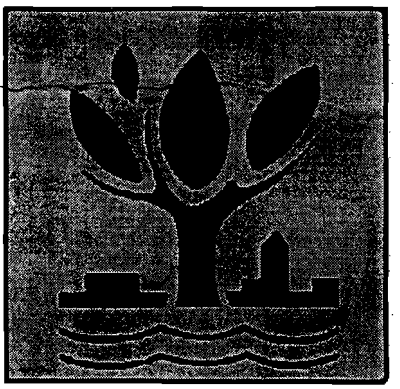
DOWNTOWN NAPERVILLE

STREETSCAPE STANDARDS



April 2003

City of Naperville

Transportation, Engineering and Development Business Group

EXHIBIT

A

DOWNTOWN NAPERVILLE

STREETSCAPE STANDARDS

City of Naperville

Transportation, Engineering and Development Business Group
400 South Eagle Street
P.O. Box 3020
Naperville, Illinois 60566-7020
www.naperville.il.us

Consulting Services

V3 Infrastructure Services, Ltd.
7325 Janes Avenue
Suite 100
Woodridge, Illinois 60517
www.v3is.com

Smith Group JJR, LLC
30 West Monroe
Suite 1010
Chicago, Illinois 60603
www.smithgroup.com

Contents

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Background 1.1

The Downtown Plan, adopted in August 2000, identified the need to establish a streetscape design system for the downtown. Although improvements have been previously undertaken in several parts of the downtown, these improvements have been implemented incrementally and without a single set of standards to guide the selection and installation of streetscape materials and furniture.

In addition to achieving design consistency over time, it is anticipated that the public/private investment associated with streetscape improvements will help to strengthen downtown's economic engine (through EAV, sales tax, continued high occupancy rates), maintain the downtown as the heart of the community, and improve accessibility. Through the adoption and implementation of standards, it is anticipated that both time and cost savings will be realized by both private and public sectors by having a single source document to guide future improvement projects.

Application 1.2

These standards apply to private and public improvement projects within downtown Naperville.

For reference information, a manufacturer, model, and supplier has been provided when available. If an equivalent product would be supplied, please submit catalog cuts or other information for approval, prior to installation.

Street Type Legend 2.1

The Downtown Plan established a comprehensive streetscape design system that identified five street classifications within the downtown, which include:

- Downtown
- Boulevard
- Neighborhood
- Pedestrian Way
- Greenspace Way

The following legend provides a graphical key to these street classifications.

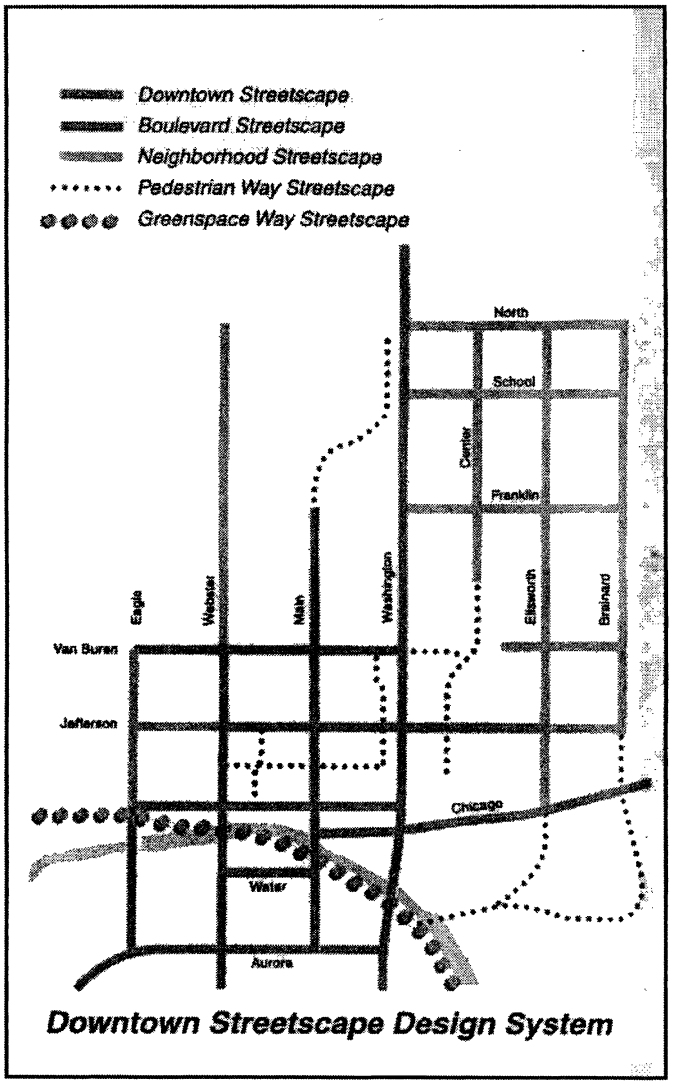
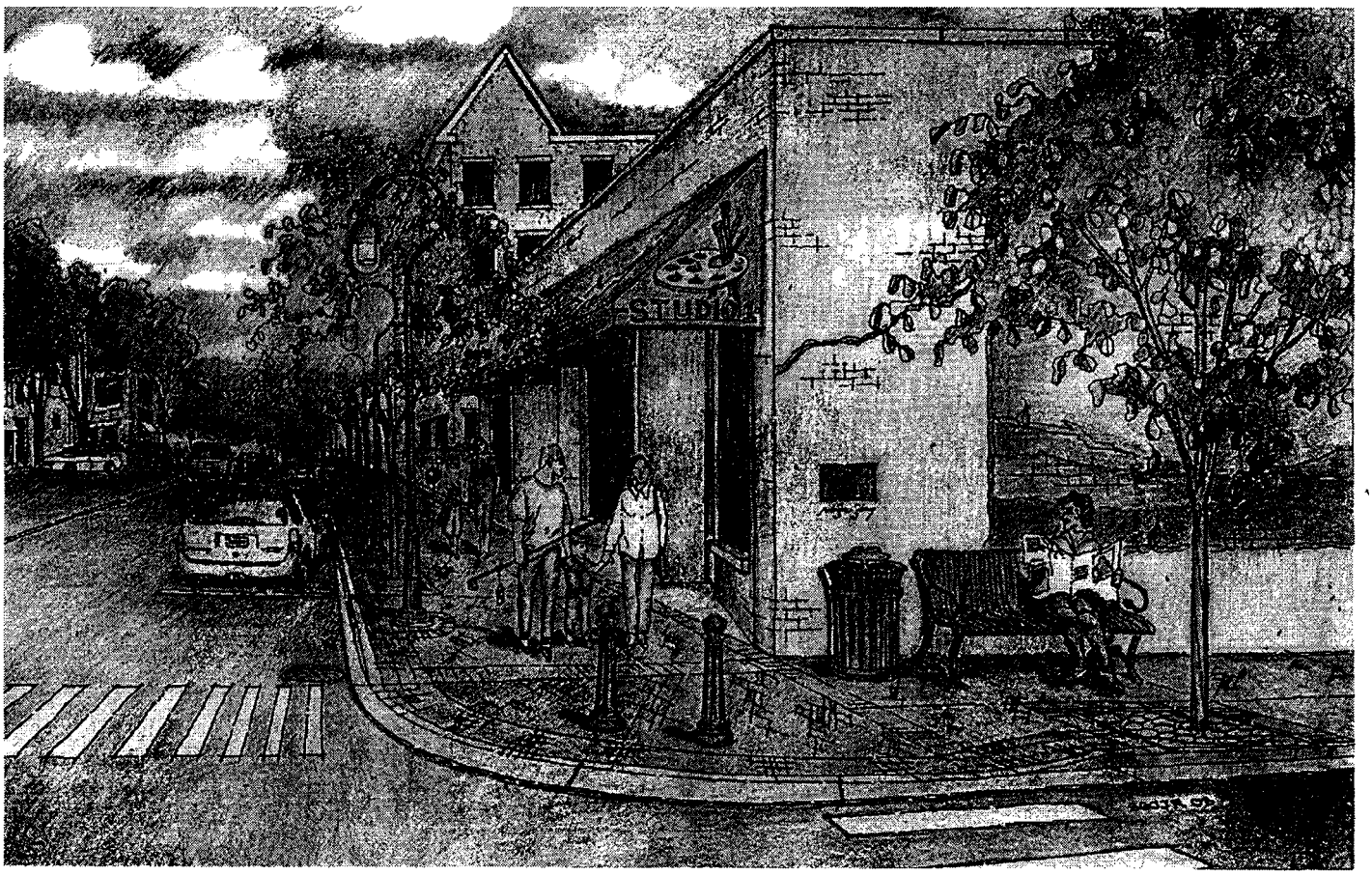
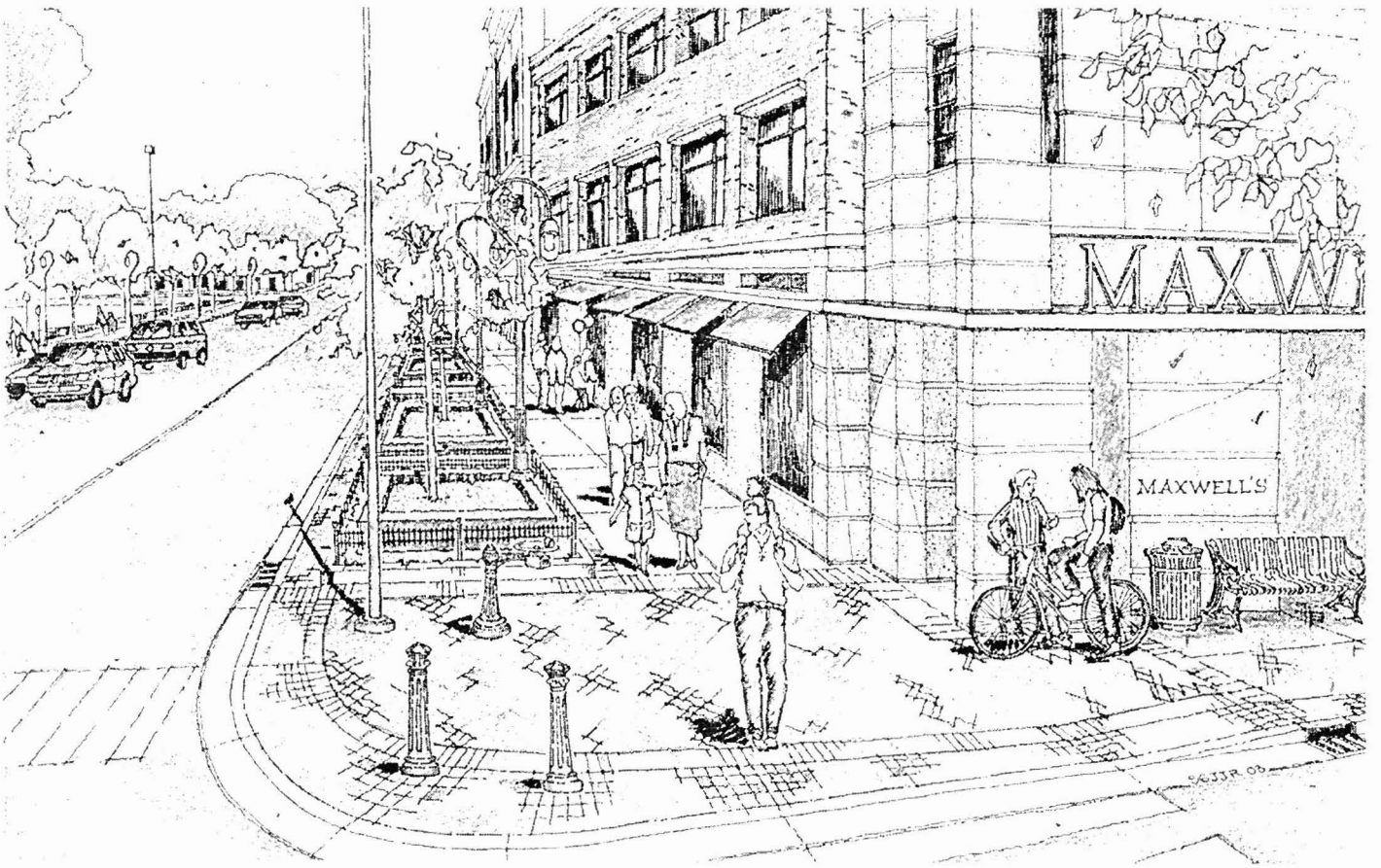


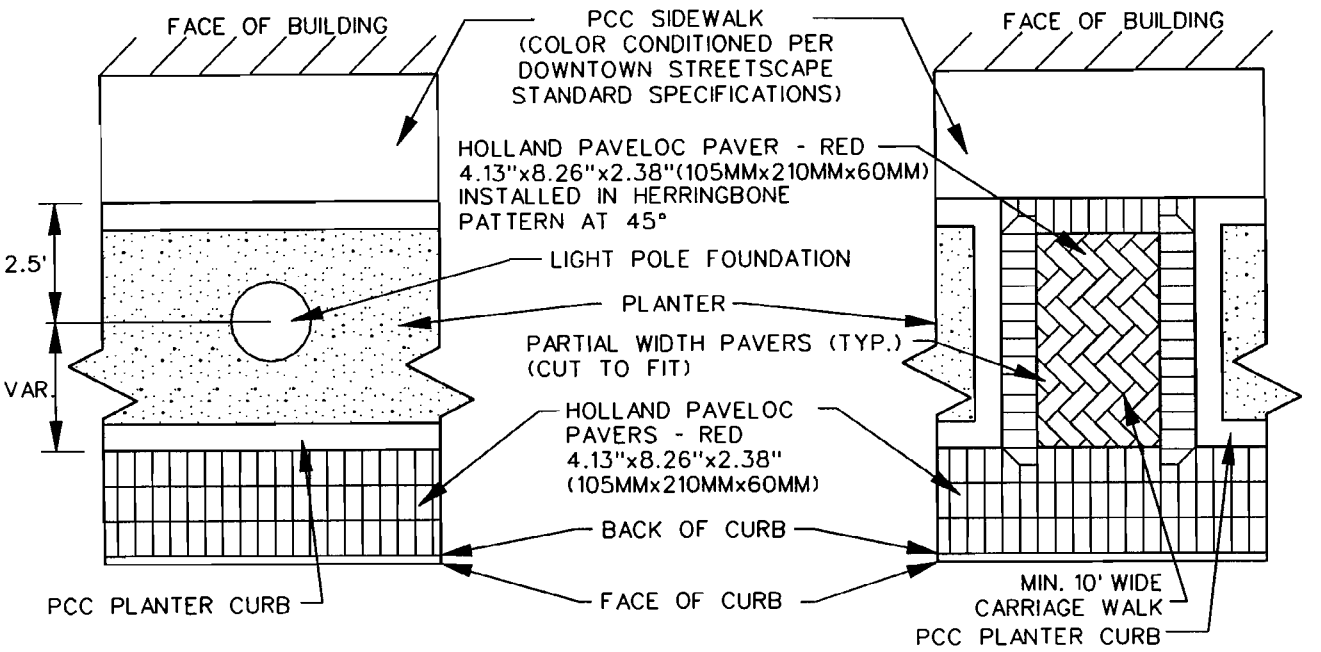
Figure 7
Downtown Plan

Streetscape Prototypes: Downtown 2.2.1

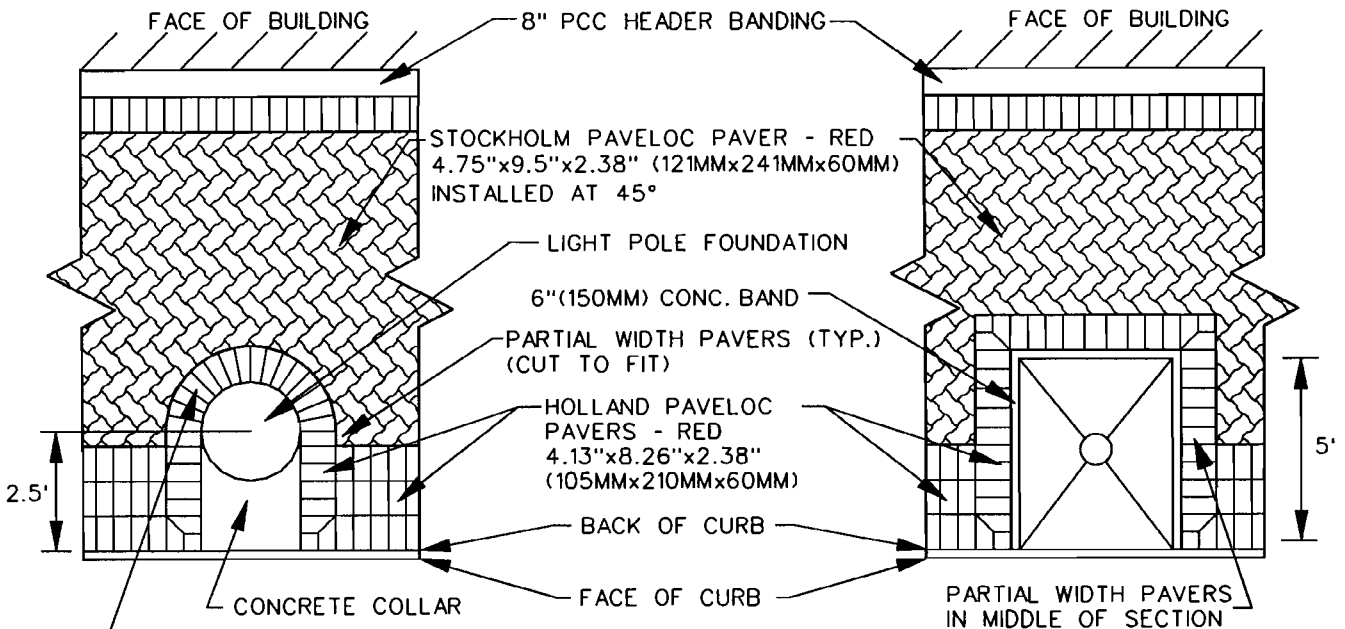



MAXWELL'S

Typical Streetscape Details: Paving Patterns and Details 3.1.1



PAVER BORDERS AROUND PLANTERS AND LIGHT POLE LOCATIONS
BOULEVARD STREETSCAPE



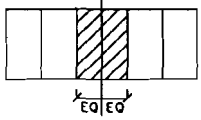
PAVER BORDERS AROUND LIGHT POLES AND TREE GRATES
DOWNTOWN STREETSCAPE

Title: TYPCIAL STREETSCAPE DETAIL	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 3/4/03	REV: 6/2/03	Detail:
	SCALE: NTS	SHEET: 1 OF 3	

Typical Streetscape Details: Corner

3.1.2

CLOSURE CUT

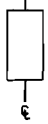


LAST CLOSURE CUT PAVERS SHALL BE NO LESS THAN ½ PAVER WIDTH - BUTT EDGES TOGETHER

CORNER DETAIL

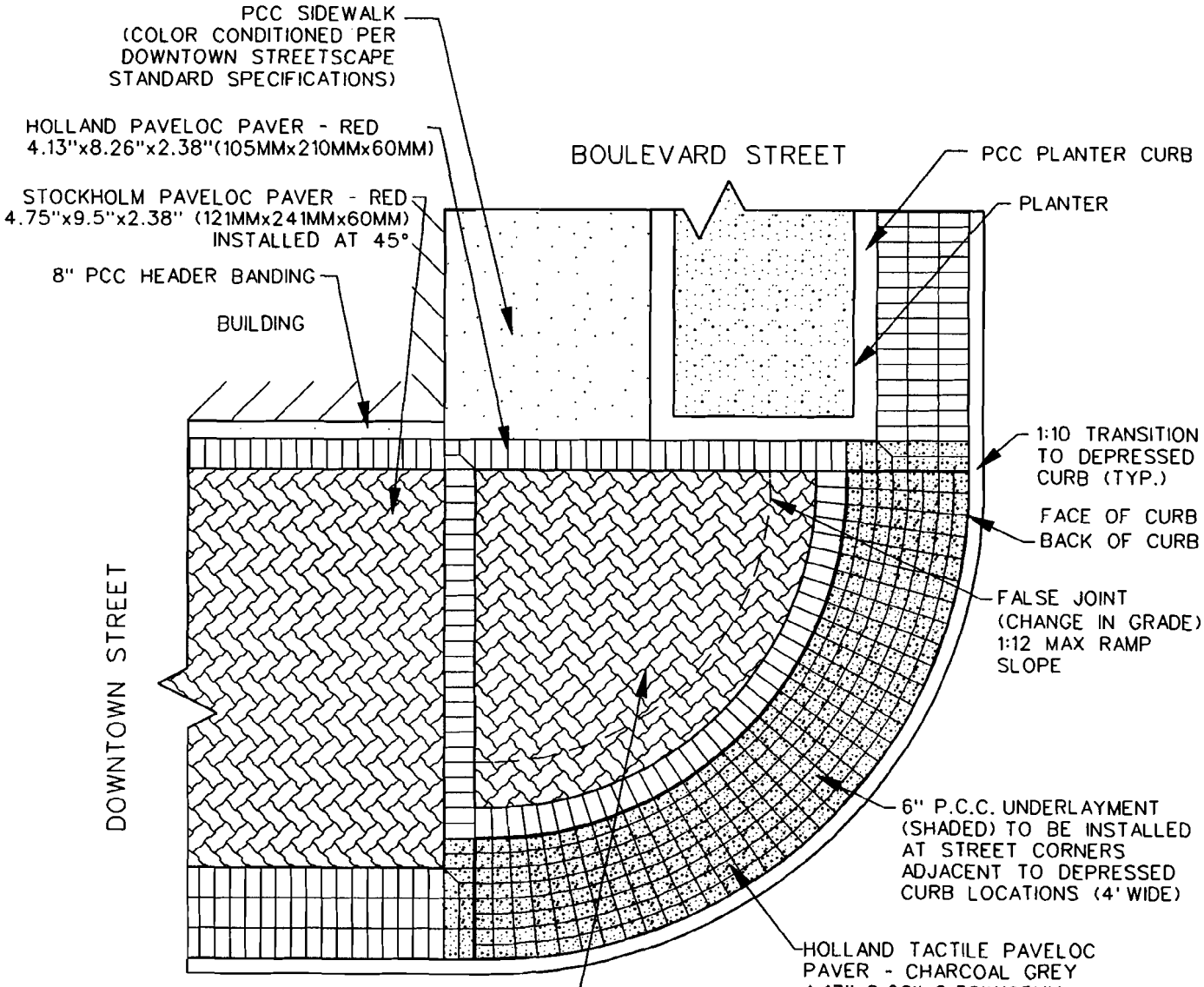
USE AS INDICATED ON DETAIL

RADIAL CUT



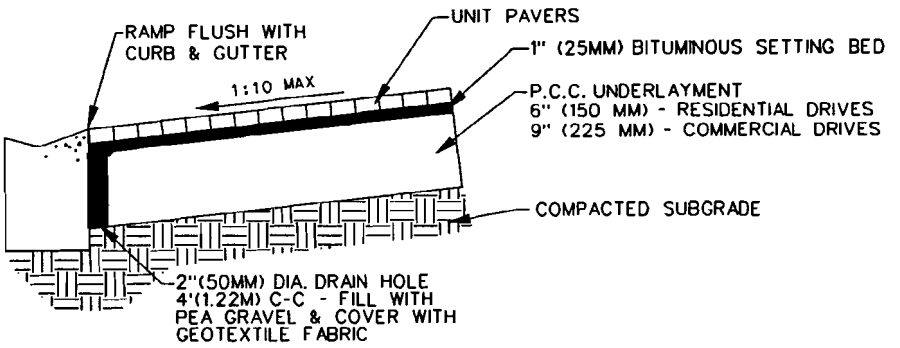
CUT SIDE TO ALIGN WITH RADIUS POINT
CUT TWO EQUAL PIECES FROM PAVER

TYPICAL PAVER CUTS

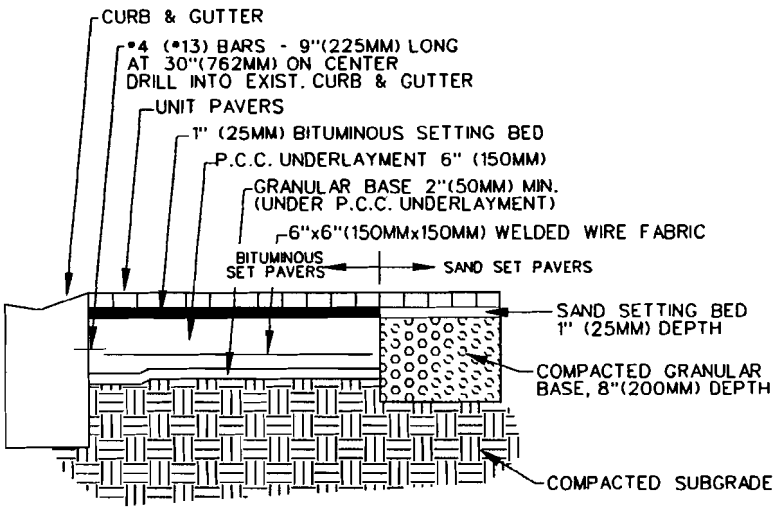


CORNER DETAIL

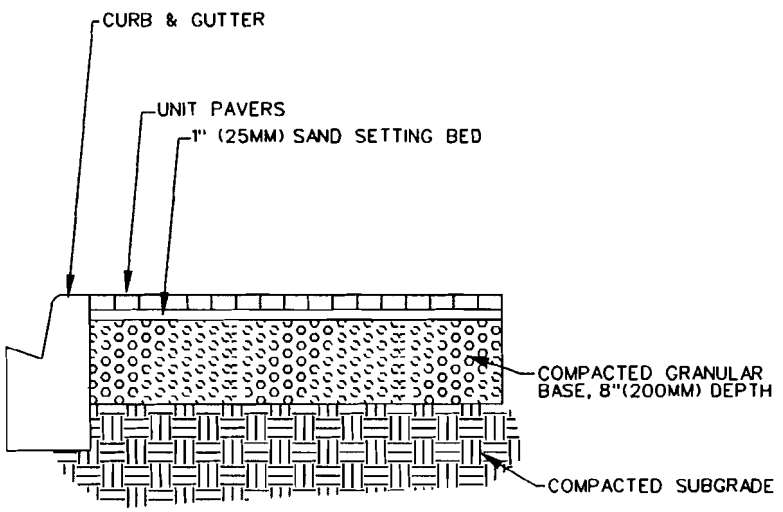
Title: TYPCIAL STREETSCAPE DETAIL	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 3/4/03	REV: 6/2/03	Detail:
	SCALE: NTS	SHEET: 2 OF 3	



TYPICAL SECTION AT DRIVEWAY



TYPCIAL SECTION AT HANDICAP RAMP

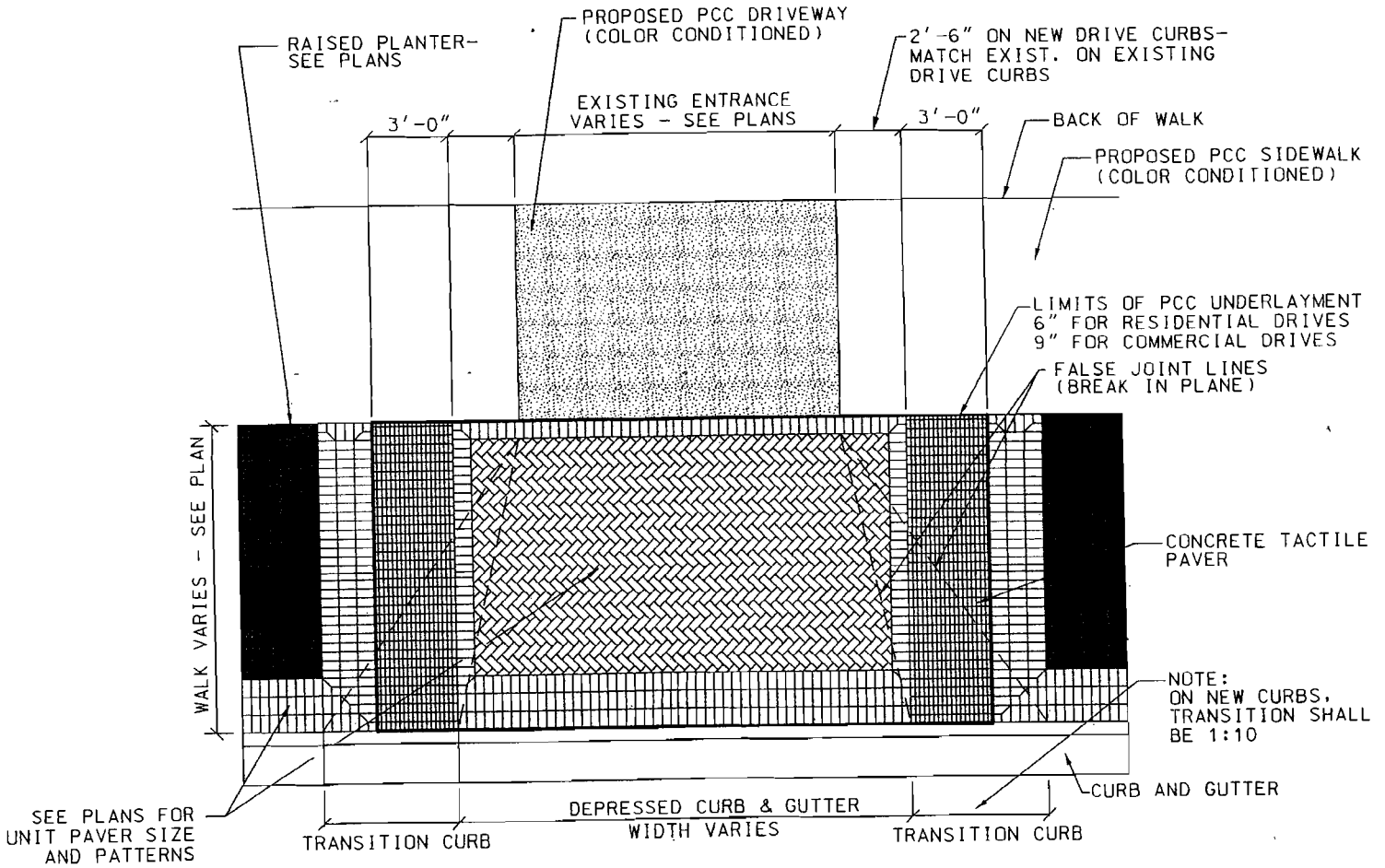


TYPICAL PARKWAY SECTION

Title: TYPCIAL STREETSCAPE DETAIL	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 3/04/03	REV: 6/2/03	Detail:
	SCALE: NTS	SHEET: 3 OF 3	

Typical Streetscape Details: Driveway

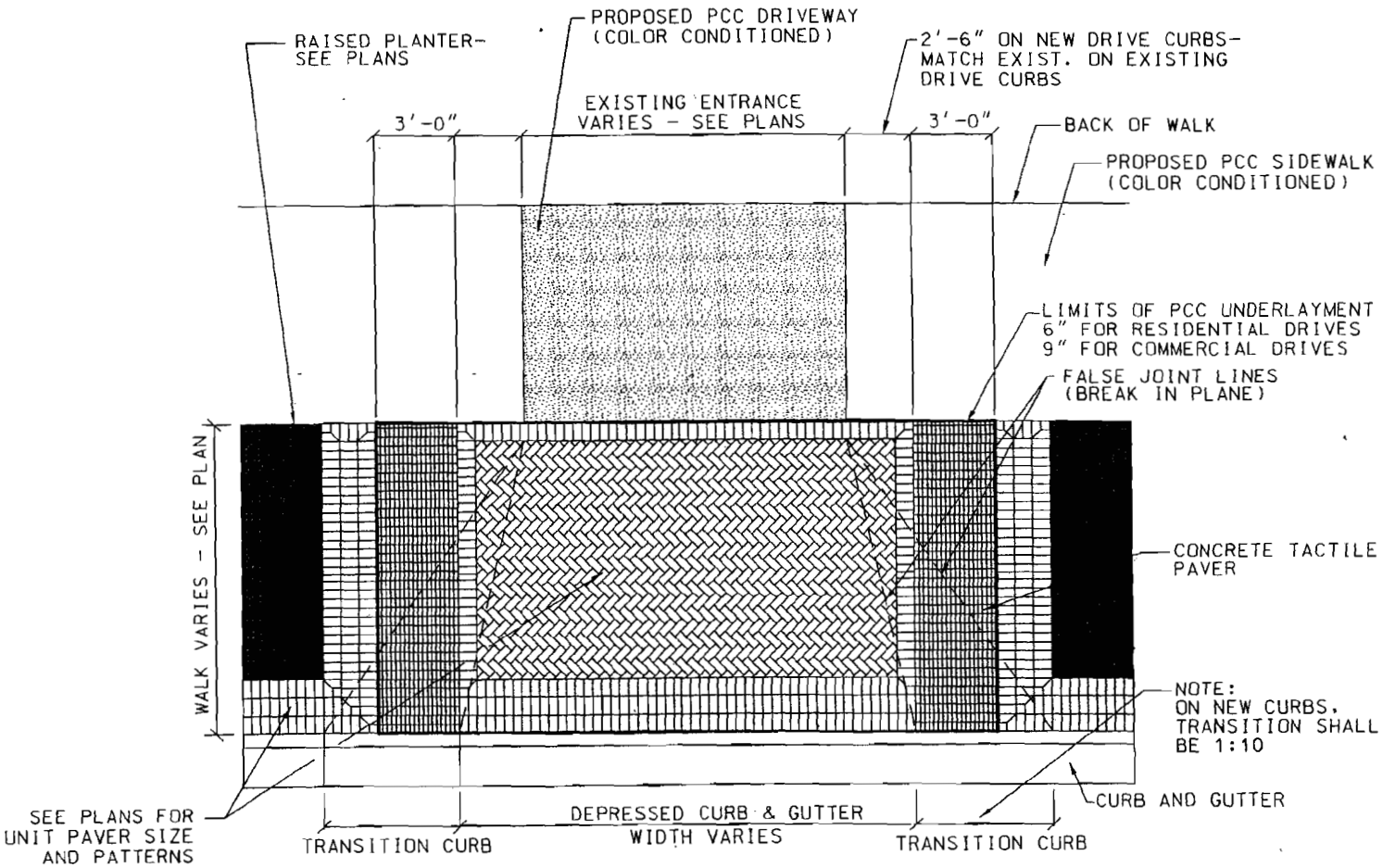
3.1.4

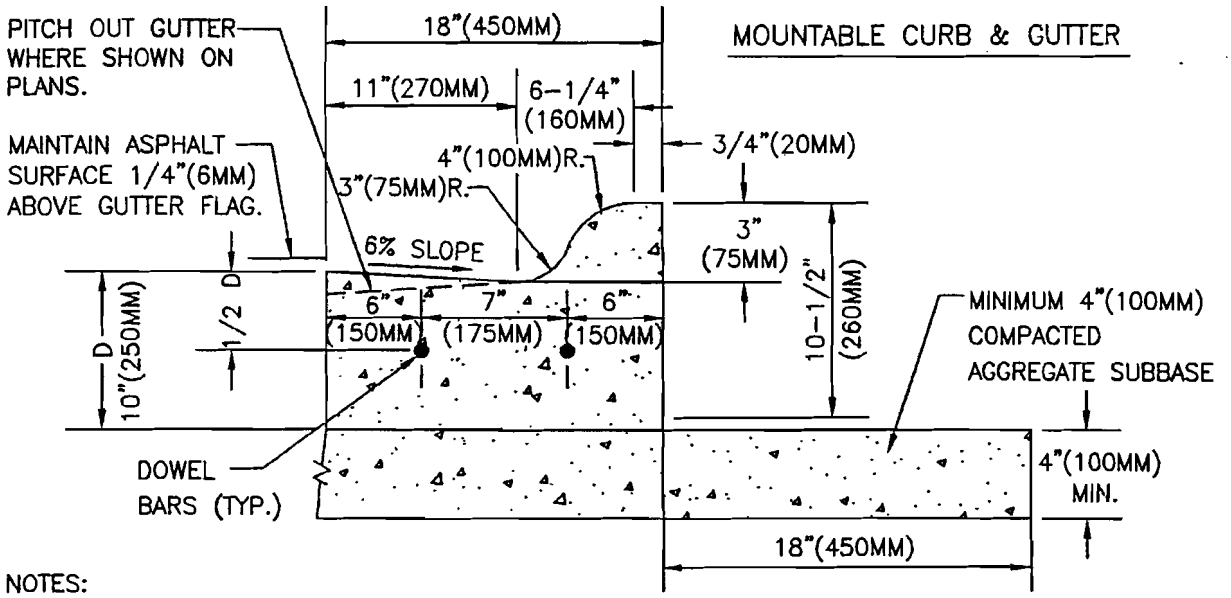


Typical Streetscape Details: Curb and Gutter 3.1.5

Typical Streetscape Details: Driveway

3.1.4

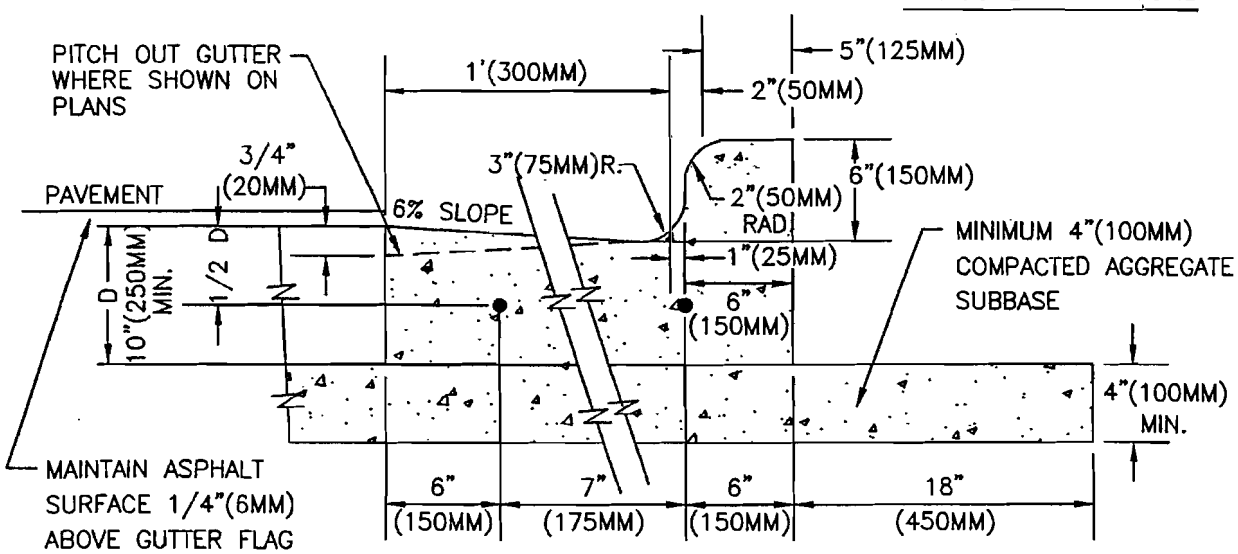




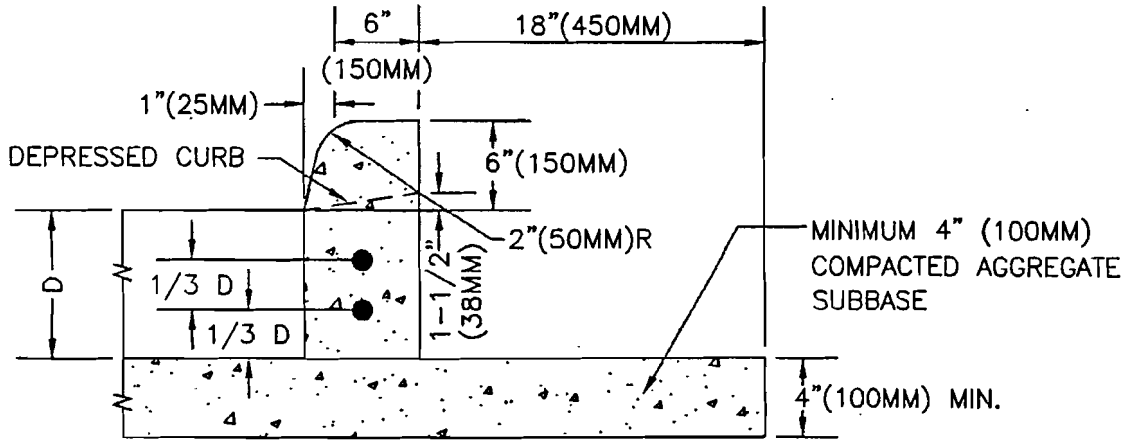
NOTES:

1. 3/4"(20MM) PREFORMED BITUMINOUS EXPANSION JOINT WITH TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4"(20MM) DIA. X 18"(450MM)) WITH GREASE CAPS SHALL BE PLACED EVERY 150' (45M), 10'(3M) EITHER SIDE OF DRAINAGE STRUCTURES, P.C.'S, RADIUS POINTS AND BACK OF CUL-DE-SACS. WHEN EXPANSION JOINTS ARE CONSTRUCTED ADJACENT TO EXISTING CURB & GUTTER THE EXISTING CURB SHALL BE DRILLED AND TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4"(20MM) X 18"(450MM)) GROUTED IN PLACE. GREASE CAPS SHALL BE PLACED ON THE SIDE OF THE NEW CURB AND GUTTER SHALL HAVE A PINCHED STOP THAT WILL PROVIDE A MINIMUM 1"(25MM) EXPANSION.
2. TOOLED CONTROL JOINTS OR SAWCUTS SHALL BE MADE EVERY 15'(4.5M).
3. SAWCUTS SHALL BE MADE WITHIN TWENTY-FOUR (24) HOURS AND SEALED WITH A CITY APPROVED JOINT SEALANT. JOINTS SHALL BE CLEAN AND DRY PRIOR TO APPLICATION OF SEALANT.
4. FOR CURB AND GUTTER CONSTRUCTED OVER UTILITY TRENCHES, TWO (2) EPOXY COATED REINFORCING BARS (NO. 4) SHALL BE PLACED IN THE CURB AND GUTTER, CENTERED OVER THE TRENCH.

B15.30 BARRIER CURB



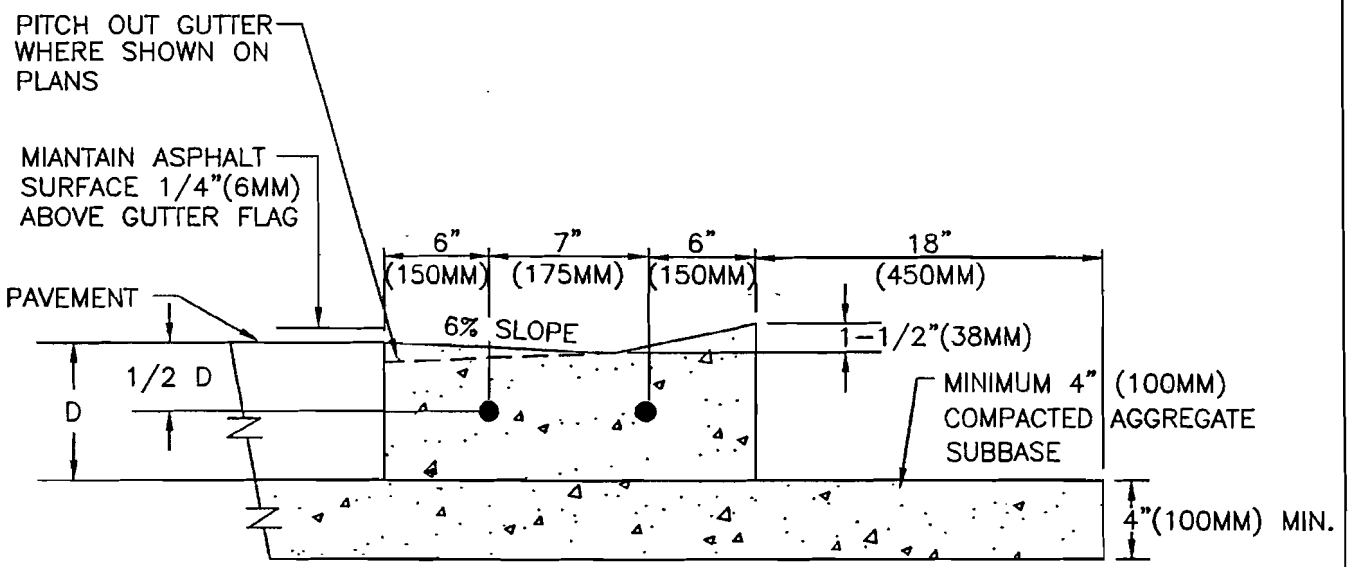
Title: CURB & GUTTER	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 6/2/98	REV:	Detail: PVMT 11
	SCALE: NTS		



6" CONCRETE CURB TYPE B

NOTES:

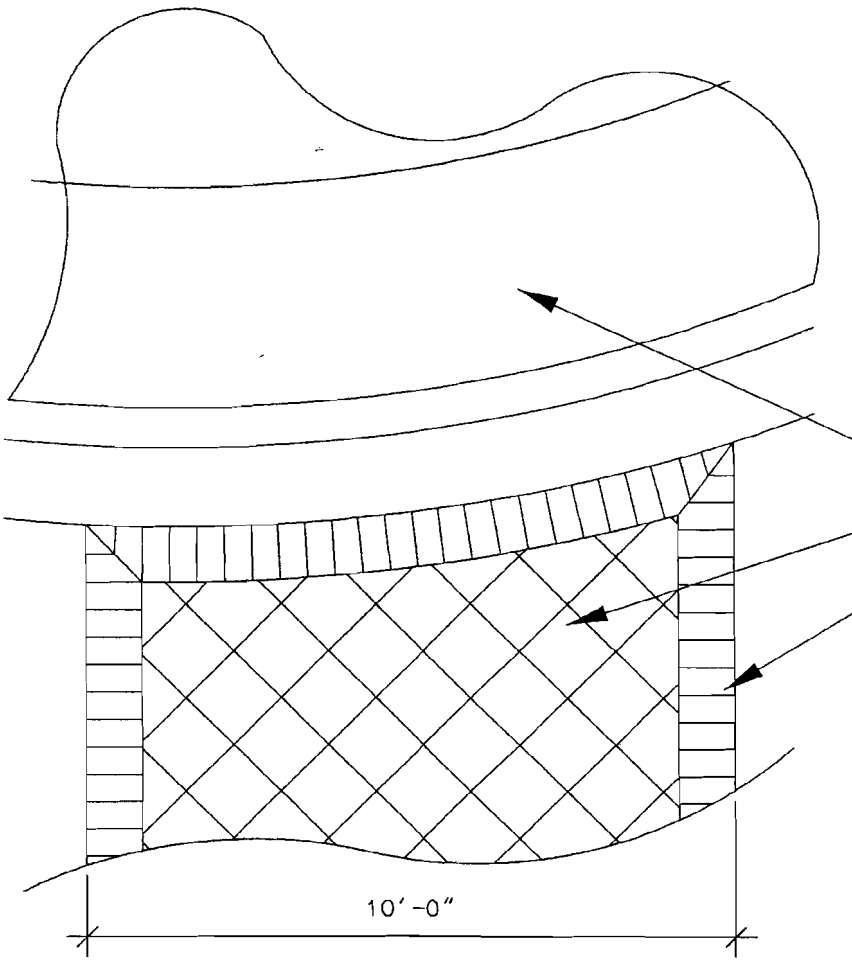
1. 3/4"(20MM) PREFORMED BITUMINOUS EXPANSION JOINT WITH TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4"(20MM) DIA. X 18"(450MM)) WITH GREASE CAPS SHALL BE PLACED EVERY 150' (45M), 10'(3M) EITHER SIDE OF DRAINAGE STRUCTURES, P.C.'S, RADIUS POINTS AND BACK OF CUL-DE-SACS. WHEN EXPANSION JOINTS ARE CONSTRUCTED ADJACENT TO EXISTING CURB & GUTTER THE EXISTING CURB SHALL BE DRILLED AND TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4"(20MM) X 18"(450MM)) GROUTED IN PLACE. GREASE CAPS SHALL BE PLACED ON THE SIDE OF THE NEW CURB AND GUTTER SHALL HAVE A PINCHED STOP THAT WILL PROVIDE A MINIMUM 1"(25MM) EXPANSION.
2. TOOLED CONTROL JOINTS OR SAWCUTS SHALL BE MADE EVERY 15'(4.5M).
3. SAWCUTS SHALL BE MADE WITHIN TWENTY-FOUR (24) HOURS AND SEALED WITH A CITY APPROVED JOINT SEALANT. JOINTS SHALL BE CLEAN AND DRY PRIOR TO APPLICATION OF SEALANT.
4. FOR CURB AND GUTTER CONSTRUCTED OVER UTILITY TRENCHES, TWO (2) EPOXY COATED REINFORCING BARS (NO. 4) SHALL BE PLACED IN THE CURB AND GUTTER, CENTERED OVER THE TRENCH.



COMBINATION CONCRETE CURB & GUTTER
DEPRESSED CURB

Title: CURB & GUTTER	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 6/8/98	REV:	Detail: PVMT 12
	SCALE: NTS		

Typical Streetscape Details: Crosswalk 3.1.6



Note:
Manufacturer: Street Print
1.800.688.5652
Pattern: Herringbone with Soldier course border
Color: Terracotta, submit color sample prior to construction

Note: Stamped Asphalt crosswalk has same pavement cross-section as non-stamped asphalt pavement.

Product Information: Concrete Pavers 3.2.1

A. Product Information

1. Manufacturer: Paveloc
   Model: Stockholm
   Size: 6 cm, Overall Dimensions: 4.75" x 9.50" x 2.38"
   Color: Solid Red
   Application: Downtown Street, Corner

2. Manufacturer: Paveloc
   Model: Holland
   Size: 6 cm, Overall Dimensions: 4.13" x 8.26" x 2.38"
   Color: Solid Red
   Application: Boulevard Street, Soldier course banding (Downtown and Boulevard)

3. Manufacturer: Paveloc
   Model: Tactile
   Size: 6 cm, Overall Dimensions: 4.13" x 8.26" x 2.38"
   Color: Solid Charcoal
   Application: Corner, Driveways

   Or equivalent, supplied by a member of Interlocking Concrete Pavement Institute (ICPI).

B. Concrete Paver Sealer

   Manufacturer: TK Products - AS-1 Achro Seal 1315
   AS-1 Achro Seal 1315
   Supplier: Illinois Brick - 708.563.5977

Product Information: Colored Concrete 3.2.2

Manufacturer: L. M. Scofield Company
Product Name: Chromix Admixtures for Color-Conditioned Concrete
Color: Summer Beige - 5234

Provided by L.M. Scofield Company: 800.800.9900

A. Material Specifications

1. Meet the following requirements of ASTM C 936, Standard Specification for Solid Concrete Interlocking Paving Units:

   i) Average compressive strength of 55 MPa (8,000 psi) with no individual unit under 50 MPa (7,200 psi). For 3.125 in. (80 mm) thick units, the compressive strength for each shall be corrected for the thickness by multiplying the test result by 1.18. This result shall represent the compressive strength for each unit.

   ii) Average absorption of 5% with no unit greater than 7% when tested in accordance with ASTM C 140.

   iii) Resistance to 50 freeze-thaw cycles when tested in accordance with ASTM C 67.

B. Bedding and Joint Sand

Note: The type of sand used for bedding is often called concrete sand. Sands vary regionally. Screenings and stone dust can be unevenly graded and have an excess amount of material passing the 75 um (No. 200) sieve. Bedding sands with these characteristics should not be used. Contact paver contractors local to the project and confirm sand(s) successfully used in previous similar applications.

1. Clean, non-plastic, free from deleterious or foreign matter and natural or manufactured from crushed rock. Do not use limestone screenings or stone dust. When concrete pavers are subject to vehicular traffic, use sands as hard as practically available.
2. Grading shall be done according to ASTM C 136. Bedding sand shall conform to the grading requirements of ASTM C 33 shown in Table 1.

Table 1

Grading Requirements for Bedding Sand - ASTM C 33

Sieve Size		Percent Passing
3/8 in.	(9.5 mm)	100
No. 4	(4.75 mm)	95 to 100
No. 8	(2.36 mm)	85 to 100
No.16	(1.18 mm)	50 to 85
No.30	(0.600 mm)	25 to 60
No. 50	(0.300 mm)	10 to 30
No. 100	(0.150 mm)	2 to 10

Note: Bedding sand may be used for joint sand. However, extra effort in sweeping and compacting the pavers may be required in order to completely fill the joints. If joint sand other than bedding sand is used, the gradations shown in Table 2 are recommended. Joint sand should never be used for bedding sand.

3. The joint sand shall conform to the grading requirements of ASTM C 144 shown in Table 2 below:

Table 2

Grading for Joint Sand - ASTM C 144

Sieve Size		Natural Sand Percent Passing	Manufactured Sand Percent Passing
3/8 in.	(9.5 mm)	100	100
No. 4	(4.75 mm)	95 to 100	95 to 100
No. 8	(2.36 mm)	70 to 80	70 to 100
No.16	(1.18 mm)	40 to 75	40 to 100
No.30	(0.600 mm)	10 to 35	20 to 40
No. 50	(0.300 mm)	2 to 15	10 to 25
No. 100	(0.150 mm)	0	0 to 10

C. Delivery Storage and Handling

1. Deliver concrete pavers to site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by fork lift or clamp lift.
2. Unload pavers at job site in such a manner that no damage occurs to the product.
3. Cover sand with waterproof covering to prevent exposure to rainfall or removal by wind.
4. Secure covering in place.
5. Coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.

D. Installation

1. Spread the sand evenly over the base course and screed to a nominal 25 mm (1 in.) thickness, not exceeding 40 mm (1.5 in.) thickness. The screeded sand should not be disturbed. Place sufficient sand to stay ahead of the laid pavers. Do not use the bedding sand to fill depressions in the base surface.
2. Ensure that pavers are free of foreign material before installation.
3. Lay the pavers in the pattern(s) as shown on the drawings. Maintain straight pattern lines.
4. Joints between the pavers on average shall be between 2 mm to 5 mm (1/16 in. and 3/16) in. wide.
5. Fill gaps at the edges of the paved area with cut pavers or edge units. No cut units shall be less than one-third of a whole paver in areas subject to vehicular traffic. In no case shall cut pavers be less than 10 mm (3/8 in.) thick.
6. Cut pavers to be placed along the edge with a [double-bladed paver splitter or] masonry saw.
7. Use a low amplitude, high frequency plate vibrator capable of at least 5,000 lbf (22 kN) compaction to vibrate the pavers into the sand.
8. Vibrate the pavers again, sweeping dry joint sand into the joints and vibrating until they are full. This will require at least two or three passes with the vibrator. Do not vibrate within 1 m (3 ft.) of the unrestrained edges of the paving units.

Note: For installation on a compacted aggregate base and soil subgrade, the specifier should be aware that the top surface of the pavers may be 3 to 6 mm (1/8 to 1/4 in.) above the final elevations after compaction. This difference in initial and final elevation is to compensate for possible minor settling.

9. All work to within 1 m (3 ft.) of the laying face including cut or manufactured edge units must be fully paved to edge restraints and compacted with sand-filled joints at the completion of each day.
10. Sweep off excess sand when the job is complete.

11. The final surface elevations shall not deviate more than 10 mm (3/8 in.) under a 3 m (10 ft.) long straightedge.
12. The surface elevation of pavers shall be 3 to 6 mm (1/8 to 1/4 in.) above adjacent drainage inlets, concrete collars or channels.

E. Field Quality Control

1. After removal of excess sand, check final elevations for conformance to the drawings.

F. Environmental Conditions

1. Do not install sand or pavers during heavy rain or snowfall.
2. Do not install sand and pavers over frozen base materials.
3. Do not install frozen sand..

G. Concrete Paver Sealant

1. Product Information:

   Manufacturer: TK Products - AS-1 Achro Seal 1315
   AS-1 Achro Seal 1315
   Supplier: Illinois Brick - 708.563.5977
2. Application
   i) Apply per attached specification.

AS-1 ACHRO SEAL 1315

Meets Federal EPA's VOC Requirements

TK PRODUCTS
Division of Sierra Corporation

Technical Data

1. PRODUCT NAME
AS-1 ACHRO SEAL 1315

2. MANUFACTURER
TK PRODUCTS, DIVISION
OF SIERRA CORPORATION
11400 West 47th Street
Minnetonka, MN 55343
952-938-7223
952-938-8084 (FAX)
e-mail: tkproduct@aol.com
Website: http://www.tkproduct.com

3. PRODUCT DESCRIPTION
AS-1 1315, a clear, Methacrylate/ Acrylic Copolymer resin curing, sealing and hardening compound for freshly placed and/or existing concrete, terrazzo, brick, stone, architectural concrete and other cementitious materials for either exterior or interior applications.

Basic Uses:
On New Concrete: AS-1 1315 forms a membrane film which seals in and retains 97.3% of the hydration water to provide maximum hardness of the substrate, resistance to abrasion, damage caused by salt, oil, grease, mild acids and alkali, and stains from soot, smog, fumes and gases. Construction debris does not adhere to the concrete; cleanup is easier, less cost for labor.

The coating is clear, dries clear. Compatible with many resilient tile and carpet adhesives; improves adhesion efficiency, adds longer life to the floor covering, less repair work, recommended for concrete substrates to be carpeted.

On Existing Concrete: AS-1 1315 penetrates into the slab, binding together the small, dusting particles, filling the voids to produce a hard, dust-free, brighter surface; and provides the same compatibility and protective capabilities as on newly placed substrates.

On Terrazzo, Brick, Stone, or Architectural Concrete: AS-1 1315 brings out the highlights of the natural colors, increases the aesthetic value and longevity of the completed project.

Use AS-1 1315 on: Commercial and industrial work, i.e. public buildings, showrooms, shopping centers, schools, hospitals, manufacturing plants, and warehousing; and residential driveways, basement floors, sidewalks, patios, and swimming pool areas.

4. TECHNICAL DATA
Composition and Materials:
AS-1 1315 is a Methacrylate/ Acrylic Copolymer resin blended with fast drying aromatic hydrocarbon. No fillers are used and there are no oils, waxes or saponifiable resins contained in the mixture. TK PRODUCTS' materials are manufactured with the finest quality raw materials available and close quality control is practiced.
- *Flash Point*: 105° F.
- *Moisture Efficiency:* .18 kg/m2 at 300 sq. ft. per gallon.
- ASTM C-1315 - max. allowed .40 kg/m2.
- *Drying Time:* 1 hour tack free, two hours open to traffic.

Applicable Standards
-ASTM C-1315-95, Type 1, Class A, B, and C.
-ASTM C-309, Type 1, Class A & B and Type 1D with a red dye added.
-Fed TT-C-800A, Type 1 Class 1
-AASHTO Des. M-148, Type 1, Clear.
-A.I.M. Category: Curing and Sealing Compound, maximum VOC 700g/l.
A.I.M. Definition - AS-1 1315 a liquid membrane-forming compound marketed and sold solely for application to concrete surfaces to reduce the loss of water during the hardening process and to seal old and new concrete providing resistance against alkalis, acids, and ultra violet light, and provide adhesion promotion qualities. The coating meets the requirements of American Society for Testing and Materials (ASTM) C-1315-95, Standard Specification for Liquid Membrane Forming Compounds Having Special Properties for Curing and Sealing Concrete.
-Approved by the Resilient Tile Institute to be compatible with most resilient tile and carpet adhesives, and most paints.
-USDA authorization for use in meat, poultry and food processing plants.

5. APPLICATION PROCEDURES AND INSTRUCTIONS
Preparation:
Material is ready for use, requires no mixing or dilution. It is unlawful to further reduce with non-exempt solvents.

New Concrete: Finish trowel and allow surface water to completely dissipate. Use low pressure (20-30 lbs.) sprayer or power sprayer. Apply uniformly at specified rate of coverage. Avoid heavy accumulations. AS-1 1315 can darken the appearance of concrete, especially if applied too heavily.

Existing Concrete: Must be free of oil or grease and soil. Use a long nap applicator or paint roller to distribute the compound more evenly. Airless sprayer or low pressure spray equipment can be used on larger areas; avoid heavy accumulations. A second coat should be applied on very porous surfaces where absorption is rapid. Allow coating to become tack free between coats.

Coverage:	Rate* Sq. Ft/Gal
Curing -broomed	300-550
-troweled	350-550
Dustproof/Seal	300-500
Second coat	400-800
Renovation	
Dustproof/Seal	300-400

*Coverage rates will always be dependent upon the porosity of the concrete.

Limitations: Apply in temperatures above 40° F. Cold weather applications can be made under prescribed conditions and procedures specified by TK PRODUCTS.

Not for use on colored concrete, asphalt, or surfaces subject to immersion or constant liquid contact.

AS-1 ACHRO SEAL 1315
Curing and Sealing Compound
PRODUCTS 3

Material Specifications: Concrete 3.3.2

A. General

1. Concrete mix must be from a certified Ready Mix plant and be Class SI, 6.4 bag Portland cement mix or 6.1 bag with water reducing agent. All mixes require a 5-8% air entrainment content, a 2-4" slump (maximum) and contain no calcium chloride.
   i) Minimum compressive strength = 4000 psi @ 28 days
2. City of Naperville standards shall apply to placement and inspection requirements.

B. Finish

1. Concrete surfaces shall be brush finished.

C. Protective Treatment

1. All concrete within public R.O.W. shall be cured in accordance with the IDOT "Standard Specifications for Road and Bridge Construction".

Material Specifications: Colored Concrete 3.3.3

Concrete mix design: Provide colored concrete admixture, per attached specification, for Boulevard sidewalks and 6" raised planter curb. Admixture design to be used with medium gray concrete.

CHROMIX® Admixtures for Color-Conditioned Concrete

L. M. SCOFIELD COMPANY
MANUFACTURER & MARKETER OF BUILDING SPECIALTIES SINCE 1915
6533 BANDINI BLVD. • LOS ANGELES, CALIFORNIA 90040
4155 SCOFIELD ROAD • DOUGLASVILLE, GEORGIA 30134
Offices and warehouses nationwide and internationally.
Inquiries: (800) 800-9900
Los Angeles, CA: (323) 720-3000 Fax (323) 720-3030
Atlanta, GA: (770) 920-6000 Fax (770) 920-6060
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TECH-DATA BULLETIN A-304.11

Colored, water-reducing, set-controlling admixtures for horizontal or vertical architectural concrete.

1. Description and Uses: Time-tested and proven for over 45 years, CHROMIX® Admixtures for Color-Conditioned Concrete provide permanent, fade-resistant, uniform, and streak-free integral color-conditioning for all types of concrete projects, from floors and hardscapes to cast-in-place or precast walls. They are true water-reducing admixtures, premeasured and packaged in disintegrating bags for easy and accurate addition into the concrete mix. Producing concrete that is structurally superior as well as beautiful and cost effective, CHROMIX Admixtures not only color concrete, but increase its strength at all ages, control the set time, and improve freeze/thaw resistance. Superior workability and finishing characteristics are achieved. Color bleeding, laitance, and efflorescence are reduced.

The addition of a CHROMIX Admixture provides endless design possibilities for concrete flatwork. Hardscapes can be brought to life with rich color or be blended into the landscape. Color-conditioned floors and walks can create a warm, inviting atmosphere while offering an easy-to-maintain, wear-resistant surface. Patterns can be formed in contrasting or complimentary colors or by use of different textures and a single color. Definition can be produced by scoring or sawcutting. Texture adds depth and slip resistance when aggregates are exposed by sandblasting or use of a surface retarder, and color-conditioned concrete can achieve the look and feel of more expensive paving materials such as granite.

To allow hardscapes and floors to reach their full color potential and beauty, Scofield has developed a complete system of color-matched curing, finishing, and joint-sealing materials especially designed for use with color-conditioned concrete. Scofield products are also available for producing superior exposed aggregate flatwork. Additional information is available in Scofield's Tech-Data Bulletins *A-514 LITHOCHROME® Colorwax™, A-634 COLORCURE® Concrete Sealer,* and *S-404-3G LITHOSEAL™ Trafficalk-3G™, T-204 LITHOTEX® Top Surface Retarder,* and *A-764 CEMENTONE® Clear Sealer.*

CHROMIX Admixtures are premeasured for the concrete mix design and packaged in SCOFIELD™ Tossin™ disintegrating bags. Unlike products that increase the risk of error by requiring weighing, mathematical calculations, or the addition of multiple bags, only one bag of a CHROMIX Admixture is added for each cubic yard (meter) of concrete. Simple and easy to use, the Tossin bag is normally added unopened directly into the mixer truck, minimizing dust, lowering disposal and labor costs, and saving room in overcrowded landfills.

For some flatwork applications LITHOCHROME® Color Hardener is preferentially recommended. Applied by the dry-shake method, it produces hard, dense surfaces with increased resistance to wear, abrasion, and the effects of freeze/thaw cycles and deicing salts. LITHOCHROME Color Hardener should normally be used to color-harden flat-troweled interior floors, and although concrete color-conditioned with CHROMIX Admixture can be imprinted, the use of LITHOCHROME Color Hardener is preferred. Its rich finishing paste creates sharper patterns and its harder surface provides greater wear resistance. When a heavier-duty, more slip-resistant surface is required, the use of EMERCHROME® Floor Hardener should be considered, and for elegant, stone-like, multicolored floors and hardscapes, the possibilities of LITHOTEX® Colorstone™ should be explored. Additional information is available in Scofield's Tech-Data Bulletins *A-104 LITHOCHROME Color Hardener, A-204 EMERCHROME Floor Hardener,* and *A-904 LITHOTEX Colorstone.*

Applying LITHOCHROME® Chemstain™ over concrete color-conditioned with a CHROMIX Admixture creates uneven, variegated or translucent color effects, much like the shadings of natural stone or the aged appearance of a time-worn patina. The result is unique to each surface and cannot be duplicated by other coloring materials. When chemically staining new concrete flatwork, the use of LITHOCHROME Color Hardener provides a wider range of colors and a harder, more abrasion-resistant surface. Additional information is available in Scofield's Tech-Data Bulletin *A-414 LITHOCHROME Chemstain.*

Before using, check with your Scofield Customer Service Representative to ensure that you have the most recent Scofield Tech-Data Bulletins.

2. Limitations: Due to the graying effect of most cements, there are some colors that can only be produced using very light or white cements, and some light or intense colors cannot be cost-effectively achieved. Variations in slump, cement type and brand, color variations in the cement or aggregates, finished texture, timing of operations, curing or forming methods, and the choice of release agents or surface treatments will each produce distinct, though in most cases slight, variations in apparent color.

The mix should have a maximum slump of four inches (100 mm) and must contain a minimum of five sacks per cubic yard (275 kg/m^3) of cement for flatwork and six sacks per cubic yard (335 kg/m^3) for vertical concrete. No calcium chloride should be added. The same brand of cement, source of sand, and water/cement ratio should be maintained for each load of concrete of the same color.

CHROMIX Admixtures should never be added to an empty drum or at the tail end of a load. Though manufactured to disintegrate in typical concrete mixes, SCOFIELD Tossin bags may not completely disintegrate during mixing when certain batching and mixing procedures or equipment is used, or with some mix ingredients and proportions. A test batch may be required to determine mixing time and suitability, or the Tossin bag may be opened and the color-conditioning admixture batched directly into the mix.

3. Composition and Materials: Manufactured specifically for use in concrete, CHROMIX Admixtures are colored, water-reducing, set-controlling admixtures that contain no calcium chloride. They are formulated to disperse color accurately and uniformly throughout the concrete mix, with coloring agents that are limeproof and have maximum resistance to the effects of sunlight (UV).

4. Types: CHROMIX Admixtures are available in several types for specific project requirements. CHROMIX Admixture, a Type A, normal-set water-reducing admixture, and CHROMIX Admixture, Retarder, a Type D retarded-set water-reducing admixture, have a refined lignosulfonate base. CHROMIX Admixture, HCA-2 Retarder, HCA-3 Retarder, and HCA-4 Retarder are recommended when greater retardation is required and are hydroxylated carboxylic acid based. The suffix numbers refer to the rate of retardation with HCA-4 producing the greatest retardation.

5. Applicable Standards and Building Codes: As formulated water-reducing admixtures, all CHROMIX Admixtures conform to the following specifications: ASTM C 494, AASHTO M 194, and CRD C 87. As formulated coloring agents, they conform to ASTM C 979.

All CHROMIX Admixtures meet the requirements of the Uniform Building Code and the Standard Building Code for use in reinforced and prestressed concrete, and are approved by the City of Los Angeles under its classification

Admixtures for Cement Reduction. Scofield should be contacted about approvals in specific jurisdictions.

Professional concreting standards and practices, including those published by the American Concrete Institute (ACI), the Portland Cement Association (PCA), and the National Ready Mixed Concrete Association (NRMCA) should be followed.

6. Colors: All CHROMIX Admixtures are available in sixteen standard and eight designer colors classified into three price groups. Scofield's Color Chart A-312 depicts the colors that may be expected when using a medium-gray shade of cement and curing with LITHOCHROME Colorwax or COLORCURE Concrete Sealer in the matching color. Upon request, Scofield's laboratories will prepare special concrete samples using cement and aggregates furnished from the job location.

With sufficient prior notification, custom colors can be formulated with minimum orders of 50 Units (equivalent to 50 cubic yards of five-sack concrete). Higher cement contents will have lower minimum amounts. Custom colors of Scofield's color-matched curing materials are also available.

CHROMIX Admixtures normally produce earth-tone colors. When more intense colors or when certain light colors are desired, the use of LITHOCHROME Color Hardener should be considered.

7. Sizes and Dosage: All CHROMIX Admixtures are packaged to eliminate weighing and measuring errors and are sold by the bag, not by weight. CHROMIX Admixtures are premeasured and packaged in SCOFIELD Tossin bags for easy and accurate addition into the concrete mix.

Standard colors of CHROMIX Admixture are normally available in bags that contain the proper dosage for either five sacks or six sacks of cement per cubic yard (275 kg/m^3 or 335 kg/m^3) of concrete. On special order, any type of CHROMIX Admixture can be packaged for a cubic yard or cubic meter of concrete having any specified cement content. If the mix contains cement substitutes, such as flyash or blast-furnace slag, their weight should be added to the weight of the cement when determining the correct CHROMIX Admixture dosage.

CHROMIX Admixture, Retarder and HCA Retarders are not stocked but custom-manufactured on order. The minimum order for CHROMIX Admixture, Retarder is 50 Units (equivalent to 50 cubic yards of five-sack concrete or 42 cubic yards of six-sack concrete). The minimum order for any CHROMIX Admixture, HCA Retarder is 200 Units. Higher cement contents will have proportionally lower minimum amounts.

8. Shelf Life: Under normal conditions when kept dry and moisture free, the shelf life of all CHROMIX Admixtures is at least one year from the date of purchase. Inventory should be rotated.

9. Cautions: Add bag unopened to minimize dust. Use with adequate ventilation. Should dusty conditions develop, a dust mask (NIOSH/MSHA TC 21C approved) is recommended. Before using or handling, read the *Material Safety Data Sheet and Warranty.*

First Aid: Eyes—DO NOT RUB EYES. Immediately flush thoroughly with plenty of water. Skin—Wash thoroughly with soap and water. Inhalation—Move to fresh air. If symptoms persist or develop, or if ingested, get medical attention. Wash thoroughly immediately after handling. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

10. Technical Data: All CHROMIX Admixtures increase concrete strength at all ages, control the set time, and improve workability and freeze/thaw resistance. Mixes containing CHROMIX Admixture or CHROMIX Admixture Retarder exhibit higher 28-day and one-year compressive strengths when compared to control mixes containing no admixture. Compressive strengths of concrete with various, representative cement contents are given in the table below. All values are typical of those obtained when tested by ASTM testing methods.

11. Concrete Mix Design: Irrespective of strength requirements, minimum cement contents are required to assure adequate fines for finishing and texturing architectural concrete. For flatwork, the cement content must be a minimum of five sacks per cubic yard (275 kg/m^3) of concrete. The American Concrete Institute in ACI 302 IR *Recommended Practice for Concrete Floor and Slab Construction* recommends a minimum of five and one-half sacks per cubic yard (5$^1/_2$ sks or 305 kg/m^3) for concrete floors and slabs containing one inch (25 mm) aggregate. For vertical concrete, the cement content must be a minimum of six sacks per cubic yard (335 kg/m^3).

The dosage rate used in designing the mix must be as specified by Scofield for the particular color and type of CHROMIX Admixture designated. CHROMIX Admixture, Retarder, or one of the HCA Retarder types, should be considered for use in vertical concrete, to facilitate continuity of placement and consolidation, and in concrete flatwork placed during hot weather. Because of the substantial retardation achieved with HCA-3 and HCA-4 Retarder they should be used only after consulting Scofield for suggestions.

Under average conditions, concrete containing CHROMIX Admixtures will entrain 1–3 percent air and have a water-requirement reduction of 7–8 percent. An air-entraining admixture complying with ASTM C 260 should be used in all concrete flatwork subject to freeze/thaw cycles and as specified or required by the engineer for workability or durability.

Addition of supplemental admixtures or cement substitutes may affect the color, finishing characteristics, and other qualities of the concrete. Calcium chloride should not be added to the mix since it causes mottling and surface discoloration. Supplemental admixtures, such as additional water-reducing admixtures, waterproofing agents, and super plasticizers, or cement substitutes, such as flyash or slag, should not be used unless Scofield is consulted for suggestions. If a supplemental admixture or cement substitute is used, it must be added to all mixes on the project having the same color.

The mix should contain only nonreactive aggregates and have as low a slump as possible. A four inch (100 mm) slump or less is recommended.

12. Jobsite Samples: Producing architectural concrete requires skill and practice. For vertical precast or cast-in-place concrete, tilt-up concrete, and for architectural flatwork, representative jobsite

Compressive Strengths and Water/Cement Ratios

Average of three tests. Slump 4" ± 0.25". Maximum aggregate size: 1" for 5.0 and 5.6 sack mixes; $^3/_8$" for 7.5 sack mix.

	Control No Admixture	CHROMIX® Admixture (Normal Set)	CHROMIX® Admixture Retarder	CHROMIX® Admixture HCA-2 Retarder
5.0 sacks/cubic yard				
28 day compressive, psi	3,592	4,350	4,765	5,105
1 year compressive, psi	4,993	6,020	5,965	5,922
W/C Ratio	0.64	0.61	0.60	0.59
5.6 sacks/cubic yard				
28 day compressive, psi	3,993	4,717	4,885	5,497
1 year compressive, psi	5,700	6,880	7,212	6,503
W/C Ratio	0.62	0.55	0.53	0.54
7.5 sacks/cubic yard				
28 day compressive, psi	5,954	6,626	6,331	6,803
1 year compressive, psi	7,497	7,863	7,805	8,090
W/C Ratio	0.48	0.47	0.45	0.47

samples should be produced and approved at least one month prior to concreting. A separate sample should be cast for each color and mix design. Each sample should be of adequate size to be representative, be made with the job materials, and use the contemplated construction techniques. For accurate color, the quantity of concrete mixed should not be less than one-third of the capacity of the mixing drum (a minimum of three cubic yards in a nine cubic yard load) and should always be in full cubic yard (cubic meter) increments.

Vertical and tilt-up sample panels should be made using the selected form materials, snap-ties, spacers, inserts, pickup bolts, release agents, and surface treatments. Areas to be patched should be included so that patching techniques may be developed. Horizontal samples should be cured and if specified, finished with the appropriate, color-matched curing and finishing material or clear sealer. All surfaces should be textured as specified.

Portions of the actual cement and aggregates used to cast the jobsite samples should be retained. Cement and aggregates from the same source should be used throughout the job and periodically sampled for comparison of color and gradation with the material used in the approved sample.

13. Batching and Depositing: Weather conditions should be considered when planning installation. Professional practices as described in ACI standards 305R *Hot Weather Concreting* and 306R *Cold Weather Concreting* should be followed.

The concrete mix should be controlled to provide good batch-to-batch uniformity. Ready-mix trucks should be in good condition. The cement should be weighed accurately. The same brand of cement, source of sand, and water/cement ratio should be maintained for each load of concrete of the same color. A method is available for wet-checking the approximate color of each load before placing. Scofield should be consulted for details.

Before batching, the drum must be thoroughly clean and wet. The quantity of colored concrete mixed should not be less than one-third of the capacity of the mixing drum (a minimum of three cubic yards in a nine cubic yard load) and should always be in full cubic yard (cubic meter) increments. Approximately 40 gallons (150 L) of the mix water, and preferably, a portion of the aggregates should be batched into the mixer drum. Then one unopened Tossin bag of the specified CHROMIX Admixture, correctly packaged for the mix design, should be added for each cubic yard (meter) of concrete. The remaining ingredients should be added, and the load mixed at the specified mixing speed for a minimum of 130 revolutions, before discharging. CHROMIX Admixtures should never be added to an empty drum or at the tail end of a load.

When pumping, the pump should be capable of depositing a low-slump concrete mix containing one-inch rock and must be primed with an identically colored slurry mix. The SCOFIELD Tossin bag should not be added to the slurry mix but opened, and the color-conditioning admixture batched directly into the mix.

When depositing, the concrete should be deposited near its final position to avoid segregation due to rehandling or flowing. If held-back water is added at the jobsite, the concrete should be mixed at mixing speed for a minimum of 30 revolutions after addition of the water and before depositing. The slump of the concrete should be consistent throughout the project at four inches (100 mm) or less, and in no event should exceed five inches (125 mm) for any load. No water should be added after a portion of the load has been discharged. Measuring and adjusting the air content of the load is recommended immediately prior to placement. Concrete that has started to set must not be retempered, but should be discarded.

14. Flatwork Installation and Curing: Only uniformly slip-resistant textures, such as broom, swirl, sponge float, exposed-aggregate, or sandblasted should be considered for concrete flatwork. When a flat surface is required, extra precautions should be taken to ensure that the surface is uniformly troweled so that it will not be slippery. Representative jobsite samples as described in *12. Jobsite Samples* should be produced prior to concrete installation to verify safety and approve the adequacy of wet and dry slip resistance.

Surrounding areas, landscaping, and adjacent surfaces should be protected. The work area should be roped off, nearby vehicles removed, and appropriate sections closed to traffic.

The subgrade should be well drained and have adequate and uniform load-bearing characteristics. It must be moist, completely consolidated, and free of frost at the time of concreting. If necessary, the subgrade may be dampened with water in advance of concreting, but concrete should not be placed over freestanding water or muddy, frozen, or soft spots.

The concrete should be placed and consolidated so that it completely fills all space inside the forms and provides a suitable surface for finishing. Concrete adjacent to the forms should be spaded.

Hard steel troweling should be minimized to avoid trowel burns. For uniformity of appearance, consistent finishing practices should be used when applying the specified texture. The edges should be finished first. All surfaces should be finished within reasonably the same time after placing. Water must not be sprinkled or otherwise added to the surface of the slab while finishing. Long-handled fresnos must not be used. All final hand-finishing should be done in the same direction.

When concrete is placed and finished in hot windy weather, precautions must be taken to prevent plastic cracking resulting from excessively rapid drying at the surface as described in CIP 5 *Plastic Shrinkage Cracking* published by the National Ready Mixed Concrete Association.

Until it is completely cured, the color of concrete is normally less uniform and appears darker than the final color. Use of one of Scofield's color-matched curing materials enhances the depth of color, produces more uniformly colored concrete, and provides surface protection.

LITHOCHROME Colorwax should be used to cure exterior flatwork that will be allowed to weather naturally or that will only receive occasional maintenance and recoating. Interior floors and exterior flatwork that will receive regular maintenance and recoating should be cured with COLORCURE Concrete Sealer. Both curing materials have been specially formulated for use with colored concrete and exceed ASTM *C 309 Liquid Membrane-Forming Compounds for Curing Concrete.* When curing with LITHOCHROME Colorwax, an optional thin finish coat may be applied, if desired. When curing with COLORCURE Concrete Sealer, one thin finish coat is required. Scofield's Tech-Data Bulletin *A-514 LITHOCHROME Colorwax* or *A-634 COLORCURE Concrete Sealer* must be read completely before using.

Though not normally recommended for colored concrete, when curing color-conditioned concrete that is to be chemically stained or have the aggregate exposed, new and unwrinkled, nonstaining, high-quality, kraft curing paper should be used. Additional information is available in the appropriate Scofield Tech-Data Bulletins *A-414 LITHOCHROME Chemstain* or *T-203 LITHOTEX Top Surface Retarder*, and *A-764 CEMENTONE Clear Sealer.*

Scofield should be consulted prior to curing by other methods. Curing with water is usually detrimental to color uniformity. Curing with burlap and other wet coverings, plastic sheeting, or other liquid-membrane type curing compounds is not recommended as mottling or staining normally occurs.

All surfaces should be thoroughly inspected to verify and approve installation and safety, including wet and dry slip resistance, before opening the area to traffic.

15. Tilt-Up Concrete Installation: Prior to commencement of construction, a representative sample panel should be cast as described in *12. Jobsite Samples.*

Following the procedures in ACI *551 Tilt-Up Concrete Structures* is suggested. The casting slab should be flat, level, and of adequate strength to support the panels. Casting over joints should be avoided when possible to prevent transferring (shadowing) to the bottom of the panels. If panels must span a joint, plastic zip strips are recommended to form the joints, alternately the joints must be taped or otherwise sealed.

All concrete panels that are to serve as a casting bed should be trowel finished to produce a flat, level surface. The casting surface must be coated with a nonstaining, surface-sealing release agent capable of preventing the passage of any moisture into the casting bed. Otherwise, curing of the bottom surfaces will be uneven, creating discolorations that cannot be removed by sandblasting. Panels that are stacked, normally do not exhibit as uniform a color and should be placed in less visible areas of the building.

The pour for each panel must be continuous to prevent cold joints. To prevent uneven distribution of the aggregates near the bottom or top surfaces, the

concrete must be vibrated evenly. Stubby vibrators, approximately two inches (50 mm) in diameter and four inches (100 mm) in length should be used. The vibrator should be inserted perpendicular to the top of the panel without touching the reinforcing steel and must not be used to move the concrete. Vibration should continue only to the extent needed to achieve proper consolidation.

After lifting, the outside surface must be textured, usually by light sandblasting, to remove all release agents and curing compounds. The interior surface may be painted or textured by sandblasting. All pickup bolt holes or damaged areas should be patched with CHROMIX™ Conpatch™ in the matching color. Scofield's Tech-Data Bulletin *M-304 CHROMIX Conpatch* must be read completely before using.

16. Vertical Concrete Installation: Prior to the start of construction, a representative sample panel should be cast as described in *12. Jobsite Samples.*

Formwork for architectural concrete must be of the highest quality to obtain smooth, straight, nonyielding surfaces. Unless a form liner has been specified, a resin, high-density overlay or an epoxy or urethane-coated plywood should be used. Alternatively, all plywood plugs (boats) must be filled and the forms coated with a material that is sufficiently heavy to prevent unwanted grain transfer, such as a polyurethane. If the grain pattern is meant to transfer and a natural wood-grain form is to be used, the forms should be seasoned prior to their first use with a cement slurry containing the specified CHROMIX Admixture so that the same color is achieved with new forms as with forms that have been repeatedly used. For color uniformity, procedures and materials used in preparing the forms must not be varied during the job. All forms should be cleaned thoroughly prior to use or reuse. Release agents must be nonstaining.

Any leakage causes the water/cement ratio of the cement paste to vary near the leakage points and discoloration of the finished concrete will result. This staining will not be removed by sandblasting or bush-hammering. All plastic snap-tie cones should be of the nonleaking type. After cleaning, joints in the forms should be sealed with a two-inch wide vinyl or polyester tape. Alternatively, the joints may be sealed with a silicone sealant applied to the edges during assembly.

To prevent staining of the finished concrete surface, form ties should leave no metal closer to the surface of the concrete than 1½ inches. The location of tie holes is normally selected so as not to detract from the overall appearance of the structure, since it is virtually impossible to conceal them completely.

All walls should be cast to their full height between engineered horizontal joints. For design reasons, a taper-cut recessed chamfer strip is often placed at the horizontal joint locations.

All concrete should be placed carefully so that surface grinding can be avoided and a minimum of patching will be required. When possible, both external and internal vibrators should be used. Over-vibration should be avoided, and internal vibrators must not be used to move the concrete.

To produce more uniform color, all forms should be stripped when the concrete is the same age. All vertical surfaces should be sandblasted sufficiently to remove minor form marks and any colored residue resulting from water, cement, and coloring agents migrating (bleeding) toward the forms during concrete placement, vibration, and compaction.

After the concrete has been textured, patching, if required, should be performed using CHROMIX Conpatch. Scofield's Tech-Data Bulletin *M-304 CHROMIX Conpatch* must be read completely before using.

To protect the finished surfaces from dirt and moisture penetration, a high-quality, clear water repellent should be applied after the walls have been textured, patched, and allowed to cure for a minimum of 28 days. Prior to general application, a test section should be applied to the jobsite sample described in *12. Jobsite Samples*, following the manufacturer's instructions and safety requirements.

17. Joint Sealing: Scofield manufactures a complete line of joint sealants optimized for specific applications. LITHOSEAL™ Trafficalk-3G™ is color-matched to the CHROMIX Admixture colors and specially formulated for high-performance in pedestrian and vehicular traffic areas. LITHOSEAL™ Buildingcalk-3G™ is a color-matched, three-component sealant formulated for dynamically moving vertical joints in buildings and structures, and LITHOSEAL™ Buildingcalk-1G™ is an oxygen-curing, one-component sealant for the same use, packaged in LITHOSEAL™ Easipaks™ for ease of loading. The appropriate Scofield Tech-Data Bulletin *S-404-3G LITHOSEAL Trafficalk-3G, S-304-3G LITHOSEAL Buildingcalk-3G,* or *S-304-1G LITHOSEAL Buildingcalk-1G* must be read completely before using.

18. Availability: CHROMIX Admixtures are marketed nationwide and internationally, through strategically located ready-mix firms, dealers, and representatives. Scofield should be contacted for its nearest representative.

19. Costs: CHROMIX Admixtures are normally purchased with the concrete from the ready-mix plant. Prices vary with the cement content of the mix, CHROMIX Admixture color, and other factors. Standard and designer colors are divided into three price groups, with Group 1 colors being the lowest in cost. For standard colors, the group number appears as the first digit in the color number preceding the color name. For designer colors, the group number appears on the CHROMIX Admixtures Color Chart A-312. Prices are subject to change.

Custom colors are priced similarly to standard and designer colors. Blues and greens are higher. Scofield should be consulted for the prices of specific custom colors.

20. Maintenance: Color-conditioned concrete flatwork or floors should be maintained by sweeping. Spills should be cleaned up when they occur. Dirt may be hosed off with water. Heavily soiled areas may be cleaned by wet mopping or scrubbing with a stiff-bristle brush and a properly diluted, high-quality commercial detergent. For larger areas, walk-behind or ride-on scrubbing machines are efficient and cost effective.

For concrete flatwork finish-coated with COLORCURE Concrete Sealer or LITHOCHROME Colorwax, a maintenance application may be made after the original coat has weathered or worn from the surface. The appropriate tech-data *A-514 LITHOCHROME Colorwax* or *A-634 COLORCURE Concrete Sealer* must be read completely before using.

Damaged areas in new or old concrete, color-conditioned with a CHROMIX Admixture, can be patched using CHROMIX Conpatch in the matching color. Tech-Data Bulletin *M-304 CHROMIX Conpatch* must be read completely before using.

21. Warranty Summary: For the complete warranty statement and important limitations, read the *Material Safety Data Sheet and Warranty.* Generally, Scofield represents and warrants only that its products are of consistent quality. No other oral or written statement is authorized. Any liability is limited to refund or replacement of defective product. The end user shall determine product's suitability and assume all risks and liability.

Suggested Short Form Specification for Color-Conditioning Concrete Flatwork: All concrete designated as colored in the plans and specifications shall contain the proper proportion of CHROMIX® Admixture for Color-Conditioned Concrete,_____ color, manufactured by L. M. Scofield Company, (800) 800-9900, Los Angeles, CA, (323) 720-3000 and Atlanta, GA, (770) 920-6000. The color-conditioning admixture shall be a single-component, colored, water-reducing, set-controlling admixture, factory formulated and packaged in cubic yard dosage increments, not multiple additives and pigments added separately into the mix. It shall comply with ASTM C 494. The concrete shall contain _____ sacks of cement per cubic yard. No calcium chloride shall be used. The slump shall not exceed four inches. All surfaces shall be finished uniformly. All colored concrete shall be cured *(optional: and finished)* with LITHOCHROME® Colorwax™ *(or cured and finished with COLORCURE® Concrete Sealer)* in the matching color and the joints sealed with LITHOSEAL™ Trafficalk-3G™ in the matching color. The concrete shall never be covered with plastic sheeting. All mix design, batching, placing, finishing, curing, joint sealing, and patching shall be in accordance with the Scofield Tech-Data Bulletins *A-304 CHROMIX® Admixtures for Color-Conditioned Concrete, A-514 LITHOCHROME® Colorwax™* (or *A-634 COLORCURE® Concrete Sealer*), *S-404-3G LITHOSEAL™ Trafficalk-3G™*, and *M-304 CHROMIX™ Conpatch™*.

Pedestrian Lighting 4.1

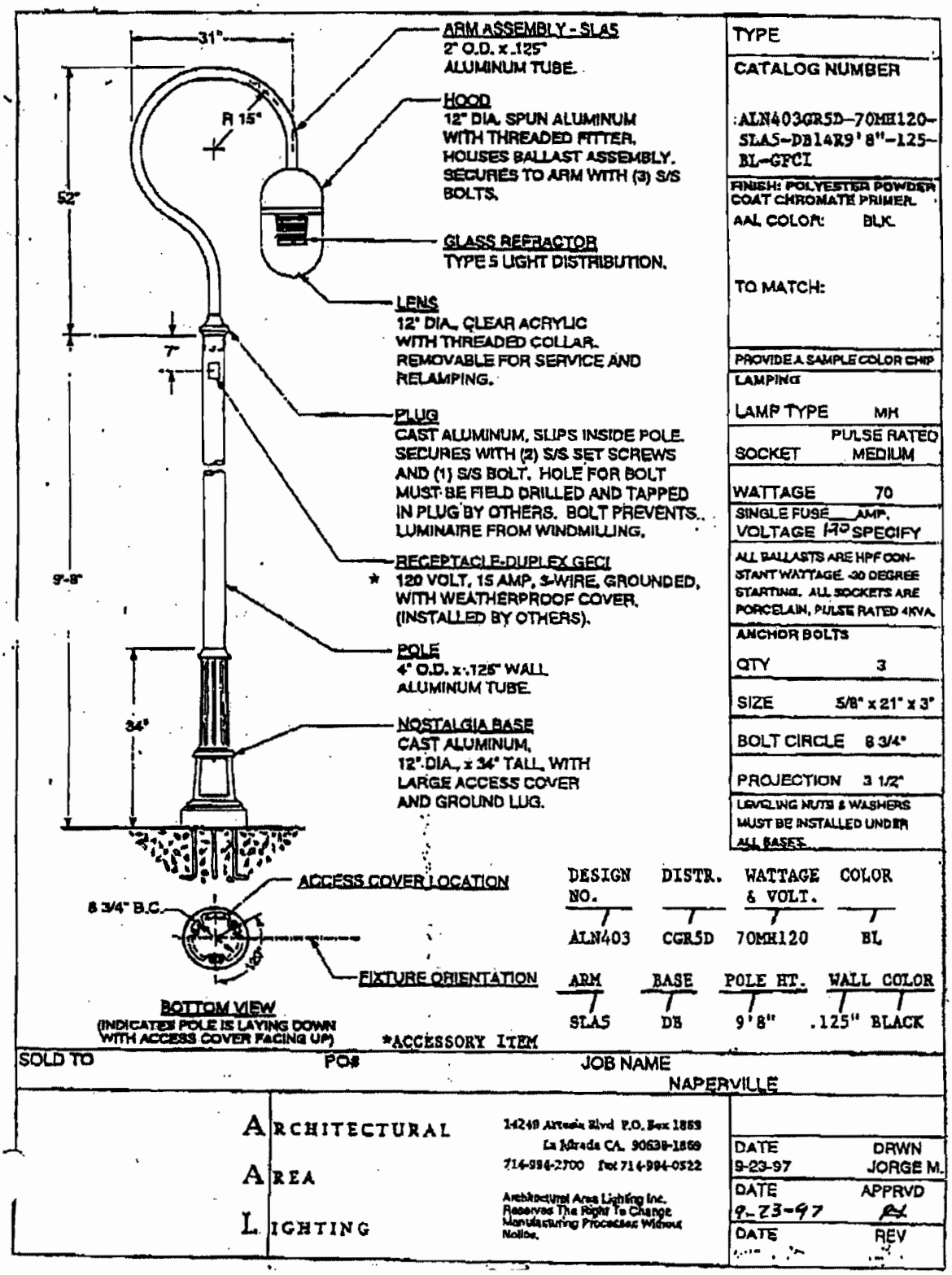
Manufacturer: Architectural Area Lighting
Model: ALN403GR5D-70MH120-SLA5-DB-14R9'8"-125-BL-GFCI
Color: Black
Finish: Polyester powder coat
Light source: Metal Halide. 70 Watts. 120 volts.

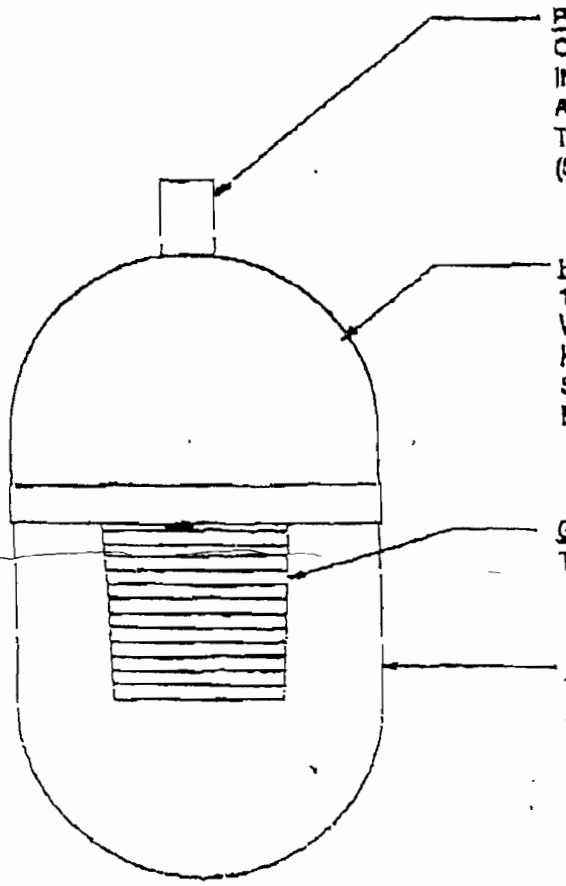
Location: Center of pole shall be located 30" from face of curb.
Spacing: Typical spacing shall be 30 feet.

Installation: Pedestrian light poles shall be surface mounted onto concrete foundation with three (3) anchor bolts, per manufacturers recommendation. Install per attached detail.

Controller: One controller required for each block (two block faces). Refer to City of Naperville standards SL 6-10.

Provided by Stone Creviston Coddington, Inc. 630.894.3202


31"
R 15"
52"
7"
9'-8"
34"
8 3/4" B.C.
ARM ASSEMBLY - SLA5
2" O.D. x .125" ALUMINUM TUBE.
HOOD
12" DIA. SPUN ALUMINUM WITH THREADED FITTER. HOUSES BALLAST ASSEMBLY. SECURES TO ARM WITH (3) S/S BOLTS.
GLASS REFRACTOR
TYPE 5 LIGHT DISTRIBUTION.
LENS
12" DIA., CLEAR ACRYLIC WITH THREADED COLLAR. REMOVABLE FOR SERVICE AND RELAMPING.
PLUG
CAST ALUMINUM, SLIPS INSIDE POLE. SECURES WITH (2) S/S SET SCREWS AND (1) S/S BOLT. HOLE FOR BOLT MUST BE FIELD DRILLED AND TAPPED IN PLUG BY OTHERS. BOLT PREVENTS LUMINAIRE FROM WINDMILLING.
RECEPTACLE-DUPLEX GFCI
* 120 VOLT, 15 AMP, 3-WIRE, GROUNDED, WITH WEATHERPROOF COVER. (INSTALLED BY OTHERS).
POLE
4" O.D. x .125" WALL ALUMINUM TUBE.
NOSTALGIA BASE
CAST ALUMINUM, 12" DIA., x 34" TALL, WITH LARGE ACCESS COVER AND GROUND LUG.
ACCESS COVER LOCATION
FIXTURE ORIENTATION
BOTTOM VIEW
(INDICATES POLE IS LAYING DOWN WITH ACCESS COVER FACING UP)
*ACCESSORY ITEM
TYPE
CATALOG NUMBER
:ALN403CGR5D-70MH120-SLA5-DB14R9'8"-125-BL-GFCI
FINISH: POLYESTER POWDER COAT CHROMATE PRIMER.
AAL COLOR: BLK.
TO MATCH:
PROVIDE A SAMPLE COLOR CHIP
LAMPING
LAMP TYPE MH
SOCKET PULSE RATED MEDIUM
WATTAGE 70
SINGLE FUSE ___ AMP, VOLTAGE 120 SPECIFY
ALL BALLASTS ARE HPF CONSTANT WATTAGE. -20 DEGREE STARTING. ALL SOCKETS ARE PORCELAIN, PULSE RATED 4KVA.
ANCHOR BOLTS
QTY 3
SIZE 5/8" x 21" x 3"
BOLT CIRCLE 8 3/4"
PROJECTION 3 1/2"
LEVELING NUTS & WASHERS MUST BE INSTALLED UNDER ALL BASES.
DESIGN NO. ALN403
DISTR. CGR5D
WATTAGE & VOLT. 70MH120
COLOR BL
ARM SLA5
BASE DB
POLE HT. 9'8"
WALL .125"
COLOR BLACK
SOLD TO
PO#
JOB NAME NAPERVILLE
ARCHITECTURAL AREA LIGHTING
14249 Artesia Blvd P.O. Box 1869 La Mirada CA. 90638-1869
714-994-2700 Fax 714-994-0522
Architectural Area Lighting Inc. Reserves The Right To Change Manufacturing Processes Without Notice.
DATE 9-23-97 DRWN JORGE M.
DATE 9-23-97 APPRVD
DATE REV



PLUG
CAST ALUMINUM. SLIPS INSIDE OF EXISTING SLAS ARM 2" O.D. x .125" ALUMINUM TUBE. SECURES TO ARM W/ (3) S/S BOLTS.

HOOD
12" DIA. SPUN ALUMINUM WITH THREADED FITTER. HOUSES BALLAST ASSEMBLY. SECURES TO ARM WITH (3) S/S BOLTS.

GLASS REFRACTOR
TYPE 5 LIGHT DISTRIBUTION.

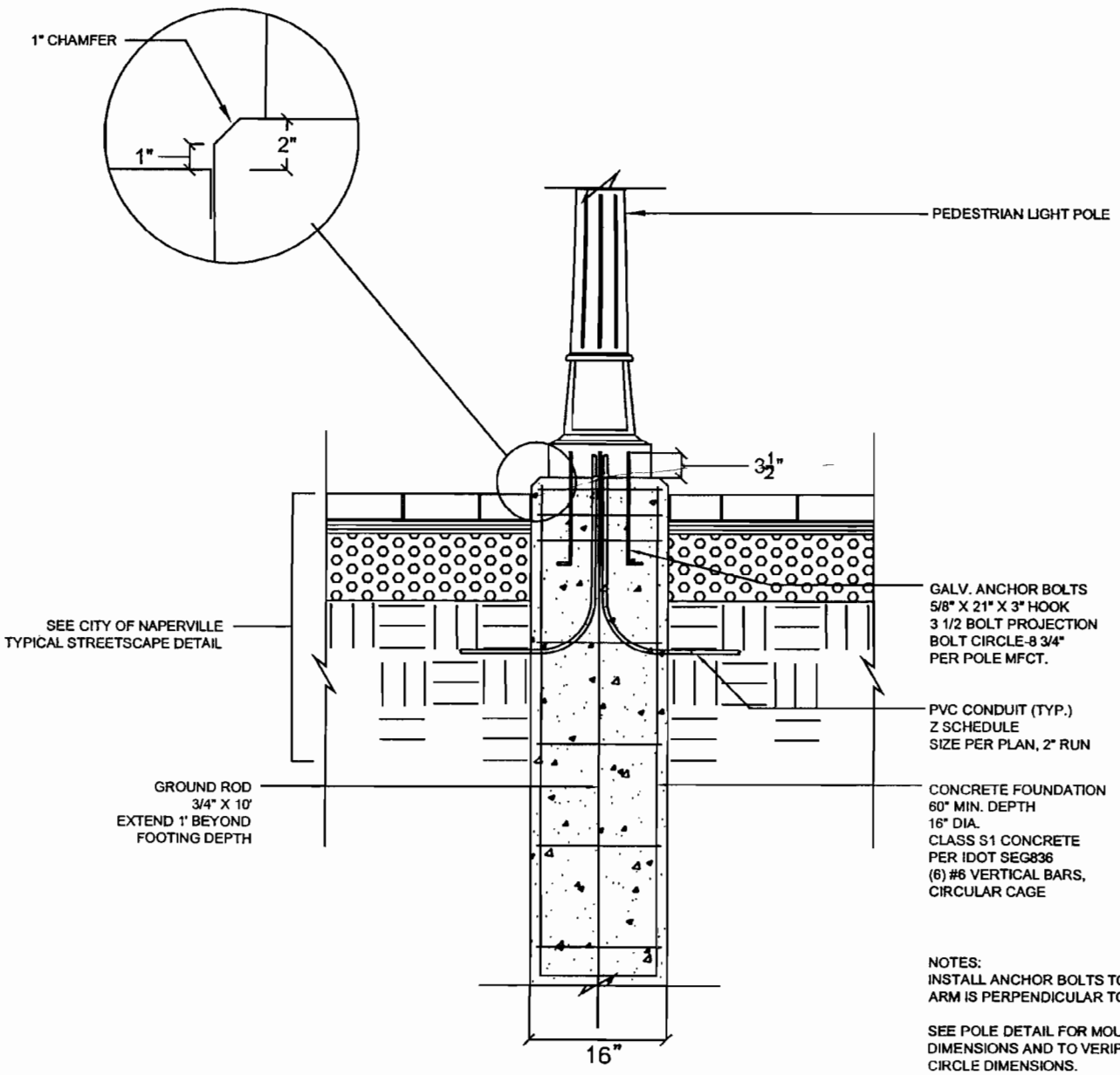
LENS
12" DIA., CLEAR ACRYLIC WITH THREADED COLLAR. REMOVABLE FOR SERVICE AND RELAMPING.

TYPE
CATALOG NUMBER ALN403CGRSD-PS1
FINISH: POLYESTER POWDER COAT CHROMATE PRIMER. AAL COLOR: BLK TO MATCH:
PROVIDE A SAMPLE COLOR CHIP
LAMPING LAMP TYPE MH
SOCKET PULSE RATED MEDIUM
WATTAGE 70
SINGLE FUSE ___ AMP. VOLTAGE SPECIFY
ALL BALLASTS ARE HPF CONSTANT WATTAGE, -30 DEGREE STARTING. ALL SOCKETS ARE PORCELAIN, PULSE RATED 4kVA.
ANCHOR BOLTS QTY
SIZE
BOLT CIRCLE
PROJECTION
LEVELING NUTS AND WASHERS MUST BE INSTALLED UNDER ALL BASES.
ONE APPROVED DRAWING MUST BE RETURNED TO A.A.L. BEFORE THIS PRODUCT CAN BE FABRICATED.
WARNING: THIS FIXTURE MUST BE GROUNDED IN ACCORDANCE WITH LOCAL CODES OR THE NATIONAL ELECTRICAL CODE. FAILURE TO DO SO MAY RESULT IN SERIOUS PERSONAL INJURY.

SOLD TO | PO# | JOB NAME
NAPERVILLE

ARCHITECTURAL AREA LIGHTING
14249 Arneda Blvd P.O. Box 1869
La Mirada CA. 90638-1869
714-994-2700 Fax 714-994-0522

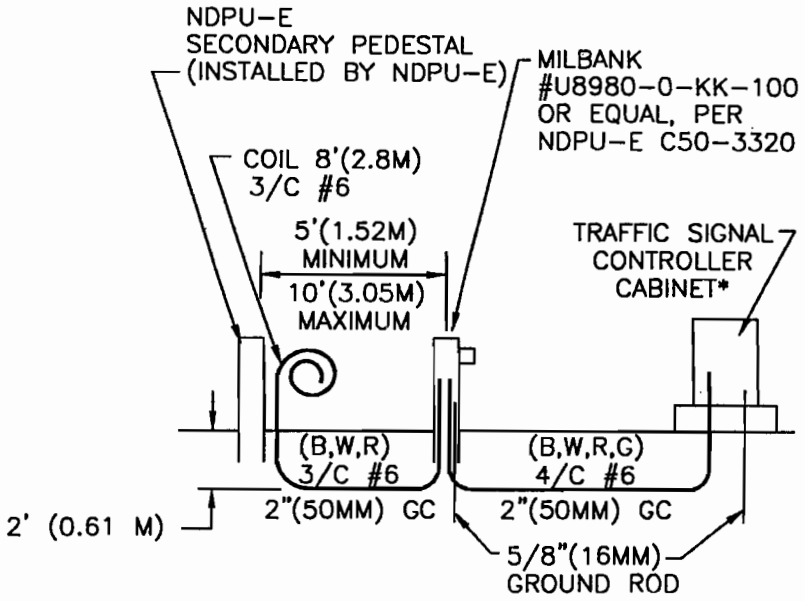
DATE	DRWN
8-23-97	JORGE M.
DATE	APPRVD
9-23-97	
DATE	REV



NOTES:
INSTALL ANCHOR BOLTS TO INSURE POLE ARM IS PERPENDICULAR TO CURB LINE.

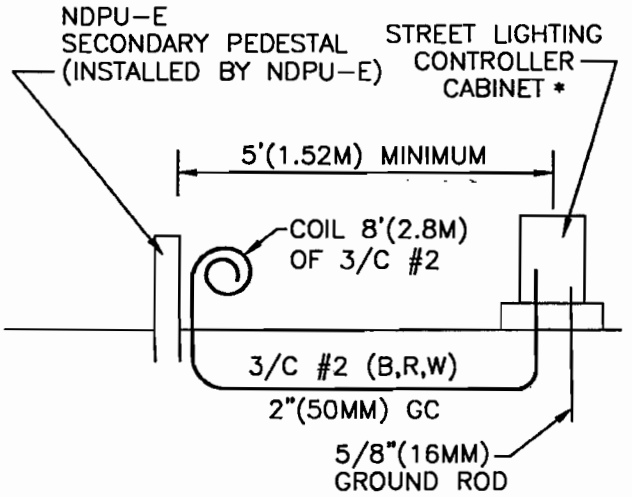
SEE POLE DETAIL FOR MOUNTING DIMENSIONS AND TO VERIFY MOUNTING CIRCLE DIMENSIONS.

PEDESTRIAN LIGHT FOUNDATION INSTALLATION



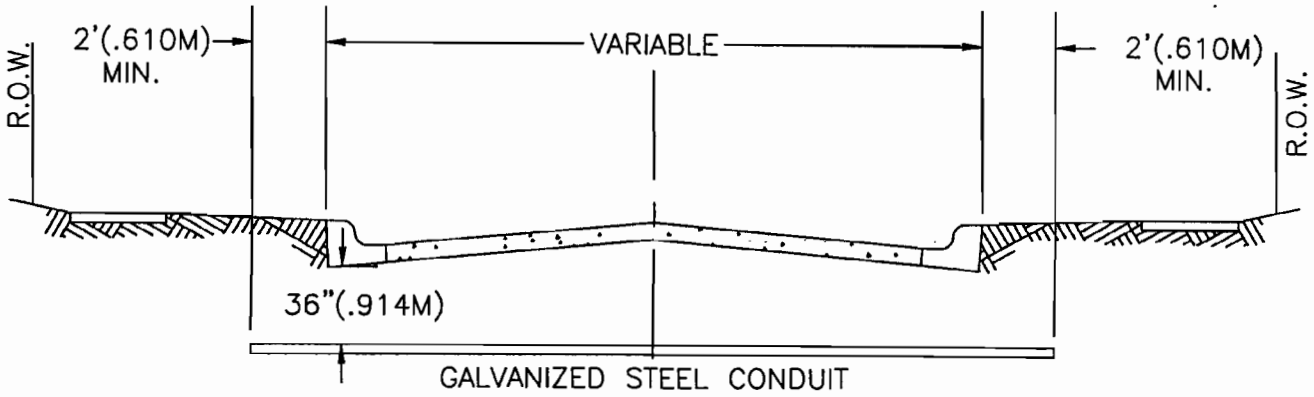
SERVICE CONNECTION TO TRAFFIC SIGNAL

* INSTALL THREADED BUSHING WITH LUG ON 2" GC SERVICE CONDUIT; CONNECT BUSHING WITH 1/C #6 GREEN CABLE TO GROUND ROD TO GREEN TERMINAL STRAP OF CONTROLLER.

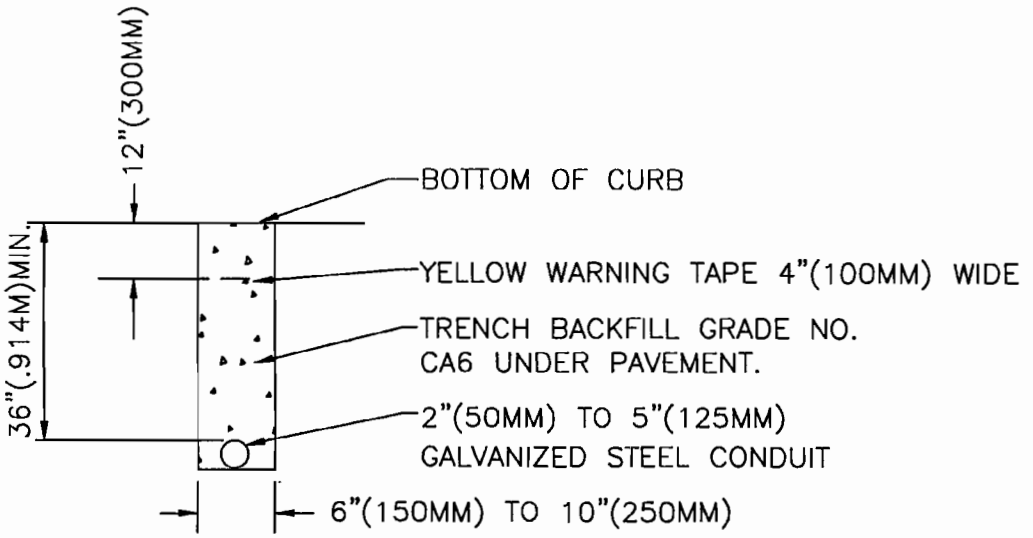


SERVICE CONNECTION TO STREET LIGHTING CONTROLLER

Title: TYPICAL STREET LIGHT CONNECTION	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 5/3/00	REV:	Detail: SL 4
	SCALE: NTS		



STREET CROSSING

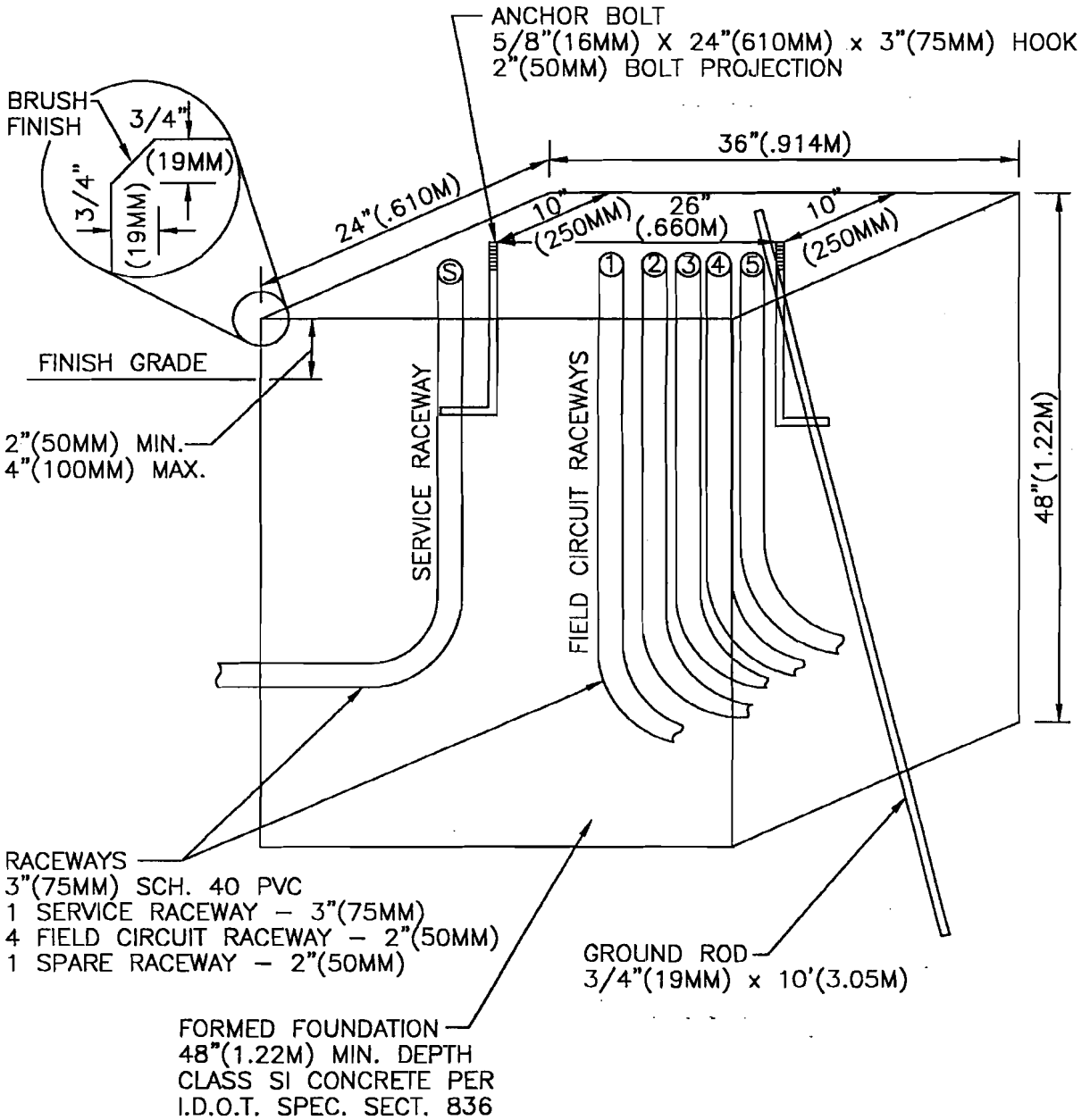


TRENCH SECTION

NOTES:

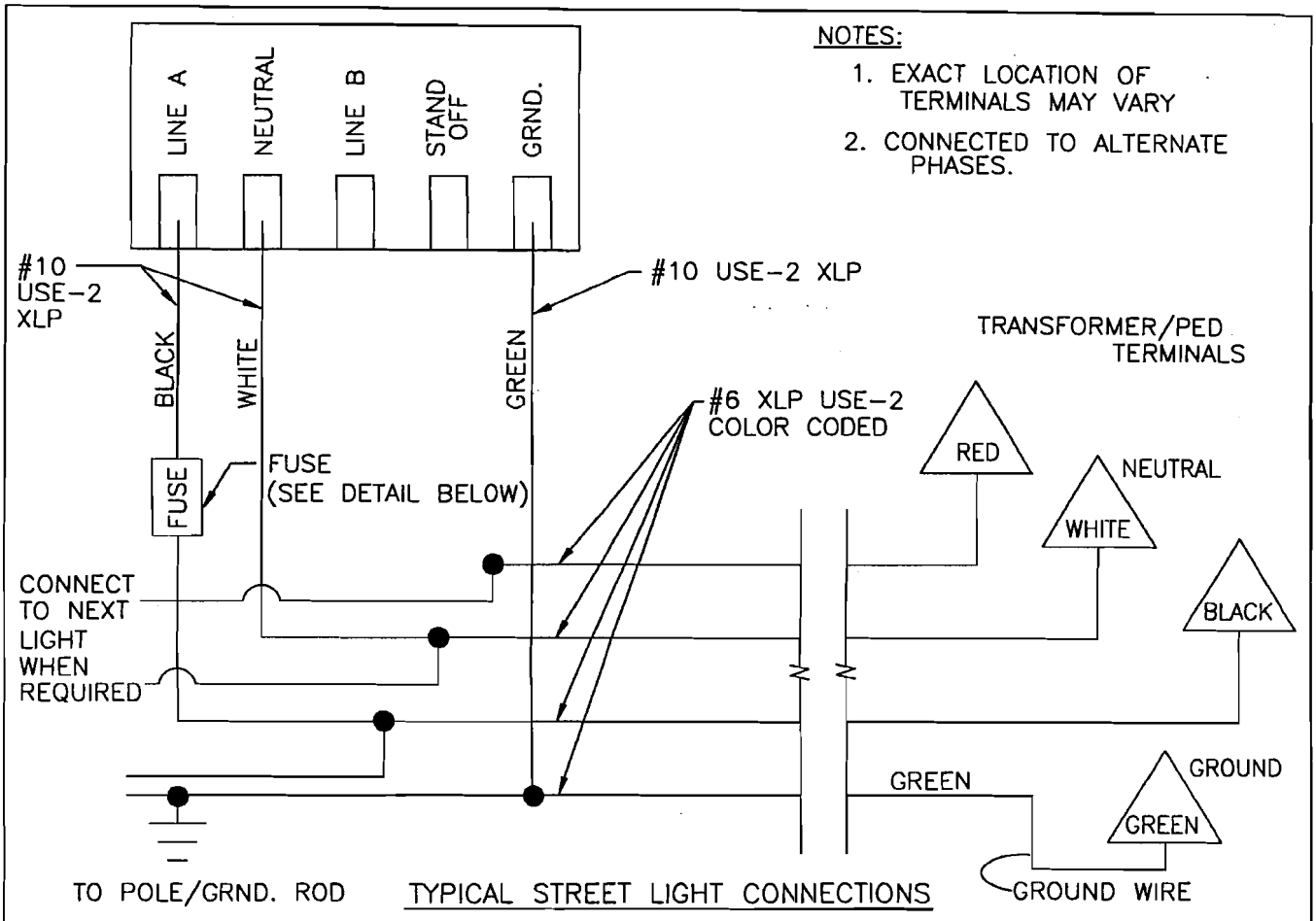
1) CONDUIT SHALL BE GALVANIZED STEEL CONDUIT
2) CONDUIT SHALL EXTEND A MINIMUM OF 2'(.610M) BEYOND BACK OF CURB
3) CONDUIT SHALL BE A MINIMUM OF 36"(.914M) BELOW CURB BOTTOM

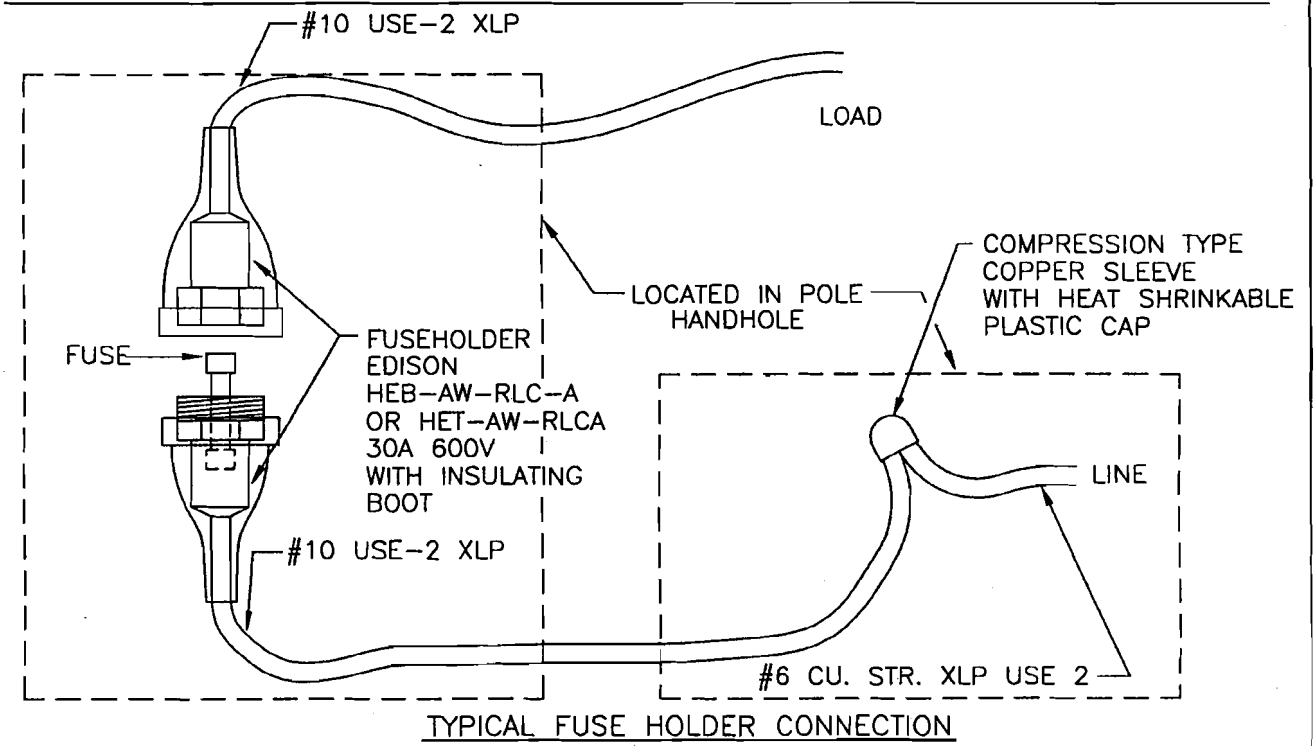
Title: ELECTRIC CONDUIT UNDER PAVEMENT	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 4/19/99	REV:	Detail: SL 6
	SCALE: NTS		



NOTE:
SEE DETAIL SL 9 FOR STREET LIGHTING CONTROL CABINET DETAIL

Title: I.D.O.T. TYPE III STREET LIGHTING CONTROL CABINET FOUNDATION	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 2/22/00	REV:	Detail: SL 7
	SCALE: NTS		





Title: TYPICAL STREET LIGHT CONNECTION	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 1/25/99	REV:	Detail: SL 10
	SCALE: NTS		

Lighting Controller

4.1.1

Please refer to the plans for the Downtown Lighting Controller details.

Roadway Lighting

Fixture
Manufacturer: GE Luminaire
Model: DMY25M1A2AHTVBL
Color: Black
Finish: Polyester powder coat

Provided by GE Lighting Systems. 800.305.1372

Pole
Manufacturer: Hapco
Model: 51-133-P1-T3 with 4" x 6" handhole
Color: Black
Finish: Polyester powder coat
Height: 30 feet

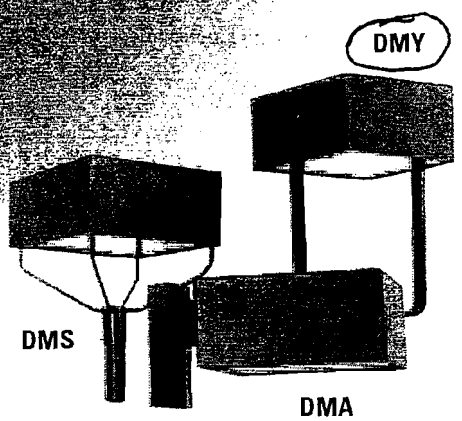
Location: Roadway lights shall be generally located at intersections and mid-block locations.

Installation: Roadway lighting poles shall be installed per City of Naperville Standard Street Lighting Connection Detail SL5 (Sheets 1&2).

Provided by Archibald & Hamel Inc. 630.833.7377

DIMENSION AREA LIGHTING

DIMENSION™ LUMINAIRE



APPLICATIONS

- Greater than 20 ft (6 meter) site lighting including parking areas, driveways, malls, shopping centers
- Commercial and industrial complexes, automobile lots and residential areas

SPECIFICATION FEATURES

- Ⓤ 1572 Listed
  Suitable For Wet Locations
- UL Listed to Canadian National Standards and Codes
- Standard construction is IP54
- Precision engineered aluminum housing featuring die-cast ends and die-cast door
- Polyester powder paint finish standard for dark bronze, black, white, charcoal gray and aluminum
- No-tool access stainless steel latch design
- Heat and impact resistant tempered flat glass lens
- All reflectors are field rotatable
- Enclosed, sealed and gasketed housing
- Choice of mountings including Decorative Mounting Arm (4 in. [103mm] or 12 in. [305mm]), Yoke or Spider (Drilling templates are the same for the Decashield® 400 and Decashield 1000 luminaires.)
- Removable ballast tray (standard)
- Mogul base socket – E39 socket
- Magnapack packaging available for DMA only

ORDERING NUMBER LOGIC

DMA	40	S	1	A	2	G	MC3	DB	1	F
PRODUCT IDENT	WATTAGE	LIGHT SOURCE	VOLTAGE	BALLAST TYPE	PE FUNCTION	LENS TYPE	DISTRIBUTION TYPE	COLOR	MOUNTING ARM LENGTH	OPTIONS
XXX	XX	X	X	X	X	X	XXX	XX	X	XXX
DMA = Dimension Luminaire with Arm Mounting DMY = Dimension Luminaire with Yoke Mounting DMS = Dimension Luminaire with Spider Mounting	07 = 70 10 = 100 NOTE:HPS only 15 = 150 (55V) 17 = 175 25 = 250 40 = 400	S = HPS M = MH Standard: Mogul base lamp not included.	60Hz 0 = 120/208/240/277 Multivolt 1 = 120 2 = 208 3 = 240 4 = 277 5 = 480 D = 347 F = 120X347 T = 220 50Hz 6 = 220 Y = 240 NOTE: 120X347 connected for 120V	See Ballast Selection Table A = Autoreg G = Mag-Reg with Grounded Socket Shell H = HPF Reactor or Lag M = Mag-Reg P = CWI with Grounded Socket Shell	1 = None 2 = PE Receptacle 4 = PE Receptacle and Shorting Cap NOTE: Receptacle connected same voltage as unit.	A = Acrylic Prismatic Drop Lens* (250W Max) G = Glass L = Polycarbonate Prismatic Drop Lens* (250W Max) S = SAG Glass (Required for use with VTV) *Contact factory for photometrice distribution.	See Photometric Selection Table MC2 = Medium Cutoff Type II MC3 = Medium Cutoff Type III HTV = Horizontal Type V VTV = Vertical Type V FWT = Forward Throw	AL = Aluminum BL = Black CG = Charcoal Gray DB = Dark Bronze (Standard) WH = White	1 = 4 in.(102mm) for Singles Two at 180° 2 = 12 in. (305mm) for Two at 90° Tri-Fixture Poles Quad-Fixture Poles 4 = 4 in. (102mm) for Round Pole 5 = 12 in. (305mm) for Round Pole R = No arm. Housing drilled with diagonal hole pattern	A = Lightning Arrester, Grounding Type B = Time Delay Automatically Switched Quartz C = Charcoal Filter (except on FWT and VTV) F = Fusing (Not available with multivolt or 120X347V) J = Line Surge Protector, Expulsion Type Q = Non-Time Delay Automatically Switched Quartz

PHOTOMETRIC SELECTION TABLE

All light sources are clear unless otherwise indicated.

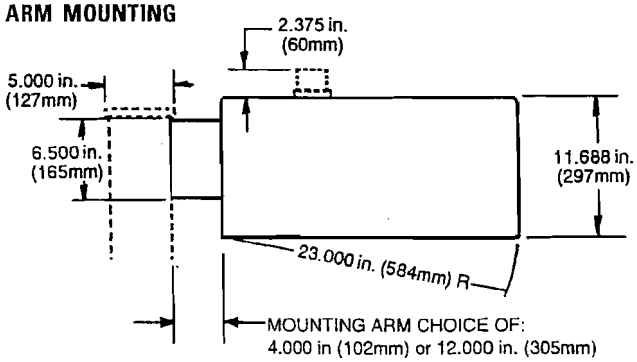
Wattage	Light Source	Photometric Curve No. 35-17 - - - - DMA MC2	DMA MC3	DMA HTV	DMA VTV	DMA FWT	DMY MC2	DMY MC3	DMY HTV	DMY VTV	DMY FWT	DMS MC2	DMS MC3	DMS HTV	DMS VTV
70, 100, 150 (55V)	HPS	8871	8875	8889	8894	8882	9229	9231	8916	8922	8928	9230	9232	8934	8940
250, 400	HPS	8872	8887	8878	8895	8883	9225	9233	8917	8923	8929	9226	9234	8935	8941
175, 250	MH	8873	8876	8880	8896	8885	9223	9235	8919	8925	8931	9224	9236	8937	8943
400	MH	8874	8877	8881	8897*	8886	9277	9276	8920	8926*	8932	9278	9275	8938	8944*

NOTE: *Lamp required for 400 watt MH must be E-18 or ED-28 only. For Standard Lamp, you must order "S" SAG Glass lens type.

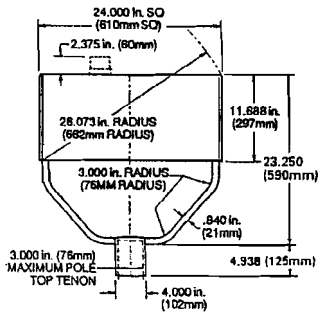
DIMENSION™ LUMINAIRE

FIXTURE DIMENSIONS

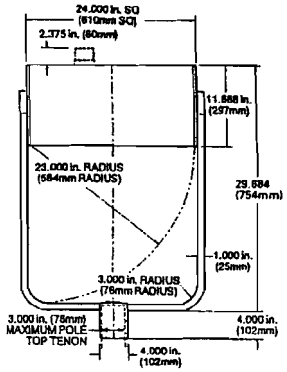
ARM MOUNTING



SPIDER MOUNTING



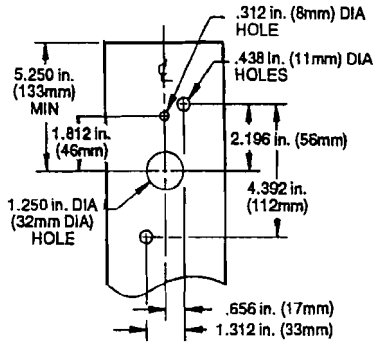
YOKE MOUNTING



DATA

Approximate Net Weight	45-70 lbs	20-32 kgs
Suggested Mounting Height	20-50 ft.	6-15 M
Effective Projected Area:		
With 4 in. (103mm) Mounting Arm	2.2 sq ft max	0.20 sq M max
With 12 in. (305mm) Mounting Arm	2.4 sq ft max	0.22 sq M max
Yoke Mounted	3.8 sq ft max	0.35 sq M max
Spider Mounted	2.9sq ft max	0.27 sq M max

SQUARE POLE MOUNTING: STANDARD
(choices 1, 2, 3 from Logic Table)



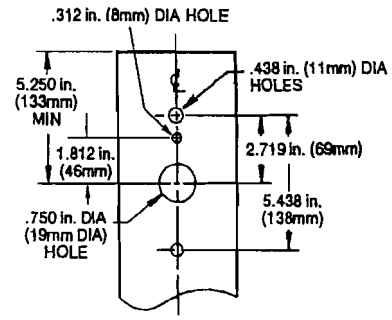
DRILLING TEMPLATE

BALLAST SELECTION TABLE

Wattage	Light Source	Ballast Type/Voltage 60Hz Multivolt	120	208, 240, 277, 480	347, 120X347	220	50Hz 220	240
70, 100, 150 (55V)	HPS	H	G,H,M	G, M	H	N/A	N/A	N/A
250, 400	HPS	A	A	A	A	A	A	A
175	MH	A	A	A	A	N/A	N/A	N/A
250, 400	MH	A	A, P	A, P	A, P	A	A	A

NOTE: C/F=Contact Factory, N/A=Not Available

ROUND POLE MOUNTING
3.5 to 4.5-inch (89 to 114mm) OD
round pole mounting arm
(choices 4, 5, 6 from Logic Table)



DRILLING TEMPLATE

REFERENCES

See Page A-16 for start of Accessories.
See Page A-22 for Explanation of Options and Other Terms Used.
See Pole and Bracket Section Page P-2 for pole selection.

Specifications & Warranty

General Specifications

SHAFT

The shaft (round or square) shall be a extruded tube of aluminum alloy 6063 and shall be full length heat-treated after welding on the base flange to produce a T6 temper. Poles without transformer bases shall include a reinforced handhole centered 18" above the bottom of the shaft. Handholes are located 90 degrees clockwise from the plane of the bracket arm as viewed from the top, except for Series 60 poles which have the handhole in the plane of the crossarm. A cover with stainless steel attachment screws shall be provided for the handhole.

BASE FLANGE

The base flange for the attachment of the shaft to the foundation or to the transformer base shall be a one-piece cast socket of aluminum alloy 356. The flange shall be joined to the shaft by means of complete circumferential welds, externally at the top of the flange, and internally at the bottom of the shaft tube. Four anchor bolt covers of cast aluminum and stainless steel screws for their attachment shall be provided.

TRANSFORMER BASE

The transformer base shall be a one-piece casting of aluminum alloy 356 with hinged or removable access door, held in place with a stainless steel screw. The access door opening shall be 13" high, 8 3/4" wide at the top, and 9 1/4" wide at the bottom. The base shall be designed to be attached to 1" anchor bolts located on 15" diameter bolt circle for the 20" high base and on a 22" diameter bolt circle for the 24" high base. Four 1" diameter x 3 3/4" long galvanized steel hex-head machine bolts with nuts and washers shall be supplied to attach the transformer base to the base flange of the pole shaft. Eight trapezoidal aluminum washers shall be provided to properly distribute the bolt forces in the top and bottom flanges.

MISCELLANEOUS HARDWARE

All nuts, bolts, and washers used in the fabrication of the pole shall be Grade 18-8 stainless steel, except for anchorage hardware.

ANCHORAGE

A set of four 55,000 psi min. yield steel anchor bolts threaded 1"- 8 NC for 6" and hot-dipped galvanized at the threaded end for at least 10" shall be supplied with each lighting pole. The bolts shall include a 4" right angle hook at the unthreaded end. A galvanized nut, lock washer, and flat washer shall

be supplied with each anchor bolt.

GROUNDING
Each pole shaft shall contain an integral lug with a 3/8" diameter hole for the purpose of attaching a grounding connector.

WELDING
Welding shall be done by the metal inert gas shielded arc method with consumable electrode. Aluminum alloy 4043 electrode shall be used.

SURFACE FINISH
The pole shaft shall be provided with a satin finish accomplished by mechanical rotary grinding. The Series 20, 30, and 60 bracket arms shall be provided with a satin etched finish. The Series 40 bracket arms shall have the same finish as is on the shaft. All materials shall be cleaned and free from dents and unsightly scratches.

NOTE:
These specifications are only intended for general information. In a continuing effort to improve our products, HAPCO Company reserves the right to change materials and designs without prior notice.

HAPCO WARRANTY
Seller warrants to repair or replace, at seller's option, any equipment which fails due to defects in material or workmanship within one year from date of shipment, unless failure is due to improper installation or misapplication. This guarantee is limited to the repair or replacement of the material involved and does not include reimbursement for the expense of installation, removal of equipment, transportation, or any other
expenses which may be incurred. Authorization must be obtained from HAPCO Company at Abingdon, VA, before any material is returned.

Hapco Aluminum Pole Products
26252 Hillman Highway
Abingdon, VA 24210
800-368-7171
276-628-7171
fax 276-628-7707

hapco Catalog American Heritage Lamp Post

Style 51

Series 50 Style 51 Tapered Side or Top Mount, Standard Base

Catalog Number	Nominal Mounting Height (ft-in)	Shaft Taper (in)	Wall Thickness (in)	Typical Lum. Weight (lbs)	Max. E.P.A. 80 mph Nominal Mount Hgt	Max. E.P.A. 90 mph Nominal Mount Hgt	Max. E.P.A. 100 mph Nominal Mount Hgt	Max. E.P.A. 110 mph Nominal Mount Hgt	Base Width (inches)	Bolt Circle Diameter (inches)	Net Weight (lbs)
51-001	20	6x4.5	0.125	140	6.6	4.9	3.7	2.9	9 3/4	9-10	65
51-002	20	6x4.5	0.156	150	9.3	7	5.4	4.3	9 3/4	9-10	80
51-003	20	6x4.5	0.188	150	12	9.2	7.2	5.8	9 3/4	9-10	90
51-004	20	7x4.5	0.156	150	14.7	11.3	8.9	7.2	10 1/2	10-11	90
51-005	20	7x4.5	0.188	150	18.5	14.3	11.4	9.2	10 1/2	10-11	100
51-006	20	8x4.5	0.156	150	21	16.3	13	10.6	11 1/4	11-12	95
51-007	20	8x4.5	0.188	150	26.1	20.3	16.3	13.3	11 1/4	11-12	105
51-062	25	6x4.5	0.156	120	4.9	3.5	2.6	1.9	9 3/4	9-10	90
51-063	25	6x4.5	0.188	120	7.1	5.2	3.9	3	9 3/4	9-10	110
51-064	25	7x4.5	0.156	150	8.9	6.7	5.1	4	10 1/2	10-11	100
51-065	25	7x4.5	0.188	150	11.8	9	7	5.6	10 1/2	10-11	120
51-066	25	8x4.5	0.156	150	13.8	10.6	8.3	6.6	11 1/4	11-12	115
51-067	25	8x4.5	0.188	150	17.7	13.7	10.8	8.7	11 1/4	11-12	130
51-068	25	8x4.5	0.219	150	21.5	16.6	13.2	10.6	11 1/4	11-12	150
51-069	25	8x4.5	0.250	150	25.1	19.5	15.5	12.6	11 1/4	11-12	165
51-124	30	7x4.5	0.156	110	5.1	3.6	2.6	1.9	10 1/2	10-11	120
51-125	30	7x4.5	0.188	120	7.4	5.4	4	3.1	10 1/2	10-11	145
51-126	30	8x4.5	0.156	150	8.7	6.5	4.9	3.8	11 1/4	11-12	125
51-127	30	8x4.5	0.188	150	11.9	9	6.9	5.5	11 1/4	11-12	150
51-128	30	8x4.5	0.219	150	14.9	11.3	8.8	7	11 1/4	11-12	175
51-129	30	8x4.5	0.250	150	17.8	13.6	10.7	8.6	11 1/4	11-12	200
51-131	30	9x4.5	0.188	150	17.3	13.2	10.4	8.2	13	13-14	170
51-133	30	9x4.5	0.250	150	24.9	19.3	15.3	12.3	13	13-14	215
51-139	30	10x6	0.188	200	23.5	18.2	14.3	11.3	14	14-15	220
51-186	35	8x4.5	0.156	120	5.2	3.6	2.5	1.8	11 1/4	11-12	155
51-187	35	8x4.5	0.188	150	7.5	5.4	4	3	11 1/4	11-12	180
51-188	35	8x4.5	0.219	150	9.9	7.3	5.6	4.3	11 1/4	11-12	205
51-189	35	8x4.5	0.250	150	12.4	9.3	7.1	5.5	11 1/4	11-12	235
51-191	35	9x4.5	0.188	150	12	9	6.9	5.3	13	13-14	200
51-193	35	9x4.5	0.250	150	18.4	14	10.9	8.6	13	13-14	245
51-199	35	10x6	0.188	200	17.3	13.2	10.1	7.8	14	14-15	250
51-200	35	10x6	0.219	250	20.9	16	12.4	9.6	14	14-15	285
51-201	35	10x6	0.250	300	24.4	18.7	14.6	11.5	14	14-15	320
51-202	35	10x6	0.312	300	32.1	24.8	19.6	15.6	14	14-15	355
51-247	39-3	8x4.5	0.188	150	4.4	2.9	1.9	1.2	11 1/4	11-12	200

51-248	39-3	8x4.5	0.219	150	6.5	4.6	3.3	2.3	11 1/4	11-12	230
51-249	39-3	8x4.5	0.250	150	8.6	6.3	4.6	3.4	11 1/4	11-12	260
51-251	39-3	9x4.5	0.188	150	8.4	6.1	4.4	3.1	13	13-14	235
51-253	39-3	9x4.5	0.250	150	13.9	10.4	7.9	6	13	13-14	280
51-259	39-3	10x6	0.188	200	13.1	9.7	7.2	5.2	14	14-15	280
51-260	39-3	10x6	0.219	250	16.1	12.1	9.1	6.8	14	14-15	325
51-261	39-3	10x6	0.250	300	19.1	14.4	11	8.4	14	14-15	365
51-262	39-3	10x6	0.312	300	25.8	19.7	15.3	11.9	14	14-15	410

Note: Anchor bolt projection must be increased when leveling nuts are used.

Note: Effective Projected Area (EPA) is square feet. EPA's calculated using base wind velocity (mph) indicated plus 30% gust factor.

Note: Satin finish - satin ground.

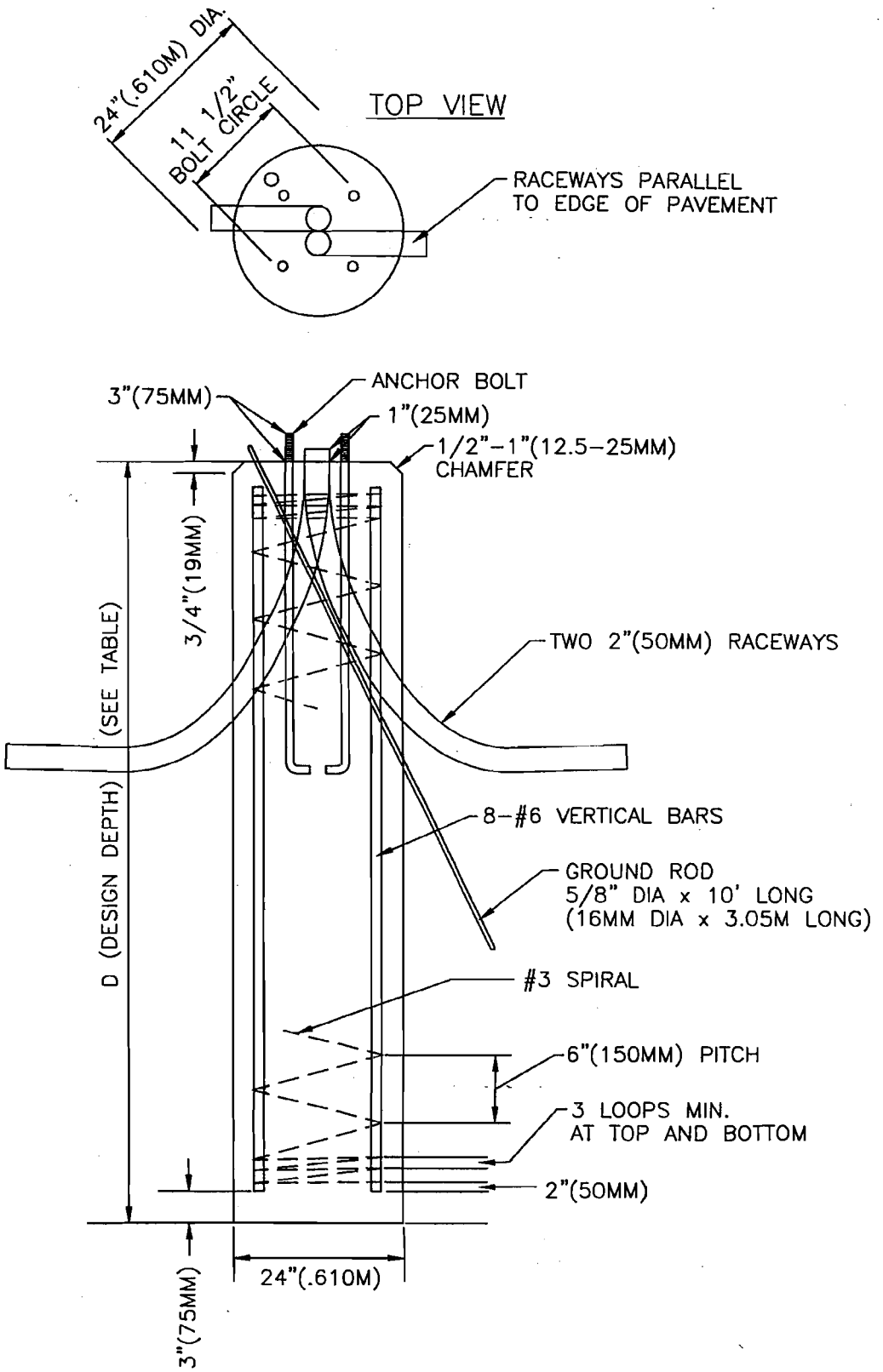
Note: Optional Finishes (add as suffix)* P1: Black Powder Paint P20: White Powder Paint P31: Dark Bronze Powder Paint P43: Dark Green Powder Paint *other finishes available, consult factory.

Mounting: (add as suffix)----T2: 2 3/8 " O.D. x 4" long tenon ---T3: 3" O.D. x 4" long tenon ---- For side mounting: specify luminaire quantity and orientation. ---- Luminaire drilling must be shipped at time of order.

Last Updated on 3/27/00

[Back To Top]

Hapco Aluminum Pole Products
26252 Hillman Highway
Abingdon, VA 24210
800-368-7171
276-628-7171
fax 276-628-7707



Title: TYPICAL STREET LIGHT CONNECTION	CITY OF NAPERVILLE STANDARD DETAIL		
Approved By:	DATE: 11/16/98	REV:	Detail: SL 5
	SCALE: NTS	SHEET: 1 OF 2	

FOUNDATION DESIGN TABLE

TYPE OF SOIL	DESIGN DEPTH OF FOUNDATION		REINFORCEMENT IN FOUNDATION			
			SINGLE ARM		TWIN ARM	
	SINGLE ARM D	TWIN ARM D	VERT. BARS	SPIRAL	VERT. BARS	SPIRAL
SOFT CLAY	13'(3.96M)	15'(4.57M)	8 #6 x 12'-6" (3.81M)	#3 x 122' (37.19M)	8 #6 x 14'-3" (4.34M)	#3 x 141' (42.98M)
MEDIUM CLAY	9'-6"(2.90M)	10'-9"(3.23M)	8 #6 x 10'-9" (2.74M)	#3 x 90' (27.43M)	8 #6 x 10'-0" (3.05M)	#3 x 100' (30.48M)
STIFF CLAY	7'(2.13M)	8'(2.44M)	8 #6 x 6'-6" (1.98M)	#3 x 66' (20.12M)	8 #6 x 7'-6" (2.29M)	#3 x 76' (23.17M)
LOOSE SAND	9'(2.74M)	10'(3.05M)	8 #6 x 8-6" (2.59M)	#3 x 85' (25.91M)	8 #6 x 9-6" (2.90M)	#3 x 94' (28.65M)
MEDIUM SAND	8'-3"(2.52M)	9'(2.74M)	8 #6 x 8'-0" (2.44M)	#3 x 78' (23.77M)	8 #6 x 8'-6" (2.59M)	#3 x 85' (25.91M)
DENSE SAND	7'-9"(2.36M)	9'(2.74M)	8 #6 x 7'-6" (2.29M)	#3 x 73' (22.25M)	8 #6 x 8'-6" (2.59M)	#3 x 85' (25.91M)
ROCK OR SOLIDIFIED SLAG	5'(1.52M)	5'(1.52M)	NONE	NONE	NONE	NONE

Title: TYPICAL STREET LIGHT CONNECTION

CITY OF NAPERVILLE STANDARD DETAIL

Approved By:

DATE: 11/16/98

REV:

SCALE: NTS

SHEET: 2 OF 2

Detail: SL 5

Tree Grates

5.1.1

Tree grates shall be used on Downtown Street types.

Manufacturer: Olympic Foundry, Inc.
Model: LPT 60. Style 'RF' frame
Finish: None

Spacing: Maximum spacing of 40' on center

Provided by Fairweather. 800.323.1798

TREE GRATES

LPT SERIES

BACK VIEW LARGER NEXT

Delicate and ornate interwoven geometric patterns are fashioned for this commercial and residential quality display tree grate. ADA Compliant. Match with the LPT 6 or LPT 18 square trench grate for the balancing touch.

Style	Size	Sections	Hole Dia.	Weight
LPT 36	36" (914mm)	2	11" (279mm)	60 lbs. (27Kg)
LPT 48	48" (1219mm)	2	11" (279mm)	220 lbs. (100Kg)
LPT 60	60" (1524mm)	2	16" (406mm)	310 lbs. (141Kg)
LPT 72	72" (1829mm)	4	16" (406mm)	540 lbs. (245Kg)
LPT 4872	48"x 72" (1219mm x 1829mm)	2	16" (406mm)	300 lbs. (136Kg)
LPT R48	48" (1219mm)	2	11" (279mm)	180 lbs. (81Kg)
LPT R60	60" (1524mm)	2	16" (406mm)	280 lbs. (127Kg)

To view Tree Grate Frames or download Grate Framing.pdf
Download tree_gr_LPT_48.pdf or tree_gr_LPT_r48.pdf

* Olympic Foundry products distributed exclusively by FairWeather.

To view specific architectural specifications choose product category below.

STANDARD | NON-STANDARD | CUSTOM | VIEW PDF LIST

Request for Proposal | General Contact Information | Catalog Request
Current Sales Rep listing | Territories Open for New Reps

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◀ BACK VIEW LARGER NEXT ▶

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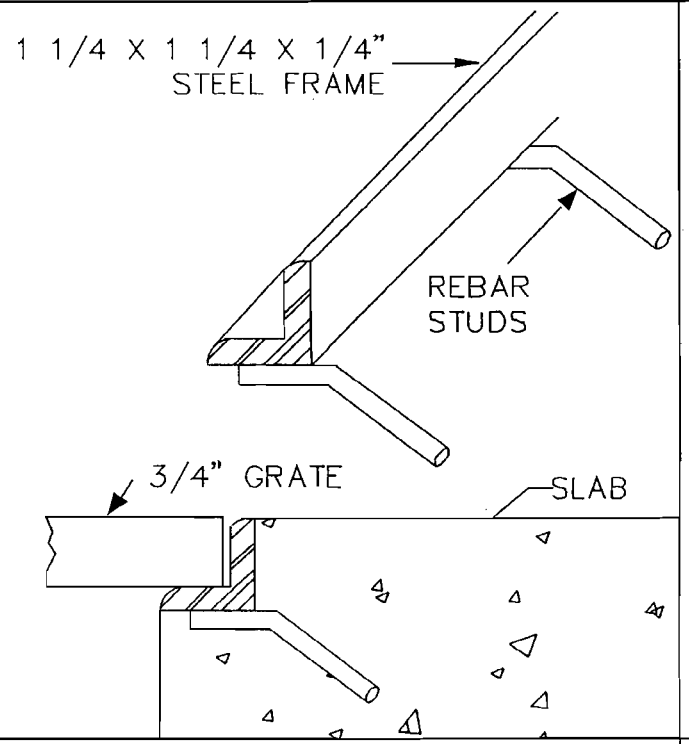
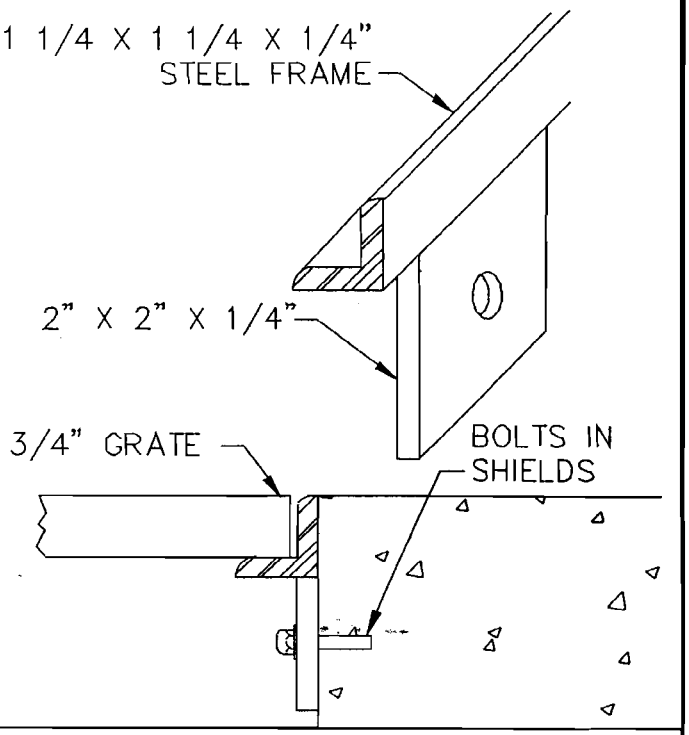
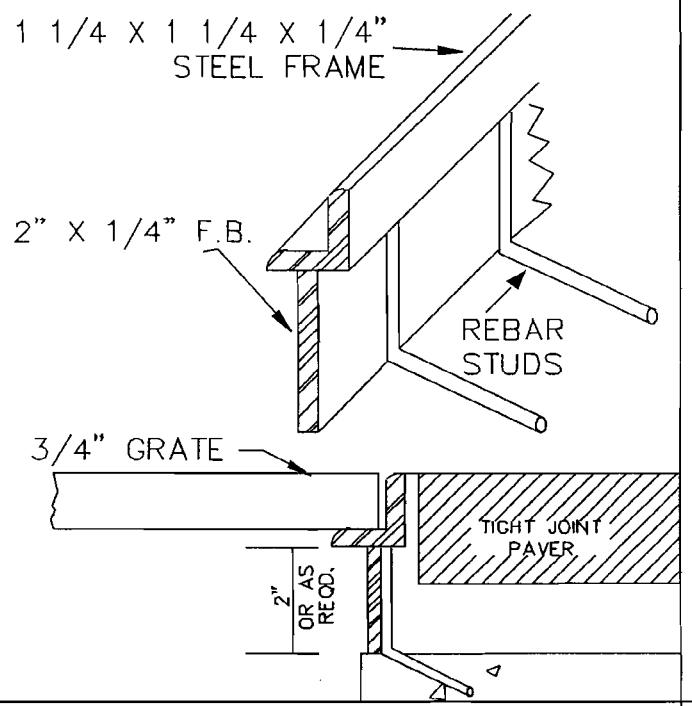
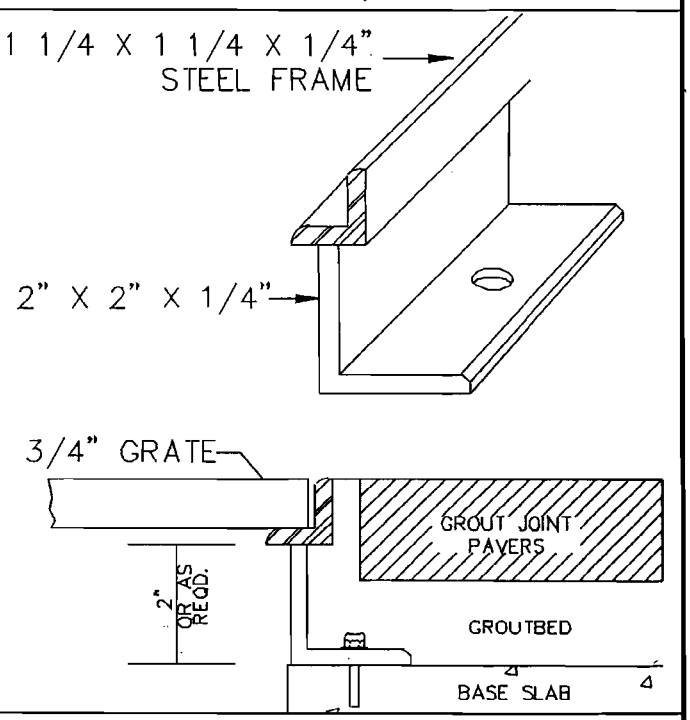
To view Tree Grate Frames or download Grate Framing.pdf
Download tree_gr_LPT_48.pdf or tree_gr_LPT_r48.pdf

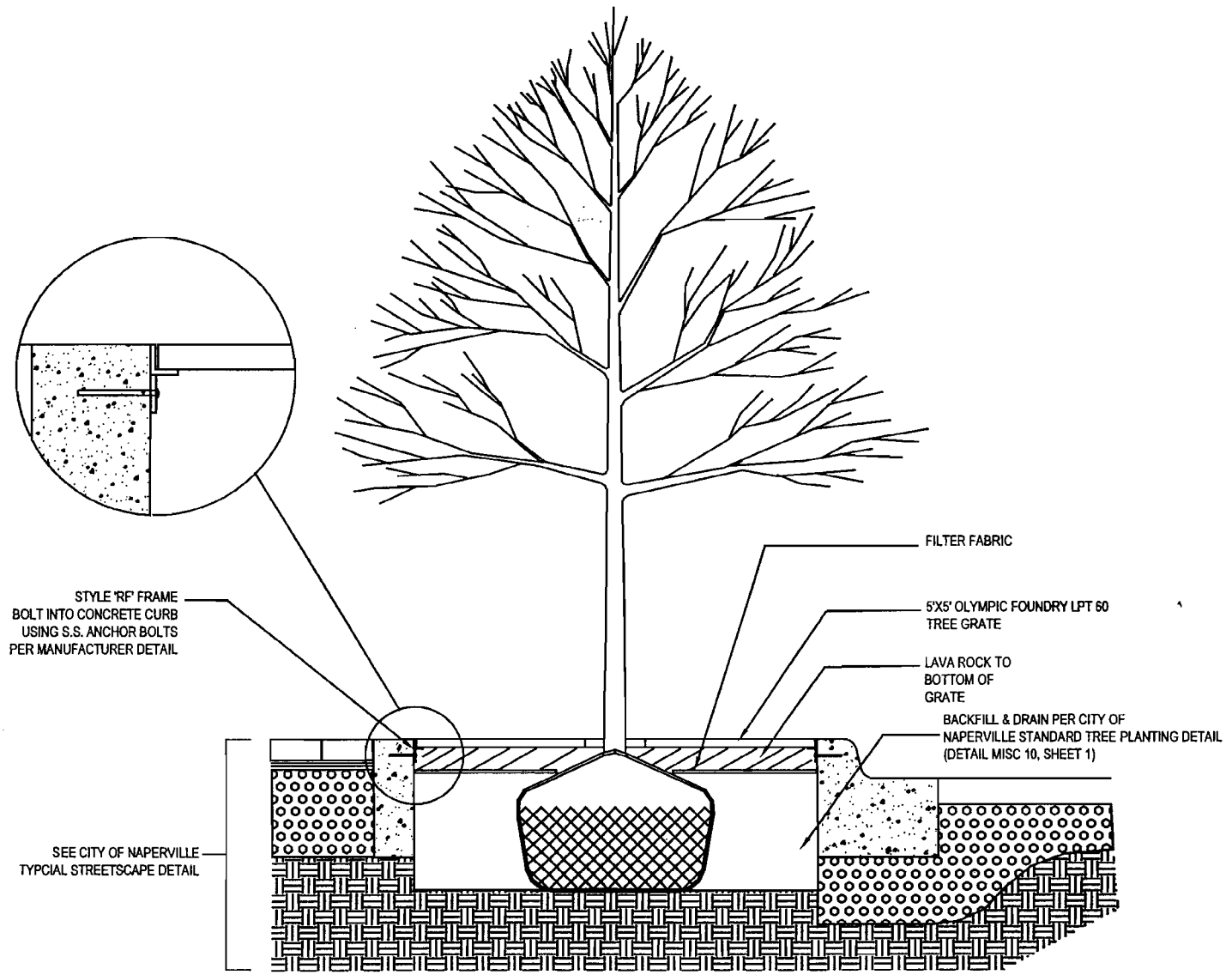
* Olympic Foundry products distributed exclusively by FairWeather.

To view specific architectural specifications choose product category below.

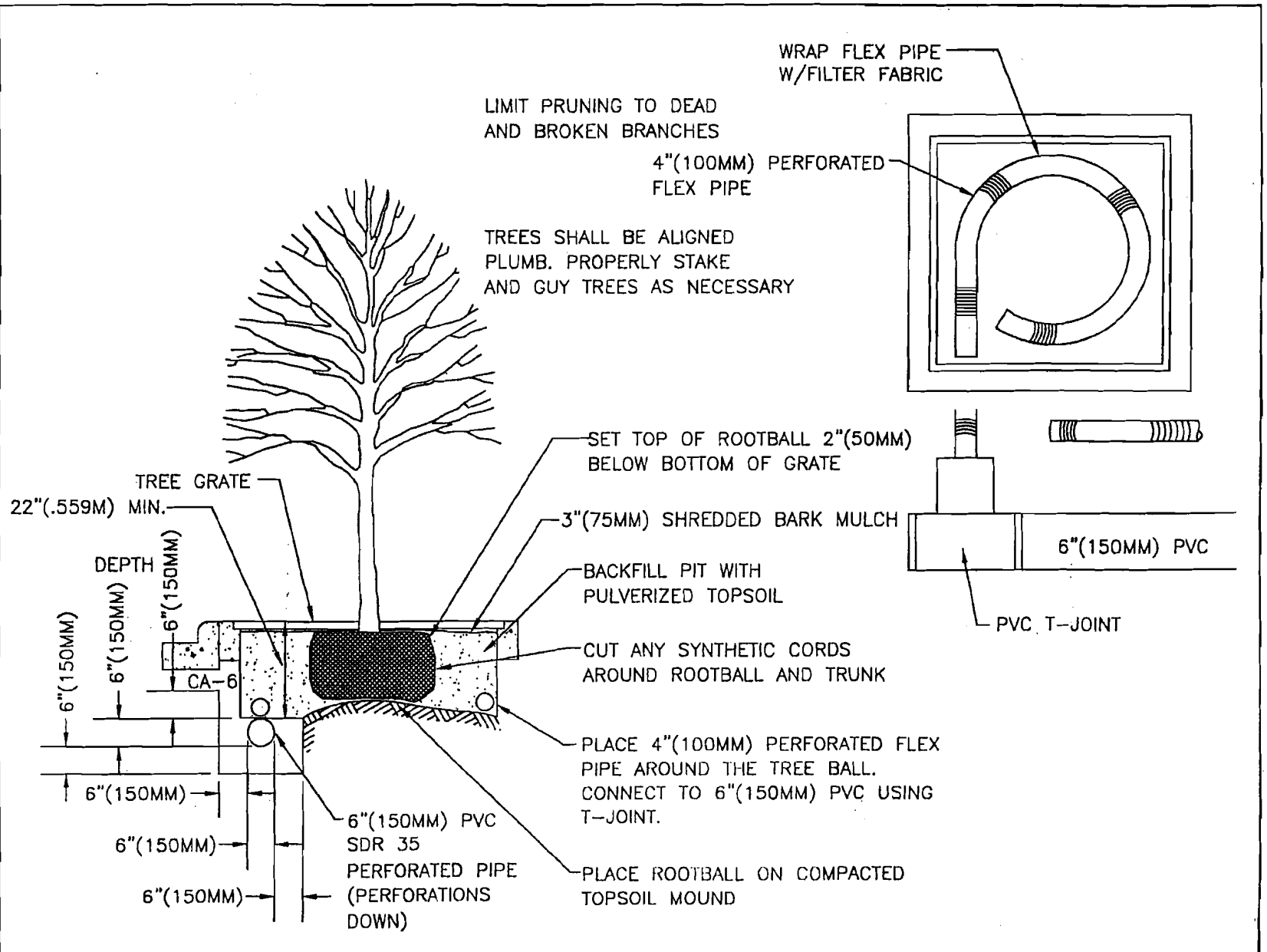
STANDARD | NON-STANDARD | CUSTOM | VIEW PDF LIST

Request for Proposal | General Contact Information | Catalog Request
Current Sales Rep listing | Territories Open for New Reps

STYLE "CI" (FOR NEW SLAB)	STYLE "RF" (FOR EXISTING SLAB)
	
STYLE "CIP" (FOR PAVING WITH NEW SUBSLAB, SAND SETTING BED)	STYLE "AP" (FOR EXISTING SUBSLAB, GROUT SETTING BED)
	
NOTES:	**OLYMPIC FOUNDRY INC.**
	TREE GRATE FRAMES:
APPROXIMATE WEIGHT:	RATING: / PART NO. SEE ABOVE:



TREE GRATE INSTALLATION



Title: TREE PLANTING (DOWNTOWN STREETSCAPE)

CITY OF NAPERVILLE STANDARD DETAIL

Approved By:

DATE: 1/7/98

SCALE: NTS

REV:

SHEET 1 OF 2

Detail: MISC 10

Raised Parkway Planter 5.2.1

The raised parkway planter will be utilized on Boulevard type streets within the downtown. The raised planter will be constructed of a 6" colored concrete planter curb with an 18" steel decorative fence. Each planter area will be supplied with a quick coupler valve, as specified, for a means of irrigation.

Summary of Specifications - Concrete Planter Curb, 6"

Concrete planter curb shall be constructed of 4000 psi Class SI concrete and installed per attached details. Concrete planter curb shall be colored according to the attached Color Conditioned Concrete specification.

Minimum length = 15'
Minimum width = 4'-4"

Summary of Specifications - Decorative Fencing, 18" height

Manufacturer: Monumental Iron Works
Model: Modified from Estate Fence Style L
Color: Black
Material: Steel, 16 gauge hollow tubing
Height: 18"
Post Option: Ball style
Finish: Polyester powder coat
Installation: Assemble and install to planter curb per attached details.

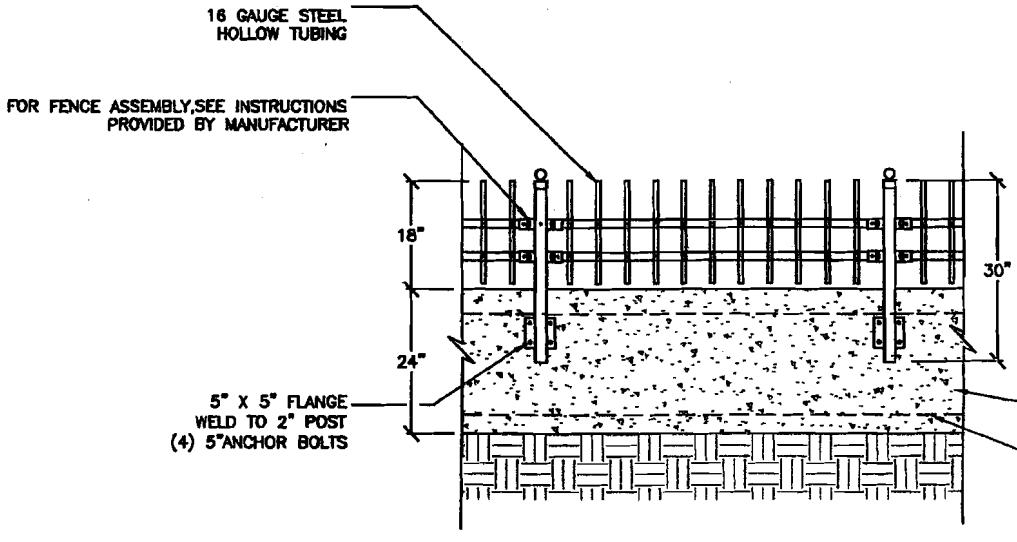
Provided by: Master Halco 800.899.6113

Summary of Specifications - Irrigation

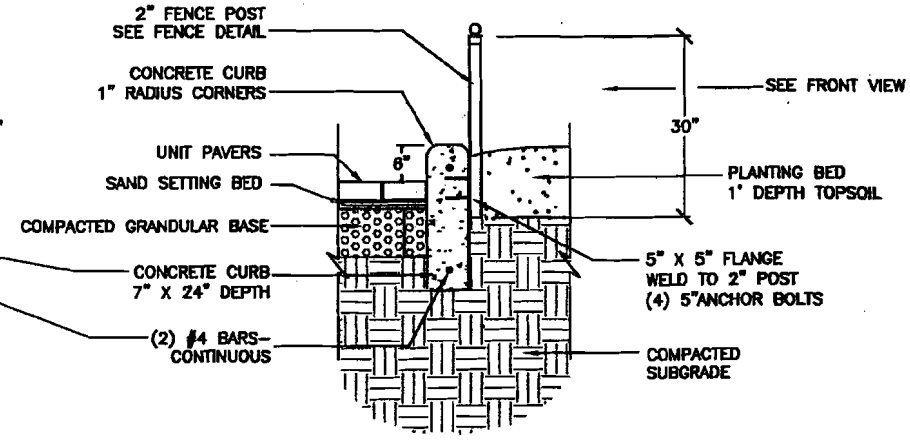
Quick coupler valves shall be bronze body with 1 -1/2 inch IPS female thread inlet and a 1-1/2 inch key outlet and as manufactured by Rainbird Sales Inc., Toro Co., or an approved equal. The contractor shall provide the Owner with six quick coupler keys equipped with 1" fpt x 1" mht hose

The irrigation system shall be designed such that the system can be evacuated of water via gravity or air pressure. Irrigation water shall be separated from potable water supplies by means of a reduced pressure zone (RPZ) backflow preventer.

A quick coupler valve shall be provided in each planter. Couplers shall be located 1 foot from the planter corner on the building side of the planter.



FRONT VIEW



SECTION

18" DECORATIVE FENCE AND 6" PLANTER CURB DETAIL

PART 1 GENERAL –18" HT. ORNAMENTAL FENCE

1.01 SECTION INCLUDES

A. Ornamental picket fencing and accessories.

1.02 RELATED SECTIONS

Not Applicable.

1.03 SUBMITTALS:

A. Changes in specification may not be made after the bid date.

B. Shop Drawings: Layout of fence and gates with dimensions, details and finishes of component accessories and post foundations.

C. Product Data: Manufacturer's catalogue cuts indicating material compliance and specified options.

D. Samples: Color selections for polyester finishes. If requested, samples of materials, (e.g. finials, caps, and accessories).

1.04 SPECIAL WARRANTY

A. Provide manufacturer's standard limited warranty that its ornamental fence system is free from defects in material and workmanship including cracking, peeling, blistering and corroding for a period of ***15 years*** from the date of purchase.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Monumental Iron Works, 1704 Trimble Road, Edgewood, Maryland 21040. (phone 410-676-2744 - fax 410-676-7098). Products from other qualified manufacturers having a minimum of 5 years experience manufacturing ornamental picket fencing will be acceptable by the architect as equal, if **approved in writing, ten days prior to bidding**, and if they meet the following specifications for design, size, gauge of metal parts and fabrication.

B. Ornamental Picket Fence:
Style: Estate Fence Style L
Height: 1'-6" (457.2 mm).

C. Approved Manufacturer: Monumental Iron Works/Master Halco **Inc.**, Baltimore, MD
Phone (630) 293-5560 Fax (630 293-5568

2.02 ORNAMENTAL PICKET FENCE

A. Pickets: Galvanized square steel tubular members manufactured per ASTM A-787, having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft^2 (0.27 kg/M^2. Minimum size pickets ¾" (19 mm). Space pickets 3-15/16" maximum (100 mm) face to face. Attach each picket to each rail with 1/4" (6 mm) industrial drive rivets. Size #4. Minimum gauge wall thickness 16 gauge [0.060" (1.65mm)].

B. Rails: 1-1/2" (38mm) x 1-3/8" (35mm) x 1-1/2" (38mm), 11 gauge [0.120" (3.05mm)] thick galvanized steel "U" channel per ASTM A-653 or ASTM A-607, having a 50,000 psi (344 MPa) yield strength and G90 zinc coating, 0.90 oz/fl^2 (o.27 kg/M^2). Punch rails to receive pickets and rivets and attach rails to rail brackets with 2 each, 1/4" (6 mm) industrial drive rivets.

C. Posts: Galvanized square steel tubular members manufactured per ASTM A-787 having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/fl^2). Zinc coating is(inside and outside), (Posts zinc coated outside and painted inside, is unacceptable). Minimum post size 2" Sq. (50 mm), having 14 gauge wall thickness [0.080" (2.03mm) weighing 2.164 lb/ft (3.22 kg/m).

D. Finish: All pickets, channels, posts, fittings and accessories shall be polyester coated individually after drilling and layout, to ensure maximum corrosion protection. (Coating of assembled sections is unacceptable). All components are given a 4 stage "Power Wash" pre-treatment process that cleans and prepares the galvanized surface to assure complete adhesion of the finish coat. All metal is then given a polyester resin based power coating applied by the electrostatic spray process, to a thickness 2.5 (.0635 mm) mils. The finish is then baked in a 450^{0}F (232^{0}C) (metal temperature) oven for 20 minutes. Color Black.

2.03 GATES

A. Ornamental picket swing gates as specified in Section 02821 A.
B. Ornamental picket cantilever slide gates as specified in Section 028321B.

2.04 ACCESSORIES

A. Rail Attachment Brackets - die cast of zinc (ZAMAK #3 Alloy) per ASTM B86-83Z 33521. Ball and socket design capable of 30° swivel (up/down - left/right). Bracket to fully encapsulate rail end for complete security. (no substitution)

B. Industrial Drive Rivets: Of sufficient length to attach items in a secure nonrattling position. Rivet to have a minimum of 1100 lbs. (4894 N) holding power and a shear strength of 1500 lbs. (6674 N).

C. Post Caps: Formed steel, cast of malleable iron or aluminum alloy, weathertight closure cap. Provide one Ball style post cap for each post.

D. Picket Tops : Flat top with polymer plug.

2.05 SETTING MATERIAL

A. Flanged Posts: Provide flange type base plates with 4 holes for surface mounting of posts where indicated.
B. Bolts: Flanges shall be bolted to planter curb with four (4) 5" stainless steel anchor bolts per flange.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify areas to receive fencing are completed to final grades and elevations.
B. Ensure property lines and legal boundaries of work are clearly established.

3.02 INSTALLATION

A. Install fence in accordance with manufacturer's instructions.

B. Space posts uniformly at 7'8-3/4" (2356 mm) maximum face to face unless otherwise indicated.

C. Concrete Set Posts: Drill hole in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than nominal outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around post in a continuous pour. Trowel finish around posts and slope to direct water away from posts.

1. Gate Posts and Hardware: Set keepers, stops, sleeves and other accessories into concrete.

D. Surface mount (wall mount) posts with mounting plates where indicated. Fasten with lag bolts and shields.

E. Check each post for vertical and top alignment, and maintain in position during placement and finishing operation.

F. Align fence panels between posts. Firmly attach rail brackets to posts with 1/4" (6 mm) bolt and lock nut, ensuring panels and posts remain plumb.

3.03 GATE INSTALLATION

A. Install gates plumb, level and secure for full opening without interference.
B. Attach hardware by means which will prevent unauthorized removal.
C. Adjust hardware for smooth operation.

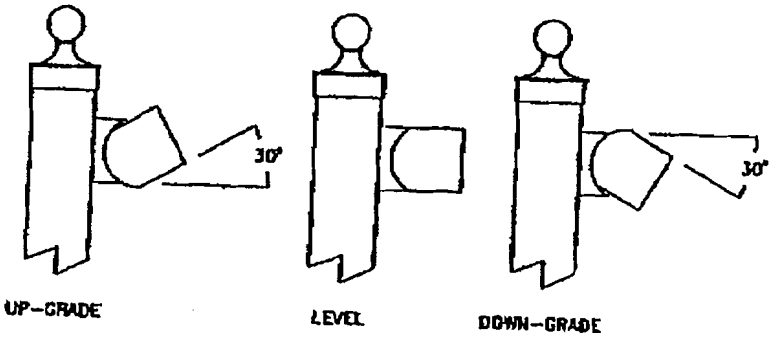
3.04 ACCESSORIES

A. Install post caps and other accessories to complete fence.

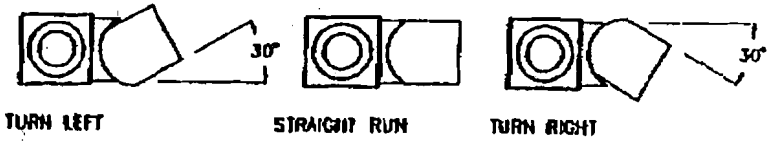
3.05 CLEANING

A. Clean up debris and unused material, and remove from site.

MONUMENTAL IRON WORKS ARCHITECTURAL SWIVEL BRACKET (Patent) U.S. PATENT #5,547,169



30° IN ANY DIRECTION

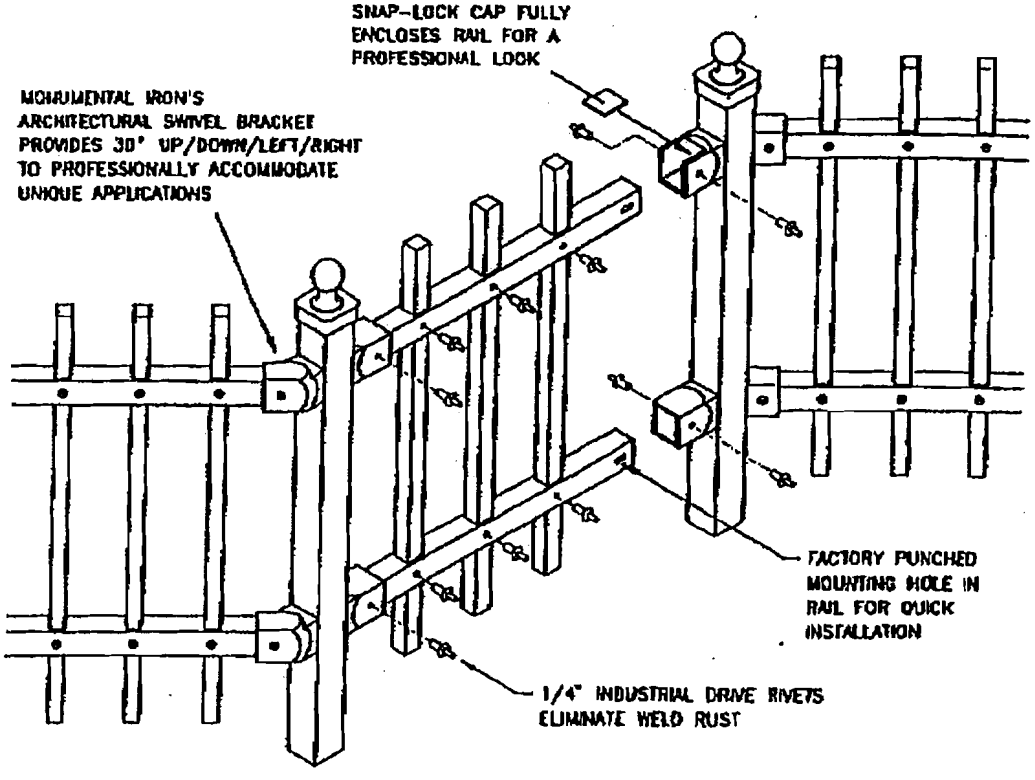


SWIVEL BRACKET

Allows angles of up to 30° in any direction without special attachments. Bracket held to post with ¼" bolt and lock nut. The bracket is a zinc die cast that will never rust.

BRACKET TOP

After insertion and riveting of rail a snap-lock cap is inserted into each bracket, completely concealing all nuts, bolts, and rail ends. Clean in appearance and the most secure attachment in the industry.



RAIL LOCK

Rails are inserted into brackets. Rail is held in place by 2 individual drive rivets (one each side) that are inserted through factory punched slotted holes in rail.

Planter/Pot

Manufacturer: Interlock Concrete Products, Inc.
Model: G.F.R.C. Highline
Color: Earthen
Finish: TF (Textured Finish)
Sizes: Any combination of sizes may be used, dependent upon location and available area.

Size (Diameter x Height)	Product Number
2' x 30"	44-40230
3' x 17"	44-40317
3' x 22"	44-40322
3' x 30"	44-40330
3' x 36"	44-40336
4' x 17"	44-40417
4' x 22"	44-40422
4' x 30"	44-40430

Provided by: Zenon Company - Buffalo Grove, Illinois. 847.215.6050

GLASS FIBER REINFORCED CONCRETE SPECIFICATION GUIDE

SECTION 02870 - SITE FURNISHINGS
SECTION 12820 - INTERIOR PLANTERS

PART 1 - GENERAL

1.1 DESCRIPTION

A - GFRC - Glass Fiber Reinforced Concrete

1.2 SAMPLES

A - Submit samples in accordance with Section 01340 if required

1.3 PACKAGING AND SHIPPING

A - Package and ship materials in such a way as to provide appropriate protection for differing sizes and shapes

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

A - Interlock Concrete Products, Inc. 3535 Bluff Drive Jordan MN 55352-8302
PHONE 952/492-3636 TOLL FREE 800/780-7212 FAX 952/492-3668
URL www.interlock-concrete.com

1. Alternates may be considered if:
   a) Manufacturing process meets or exceeds specified manufacturer.
   b) Architects design intent and criteria are met.

All submittals to architect must be in writing.

2.2 MATERIALS

A - CEMENT - ASTM - C150 - 94 - Type 1
AASHTO M85 - 93
CAN/CSA A5 Type 10 Normal Portland

1) Minimum strength is 3,000 PSI

B - AGGREGATE - Sand shall be washed and dried silica or approved equal with a history of successful use in GFRC. All sand shall pass through a No. 16 (1.18mm) sieve.

C - GLASS FIBER - Alkali resistant glass fiber strands.

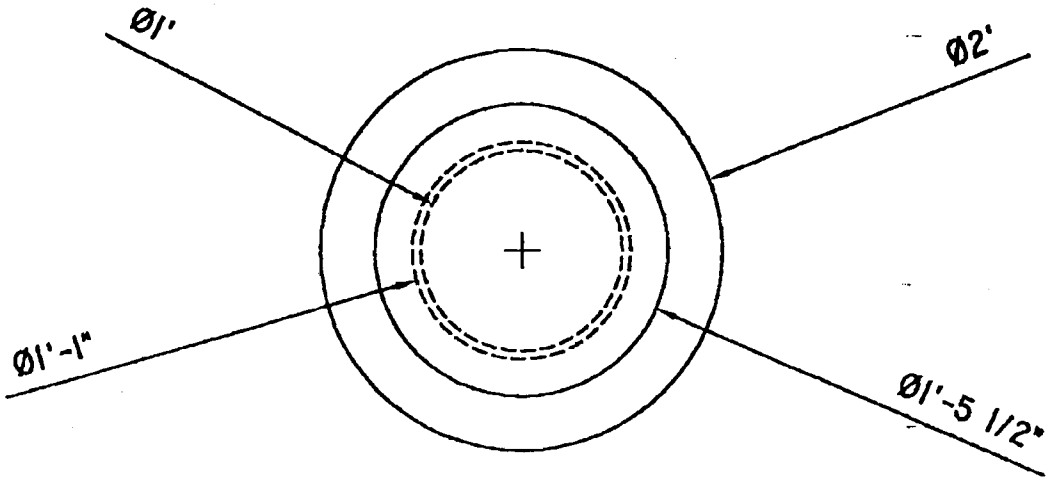
D - FINISHES - Consult manufacturer for full range of finishes and colors.

PART 3 - EXECUTION

3.1 INSTALLATION

A - Install as per manufacturer's instructions.

B - Insure products are free of dust and dirt upon installation.

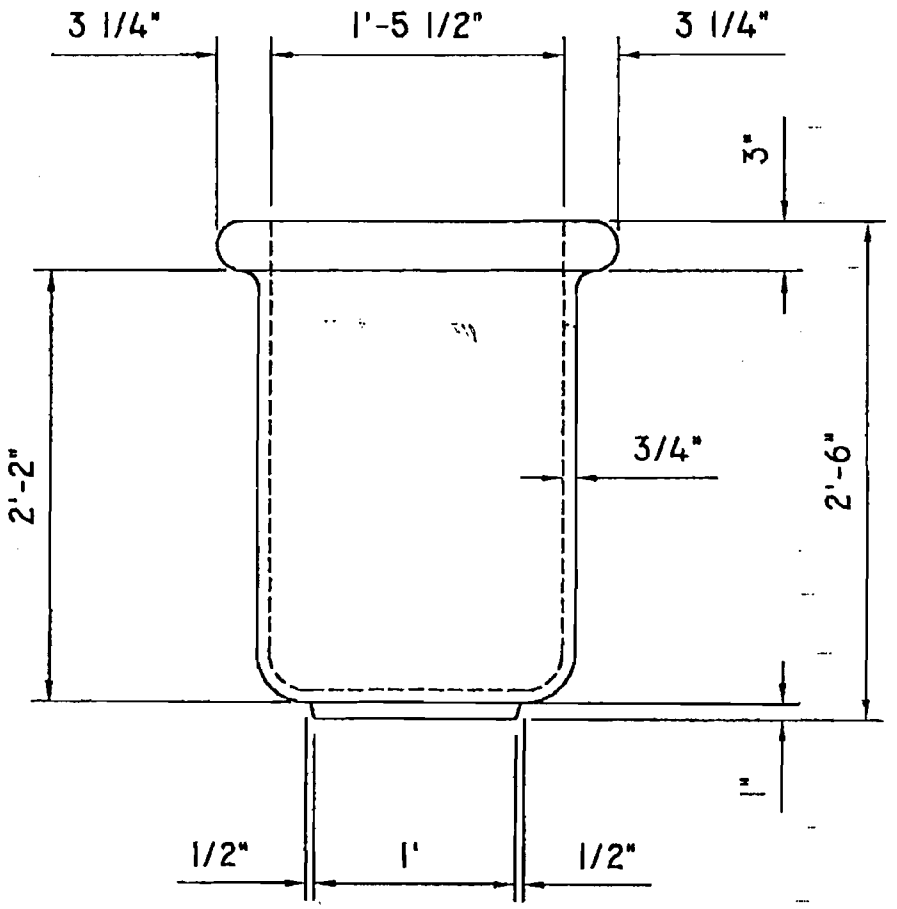


TOP VIEW

G.F.R.C. HIGHLINE PLANTER/ POT

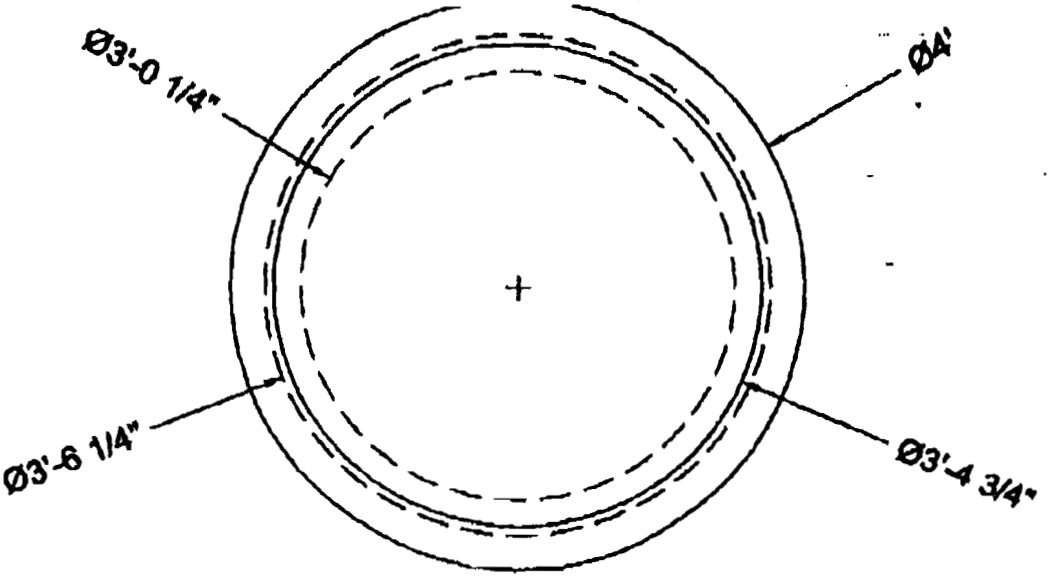
MODEL# 44-40230

APPROXIMATE WEIGHT OF PLANTER = 200 LBS.



SIDE VIEW

INTERLOCK CONCRETE PRODUCTS, INC.
3535 BLUFF DRIVE, JORDAN, MN. 55352-8302
Phone: 1-800-780-7212 Fax: (612)-492-3668

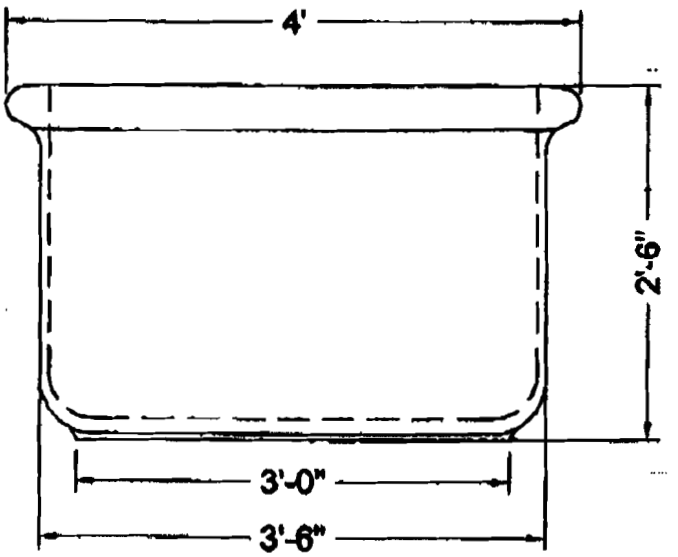


TOP VIEW

G.F.R.C. HIGHLINE PLANTER/ POT

model #44-40430

APPROXIMATE WEIGHT OF PLANTER = 455 lbs.



SIDE/ END VIEW

INTERLOCK CONCRETE PRODUCTS, INC.
3535 BLUFF DRIVE, JORDAN, MN. 55352-8302
Phone: 1-800-780-7212 Fax: (952)-492-3668

Parkway trees shall be selected from either Table 3 or Table 4, and have a minimum caliper size of 2-½". Additional species may be approved by the City of Naperville Forestry Department.

Table 3
Recommended Varieties

Common Name	Botanical Name	Approximate Mature Height	Remarks
AUTUMN BLAZE MAPLE	*Acer freemanii*	50'-80'	Red/orange fall color, good growth habit, faster growth rate and more urban tolerant than red maple. Adapts well to urban conditions.
GINKGO (MALE)	*Ginkgo biloba*	60'	Pyramidal in form, unique fan shaped leaves on ascending branches. The leaves turn yellow in the fall. Slow growth rate. Very resistant to insects, diseases and city conditions.
HACKBERRY	*Celtis occidentalis*	60'	Fairly free of disease and insect pests. Elm-like leaves turn yellow in the fall. Medium growth rate.
HONEYLOCUST (THORNLESS)	*Gleditsia triacanthos 'inermis'*	50'	Somewhat vase shaped, 40' spread. Foliage is fine textured with small leaflets which turn yellow in fall. Very tolerant of urban conditions, salt, and pollution.
HYBRID ELM	*Ulmus species 'Triumph' 'Accolade'*	60'	Disease resistant elm varieties. Leaves turn yellow in fall. Fast growth rate. Tolerant of urban conditions, including compacted alkaline soils, salt and pollution.
MIYABE MAPLE	*Acer miyabei 'State Street'*	40'	Yellow fall color, interesting corky bark, upright oval shape. Adaptable to urban conditions.
IRON WOOD	*Ostrya virginiana*	40'	Native to Illinois. Graceful medium sized understory tree; elm-like habit. Yellow fall color.
BALD CYPRESS	*Taxodium distichum*	50'	Native to Illinois. Pyramid shaped deciduous conifer. Fine textured leaves turn orange/brown in fall. Medium growth rate. Adapts to urban conditions.
ZELKOVA	*Zelkova serrata*	50'	Medium sized tree, interesting bark and fall color. Similar to elm tree in leaf and form. Medium growth rate.
DAWN REDWOOD	*Metasequoia glyptostroboides*	70'	Pyramid shaped deciduous conifer. Fern like leaves turn reddish brown in fall. Medium growth rate.

Table 4
Trees for Planting Beneath Overhead Utility Lines

Common Name	Botanical Name	Approximate Mature Height	Remarks
PAPERBARK MAPLE	*Acer griseum*	30'	Red fall color. Unusual copper peeling bark. Slow growing
HEDGE MAPLE	*Acer campestre*	35'	Yellow fall color, very urban tolerant. Medium growth rate.
IRON WOOD	*Ostrya virginiana*	25'	Graceful small to medium sized understory tree; elm-like habit.
REDBUD	*Cercis canadensis*	35'	Native to Illinois, small white or purple flowers in spring. Yellow fall color.
MAGNOLIA	*Magnolia species*	20'	Large attractive fragrant flowers in spring. Slow to medium growth rate.
SERVICEBERRY	*Amelanchier species*	15'-20'	Attractive bark; white flowers in spring and orange/red fall color. For planters of landscape planting beds/groupings only.
CRABAPPLE	*Malus species 'Prarie Fire' 'Adirondack' 'Beverly'*	10-20'	Hundreds of cultivars available with different colored flowers in the spring. Some have small inconspicuous fruit. Many disease resistant varieties are available. Medium to fast growth rate. For planters or landscape planting beds/groupings only.
TREE LILAC	*Syringa species 'Ivory Silk'*	25'	Clusters of creamy white flowers in summer, attractive bark. Medium growth rate.
TATARIAN MAPLE	*Acer tataricum*	20'	Round shape, yellow to red fall color, medium growth rate, drought tolerant.
FRINGE TREE	*Chionanthus virginicus*	15'	Frangrant white flowers in spring, yellow fall color, interesting peeling bark.
CORNELIANCHERRY DOGWOOD	*Cornus mas 'Golden Glory'*	20'	Small yellow flowers in march, purple/red fall color. Several cultivars available.
AMERICAN HORNBEAM	*Carpinus carolinana*	25'	Native to Illinois, rounded shape. Red/orange fall color. Adaptable to many urban conditions.

SPECIES NOT APPROVED:
Silver maple, any variety of poplar, willow, ailanthus, any species of evergreen conifer, hawthorn with thorns, pin oak, ash, and box elder.

Plantings 5.5

Proposed planting should be reviewed with the Department of Public Works prior to installation.

Refuse Containers 6.1

Manufacturer: Victor Stanley
Model: SD-42 (32-gallon)
Color: Black
Finish: Polyester powder coat

Mounting: Waste receptacles shall be surface mounted per attached detail, at location approved by the Department of Public Works.

Other: Waste receptacle shall have side swing door with key lock option and interior plastic liner. Model S-2 steel dome lid shall be used.

Provided by Howard White and Associates, Inc.: 800.225.2880

Other available options:
45-gallon receptacle - Model S-45
Ash tray - Ash tray dome top compatible with S-2 dome lid

Home
Company Info
Contact Us
Manufacturing Information
Product Options
Products
Request Info
Site Guide
VSI Installations Worldwide
New Products

Ironsites® Series :: SD-42 ::

Model SD-42 (U. S. Patent D304,253) (36-gallon capacity) shown above with optional S-2 steel dome lid.

Side-door opening litter receptacles ("SD") are a marvel of detail and constructional integrity. The side door hinges have stainless steel hinge pins and oilite bronze bushings. They are available with either key locks or latches and with all lid options.

Ironsites® Product Capacities:

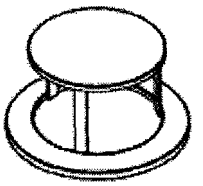
- S-35: 24-gallon (90 liters)
- S-42: 36-gallon (136 liters)
- S-424: 36-gallon (136 liters)
- S-45: 45-gallon (170 liters)
- SD-35: (side-door opening) 24-gallon (90 liters)
- SD-42: (side-door opening) 36-gallon (136 liters)
- PS-535: (center-post mount) 24-gallon (90 liters)
- S-20: Ash Urn
- S-24: Planter
- S-6: Tree Guard

Lid Options:
Ironsites® litter receptacles are shipped with standard spun-steel lids. Please specify lid type when order is placed.

Standard Tapered Spun-Steel Lid	Optional S-1 (24-gallon) Steel Dome	Optional S-2 (36-gallon) Steel Dome

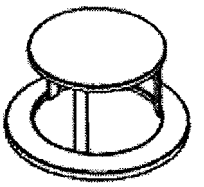
Lid

Optional DS-24 (24-gallon) Low Profile Steel Dome with Self-Closing Door

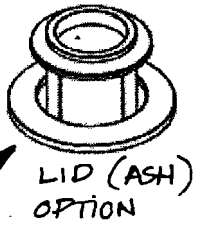


Optional 10-in diameter Stainless Steel Ashtray (for S-1 and S-2 Steel Domes)

Lid



Optional DS-32 (36-gallon) Low Profile Steel Dome with Self-Closing Door



Options:
Side-door opening litter receptacles ("SD") are a marvel of detail and constructional integrity. The side door hinges have stainless steel hinge pins and oilite bronze bushings. They are available with either key locks or latches and with all lid options.

Custom Plaques and Lettering available.

Standard:
All fabricated metal components are steel shotblasted, etched, phosphatized, preheated and electrostatically powder-coated with TGIC polyester powder coatings.

Other standard features include a spun-steel lid attached to the frame, a high-density plastic liner, and rubber-tipped leveling feet on the base.

Interior plastic cans for all of our receptacles are made on molds designed by Victor Stanley. These plastic liners are reinforced, ribbed and molded for long life, ease of use and emptying and greater capacity. Sizes include full 24-gallon, full 36-gallon and now full 45-gallon capacities, offering substantial extra value.

[S-42] [SD-42] [S-45] [S-20] [S-24] [S-13] [S-7] [S-6]
[Back to Ironsites® Series page] [Back to Products page]

Back to Top

Victor Stanley, Inc. Toll Free: 1-800-368-2573 (USA & Canada) Tel: 301-855-8300

Victor Stanley, Inc.
P.O. DRAWER 330 - DUNKIRK, MD 20754 USA
TEL (301) 855-8300 - FAX (410) 257-7579
WEB SITE: http//www.victorstanley.com

DR#2000_113
PG 1 | OF 1

PRODUCT SPECIFICATIONS

CADD Department | VIEWS 5
DRAWN R.D.N. | REV. 5/16/00

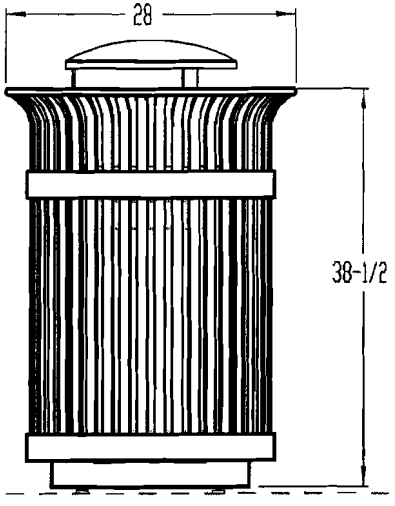
IRONSITES™ SERIES
S-42
36 Gallon Capacity
Optional S-2 Steel Dome Lid

All specifications are subject to change. Please contact factory for details.

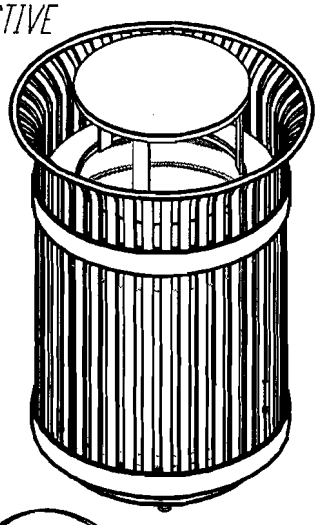
All fabricated components are steel shot-blasted, etched, phosphatized, preheated and electrostatically powder-coated with TGIC polyester powder coatings.

* All dimensions are in Inches *

SIDE VIEW

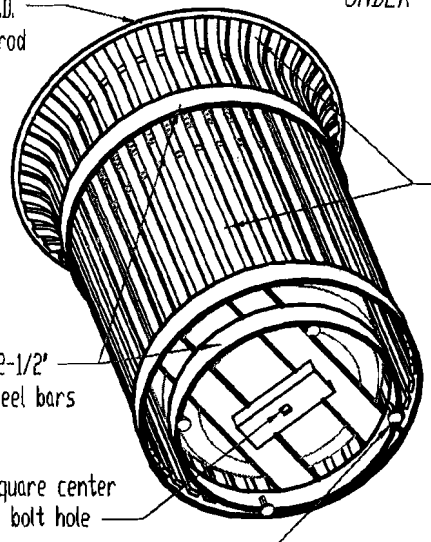


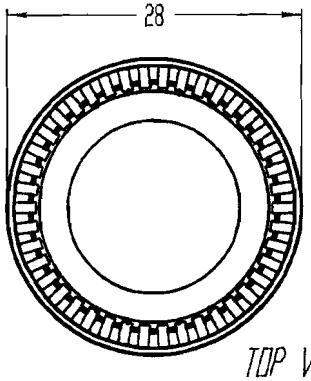
PERSPECTIVE



(Anchor bolt provided by others)

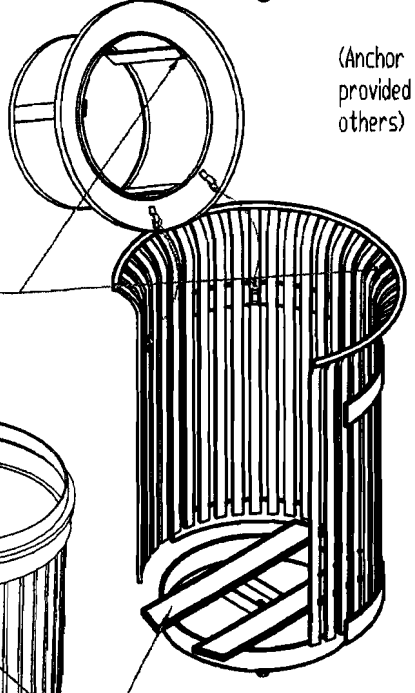
UNDER VIEW





TOP VIEW

CUT SECTION



Victor Stanley, Inc.

P.O. DRAWER 330 - DUNKIRK, MD 20754 USA
TEL (301) 855-8300 - FAX (410) 257-7579

PG 1 | OF 1

PRODUCT SPECIFICATIONS

CADD Department	VIEWS 6
DRAWN R.D.N.	REV. 12/6/96

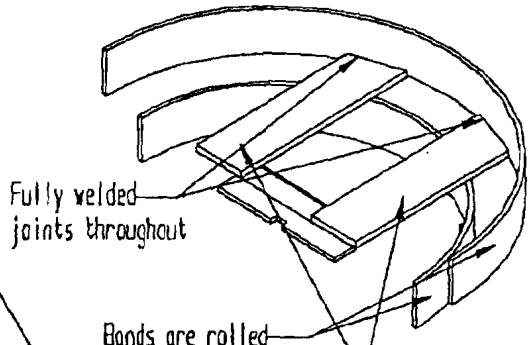
S-42 * BASE ASSEMBLY *

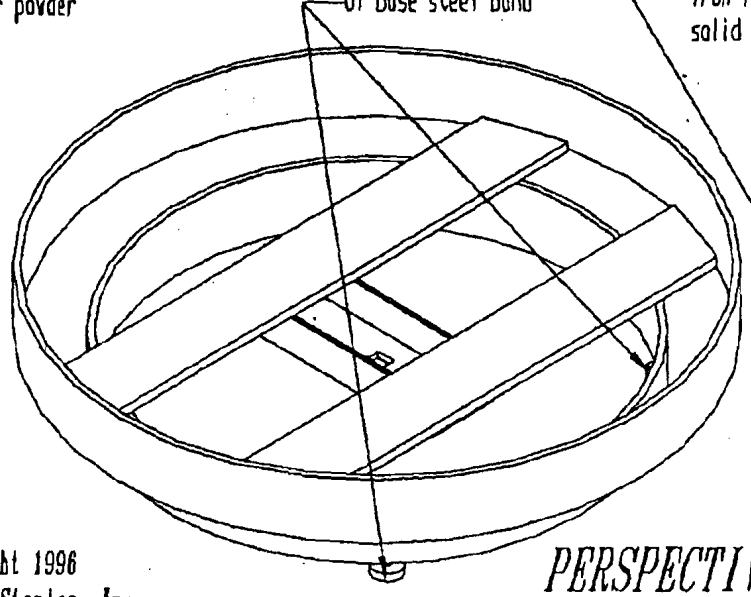
(Typical Anchoring Detail)
(Leveling Foot Detail)

All specifications are subject to change. Please contact factory for details.

All fabricated components are steel shot-blasted, etched, phosphatized and electrostatically powder-coated with TGIC polyester powder coatings.

CUT SECTION

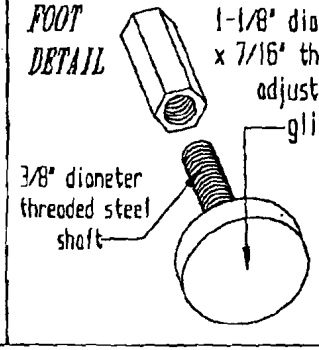




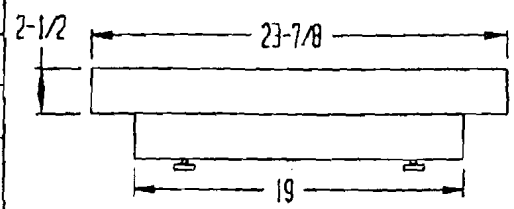
PERSPECTIVE

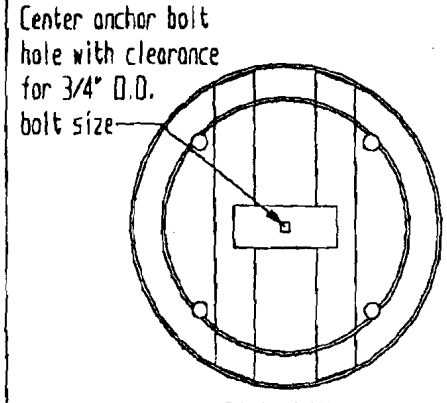
** For additional information on the S-42 Litter Receptacle, please refer to the S-42 standard specifications **

FOOT DETAIL



SIDE VIEW

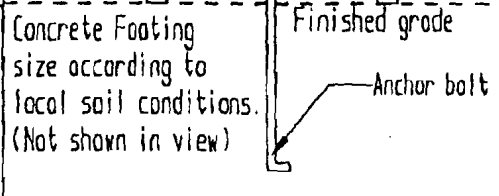




BOTTOM VIEW

ANCHORING DETAIL

Receptacle / Cut Section



(Anchor bolt provided by others)

Victor Stanley, Inc.

P.O. DRAWER 330 - DUNKIRK, MD 20754 USA
TEL (301) 855-8300 - FAX (410) 257-7579

PG 1 | OF 1

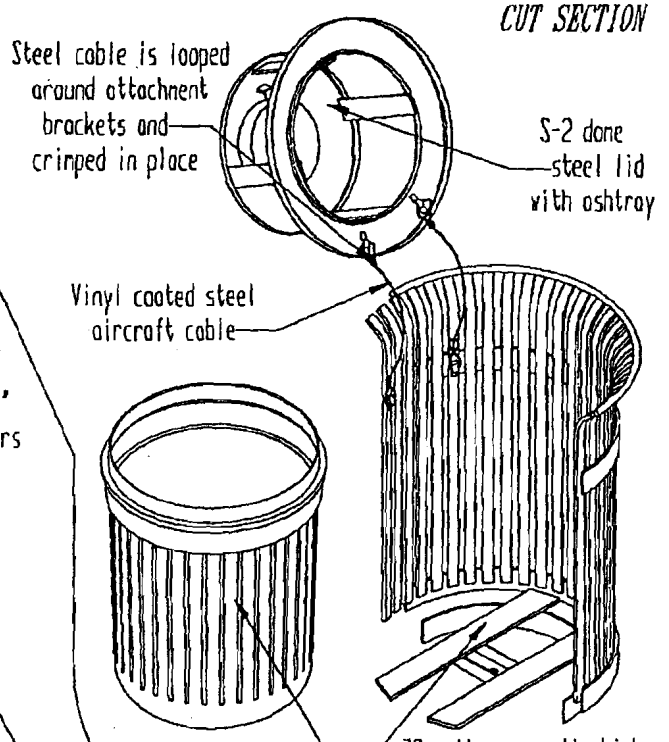
PRODUCT SPECIFICATIONS

CADD Department	VIEWS 5
DRAWN R.D.N.	REV. 7/14/97

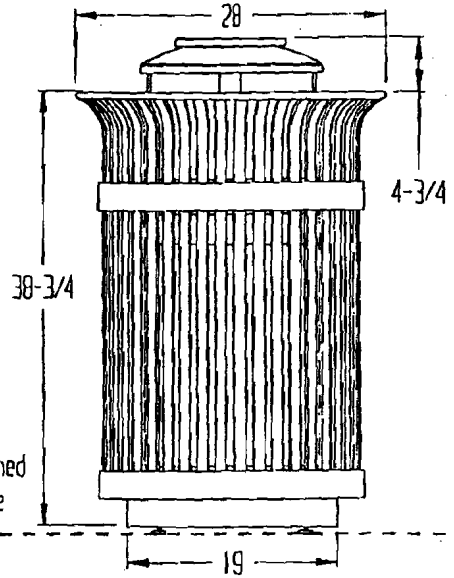
S-42 IRONSITES™ 36 Gallon Capacity

All Steel Bethesda Series Litter Receptacle
Optional S-2 Steel Dome Lid With Ashtray

CUT SECTION

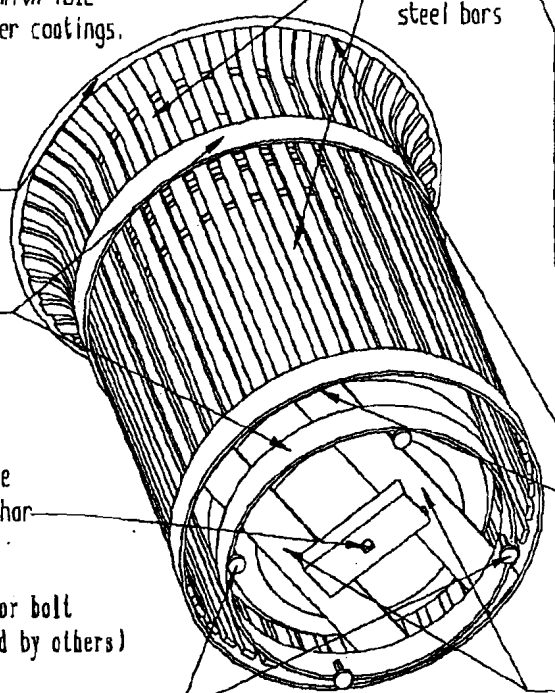


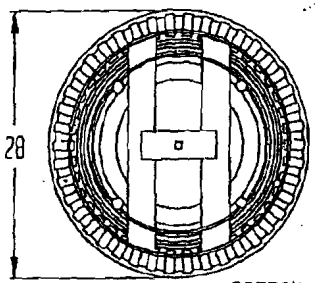
SIDE VIEW



UNDER VIEW

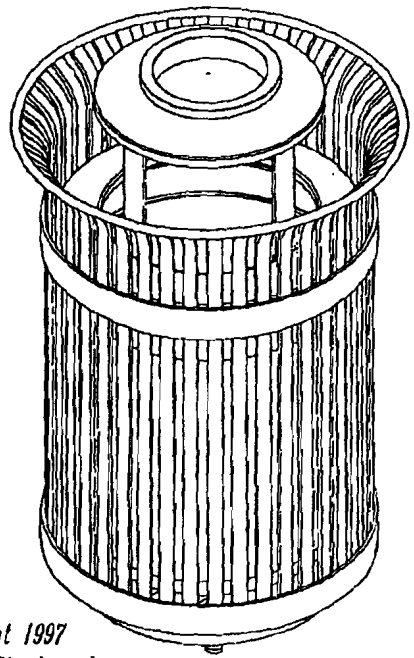
All fabricated steel components are steel shot-blasted, etched, phosphotized and electrostatically powder-coated with TGIC polyester powder coatings.



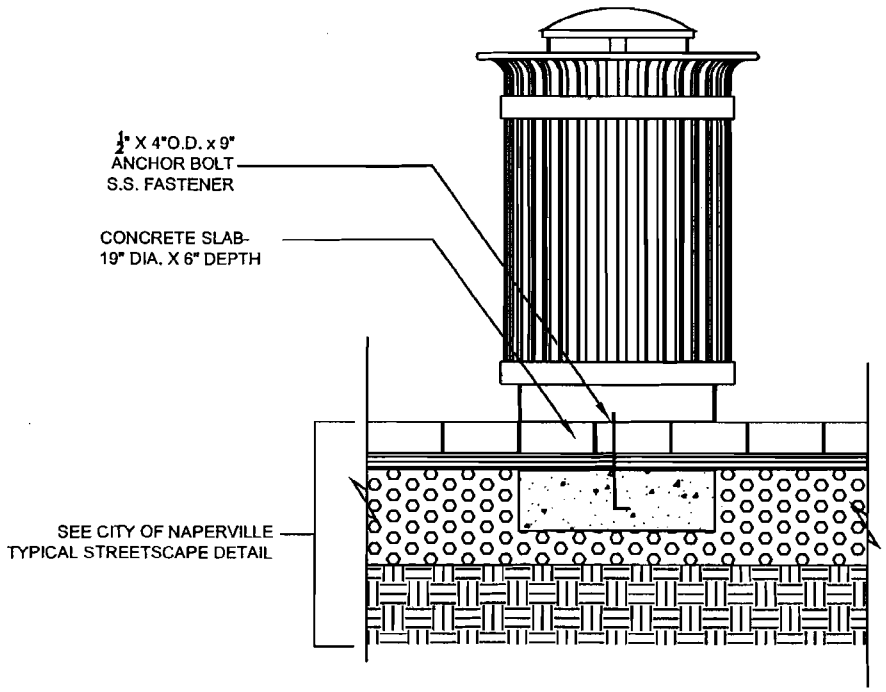


BOTTOM VIEW

PERSPECTIVE



U.S. Patent DES# 304,632



WASTE RECEPTACLE INSTALLATION

Benches 6.2

Manufacturer: DuMor
Model: 58-60 with cast iron supports
Color: Black

Mounting: Benches shall be surface mounted per attached detail.

Provided by NuToys: 800.526.6197

Other available options:
8' length: Model 58-80
6' backless: Model 92-60
8' backless: Model 92-80

Bench 58

Steel Benches with Backrest

For details on custom lettering on side support panels, please consult your DuMor representative.

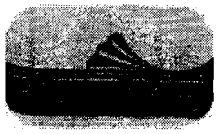
<-- Back to selection page

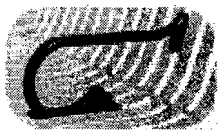
- **SEAT PORTION WELDED INTO ONE UNIT**
- **CUSTOM LETTERING AVAILABLE ON SIDE**
- **AVAILABLE IN EXTENDED LENGTHS IN MU OF 6' & 8'**

Materials

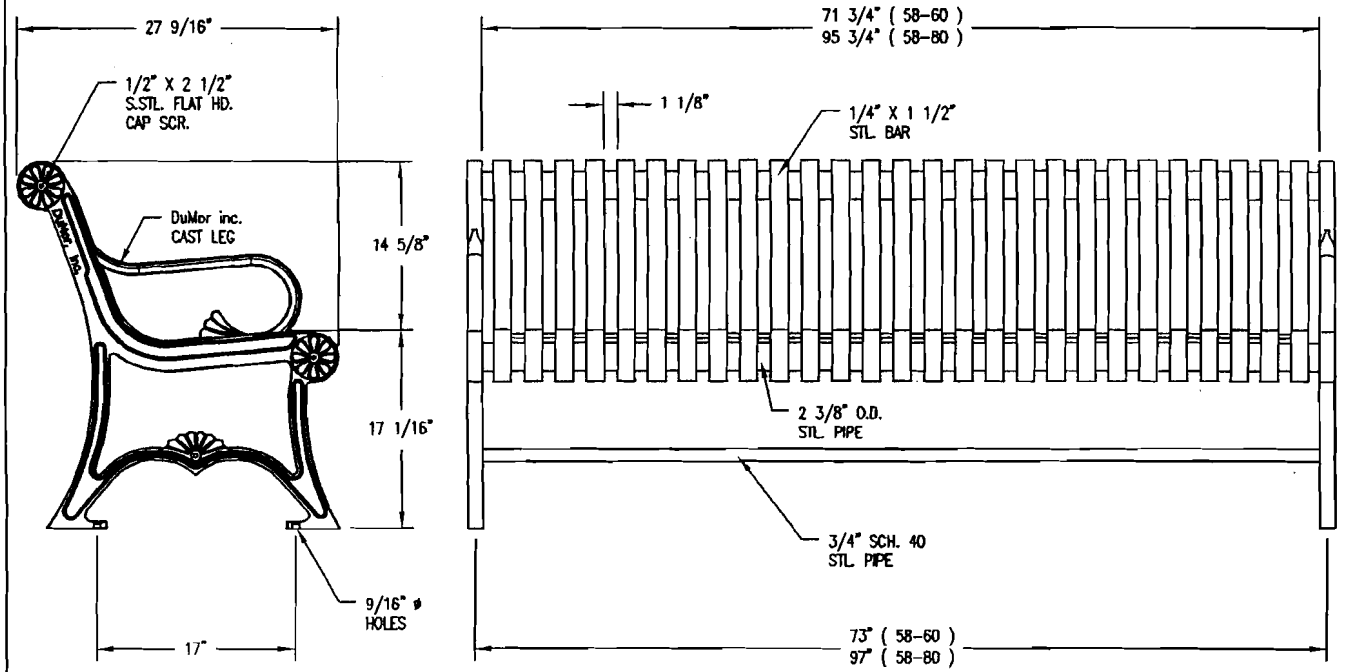
Seating Surface: 1/4" x 1-1/2" steel bar and 2-3/8" O.D. steel pipe
Supports: Cast iron
Bracing: 1-1/16" O.D. steel pipe
Fasteners: Stainless steel
Finish: See Options page for choice of polyester finish (shown in Black).

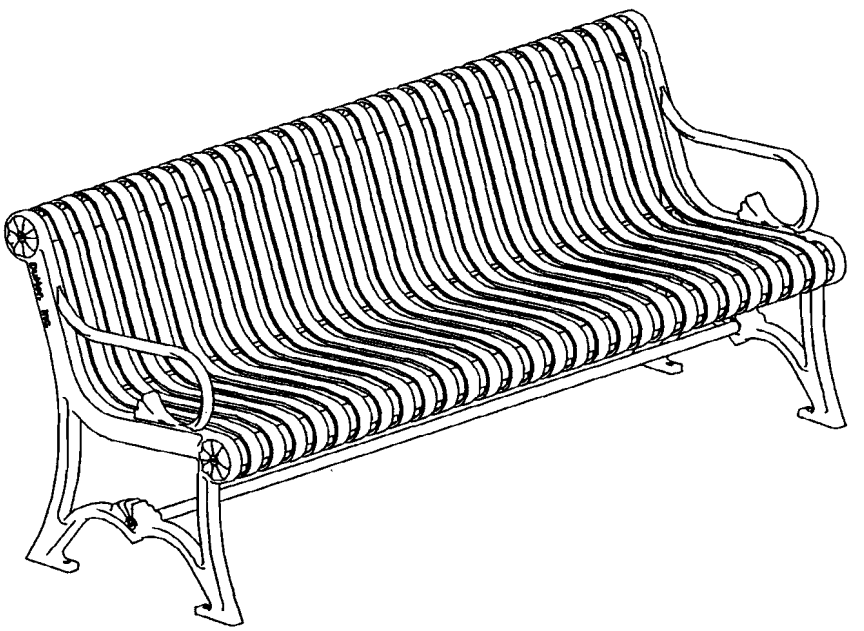
58-60 6' long. 2 supports, 296 lbs.
58-80 8' long, 2 supports, 358 lbs.





DuMor Inc. • P.O. Box 142 • Mifflintown, PA 17059 • 717-436-2106 • Toll-Free: 800-598-4018 • Fax: 717-436-9839
E-mail: **dumorsales@acsworld.net**





NOTES

1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" PLTD. EXPANSION ANCHOR BOLTS PROVIDED.
3.) CUSTOM LETTERING AVAILABLE FOR RECESSED SIDE PANELS (TOTAL OF 37 SPACES)

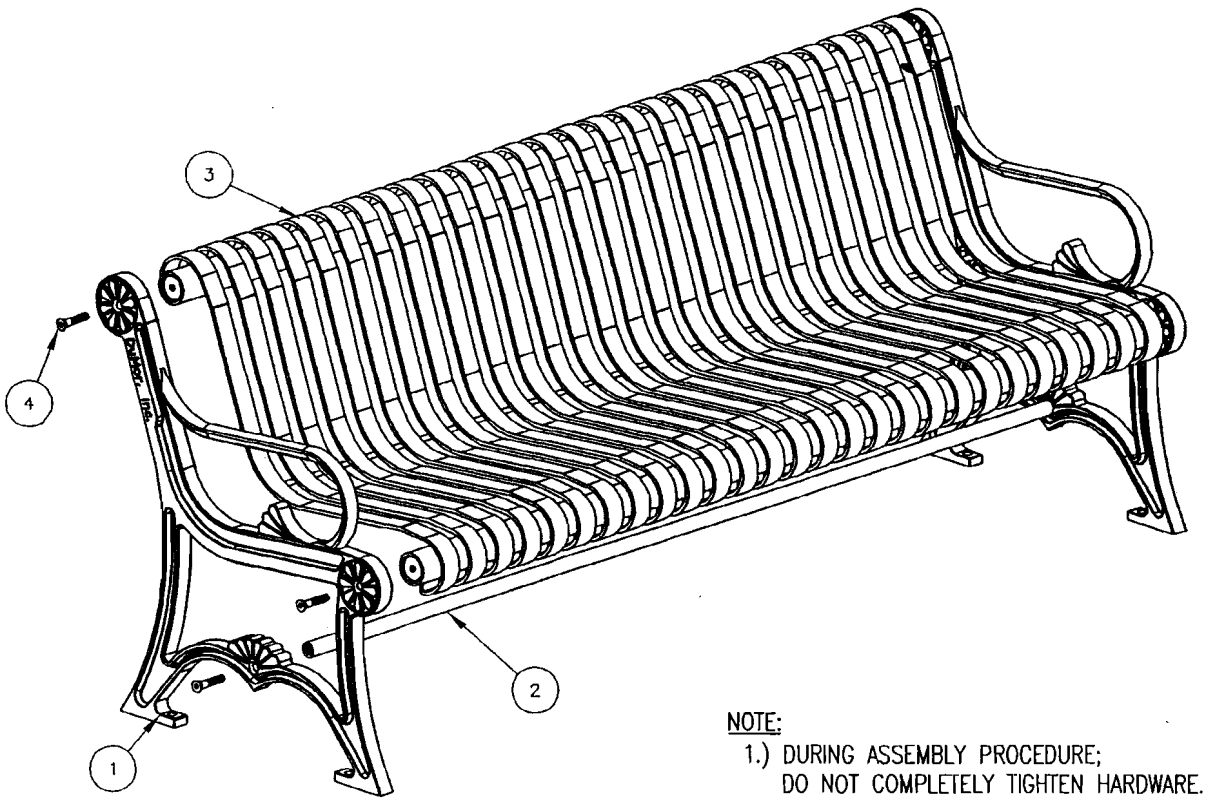
☐ CUSTOM LETTERING (37 SPACES) _____

LENGTH OPTIONS

☐ 6' BENCH
☐ 8' BENCH

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

SCALE : NONE	TITLE : BENCH			
DATE DRAWN : 3/22/94				
DRAWN BY : AH	REV. D	DRAWING NUMBER 58 SERIES	SHEET 1 OF 2	
DATE REV. : 11/21/99				
REV. BY : JSB				



NOTE:
1.) DURING ASSEMBLY PROCEDURE;
DO NOT COMPLETELY TIGHTEN HARDWARE.
2.) THE ACTUAL PARTS WILL NOT BE NUMBERED:
NUMBERS ONLY APPLY TO DRAWING.

STEP 1:
USE 2 – PCS. CAST IRON BENCH SUPPORT (1)
1 – PC. 6' ALL STL. SEAT ASSEMBLY (3)
4 – PC. 1/2" X 2 1/2" FLT. SKT. HD. CAP SCR. (4)
ATTACH CAST IRON BENCH SUPPORT (1) TO 6' ALL STL.
SEAT ASSEMBLY (3) USING HARDWARE (4).
TIGHTEN TO SNUG FIT.

STEP 2:
USE 1 – PC. 71 3/4" PIPE BRACE (2)
2 – PCS. 1/2" X 2 1/2" FLT. SKT. HD. CAP SCR. (4)
ATTACH 71 3/4" PIPE BRACE (2) TO STEP 1 ASSEMBLY
USING HARDWARE (4). TIGHTEN TO SNUG FIT.

STEP 3:
UPON COMPLETION OF BENCH ASSEMBLY SQUARE ALL
COMPONENTS THEN TIGHTEN ALL HARDWARE.

STEP 4:
MOUNT AND ANCHOR AS SPECIFIED.

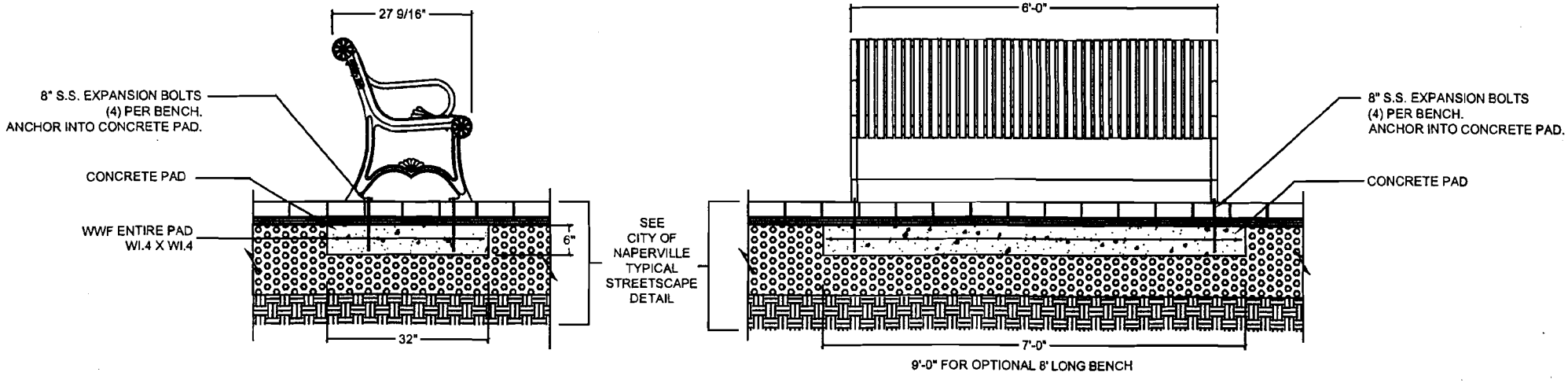
ITEM	QTY	PART NO	DESCRIPTION
1	2	0-57-00-02	CAST IRON BENCH SUPPORT W/BACK
2	1	0-57-60-04	71-3/4" PIPE BRACE
3	1	0-58-60-01	6' ALL STL SEAT ASSEMBLY
4	6	1-12-065	1/2" X 2 1/2" FLT SKT HD CAP SCR

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

SCALE :	NONE
DATE DRAWN :	11/21/99
DRAWN BY :	JSB
DATE REV. :	
REV. BY :	

TITLE : BENCH ASSEMBLY

REV.	DRAWING NUMBER	SHEET
A	58 SERIES	2 OF 2



SIDE VIEW

FRONT VIEW

BENCH INSTALLATION

Drinking Fountains 6.3

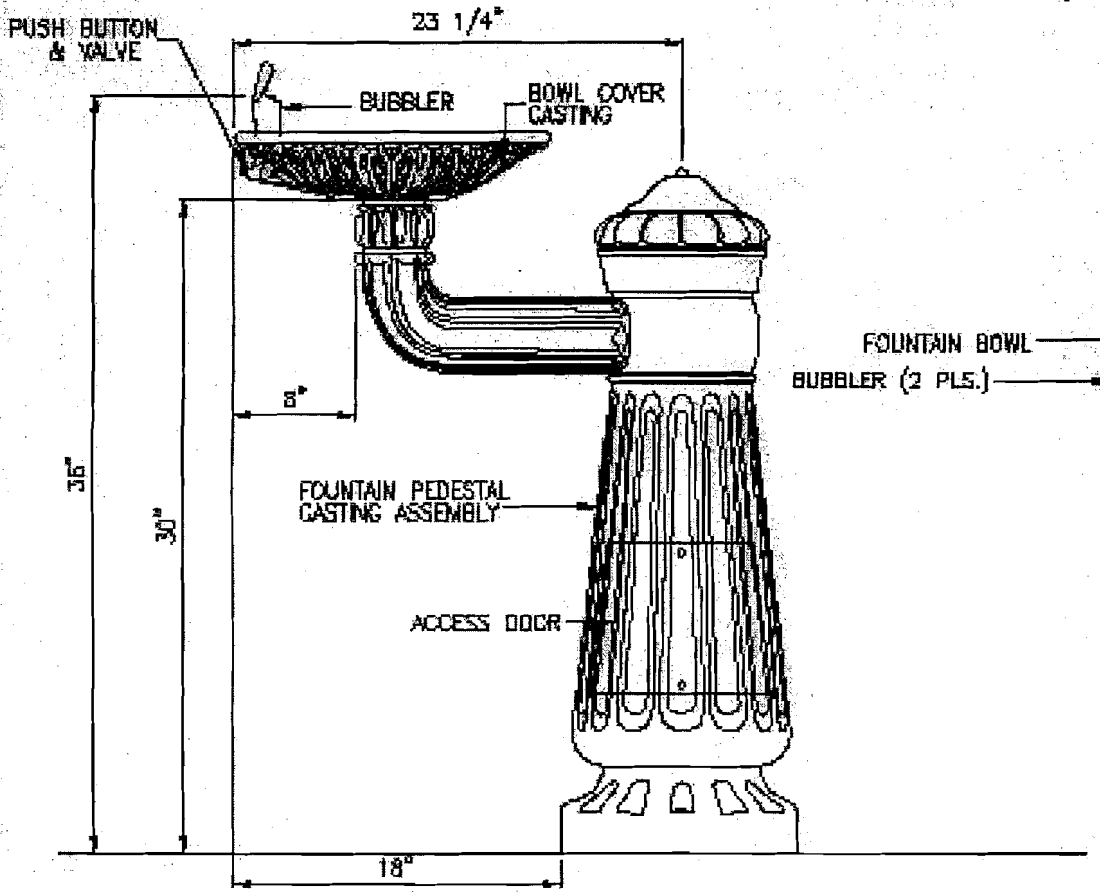
Manufacturer: Canterbury International
Model: 1890
Color: Black
Materials: Chrome plated brass fountain bowl. Strainers and drain pipe in chrome plated brass. Cast iron body and bowl cover.
Finish: Polyester powder coat

Installation: Install per attached details and as directed by the City of Naperville.

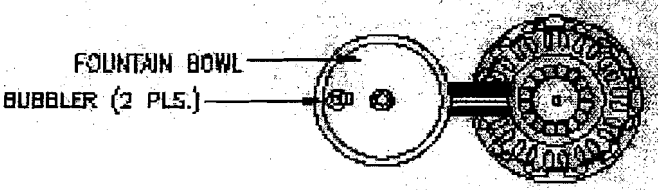
Provided by Canterbury International. 800.935.7111

CANTERBURY®
INTERNATIONAL

CANTERBURY DESIGNS, INC.
5632 W. WASHINGTON BLVD.
LOS ANGELES, CA 90016
1-800-935-7111
PHONE (323) 936-7111
FAX (323) 936-7115
www.canterburyintl.com



ELEVATION VIEW



TOP VIEW

SPECIFICATIONS:
MATERIALS: Chrome Plated Brass
FOUNTAIN BOWL – ~~BRONZE WITH PATINA~~
BUBBLERS – STRAINERS AND DRAIN PIPE IN CHROME PLATED BRASS.
BODY & BOWL COVER – ~~CAST ALUMINUM OR~~ CAST IRON, ~~ALSO AVAILABLE IN BRONZE WITH PATINA~~
FINISH: BLACK
~~PAINTED FINISH PER OUR STANDARD COLOR CHART. (CUSTOM COLORS AVAILABLE)~~

SUPPLY INLET – 3/8" TUBING.
WASTE OUTLET – 1-1/4" TUBING.

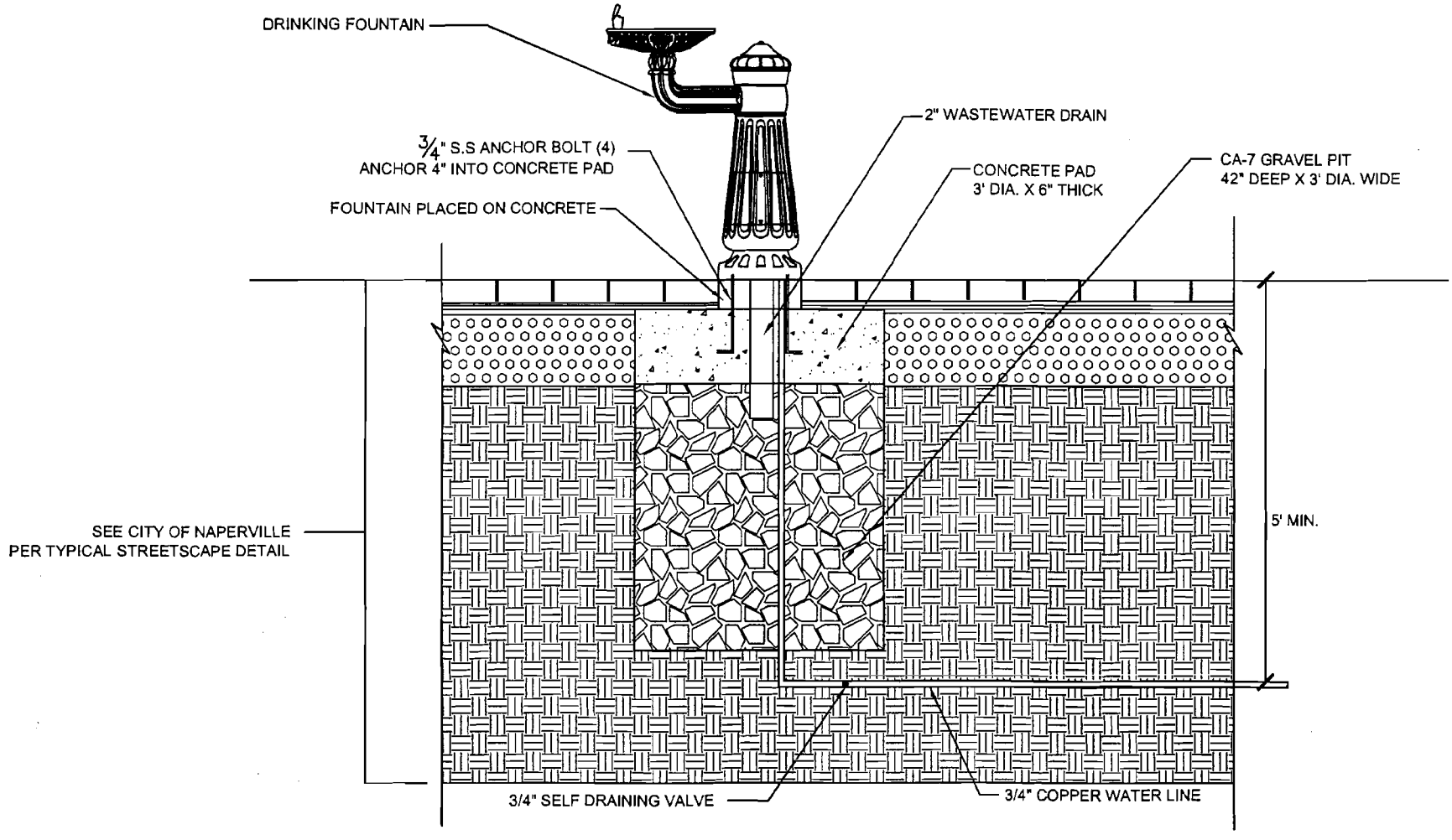
PACKAGING – SHIPPED FULLY ASSEMBLED.

ORDERING: WHEN ORDERING SPECIFY:
"1890 DRINKING FOUNTAIN – 1 ARM"
(MEETS HANDICAP REQUIREMENTS)
INCLUDING MATERIAL & FINISH.

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTOR'S NOTE: FOR PRODUCT AND PURCHASING INFORMATION VISIT www.PROJECTmarketsite.com REFERENCE NUMBER 382-055

1890 DRINKING FOUNTAIN – 1 ARM

HANDICAP ACCESSIBLE – N.T.S.



DRINKING FOUNTAIN INSTALLATION

Bollards 7.0

Standard
Manufacturer: Olympic Foundry, Inc.
Model: CB-B. Ductile cast iron
Color: Black
Finish: Polyester powder coat

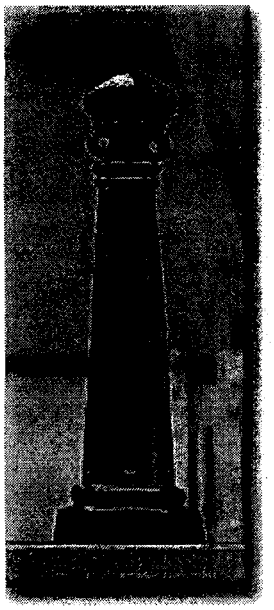
Installation: Three-quarter inch (3/4") redi-rod shall be core drilled through concrete pavers into 20" dia. concrete pad (6" thick). Install per attached detail.

Security Option
Manufacturer: Olympic Foundry, Inc.
Model: CB-B. Ductile cast iron. (Modified security mounting)
Color: Black
Finish: Polyester powder coat

Installation: Manufacturer to provide anchor. Bollard shall be filled with concrete and placed on 42" deep x 9-7/8" dia. concrete pad. Install per attached details.

Provided by Fairweather. 800.323.1798

BOLLARDS



CB-B Cast Bollard

Defining the flow of pedestrian and auto traffic, our bollards enhance the attention to a specific area with old world grace. Our Ductile iron bollards are available in a variety of standard powder coated colors.

Specifications:
32" classic design cast bollard with a 9" base.
Options:
Mounting: permanent, removable

* Olympic Foundry products distributed exclusively by FairWeather.

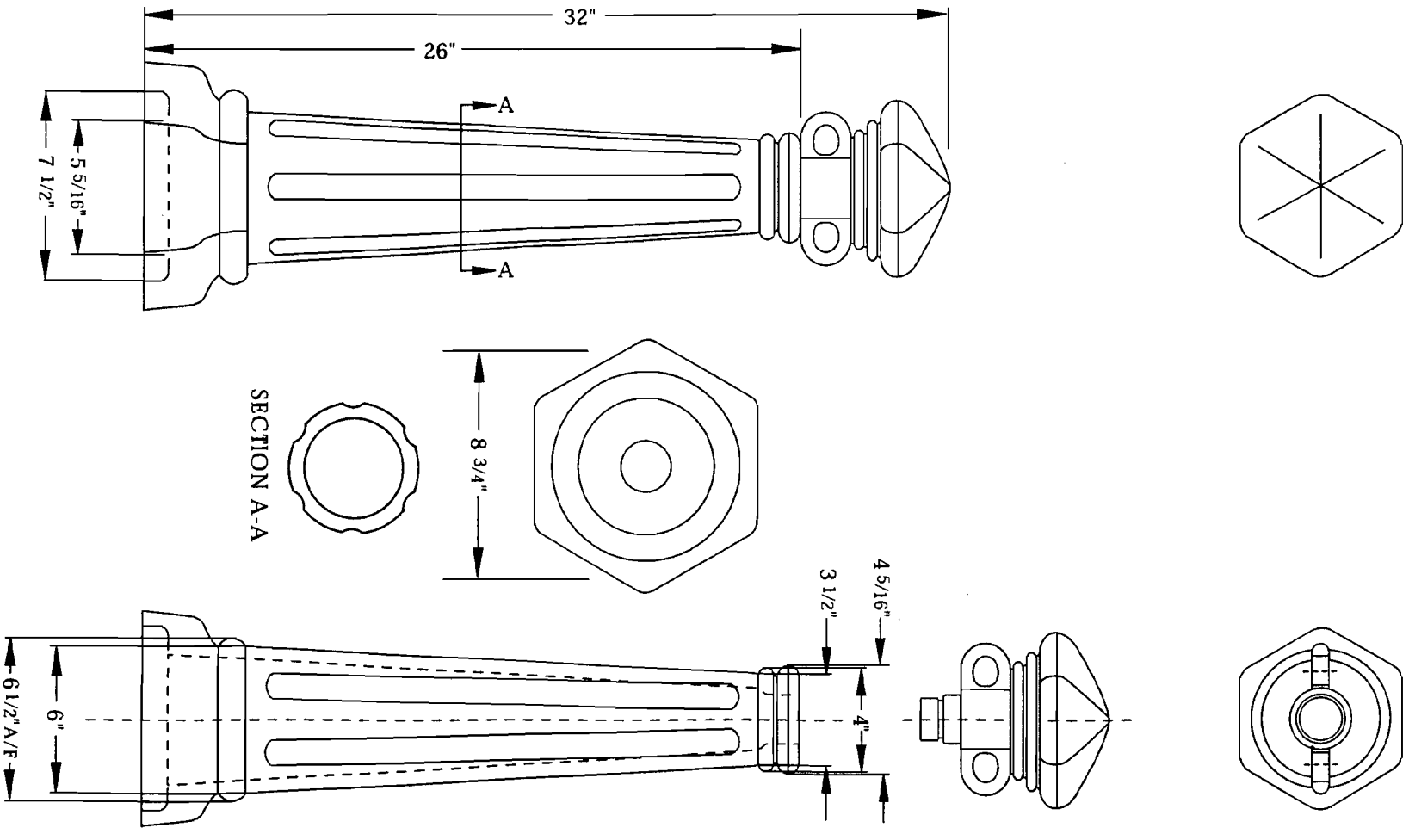
BACK VIEW LARGER NEXT

view colors

To view specific architectural specifications choose product category below.

STANDARD | NON-STANDARD | CUSTOM | VIEW PDF LIST

Request for Proposal | General Contact Information | Catalog Request
Current Sales Rep listing | Territories Open for New Reps



NOTES:
*MATERIAL: DUCTILE CAST IRON ASTM, A536, CL 80-55-06

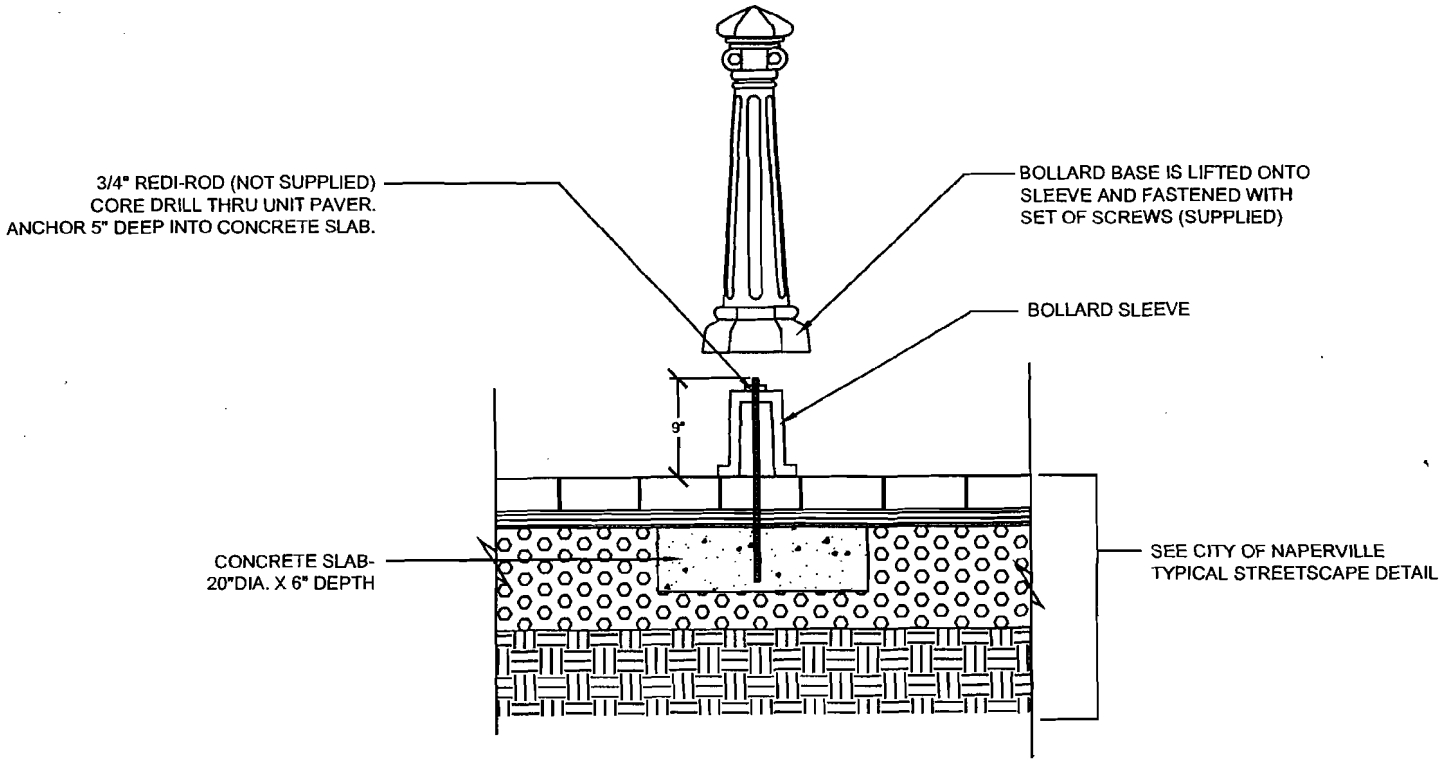
OLYMPIC FOUNDRY INC.

CB-B CAST BOLLARD

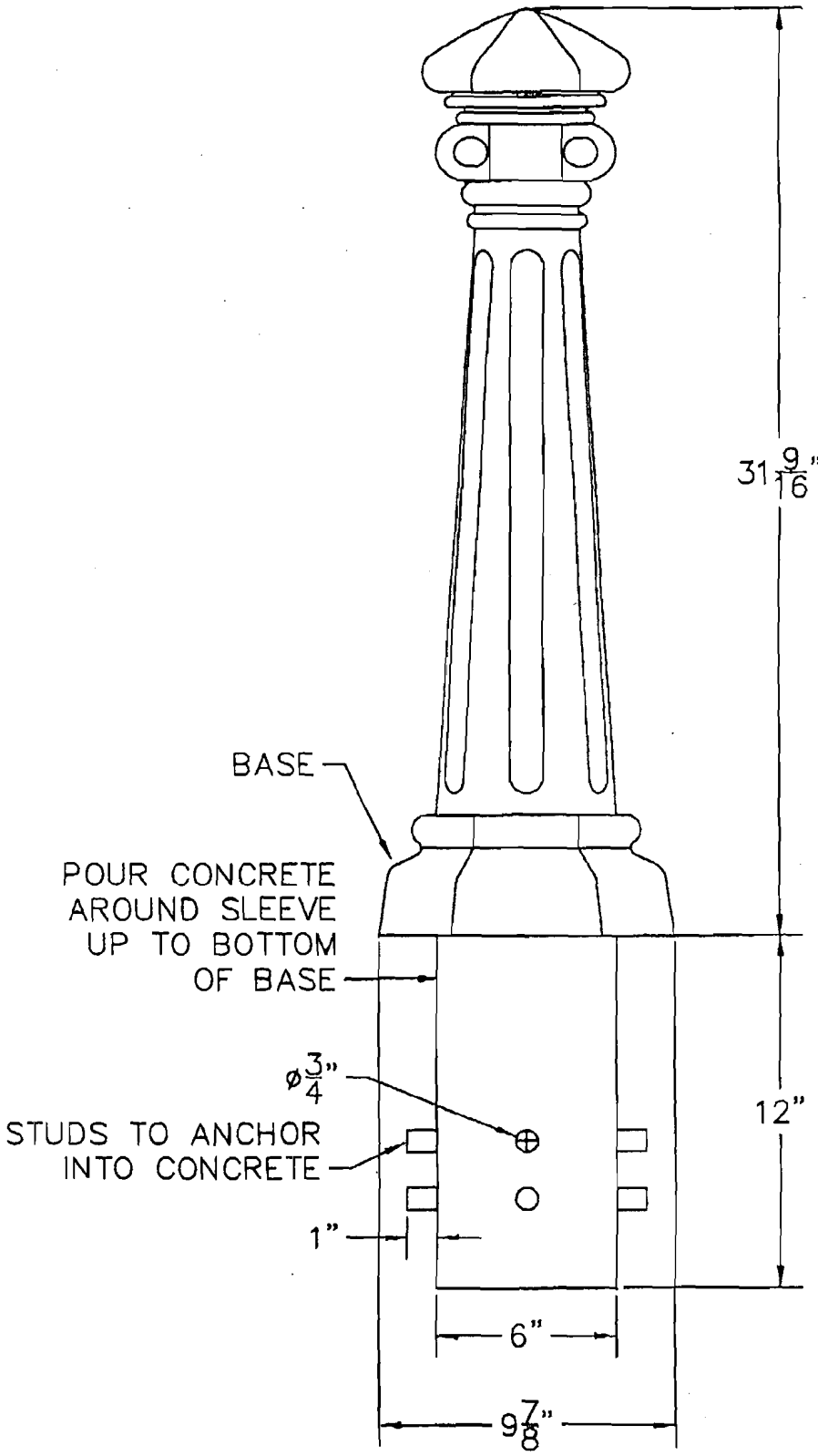
APPROXIMATE WEIGHT:

RATING: N/A

PART NO. 84-4100



BOLLARD INSTALLATION



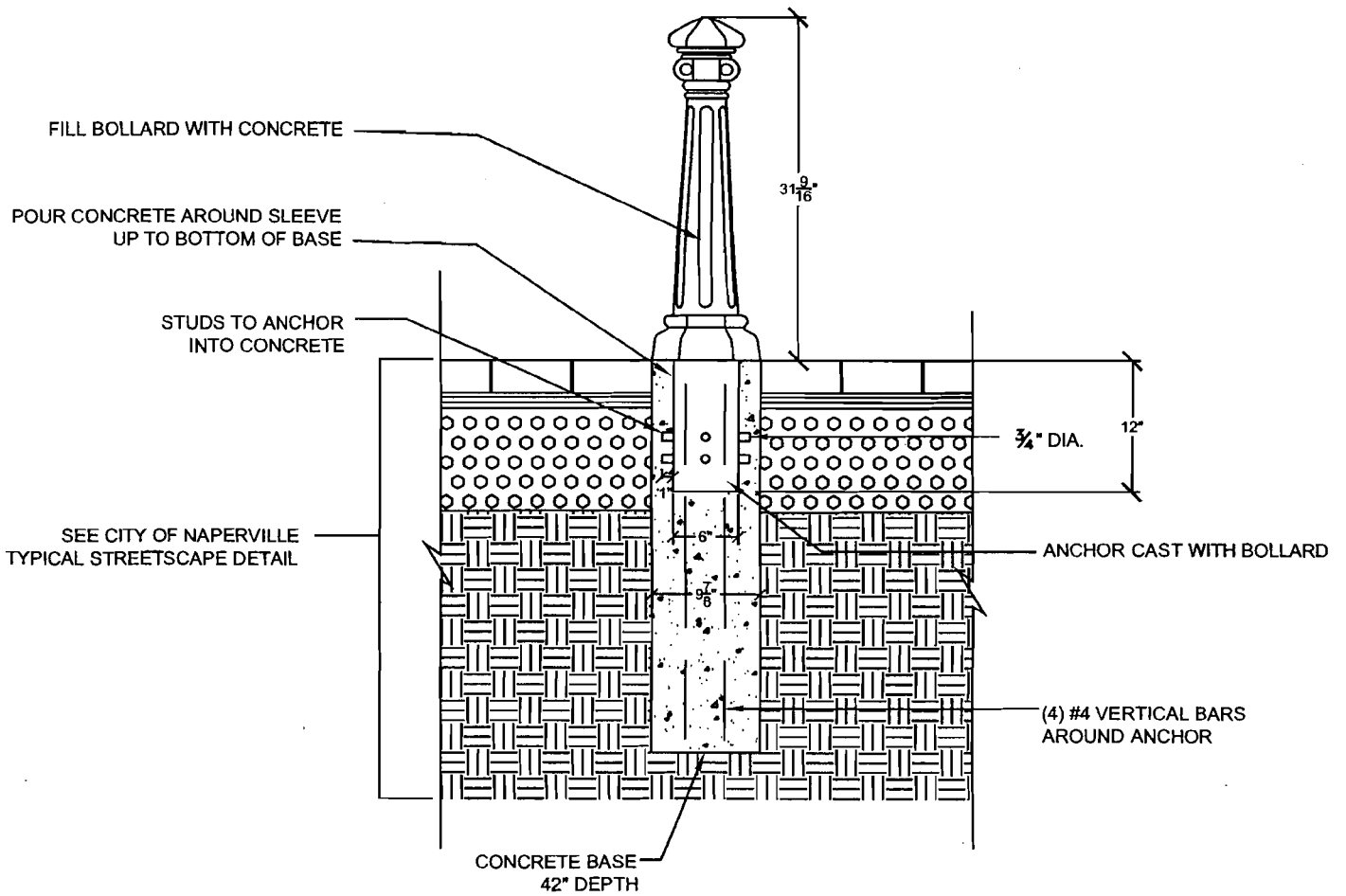
NOTES:

SECURITY BOLLARD

OLYMPIC FOUNDRY INC.

CB-B PERMANENT
EMBEDDED BOLLARD

MATL: DUCTILE IRON ASTM A536, CL 80-55-08			RATING: N/A	PART NO. CB-B P	
APPROX WT: 175 LBS.			REV: A DATE: 3/28/03 CREATED DRAWING		REV A
DOCUMENT APPROVED BY: DATE:	DWN: CL DATE: 03/28/03	TOLERANCE XX ± .1 XXX ± .08 XXXX ± .030 < ± 2 DEC	REV: X DATE: XX/XX/XX DSC:		
	CHKD: CL DATE: 03/28/03		DWG #: CB-B PERM	SCALE: N/A	SHEET 1 OF 1



SECURITY BOLLARD INSTALLATION

Decorative Fencing

8.0

Manufacturer: Monumental Iron Works
Model: Estate Fence Style L
Material: Steel, 16 gauge hollow tubing
Color: Black
Height: 4 feet
Post Top: Ball style
Finish: Polyester powder coat

Installation: Assemble and install per attached details.

Provided by: Master Halco 800.899.6113

PART 1 GENERAL-4' HT. ORNAMENTAL FENCE

1.01 SECTION INCLUDES

A. Ornamental picket fencing and accessories.

1.02 RELATED SECTIONS

Not Applicable.

1.03 SUBMITTALS:

A. Changes in specification may not be made after the bid date.

B. Shop Drawings: Layout of fence and gates with dimensions, details and finishes of component accessories and post foundations.

C. Product Data: Manufacturer's catalogue cuts indicating material compliance and specified options.

D. Samples: Color selections for polyester finishes. If requested, samples of materials, (e.g. finials, caps, and accessories).

1.04 SPECIAL WARRANTY

A. Provide manufacturer's standard limited warranty that its ornamental fence system is free from defects in material and workmanship including cracking, peeling, blistering and corroding for a period of ***15 years*** from the date of purchase.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Monumental Iron Works, 1704 Trimble Road, Edgewood, Maryland 21040. (phone 410-676-2744 - fax 410-676-7098). Products from other qualified manufacturers having a minimum of 5 years experience manufacturing ornamental picket fencing will be acceptable by the architect as equal, if **approved in writing, ten days prior to bidding**, and if they meet the following specifications for design, size, gauge of metal parts and fabrication.

B. Ornamental Picket Fence:
Style: Estate Fence Style L
Height: 4'-0"(1219 mm).

C. Approved Manufacturer: Monumental Iron Works/Master Halco Inc., Baltimore, MD
Phone (630) 293-5560 Fax (630) 293-5568
Attention: Brad Knepper

2.02 ORNAMENTAL PICKET FENCE

A. Pickets: Galvanized square steel tubular members manufactured per ASTM A-787, having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft^2 (0.27 kg/M^2. Minimum size pickets ¾" (19 mm). Space pickets 3-15/16" maximum (100 mm) face to face. Attach each picket to each rail with 1/4" (6 mm) industrial drive rivets. Size #4. Minimum gauge wall thickness 16 gauge [0.060" (1.65mm)].

B. Rails: 1-1/2" (38mm) x 1-3/8" (35mm) x 1-1/2" (38mm), 11 gauge [0.120" (3.05mm)] thick galvanized steel "U" channel per ASTM A-653 or ASTM A-607, having a 50,000 psi (344 MPa) yield strength and G90 zinc coating, 0.90 oz/fl^2 (o.27 kg/M^2). Punch rails to receive pickets and rivets and attach rails to rail brackets with 2 each, 1/4" (6 mm) industrial drive rivets.

C. Posts: Galvanized square steel tubular members manufactured per ASTM A-787 having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft^2). Zinc coating is(inside and outside), (Posts zinc coated outside and painted inside, is unacceptable). Minimum post size 2 ½" Sq. (63.5 mm), having 14 gauge wall thickness [0.080" (2.03 mm) weighing 2.733 lb/ft (4.07 kg/m).

D. Finish: All pickets, channels, posts, fittings and accessories shall be polyester coated individually after drilling and layout, to ensure maximum corrosion protection. (Coating of assembled sections is unacceptable). All components are given a 4 stage "Power Wash" pre-treatment process that cleans and prepares the galvanized surface to assure complete adhesion of the finish coat. All metal is then given a polyester resin based power coating applied by the electrostatic spray process, to a thickness 2.5 (.0635 mm) mils. The finish is then baked in a 450^{0}F (232^{0}C) (metal temperature) oven for 20 minutes. Color Black.

2.03 GATES

A. Ornamental picket swing gates as specified in Section 02821 A.
B. Ornamental picket cantilever slide gates as specified in Section 028321B.

2.04 ACCESSORIES

A. Rail Attachment Brackets - die cast of zinc (ZAMAK #3 Alloy) per ASTM B86-83Z 33521. Ball and socket design capable of 30° swivel (up/down - left/right). Bracket to fully encapsulate rail end for complete security. (no substitution)

B. Industrial Drive Rivets: Of sufficient length to attach items in a secure nonrattling position. Rivet to have a minimum of 1100 lbs. (4894 N) holding power and a shear strength of 1500 lbs. (6674 N).

C. Ornamental Picket Fence Accessories: Provide indicated items required to complete fence system. Galvanize each ferrous metal item in accordance with ASTM B695 and finish to match framing.

D. Post Caps: Formed steel, cast of malleable iron or aluminum alloy, weathertight closure cap. Provide one Ball style post cap for each post.

E. Picket Tops : Flat top with polymer plug.

2.05 SETTING MATERIAL

A. Concrete: IDOT Class SI concrete with a minimum 28 day compressive strength of 4000 psi. Depth and size of foundation to be as specified by the manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify areas to receive fencing are completed to final grades and elevations.
B. Ensure property lines and legal boundaries of work are clearly established.

3.02 INSTALLATION

A. Install fence in accordance with manufacturer's instructions.

B. Space posts uniformly at 7'8-3/4" (2356 mm) maximum face to face unless otherwise indicated.

C. Concrete Set Posts: Drill hole in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than nominal outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around post in a continuous pour. Trowel finish around posts and slope to direct water away from posts.

    1. Gate Posts and Hardware: Set keepers, stops, sleeves and other accessories into concrete.

D. Check each post for vertical and top alignment, and maintain in position during placement and finishing operation.

E. Align fence panels between posts. Firmly attach rail brackets to posts with 1/4" (6 mm) bolt and lock nut, ensuring panels and posts remain plumb.

3.03 GATE INSTALLATION

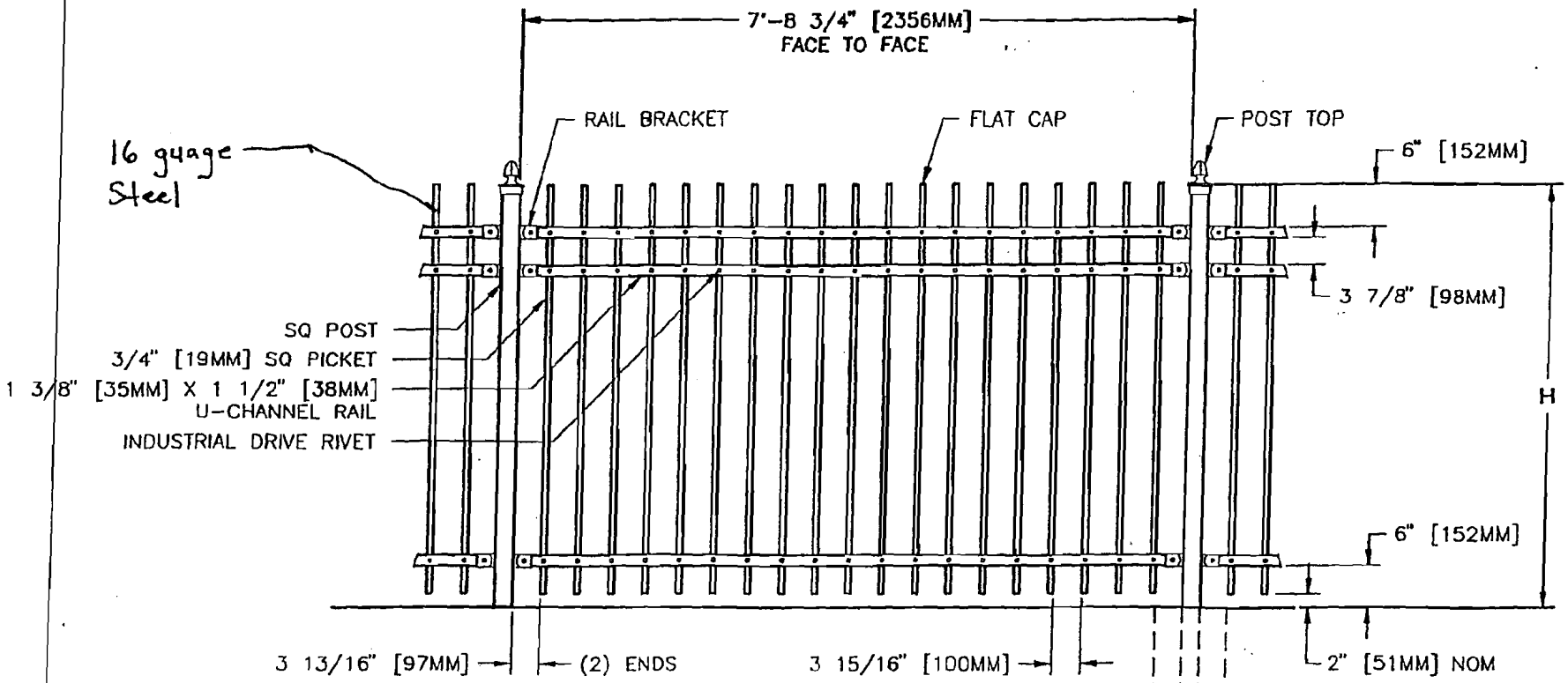
A. Install gates plumb, level and secure for full opening without interference.
B. Attach hardware by means which will prevent unauthorized removal.
C. Adjust hardware for smooth operation.

3.04 ACCESSORIES

A. Install post caps and other accessories to complete fence.

3.05 CLEANING

A. Clean up debris and unused material, and remove from site.



FENCE SECTION ELEVATION

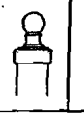
SEE DWG 6-1810 FOR 1" PICKETS

MIN DEPTH
IN: 36"
MM: 914

WIDTH
IN:
MM:

NOM HEIGHT (H)
3'-0" [914MM]
3'-6" [1067MM]
4'-0" [1219MM]
5'-0" [1524MM]
6'-0" [1829MM]
7'-0" [2134MM]
8'-0" [2438MM]

POST TOP OPTIONS

STANDARD	BALL	FLAT
		

NOTES:
1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
2. SPECIFICATIONS SHOWN CAN BE CHANGED BY MASTER-HALCO ONLY.
3. FOOTING WIDTH TO BE (4)X POST WIDTH.

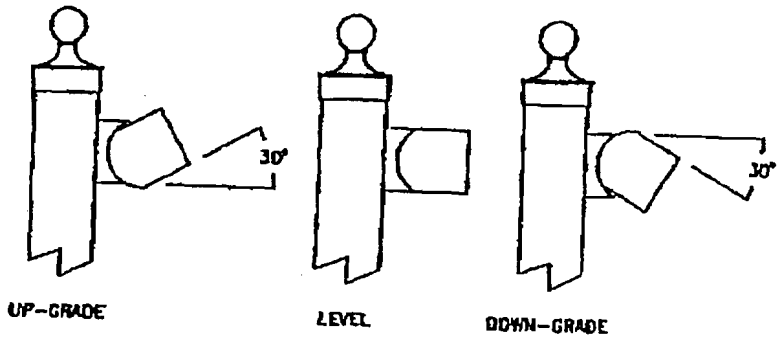
MONUMENTAL
IRON WORKS

ESTATE FENCE - STYLE L

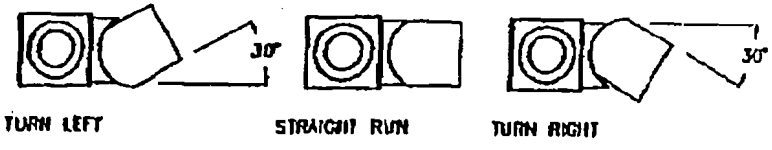
NOM 8' SECTION LENGTH - 3/4" PICKETS

BY:	JRR
DATE:	04-28-95
REV:	B
REV DATE:	06-01-98
DWG:	6-1710
LAYER:	1
SCALE:	1/2" = 1'-0"

MONUMENTAL IRON WORKS ARCHITECTURAL SWIVEL BRACKET (Patent) U.S. PATENT #5,547,169



30° IN ANY DIRECTION

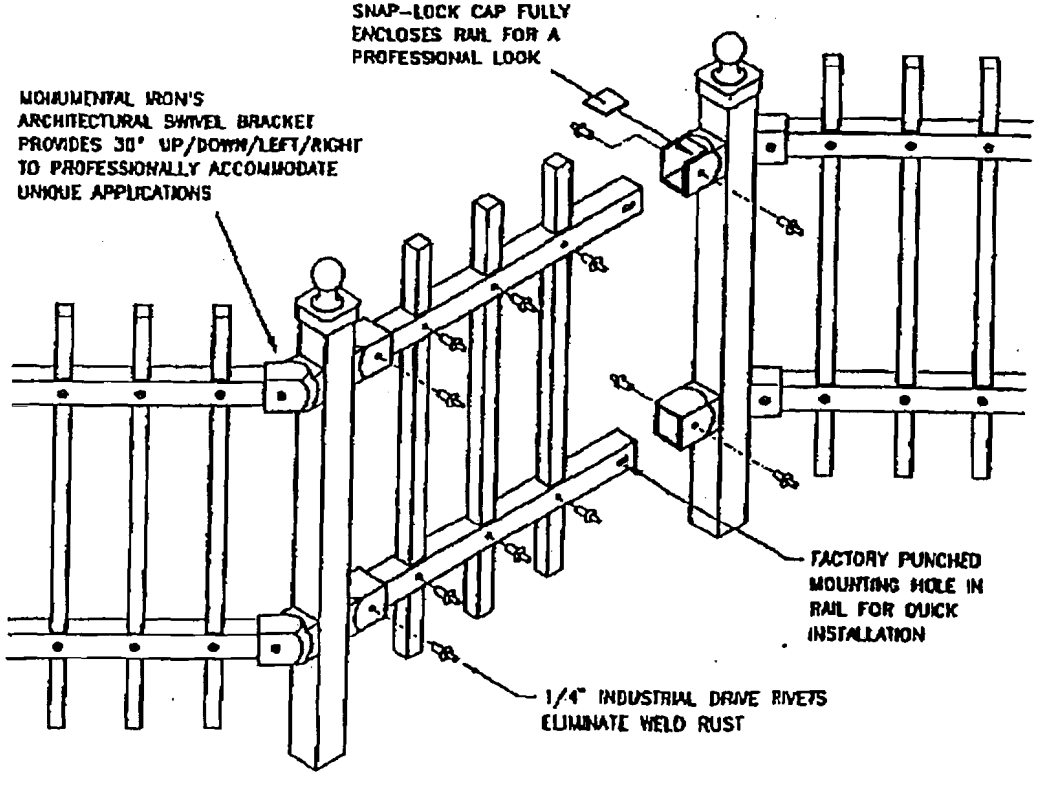


SWIVEL BRACKET

Allows angles of up to 30° in any direction without special attachments. Bracket held to post with ¼" bolt and lock nut. The bracket is a zinc die cast that will never rust.

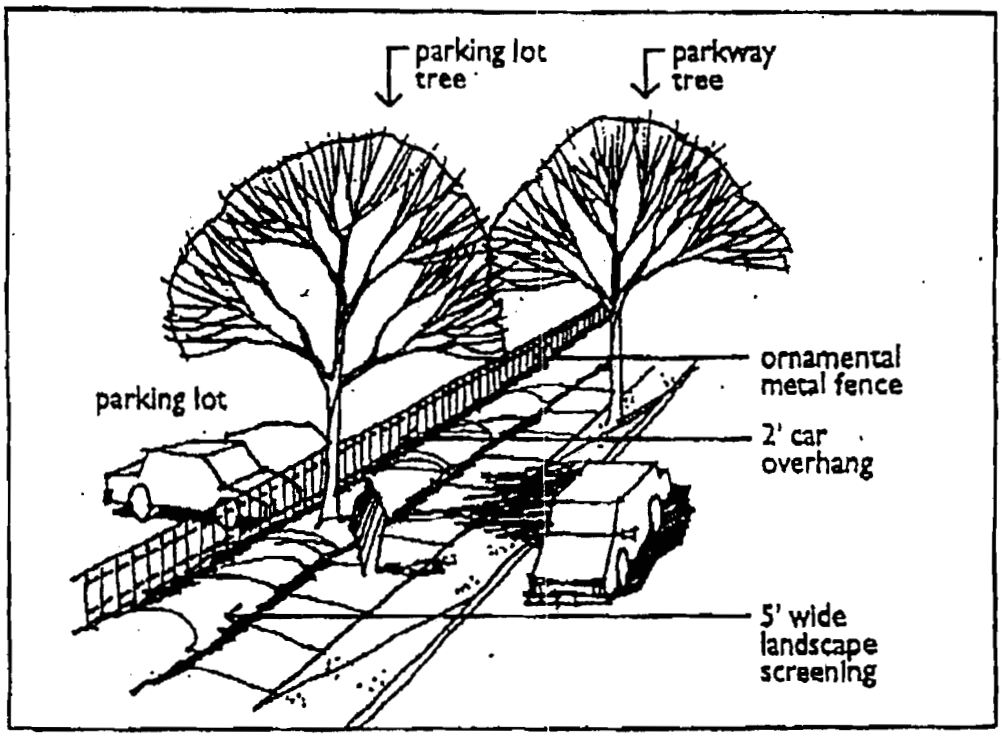
BRACKET TOP

After insertion and riveting of rail a snap-lock cap is inserted into each bracket, completely concealing all nuts, bolts, and rail ends. Clean in appearance and the most secure attachment in the industry.



RAIL LOCK

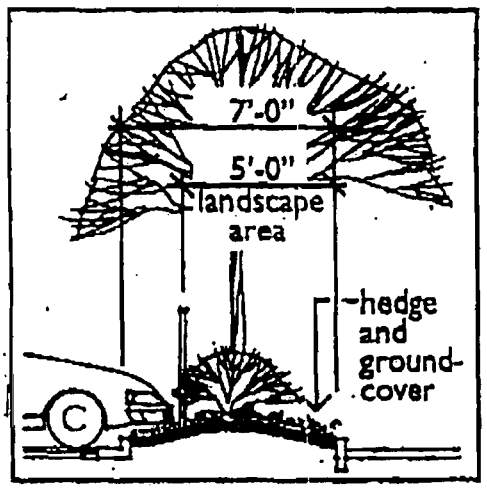
Rails are inserted into brackets. Rail is held in place by 2 individual drive rivets (one each side) that are inserted through factory punched slotted holes in rail.

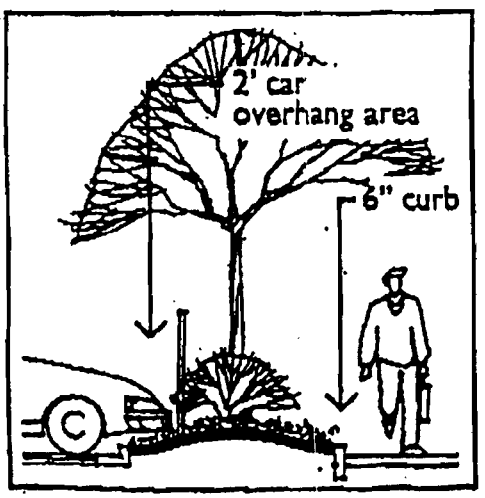


Guide to the Chicago Landscape Ordinance

Example of fencing use

Illustration





Example of fence use.

Irrigation System Installation

CONTRACTOR will design, lay out and install irrigation spray systems in twenty-two planting beds on Van Buren Ave. between Washington St. and Webster System components in each bed will include:

- Battery-powered control system, Hunter SVC or approved equal, and related battery-powered control valves with appropriate enclosure or a 110 volt single control station.
- 6" institutional pop-up fixed spray heads with integral pressure regulators, Hunter INST w/PRS or approved equal. Spray heads will be appropriate flow rate, spray radius, and spray pattern to properly irrigate the areas in which they are installed without excessive overspray onto adjacent sidewalk or street areas.
- All related excavation, trenching, pipe and fittings, backfilling, pressure, flow, and coverage testing.
- Connections will be made to the existing water piping in each bed

Upon completion of work at startup the contractor will provide:

- One hour of instruction regarding operation of the systems to DPW personnel
- As-built drawings of the sprinkler systems that were installed. These do not need to be engineering drawings. An accurate sketch of each bed showing the location and types of system components will be adequate.

Irrigation Controller Upgrades

The irrigation maintenance contractor shall meet with city staff to review the existing rainmaster irrigation controllers and irrigation distribution systems at the Municipal Center and the Naperville Police Facility. The CONTRACTOR shall remove the existing Rainmaster controllers at both locations and replace both of them with NEW Hunter Irrigation Controller Model # ICC-800-SS, 48 station capacity units. The new controllers for the Police facility and Municipal Center are to be mounted in the same locations. The CONTRACTOR must also provide two each ICR remote hand-held controllers and any interface boards or wireless adapters for the controllers that may be required. The CONTRACTOR shall reconnect all zone and/or power wiring, test and verify all zones using both the main controllers and each of the hand-held units.

The CONTRACTOR shall provide a minimum of four hours of training to designated city staff in the operations and control of the new controllers and hand-held devices. All work must be warrantied for a minimum of one year from the date of CITY acceptance.

Irrigation In-line Water Filter Installation

Work with city staff to install an in-line water filter at the Municipal Center. The water filter will be furnished by the city.

SITE VISITATION & MANDATORY PRE-BID MEETING

A mandatory pre-bid meeting has been scheduled on Tuesday, April 18 at 9:00 am. in the Municipal Center located at 400 S. Eagle. To familiarize vendors with site locations and systems, a tour will be conducted immediately following the mandatory pre-bid conference.