

PROJECT TITLE:

INSTALLATION OF 300mmØ STEEL WELDED TRANSMISSION PIPELINES AND OTHER APPURTENANCES.

LOCATION:

NAPAL ROAD, BRGY. SAN ISIDRO, GENERAL SANTOS CITY

OWNER:

GENERAL SANTOS CITY WATER DISTRICT

S P E C I F I C A T I O N S

I. SCOPE OF WORK

The work consists of furnishing of materials, fittings, labor, equipment and supervision and supervision including pipelaying and installation of valves up to interconnection for the completion of the proposed project as shown in the plan and technical drawings specified in the scope of work herein.

1. Perform hauling & handling of steel pipes from the stacking area provided by the GSCWD to the actual working site.
2. Perform excavation on any type of soil and backfilling using suitable materials and disposal of undesirable surplus materials where directed.
3. Install pipes, valves, fittings, closure pieces, supports, bolts, nuts, gaskets, jointing materials and appurtenances as shown and specified, and as required for a complete and workable piping system.
4. Install stub-out assembly including lateral thrust blocks and filling as specified and as shown in the drawing.
5. Furnish labor, tools and equipment necessary to demolish pavement including the hauling of discard materials to approved dump site.
6. Furnish materials, labor, tools and equipment necessary to construct pavement and restore structure as specified.
7. Furnish materials, labor, tools and equipment necessary to construct all pipe crossings.
8. Flushing, hydro testing, disinfection of the laid pipes.
9. Newly installed pipelines will be interconnected with the GSCWD Engineer's approval and supervision.
10. All steel pipes and valves shall be supplied by the District.

II. BIDDERS QUALIFICATION

A. Bidders/Contractors Qualification

Bidders/Contractors who are fully experienced and reputable in the field of construction.

B. Bidders/Contractors Competence & Experience

Bidder/Contractors should have at least Two(2) years' experience in civil, structural steel works and had completed at least Two(2) related construction projects in any Government or Private Institutions from the date of submission and receipt of bids.

III. GENERAL CONDITIONS

A. DEFINITIONS

1. OWNER
The word "Owner" refers to the General Santos City Water District.
2. ENGINEER
The word "Engineer" refers to the individual or firm authorized by the Owner to oversee the execution of the Contract.
3. CONTRACTOR
The word "Contractor" refers to the party entering into the contract for the performance of the work required.
4. CONTRACT
The word "Contract" refers to the contract documents and shall include the basic contract entered into by the owner and the contractor for the performance of the work.
5. SPECIFICATION
The word "Specification" refers to the General Conditions, Special Provisions and Technical Specifications of the contract together with all addenda and change orders issued with respect thereto.
6. DRAWINGS
The word "Drawing" or "Contract Drawing" refers to those drawings accompanying the Specification and subsequent approved drawings, which show the location, nature, extent and form of the work together with applicable detail.
7. WORK
The word "Work" refers to the labor, material, equipment, transportation and all incidental costs necessary to complete the Contract.
8. SITE
The word "Site" refers to the lands and other places on, under, in or through which the work is to be executed or carried out and any other lands or places provided by the Owner for the purpose of the Contract.

9. APPROVAL

The word "Approval" refers to concurrence in writing, including subsequent written confirmation of the previous verbal approval.

10. WORKING / CALENDAR DAY

The term "Working Day" refers to working days in the government service. The term "Calendar Day" refers to the days in a week including Saturdays, Sundays and Holidays. Whenever the word "Day" is issued, it shall refer to calendar day.

B. SPECIFICATION, DRAWING AND RELATED AREAS

1. SPECIFICATION, DRAWINGS AND DISCREPANCIES

The intent of the Specifications and Drawings is that the contractor shall furnish all the required plant, labor, materials, equipment and services, unless otherwise specified provided.

The Specifications and Drawings are complementary and what is called for in one shall be as binding as if called for in both.

Any discrepancies, errors or omission found in the Specifications or Drawings shall be reported in writing within three (3) days from the discovery to the Engineer who will issue the correction in writing within the same period. The contractor shall not take advantage of any such discrepancies, errors or omissions but shall comply with the corrective measures regarding the same as prescribed by the Engineer.

In case of conflict between the Specifications and the Drawings, the Specifications shall govern over the Drawings.

2. SHOP DRAWINGS

Whenever called for in these Specifications or on the Drawings, or where required by the Engineer, the Contractor shall furnish the Owner for review two (2) prints of each shop drawing.

The term "Shop Drawing" as used herein shall be understood to include detail design calculations, fabrications and installations, drawings, lists, graphs, operating instructions. Shop drawing shall be submitted to the Engineer for review and approval within fifteen (15) calendar days from receipt of the Notice of Award.

All shop drawings submittal shall be accompanied by transmittal form.

C. OWNER – ENGINEER – CONTRACTOR RELATIONS

1. ENGINEER AUTHORITY

The Engineer, acting as the authorized representative of the Owner, will decide such questions which may arise as to the quality and acceptability of materials and equipment furnished, work performed, rate of progress of work, interpretation of Specifications and Drawings, and those relating to the acceptability in fulfillment of the Contract by the Contractor.

The Engineer will, subject to verification and / or approval by the Owner, certify the estimates of the value of the work completed and the materials utilized.

2. RESIDENT ENGINEER'S OFFICE

The Contractor shall provide space as temporary office or "Payag" in the field for use by the Resident Engineer.

3. CONTRACTOR'S EMPLOYEES

The employees of the Contractor are not employees of the Owner. Hence, the Owner shall not be liable or responsible for any personal injury or damage including death caused by any of the employees of the contractor during the lawful performances of their duties

The contractor shall, at all times, stand solely liable and/or responsible for the enforcement of and compliance with all existing laws, rules and regulations applicable, and the contractor hereby agrees and binds itself to save and hold the Owner free and harmless from any or all liabilities in respect thereto and/or arising therefrom.

Attach organizational structure and subject for checking during post qualification.

4. CONTRACTOR'S SUPERINTENDENCE

A qualified superintendent shall be present in the work and shall provide competent supervision of the work, until its completion. The superintendent shall have full authority to act in behalf of the contractor, and all directions given by the Owner to the superintendent shall be considered given to the contractor.

5. INSPECTION AND TESTING

All materials furnished and all work performed under the Contract shall be subject to inspection by the Owner. The Contractor shall be held strictly to the true intent of the Specifications and Drawing in regard to quality of materials, workmanship and diligent execution of the Contract.

Work done in the absence of prescribed inspection may be required to be removed and replaced under the proper inspection; and the entire cost of removal and replacement, including the cost of all materials which may be used in the work shall be borne by the Contractor.

D. PROGRESS AND PAYMENT

1. MONTHLY PROGRESS REPORT

The Contractor is required to submit to the Owner two (2) copies of Monthly Progress Report which shall include the following;

- a) Items of work accomplished for the month;
- b) Cumulative summary of work accomplished to date;
- c) Items of work scheduled for the following month.
- d) Project photos for the month.

The first Monthly Progress Report will cover the time from the date when the Notice to Proceed is issued until the end of the following month. Subsequently, monthly reports shall be submitted monthly thereafter until provisional acceptance of the project.

If the Contractor fails to submit Monthly Progress Report, the Owner may withhold approval of progress payment until the reports are received.

2. MONTHLY COORDINATION MEETING

There will be a monthly coordination meeting be conducted every first Friday of the month to discuss issues and concerns of the project.

3. CONTRACT DURATION

Contract duration is **NINETY (90) Calendar Days** and shall commence Five (5) Days after the receipt of Notice to proceed.

E. BONDS, INSURANCE, LEGAL RESPONSIBILITY AND PUBLIC SAFETY

1. INSPECTION OF PROJECT SITE

The Contractor shall be required to inspect the project site and required to submit a Certificate of Site Inspection.

2. PERMIT AND LICENSES

The procurement and payment of all permits such as excavation, demolition, etc. before and during the project implementation shall be responsibility of the Owner.

However, during the project implementation any coordination or compliance required to the concerned agencies shall be the sole responsibility of the Contractor. The Owner shall provide all assistance whenever necessary.

3. ROUTE CLEARING

Routes of the proposed pipelines in roads are shown in the plans. Clearing of said routes shall be the responsibility of the Contractor. All affected and or adjoining landowners/establishment/utility facilities that may cause service clashes are to be advised via a letter drop prior to excavation/pipe laying including the settlement of claims, damages and complaints shall be the responsibility of the Contractor.

4. LAWS AND REGULATIONS

The Contractor shall observe and comply all National, Provincial and Local laws, ordinances, and regulations which on the manner affect those engaged or employed on the work, the material used in the work, or in the conduct of the work. The Contractor shall indemnify and save harmless the Owner against all claims or liabilities arising from violation of any such laws, ordinance, order, or regulation, whether by itself or by its employees.

5. PUBLIC SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with safe working practices and all health and safety regulations of the state and local health regulations of the state and local health regulatory agency. Furnish protective and lifesaving equipment for persons working at the site and provide a **Contractor's All Risk Insurance** for all his workers.

The Contractor shall provide and maintain such sanitary accommodation for the use of its employees as may be necessary to comply will all application national and local laws and ordinances, regulations, customs and practices.

Coordination with the local police department and agencies concerned with traffic problems shall be the responsibility of the contractor. Whenever the Contractor's operation create a condition hazardous to traffic or to the public, it shall furnish at its own expense such as flagmen and guards necessary to give adequate warning of any dangerous condition that encountered the public it shall furnish, erect and maintain such fences, barricades, lights, signs and other devices as are necessary to prevent accidents and avoid damage or injury to the public.

The Contractor shall be liable to all claims and/or liabilities arising during the public implementation.

Should the Contractor fail to faithfully observe the Safety Provisions herein specified, the Owner may exercise remedial rights as stipulated under this Contract.

6. THIRD PARTY LIABILITY

The Owner shall in no case be held civilly or criminally liable due to the act or omission of the Contractor during the duration of the contract period. Any liability that may arise to the third party shall be the sole responsibility of the contractor.

GENERAL TECHNICAL SPECIFICATIONS

LOCATION

The transmission pipeline shall start at junction of GSC Circumferential Road (Albert Morrow Rd.) and shall end at Paseo De Paz Block 1 Road, Brgy. San Isidro. (See Detailed Plan)

HANDLING AND HAULING

All pipes and fittings shall be handled and installed in manner that will prevent physical or structural damages to pipes, coatings and linings e.g.

Scored pipe surfaces, crack cement lining etc. Regardless of which mode of transportation is used utmost care should be observed during transit and apply necessary equipment and accessories like slings etc. during hauling of pipes. Contractor will be held responsible in all damages occurred in such.

EXCAVATION AND BACKFILLING

Pipe trench shall have a minimum of One (1) meter from property line. Line of trench shall be staked out at least one week before scheduled start of excavation works. Excavation shall be open cut trenches. Bottom of trench should be uniformly level. Maximum length of open trench permitted at any time shall be 300m. or the length necessary to **accommodate the number of pipe installed in a single day**. All newly laid pipes shall be backfilled immediately with good extracted soil free from rocks larger than 100mm. in diameter at the top. A warning tape as approved by the District is to be laid 30 cm. below ground level with markings "*Water Line Buried Below*". Pipes shall have a minimum backfill cover of 1.20m. The Contractor shall remove and dispose all excess excavated material at his own expense in a proper manner. Trees shall be protected from injury during excavation/pipe laying operation and no tree is to be removed without written permission from DENR/GSCWD.

PIPELAYING

Transmission pipes shall be supplied by the District while the remaining other materials shall be furnish by the contractor such as warning tapes, flanges, hot dip galvanized bolts and nuts, straps, etc. as required to provide to complete and workable installation. Pipes shall be examined for possible defects before lowering. Care shall be observed as not to damage the cement mortar lining of the pipes and the cement mortar coating. Damage lining/coating shall be repaired prior to laying. At all times when the installation of the pipe is not in progress, all openings into the pipeline shall be kept tightly closed to prevent entrance of animals and foreign materials. Trenches shall be in reasonably dry condition when the pipe is laid. Necessary facilities including slings, rollers etc. shall be provided for lowering and properly placing the pipe section in the trench without damage. Pipes shall be laid to the required line and grade and be jointed closely to form a smooth flow line. Interior side of the pipe shall be cleaned properly before installation with the swabbing device to remove unnecessary sediments inside the pipes.

PIPE JOINTING

Before the spigot is inserted into the bell, the bell shall be daubed with mortar containing one part cement to one part graded sand. The spigot end shall then be forced to the bottom of the bell and excess mortar on the inside of joint shall be swabbed.

Welded joints are either lap joint or butt strap joint. Field welding of pipe joints shall conform to the requirements of the "AWWA Standards for Field Welding of Steel Pipe Joints" (AWWA C206). Such joints shall be inspected before any protective coating is place around the outside of the joint. Pipe larger than 600mm (24") is almost always assembled in the trench. Smaller pipes is sometimes assembled above the trench and lowered into it means of chain hoists. This allows progressive lowering of assembled pipe without more than a degree or two deflection at any one joint during the laying process. Not more than 20m. Should be welded together above ground.

The contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause, and shall at his own expense restore and replace the pipe to its specified condition and grade if it be displaced due to floating.

PIPE JOINTS REPAIR

After the pipe has been jointed and laid, the outside annular space between pipe sections shall be repaired in accordance with the pipes original coatings.

For cement mortar coatings, remove all loose cement coating materials and debris on the welded joint by using chipping hammer or other means. (Care must be observed during the removal of this loose material to prevent unnecessary damage to the adjacent coating). The prepared area must be wetted with cement slurry (cement water mix) to provide bonding between surface of the pipe and new mortar mix. The grout shall be poured in such a manner that all exposed portions of metals joints be completely protected with cement grout. The grout shall be one part cement to one part graded sand by weight and shall be sufficiently fluid to permit it to be poured into the joint space. Application of cement mortar coating must be done by means of patching by hand or towel using newly mixed mortar with little water just enough to moisten the mixture (Dry Mix Type). The finished coating must not be less than 25mm thick. The appearance and thickness of the finished coating must be comparatively uniform all along the pipe surface.

Primer paint coating should be applied to the steel pipes prior the application of cement mortar coating.

INSTALLATION OF VALVES, FITTINGS AND STUB-OUTS

A frequent cause of leaks in flanges is poor alignment or dirt on the flange face. Valves and fittings shall be installed properly and bolts evenly tighten in correct sequence. One method is "*round and round*" and another "*criss-cross*". Either method is satisfactory. Inspect pipe flange for warping. If bolts are tightened against a warped flange, there is danger of cracking the cast iron valve or fitting flange. Inspect rubber gasket for defects and foreign substance.

Fittings are defined as bends, reducers, wyes, tees, crosses, outlets and manifolds. Fabrication of such shall conform with the "*AWWA Standard for Steel Water Pipe 6" and larger*" (AWWA C-200). Stub-out outlets shall be welded to the steel cylinder of the pipe. Flanges shall conform to ANSI B16.5 2.0 MPA (300 psi). Flanges shall have flat or raised faces. Flanges shall be attached with bolts straddling the vertical axis of the pipe. Where flange is to be blinded/end plug, thickness of plate shall be at least 20mm.

All valves shall be AVK Brand (supplied by the Owner)

Stub-outs shall be fabricated as shown and installed on designated area. Trust blocks shall be installed where there is a change in direction or pressure to avoid pipe movement.

DEMOLITION AND RESTORATION

Removal of existing pavement and restoration of damaged surface and property shall commence upon approval of parties having jurisdiction thereof. The contractor shall restore at his own expense all property removed or destroyed by his operation at least equal to conditions prior to work under this contract or to the satisfaction of the property owner.

PIPE CROSSING

Cross-over pipe for canals shall be steel pipes fabricated to suit actual field condition. It shall be painted in accordance with "Unprimed Ferrous Metal". An air release valve (supplied by owner) shall be installed on top of the pipe crossing.

HYDROTESTING

After the pipes, stub-outs, valves and fittings have been installed and all thrust blocks cast and set the pipelines system shall be tested for leakages. Cap and brace all pipe ends to prevent movement. Make provisions to relieve air from high points and pipe ends. Compressed entrapped air causes difficulty in pumping up to the required pressure. A pipeline may leak compressed air when it is not actually watertight and may show erroneous results during test.

Locate pump and pressure gauge at low point of line if possible. Test by sections, so repairs shall be repaired immediately and backfill can be completed as the work progress. The contractor shall furnish the required volume of water. Fill slowly from the point in the line if possible. This helps expel trapped air. After water filling, pipe must stand for 48 hours. Under slight pressure for linings to get soaked. Pressure in the pipeline shall then be brought to 150 psi test pressure and maintained. Pipeline pressure shall not be allowed to drop more than 5 psi. Pressure at the end of the test period should be same as the beginning. Allowable water leakage limit is computed as $1.85 \text{ l/mm. of dia. /length in km/24hr.}$

DISINFECTION

Prior to putting the system to operation the pipeline shall be disinfected to eliminate impurities that possibly enter the pipeline during the construction process by means of chlorination. The pipes shall be filled with 50 PPM chlorine solution for 24 hours and after that flushing will follow to cleanse the pipeline.

SPECIAL CONDITIONS

LIQUIDATED DAMAGES

The Contractor shall pay liquidated damages to the Owner if he fails to complete the work within the time agreed upon. It is understood that said payment is not a penalty but a fixed sum representing the liquidated damages for each calendar day of delay.

Computation of the said liquidated damages shall conform to the provision of RA 9184.

PROJECT TURNOVER

During project's turn-over, Contractor is required to submit as-built plan. The contractor's deliverables are 100 percent accomplished either on each part and the site restored as is prior to construction.

LOGBOOK

A logbook shall be maintained by the Contractor and Engineer at all times in the project site reflecting the daily work activity, visitors, time extension, work suspension, change/extra work orders and circumstances affecting the program of work to be signed by both the Engineer and Contractor.

PROJECT SIGNS / COA SIGNBOARD

The Contractor shall furnish, erect and maintain one (1) project sign and one (1) COA signboard in accordance with the Standard Drawings. The location for the erection of these signs by the Contractor shall be as directed by the Engineer.

WEEKLY WORK SCHEDULE

The Contractor should submit to the Engineer a weekly work schedule submission shall be every Friday of the current week for the schedule of the incoming week.

EQUIPMENT

Contractor shall provide equipment for the project's completion but not limited to:

<i>Quantity</i>	<i>Description</i>
1	Backhoe
1	Concrete Cutter
1	Engine Driven Welding Machine
1	Jack Hammer
1	Boom truck

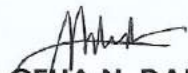
1	Hauling truck
1	Water truck
1	Hydrotesting Equipment
2	Oxy-acetylene cutting outfit
2	Power Brush/Grinder
1	Blinker Warning Light
1	Tamping Rammer
1	Concrete vibrator

Equipment's shall be checked on site during post qualification

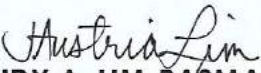
PLANS AND SPECIFICATIONS

All works, that may be called for in the specifications and not shown in the plans or vice versa, shall be executed and finished as if described in both. Should any work required which is not denoted on either plans and specifications either directly or indirectly, it is understood that same shall be implied and required and shall be performed and furnished such materials and layout as fully as if it has been so described.

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