

Board Office Use: Legislative File Info.	
File ID Number	13-0804
Committee	Facilities
Introduction Date	5-8-2013
Enactment Number	13-0795
Enactment Date	5/8/13 OR



OAKLAND UNIFIED  
SCHOOL DISTRICT

Memo

To Board of Education

From Tony Smith, Ph.D., Superintendent  
Timothy White, Associate Superintendent, Facilities Planning and Management

Board Meeting Date May 8, 2013

Subject Division of Facilities Planning and Management P.O's. Less than \$50,000.00

Action Requested: Ratification by the Board of Education of the attached contracts for the Division of Facilities Planning and Management.

Legistar #	Name	Amount	Funding Source	P.O.	Project	Date	City
13-0796	Apple Inc.	\$1,974.009	Measure A	P.O.	Facilities	12-4-12 thru 12-4-13	Cupertino
13-0797	Chussy International	\$620.20	Measure A	P.O.	Facilities	10-10-12 thru 11-10-12	Oakland
13-0798	Chussy International	\$350.00	Measure A	P.O.	Facilities	12-7-12 thru 12-7-12	Oakland
13-0799	Comtel Systems	\$7,784.00	County School Facilities Fund	P.O.	La Escuelita Educational Center	11-7-12 thru 3-31-13	Sunnyvale
13-0804	Dell	\$3,887.02	Measure A	P.O.	Facilities	11-29-12 thru 12-28-12	Round Rock, TX
13-0805	DFS	\$17,025.00	Developer Fee	P.O.	Facilities	12-1-12 thru 1-31-13	Foster City
13-0806	Goodman Manufacturing Corp.	\$190,100.00	Special Funding	P.O.	Stonehurst 3 Multizone HVAC Units	11-4-12 thru 1-5-13	Roseville, CA
13-0807	Graninger	\$156.71	Measure A	P.O.	Facilities	10-16-12 thru 11-15-12	San Leandro
13-0808	Humanized Productions	\$15,000.00	Measure B	P.O.	Facilities	10-1-2012 thru 6-30-13	Oakland
13-0809	Integrity Painting Company	\$12,718.00	Special Funding	P.O.	Facilities	7-13-12 thru 6-30-13	Oakland
13-0810	Marketing VUE	\$1,320.84	Special Funding	P.O.	Facilities	10-31-12 thru 11-30-12	Wayland, MA
13-0811	PG&E	\$1,500.00	Measure B	P.O.	Arroyo Viejo	10-22-12 thru 12-31-13	Sacramento
13-0812	Ricoh USA, Inc.	\$4,000.00	Measure A	P.O.	Facilities	6-30-12 thru 6-30-13	Malvern, PA
13-0813	R&S Overhead Garage Door, Inc.	\$14,124.00	County School Facilities Fund	P.O.	Oakland Tech Seismic Retrofit	10-16-12 thru 12-31-13	San Leandro



OAKLAND UNIFIED SCHOOL DISTRICT

13-0814	RMT Landscape Contractors, Inc.	\$25,080.00	Measure A	P.O.	Claremont Landscaping	10-16-12 thru 12-31-13	Oakland
13-0815	Syska Hennessy Group	\$6,880.00	Measure B	P.O.	Highland New Classroom	10-22-12 thru 12-31-13	San Francisco
13-0816	Syska Hennessy Group	\$3,755.00	Developer Fee	P.O.	La Escuelita Educational Center	11-15-12 thru 1-15-13	San Francisco

Discussion:

Among the key purposes of the District's Facilities Master Plan is to provide an academic environment for the Oakland community that will give every student, educator, and community member using our facilities the best possible opportunity for learning.

Through implementation of the Facilities Master Plan, the District intends to improve the District's facilities in terms of structural integrity, safety, reliability of operating (mechanical) systems, access to modern resources, number and type of appropriate laboratories and specialized instruction rooms, opportunities for physical education, and attractiveness, such that the Oakland Public Schools are second to none. Operation of the District schools under the planned approach is intended to ensure safety, cleanliness, and orderliness for all individuals participating in the learning process.

The basic facility needs of students such as proper lighting, functional roofs, noise control and well maintained buildings, not only convey the message that we value our students and teachers but may foster a sense of school pride and community ownership which may improve attitudes towards learning. The implementation of the Facilities Master Plan is our first step in that direction.

Fiscal Impact:

Various

Recommendation:

The Board of Education is requested to approve the Facilities Planning and Management contracts and Purchase Order for the OUSD school sites.



**OAKLAND UNIFIED SCHOOL DISTRICT**  
**Department of Facilities Planning and Management**  
**AGREEMENT REQUEST FORM**

1001404

DATE SUBMITTED: 9/21/2012  
 SUBMITTED BY: Rocky Borton

REVIEWED BY: \_\_\_\_\_

**SECTION I. TYPE OF AGREEMENT (PLEASE CHECK ONE BOX)**

Bond Program Director

1.) A/E (Architect and Engineers) Contract	<input type="checkbox"/>	5.) "Small" (under \$15,000.00) Construction Contract	<input type="checkbox"/>
2.) IOR (Inspector of Record Contract)	<input type="checkbox"/>	6.) Resolution Awarding Bid and Construction Contract	<input type="checkbox"/>
3.) Agreement for Professional Services - Testing Etc.	<input type="checkbox"/>	7.) Change Order	<input type="checkbox"/>
4.) Amendment to Agreement for Professional Services	<input type="checkbox"/>	8.) Purchase Order	<input checked="" type="checkbox"/>

Vendor Number: \_\_\_\_\_  
 Fiscal Year: 2012-2013  
 PO: Under \$50K:   
 Date Processed: 10-24-2012  
 To: MB 10/24 To DR: \_\_\_\_\_

\_\_\_\_\_  
 Timothy E. White  
 Asst. Superintendent

\_\_\_\_\_  
 Tadashi Nakadegawa  
 Facilities Director

Date \_\_\_\_\_ Date \_\_\_\_\_

**SECTION II. LOCAL BUSINESS PARTICIPATION PERCENTAGE:**

Local Business	Small Local Business	Small Local Resident Business	Total Percentage
100.00%		0.00%	100.00%

**SECTION III. AGREEMENT INFORMATION:**

Project Name:	Claremont Claremont Landscaping	Project No:	07088
Vendor Name:	RMT Landscape Contractors, Inc.	Vendor Contact:	Rick DeHerrera
Vendor Phone Number:	(510) 568-3208	Vendor Mailing Address:	7699 Edgewater Drive Oakland, CA 94621
Agreement Start and Stop Dates:	Start: 10/16/2012 Stop: 12/31/2013	Amounts:	Current Contract Amount: \$0.00 Not to Exceed Amount: \$25,080.00 Revised Contract Amount: \$25,080.00
Has Work Started?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes give an explanation:</i>	Has Work Been Completed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date: _____
Certificate of Insurance Attached	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date provided:	_____

2019303891-  
6274

5/9/13

**For Construction Contracts >\$15,000, please provide or attach the following:**

- 1) Number of Bids Received, List of Bidders and Amounts (Bid Form) (Attach Bid Documents)
- 2) Date(s) of Bid Advertisement -
- 3) Date of Bid Opening -
- 4) Name of Architect -
- 5) Liquidated damages per day - \$

David Kakishima  
 President, Board of Education

Please attach separately along with Vendor's proposal.

**Scope of Work:** (Needed to prepare Executive Summary)

Variety of items for Phase 2 landscaping, including sump pump, new trees, and pavers. This scope was not included in the original landscape project.

**Discussion Info:** (Needed to prepare Executive Summary) (Provide detailed background - Why is contract required and what is the benefit to students) - Add additional pages as needed

Per site request, we have compiled a list of additional scope not in the original contract.

Introduction Date: 5-8-2013  
 Enactment No.: 13-0795  
 Funding Source: 5/8/13  
 of \_\_\_\_\_

Budget Number: \_\_\_\_\_

**RECEIVED**  
10-24-2012



# RMT LANDSCAPE CONTRACTORS, INC.

7699 Edgewater Drive  
Oakland, CA 94621

Contractor's License No. 372869

## PROPOSAL & CONTRACT

Name:	SGI Construction Management	Date:	09/21/12
Attention:	Rocky Borton	Phone:	(510) 535-7076
Address:	360 22nd Street Suite 620 Oakland, Ca.	E-mail:	<a href="mailto:rborton@sgicm.com">rborton@sgicm.com</a>
Job Location:	Claremont Middle School- Oakland, Ca.		

Work to be performed as follows:

1) provide and install 1 -1/2hp, 5- gpm pump and bolt down to grate	\$2,500.00
2) grind tree stumps on College	\$865.00
3) install 4- (15) Western Red buds	\$1,000.00
4) re stain curb in big courtyard	\$750.00
5) remove existing pavers and install permeable pavers @ walkway in front of community garded	\$5,975.00
6) patch concrete @ pavers in big courtyard	\$680.00
7) stake (6) redwoods	\$600.00
8) install 6- (5) shrubs @ gate	\$180.00
9) paint controller enclosure	\$50.00
10) install 3- Dumoor benches	\$6,500.00
11) add 50- (1) plants @bioswale area	\$1,000.00
12) remove 1- Liquidambar & stump on College Ave.	\$1,850.00
13) supply & install 5- (15) gal. Wester Red Buds on Miles Ave.	\$1,250.00
14) add 3- (15) gal Western Red Buds on College to replace Liquidambar	\$750.00
15) repair remote control valve and sprinkler head on College	\$500.00
16) drill and poison 3- stumps	\$450.00
17) install 6- (5) gal raphiolepis @ front gate	\$180.00
<b>TOTAL:</b>	<b>\$25,080.00</b>

We agree to supply labor and materials in order to execute the work as outlined above in a workmanlike manner for the sum of \$ 25080.00 which the owner agrees to pay in accordance with the terms of payment set forth.

TERMS OF PAYMENT:  
NET: Payment on Completion

RMT LANDSCAPE CONTRACTORS, INC.

By: \_\_\_\_\_

Title: President

Accepted by: \_\_\_\_\_

Date: \_\_\_\_\_

Owner's Signature: \_\_\_\_\_



WALK w/ RMT 9.12.12

### Claremont Landscape Ph. 2 Bid Scope

1. Provide and install sump pump at DI in garden area-, this was missed on the drawings.
2. 1½ HP w/5 gpm *SPEC - ND. KEY - ND. ELEC CONDUIT*
3. Bolt down to grate at garden to concrete area
4. 6. Grind tree stumps and roots at bldg. on college, roots are not ground down properly and saplings continue to grow.
5. add (4-5) red buds in same area, this is not contract. This is a site request.
6. Re-stain curb at big courtyard, sack and patch has lime seeping through.
7. Change out pavers to permeable pavers at walkway in front of Community Garden, follow paver's specification provided. There is an (E) ponding area, can't fix with elevation change:  
*NIC 40'x6'*
8. Give pavers to site for parents to install (N) path
9. Patch concrete walkway at pavers in big courtyard, small patch from demo work.
10. Check redwoods for vertical
11. Replant plants in front of gate.
12. Paint cage over controller and block wall caps.

**Wish List:**

*ND. SPEC 61-978-6PL*

Price to install (N) benches (between rocks) at b-ball area at Bio swale, replace plants and sprinklers at bio swale

Price to remove tree on College, this would include stump grinding & add irrigation (3)

Price (5) trees along Miles ave. *- RB, BUDS 15 GAL.*

Replace missing half wine barrels (6)

*VALVE*

**Eco-Priora™**

**Concrete Paver Environmental Systems**

IMPROVING YOUR LANDSCAPE™

**PRIORA®**





# Eco-Priora™

Pavestone Eco-Priora™ is the sustainable solution for permeable pavements. Eco-Priora™ is produced in a 120mm x 240mm rectangular module that is 80mm in thickness with a patented interlocking joint and a micro-chamfered top edge profile. This ingenuity is singular to the Pavestone Eco-Priora™ product and insures optimum pavement performance unequaled in the permeable paver industry. The unique Eco-Priora™ joint profile allows surface water to infiltrate into the pavement and its sub-layers. With initial permeability average flow rates of over 100 inches per hour, the Eco-Priora™ product, even with a clogging factor, will still meet the majority of current storm water management plans (SWMP). The structural interlocking capability is achieved by the paving unit having interlocking joints with a minimum of two vertically aligned horizontal interlocking spacer bars on each of its sides. These spacer bars interlock throughout the depth of the block and nest adjacently with neighboring paving units. This interlocking function resists lateral and vertical displacement when the unit is exposed to load. The dynamics of pavement stress are better distributed providing a structurally superior permeable paving system.

The micro-chamfered top edge profile produces a horizontal edge to edge dimension that is nominally 7mm including installation gapping. This small joint complies dimensionally with current ADA requirements for walking surfaces with spaces no greater than 1/2 inch. This narrow jointed surface diminishes vibration for wheelchairs and shopping carts when compared to all other permeable paving products. Eco-Priora™ can assist in meeting current EPA storm water regulations and LEED certification. The Eco-Priora™ product best achieves the balance of aesthetic segmental paving and the function of permeable pavement.

## APPLICATIONS

Parking Lots • Driveways • Patios • Entrance Areas • Sidewalks  
Terraces • Garden Pathways • Pool Decks • Pedestrian Malls • Roof Gardens • Streets

## COMPOSITION AND MANUFACTURE

Eco-Priora™ is available in one size. Height = 80mm. Eco-Priora™ is made from a "no slump" concrete mix made under extreme pressure and high frequency vibrations. Eco-Priora™ has a compressive strength greater than 8000 psi, a water absorption maximum of 5% and will meet or exceed ASTM C-936. Note: Requires modification to the ASTM C 140 - Paver Annex A4 - "The test specimen shall be 60 ± 3 mm thick and if necessary, during a test specimen size having a Height/Thickness (width) [H/T] aspect ratio of 0.6 ± 0.1

## INSTALLATION

- Excavate unsuitable, unstable or unconsolidated subgrade material. Compact the area, which has been cleared as per the engineer's of record (EOR) requirements. Backfill and level with open graded aggregates as per the EOR's structural and hydraulic design.
- Place bedding course of hard and angular material conforming to the grading requirements of ASTM No. 8 or No. 9 to a uniform minimum depth of 1 1/2" (38mm) screeded to the grade and profile required.
- Install Eco-Priora™ with joints approximately 1/4". (7mm).
- Where required, cut pave stones with an approved cutting device to fit accurately, neatly and without damaged edges.
- Tamp pave stones with a plate compactor, uniformly level, true to grade and free of movement.
- Spread a thin layer of hard angular material conforming to the grading requirements of ASTM No. 8 or No. 9 aggregate over entire paving area.
- Make one more pass with plate compactor to nest the aggregate and fill joints to the top.
- Sweep and remove surplus joint material.  
Complete installation & specification details are available by contacting your Pavestone Sales Representative.

Note: Permeable pavements require both civil and hydraulic engineering. All final pavements design shall be approved by a licensed engineer familiar with local site conditions, building codes and storm water management plans.



**PAVESTONE**  
Improving Your Landscape™  
www.pavestone.com

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## PRODUCT INFORMATION

Eco-Priora™ is available in one size. Height = 80mm

### Eco-Priora™

Dimensions: 4 3/4" W x 9 7/16" L x 3 1/8" H

Wt./Stone: 11.5 lbs.

Stones/Pallet: 280

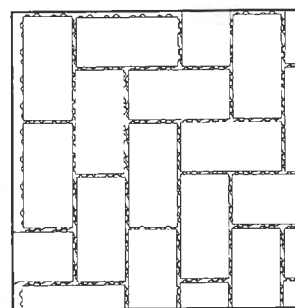
Approx. Wt./Pallet: 3,255 lbs.

Sq. Ft./Pallet: 88

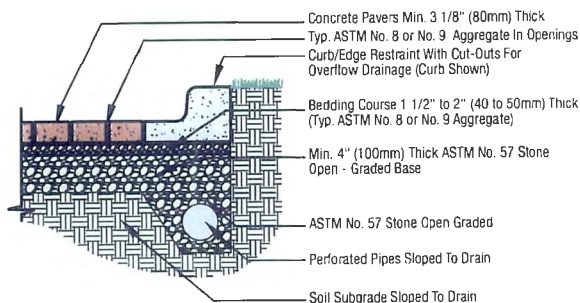
Product Number: 699



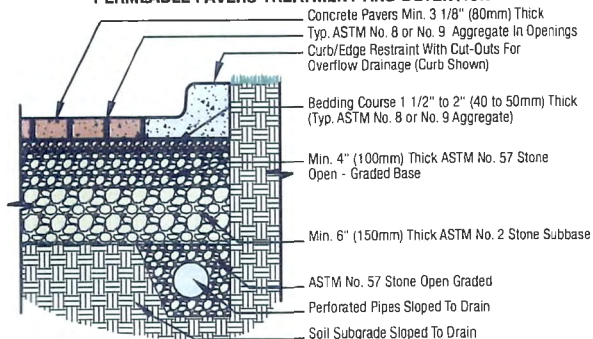
## INSTALLATION PATTERN



## PERMEABLE PAVERS TREATMENT



## PERMEABLE PAVERS TREATMENT AND DETENTION



- Atlanta, GA: (770) 306-9591
- Austin/San Antonio, TX: (512) 558-7283
- Boston, MA: (508) 947-6001
- Cartersville, GA: (770) 607-3345
- Charlotte, NC: (704) 588-4747
- Cincinnati, OH: (513) 474-3783
- Colorado Springs, CO: (719) 322-0101
- Dallas/Ft. Worth, TX: (817) 481-5802
- Denver, CO: (303) 287-3700
- Hagerstown, MD: (240) 420-3780

- Houston, TX: (281) 391-7283
- Kansas City, MO: (816) 524-9900
- Las Vegas, NV: (702) 221-2700
- New Orleans, LA: (985) 882-9111
- Phoenix, AZ: (602) 257-4588
- St. Louis, MO: (573) 332-8312
- Cape Girardeau, MO: (573) 332-8312
- Sacramento/Winters, CA: (530) 795-4400

Member of ASLA and NCMA

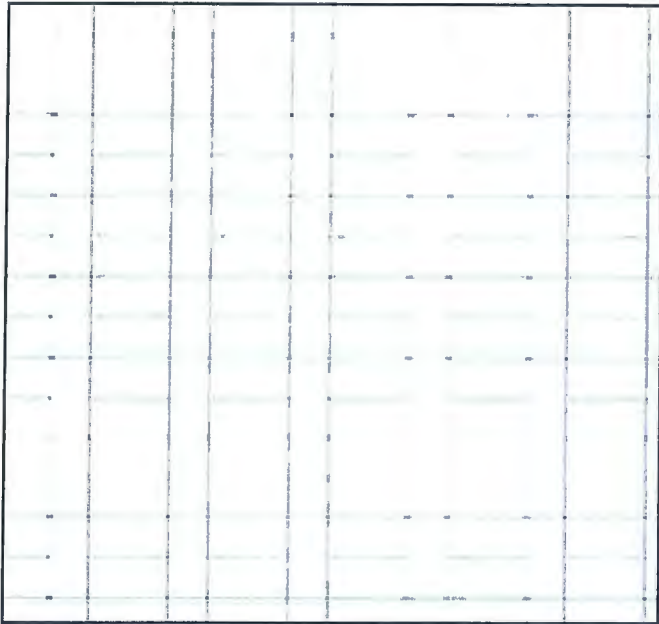


ICPI Charter Member

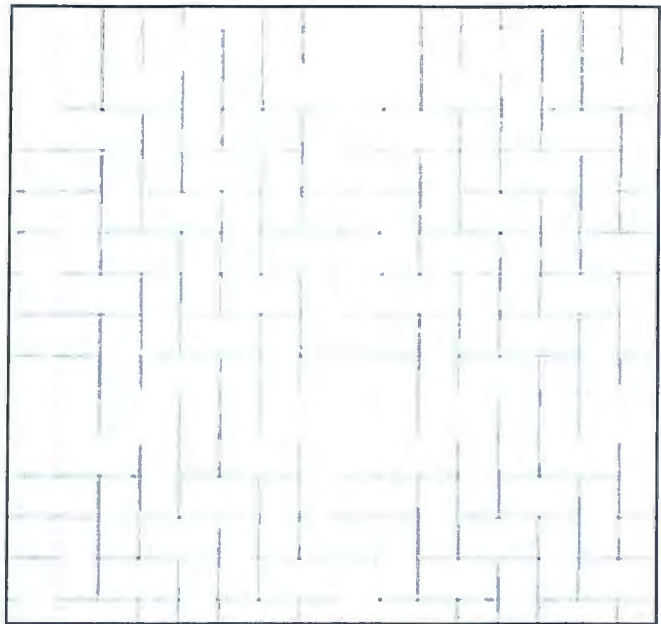
World Wide

Pavers

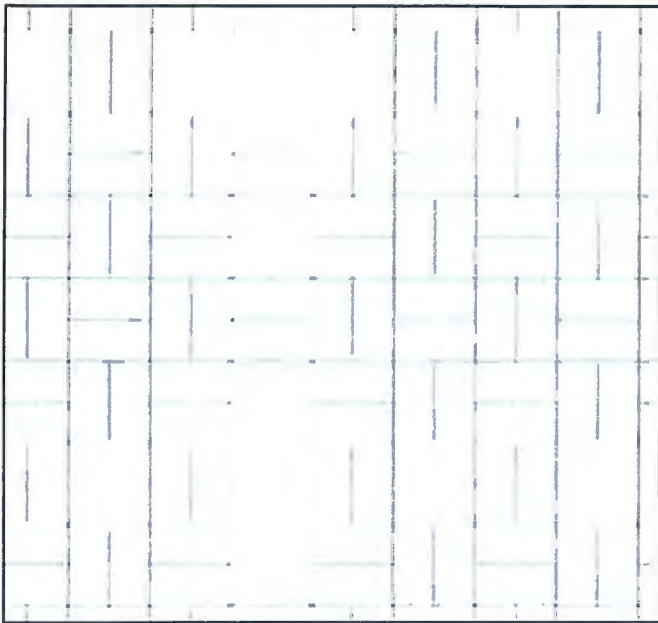
## Eco-Priora™ 699 Installation Patterns



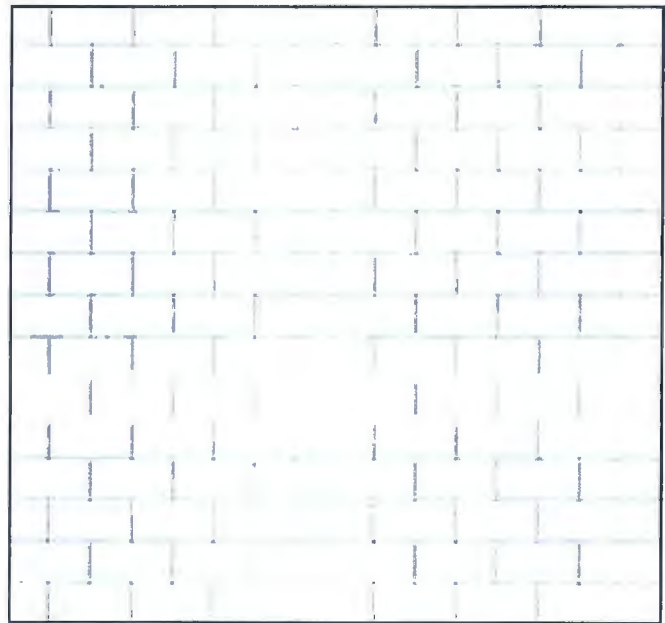
**BASKETWEAVE (1)**



**HERRINGBONE (2)**



**PARQUET (5)**

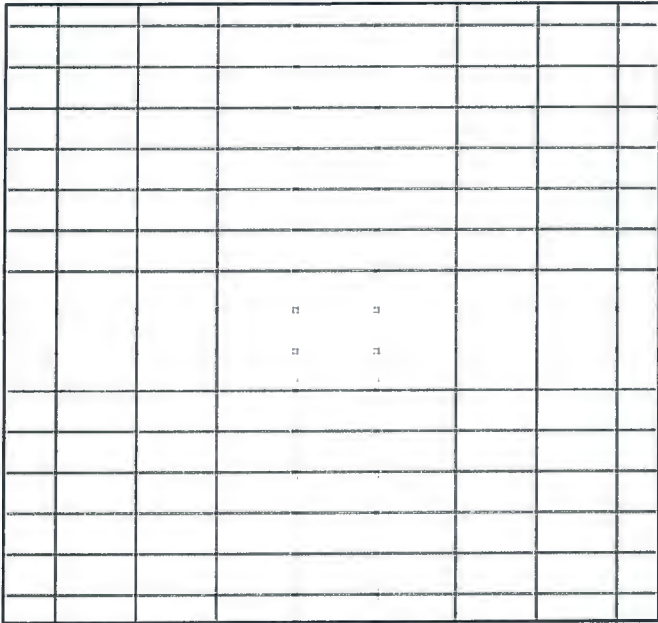


**RUNNER BOND (7)**

**PANGSTONE®**  
CREATING BEAUTIFUL LANDSCAPES™



## Eco-Priora™ 699 Installation Patterns



STACK (8)

**PANGSTONE®**  
CREATING BEAUTIFUL LANDSCAPES™

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## SECTION 32 14 43

### POROUS PAVING

#### PERMEABLE INTERLOCKING CONCRETE PAVEMENT

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#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes
  - 1. Permeable concrete pavers.
  - 2. Crushed stone bedding material.
  - 3. Open-graded subbase aggregate.
  - 4. Open-graded base aggregate.
  - 5. Bedding and joint/opening filler materials.
  - 6. Edge restraints.
  - 7. Geotextiles.
  
- B. Related Sections
  - 1. Section 03 30 00: Cast-in-Place Concrete – Edge Restraints.
  - 2. Section 32 11 00: Aggregate base.
  - 3. Section on PVC Drainage pipes
  - 4. Section on Impermeable liner.
  - 5. Section Drainage pipes and appurtenances.
  - 6. Section 31 00 00 Earthworks/excavation/soil compaction.

Contractor shall be responsible for furnishing and installing permeable pavers, base, drainage, perimeter conditions, junction with other materials, expansion and control joints, paver color, installation and setting details shall be per details and plans. Unit Pavers shall be laid out in a staggered bond layout.

##### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
  - 1. C 67, Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
  - 2. C 131, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
  - 3. C 136, Method for Sieve Analysis for Fine and Coarse Aggregate.
  - 4. C 140, Test Methods for Sampling and Testing Brick and Structural Clay Tile, Section 8 – Freezing and Thawing.
  - 5. D 448, Standard Classification for Sizes of Aggregate for Road and Bridge Construction.
  - 6. C 936, Standard Specification for Solid Interlocking Concrete Pavers.
  - 7. C 979, Specification for Pigments for Integrally Colored Concrete.
  
  - 8. D 698, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 5.5-lb (2.49 kg) Rammer and 12 in. (305 mm) drop.
  - 9. D 1557, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 10-lb (4.54 kg) Rammer and 18 in. (457 mm) drop.



10. D 1883, Test Method for California Bearing Ratio of Laboratory-Compacted Soils.
  11. D 4254, Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
- C. Interlocking Concrete Pavement Institute (ICPI)
1. Permeable Interlocking Concrete Pavement manual.

### 1.03 SUBMITTALS

- A. In accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Contractor shall submit the following to the Landscape Architect prior to ordering:
1. Manufacturer's product catalog sheets with specifications.
  2. [Four] representative full-size samples of each paver type, thickness, color, and finish. Submit samples indicating the range of color expected in the finished installation.
  3. Accepted samples become the standard of acceptance for the work of this Section.
  4. Laboratory test reports certifying compliance of the concrete pavers with ASTM C 936.
  5. Manufacturer's material safety data sheets for the safe handling of the specified materials and products.
  6. Manufacturer's written quality control procedures including representative samples of production record keeping that ensure conformance of paving products to the project specifications.
  7. Minimum 3 lb (2 kg) samples of subbase, base and bedding aggregate materials.
  8. Sieve analysis of aggregates for subbase, base and bedding materials per ASTM C 136.
- C. Paver Installation Subcontractor:
1. A copy of Subcontractor's current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.
  2. Job references from projects of a similar size and complexity. Provide Owner/Client/General Contractor names, postal address, phone, fax, and email address.
  3. Written Method Statement and Quality Control Plan that describes material staging and flow, paving direction and installation procedures, including representative reporting forms that ensure conformance to the project specifications.

### 1.04 QUALITY ASSURANCE

- A. Paver Installation Subcontractor Qualifications:
1. Utilize an installer having successfully completed concrete paver installation similar in design, material and extent indicated on this project.
  2. Utilize an installer holding a current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.
- B.. Review the manufacturers' quality control plan, paver installation subcontractor's Method Statement and Quality Control Plan with pre-construction meeting of representatives from the manufacturer, paver installation subcontractor, general contractor, engineer and/or owner's representative.

- C. Mock-Ups:
  - 1. Install a 10 ft x 10 ft (3 x 3 m) paver area.
  - 2. Use this area to determine surcharge of the bedding layer, joint sizes, lines, laying pattern(s), color(s) and texture of the job.
  - 3. This area will be used as the standard by which the work will be judged.
  - 4. Subject to acceptance by owner, mock-up may be retained as part of finished work.
  - 5. If mock-up is not retained, remove and properly dispose of mock-up.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged container packaging with identification tags intact on each paver bundle.
  - 1. Coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.
  - 2. Deliver concrete pavers to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by forklift or clamp lift.
  - 3. Unload pavers at job site in such a manner that no damage occurs to the product or existing construction
- D. Storage and Protection: Store materials in protected area such that they are kept free from mud, dirt, and other foreign materials.

#### 1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not install in rain.

#### 1.07 MAINTENANCE

- A. Extra materials: Provide .5% additional material for use by owner for maintenance and repair.
- B. Pavers shall be from the same production run as installed materials.

#### PART 2 PRODUCTS

- A. Manufacturer: **PAVESTONE**
  - 1. Contact: **530-795-4400**
- B. Permeable Interlocking Concrete Paver Units:
  - 1. Paver Type: Eco-Priora™
    - a. Material Standard: Comply with ASTM C 936.
    - b. Paver Style: Eco-Priora™ 4 3/4" X 9 1/2" X 3 1/8"
    - c. Color: Old Town Blend
    - d. Color Pigment Material Standard: Comply with ASTM C 979.

#### 2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: "Approved Equal only as determined by the Landscape Architect".

#### 2.03 CRUSHED STONE FILLER, BEDDING, BASE AND SUBBASE

- A. Crushed stone with 90% fractured faces, LA Abrasion < 40 per ASTM C 131, minimum CBR of 80% per ASTM D 1883.
- B. Do not use rounded river gravel.
- C. All stone materials shall be washed with less than 1% passing the No. 200 sieve. Non-Plasti and free from deleterious or foreign matter
- D. Joint/opening filler, bedding, base and subbase: conforming to ASTM D 448 gradation as shown in Tables 1, 2 and 3 below:



Note: No. 89 or finer gradation may be used to fill permeable pavers with narrow joints.

Table 1 ASTM No. 8 Grading Requirements Bedding and Joint/Opening Filler

	Sieve Size	Percent Passing
1.	12.5 mm (1/2 in.)	100
2.	9.5 mm (3/8 in.)	85 to 100
	4.75 mm (No. 4)	10 to 30
	2.36 mm (No. 8)	0 to 10
	1.16 mm (No. 16)	0 to 5

Table 2 ASTM No. 57 Base Grading Requirements

	Sieve Size	Percent Passing
1.	37.5 mm (1 1/2 in.)	100
2.	25 mm (1 in.)	95 to 100
3.	12.5 mm (1/2 in.)	25 to 60
4.	9.5 mm (3/8 in.)	0 to 15
5.	4.75 mm (No. 4)	0 to 10
6.	2.36 mm (No. 8)	0 to 5

Table 3 Grading Requirement for ASTM No. 2 Subbase Sieve Size Percent Passing  
 75 mm (3 in.) 100  
 63 mm (2 1/2 in.) 90 to 100  
 50 mm (2 in.) 35 to 70  
 37.5 mm (1 1/2 in.) 0 to 15  
 19 mm (3/4 in.) 0 to 5

E. Gradation criteria for the bedding and base:

Note:  $D_x$  is the particle size at which  $x$  percent of the particles are finer. For example,  $D_{15}$  is the particle size of the aggregate for which 15% of the particles are smaller and 85% are larger.

1.  $D_{15}$  base stone /  $D_{50}$  bedding stone < 5.
2.  $D_{50}$  base stone /  $D_{50}$  bedding stone > 2.

F. Micro-Deval Degradation of less than 8%. Soft Aggregates such as limestone can not be used as they will lead to total system failure.

## 2.04 ACCESSORIES

A. Provide accessory materials as follows:

1. Edge Restraints
  - a. Concrete Cast-in-Place.
2. Geotextile Fabric:
  - a. Material Type and Description: Per Geotechnical Report.
  - b. Material Standard: Per Geotechnical Report.
  - c. Manufacturer: Per Geotechnical Report.

## PART 3 EXECUTION

### 3.01 ACCEPTABLE INSTALLERS

A. Installers with 5 years or more installing similar paving systems.

### 3.02 EXAMINATION

A. Acceptance of Site Verification of Conditions:

1. General Contractor shall inspect, accept and certify in writing to the paver installation subcontractor that site conditions meet specifications for the following items prior to installation of interlocking concrete pavers.
  - a. Subgrade shall be placed as indicated on the plans and compacted to a minimum 95% density and elevations conform to specified requirements or as recommended by Engineer.
  - b. Contractor shall provide written density test results for soil subgrade to the Owner, General Contractor and paver installation subcontractor.
  - c. Verify location, type, and elevations of edge restraints, utility structures, and drainage pipes and inlets.
2. Do not proceed with installation of bedding and permeable concrete pavers until subgrade soil conditions are installed properly.

### 3.03 PREPARATION

- A. Verify that the soil subgrade is free from standing water.
- B. Stockpile joint/opening filler, base and subbase materials such that they are free from standing water, uniformly graded, free of any organic material or sediment, debris, and ready for placement.
- C. Edge Restraint Preparation:
  1. Install concealed edge restraints per the drawings and at the elevations required to provide proper elevation of Finished Grade of Pavers.

### 3.04 INSTALLATION

*Note: The minimum slope of the soil subgrade should be 0.5%. Actual slope of soil subgrade will depend on the drainage design and exfiltration type. All drainpipes, observation wells, overflow pipes, geotextile (if applicable) and impermeable liner (if applicable) should be in place per the drawings prior to or during placement of the subbase and base, depending on their location. Care must be taken not to damage drainpipes during compaction and paving. No mud or sediment can be left on the base or bedding aggregates. If they are contaminated, they must be removed and replaced with clean materials.*

- A. General
  1. Any excess thickness of soil applied over the excavated soil subgrade to trap sediment from adjacent construction activities shall be removed before application of the Geotextile per Geotechnical Report and subbase materials.
  2. Keep area where pavement is to be constructed free from sediment during entire job. Geotextiles per Geotechnical Report Base and bedding materials contaminated with sediment shall be removed and replaced with clean materials.
  3. Do not damage drainpipes, overflow pipes, observation wells, or any inlets and other drainage appurtenances during installation. Report any damage immediately to the project engineer.
- B. Geotextiles
  1. Place on bottom and sides of soil subgrade. Secure in place to prevent wrinkling from vehicle tires and tracks.
  2. Overlap a minimum of [0.3 in (12 in.)] [0.6 m (24 in.)] in the direction of drainage.
- C. Open-graded subbase and base
  1. Moisten, spread and compact the No. 2 subbase in 4 to 6 in. (100 to 150 mm) lifts [without wrinkling or folding the geotextile. Place subbase to protect geotextile from wrinkling under equipment tires and tracks.]



2. For each lift, make at least two passes in the vibratory mode then at least two in the static mode with a minimum 10 t (10 T) vibratory roller until there is no visible movement of the No. 2 stone. Do not crush aggregate with the roller.
3. The surface tolerance of the compacted No. 2 subbase shall be  $\pm 2 \frac{1}{2}$  in. ( $\pm 65$ mm) over a 10 ft (3 m) straightedge.
4. Moisten, spread and compact No. 57 base in 100 mm (4 in.) lift over the compacted No. 2 subbase with a minimum 10 t (10 T) vibratory roller until there is no visible movement of the No. 57 stone. Do not crush aggregate with the roller.
5. The surface tolerance of the compacted No. 57 base should not deviate more than  $\pm 1$  in. (25 mm) over a 10 ft (3 m) straightedge.

*Note: In-place density of the base and subbase may be checked per ASTM D 4254. Compacted density should be 95% of the laboratory index density established for the subbase and base stone.*

D. Bedding layer

1. Moisten, spread and screed the No. 8 stone bedding material.
2. Fill voids left by removed screed rails with No. 8 stone.
3. The surface tolerance of the screeded No. 8 bedding layer shall be  $\pm 3/8$  in. (10 mm) over a 10 ft (3 m) straightedge.
4. Do not subject screeded bedding material to any pedestrian or vehicular traffic before paving unit installation begins.

E. Permeable interlocking concrete pavers and joint/opening fill material

1. Lay the pavers [paving slabs] in the pattern(s) and joint widths shown on the drawings. Maintain straight pattern lines.
2. Fill gaps at the edges of the paved area with cut units. Cut pavers subject to tire traffic shall be no smaller than 1/3 of a whole unit.
3. Cut pavers and place along the edges with a [double-bladed splitter or] masonry saw.
4. Fill the openings and joints with [No. 8] stone.

*Note: Some paver joint widths may be narrow and not accept most of the No. 8 stone. Use joint material that will fill joints such as washed ASTM No. 9 or No. 10 stone. These smaller stone sizes are recommended for filling joints in pedestrian applications that use 2 3/8 in. (60 mm) thick pavers.*

5. Remove excess aggregate on the surface by sweeping pavers clean.
6. Compact and seat the pavers into the bedding material using a low-amplitude, 7590 Hz plate compactor capable of at least 4,000 lbs (18 kN) centrifugal compaction force. This will require at least two passes with the plate compactor.
7. Do not compact within 6 ft (2 m) of the unrestrained edges of the paving units.
8. Apply additional aggregate to the openings and joints, filling them completely. Remove excess aggregate by sweeping then compact the pavers. This will require at least two passes with the plate compactor.
9. All pavers within 6 ft (2 m) of the laying face must be left fully compacted at the completion of each day.
10. The final surface tolerance of compacted pavers shall not deviate more than  $\pm 3/8$  (10 mm) under a 10 ft (3 m) long straightedge.
11. The surface elevation of pavers shall be 1/8 to 1/4 in. (3 to 6 mm) above adjacent drainage inlets, concrete collars or channels.

### 3.05 FIELD QUALITY CONTROL

- A. After sweeping the surface clean, check final elevations for conformance to the drawings.
- B. Lippage: No greater than 1/8 in. (3 mm) difference in height between adjacent pavers.

*Note: The minimum slope of the finished pavement surface should be 1%. The surface of the*

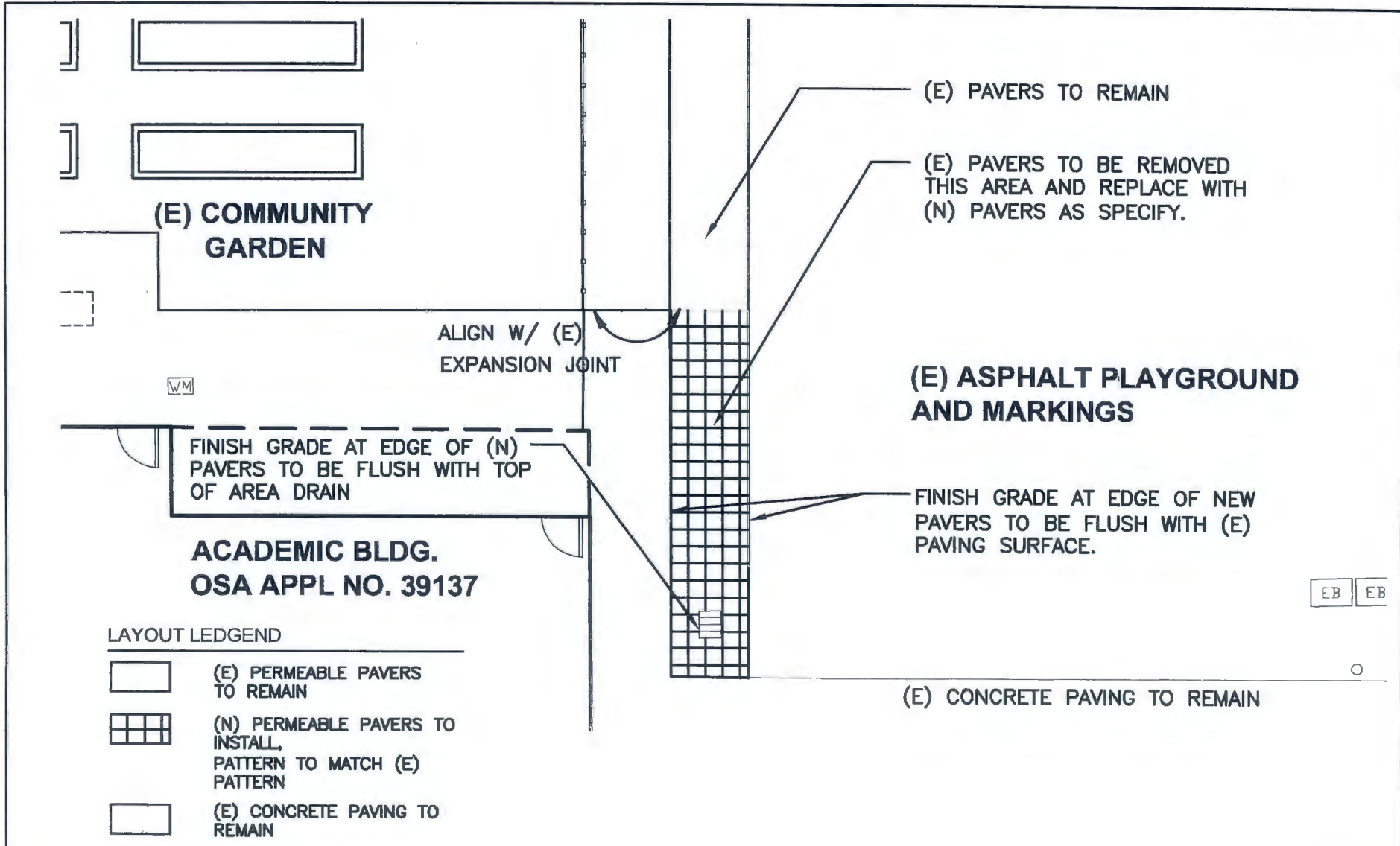
*pavers may be 1/8 to 1/4 in. (3 to 6 mm.) above the final elevations after compaction. This helps compensate for possible minor settling normal to pavements.*

- C. The surface elevation of pavers shall be 1/8 to 1/4 in. (3 to 6 mm) above adjacent drainage inlets, concrete collars or channels.




### 3.06 PROTECTION

- A. After work in this section is complete, the General Contractor shall be responsible for protecting work from sediment deposition and damage due to subsequent construction activity on the site.

**END OF SECTION 32 14 43**



LAYOUT LEDGEND

-  (E) PERMEABLE PAVERS TO REMAIN
-  (N) PERMEABLE PAVERS TO INSTALL, PATTERN TO MATCH (E) PATTERN
-  (E) CONCRETE PAVING TO REMAIN

1 LAYOUT PLAN FOR (N) PAVER INSTALLATION  
SCALE: 1" = 10'

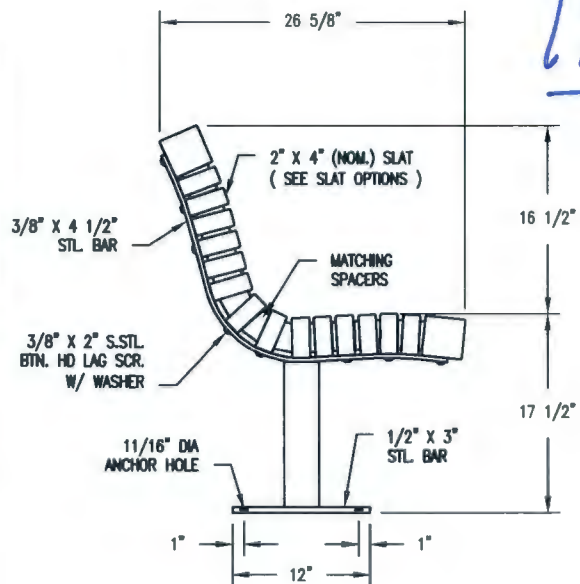


 <b>GOLDEN</b> associates	LANDSCAPE ARCHITECTURE URBAN DESIGN & PLANNING  4400 MARKET STREET OAKLAND, CA 94608 t. 510 465 4090 f. 510 465 5375 CA lic. #24511	 <b>OAKLAND UNIFIED SCHOOL DISTRICT</b> Oakland, California	<b>CLAREMONT MIDDLE SCHOOL</b> 5750 COLLEGE AVE, OAKLAND, CA	Client / Developer: OAKLAND UNIFIED SCHOOL DISTRICT 1025 2ND AVENUE OAKLAND, CA 94606	<b>LAYOUT PLAN -</b> (N) PAVER INSTALLATION  SCALE: 1" = 10'-0" DATE: MARCH 12, 2011	<b>LL-1</b>
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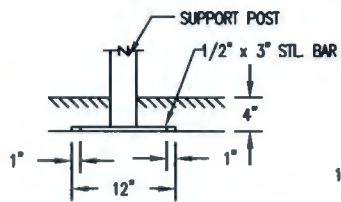


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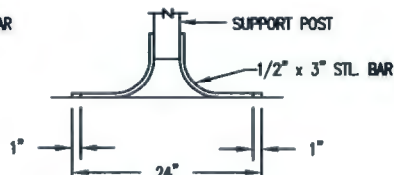
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ROUT 9.17.12



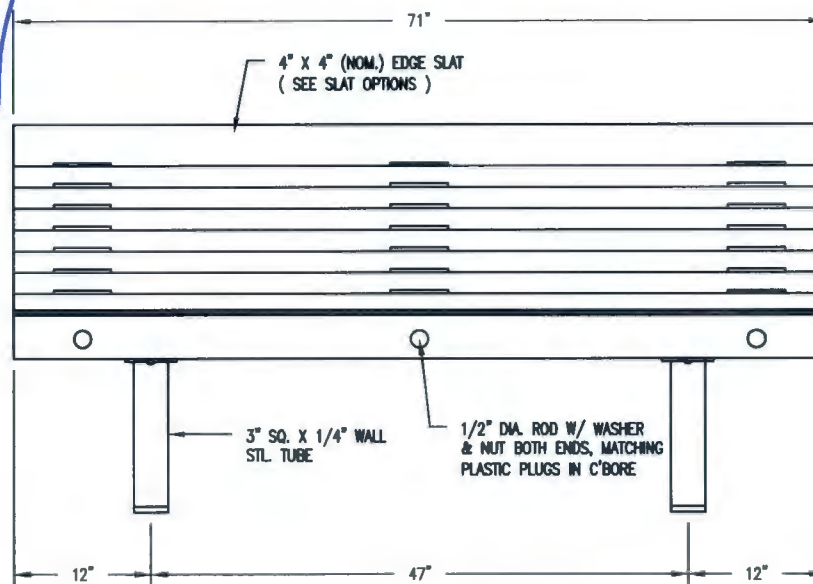
S-2 SURFACE



S-4 SUB FLOOR

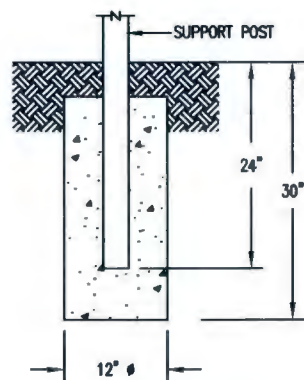


S-3 GULL WING

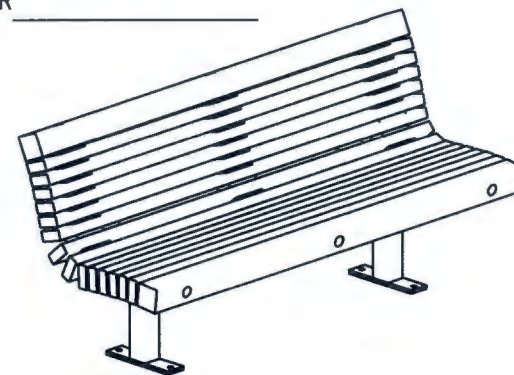


SLAT OPTIONS

- "CEDAR" RECYCLED PLASTIC
- "GREY" RECYCLED PLASTIC
- "REDWOOD" RECYCLED PLASTIC
- "WALNUT" RECYCLED PLASTIC
- OTHER \_\_\_\_\_



S-1 EMBEDMENT



NOTES

- 1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
- 2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLT PROVIDED FOR S-2, S-3 & S-4 OPTIONS.

**DuMor, inc.**  
P.O. Box 142 Mifflintown, PA 17059-0142

DATE DRAWN : 3/21/94  
DRAWN BY : HD  
DATE REV. : 11/03/11  
REV. BY : ESS

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