Town of Acton

Elm Street Field
Light Project

Date: June 5, 2007

Elm Street Ball Field Light Replacement
Special Permit

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TOWN OF ACTON
472 Main Street
Acton, Massachusetts, 01720
Telephone (978) 264-9612
Fax (978) 264-9630

Don Johnson
Town Manager

Special Permit for Elm Street Ballfield Light Replacement

Property Owner: Town of Acton

Applicant: Don Johnson, Town Manager, Town of Acton, 978-264-9612

Contact: Cathy Fochtman, Recreation Director, Town of Acton, 978-264-9608, ext. 0 email: recreation@acton-ma.gov

Parcel Location: 21 Elm Street, Acton, Atlas Map E2, Parcel 247

June 6, 2007

Members of the Planning Board,

The Town of Acton is applying for a Special Permit for the Elm Street Ballfield Light Replacement Project. The height requirements of the new light poles exceed the height limitation of 45'. Eight aging 50' wooden poles located on the Elm Street ballfield are to be replaced with six galvanized steel poles: two 70' poles and four 80' poles, to be installed in new pole locations. The new lighting configuration serves a number of purposes:

- Replaces decaying and potentially hazardous existing light poles
- Conforms to Town of Acton Zoning Bylaw Section 10.6, resulting in a reduction of light trespass onto abutting properties
- Expands lighting coverage to include not only the ballfield, but two adjoining practice fields, critical for the safe use of Youth sports leagues
- Adequately lights the athletic fields to recommended levels, eliminating the danger currently posed by inadequately lit areas on the field.
- Better serves the community and the leagues that utilize the facility: Acton Boxborough Youth Softball, Pop Warner Football, Acton Boxborough Field Hockey, Recreation Field Hockey and Acton Adult Softball League

The existing hours of light operation are 30 minutes prior to sunset until 9:30pm or at the next inning break thereafter Monday – Friday. League play was recently granted daytime hours only, Saturday 9:00am – 5:00 pm. There is no organized league play on Sundays. Hours of operation are at present to remain the same. A letter from the Town Manager clarifying the status of neighborhood concerns with existing lighting has been included.

The Town of Acton bid package for the project was developed by Engineer Nick Ferzacca of Maricor Corporation and went out to bid on April 10, 2007. The project was awarded by the Town of Acton to Blaise Electrical Corporation of Framingham, MA on May 10, 2007 for the lowest bid price of $199,984.00. The lighting equipment is to be supplied by Musco Systems, Inc. Musco has provided technical specifications for the project. Mr. Ferzacca has provided a letter certifying that the proposed lighting information is valid and complies with Acton Zoning Bylaw Section 10.6. The Outdoor Lighting Education Committee has reviewed the Musco bid package and provided a letter of support for the project.

The light pole and electrical installation is to take place this summer when not in conflict with Town permitted use of the ballfield. Major work may take place in the hiatus between the end of the softball season on August 5 and the beginning of the football practice season the first week of September. Existing lighting will remain in place until the end of the softball season.

Please refer to attachments which provide the details of the project.

Don R. Johnson 6/11/07

Don Johnson, Town Manager Date

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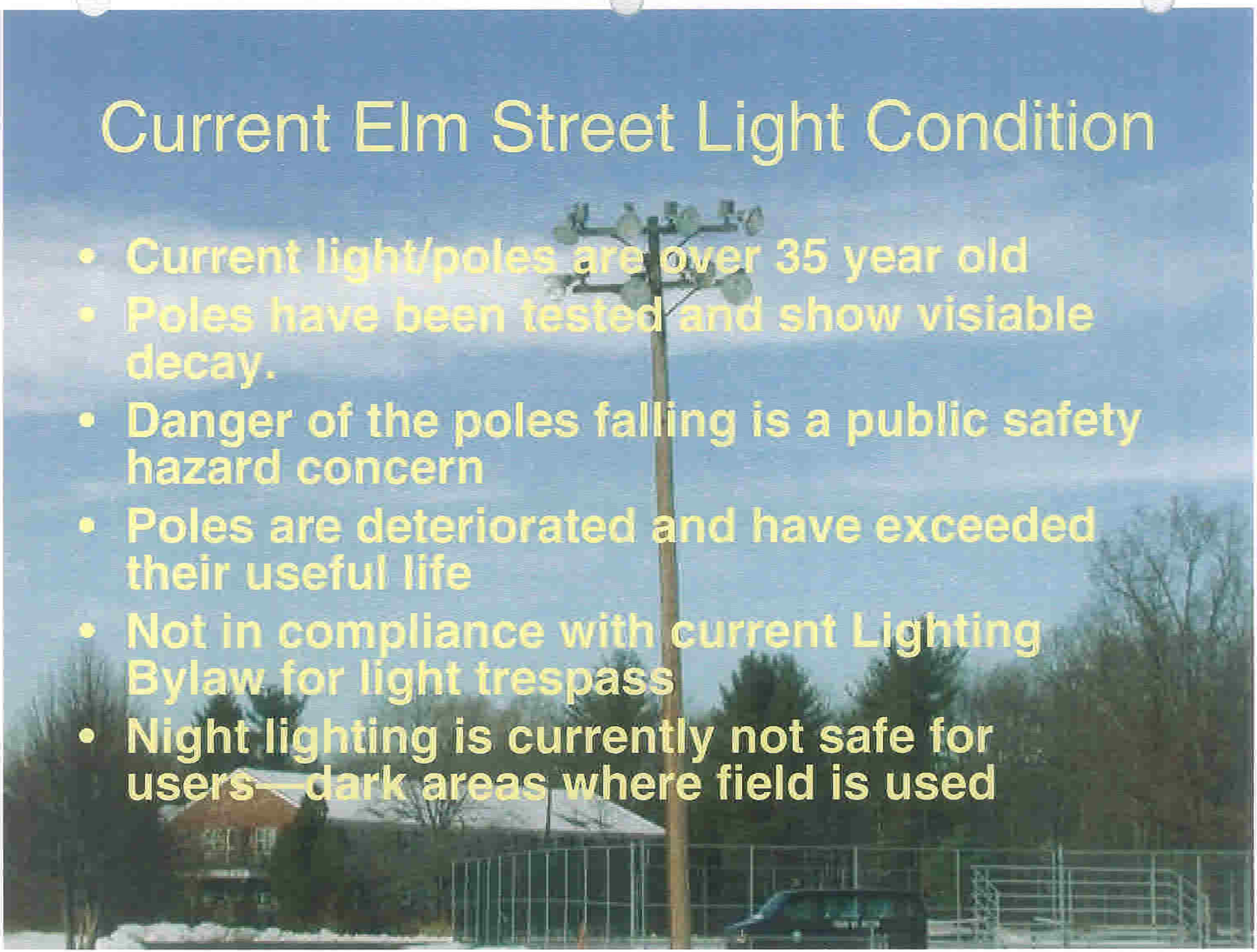
Current Elm Street Lights

Current Elm Street Light Condition



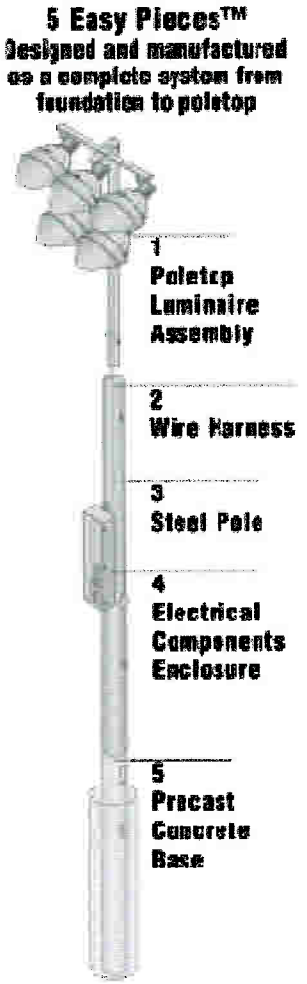
- Current light/poles are over 35 year old
- Poles have been tested and show visiable decay.
- Danger of the poles falling is a public safety hazard concern
- Poles are deteriorated and have exceeded their useful life
- Not in compliance with current Lighting Bylaw for light trespass
- Night lighting is currently not safe for users—dark areas where field is used

Elm Street New Lights/Poles

- New lights will eliminate spill light migrating onto abutting properties
- Galvanized steel poles eliminate wood rot concerns
- Light/Pole replacement cost $199,984.00

25 Year Life Cycle Cost

- Energy Savings, based on prior technology vs. Light Structure Green
- With current technology 25 Year Life Cycle Cost: $60,519.00
- Light Structure Green 25 Year Life Cycle Cost: $21,701.00
- **25 Year Life Cycle Cost Savings: $38,818.00**



The Maricor Group

www.maricorgroup.com

June 8, 2007

Ms. Cathy Fochtman
Recreation Director
Town of Acton
472 Main St.
Acton, MA 01720

Re: Elm St Field Lighting

Dear Cathy:

This is to confirm that the design for the field lighting at Elm St. will comply with the Town of Acton Lighting Ordinance and in particular, Section 10.6.2.4 c which relates to outdoor recreation facilities. The bid documents specifically require the manufacturer to meet this ordinance including the following:

A. Illumination shall be by either SHIELDED or FULLY SHIELDED LUMINARIES' and shall meet the following:

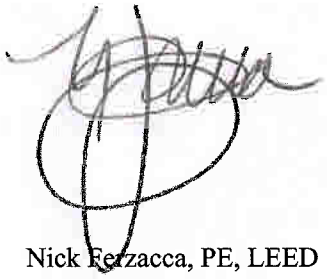
1. SHIELDED LUMINAIRES' shall be mounted at sufficient height and aimed so that the brightest part of the beam is elevated no more than 60 degrees above a point directly below the LUMINAIRE (figure 4). Light poles for recreation facilities may be as high as necessary to adequately illuminate the facility in compliance with the maximum 60-degree elevation angle, but shall not exceed a height of 85 feet. Section 5.3.5.3 of this bylaw for a special permit to increase pole height.

2. The LUMINARIES' shall be SHIELDED so that LIGHT TRESPASS onto STREETS, or abutting LOTS in Residential or Conservation USE, is less than 0.8fc. This measurement shall be made with a photometer positioned at the boundary and aimed directly at the LUMINAIRE. The lighting plan shall include calculations demonstrating that the LIGHT TRESPASS requirement will be satisfied.

3. The LAMP shall not be visible from a STREET, or abutting LOT that is in Residential or Conservation USE. Alternatively, the installer may retain a qualified independent lighting consultant to measure the maximum luminance visible from STREETS, or abutting LOTS that are in Residential or Conservation USE. The measurement report shall be delivered to the Building Commissioner and shall demonstrate that the maximum luminance apparent from a STREET or abutting LOT that is in Residential or Conservation use, is not more than 2500 cd/sq.m.

Please feel free to contact me at (617) 482 6281 if you have any questions,

Sincerely,



Nick Ferzacca, PE, LEED
President

To: Catherine Fochtman, Director, Recreation Department

From: Bernard Kosicki, Chairman, Outdoor Lighting Education Committee

Subject: Height of Sports Lighting Poles at Elm Street Recreation Field

The Outdoor Lighting Education Committee (OLEC) has voted to support approval of the Special Permit application of the Recreation Department to exceed the normal height restriction for sports lighting poles on the Elm Street recreation fields.

Our predecessor committee, the Outdoor Lighting Advisory Committee, wrote the present Outdoor Lighting Bylaw which was passed during the April 2004 Town Meeting. In that Bylaw, sports lighting was specifically addressed in Section 10.6.2.4 c), Illuminated Outdoor Recreation Facilities. Paragraph (i) of this section allows that poles for an Outdoor Recreation Facility may be as high as 85 feet, assuming that a Special Permit for increased structure height is granted.

The primary objectives of the 2004 Outdoor Lighting Bylaws are to minimize glare and light trespass of light onto adjacent residential properties and public land and rights-of-way. Outdoor recreation facilities that are poorly designed are well known to project large amounts of light beyond the borders of the facility. Good designs use pole heights that are high enough so that the light may be projected substantially downwards, onto the recreation field only, therefore minimizing light spill outside the playing areas.

The Elm Street playing fields currently use pole heights of about 40-45 feet. These pole heights are not enough to maintain low levels of light spill onto Elm Street and the residential properties directly across the street (measurements made of light levels on the sidewalks across the street substantiate this). The new design of the Recreation Department uses poles that are 70 and 80 feet in height. Simulations of the light patterns that would be produced by this design show good control of light spill at the borders of the playing fields. This control is made possible in part by the increased height of the poles and in part by the much better-shielded fixtures that are being used compared to the present lighting equipment.

OLEC supports the approval of the application by the Recreation Department for a Special Permit to exceed the standard Town structure heights.

Placeholder

Town Manager Letter
Re: Neighborhood Concerns

Town of Acton
472 Main Street
Acton, MA 01720
Telephone (978) 264-9622
Fax (978) 264-9630

rian McMullen
ssistant Assessor

Locus: 354,360 & 332 GREAT RD
Parcel: D4-4, D4-9 & C4-29

ocation	Parcel ID	Owner	Co-Owner	Mailing Address	
SENECA CT	E2-178-7	ROTOLANTE RALPH A	ROTOLANTE E JEANINE	4 SENECA CT	ACTON
2 ELM ST	E2-192	22 ELM STREET LLC		22 ELM ST	ACTON
0 ELM ST	E2-192-2	STARR ANDREA		22 ELM ST	ACTON
JESSE DR	E2-192-6	GIBALERIO KATHRYN A	FOSTER WALTER M	3 JESSE DR	ACTON
2 ELM ST	E2-228	FOX EDWARD	FOX SHERYL V	12 ELM ST	ACTON
4 ELM ST	E2-234	GABRIELLI GABRIEL		14 ELM ST	ACTON
ELM CT	E2-235	SOFKA STANLEY G + EDITH M	C/O AMMENDOLIA NICHOLAS + KA	5 PASTORE LN	DANVERS
6 ELM ST	E2-241	AMMENDOLIA ANTHONY J.	AMMENDOLIA ANNE W.	16 ELM STREET	ACTON
ELM CT	E2-243	DAVIS FRANCES H		5 ELM COURT	ACTON
8 ELM ST	E2-248	LEGER NANCY M		18 ELM ST	ACTON
4 ELM ST	E2-249	MURPHY JOSEPH P	ROBIN J B	24 ELM ST	ACTON
6 ELM ST	E2-253	WERST LEONARD	WERST DOROTHY	26 ELM ST	ACTON
5 AGAWAM RD	E2-253-2	YASGUR DIANE	ARCHBOLD RODOLFO	45 AGAWAM RD	ACTON
6 AGAWAM RD	E2-258	GREGORITCH WILLIAM J	GREGORITCH LILYN R	46 AGAWAM RD	ACTON
8 AGAWAM RD	E2-263	BACA JAN	BACA MARIE E	48 AGAWAM RD	ACTON
4 ELM ST	E2-264	ORCUTT CHARLES E JR	CORRINE	34 ELM STREET	ACTON
7 ELM ST	E2-269	PRENDIVILLE JOHN F	PRENDIVILLE MARY D	27 ELM STREET	ACTON
HOUGHTON LN	E2-276	HATANAKA IWAO	HATANAKA MELISSA	8 HOUGHTON LN	ACTON
9 ELM ST	E2-277	COMJEAN CRAIG A		29 ELM ST	ACTON
HOUGHTON LN	E2-281	LUKACZ JOHN JR	MARY G	7 HOUGHTON LANE	ACTON
1 ELM ST	E2-282	NING YAOYU	QIN GUOZHONG	31 ELM ST	ACTON
23 CENTRAL ST	E2-289	SUNDBERG ROBERT A TRUSTEE	ROBERT'S SON TRUST	20 HENLEY ROAD	ACTON
01 MASS AV BEHIND	F2-75-14	DONOHOE MARK T	YOUNAMEIT REALTY CO	8 KNOWLTON DR	ACTON
8 WRIGHT TERR	F2.A-1	RICE JOSEPH H		18 WRIGHT TERR	ACTON
1 MEAD TERR	F2.A-1-1	TABOR ROBERT J	VICTORIA N	11 MEAD TER	ACTON
11 CENTRAL ST	F2.A-2	FORD ELIZABETH A	ROGERS JOSEPH D	311 CENTRAL ST	ACTON
15 CENTRAL ST	F2.A-2-1	SUNDBERG ROBERT TRUSTEE	ROBERTS SONS TRUST	20 HENLEY ROAD	ACTON
13 CENTRAL ST	F2.A-2-2	WAJDA JOHN	WAJDA PATRICIA K	313 CENTRAL ST	ACTON
17 CENTRAL ST	F2.A-2-3	SUNDBERG ROBERT A TRUSTEE	ROBERT'S SON TRUST	20 HENLEY ROAD	ACTON
07 CENTRAL ST BESIDE	F2.A-2-4	PIANTEDOSI RUDOLPH A	PIANTEDOSI FLORENCE M	309 CENTRAL STREET	ACTON
HOUGHTON LN	F2.A-4	CHEN FRANK	WANG ZHAO YI	6 HOUGHTON LN	ACTON
HOUGHTON LN	F2.A-5	HOLLAND DAVID N	HOLLAND MICHELLE B	5 HOUGHTON LANE	ACTON

HOUGHTON LN	F2.A-6	WALL MICHAEL J	LYNDON ORRAINE M	3 HOUGHTON LANE	ACTON
HOUGHTON LN	F2.A-7	VANDEGRIFT JEFFREY C	VANDE T TINEKE	4 HOUGHTON LANE	ACTON
HOUGHTON LN	F2.A-9	ASEBROOK MICHAEL	ASEBROOK MIKAELA DEYOUNG	2 HOUGHTON LN	ACTON
69 ARLINGTON ST	F2.A-10	LOWITT PETER C	LOWITT MARILYN K	169 ARLINGTON ST	ACTON
81 ARLINGTON ST	F2.A-13	MILL DAM TRUST	C/O BARBARA KEIZER	1 LEXINGTON ROAD	CONCORD
75 ARLINGTON ST	F2.A-14	LIN MIN-CHENG	VAN-ROONG WANG LIN	175 ARLINGTON ST	ACTON
08 CENTRAL ST	F2.A-16	BETTINSON ROBERT A	BETTINSON STACIE D	308 CENTRAL ST	ACTON
12 CENTRAL ST	F2.A-16-1	WU SHUYUN	ZHANG RONGHUA	312 CENTRAL ST	ACTON
10 CENTRAL ST	F2.A-16-3	HORA JOSEPH L	HORA PENNY R PITAN	310 CENTRAL ST	ACTON
8 SPRUCE ST	F2.A-17	JENKS DOROTHY TRUSTEE	LITTLE LANTERN RLTY TR	68 SPRUCE ST	ACTON
1 SPRUCE ST	F2.A-18	FRANK KENNETH A	FRANK JEANNETTE I	51 SPRUCE ST	ACTON
1 SPRUCE ST	F2.A-18-1	SMITH AIDEN T	REGAN-SMITH ELLEN	61 SPRUCE ST	ACTON
1 SPRUCE ST	F2.A-18-2	FLANNERY JR EDWARD W		41 SPRUCE ST	ACTON
0 SPRUCE ST	F2.A-19	JENKS DOROTHY TRUSTEE	LITTLE LANTERN RLTY TR	68 SPRUCE STREET	ACTON
15 ARLINGTON ST	F2.A-20	CICCONE SCOTT A	CICCONE KELLY MORAN	197 ARLINGTON ST	ACTON
99 ARLINGTON ST	F2.A-20-1	TOWN OF ACTON		472 MAIN STREET	ACTON
05 ARLINGTON ST	F2.A-20-2	REAGAN RONALD J	LAMBERT DIANE M	205 ARLINGTON ST	ACTON
11 ARLINGTON ST	F2.A-20-3	YEN WILLIAM	YEN MARGARET	211 ARLINGTON ST	ACTON
95 ARLINGTON ST	F2.A-21	MARDEN KURT M	MARDEN JACQUELINE J	550 OLD HARVARD RD	BOXBOROUGH
82 ARLINGTON ST	F2.A-22-1	BOURDAGE STEPHANIE	BRAUN CHRIS	182 ARLINGTON ST	ACTON
90 ARLINGTON ST	F2.A-22-2	TOWN OF ACTON		190 ARLINGTON ST	ACTON
4 SPRUCE ST	F2.A-23	BETTEZ RYAN J + ERIN O	BETTEZ DENNIS R + LOUISE M	46 SUMMER STREET	ACTON
2 SPRUCE ST	F2.A-24	BETTEZ RYAN J + ERIN O	BETTEZ DENNIS R + LOUISE M	46 SUMMER STREET	ACTON
9 SPRUCE ST	F2.A-25	KENNEDY JULIANA P	PETERSON ANDREW B	39 SPRUCE ST	ACTON
09 CENTRAL ST	F2.A-27	PIANTEDOSI RUDOLPH	FLORENCE	309 CENTRAL ST	ACTON
0 SPRUCE ST	F2.A-28	GOGAN JR ROBERT M	ADDISON FRANN S	40 SPRUCE ST	ACTON
98 ARLINGTON ST	F2.A-29	REED MARGOT		198 ARLINGTON STREET	ACTON
10 ARLINGTON ST	F2.A-29-1	THOMPSON DOUGLAS A		210 ARLINGTON ST	ACTON
WEST RD	F2.A-29-2	WILSON BONNIE L		2 WEST RD	ACTON
WEST RD	F2.A-29-3	CHU YU-MEI		3 WEST RD	ACTON
WEST RD	F2.A-29-4	LALA KANAYO H	LALA SONI	4 WEST ROAD	ACTON
07 CENTRAL ST	F2.A-32	PIANTEDOSI RUDOLPH	FLORENCE	309 CENTRAL ST	ACTON
5 SPRUCE ST	F2.A-33	HARRIS HELEN E	GRANEY MARK R ET AL	33 SPRUCE STREET	ACTON
21 ARLINGTON ST	F2.A-34	FLANNERY CECELIA JOAN		544 MASSACHUSETTS AVE	ACTON
19 ARLINGTON ST	F2.A-35	PETERSON N ROBERT	MORSE KAREN J	219 ARLINGTON ST	ACTON
HALF MOON HILL	E2-239-12	NOVAK CAROL A	MEYERS REBECCA B	4 HALF MOON HILL	ACTON
1 HALF MOON HILL	E2-239-19	CAPASSO NICHOLAS J	SOUTHWICK ANDREA M	11 HALF MOON HILL	ACTON
4 HALF MOON HILL	E2-239-22	SAKS JANE		14 HALF MOON HILL	ACTON
5 HALF MOON HILL	E2-239-23	GROHER DANIEL	JICK SUSAN	15 HALF MOON HILL	ACTON
6 HALF MOON HILL	E2-239-24	FREEMAN WILLIAM T	OSMAN FRANCES J	16 HALF MOON HILL	ACTON
9 HALF MOON HILL	E2-239-27	PARKER ADAM L	KETELSEN LEE	19 HALF MOON HILL	ACTON
0 HALF MOON HILL	E2-239-28	ROSENFELD KENNETH S.	JENNIFER E. BIXBY	2290 CERVANTES WAY	CAMPBELL
1 HALF MOON HILL	E2-239-29	LEWIN-BERLIN STEPHEN T.	MARCIA LEWIN-BERLIN	21 HALF MOON HILL	ACTON
2 HALF MOON HILL	E2-239-30	SALEM JAMES C	SALEM SUSAN C	22 HALF MOON HILL	ACTON
3 HALF MOON HILL	E2-239-31	BEIN WARD E.	PRISCILLA D. BOLTE	23 HALF MOON HILL	ACTON
4 HALF MOON HILL	E2-239-32	BRADLEY MICHAEL J.	BRADLEY CARYN L.	24 HALF MOON HILL	ACTON

1 ELM ST UNIT 1	E2-240-111	ANTONELLI KEVIN M	PATTON CINDY A	11 ELM STREET #1	ACTON
1 ELM ST UNIT 2	E2-240-112	TAYLOR KATHLEEN E	AGNES TAYLOR	11 ELM STREET NO 2	ACTON
1 ELM ST UNIT 3	E2-240-113	DHILLA ESMAIL F	DHILLA MUNIRA E	11 ELM ST UNIT 3	ACTON
1 ELM ST UNIT 4	E2-240-114	HAHN VIRGINIA C	VIRGINIA C HAHN 2005 REV TRUST	11 ELM ST UNIT 4	ACTON
1 ELM ST UNIT 5	E2-240-115	GODOY ROBERT	GODOY ROSARIO MORENO	11 ELM ST UNIT 5	ACTON
1 ELM ST UNIT 6	E2-240-116	ALLARD PATRICIA L		PO BOX 2874	ACTON
1 ELM ST UNIT 7	E2-240-117	MOORE MARSHALL P		11 ELM ST UNIT 7	ACTON
1 ELM ST UNIT 8	E2-240-118	BLUE BIRD TRUST	C/O MARY BLANCHETTE	81 ROBBINS STREET	ACTON
ELM ST UNIT 1	E2-240-301	PAREKH KETAN	PAREKH HEMALI	3 ELM ST UNIT 1	ACTON
ELM ST UNIT 2	E2-240-302	BRAUN THOMAS J		22 HIGH STREET	MEDFIELD
ELM ST UNIT 3	E2-240-303	MACDONALD ALEXANDER S		1612 W HILL ROAD	LINCOLN
ELM ST UNIT 4	E2-240-304	SMITH NORMA P		3 ELM ST UNIT 4	ACTON
ELM ST UNIT 5	E2-240-305	DAVIES DONNA J		3 ELM ST #5	ACTON
ELM ST UNIT 6	E2-240-306	EBERLY BARRY L		3 ELM ST UNIT 6	ACTON
ELM ST UNIT 7	E2-240-307	MACMILLAN PAUL W	MACMILLAN JENNIFER B	3 ELM ST UNIT 7	ACTON
ELM ST UNIT 8	E2-240-308	SUBRAMONY SENAPATHY		3 ELM ST UNIT 8	ACTON
ELM ST UNIT 1	E2-240-501	SOAR ELIZABETH	C/O ELIZABETH ORCUTT	28 ELM ST	GROTON
ELM ST UNIT 2	E2-240-502	HOEY PATRICK TRUSTEE	HOEY JANE TRUSTEE	5 ELM ST UNIT 2	ACTON
ELM ST UNIT 3	E2-240-503	VACEK MARTIN	VACEK IVANNA	5 ELM ST UNIT 3	ACTON
ELM ST UNIT 4	E2-240-504	ABREU HUDSON X	ABREU REGINA C	5 ELM ST UNIT 4	ACTON
ELM ST UNIT 5	E2-240-505	ZENG SHENGYOU		5 ELM ST UNIT 5	ACTON
ELM ST UNIT 6	E2-240-506	FOX NANCY KAY	C/O CAROL STORRS	5 ELM STREET #6	ACTON
ELM ST UNIT 7	E2-240-507	WEAVER LOREN F + WEAVER MARGAR	C/O WEAVER STERLING + JEAN	5 ELM ST UNIT 7	ACTON
ELM ST UNIT 8	E2-240-508	LANDERS DIANNA		5 ELM ST UNIT 8	ACTON
ELM ST UNIT 1	E2-240-701	SANYAL JHILAM		7 ELM ST UNIT 1	ACTON
ELM ST UNIT 2	E2-240-702	BURROWS JOAN		7 ELM STREET #2	ACTON
ELM ST UNIT 3	E2-240-703	MURPHY CYRIL J		7 ELM ST UNIT 3	ACTON
ELM ST UNIT 4	E2-240-704	GRIFFIN MAUREEN		7 ELM ST NO 4	ACTON
ELM ST UNIT 5	E2-240-705	LIU XIANGHAI	QU FENG	236 PARKER STREET	ACTON
ELM ST UNIT 6	E2-240-706	MAGZELCI MURAT	IRENA & SEMA MAGZELCI	7 ELM ST UNIT 6	ACTON
ELM ST UNIT 7	E2-240-707	DOHERTY SHARON B		7 ELM ST UNIT 7	ACTON
ELM ST UNIT 8	E2-240-708	PAIGE WILLIAM H		7 ELM ST UNIT 8	ACTON
ELM ST UNIT 1	E2-240-901	PRENDERGAST REBECCA A		53 BELLINGTON STREET	ARLINGTON
ELM ST UNIT 2	E2-240-902	CUSHMAN GEORGE P JR		9 ELM ST UNIT 2	ACTON
ELM ST UNIT 3	E2-240-903	SONG WEI		9 ELM ST UNIT 3	ACTON
ELM ST UNIT 4	E2-240-904	CURRAN THOMAS J	CURRAN KATHLEEN M	9 ELM ST UNIT 4	ACTON
ELM ST UNIT 5	E2-240-905	SIEGEL HOWARD D		71 MONADNOCK DR	CHESTNUT HILL
ELM ST UNIT 6	E2-240-906	SIEGEL HOWARD D		71 MONADNOCK DR	CHESTNUT HILL
ELM ST UNIT 7	E2-240-907	BRADEN ANN	C/O VIGNA ANTHONY AND SABRIN	9 ELM ST UNIT 7	ACTON
ELM ST UNIT 8	E2-240-908	UTT RICHARD W	UTT MARY H	9 ELM ST UNIT 8	ACTON

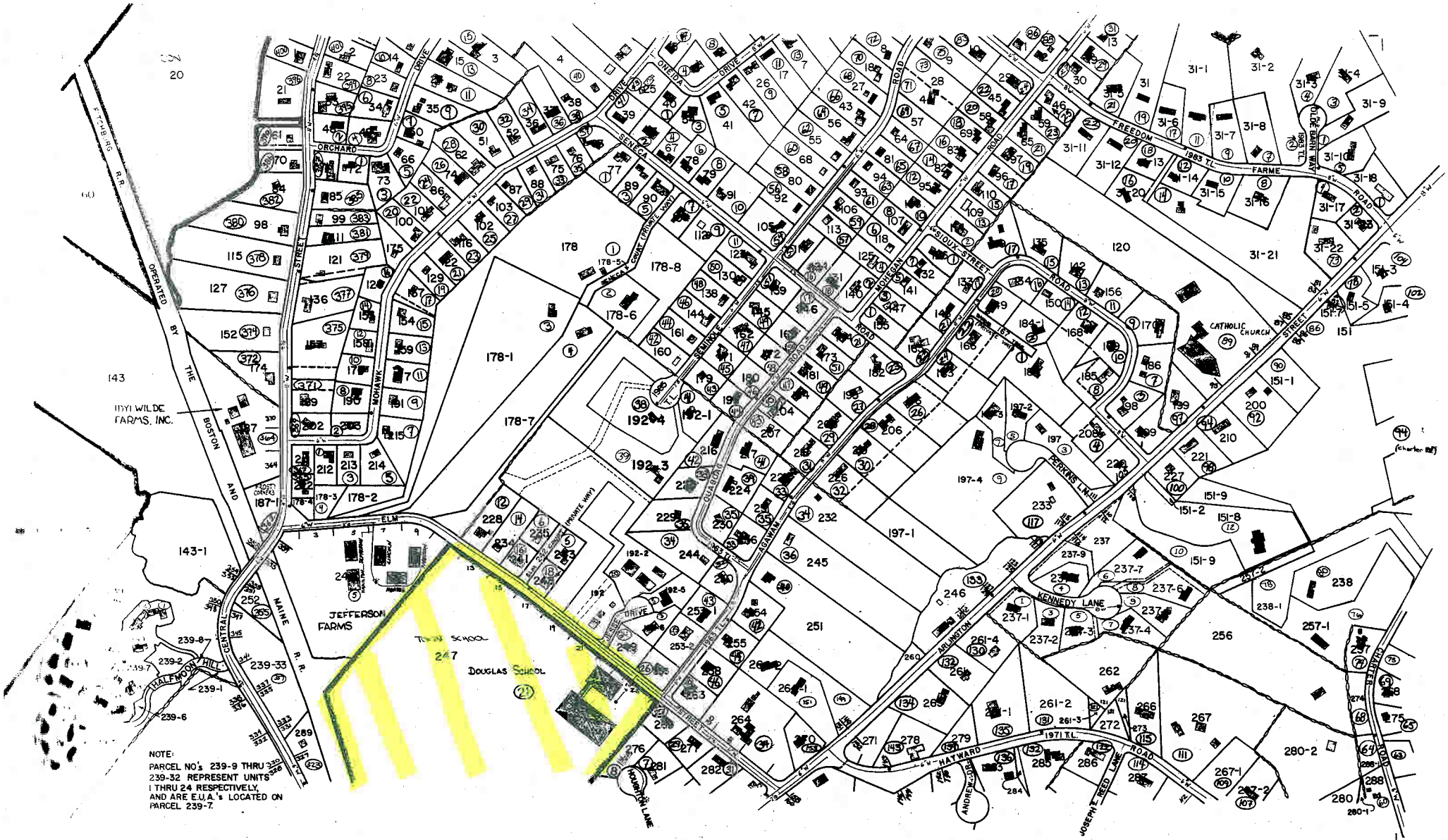
butters and owners of land directly opposite on any public or private street or way and abutters to the abutters within three hundred feet of the roperty line all as they appear on the most recent applicable tax list.

IEARING NOTICES FOR ALL SPECIAL PERMITS MUST BE SENT TO THE 'LANNING BOARD, TOWN HALL IN THE FOLLOWING TOWNS:

oxborough, MA 017 Maynard, MA 01754 Concord, MA 01742 Littleton, MA 01460
arlisle, MA 01741 Stow, MA 01775 Westford, MA 01886 Sudbury, MA 01776

mberly Hoyt 6-Jun-07
ssessing Clerk
cton Assessors Office

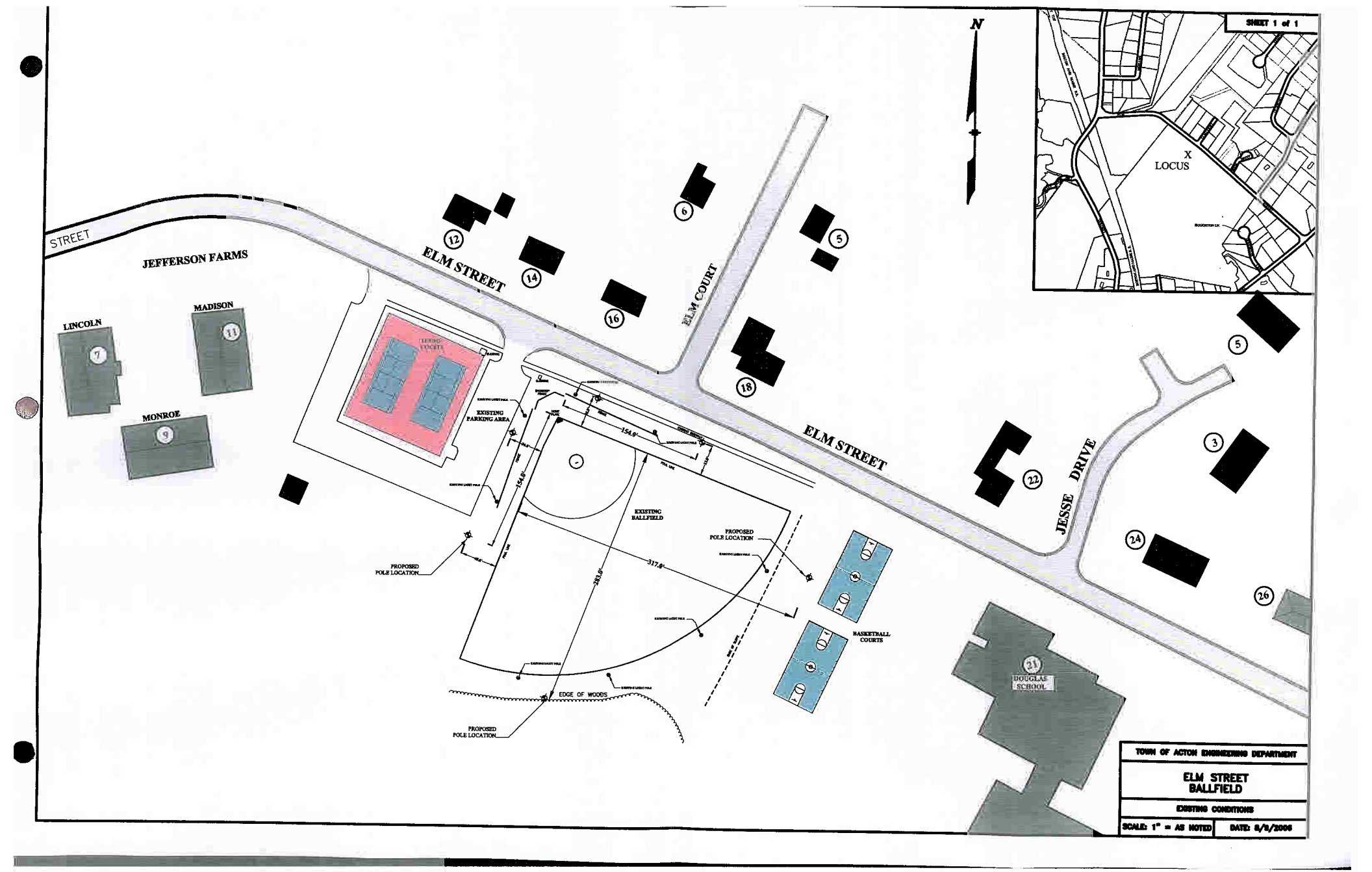
E-2

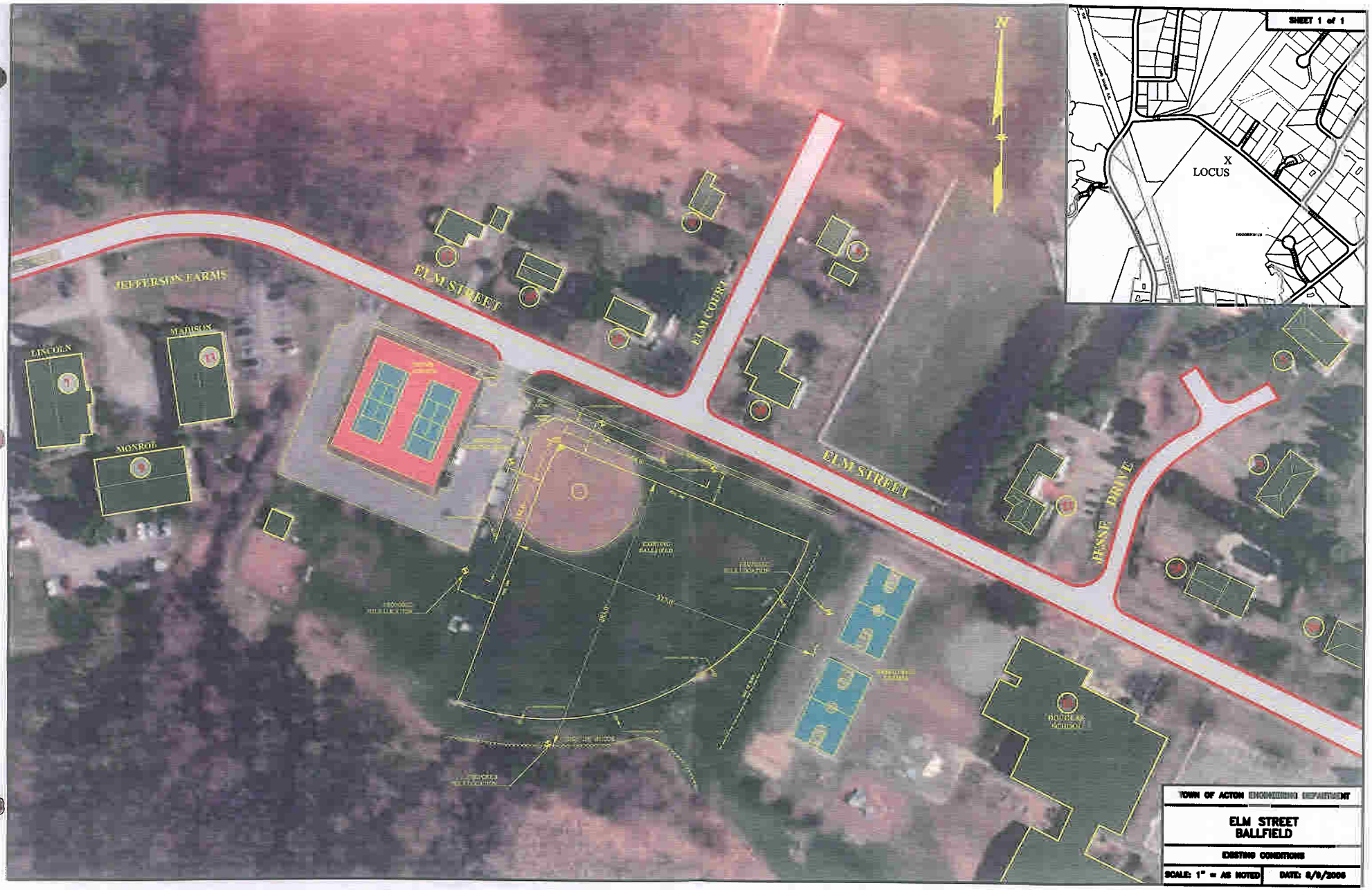


	D-2	D-3
E-1	E-2	E-3
F-1	F-2A F-2B	F-2	F-3

TOWN of ACTON

E-2


SHEET 1 of 1
X
LOCUS
N
STREET
JEFFERSON FARMS
ELM STREET
ELM COURT
ELM STREET
JESSE DRIVE
LINCOLN
7
MADISON
11
MONROE
9
12
14
16
6
5
18
22
5
3
24
26
TENNIS COURTS
EXISTING PARKING AREA
EXISTING BALLFIELD
PROPOSED POLE LOCATION
PROPOSED POLE LOCATION
PROPOSED POLE LOCATION
154.0'
154.8'
317.0'
283.0'
EDGE OF WOODS
BASKETBALL COURTS
21
DOUGLAS SCHOOL
TOWN OF ACTON ENGINEERING DEPARTMENT
ELM STREET
BALLFIELD
EXISTING CONDITIONS
SCALE: 1" = AS NOTED
DATE: 8/8/2006


N
SHEET 1 of 1
X
LOCUS
JEFFERSON FARMS
ELM STREET
ELM COURT
ELM STREET
JESSE DRIVE
LINCOLN
MADISON
MONROE
EXISTING BALLFIELD
PROPOSED BALLFIELD
DOUGLAS SCHOOL
TOWN OF ACTON ENGINEERING DEPARTMENT
ELM STREET
BALLFIELD
EXISTING CONDITIONS
SCALE: 1" = AS NOTED
DATE: 8/8/2006

Presented to:

Elm Street Field
Softball Lighting Project
Acton, Massachusetts
June 1, 2007

Project #122070

Light·Structure GREEN™

Submitted by:

Musco Sports Lighting, LLC
2107 Stewart Road
Muscatine, Iowa 52761
Local Phone: 563-263-2281
Toll Free: 800-756-1205
Fax: 800-374-6402

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Acton, Massachusetts

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SUBMITTAL CHECKLIST

Design Submittal Data Checklist and Certification

All items listed below are **mandatory**, shall comply with the specification and be provided with the bid.

Tab	Item	Description
A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
B	On Field Lighting Design/Field Layout	Lighting design drawing(s) showing: a. Field Name, date, file number, prepared by, and other pertinent data b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), or homeplate for baseball/softball fields. Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, as well as luminaire information including wattage, lumens and optics d. Height of meter above field surface e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance and uniformity gradient; number of luminaries, total kilowatts, average tilt factor; light loss factor. f. Alternate manufacturers shall provide both initial and maintained light scans using a maximum 0.70 Light Loss Factor to calculate maintained values. g. Drawing showing field layouts with pole locations.
C	Off Field Lighting Design	Lighting design drawing showing initial vertical spill light levels along the boundary line (defined on bid drawings) in footcandles. Vertical levels shall be at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank lights.
D	Life Cycle Cost calculation	Document life cycle cost calculations as defined in the specification. Identify energy costs for operating the luminaires, maintenance cost for the system including spot lamp replacement, and group relamping costs. All costs should be based on 25 years.
E	Luminaire Aiming Summary	Document showing each luminaire's aiming angle and the poles on which the luminaries are mounted. Each aiming point shall identify the type of luminaire.
F	Structural Information (if required)	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of Massachusetts.
G	Control and Monitoring	Manufacturer shall provide written definition and schematics for automated control system to include monitoring. They will also provide examples of system reporting and access for numbers for personal contact to operate the system.
HI	Electrical distribution plans	If bidding an alternate system, manufacturer must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of Massachusetts.
I	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed per specification for 25 years.
J	Warranty	Provide written warranty information including all terms and conditions.
K	Project References	Manufacturer to provide a list of project references of similar projects completed within the past three years.
L	Product Information	Complete set of product brochures for all components, including a complete parts list and UL Listings.
M	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications.
N	Compliance	Manufacturer shall sign off that all requirements of the specifications have been met at that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in item N – Non-Compliance

Manufacturer: Musco Lighting, Inc

Contact Name: Margaret Varela

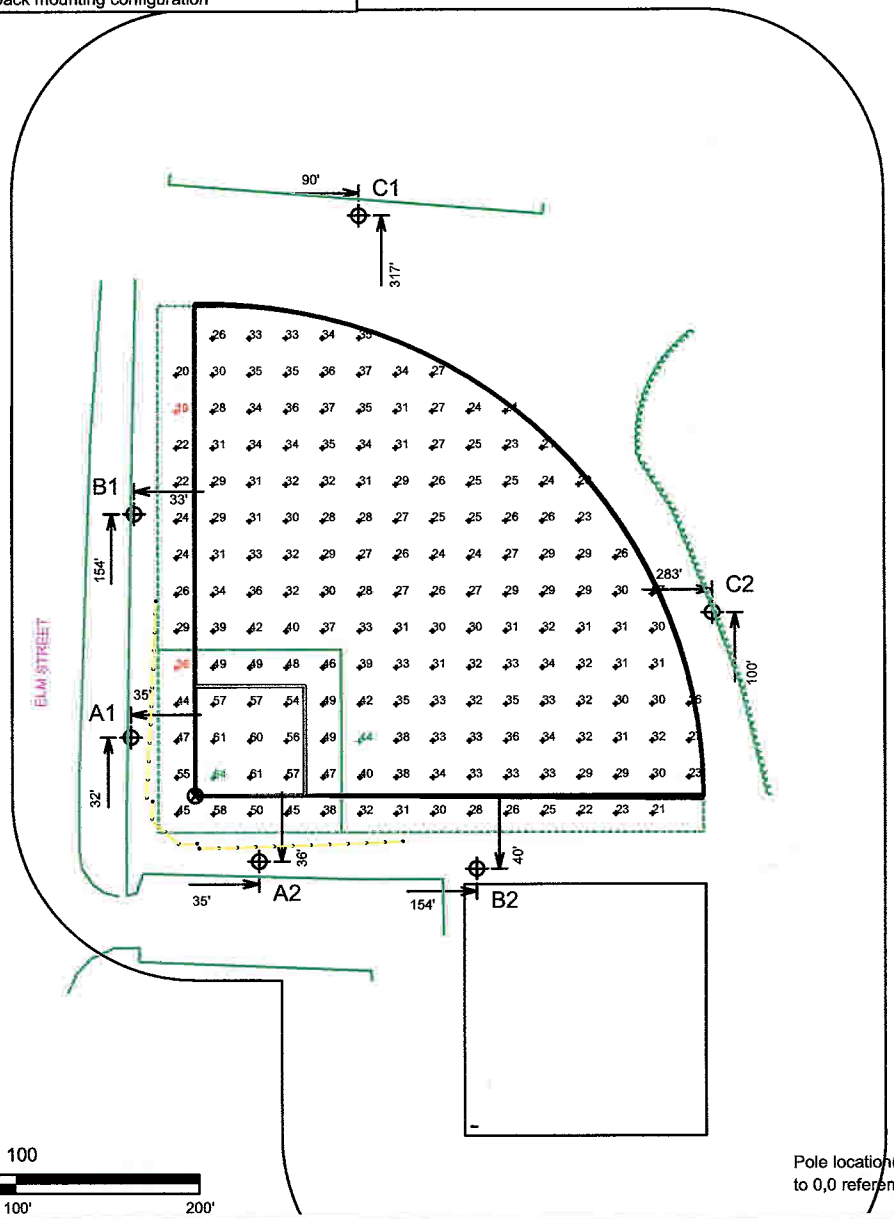
Signature: Margaret Varela

Phone: 800-756-1205 **Date:** 06-01-07

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	70'	1500W MZ	3	3	0
1	B1	80'	-	80'	1500W MZ	6	6	0
1	B2	80'	-	80'	1500W MZ	6/4*	6	4
1	C1	80'	-	80'	1500W MZ	8	5	3
1	C2	80'	-	80'	1500W MZ	7	5	2
6	← TOTALS →					37	28	9

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Softball
Elm St Field
Acton, MA

Softball
· Size: 268'/275'/278' - 60' Basepath
· Grid Spacing = 20.0' x 20.0'
· Values given at 3.0' above grade

· Luminaire Type: Green Generation
· Rated Lamp Life: 5000 hours
· Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Infield	Outfield
No. of Target Points:	25	147
Average:	51.4	30.2
Maximum:	64	44
Minimum:	36	19
Avg/Min:	1.41	1.55
Max/Min:	1.76	2.26
UG (Adjacent Pts):	1.50	1.50
CV:	0.14	0.16

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	28
Avg KW over 5000 hours:	43.79
Max KW:	47.6

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Micha Hudack

File #: 122070ar2 Date: 31-May-07

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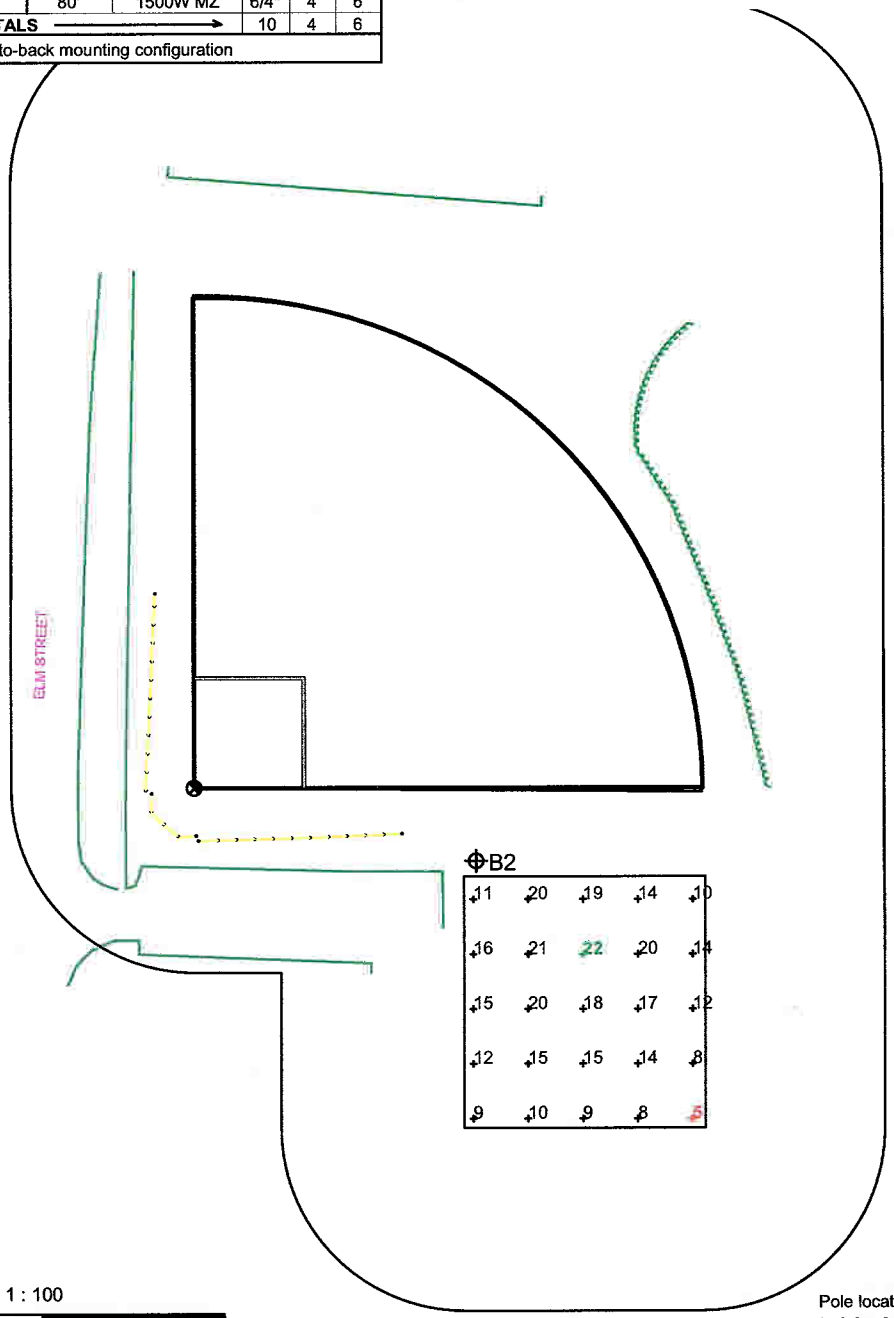
Print Date (31/May/2007) & Time (15:05)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	B2	80'	-	80'	1500W MZ	6/4*	4	6
1	← TOTALS →					10	4	6

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

musco GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Area 3 Practice

Elm St Field
Acton, MA

Area 3 Practice
· Grid Spacing = 30.0' x 30.0'
· Values given at 3.0' above grade

· Luminaire Type: Green Generation
· Rated Lamp Life: 5000 hours
· Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	25
Average:	14.2
Maximum:	22
Minimum:	5
Avg/Min:	2.83
Max/Min:	4.40
UG (Adjacent Pts):	1.80
CV:	0.33

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	4
Avg KW over 5000 hours:	6.26
Max KW:	6.8

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

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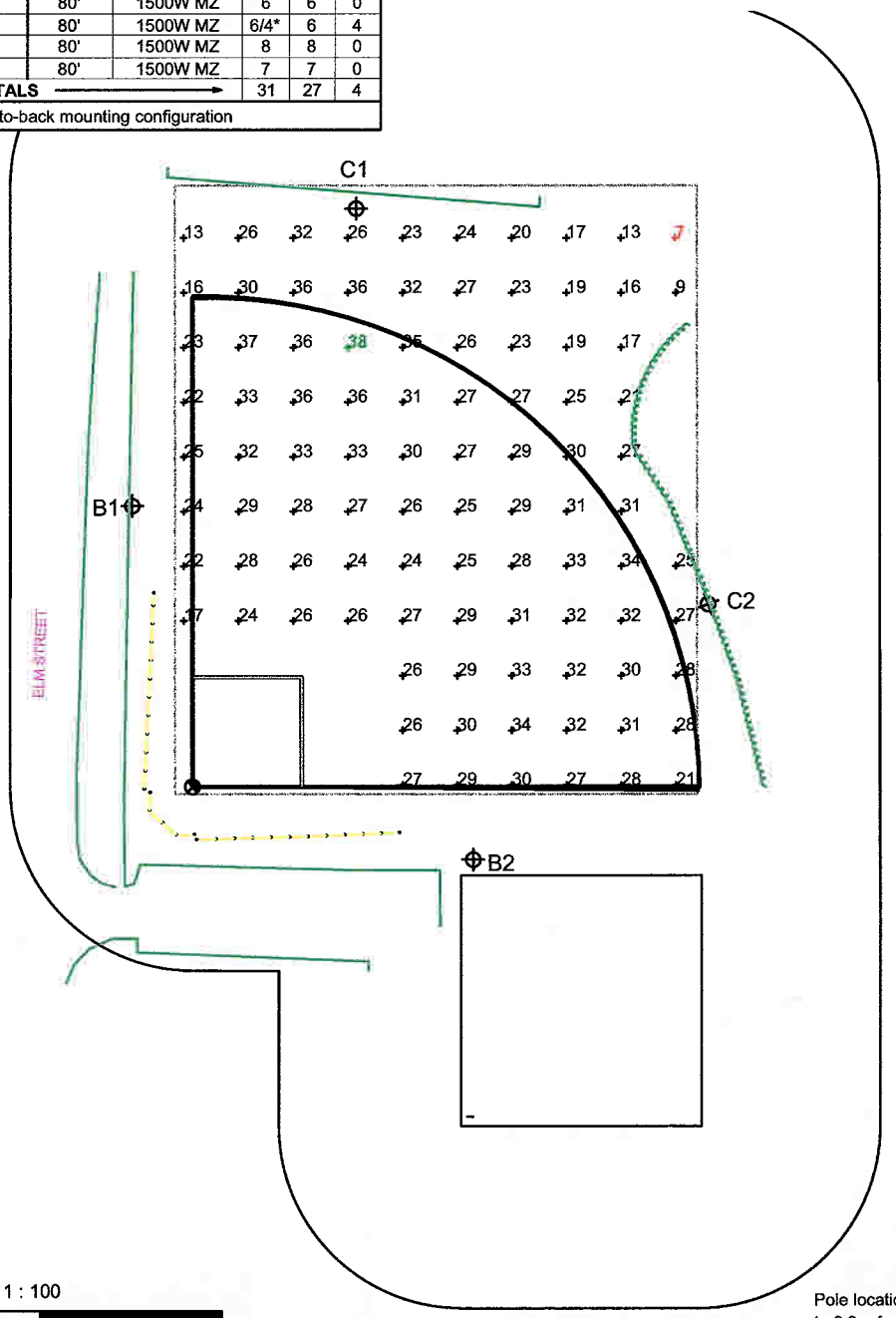
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	B1	80'	-	80'	1500W MZ	6	6	0
1	B2	80'	-	80'	1500W MZ	6/4*	6	4
1	C1	80'	-	80'	1500W MZ	8	8	0
1	C2	80'	-	80'	1500W MZ	7	7	0
4	← TOTALS →					31	27	4

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MUSCO GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Area 2 Practice

Elm St Field
Acton, MA

Area 2 Practice
· Grid Spacing = 30.0' x 30.0'
· Values given at 3.0' above grade

· Luminaire Type: Green Generation
· Rated Lamp Life: 5000 hours
· Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	94
Average:	27.0
Maximum:	38
Minimum:	7
Avg/Min:	4.01
Max/Min:	5.61
UG (Adjacent Pts):	1.97
CV:	0.22

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	27
Avg KW over 5000 hours:	42.23
Max KW:	45.9

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

By: Micha Hudack

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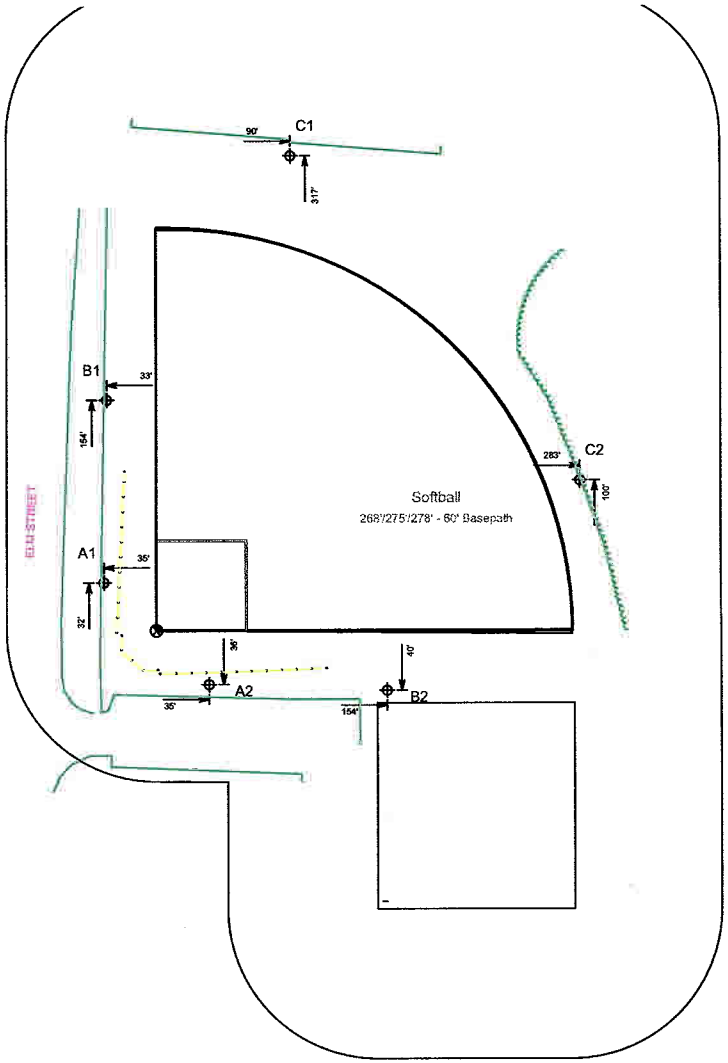

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) ✦ dimensions are relative to 0,0 reference point(s) ⊗

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GUARANTEED PERFORMANCE

EQUIPMENT LAYOUT

Elm St Field
Acton, MA

INCLUDES:
- Softball

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
2	A1-A2	70'	-	70'	1500W MZ	3
1	B1	80'	-	80'	1500W MZ	6
1	B2	80'	-	80'	1500W MZ	6/4*
1	C1	80'	-	80'	1500W MZ	8
1	C2	80'	-	80'	1500W MZ	7
6	← TOTALS →					37

* This structure utilizes a back-to-back mounting configuration

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.98 min power factor)		Line Amperage Per Luminaire (max draw)							
Single Phase Voltage		120 (60)	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	415 (60)	480 (60)
1500 watt MZ	Max	-	8.6	7.7	7.5	6.5	5.1	4.7	-	3.7
	Min	11.7	6.7	6.0	5.9	5.1	4.0	3.7	X	2.9

By: Micha Hudack

File #: 122070ar2 Date: 31-May-07

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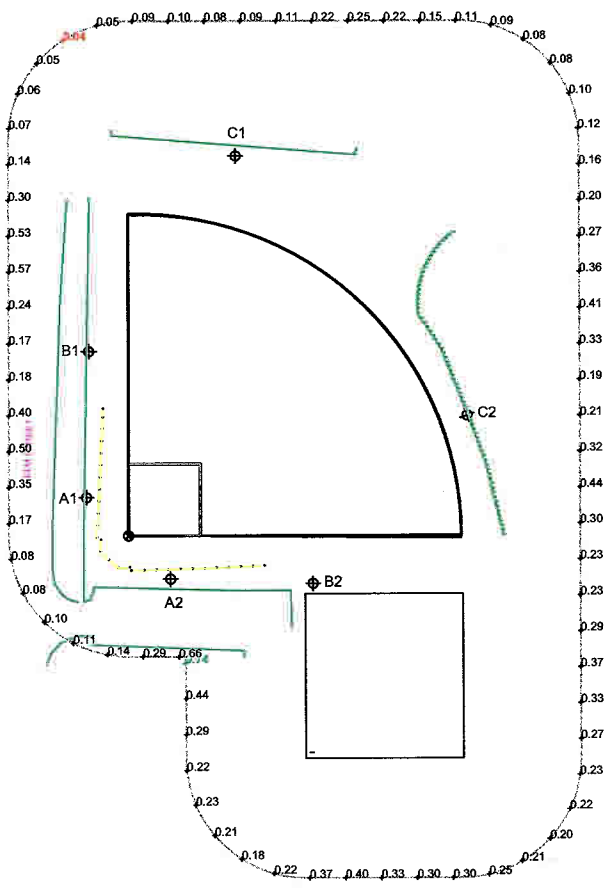

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ✥ dimensions are relative to 0,0 reference point(s) ⊗

MUSCO
GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Spill @ 100'
Elm St Field
Acton, MA

Spill @ 100'
· Grid Spacing = 30.0'
· Values given at 6.0' above grade

· Luminaire Type: Green Generation
· Rated Lamp Life: 5000 hours
· Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	73
Average:	0.239
Maximum:	0.74
Minimum:	0.04

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	31
Avg KW over 5000 hours:	48.48
Max KW:	52.7

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

Exhibit B 1

By: Micha Hudack

File #: 122070ar2 Date: 31-May-07

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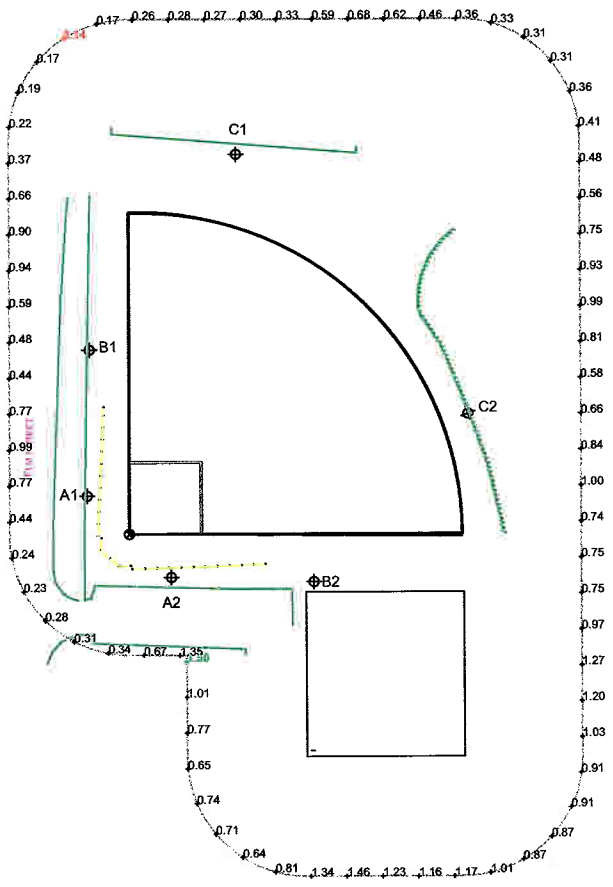

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Spill @ 100'
Elm St Field
Acton, MA

Spill @ 100'
- Grid Spacing = 30.0'
- Values given at 6.0' above grade

- Luminaire Type: Green Generation
- Rated Lamp Life: 5000 hours
- Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION
MAX VERTICAL FOOTCANDLES

	Entire Grid
No. of Target Points:	73
Average:	0.679
Maximum:	1.50
Minimum:	0.14

Average Lamp Tilt Factor:	1.000
Number of Luminaires:	31
Avg KW over 5000 hours:	48.48
Max KW:	52.7

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

Exhibit B-2

By: Micha Hudack

File #: 122070ar2 Date: 31-May-07

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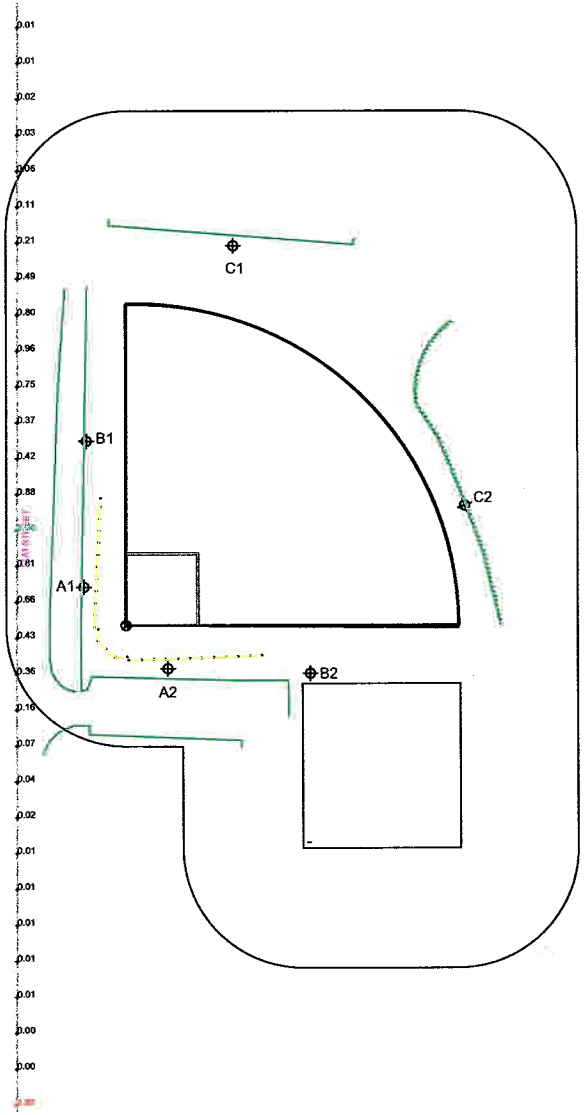

musco
GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Property Line
Elm St Field
Acton, MA

Property Line
· Grid Spacing = 30.0'
· Values given at 3.0' above grade

· Luminaire Type: Green Generation
· Rated Lamp Life: 5000 hours
· Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION
HORIZONTAL FOOTCANDLES

	Entire Grid
No. of Target Points:	31
Average:	0.282
Maximum:	1.00
Minimum:	0.00
Average Lamp Tilt Factor:	1.000
Number of Luminaires:	37
Avg KW over 5000 hours:	57.87
Max KW:	62.9

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 100

0 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

By: Micha Hudack
File #: 122070ar2 Date: 31-May-07

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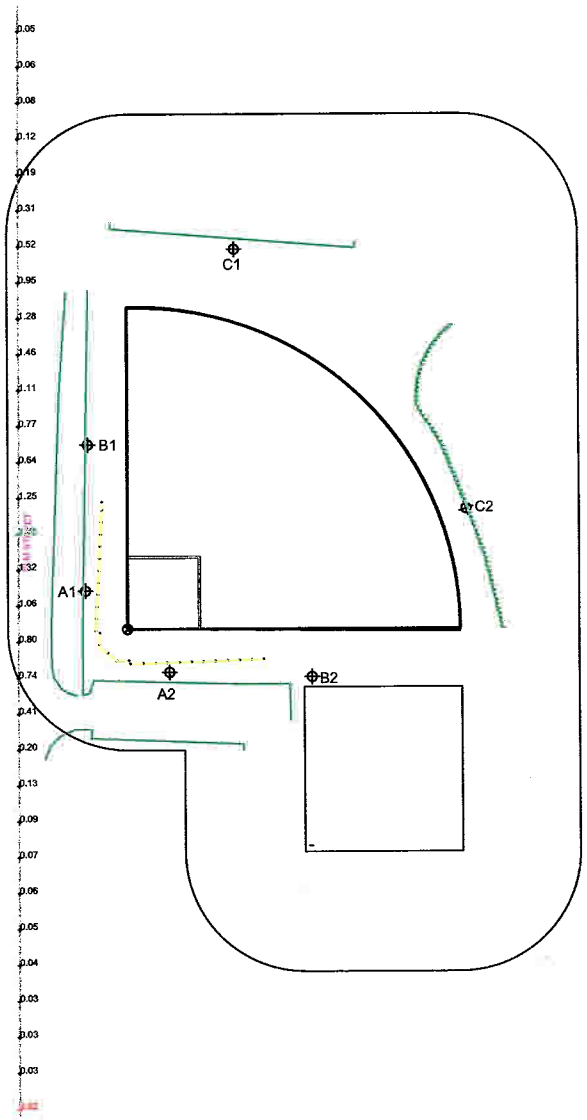

musco
GREEN GENERATION LIGHTING

GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Property Line
Elm St Field
Acton, MA

Property Line
· Grid Spacing = 30.0'
· Values given at 3.0' above grade

· Luminaire Type: Green Generation
· Rated Lamp Life: 5000 hours
· Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION
MAX VERTICAL FOOTCANDLES

	Entire Grid
No. of Target Points:	31
Average:	0.49
Maximum:	1.52
Minimum:	0.02
Average Lamp Tilt Factor:	1.000
Number of Luminaires:	37
Avg KW over 5000 hours:	57.87
Max KW:	62.9

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/-10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

Exhibit B 4

SCALE IN FEET 1 : 100
0' 100' 200'

Pole location(s) ⌖ dimensions are relative to 0,0 reference point(s) ⊗

By: Micha Hudack
File #: 122070ar2 Date: 31-May-07

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Print Date (31/May/2007) & Time (15:07)

25-Year Life Cycle Cost

Elm St Field
Acton, MA

Prepared for: Mr. Jack Blais, Blais Electrical Corp
06/04/07

	Prior Technology	Light-Structure Green	Your Savings
Hours	3,750	3,750	
Average kW	100.4	57.9	
Energy	$37,665	$21,701	$15,965
Group Relamp	$9,687	$0	$9,687
Lamp Maintenance	$3,750	$0	$3,750
Controls - Energy	$9,416	$0	$9,416
Controls - Labor	$0	$0	$0
25-Year Life Cycle Cost	$60,519	$21,701	$38,818

Assumptions

Field Name	Annual Operating Hours	Energy Cost per kWh	Prior Technology		Light-Structure Green		Controls Energy Savings	Labor Rate per Hour	# On/Off Cycles per Year	Labor Hours per Cycle
			Fixtures	Avg kW	Fixtures	Avg kW				
Baseball field	150	$0.10	62	100.4	37	57.9	25.0%	N/A	N/A	N/A

NOTE:
Life cycle costs are based upon the assumptions given by the customer above. Any variation in this data will change the life cycle cost proportionately. Group Relamp calculates using a per lamp replacement cost of $125, including parts, equipment, and labor. Useful lamp life of Prior Technology is 3000 hours. Musco guarantees the average Light-Structure Green system kW and 5000 hours useful life of the lamp.

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122070 PV9 Brenda McQuillen

We Make It Happen.

Pole ID	Dimensioned From	Pole Location X	Pole Location Y	Light Bank Mounting Height	Reflector NEMA Type	Aiming Point X	Aiming Point Y	Aiming Point Z	Aiming Angle HOR	Aiming Angle VER	Group
A1	Softball	-35.00	32.00	70.00	5	19.37	88.20	0.00	L 45.0	42.12	D
					5	76.04	55.51	0.00	L 12.0	31.38	D
					5	10.65	-9.45	0.00	R 41.0	49.06	D
A2	Softball	35.00	-36.00	70.00	5	-8.10	8.86	0.00	L 42.6	48.82	D
					5	55.55	84.28	0.00	R 9.7	29.56	D
					5	101.77	32.84	0.00	R 43.4	36.26	D
B2	Softball	154.00	-40.00	80.00	4	181.98	98.67	0.00	R 11.4	29.25	A
					4	245.04	82.55	0.00	R 36.0	27.65	A
					4	72.66	66.43	0.00	L 36.7	30.78	A
					4	43.78	11.04	0.00	L 64.9	32.68	A
					4	268.36	17.62	0.00	R 63.0	31.40	A
					4	119.20	99.97	0.00	L 14.0	28.01	A
					4	273.72	-87.06	0.00	L 68.2	32.26	C
					4	159.10	-181.55	0.00	L 3.4	29.23	C
					4	258.16	-143.03	0.00	L 45.1	28.44	C
					4	226.93	-165.54	0.00	L 30.6	28.45	C
C1	Softball	90.00	317.00	80.00	4	225.48	260.75	0.00	L 67.1	28.96	B
					4	141.27	170.96	0.00	L 19.0	27.27	A
					4	94.30	173.26	0.00	L 2.2	28.97	A
					5	18.78	222.53	0.00	R 35.8	34.28	A
					5	-1.02	289.30	0.00	R 72.8	40.32	B
					4	232.01	302.87	0.00	L 84.4	29.10	B
					4	171.20	198.59	0.00	L 34.2	28.54	A
					4	47.79	182.47	0.00	R 17.0	28.94	A
B1	Softball	-33.00	154.00	80.00	4	84.38	226.60	0.00	L 31.0	30.05	A
					4	76.34	74.72	0.00	R 35.3	30.62	A
					4	117.46	114.36	0.00	R 14.8	26.97	A
					4	16.94	254.31	0.00	L 63.2	34.85	A
					4	17.63	42.43	0.00	R 65.4	32.45	A
					4	113.97	168.42	0.00	L 5.6	27.46	A
C2	Softball	283.00	100.00	80.00	4	167.37	18.03	0.00	L 14.1	29.35	A
					4	145.07	87.00	0.00	R 15.1	29.71	A
					4	251.62	254.21	0.00	L 81.1	27.24	B
					4	187.21	194.14	0.00	R 64.5	30.67	A
					5	268.49	0.92	0.00	L 61.3	37.99	A
					4	159.07	153.89	0.00	R 43.6	29.57	A
					4	196.99	218.39	0.00	R 73.9	28.74	B

musco GREEN GENERATION LIGHTING™

GUARANTEED PERFORMANCE

AIMING SUMMARY

Elm St Field
Acton, MA

Zone Description	Groups
Zone1	AD
Zone2	C
Zone3	AB
Zone4	ABC
Zone5	ABCD

By: Cory Kitzman

File #: 122070ar2 Date: 04-Jun-07

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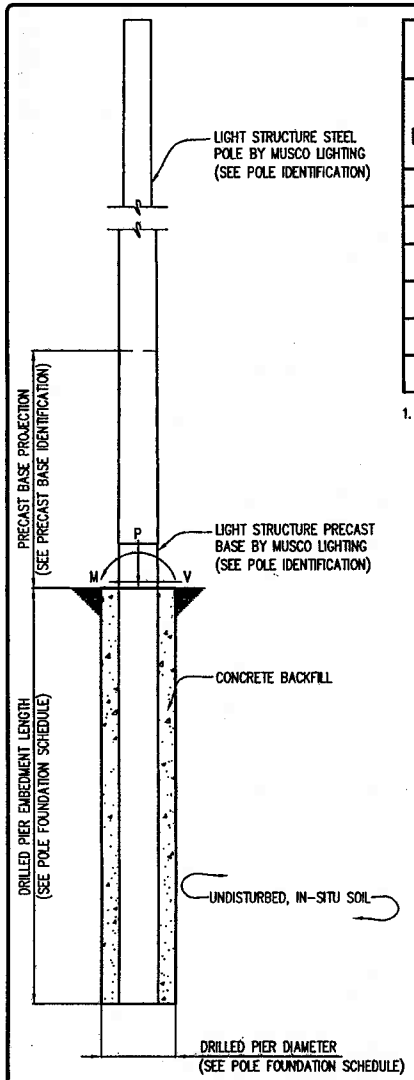


POLE FOUNDATION ELEVATION

SCALE: NOT TO SCALE

POLE FOUNDATION SCHEDULE

POLE DESIGNATION	FORCES			DRILLED PIER	
	MOMENT, (M), FT-LBS	SHEAR, (V), LBS	VERTICAL, (P), LBS (1.)	DIAMETER INCH	EMBEDMENT LENGTH
A1	50,366	1,225	1,228	36	12'-0"
A2	47,928	1,191	1,228	36	12'-0"
B1	91,267	1,828	2,059	36	14'-0"
B2	116,170	2,301	3,173	36	16'-0"
C1	106,903	2,192	2,993	36	16'-0"
C2	90,404	1,814	2,149	36	14'-0"

1. WEIGHT OF POLE, FIXTURES AND ACCESSORIES

PRECAST BASE IDENTIFICATION

PRECAST BASE TYPE	PRECAST BASE WEIGHT	PRECAST BASE LENGTH	PROJECTION ABOVE GRADE	STANDARD EMBEDMENT	OUTSIDE DIAMETER
3B	2,470	20'-0"	8'-0"	12'-0"	13.37"
4B	3,490	22'-0"	8'-0"	14'-0"	15.75"
5B	4,580	23'-11"	7'-11"	16'-0"	18.36"

POLE IDENTIFICATION

POLE DESIGNATION	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIX. PER XARM)	FIXTURE AND ACCESSORIES EPA (FT^2)
A1	LS70-A	3B	3 (3)	6.6
A2	LS70-A	3B	3 (3)	5.4
B1	LS80-A	4B	6 (3+3)	13.8
B2	LS80-B	5B	10 (3+3) / (4)	19.0
C1	LS80-B	5B	8 (4+4)	15.2
C2	LS80-A	4B	7 (4+3)	13.3

GENERAL NOTES

WIND DESIGN PARAMETERS:
WIND: 90 MPH (EXP. C, I = 1.0) PER BOCA CODE, 1999 EDITION.
DESIGN WIND PARAMETERS ARE NOTED. ACTUAL WIND SPEED AND EXPOSURE MUST BE VERIFIED FOR THE SITE BY THE PROPER GOVERNING OFFICIAL.

SOIL DESIGN PARAMETERS:
ALLOWABLE END BEARING SOIL PRESSURE: 2,000 PSF
ALLOWABLE LATERAL SOIL BEARING PRESSURE: 0 PSF/FT (GRADE TO -2'-0")
ALLOWABLE LATERAL SOIL BEARING PRESSURE: 133 PSF/FT (-2'-0" TO -4'-0")
ALLOWABLE LATERAL SOIL BEARING PRESSURE: 267 PSF/FT (BELOW -4'-0")
IN ACCORDANCE WITH THE 1997 EDITION OF THE UNIFORM BUILDING CODE, VOLUME 2, CHAPTER 18, SECTION 1806.

DESIGN SOIL PARAMETERS ARE AS NOTED. ACTUAL ALLOWABLE SOIL PARAMETERS MUST BE VERIFIED ON SITE. REFERENCE SOILS AND FOUNDATION REPORT, NO. J0022-15-01, PREPARED BY O'REILLY, TALBOT, & OKUN ASSOCIATES; SPRINGFIELD, MASSACHUSETTS.

A GEOTECHNICAL ENGINEER OR REPRESENTATIVE OF SHOULD BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

ENCOUNTERING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY OCCUR. POLE FOUNDATIONS WILL NEED TO BE ANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST. IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY. REVISIONS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A REGISTERED ENGINEER.

ALL EXCAVATIONS MUST BE FREE OF WATER, LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND CONCRETE BACKFILL PLACEMENT. TEMPORARY CASINGS OR DRILLERS SLURRY MAY BE USED TO STABILIZE THE EXCAVATION DURING INSTALLATION. CASINGS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT.

CONCRETE SHALL BE AIR-ENTRAINED AND HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 3,000 PSI. ALL PIERS AND THE CONCRETE BACKFILL MUST BEAR ON AND AGAINST FIRM UNDISTURBED SOIL. CONCRETE BACKFILL INSTALLATION LIMITED TO MAXIMUM FREE DROP OF 6'-0", TREMIE OR PUMPING TECHNIQUES SHOULD BE UTILIZED.

CONTRACTOR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS, AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.

FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION.

POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS AND INSTALLATION PER MUSCO LIGHTING.

COMMONWEALTH OF MASSACHUSETTS
KYLE G. LACINA
STRUCTURAL
No. 46148
REGISTERED PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MASSACHUSETTS.

4/9/07
KYLE G. LACINA NO. 46148 DATE:

LICENSE RENEWAL DATE: JUNE 30, 2007
DRAWING NO. COVERED BY THIS SEAL: C1

STRUCTURAL ENGINEERS, P.C.
114 NICHOLAS DRIVE MARSHALLTOWN, IOWA 50158
TELEPHONE NUMBER: 641-752-6334
EMAIL: STRUCTURALENGINEERS@SBCPC.BIZ

MUSCO SPORTS LIGHTING, LLC.
2107 STEWART ROAD MUSCATINE, IOWA 52761
563-263-2291

ELM ST
FIELD
LIGHTING
ACTON, MASSACHUSETTS

DRAWING TITLE: POLE SUPPORT FOUNDATION
SCALE: SEE PLAN
NOTES:

PROJECT NO. 122070
DATE: APRIL 9, 2007
DRAWING NO. C1
OF ONE

Control-Link Central™

Elm Street Field
Softball Lighting Project
Acton, Massachusetts

Control-Link Central™ has trained staff available 24/7

Contact Information:

Internet - www.control-link.com

Fax - 800-853-8847

Phone - 877-347-3319

Email - schedule@musco.com

MUSCO CONTROL SYSTEM SUMMARY

Project Number:	122070	
Project Name:	Elm St Field	
Prepared By:	Taron Ferguson	
Sales Rep:	Mike Berry	
Scan:	122070a	**Date:** 09/12/2006
Service Location:	1 of 1	

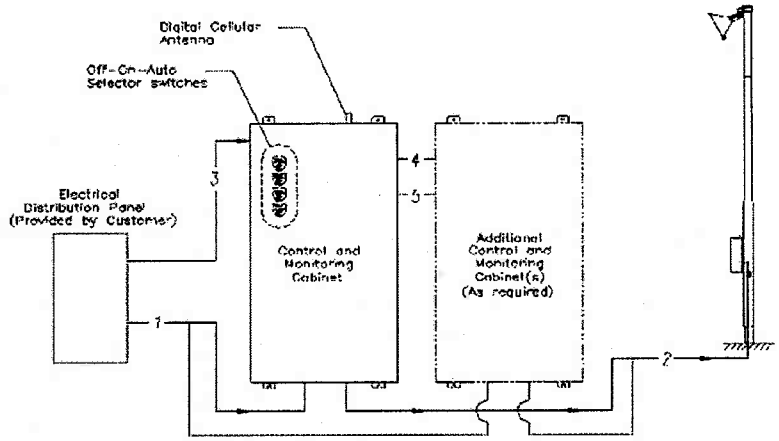
CONTROL SYSTEM TYPE: Control and Monitoring Typical

EQUIIPMENT LISTING

	DESCRIPTION	APPROXIMATE SIZE
1.	CONTROL AND MONITORING CABINET	24 X 72

	QTY	SIZE
TOTAL CONTACTORS:	9	30 AMP
TOTAL Off/On/Auto SWITCHES:	4	

Control and Monitoring Digital Typical Equipment Layout



Wiring Details

WIRE	DESCRIPTION	VOLTAGE	# OF WIRES	TYP. SIZE	NOTES	SUPPLIER
1	POWER TO LIGHTING CONTACTORS (LINE)	NOTE A	NOTE A	NOTE B	A thru E	CONTRACTOR
2	POWER FROM CONTACTORS TO POLES (LOAD)	NOTE A	NOTE A	NOTE B	A thru E	CONTRACTOR
3	CONTROL VOLTAGE (20 AMP)	120V (AC)	3	12	C,D,E	CONTRACTOR
4	CONTROL VOLTAGE HARNESSES	120V (AC)	--	--	C,D,E	MUSCO
5	MONITORING MODULE COMMUNICATION CABLE	N/A	1	--	C,D,E	MUSCO

Notes:

A. Voltage and phasing per the notes on page 2.
B. Calculate per load, voltage drop.
C. For more information on equipment, see attached drawings.
D. Refer to installation instructions for details on equipment mounting and conduit entry points.
E. Power circuits (wire #1-4) must be run in separate conduit from non-power circuits (wire #5).

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MUSCO CONTROL SYSTEM SUMMARY

Project Number:	122070	
Project Name:	Elm St Field	
Prepared By:	Taron Ferguson	
Sales Rep:	Mike Berry	
Scan:	122070a	**Date:** 09/12/2006
Service Location:	1 of 1	

IMPORTANT NOTES:

1. This design is based on **480 VOLTS 3 phase.** If voltage is other, equipment costs may be affected. Contact your Musco sales representative.
2. When 3 phase service is available, all 3 phases are to be run to each pole.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit.
4. If the lighting system will be fed from more than one service location, additional equipment may be required.
5. Entrance hub and locknut materials must be die-cast zinc, copper free die-cast aluminum or PVC and must meet NEMA 4 enclosure sealing requirements.
6. A **single 120V control circuit** must be supplied to each control system.
7. Size overcurrent devices using the full load amps column of the chart. Full load amps based on an assumed power factor of 0.9.

CONTROL POWER CONSUMPTION	
120V SINGLE PHASE (SEE NOTE 6)	
VA LOADING OF MUSCO SUPPLIED EQUIPMENT	INRUSH: 715.0
	SEALED: 152.5

SWITCHING SCHEDULE

Field Type	Zones	Customer Field Name
Baseball	1,4	Softball
MANUAL	2	Area 2
MANUAL	3	Area 3

CIRCUIT SUMMARY BY POLE ID

POLE	CIRCUIT NAME	# OF FIXT	FULL LOAD AMPS	CONTACTOR SIZE(AMPS)	CONTACTOR ID	ZONE
A1	SB Infield	3	7.4	30	C8	4
A2	SB Infield	3	7.4	30	C9	4
B1	SB Outfield	6	14.8	30	C1	1
B2	SB Outfield	6	14.8	30	C2	1
B2	Area 3	4	11.1	30	C7	3
C1	SB Outfield	5	14.8	30	C3	1
C1	Area 2	3	7.4	30	C5	2
C2	SB Outfield	5	14.8	30	C4	1
C2	Area 2	2	7.4	30	C6	2

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MUSCO CONTROL SYSTEM SUMMARY

Project Number:	122070		
Project Name:	Elm St Field		
Prepared By:	Taron Ferguson		
Sales Rep:	Mike Berry		
Scan:	122070a	**Date:** 09/12/2006	
Service Location:	1 of 1		

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONT. ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID BY OTHERS	CIRCUIT BREAKER POSITION BY OTHERS
1	1	C7	Pole B2	11.1		
1	1	C8	Pole A1	7.4		
1	1	C9	Pole A2	7.4		
1	1	C1	Pole B1	14.8		
1	1	C2	Pole B2	14.8		
1	1	C3	Pole C1	14.8		
1	1	C4	Pole C2	14.8		
1	1	C5	Pole C1	7.4		
1	1	C6	Pole C2	7.4		

ZONE SCHEDULE

ZONE	REC RELAY #	ZONE DESCRIPTION	CIRCUIT DESCRIPTION	
			POLE ID	CONT ID
Zone 1	1	SB Outfield	B1	C1
			B2	C2
			C1	C3
			C2	C4
Zone 2	2	Area 2	C1	C5
			C2	C6
Zone 3	3	Area 3	B2	C7
Zone 4	4	SB Infield	A1	C8
			A2	C9

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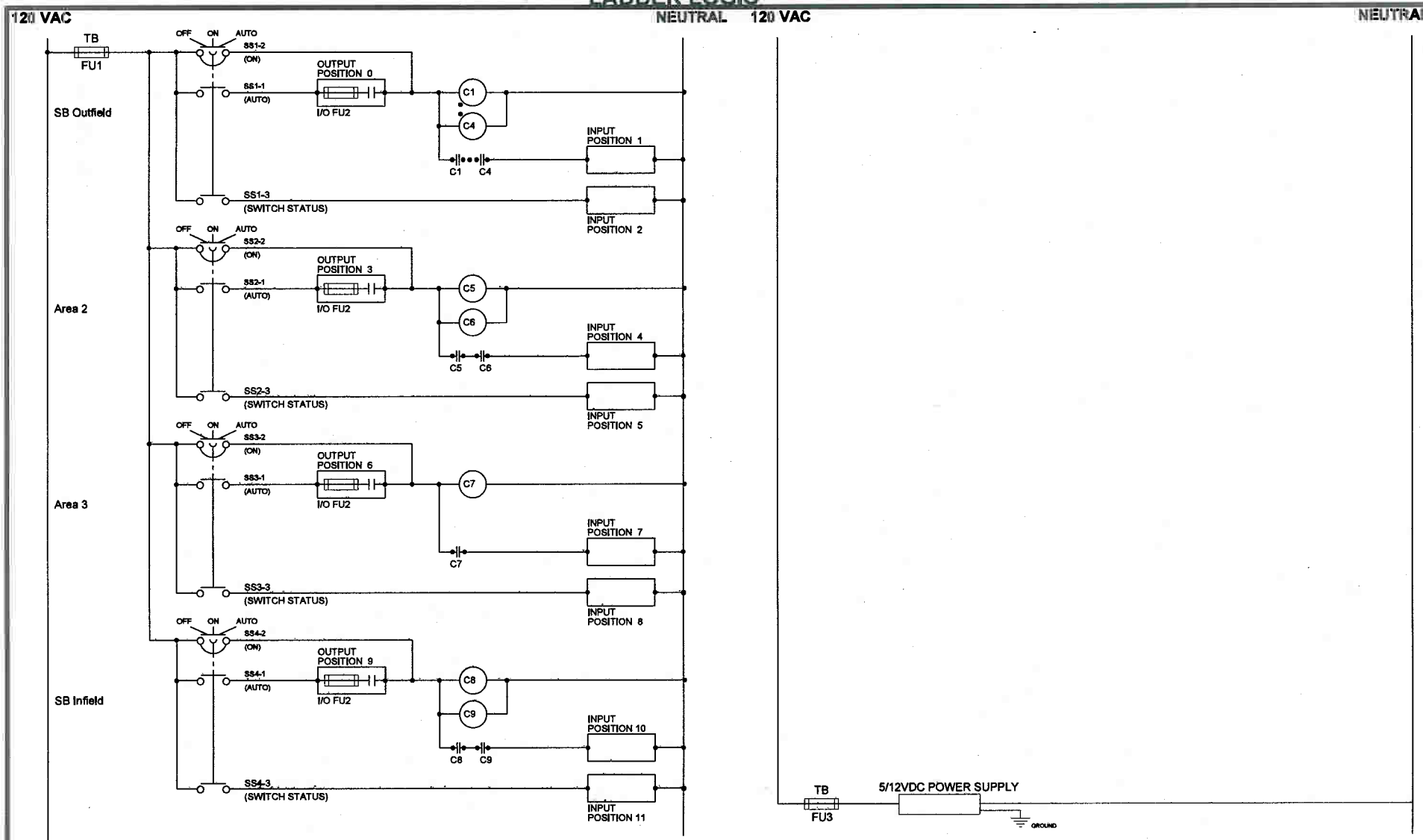
LADDER LOGIC



BILL OF MATERIALS

ITEM	DESCRIPTION	VENDOR	VENDOR P/N
SS1-SS8	SELECTOR SWITCH ASSY.	MUSCO	CS-1360-1
TB FUSE #1,#2	FUSE, 10 AMP	BUSSMAN	MDA 10
TB FUSE #3	FUSE, 5 AMP	BUSSMAN	MDA 5
OUTPUT	GRAYHILL OUTPUT	GRAYHILL	70G-0AC5A-L-QT1
INPUT	GRAYHILL INPUT	GRAYHILL	70G-IAC5
C	CONTACTOR, 30A	SQUARE D	LC1D32G7
	CONTACTOR, 60A	SQUARE D	LC1D6011G7
	CONTACTOR, 100A	SQUARE D	LC1D115G7

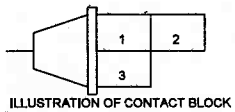


ILLUSTRATION OF CONTACT BLOCK LOCATION ON SELECTOR SWITCH (TOP VIEW)

SELECTOR SWITCH # 1-8

CONTACT BLOCK	OFF	ON	AUTO	ON TO AUTO	AUTO TO ON	FUNCTION
1	0	0	X	X	X	AUTO MODE
2	0	X	0	X	X	ON MODE
3	0	0	X	N/A	N/A	SWITCH STATUS

Project#: 122070
Project Name: Elm St Field
Location: Acton, MA USA

Vantage Order: 0
Drawing#: CG-070-0
Cabinet: 1

Musco Sample Control-Link® Usage Report

By Facility and Field and User Group
4-Oct

Summary by Facility:

Facility	Total Hours Usage
Arnold Cypress Park #1	68:00:00
Oak Knoll Park	150:45:00
Total for City of Cypress	218:45:00

Summary by Facility and Field:

Facility	Field	Total Hours Usage
Arnold Cypress Park #1	Softball	68:00:00
Oak Knoll Park	Baseball Field 3	37:45:00
Oak Knoll Park	Baseball3 Practice	55:45:00
Oak Knoll Park	North Grass Area	6:15
Oak Knoll Park	Softball Field 4	51:00:00
Total for City of Cypress		218:45:00

Summary by User Group:

User Group	Total Hours Usage
[None]	5:30
AYSO Region 5	24:00:00
Cypress Girls Softball	37:15:00
Cypress Pop Warner	95:30:00
Cypress Recreation	56:30:00
Total for City of Cypress	218:45:00

Summary by Field and User Group:

Facility	Field	User Group	Total Hours Usage
Arnold Cypress Park #1	Softball	[None]	2:30
Arnold Cypress Park #1	Softball	Cypress Girls Softball	37:15:00
Arnold Cypress Park #1	Softball	Cypress Recreation	28:15:00
Oak Knoll Park	Baseball Field 3	AYSO Region 5	3:00
Oak Knoll Park	Baseball Field 3	Cypress Pop Warner	34:45:00
Oak Knoll Park	Baseball3 Practice	AYSO Region 5	21:00
Oak Knoll Park	Baseball3 Practice	Cypress Pop Warner	34:45:00
Oak Knoll Park	North Grass Area	Cypress Pop Warner	6:15
Oak Knoll Park	Softball Field 4	[None]	3:00
Oak Knoll Park	Softball Field 4	Cypress Pop Warner	19:45
Oak Knoll Park	Softball Field 4	Cypress Recreation	28:15:00
Total for City of Cypress			218:45:00

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Schedule Detail:

Facility	Field	Start Day	Start Date	Start Time	End Day	End Date	End Time	Scheduler	UserCode	User Group	Description	Hours Usage
Arnold Cypress Park #1	Softball	Fri	10/1/04	7:00p	Fri	10/1/04	9:30p	Steven Clark	stclark			2:30
Arnold Cypress Park #1	Softball	Sat	10/2/04	6:00p	Sat	10/2/04	10:00p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		4:00
Arnold Cypress Park #1	Softball	Tue	10/5/04	6:30p	Tue	10/5/04	8:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		1:45
Arnold Cypress Park #1	Softball	Thu	10/7/04	6:30p	Thu	10/7/04	9:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		2:45
Arnold Cypress Park #1	Softball	Sat	10/9/04	6:30p	Sat	10/9/04	10:00p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		3:30
Arnold Cypress Park #1	Softball	Mon	10/11/04	6:30p	Mon	10/11/04	8:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		1:45
Arnold Cypress Park #1	Softball	Tue	10/12/04	6:30p	Tue	10/12/04	8:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		1:45
Arnold Cypress Park #1	Softball	Thu	10/14/04	6:30p	Thu	10/14/04	8:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		1:45
Arnold Cypress Park #1	Softball	Sat	10/16/04	5:00p	Sat	10/16/04	10:00p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		5:00
Arnold Cypress Park #1	Softball	Thu	10/21/04	6:00p	Thu	10/21/04	7:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		1:15
Arnold Cypress Park #1	Softball	Sat	10/23/04	6:00p	Sat	10/23/04	10:00p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		4:00
Arnold Cypress Park #1	Softball	Mon	10/25/04	6:00p	Mon	10/25/04	8:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		2:15
Arnold Cypress Park #1	Softball	Tue	10/26/04	5:00p	Tue	10/26/04	6:00p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		1:00
Arnold Cypress Park #1	Softball	Thu	10/28/04	6:00p	Thu	10/28/04	8:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		2:15
Arnold Cypress Park #1	Softball	Sat	10/30/04	6:00p	Sat	10/30/04	10:15p	Cypress Girls Softball	Cypress Girls Softba	Cypress Girls Softball		4:15
Arnold Cypress Park #1	Softball	Sun	10/3/04	5:30p	Sun	10/3/04	7:15p	Steven Clark	stclark	Cypress Recreation		1:45
Arnold Cypress Park #1	Softball	Wed	10/6/04	6:15p	Wed	10/6/04	10:15p	Steven Clark	stclark	Cypress Recreation		4:00
Arnold Cypress Park #1	Softball	Fri	10/8/04	6:00p	Fri	10/8/04	9:15p	Steven Clark	stclark	Cypress Recreation		3:15
Arnold Cypress Park #1	Softball	Sun	10/10/04	5:30p	Sun	10/10/04	7:15p	Steven Clark	stclark	Cypress Recreation		1:45
Arnold Cypress Park #1	Softball	Wed	10/13/04	6:15p	Wed	10/13/04	10:15p	Steven Clark	stclark	Cypress Recreation		4:00
Arnold Cypress Park #1	Softball	Fri	10/15/04	6:00p	Fri	10/15/04	9:15p	Steven Clark	stclark	Cypress Recreation		3:15
Arnold Cypress Park #1	Softball	Sun	10/17/04	5:30p	Sun	10/17/04	7:15p	Steven Clark	stclark	Cypress Recreation		1:45
Arnold Cypress Park #1	Softball	Fri	10/22/04	6:00p	Fri	10/22/04	9:15p	Steven Clark	stclark	Cypress Recreation		3:15
Arnold Cypress Park #1	Softball	Sun	10/24/04	5:30p	Sun	10/24/04	7:15p	Steven Clark	stclark	Cypress Recreation		1:45
Arnold Cypress Park #1	Softball	Wed	10/27/04	6:15p	Wed	10/27/04	6:30p	Steven Clark	stclark	Cypress Recreation		0:15
Arnold Cypress Park #1	Softball	Fri	10/29/04	6:00p	Fri	10/29/04	9:15p	Steven Clark	stclark	Cypress Recreation		3:15
Oak Knoll Park	Baseball Field 3	Tue	10/5/04	6:00p	Tue	10/5/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball Field 3	Fri	10/1/04	6:15p	Fri	10/1/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:00
Oak Knoll Park	Baseball Field 3	Sat	10/2/04	6:45p	Sat	10/2/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:45
Oak Knoll Park	Baseball Field 3	Mon	10/4/04	6:15p	Mon	10/4/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:00
Oak Knoll Park	Baseball Field 3	Wed	10/6/04	6:15p	Wed	10/6/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:00
Oak Knoll Park	Baseball Field 3	Fri	10/8/04	6:00p	Fri	10/8/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:15
Oak Knoll Park	Baseball Field 3	Sat	10/9/04	6:15p	Sat	10/9/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		3:15
Oak Knoll Park	Baseball Field 3	Mon	10/11/04	6:00p	Mon	10/11/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:15
Oak Knoll Park	Baseball Field 3	Wed	10/13/04	6:30p	Wed	10/13/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		1:45
Oak Knoll Park	Baseball Field 3	Fri	10/15/04	6:45p	Fri	10/15/04	8:00p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		1:15
Oak Knoll Park	Baseball Field 3	Sat	10/16/04	6:15p	Sat	10/16/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		3:15
Oak Knoll Park	Baseball Field 3	Mon	10/18/04	5:45p	Mon	10/18/04	6:45p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		1:00
Oak Knoll Park	Baseball Field 3	Fri	10/22/04	6:00p	Fri	10/22/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:15
Oak Knoll Park	Baseball Field 3	Sat	10/23/04	6:15p	Sat	10/23/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		3:15
Oak Knoll Park	Baseball Field 3	Mon	10/25/04	5:45p	Mon	10/25/04	8:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:45
Oak Knoll Park	Baseball Field 3	Fri	10/29/04	5:45p	Fri	10/29/04	8:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:45
Oak Knoll Park	Baseball3 Practice	Thu	10/7/04	6:00p	Thu	10/7/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball3 Practice	Tue	10/12/04	6:00p	Tue	10/12/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball3 Practice	Thu	10/14/04	6:00p	Thu	10/14/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball3 Practice	Tue	10/19/04	6:00p	Tue	10/19/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball3 Practice	Thu	10/21/04	6:00p	Thu	10/21/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball3 Practice	Tue	10/26/04	6:00p	Tue	10/26/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball3 Practice	Thu	10/28/04	6:00p	Thu	10/28/04	9:00p	AYSO Region 154	AYSO Region 5	AYSO Region 5		3:00
Oak Knoll Park	Baseball3 Practice	Fri	10/1/04	6:15p	Fri	10/1/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:00
Oak Knoll Park	Baseball3 Practice	Sat	10/2/04	6:45p	Sat	10/2/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:45
Oak Knoll Park	Baseball3 Practice	Mon	10/4/04	6:15p	Mon	10/4/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:00
Oak Knoll Park	Baseball3 Practice	Wed	10/6/04	6:15p	Wed	10/6/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:00
Oak Knoll Park	Baseball3 Practice	Fri	10/8/04	6:00p	Fri	10/8/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:15
Oak Knoll Park	Baseball3 Practice	Sat	10/9/04	6:15p	Sat	10/9/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		3:15
Oak Knoll Park	Baseball3 Practice	Mon	10/11/04	6:00p	Mon	10/11/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		2:15
Oak Knoll Park	Baseball3 Practice	Wed	10/13/04	6:30p	Wed	10/13/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		1:45
Oak Knoll Park	Baseball3 Practice	Fri	10/15/04	6:45p	Fri	10/15/04	8:00p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner		1:15

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Oak Knoll Park	Baseball3 Practice	Sat	10/16/04	6:15p	Sat	10/16/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	3:15
Oak Knoll Park	Baseball3 Practice	Mon	10/18/04	5:45p	Mon	10/18/04	6:45p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	1:00
Oak Knoll Park	Baseball3 Practice	Fri	10/22/04	6:00p	Fri	10/22/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:15
Oak Knoll Park	Baseball3 Practice	Sat	10/23/04	6:15p	Sat	10/23/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	3:15
Oak Knoll Park	Baseball3 Practice	Mon	10/25/04	5:45p	Mon	10/25/04	8:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:45
Oak Knoll Park	Baseball3 Practice	Fri	10/29/04	5:45p	Fri	10/29/04	8:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:45
Oak Knoll Park	North Grass Area	Fri	10/1/04	6:15p	Fri	10/1/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:00
Oak Knoll Park	North Grass Area	Wed	10/6/04	6:15p	Wed	10/6/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:00
Oak Knoll Park	North Grass Area	Fri	10/22/04	6:00p	Fri	10/22/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:15
Oak Knoll Park	Softball Field 4	Fri	10/1/04	8:30p	Fri	10/1/04	10:00p	Steven Clark	stclark		1:30
Oak Knoll Park	Softball Field 4	Mon	10/18/04	7:00p	Mon	10/18/04	8:30p	Steven Clark	stclark		1:30
Oak Knoll Park	Softball Field 4	Fri	10/1/04	6:15p	Fri	10/1/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:00
Oak Knoll Park	Softball Field 4	Mon	10/4/04	6:15p	Mon	10/4/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:00
Oak Knoll Park	Softball Field 4	Sat	10/9/04	6:15p	Sat	10/9/04	9:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	3:15
Oak Knoll Park	Softball Field 4	Mon	10/11/04	6:00p	Mon	10/11/04	8:15p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:15
Oak Knoll Park	Softball Field 4	Thu	10/14/04	6:00p	Thu	10/14/04	7:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	1:30
Oak Knoll Park	Softball Field 4	Mon	10/18/04	5:45p	Mon	10/18/04	8:00p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:15
Oak Knoll Park	Softball Field 4	Thu	10/21/04	5:30p	Thu	10/21/04	7:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:00
Oak Knoll Park	Softball Field 4	Mon	10/25/04	6:00p	Mon	10/25/04	8:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:30
Oak Knoll Park	Softball Field 4	Thu	10/28/04	5:30p	Thu	10/28/04	7:30p	Cypress Pop Warner	Cypress Pop Warner	Cypress Pop Warner	2:00
Oak Knoll Park	Softball Field 4	Sun	10/3/04	5:30p	Sun	10/3/04	7:15p	Steven Clark	stclark	Cypress Recreation	1:45
Oak Knoll Park	Softball Field 4	Wed	10/6/04	6:15p	Wed	10/6/04	10:15p	Steven Clark	stclark	Cypress Recreation	4:00
Oak Knoll Park	Softball Field 4	Fri	10/8/04	6:00p	Fri	10/8/04	9:15p	Steven Clark	stclark	Cypress Recreation	3:15
Oak Knoll Park	Softball Field 4	Sun	10/10/04	5:30p	Sun	10/10/04	7:15p	Steven Clark	stclark	Cypress Recreation	1:45
Oak Knoll Park	Softball Field 4	Wed	10/13/04	6:15p	Wed	10/13/04	10:15p	Steven Clark	stclark	Cypress Recreation	4:00
Oak Knoll Park	Softball Field 4	Fri	10/15/04	6:00p	Fri	10/15/04	9:15p	Steven Clark	stclark	Cypress Recreation	3:15
Oak Knoll Park	Softball Field 4	Sun	10/17/04	5:30p	Sun	10/17/04	7:15p	Steven Clark	stclark	Cypress Recreation	1:45
Oak Knoll Park	Softball Field 4	Fri	10/22/04	6:00p	Fri	10/22/04	9:15p	Steven Clark	stclark	Cypress Recreation	3:15
Oak Knoll Park	Softball Field 4	Sun	10/24/04	5:30p	Sun	10/24/04	7:15p	Steven Clark	stclark	Cypress Recreation	1:45
Oak Knoll Park	Softball Field 4	Wed	10/27/04	6:15p	Wed	10/27/04	6:30p	Steven Clark	stclark	Cypress Recreation	0:15
Oak Knoll Park	Softball Field 4	Fri	10/29/04	6:00p	Fri	10/29/04	9:15p	Steven Clark	stclark	Cypress Recreation	3:15

218:45:00

Total Usage for City of Cypress

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