVEL
C	74MM	100	BEVEL	BEVEL
D	2784MM	100	BEVEL	BEVEL
E				
F	971MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–04
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–JET–033–F TO G

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–JET–033–P01561–100
SHEET No. 03 OF 07
DRG No. CHK–JET–033–03 REV. 1

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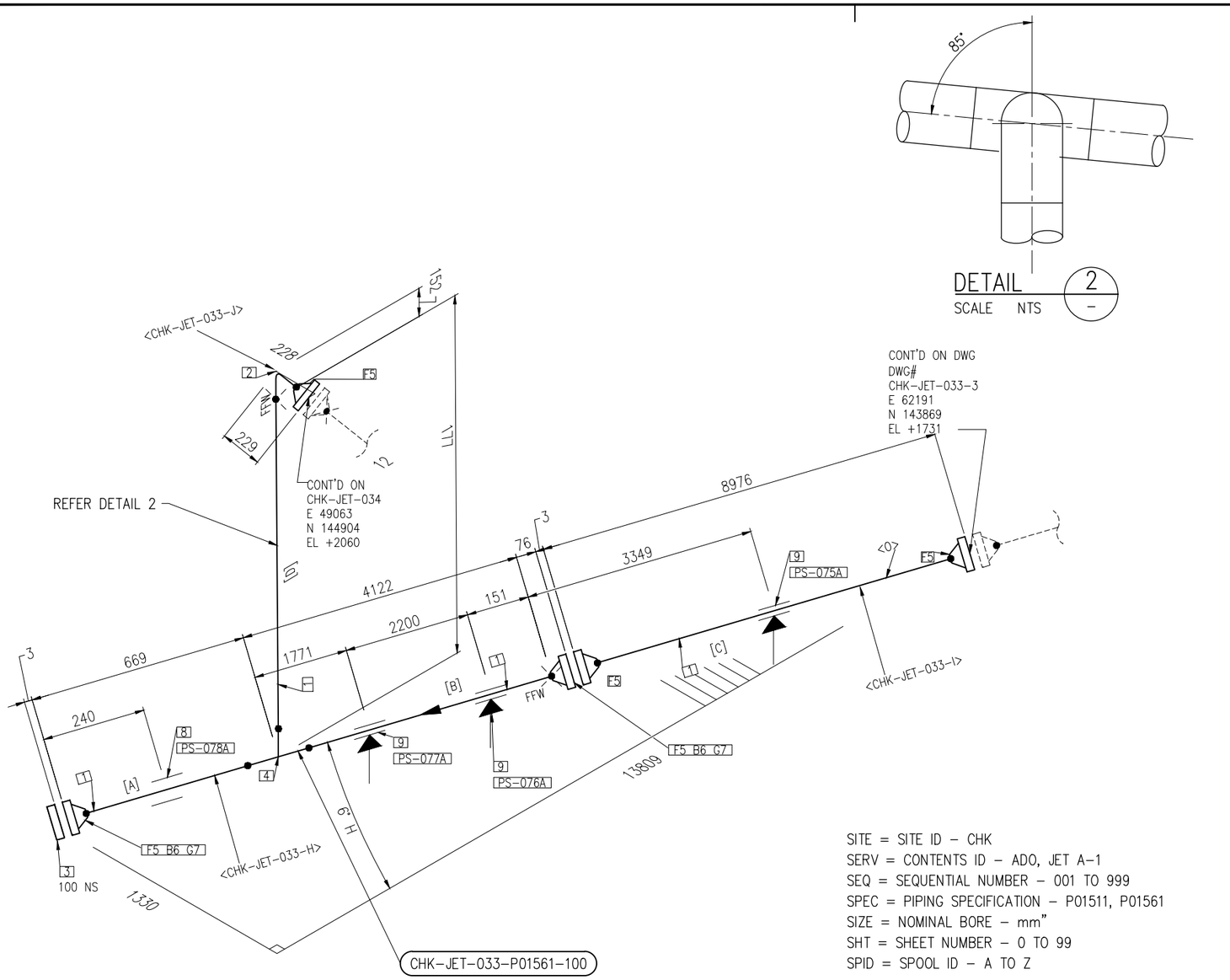

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	13.8M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	100	P02006S100	1
3	FLANGE BLIND RF CL150 A182 F316L	100	P2616AX100	1
4	TEE EQUAL BW SCH 40S A403 WP316L	100	P03006S100	1
	FLANGES			
5	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	5
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	2
	PIPE SUPPORTS			
8	WEAR PAD TYPE W1 – ESD UHWM-PE (STD-46301-01)	100		1
9	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	3

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	489MM	100	BEVEL	BEVEL
B	4168MM	100	BEVEL	
C	8824MM	100	BEVEL	BEVEL
D	222MM	100	BEVEL	

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-033-P01561-100

DRG NUMBER = CHK-JET-033-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-033-A> — SPOOL ID

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-033-H TO J

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-033-P01561-100
SHEET No. 04 OF 07
DRG No. CHK-JET-033-04 REV. 1

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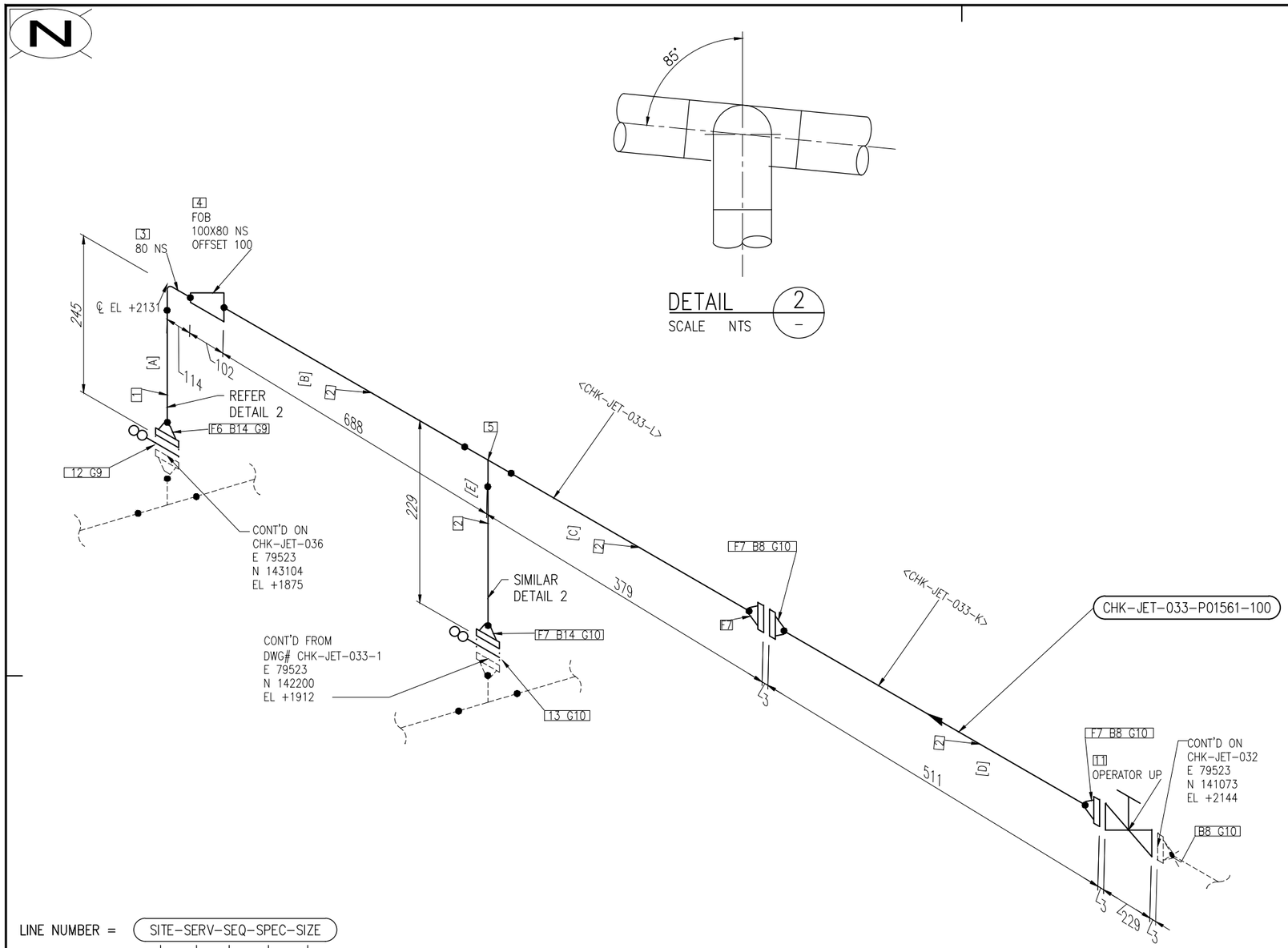

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	0.1M
2	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	1.2M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	80	P02006S080	1
4	REDUCER ECC BW SCH 40S A403 WP316L	100X80	P07006SSGF	1
5	TEE EQUAL BW SCH 40S A403 WP316L	100	P03006S100	1
	FLANGES			
6	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	4
	FASTENERS			
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	24
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	2
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	5
	VALVES			
11	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
	MISC			
12	SPECTACLE BLIND THICKNESS TO ASME B16.48	80	PROPRIETARY	1
13	SPECTACLE BLIND THICKNESS TO ASME B16.48	100	PROPRIETARY	1
14	STUDBOLT 5/8" UNC X115 B8M CL2/8MA NUTS	16X115		12

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	61MM	80	BEVEL	BEVEL
B	584MM	100	BEVEL	BEVEL
C	198MM	100	BEVEL	BEVEL
D	359MM	100	BEVEL	BEVEL
E	48MM	100	BEVEL	BEVEL

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-033-P01561-100

DRG NUMBER = CHK-JET-033-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-033-A> — SPOOL ID

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-033-K TO L

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-033-P01561-100
SHEET No. 05 OF 07
DRG No. CHK-JET-033-05 REV. 1

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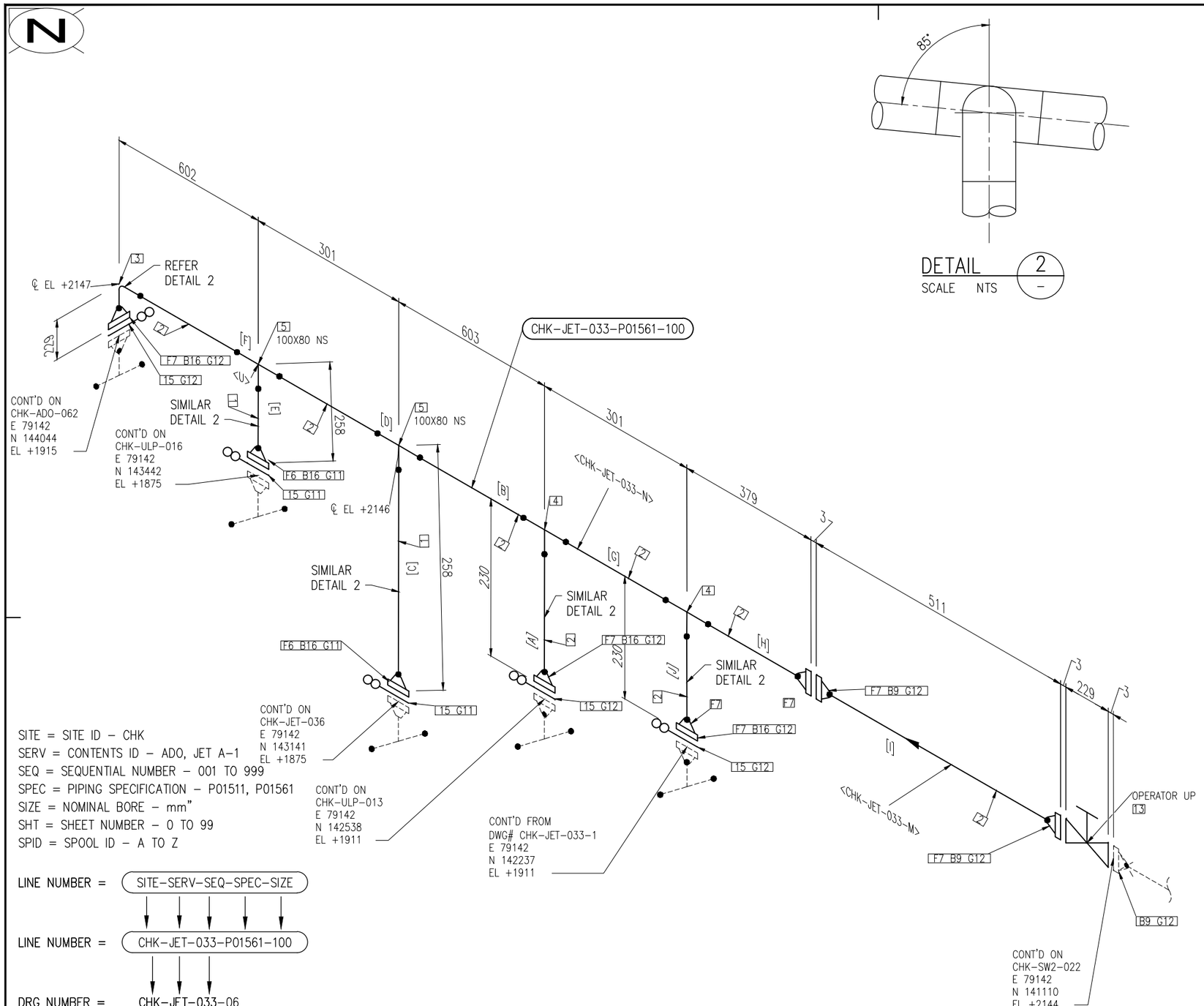

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-033-P01561-100

DRG NUMBER = CHK-JET-033-06 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-033-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	0.2M
2	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	1.6M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	1
4	TEE EQUAL BW SCH 40S A403 WP316L	100	P03006S100	2
5	TEE RED BW SCH 40S A403 WP316L	100X80	P04006SSGF	2
	FLANGES			
6	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	2
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	5
8				
	FASTENERS			
9	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	24
10				
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	4
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	9
	VALVES			
13	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
	MISC			
14	SPECTACLE BLIND THICKNESS TO ASME B16.48	80	PROPRIETARY	2
15	SPECTACLE BLIND THICKNESS TO ASME B16.48	100	PROPRIETARY	3
16	STUDBOLT 5/8" UNC X115 B8M CL2/8MA NUTS	16X115		40

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	50MM	100	BEVEL	BEVEL
B	394MM	100	BEVEL	BEVEL
C	102MM	80	BEVEL	BEVEL
D	93MM	100	BEVEL	BEVEL
E	102MM	80	BEVEL	BEVEL
F	346MM	100	BEVEL	BEVEL
G	92MM	100	BEVEL	BEVEL
H	198MM	100	BEVEL	BEVEL
I	359MM	100	BEVEL	BEVEL
J	50MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-033-L TO M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

UNE No. CHK-JET-033-P01561-100
SHEET No. 06 OF 07
DRG No. CHK-JET-033-06 REV. 1

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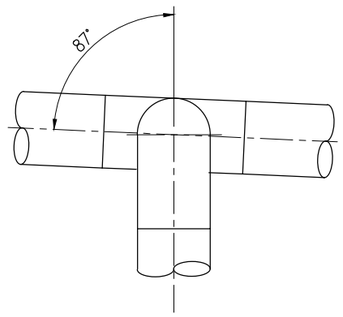
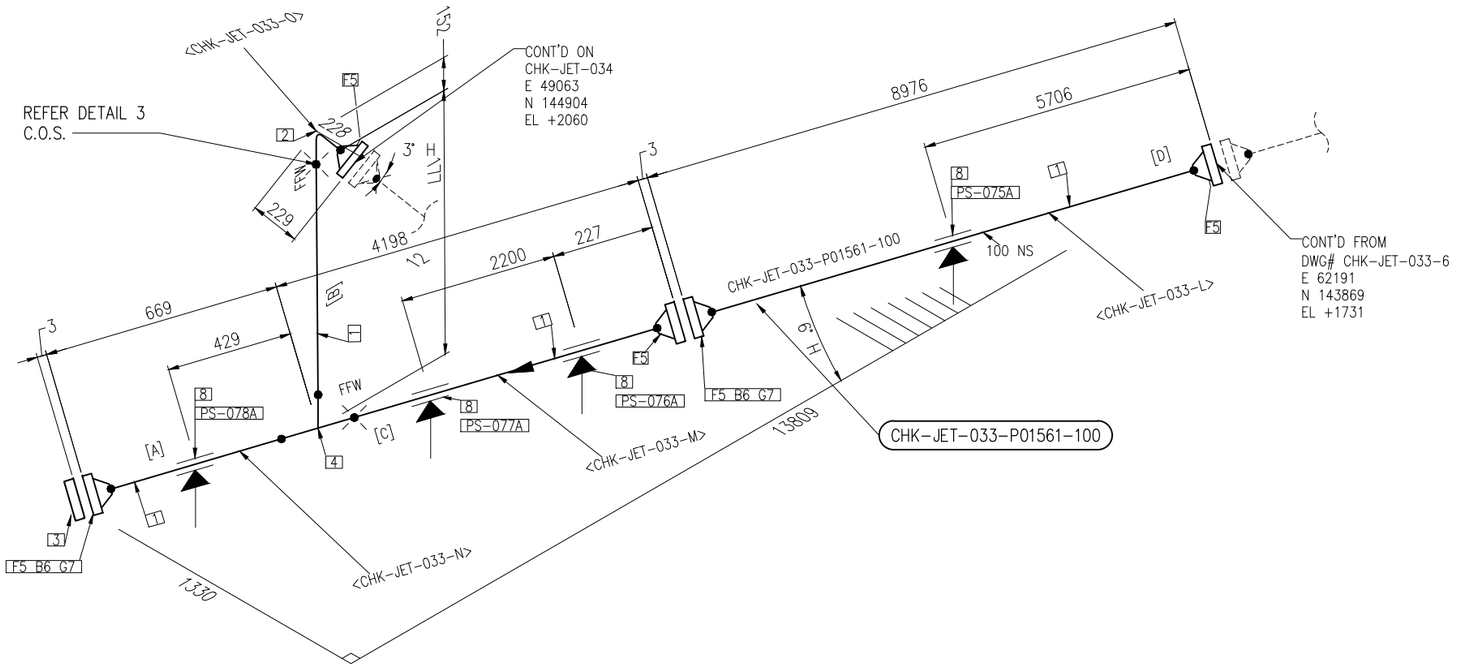
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



DETAIL 3
SCALE NTS



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-JET-033-P01561-100
DRG NUMBER = CHK-JET-033-07 — SHEET NUMBER
SPOOL NUMBER = <CHK-JET-033-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	13.8M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	100	P02006S100	1
3	FLANGE BLIND RF CL150 A182 F316L	100	P2616AX100	1
4	TEE EQUAL BW SCH 40S A403 WP316L	100	P03006S100	1
	FLANGES			
5	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	5
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	2
	PIPE SUPPORTS			
8	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	4

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	489MM	100	BEVEL	BEVEL
B	222MM	100	BEVEL	
C	4168MM	100		BEVEL
D	8824MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-033-L TO 0

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-033-P01561-100
SHEET No. 07 OF 07
DRG No. CHK-JET-033-07 REV. 1

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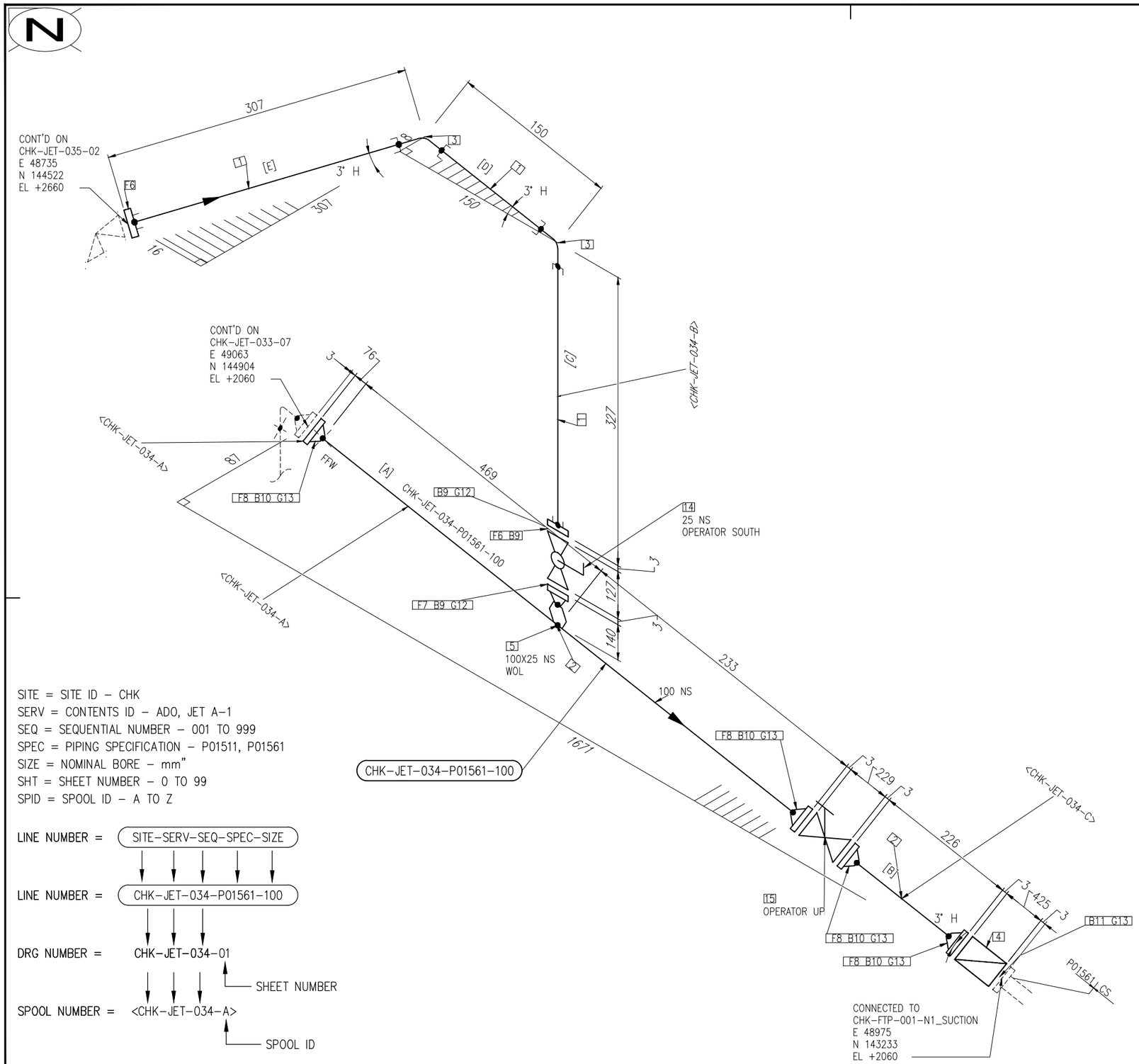

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-034-P01561-100

DRG NUMBER = CHK-JET-034-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-034-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	0.7M
2	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.9M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	2
4	BASKET STRAINER CL150 RF SS	100	STRB0SS100	1
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	1
	FLANGES			
6	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
7	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
8	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	4
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	12
10	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	32
11	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	8
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
13	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	5
	VALVES			
14	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
15	VALVE GATE RF CL150 VG01521	100	VG01521100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	777MM	100	BEVEL	
B	74MM	100	BEVEL	BEVEL
C	301MM	25	SQUARE CUT	SQUARE CUT
D	106MM	25	SQUARE CUT	SQUARE CUT
E	281MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-034-A TO D

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-034-P01561-100
SHEET No. 01 OF 01
DRG No. CHK-JET-034-01 REV. 1

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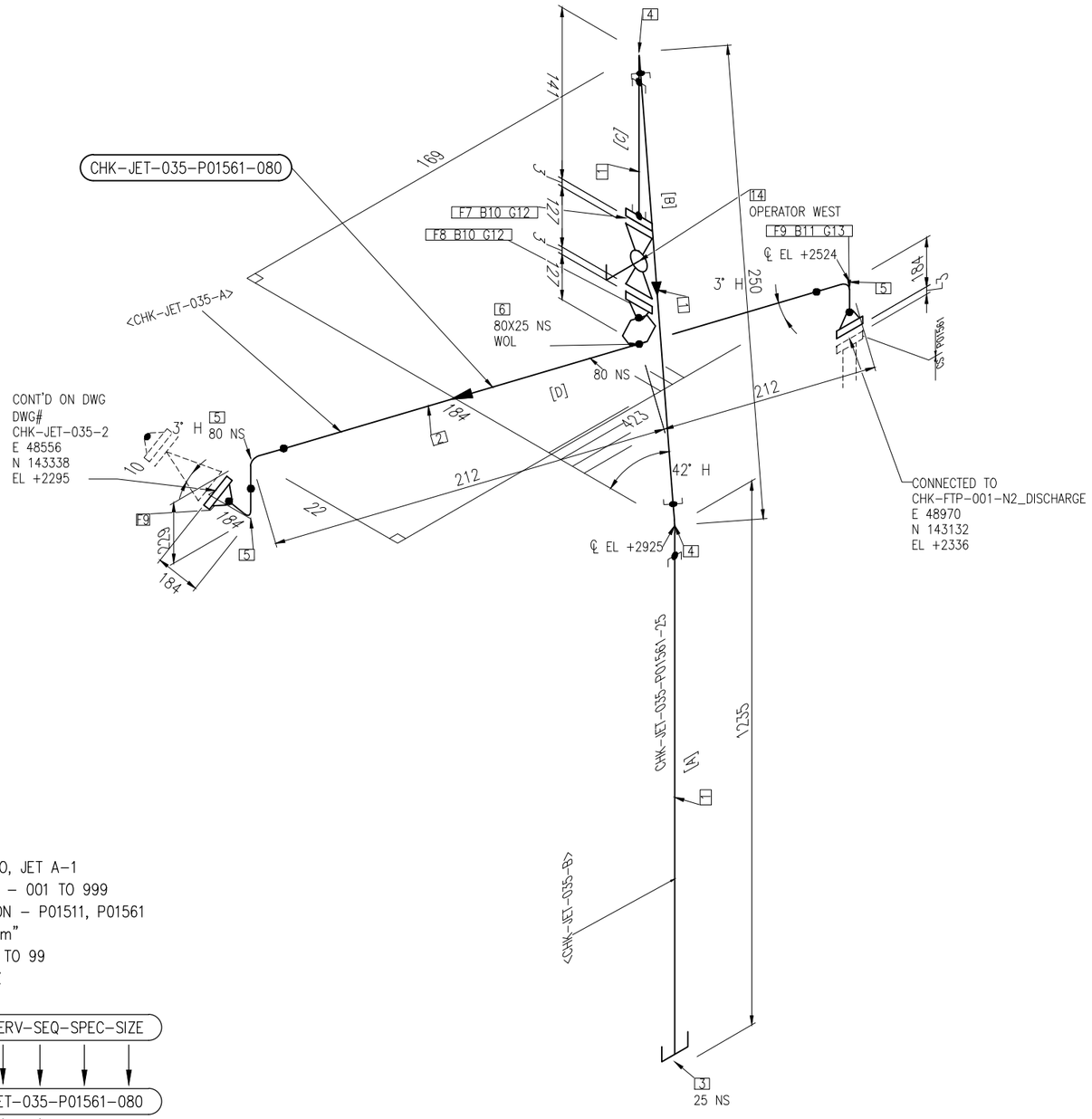

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-035-P01561-080

DRG NUMBER = CHK-JET-035-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-035-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.5M
2	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	0.2M
	FITTINGS			
3	CAP SCRD NPT CL3000 A182 F316	25	P450753025	1
4	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	2
5	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	80	P02006S080	3
	OLETS			
6	WELDOLET SCH 40SX80S A182 F316L	80X25	P50006STFC	1
	FLANGES			
7	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	1
8	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
9	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	2
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
11	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	4
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
13	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	1
	VALVES			
14	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1172MM	25	SCREWED	SQUARE CUT
B	206MM	25	SQUARE CUT	SQUARE CUT
C	115MM	25	SQUARE CUT	SQUARE CUT
D	196MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-035-A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-035-P01561-080
SHEET No. 01 OF 02
DRG No. CHK-JET-035-01 REV. 1

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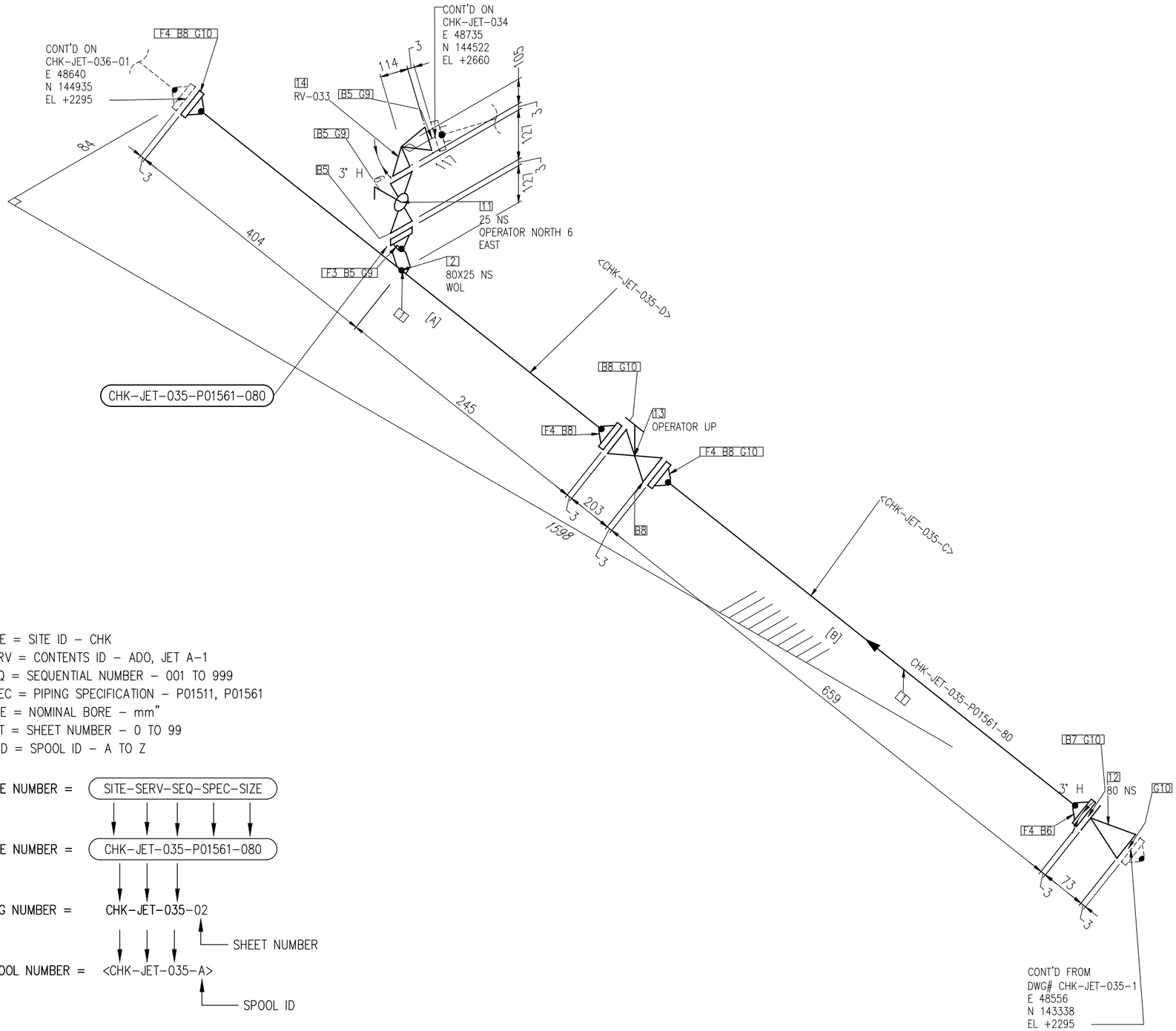

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	1.1M
	OLETS			
2	WELDOLET SCH 40SX80S A182 F316L	80X25	P50006STFC	1
	FLANGES			
3	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
4	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	4
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	16
6	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X180	P900505100	4
7	STUDBOLT 5/8" UNC X180 B8M CL2/8MA (CHK)	16X180	P900505180	4
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	20
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	5
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
12	VALVE CHECK WAFER RF CL150 VC01524	80	VC01524080	1
13	VALVE GATE RF CL150 VG01521	80	VG01521080	1
14	VALVE RELIEF RF CL150 CHK-RV-033	25	MECHANICAL	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	511MM	80	BEVEL	BEVEL
B	520MM	80	BEVEL	BEVEL

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-035-P01561-080

DRG NUMBER = CHK-JET-035-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-035-A> — SPOOL ID

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-035-C TO D

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-035-P01561-080
SHEET No. 02 OF 02
DRG No. CHK-JET-035-02 REV. 1

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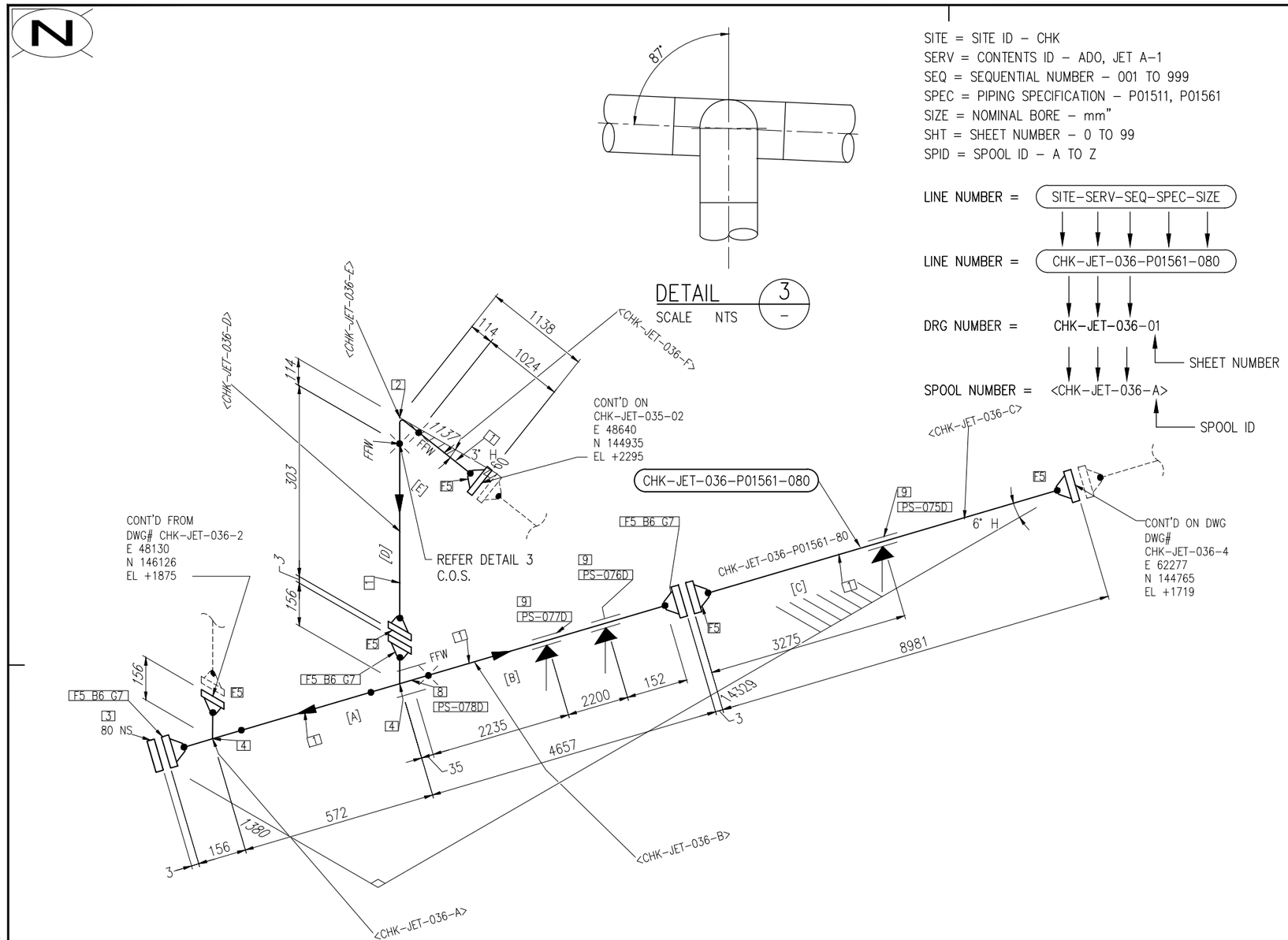

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A–1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–JET–036–P01561–080

DRG NUMBER = CHK–JET–036–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–JET–036–A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	15.4M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	80	P02006S080	1
3	FLANGE BLIND RF CL150 A182 F316L	80	P2616AX080	1
4	TEE EQUAL BW SCH 40S A403 WP316L	80	P03006S080	2
	FLANGES			
5	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	8
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	12
7	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	3
	PIPE SUPPORTS			
8	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	80	W146301080	1
9	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	80	U446204080	3

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	401MM	80	BEVEL	BEVEL
B	4652MM	80	BEVEL	
C	8842MM	80	BEVEL	BEVEL
D	383MM	80	BEVEL	
E	1105MM	80		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732–SK–PM–502–03
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD
AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–JET–036–A TO F

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–JET–036–P01561–080
SHEET No. 01 OF 06
DRG No. CHK–JET–036–01 REV. 1

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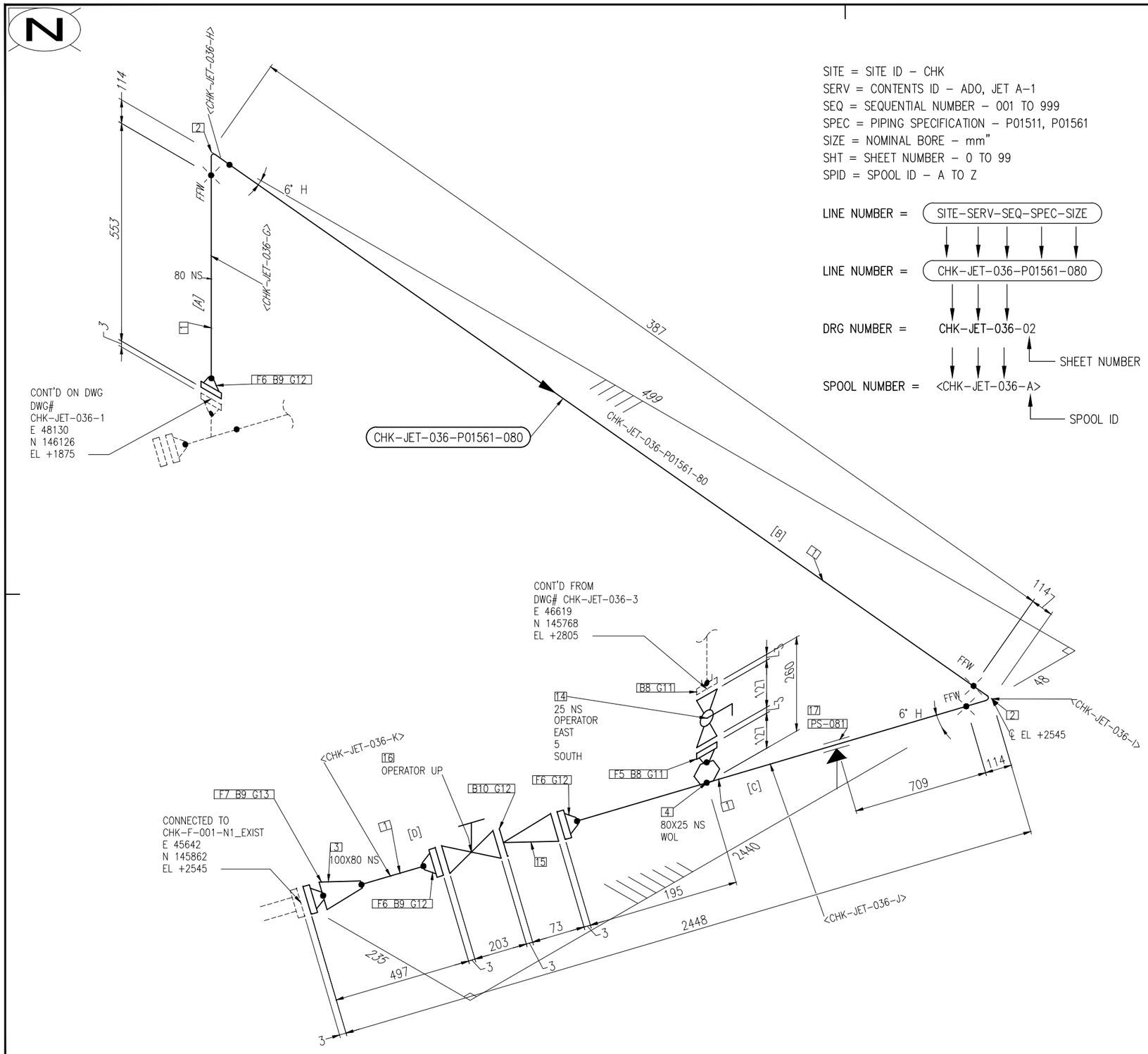

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–JET–036–P01561–080

DRG NUMBER = CHK–JET–036–02 (SHEET NUMBER)

SPOOL NUMBER = <CHK–JET–036–A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	3.0M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	80	P02006S080	2
3	REDUCER CONC BW SCH 40S A403 WP316L	100X80	P06006SSGF	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	80X25	P50006STFC	1
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
6	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	3
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	1
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
9	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
10	STUDBOLT 5/8" UNC X180 B8M CL2/8MA NUTS	16X180	P900505180	4
11	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
12	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	4
13	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	1
	VALVES			
14	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
15	VALVE CHECK WAFER RF CL150 VC01524	80	VC01524080	1
16	VALVE GATE RF CL150 SS VG01521	80	VG01521080	1
	PIPE SUPPORTS			
17	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	80	U446204080	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	633MM	80		BEVEL
B	424MM	80		BEVEL
C	1632MM	80	BEVEL	
D	250MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
				DRAWING REVISIONS		CONSULTANT	
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS NO.	NA.		
PIPING PLAN	12732–SK–PM–502–02		
P&ID	12732–SK–P&ID–002–01		

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–JET–036–G TO K

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–JET–036–P01561–080
SHEET No. 02 OF 06
DRG No. CHK–JET–036–02 REV. 1

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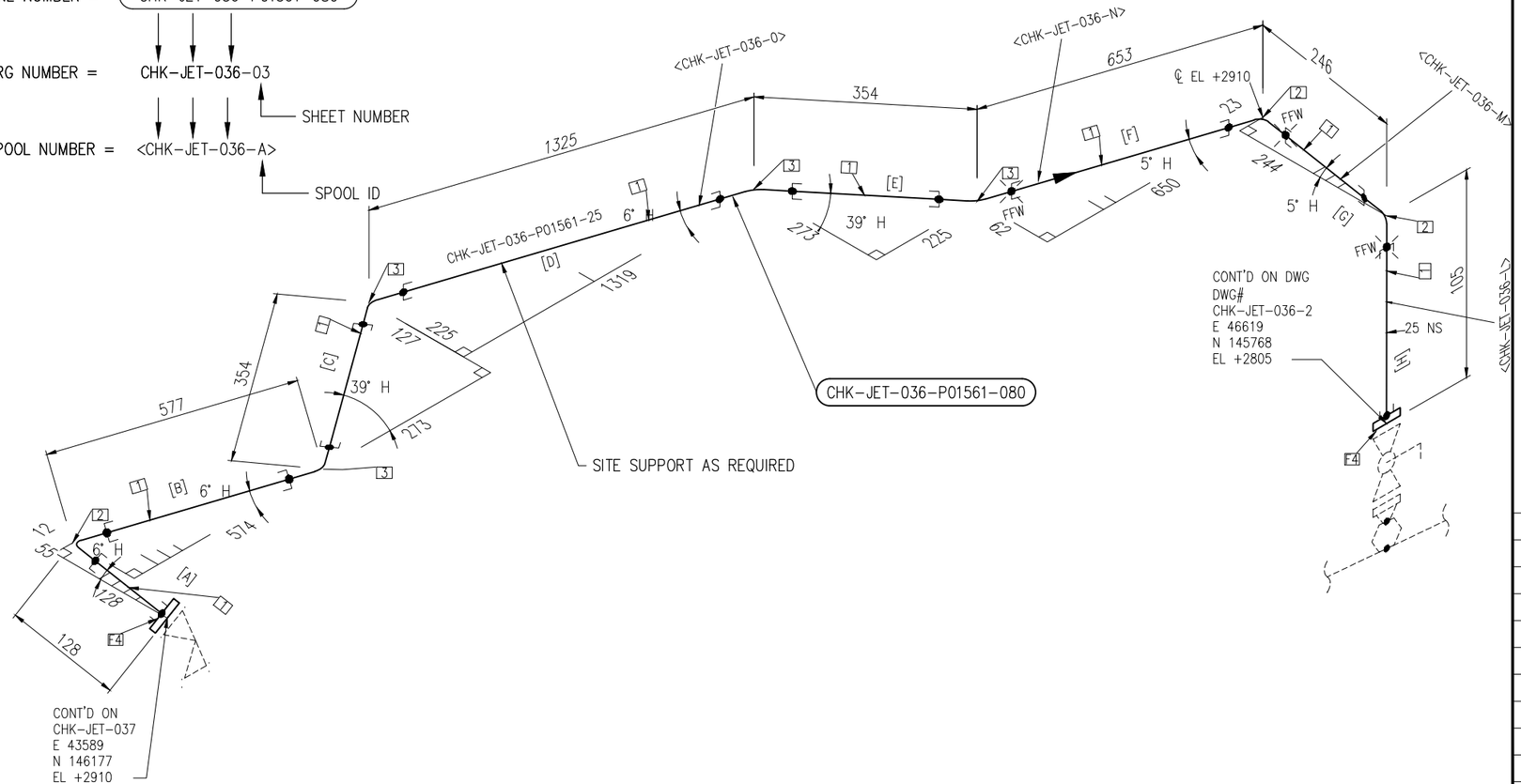
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-036-P01561-080

DRG NUMBER = CHK-JET-036-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-036-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	4M
	FITTINGS			
2	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
3	ELBOW 45 DEG SW CL3000 A182 F316L	25	P400263025	4
	FLANGES			
4	FLANGE SW RF CL150 A182 F316	25	P2516AX025	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	102MM	25	SQUARE CUT	SQUARE CUT
B	541MM	25	SQUARE CUT	SQUARE CUT
C	325MM	25	SQUARE CUT	SQUARE CUT
D	1297MM	25	SQUARE CUT	SQUARE CUT
E	326MM	25	SQUARE CUT	SQUARE CUT
F	767MM	25	SQUARE CUT	SQUARE CUT
G	352MM	25	SQUARE CUT	SQUARE CUT
H	229MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-02
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-036-L TO M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-036-P01561-080
SHEET No. 03 OF 06
DRG No. CHK-JET-036-03 REV. 1

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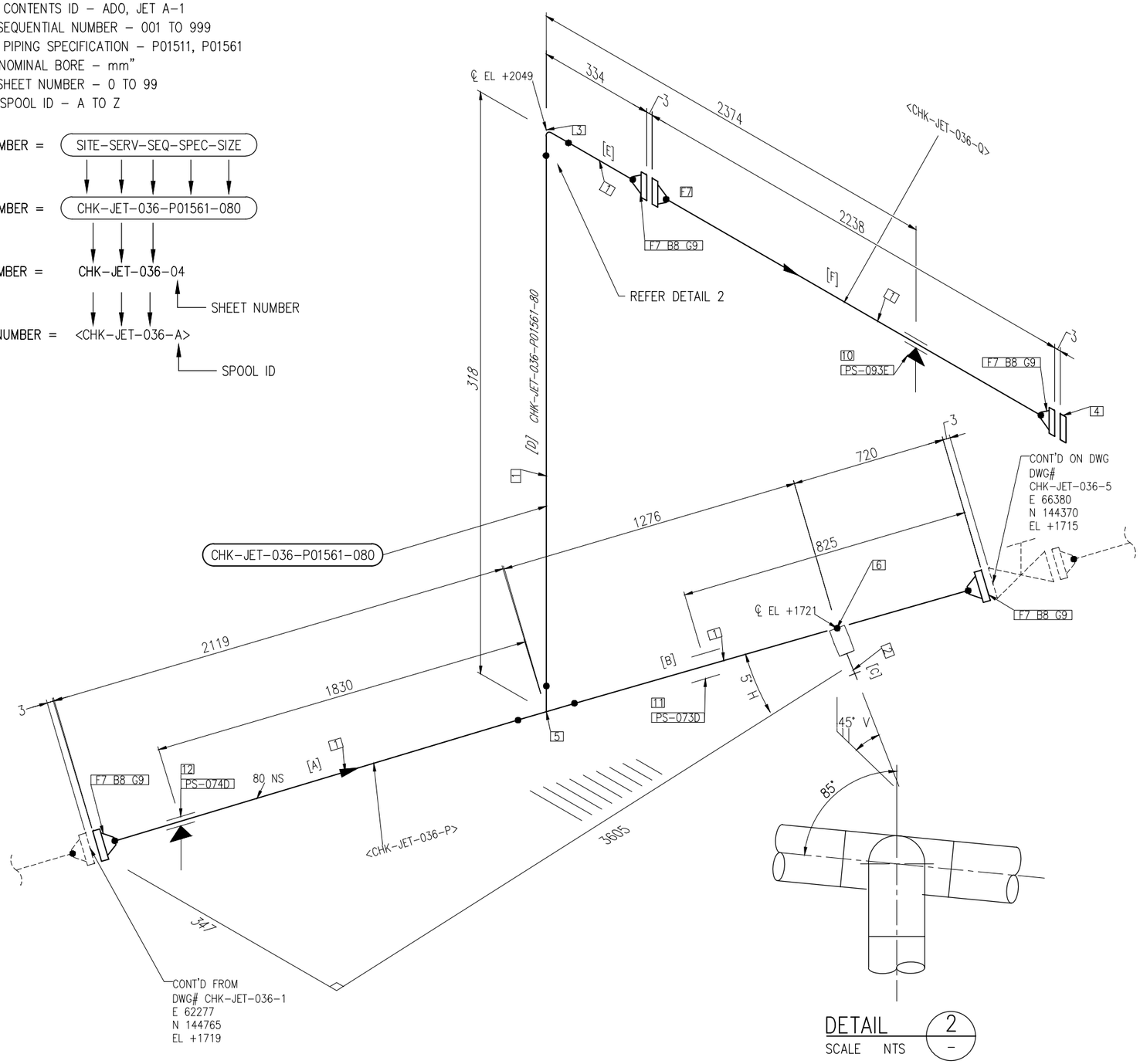
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE
LINE NUMBER = CHK-JET-036-P01561-080
DRG NUMBER = CHK-JET-036-04 — SHEET NUMBER
SPOOL NUMBER = <CHK-JET-036-A> — SPOOL ID



DETAIL 2
SCALE NTS

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	6.2M
2	EARTH BOSS STUD (REFER DRG 000-50028-01)	10		0.1M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	80	P02006S080	1
4	FLANGE BLIND RF CL150 A182 F316L	80	P2616AX080	1
5	TEE EQUAL BW SCH 40S A403 WP316L	80	P03006S080	1
	OLETS			
6	EARTH BOSS (REFER DRG STD-50028-01)	80X10	EB000000FE	1
	FLANGES			
7	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	5
	FASTENERS			
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	4
	PIPE SUPPORTS			
10	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	80	U446204080	1
11	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	80	W146301080	1
12	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	80	U346203080	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	1964MM	80	BEVEL	BEVEL
B	1840MM	80	BEVEL	BEVEL
C				
D	119MM	80	BEVEL	BEVEL
E	150MM	80	BEVEL	BEVEL
F	2099MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-02
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-036-O TO P

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-036-P01561-080
SHEET No. 04 OF 06
DRG No. CHK-JET-036-04 REV. 1

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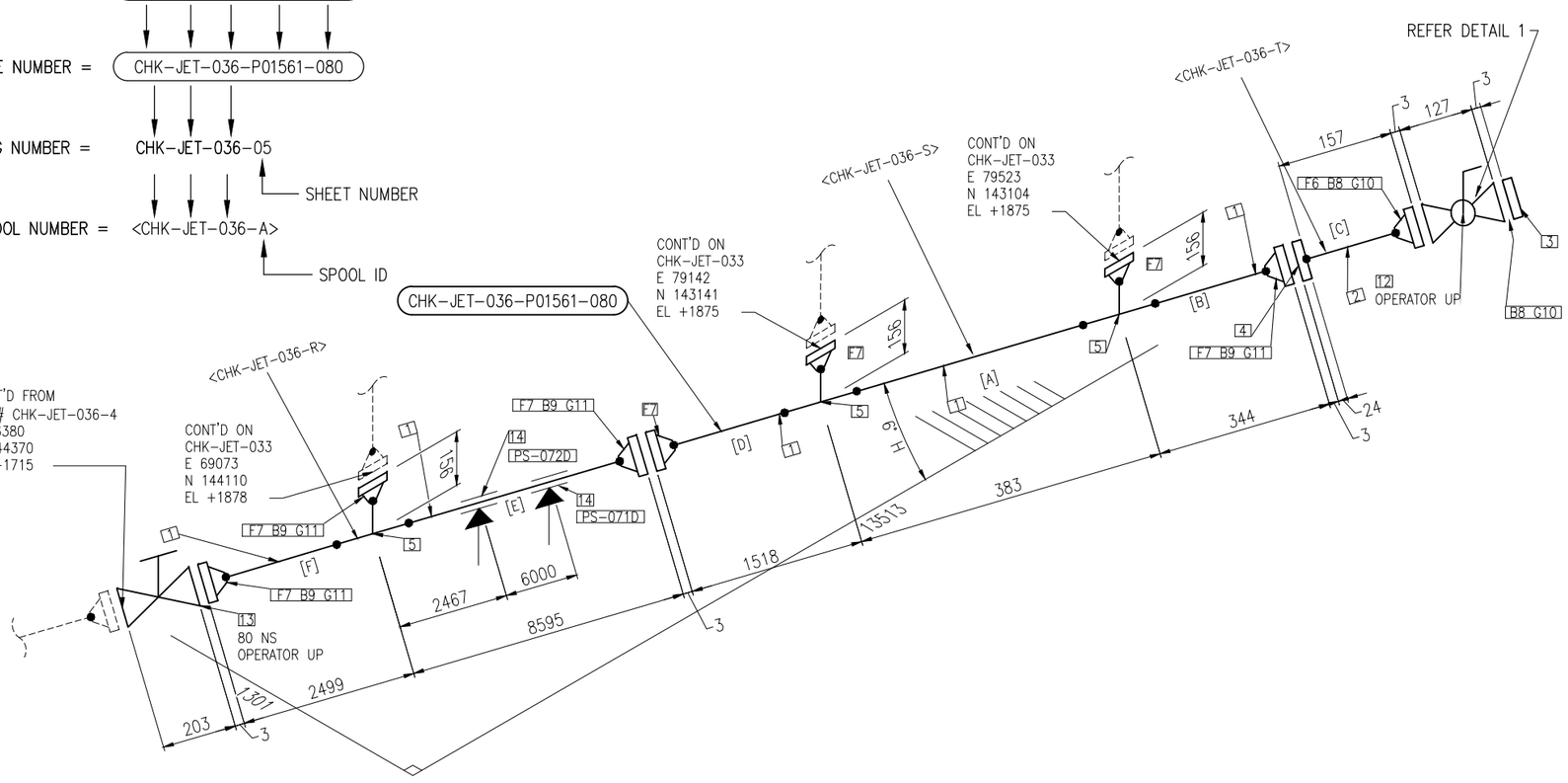
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

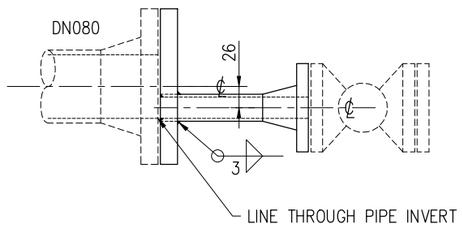
LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-036-P01561-080

DRG NUMBER = CHK-JET-036-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-036-A> — SPOOL ID





DETAIL 1
SCALE NTS –

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	12.6M
2	NIPPLE SMLS PBE SCH 80S X100LG A312 TP316L	25	P60306TC10	1
	FITTINGS			
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
4	FLANGE BLIND RF CL150 A182 F316L	80	P2616AX080	1
5	TEE EQUAL BW SCH 40S A403 WP316L	80	P03006S080	3
	FLANGES			
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	7
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
9	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	4
	VALVES			
12	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
13	VALVE GATE RF CL150 SS VG01521	80	VG01521080	1
	PIPE SUPPORTS			
14	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	80	U346203080	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	212MM	80	BEVEL	BEVEL
B	189MM	80	BEVEL	BEVEL
C	100MM	25	PL	PL
D	1363MM	80	BEVEL	BEVEL
E	8440MM	80	BEVEL	BEVEL
F	2344MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-036-Q TO R

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-036-P01561-080
SHEET No. 05 OF 06
DRG No. CHK-JET-036-05 REV. 1

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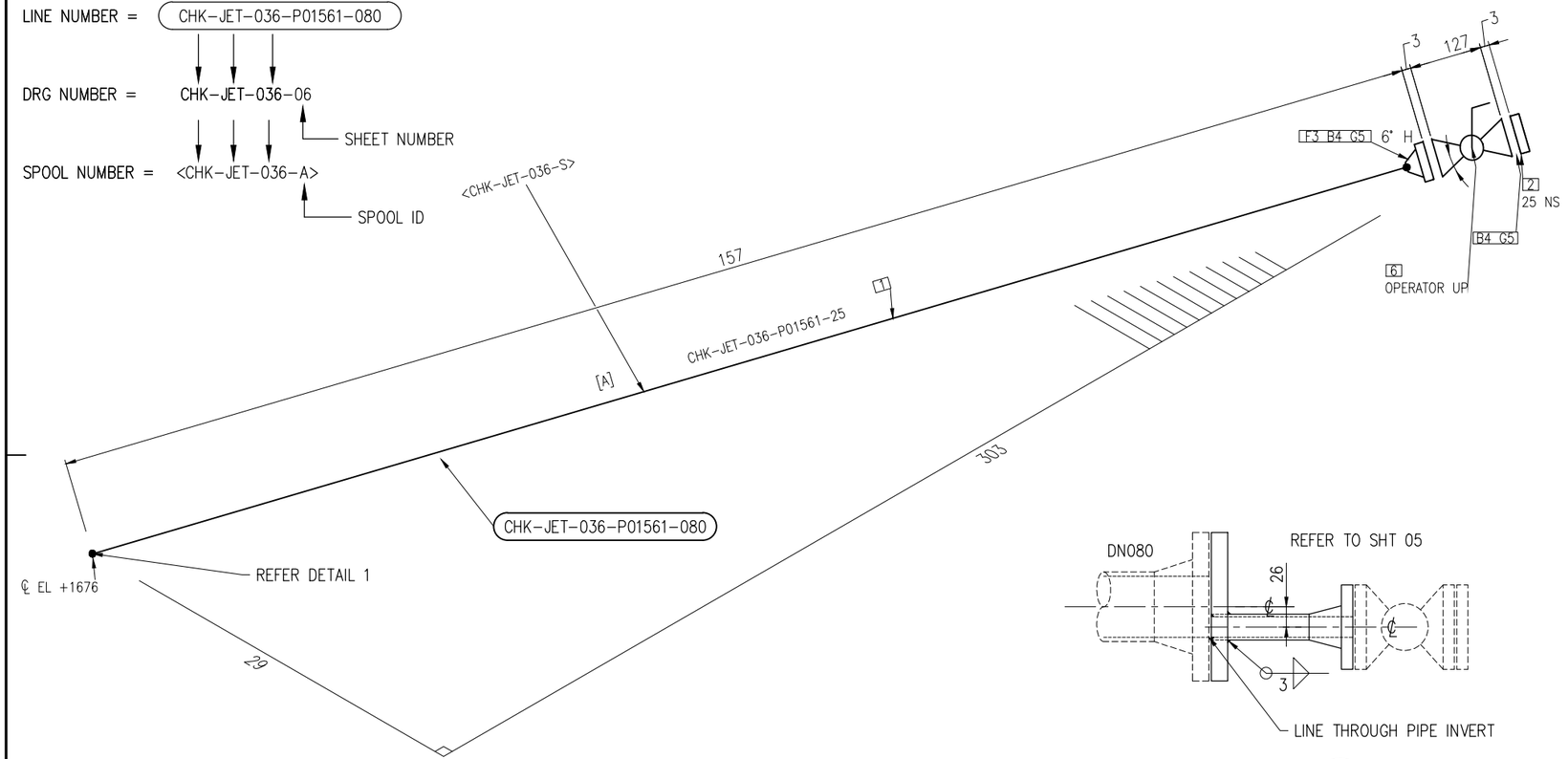
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-036-P01561-080

DRG NUMBER = CHK-JET-036-06 ← SHEET NUMBER

SPOOL NUMBER = <CHK-JET-036-A> ← SPOOL ID



DETAIL 1 / –
SCALE NTS

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	NIPPLE SMLS PBE SCH 80S X100LG A312 TP316L	25	P60306TC10	1
	FITTINGS			
2	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	FLANGES			
3	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
	VALVES			
6	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	100MM	25	PL	PL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-036-S

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-036-P01561-080
SHEET No. 06 OF 06
DRG No. CHK-JET-036-06 REV. 1

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N

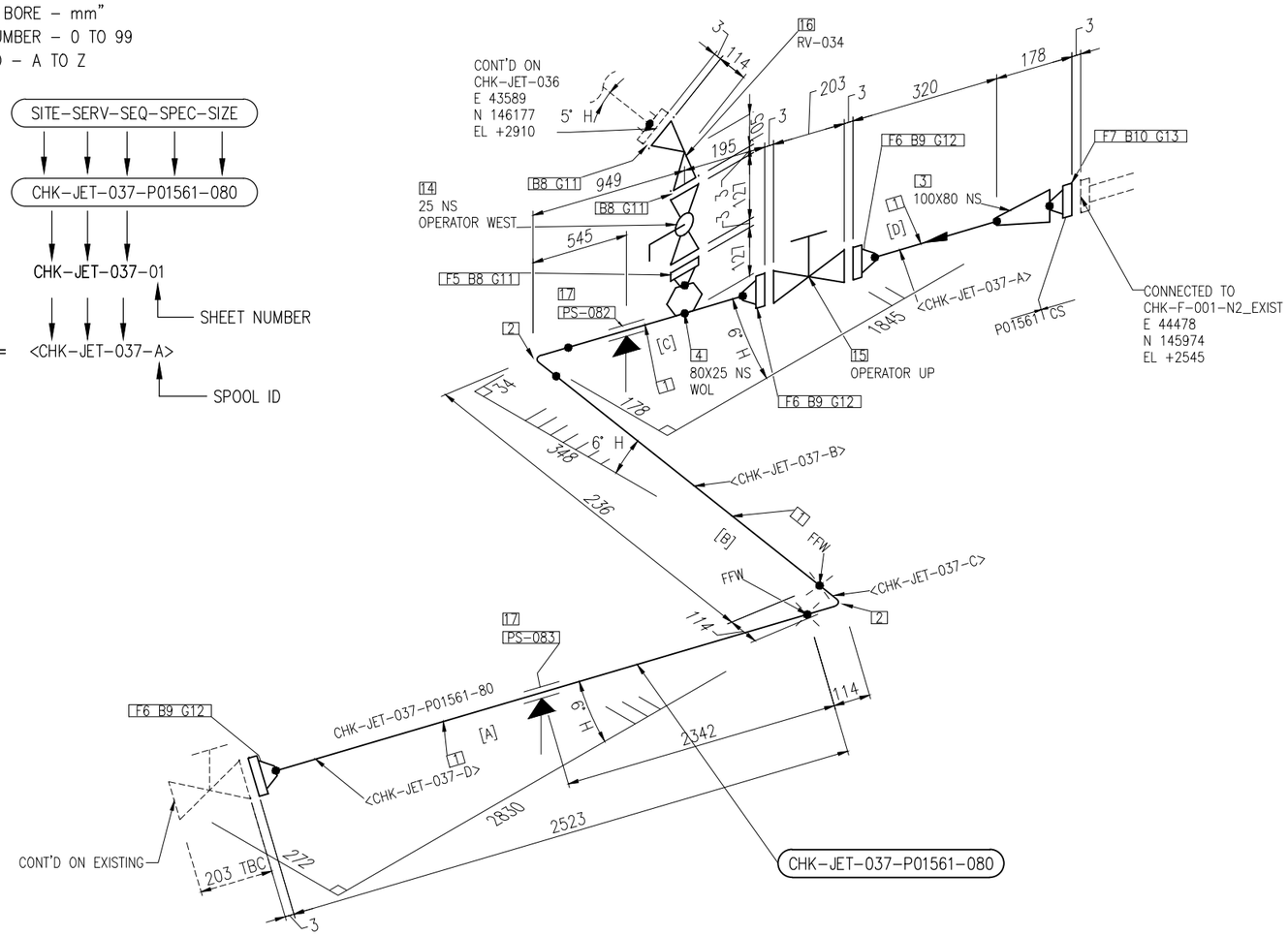
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-JET-037-P01561-080

DRG NUMBER = CHK-JET-037-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-JET-037-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	80	P01206S080	4.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	80	P02006S080	2
3	REDUCER CONC BW SCH 40S A403 WP316L	100X80	P06006SSGF	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	80X25	P50006STFC	1
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
6	FLANGE WN RF SCH 40S CL150 A182 F316L	80	P2016AS080	3
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	1
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS		P900504070	12
9	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS		P900505100	12
10	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV		P902105100	8
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	3
13	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	1
	VALVES			
14	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
15	VALVE GATE RF CL150 SS VG01521	80	VG01521080	1
16	VALVE RELIEF RF CL150 CHK-RV-034	25x25	MECHANICAL	1
	PIPE SUPPORTS			
17	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	80	U446204080	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	2603MM	80	BEVEL	SQUARE CUT
B	272MM	80	SQUARE CUT	BEVEL
C	960MM	80	BEVEL	BEVEL
D	251MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-02
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-JET-037-A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-JET-037-P01561-080
SHEET No. 01 OF 01
DRG No. CHK-JET-037-01 REV. 1

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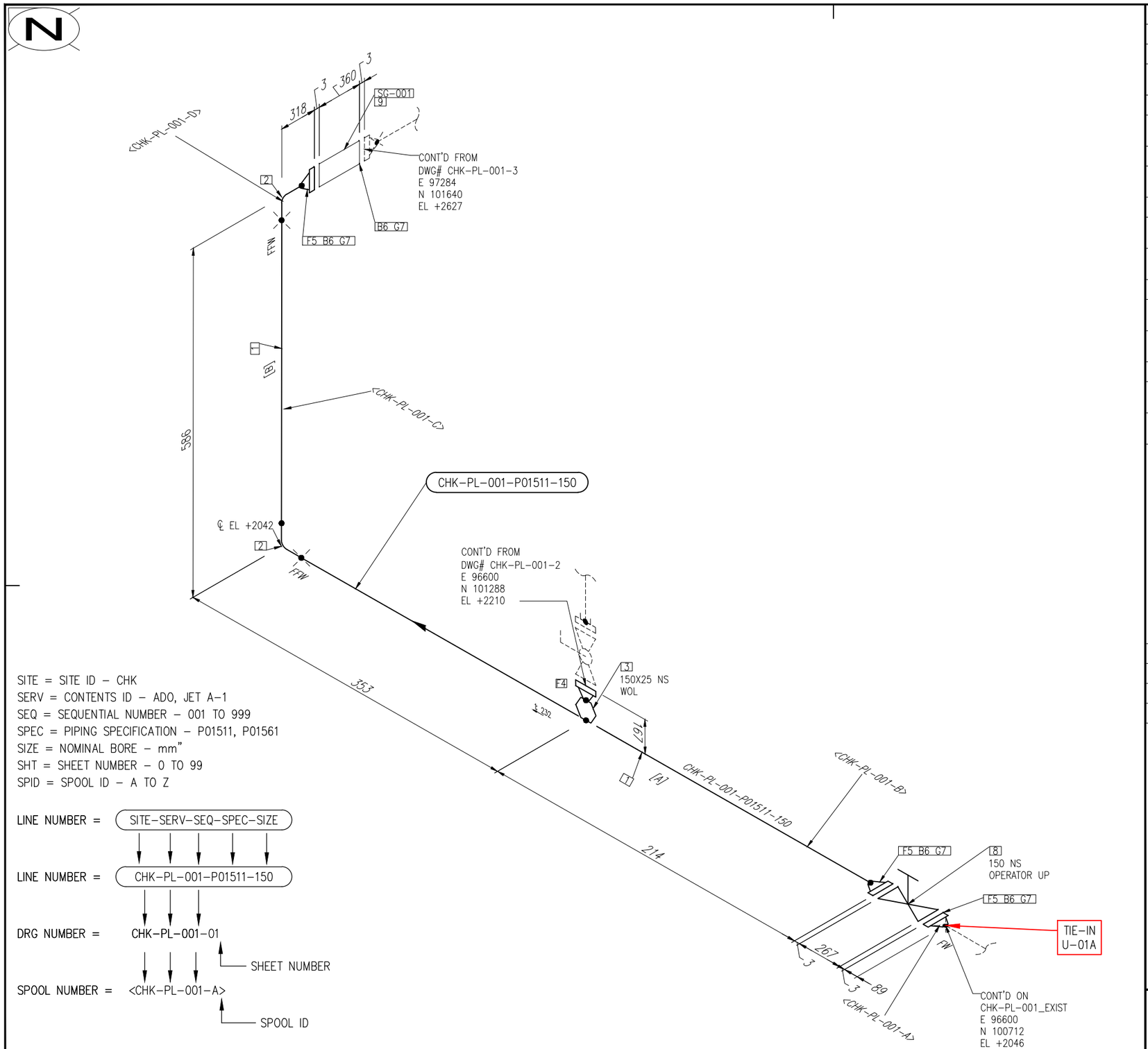

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	150	P01201D150	0.7M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	150	P02001D150	2
	OLETS			
3	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	1
	FLANGES			
4	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
5	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	3
	FASTENERS			
6	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	32
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
8	VALVE GATE RF CL150 VG01121	150	VG01121150	1
9	SIGHT GLASS CL150 RF CS CHK-SG-001	150	PSGXCSX150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	400MM	150		BEVEL
B	278MM	150		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS			
HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS No.	NA.		
PIPING PLAN	12732-SK-PM-502-20		
P&ID	12732-SK-P&ID-001-01		

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-A TO D

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-001-P01511-150
SHEET No. 01 OF 10
DRG No. CHK-PL-001-01 REV. 1

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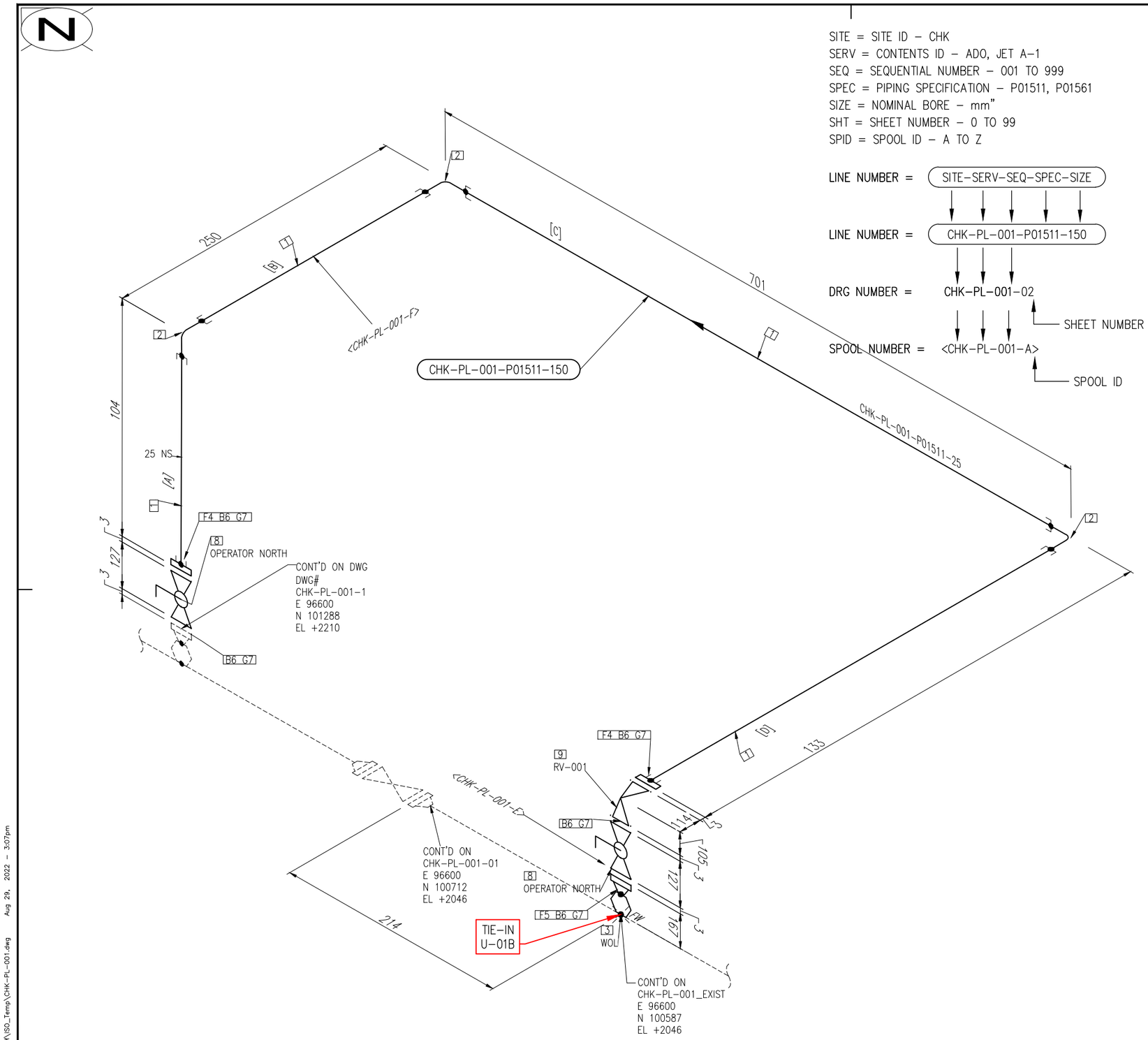

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.1M
	FITTINGS			
2	ELBOW 90 DEG SW CL3000 A105	25	P400113025	3
	OLETS			
3	WELDOLET SCH 40X80 A105N	25	P50001DFHC	1
	FLANGES			
4	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	20
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
	VALVES			
8	VALVE BALL FB RF CL150 VB01122	25	VB01122025	2
9	VALVE RELIEF RF CL150 CHK-RV-001	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	78MM	25	SQUARE CUT	SQUARE CUT
B	206MM	25	SQUARE CUT	SQUARE CUT
C	657MM	25	SQUARE CUT	SQUARE CUT
D	107MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-E TO F

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-PL-001-P01511-150
CHKD	M.WEST	06/22	SHEET No. 02 OF 10
APPD	·	06/22	DRG No. CHK-PL-001-02 REV. 1
APPD	W.DOUGAN	06/22	

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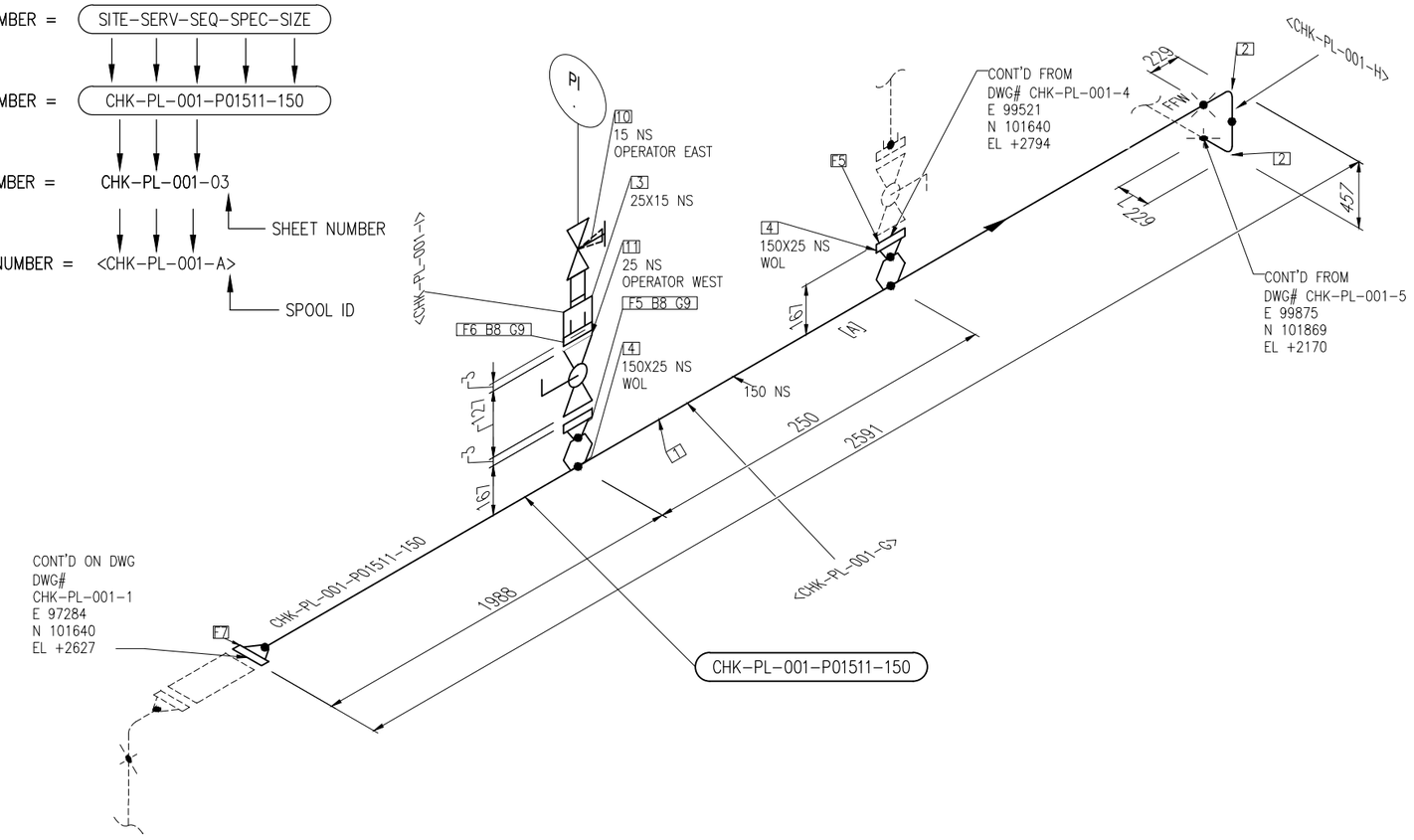
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–PL–001–P01511–150

DRG NUMBER = CHK–PL–001–03 ← SHEET NUMBER

SPOOL NUMBER = <CHK–PL–001–A> ← SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	150	P01201D150	2.5M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	150	P02001D150	2
3	HEX BUSH RED NPT CL3000 A182 F316L	25X15	P4535630CA	1
	OLETS			
4	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	2
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	2
6	FLANGE SCRD RF NPT CL150 A105	25	P2310AX025	1
7	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	1
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
9	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
	VALVES			
10	VALVE NEEDLE SCRD MXFNPT CL6000 AISI 316	15	INSTRUMENT	1
11	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	2424MM	150	BEVEL	

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–20
P&ID	12732–SK–P&ID–001–01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–PL–001–G TO I

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–PL–001–P01511–150
CHKD	M.WEST	06/22	SHEET No. 03 OF 10
APPD	·	06/22	DRG No. CHK–PL–001–03 REV. 1
APPD	W.DOUGAN	06/22	

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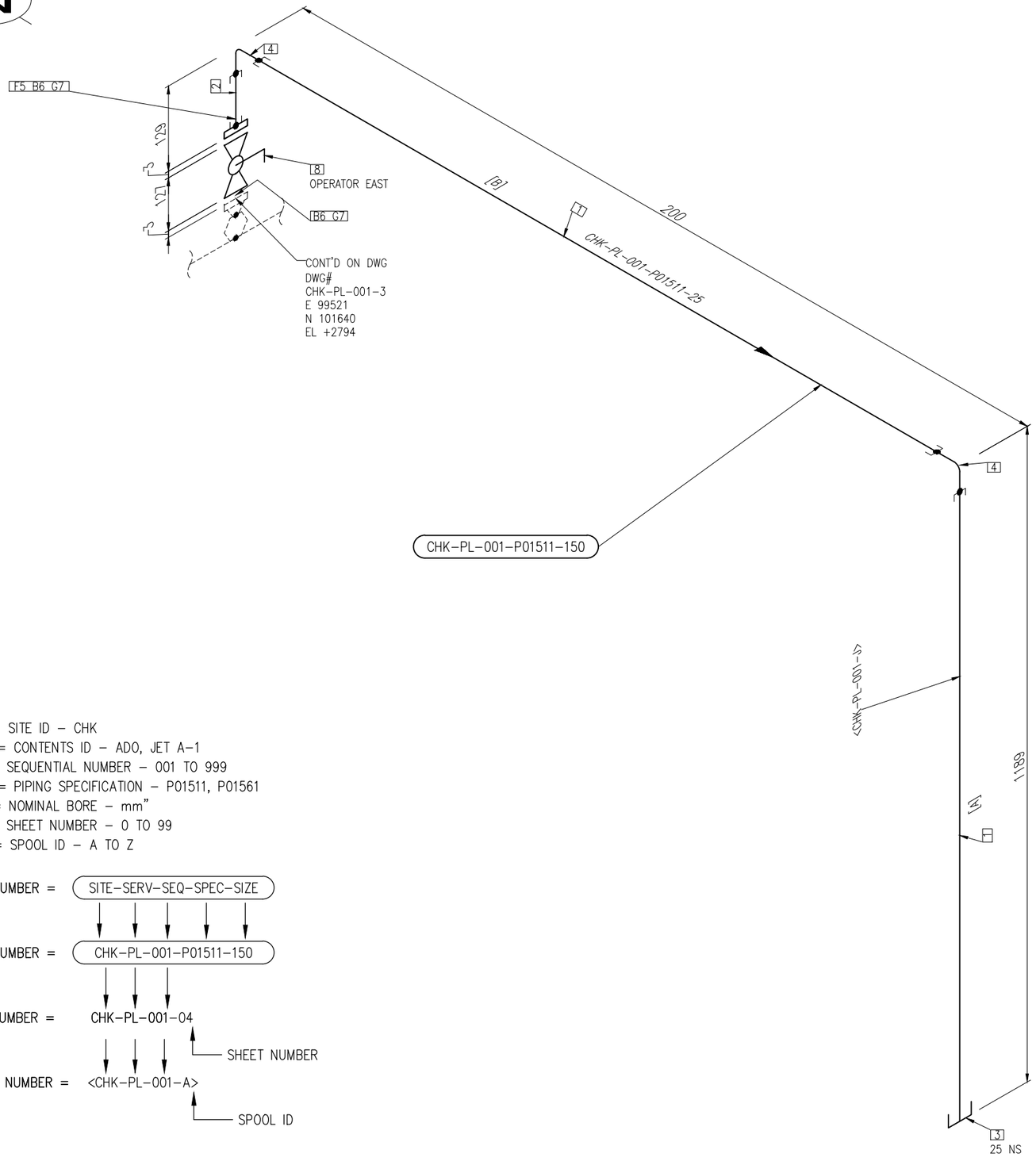

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.3M
2	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	1
	FITTINGS			
3	CAP SCRD NPT CL3000 A105	25	P450713025	1
4	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
	FLANGES			
5	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	1
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
	VALVES			
8	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	1126MM	25	SCREWED	SQUARE CUT
B	156MM	25	SQUARE CUT	SQUARE CUT

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-J

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-001-P01511-150
SHEET No. 04 OF 10
DRG No. CHK-PL-001-04 REV. 1

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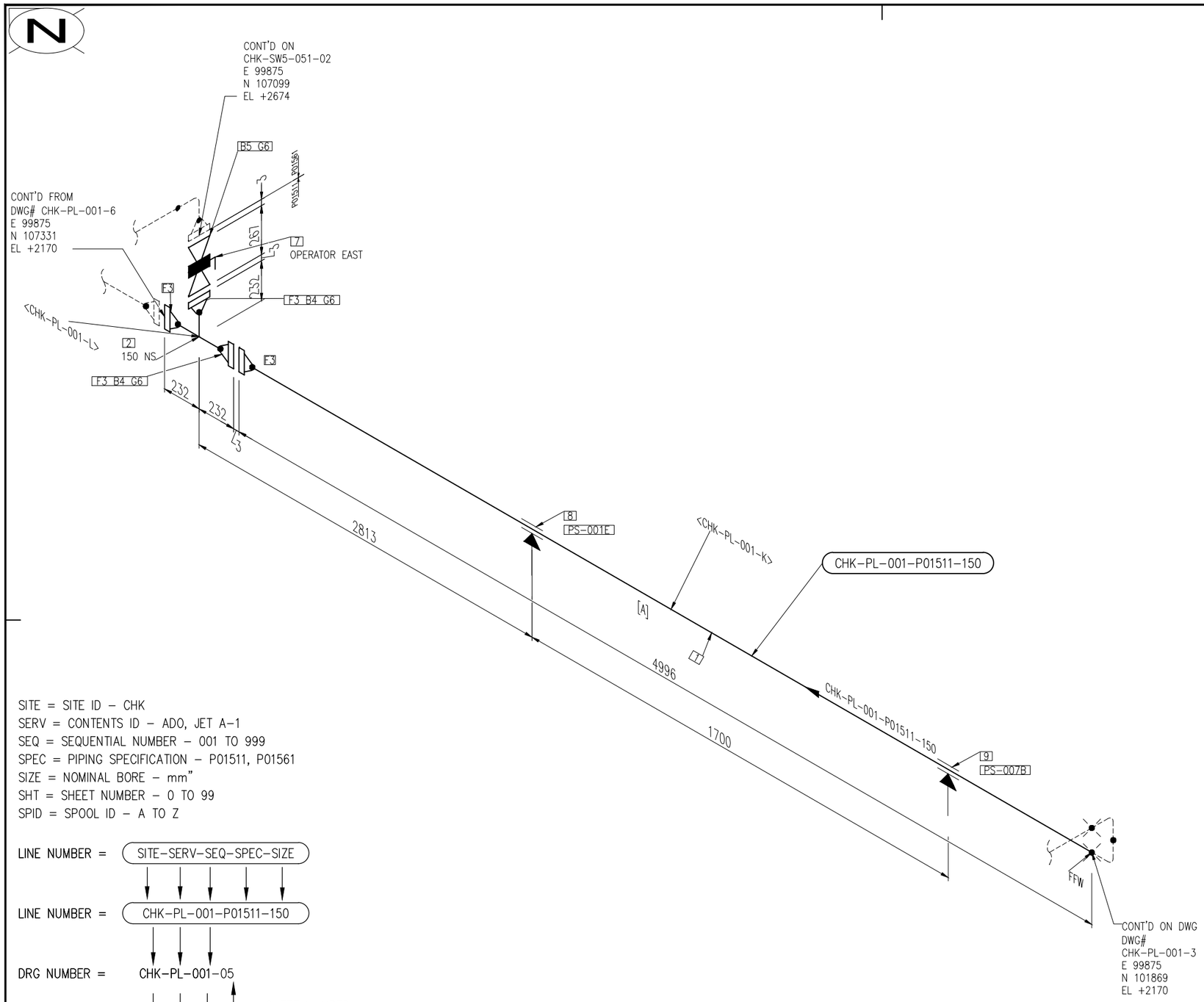

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	5.1M
	FITTINGS			
2	TEE EQUAL BW SCH 40 A234 WPB	150	P03001D150	1
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	4
	FASTENERS			
4	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	16
5	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
6	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	3
	VALVES			
7	VALVE PLUG RF CL150 CS VP01121	150	VP01121150	1
	PIPE SUPPORTS			
8	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	1
9	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	150		1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	5057MM	150	BEVEL	

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-K TO L

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-001-P01511-150
SHEET No. 05 OF 10
DRG No. CHK-PL-001-05 REV. 1

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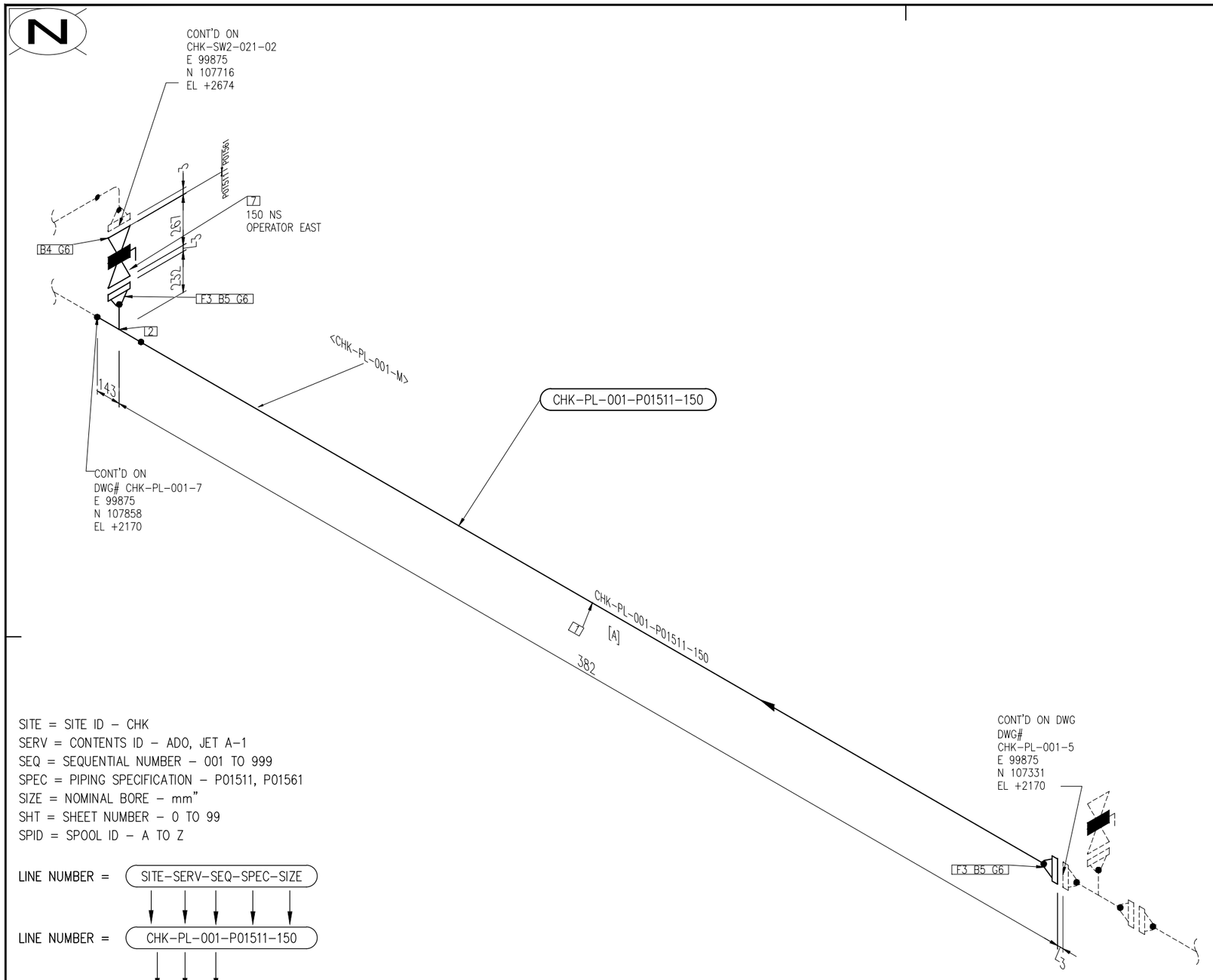

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	0.2M
	FITTINGS			
2	TEE EQUAL BW SCH 40 A234 WPB	150	P03001D150	1
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	2
	FASTENERS			
4	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
5	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	16
6	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	3
	VALVES			
7	VALVE PLUG RF CL150 CS VP01121	150	VP01121150	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	151MM	150	BEVEL	BEVEL

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-06 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS			
HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS NO.	NA.		
PIPING PLAN	12732-SK-PM-502-15		
P&ID	12732-SK-P&ID-001-01		

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-001-P01511-150
SHEET No. 06 OF 10
DRG No. CHK-PL-001-06 REV. 1

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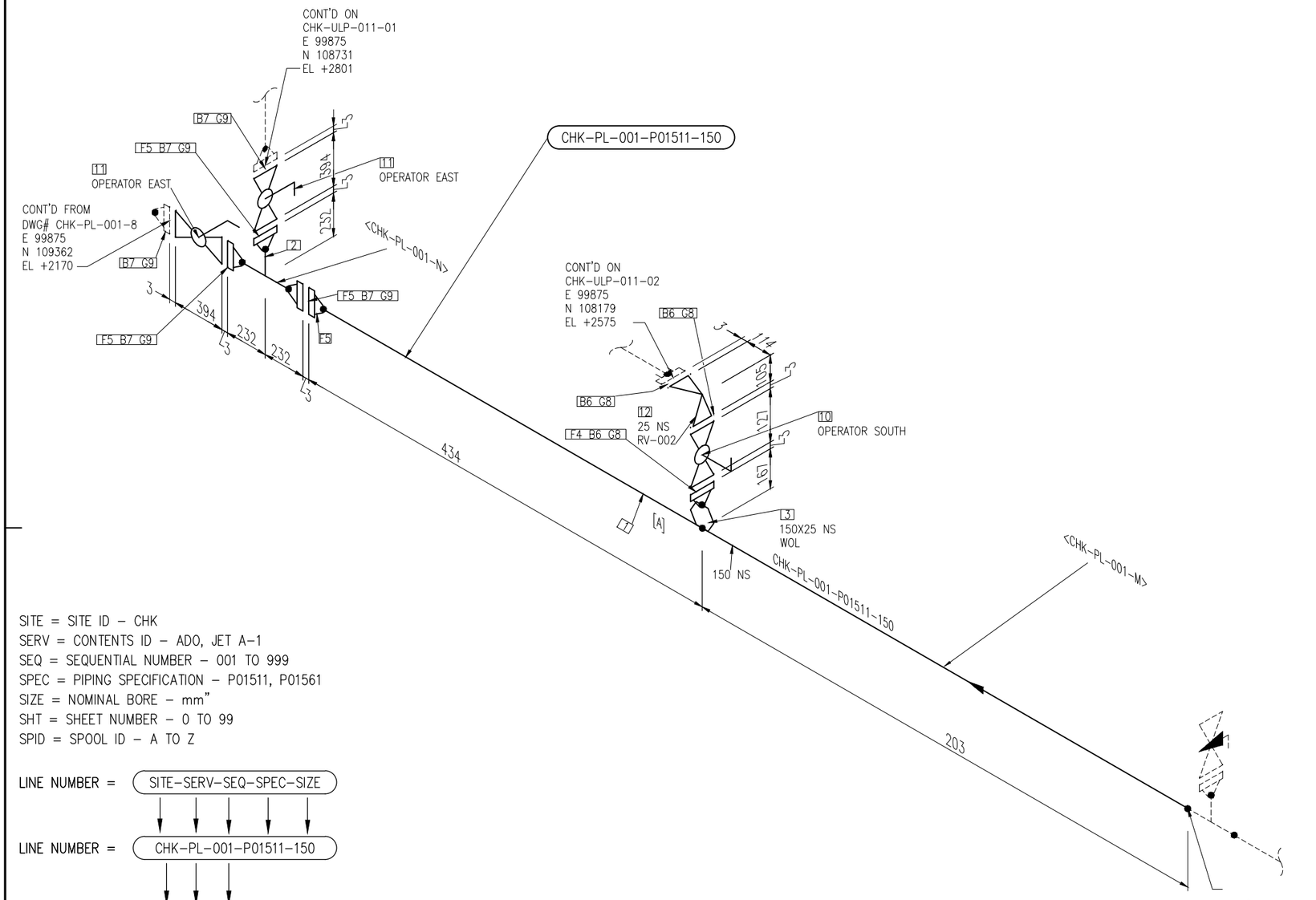

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-07 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	0.6M
	FITTINGS			
2	TEE EQUAL BW SCH 40 A234 WPB	150	P03001D150	1
	OLETS			
3	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	1
	FLANGES			
4	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
5	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	4
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
7	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	40
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	5
	VALVES			
10	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
11	VALVE BALL FB RF CL150 VB01122	150	VB01122150	2
12	VALVE RELIEF RF CL150 CHK-RV-002	25x25	MECHNICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	549MM	150	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

DRAWING REVISIONS

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-M TO N

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-001-P01511-150
SHEET No. 07 OF 10
DRG No. CHK-PL-001-07 REV. 1

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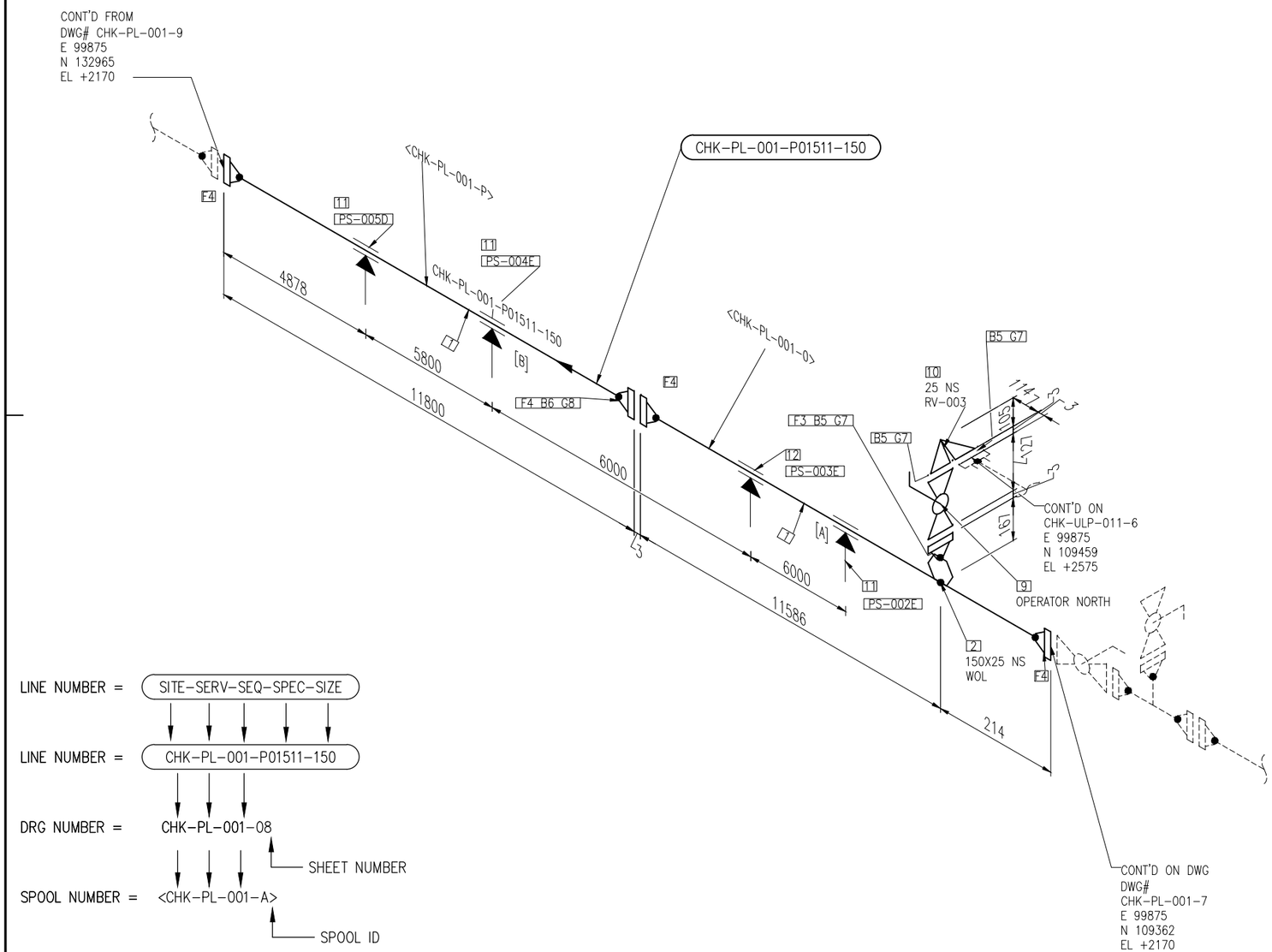
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-08 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	23.3M
	OLETS			
2	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	1
	FLANGES			
3	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
4	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	4
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
6	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	1
	VALVES			
9	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
10	VALVE RELIEF RF CL150 CHK-RV-003	25x25	MECHNICAL	1
	PIPE SUPPORTS			
11	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	3
12	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	150		1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	11623MM	150	BEVEL	BEVEL
B	11623MM	150	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-10
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-0 TO P

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-001-P01511-150
SHEET No. 08 OF 10
DRG No. CHK-PL-001-08 REV. 1

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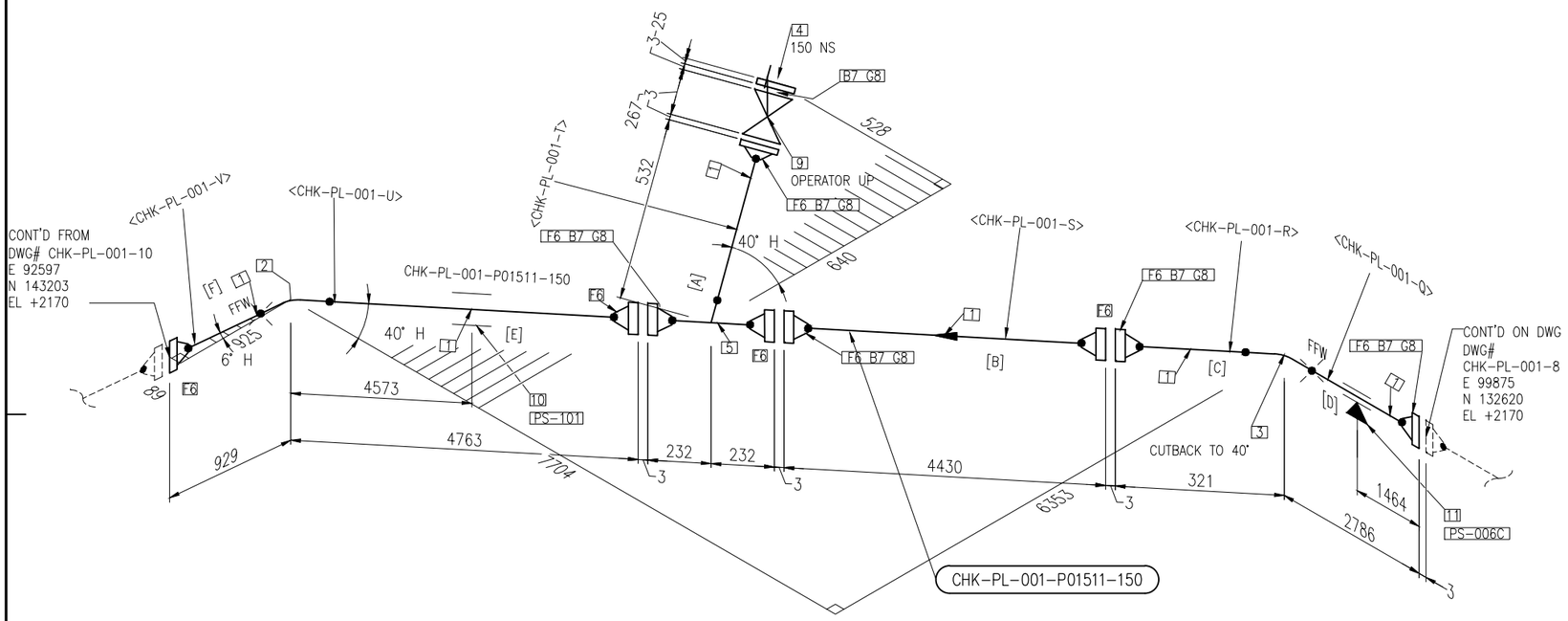
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-09 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	150	P01201D150	13.0M
	FITTINGS			
2	ELBOW 45 DEG LR BW SCH 40 A234 WPB	150	P02201D150	1
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB– CUTBACK TO 40 DEG.	150	P02001D150	1
4	FLANGE BLIND RF CL150 A105	150	P2610AX150	1
5	TEE EQUAL BW SCH 40 A234 WPB	150	P03001D150	1
	FLANGES			
6	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	9
	FASTENERS			
7	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	48
8	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	150	P82261A150	6
	VALVES			
9	VALVE GATE RF CL150 VG01121	150	VG01121150	1
	PIPE SUPPORTS			
10	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	150	W146301150	1
11	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	150	U446204150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	300MM	150	BEVEL	BEVEL
B	4253MM	150	BEVEL	BEVEL
C	151MM	150	BEVEL	BEVEL
D	2766MM	150		BEVEL
E	4579MM	150	BEVEL	BEVEL
F	896MM	150	BEVEL	

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–10
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-Q TO V

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-PL-001-P01511-150
CHKD	M.WEST	06/22	SHEET No. 09 OF 10
APPD	·	06/22	DRG No. CHK-PL-001-09 REV. 1
APPD	W.DOUGAN	06/22	

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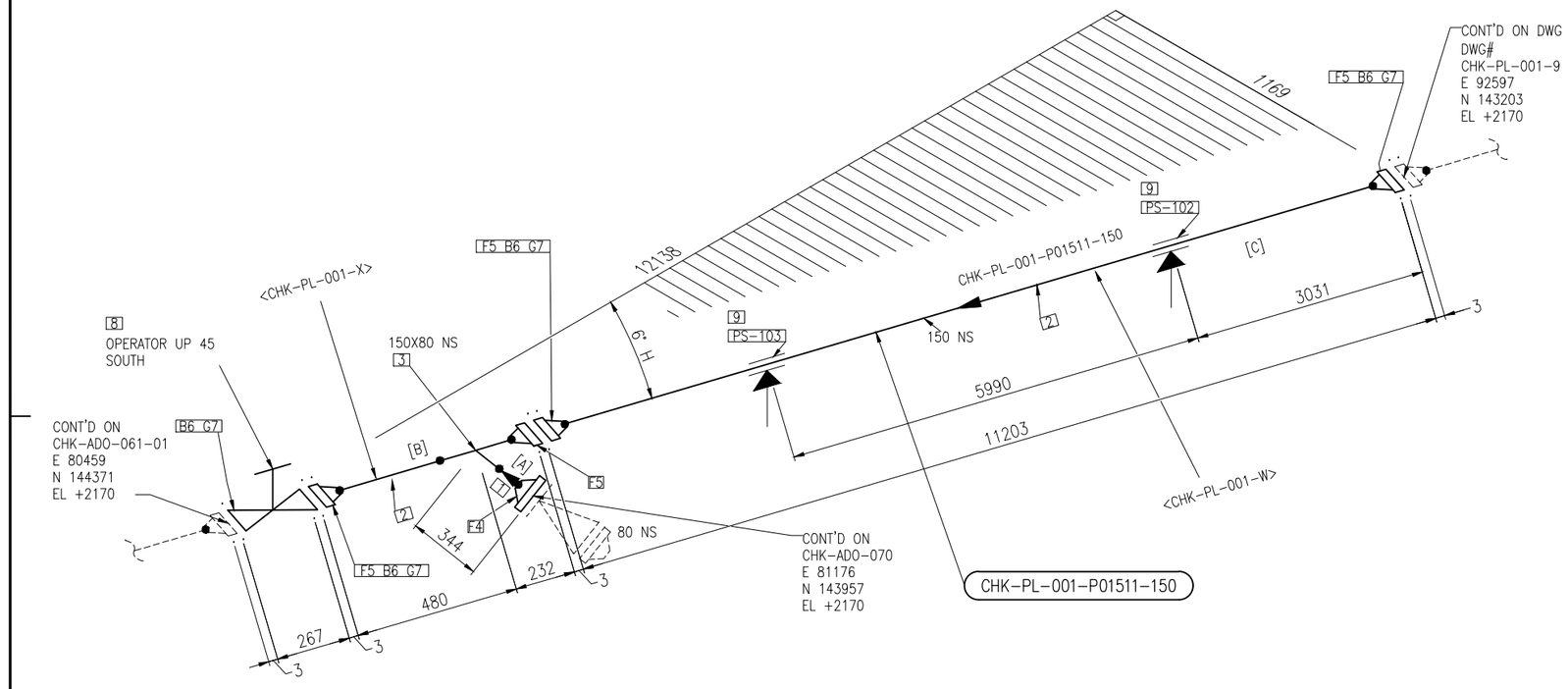
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-001-P01511-150

DRG NUMBER = CHK-PL-001-10 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-001-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	0.2M
2	PIPE SMLS SCH 40 A106 B	150	P01201D150	11.3M
	FITTINGS			
3	TEE RED BW SCH 40 A234 WPB	150X80	P04001DDHF	1
	FLANGES			
4	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	1
5	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	4
	FASTENERS			
6	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	32
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
8	VALVE GATE RF CL150 CS VG01121	150	VG01121150	1
	PIPE SUPPORTS			
9	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	150MM	80	BEVEL	BEVEL
B	249MM	150	BEVEL	BEVEL
C	11026MM	150	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS No.	NA.		
PIPING PLAN	12732-SK-PM-502-10		
P&ID	12732-SK-P&ID-001-01		

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-001-W TO X

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-001-P01511-150
SHEET No. 10 OF 10
DRG No. CHK-PL-001-10 REV. 1

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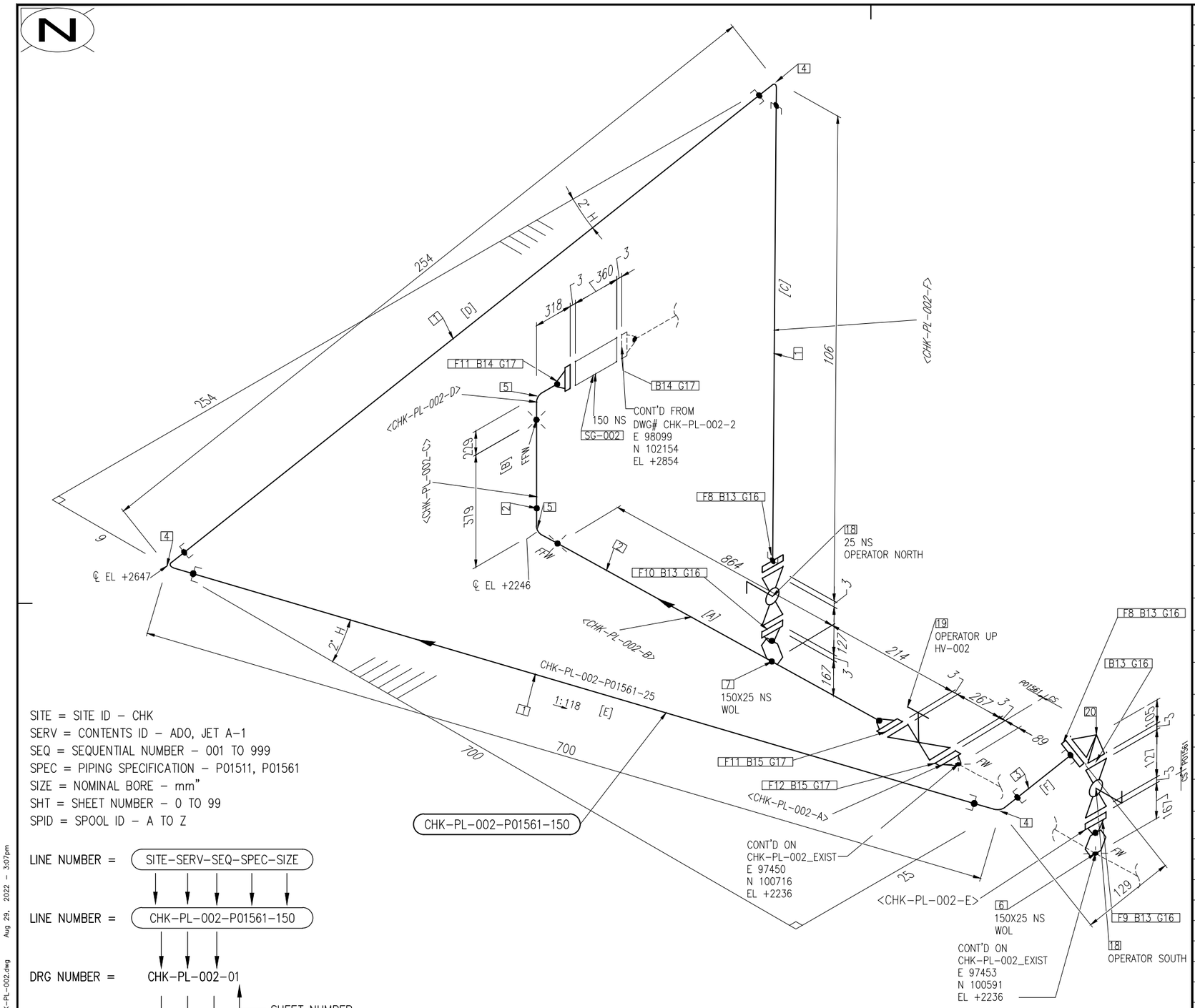

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-002-P01561-150

DRG NUMBER = CHK-PL-002-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-002-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.0M
2	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	1.3M
3	NIPPLE SMLS PBE SCH 80S X100LG A312 TP316L	25	P60306TC10	1
	FITTINGS			
4	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
5	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	2
	OLETS			
6	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	1
7	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
8	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
9	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
10	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
11	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
12	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	1
	FASTENERS			
13	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	20
14	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	16
15	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	16
16	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
17	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
18	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
19	VALVE GATE RF CL150 CS VG01121	150	VG01121150	1
20	VALVE RELIEF RF CL150 CHK-RV-004	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	910MM	150		BEVEL
B	301MM	150		BEVEL
C	80MM	25	SQUARE CUT	SQUARE CUT
D	210MM	25	SQUARE CUT	SQUARE CUT
E	656MM	25	SQUARE CUT	SQUARE CUT
F	102MM	25	PL	PL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-002-A TO E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-002-P01561-150
SHEET No. 01 OF 05
DRG No. CHK-PL-002-01 REV. 1

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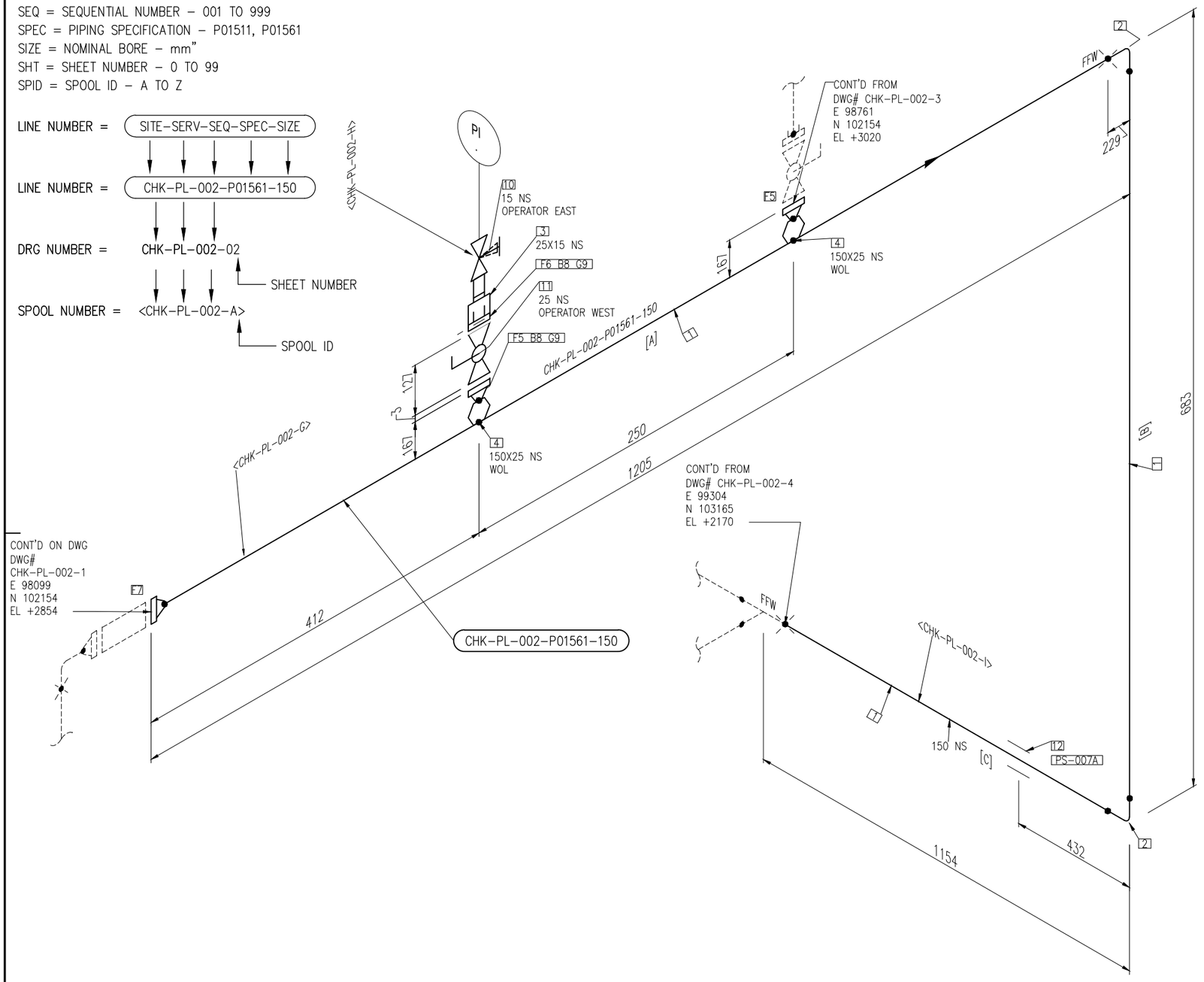
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE
LINE NUMBER = CHK–PL–002–P01561–150
DRG NUMBER = CHK–PL–002–02 — SHEET NUMBER
SPOOL NUMBER = <CHK–PL–002–A> — SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	2.2M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	2
3	HEX BUSH RED NPT CL3000 A182 F316L	25X15	P4535630CA	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	2
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	2
6	FLANGE SCRD RF NPT CL150 A182 F316L	25	P2316AX025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	1
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
9	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
	VALVES			
10	VALVE NEEDLE MXFNPT CL6000 AISI 316	15	INSTRUMENT	1
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
12	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	150		1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	1038MM	150		BEVEL
B	227MM	150	BEVEL	BEVEL
C	933MM	150		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
				DRAWING REVISIONS		CONSULTANT	
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS NO.	NA.		
PIPING PLAN	12732–SK–PM–502–20		
P&ID	12732–SK–P&ID–001–02		
REFERENCE DRAWINGS			

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–PL–002–G TO I

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–PL–002–P01561–150
CHKD	M.WEST	06/22	SHEET No. 02 OF 05
APPD	·	06/22	DRG No. CHK–PL–002–02 REV. 1
APPD	W.DOUGAN	06/22	

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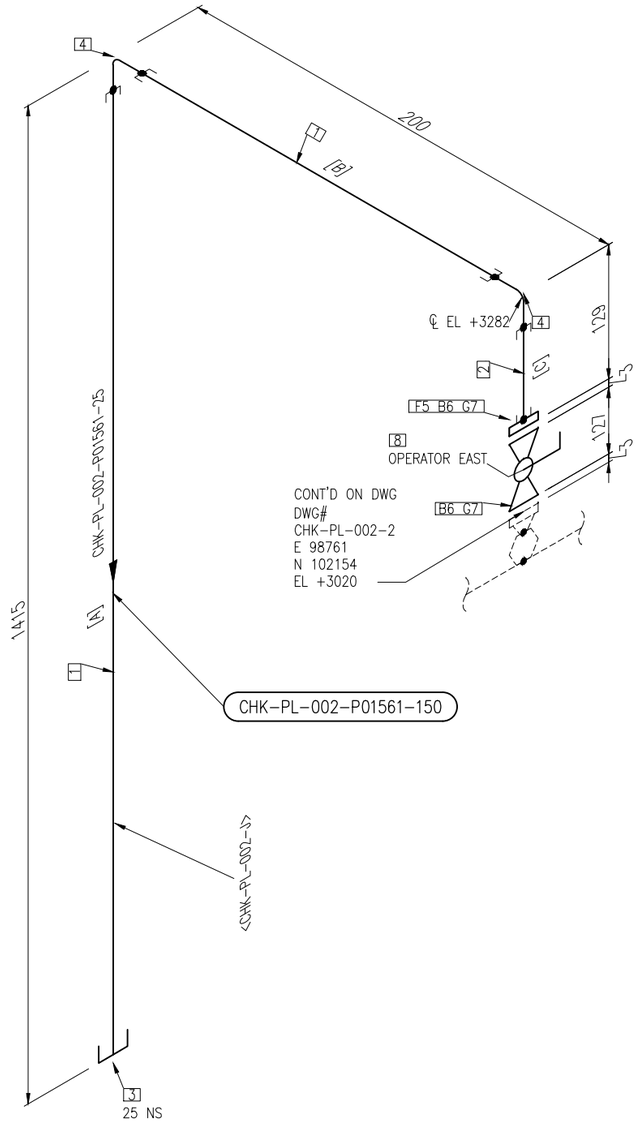
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–PL–002–P01561–150

DRG NUMBER = CHK–PL–002–03 ← SHEET NUMBER

SPOOL NUMBER = <CHK–PL–002–A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.6M
2	NIPPLE SMLS PBE SCH 80S X100LG A312 TP316L	25	P60306TC10	1
	FITTINGS			
3	CAP SCRD NPT CL3000 A182 F316	25	P450753025	1
4	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	2
	FLANGES			
5	FLANGE SW RF CL150 A182 F316	25	P2516AX025	1
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
7	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
	VALVES			
8	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1352MM	25	SCREWED	SQUARE CUT
B	156MM	25	SQUARE CUT	SQUARE CUT
C	102MM	25	SQUARE CUT	SQUARE CUT

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–20
P&ID	12732–SK–P&ID–001–02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–PL–002–J

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–PL–002–P01561–150
CHKD	M.WEST	06/22	SHEET No. 03 OF 05
APPD	·	06/22	DRG No. CHK–PL–002–03 REV. 1
APPD	W.DOUGAN	06/22	

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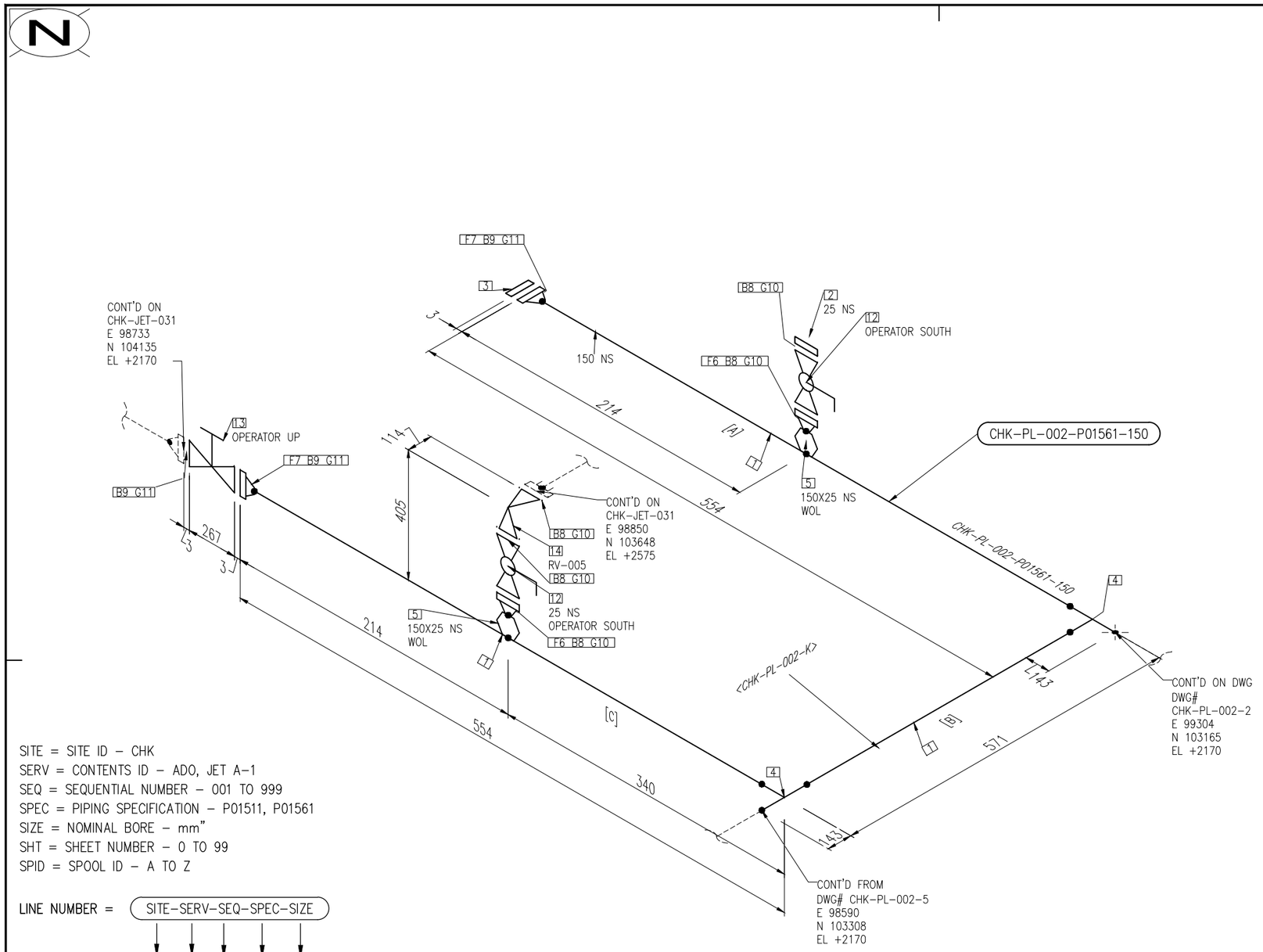

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-002-P01561-150

DRG NUMBER = CHK-PL-002-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-002-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	1.0M
	FITTINGS			
2	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
3	FLANGE BLIND RF CL150 A182 F316L	150	P2616AX150	1
4	TEE EQUAL BW SCH 40S A403 WP316L	150	P03006S150	2
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	2
	FLANGES			
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	2
7	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	20
9	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	24
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	3
	VALVES			
12	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
13	VALVE GATE RF CL150 VG01521	150	VG01521150	1
14	VALVE RELIEF RF CL150 CHK-RV-005	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	323MM	150	BEVEL	BEVEL
B	286MM	150	BEVEL	BEVEL
C	323MM	150	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-PL-002-K

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-PL-002-P01561-150
CHKD	M.WEST	06/22	SHEET No. 04 OF 05
APPD	·	06/22	DRG No. CHK-PL-002-04 REV. 1
APPD	W.DOUGAN	06/22	

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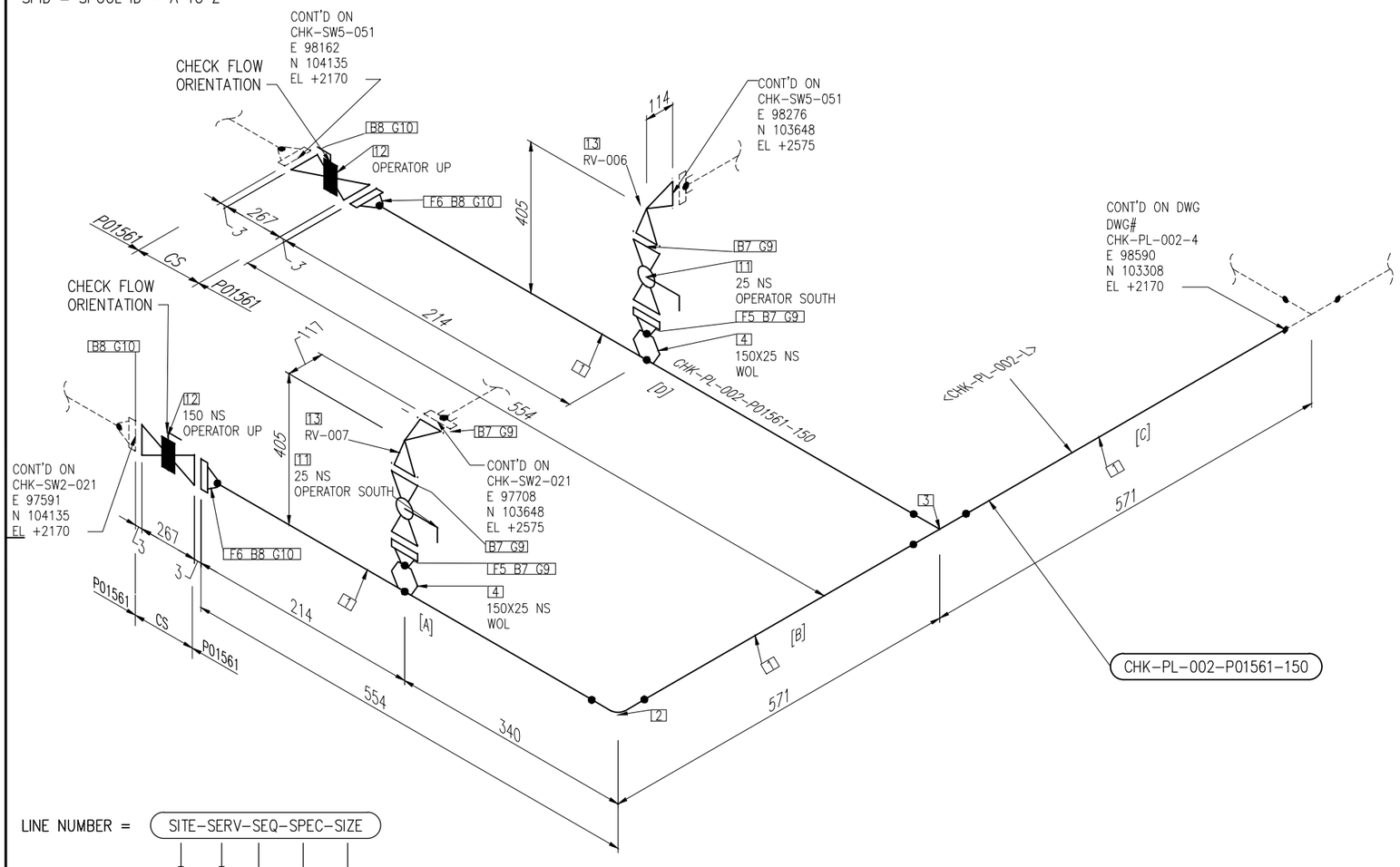
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z



LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-PL-002-P01561-150

DRG NUMBER = CHK-PL-002-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-PL-002-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	1.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	1
3	TEE EQUAL BW SCH 40S A403 WP316L	150	P03006S150	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	2
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	2
6	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	20
8	STUDBOLT 3/4" UNC x110 B7/2H SPUN GALV	20X110	P902106110	32
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
12	VALVE PLUG RF CL150 CS VP01121	150	VP01121150	2
13	VALVE RELIEF RF CL150 CHK-RV-006 & 007	25	MECHANICAL	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	237MM	150	BEVEL	BEVEL
B	200MM	150	BEVEL	BEVEL
C	286MM	150	BEVEL	BEVEL
D	323MM	150	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC SPOOL No. CHK-PL-002-L

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-PL-002-P01561-150
SHEET No. 05 OF 05
DRG No. CHK-PL-002-05 REV. 1

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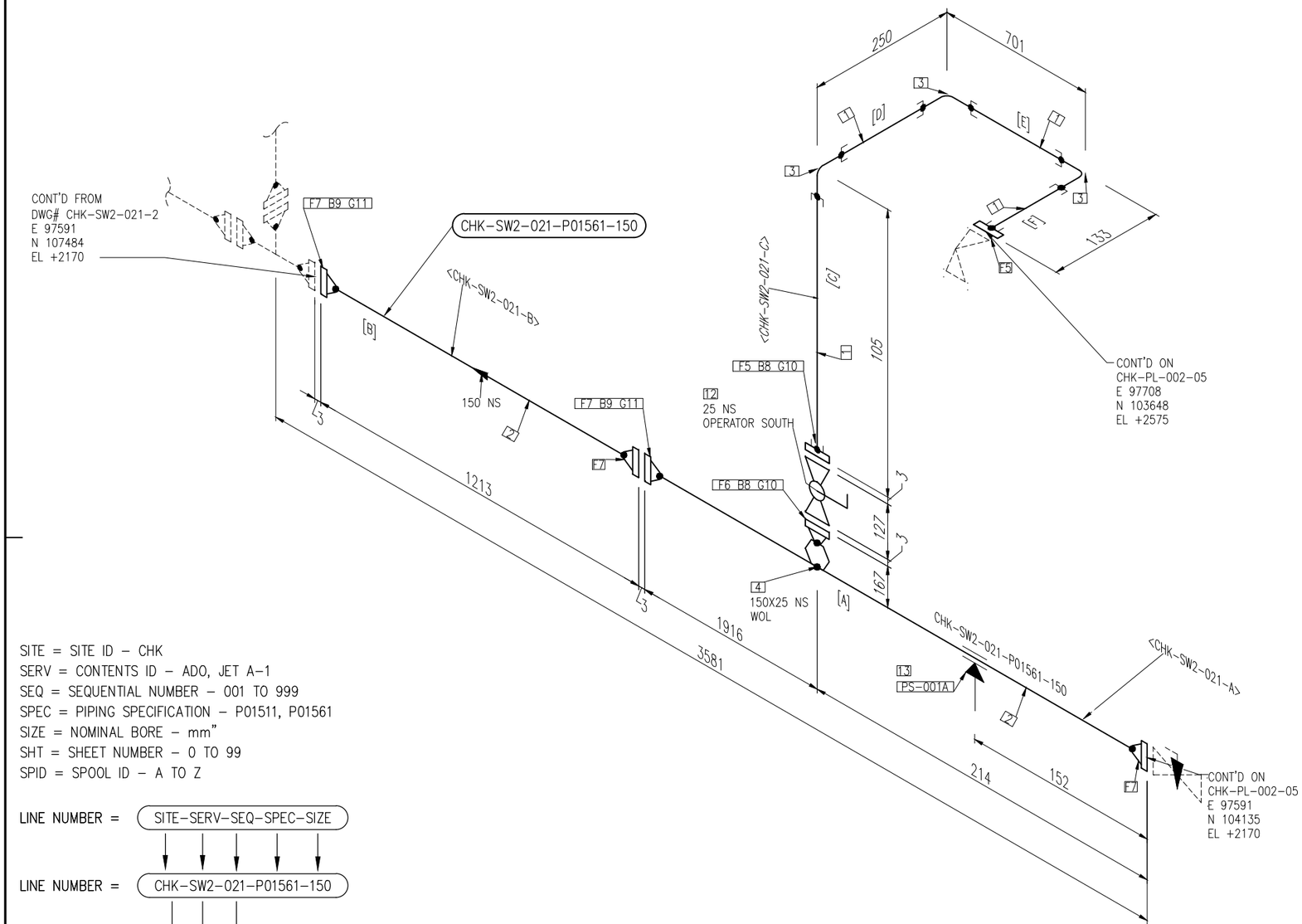

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-021-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.1M
2	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	3.0M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
5	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	4
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
9	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	16
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	VALVES			
12	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
	PIPE SUPPORTS			
13	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1953MM	150	BEVEL	BEVEL
B	1035MM	150	BEVEL	BEVEL
C	79MM	25	SQUARE CUT	SQUARE CUT
D	206MM	25	SQUARE CUT	SQUARE CUT
E	657MM	25	SQUARE CUT	SQUARE CUT
F	107MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-021-P01561-150
SHEET No. 01 OF 08
DRG No. CHK-SW2-021-01 REV. 1

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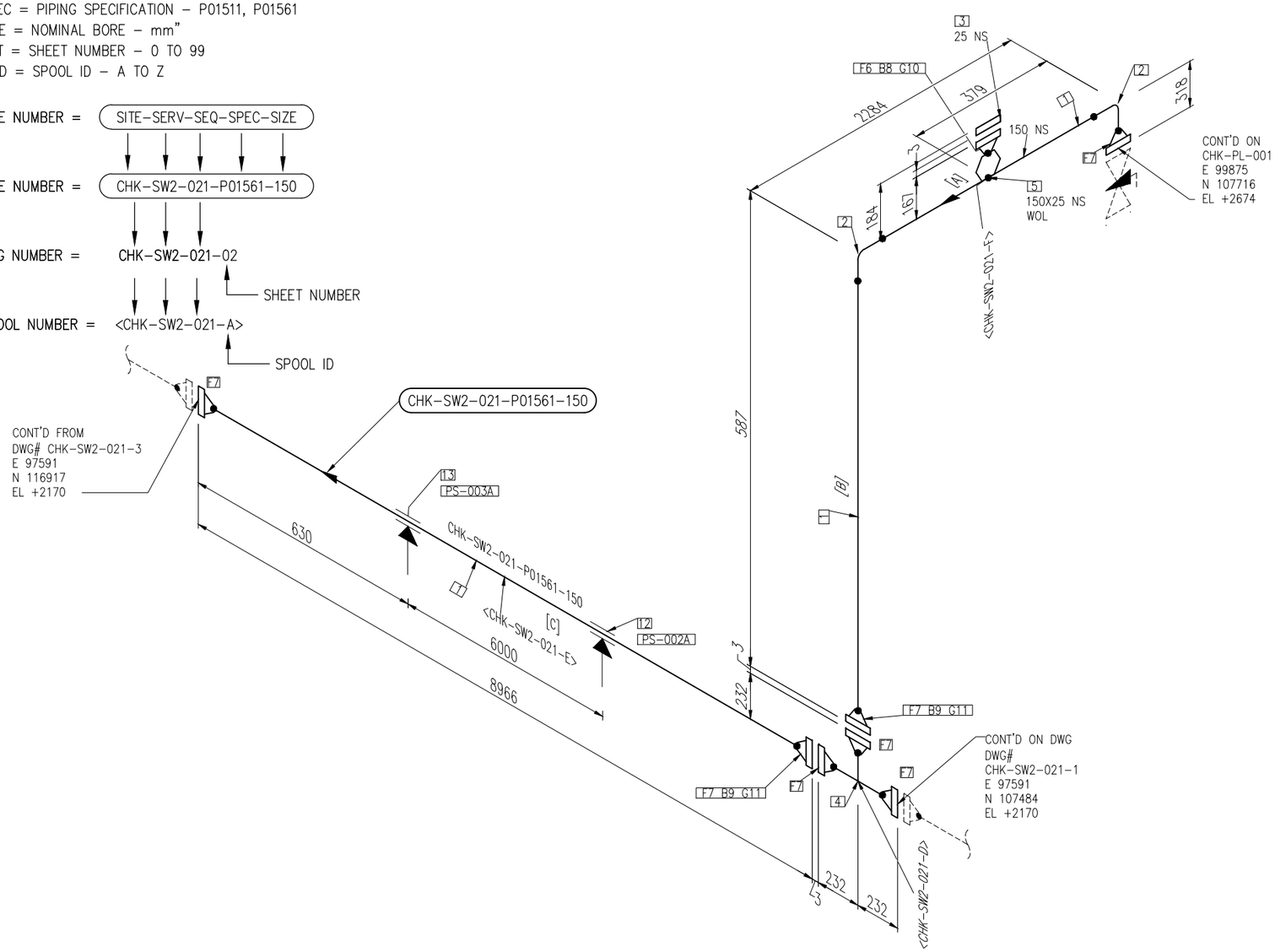
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-021-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	10.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	2
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
4	TEE EQUAL BW SCH 40S A403 WP316L	150	P03006S150	1
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	7
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	4
9	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	16
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	1
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	PIPE SUPPORTS			
12	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	1
13	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	150	U346203150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1827MM	150	BEVEL	BEVEL
B	270MM	150	BEVEL	BEVEL
C	8789MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-D TO F

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-021-P01561-150
SHEET No. 02 OF 08
DRG No. CHK-SW2-021-02 REV. 1

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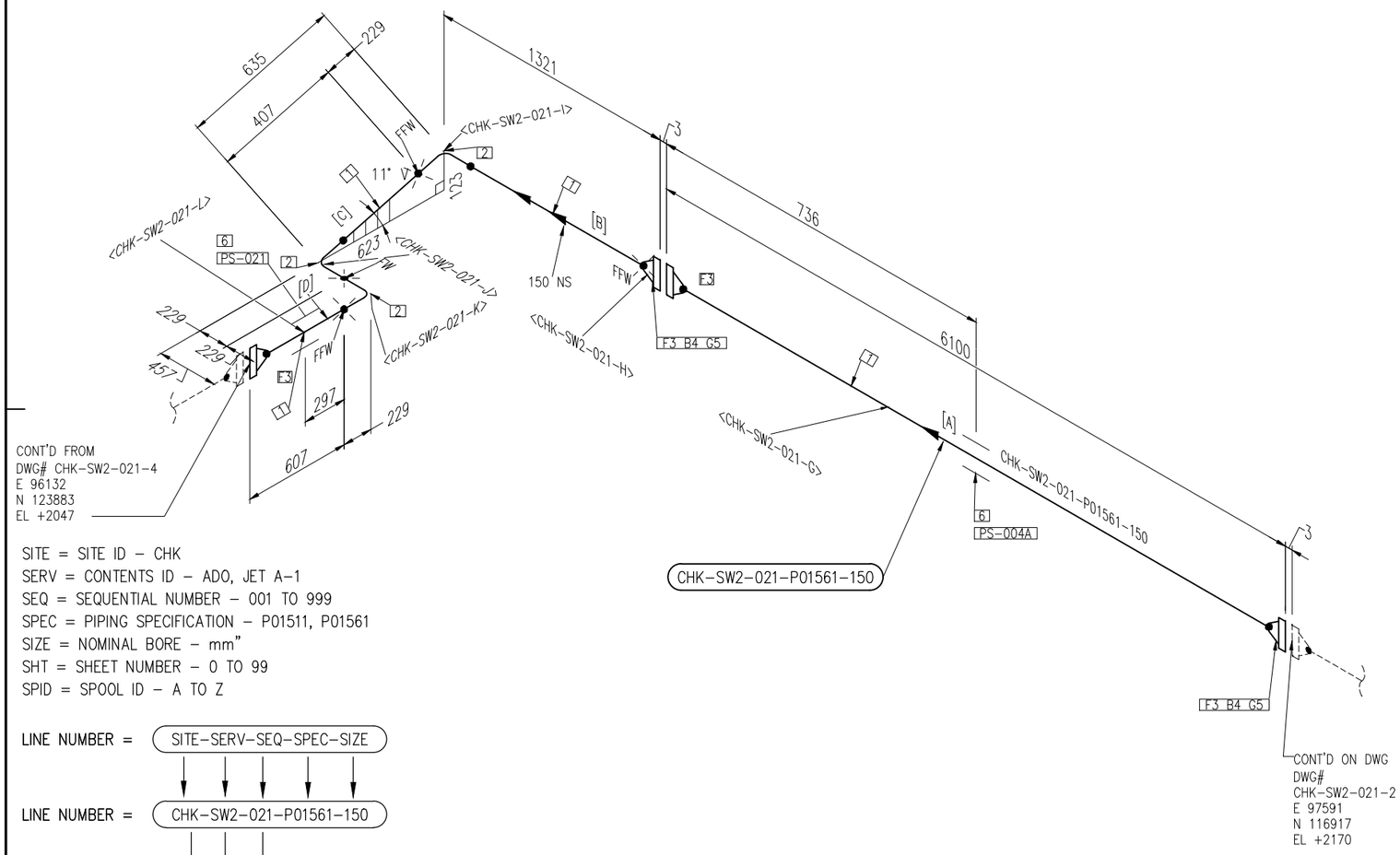

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-021-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	8.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	3
	FLANGES			
3	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	4
	FASTENERS			
4	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	16
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	PIPE SUPPORTS			
6	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	150	W146301150	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	5923MM	150	BEVEL	BEVEL
B	1150MM	150	BEVEL	
C	328MM	150	BEVEL	
D	669MM	150	BEVEL	

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-G TO L

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-021-P01561-150
SHEET No. 03 OF 08
DRG No. CHK-SW2-021-03 REV. 1

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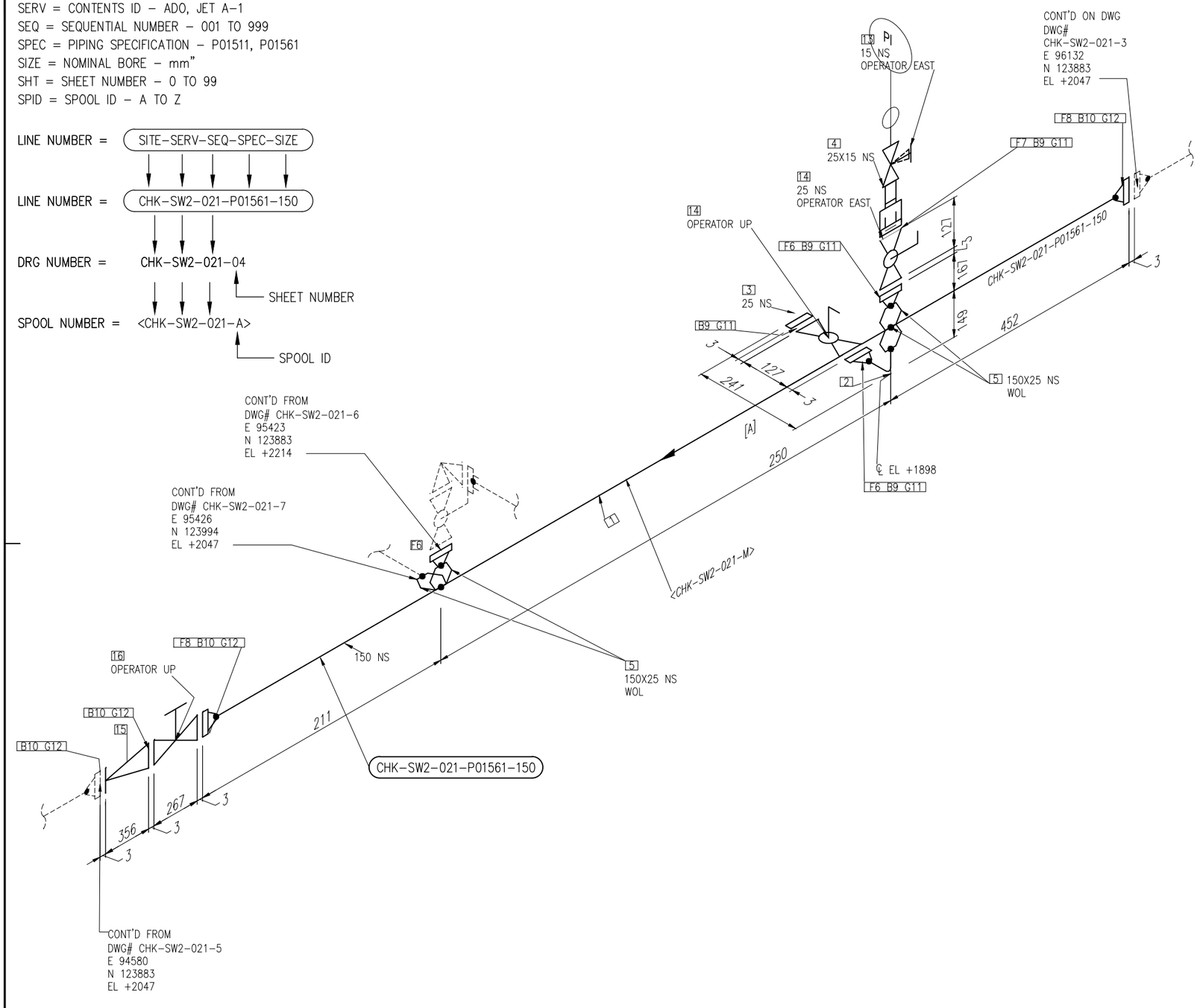
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-021-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	0.8M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
4	HEX BUSH RED NPT CL3000 A182 F316L	25X15	P4535630CA	1
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	4
	FLANGES			
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	3
7	FLANGE SCRD RF NPT CL150 A182 F316L	25	P2316AX025	1
8	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	16
10	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	32
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	4
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
13	VALVE NEEDLE MXFNPT CL6000 AISI 316	15	INSTRUMENT	1
14	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
15	VALVE CHECK SWING RF CL150 VC01521	150	VC01521150	1
16	VALVE GATE RF CL150 VG01521	150	VG01521150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	739MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-021-P01561-150
SHEET No. 04 OF 08
DRG No. CHK-SW2-021-04 REV. 1

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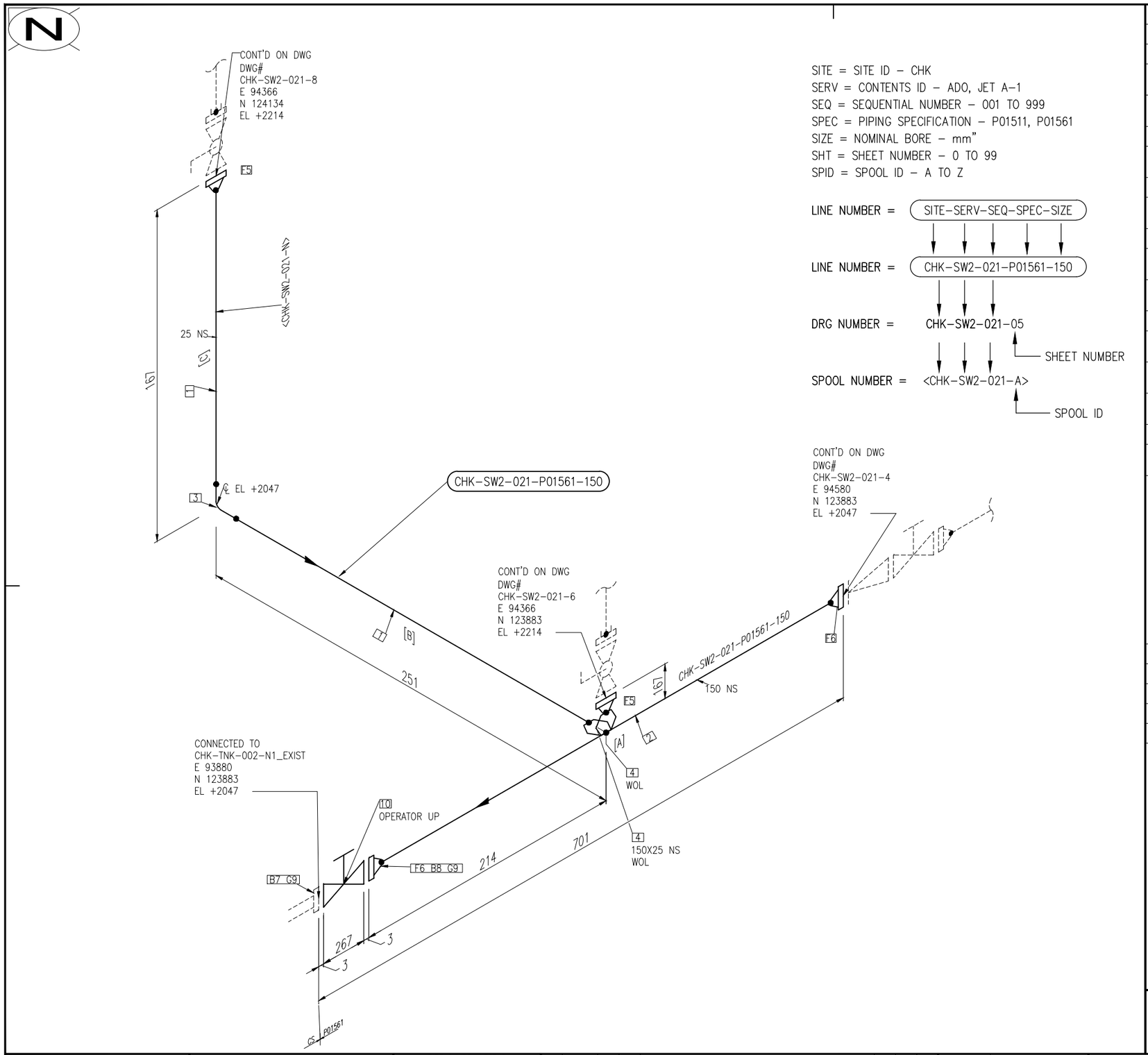

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-05 (SHEET NUMBER)

SPOOL NUMBER = <CHK-SW2-021-A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	0.2M
2	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	0.3M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	2
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	2
6	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
7	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
8	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	VALVES			
10	VALVE GATE RF CL150 SS VG01521	150	VG01521150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	251MM	150	BEVEL	BEVEL
B	102MM	25	BEVEL	BEVEL
C	74MM	25	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-N

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-SW2-021-P01561-150
CHKD	M.WEST	06/22	SHEET No. 05 OF 08
APPD	·	06/22	DRG No. CHK-SW2-021-05 REV. 1
APPD	W.DOUGAN	06/22	

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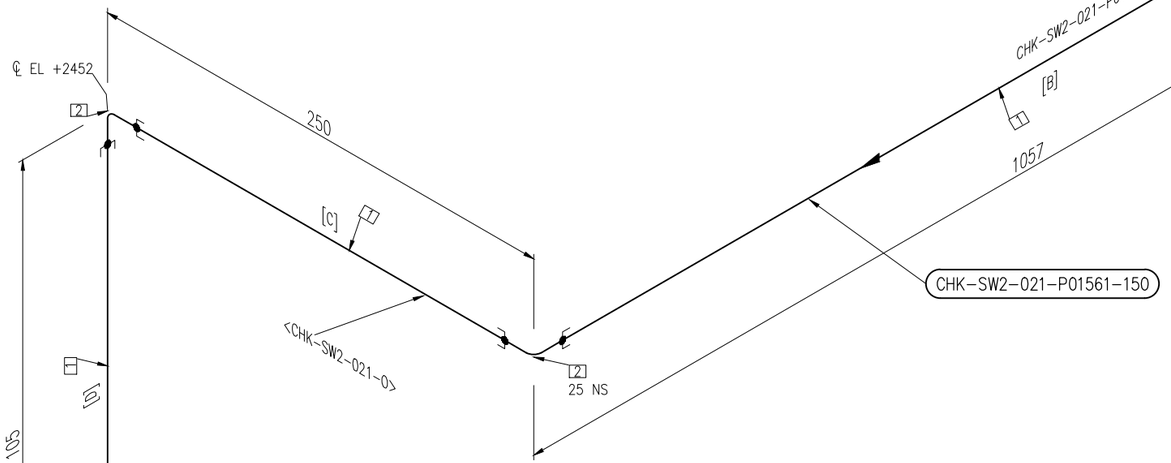
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-06 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-021-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.5M
	FITTINGS			
2	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
	FLANGES			
3	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	20
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
	VALVES			
6	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
7	VALVE RELIEF RF CL150 CHK-RV-021	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	107MM	25	SQUARE CUT	SQUARE CUT
B	1013MM	25	SQUARE CUT	SQUARE CUT
C	206MM	25	SQUARE CUT	SQUARE CUT
D	79MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-0

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-021-P01561-150
SHEET No. 06 OF 08
DRG No. CHK-SW2-021-06 REV. 1

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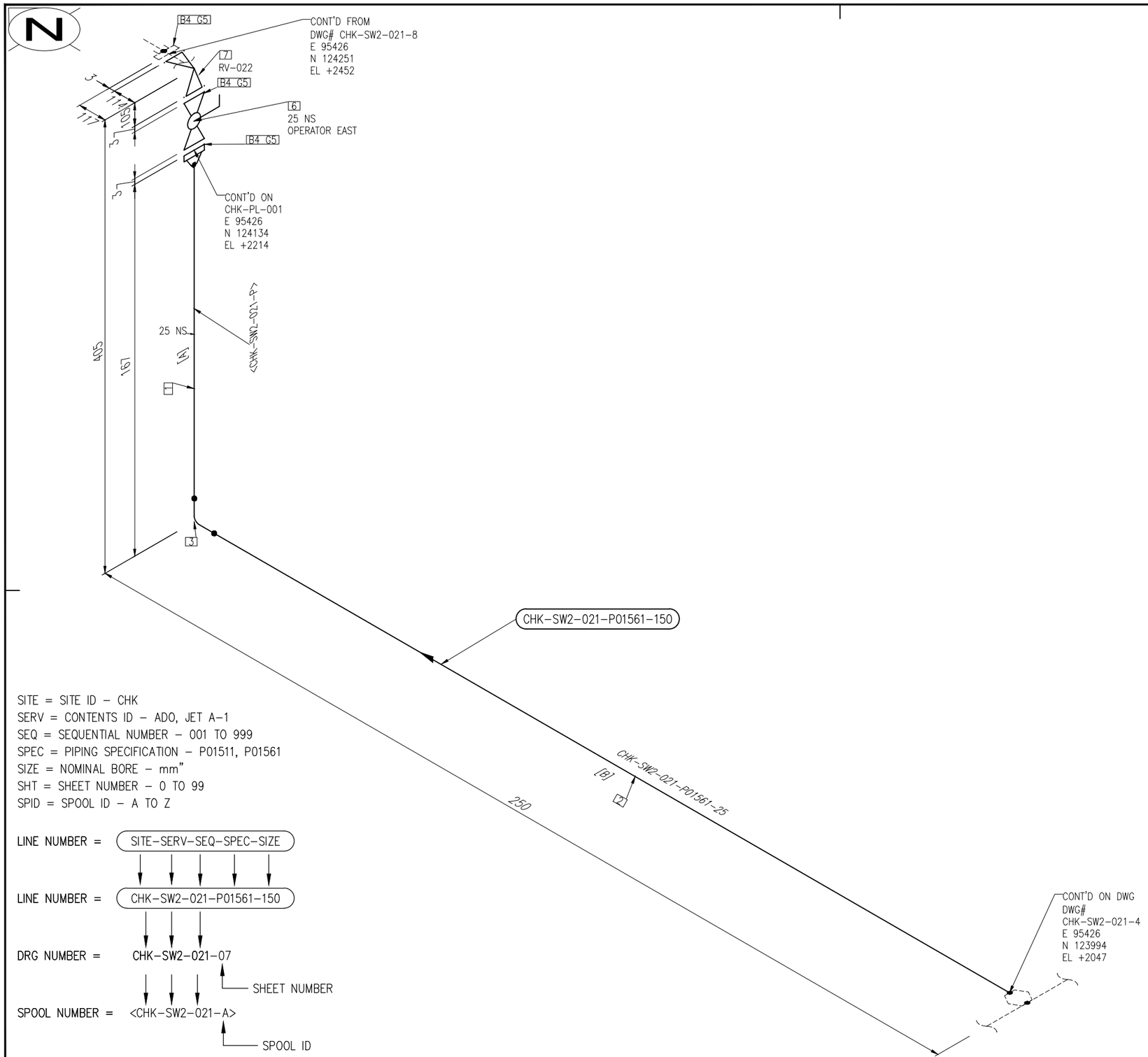

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-07 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-021-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	0.2M
2	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	12
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
	VALVES			
6	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
7	VALVE RELIEF RF CL150 CHK-RV-022	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	74MM	25	BEVEL	BEVEL
B	102MM	25	BEVEL	BEVEL

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-P

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-021-P01561-150
SHEET No. 07 OF 08
DRG No. CHK-SW2-021-07 REV. 1

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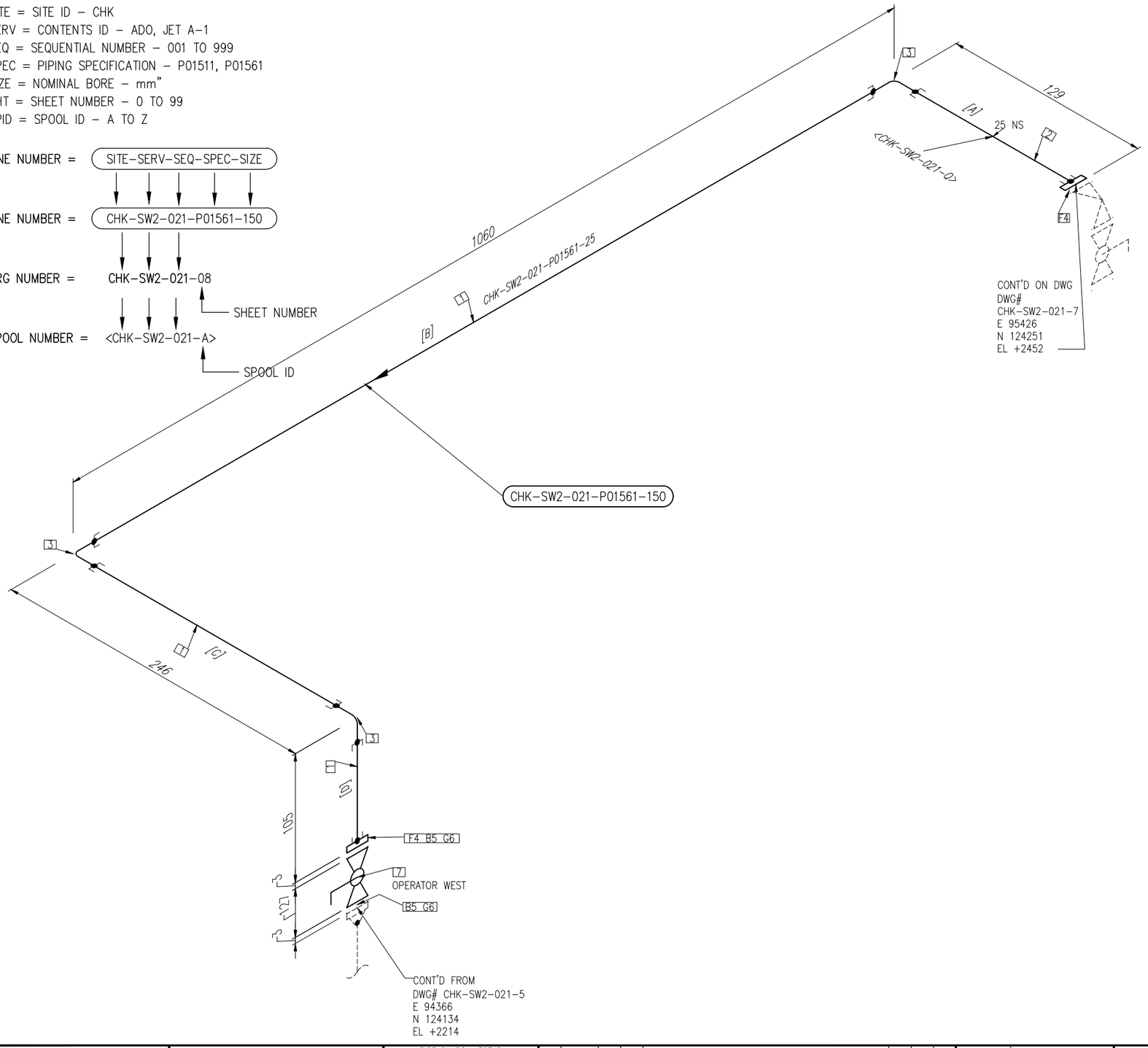
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-021-P01561-150

DRG NUMBER = CHK-SW2-021-08 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-021-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.4M
2				
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
	FLANGES			
4	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
6	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
	VALVES			
7	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	102MM	25	SQUARE CUT	SQUARE CUT
B	1016MM	25	SQUARE CUT	SQUARE CUT
C	202MM	25	SQUARE CUT	SQUARE CUT
D	79MM	25	SQUARE CUT	SQUARE CUT

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-021-Q

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-021-P01561-150
SHEET No. 08 OF 08
DRG No. CHK-SW2-021-08 REV. 1

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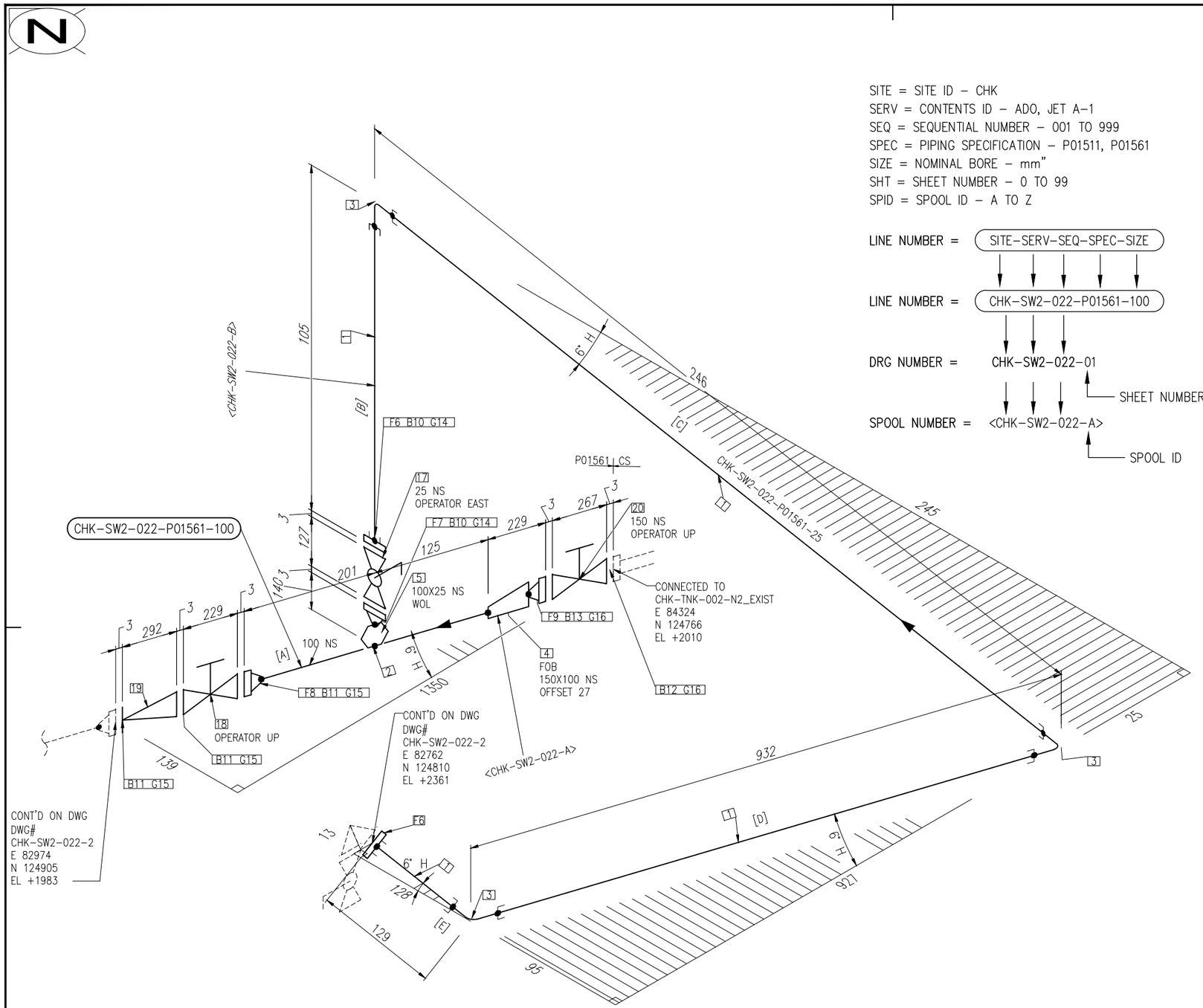

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.3M
2	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
4	REDUCER ECC BW SCH 40S A403 WP316L	150X100	P07006SSHG	1
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	1
	FLANGES			
6	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
7	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
8	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	1
9	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	1
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
11	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	24
12	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
13	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
14	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
15	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	3
16	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	VALVES			
17	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
18	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
19	VALVE CHECK SWING RF CL150 VC01521	100	VC01521100	1
20	VALVE GATE RF CL150 SS VG01521	150	VG01521150	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	251MM	100	BEVEL	BEVEL
B	79MM	25	SQUARE CUT	SQUARE CUT
C	202MM	25	SQUARE CUT	SQUARE CUT
D	888MM	25	SQUARE CUT	SQUARE CUT
E	102MM	25	SQUARE CUT	SQUARE CUT

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-10
P&ID	12732-SK-P&ID-001-02

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-022-A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-022-P01561-100
SHEET No. 01 OF 05
DRG No. CHK-SW2-022-01 REV. 1

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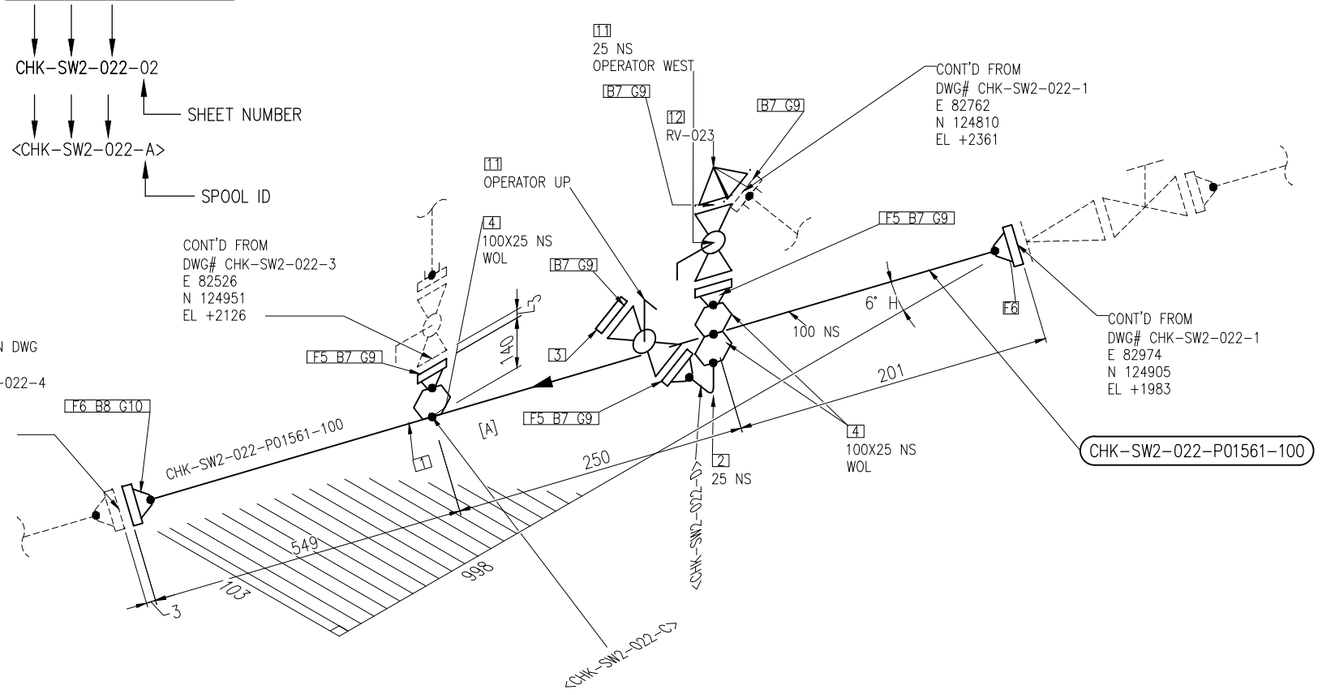
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-022-P01561-100

DRG NUMBER = CHK-SW2-022-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-022-A> — SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	3
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	3
6	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	24
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	8
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	6
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	1
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
12	VALVE RELIEF RF CL150 CHK-RV-023	25	MECHANICAL	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	848MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-10
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-022-C TO D

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-SW2-022-P01561-100
CHKD	M.WEST	06/22	SHEET No. 02 OF 05
APPD	·	06/22	DRG No. CHK-SW2-022-02 REV. 1
APPD	W.DOUGAN	06/22	

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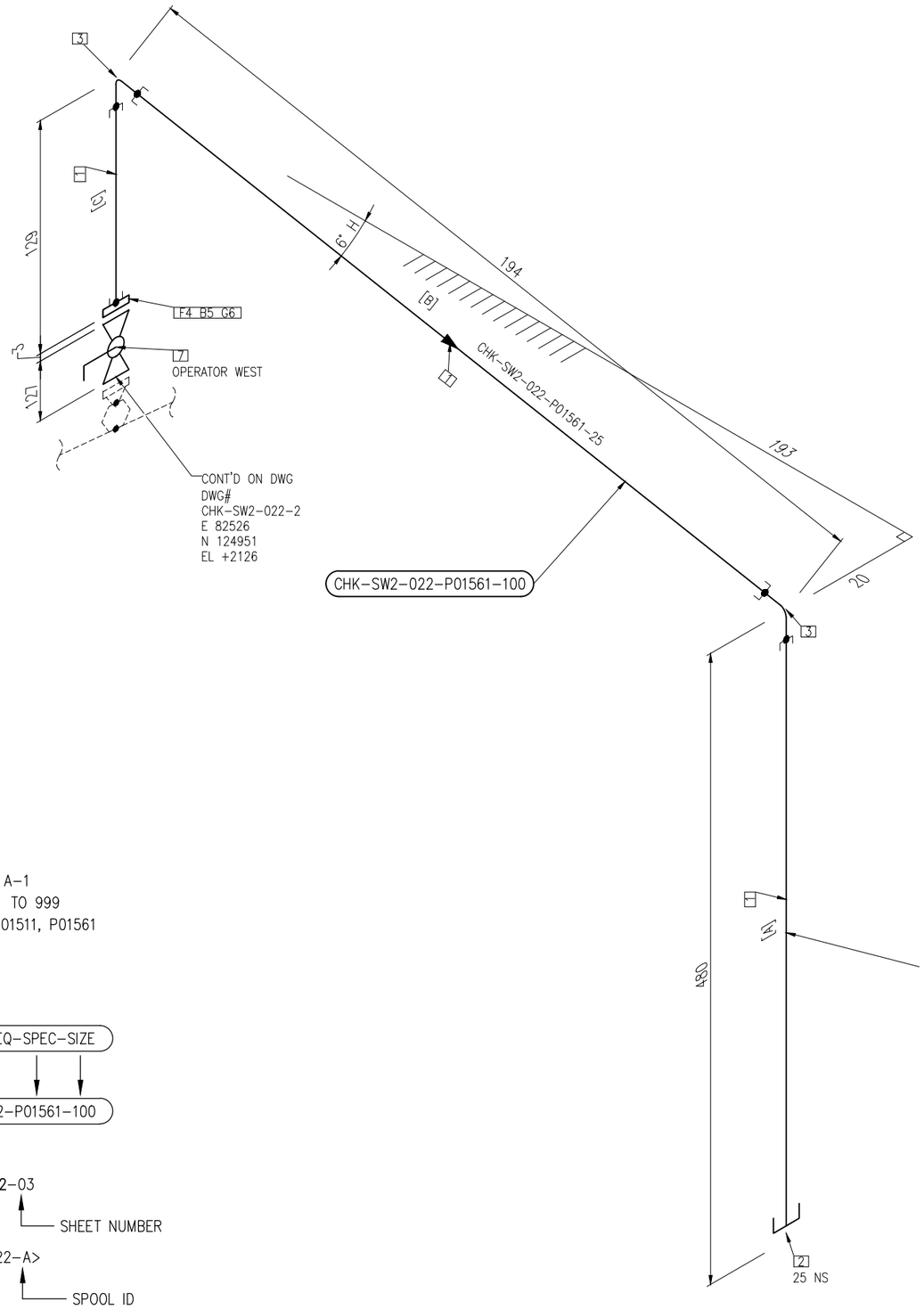

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.0M
	FITTINGS			
2	CAP SCRD NPT CL3000 A182 F316	25	P450753025	1
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	2
	FLANGES			
4	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	1
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	4
6	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	1
	VALVES			
7	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	417MM	25	SCREWED	SQUARE CUT
B	150MM	25	SQUARE CUT	SQUARE CUT
C	102MM	25	SQUARE CUT	SQUARE CUT

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-022-P01561-100

DRG NUMBER = CHK-SW2-022-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-022-A> — SPOOL ID

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-022-E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-022-P01561-100
SHEET No. 03 OF 05
DRG No. CHK-SW2-022-03 REV. 1

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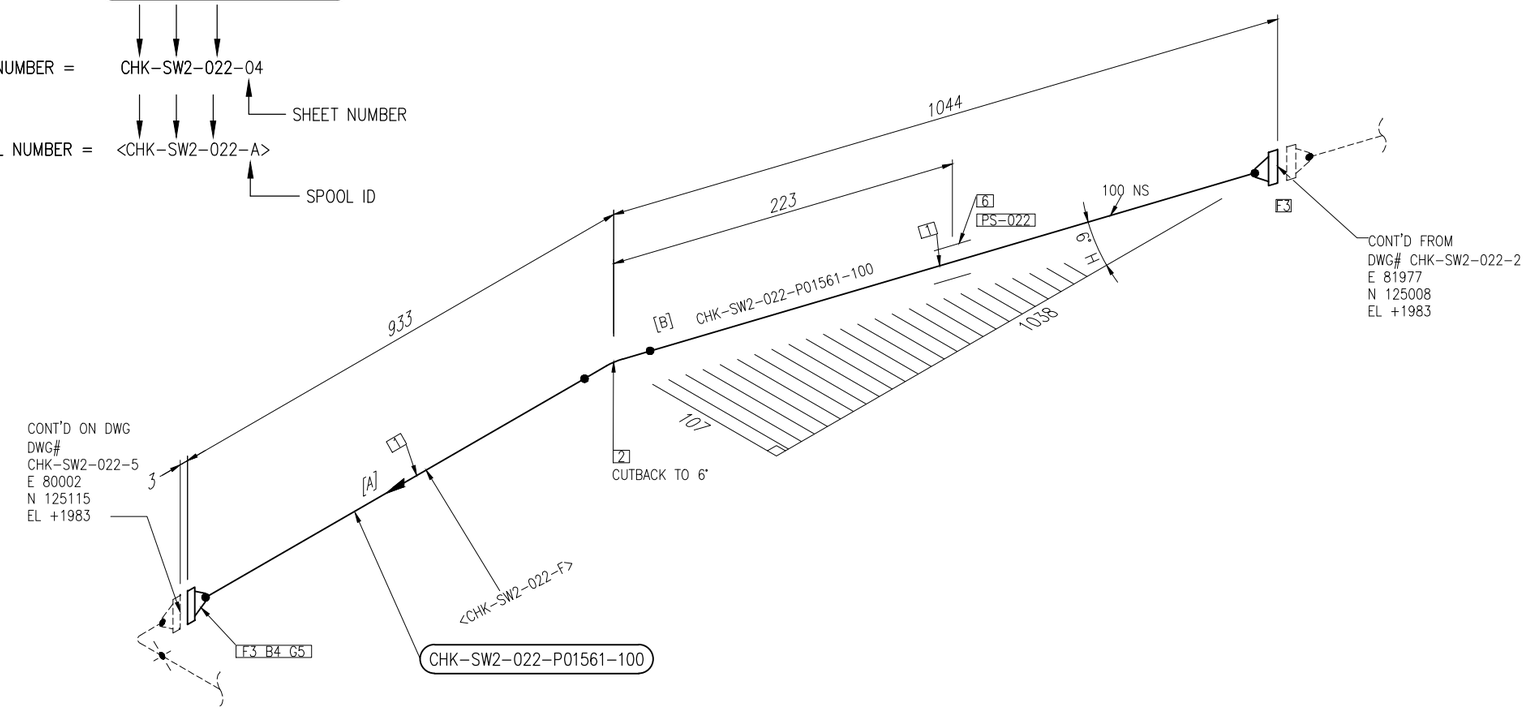
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-022-P01561-100

DRG NUMBER = CHK-SW2-022-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW2-022-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	1.9M
	FITTINGS			
2	ELBOW 45 DEG LR BW SCH 40S A403 WP316L–CUTBACK TO 6 DEG.	100	P02206D100	1
	FLANGES			
3	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	2
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	8
5	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	1
	PIPE SUPPORTS			
6	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	100	W146301100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	850MM	100	BEVEL	BEVEL
B	960MM	100	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63"

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-10
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-022-F

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-022-P01561-100
SHEET No. 04 OF 05
DRG No. CHK-SW2-022-04 REV. 1

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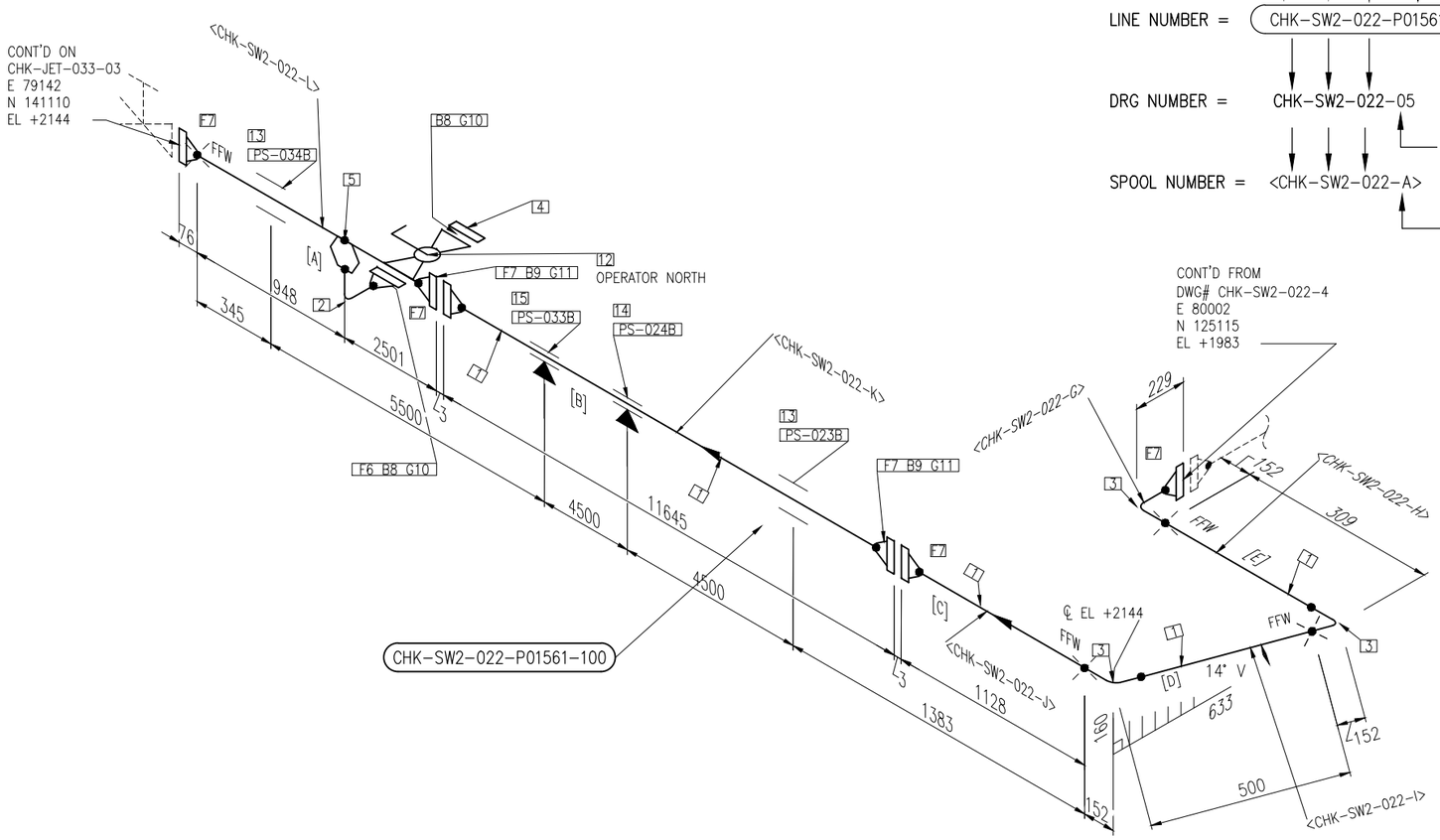

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW2-022-P01561-100

DRG NUMBER = CHK-SW2-022-05 (SHEET NUMBER)

SPOOL NUMBER = <CHK-SW2-022-A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	17.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	100	P02006S100	3
4	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	1
	FLANGES			
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	6
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
9	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	2
	VALVES			
12	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
	PIPE SUPPORTS			
13	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	100	W146301100	2
14	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	100	U346203100	1
15	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	3523MM	100	BEVEL	
B	11493MM	100	BEVEL	BEVEL
C	1203MM	100		BEVEL
D	498MM	100		BEVEL
E	308MM	100		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD
AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW2-022-G TO L

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW2-022-P01561-100
SHEET No. 05 OF 05
DRG No. CHK-SW2-022-05 REV. 1

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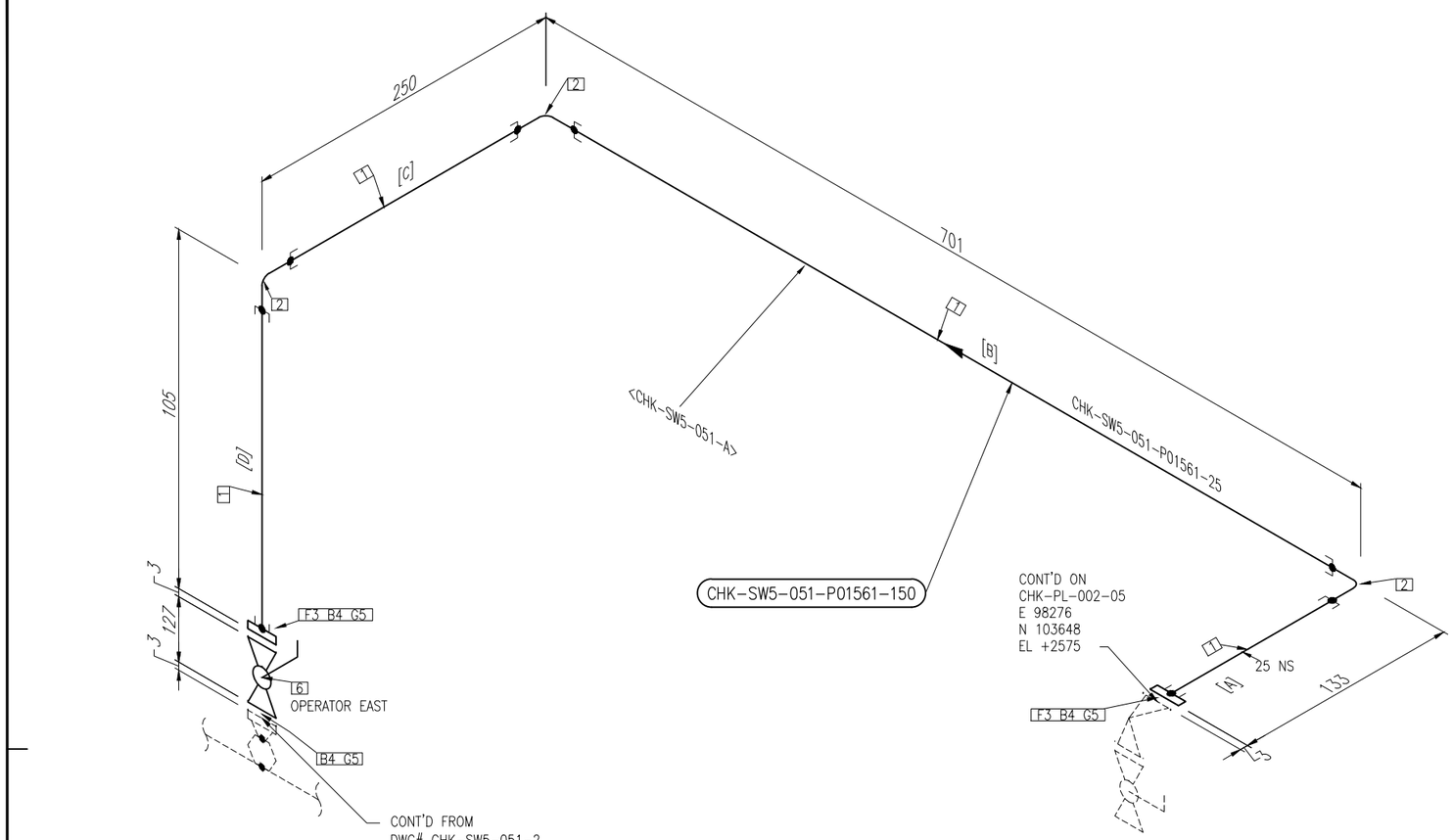

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-051-P01561-150

DRG NUMBER = CHK-SW5-051-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-051-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.1M
	FITTINGS			
2	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
	FLANGES			
3	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	12
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
	VALVES			
6	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	107MM	25	SQUARE CUT	SQUARE CUT
B	657MM	25	SQUARE CUT	SQUARE CUT
C	206MM	25	SQUARE CUT	SQUARE CUT
D	79MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT — WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-051-A

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-051-P01561-150
SHEET No. 01 OF 07
DRG No. CHK-SW5-051-01 REV. 1

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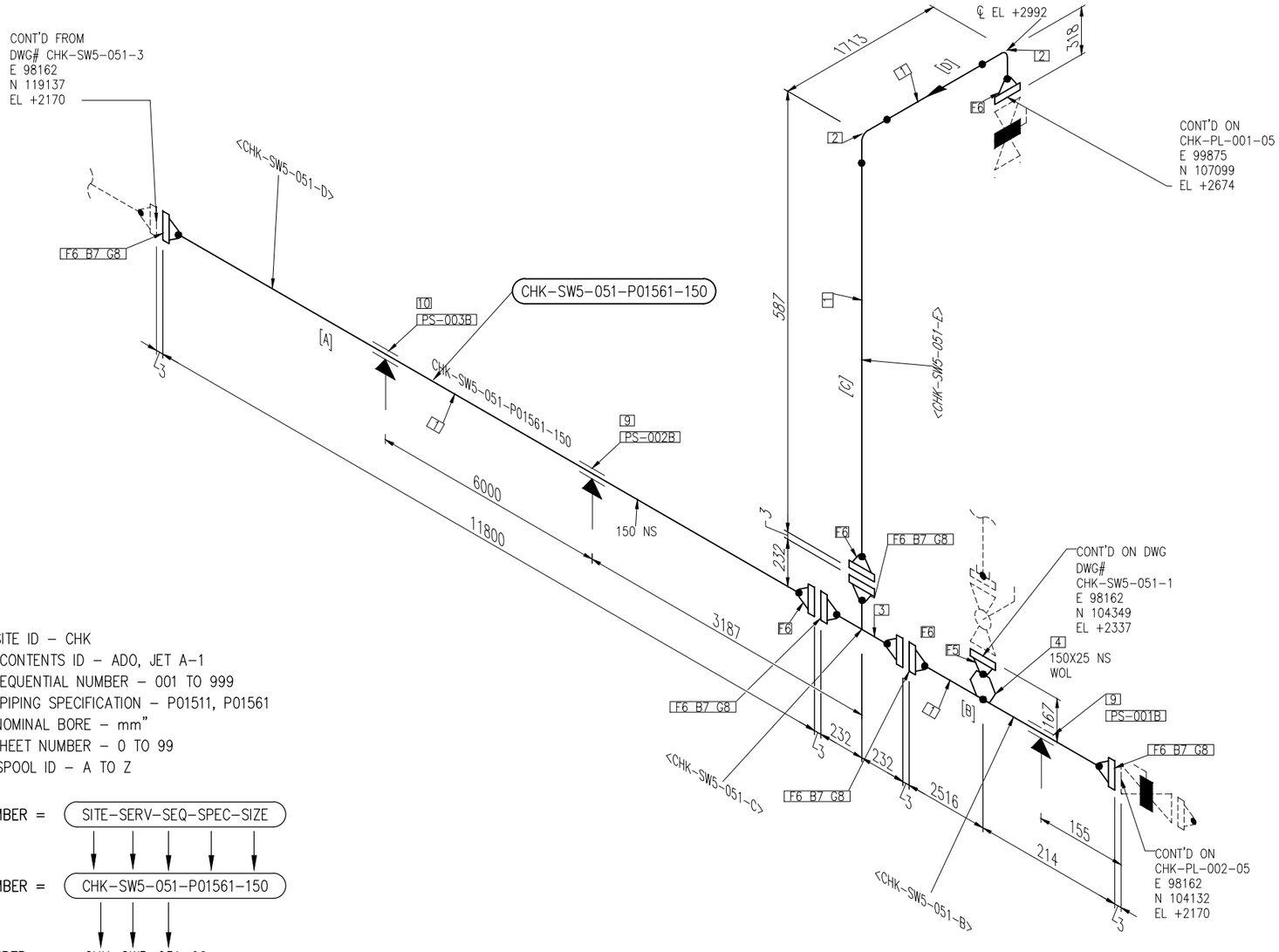

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-051-P01561-150

DRG NUMBER = CHK-SW5-051-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-051-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	15.7M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	2
3	TEE EQUAL BW SCH 40S A403 WP316L	150	P03006S150	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
6	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	9
	FASTENERS			
7	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	40
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	5
	PIPE SUPPORTS			
9	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	2
10	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	150		1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	11623MM	150	BEVEL	BEVEL
B	2553MM	150	BEVEL	BEVEL
C	270MM	150	BEVEL	BEVEL
D	1256MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-20
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-051-B TO E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-051-P01561-150
SHEET No. 02 OF 07
DRG No. CHK-SW5-051-02 REV. 1

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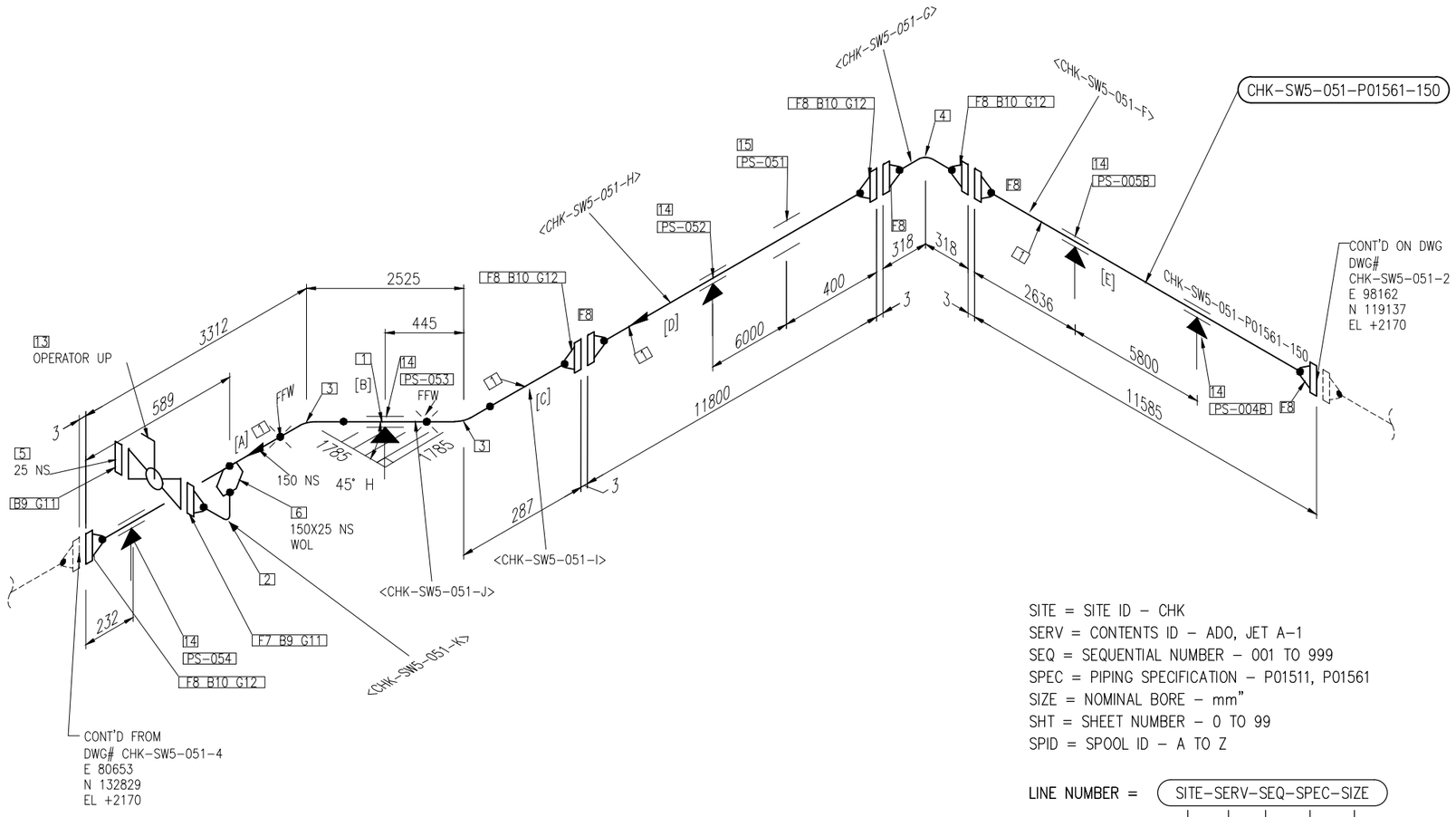

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-051-P01561-150

DRG NUMBER = CHK-SW5-051-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-051-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	28.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	ELBOW 45 DEG LR BW SCH 40S A403 WP316L	150	P02206D150	2
4	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	1
5	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
6	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
7	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
8	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	8
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
10	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	32
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
13	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
	PIPE SUPPORTS			
14	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	5
15	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	150	W146301150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	3276MM	150		BEVEL
B	2485MM	150		BEVEL
C	104MM	150	BEVEL	BEVEL
D	11623MM	150	BEVEL	BEVEL
E	11408MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

12 ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-051-F TO K

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-051-P01561-150
SHEET No. 03 OF 07
DRG No. CHK-SW5-051-03 REV. 1

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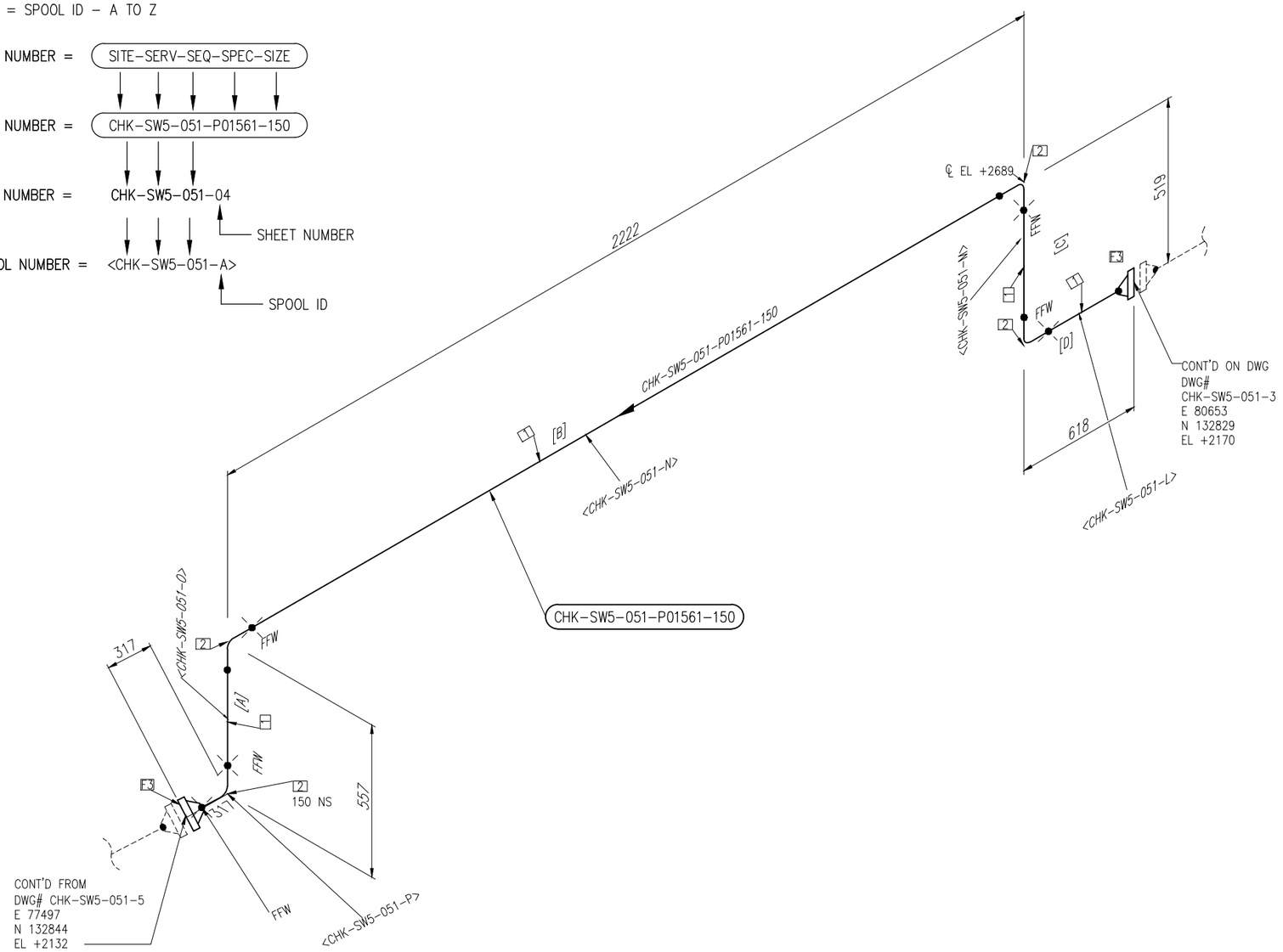
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-051-P01561-150

DRG NUMBER = CHK-SW5-051-04 ← SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-051-A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	2.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	150	P02006S150	4
	FLANGES			
3	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	250MM	150		BEVEL
B	1915MM	150		BEVEL
C	212MM	150		BEVEL
D	450MM	150		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-07
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NO NE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD
AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-051-L TO P

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-051-P01561-150
SHEET No. 04 OF 07
DRG No. CHK-SW5-051-04 REV. 1

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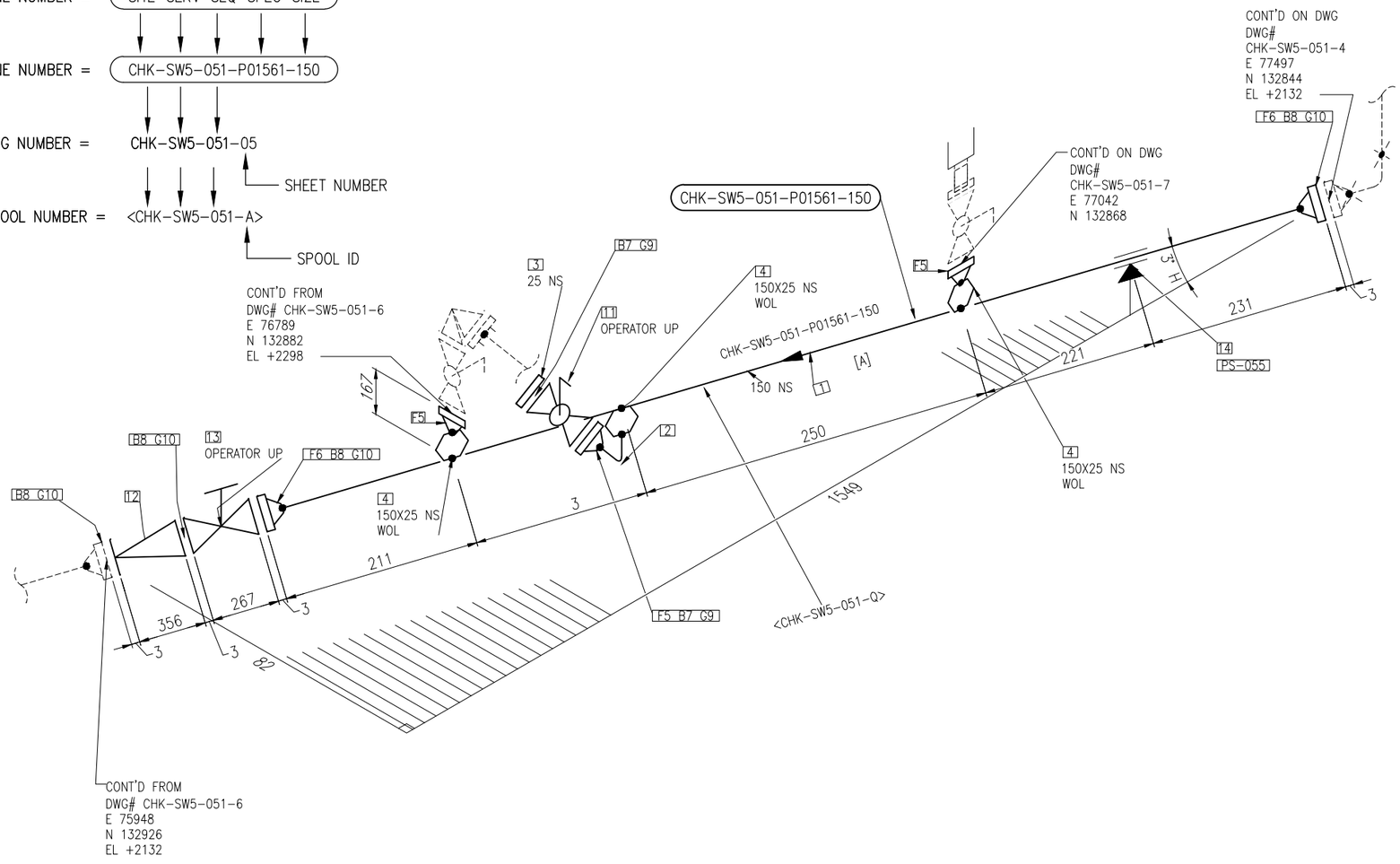
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-051-P01561-150

DRG NUMBER = CHK-SW5-051-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-051-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	0.8M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	3
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	3
6	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
8	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	32
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
12	VALVE CHECK SWING RF CL150 VC01521	150	VC01521150	1
13	VALVE GATE RF CL150 VG01521	150	VG01521150	1
	PIPE SUPPORTS			
14	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	739MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-051-Q

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-051-P01561-150
SHEET No. 05 OF 07
DRG No. CHK-SW5-051-05 REV. 1

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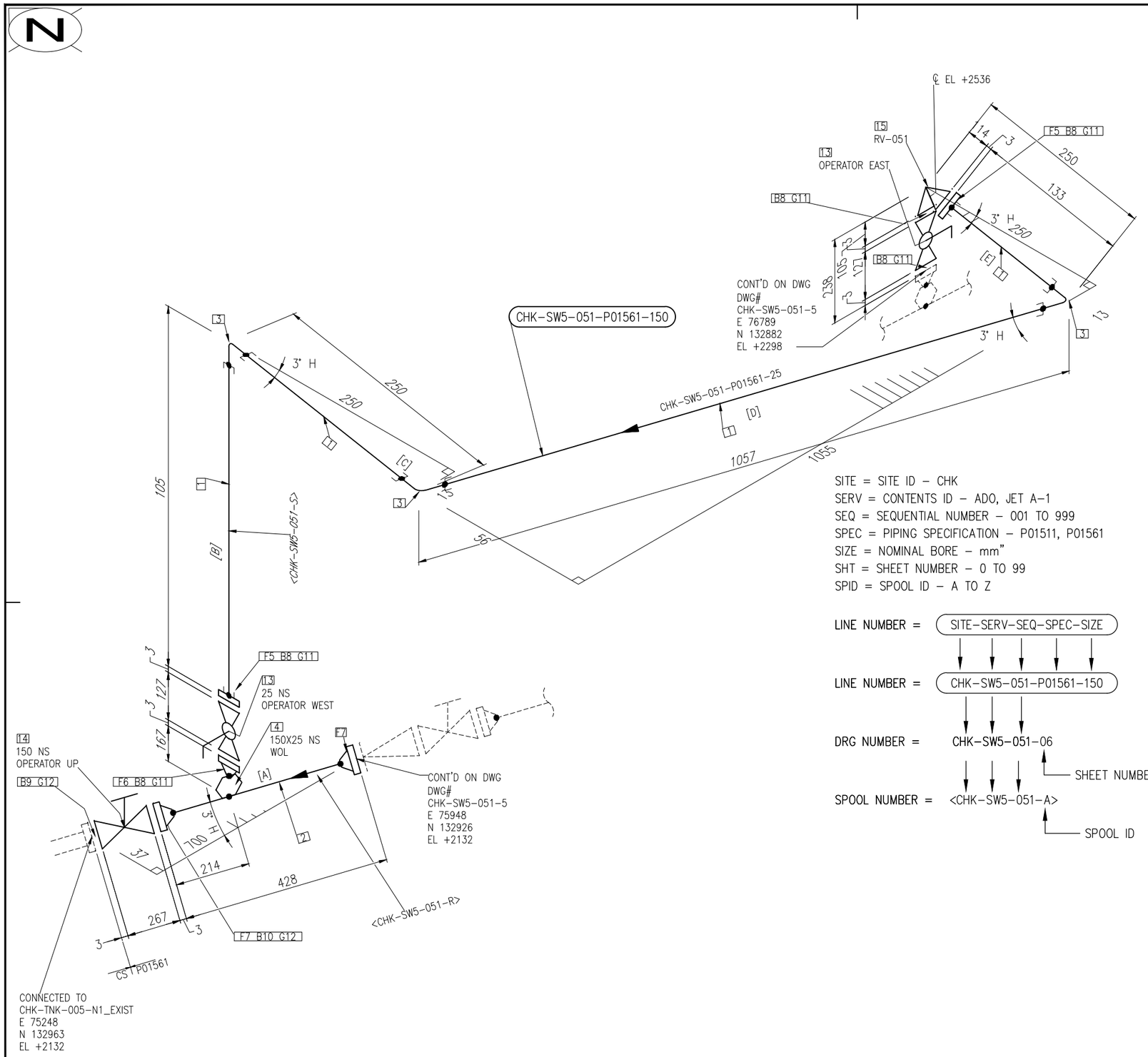

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-051-P01561-150

DRG NUMBER = CHK-SW5-051-06 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-051-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.5M
2	PIPE SMLS SCH 40S A312 TP316L	150	P01206S150	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	150X25	P50006STHC	1
	FLANGES			
5	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	2
6	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
7	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	2
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	20
9	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
10	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	VALVES			
13	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
14	VALVE GATE RF CL150 SS VG01521	150	VG01521150	1
15	VALVE RELIEF RF CL150 CHK-RV-051	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	251MM	150	BEVEL	BEVEL
B	79MM	25	SQUARE CUT	SQUARE CUT
C	206MM	25	SQUARE CUT	SQUARE CUT
D	1013MM	25	SQUARE CUT	SQUARE CUT
E	107MM	25	SQUARE CUT	SQUARE CUT

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-051-R TO S

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-051-P01561-150
SHEET No. 06 OF 07
DRG No. CHK-SW5-051-06 REV. 1

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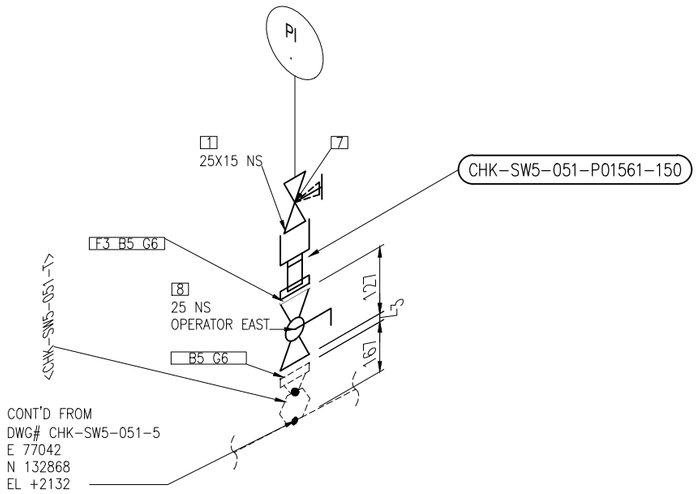
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-051-P01561-150

DRG NUMBER = CHK-SW5-051-07 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-051-A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	FITTINGS			
1	HEX BUSH RED NPT CL3000 A182 F316L	25X15	P4535630CA	1
	OLETS			
2				
	FLANGES			
3	FLANGE SCRD RF NPT CL150 A105	25	P2310AX025	1
4				
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
6	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
	VALVES			
7	VALVE NEEDLE MXFNPT CL6000 AISI 316	15	INSTRUMENT	1
8	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-051-T

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-051-P01561-150
SHEET No. 07 OF 07
DRG No. CHK-SW5-051-07 REV. 1

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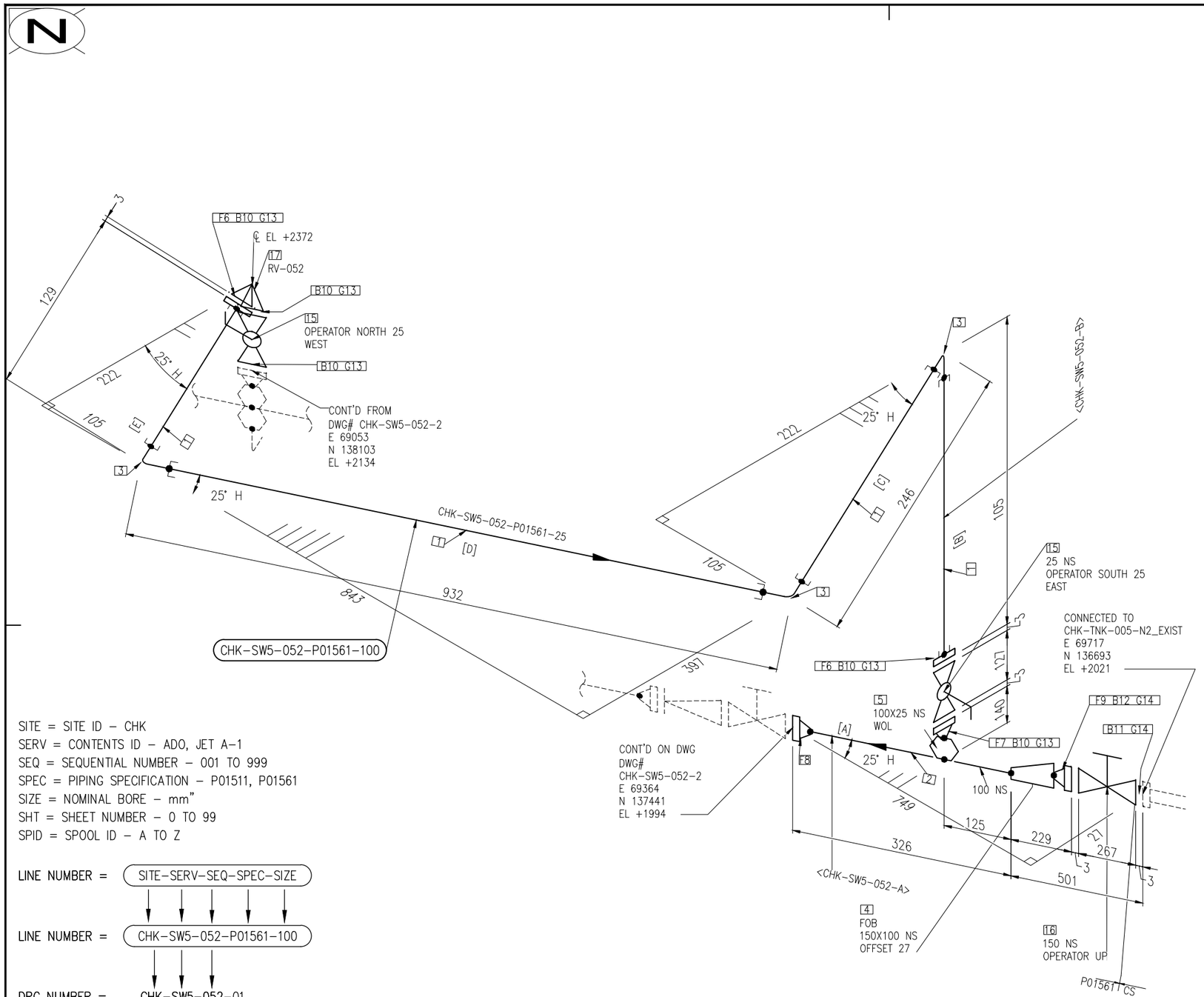

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-052-P01561-100

DRG NUMBER = CHK-SW5-052-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-052-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	1.3M
2	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	3
4	REDUCER ECC BW SCH 40S A403 WP316L	150X100	P07006SSHG	1
	OLETS			
5	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	1
	FLANGES			
6	FLANGE SW RF CL150 A182 F316	25	P2516AX025	2
7	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
8	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	1
9	FLANGE WN RF SCH 40S CL150 A182 F316L	150	P2016AS150	1
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	20
11	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
12	STUDBOLT 3/4" UNC X110 B8M CL2/8MA NUTS	20X110	P900506110	8
13	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
14	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	2
	VALVES			
15	VALVE BALL FB RF CL150 VB01522	25	VB01522025	2
16	VALVE GATE RF CL150 SS VG01521	150	VG01521150	1
17	VALVE RELIEF RF CL150 CHK-RV-052	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	250MM	100	BEVEL	BEVEL
B	79MM	25	SQUARE CUT	SQUARE CUT
C	202MM	25	SQUARE CUT	SQUARE CUT
D	888MM	25	SQUARE CUT	SQUARE CUT
E	102MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
				DRAWING REVISIONS	CONSULTANT		
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-052-A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-052-P01561-100
SHEET No. 01 OF 05
DRG No. CHK-SW5-052-01 REV. 1

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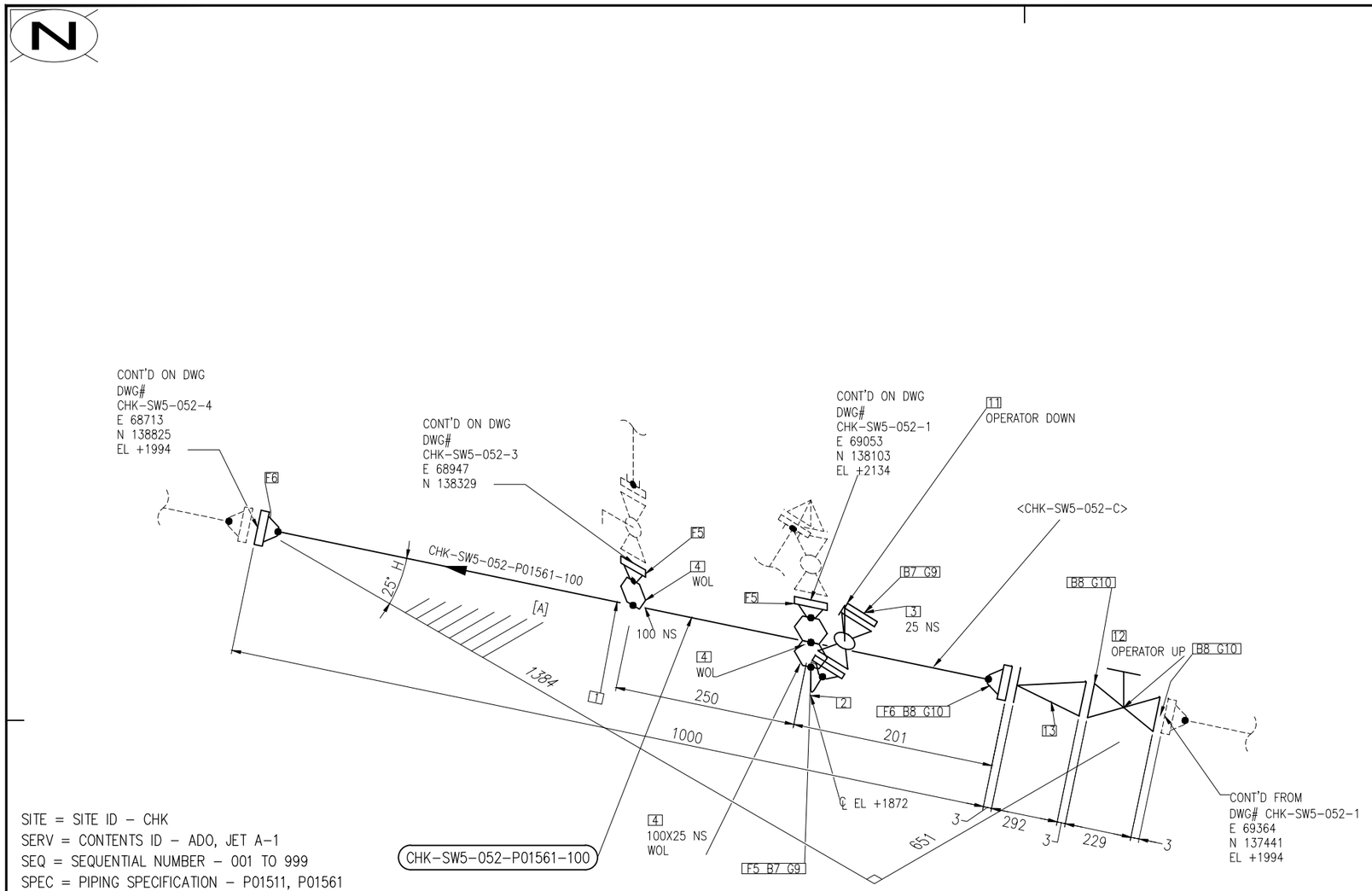

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-052-P01561-100

DRG NUMBER = CHK-SW5-052-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-052-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
3	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1
	OLETS			
4	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	3
	FLANGES			
5	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	3
6	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
8	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	24
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	3
	VALVES			
11	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
12	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
13	VALVE CHECK SWING RF CL150 VC01521	100	VC01521100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	848MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.

REFERENCE DRAWINGS

PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-02

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-052-C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-052-P01561-100
SHEET No. 02 OF 05
DRG No. CHK-SW5-052-02 REV. 1

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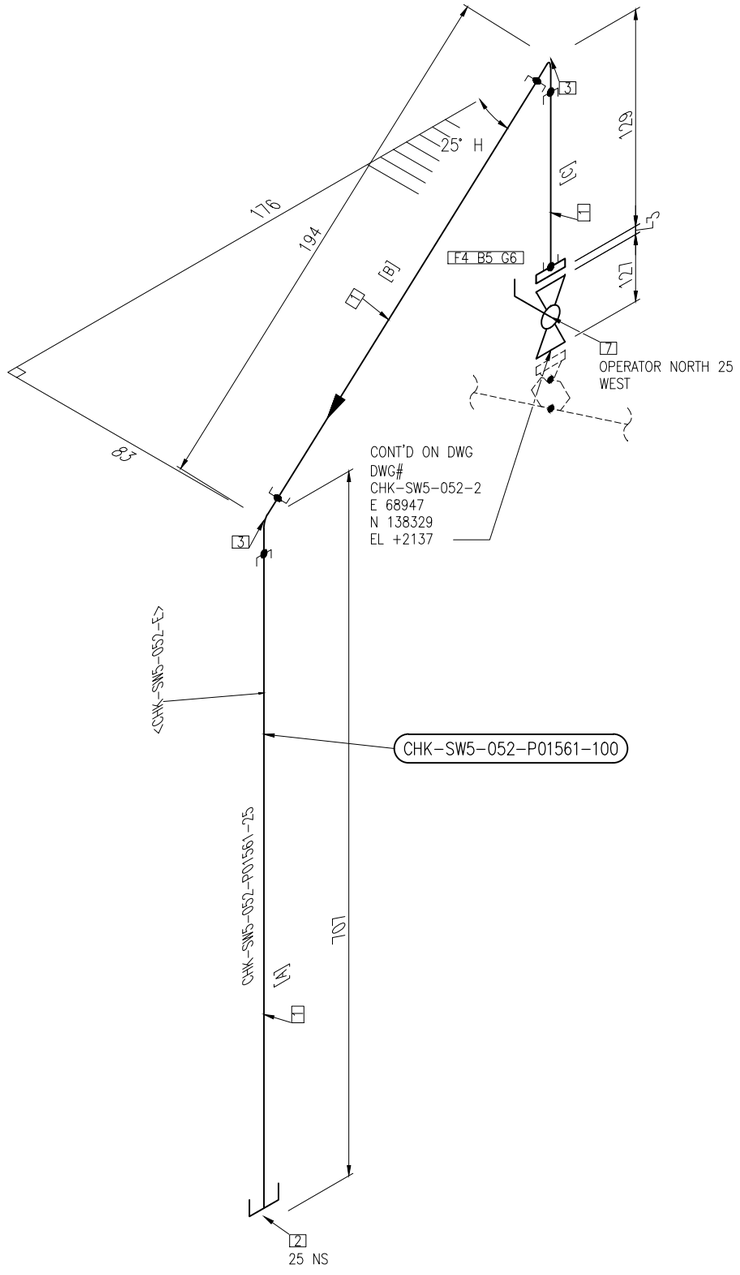
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–SW5–052–P01561–100

DRG NUMBER = CHK–SW5–052–03 — SHEET NUMBER

SPOOL NUMBER = <CHK–SW5–052–A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80S A312 TP316L	25	P01206T025	0.9M
	FITTINGS			
2	CAP SCRD NPT CL3000 A182 F316	25	P450753025	1
3	ELBOW 90 DEG SW CL3000 A182 F316L	25	P400163025	2
	FLANGES			
4	FLANGE SW RF CL150 A182 F316L	25	P2516AX025	1
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	4
6	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	1
	VALVES			
7	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	644MM	25	SCREWED	SQUARE CUT
B	150MM	25	SQUARE CUT	SQUARE CUT
C	102MM	25	SQUARE CUT	SQUARE CUT

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–09
P&ID	12732–SK–P&ID–001–02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–SW5–052–D

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–SW5–052–P01561–100
SHEET No. 03 OF 05
DRG No. CHK–SW5–052–03 REV. 1

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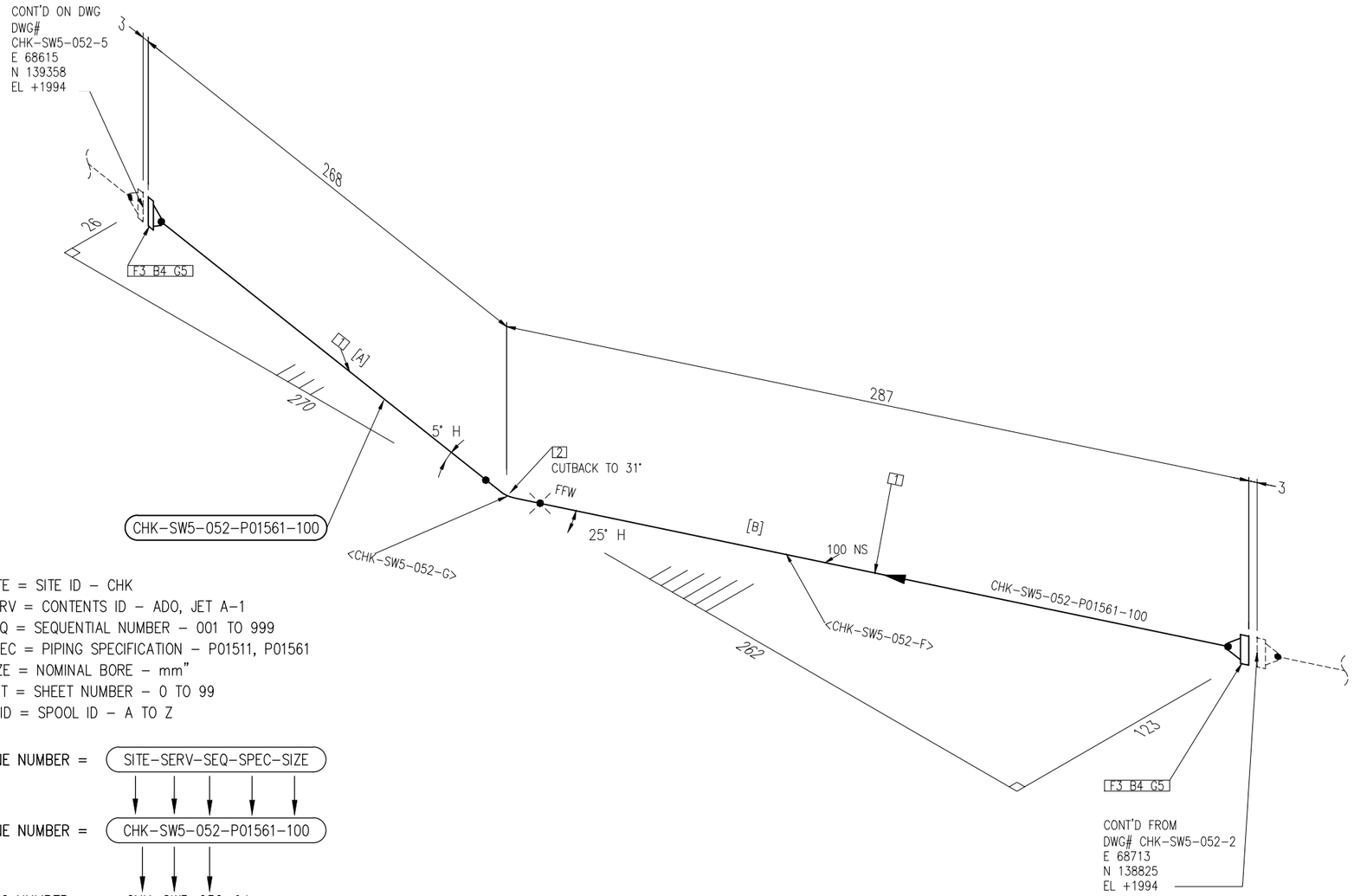

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-052-P01561-100

DRG NUMBER = CHK-SW5-052-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-052-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	0.5M
	FITTINGS			
2	ELBOW 45 DEG LR BW SCH 40S A403 WP316L–CUTBACK TO 31 DEG.	100	P02206D100	1
	FLANGES			
3	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	2
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	16
5	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	150MM	100	BEVEL	BEVEL
B	319MM	100	BEVEL	

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-001-02

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-052-G

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-SW5-052-P01561-100
CHKD	M.WEST	06/22	SHEET No. 04 OF 05
APPD	·	06/22	DRG No. CHK-SW5-052-04 REV. 1
APPD	W.DOUGAN	06/22	

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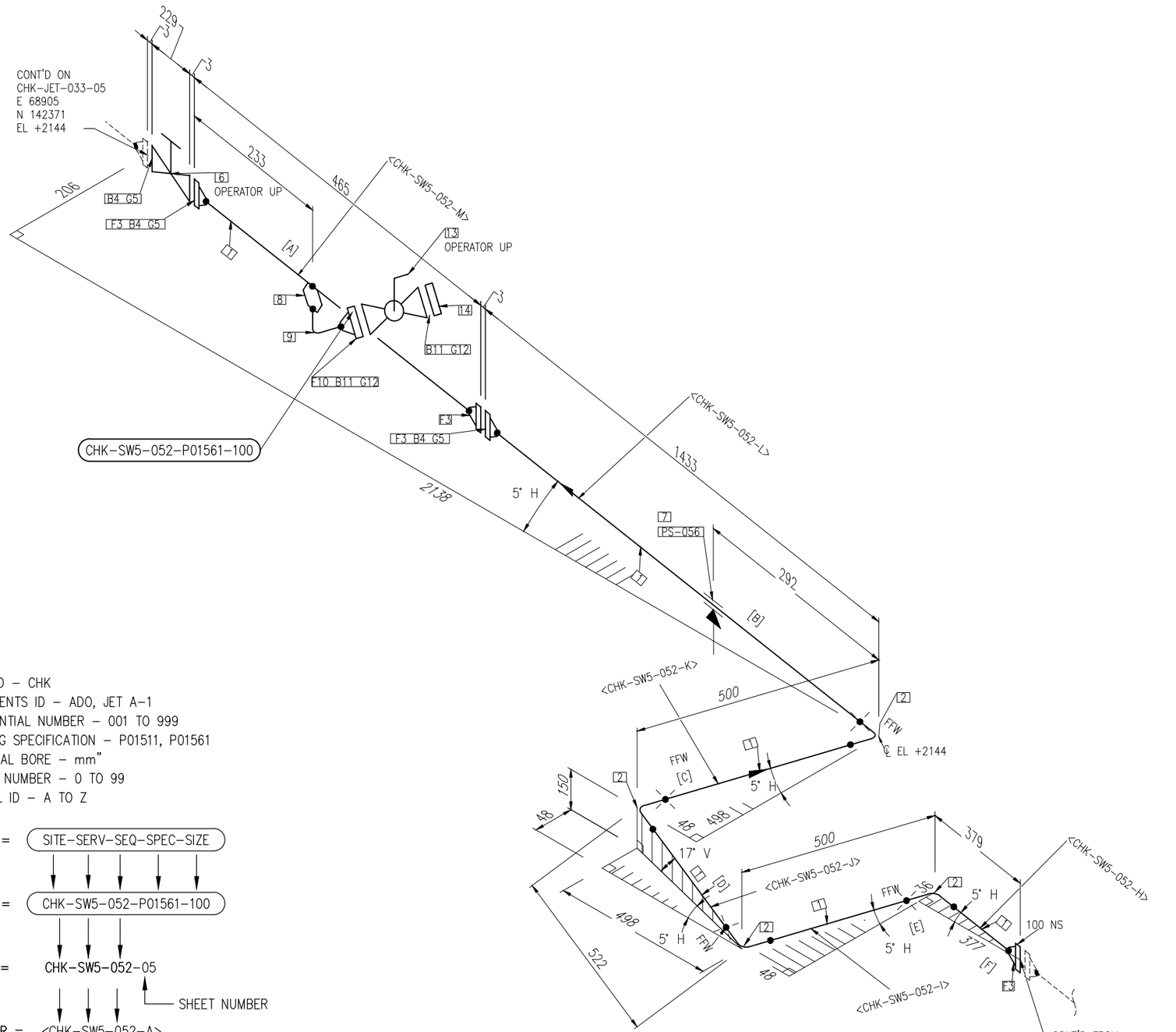

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-SW5-052-P01561-100

DRG NUMBER = CHK-SW5-052-05 — SHEET NUMBER

SPOOL NUMBER = <CHK-SW5-052-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40S A312 TP316L	100	P01206S100	2.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	100	P02006S100	4
	FLANGES			
3	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	4
	FASTENERS			
4	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	24
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	3
	VALVES			
6	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
	PIPE SUPPORTS			
7	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	1
	MISC			
8	WELDOLET SCH 40SX80S A182 F316L	100X25	P50006STGC	1
9	ELBOW 90 DEG LR BW SCH 80S A403 WP316L	25	P02006T025	1
10	FLANGE WN RF SCH 80S CL150 A182 F316L	25	P2016AT025	1
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
12	STUDBOLT 1/2" UNC X70 B8M CL2/8MA NUTS	12X70	P900504070	8
13	VALVE BALL FB RF CL150 VB01522	25	VB01522025	1
14	FLANGE BLIND RF CL150 A182 F316L	25	P2616AX025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	313MM	100	BEVEL	BEVEL
B	1367MM	100		BEVEL
C	346MM	100		BEVEL
D	368MM	100		BEVEL
E	346MM	100		BEVEL
F	150MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% DYE PEN INSPECTION OF FILLET WELDS
100% DYE PEN INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA.
CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-04
P&ID	12732-SK-P&ID-001-02

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	0
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	NONE
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-SW5-052-H TO M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-SW5-052-P01561-100
SHEET No. 05 OF 05
DRG No. CHK-SW5-052-05 REV. 1

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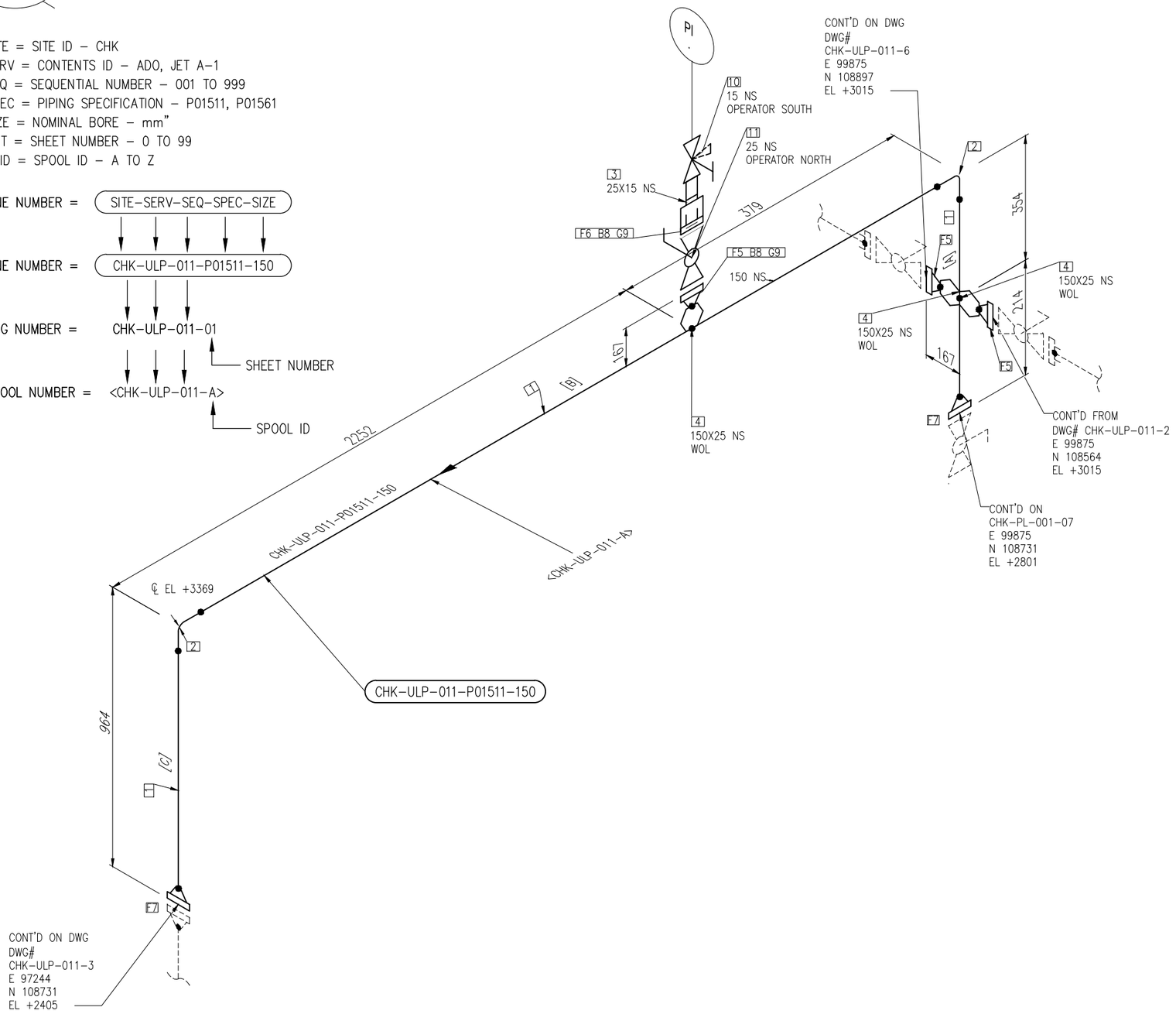
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–011–P01511–150

DRG NUMBER = CHK–ULP–011–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–011–A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	3.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	150	P02001D150	2
3	HEX BUSH RED NPT CL3000 A182 F316L	25X15	P4535630CA	1
	OLETS			
4	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	3
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	3
6	FLANGE SCRD RF NPT CL150 A105	25	P2310AX025	1
7	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	2
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
9	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
	VALVES			
10	VALVE NEEDLE SCRD MXFNPT CL6000 AISI 316	15	INSTRUMENT	1
11	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	250MM	150	BEVEL	BEVEL
B	2174MM	150	BEVEL	BEVEL
C	647MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–15
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–011–A

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ULP–011–P01511–150
SHEET No. 01 OF 06
DRG No. CHK–ULP–011–01 REV. 1

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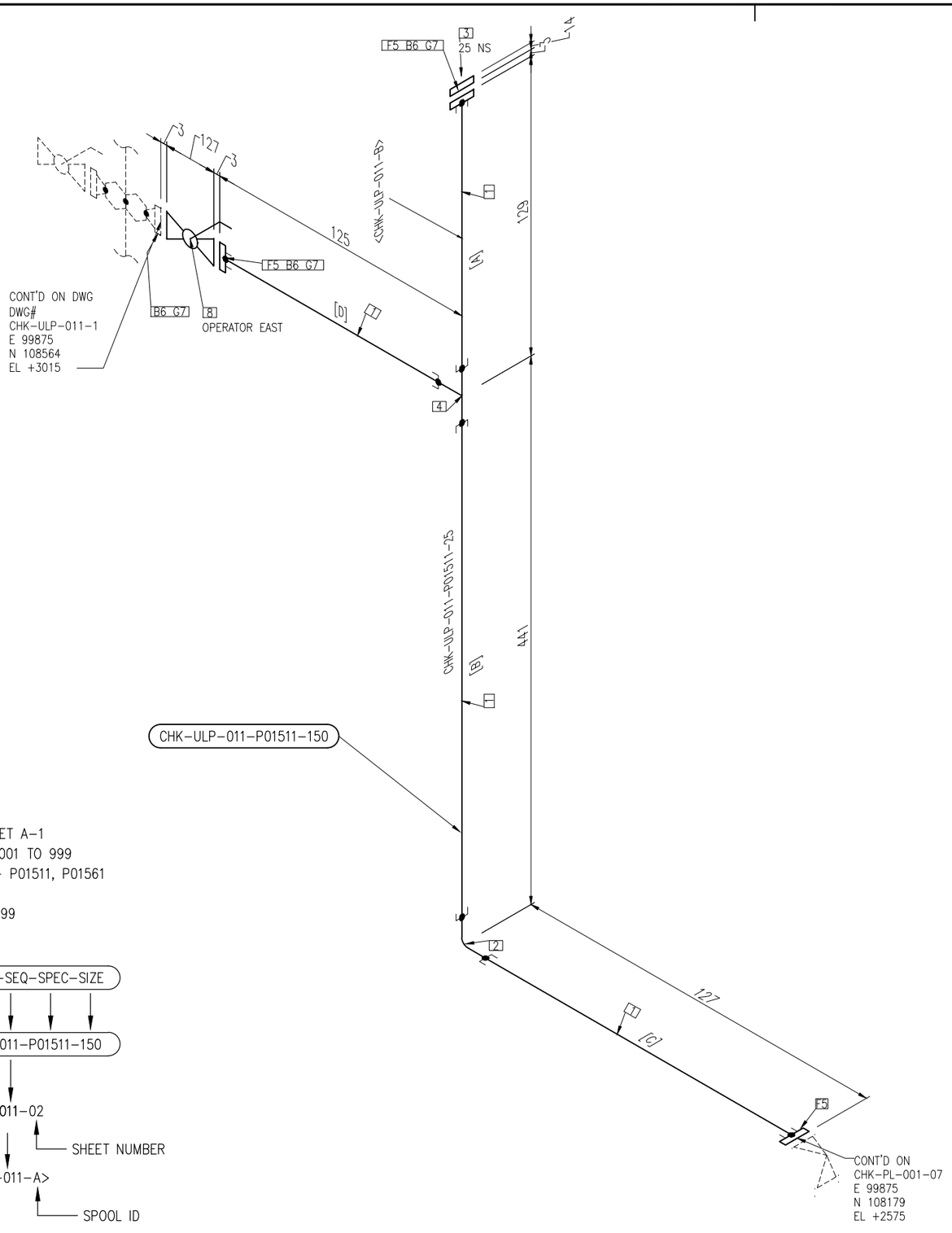

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	0.7M
	FITTINGS			
2	ELBOW 90 DEG SW CL3000 A105	25	P400113025	1
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
4	TEE EQUAL SW CL3000 A105	25	P400313025	1
	FLANGES			
5	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	3
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
	VALVES			
8	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	102MM	25	SQUARE CUT	SQUARE CUT
B	397MM	25	SQUARE CUT	SQUARE CUT
C	100MM	25	SQUARE CUT	SQUARE CUT
D	98MM	25	SQUARE CUT	SQUARE CUT

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-011-P01511-150

DRG NUMBER = CHK-ULP-011-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-011-A> — SPOOL ID

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-011-B

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK-ULP-011-P01511-150
CHKD	M.WEST	06/22	SHEET No. 02 OF 06
APPD	·	06/22	DRG No. CHK-ULP-011-02 REV. 1
APPD	W.DOUGAN	06/22	

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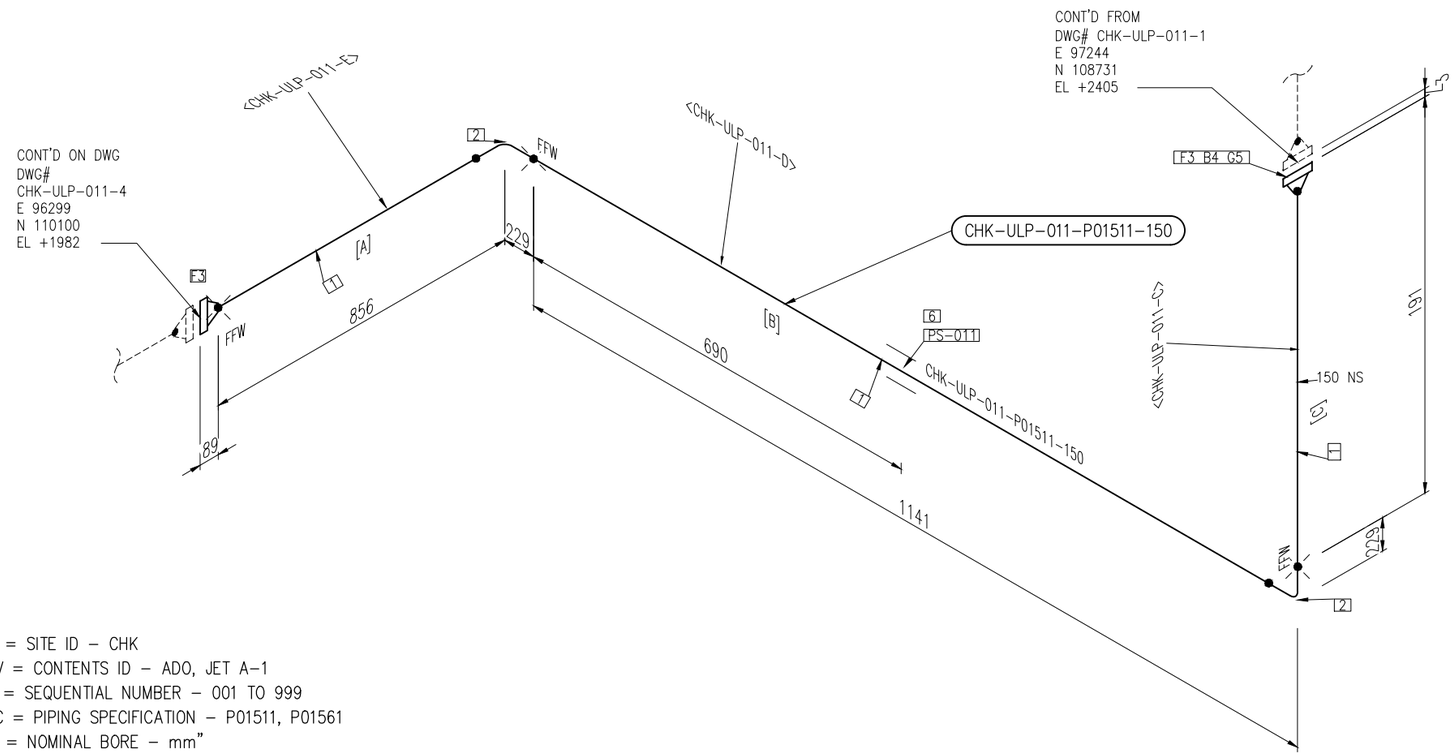

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-011-P01511-150

DRG NUMBER = CHK-ULP-011-03 — SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-011-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	2.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	150	P02001D150	2
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	2
	FASTENERS			
4	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	8
5	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	1
	PIPE SUPPORTS			
6	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	150	W146301150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	777MM	150	BEVEL	
B	1063MM	150	BEVEL	
C	252MM	150	BEVEL	

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

DRAWING REVISIONS

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-011-C TO E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-011-P01511-150
SHEET No. 03 OF 06
DRG No. CHK-ULP-011-03 REV. 1

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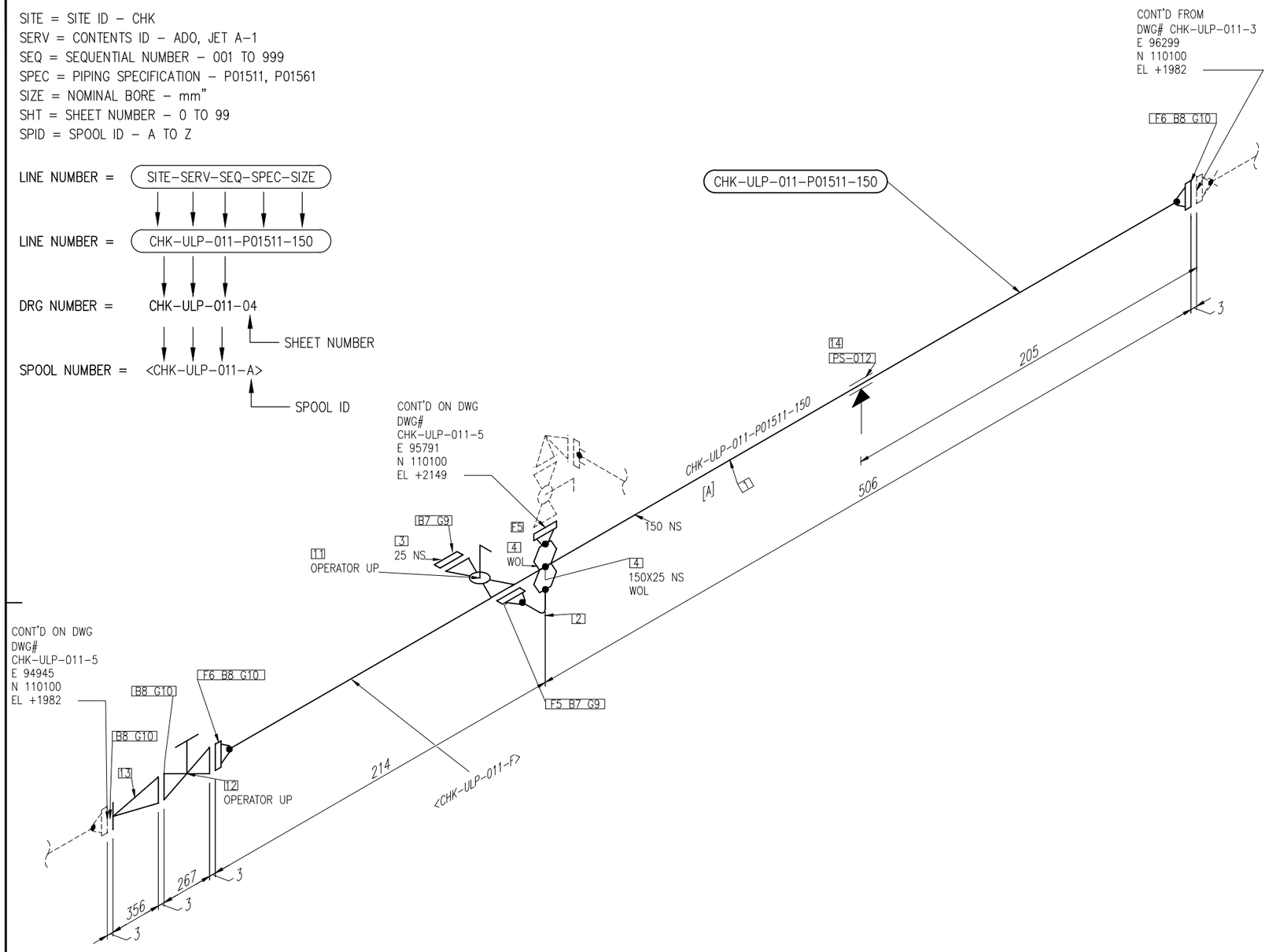
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-011-P01511-150

DRG NUMBER = CHK-ULP-011-04 ← SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-011-A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	0.6M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80 A234 WPB	25	P02001F025	1
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
	OLETS			
4	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	2
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	2
6	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
8	STUDBOLT 3/4" UNC X110 B7/2H SPUN GALV	20X110	P902106110	32
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	150	P82261A150	4
	VALVES			
11	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
12	VALVE GATE RF CL150 VG01121	150	VG01121150	1
13	VALVE CHECK SWING RF CL150 VC01121	150	VC01121150	1
	PIPE SUPPORTS			
14	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	150	U446204150	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	542MM	150	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

DRAWING REVISIONS

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

CONSULTANT

REFERENCE DRAWINGS

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-011-F

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-011-P01511-150
SHEET No. 04 OF 06
DRG No. CHK-ULP-011-04 REV. 1

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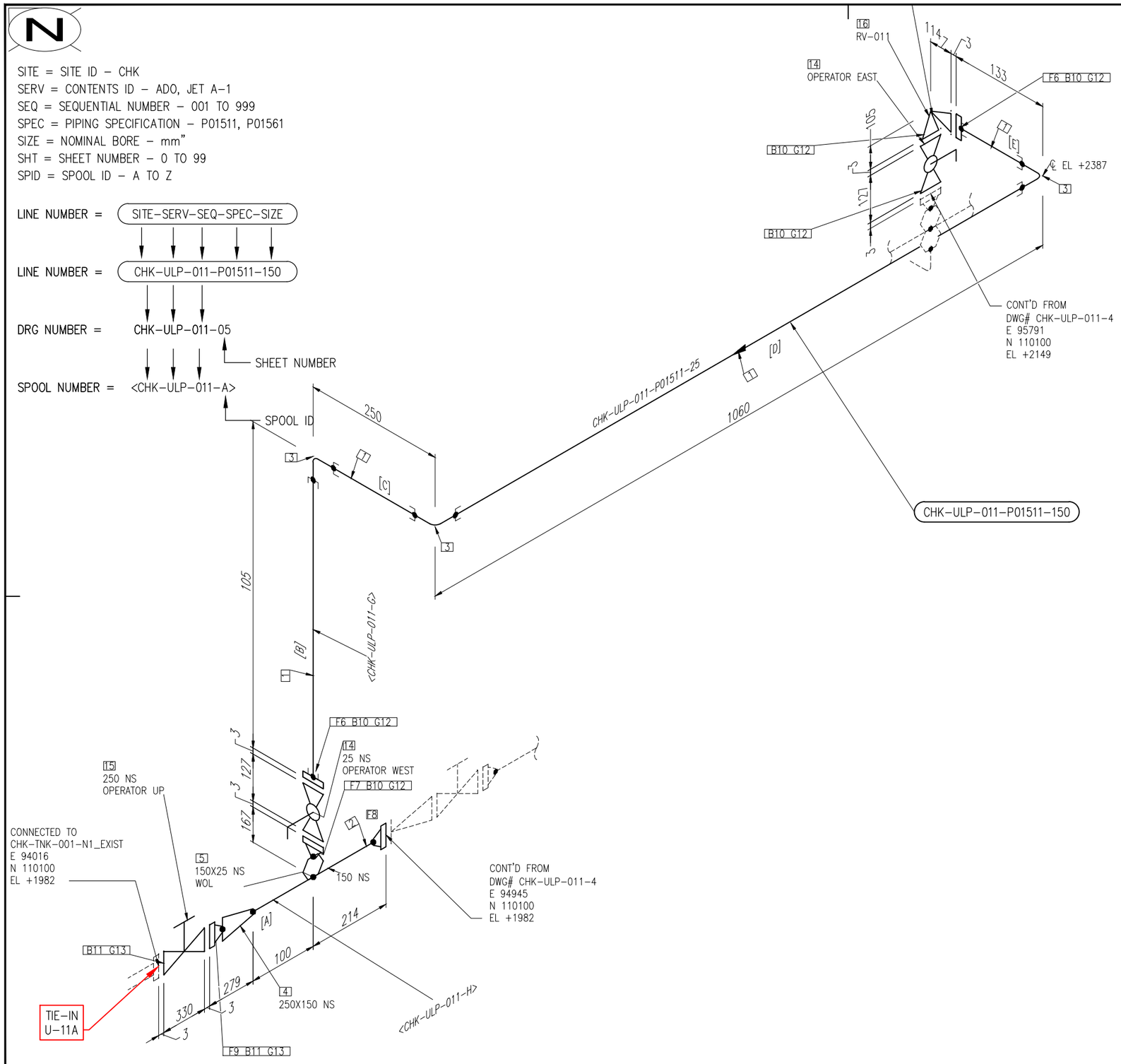
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-011-P01511-150

DRG NUMBER = CHK-ULP-011-05 ← SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-011-A> ← SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.5M
2	PIPE SMLS SCH 40 A106 B FL	150	P01201D150	0.3M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	3
4	REDUCER CONC BW SCH 40 A234 WPB	250X150	P06001DDKH	1
	OLETS			
5	WELDOLET SCH 40X80 A105N	150X25	P50001DFHC	1
	FLANGES			
6	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
7	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
8	FLANGE WN RF SCH 40 CL150 A105	150	P2010AD150	1
9	FLANGE WN RF SCH 40 CL150 A105	250	P2010AD250	1
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	20
11	STUDBOLT 7/8" UNC X120 B7/2H SPUN GALV	24X120	P902107120	24
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	5
13	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	250	P82261A250	2
	VALVES			
14	VALVE BALL FB RF CL150 VB01122	25	VB01122025	2
15	VALVE GATE RF CL150 CS VG01121	250	VG01121250	1
16	VALVE RELIEF RF CL150 CHK-RV-011	25	MECHNICAL	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	225MM	150	BEVEL	BEVEL
B	78MM	25	SQUARE CUT	SQUARE CUT
C	206MM	25	SQUARE CUT	SQUARE CUT
D	1016MM	25	SQUARE CUT	SQUARE CUT
E	107MM	25	SQUARE CUT	SQUARE CUT

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-011-G TO H

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-011-P01511-150
SHEET No. 05 OF 06
DRG No. CHK-ULP-011-05 REV. 1

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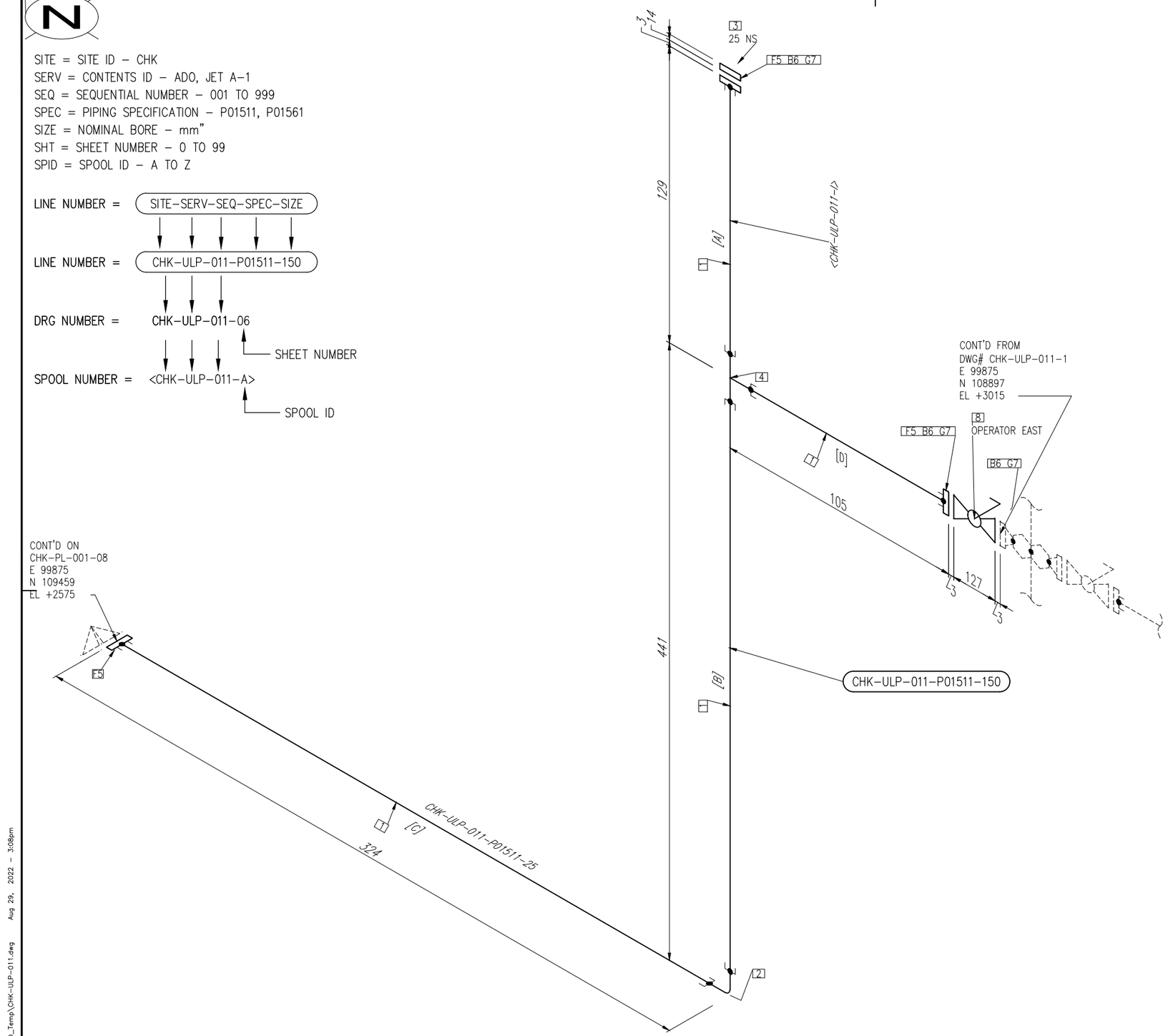
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, JET A-1
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-011-P01511-150

DRG NUMBER = CHK-ULP-011-06 — SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-011-A> — SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	0.9M
	FITTINGS			
2	ELBOW 90 DEG SW CL3000 A105	25	P400113025	1
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
4	TEE EQUAL SW CL3000 A105	25	P400313025	1
	FLANGES			
5	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	3
	FASTENERS			
6	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
	VALVES			
8	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	102MM	25	SQUARE CUT	SQUARE CUT
B	397MM	25	SQUARE CUT	SQUARE CUT
C	297MM	25	SQUARE CUT	SQUARE CUT
D	79MM	25	SQUARE CUT	SQUARE CUT

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
B	07/22	SAR	–	ISSUED FOR REVIEW – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-15
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-011- I

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-011-P01511-150
SHEET No. 06 OF 06
DRG No. CHK-ULP-011-06 REV. 1

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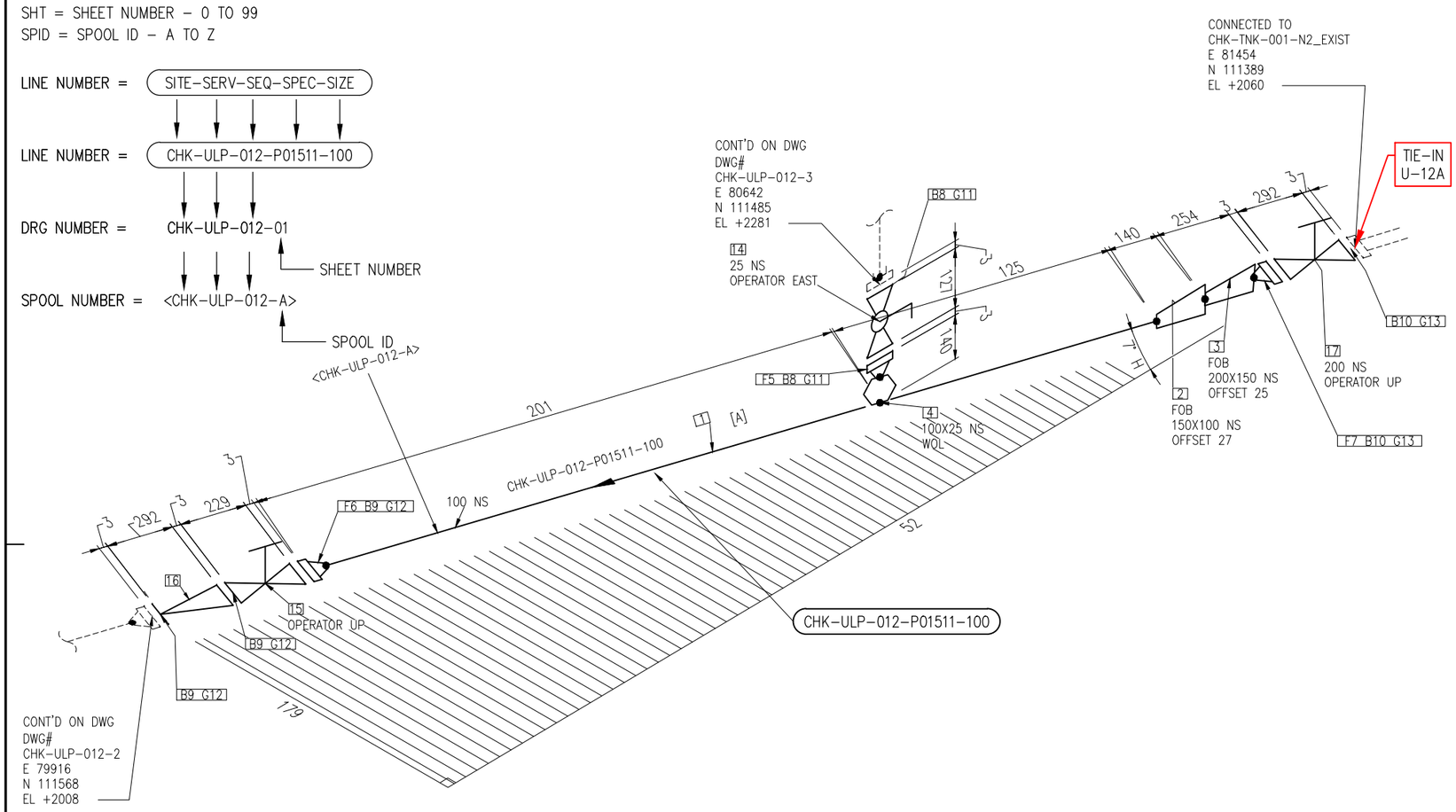
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–012–P01511–100

DRG NUMBER = CHK–ULP–012–01 ← SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–012–A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	100	P01201D100	0.3M
	FITTINGS			
2	REDUCER ECC BW SCH 40 A234 WPB	150X100	P07001DDHG	1
3	REDUCER ECC BW SCH 40 A234 WPB	200X150	P07001DDJH	1
	OLETS			
4	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	1
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
6	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	1
7	FLANGE WN RF SCH 40 CL150 A105	200	P2010AD200	1
	FASTENERS			
8	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
9	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	24
10	STUDBOLT 3/4" UNC X120 B7/2H SPUN GALV	20X120	P902106120	16
11	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
12	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	3
13	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	200	P82261A200	2
	VALVES			
14	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
15	VALVE GATE RF CL150 CS VG01121	100	VG01121100	1
16	VALVE CHECK SWING RF CL150 VC01121	100	VC01121100	1
17	VALVE GATE RF CL150 CS VG01121	200	VG01121200	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	250MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–14
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–012–A

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ULP–012–P01511–100
SHEET No. 01 OF 06
DRG No. CHK–ULP–012–01 REV. 1

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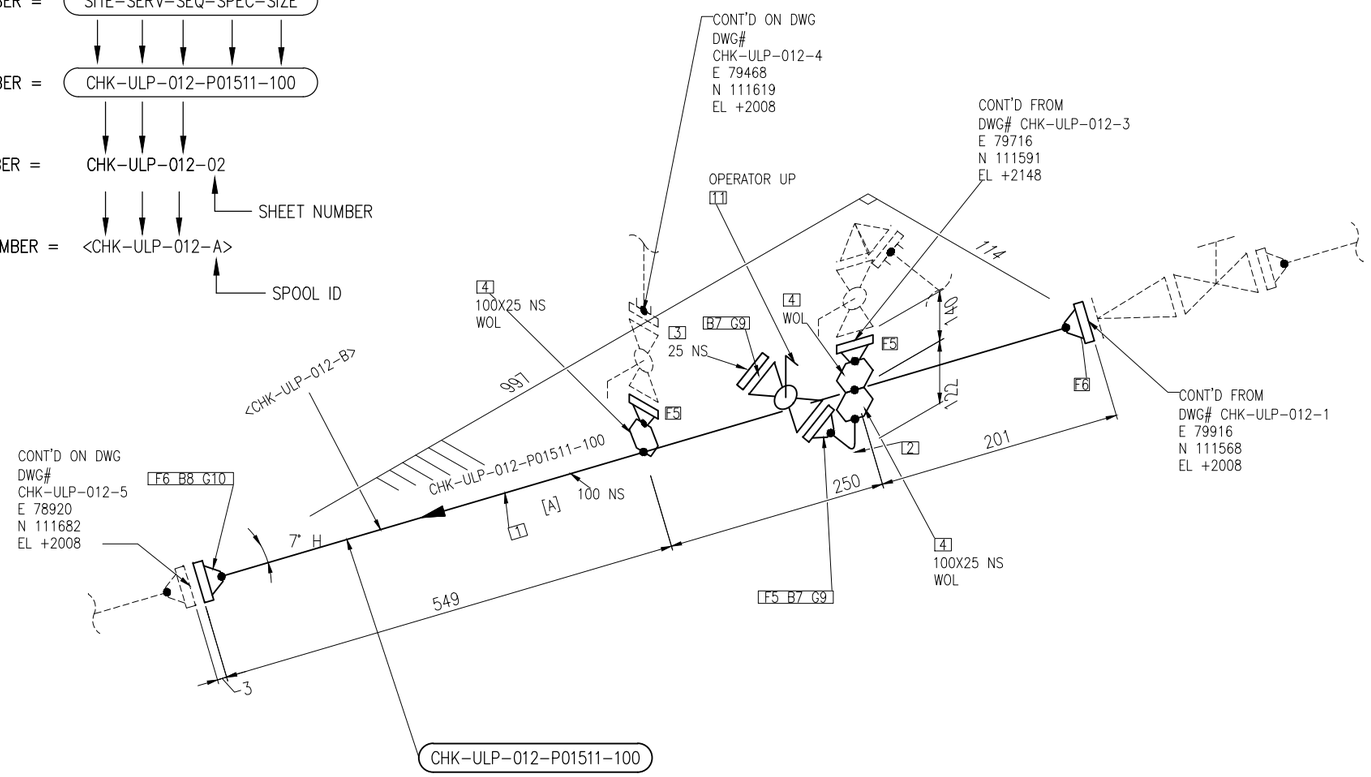
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–012–P01511–100

DRG NUMBER = CHK–ULP–012–02 — SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–012–A> — SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	100	P01201D100	0.9M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80 A234 WPB	25	P02001F025	1
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
	OLETS			
4	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	3
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	3
6	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	2
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
8	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	8
9	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
10	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	1
	VALVES			
11	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	848MM	100	BEVEL	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732–SK–PM–502–14
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–012–B

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–ULP–012–P01511–100
CHKD	M.WEST	06/22	SHEET No. 02 OF 06
APPD	·	06/22	DRG No. CHK–ULP–012–02 REV. 1
APPD	W.DOUGAN	06/22	

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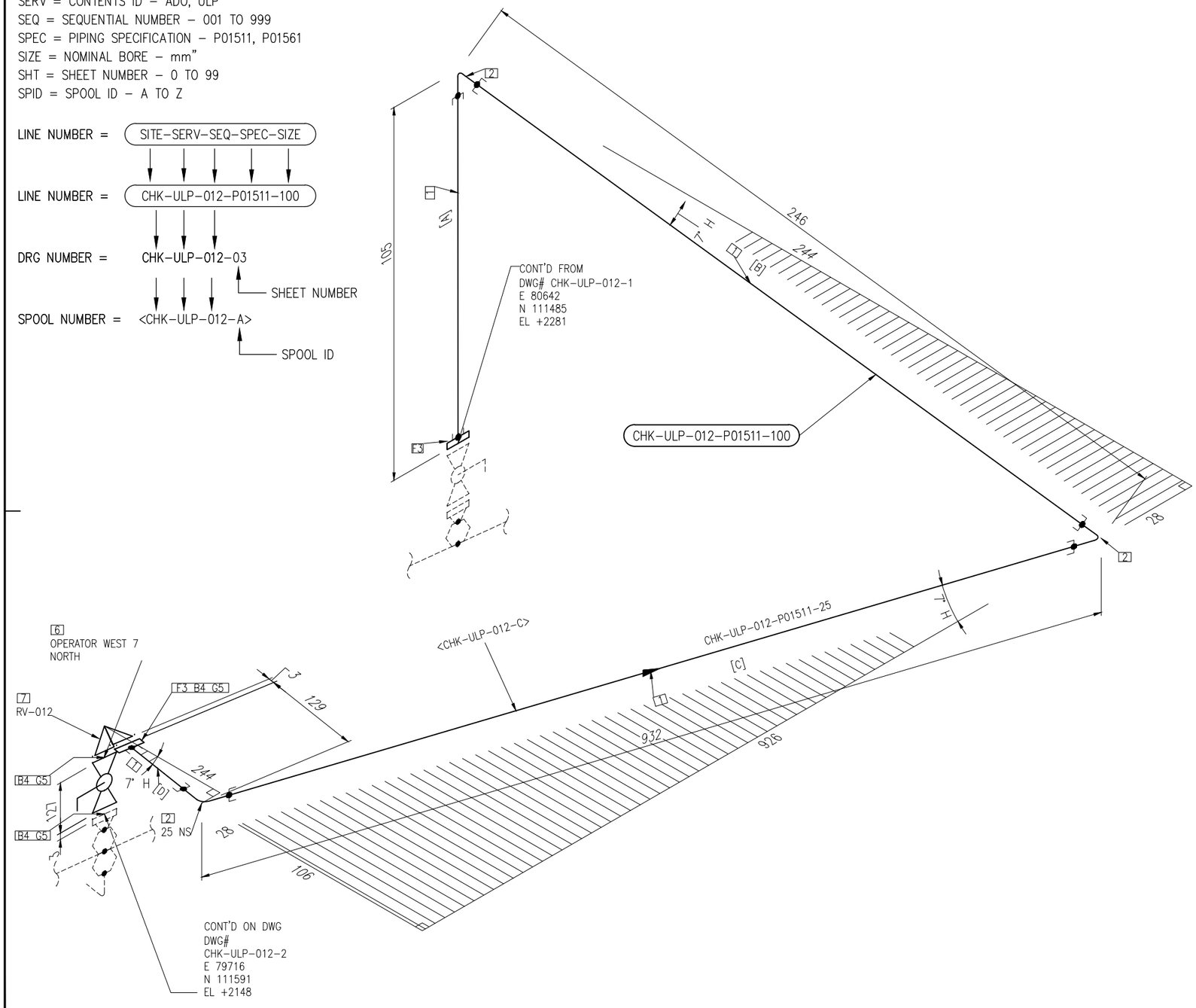
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–012–P01511–100

DRG NUMBER = CHK–ULP–012–03 ← SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–012–A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.3M
	FITTINGS			
2	ELBOW 90 DEG SW CL3000 A105	25	P400113025	3
	FLANGES			
3	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
	FASTENERS			
4	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
5	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	3
	VALVES			
6	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
7	VALVE RELIEF RF CL150 CHK–RV–012	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	79MM	25	SQUARE CUT	SQUARE CUT
B	202MM	25	SQUARE CUT	SQUARE CUT
C	888MM	25	SQUARE CUT	SQUARE CUT
D	102MM	25	SQUARE CUT	SQUARE CUT

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–14
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–012–C

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–ULP–012–P01511–100
CHKD	M.WEST	06/22	SHEET No. 03 OF 06
APPD	·	06/22	DRG No. CHK–ULP–012–03 REV. 1
APPD	W.DOUGAN	06/22	

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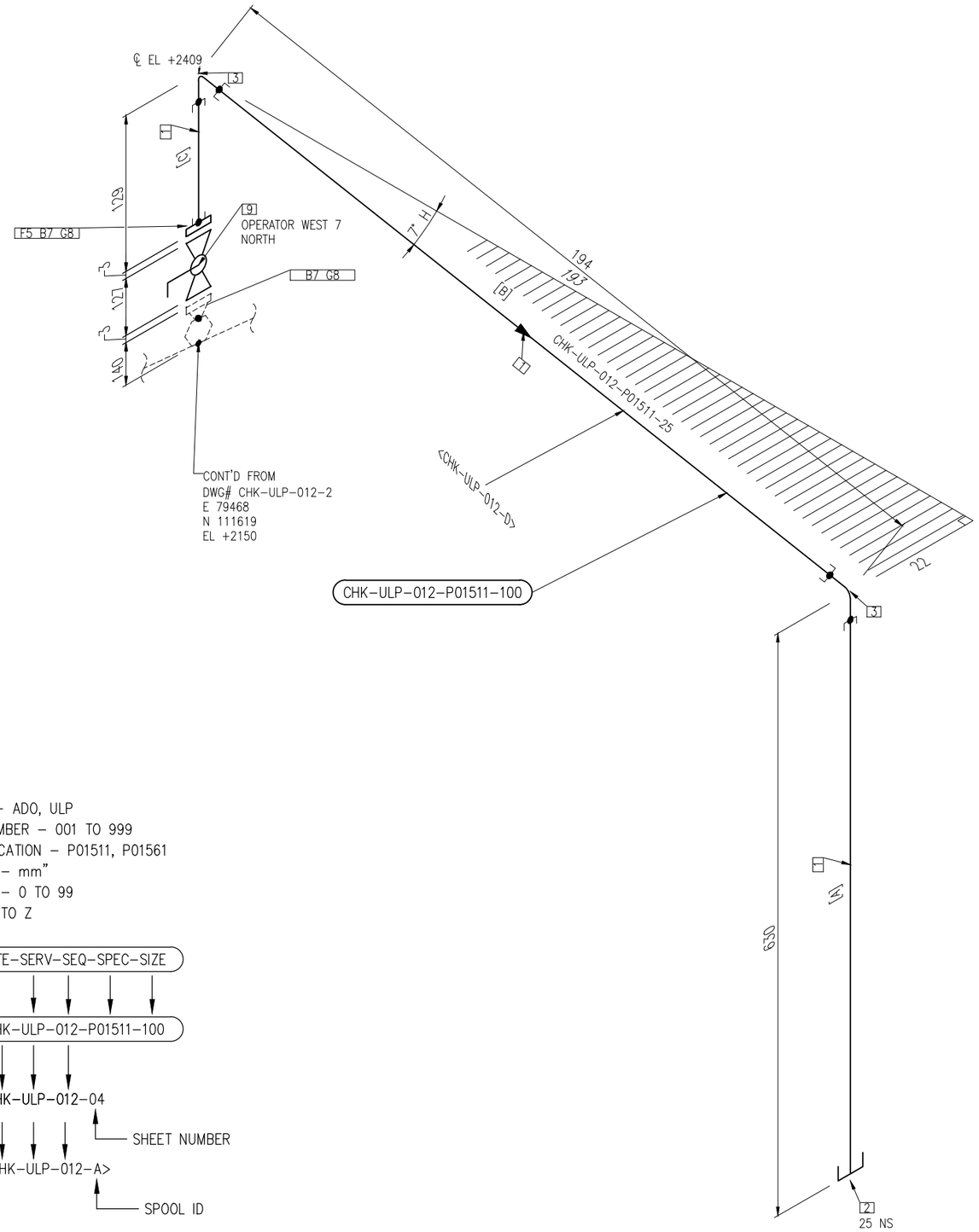

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	0.9M
	FITTINGS			
2	CAP SCRD NPT CL3000 A105	25	P450713025	1
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
	OLETS			
4				
	FLANGES			
5	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	1
6				
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
	VALVES			
9	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	567MM	25	SCREWED	SQUARE CUT
B	150MM	25	SQUARE CUT	SQUARE CUT
C	102MM	25	SQUARE CUT	SQUARE CUT

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-012-P01511-100

DRG NUMBER = CHK-ULP-012-04 — SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-012-A> — SPOOL ID

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NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-14
P&ID	12732-SK-P&ID-001-01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD
AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

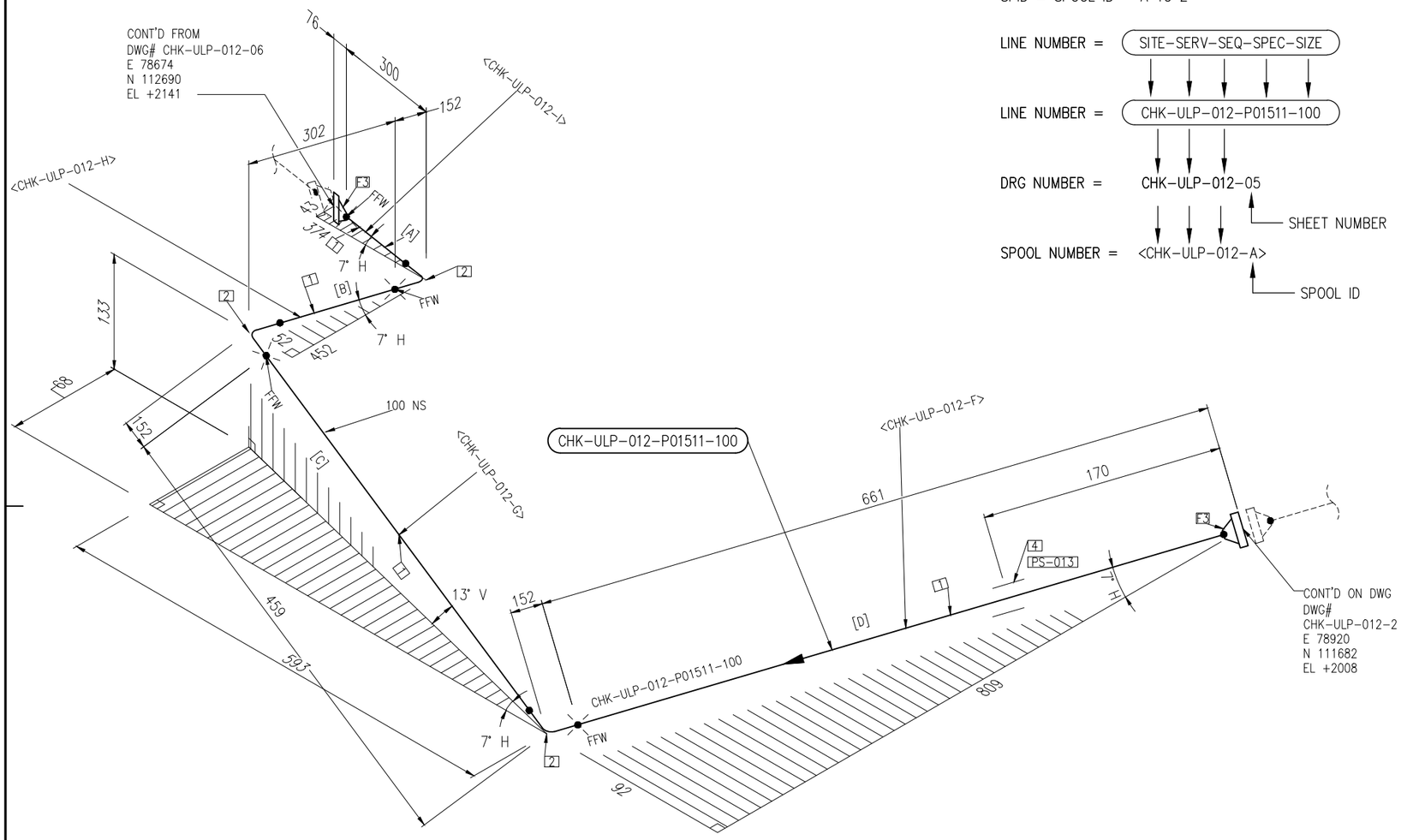
JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-012-D

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-012-P01511-100
SHEET No. 04 OF 06
DRG No. CHK-ULP-012-04 REV. 1



SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–012–P01511–100

DRG NUMBER = CHK–ULP–012–05 (SHEET NUMBER)

SPOOL NUMBER = <CHK–ULP–012–A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	100	P01201D100	1.8M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	3
	FLANGES			
3	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	2
	PIPE SUPPORTS			
4	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	100	W146301100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	298MM	100		BEVEL
B	300MM	100		BEVEL
C	457MM	100		BEVEL
D	736MM	100		BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–14
P&ID	12732–SK–P&ID–001–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–012–F TO I

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–ULP–012–P01511–100
CHKD	M.WEST	06/22	SHEET No. 05 OF 06
APPD	·	06/22	DRG No. CHK–ULP–012–05 REV. 1
APPD	W.DOUGAN	06/22	

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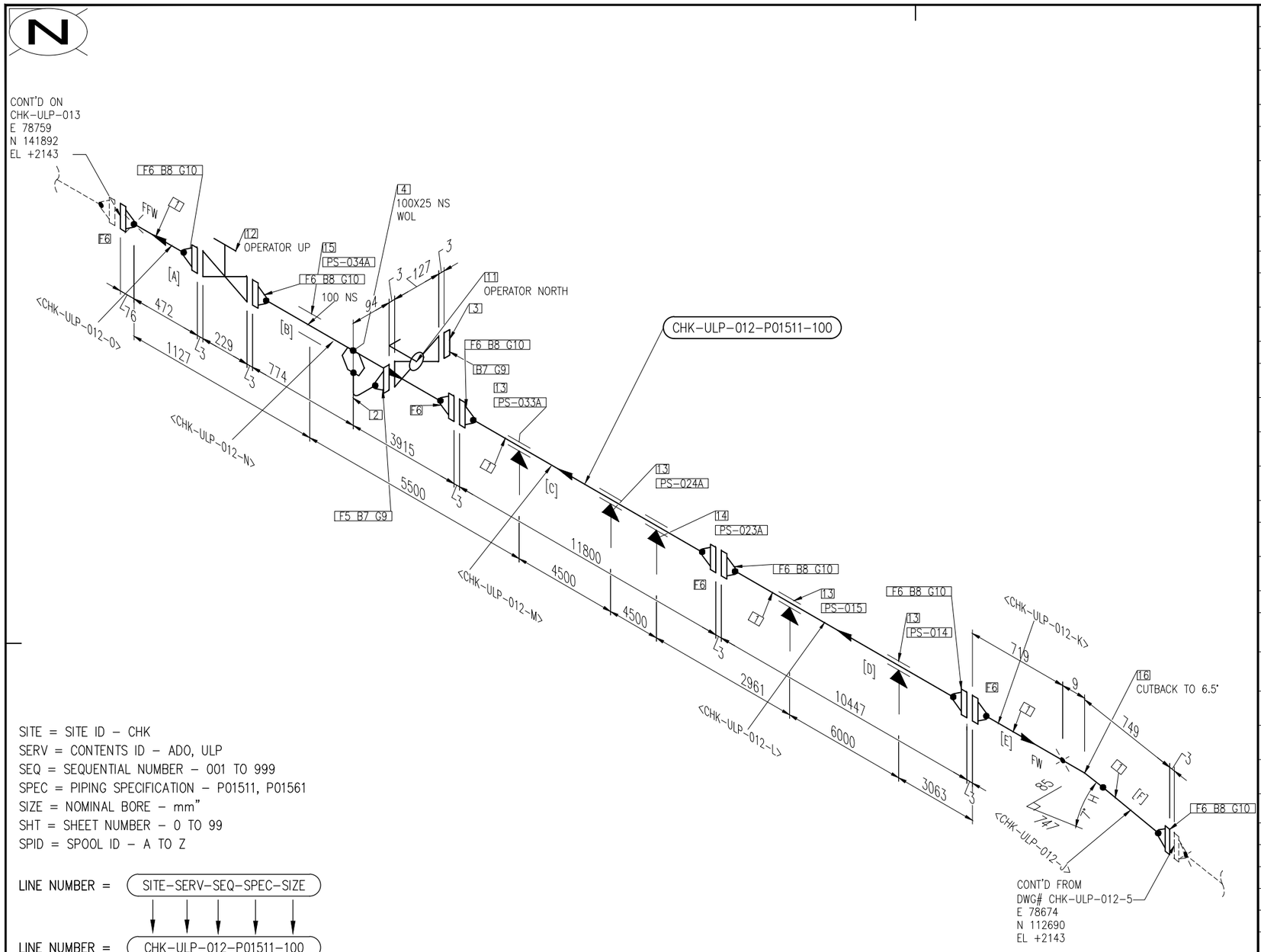

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-012-P01511-100

DRG NUMBER = CHK-ULP-012-06 (SHEET NUMBER)

SPOOL NUMBER = <CHK-ULP-012-A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	28.6M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 80 A234 WPB	25	P02001F025	1
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
	OLETS			
4	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	1
	FLANGES			
5	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
6	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	10
	FASTENERS			
7	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
8	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	48
9	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
10	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	6
	VALVES			
11	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
12	VALVE GATE RF CL150 CS VG01121	100	VG01121100	1
	PIPE SUPPORTS			
13	U-BOLT TYPE U4 – NON GRIP & WEAR PAD (STD-46204-01)	100	U446204100	4
14	U-BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD-46203-01)	100	U346203100	1
15	WEAR PAD TYPE W1 – ESD UHMW-PE (STD-46301-01)	100	W146301100	1
	MISC			
16	ELBOW 45 DEG LR BW SCH 40 A234 WPB– CUTBACK TO 6.5 DEG.	100	P02201D100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	664MM	100	BEVEL	BEVEL
B	643MM	100	BEVEL	
C	10295MM	100	BEVEL	BEVEL
D	11648MM	100	BEVEL	BEVEL
E	4537MM	100	BEVEL	BEVEL
F	546MM	100	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-09
P&ID	12732-SK-P&ID-001-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-012-J TO N

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-012-P01511-100
SHEET No. 06 OF 06
DRG No. CHK-ULP-012-06 REV. 1

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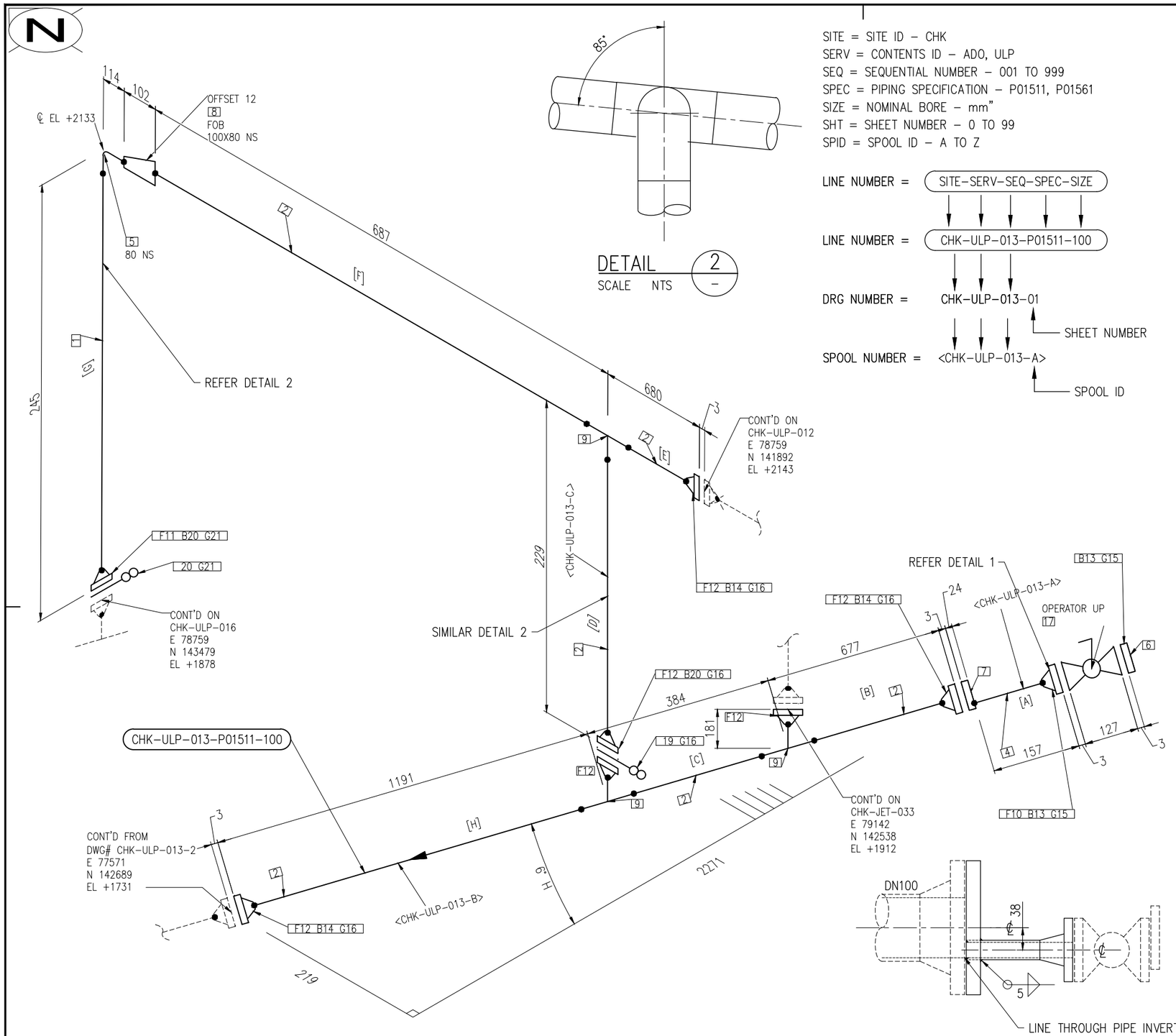

DETAIL 2
SCALE NTS

DETAIL 1
SCALE NTS

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–013–P01511–100

DRG NUMBER = CHK–ULP–013–01 (SHEET NUMBER)

SPOOL NUMBER = <CHK–ULP–013–A> (SPOOL ID)

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	80	P01206S080	0.1M
2	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	2.9M
3				
4	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	0.2M
	FITTINGS			
5	ELBOW 90 DEG LR BW SCH 40S A403 WP316L	80	P02006S080	1
6	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
7	FLANGE BLIND RF CL150 A105	100	P2610AX100	1
8	REDUCER ECC BW SCH 40S A403 WP316L	100X80	P07006SSGF	1
9	TEE EQUAL BW SCH 40 A234 WPB	100	P03001D100	3
	FLANGES			
10	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
11	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	1
12	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	6
	FASTENERS			
13	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
14	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	32
15	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
16	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	5
	VALVES			
17	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
	MISC			
18	SPECTACLE BLIND THICKNESS TO ASME B16.48	80	PROPRIETARY	1
19	SPECTACLE BLIND THICKNESS TO ASME B16.48	100	PROPRIETARY	1
20	STUDBOLT 5/8" UNC X115 B8M CL2/8MA NUTS	16X115		16
21	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80		2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	100MM	25	PL	PL
B	496MM	100	BEVEL	BEVEL
C	176MM	100	BEVEL	BEVEL
D	48MM	100	BEVEL	BEVEL
E	500MM	100	BEVEL	BEVEL
F	583MM	100	BEVEL	BEVEL
G	89MM	80	BEVEL	BEVEL
H	1010MM	100	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	07/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	WDD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–04
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–013–A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ULP–013–P01511–100
SHEET No. 01 OF 03
DRG No. CHK–ULP–013–01 REV. 1

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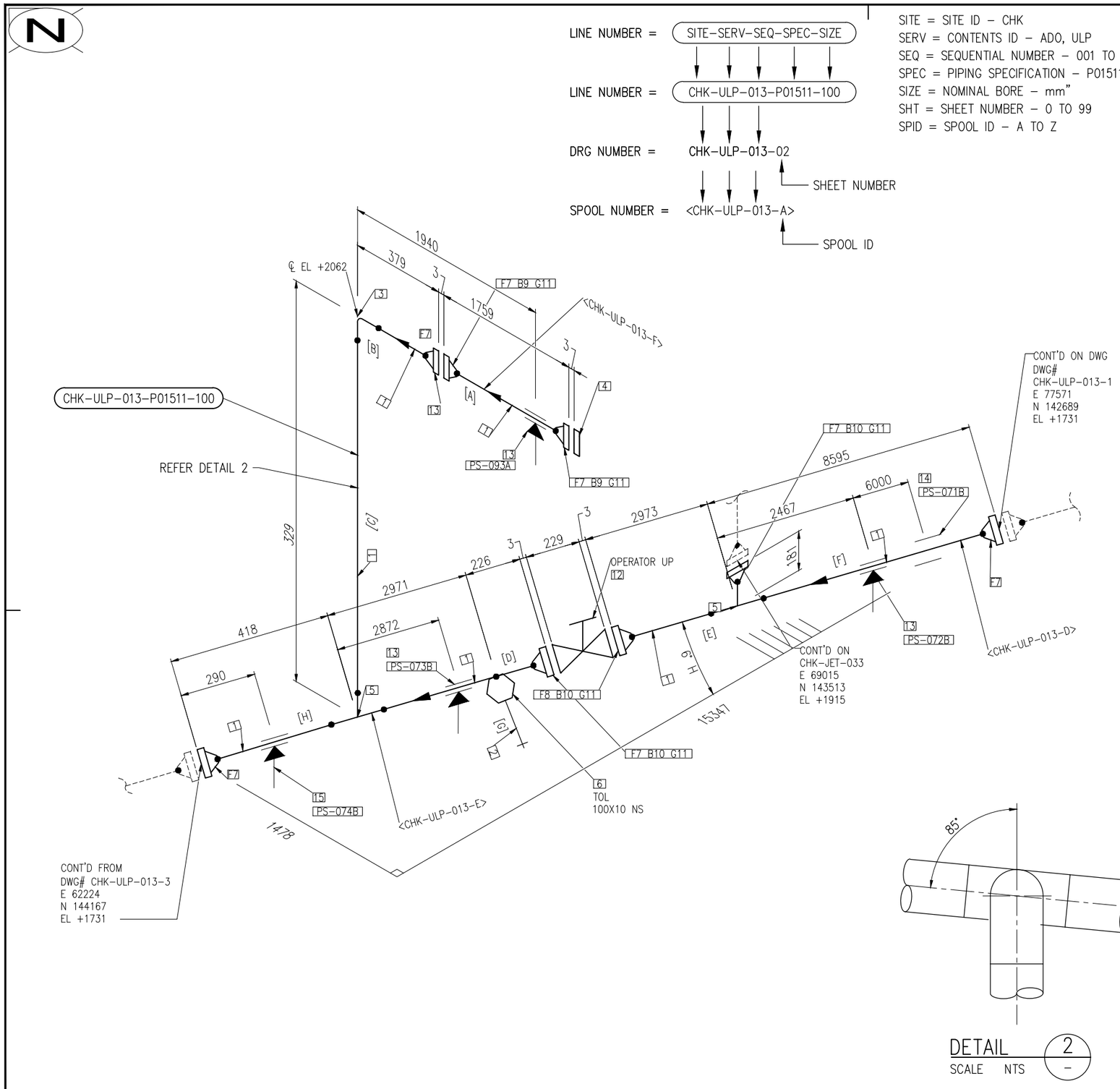

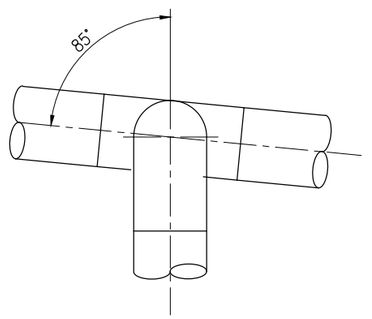

DETAIL 2
SCALE NTS –

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	16.3M
2	EARTH BOSS STUD (REFER DRG 000–50028–01)	10		0.1M
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	1
4	FLANGE BLIND RF CL150 A105	100	P2610AX100	1
5	TEE EQUAL BW SCH 40 A234 WPB	100	P03001D100	2
	OLETS			
6	EARTH BOSS (REFER DRG STD–50028–01)	100X10	EB000000GE	1
	FLANGES			
7	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	7
8	FLANGE WN RF SCH 40S CL150 A182 F316L	100	P2016AS100	1
	FASTENERS			
9	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	16
10	STUDBOLT 5/8" UNC X100 B8M CL2/8MA NUTS	16X100	P900505100	24
11	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	5
	VALVES			
12	VALVE GATE RF CL150 SS VG01521	100	VG01521100	1
	PIPE SUPPORTS			
13	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	100	U446204100	3
14	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	100	W146301100	1
15	U–BOLT TYPE U4 – FULL GRIP & WEAR PAD (STD–46204–01)	100	U446204100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1607MM	100	BEVEL	BEVEL
B	150MM	100	BEVEL	BEVEL
C	72MM	100	BEVEL	BEVEL
D	3016MM	100	BEVEL	BEVEL
E	2793MM	100	BEVEL	BEVEL
F	8415MM	100	BEVEL	BEVEL
G	41MM	10	SCREWED	SCREWED
H	237MM	100	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–03
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–013–D TO F

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ULP–013–P01511–100
SHEET No. 02 OF 03
DRG No. CHK–ULP–013–02 REV. 1

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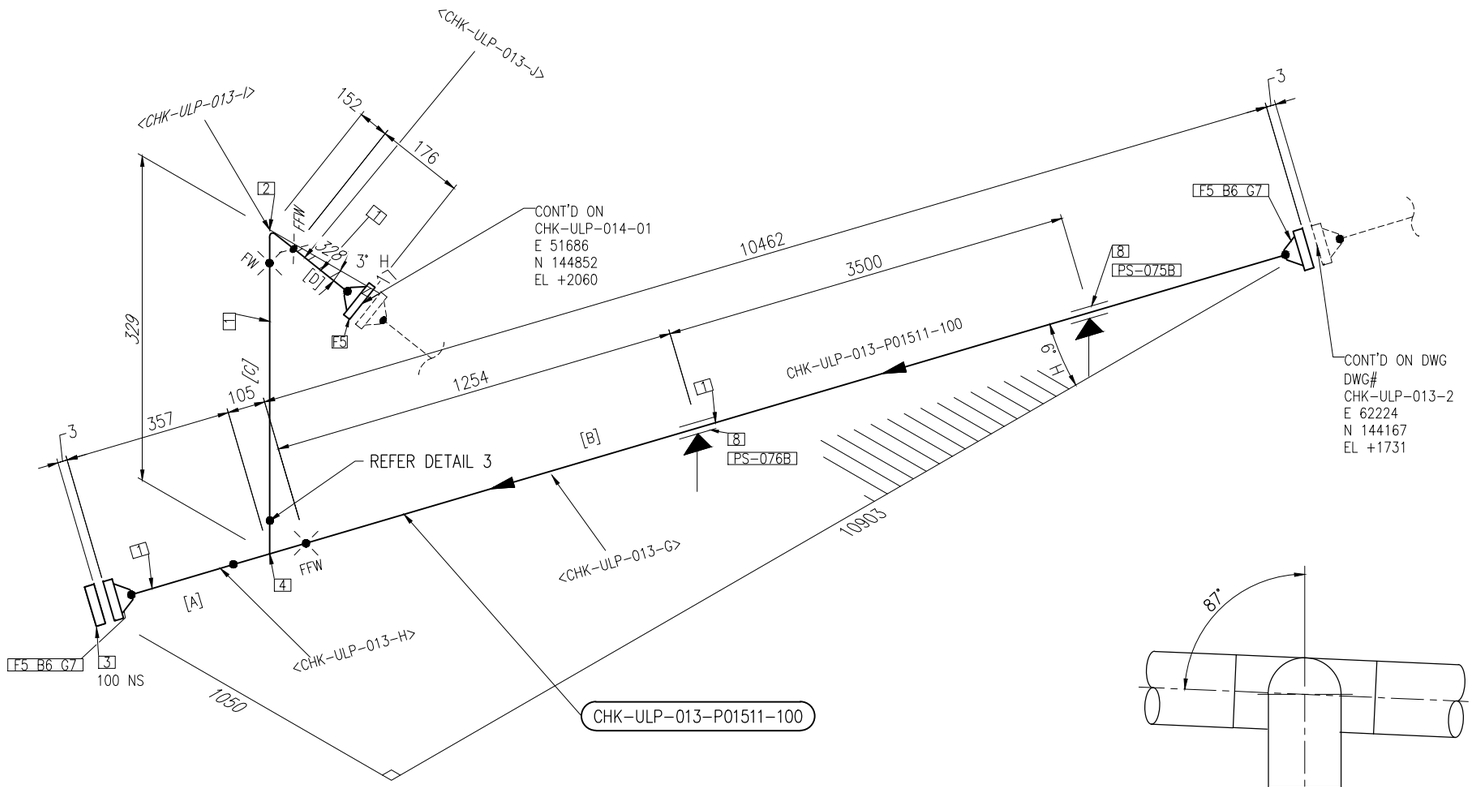

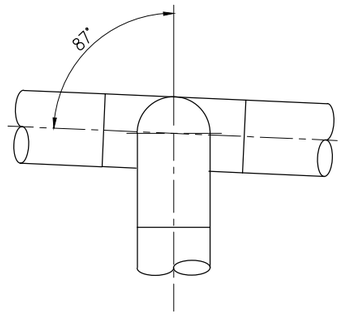

DETAIL 3
SCALE NTS –

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–013–P01511–100

DRG NUMBER = CHK–ULP–013–03 ← SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–013–A> ← SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	100	P01201D100	11.1M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	100	P02001D100	1
3	FLANGE BLIND RF CL150 A105	100	P2610AX100	1
4	TEE EQUAL BW SCH 40 A234 WPB	100	P03001D100	1
	FLANGES			
5	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	3
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	16
7	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	100	P82261A100	2
	PIPE SUPPORTS			
8	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	100	U446204100	2

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	177MM	100	BEVEL	BEVEL
B	10536MM	100		BEVEL
C	222MM	100		BEVEL
D	100MM	100	BEVEL	WS

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–PM–502–02
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

THIS DRAWING AND ASSOCIATED DESIGN IS THE COPYRIGHT AND PROPERTY OF VITAL FSM PETROCORP LTD AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–013–G TO J

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–ULP–013–P01511–100
CHKD	M.WEST	06/22	SHEET No. 03 OF 03
APPD	·	06/22	DRG No. CHK–ULP–013–03 REV. 1
APPD	W.DOUGAN	06/22	

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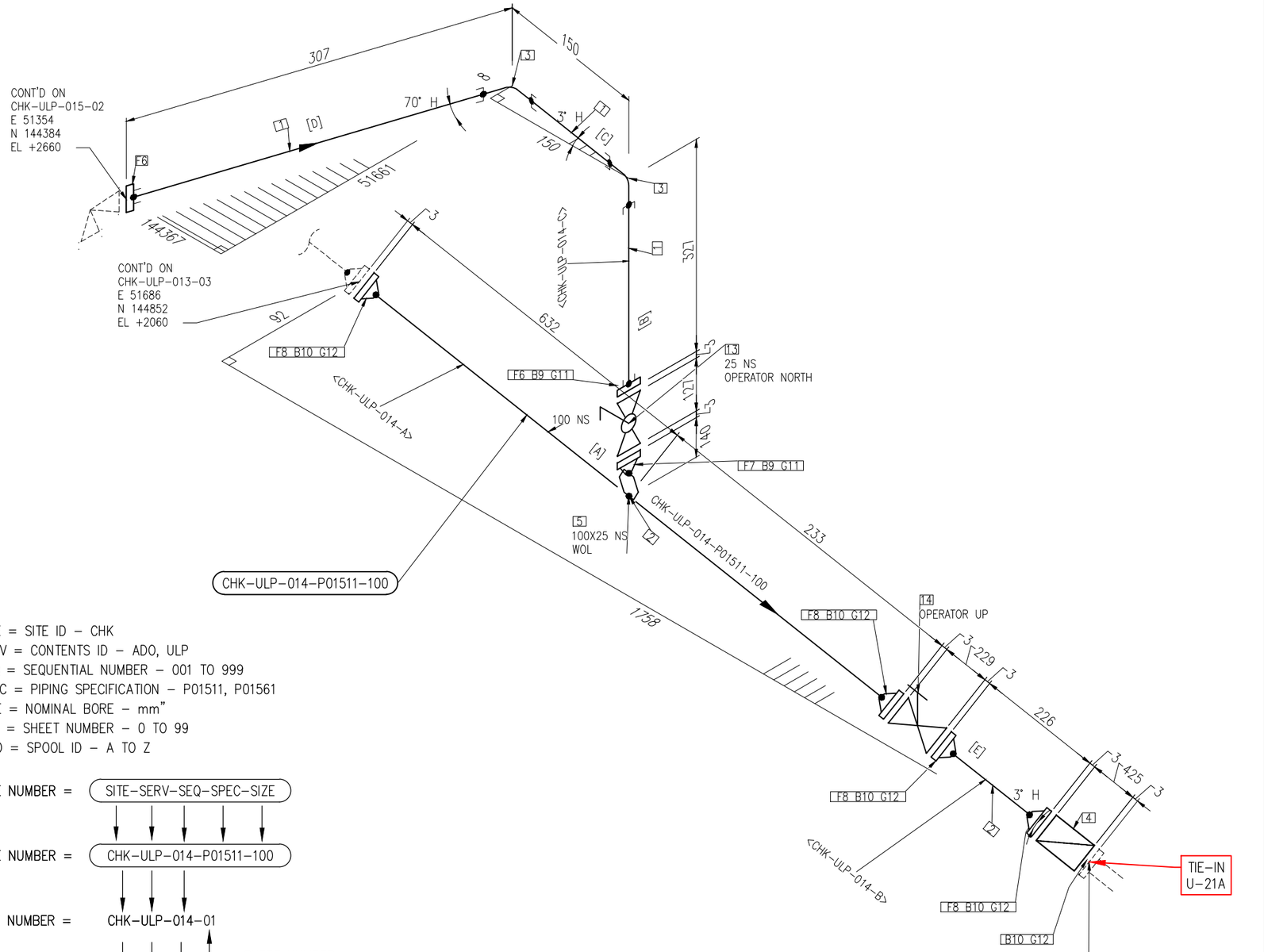

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-014-P01511-100

DRG NUMBER = CHK-ULP-014-01 — SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-014-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	0.7M
2	PIPE SMLS SCH 40 A106 B FL	100	P01201D100	0.8M
	FITTINGS			
3	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
4	BASKET STRAINER CL150 RF CS C/W DRAIN VALVE & PLUG CHK-STR-003	100	STRB0CS100	1
	OLETS			
5	WELDOLET SCH 40X80 A105N	100X25	P50001DFGC	1
	FLANGES			
6	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	2
7	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
8	FLANGE WN RF SCH 40 CL150 A105	100	P2010AD100	4
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
10	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	40
11	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	2
12	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	100	P82261A100	5
	VALVES			
13	VALVE BALL RB RF CL150 VB01121	25	VB01121025	1
14	VALVE GATE RF CL150 CS VG01121	100	VG01121100	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	713MM	100	BEVEL	BEVEL
B	301MM	25	SQUARE CUT	SQUARE CUT
C	106MM	25	SQUARE CUT	SQUARE CUT
D	281MM	25	SQUARE CUT	SQUARE CUT
E	74MM	100	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-PM-502-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-014-A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-014-P01511-100
SHEET No. 01 OF 01
DRG No. CHK-ULP-014-01 REV. 1

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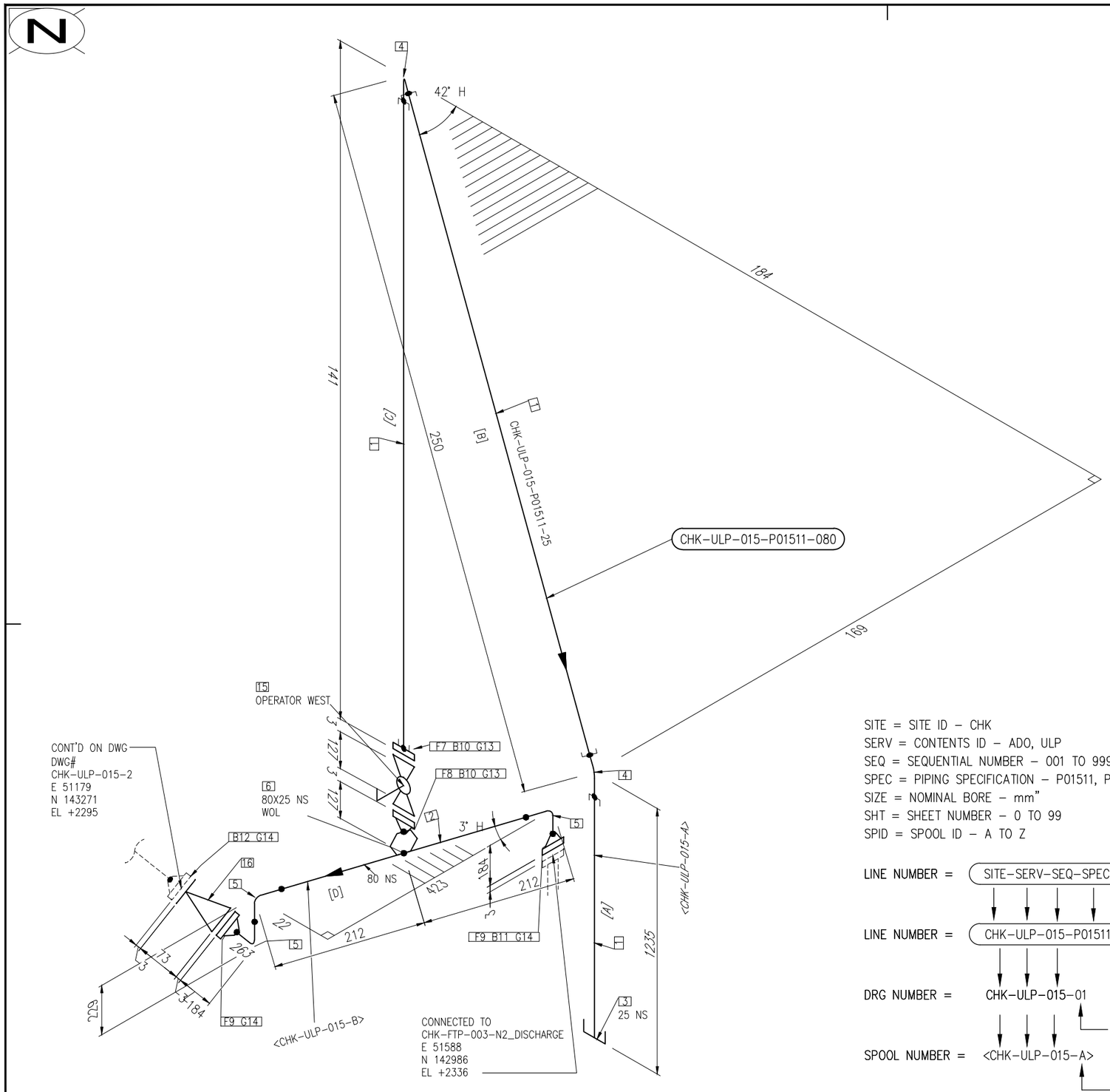

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–015–P01511–080

DRG NUMBER = CHK–ULP–015–01 — SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–015–A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 80 A106 B	25	P01201F025	1.5M
2	PIPE SMLS SCH 40 A106 B	80	P01201D080	0.2M
	FITTINGS			
3	CAP SCRD NPT CL3000 A105	25	P450713025	1
4	ELBOW 90 DEG SW CL3000 A105	25	P400113025	2
5	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	3
	OLETS			
6	WELDOLET SCH 40X80 A105N	80X25	P50001DFFC	1
	FLANGES			
7	FLANGE SW RF SCH 80 CL150 A105	25	P2510AF025	1
8	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
9	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	2
	FASTENERS			
10	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
11	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	4
12	STUDBOLT 5/8" UNC X180 B7/2H SPUN GALV	16X180	P902105180	4
13	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
14	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	3
	VALVES			
15	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
16	VALVE CHECK WAFER RF CL150 VC01124	80	VC01124080	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1172MM	25	SCREWED	SQUARE CUT
B	206MM	25	SQUARE CUT	SQUARE CUT
C	115MM	25	SQUARE CUT	SQUARE CUT
D	196MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.		
HAZARD LEVEL CLASSIFICATION	NA.	CONTENTS	NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P		
P&P PDCS NO.	NA.		
PIPING PLAN	12732-SK-P&ID-002-03		
P&ID	12732-SK-P&ID-002-01		

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-015-A TO B

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-015-P01511-080
SHEET No. 01 OF 02
DRG No. CHK-ULP-015-01 REV. 1

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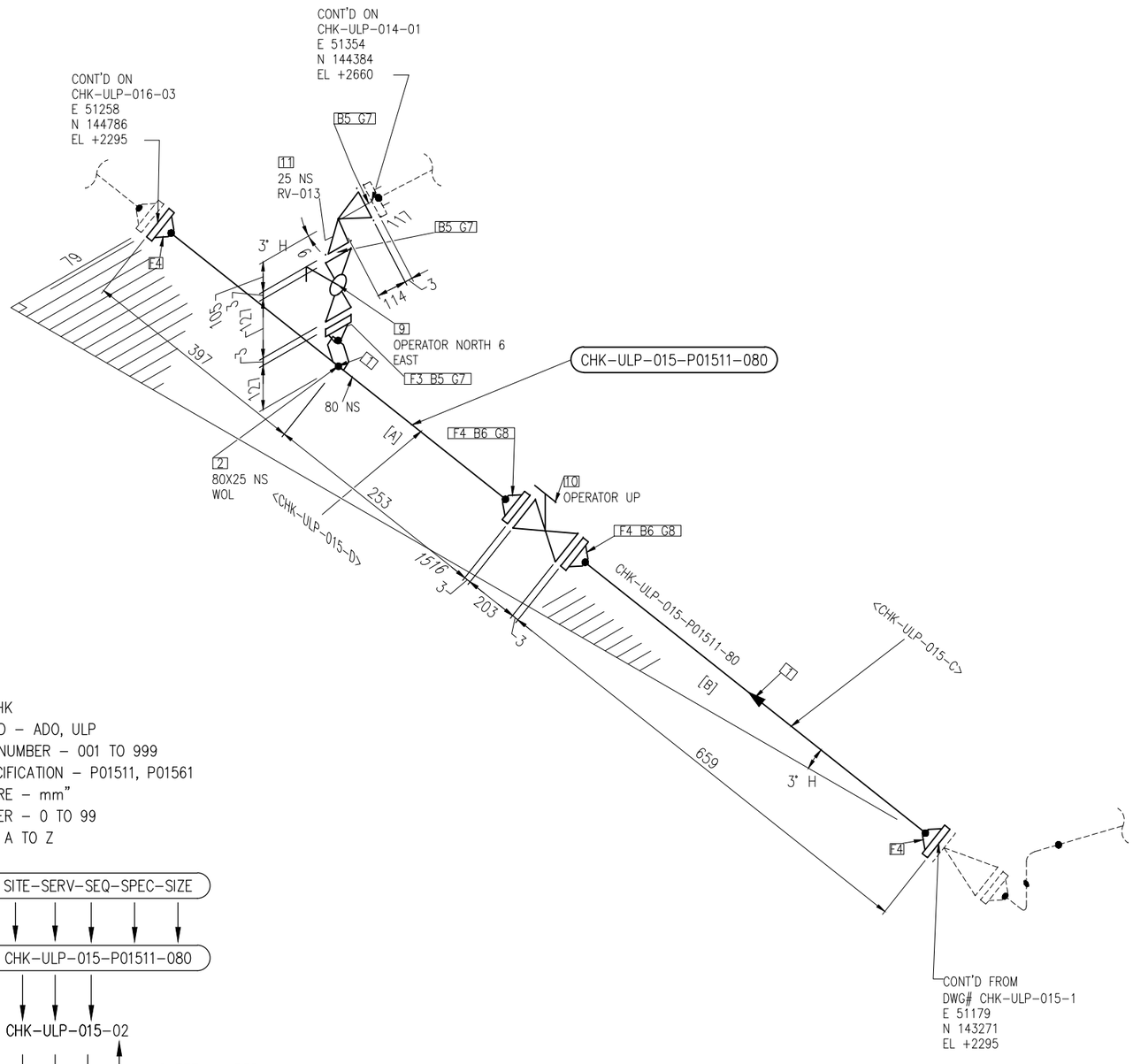

SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE-SERV-SEQ-SPEC-SIZE

LINE NUMBER = CHK-ULP-015-P01511-080

DRG NUMBER = CHK-ULP-015-02 — SHEET NUMBER

SPOOL NUMBER = <CHK-ULP-015-A> — SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	1.1M
	OLETS			
2	WELDOLET SCH 40X80 A105N	80X25	P50001DFFC	1
	FLANGES			
3	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
4	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	4
	FASTENERS			
5	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	12
6	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	8
7	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	25	P82261A025	3
8	GASKET SPW RF 4.5 CL150 316L-FG/316L/316L	80	P82261A080	2
	VALVES			
9	VALVE BALL RB RF CL150 VB01121	25	VB01121025	1
10	VALVE GATE RF CL150 CS VG01121	80	VG01121080	1
11	VALVE RELIEF RF CL150 CHK-RV-013	25	MECHANICAL	1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	511MM	80	BEVEL	BEVEL
B	520MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO-ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO-ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732-SK-P&ID-002-03
P&ID	12732-SK-P&ID-002-01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK-ULP-015-D TO E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK-ULP-015-P01511-080
SHEET No. 02 OF 02
DRG No. CHK-ULP-015-02 REV. 1

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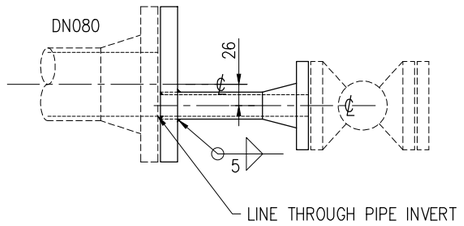
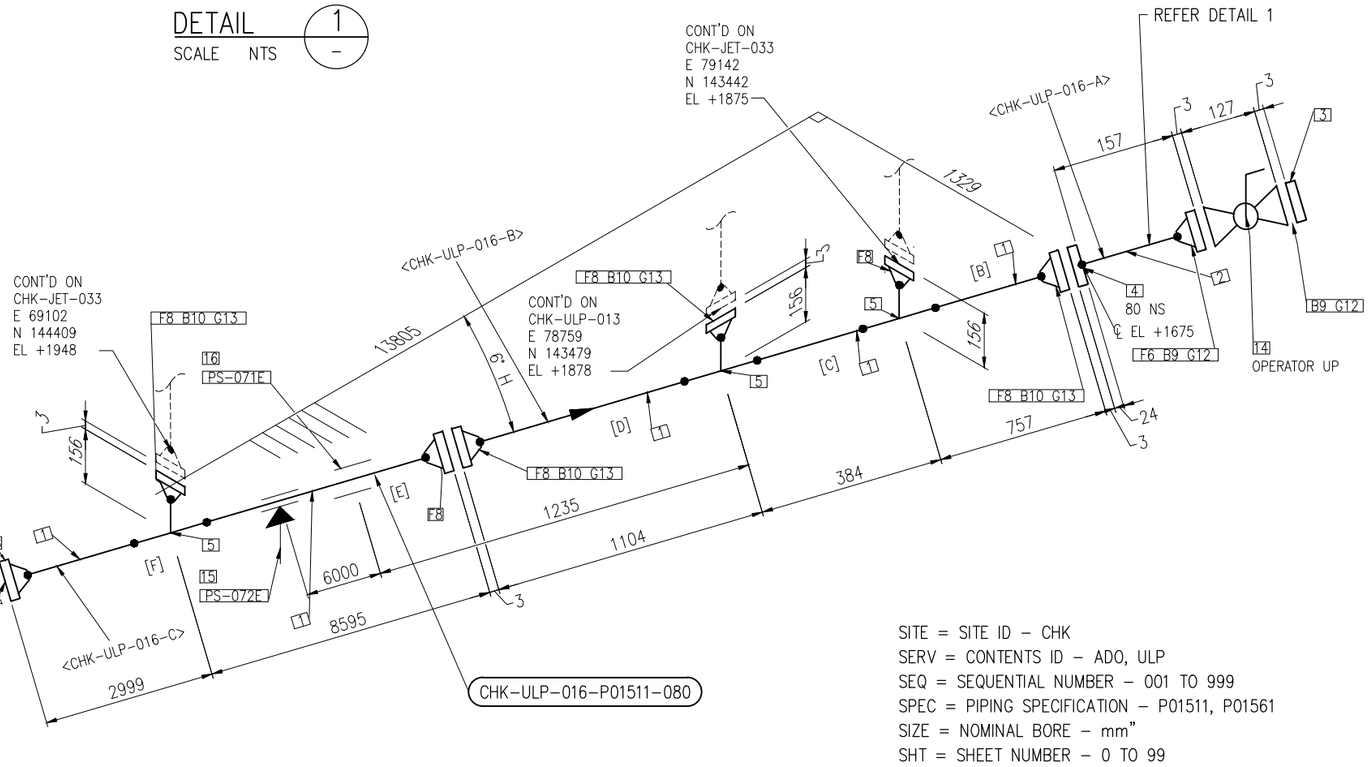


DETAIL 1 / –
SCALE NTS



SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–016–P01511–080

DRG NUMBER = CHK–ULP–016–01 – SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–016–A> – SPOOL ID

BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	80	P01201D080	13.1M
2	NIPPLE SMLS PBE SCH 80 X100LG A106 B	25	P60301FC10	1
	FITTINGS			
3	FLANGE BLIND RF CL150 A105	25	P2610AX025	1
4	FLANGE BLIND RF CL150 A105	80	P2610AX080	1
5	TEE EQUAL BW SCH 40 A234 WPB	80	P03001D080	3
	FLANGES			
6	FLANGE WN RF SCH 80 CL150 A105	25	P2010AF025	1
7				
8	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	7
	FASTENERS			
9	STUDBOLT 1/2" UNC X70 B7/2H SPUN GALV	12X70	P902104070	8
10	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	16
11				
12	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	25	P82261A025	2
13	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	4
	VALVES			
14	VALVE BALL FB RF CL150 VB01122	25	VB01122025	1
	PIPE SUPPORTS			
15	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	80	U446204080	1
16	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	80		1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	100MM	25	PL	PL
B	602MM	80	BEVEL	BEVEL
C	213MM	80	BEVEL	BEVEL
D	949MM	80	BEVEL	BEVEL
E	8439MM	80	BEVEL	BEVEL
F	2844MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–P&ID–002–04
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–016–A TO C

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ULP–016–P01511–080
SHEET No. 01 OF 04
DRG No. CHK–ULP–016–01 REV. 1

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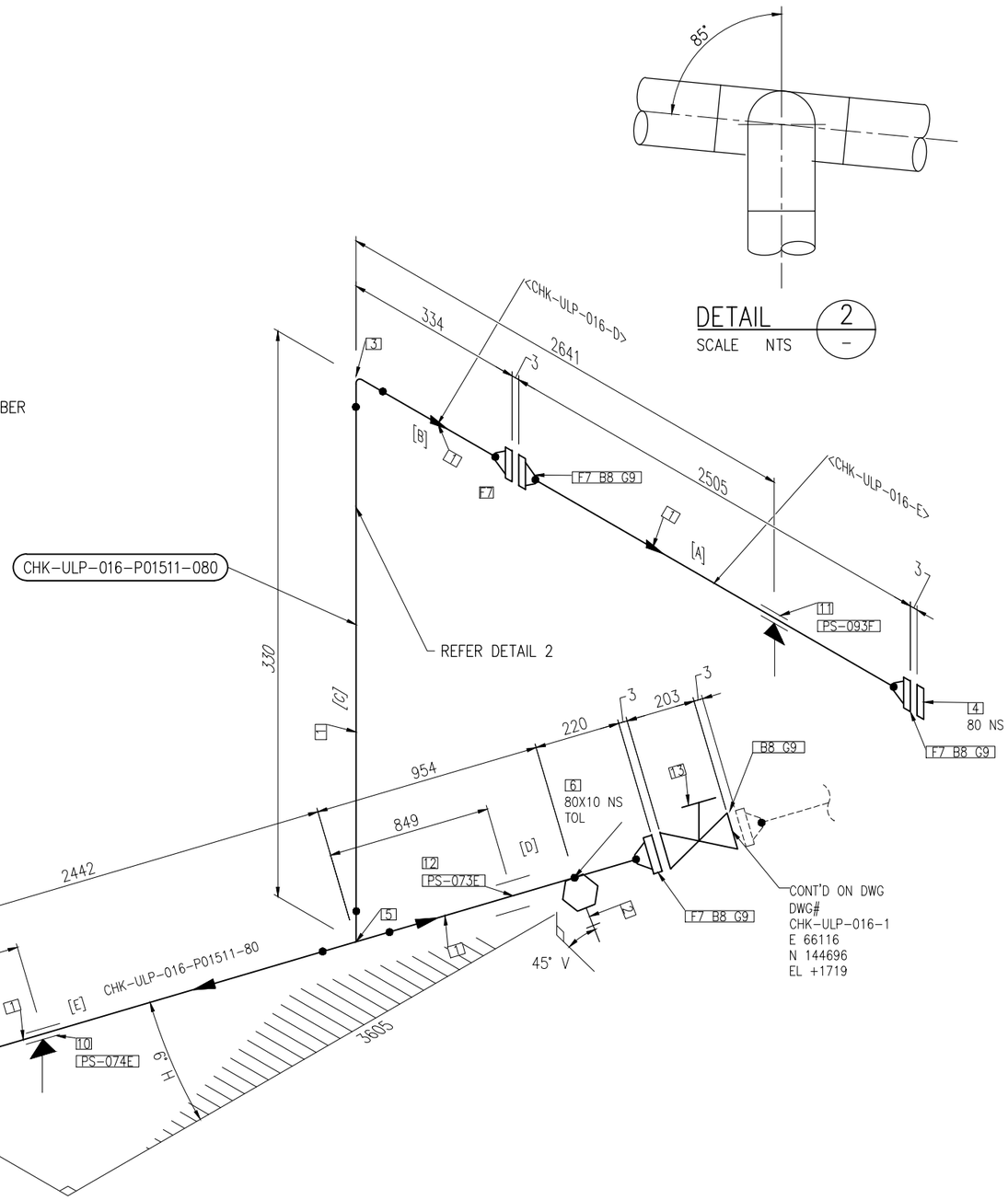
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–016–P01511–080

DRG NUMBER = CHK–ULP–016–02 ← SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–016–A> ← SPOOL ID



BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B	80	P01201D080	6.0M
2	EARTH BOSS STUD (REFER DRG 000–50028–01)	–	–	1
	FITTINGS			
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
4	FLANGE BLIND RF CL150 A105	80	P2610AX080	1
5	TEE EQUAL BW SCH 40 A234 WPB	80	P03001D080	1
	OLETS			
6	EARTH BOSS (REFER DRG STD–50028–01)	–	EB000000FE	1
	FLANGES			
7	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	5
	FASTENERS			
8	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	20
9	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	5
	PIPE SUPPORTS			
10	U–BOLT TYPE U3 – FULL GRIP & WEAR PAD (STD–46203–01)	80	U346203080	1
11	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	80	U446204080	1
12	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	80	W146301080	1
	VALVES			
13	VALVE GATE RF CL150 SS VG01521	80	VG01521080	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	2366MM	80	BEVEL	BEVEL
B	150MM	80	BEVEL	BEVEL
C	130MM	80	BEVEL	BEVEL
D	1018MM	80	BEVEL	BEVEL
E	2287MM	80	BEVEL	BEVEL

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JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–P&ID–002–02
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–016–D TO E

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ULP–016–P01511–080
SHEET No. 02 OF 04
DRG No. CHK–ULP–016–02 REV. 1

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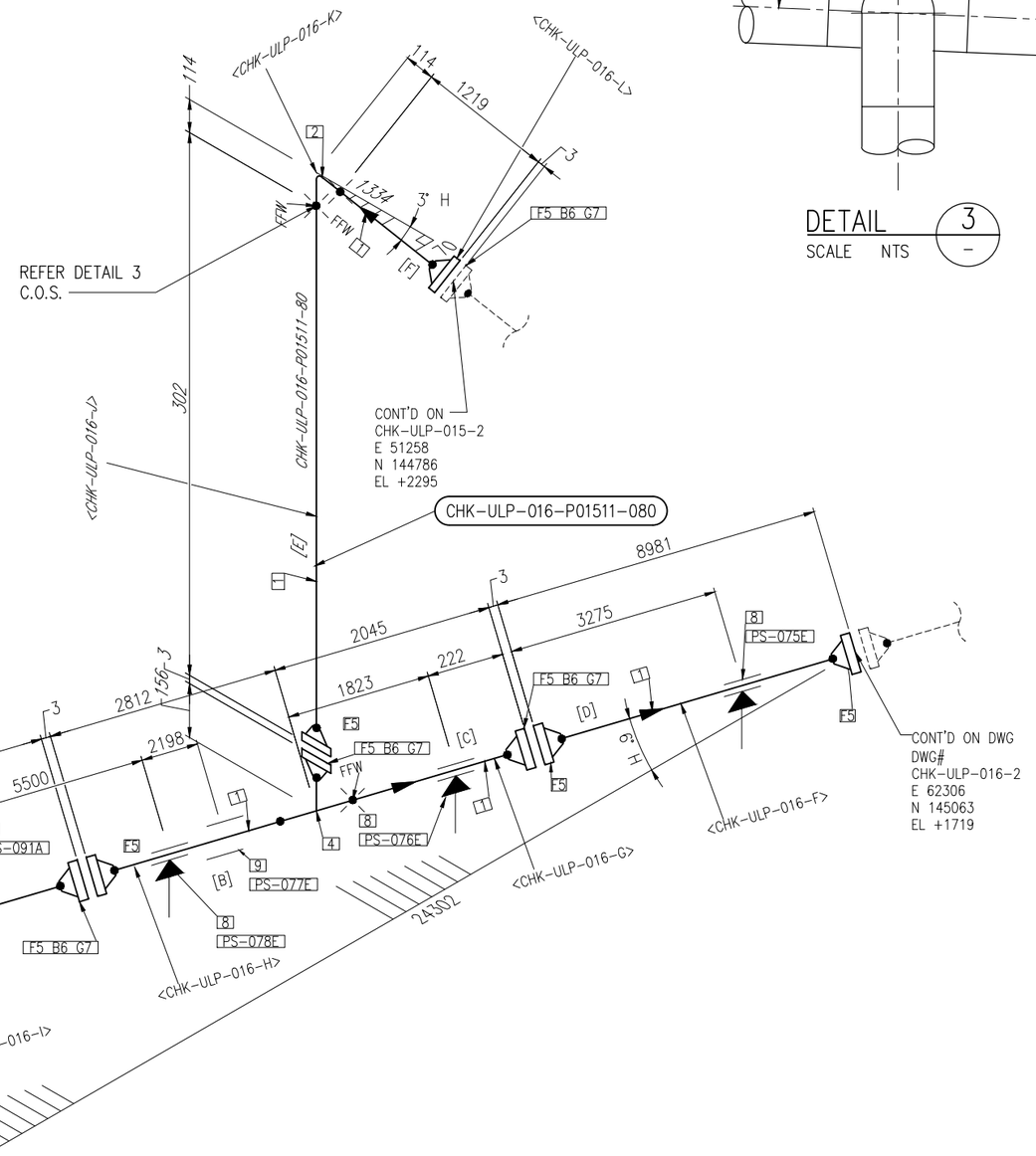
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

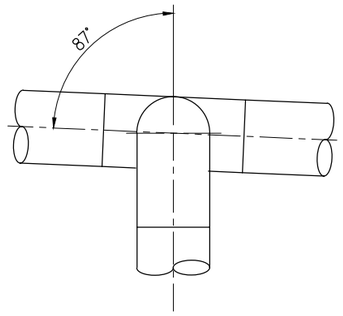
LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–016–P01511–080

DRG NUMBER = CHK–ULP–016–03 ← SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–016–A> ← SPOOL ID





DETAIL 3
SCALE NTS

BILL OF MATERIALS				
ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	80	P01201D080	25.7M
	FITTINGS			
2	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
3				
4	TEE EQUAL BW SCH 40 A234 WPB	80	P03001D080	1
	FLANGES			
5	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	9
	FASTENERS			
6	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV	16X100	P902105100	20
7	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	5
	PIPE SUPPORTS			
8	U–BOLT TYPE U4 – NON GRIP & WEAR PAD (STD–46204–01)	80	U446204080	5
9	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	80	W146301080	1

CUT PIECE LIST				
ID	LENGTH	ND	END1	END2
A	10404MM	80	BEVEL	BEVEL
B	2657MM	80	BEVEL	BEVEL
C	2040MM	80	BEVEL	SQUARE CUT
D	8842MM	80	BEVEL	BEVEL
E	383MM	80	BEVEL	SQUARE CUT
F	1299MM	80	SQUARE CUT	BEVEL

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U–BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD
A	05/22	SAR	–	ISSUED FOR TENDER – (12732)	MAW	·	WDD

DRAWING REVISIONS — CONSULTANT

REFERENCE DRAWINGS	
HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS NO.	NA.
PIPING PLAN	12732–SK–P&ID–002–03
P&ID	12732–SK–P&ID–002–01

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

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JOB NO. 12732

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–016–F TO L

DRAWN	S.ROWE	DATE 05/22	LINE No. CHK–ULP–016–P01511–080
CHKD	M.WEST	06/22	SHEET No. 03 OF 04
APPD	·	06/22	DRG No. CHK–ULP–016–03 REV. 1
APPD	W.DOUGAN	06/22	

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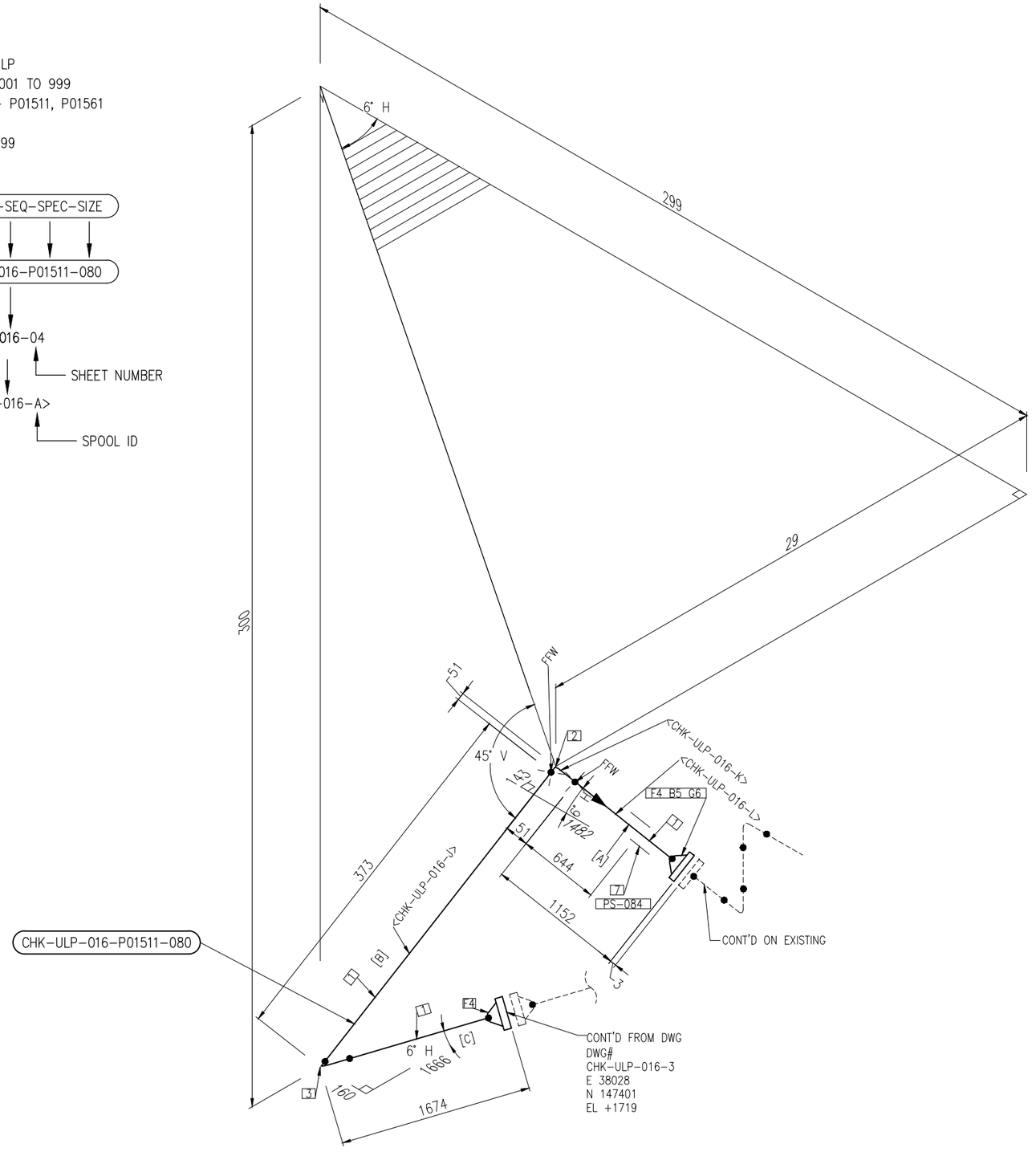
SITE = SITE ID – CHK
SERV = CONTENTS ID – ADO, ULP
SEQ = SEQUENTIAL NUMBER – 001 TO 999
SPEC = PIPING SPECIFICATION – P01511, P01561
SIZE = NOMINAL BORE – mm"
SHT = SHEET NUMBER – 0 TO 99
SPID = SPOOL ID – A TO Z

LINE NUMBER = SITE–SERV–SEQ–SPEC–SIZE

LINE NUMBER = CHK–ULP–016–P01511–080

DRG NUMBER = CHK–ULP–016–04 ← SHEET NUMBER

SPOOL NUMBER = <CHK–ULP–016–A> ← SPOOL ID



BILL OF MATERIALS

ID	DESCRIPTION	DN	ITEM CODE	QTY
	PIPE			
1	PIPE SMLS SCH 40 A106 B FL	80	P01201D080	4.2M
	FITTINGS			
2	ELBOW 45 DEG LR BW SCH 40 A234 WPB	80	P02201D080	1
3	ELBOW 90 DEG LR BW SCH 40 A234 WPB	80	P02001D080	1
	FLANGES			
4	FLANGE WN RF SCH 40 CL150 A105	80	P2010AD080	2
	FASTENERS			
5	STUDBOLT 5/8" UNC X100 B7/2H SPUN GALV		P902105100	4
6	GASKET SPW RF 4.5 CL150 316L–FG/316L/316L	80	P82261A080	1
	PIPE SUPPORTS			
7	WEAR PAD TYPE W1 – ESD UHMW–PE (STD–46301–01)	80		1

CUT PIECE LIST

ID	LENGTH	ND	END1	END2
A	1600MM	80	BEVEL	SQUARE CUT
B	760MM	80	SQUARE CUT	BEVEL
C	1490MM	80	BEVEL	BEVEL

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AND SHALL NOT BE USED FOR ANY PURPOSES OR PROJECT OTHER THAN THAT DESIGNATED WITHOUT PRIOR CONSENT.

JOB NO. 12732

NDE REQUIREMENTS

10% RADIOGRAPHY OF BUTT WELDS
100% RADIOGRAPHY OF UNDERGROUND BUTT WELDS
100% RADIOGRAPHY OF ALL SOCKET WELDS (GAP CHECK)
10% MAGNETIC PARTICLE INSPECTION OF FILLET WELDS
100% MAGNETIC PARTICLE INSPECTION OF ALL OLET WELDS

GENERAL NOTES:

1. FLANGE BOLT HOLES TO STRADDLE CENTRELINE U.N.O.
2. TYPICAL GUIDE/LINESTOP GAP TO BE 3mm U.N.O.
3. ALL CO–ORDINATES AND ELEVATIONS ARE IN METRES.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ENSURE WELDS ARE CLEAR OF SUPPORTS OR FURNITURE.
6. REFER TO PIPING PLANS FOR FINAL VALVE ORIENTATIONS.
7. TYPICAL FIELD FIT WELD ALLOWANCE TO BE 150mm U.N.O.
8. U.N.O. HOLD HYDROTEST FOR A MINIMUM OF 1 HOUR (SHOP ONLY)
9. CO–ORDINATES ARE RELATIVE TO CP 2 ROTATION 63°

PIPE SYMBOL LEGEND

U-BOLT WEAR PAD

[12] ITEM No.
[1] CUT PIECE No.
<A> SPOOL ID No.

No.	DATE	BY	PROJ	DESCRIPTION	CHKD	APPD	APPD
1	09/22	SAR	–	ISSUED FOR CONSTRUCTION – (12732)	MAW	·	RPD

DRAWING REVISIONS — CONSULTANT

HSE REGULATION	NA.
HAZARD LEVEL CLASSIFICATION	NA. CONTENTS NA.
DESIGN CONFORMITY ASSESSMENT BY :	P&P
P&P PDCS No.	NA.
PIPING PLAN	12732–SK–P&ID–002–03
P&ID	12732–SK–P&ID–002–01

REFERENCE DRAWINGS

PIPING CODE	B31.3
DESIGN PRESS Barg	10.3
DESIGN TEMPERATURE °C Min/Max	0/45
CORROSION ALLOWANCE mm	1.6
HYDROTEST PRESSURE Barg	15.45
HYDROTEST DURATION Hrs	1 (MIN)
POST WELD HEAT TREATMENT	NO
SURFACE PROTECTION SPEC	PER SPEC
INSULATION THICKNESS / TYPE	NONE
NACE COMPLIANCE	NO

CHUUK TERMINAL

PIPING ISOMETRIC
SPOOL No. CHK–ULP–016–M

DRAWN	S.ROWE	DATE	05/22
CHKD	M.WEST		06/22
APPD	·		06/22
APPD	W.DOUGAN		06/22

LINE No. CHK–ULP–016–P01511–080
SHEET No. 04 OF 04
DRG No. CHK–ULP–016–04 REV. 1

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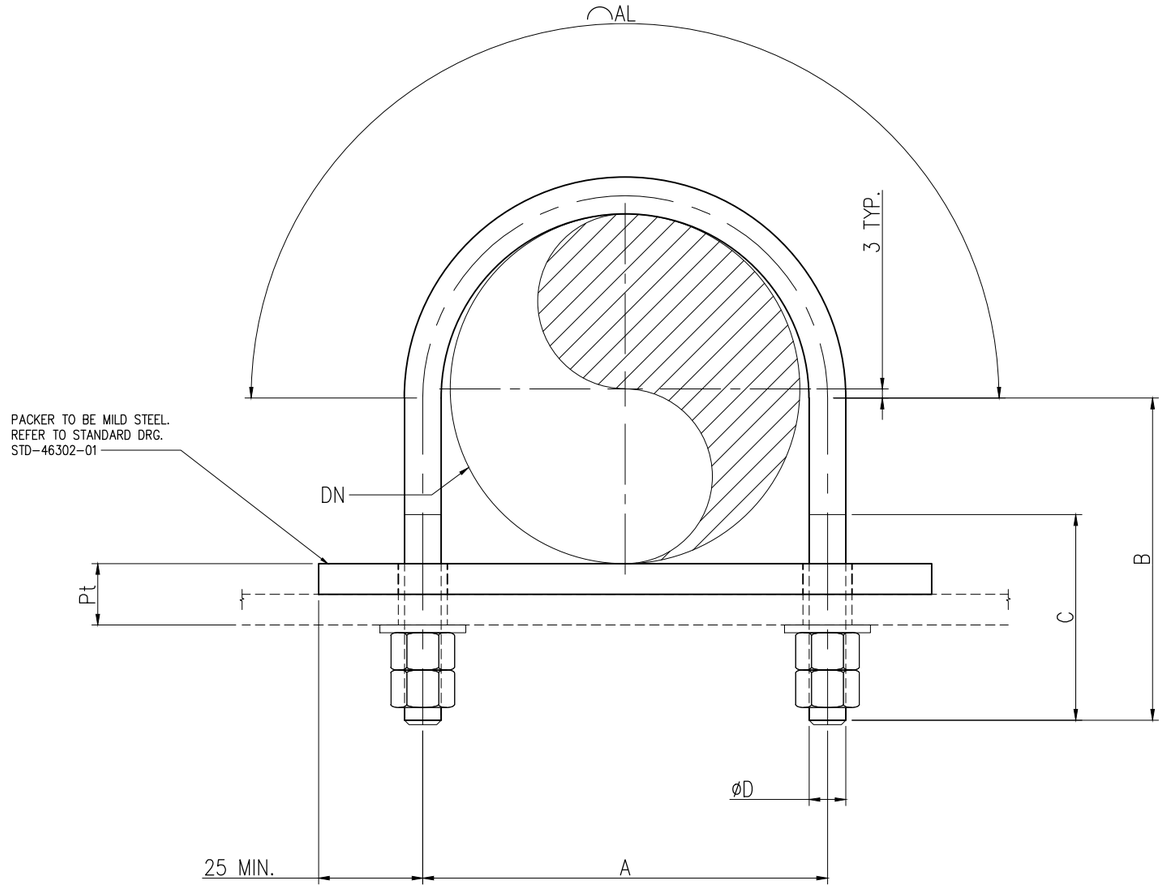

U-BOLT FULL-GRIP

	PARENT PIPE DIAMETER NOMINAL (DN)																
	20	25	32	40	50	65	80	100	150	200	250	300	350	400	450	500	600
MAX. LATERAL LOAD (KN)	2.30	1.85	1.45	1.25	2.05	1.70	1.40	1.90	1.30	1.00	2.10	1.75	1.60	1.40	1.25	2.20	1.84
MAX. LONGITUDINAL LOAD (kN)	1.50				2.35			3.40			6.35					9.90	
ARC LENGTH (AL)	64.4	73.8	88	97.4	119.4	139.8	164.9	207.4	292.2	372.3	463.4	543.5	593.8	672.3	752.4	838.8	999
DIMENSION (A)	41	47	56	62	76	89	105	132	186	237	295	346	378	428	479	534	636
LENGTH (B)	51	54	58.5	61.5	71.5	78	86	105	132	157.5	194	219.5	235.5	260.5	286	319	370
LENGTH (C)	45	46.5	50		56.5			67			82					94	
DIAMETER/METRIC THREAD (øD)	8				10			12			16					20	
TORQUE (65% OF PROOF LOAD, Nm)	8				16			38			74					132	
MAXIMUM THICKNESS (Pt)	20																

U-BOLT FULL-GRIP

GENERAL NOTES
1. FULL-GRIP U-BOLT FOR LIGHT DUTY APPLICATION.
2. DIMENSIONS GIVEN PROVIDE 3mm GAP AT SIDES OF U-BOLT AND PIPE.
3. U-BOLT PROPERTY CLASS 4.6 TO AS 1111.1
4. NUT MATERIAL PROPERTY CLASS 5 TO AS 1112.3,
5. THREADS TO AS 1275.
6. WASHER MATERIAL TO AS 1237.
7. ALL ITEMS TO BE HOT DIPPED GALVANISED TO AS 1214 & AS/NZS 4680 AS APPLICABLE

PROJ NO. I

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand

STD-46203-01.dwg
12 Sep 2022 - 4:55pm

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
0	07/22	AM	CEW	BKW	KGB		STANDARD FIRST ISSUE

REVISIONS

NUMBER	TITLE
STD-46302-01	W2 - MILD STEEL WEAR PAD/PACKER

REFERENCE DRAWINGS

LOCATION: STRUCTURAL STANDARD
PROJECT No: -
SCALE: N.T.S.
CLIENT: PLANT & PLATFORM CONSULTANTS LTD

DRAWN	A.MALAN	07/22
CHECKED	C.WALKER	08/22
ENGINEERED	B.WALKER	08/22
APPROVED	K.BLOXHAM	08/22
CLIENT	-	-
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: STANDARD DRAWING
PIPE SUPPORT FURNITURE - LIGHT DUTY
U3 - U-BOLT FULL GRIP & MS. PACKER

DRAWING No: STD-46203-01
REVISION: 0

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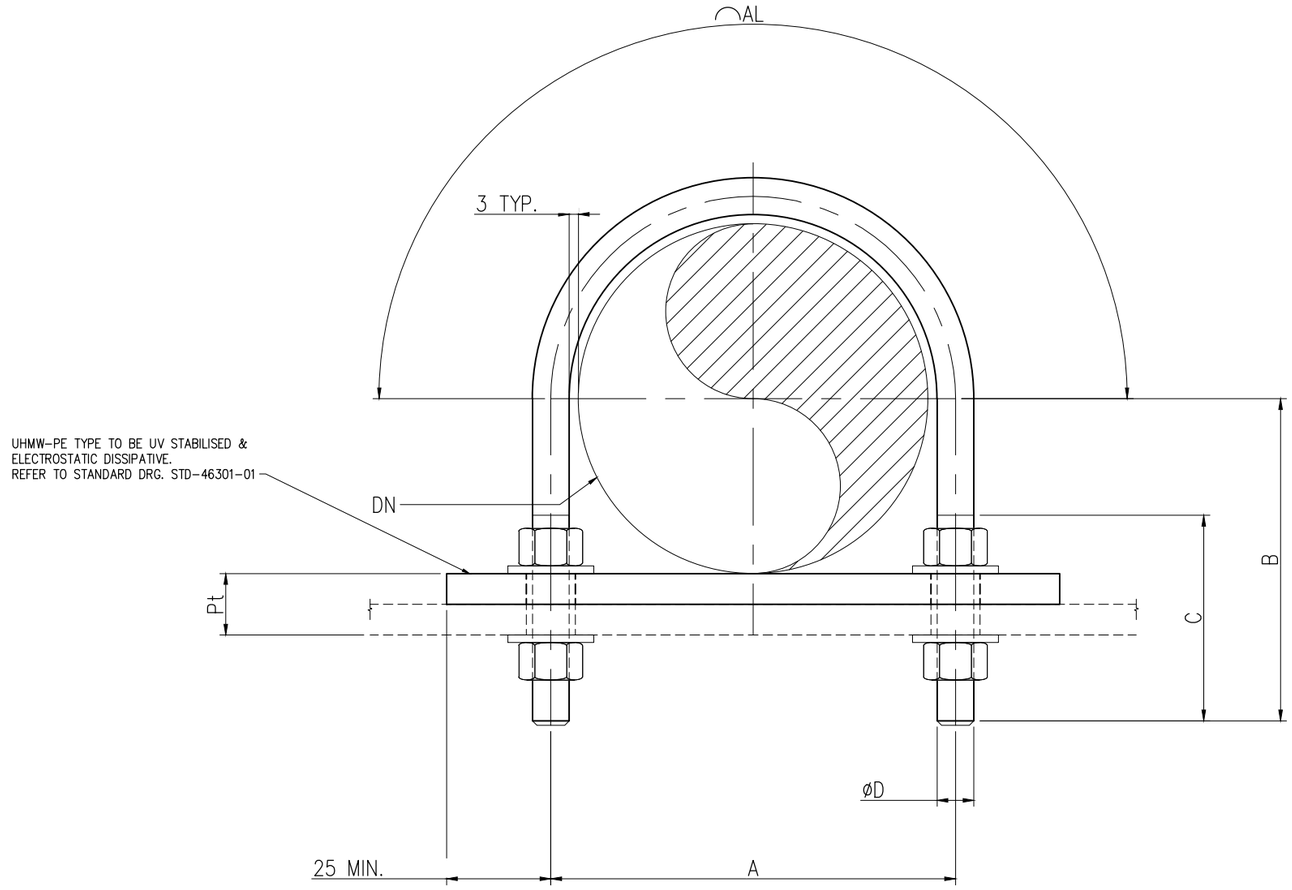

U-BOLT NON-GRIP

	PARENT PIPE DIAMETER NOMINAL (DN)																
	20	25	32	40	50	65	80	100	150	200	250	300	350	400	450	500	600
MAX. LATERAL LOAD (KN)	2.30	1.85	1.45	1.25	2.05	1.70	1.40	1.90	1.30	1.00	2.10	1.75	1.60	1.40	1.25	2.20	1.84
ARC LENGTH (AL)	64.4	73.8	88	97.4	119.4	139.8	164.9	207.4	292.2	372.3	463.4	543.5	593.8	672.3	752.4	838.8	999
DIMENSION (A)	41	47	56	62	76	89	105	132	186	237	295	346	378	428	479	534	636
LENGTH (B)	51	54	58.5	61.5	71.5	78	86	105	132	157.5	194	219.5	235.5	260.5	286	319	370
LENGTH (C)	45	46.5	50		56.5			67			82					94	
DIAMETER/METRIC THREAD (øD)	8				10			12			16					20	
MAXIMUM THICKNESS (Pt)	20																

U-BOLT NON-GRIP

GENERAL NOTES
1. NON-GRIP U-BOLT FOR LIGHT DUTY APPLICATION.
2. DIMENSIONS GIVEN PROVIDE 3mm GAP BETWEEN U-BOLT AND PIPE.
3. U-BOLT PROPERTY CLASS 4.6 TO AS 1111.1
4. NUT MATERIAL PROPERTY CLASS 5 TO AS 1112.3,
5. THREADS TO AS 1275.
6. WASHER MATERIAL TO AS 1237.
7. ALL ITEMS TO BE HOT DIPPED GALVANISED TO AS 1214 & AS/NZS 4680 AS APPLICABLE

PROJ NO.

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION
0	07/22	AM	CEW	BKW	KGB		STANDARD FIRST ISSUE

REVISIONS

NUMBER	TITLE
STD-46301-01	UHMW-PE WEAR PAD

REFERENCE DRAWINGS

LOCATION: STRUCTURAL STANDARD
PROJECT No: –
SCALE: N.T.S.
CLIENT: PLANT & PLATFORM CONSULTANTS LTD

DRAWN	A.MALAN	07/22
CHECKED	C.WALKER	08/22
ENGINEERED	B.WALKER	08/22
APPROVED	K.BLOXHAM	08/22
CLIENT	.	.
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: STANDARD DRAWING
PIPE SUPPORT FURNITURE – LIGHT DUTY
U4 – U-BOLT NON GRIP & WEAR PAD

DRAWING No: STD-46204-01
REVISION: 0

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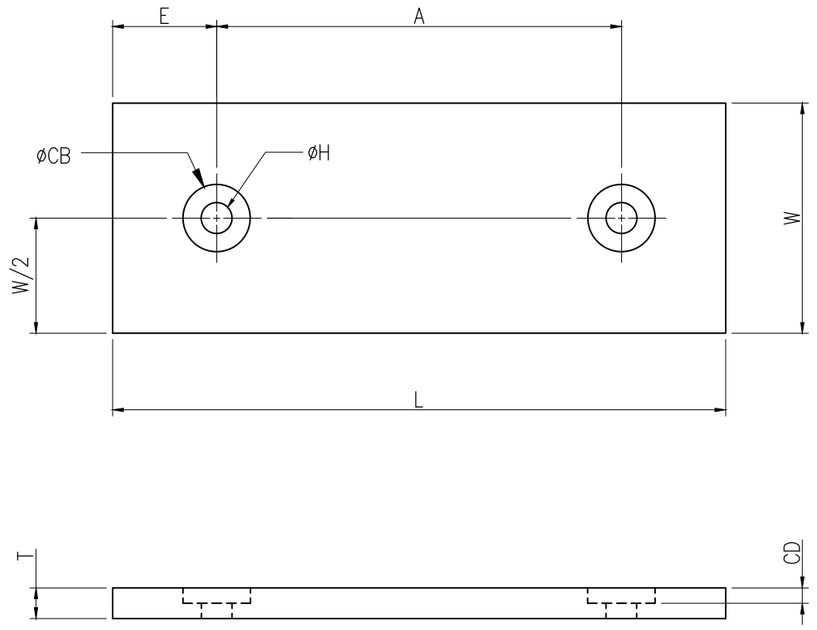

UHMW–PE PACKER DIMENSIONS

	PARENT PIPE DIAMETER NOMINAL																	
	20	25	32	40	50	65	80	100	150	200	250	300	350	400	450	500	600
WIDTH (W)	75																
THICKNESS (T)	10																
LENGTH (L)	100	110	120	130	140	160	180	200	250	300	370	420	450	500	550	610	710
DIMENSION (E)	29.5	31.5	32	34	32	35.5	37.5	34	32	31.5	37.5	37	36	36	35.5	38	37
DIMENSION (A)	41	47	56	62	76	89	105	132	186	237	295	346	378	428	479	534	636
HOLE DIAMETER (øH)	10				12			16			20					26	
C'BORE DIAMETER (øCB)	22		NONE														
C'BORE DEPTH (CD)	5	3.5															
COACH BOLT DIMENSIONS (NOTE 7)	M6 x 30				M8 x 35			M10 x 35			M12 x 40					M16 x 50	

UHMW–PE PACKER DIMENSIONS

GENERAL NOTES
1. UHMW–PE TO BE UV STABILISED & ELECTROSTATIC DISSIPATIVE.
2. BOLT PROPERTY CLASS 4.6 TO AS 1111.1
3. NUT MATERIAL PROPERTY CLASS 5 TO AS 1112.3,
4. THREADS TO AS 1275.
5. WASHER MATERIAL TO AS 1237.
6. BOLTING TO BE HOT DIPPED GALVANISED.
7. COACH BOLTS USED IN LIEU OF OF U–BOLT

PROJ NO. –

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REVISIONS

NUMBER	TITLE
STD-46204-01	U4 – NON GRIP U–BOLT

REFERENCE DRAWINGS

LOCATION: STRUCTURAL STANDARD
PROJECT No: –
SCALE: N.T.S.
CLIENT: PLANT & PLATFORM CONSULTANTS LTD

DRAWN	A.MALAN	07/22
CHECKED	S.ROWE	08/22
ENGINEERED	B.WALKER	08/22
APPROVED	K.BLOXHAM	08/22
CLIENT	.	.
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE
STANDARD DRAWING
PIPE SUPPORT FURNITURE
W1 – WEAR PLATE – UHMW–PE

DRAWING No: STD–46301–01
REVISION: 0

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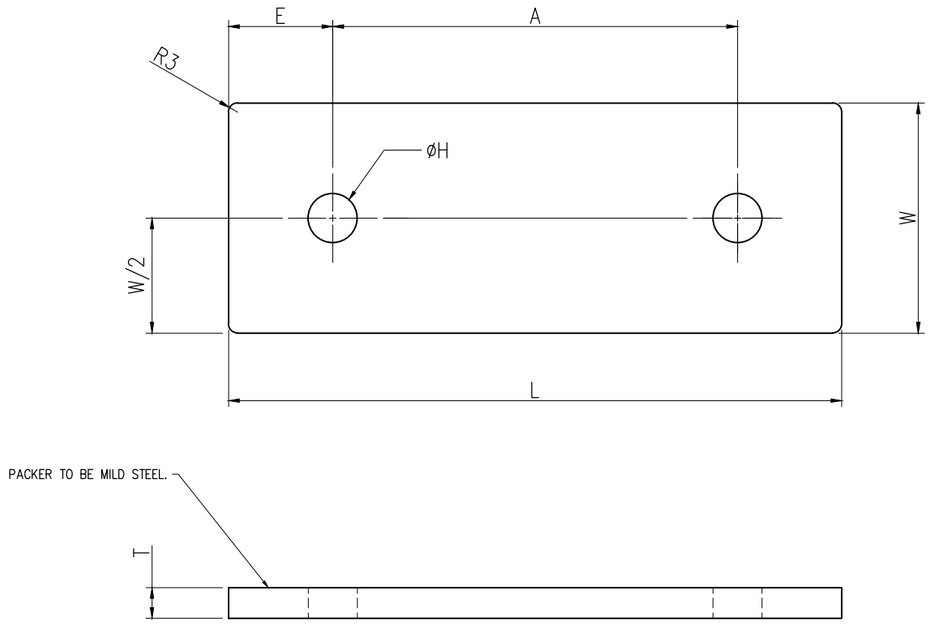

STEEL PACKER DIMENSIONS

	PARENT PIPE DIAMETER NOMINAL																	
	20	25	32	40	50	65	80	100	150	200	250	300	350	400	450	500	600
WIDTH (W)	75																
THICKNESS (T)	10																
LENGTH (L)	100	110	120	130	140	160	180	200	250	300	370	420	450	500	550	610	710
DIMENSION (E)	29.5	31.5	32	34	32	35.5	37.5	34	32	31.5	37.5	37	36	36	35.5	38	37
DIMENSION (A)	41	47	56	62	76	89	105	132	186	237	295	346	378	428	479	534	636
HOLE DIAMETER (øH)	10				12			16			20					26	

MILD STEEL PACKER DIMENSIONS

GENERAL NOTES
1. REMOVE ALL BURS AND ROUND OFF ALL SHARP EDGES.
2. MILD STEEL PACKER TO BE MILD STEEL HOT DIPPED GALVANISED TO AS 1214 & AS/NZS 4680 AS APPLICABLE.

PROJ NO. I

PLANT & PLATFORM ENGINEERING CONSULTANTS New Plymouth New Zealand

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No	DATE	DRN	CHKD	ENGD	APPD	CLIENT	DESCRIPTION	NUMBER	TITLE
0	08/22	AM	SAR	BKW	KGB		STANDARD FIRST ISSUE	STD-46203-01	U3 – FULL GRIP U-BOLT

REVISIONS | REFERENCE DRAWINGS

LOCATION: STRUCTURAL STANDARD
PROJECT No: –
SCALE: N.T.S.
CLIENT: PLANT & PLATFORM CONSULTANTS LTD

DRAWN	A.MALAN	07/22
CHECKED	S.ROWE	08/22
ENGINEERED	B.WALKER	08/22
APPROVED	K.BLOXHAM	08/22
CLIENT	.	.
A1 BDR	SIGN	DATE

ORIGINAL SIZE: A1

TITLE: STANDARD DRAWING
PIPE SUPPORT FURNITURE
W2 – MILD STEEL WEAR PAD / PACKER

DRAWING No: STD–46302–01
REVISION: 0

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