APPENDIX J
AIT COMPLEX DRAWINGS AND DETAILS

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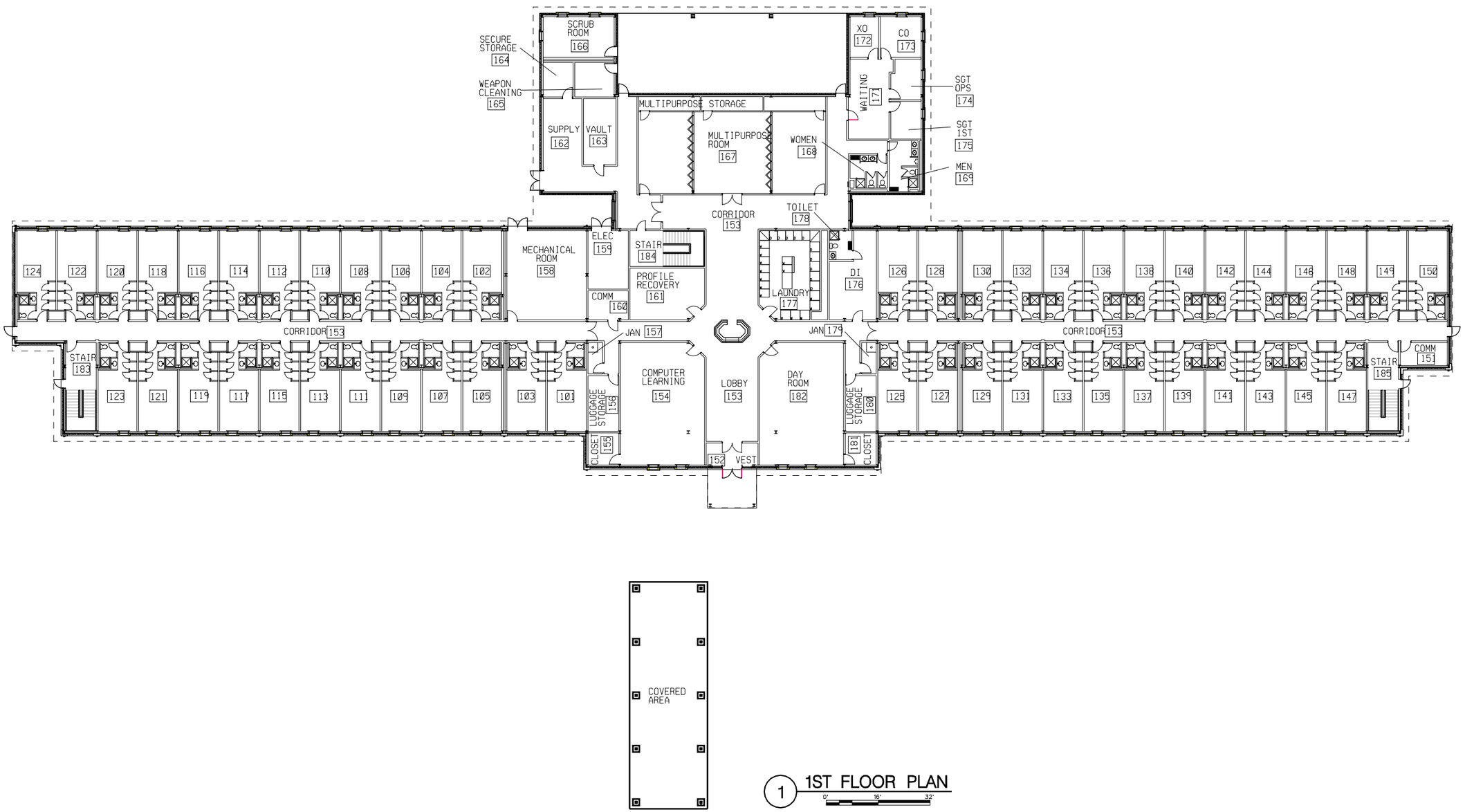
- BARRACKS/COMPANY OPERATIONS (B/COF) FLOORPLANS
- CONCEPTUAL COMPLEX SITE PLAN
- ESTABLISHED TRAVEL DISTANCES BETWEEN FACILITIES IN COMPLEX
- TYPICAL RUNNING TRACK LAYOUT
- TYPICAL TRACK CROSS SECTION
- SPECIFICATION SECTION 02 83 30 SYNTHETIC SPORTS SURFACE
- PT PIT CLIMBING BAR DETAILS



1 1ST FLOOR PLAN

0' 16' 32'

US Army Corps of Engineers
Fort Worth District

Symbol	Description	Tracking No.	Action	Date

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Dwn by: | Sol No.
Reviewed by: | Contr No.
Submitted by: BMARKBOYLE,AGM,P.E | File name: WIZA101-FP1.dgn Plot date: 9/30/2009 Plot scale:

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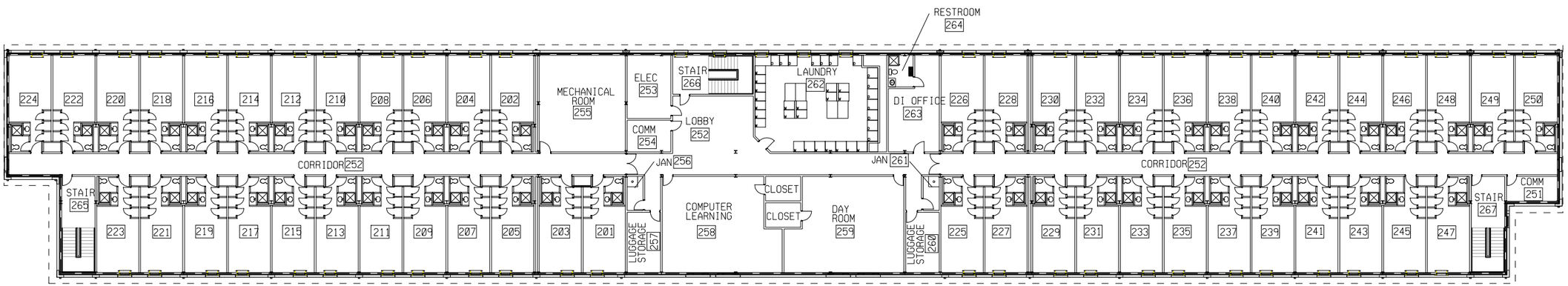

1 2ND FLOOR PLAN

0' 16' 32'

US Army Corps of Engineers
Fort Worth District

Symbol	Description	Tracking No.	Action	Date

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Reviewed by: BILL BOYLE
Submitted by:
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Rev.
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PN:
SHEET PLAN
TEMPLE LOGS
MAXIMUM

Sheet reference number:
A102

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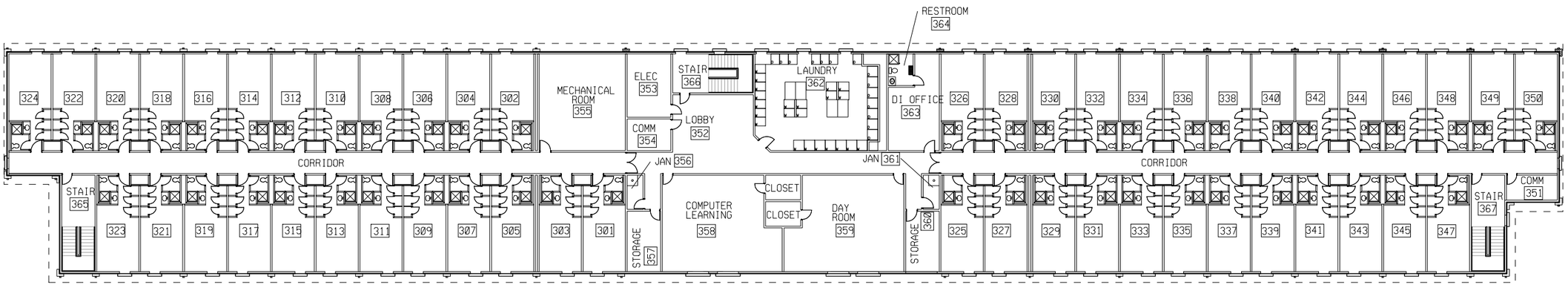

1 3RD FLOOR PLAN

0' 16' 32'

US Army Corps of Engineers
Fort Worth District

Symbol	Description	Tracking No.	Action	Date

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Contr No.
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Reviewed by: BILL BOYLE
Submitted by:
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Plot scale:

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FLOOR PLAN
3RD FLOOR

Sheet reference number:
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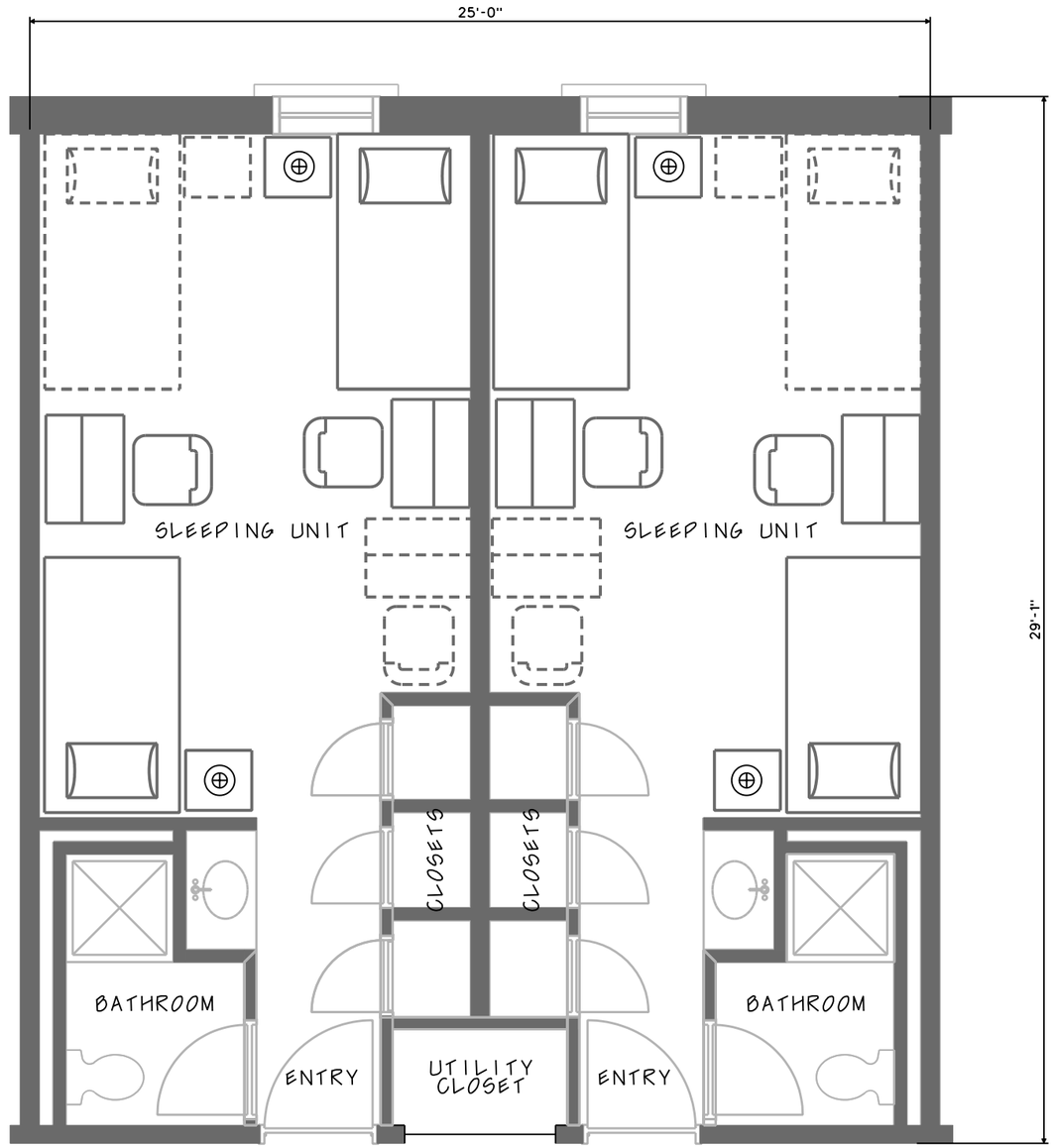

1 ROOM MODULE

1/2"=1'-0" 0' 4' 8'

US Army Corps of Engineers
Fort Worth District

Symbol	Description	Tracking No.	Action	Date

U.S. ARMY ENGINEER DISTRICT,
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ENGINEERING/ CONSTRUCTION DIVISION DESIGN BRANCH

Designed by:
Dwn by:
Reviewed by:
Submitted by:
BILL BOYLE, A.I.A.
CHIEF, ARCHITECTURAL SECTION

Date:
Sol No.
Contr No.
File name: $$cadd file name$$
Plot date: $$date$$
Plot scale:

CENTER OF STANDARDIZATION
ADVANCED INDIVIDUAL TRAINING
BARRACKS COMPANY OPERATIONS FACILITY
PN:

Sheet reference number:

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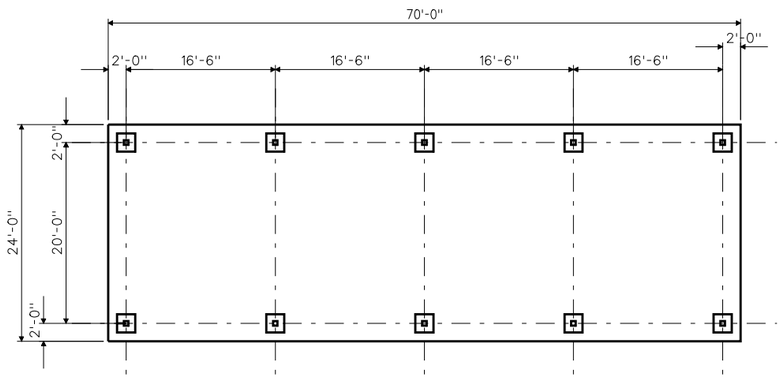

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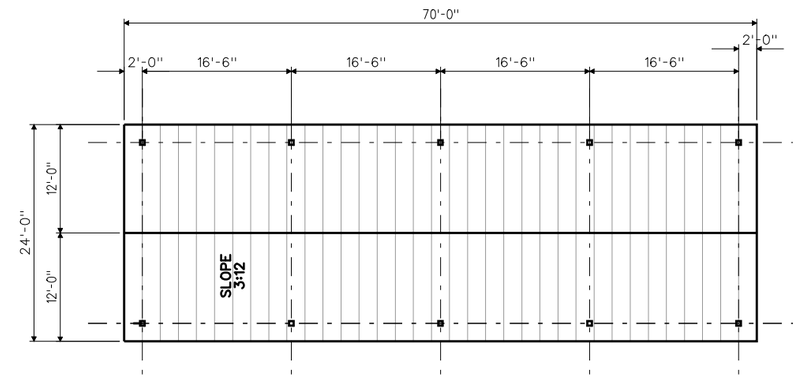
1/8"=1'-0"



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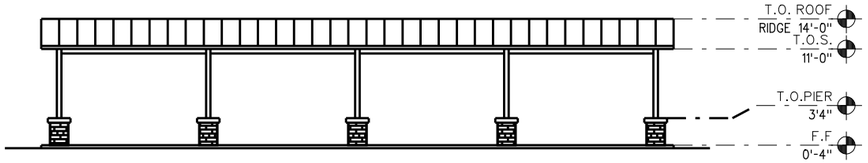
1/8"=1'-0"



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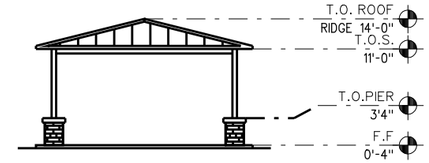
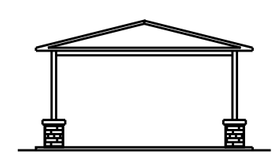
1/8"=1'-0"



4 COVERED ASSEMBLY AREA ELEVATION
1/8"=1'-0"



5 COVERED ASSEMBLY AREA SECTION
1/8"=1'-0"

US Army Corps of Engineers
Fort Worth District

Symbol	Description	Tracking No.	Action	Date

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Dwn by:	Sol No.	
Reviewed by:	Contr No.	
Submitted by: BILL BOYLE, ALA CHIEF, ARCHITECTURAL SECTION	File name: AIT_BCOF-A611----.dgn Plot date: 6/29/2009 Plot scale:	

U.S. ARMY ENGINEER DISTRICT, CORPS OF ENGINEERS FORT WORTH, TEXAS

ENGINEERING/ CONSTRUCTION DIVISION DESIGN BRANCH

CENTER OF STANDARDIZATION
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COVERED ASSEMBLY AREA

Sheet reference number:
A605

Contr No.

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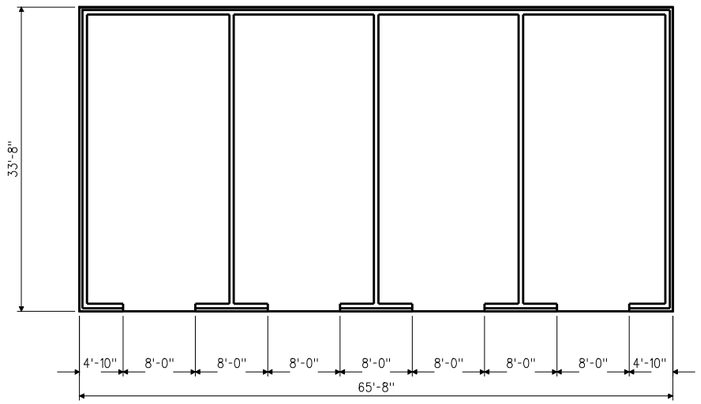
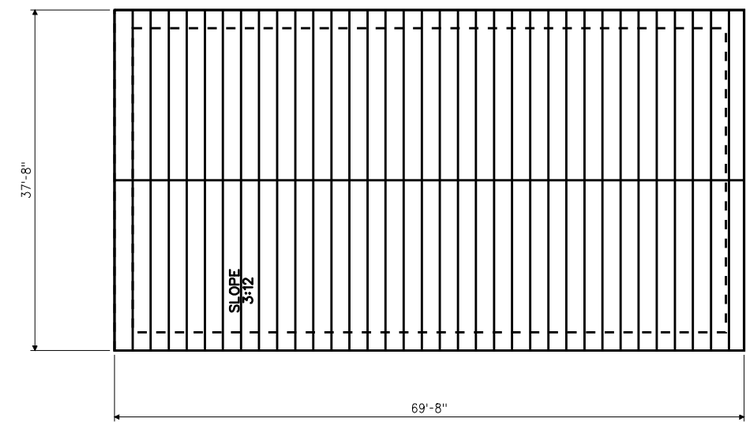
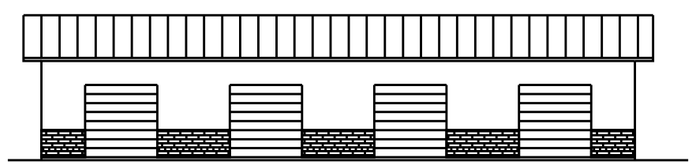


1 LAWN EQUIPMENT BUILDING PLAN
1/8"=1'-0"



2 LAWN EQUIPMENT BUILDING ROOF PLAN
1/8"=1'-0"



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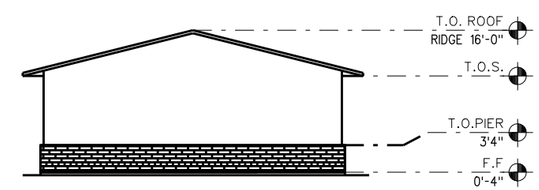
1/8"=1'-0"



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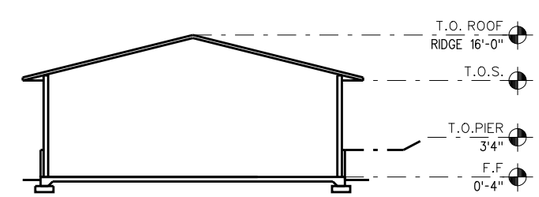
1/8"=1'-0"



5 LAWN EQUIPMENT BUILDING SECTION
1/8"=1'-0"

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Fort Worth District

Symbol	Description	Tracking No.	Action	Date

Designed by: | Date: | Rev.
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Reviewed by: | Contr No.
Submitted by: BILL BOYLE, ALA CHIEF, ARCHITECTURAL SECTION
File name: A612-----.dgn
Plot date: 6/29/2009
Plot scale:

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ENGINEERING/ CONSTRUCTION DIVISION DESIGN BRANCH

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ADVANCED INDIVIDUAL TRAINING
BARRACKS COMPANY OPERATIONS FACILITY
PN:

LAWN EQUIPMENT BUILDING

Sheet reference number:
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Contr No.

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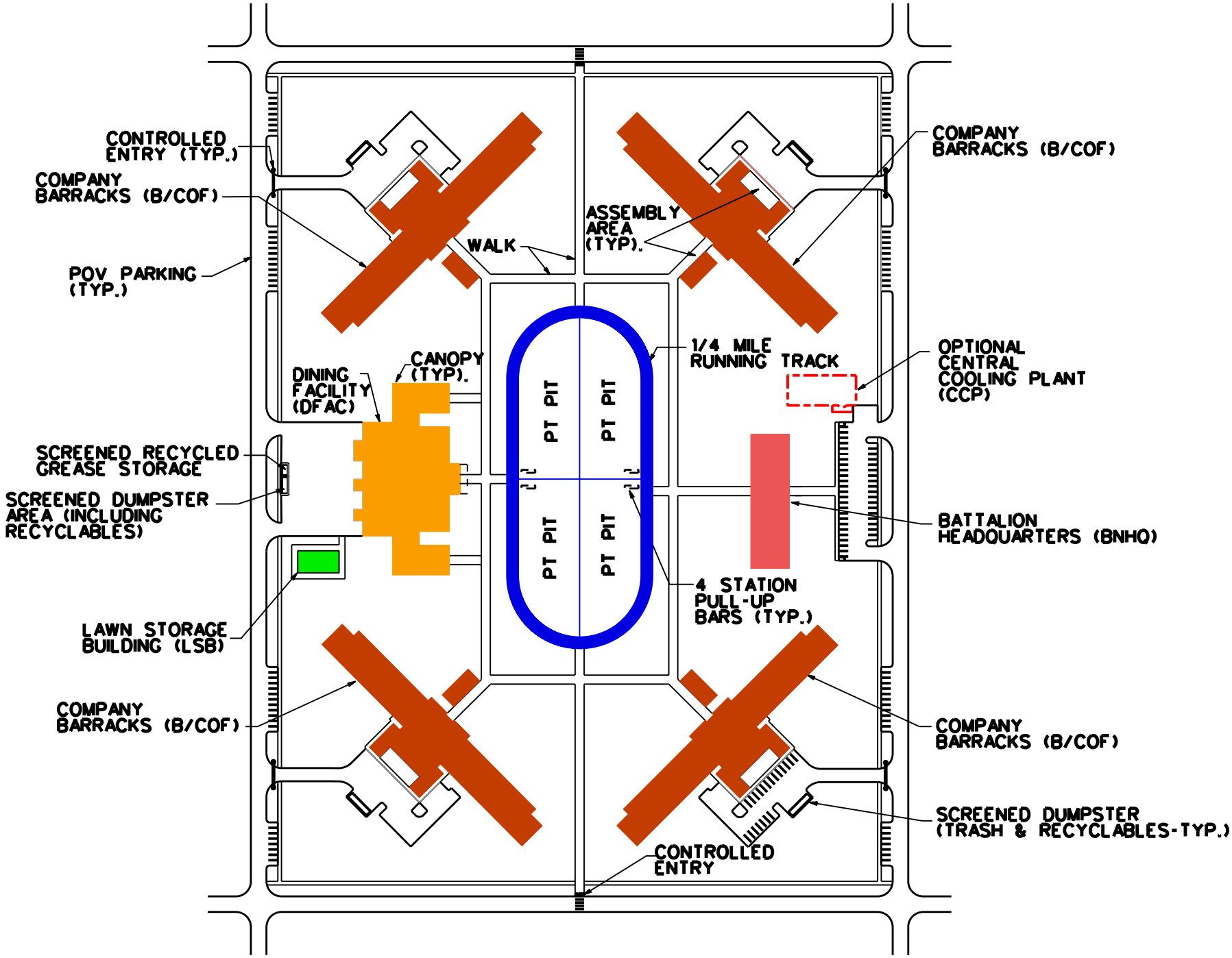
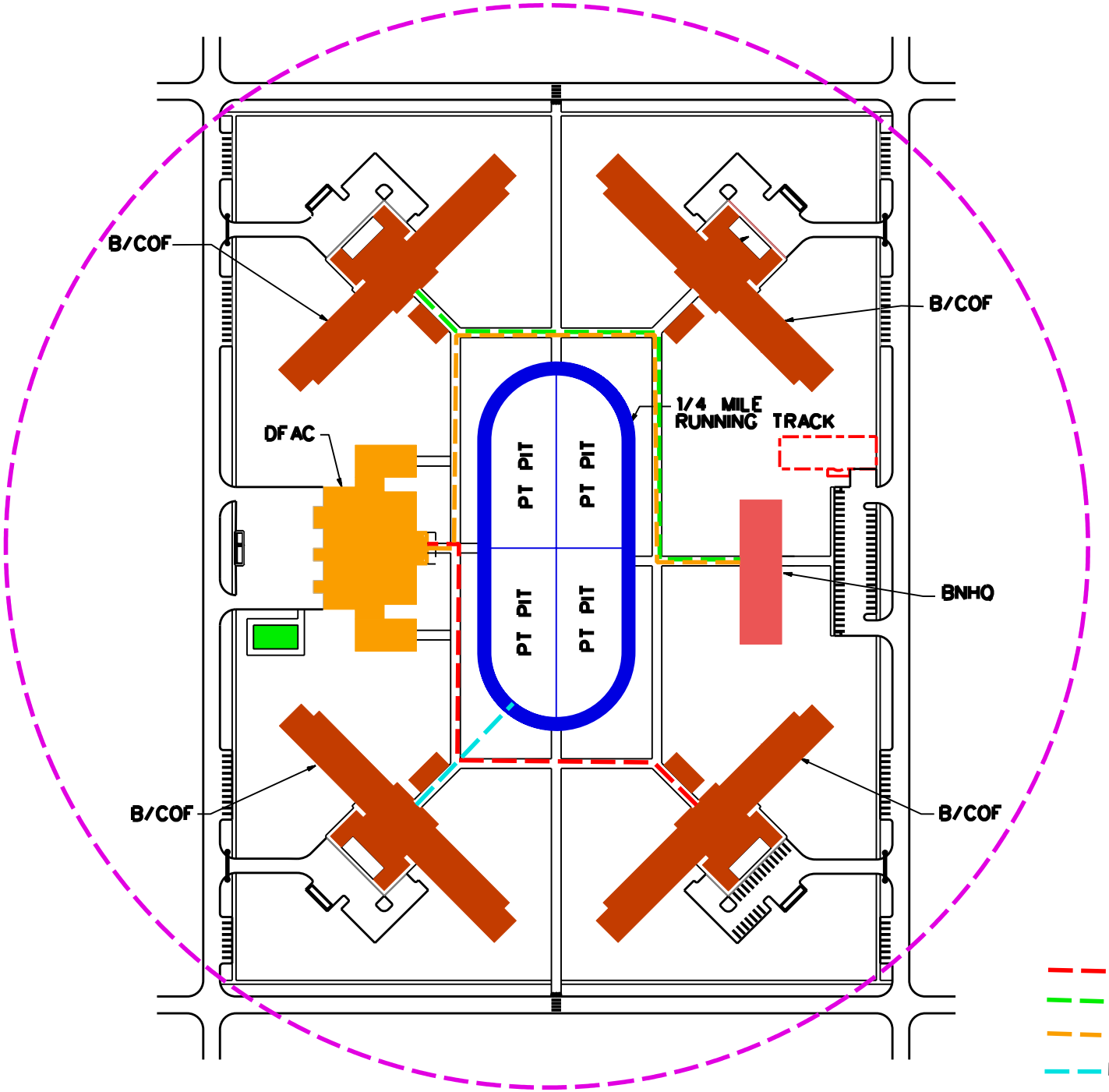


ADVANCED INDIVIDUAL TRAINING (AIT) COMPLEX

(34 Acres As Shown)

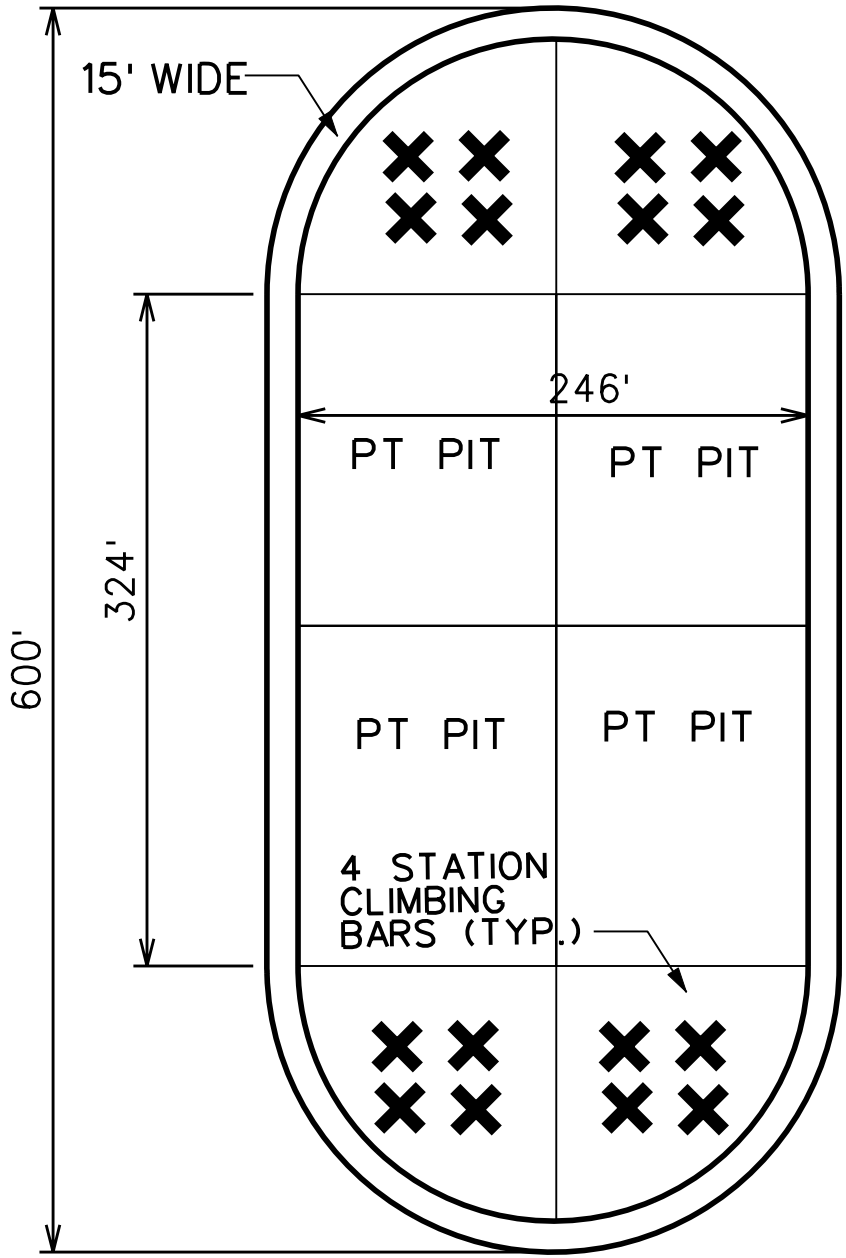


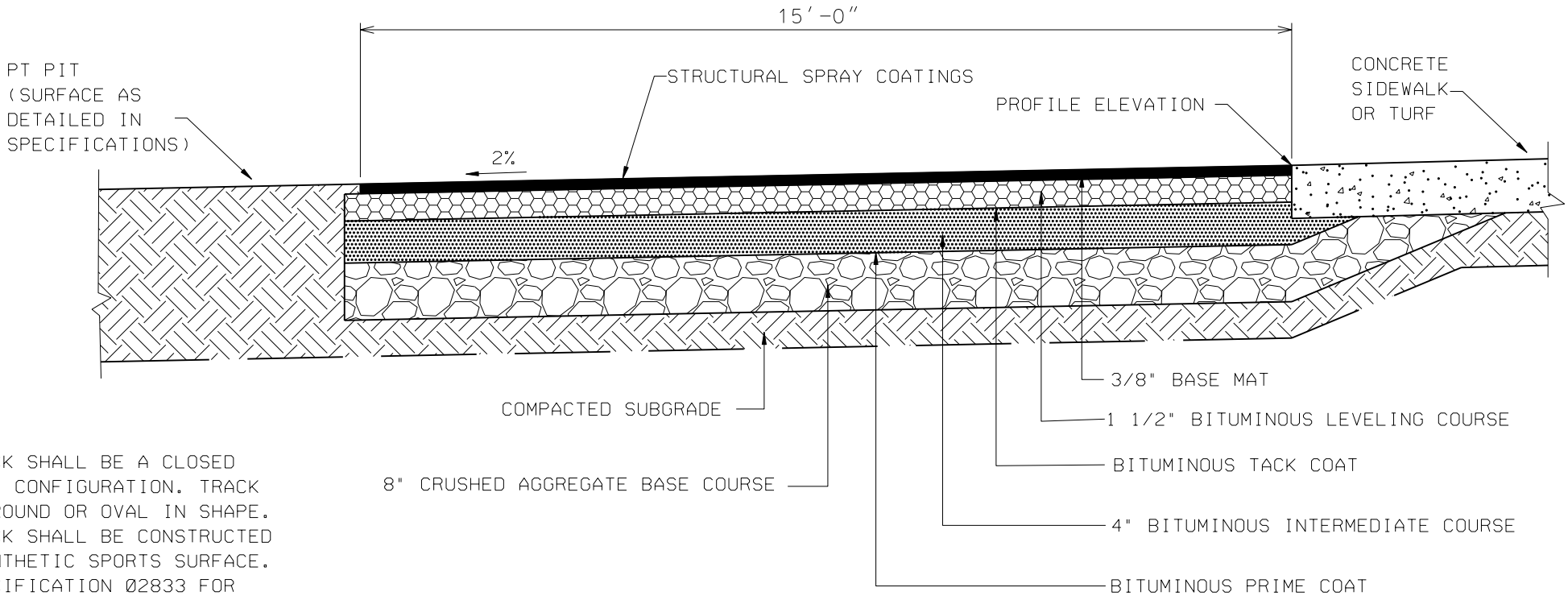
ADVANCED INDIVIDUAL TRAINING (AIT) COMPLEX

(34 Acres As Shown)

DISTANCE LEGEND

- B/COF to DFAC 787' (3.3 min.)
- B/COF to BNHQ 881' (3.7 min.)
- BNHQ to DFAC 1171' (4.9 min.)
- B/COF to PT PITS 215' (0.9 min.)
- 1680' RECOMMENDED MAXIMUM DISTANCE BETWEEN B/COF AND OTHER FACILITIES (10 min. from a 3 Story Facility)


15' WIDE
246'
PT PIT
PT PIT
324'
600'
PT PIT
PT PIT
4 STATION
CLIMBING
BARS (TYP.)



NOTE:

THE TRACK SHALL BE A CLOSED 1/4 MILE CONFIGURATION. TRACK MAY BE ROUND OR OVAL IN SHAPE. THE TRACK SHALL BE CONSTRUCTED OF A SYNTHETIC SPORTS SURFACE. SEE SPECIFICATION 02833 FOR MATERIAL AND INSTALLATION REQUIREMENTS. TRACK AND PT PITS SHALL BE DESIGNED WITH SURFACE AND/OR SUBSURFACE DRAINAGE, AS REQUIRED TO ELIMINATE ALL STANDING WATER.

ATHLETIC RUNNING TRACK TYPICAL CROSS SECTION

NOT TO SCALE

FIGURE 2- RUNNING TRACK

SECTION 02 83 30

SYNTHETIC SPORTS SURFACE
01/03

PART 1 GENERAL

The product shall be an impermeable, synthetic sports surface, designed for track and field activities. The system shall consist of a base mat, and of recycled rubber granules bound with a polyurethane binder and a impermeable layer of bi-component urethane coating, and a pigmented spray-applied top finish of polyurethane spray-coating and EPDM rubber granules. The system shall be installed on site.

1.2 SUBMITTALS

The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Synthetic Sports Surface Material

The Contractor shall submit descriptive technical data on the primers,granules, impermeable layer, structural spray coating, and line marking paint.

The Contractor shall provide written instructions provided by the manufacturer of all the materials used in the construction of the synthetic running track.

SD-07 Certificates

Synthetic Sports Surface Material

The Contractor shall provide documentation showing that the installer and supplier meet the qualifications listed.

1.4 WARRANTY

The product shall be warranted against defects in workmanship, labor, and materials for 60 months at no extra cost to the government.

PART 2 PRODUCTS

2.1 PRIMER

Polyurethane-based primers shall be compatible with the base and track surfacing materials.

2.2 BLACK RECYCLED RUBBER GRANULES

The rubber granules for the base mat shall be recycled rubber, processed and chopped to 0.029 to 0.118 inches, containing less than 4% dust.

2.3 POLYURETHANE BINDER

Binder for the black rubber mat shall be an MDI-based mono-component, polyurethane binding agent. The binding agent shall not have a free TDI monomer level above 0.2%, must be clear in color, not milky, and must be solvent free. The binding agent must be specially formulated for compatibility with SBR stranded or rubber crumb.

2.4 EPDM GRANULES

The rubber granules for the structural spray wearing coats shall be EPDM peroxide cured, man-made rubber containing a minimum 20% EPDM, with a specific gravity of 1.5 +/-0.1, cryogenically processed and chopped to two different gradations, 0.019 to 0.059 and 0.029 to 0.118 inches. The EPDM rubber will be the same color as chosen by the government for the track surface.

2.5 IMPERMABLE LAYER

The resin for this application shall be a pigmented, thixotropic, two-component, polyol and isocyanate, moisture cured, urethane compound and shall be squeegee applied.

2.6 STRUCTURAL SPRAY COATING

The spray coating shall be a single component moisture cured, pigmented polyurethane, specifically formulated for compatibility with EPDM granules. The coating shall be the color red.

2.7 LINE MARKING PAINT (NOT USED)

PART 3 EXECUTION

3.1 ASPHALTIC SURFACE INSPECTION

Prior to the application of the synthetic track surface, the asphaltic concrete base shall be inspected for conformity to planarity requirements. The surface shall not deviate from the specified grade more than 1.26 inches in 10 feet measured in any direction. All areas not in conformance with the above requirements will be repaired by others, with materials as approved by the manufacturer and allowed to cure prior to application of synthetic course. The surface shall be constructed with a slope of 2.36 inches per 10 feet towards the inner edge.

3.2 CURING

The asphalt surface shall be cured for a minimum of 14 days before construction of the synthetic surface begins.

3.3 CLEANING

The area to be surfaced shall be clean and free of any loose particle or foreign substances (dirt, oil, etc.) prior to commencement of the work.

3.4 PRIMING

The primer shall be spray-applied in accordance with the manufacturer's specifications. Primer shall be applied within 12 hours of synthetic material installation.

3.5 BASE MAT

3.5.1 Mixing

SBR granules and binder shall be mixed according to manufacturer's instructions. Mixing time shall be 2 to 4 minutes.

3.5.2 Application

The material shall be spread onto the asphalt mat using a mechanical tandem leveler. The tandem leveler shall have a heated oscillating screed bar for smoothness and compaction. The heated screed shall be heated to between 158 and 176 degrees F.

The laying procedure shall be bay-to-bay and limiting the length of the passes so as not to have any cold (or cured) lints between the bays. At the beginning of each work day, the traverse joint from the previous day shall be tack coated to ensure adequate bond. Small irregularities remaining in the surface after the tandem leveler has passed shall be removed using a length polyethylene or a Teflon roller.

3.6 IMPERMEABLE LAYER

The components are mixed at the prescribed ration homogeneously with suitable mixing device. This may be a strong drilling machine with a mixing paddle, a static mixing machine, or an automatic mixer. Mixing shall be done for 2 to 4 minutes per batch, depending on the mixer used. The coating shall be squeegee-applied to the base mat, making it impermeable.

3.7 STRUCTURAL SPRAY WEAR COATS

The top layer installation shall commence after the black rubber and sealer coat have cured. The top layer shall consist of a spray coating and EPDM granules. The base mat shall be dry, clean, and free of dust, oils, and greases. The spray coating material shall be mixed with the EPDM granules in a suitable device. Application of the mixture shall include the use of a structure-spray-machine. The mixture shall be placed using two applications in alternate directions with approximately 0.14 pounds per square foot per coat.

3.8 LINE MARKINGS (NOT USED)

3.9 PHYSICAL REQUIREMENTS

The completed surface shall meet the following requirements:

Thickness: 0.512 inches or as specified in the drawings.

Shore A Hardness	ASTM D 2240	55 +/-5
Elongation at Break	ASTM D 412	110%
Tensile Strength	ASTM D 412	645 pounds/sq in (at 68 degrees F)
Compression Set Recovery	ASTM D 395	90-95% over 24 hour period (at 68 degrees F)
Abrasion Resistance	ASTM D 501	0.009 ounces loss after 100 cycles
Chalking	ASTM D 822	No change after 1000 hours

Coefficient of Friction	ASTM D 1984	Dry: 0.70 to 0.75 Wet: 0.60 to 0.65
Resilience	ASTM D 2632	38 to 42%
Tear Resistance	ASTM D 624	60-75 psi

3.10 CONTRACTOR QUALIFICATIONS

The contractor shall submit evidence of at least 20 surface installations in the last 3 years utilizing the type of system specified herein.

The surfacing contractor chosen shall show proof of manufacturing their own polyurethane coatings.

-- End of Section --

APPENDIX B

Climbing Bars

Figure B-1.

Climbing Bars Specifications

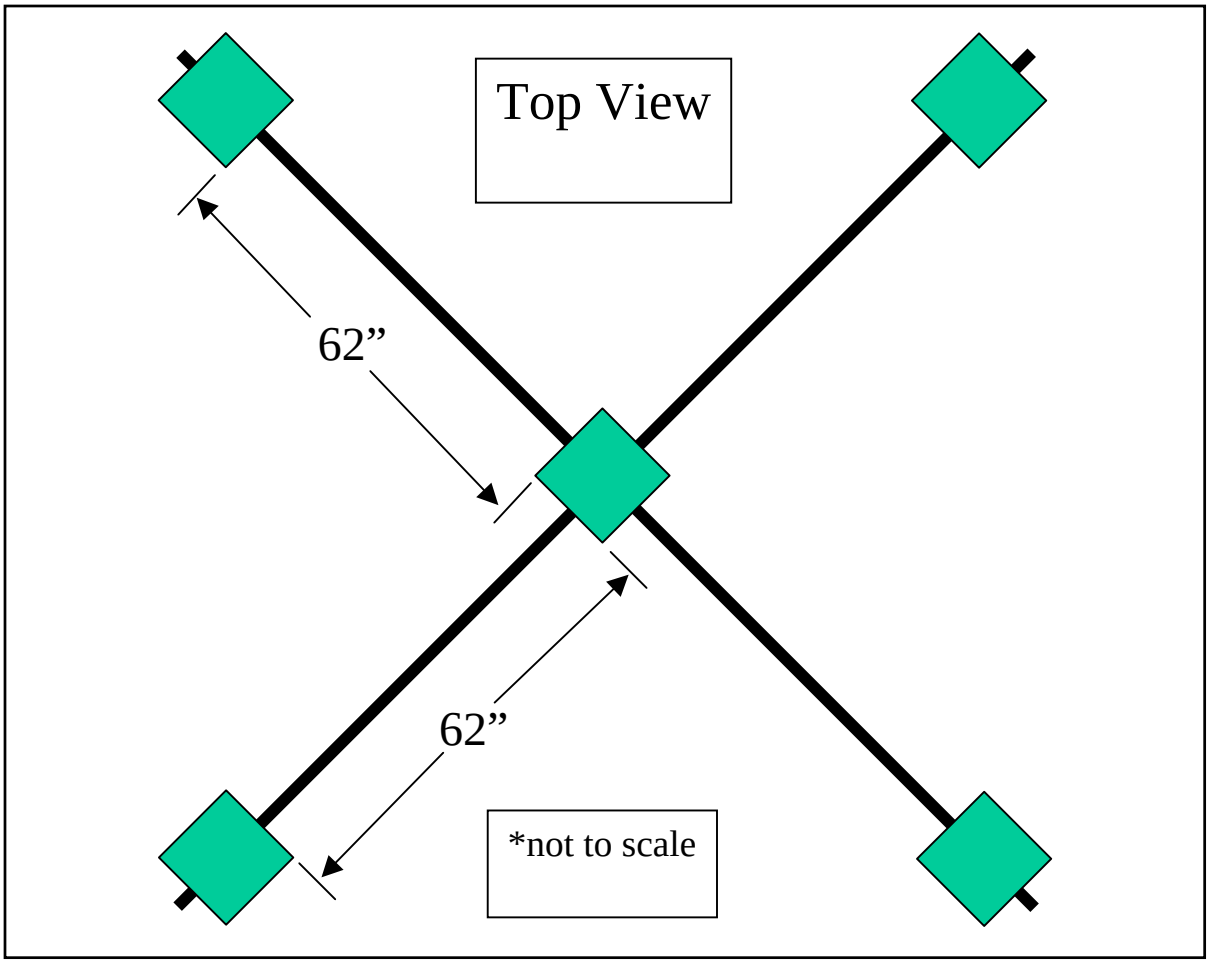


Figure B-2.

The specifications for the climbing bars are as follows:

- The posts (5) are 6” x 6” x 12’ and sunk 3 feet into the ground, anchored with concrete.
- The bars (2) are threaded water pipe, 1.0 inch inside diameter, 12 feet long with 1-inch end caps (4).
- The bars are throught the 6x6s at 7.5 and 8 feet above the ground.
- The distance from inside post edge to inside post edge is approximately 62 inches (refer to Figure B-2). This is to allow enough bar space to conduct all exercises safely.
- The step-ups (16 inches long) are cut from 4” x 4” x 8’ posts and secured to the 6x6s with 3 inch screws that are counter sunk.
- The step-ups on the outside 6x6 posts are 18 inches from the ground, the step-ups on the inside post are 24 inches above the ground (refer to Figure DB-3).

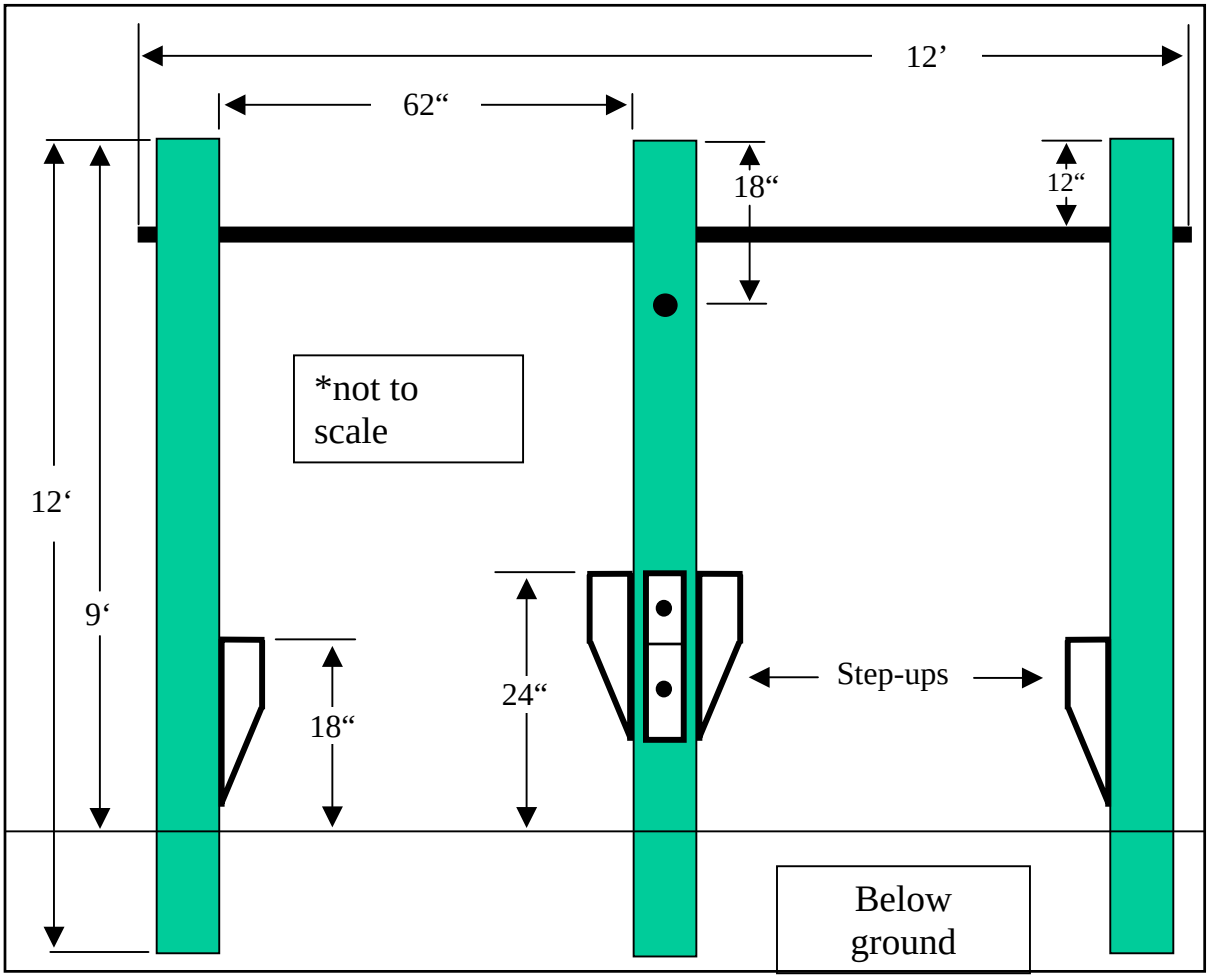


Figure B-3.

The following planning considerations apply:

- Climbing bars provide adequate space and facilitate better command and control than traditional pull-up bars. Traditional pull-up bars are too narrow to safely and efficiently conduct the climbing drills.
- Employment of multiple climbing bar “pods” as shown in Figure B-4 will allow for efficient mass training. The climbing drills require one bar for every three soldiers when performed as a single activity.
- The total ground surface area for four pods is only 625 square feet.
- Four pods will accommodate 16 stations x 3 soldiers per station for a total of 48 soldiers.
- Additional free-standing pods should be constructed to accommodate more soldiers.

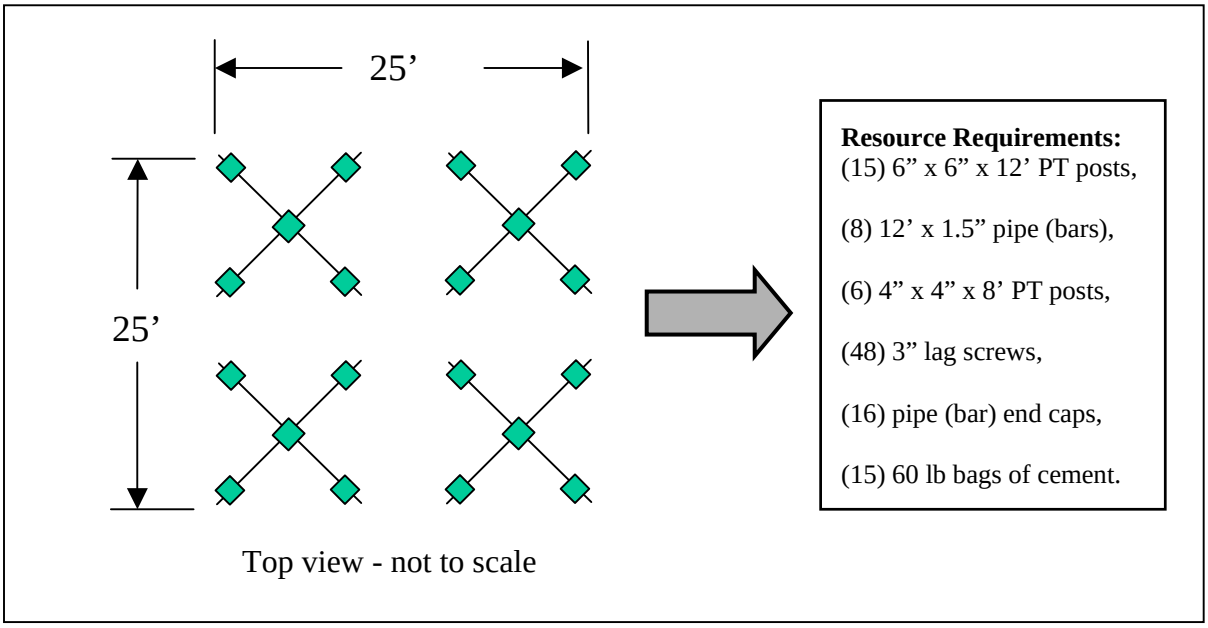

25’
25’
Top view - not to scale
Resource Requirements:
(15) 6” x 6” x 12’ PT posts,
(8) 12’ x 1.5” pipe (bars),
(6) 4” x 4” x 8’ PT posts,
(48) 3” lag screws,
(16) pipe (bar) end caps,
(15) 60 lb bags of cement.

FIGURE B-4.