

MASONRY

PREPARATION

CLEAN STONE SURFACES WHICH HAVE BECOME DIRTY OR STAINED PRIOR TO SETTING TO REMOVE SOIL, STAINS AND FOREIGN MATERIALS. CLEAN STONES BY THOROUGHLY SCRUBBING STONES WITH FIBER BRUSHES FOLLOWED BY A THOROUGH DRENCHING WITH CLEAR WATER. USE ONLY MILD CLEANING COMPOUNDS THAT CONTAIN NO CAUSTIC OR HARSH FILLER OR ABRASIVES.

SETTING STONE: EXECUTE STONEMWORK BY SKILLED MASONS AND EMPLOY SKILLED STONE FITTERS AT THE SITE TO DO NECESSARY FIELD CUTTING AS STONES ARE SET. USE POWER SAWS TO CUT STONES; FOR EXPOSED EDGES, PRODUCE EDGES WHICH ARE CUT STRAIGHT AND TRUE.

SET PAVERS TRUE TO GRADE AND HORIZONTAL AND VERTICAL ALIGNMENT, ON 1" MINIMUM MORTAR BED ON CONCRETE SLAB SO THAT VERTICAL AND HORIZONTAL DIFFERENCES BETWEEN ADJACENT STONES DOES NOT EXCEED 1/16".

SET PAVING TRUE TO GRADE WITH NO UNEVEN BREAKS IN HORIZONTAL OR VERTICAL ALIGNMENT, TO COMPLY WITH REQUIREMENTS INDICATED ON DRAWINGS AND FINAL SHOP DRAWINGS. INSTALL ANCHORS, SUPPORTS, FASTENERS AND OTHER ATTACHMENTS INDICATED OR NECESSARY TO SECURE STONEMWORK IN PLACE. SHIM AND ADJUST ANCHORS, SUPPORTS AND ACCESSORIES TO SET STONES ACCURATELY IN LOCATIONS INDICATED WITH UNIFORM JOINTS OF WIDTHS INDICATED AND WITH EDGES AND FACES ALIGNED ACCORDING TO ESTABLISHED RELATIONSHIPS AND INDICATED TOLERANCES.

INSTALLATION OF GRANITE PAVERS AND COBBLESTONES

PLACING THE MORTAR SETTING BED: THE BEDDING COURSE SHALL BE PLACED, SCREEDED AND SHAPED UPON THE CONCRETE BASE, ITS FINISHED DEPTH SHALL BE 2 INCH NOMINAL OR AS SHOWN ON THE PLANS. THE BEDDING SHALL BE SHAPED TO FOLLOW FINISHED GRADES, TO A TRUE SURFACE, PARALLEL WITH SURFACE OF FINISHED PAVING, BY MEANS OF TEMPLATE OR STRIKING BOARD (12' X 2" X 6" BOARD). THE BED SHALL THEN BE STRUCK OFF UNTIL PROPER ALIGNMENT IS SECURED. THE AREA OF BEDDING PLACED IN ANY WORK DAY SHALL BE SCHEDULED SO THAT NO BEDDING COURSE REMAINS AT THE END OF THE DAY WITHOUT A PAVER COURSE. AFTER FINAL SHAPING, THE BEDDING COURSE SHALL NOT BE DISTURBED PRIOR TO LAYING THE PAVERS.

LAYING GRANITE PAVERS AND COBBLESTONES.

GENERAL : WHERE SHOWN ON THE PLANS, LAY GRANITE PAVERS ON MORTAR SETTING BED AS DESCRIBED BELOW. LAY PAVERS AND COBBLESTONES IN PATTERNS AS INDICATED ON THE PLANS. ACCURATELY LAY OUT WORK TO PATTERNS AND GROUTINGS SHOWN ON THE DRAWINGS AND ENCOUNTERED ON THE SITE. ANY DISCREPANCIES FOUND BETWEEN FIELD CONDITIONS AND THOSE SHOWN ON THE DOCUMENTS MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. LAY PAVERS TO FOLLOW ADJACENT ABUTTING GRADES, SO THAT DIFFERENCE BETWEEN ADJACENT MATERIALS DOES NOT EXCEED 1/4". SET PAVERS WITH 3/16" JOINTS BETWEEN PAVERS AND ADJACENT MATERIALS AS INDICATED ON THE PLANS.

SET COBBLESTONES WITH 1" NOMINAL JOINTS BETWEEN PAVERS AND ADJACENT MATERIALS AS INDICATED ON THE PLANS.

JOINTS BETWEEN PAVERS SHALL BE FILLED WITH MORTAR OR CAULKED AS SHOWN ON THE PLANS, IN ACCORDANCE WITH THE SPECIFICATIONS FOR EXPANSION JOINTS.

MORTAR JOINTS SHALL BE FILLED BY THE "WET GROUT" TECHNIQUE AS FOLLOWS, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT:

GROUT SHALL BE MIXED TO A WORKABLE, SOUPY, CONSISTENCY, SO AS TO POUR EASILY FROM THE BUCKET. COLOR MAY BE ADDED PER LANDSCAPE ARCHITECT'S INSTRUCTIONS. CARE SHOULD BE TAKEN TO MAINTAIN CONSISTENCY OF COLOR THROUGHOUT PROJECT. WET DOWN SET MODULES TO BE GROUTED WITH A HOSE IMMEDIATELY PRIOR TO GROUTING. THIS ASSISTS THE WET GROUT IN SLIDING INTO ALL THE DEPRESSIONS. POUR THE GROUT FROM BUCKETS ONTO THE WETTENED MODULES AND BEGIN BRUSHING GROUT INTO JOINTS AND DEPRESSIONS WITH A STIFF BRISTLE PUSH BROOM. THE STIFF BRISTLES CLEAN SURFACE OF THE STONE WHILE LEVELING THE JOINTS JUST BELOW THE SURFACE OF THE STONE. SOFTER BRISTLES WOULD PULL GROUT FROM THE JOINTS.

AS GROUT BEGINS TO HARDEN (TIMING CAN BE AFFECTED BY SAND/CEMENT RATIO, TEMPERATURE, OR HUMIDITY) WASH THE FACE OF THE MODULES WITH A FLAT SPRAY FROM A HOSE HELD AT A LOW ANGLE. THIS WASHES THE MORTAR FROM THE FACE OF THE STONES WHILE LEAVING THE GROUTED JOINTS RELATIVELY UNAFFECTED. PRACTICE ON A SMALL AREA WILL HELP DETERMINE APPROPRIATE ANGLE AND AMOUNT OF WATER PRESSURE DESIRED.

AFTER GROUT HAS COMPLETELY SET UP, WASH ENTIRE AREA WITH AMPLW WATER. ANY RESIDUE OF GROUT ON SURFACE OF STONE MAY BE REMOVED WITH PRODUCT SUCH AS "CONCLENE" OR SIMILAR ACID BATH. FLOOD AND CLEANSE WITH AMPLW WATER.

QUALITY ASSURANCE

A. OBTAIN EACH TYPE OF STONE FROM A SINGLE QUARRY WITH RESOURCES TO PROVIDE MATERIALS OF CONSISTENT APPEARANCE AND PHYSICAL PROPERTIES, AND THE CAPACITY TO CUT FINISH, AND SUPPLY STONEMWORK WITHOUT DELAYING THE PROGRESS OF THE WORK.

B. INSTALLATION OF ALL STONEMWORK SHALL BE PERFORMED ONLY BY A FIRM SPECIALIZING IN SUCH CONSTRUCTION, USING SKILLED WORKERS.

DELIVERY, STORAGE, AND HANDLING

A. DELIVER MASONRY MATERIALS TO PROJECT SITE IN UNDAMAGED CONDITION. STORE AND HANDLE STONE AND RELATED MATERIALS TO PREVENT THEIR DETERIORATION OR DAMAGE DUE TO MOISTURE, TEMPERATURE CHANGES, CONTAMINANTS, CORROSION, BREAKAGE, CHIPPING, OR OTHER CAUSES.

B. DO NOT USE PINCH OR WRECKING BARS. LIFT WITH WIDE-BELT-TYPE SLINGS WHERE POSSIBLE. DO NOT USE WIRE ROPE OR ROPES CONTAINING TAR OR OTHER SUBSTANCES WHICH MIGHT CAUSE STAINING. IF REQUIRED TO MOVE STONE, USE WOOD ROLLERS WITH CUSHIONS AT END OF WOOD SLIDES.

C. STORE STONE ON WOOD SKIDS OR PALLETS, COVERED WITH NONSTAINING, WATERPROOF MEMBRANE. PLACE AND STACK SKIDS AND STONES TO DISTRIBUTE WEIGHT EVENLY AND TO PREVENT BREAKAGE OR CRACKING OF STONES. ALLOW AIR CIRCULATION AROUND STONES. STORE CEMENTITIOUS MATERIALS OFF THE GROUND, UNDER COVER AND IN A DRY LOCATION.

WEATHER LIMITATIONS

A. NO STONEMWORK OR MORTAR SHALL BE INSTALLED WHEN TEMPERATURES ARE AT OR BELOW 40 DEGREES FAHRENHEIT, OR DURING RAIN, SLEET, OR SNOW.

B. DO NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST. DO NOT BUILD ON FROZEN OR THAWING SUBGRADE OR BASE COURSE. REMOVE AND REPLACE WORK DAMAGED BY FROST OR FREEZING.

C. CONCRETE WORK SHALL COMPLY WITH HOT AND COLD WEATHER REQUIREMENTS OF SECTION 03300 - CAST IN PLACE CONCRETE.

D. SANDBLASTING SHALL TAKE PLACE WHEN AIR TEMPERATURES ARE ABOVE 40 DEGREES FAHRENHEIT OR DURING RAIN, SLEET, OR SNOW.

PRODUCTS

STONE SOURCES

A. ALL STONE FOR USE ON THE PROJECT SHALL BE OBTAINED FROM THE SAME QUARRY AS APPROVED BY THE LANDSCAPE ARCHITECT.

MALPAIS, SANDSTONE, ONYX

A. STONE SIZES PER PLAN

MASONRY (CONT.)

B. FINISH AT STONE: STONE SHALL BE OF CONSISTENT FINISH THROUGHOUT. FINISH AT FACE SHALL BE QUARRY-FACE, ROCK-FACE, SPLIT-FACE OR SEAM-FACE, WITH A MAXIMUM VARIATION OF ONE (1) INCH. UN-EXPOSED SIDES AND BACKS OF STONE SHALL BE SAWN.

C. ALL STONE SHALL BE SOUND AND FREE OF SEAMS OR EVIDENCE OF DISINTEGRATION.

MORTAR

A. MORTAR AT ALL MASONRY JOINTS SHALL COMPLY WITH ASTM C-270, TYPE K, AND SHALL CONSIST OF: 1 PART PORTLAND CEMENT, 1 PARTS LIME, 6 PARTS SAND

B. MORTAR PRODUCTS SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. PORTLAND CEMENT: ASTM C150, TYPE I. PROVIDE GRAY CEMENT.
2. HYDRATED LIME: ASTM C207, TYPE S.
3. SAND: ASTM C144.
4. WATER: CLEAN, NON-ALKALINE, AND POTABLE.

C. MORTAR COLORING: NATURAL IRON OXIDES OR CHROMIUM OXIDES PIGMENTS, CONSISTING OF THE FOLLOWING:

1. "TRUE TONE MORTAR COLORS"; DAVIS COLORS, A SUBSIDIARY OF ROCKWOOD INDUSTRIES.
2. "SONOBRITE"; SONNEBORN B. P. DIV.; REXNORD CHEMICAL PRODUCTS, INC. OR APPROVED EQUAL.

GROUT

A. GROUT AT ALL MASONRY CORES AND CAVITIES SHALL COMPLY WITH ASTM C-476, FINE GROUT. NO ADMIXTURES SHALL BE PERMITTED IN GROUT MIX. GROUT SHALL CONSIST OF: 1 PART PORTLAND CEMENT AND 2.5 PARTS FINE SAND.

STONE ANCHORS AND ACCESSORIES

A. DOVETAIL ANCHORS AND ANCHOR SLOTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 03300 - CAST IN PLACE CONCRETE.

B. DOWEL ANCHORS SHALL BE 3/8" DIAMETER X 6" LONG, STAINLESS STEEL DOWELS.

C. SETTING BUTTONS: LEAD OR RESILIENT PLASTIC BUTTONS, NONSTAINING TO STONE, SIZED TO SUIT JOINT THICKNESSES AND BED DEPTHS OF STONEMWORK.

EXECUTION

PREPARATION

A. CONTRACTOR SHALL EXAMINE ALL SURFACES TO RECEIVE STONEMWORK, AND CORRECT ALL CONDITIONS WHICH ARE NOT IN COMPLIANCE WITH THE REQUIREMENTS SPECIFIED HEREIN, OR WHICH ARE UNSATISFACTORY IN ANY WAY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL CONCRETE WALLS AND FOOTINGS, AND ALL SUBGRADES, BASES AND SURFACES TO RECEIVE STONEMWORK, ARE CLEAN, LEVEL AND ADEQUATELY PREPARED.

B. CLEAN ALL SURFACES OF STONES WHICH HAVE BECOME DIRTY OR STAINED PRIOR TO SETTING, TO REMOVE ALL SOIL, STAINS AND FOREIGN MATERIALS. CLEAN STONES BY THOROUGHLY SCRUBBING STONES WITH FIBER BRUSHES FOLLOWED BY A THOROUGH DRENCHING WITH CLEAR WATER. USE ONLY MILD CLEANING COMPOUNDS THAT CONTAIN NO CAUSTIC MATERIALS OR ABRASIVES.

STONE FABRICATION

A. FABRICATE STONEMWORK TO SIZES, SHAPES AND FINISHES SHOWN ON THE DRAWINGS. WHERE FIELD CUTTING OF STONES IS REQUIRED, USE POWER SAWS TO CUT STONES; FOR EXPOSED EDGES, PRODUCE EDGES WHICH ARE CUT STRAIGHT AND TRUE.

B. CUT AND DRILL SINKAGES AND HOLES IN STONES FOR ANCHORS, FASTENERS, SUPPORTS AND LIFTING DEVICES AS SHOWN ON THE DRAWINGS OR AS REQUIRED TO SET STONEMWORK SECURELY IN PLACE.

C. CLEAN ALL SAWN FACES OF STONES TO REMOVE RUST STAINS AND IRON PARTICLES.

SETTING STONEMWORK

A. BEFORE SETTING, ALL STONES SHALL BE THOROUGHLY WETTED BY DRENCHING OR SPONGING WITH WATER. SET STONES ON FULL BED OF MORTAR WITH VERTICAL JOINTS SLUSHED FULL, UNLESS OTHERWISE INDICATED.

B. PLACE SETTING BUTTONS OF ADEQUATE SIZE, IN SUFFICIENT QUANTITY, AND OF SAME THICKNESS AS INDICATED JOINT WIDTH, TO PREVENT MORTAR FROM SQUEEZING OUT AND TO MAINTAIN UNIFORM JOINT WIDTHS. HOLD BUTTONS 1/2" BACK FROM FACE OF STONES.

C. DO NOT SET HEAVY STONES UNTIL MORTAR IN COURSES BELOW HAS HARDENED SUFFICIENTLY TO RESIST BEING SQUEEZED OUT OF JOINT.

STONE VENEER

A. AT STONE VENEER OVER CONCRETE WALLS, ANCHOR STONES TO CONCRETE USING DOVETAIL ANCHORS IN ANCHOR SLOTS, AS SHOWN ON THE DRAWINGS. ANCHOR SLOTS SHALL BE INSTALLED VERTICALLY IN CONCRETE, AT SPACINGS AS SHOWN ON THE DRAWINGS. DOVETAIL ANCHORS SHALL BE POSITIONED IN SLOTS AT A MAXIMUM OF 16" INTERVALS. THERE SHALL BE A MINIMUM OF ONE ANCHOR FOR EACH THREE (3) SQUARE FEET OF STONE FACE AREA. FILL ALL ANCHOR HOLES WITH MORTAR.

B. ALL COPING STONES OR STONE CAPS SHALL HAVE DOWELS IN THE BOTTOM BED, SPACED AT A MAXIMUM OF 16" ON CENTER, OR AS SHOWN ON THE DRAWINGS.

C. SET STONEMWORK AS DESCRIBED ABOVE. BACKFILL ALL CAVITIES BEHIND STONES, OR BETWEEN STONE AND CONCRETE, WITH GROUT, AS SPECIFIED HEREIN.

STONE COPINGS

A. STONE COPINGS SHALL BE OVER NEWLY EXTENDED STONE WALL, AS SHOWN ON THE DRAWINGS. SAW CUT COPING STONES AS NECESSARY ON SITE, TO CLEAN STRAIGHT EDGES.

B. ENSURE TOPS OF STONES ARE LEVEL AND EVEN. COPINGS SHALL BE DOWELED IN PLACE AS SHOWN ON THE DRAWINGS. SET ON MORTAR SETTING BED, 1/2 INCH MINIMUM, 1 1/2 INCH MAXIMUM THICKNESS. JOINTS TO BE 1/2 INCH MAXIMUM WIDTH, WITH MORTAR TO SURFACE OF COPING. MORTAR SHALL BE COLORED TO MATCH STONE COLOR.

POINTING JOINTS

A. PREPARE MORTAR SAMPLES ON SITE, SHOWING PROPOSED COLOR OF MORTAR JOINTS FOR EACH TYPE OF STONE USED. PREPARE A MINIMUM OF THREE DIFFERENTLY COLORED SAMPLES FOR EACH TYPE OF STONE, FOR APPROVAL BY LANDSCAPE ARCHITECT. DO NOT BEGIN JOINT POINTING OPERATIONS UNTIL SAMPLE IS APPROVED.

B. PREPARE JOINTS FOR POINTING BY REMOVING ALL DUST AND MORTAR PARTICLES WITH A STIFF BRUSH OR WATER STREAM. APPLY POINTING MORTAR IN LAYERS NOT GREATER THAN 3/8". COMPACT EACH LAYER THOROUGHLY AND ALLOW TO BECOME "THUMB-PRINT" HARD BEFORE APPLYING NEXT LAYER. TOOL JOINTS TO PROVIDE A CONCAVE SURFACE, USING A ROUND JOINTER, WHEN POINTING MORTAR IS THUMB-PRINT HARD.

MASONRY (CONT.)

PROTECTION

A. COVER TOP OF WALLS, AND OTHER STONEMWORK WITH NONSTAINING WATERPROOF SHEETING AT END OF EACH DAY'S WORK. COVER PARTIALLY COMPLETED STRUCTURES WHEN WORK IS NOT IN PROGRESS. EXTEND COVERS A MINIMUM OF 24" DOWN BOTH SIDES AND HOLD SECURELY IN PLACE.

B. PREVENT STAINING OF STONE FROM MORTAR, OR OTHER SOURCES. IMMEDIATELY REMOVE SUCH MATERIALS FROM STONE WITHOUT DAMAGE TO LATTER. PROTECT BASES OF WALLS FROM RAIN-SPLASHED MUD AND MORTAR SPLATTER BY MEANS OF COVERINGS SPREAD ON GROUND AND OVER WALL SURFACE.

PAVING NOTES

CURB AND GUTTER PER MAG STANDARD DETAIL 220-1 TYPE A SHALL CONFORM TO MAG SPECIFICATION SECTIONS 301, 340, 725, AND 729 AND THE CITY OF TEMPE SUPPLEMENT. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, AND LABOR TO INSTALL THE CURB AND GUTTER PER MAG STANDARD DETAIL 220-1 TYPE A. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, AND LABOR TO INSTALL THE RIBBON CURB PER MAG STANDARD DETAIL 220-1 TYPE B. MEASUREMENT AND PAYMENT WILL BE AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT OF TYPE A CURB AND GUTTER, TRANSITIONS, AND TYPE B RIBBON CURB AND SHALL BE FULL COMPENSATION FOR THE ITEM COMPLETE IN PLACE.

REMOVAL OF EXISTING IMPROVEMENTS SUCH AS SIDEWALK AND OTHER ITEMS NECESSARY FOR THE IMPROVEMENTS SHALL CONFORM TO THE PROVISIONS OF SECTION 350 OF THE MAG SPECIFICATIONS. BACKFILL AND COMPACTION OF ALL EXCAVATED AREAS SHALL BE TO THE DENSITIES AS PRESCRIBED IN SECTION 301 OF THE MAG SPECIFICATIONS. ALL SURPLUS MATERIALS SHALL BE IMMEDIATELY HAULED FROM THE JOB SITE AND DISPOSED IN ACCORDANCE WITH SECTION 205 OF THE MAG SPECIFICATIONS.

REMOVAL OF EXISTING IMPROVEMENTS SUCH AS CURB AND GUTTER AND OTHER ITEMS NECESSARY FOR THE IMPROVEMENTS SHALL CONFORM TO THE PROVISIONS OF SECTION 350 OF THE MAG SPECIFICATIONS. BACKFILL AND COMPACTION OF ALL EXCAVATED AREAS SHALL BE TO THE DENSITIES AS PRESCRIBED IN SECTION 301 OF THE MAG SPECIFICATIONS. ALL SURPLUS MATERIALS SHALL BE IMMEDIATELY HAULED FROM THE JOB SITE AND DISPOSED IN ACCORDANCE WITH SECTION 205 OF THE MAG SPECIFICATIONS.

ALL PROPOSED PAVING AND SIDEWALK COMPONENTS OF THESE PLANS SHALL BE INSTALLED PAR M.A.G. UNIFORM STANDARD DETAILS AND SPECIFICATIONS, UNLESS OTHERWISE INDICATED IN THESE PLANS.

TRAFFIC CONTROL SHALL BE REGULATED IN ACCORDANCE WITH THE MAG SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

ELECTRICAL AND IRRIGATION

ALL ELECTRICAL COMPONENTS OF THESE PLANS SHALL BE INSTALLED PER THE M.A.G. UNIFORM STANDARD DETAILS AND SPECIFICATIONS, UNLESS OTHERWISE INDICATED IN THESE PLANS.

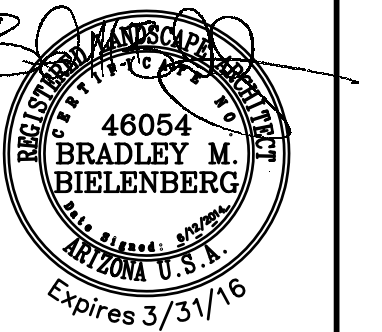
ALL IRRIGATION COMPONENTS OF THESE PLANS SHALL BE INSTALLED PER THE M.A.G. UNIFORM STANDARD DETAILS AND SPECIFICATIONS, UNLESS OTHERWISE INDICATED IN THESE PLANS.

GRADING AND STORMDRAIN

ALL STORMDRAIN COMPONENTS OF THIS PROJECT SHALL BE INSTALLED PER M.A.G. UNIFORM STANDARD DETAILS AND SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED IN THESE PLANS.

FOURTH STREET GATEWAY PLAZA
FLAGSTAFF, ARIZONA

SPECIAL PROVISIONS



1'-0" = 1/8"



Project No. 17165

8.5

Drawing No. 13 of 15

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