

DIVISION 2

SITE WORK

BUILDING WORK

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SECTION 02230

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes removal of surface debris, paving, curbs, designated plant life, grass, and asphalt; removal of topsoil, subsoil, rough grading, and site contouring.

PART 2 EXECUTION

2.1 PROTECTION

- A. Identify and protect utilities from damage.
- B. Protect trees, plant growth, and features designated to remain, as final landscaping. Identify and tag.
- C. Verify survey benchmark and intended elevations for the Work are as indicated on Drawings.

2.2 CLEARING

- A. Clear areas required for access to site and execution of Work to minimum depth as indicated by Engineer.
- B. Remove paving, curbs, surface rock, and asphalt.
- C. Remove trees and shrubs (within marked areas) Remove stumps, main root ball and root system.
- D. Apply herbicide to remaining stumps or plant life to inhibit growth.

2.3 ROUGH GRADING

- A. Identify required lines, levels, contours, and datum.
- B. Identify known underground, above ground and aerial utilities. Stake and flag locations.
- C. Notify utility company or authorities to remove or relocate utilities if needed.
- D. Excavate topsoil and subsoil from marked areas.
- E. Remove topsoil and subsoil from site.

2.4 CLEAN UP

- A. Remove debris, rock and extracted plant life from site.

2.5 MEASUREMENT

Rates measured in Square meters of the covered area shall be inclusive of all works and materials.

END OF SECTION

SECTION 02300**EARTHWORK****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes site grading, removal of topsoil and subsoil, building excavating and trenching, backfilling, and compacting.
- B. The Engineer may make available, for the Contractor's guidance only and without guarantee, information regarding the nature of the ground to be excavated.

The Contractor shall make use of the Soil Report prepared from results of tests carried out on Site by specialist consultants.

PART 2 PRODUCTS

- 2.1 The material to be used for filling and backfilling whether excavated from within the site or imported from outside the site shall satisfy the AASHTO classification for granular material and falling within one of the following subgroups:

Subgroup	% Passing		
	No. 200 sieve	LL	PI
A-2-4	35 max.	40 max.	10 max.
A-2-5	35 max.	41 min.	10 max.
A-2-6	35 max.	40 max.	11 min.

Classification tests shall be carried out to determine the suitability of material prior to the start of filling and backfilling work.

2.2 BASE COURSE LAYER

- A. The base course layer under slabs on-grade shall conform to the specifications given in the following table (Class-B). The base course layer under external paved area shall conform to the following table (Class-A). The base course layer shall be overlaid with a clean well graded sand bed providing 20 mm cover to the upper most granular of the base course layer.

GRANULAR BASE COURSE

ITEM OF WORK	GRANULAR BASE COURSE		
208.7	TESTS	LIMITS	REFERENCE STANDARDS
B A S E C O U R S E	- TYPE OF MATERIAL	CRUSHED LIME STONE, CRUSHED BASALT, CRUSHED GRANITE.	
	- LAYER THICKNESS	AS SPECIFIED IN THE CROSS-SECTIONS.	
	- MAX. TOLERANCE IN LEVEL	-	
	- ABRASION (%)	+ 10MM	AASHTO T 96
	RATIO OF WEAR LOSS	40% MAX.	AASHTO T 96
	REV100/REV500	0.25 MAX.	
	- FRACTURED FACES (%)	80% MIN. (ONE FACE OR TWO FACES)	ASTM D1883 (MODIFIED)
	(FOR AGGREGATE RETAINED ON #4)	80% MIN.	AASHTO T89
	- C.B.R. (%)	25% MAX.	AASHTO T89, T90
- L.L. (%)	2-6% MAX.	AASHTO T180-D-WITH REPLACEMENT	
- P.I.	2.1 MIN.		
- M.D DENSITY (GM/CM3)			

	- GRADATION (%) *	CLASS A	CLASS B	AASHTO T-27 AND AASHTO T-11
B A S E	2"	---	100	
	1 1/2"	100	70-100	
	1"	75-100	55-85	
	3/4"	60-90	50-80	
	1/2"	45-80	---	
	3/8"	40-70	40-70	
	# 4	30-65	30-60	
	# 10	20-40	20-50	
	# 40	8 -20	10-30	
	# 200 (BEFORE COMP.) # 200 (AFTER COMP.)	5 -10 + 3% MAX.	5-12 + 3% MAX.	
C O U R S E	- COMPACTION (%)	95% MIN.	90% MIN.	AASHTO (T180-D-WITH REPLACEMENT) AASHTO T191
	- CLAY LUMPS AND FRIABLE PARTICLES	3% MAX.		AASHTO T112
	- S.E (%)	30 MIN.		AASHTO T176
	- FLAKINESS INDEX	25% MAX.		B.S 812
	- ELONGATION INDEX	25% MAX.		B.S 812
	- SOUNDNESS : Na Mg	12% MAX. 18% MAX.		AASHTO T104
	- GYPSUM CONTENT (EXPRESSED AS SO3)	2%		B.S 1369

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Identify required lines, levels, contours, and datum. Notify the Engineer well in advance of the commencement of any excavation. Check, at own expense, the given topographical map, sign it and submit it for the Engineer's countersignature. Cross-sectional elevations and profiles may be taken of the natural ground before commencing the work if they are needed.
- B. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- C. Identify and flag known utility locations. Notify to remove or relocate utilities.
- D. Maintain and protect existing utilities to remain.
- E. Verify foundation or basement walls are braced to support surcharge forces imposed by backfilling operations.

3.2 PROTECTION OF ADJACENT WORK

- A. Underpin adjacent structures, which may be damaged by excavation work, including service utilities and pipe chases.
- B. Grade excavation top perimeter to prevent surface water run-off into excavation or to adjacent properties.

3.3 CLASSIFICATION OF EXCAVATION

- A. **Unclassified Site Excavations – General Excavation:**

Surface excavations for Site leveling shall include excavations in all soils, in any type of material encountered whatsoever including rock. No allowance will be made for classification of materials encountered under this Item.

- B. **Excavations for Structures:**

Excavation in foundations and trenches shall be classified as "common excavation", which is defined in this Contract as excavation in all materials, including rock.

3.4 EXCAVATION FOR SITE LEVELING – GENERAL EXCAVATION

The Contractor shall excavate over areas of the whole of the Site to the required dimensions and levels indicated on Drawings or as directed by the Engineer.

All excavations under this item shall be considered as "Unclassified Site Excavations" and no allowance hereunder shall be made for excavation in rock or other.

The excavations shall be carried down below the indicated finished floor or grade levels to allow for sub-base and base course and the construction of pavements or floor systems. The bottoms shall be leveled and prepared to the entire satisfaction of the Engineer.

All material removed shall be transported from Site to a dump provided by the Government or the appropriate local authority.

3.5 EXCAVATION FOR STRUCTURES – COMMON EXCAVATION

- A. Trenches or foundation pits for structure footings shall be excavated to the lines and grades shown on the plans or as directed by the Engineer. They shall be of sufficient size to permit the placing of structures or structure footings of the full width and length shown. The elevations of bottoms of footings shall be considered as approximate only, and the Engineer may order such changes in the dimensions or elevations thereof as he deems necessary to secure a satisfactory sub-foundation. Boulders, logs and other objectionable material encountered in the excavation shall be removed upon the requirement of the Engineer.

All rock or other hard foundation material shall be cleaned of all loose material and cut to a firm surface and either leveled or stepped as directed by the Engineer.

All seams or crevices shall be cleaned out and grouted, and all loose and disintegrated rock and strata shall be removed.

When the footing is to rest on material other than rock, excavation to the final grade shall not be made until just before the footing is to be placed. Wherever the foundation material is soft or muddy or otherwise unsuitable in the opinion of the Engineer, the Contractor shall remove the unsuitable material and backfill with Class 'C' concrete, for which work the Contractor shall then be entitled to receive payment as for other similar items.

- B. For portions of underground concrete structures where shuttering work is required, the excavation shall be made far enough from the final lines of the structure to afford ample room for the setting and removing of forms and for waterproofing the external surfaces of concrete structures where and if so required.

The Contractor shall, in any case, judge the amount of materials to be removed beyond the foundation line in order to meet his needs. He shall in his Tender have anticipated this and all over-breakage that might result from slips or slides due to the nature of the soil, the result of blasting and moving or handling equipment over the foundation, and the Contractor shall have included in his Tender Prices a sufficient amount to cover all these contingencies.

- C. After each excavation is completed, the Contractor shall notify the Engineer to that effect, and no footing shall be placed until the Engineer has approved the depth of excavation and the character of the sub-foundation material.

3.6 UTILISATION OF EXCAVATED MATERIALS

All excavated materials, insofar as suitable, shall be utilized as backfill for Site leveling, forming of roads, yards and parking areas, behind external walls of basements and retaining walls, and around structures.

The surplus and unsuitable materials shall be transported and dumped and finally disposed of in such a manner as to be satisfactory to the Engineer and without detriment to any property.

3.7 BACKFILLING AND FILLING

A. The Contractor shall backfill or fill for:-

1. Site leveling and landscape works. Filling to the required levels shall do this work with allowance for any subsequent settling.
2. Backfill below and around foundation (Engineering Fill) shall be done in layers not exceeding 25 cm thickness when compacted to be watered and compacted with mechanical compactors to the required elevations, the upper 1m of the fill shall maintain 98% modified proctor of maximum dry density while the rest shall have 95% modified proctor test of maximum dry density.

3.8 RECEIVED BACKFILLING AND FILLING

The Contractor shall be responsible for any depression resulting from defective backfilling or filling, and he shall reconstruct or repair any damages to structures, pipelines or trenches resulting from defective backfilling or filling at his own expense.

3.9 UPHOLDING EXCAVATIONS

The Contractor shall take all the necessary precautions, by planking and strutting or otherwise, to ensure that the faces of excavations are upheld. In the event of the collapse of any faces of excavation, the Contractor shall re-excavate and make good any damage at his own cost.

3.10 WATER IN EXCAVATIONS

All water accumulating in excavations through any cause whatsoever shall be removed by the Contractor at his own expense, and pumping shall be done in such a way as not to disturb the condition of the excavation.

3.11 RESTORATION OF ROAD SURFACES

Where the excavation is in asphalted roads, it shall be carried out with as little damage to surrounding surfaces as possible.

On completion of backfilling with proper consolidation, the Contractor shall immediately carry out the reinstatement of the road, bringing the backfill up to the required level and leaving the necessary space for sub-base and base course and the asphalted layer. Compaction of backfilling shall be 95% dry density as per AASHTO T-180.

Both the base course and the asphalted layer shall be thoroughly compacted by tamping or rolling, and the top of the asphalt shall be rounded over the trench slightly higher than the street level to allow for any subsequent settlement.

END OF SECTION

SECTION 02540

SEPTIC TANK SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes Impervious septic tank, distribution box .

1.2 SUBMITTALS

- A. Section 01330 - Submittals Procedures: Submittal procedures.
- B. Shop Drawings: Indicate plan, location and inverts of filter field, inverts of connecting piping.
- C. Product Data: Submit data on tank, distribution box, piping and accessories.

1.3 CLOSEOUT SUBMITTALS

- A. Section 01700 - Execution Requirements: Closeout procedures.
- B. Project Record Documents: Accurately records actual locations and inverts of buried pipe, components, and connections.

1.4 COORDINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.

PART 2 PRODUCTS

2.1 SEPTIC TANK AND DISTRIBUTION BOX

1. Septic Tank: Reinforced concrete construction 30 MPa 28-day minimum strength, use sulphate resistant cement, concrete partitioned chambers, concrete lid with lift rings, vent, inlet inspection hole.
2. Distribution Box: Reinforced concrete single inlet, two outlets, gate, and removable cover with lift ring.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify building sanitary sewer connection, size, location and invert are as indicated on Drawings.

3.2 PREPARATION

- A. Ream pipe ends and remove burrs.
- B. Remove scale and dirt from components before assembly.
- C. Establish invert elevations for each component in system.
- D. Hand trim excavation to suit septic tank, distribution box and field tile arrangement. Remove stones, roots or other obstructions.

3.3 TANK AND TANK BEDDING

- A. Apply concrete work in accordance with section 3050.
- B. Backfill around sides of tank, tamped in place and compacted to 95 percent.
- C. Maintain optimum moisture content of bedding material to attain required compaction density.

3.4 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Requirements: Testing and inspection services 01700 - Execution Requirements: Testing, adjusting, and balancing.
- B. Request inspection by the Engineer prior to placing aggregate cover over piping.
- C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

3.5 PROTECTION OF FINISHED WORK

- A. Do not permit vehicular traffic over drainage field.

END OF SECTION

SECTION 02784

STONE PAVERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes Stone sidewalks, curbs and roads.

1.2 SUBMITTALS

- A. Product Data: Submit product information.
- B. Submit samples.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with “Specifications for Highway and Bridge Construction” issued by the Ministry of Public Works & Housing-Jordan.
- B. Maintain one copy of each document on site.

PART 2 PRODUCTS

2.1 Stone:

- A. Veneer stone floor tiles .
- B. Black stone and Random rubble stone different shapes and colors to be collected from the surrounded area and to be shaped and dressed as required.
- C. Ajloun first Quality.
- D. Ajloun Stone should satisfy the requirements for Stone Class A, in accordance with the General Specifications issued by the Ministry of Public Works & Housing.

2.2 Fine and Coarse Aggregates: in accordance with ASTM C33.

2.3 Cement mortar: as specified in section 3050.

2.4 Bituminous: in accordance with “Specifications for Highway and Bridge Construction”.

PART 3 EXECUTION

Apply work in accordance with the “Specifications for Highway and Bridge Construction”.

- Stone Sidewalks’ tiles and Stone Curb to be installed on cement mortar 3 cm thick on the compacted base layers. And to be pointed and as detailed in the drawings and directed by the Engineer.

END OF SECTION

SECTION 02900

PLANTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes preparation of soil, placement of plant life and fertilizer.

1.2 QUALIFICATIONS

- A. Nursery: Company specializing in growing and cultivating plant life specified in this section.
- B. Maintenance Services: Performed by installer.

1.3 WARRANTY

- A. Furnish one year warranty including one continuous growing, including coverage of plants from death or unhealthy conditions.
- B. Replacements: Plants of same size and species as specified, planted in next growing season, with new warranty beginning on date of replacement.

1.4 MAINTENANCE SERVICE

- A. Maintain plant life for three months from Date of Substantial Completion.

PART 2 MATERIAL

2.1 SOIL AND SOIL MODIFICATION MATERIALS

- A. Topsoil:
 - 1. Soil shall be obtained from well-drained arable land approved by the Engineer before it use. It shall be free draining, non-toxic and capable of sustaining healthy plant growth. Soil shall not contain subsoil, refuse, roots, heavy clay, noxious weed, phytotoxic materials, coarse sand, rocks, sticks, brush, litter and other deleterious materials.
 - 2. Agricultural soil brought on to the site without prior inspection and approval shall be at the risk of the contractor, who shall remove it at his own expenses unless otherwise instructed by the Engineer.
 - 3. The Contractor shall arrange for physical and chemical analyses of representative samples of the soil to be made by an approved soil laboratory. Separate analyses shall be provided for each source of supply. The following parameters shall be determined and in the event that the soil does not conform to the following specified standards, it shall be liable to

rejection by the Engineer:

- a. Stones : non bigger than 10mm in diameter
 - b. Gravel (larger than 2mm diameter): 5% or less
 - c. Sand (0.05-2.0mm diameter): 70% or more
 - d. Silt and clay (less than 0.05 diameter): 25% or less
 - e. Conductivity: less than 4mm mS(micron S)/cm at 25 degrees C in a saturated soil extract(=2,560ppm)
 - f. pH: pH 6.0 – 8.5 in saturated soil extract
 - g. Boron: less than 1ppm in a hot saturated soil extract
 - h. Chlorine (Cl): less than 175 ppm in saturated soil extract
 - i. Exchangeable sodium percentage (ESP): less than 12%
 - j. Sodium absorption ratio (SAR): less than 10%
4. A sample Load of agricultural soil of not less than 5cu. M, from each source, shall be submitted for the approval. This sample, shall be retained for comparison with subsequent loads.

B. Fertilizer:

1. Inorganic fertilizer shall be applied to the irrigation water by the use of injection equipment. Fertilizer shall be approved soluble NPK fertilizers in a suitable ratio applied at a dilution rate of one kg fertilizer to 1,000 ltr of water.
2. Proposals for use of any of the following alternative fertilizer types and composition where injection equipment is not specified for use, may be submitted for consideration:
 - a. Compound fertilizers applied at the rate of 12 bags per hectare giving N=100 Kg/ha; P2O5=150 Kg/ha; and K2O=100 Kg/ha.
 - b. Single superphosphate fertilizers with a minimum content of 18% P2O5 applied at the rate of 2.4 kg/cu.m of soil.
 - c. Controlled release fertilizer with an NPK ratio of 16-17-5+Fe and a release longevity of 12+4 months at 21 degrees C soil temperature. Fertilizer planting tablets shall be tightly compressed fertilizer chips forming plant tablets, each weighting approximately 21 gm.
 - d. Slow release fertilizer with an NPK ratio of 20-10-5 + traces (Fe, Mn and Zn) with a release longevity of 1-24 months.
 - e. Nitrogen fertilizer in the form of urea pills containing 32% to 46% nitrogen.

However, the suitable fertilizer type and grade shall be determined after testing the soil samples to suit the type of plantation desired.

C. Plants:

1. All plants shall be of the size specified. No plant shall be less than the minimum size and at least 50% shall be in the upper part of the specified range. Plants that meet the measurements specified but do not possess the normal balance between height and spread will not be accepted.
2. All planting stock shall be well-balanced and well formed, sound vigorous, healthy and free from disease, sunscald, abrasion, harmful

insects or insect eggs and with a healthy, unbroken root system. Unless otherwise specified, only nursery-grown plants shall be used.

3. Nomenclature of trees and plants shall conform to the scientific names given in the following books. Alternative names can be checked in these books to confirm that plants agree with the botanical description given:
 - a. American Joint Committee on horticultural Nomenclature (AJCHEN) – “Standardized Plant Names”.
 - b. Royal Horticultural Society – “Directory of Gardening”
 - c. Post, George E., “Flora of Syria, Palestine and Sinai”, American University of Beirut.
4. All plants supplied shall have been grown from the Contractor’s own nursery stock or obtained from a reputable nursery, and shall be subject to approval.
5. If specified plants are unobtainable, details of alternatives shall be submitted with the Tender, stating how they differ from the plants specified.
Such substitutions shall be subject to approval.

D. Trees:

1. Trees shall be symmetrically developed, their structure and habit of growth typical of their species or variety with straight stems and an intact central leader. In the Tourist Street Trees shall have a minimum height as specified in drawings and in the bill of quantities, in the other locations minimum height of 1.2 m above planting level.
2. Where trees of 1.2 m height are unobtainable, and subject to the submission of evidence to that effect, the Contractor may, if approved, substitute trees of 1 m height.

E. Shrubs

1. Shrubs shall have a minimum height of 0.75 m. The shrubs shall be of good form, well grown and bushy. Deciduous shrubs may be supplied bare-rooted, earth-balled and hessian covered or container-grown. Evergreen shrubs shall be either earth-balled or container-grown. Each shrub shall possess a structure and habit of growth typical of the species of variety.
2. Where shrubs of the specified height are not available, the Contractor may, if approved, use smaller substitutes.

PART 3 EXECUTION

3.1 Soil Grading and Preparation

- A. Subsoil shall be excavated to achieve tolerances specified for finished level of soil, and when reasonably dry and workable, graded to smooth, flowing contours with all minor hollows and ridges removed. Non cohesive, light subsoils shall be loosened with a 3-tine ripper, 300 mm deep at one (1) meter centers.
All perennial weeds shall be treated with herbicides and the period of time

recommended by the manufacturer shall be allowed to elapse before grading.

- B. Finished ground levels shall be 30 mm below adjoining paved areas or curbs after settlement, except for any median strip where New Jersey barriers are specified, in which case the finished level shall be 100 mm below the top of the New Jersey barrier after settlement. Finished ground level adjoining buildings shall be kept 150 mm below the level of the dampproof course.
- C. Areas to be grassed shall be excavated to 150 mm below finished levels and shall be brought up to finished levels using agricultural soil. When reasonably dry and workable, the agricultural soil shall be graded to finished grade with all minor hollows and ridges removed.
- D. Areas for shrubs shall be cultivated to a depth of 300 mm and brought up to within 100 mm below finished grade. Planting medium shall be spread evenly over planting areas to a depth of 100 mm prior to planting.
- E. All weeds, rocks and other debris shall be removed and disposed of and the Contractor shall ensure that all planting positions are well drained.

3.2 Planting Procedures

- A. The outline of soft landscaping areas shall be staked out for approval. Agricultural soil shall then be supplied and spread over seeded areas. Planting medium shall be prepared and spread over the planting areas.
- B. Tree, shrub and other planting positions shall then be staked out for approval. Planting pits shall be excavated to the sizes specified and excavated subsoil removed from the Site. Each planting pit shall be filled with irrigation water to ensure that the water can drain away. Stakes shall be driven where specified, a layer of planting medium spread over the bottom of each pit and each plant positioned and surrounded with planting medium. Plants shall be tied to stakes and aggregate mulch spread as specified.
- C. All plants shall be checked one week after planting for signs of windshake and loosening due to soil subsidence which shall be made good as necessary. All plants shall thereafter be checked at monthly intervals until the end of the Maintenance Period.
- D. Re-seeding fertilizers shall then be applied and grass seeding/ stolon planting carried out to the areas shown on the Drawings.
- E. Wrapping shall be removed from the buds of palm trees after completion of all the above mentioned operations.

3.3 Planting Shrubs and Ground Cover

- A. Holes for plants, including shrubs and ground cover, shall be excavated to a depth of 0.5 m below finished grade and to a diameter of 0.5 m. Whenever the root-ball, container or root system is of such a dimension as to prevent proper backfilling being carried out, the diameter of the hole shall be broken up to an additional depth of 0.3 m.
- B. Plants shall be set plumb and at such level that, after settlement, they will bear the same relationship to the level of the surrounding ground as they did in the nursery.
- C. Earth-bailed hessian-covered plants shall have all cloth, ropes etc., removed from the tops of the earth-balls but no cloth shall be removed from under the earth-balls.
- D. Disturbance of the root system or the balls of earth shall be avoided when removing plants from containers. Cutters shall be used on metal containers.
- E. Bare-rooted plants and plants with broken root-balls that fall apart while being planted, will not be accepted.
- F. Prepared planting medium shall be carefully packed around each root-ball in 150 mm layers and well heeled-in, to position the plant and eliminate air pockets.
- G. Where 'long term' fertilization of shrubs is specified or required by the Engineer, 'slow release' tablets shall be placed, during shrub planting, in a similar manner to that specified for trees and palms, but at the rate of one tablet (21 gm) for each 300 mm of shrub height.
- H. Each plant shall be thoroughly watered when the plant area has been backfilled with planting medium to the base of the root-ball. When the water has drained away completely, backfilling shall be completed and the plant rewatered.
- I. Climbing plants shall have their leading shoots trained around the supporting wire mesh.

END OF SECTION

SECTION 02946

LANDSCAPE EDGING

PART 1 GENERAL

- 1.1 DESCRIPTION: The work of this section consists of the furnishing of materials and construction aluminum edging designed for the retaining of pavers.
- 1.2 SUBMITTAL: Submit catalogues to the Engineer of the proposed material for approval.

PART 2 PRODUCTS

- 2.1 Aluminum "L"-shape T-5 hardness, sections size 2.54m long, 8-10 high, 3.2mm thick as shown in drawings and directed by the Engineer.
- 2.2 Horizontal walls shall have equally spaced V-shaped cutouts of at least 90 for flexibility and equally spaced flanges with countersunk holes for flush fitting of nails. Vertical walls shall be ridged for extra strength and contain end holes for joining sections.
- 2.3 Jointing tab, wingnuts, and screws shall be fully reversible locking –joining system with no obstructions.

PART 3 EXECUTION

- 3.1 To be executed in according to the manufacture's instruction and as directed by the Engineer.

END OF SECTION