

Invitation to Bid

GHS FOOTBALL STADIUM – PHASE I IMPROVEMENTS DEMO

Responses to an Invitation to Bid will be received by the Purchasing Supervisor, Sumner County Board of Education, 1500 Airport Road, Gallatin, TN 37066 for GHS FOOTBALL STADIUM – PHASE I IMPROVEMENTS DEMO until 10:30 a.m. CDT Tuesday, April 1, 2014. Bid responses will be opened at that time, taken under advisement and evaluated. Should you have any questions please call Chris Tuck, GHS Football Booster's at (615) 394-0505. All proposals are subject to the Board of Education's conditions and specifications which are available from Vicky Currey, Purchasing Supervisor (615) 451-6560. All bids can be viewed on line at www.sumnerschools.org.

GALLATIN HIGH FOOTBALL STADIUM

PHASE I IMPROVEMENTS – WALL CONSTRUCTION

The Sumner County Board of Education, herein known as “School System”, is soliciting bids for the construction of the home side and visitors’ side wall to be completed at the Gallatin High Football Stadium. The bid will be for labor only, which includes any necessary equipment to complete the project. Materials shall be donated by others.

NOTE: These bid documents are in relation to the Invitation to Bid referenced in the Sunday, March 23, 2014. The bid title was incorrectly reference as “DEMO”.

Scope of Work:

HOME SIDE WALL CONSTRUCTION

The center line for the home side wall will be 38”, measured off the saw-cut in walkway. For referencing purposes, see photos A and B, the coach’s phone box is in approximate location of the center line for the new wall.

The home side wall foundation shall extend 300’ from the coach’s gate on the field’s south end to the end of the grandstand on the north end. Please see attached drawings for wall construction details.

The prevailing, constant grade for the home side wall is the walkway. The ultimate height of the wall should be 39” above the prevailing walkway grade. As the walkway grade varies along its length, the lowest measured point should be the prevailing grade. The home side wall shall be cast to a finished thickness of 8”.

Wall form liners should be installed according to the manufacturer’s recommendations. Also, the care and handling of the wall form liners shall be according to the manufacturer’s guidelines. The guidelines and recommendations are enclosed.

Pouring of the new area of home side walkway shall be after all adjacent wall construction has concluded (see attached detail).

VISITOR’S GRANDSTAND WALL

The foundation for the visitor’s side wall shall be installed as close as is possible to the existing foundation. The wall shall be cast against the existing grandstand face while remaining solidly on the foundation. The wall should be cast to a width of 10”, but above mentioned conditions could require additional thickness.

The prevailing wall height will be the top of the existing grandstand face. This height will vary from 30” to 42” (see photo F).

Contractor Obligations:

- Shall provide and obtain all necessary equipment and labor.
- Shall provide and obtain all necessary permits with Local, County, etc. agencies as required by law.
- Shall schedule all necessary inspections with Local, County, etc. agencies as required by law.
- Shall strictly adhere to specifications. The School System reserves the right to withhold partial or all payment until the work is completed to the specifications and satisfaction of the School System. Any work not completed to specifications will be the Contractor's sole responsibility and expense to redo.
- Shall provide Worker's Compensation Insurance as required by Tennessee State Law. The Contractor shall prove compliance with Public Chapter No. 587, T.C.A. 49-5-413(d), criminal background check, and provide a Drug Free Workplace Affidavit.
- Shall dispose of all generated waste materials in compliance with all Local, State and Federal guidelines, regulations, and requirements.
- Shall have properly trained and experienced staff to facilitate the specified services.

BID SHEET

**GALLATIN HIGH FOOTBALL STADIUM
PHASE I IMPROVEMENTS – WALL CONSTRUCTION**

\$ _____

Company Name: _____

Address: _____

Phone: _____

Email address: _____

Signature of Authorized Company Representative

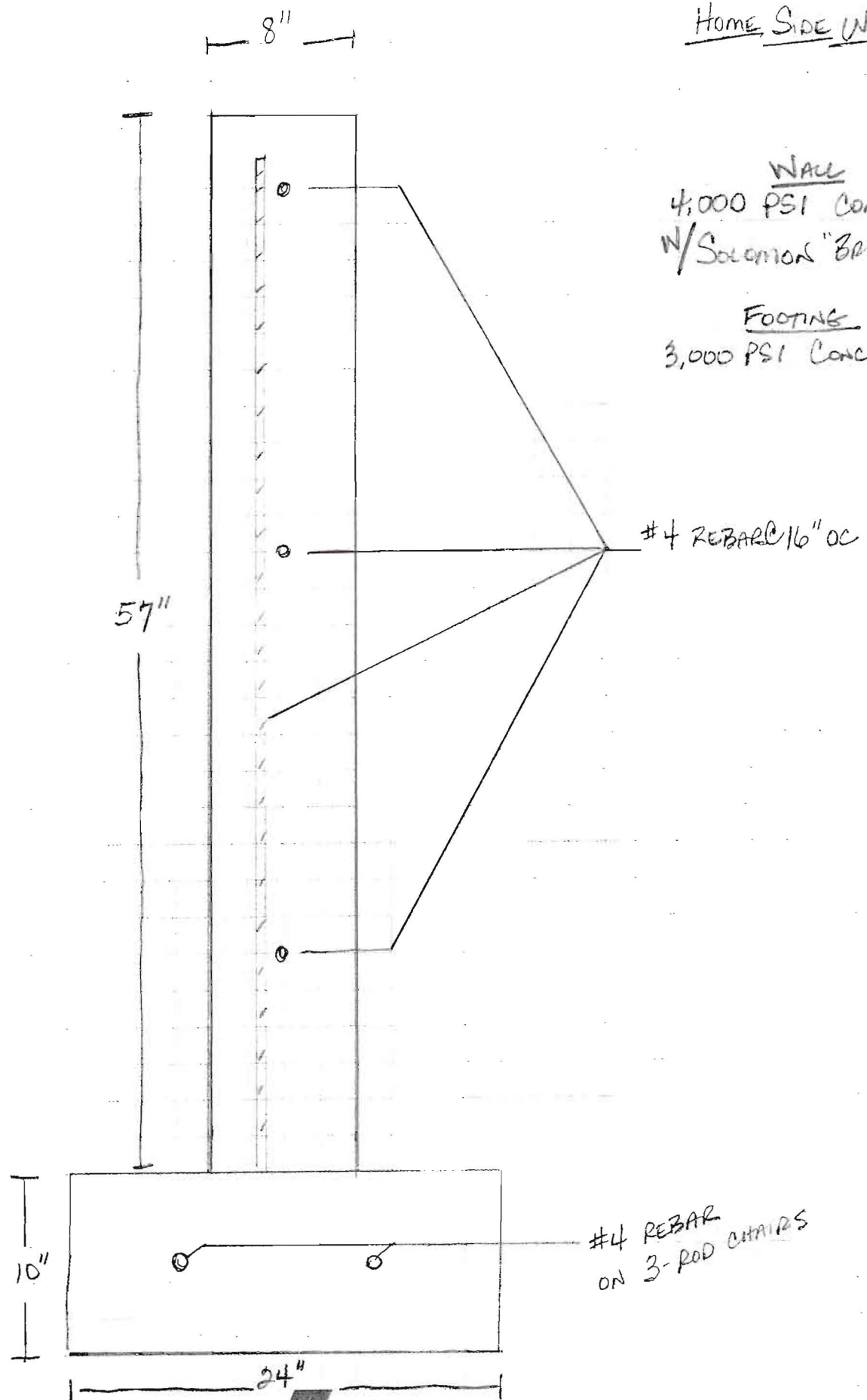
Date

Printed Name

Home Side Wall

WALL
4,000 PSI CONCRETE
W/ Solomon "BRICK RED"

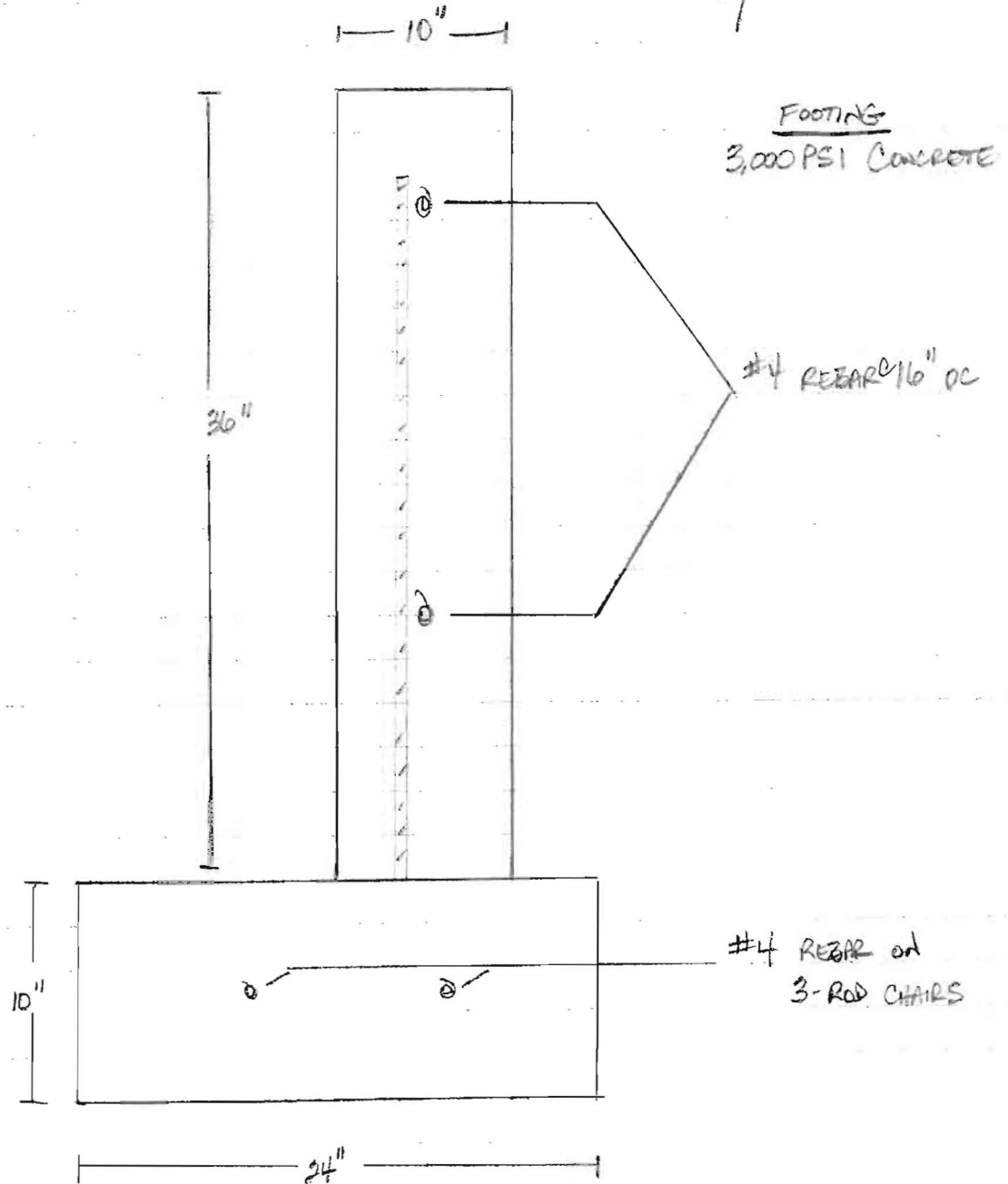
FOOTING
3,000 PSI CONCRETE

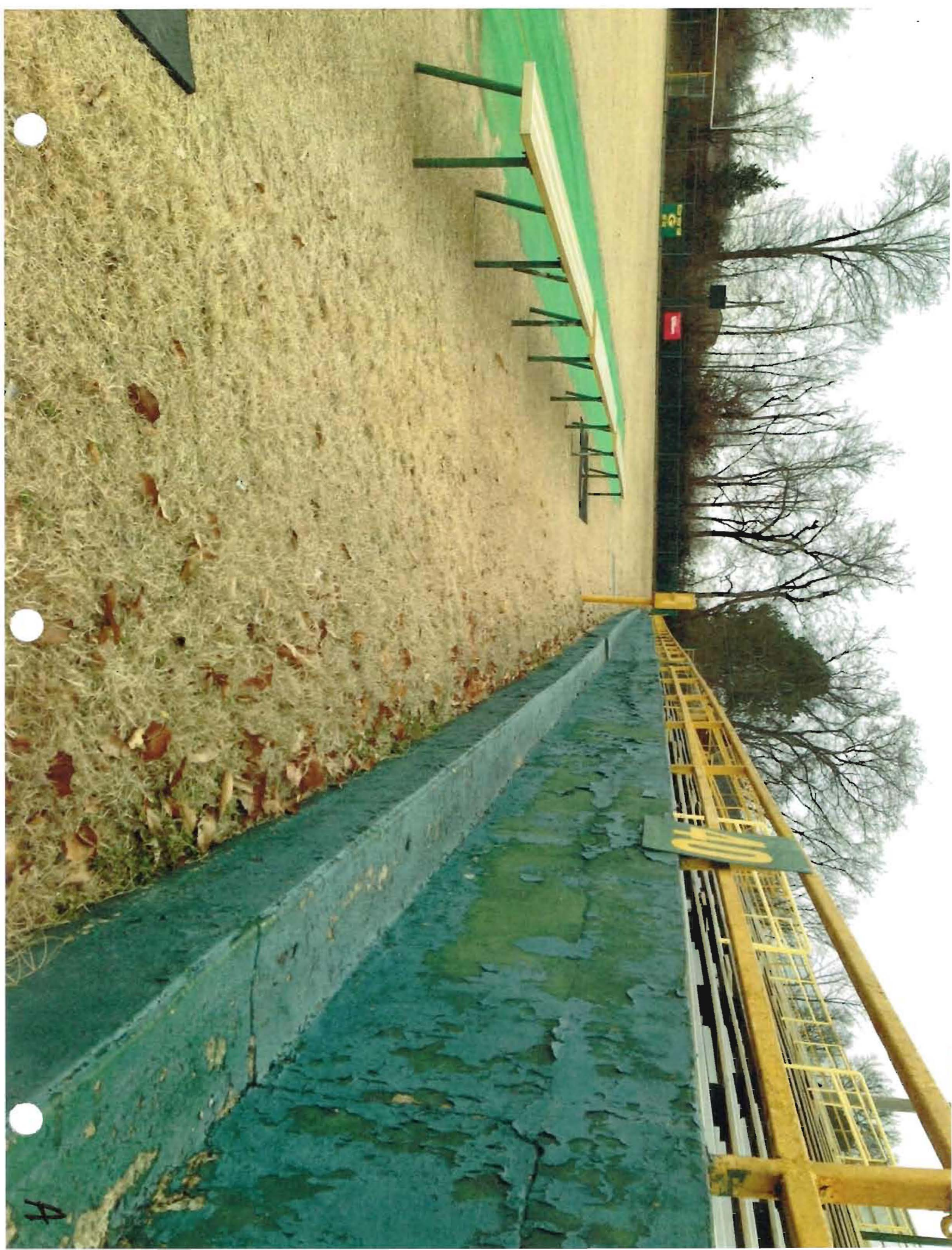


www.lafargenorthamerica.com

VISITOR SIDE WALL

WALL
4,000 PSI CONCRETE
W/





A

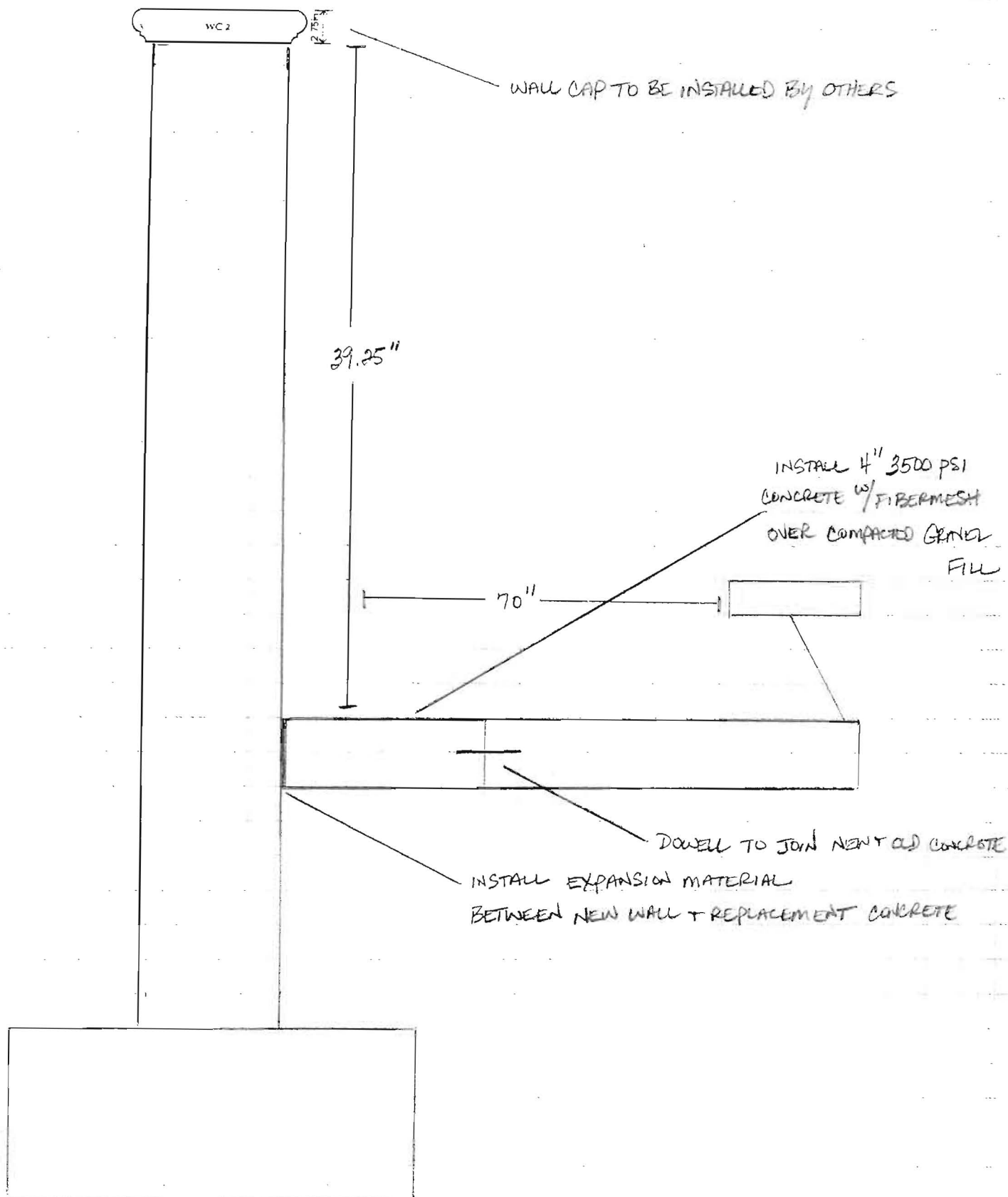


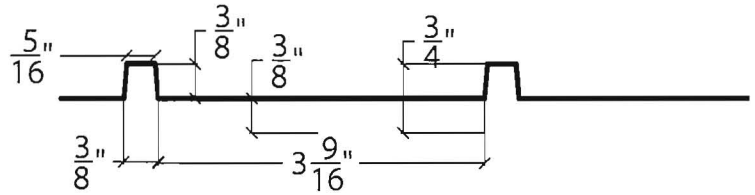
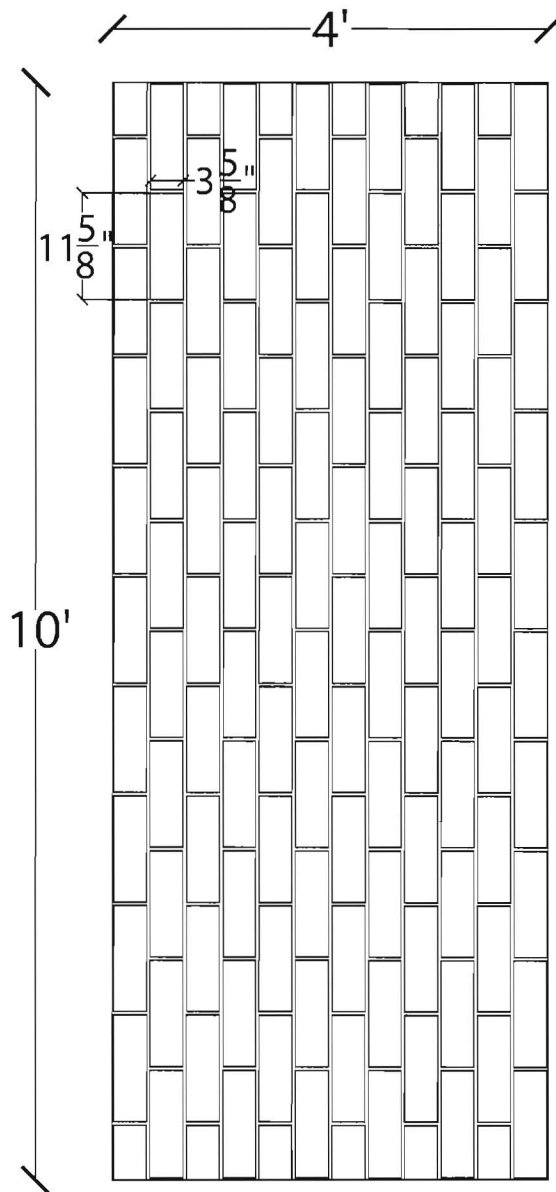


HOME OF THE GREEN MONSIEUR
HOME
VISITOR
TO GO ON
WILSON
CALVIN SHORT FIELD

F

Home Side
Replacement





General Information:

The Styrene and ABS form liners are an economical solution for providing architectural pattern reproductions. The Styrene plastic formliner is a perfect alternative for single use applications which costs less than other liners. The ABS plastic formliner exhibits good impact resistance and excellent overall performance. Its reuse factor is 10, subject to pattern configuration, proper handling and jobsite configurations.

Care and Handling:

To protect from thermal deformation, form liners should not be exposed to temperatures above 140°F (60°C). To avoid discoloration from sunlight exposure, form liners should be covered with a tarpaulin when not in use. This helps prolong the life of the material and keeps the material clean.

Form Liners are subject to thermal expansion and contraction $\pm 1/8"$ @ 70°F. Keep away from steam, acids, and certain fuels.

Styrene	ABS
Product Code #	Product Code #
F70328	F70268
Uses	Uses
1	Up to 10
Material Thickness	Material Thickness
.090	.110
Standard Dimensions	Standard Dimensions
10' x 4'	10' x 4'
Color	Color
White	Gray





Formliners can be use with any concrete forming system to provide unique designs and economical solutions to forming architectural concrete surfaces.

FORMWORK CONSIDERATIONS	1
Form Placement	1
Tie Placement	1
Formliner Joints	1
Rustication	1
Boxouts	1
Corners	2
Reinforcing Steel	2
Test Pour	2
ATTACHMENT PROCEDURES FOR SPS AND ABS PLASTIC FORMLINERS	2
Handling and Care of Formliners	2
Materials and Tools	3
Cutting and Drilling	3
Attachment – Handset Systems	3
Attachment – Gangform Systems	4
Repair	4
Form Release	4
ATTACHMENT PROCEDURES FOR ELASTOMERIC FORMLINERS	5
Handling	5
Materials and Tools	5
Cutting and Drilling	5
Elastomeric Formliner Attachment	6
Repair	6
Form Release	6
CONCRETE CONSIDERATIONS	6
Concrete Mix	6
Concrete Placement	6
Vibration	7
Stripping Formwork	7
Manufacturing Tolerances	7
Concrete Design	7
Curing	7
Patching	7
INDEX	9

FORMWORK CONSIDERATIONS

Dayton Superior formliners can be used with any concrete forming system, including Steel-Ply®, Sym-Ply® or Max-A-Form® concrete forming systems. The information contained in this application guide are for reference only, should a situation occur not discussed in this guide please contact your local Dayton Superior representative for assistance.

Form Placement

It is most important that forms for architectural concrete be aligned and in common planes. A "stack-up" of manufacturing tolerances can result in forms being in different planes. This creates a noticeable "step" in the finished surface, particularly with shallow Formliner patterns. All formwork should be sufficiently rigid to remain sealed during concrete placement and vibration. Seal all joints and tie holes by caulking or the use of gaskets to prevent grout leakage. Do not "lap" formwork over previous pours which have uneven architectural surfaces. Such lapping will result in a form offset with leakage that distorts the finished concrete appearance. Further recommendations are contained in ACI 347-88.

Tie Placement

To minimize the visual effect in the finished surface plan formwork so tie placement is at rustications, reveals, or other inconspicuous locations. Remember to allow for the depth of the formliner when calculating the breakback requirement for ties.

When using a rib pattern formliner, locate ties at the high point of the formliner rib. This places the tie in the recess of the finished surface where it is less noticeable. The maximum diameter of the tie (cone, She-Bolt, Taper Tie) should not exceed the minimum width of the rib. Provide a minimum of 1" concrete cover for ties requiring breakback. If cones are used, the diameter of the cone should be less than its depth to facilitate patching.

To minimize grout leakage through tie holes when using SPS or ABS Plastic Formliner, foam tape or foam rod should be used. This packing material is used to fill any space around the tie. Packing should be done from the face of the form and extend 1/8" through the formliner.

CAUTION: Burning tie holes in the formliner with a heated tie or other tool emits toxic fumes that may cause debilitating injury if inhaled. If workers inhale fumes, remove them to fresh air and contact a physician immediately.

Formliner Joints

It is very difficult to match pattern features at joints and make sure the surface appears continuous. Slight differences in shape, thickness, and texture will have a visible impact on the finished surface. For this reason, avoid or minimize both vertical and horizontal joints.

When joints are unavoidable, make the joint along the main features of the pattern. Match pattern features carefully, and minimize grout leakage at the joint with foam tape. This practice will help reduce the visible effect on the finished surface.

Consider the pattern dimensions to achieve an overall balanced design. It is especially important to consider pattern dimensions when planning for unavoidable joints, boxouts and corners in the finished surface.

Rustication

Rustication strips are often used at formliner joints. This not only accentuates the pattern, but eliminates the need to produce a perfect pattern joint. It is recommended that rustication be applied as a closure on the top of the pattern and sealed with foam tape.

Dayton Superior offers many different types of reusable rustications that are compatible with formliners. The rustication is strong enough to resist concrete pressures and flexible enough to conform to curves.

Boxouts

There are two methods of forming boxouts; one requires permanently modifying the formliner, the other applies a closure to the face of the formliner.

Boxouts by modification require that the formliners be cut to accommodate the boxouts. The location of the pattern features should be determined before fabricating the required boxouts.

Boxouts by closure do not require that the formliners be cut. The required boxouts are placed over the formliner, and materials are used to fill the voids between the boxouts and the formliner surface. The materials used are dependent on the configuration of the formliners and the concrete pressures. Access through the boxout should be considered when box out exceeds 2' in width.

Corners

Corners by modification require that the formliners be cut to accommodate the corners. The location of the pattern features should be determined before fabricating the required corners.

Corners by closure do not require that the formliners be cut. A smooth reveal is used at inside or outside corners to simplify corner formwork construction and minimize pattern misalignment at the corners.

Reinforcing Steel

Locate reinforcing steel accurately to insure proper cover and eliminate rust stains on the finished concrete surface. The clear distance between the outermost reinforcing bar and the surface should be at least 2" for plastic formliner and 1½" for urethane formliner. Remember to allow for the thickness of the formliner pattern when calculating the proper cover for the reinforcing steel.

Provide a minimum of 5"x5" clear opening in reinforcing steel throughout, for proper placement and vibration of concrete. Use maximum diameters in calculating steel spacing and clear openings. These placement and vibration openings should be consistent with the capabilities of the vibration equipment. Further recommendations are contained in ACI 309-92.

Test Pour

Before actual construction, a test pour is recommended to demonstrate the results on the finished concrete surface. The test pour should simulate as many phases of the actual construction as possible and include typical tie holes boxouts, corners, reveals, wall intersections and joints. The test pour should be the height of the maximum wall to be produced. Upon approval, the actual construction should proceed using the same methods and materials to assure uniformity throughout the entire project.

ATTACHMENT PROCEDURES FOR SPS AND ABS PLASTIC FORMLINERS

SPS Plastic Formliner is manufactured from polystyrene plastic, and thermoformed to provide the contractor with a single use pattern. SPS Plastic Formliner can be used to provide a textured concrete surface in a limited application at an affordable price. ABS Plastic Formliner is manufactured from premium quality ABS Plastic, and thermoformed to provide the contractor with low range re-use projects. ABS Plastic Formliner exhibits excellent impact resistance and contains an ultraviolet shielding compound which reduces the damaging effects of sunlight.

SPS and ABS Plastic Formliners are available in standard 4'x10' sheets in more than 125 standard patterns. Patterns that have a space larger than ¾" in any direction will need to be backed by contractor and can cause less than desirable results if proper practices are not followed.

Handling and Care of Formliners

ABS and SPS Plastic Formliners are shipped in a closed crate for protection. It is recommended that they remain in the crate until needed on the work site. This will protect the material from sunlight, dirt and debris. After being attached to formwork, SPS and ABS Plastic Formliners should be stored on edge. Care should be taken to avoid striking the face with heavy, sharp, or heated objects that could cause permanent damage. Temperatures in excess of 140° F will cause permanent thermal decomposition in SPS and ABS Plastic Formliners.

CAUTION: Most plastics degrade when exposed to intense sunlight for extended periods of time. Cover the Formliner with a tarpaulin or black plastic to protect the forming surface whenever it is not in use. This will prolong the life of the formliner material and keep the forming surface clean.

General Attachment Notes:

1. Identify the pour side of the Formliner. The pour side can be identified by the roughened, "hair cell" texture or as the side with the highest resolution in the pattern. The shiny or slick

side of the liner will be placed against the slab or formwork.

2. Because of the nature of plastic to expand and contract, it may be necessary for the material to be trimmed. The easiest way to cut the liner is to use a circular hand saw (skill saw) with a fine tooth, plywood blade such as the type used for cutting fine veneer paneling. Formliner without much relief may be trimmed by scoring with a sharp knife and breaking off the excess.
3. The effects of temperature, thermal expansion and contraction must be considered. The size of the liner will expand and contract approximately $\frac{1}{16}$ " in 10' with each 10° F temperature change. Formliner should be installed at about the same temperature as expected during the placement of concrete. Early morning is recommended.

CAUTION: Failure to provide adequate support against the concrete pressures could result in a "blowout", subjecting workers to injury and causing job delays or costly rework.

Materials and Tools

The basic materials needed to attach and modify SPS and ABS Plastic Formliners include:

- Staples ($\frac{9}{16}$ " or $\frac{3}{4}$ " depending on pattern thickness) for attachment to plywood
- Nails for attachment to plywood (may enhance the finished look of wood patterns)
- Plastic pipe cement or external grade panel glue can be used when mechanical attachment is not permissible
- Foam tape grout seal blocks may be required for voids and modifications
- Silicone caulking for voids and modifications.
- Clean Strip™ J1A, or Magic Kote®, or Action Kote™ form release

The quantities of materials needed will vary with the size of the project and the method of attachment.

The basic tools needed to attach and modify SPS and ABS Plastic Formliners include:

- Tape measure
- Chalk line
- Circular saw with carbide tipped blade
- Power sander or grinder, 30 grit or less

- Power stapler
- Electric drill
- Hammer
- Other hand tools depending on attachment method
- Sprayer with wand extension
- Personal safety equipment

The quantities of tools needed will vary with the size of the project and the method of attachment.

Cutting and Drilling

ABS and SPS Plastic Formliners come in a standard size of 4'x10' and can be modified by cutting and drilling with a circular saw and electric drill. These operations should be performed on SPS or ABS Plastic Formliners that are securely clamped to a work bench with a cutting guide or drilling template. The work pace should be steady to prevent any "chatter" that can fracture the surface. Because of the nature of plastic to expand and contract, it may be necessary for the materials to be trimmed before use.

CAUTION: Cutting and drilling can create dust and rough edges. Workers should wear appropriate safety equipment. The rough edges created by cutting and drilling can be dressed with sander. Remember to remove all dust and debris from the surface.

CAUTION: Sanding can create dust that might be inhaled. Long term exposure to this dust may be harmful. Workers should wear appropriate safety equipment.

Attachment – Handset Systems

Procedures for attachment to handset systems include:

1. Apply foam tape to the plate or sill that supports formwork to prevent grout leakage at the base of the Plastic Formliner.
2. Assemble and brace the architectural side of the formwork first. Attach the Plastic Formliners before setting ties or opposite formwork side.
3. Apply foam tape to back side of the Plastic Formliner along all edges. Allow foam tape to extend beyond the edge when the Formliner will be jointed.

4. Position the Plastic Formliner against the formwork so that edges, pattern and joints are square. Work with one sheet at a time.
5. Staple the Plastic Formliner on 6" centers around the perimeter and 12" centers throughout the field. Around all tie locations and pipe penetrations, securely staple as needed. Staple heads should be driven flush with the surface (adequate electrical power must reach stapler to drive staples flush).
6. Foam tape should be positioned behind the joint of two pieces and pressed down firmly. If a ribbed pattern is used, insert grout seal block to support joint and prevent grout seepage.
7. Grout seal blocks may also be needed to seal tie holes, fill voids in boxouts and open-ended patterns or support especially deep patterns.

Attachment – Gangform Systems

Procedures for attachment to gangform systems include:

1. Level and square the formwork so that attachment can be made accurately in a horizontal plane. Dimensions should be marked so that edges, patterns and joints are square. If strongbacks are required, they should be attached to the formwork holding the Plastic Formliner.
2. Apply foam tape to the plate or sill that supports formwork to prevent grout leakage at the base of the Plastic Formliner.
3. Apply foam tape to the back side of the Plastic Formliner along all edges. Allow the foam tape to extend beyond the edge with the Formliner will be jointed.
4. Position the Plastic Formliner against the formwork so that edges, pattern, and joints are square. Work with one sheet at a time.
5. Staple the Plastic Formliner on 6" centers around the perimeter and 12" centers throughout the field. Around all tie locations and pipe penetrations, securely staple as needed. Staple heads should be driven flush with the surface (adequate electrical power must reach stapler to drive staples flush).
6. Foam tape should be positioned behind the joint of two pieces and pressed down firmly. Attachment can then be made.

7. Grout seal blocks may also be needed to seal tie holes, fill voids in boxouts and open-ended patterns or support deep patterns.

Attachment – Plywood Gang Systems

Procedures for attachment to plywood include:

1. If a secondary underlayment is attached to forms, and the formliner attached to it, 1/2" or 3/4" unoled plywood should be used. If the form face sheet is not sacrificial, the best method of attachment is with Tee Nuts (1/4" min.) placed at 1' on center for 1/2" plywood, and at 2' on center for 3/4" plywood. A washer is required on the back side of a plywood face sheet form.
2. Apply foam tape to back side of plastic formliner along all edges.
3. Position plastic formliner against the plywood so that edges are square and press down firmly. Work with one sheet at a time.
4. Staple the plastic formliner on 3" center and around all tie locations (be sure adequate electrical power reaches stapler to drive staples flush).
5. Attach the plywood with plastic formliner to the form face. Screws should be driven from the back of the form face into the plywood. Screws should be positioned on 12" centers and capture 3/4 of the plywood thickness.
6. Subsequent plywood with plastic formliner should be carefully aligned on the formwork and foam tape used at all joints.
7. Grout seal blocks may be needed to provide additional backing at formliner joints, fill voids in boxouts and open-ended patterns or support especially deep patterns.

Repair

Small breaks in ABS or SPS Plastic Formliner can be repaired by stapling the affected area to the formwork. The repaired area will be visible on the finished surface. If this is not acceptable, the damaged piece must be carefully replaced.

Form Release

Plastic Formliners should be sprayed with form release before each use and within the same day that concrete is placed. A form release sprayer should be used and the spraying angle varied to ensure complete coverage of all pattern features. Clean Strip™ J1A or Magic Kote® are suggested form

releases. Dayton Superior takes no responsibility for any damage to our liner due to improper use or application of a form release agent. Contact your local Dayton Superior Representative with questions prior to use.

CAUTION: Reprocessed oils used as form releases can damage formliners and cause degradation of liner material and stripping difficulties.

ATTACHMENT PROCEDURES FOR ELASTOMERIC FORMLINERS

Elastomeric Formliners are a premium formliner, combining great resilience and high tensile strength. This material provides superior toughness and wear resistance so that reproduction of even the most difficult undercut and complex designs is consistent, even after many re-uses.

Elastomeric Formliners are available in standard 4'x10' sheets in many different patterns. Some patterns are available in larger sizes and all patterns can be ordered in smaller sizes. These formliners expand and contract with temperature changes and are shipped with 1" to 2" extra trim length. It is best to install formliners at the temperature conditions that most closely approximate the time of concrete placement.

Thermal compatibility can be achieved by "letting fluid state during manufacture.

CAUTION: Elastomerics can degrade when exposed to intense sunlight for extended periods of time. Cover the formliner surface with a tarpaulin or black plastic to shade the forming surface whenever it is not in use. This prolongs the life of the formliner material and keep the forming surface clean.

Handling

Elastomeric Formliners are shipped in a closed crate for protection. Keep them in the crate until needed on the work site. This will protect the material from sunlight, dirt and debris.

Once attached to formwork, store formliners on edge. Avoid striking the face with heavy, sharp or heated objects that could cause permanent damage to the material.

Materials and Tools

The basic materials needed for field attachment and modification of Elastomeric Formliners include:

- Wood tack strips
- 2" x 4" lumber
- Box nails (6d) and finishing nails (#6)
- Disposable one gallon mixing containers
- Mixing sticks
- Adhesive
- Methylene chloride cleaning solvent
- Cotton rags
- Foam tape for voids and modifications
- Silicone caulking for voids and modifications
- Sanding disks, #36 or #24 grit
- Clean Strip™ J1A or Magic Kote® form release
- Paint brush with natural bristles
- Deck brush with natural bristles

The quantities of materials needed will vary with the size of the project and the method of attachment.

The basic tools needed to attach and modify Elastomeric Formliners include:

- Tape measure
- Chalk line
- Utility knife
- Power rotary rasp
- Saber saw with knife blade
- Power sander or grinder
- Hammer
- Electric drill with hole saw
- Measuring cup
- Serrated trowel (1/16")
- Sprayer with wand extension
- Personal safety equipment

The quantities of tools needed will vary with the size of the project and the method of attachment.

Cutting and Drilling

Elastomeric Formliners can be modified by cutting and drilling. Use a utility knife or saber saw with a knife blade for cutting. A cylinder type hole saw can be used for drilling. Perform these operations on formliners that are securely clamped to a work bench with a cutting guide or drilling template. The work pace should be steady to prevent excess friction that can melt formliners and disable tools.

CAUTION: Sanding, cutting and drilling can create dust that might be inhaled. Long term exposure to this dust may be harmful. Workers should wear appropriate safety equipment.

The rough edges created by cutting and drilling can be dressed with a sander. Remember to remove all dust and debris from the surface.

Elastomeric Formliners can be attached to handset systems, gangform systems or plywood (for subsequent mounting to gangform systems).

Elastomeric Formliner Attachment

Guidelines for attachment to forms:

1. Assemble and brace the architectural side of the formwork first. Attach the formliner before setting ties or opposite formwork.
2. Position the formliner against the formwork so that edges, pattern, and joints are square. Work with one sheet at a time.
3. Elastomeric Formliners can be attached to the forms from the front or back of the form with bolts or lag screws. The head of the bolt can be screwed into the face of the liner and covered with a silicon or urethane caulking material.
4. Should joints be required, apply adhesive to the formliner edges and then firmly butt edges. Compress the joint as tightly as possible, without buckling or distorting the pattern.
5. Dress the joints and edges with a utility knife or sander to match pattern features as closely as possible.
6. Cover the formliner when it is not in use to prolong the life of the material and pattern.

CAUTION: Adhesives will not provide adequate attachment if formwork contains residual form release.

Repairing

Cuts or tears in Elastomeric Formliners can often be repaired with shoe glue or other urethane adhesives. Work the adhesive into the edges of the cut or tear and weight the area while the adhesive is setting. After setting, lightly sand residual adhesive to avoid a gloss-producing spot in the concrete.

Form Release

Elastomeric formliners are slightly oil absorbent when new. It is recommended that an initial spray

of Clean Strip™ J1A form release be brushed in to help "season" and clean the pattern. Work the form release into all areas, especially pattern recesses. Magic Kote® can be used as a release agent after the liner has been seasoned.

Spray Elastomeric Formliners with release agent before each use and within the same day that concrete is placed. A form release sprayer should be used and spraying angle varied to insure complete coverage of all pattern features. Use a brush for deep or rough patterns.

None of the form releases will adversely affect the formliners or concrete. They provide consistent release for easy stripping and prolong the useful life of the formliners. They will not stain concrete, and leaves no residue, virtually eliminating any concrete dusting.

CAUTION: Reprocessed oils used as form releases can damage formliners and cause degradation of liner material and stripping difficulties.

CONCRETE CONSIDERATIONS

Concrete Mix

Architectural concrete requires mix designs that can be consolidated with immersion vibrators that provide maximum workability consistent with strength requirements. Further recommendations are contained in ACI 303 (architectural cast in place), 211 (sand/aggregate and gradation), 301 (water/cement) and 309 (voids). Consolidation of the architectural concrete mix has a direct relationship to the quality of the finished surface.

Interesting effects can be achieved in architectural concrete by using gap-graded or colored aggregates in the concrete mix.

Concrete Placement

Place architectural concrete using a pump or conveyor, with a drop chute, to avoid separation of the concrete mix. If not controlled, rock pockets, "honey comb", and spatter marks may be evident in the finished surface.

Place architectural concrete in two foot continuous lifts, and do not move concrete horizontally. If horizontal movement is employed, flow lines and sand streaking will be evident in the finished

surface. Do not stop concrete placement part way up the pattern, the resulting cold joint will be very apparent in the finished surface.

CAUTION: The setting of concrete is an exothermic reaction and considerable heat can be generated. The heat, together with the effects of sun shining on the formwork, can cause temperatures in excess of 140° F that may damage Formliner.

Vibration

Proper consolidation is critical to architectural concrete and is normally accomplished by internal vibration. Recommended practice calls for vibrating one lift at a time, extending the vibrator 6" to 12" into the preceding lift. After a momentary pause, withdraw the vibrator slowly, at a rate of 1" to 2" per second. For deeply textured patterns, the rate of withdrawal should be proportionately decreased. Vibrate at intervals of 12" to 18", depending on the properties of the concrete mix and the radius of influence of the vibrator. The area affected by the vibrator should overlap the previously vibrated area by a few inches. To avoid variations in concrete color and texture, maintain a consistent interval from time of placement to time of vibration, throughout the entire project.

CAUTION: Architectural concrete requires extensive vibration. Design formwork and sealing procedures to resist the stresses caused by vibration of this type.

Stripping Formwork

Strip formwork with Formliners at right angles to the form. The force required to strip a form will depend on the surface area of the pattern and on the percentage of the pattern at right angles to the direction of stripping. A shallow profile pattern will be easier to strip than a deep profile pattern.

CAUTION: Excessive stripping force and formwork pivoting can cause damage to the finished surface and Formliner.

Strip formwork with Formliners within 24 hours of concrete placement. To avoid variations in concrete color, it is important to maintain consistent intervals from time of placement to time of stripping throughout the entire project.

If formliner is left on the wall for longer than 24 hours the formliner can start to degrade and will wear easier taking away from the total expected reuse.

Manufacturing Tolerances

Dayton Superior warrants that our product at time of manufacture will be within 1/8" plus or minus the expressed size on our Cut Sheets. Normal expansion and contraction of plastic is approximately 1/16" in 10' with each 10° F change in temperature.

Concrete Design

The design of the concrete mix will affect the finished appearance because it causes changes in workability, pressure, color, set and strength.

Load concrete onto the formliner from the centers, moving the concrete towards the outside perimeter with rakes. Do not allow concrete to be pushed under the formliner at joints.

Curing

Concrete will usually require a membrane forming, curing compound according to project specification. Resi-Chem[®] or Spec Cure[™] curing compounds from Dayton Superior may be appropriate.

Patching

Patching can be accomplished with epoxy mortars or specially mixed grouts. Do not use grout from subsequent placements because it will not match the original water/cement ratios, evaporation rate and hydration time. Recess patches slightly and avoid smearing fill material on the surrounding finished surface.

INDEX

ABS Plastic Formliner.....	2	Joints.....	1
ACI 347-88 recommendations.....	1	Liner Kote™.....	3
Action Kote™.....	3	Magic Kote®.....	3, 6
Attachment materials and tools.....	3, 5	Max-A-Form®.....	1
Attachment to forms.....	6	Modification.....	3, 5
Attachment to gangform systems.....	4	Polystyrene plastic.....	2
Attachment to handset systems.....	3	Reinforcing steel coverage.....	2
Attachment to plywood.....	4	Release.....	4
Boxouts by closure.....	2	Repairing elastomeric formliners.....	6
Boxouts by modification.....	1	Repairing plastic formliners.....	4
Clean Strip™ J1A.....	4, 6	Resi Chem®.....	7
Colored aggregates.....	6	Rustication strips.....	1
Concrete consolidation.....	6	Sealing joints and tie holes.....	1
Concrete mix.....	6	Spec Cure™.....	7
Concrete placement.....	6	SPS Plastic Formliner.....	2
contraction.....	7	Standard patterns.....	2
Corners by closure.....	2	Standard sheet dimensions.....	2
Corners by modification.....	2	Steel-Ply®.....	1
Elastomeric.....	5	Stripping forms.....	7
Expansion.....	7	Sym-Ply®.....	1
Forming boxouts.....	1	Thermoformed liner.....	2
Form release for elastomeric formliner.....	6	Ties.....	1
Form release for plastic formliners.....	4	Vibrating concrete.....	7
Gap-graded aggregates.....	6		
Grout seal blocks.....	4		

Q How many reuses can I expect?

A With proper care and jobsite management, expect SPS to get 1 use and ABS 5-10 uses.

Q What is the usual lead time?

A We stock our top plastic patterns at our Distribution Centers across the country so that patterns in stock will ship the next day. Patterns not in stock will ship in 5-7 business days. Custom orders depend on quantities and design difficulty.

Q When do I need to back my formliners and with what?

A When you have $\frac{3}{4}$ " or more spacing, liners need to be backed. There are many options, foam-backed liners, EPS foam strips, wood strips by contractor, etc.

Q How do I attach formliner to my forms?

A Plastic liners are easily attached with a power staple gun or screwed from the front.

Q How heavy are the formliners?

A Plastic formliners weight only 1-2 pounds per square foot.

Q Will the concrete mix effect the liner?

A If using colored concrete, you might see some staining on the liner, but with a light powerwash and scrub brush with soap, all residue should come off the liner. Any mix is acceptable.

Q How do I cut the formliner?

A Plastic liner can be cut with a small tooth saw blade or utility knife.

Q What side of the liner do I form against?

A We place a sticker on one side that informs the user to pour against the other side.

Q How does heat effect the liners?

A Plastic liners are effected by outside air temperature and can grow or shrink with the weather. We suggest that you attach your liners and pour the wall at a maximum air temperature difference of 5 degrees.

Q Can we get liners longer or wider?

A We are limited to a maximum 4'x10' sheet of plastic liner, but sheets can be combined to produce almost any dimension. Certain patterns are easier to combine.

Q Do the plastic liners bend to a radius?

A All of the plastic sheets can be curved into a radius. The real question is how tight of a radius? If forming a tight column, the fractured fin and fluted patterns will bend to a tighter radius, but the stones, brick and block patterns adapt to only larger radii.

Q Can we recycle the plastic sheets?

A While the material used in our plastic sheets is over 95% recycled material, the sheets cannot be recycled after use. Concrete residue and caulking cause this product to not be accepted by recyclers.

Q How do I make tie holes through the liner?

A There are a few different ways to do create tie holes. With plastic liners, you can heat up the end of a tie and burn a hole right in the spot of your tie. Make sure you don't use the heated tie in the wall.

Q What Form Release is suggested?

A Magic Kote[®], Clean Strip[™] J1A and Clean Strip[™] Ultra J3 are recommended for formliners.

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm; 1 pound per square foot per foot = 0.1571 kPa²/m, 1 pound per square inch = 6.895 kPa.

- Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1.
- Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi concrete with a minimum specified compressive strength of 2,500 psi and vertical reinforcement being located at the centerline of the wall. See [Section R404.1.2.3.7.2](#).
- Vertical reinforcement with a yield strength of less than 60,000 psi and/or bars of a different size than specified in the table are permitted in accordance with [Section R404.1.2.3.7.6](#) and Table R404.1.2(9).
- Deflection criterion is $L/240$, where L is the height of the basement wall in inches.
- Interpolation is not permitted.
- Where walls will retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
- NR indicates no vertical wall reinforcement is required, except for 6-inch nominal walls formed with stay-in-place forming systems in which case vertical reinforcement shall be No. 4@48 inches on center.
- See [Section R404.1.2.2](#) for minimum reinforcement required for basement walls supporting above-grade concrete walls.
- See Table R611.3 for tolerance from nominal thickness permitted for flat walls.
- DR means design is required in accordance with the applicable building code, or where there is no code, in accordance with ACI 318.

TABLE R404.1.2(3) MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH (203 mm) NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, f, h, i}

MAXIMUM UNSUPPORTED WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT ² (feet)	MINIMUM VERTICAL REINFORCEMENT-BAR SIZE AND SPACING (inches)		
		Soil classes ^a and design lateral soil (psf per foot of depth)		
		GW, GP, SW, SP 30	GM, GC, SM, SM-SC and ML 45	SC, ML-CL and inorganic CL 60
8	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	6 @ 37
	7	NR	6 @ 36	6 @ 35
	8	6 @ 41	6 @ 35	6 @ 26
9	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	6 @ 35
	7	NR	6 @ 35	6 @ 32
	8	6 @ 36	6 @ 32	6 @ 23
10	9	6 @ 35	6 @ 25	6 @ 18
	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	6 @ 35
	7	NR	6 @ 35	6 @ 29
	8	6 @ 35	6 @ 29	6 @ 21
	9	6 @ 34	6 @ 22	6 @ 16
	10	6 @ 27	6 @ 17	6 @ 13

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm; 1 pound per square foot per foot = 0.1571 kPa²/m, 1 pound per square inch = 6.895 kPa.

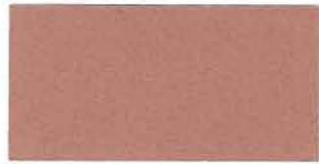
- Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1.
- Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi (420 MPa), concrete with a minimum specified compressive strength of 2,500 psi and vertical reinforcement being located at the centerline of the wall. See [Section R404.1.2.3.7.2](#).
- Vertical reinforcement with a yield strength of less than 60,000 psi and/or bars of a different size than specified in the table are permitted in accordance with [Section R404.1.2.3.7.6](#) and Table R404.1.2(9).
- NR indicates no vertical reinforcement is required.
- Deflection criterion is $L/240$, where L is the height of the basement wall in inches.
- Interpolation is not permitted.
- Where walls will retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
- See [Section R404.1.2.2](#) for minimum reinforcement required for basement walls supporting above-grade concrete walls.
- See Table R611.3 for tolerance from nominal thickness permitted for flat walls.

TABLE R404.1.2(4) MINIMUM VERTICAL REINFORCEMENT FOR 10-INCH NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, f, h, i}

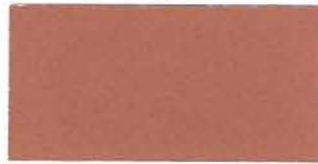
MAXIMUM UNSUPPORTED WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT ² (feet)	MINIMUM VERTICAL REINFORCEMENT-BAR SIZE AND SPACING (inches)		
		Soil classes ^a and design lateral soil (psf per foot of depth)		
		GW, GP, SW, SP 30	GM, GC, SM, SM-SC and ML 45	SC, ML-CL and inorganic CL 60
8	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	NR
	7	NR	NR	NR
	8	6 @ 48	6 @ 35	6 @ 28
9	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	NR
	7	NR	NR	6 @ 31
	8	NR	6 @ 31	6 @ 28
10	9	6 @ 37	6 @ 28	6 @ 24
	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	NR

ColorFlo® Liquid Color Card

SOLOMON COLORS



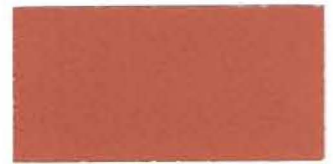
413 Colony Red



413 Clay



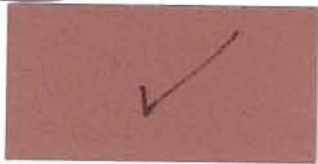
413 Fox Red



413 Terra Cotta



417 Rose



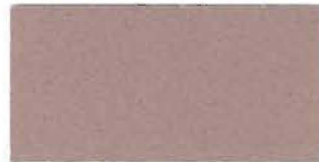
417 Brick Red



417 Paver Red



417 Apple Red



489 Dusty Rose



489 Light Plum



489 Redwood



489 Dark Redwood



288 Rosemary



288 Ginger



288 Bamboo



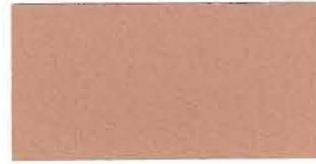
288 Straw



750 Desert Tan



750 Salmon



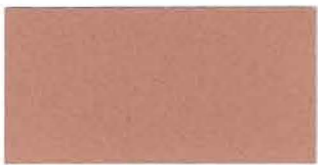
750 Prairie Tan



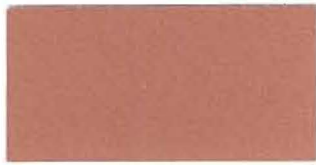
750 Peach



775 Sand



775 Cedar



775 Camel



775 Sedona



757 Buckwheat



757 Pecan



757 Antique Gold



757 Old Gold



755 Trail Dust



755 Driftwood



755 Spice



755 Apricot

STATEMENT OF NON-COLLUSION

The undersigned affirms that they are duly authorized to execute this contract, that this company, corporation, firm, partnership or individual has not prepared this proposal in collusion with any other respondent, and that the contents of this proposal as to prices, terms or conditions of said proposal have not been communicated by the undersigned nor by an employee or agent to any other person engaged in this type of business prior to the official opening of this proposal.

Company _____

Address _____

Phone _____

Fax _____

Respondent _____
(*Signature*)

Respondent _____
(*Print Name and Title*)

Authorized Company Official _____
(*Print Name*)

CERTIFICATION BY CONTRACTOR

I, the undersigned, certify that on behalf of Contractor, I am authorized to attest and obligate the above certification and to legally bind Contractor to these terms, conditions and obligations.

_____ Title

_____ Name

_____ Date

_____ Witness

DRUG-FREE WORKPLACE

The Sumner County Board of Education is committed to maintaining a safe and productive work environment for its employees and to providing high quality service to its citizens. The goal of this policy is for Sumner County employees and contractors to remain, or become and remain, drug-free. Abuse and dependency on alcohol and/or drugs can seriously affect the health of employees, contractors and citizens, jeopardize personal safety, impact the safety of others and impair job performance.

Drug-Free Workplace Act of 1988 – Sumner County Board of Education is governed by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D).

Omnibus Transportation Employee Testing Act of 1991 – Sumner County Board of Education is governed by the Omnibus Transportation Employee Testing Act of 1991 (Pub. L. 102-143, Title V).

Right to an Alcohol and Drug-Free Workplace - Employees have the right to work in an alcohol and drug-free environment and to work with persons free from the effects of alcohol and/or drugs.

Required Alcohol and Drug Tests - Alcohol and drug testing for safety sensitive employees shall be in accordance with the provisions contained in the Sumner County Alcohol and Drug Policy adopted by departments which have safety sensitive positions.

Contracts – Any contractors providing goods or services to Sumner County Board of Education must comply with all State and Federal drug free workplace laws, rules and regulations and so certify this compliance by completion of the DRUG-FREE WORKPLACE AFFIDAVIT (attached page 2).

DRUG-FREE WORKPLACE AFFIDAVIT (page 2)

STATE OF _____

COUNTY OF _____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with Sumner County Board of Education to provide goods or services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company") and is duly authorized to execute this Affidavit on behalf of the Company.

2. The Company submits this Affidavit because it shall be receiving pay pursuant to a contract with the state or any local government to provide goods or services.

3. The Company is in compliance with all State and Federal Laws, Rules and Regulations requiring a drug-free workplace program.

Further affiant saith not.

Principal Officer: _____

STATE OF _____

COUNTY OF _____

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence) and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____, 20__.

Notary Public

My commission expires: _____

NOTICE TO RESPONDENTS

Responses to an Invitation to Bid will be received by the Purchasing Supervisor in the SUPPORT SERVICE FACILITY CONFERENCE ROOM, Sumner County Board of Education, 1500 Airport Road Gallatin, TN 37066. They will be received until **10:30 A.M. Local Time TUESDAY APRIL 1, 2014** for **GHS FOOTBALL STADIUM – PHASE I IMPROVEMENTS WALL CONSTRUCTION**, at which time the responses will be opened, taken under advisement and evaluated. ***BIDS WILL BE POSTED ON www.sumnerschools.org***

GENERAL REQUIREMENTS AND CONDITIONS

1. The Sumner County Board of Education reserves the right to accept or reject any and/or all responses in whole or in part, and to waive informalities therein.
2. Any responses received after the scheduled closing time for the receipt for responses will not be considered.
3. If a mistake is discovered after the responses are received, only the Sumner County Board of Education may allow the respondent to withdraw the entire response.
4. Partial payments will not be approved unless justification for such payment can be shown. Terms will be net 30 days.
5. Payment will not be made until the said **GHS FOOTBALLSTADIUM – PHASE I IMPROVEMENTS WALL CONSTRUCTION** are inspected and approved as meeting all specifications by persons appointed by the Sumner County Board of Education.
6. Responses submitted must be in a sealed envelope and marked on the outside as follows:
RESPONSE: GHS FOOTBALL STADIUM – PHASE I IMPROVEMENTS WALL CONSTRUCTION
DEADLINE: 10:30 A.M., TUESDAY APRIL 1, 2014
7. Facsimile responses will not be considered.
8. If a successful bidder violates any terms of their bid, the contract, school board policy or any law they may be disqualified from bidding for a period of two years for minor violations or longer for major violations. Bids from disqualified bidders will not be accepted during the period of disqualification.
9. Prices quoted on the response (if any) are to be considered firm and binding until the said **GHS FOOTBALL STADIUM – PHASE I IMPROVEMENTS WALL CONSTRUCTION** are in the possession of the Sumner County Board of Education.
10. No purchase or contract is authorized or valid until the issuance of a Board Purchase Order in accordance with Board Policy. No Board Employee is authorized to purchase equipment, supplies or services prior to the issuance of such a Purchase Order.
11. Any deviation from these stated terms, specifications and conditions must be coordinated with and approved in writing by the Purchasing Supervisor, Vicky Currey (615) 451-6560.
12. All bids that exceed \$25,000 must have the Company Name, License Number, Expiration Date thereof and License Classification of Contractor listed on outside of sealed envelope. As required by State of Tennessee Code Annotated 62-6-119.
13. The awarded bidder will be required to post a performance and payment bond in the amount of 25% of the contract price if it exceeds \$100,000 as stated by State of Tennessee Code Annotated 12-4-201.
14. If the project cost in excess of \$25,000 a performance bond must be secured by the requesting party in an amount equal to the market improvement value.