PART 1 GENERAL

1.1 SECTION INCLUDES

.1 Work under this section shall include all labour, materials, equipment and services necessary for the completion of all random ashlar limestone work as shown on the drawing or hereinafter specified.

1.2 RELATED SECTIONS

.1 Other Masonry Sections (e.g. Procedures, Mortar & Grout, Accessories, Reinforcing & Tying, Brick, Concrete Units), Dovetail slots in concrete for anchors; Steel inserts, shelf angles, supports; Anchors & Ties; Insulation; Air and/or Vapour barrier; Caulking & Sealants; etc.

See: 04 05 13 for masonry mortaring.
04 05 16 for masonry grouting.
04 05 19 for masonry anchorage and reinforcing.
04 05 23 for masonry accessories.

1.3 REFERENCES

.1 American Society for Testing and Materials (ASTM) – Latest Edition

.1	ASTM C119	Standard Terminology Relating to Dimension Stone
.2	ASTM C568/C568M	Standard Specification for Limestone Dimension Stone
.3	ASTM C1242-12ae1	Standard Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems
.4	ASTM C1515	Standard Guide for Cleaning of Exterior Dimension Stone, Vertical And Horizontal Surfaces, New or Existing

.2 Canadian Standards Association (CSA) – Latest Edition

.1	CAN/CSA A179	Mortar and grout for unit masonry
.2	CAN/CSA A370	Connectors for masonry
.3	CAN/CSA A371	Masonry construction for buildings

1.4 SUBMITTALS

.1 Samples
.2 Submit samples under provisions of Section 01 33 00 indicating range of colour and finish to be supplied.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Deliver Stone promptly in accordance with job schedule requirements.
.2 On Arrival check all stone for damage and report to carrier, noting damage on delivery document.
.3 Handle stone carefully. Avoid chipping edges or corners.
.4 Store stone off ground and protect from dirt and damage.

1.6 QUALITY ASSURANCE

.1 Mockup (Optional)
  .1 Provide Mockup under provision of Section 01 43 39.
  .2 Installer to be a Red Seal Journeyman Bricklayer.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Installer to coordinate deliveries with manufacturer.
.2 On arrival, check all stone for damage and report to carrier, noting damage on delivery document.

.3 Handle stone carefully.
.4 Avoid chipping edges or corners.
.5 Store stone off ground and protect from dirt and damage.

1.8 PROJECT/SITE CONDITIONS

.1 Existing Conditions

.1 Inspect and arrange for correction of defects or dimension errors in concrete or steel structural surfaces, which would affect stone work.

PART 2 PRODUCTS

2.1 MANUFACTURER

.1 Limestone shall be quarried and supplied by Gillis Quarries Limited, Winnipeg, Canada.
Toll free 1-800-540-0988 or Ph: (204) 222-2242.

2.2 MATERIAL

.1 Limestone shall be Manitoba Tyndall Stone® Random Ashlar, a medium density limestone per ASTM C-119 and ASTM C-568.

.1 Colour

.1 Specify Buff, Grey, Golden Buff, or Mixed colour.

2.3 OTHER MATERIALS

.1 Include other applicable materials such as: water, sand, lime, cement, mortar, water repellent, insulation, caulking, control joints, anchors & ties, reinforcing, supports, flashing, etc.

2.4 MIXES

.1 Mortar for setting:

.1 One (1) part white non-staining cement,
One (1) part lime,
Six (6) parts sand.

OR

.2 One (1) part approved white non-staining premixed masonry cement,
Three (3) parts sand.

> **NOTE**: If lump lime is used, paste must be properly aged before use. All mixtures must be used before initial set has taken place – no retempering will be permitted. Do not use integral waterproofing.

2.5 FABRICATION

.1 Shop Finishing

.1 Stone shall be supplied in optimal mill lengths (to be further jointed on the job by the setting contractor as required) and shall be supplied in course heights and wall thickness listed below.

.2 Course heights

.1 For Sawn, Rubbed, Split, Bushhammered, Pointed finish:

.1 Single Course

.1 Specify 57 mm, 90 mm, 123 mm, 190 mm or 290 mm course height. (290mm not available in split face finish)

.2 Three Course

.1 Specify 15% - 57 mm course, 50% - 123 mm course, 35% - 190 mm course.

.2 For Rustic finish:

.1 Single Course

.1 If Split Bed – Specify 80 mm, 180 mm or 280 mm.

.2 If Sawn Bed – Specify 90 mm, 190 mm or 290 mm.

.2 Three Course

.1 If Split Bed – Specify 40% - 80 mm, 40% - 80 mm, 20% - 280 mm.

.3 Wall thickness

.1 For Sawn Rubbed, Split, Bushhammered, Pointed finish:

.1 Specify 90 mm for normal veneered or cavity walls. Specify greater depths as required for engineered load bearing walls.

.2 For Rustic finish:

.1 Specify variable bed thickness ranging from 75 mm – 130 mm.

.4 Top & Bottom Beds

.1 Sawn beds for Sawn, Rubbed, Split, Bushhammered, and Pointed finish.

.2 Specify Split or Sawn beds for Rustic finish.

.5 Ends shall be Sawn except for split face heads or otherwise specified.

.6 Face Finish

.1 Specify Split, Sawn, Rubbed, Bushhammered, Pointed or Rustic finish.

PART 3 EXECUTION

3.1 EXAMINATION/VERIFICATION OF CONDITIONS
(See Part 1 General – Project/Site Conditions)

3.2 INSTALLATION/APPLICATION/ERECTION

.1 Setting Random Ashlar Stone

.2 Patterns & Joints:

.1 Single Course

.1 Stone strips shall be laid up in full beds of mortar in a series of continuous single rises of coursings, taking care to build best split face to the outside.

.2 All vertical joints to be sawn for best appearance.

.3 All joints to be 10 mm in width, except for Rustic finish with split bed – specify 20 mm.

.4 All mortar joints to be tooled or raked as per consultant's specifications.

.5 Protruding stone end edges to be chipped off on the job by the setting contractor to create a more continuous coursing, and to achieve a more monolithic appearance to finished wall.

.2 Three Course

.1 Stone strips shall be laid up in full beds of mortar in various lengths and course heights, taking care to form random pattern.

.2 Select and build best face to outside.

.3 Break horizontal joints as often as possible. No horizontal joint to continue for more than five stones (except where a control joint is required).

.4 Break vertical joints as often as possible. No vertical joint to continue for more than three stones (except where a control joint is required).

.5 All vertical joints to be Sawn.

.6 All joints to be 10 mm in width, except for Rustic finish with split bed – specify 20 mm.

.7 All mortar joints to be tooled or raked as per consultant's specifications.

.8 Protruding stone end edges to be chipped off on the job by setting contractor to achieve a more monolithic appearance to finished wall.

.3 Other

.1 Stone shall be laid up in full beds of mortar to form pattern and joint sizes as indicated on the drawing and/or hereinafter specified.

.3 Anchoring

.1 Stone to be anchored to back-up wall with metal wall ties as specified spaced not more than 600 mm apart vertically and 800 mm horizontally (or as called for by local code).

.2 All anchors to be corrosion resistant material and to be supplied by the setting contractor.

.4 Pitching

.1 When machine-pitched face stone is being supplied, specify "stone ends to be pitched to match, on the job by the setting contractor."

.5 Other

.1 Specify other related jobsite installation requirements such as: Structural supports, Flashing, Insulation, Vent and Weep holes, special cutting and fitting, etc.

3.3 FIELD QUALITY CONTROL

.1 After setting, protect projecting areas, corners, etc., with boards. Cover walls at night and during rains.

3.4 ADJUST AND CLEAN

.1 Each day brush completed stonework clean with fiber bristle brushes, preferably dry, or with a minimum amount of clean water. Do not use wire brushes, acids, or acidic or alkaline cleaning compounds.

3.5 PROTECTION

.1 Water Repellent (Optional)

.1 When exterior stonework is thoroughly dry, apply one flood coat of a water solution of sodium methyl siliconate (“XIAMETER OFS-0772” or equal).

.2 Use brush, roller, or low pressure spray.