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**CAPITOL PLANNING COMMISSION
VERTICAL INFRASTRUCTURE ADVISORY COMMITTEE MEETING
January 17, 2007**

RECENT PAST PROJECTS

Historical Building Coping
Historical Building Light Sculpture
Mitchellville Women's Facility – Administration Building Reroofing

CURRENT PROJECTS

Historical Building Planter Beds: Waiting decision based on budget

- Exhibit A – Condition Survey – Discussion of Findings
- Exhibit B – Condition Survey – Recommendations
- Exhibit C – Condition Survey – Cost Calculations
- Exhibit D – Revised Planter Beds Costs
- Exhibit E – Handicap Access Pathway
- Exhibit F – Plan of Historical Building
- Exhibit G – Bids Received on 9/15/06
- Exhibit H – Bids Received on 11/8/06

Woodward Resource Center – Chapel Reroofing: Currently under construction
Woodward Resource Center – Meyers Hall and Hospital Buildings Reroof: Construction Documents underway

FUTURE PROJECTS

Jessie Parker Building – Roof Replacement
Grimes Building – Roof Replacement
Carriage House – Roof Replacement
Matthew Edel Blacksmith Shop – Roof Replacement
Historical Building, Hoover Building, Lucas Building, and Ola Babcock Miller – Roof Repairs
Historical Building Skylights
Woodward Resource Center – Other Reroofing Projects
Eldora Training School – Other Reroofing Projects

IV DISCUSSION OF FINDINGS

Overview

This survey specifically targets the deficiencies of six building systems identified in the previous section. Each system will be discussed independently and observations noted. During the investigation of these systems other issues have been discovered, which will be elaborated on in the course of this discussion.

Field Survey - General

An individual field survey has been included for each system, looking at the specific problems that are associated with each.

Note: Photo numbers in parenthesis (001, 002, etc.) have been inserted into the text and refer to numbered photos in the Appendix.

Field Survey – Sealant Deficiencies

Granite Roof Coping

There are multiple locations where sealant failure has occurred in the joints of the stone roof coping (250-255). As a result several of the coping pieces were loose which indicates a bond failure between the coping stone and setting bed.

Water penetrating the top of the wall through these open joints runs down the wall in the cavity between the granite panels and substructure where it causes additional damage to interior and exterior building elements. For example, the sunscreens above the south facing windows and several granite panels on the upper plaza deck (200-209) have also been extensively damaged.

Granite Wall and Cap Panels

Sealant deficiencies wall panels are two-fold: First, the sealant, which was placed in the building at the time of construction (1987-1988), is deteriorated to the point of total replacement. Secondly the portions of the building that were resealed have experienced severe bleeding of the sealant into the granite panels. This sealant should be removed, and replaced with a non-bleed sealant after the panels have been cleaned. Proper venting of the cavity behind the granite panels can extend the life of the new sealant.

As part of the field survey a demonstration area at the NW corner of the building was selected for stain removal tests and sample sealant installations.

Field Survey – Granite Failures

The majority of the failures in the granite wall panels occur at the base of the walls (see elevations and sections on pages VI-9 thru VI-20 and photos 001, 002, 009-101, 103-107, 128-131, 133-161, 163-167), the only exceptions are the ones on the upper plaza that are attributed to moisture penetration (see sealant deficiencies above and photos 116-119, 121-127). While moisture may be a contributing factor, the primary source of the granite failures is physical abuse; this is particularly evident at the low wall granite caps (005, 303-314) and along the exterior walks (001, 002).

The granite panels, originally designed to be 2 1/2 inches thick, were reduced in thickness to 1 1/4 inches in a cost reduction effort (the specification spelled out a tolerance of plus or minus 1/4 inch – thus, allowing 1 inch panels as acceptable) when the building was initially constructed. The resulting thinner panels are incapable of absorbing the amount of physical abuse to which they are subjected. Panels along the sidewalks are subjected to impact loads from snow removal equipment; while wall panels in grassy areas are subjected to impacts from lawn care equipment.

Panels were removed from the building at three locations to verify the nature and potential varying conditions of the granite failures (600-608).

Also at three other locations, around the exterior of the building granite panels are mounted to the face of required egress doors. The extreme weight of the granite panels is affecting the ability of these doors to operate. So much in fact that even after being properly adjusted and lubricated these doors are difficult for a single person to open and close.

Field Survey – Plaza Tile Failures

Upon observing the plaza tiles it was evident that grout joints had failed allowing water to saturate the setting bed (403, 405). It was also observed that once the water was allowed to penetrate the setting bed there was no effective way for the water to drain off. This condition resulted in the complete deterioration of the setting bed and the subsequent failure of the system (400-407).

Field Survey – Skylight Deficiencies

A review of the history of the skylight deficiencies reveals that they were a problem from the time the building initially opened (December 1987). Due to the complexity of the system (500-503), its integrity relies heavily on proper detailing and skilled craftsmanship. Upon close inspection (518, 519) several avenues of possible leaks were discovered: Lap seams in the gutter between the skylight and the wall are not sufficiently lapped or sealed (518) which allows water to enter the building along the wall (521, 524). Virtually every intersection where the vertical portion of the skylight meets the wall or another skylight showed evidence of a leak (504, 515, 516). The most probable cause for these failures is a combination of improperly installed cladding and sealant malfunction.

Because of the combination of high temperature (interior of the granite panels have been recorded to reach temperatures of 195 degrees Fahrenheit when exposed to direct sunlight) and thermal movement to which the skylight is subjected, the compressible filler between the wall and skylight has failed. While this is not a primary source of leaks it creates an unsightly appearance (521, 522, 524) and is unable to stop condensation moisture from dripping below. If properly installed it would serve as a secondary defense against water penetration.

It should also be noted that because of the many attempts over the years to 'seal' the skylight system an abundance of sealant has been applied over what could be considered a questionable substrate. Without removing all the old sealant and starting over it is impossible to understand all the underlying conditions (504-507, 513, 515). There are even areas that have never been sealed that probably should be (vertical joint on photo 515, horizontal joint on photo 516).

Structural integrity is also a concern. The system's skeletal support may have been damaged by years of unintended moisture exposure. There is visible evidence of some rusted structural components (522, 524) whether the damage is surface or more severe is unable to be determined until a systematic dismantling of the parts takes place. The condition of the anchor points was not reviewed due the inability to access.

Field Survey – Planter Bed Deficiencies

The planter beds will not fully be investigated until all the soil is removed and the planter membrane can be examined. However, existing evidence indicates that given the nature and location of the leaks, the age of the planter membrane (17 years), and the condition of the joints in the granite caps,

that relining the planters and resetting and sealing the caps would be in order (the architect reviewed an invoice for work completed on May 14, 1999 where a planter bed membrane was replaced; after removal of soil, extensive damage to the original membrane was documented). Also the plant material in the beds seem to be over filled trapping moisture in the setting bed along the back side of the granite caps and subsequently, adding to the advanced deterioration of the mortar bed (550).

Planter beds located adjacent to skylight assemblies need to be protected from the water exiting the gutter system. There is evidence that the flow of water from the skylight gutters has washed away extensive planter bed materials and soil (551, 552). The resulting condition ponds water against the already failing membrane allowing it to eventually find a point of entry compromising the system and subsequently finding its way down to the interior of the building. This condition may also be over taxing the internal drains located in the bottom of the planter beds.

Other related leaks similar to those in the planter beds have been documented at locations within the plaza itself. Similar to the planter beds age degradation of the plaza membrane and general failure of sealants is the major cause of these moisture problems.

Field Survey – Fountain Deficiencies

Conversations with maintenance personnel uncovered many faults with the fountain. First water seepage has occurred over the years along the wall at the location of the bronze sculpture. The tile interior of the fountains has not been able to hold back water sufficiently since it was installed and continuously leeches water from the system.

Mechanically, from day one the fountains have never operated properly either. When the pumps are running (they have not been activated for years) and the fountains are operational, water circulates up from the lower two circle pools (004, 007) and cascades down the water fall bronze sculpture (111, 112) into the larger pool. When the system is powered down there is no mechanism in place to prevent water from draining out of the large pool into the smaller pools. When this happens the two smaller pools over flow and spill onto Locust Street.

Electrically the installed lighting does not seem permanent and it is need of replacement. The current marginal condition and temporary nature of the fixtures looks like an electrical hazard waiting to happen.

Operational condition of the inner workings of the pump system is marginal at best and is showing its age and deterioration due to years of exposure to the harsh Iowa climate and infrequent use (575-577).

V RECOMMENDATIONS

Overview

The opinions and recommendations contained in this report are based on existing documentation, visual observations and field investigations performed as a part of this project. This report does not address any other areas of the building other than those mentioned, nor does it provide any warranty, either expressed or implied, for any portion of the existing structure.

The recommended resolutions of the subject system deficiencies of this report are addressed in this section. The probable cost of the correction of these deficiencies will be enumerated in subsequent *Section VIII*.

Recommendations – Sealant Deficiencies

1. Granite Roof Coping (250-255): If the granite coping remains in place, loose pieces are reset and the joints are sealed, a flashing system should be devised to route the inevitable penetrating moisture from beneath the cap. However, the underlying problems and potential safety concerns of the system will still remain and require continual maintenance. As conditions worsen and the coping continues to loosen the risk increases that a piece of coping may fall to the ground below. Therefore it is the recommendation of this report to replace the granite coping with a new metal coping system (matching the profile of the removed granite and minimizing any aesthetic building changes). The removal and replacement of the granite will result in a maintenance free system with little or no visual change to the structure.
2. Granite Wall and Cap Panels: The original sealant joints are deteriorated to the point of total replacement and therefore require to be resealed. The joints that have been recently resealed are weather-tight but oils in the sealant (or installation primer) have severely stained the granite. The stained panels should be treated with a stain digester to reduce the severity of the stain. The discoloration may not totally be eliminated with a single application and multiple applications may be necessary.

A demonstration of the ability of the stain digester was tested in a mock-up on the NW corner of the building. See photos 700-707:

The before condition is shown in photo 700.

The sealant is removed in photo 701.

The Prosoco Dicone NC15 Gel (photo 704) is applied in photos 702 and 703.

The Gel is allowed to set for 15 minutes then it is power washed off in photo 705.

The removed stain prior to sealant application photo 706

Sealant color test – Dow Corning 756 Adobe Tan was selected, shown on upper joint of lower panel second from the right in photo 707.

It is also important that the air in the cavity between the granite and the sub-structure be properly exhausted by means of small equally spaced vents located (in the sealant joints) per the sealant and granite manufacturers recommendations. Part of this mock-up also included sending sample panels of granite to a testing lab to test the adhesion capabilities and stain resistance of the proposed sealant product, results of this test will be available for review after submission of this report. To achieve the desired uniformity of detail and color it is the recommendation of this report to reseat all exterior joints with a product equivalent to that provided in the test sample itemized above (Dow Corning 756).

Recommendations – Granite Failures

1. Granite Wall Panels: As indicated previously in this report, the majority of the granite failures are at the base of the wall and due to physical abuse. The granite panel intolerance to this abuse is due to the thinness of the panel (approximately 1 inch), particularly at the locations where the mounting hardware is inserted into the edges of the panels.

The recommendation for the correction of this deficiency is to provide a solid backing for the panels at the base of the building to a height of 2'-0" minimum above grade (see hand drawn details – part of this Section). This will provide the added thickness required to tolerate the abuse. Several methods of achieving this goal were discussed with the preferred solution being incorporated into an on-site mock-up.

The mock-up is documented in photos 600-624:

The before condition is shown in photo 600.

The unbroken upper panel is removed first in photos 601 and 602.

The broken lower panel is removed in photos 603-605.

Other test areas were chosen to have panels removed to verify substrate conditions, photos 606-608.

3M Super 77 adhesive (photo 609) was used to adhere the mesh side of CCW MiraDRAIN 9900 (photo 610) to the back of the lower granite panel.

Owens Corning Formular 250 pink rigid insulation board is installed between concrete structural wall and MiraDRAIN (photo 612). This is used as a filler to reduce the amount of needed grout.

SikaGrout 300 PT was poured in between the rigid insulation and the MiraDRAIN. It was used because of its fluid nature to fill in the back side of the buttons in the MiraDRAIN 9900 (photos 611-613)

SikaGrout 212 was used to form the cant on the top of the detail in photos 614-616.

CCW-705-TWF self adhering membrane flashing was installed against the concrete structural wall and on top of the grout cant as shown in green in photo 618.

Granite patching was tested on the broken areas of the lower panel in photos 615, 616 and 620.

Lead was melted into the anchor points of the granite panel as shown in photos 617 and 619.

The upper panel was reassembled in photo 621.

The completed mock-up without sealant is shown in photo 622.

Evidence of granite patch shadowing is shown in photos 623 and 624.

It is recommended that solid backing be added to all panels around the base of the building. The panels that are now fractured should be repaired if practical (as of submission of this report architect was not pleased with the results of patching in the mock-up and would require further test samples before process is accepted as an alternative to panel replacement) and if they cannot be repaired should be replaced with new panels of equal size and color. Both granite colors used on the building are still currently available through Cold Spring Granite in Cold Spring, Minnesota (the original granite supplier on the project). The pinker panel color has a flamed finish on a Radiant Red stone quarried out of Fredericksburg, Texas. The darker color has a honed or polished finish on a Carnelian Red stone quarried out of Milbank, South Dakota. Both colors can be matched by other quarries and should not thought of as proprietary.

The nature of the repair of these panels is such that if the budget did not allow the solid backing to be added to all panels in a single contract, the work could proceed in phases. But, is important to note that the problem will persist until all panels have solid backing.

2. Granite Cap Panels: The deficiencies in the low wall caps are two-fold: some are loose and some are fractured.

The fractured caps are in areas of high abuse, for example, the area at the SE corner around the fountain (005 and 303-314). Since most of these caps are damaged beyond repair, it is recommended that these caps be replaced. There are two options for replacement: 1) replace the caps with material of similar thickness (1 ¼ inch) and provide solid support or 2) replace the caps with caps of thicker material (2 ½ inches).

The loose caps occur primarily at the planter beds, where excessively high levels of soil have allowed water to penetrate under the wall caps. This, in combination with the failure of the joint sealant, has led to the complete deterioration of the mortar setting bed resulting in loose caps (similar condition and safety concerns as the roof coping). For the correction of this deficiency, it is recommended that the level of soil be lowered to a minimum of 2 inches below the top of the planter membrane and a flashing system should be devised to route the inevitable penetrating moisture from beneath the cap. The granite caps should then be reset and the joints sealed.

3. Granite Panel Doors: The deficiencies in the granite panel covered doors are a direct result of the shear weight of the panels. The safety concern exists that an individual may not be able to open the doors in a panic situation.

It is the recommendation of this report that the granite panels be removed from the doors and an alternate detail that maintains the granite or another door should be installed that minimally impacts the aesthetics of the exterior.

4. Granite Cleaning: Over time the exterior of the building has taken on a fair amount of dirt and grime, including markings directly related to the granite panel failures. A test sample consisting of panel cleaning took place on the west side of the building (photos 750-756).

The goal of the test cleaning was to attempt to remove the rust stain marking that occurred due to the rubbing of maintenance equipment wheel weights along the building's exterior granite perimeter (marking is consistently 16 inches above grade):

Photos 750-752 is the before cleaning condition.

Prosoco Light Duty Restoration Cleaner was scrubbed into the surface of the granite panels in photo 753.

The cleaner was power washed off in photo 754.

The clean condition is shown in photos 755 and 756.

It is the desire of this report to recommend cleaning of the granite panels around the entire exterior of the building. At a minimum we recommend the cleaning of all panels that are within reach of an individual walking around any part of the building (including plaza and grassy areas) and all horizontal panels.

Recommendations – Plaza Failures at the South Entrance

Because of the deterioration of the setting bed (400-407) for the plaza tiles and the lack of adequate drainage thereof, the recommendation for the correction of this deficiency is the total replacement of the plaza tiles. By rebuilding the plaza from the base up, an effective under-tile drainage system can be developed. This will require an entirely new concrete slab sloped to storm water drains under the tile system. In order to adequately drain the tile a system similar to the Laticrete Plaza and Deck System should be installed (408). Therefore, in the event water should penetrate the surface of the new plaza a properly designed drainage system will dissipate it before it has the opportunity to cause any damage.

Recommendations – Skylight Deficiencies

Observations have uncovered several possible areas of leaks in the skylight system. However, given the history of attempted fixes for the problem and their resulting success or lack thereof, the only practical option for the complete repair of the existing skylight will require the dismantling and rebuilding of the system. It is recommended that serious consideration be given to replacing the skylight gutter system with a welded, stainless steel system. In conjunction with this, an internal condensation collection system should be integrated into the design. With this option the opportunity also exists to structurally evaluate, clean, and examine the other components as they are disassembled, and where necessary modify or replace them. It is further recommended to seriously consider changing the design of the skylight system to delete or minimize the need for an internal gutter arrangement.

Recommendations – Planter Bed Deficiencies

As stated in the Field Survey section of this report the planter beds have not yet been examined with the soil removed. However, after review of an earlier repair report dated May 14, 1999 it is apparently obvious that membrane failure is contributing to the leaks. It is the recommendation of this report that the bed level of the planters should be lowered (550) below the membrane edge and any water expelled from the skylight gutter system be routed off of the surface of the planter beds (551, 552) and onto the plaza below. Further from the information gathered in the May 1999 repair report and the visual information collected during the course of our investigations it can be reasonably concluded that the planter's membranes should be replaced and the granite caps reset with the joints resealed as indicated in the recommendations under granite failures above.

Other related leaks similar to those in the planter beds have been documented at other locations within the plaza itself. Those specific leaks need to be addressed and tracked down on a case-by-case basis. More than likely age degradation of the plaza membrane and general failure of sealants is the major cause of these moisture problems.

Recommendations – Fountain Deficiencies

The recommendation of this report is that all pump equipment needs to be thoroughly checked by an expert and replaced as needed (575-577). The functional issues addressing the fountain's operation or lack of (when the fountain is shut down and floods Locust Street) should be addressed in the reconditioning or replacement of pump equipment. The seeping of water behind the granite wall panels around the bronze sculpture waterfall should be corrected with proper detailing similar to the Laticrete Plaza Deck System (408) only adapted for a vertical application. The tile interior of the fountains should be completely removed and replaced with a system that is similar once again to the Laticrete Plaza Deck System (see information above under Recommendations – Plaza Failures at the South Entrance). New lighting should also be considered as part of this project and it is recommended that the lights be integral with the bed of the fountain and should be installed at the same time the tile is replaced.

Details

Several details were created leading up the final granite reinforcement mock-up installation (600-624). Three of the generated details are included in this report to demonstrate the evolution of the final solution. Each drawing is included after page 6 of this section.

The three drawings are titled as shown and described in detail below:

- A. Page V - 7: Historical Building Repair Mock-ups (page shows four details each corresponds to its respective number below):
1. The bottom 'B' panel would be cut from the original broken piece, the top 'B' panel could be from the cap stone salvage (or new material purchase if cap stone use is deemed unacceptable). If done carefully panel 'A' may not need to be removed - only supported with clip angles while the cavity below is grouted full. Disadvantage: the repair project would affect every piece of granite around the entire base of the building - reducing the options for phasing repair of just the broken panels. Verification with the installing contractor will determine if the 'A' panel can remain in place on this option.
 2. This option utilizes replacement granite at broken locations only (about 200) - however, in order to make this repair, panel 'A' must be removed. Even though we must purchase several new panels (or effectively patch) for this scenario we imagine that the labor to achieve this solution (typical in all solutions) will dwarf the material cost. Advantage: this repair will blend in with existing panel layout allowing the owner to repair panels as their budget allows without aesthetically changing the exterior appearance of the building. Ultimately, if only a fix of the broken areas is selected the balance of the panels around the exterior will remain susceptible to damage, we would recommend grouting full all panels at the base of the building.
 3. A hybrid of the first two options. In order to grout the cavity and insert the flashing, panel 'A' must be removed. The difference is that this solution offers a solid granite base piece (could be a salvage granite panel cast into concrete, or pre-cast concrete only for cost savings). This solution is more labor intensive than 2 to install but, could have substantial material savings similar to 1.
 4. A variation of 3 - the cut granite panel 'B' is continually supported on the granite curb below, reducing the need to grout the cavity full. The kerfs cut on the top of the granite curb could act as a flashing of sorts minimizing the need for the flashing shown below the 'A' panel. If the flashing below the 'A' panel is not installed the 'A' panel will not need to be removed for this repair scenario. Therefore, reducing labor to that which would be similar to option 1. The material cost would be similar to option 3.
- B. Page V - 8: Panel Elevation and Panel Section drawings:
1. The panel elevation indicates the damage line that occurs around the perimeter of the building the result of this drawing shows the inherent complexities involved in choosing a line to terminate the back grouting of the panel system.
 2. The panel section shown begins to look in detail grouting solid behind the granite panels, notice the flashing directing any moisture to the exterior of the system.
- C. Page V - 9: Historical Building 07/09/04 - Panel Mock-up Section:
1. This final detail that was created and utilized in the actual granite panel mock-up installation (600-624). Slight variances occurred in the actual installation from this detail but, the overall intent and material use stayed the same.

Cost Calculations

Description	Factor	Quantity	Labor & Materials	Subtotal	Totals
New Metal Coping System					
Removal of grante cap system	unit	402	\$80	\$32,160	
Installation of metal coping	linear foot	2,206	\$12	\$26,472	
Miscellaneous related leak repairs	unit	6	\$3,500	\$21,000	
					\$79,632
Reseal Joints in Granite Wall Panels & Caps					
Removal and resealing granite					
Planter caps	square foot	8,270	\$3.50	\$28,945	
Walls	square foot	84,512	\$3.50	\$295,792	
Clean stained granite panels	square foot	49,404	\$1.00	\$49,404	
Power wash graninte panels	square foot	84,512	\$0.30	\$25,354	
					\$399,495
Repair Broken Granite Wall Panels					
Remove broken panels	unit	150	\$390	\$58,500	
New panels with new backup system	unit	150	\$590	\$88,500	
Reinforce unbroken base panels	linear foot	4,544	\$180	\$817,920	
					\$964,920
Reset Planter Cap Stone					
Replace broken units	unit	29	\$460	\$13,340	
Reset all cap units	unit	1,241	\$150	\$186,150	
					\$199,490
Repair Granite Clad Doors					
Repair Granite Panel Doors	unit	3	\$3,500	\$10,500	
					\$10,500
South Entry Plaza Tile Replacement					
Removal of tile and setting bed	square foot	5,400	\$3	\$16,200	
Replacement of tile and setting bed	square foot	5,400	\$25	\$135,000	
					\$151,200
Skylight Repairs					
Remove skylight assemblies	square foot	5,900	\$10	\$59,000	
Replace skylight assemblies	square foot	5,900	\$75	\$442,500	
					\$501,500
Planter Bed Repair					
Remove/repair planter bed materials	unit	15	\$6,500	\$97,500	
Repair miscellaneous leaks	unit	6	\$3,250	\$19,500	
					\$117,000

Description	Factor	Quantity	Labor & Materials	Subtotal	Totals
Fountain Repair					
Rework mechanical systems	unit	1	\$85,000	\$85,000	
Replace tile in fountain bed	square foot	712	\$23	\$16,376	
Remove and replace granite wall panels	linear foot	124	\$180	\$22,320	
Rework electrical system	unit	1	\$9,500	\$9,500	
Remove and replace lighting systems	unit	10	\$850	\$8,500	
Replace low wall and cap granite	unit	18	\$460	\$8,280	
					\$149,976
Subtotal before contingency					\$2,573,713
15% contingency					\$386,057
Subtotal before fees					\$2,959,769
10% fees and other administrative costs					\$295,977
Project Total Probable Cost					\$3,255,746

VIII REPAIR COSTS

Cost Summary

The costs required for the correction of deficiencies outlined under the recommendations section are summarized by system. These costs are based upon conceptual information and should be useful for initial budgeting. As the detailed repairs for each system are developed these costs can be further refined. Refer to the Cost Calculation sheets following this summary for detail on cost computation for each system.

Costs are in year 2004 dollars and should be adjusted for inflation as deemed appropriate. Certain repair costs rely on other recommended items to be completed prior to initiating the individual repair project – if items are phased or split from the list below verification of all items should be completed. Always include contingency and fee percentages in revised totals.

Probable Improvement Cost for each system is as follows:

Sealant Deficiencies	\$479,127
New Metal Coping System	
Reseal Joints in Granite Wall Panels & Caps	
Granite Failures	\$1,174,910
Repair Broken Granite Wall Panels	
Reset Planter Cap Stone	
Repair Granite Clad Doors	
Plaza Tile Failures	\$151,200
South Entry Plaza Tile Replacement	
Skylight Deficiencies	\$501,500
Skylight Repairs	
Planter Bed Deficiencies	\$117,000
Planter Bed Repair	
Fountain Deficiencies	\$149,976
Fountain Repair	
<hr/>	
Subtotal Before Contingency	\$2,573,713
Add 15% Contingency	\$386,057
Subtotal Before Fees	\$2,959,769
Add 10% Fee and Other Administrative Costs	\$295,977
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Total Improvement Cost of All Recommended Items	\$3,255,746

CONSTRUCTION PROBABLE COSTS

Historical Building
Des Moines, IA
8/19/2005

Keffer/Overton Associates Architects
317 Sixth Avenue, Studio 201
Des Moines, Iowa 50309
515-288-4821 fax 515-288-0859

Estimate of All Work Associated With Planter Beds Over Occupied Areas (15 total)
Removal and Replacement of plant material not included

Item	bed#	EPDM SF	LF granite	Wall	EPDM LF
	14	472	102		176
	15	192	41		52
	16	2496	452		426
	17	656	74		142
	17b	81	20		36
	18	192	80		80
	20	200	58		108
	21	32	16		24
	23	32	16		24
	24	192	64		64
	25	240	68		128
	35	112	34		68
	45	112	34		68
	46	112	34		68
	47	64	32		32
<hr/>					
Total		5185	1125		7480
price		\$7	\$110		\$7
Totals		\$36,295	\$123,750		\$52,360
					\$212,405
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Drain Wk		15	\$960		\$14,400
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Total Est					\$226,805

PROBABLE COST

Handicap access pathway
State of Iowa Historical Building
Des Moines, IA

Keffer/Overton Associates Architects Planners Constructors
317 Sixth Avenue, Studio 201
Des Moines, Iowa 50309
515-288-4821 fax 515-288-0859

3/27/2006

00 Type	Description	Factor	Quantity	Labor & Materials	Subtotal	Totals	
02	Sitework						
	Removal of Plant Materials	Lump	1	\$8,000.00	\$8,000		
	Demolition of Concrete/Granite Walls	Lump	1	\$12,000	\$12,000		
	Storm Sewer	Lump	1	\$1,500	\$1,500		
						\$21,500	
03	Concrete						
	New base slab	SF	372	\$8.00	\$2,976		
	Perimeter Sidewalk Replacement	SF	258	\$8.00	\$2,064		
						\$5,040	
04	Masonry						
	Reset Granite Coping	LF	158	\$110.00	\$17,380		
	Granite Panels - Material	SF	624	\$36.00	\$22,464		
	Granite Panels - Labor	Lump	1	\$20,000.00	\$20,000		
	Plaza Pavers	SF	372	\$15.00	\$5,580		
						\$65,424	
17	Subtotal 1 - includes items 02, 03, & 04						\$91,964
18	Contingency - 10% of Subtotal 1				\$9,196		
19	Subtotal 2					\$101,160	
20	General Conditions, Overhead/Profit - 10% of Subtotal 2				\$10,116		
21	Subtotal 3					\$111,276	
22	Increase for 2 months Inflation - 1.5% of subtotal 3				\$1,669		
23	Subtotal - Probable Construction Cost						\$112,946

**NEW HISTORICAL BUILDING
FOR THE STATE OF IOWA**
DES MOINES, IOWA

CONSULTANTS:
DURRANT ENGINEERS INC.
DUBUQUE, IOWA
(319) 283-8131

ARCHITECTS:
BROWN HEALEY BOCK P.C.
800 1ST AVE. NE
CEDAR RAPIDS, IOWA 52402
PHONE: (319) 396-9426

SHEET TITLE:
**LEVELS TWO & THREE
AREAS FOR BREAKDOWN OF
ALTERNATES GC-1, P-1, HVAC-1, & E-1**

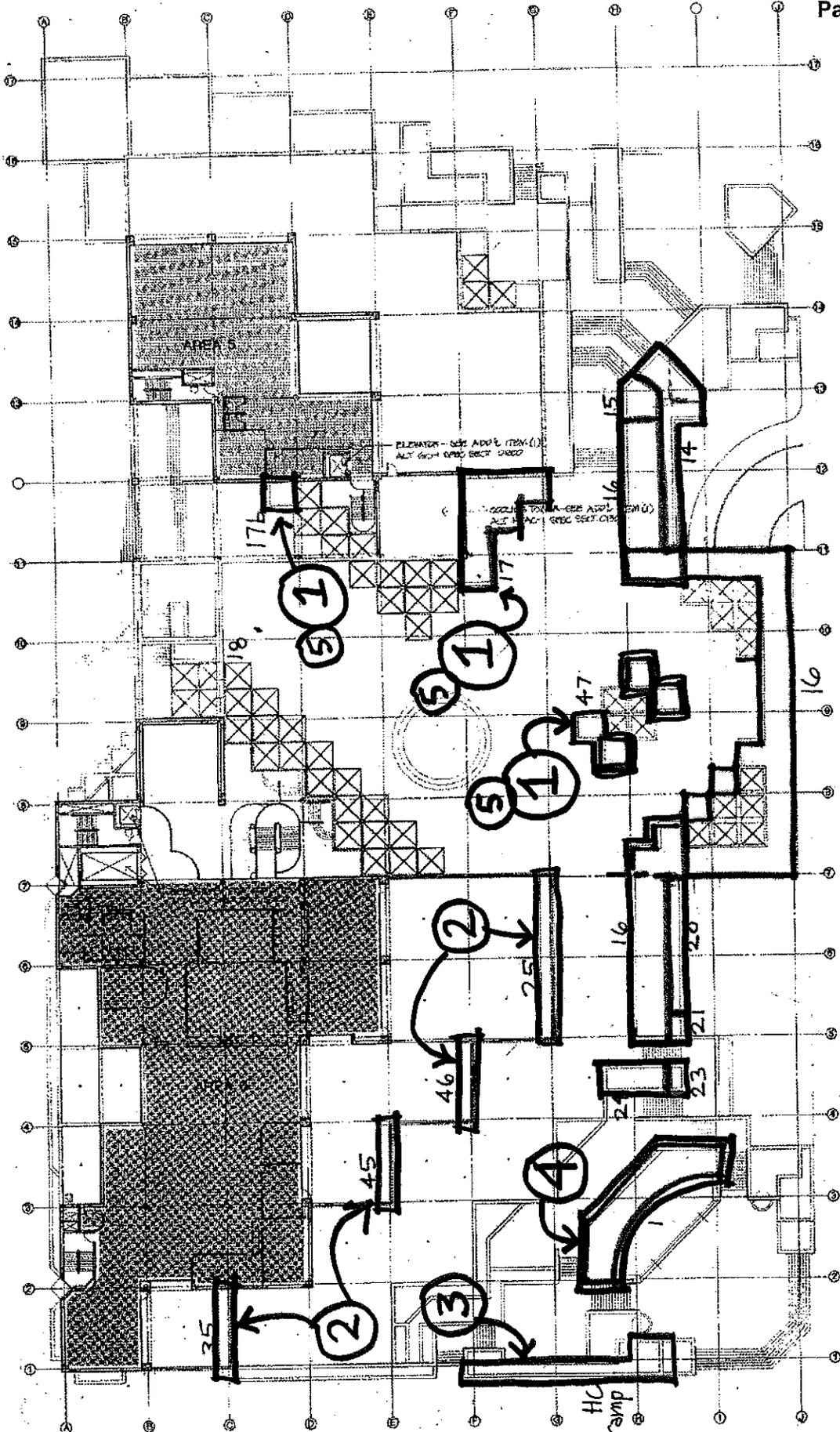


DATE: 3/1/86
REV:

JOB NO:
82047
SHEET NO:

0.06

PLANTER BED LOCATIONS AND ALTERNATES



LEVEL THREE

SCALE: 1" = 20'

SEE SPECIFICATION SECTION 01300 FOR INFORMATION ON ALTERNATES #1 AREAS AND ADDITIONAL ITEMS REQUIRED FOR BREAKDOWN

SECTION 00411

BID FORM

THE PROJECT AND THE PARTIES

1.01 PROJECT:

- A. State of Iowa Historical Building planter Bed Repairs.

1.02 TO:

- A. Owner
1. State of Iowa Department of General Services
 2. Purchasing Division
 3. Hoover State Office Building -Level A
 4. Des Moines, Iowa

1.03 DATE: 9/19/06 (Bidder to enter date)

1.04 SUBMITTED BY: (Bidder to enter name and address)

- A. Bidder's Full Name BERGSTROM CONSTRUCTION, INC.
1. Address 1719 Hull Avenue
 2. City, State, Zip DES MOINES, IOWA 50313
- Phone: 265-5146

1.05 OFFER

- A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Keffer/Overton Architects for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:
- B. Seven hundred seventeen thousand dollars
(\$ 717,000), in lawful money of the United States of America.
- C. We have included the required security deposit as required by the Instruction to Bidders.
- D. All applicable federal taxes are included and State of Iowa taxes are included in the Bid Sum.
- E. Site Visit has taken place and signed site examination form is attached.

1.06 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
1. Execute the Agreement within seven days of receipt of Notice of Award.
 2. Furnish the required bonds within seven days of receipt of Notice of Award.
 3. Commence work within seven days after written Notice to Proceed of this bid.
- C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
- D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

SECTION 00431

SUPPLEMENT A - LIST OF SUBCONTRACTORS

PARTICULARS

1.01 Apparent low bid contractor will be required to submit this form within 24 hours after bid opening.

1.02 Herewith is the list of Subcontractors referenced in the bid submitted by:

1.03 (Bidder) Bergstrom Const Inc.

1.04 TO: State of Iowa Department of General Services

1.05 Dated 9/15/06 and which is an integral part of the Bid Form.

1.06 The following work will be performed (or provided) by Subcontractors and coordinated by us:

LIST OF SUBCONTRACTORS

2.01 WORK SUBJECT.....	SUBCONTRACTOR NAME
2.02 excavation/fill	Sandstone Mngt
2.03 Plumbing	EMK
2.04 Waterproofing	Western Waterproofing
2.05 Masonry	MtM
2.06	
2.07	
2.08	
2.09	
2.10	

END OF SUPPLEMENT A

SECTION 00433

SUPPLEMENT C - LIST OF ALTERNATIVES

PARTICULARS

1.01 The following is the list of Alternatives referenced in the bid submitted by:

1.02 (Bidder) Bergstrom Const. Inc.

1.03 TO: State of Iowa Department of General Services

1.04 Dated 9/15/06 and which is an integral part of the Bid Form.

ALTERNATIVES LIST

2.01 The following amounts shall be added to or deducted from the Bid Amount. Refer to Section 01230 - Alternatives: Schedule of Alternatives.

A. Please circle the appropriate Add or Deduct indicator and include the dollar amounts below.

2.02 Alternative # 1 - Planter Beds 17, 17b, 47:

(Deduct) \$ 115,000

2.03 Alternative # 2 - Planter Beds 25, 35, 45, 46:

(Deduct) \$ 138,000

2.04 Alternative # 3 - Handicap Walkway:

(Add) (Deduct) \$ 69,000

2.05 Alternative # 4 - Fountain Conversion to Planter Bed:

(Add) (Deduct) \$ 46,000

2.06 Alternative # 5 - Planter Beds 17, 17b, and 47 non-demolition:

(Deduct) \$ 3,000

END OF SUPPLEMENT C

SECTION 00411

BID FORM

THE PROJECT AND THE PARTIES

1.01 PROJECT:

- A. State of Iowa Historical Building planter Bed Repairs.

1.02 TO:

- A. Owner
1. State of Iowa Department of General Services
 2. Purchasing Division
 3. Hoover State Office Building -Level A
 4. Des Moines, Iowa

1.03 DATE: 11/08/06 (Bidder to enter date)

1.04 SUBMITTED BY: (Bidder to enter name and address)

- A. Bidder's Full Name BROCON SERVICES LLC
1. Address 6720 NW BEAVER DR. SUITE 4
 2. City, State, Zip JOHNSTON, IA 50131

1.05 OFFER

- A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Keffer/Overton Architects for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:
- B. SEVEN HUNDRED FORTY FIVE THOUSAND dollars
(\$ 745,000), in lawful money of the United States of America.
- C. We have included the required security deposit as required by the Instruction to Bidders.
- D. All applicable federal taxes are included and State of Iowa taxes are included in the Bid Sum.
- E. Site Visit has taken place and signed site examination form is attached.

1.06 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
1. Execute the Agreement within seven days of receipt of Notice of Award.
 2. Furnish the required bonds within seven days of receipt of Notice of Award.
 3. Commence work within seven days after written Notice to Proceed of this bid.
- C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
- D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.07 CONTRACT TIME

- A. If this Bid is accepted, we will:
- B. Complete the Work as outlined in the Master Project Schedule.

1.08 CHANGES TO THE WORK

- A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
 - 1. 18 percent overhead and profit on the net cost of our own Work;
 - 2. 13 percent on the cost of work done by any Subcontractor.
- B. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus 5 of the overhead and profit percentage noted above.

1.09 ADDENDA

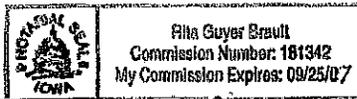
- A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
 - 1. Addendum # 1 Dated 11/2/06
 - 2. Addendum # 2 Dated 11/7/06
 - 3. Addendum # _____ Dated _____
 - 4. Addendum # _____ Dated _____

1.10 BID FORM SUPPLEMENTS

- A. The following Supplements are attached to this Bid Form and are considered an integral part of this Bid Form:
 - 1. Document 00433 - Supplement C - Alternatives: Include the cost variations to the Bid Sum applicable to the Work as described in Section 01230.
- B. We agree to submit the following Supplements to Bid Forms within 24 hours after submission of this bid for additional bid information:
 - 1. Document 00431 - Supplement A - Subcontractors: Include the names of all Subcontractors and the portions of the Work they will perform.

1.11 BID FORM SIGNATURE(S)

- A. The Corporate Seal of
- B. BROCON SERVICES LLC
- C. (Bidder - print the full name of your firm)
- D. was hereunto affixed in the presence of:
- E. Rita Geyer Brault
- F. (Authorized signing officer, Title)
- G. 
- H. Chris Brault CHRIS BRAULT
- I. (Authorized signing officer, Title) MANAGING PARTNER



1.12 If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF SECTION

SECTION 00433

SUPPLEMENT C - LIST OF ALTERNATIVES

PARTICULARS

1.01 The following is the list of Alternatives referenced in the bid submitted by:

1.02 (Bidder) Brownstein

1.03 TO: State of Iowa Department of General Services

1.04 Dated 11/08/2000 and which is an integral part of the Bid Form.

ALTERNATIVES LIST

2.01 The following amounts shall be added to or deducted from the Base Bid Amount. Refer to Section 01230 - Alternatives: Schedule of Alternatives.

A. Please circle the appropriate Add or Deduct indicator and include the dollar amounts below.

2.02 Alternative # 1 - Deduct work for Planter Beds 17, 17b, 47:
(Add) (Deduct) \$ 133,710

2.03 Alternative # 2 - Deduct work for Planter Beds 25, 35, 45, 46:
(Add) (Deduct) \$ 17,370

2.04 Alternative # 3 - Deduct work for Handicap Walkway:
130,000 (Add) (Deduct) \$

2.05 Alternative # 4 - Deduct work for Fountain Conversion to Planter Bed:
(Add) (Deduct) \$ 44,000

2.06 Alternative # 5 - Planter Beds 17, 17b, and 47 non-demolition and repairs:
(Add) (Deduct) \$ 29,000

END OF SUPPLEMENT C

FA4248-2481

SECTION 00411

BID FORM

THE PROJECT AND THE PARTIES

1.01 PROJECT:

- A. State of Iowa Historical Building planter Bed Repairs.

1.02 TO:

- A. Owner
1. State of Iowa Department of General Services
 2. Purchasing Division
 3. Hoover State Office Building -Level A
 4. Des Moines, Iowa

1.03 DATE: 8 Nov 2006 (Bidder to enter date)

1.04 SUBMITTED BY: (Bidder to enter name and address)

- A. Bidder's Full Name E & H Restoration, L.L.C.
1. Address 1926 Comenitz Drive
 2. City, State, Zip Davenport, IA 52802

1.05 OFFER

- A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Keffer/Overton Architects for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:
- B. One Million One Hundred Nineteen Thousand Five Hundred Sixty-one dollars
(\$ 1,119,561.00), in lawful money of the United States of America.
- C. We have included the required security deposit as required by the Instruction to Bidders.
- D. All applicable federal taxes are included and State of Iowa taxes are included in the Bid Sum.
- E. Site Visit has taken place and signed site examination form is attached.

1.06 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
1. Execute the Agreement within seven days of receipt of Notice of Award.
 2. Furnish the required bonds within seven days of receipt of Notice of Award.
 3. Commence work within seven days after written Notice to Proceed of this bid.
- C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
- D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.07 CONTRACT TIME

- A. If this Bid is accepted, we will:
- B. Complete the Work as outlined in the Master Project Schedule.

1.08 CHANGES TO THE WORK

- A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
 - 1. 20 percent overhead and profit on the net cost of our own Work;
 - 2. 10 percent on the cost of work done by any Subcontractor.
- B. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus same of the overhead and profit percentage noted above.

1.09 ADDENDA

- A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
 - 1. Addendum # 1 Dated Nov. 2, 2006.
 - 2. Addendum # 2 Dated Nov. 7, 2006.
 - 3. Addendum # _____ Dated _____.
 - 4. Addendum # _____ Dated _____.

1.10 BID FORM SUPPLEMENTS

- A. The following Supplements are attached to this Bid Form and are considered an integral part of this Bid Form:
 - 1. Document 00433 - Supplement C - Alternatives: Include the cost variations to the Bid Sum applicable to the Work as described in Section 01230.
- B. We agree to submit the following Supplements to Bid Forms within 24 hours after submission of this bid for additional bid information:
 - 1. Document 00431 - Supplement A - Subcontractors: Include the names of all Subcontractors and the portions of the Work they will perform.

1.11 BID FORM SIGNATURE(S)

- A. ~~The Corporate Seal of~~ Limited Liability Corporation (partnership)
- B. E & H Restoration, L.L.C.
- C. (Bidder - print the full name of your firm)
- D. was hereunto affixed in the presence of:
- E. Mark F. Emde
- F. Mark F. Emde, Partner
(Authorized signing officer, Title)
- G. (Seal)
- H. Donald R. Emde
- I. Donald R. Emde, Partner
(Authorized signing officer, Title)

1.12 If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF SECTION

SECTION 00433

SUPPLEMENT C - LIST OF ALTERNATIVES

PARTICULARS

1.01 The following is the list of Alternatives referenced in the bid submitted by:

1.02 (Bidder) E & H Restoration, L.L.C.

1.03 TO: State of Iowa Department of General Services

1.04 Dated 8 Nov 2006 and which is an integral part of the Bid Form.

ALTERNATIVES LIST

2.01 The following amounts shall be added to or deducted from the Base Bid Amount. Refer to Section 01230 - Alternatives: Schedule of Alternatives.

A. Please circle the appropriate Add or Deduct indicator and include the dollar amounts below.

2.02 Alternative # 1 - Deduct work for Planter Beds 17, 17b, 47:

(Add) (Deduct) \$ 156,363.00

2.03 Alternative # 2 - Deduct work for Planter Beds 25, 35, 45,

46: (Add) (Deduct) \$ 116,124.00

2.04 Alternative # 3 - Deduct work for Handicap Walkway:

\$ 197,235.00 (Add) (Deduct) \$

2.05 Alternative # 4 - Deduct work for Fountain Conversion to Planter Bed:

(Add) (Deduct) \$ 86,035.00

2.06 Alternative # 5 - Planter Beds 17, 17b, and 47 non-demolition and repairs:

(Add) (Deduct) \$ 31,683.00

END OF SUPPLEMENT C