

1 Unless otherwise specified in these specifications or otherwise shown on the drawings, conform
2 work under this section to Section 616 of the State Specifications.

3
4 **CONTINUITY OF EXISTING SECURITY FENCING**

5 Do not interrupt or change existing security fencing without prior written approval from the LA/E.
6 When interruption is required, coordinate schedule with the OWNER agency to minimize
7 disruptions. Unless specifically stated, all work involved in interrupting or changing existing
8 security fencing is to be done during normal working hours.

9
10 Verify the locations of any water main, sanitary sewer, force main, storm sewer, underdrain,
11 culverts, gas, electric, telephone or steam lines which may be encountered in the excavation of
12 fence bases.

13
14 **RECORD DRAWINGS**

15 Maintain record drawings of all fencing installations and points of connection made as part of this
16 project and for future connection on original drawings prepared by the installing
17 CONTRACTOR/subcontractor. Include copies of record drawings with the Operating and
18 Maintenance instructions.

19
20 **PART TWO - PRODUCTS**

21
22 **GENERAL**

23 All materials furnished shall be new materials unless otherwise specified. Salvaged materials
24 may be used only when specified.

25
26 **FENCE HEIGHT**

27 The height of the fence shall be as shown on the drawings or specified. The designated height of
28 the fence shall be the fabric height.

29
30 **REQUIRED ARMS, RAILS, AND TENSION WIRES**

31 Provide top rail/tension wire, intermediate rail, and bottom rail/tension wire in accordance with the
32 drawings.

33
34 **REQUIRED COATINGS**

35 Galvanized, in accordance with Section 616.2.3.1 of State Specifications.

36
37 **FABRIC**

38 Provide 9 gauge aluminum coated, two (2) inch mesh fabric, with knuckled selvedge on top
39 conforming to ASTM A-491 for top 12' of the 24' backstop.

40
41 Provide 6 gauge aluminum coated, two (2) inch mesh fabric with knuckled selvedge on top
42 conforming to ASTM A-491 for all other fencing.

43
44 **FABRIC FASTENERS**

45 Provide fabric fasteners of steel wire clips and tie wires galvanized in accordance with ASTM A-
46 641, Class III, or aluminum coated in conformance with fence fabric specifications.

47
48 Provide fasteners for posts, top and intermediate rails, bottom rails, top tension wires and braces
49 of 9 gauge steel or 0.179 inch diameter aluminum tie wires.

50
51 Provide fasteners for bottom tension wire of not smaller than 12 gauge or 0.149 inch diameter
52 aluminum tie wires.

1
2
3

MATERIALS TO BE FURNISHED

All Post Types shall be SCH 40 Pipe Steel or SS 40 Pipe Steel. Furnish materials in accordance with the following schedules for the fence height specified:

SCHEDULE OF FENCING MATERIALS AND GATE MATERIALS							
TYPE AND HEIGHT	POST TYPE	SIZE O.D. (IN)	MIN. WALL THICK (IN)	MIN. SECT MODULUS (IN³)	MIN. YIELD STRENGTH (PSI)	MIN. WGT (LBS/ FT.)	MAX. POST SPACE (FT.)
LINE POSTS (6 FEET OR LESS)	SCH 40 Pipe-Steel	1.90	0.145	0.326	25,800	2.72	10
	SS 40 Pipe Steel	1.90	0.090	0.221	45,000	1.74	10
LINE AND CORNER POSTS (6 FEET OR LESS WITH WINDSCREEN)	SCH 40 Pipe-Steel	2.875	0.203	1.063	25,800	5.79	8
	SS 40 Pipe Steel	2.875	0.160	0.636	45,000	3.25	6
LINE POSTS (8 FEET)	SCH 40 Pipe Steel	2.375	0.154	0.560	25,800	3.65	10
	SS 40 Pipe Steel	2.375	0.120	0.456	45,000	2.64	10
LINE AND CORNER POSTS (8 FEET WITH WINDSCREEN)	SCH 40 Pipe Steel	2.875	0.226	2.386	25,800	9.10	8
	SS 40 Pipe Steel	2.875	0.160	0.878	45,000	4.64	6
LINE POSTS (10 FEET)	SCH 40 Pipe Steel	2.875	0.203	1.063	25,800	5.79	10
	SS 40 Pipe Steel	2.875	0.110	0.636	45,000	3.25	10
BACKSTOP POSTS (24 FEET)	SCH 40 Pipe Steel	4.00	0.226	2.386	25,800	9.10	8
	SS 40 Pipe Steel	4.00	0.160	1.7819	45,000	6.56	8
CORNER AND BRACE POSTS (7 FEET or LESS)	SCH 40 Pipe-Steel	2.375	0.154	0.560	25,800	3.65	--
	SS 40 Pipe Steel	2.375	0.130	0.485	45,000	3.12	--
CORNER AND BRACE POSTS (8 FEET or 10 FEET)	SCH 40 Pipe Steel	2.875	0.203	1.064	25,800	5.79	--
	SS 40 Pipe Steel	2.875	0.110	0.636	45,000	3.25	--
RAILS AND BRACES	SCH 40 Pipe-Steel	1.66	0.140	0.235	25,800	2.27	--
	SS 40 Pipe Steel	1.66	0.111	0.196	45,000	1.84	--
GATE POSTS LEAF WIDTH (6 FEET OR LESS)	SCH 40 Pipe-Steel	2.875	0.203	1.064	25,800	5.79	--
	SS 40 Pipe Steel	2.875	0.160	0.877	45,000	4.64	--
LEAF WIDTH (7 TO 13 FEET)	SCH 40 Pipe Steel	4.00	0.226	2.386	25,800	9.10	--
	SS 40 Pipe Steel	2.875	0.160	0.878	45000	4.64	--
GATE FRAMES	SCH 40 Pipe-Steel	1.90	0.145	0.326	25,800	2.72	--
	SS 40 Pipe Steel	1.90	0.090	0.221	45,000	1.74	--

4
5

1 **GATES**

2 Provide additional horizontal and vertical members as necessary to assure proper gate operation
3 and attachment to fabric and hardware.

4
5 Provide diagonal braces made of crossed adjustable length three-eighth inch diameter truss rods
6 on nonwelded gate frames and on welded frames where corner rigidity is not sufficient to prevent
7 sag.

8
9 Gate frames shall be covered with the same fabric as the fence.

10
11 Weld or assemble gate frames with malleable or pressed steel fittings and rivets to provide rigid
12 connections. Install fabric with stretcher bars at vertical edges. Attach to frame at fifteen (15)
13 inches o.c. all sides. Provide caps for all gate frame work ends.

14
15 **GATE HARDWARE**

16 Provide heavy duty hinges of malleable iron, pressed or forged steel, nonlift-off type, adjusted to
17 permit 180 degree gate opening. Provide two (2) hinges for each leaf.

18
19 Provide heavy duty forked type or plunger bar type latches for all single leaf gates. Provide
20 center stop and keeper for all double leaf gates. Provide spring latch for all sliding gates.
21 Provide padlock eye as an integral part of all latches.

22
23 Provide heavy duty track, ball bearing hanger sheaves framing and supports, guides, stays stops
24 and bracing necessary for sliding gates.

25
26 **POST TOPS**

27 Provide cast or malleable iron ornamental tops on all posts except 3.5-inch x 3.5 inch roll formed
28 sections. Tops shall have an opening for the top rail to pass through.

29
30 **TENSION WIRE**

31 Provide 7 gauge tension wire conforming to the fence fabric used, complete with end clamps.

32
33 **STRETCHER BARS**

34 Provide stretcher bars of one piece lengths equal to the full fabric height with a minimum cross
35 section of 3/16" x 3/4". Provide one (1) stretcher bar for each gate and end post and two (2) for
36 each corner and pull post, except roll form posts with integral loops.

37
38 **CONCRETE**

39 All concrete for post base construction shall be a five (5) bag mix, and shall be mixed to obtain a
40 low slump. Maximum aggregate size shall be one (1) inch. Two (2) percent to four (4) percent
41 entrained air is allowed.

42
43 **FENCE GUARDS**

44 Top of fence, guard system

45 Color: color to be approved by Owner.

46 Location: All fence chain link fence

47 Material: UV resistant polyethylene

48 Contact: John Moynihan, Keeper Goals, 800-594-5126

49
50 **WINDSCREEN (BY OTHERS)**

51 Polyester, vinyl bound with grommets on 18-inch centers on all edges.

52
53 Heat cut oval air vents 8 inch by 12 inch at 6-foot intervals.

1 Center reinforcement sewn horizontally through middle of screen.

2
3 Contact: John Moynihan, Keeper Goals, 800-594-5126

4
5 **PART THREE - EXECUTION**

6
7 **SITE WORK**

8 Prior to fence construction remove and dispose of all trees, brush, logs, stumps and other debris
9 for a width of at least twelve (12) inches each side of the proposed fence alignment.

10
11 **CONCRETE FOOTINGS**

12 Excavate holes for footings to neat dimensions in firm ground to ensure the post will be centered.
13 Remove rock or other obstructions encountered to the required depth. Use forms in unstable soil
14 and allow them to remain in place for at least twenty-four (24) hours after concrete is poured.
15 Backfill, after forms are removed, with suitable material thoroughly compacted in place in layers
16 to prevent settlement.

17
18 Footings shall be 5-feet deep and 18-inch minimum diameter. The bottom of the post shall be 3
19 inches above the bottom of the hole. Corner, gate and end post bases shall be minimum 18-inch
20 diameter. Gate posts larger than 4-inch o.d. shall have a base with a minimum diameter of 18
21 inches. Concrete bases shall have a smooth troweled finish at the post. Concrete footings shall
22 cure for seven (7) days before placing tension wires.

23
24 **POSTS AND BRACES**

25 Set posts in a vertical position at the required location and alignment. Set tops at the required
26 elevation to provide a smooth profile at the top rail or tension wire without abrupt changes and in
27 conformity with the general contour and which meets the approval of the LA/E.

28
29 Place an end post at each end of each run of fence. Place a corner post whenever a break of 30
30 degrees or more occurs in the horizontal alignment. Set an intersection post in line with an
31 intersecting chain link fence and brace it to the adjacent posts of the intersecting fence.

32
33 Place an intermediate braced post where the vertical alignment changes by more than 5 degrees
34 or a change in fence grade of more than 9% percent occurs.

35
36 Place an intermediate braced post at 660-foot intervals for fence with a top rail and at 1,000-foot
37 intervals for fence with a top tension wire on all long runs of fence. Set an intermediate brace
38 post at the approximate midpoint when runs of fence are less than 1,320 feet but more than 660
39 feet for fence with top rail, or less than 2,000 feet but more than 1,000 feet for fence with top
40 tension wire.

41
42 Line posts may be driven posts. All end, corner, gate and brace posts must be set in concrete.
43 Driven posts shall be driven a minimum of 60 inches into undisturbed soil.

44
45 **POST BRACING ASSEMBLY**

46 Post bracing assemblies consist of one or more brace rails and a 3/8-inch truss rod as hereafter
47 specified. Provide brace rails the same size as the top rail. Provide truss rods with an adjustable
48 take-up adapter.

49
50 Install a single bracing assembly at each gate and end post location.

51
52 Install a double bracing assembly at each corner post and all intermediate braced posts.

1 Provide the bracing assembly with one horizontal brace rail and one diagonal truss rod on all
2 fences which have a top rail. Locate the horizontal brace rail in accordance with the
3 manufacturer's specifications.
4

5 Provide the bracing assembly with one horizontal brace rail and one diagonal brace rail and one
6 diagonal truss rod on all fences which do not have a top rail. Locate the horizontal rail in
7 accordance with the manufacturer's specifications.
8

9 **STRETCHER BARS**

10 Provide one stretcher bar for each gate and end post and two for each corner and pull post,
11 except roll form posts with integral loops. Attach to posts with heavy duty pressed steel or
12 malleable iron bands spaced at 15 inches o.c.
13

14 **FABRIC**

15 Install, stretch, and anchor tension wires to each end, corner, gate and brace post and properly
16 attach to each line post before the fabric is placed. Pass top tension wire thru the post top rail
17 opening. Install top, intermediate and bottom rails at proper locations.
18

19 Hang fabric on side of fence as indicated on drawings.
20

21 Attach the end of the fabric to the end, corner, gate or brace posts (except roll form posts with
22 integral loops) by means of a stretcher bar threaded through the end loops of the fabric and
23 stretched to remove all slack with proper stretching equipment. Secure the stretched fabric to
24 posts, rails and tension wires with specified fabric fasteners. Install fabric fasteners on all posts
25 at not greater than 14 inches o.c. and on rails and bottom tension wires at not more than 24
26 inches o.c. Where a top tension wire is installed, fasten to the fabric at not more than 18 inches
27 o.c.
28

29 Repeat stretching operations at approximately every 100 feet for each run of fence.
30

31 Make splices in fabric by interweaving a wire picket through each end loop of each piece of fabric.
32 Each splice shall be subject to the LA/E approval.
33

34 **GRADE CLEARANCE**

35 For baseball field, provide a clearance from the bottom of the fabric to the new finished grade of 1
36 inch.
37

38 **GATES**

39 Install gates plumb and level and adjust for smooth operation as intended, without binding or
40 hanging up.
41

42 **CLEANUP**

43 After chain link fence construction is completed clean up all storage and work areas. Replace or
44 repair as required all landscape features damaged or disturbed under this contract.
45

46 **FENCE GUARD & WINDSCREEN**

47 In accordance with Manufacturer's recommendations.
48
49

50 End of Section