
AT&T Practices

AT&T Procurement Requirements for Raised Seismic Access Floor (SAF) System

written in CSI Format

Contents	Page
Purpose	1
Reason for Reissue	1
About this Document	1
1.0 Overview	1
2.0 Ordering Information	1
3.0 How to Comment on This Document	2
1. PART I: General	3
1.0 General	3
2.0 Summary	3
3.0 Submittals	4
4.0 System Performance	6
5.0 Quality Assurance	9
6.0 Project Conditions	12
7.0 Extra Materials	13
2. PART II: Products	14
1.0 Manufacturers	14
2.0 Floor Panels	15
3.0 Pedestals	17
4.0 Pedestal Anchors	20
5.0 Box Stringers	20
6.0 Panel Lifters	21
7.0 Accessories	21
8.0 Corrosion Protection	23

Contents	Page
3. PART III: Execution	24
1.0 Examination	24
2.0 Preparation	25
3.0 Installation	25
4.0 Electrical Grounding (by others)	27
5.0 Completion	27
PART IV: Details and Attachments	30

Purpose

This document provides procurement guidelines for Division 10 - Titled "Specialties Section 10270 - Access Flooring" revised to AT&T Raised Seismic Access Flooring.

Reason for Reissue

This document is reissued to incorporate a title change, condensed format, clarification of Pedestal "B" (the heavy duty seismic pedestal), structural requirements and the deletion of the original formatted Part IV, VI and VII.

About this Document

Overview

This document is organized in four (4) Parts.

- Part I General: describes the design and installation criteria for Seismic Access Flooring (SAF) System.
- Part II Products: describes the product components used in the SAF System.
- Part III Execution: describes the preparation and installation of the SAF System.
- Part IV Details and Attachments: includes SAF details and forms.

Ordering Information

The ordering number for this document is 760-200-120 Appendix 1. Additional copies are available from the AT&T Customer Information Center (CIC). You may order this practice by phone, FAX, or mail by contacting CIC.

Toll Free: 1-800-432-6600
Toll: 1-317-322-6557
FAX: 1-317-322-6484
Mail: AT&T Customer Information Center
Attn.: Customer Service Rep.
P.O. Box 19901

AT&T — PROPRIETARY
Use pursuant to Company Instructions

Indianapolis, IN 46219

Use the document numerical identifier and issue number (i.e., 760-200-120 Appendix 1) when ordering this practice. The practice may be purchased via check, money order, major credit card, or approved company purchase orders.

How to Comment on This Document

To suggest changes to the information in this document or to notify the authors of errors in this manual, please submit a comment form that is located at the end of this practice. If the form is missing, send your comments and recommendations to:

AT&T
Manager
NSD Power and Infrastructure Development
Documentation Group
Room 21-2B27
1600 Osgood Street
N. Andover, MA 01845

Phone: 1-800-854-6228
FAX: 1-508-960-6851
ATT Mail: !powerdoc

PART I: General

1. General

- 1.1 This Section written in the Construction Specification Institute (CSI) format, provides procurement guidelines for Division 10 - Titled: Specialties, Section 10270 - Access Flooring, revised to "AT&T Raised Seismic Access Flooring." Herein known as the "System," is intended for use within all areas of central office telecommunication equipment facilities. The standards here listed, and as combined with other AT&T practices, are in concurrence with the Company's standardization policy for both new and renovation work.
- 1.2 Reason for Reissue: Changed title, condensed format, clarification of Pedestal "B" (the heavy duty seismic pedestal) structural requirements, and the deletion of the original formatted Part IV, VI, and VII.

2. Summary

- 2.1 This Section establishes the design and installation criteria for a complete, portable, raised, Seismic Access Flooring (SAF) System assembly incorporating modular gravity-held formed steel panels on an elevated, mechanically anchored seismic understructure (pedestals) supporting bolted box stringers with metal railings, ramps and stairs assemblies. Including but not limited to fasteners and related items as indicated, specified or, required herein and noted on the Architect of Record drawings. Thus creating a system with an accessible underfloor cavity for telecommunication network services and not used as an air plenum.
- 2.2 The floor system shall be installed in new or existing facilities where the product can be erected in a portion of, or on entire building floor. In new construction, if a depressed slab can be incorporated into the design to allow for future growth and be within budget, then the need for stair/ramp systems can be eliminated.
- 2.3 Related documentation shall include the drawings and general provisions of the Project Contract including General, Supplementary, and Special Conditions, AT&T/Manufacturer National Purchasing Agreement No. CH923022AO with Amendment No. 1, dated November, 1993, AT&T Practices and Corporate Order of Compliance with Central Office of the Future (COOTF) Standards, and the Architectural/Engineering (A/E) Consultant's specifications shall all be applicable to this Work.

- 2.3.1 AT&T Practice 760-200-026 "Seismic Zone Classification", and AT&T Practice 760-200-110 "Raised Floor Systems Design Criteria" shall apply. AT&T national seismic construction classification is based on the current Uniformed Building Code (UBC) seismic map.
- 2.3.2 Bellcore Technical Reference Publication TR-NWT-000063 Issue 4, 7/ 1991, Titled: Network Equipment-Building System (NEBS) for generic equipment compliance requirements, and AT&T 801-900-160 Issue 2, 2/ 1994, Titled: AT&T Network Equipment Development Standards (NEDS) Generic Requirements.
- 2.4 For construction terminologies defined or not defined in this section or, in other referenced standards refer to the appropriate component standards of nationally recognized Associations and Societies for design, testing, and installation methods and standards addressing this complete system.
- 2.5 AT&T's Network Environmental Systems Manager shall be contacted for any resolutions regarding design layout, equipment, space/area uses, and occupancies issues.

3. Submittals

- 3.1 Manufacturer shall submit price for materials and services (if requested) per square foot, that will be "added to" or "deducted from" the total contract sum by Change Order(s), per AT&T's approval. Refer to AT&T/Manufacturer agreement which addresses pricing for all material, labor, profit, freight and taxes.
- 3.2 Submit product technical information, samples and certificates for each component and installation method as required. Clearly mark all data which describes more than one type or item, process, etc., which is proposed for used or as an alternate/substitute meeting the requirements specified herein and in referenced publications.
 - 3.2.1 All components shall be in current production as a standard product of the system or device manufacturer noting that refurbished or reconditioned components are unacceptable when purchasing new materials.
 - 3.2.2 Samples for verification which be verify with the Architect of Record and/ or the AT&T representative. Refer to the vendor's submitted "System Details Catalog".
 - 3.2.3 Submit maintenance data per the Architect of Record specifications and/ or as required herein.

- 3.2.4 Provide product testing documentation for AT&T's approval from either a qualified testing laboratory or manufacturer. If submitted by manufacturer, testing shall be witnessed by independent laboratory to ensure product compliance.
- 3.3 Substitutions or approved equals are defined as any acceptable manufacturers' specific product, and/or specified method which meets the requirements as herein specified and/or as in occurrence with industry standards. Any and all substitutions shall be an "Approved Equal" agreed to by the AT&T representatives.
- 3.3.1 Only at AT&T's discretion, shall recondition material from within company stock be reused, provided that this material was properly removed, stored, and retains all applicable identifying certification. No custom products shall be allowed unless required by this specification. All products shall be supported per the vendor's warranty.
- 3.4 The shop drawings as prepared on AutoCad[®] shall delineate the complete floor system layout with field-verified dimensions based on AT&T's "referenced starting point." Include floor plans, elevations, sections, details with descriptive notes indicating seismic zone classification, finished floor height (FFH), materials, finishes, typical and special edge conditions, understructure, fasteners, quantities, accessories, and other data to permit full system evaluation.
- 3.4.1 Where a site survey and/or field measurements cannot be made without delaying the Work, guarantee design dimensions, and proceed with shop drawings preparation. Coordinate installation to ensure actual dimensions correspond to the guaranteed dimensions.
- 3.5 The vendor shall prepared and submit to AT&T a "Method Of Procedure" (MOP) for review as noted prior to commencement of any Work. Site conditions may require that all or part of the Work be executed outside of normal working hours which is AT&T's determination. AT&T's on-site representative has full authority to stop all Work which is not specifically detailed in the approved "MOP", with any expense incurred as a result of such action being borne fully by the vendor.
- 3.6 All changes to the "Scope of Work" must include a written and signed "Change Order" inclusive of materials, services and pricing before Work is to proceed.
- 3.7 If product demonstration is requested prior to installation, erect actual sample mock-up(s) necessary to demonstrate system capabilities to the approval of the AT&T representatives. Upon completion, dismantle, remove, and use within the system installation if approved by the Architect of record and/or the AT&T representative.

AT&T — PROPRIETARY
Use pursuant to Company Instructions

4. System Performance

- 4.1 Design, engineer, fabricate, ship, store, and install the floor system to comply with performance requirements of seismic zone four (4) calculations for establishing the structural integrity of AT&T's Network standardization policy of the elevated floor system as specified herein.
- 4.1.1 The System must be free of squeaks, rattles, rocking, vibration, to tight or loose fit, delamination, etc.
- 4.2 Table 1.1 coordinates finished floor elevation with the type of pedestal used per seismic zone. Pedestal "A" equals the standard seismic pedestal unit, and pedestal "B" equals the heavy duty seismic pedestal unit, each requiring no after market applied diagonal bracing for any seismic zone installation.

Table 1-1. **Finished Floor Height Table**

Seismic Zone	Pedestal Type	Designed Floor Height
0 (zero)	Pedestal A	36 inches (three feet)
1 (one)	Pedestal A	36 inches (three feet)
2A (two)A	Pedestal A and B	36 inches (three feet)
2B (two)B	Pedestal A and B	36 inches (three feet)
3 (three)	Pedestal A and B	36 inches (three feet)
4 (four)	Pedestal A and B	24 inches (two feet)

- 4.3 The engineered raised floor system shall be capable of supporting the following loads tested in accordance with the applicable procedures in the Ceiling and Interior Systems Construction Association (CISCA), and the "Recommended Test Procedures for Access Floors (AF)", referred herein as CISCA/AF. Noting that the design calculation parameters herein specified, were developed to meet seismic zone four (4) requirements for the AT&T standard.
- 4.3.1 Manufacturer to submit proof that the designed structural computations are in compliance with their in-house professional engineer's analysis for earthquake load resistance. This report shall state that the system will withstand earthquake loads as required by the local building codes and AT&T's Network Requirements per the seismic zone specified herein.

- 4.3.2 Floor panels must be capable of supporting a concentrated design load requirement of 1,250 pound-force (lbf.) magnitude concentrated on 1.0 square inch with a top surface deflection (under load) and a permanent set not to exceed 0.160 inch and 0.010 inch respectively; as measured above each applied load any where on the panel surface.
- 4.3.3 Pedestal "A and B" assemblies installed in either the 24 or 36 inch unit assemblies shall be capable of withstanding the following loads on the new or existing building sub-floor for ALL seismic zones without stringers and panels in place. Overturning moment for Pedestal "A" assemblies equal 3,000 inch-pounds, and Pedestal "B" assemblies equal 180,000 inch-pounds. The overturning moment for Pedestal "A" head assemblies equals 2,000 inch-pounds, and the shear load for Pedestal "B" head assemblies equals 7,500 pounds. The axial load of 5,000 pounds is required for each pedestal assembly.
- 4.3.4 Anchored pedestal assembly shall support the following lateral forces, noting that the lateral force is applied in a plane parallel to the baseplate and in a direction in-line with the anchors.
- Pedestal "A" (24 inch unit) = 300 lbs. ultimate, Pedestal "A" (36 inch unit) = 200 lbs. with no yield.
 - Pedestal "B" (24 inch unit) = 7,500 lbs. ultimate, Pedestal "B" (36 inch unit) = 5,000 lbs. with no yield.
- 4.4 Table 1.2 coordinates the pedestal assembly types per square foot of use for each seismic zone. Figure 18 presents an example of a typical Pedestal "B" layout.

Table 1-2. **Pedestal Location Table**

Seismic Zone	Pedestal Type Used	Square Footage
0 (zero)	Pedestal "A"	Used singularly through out
1 (one)	Pedestal "A"	Used singularly through out
2A (two)A	Pedestal "A", "B"	"A"=std., "B"= 1/64 sq. ft.
2B (two)B	Pedestal "A", "B"	"A"=std., "B"= 1/64 sq. ft.
3 (three)	Pedestal "A", "B"	"A"=std., "B"= 1/64 sq. ft.
4 (four)	Pedestal "A", "B"	"A"=std., "B"= 1/64 sq. ft.

- 4.5 Stringers shall be capable of supporting a concentrated load of 450 lbf. (pounds-force) at mid-span of pedestals without panels in place; and with a permanent set not to exceed 0.010 inch.

- 4.6 The total floor system capable of supporting the following loads:
- 4.6.1 Ultimate strength of the floor system shall have the loading capacity of 4,000 pounds. Failure is defined as the point at which the panel no longer accepts the load.
- 4.6.2 The panel shall sustain an applied load of 400 lbf. (pound-force) on CISC/AF Wheel Test No. 1 for ten (10) passes (rolling load). A maximum local and overall surface deformation not to exceed 0.040 inch, and a permanent local indentation not to exceed 0.020 inch.
- 4.6.3 Design, engineer, fabricate and install floor panels within the System to withstand a 100 lbf.(pound-force) impact (impact load). This load when dropped from 12 inches onto a 1.0 square inch area anywhere on the panel surface will not exceed an indentation of 0.060 inch.
- 4.6.4 This System shall be capable of withstanding stresses produced by lateral forces (measured as foot-pounds) of magnitude per Seismic Zone (earthquake loads). Note that where wind load requirements produce higher stresses, such forces shall be used in lieu of the seismic loads as determined by the architect or engineer. The construction documents/ drawings shall indicate the seismic zone per the latest applicable requirements of code authority holding jurisdiction. Refer to Table 1.1.
- 4.7 Lateral force (F_p) calculation (AT&T Proprietary Information) will, upon written request with "signature of non-disclosure agreement," be provided with the required calculations and testing results used to develop this seismic floor system for company use. Noting that this information exceeds the design requirements of the national building code formula. The vendor is to verify calculation compliance with regulatory agency's code requirements by calculating lateral forces (F_p) in accordance with the formula $F_p = ZIC_pW_p$, in which the values for the following are based on requirements of ANSI A58.1 (Minimum Design Loads for Buildings and Other Structures) for the project within the specified seismic zone.

- Z = Seismic Coefficient = 1.000 (Zone #4).
- I = Occupancy Importance Factor = 1.000
- C_p = Horizontal Force Factor = 0.3 (code coefficient)
- W_p = Area of a single standard field panel in sq.ft. by [(25 percent of Uniform Live Load in lbf./sq.ft.) plus (Dead Load consisting of weight of access floor in lbf./sq.ft. plus partition load in lbf. divided by sq.ft.)].
- UBC = Uniform Load is 100 psf (computer room).
- DL = Dead Load is equal to the weight of raised seismic access floor system.

- 4.8 Provide the floor system with the following electrical resistance characteristics:
 - 4.8.1 Static-control of the floor covering laminate resistance of not less than 500,000 ohms, nor more than 20,000 meg-ohms, as measured across the surface covering through panel to understructure; using a modified test method of conductive flooring specified in Chapter 3, NFPA 99. Noting that the Panel to understructure resistance of not more than 10 ohms.
 - 4.8.2 The floor system shall be effectively grounded to the common building ground, as designed and installed by AT&T unless noted otherwise per network requirements. Refer to Section 4, Part III herein.
- 4.9 The following System's fire protection values are based on NFPA 101, Life Safety Code, and AT&T's Network Equipment Building System (NEBS) requirements for flammability protection of network equipment. The manufacturer shall submit certified documentation with test data that the System meets the following criteria. Separate tests shall be conducted on both sides of the floor panel with additional testing of the lower surface since there will be extensive cabling within the access floor cavity.
 - 4.9.1 Flame spread rating shall not be greater than 25, and the smoke developed shall not be greater than 75; as measured by ASTM-E84, Standard Test Method for Surface Burning Characteristics of Building Materials. (FINISHED PANEL)
 - 4.9.2 Critical radiant flux shall not be less than 0.45 watts per square centimeter (watts/cm^2) as determined by ASTM-E648, Standard Test Method for Critical Radiant Flux of Floor Covering System Using a Radiant Heat Energy Source. This test shall be performed with all panel trim/edging installed and at least one (1) trimmed cutout (15cm by 15cm) shall be located on the center line of the panel so that the edge of the cutout located closest to the radiant panel is no less than 10cm, and no more than 15cm from the zero (0) mark on the specimen fixture. (FINISHED PANEL)
 - 4.9.3 All nonmetallic components (example: laminate, trim, edging, etc.) shall have an Oxygen Index of 28 percent or greater, as determined by ASTM-D2863, Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics.
- 4.10 All standard panels shall be removable and interchangeable by one person with a portable lifting device.

5. Quality Assurance

- 5.1 AT&T retains the right to immediately terminate all operations and/or cancel this agreement, under project conditions where the vendor is not in

AT&T — PROPRIETARY
Use pursuant to Company Instructions

compliance with company policies. At end of each work shift or before moving to another area, the vendor shall remove all debris, tools and materials resulting from Work.

- 5.2 The manufacturer, distributor/dealer, and installer herein refer to as "vendor", shall provide the "Work" described in this specification which consists of all labor, materials, equipment, and services necessary to install a fully functional and integrated System. Work that may or may not be specifically mentioned herein nor shown in the drawing package but required for proper performance, operation, testing and maintenance shall be furnished and installed. Any extra and/or special equipment, mounting devices, etc., needed to install or perform specific system functions shall be provided without additional cost to AT&T.
- 5.2.1 For construction, inspection, and payment schedules refer to the Bid Package and Project Schedule. All material and equipment used shall be new.
- 5.3 Single-Source Responsibility: All system components shall be the product of the same component manufacturer and/or from a manufacturer acceptable to another manufacturer. All components shall be new, free from defects and labeled with make, model number, device tag number, manufacturing lot number per ISO requirements, and the testing agencies labels (e.i. UL) as applicable. No partial System acceptances shall be granted nor shall any payment be made for any Work WHICH IS NOT one-hundred (100%) acceptable per site conditions and schedules.
- 5.3.1 The manufacturer shall submit signed certification by an Officer or Technical Service Engineer of the Company to the AT&T/Manufacture agreement manager on a project basis. Stating that the System as installed meets AT&T's specified design requirements and quality standards of performance reliability.
- 5.3.2 Prior to installation and at time of shop drawing preparation, the vendor shall perform a site survey (if required) to verify site condition. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with all preparation of shop drawings without field measurements.
- 5.4 Errors, omissions or other defects in the construction document package known to the Bidders shall be addressed to AT&T prior to bid submission. Should any Bidder be in doubt relative to the intention and meaning of the drawings, specifications and/or a code issue, shall inquiry to the Architect/Engineer. Written response will then be mailed/FAX to all Bidders if the bid package is in error or in need of clarification. AT&T will not be held responsible for any inquiry being addressed and answered verbally.

- 5.5 The installed System and components of, shall be in compliance with the latest issue of all applicable ordinances and regulations of the building codes and recommended industry standards where governing authorities having jurisdiction may carry out inspections deemed necessary. All products shall be labelled with the appropriate approval markings. Verification of compliance shall rest with the vendor.
- 5.5.1 Nothing herein shall be construed as permitting Work not conforming with the applicable code to be implemented. Should changes be necessary to the drawings, specifications, and/or the Work for code compliance, the vendor shall notify the AT&T representative in writing upon receipt of this proposal.
- 5.5.2 The manufacturer's registered engineer, professionally trained to render such services that have resulted in successful installation of similar systems of design and extent will be required for System changes.
- 5.5.3 The manufacturer's dealer/supplier qualifications per AT&T/manufacture agreement shall establish a "Single Point of Contact and Responsibility"; to supply the System as supplied, installed and guaranteed.
- 5.5.4 Installer qualifications per AT&T/manufacture agreement shall establish a "Single Point of Contact and Responsibility;" to install and guarantee the specified system.
- 5.5.5 An independent testing laboratory (if required) must demonstrate to Architect's satisfaction, based on laboratory submitted criteria conforming to ASTM E 699; that it has the experience and capability to conduct the testing indicated without delaying the progress of the work. Personnel, materials, and installation procedures shall meet the requirements as specified herein, and/or the required regulatory agencies standards for AT&T's network reliability concerns at all times.
- 5.6 The vendor shall coordinate their location of operation with general contractor and/or AT&T's representative to assure that facility standards of operations are met project duration.
- 5.6.1 Materials shall be delivered in original, unopened packages, clearly labeled with vendor's name and part description. Arriving materials shall distributed around the work area to avoid damage to the product and overstressing of the existing subfloor. Delivered materials shall be stored in ventilated dry locations. Storage area shall permit easy access for inspection and handling. If it is necessary to store materials outside, they shall be stacked off the ground, properly supported on a level platform, and fully protected from the weather avoiding the use of non-venting plastic or canvas shelters which would create a humidity chamber. Handle materials carefully to prevent damage. Replace damaged items that cannot be restored to like-new condition.

AT&T — PROPRIETARY
Use pursuant to Company Instructions

- 5.7 The vendor shall not admit persons into or on AT&T property who has not gained security approval whether in their employment or not (i.e., sales representative). All vendor employees shall visibly wear and be responsible for identification badges as issued while on company property.
- 5.7.1 The vendor shall be responsible for potential damages done to company by leaving any security door, gate, or opening unsecured at any time when such an area is not directly attended. Also, vendor shall not employ minors without the proper work permits and shall perform sufficient research, to preclude the use of illegal aliens as part of this agreement.

6. Project Conditions

- 6.1 The general contractor will be responsible for providing a clean facility environment free of dust, debris, and other materials, while providing a secured "on-site" storage area for vender's materials.
 - a. Vendor shall verify all pre-agreed job-site conditions have been met.
 - b. Vendor shall stage their operations on the approved "MOP," prior to Work commencement.
 - c. Vendor shall coordinate actual construction dimensions, by conducting an accurate field inspection with measurements before commencing Work. Show all recorded measurements on final shop drawings along with AT&T's specified "Reference/Starting Point".
 - d. Vendor shall coordinate fabrication schedule with construction progress to avoid delay of Work.
- 6.2 Sequencing and Scheduling:
 - a. Vendor shall attend job meetings to establish schedules, review approved shop drawings, and coordinate trade work that will affect or be affected by this installation.
 - b. Do not proceed with installation until substantial completion of other Work has been signed off.
 - c. Install the System in ten (10) foot square areas or as directed, so other Work can take place with minimal interference.
 - d. To maintain system integrity, install and protect floor system as required by manufacturer's suggested method as coordinated with the general contractor and other trades.

7. Extra Materials

- 7.1 Furnish four (4) standard floor panels without cutouts per one-thousand (1,000) square feet installed in factory packaging. Any additional material shall be ordered under the AT&T/Manufacturer agreement.

PART II: Products

1. Manufacturers

Subject to product compliance as defined herein and under the AT&T/Manufacturer National Purchasing Agreement CH923022AO dated January, 1993 and amended November, 1993; provide the raised Seismic Access Flooring (SAF) System and components of, and with or without installation services from:

TATE ACCESS FLOORS, INC.	For: TATE SAF System
7510 Montevideo Road	Attn.: Mr. Thomas B. Kidd
Jessup, Maryland, USA 20794	Phone: 1-800-242-4304

1.1 The System shall be gravity-held formed steel panels mechanically anchored to a seismic pedestal understructure anchored to the building sub-floor, supporting a screwed basket-weave pattern of four (4) foot box stringers. Noting that substitutions of equivalent systems using materials, equipment, devices, and methods of installation that perform the same functions as listed herein, are not acceptable at this time.

1.2 Proposal:

The General Contractor is herein requested to submit a lump sum price proposal with the added administration and construction coordination fees itemized to AT&T. All material, equipment, software, devices, accessories and other facilities and appurtenances herein specified, or as noted in the construction documentation including the approved shop drawings and installation instructions shall be new, best suited for its intended use, and shall conform to all applicable and recognized standards. All materials and equipment shall be from the vendor's standard cataloged and inventoried product line.

1.3 Order:

For purposes of this document, the term "Ordering Party" shall refer to the entity that places an "AT&T Order" upon the vendor for a particular installation. It may include authorized AT&T employees or non-AT&T personnel such as General Contractor, Construction Manager, or the Architect/Engineer. It is understood that non-AT&T personnel or agent of, are authorized to place orders only when working under contract or other legal arrangement with AT&T.

1.3.1 The Ordering Party shall place said Order with requested progress payment (if any) using the AT&T Order Form as Part IV of this specifications, and the attached construction documentation. The vendor's representa-

tive shall be in compliance with this Order as dated, and shall forward an itemized material pricing schedule directly to the assigned AT&T representative per AT&T/manufacture's Agreement. Refer to the Architect of Record's specification package for additional or supplemental information.

- 1.3.2 The manufacturer shall verify at time of Order, the need and feasibility of utilizing the factory's safety stock with the appropriate AT&T/manufacture's agreement administrator, prior to shipment.

- 1.4 Time and Payment Schedules:

Refer to the Bid Package, Construction Schedule, and Article 8 of the AT&T/manufacture's agreement instructing the ordering party to purchase direct from paragraph 1.0, Part II. All mutually agreed retained and progress payments for Work rendered, shall be made directly to the manufacturer no later than seven (7) days after receipt by the general contractor of payment(s) from AT&T.

- 1.5 Change Orders:

Following contract award; any "scope-of-work changes" shall be in writing requiring AT&T's approval prior to proceeding. All change proposals must include detailed material and labor pricing. Any compliance changes to the System's design or configuration for company use shall be approved by AT&T's Network Environmental Systems Manager.

2. Floor Panels

- 2.1 Provide vendor's standard modular panels of size and construction indicated. Panels must be easily set and removed without disturbing adjacent units or understructure by one person using a portable lifting device. When installed, panels are to be free of exposed metal edges with floor covering in place.

- 2.2 All panels shall bear model identification permanently stamped into the bottom metal surface of each unit and a reference number, denoting the concentrated load of 1250 pounds per the Ceiling and Interior Systems Contractors Association (CISA) standard.

- 2.3 Panel Construction:

Fabricate all-steel panels with a die-cut full hard cold-rolled steel top sheet welded to a die-formed and stiffened, cold-rolled steel bottom sheet. All units shall be 24 inches square, unitized, welded construction with a minimum of 131 welds, with a uniform bottom pan pattern of formed modular pockets to resist deflection. The installed panels shall not extend below the support stringer's bottom edge.

AT&T — PROPRIETARY
Use pursuant to Company Instructions

- 2.3.1 Fabrication tolerance shall be expressed as the difference between the diagonal measurements of plus or minus 0.015 inch of required size, and a squareness tolerance of plus or minus 0.015 inch.
- 2.3.2 Unit flatness shall be plus or minus 0.025 of an inch as measured on the diagonal top surface of the panel.
- 2.4 All metal surfaces shall be corrosion protected with epoxy applied paint in an immersion dipped or baked process. This finish shall comply with Part I's fire and electrical grounding resistance requirements.
- 2.5 Provide manufacturer's standard floor covering of color and/or pattern as herein specified.
 - 2.5.1 Laminate:

NEMA LD 3, High Wear (.062) Type, in high pressure laminate (HPL), fabricated in one piece to cover each panel face within perimeter edging. Color: Grey Starlite (ST61) or Architect's sample. Panel trim shall be mechanically fastened and adhered to the floor panel. Trim color: Black.
 - 2.5.2 Adhesive:

Panel adhesive shall be moisture resistant and waterproof. The plastic laminate shall be tested for adhesion on three panels randomly selected from the assembly line. This test shall be performed after a minimum curing time of 48 hours to verify lamination capable of resisting a tensile load of 15 lb.s per square inch for a minimum of five minutes. The testing shall be certified and submitted by an independent laboratory per the AT&T/manufacturer's agreement. This laminate shall also be capable of being cut and removed for field penetrations without splintering and/or delamination.
 - 2.5.3 Grounding:

Panel grounding to understructure contacts shall have no more than ten (10) ohms resistance. Continuity clips shall be attached to the stringer over the pedestal or placed within the panel.
- 2.6 Should the vendor be directed to provide panel cable access, proceed with this operation for panel cutouts per size, shape, and location as directed by company. These shapes shall be dimensionally squared, rectangular or round, and done at manufacturing facility or on-site but outside of the work area.
- 2.7 Each cut panel and panels with cutouts that can not maintain the specified load rating shall be reinforced with additional pedestals and/or added

underside panel support. When the panel is removed, the mechanically attached underside panel support(s) must remain firmly in place.

3. Pedestals

- 3.1 Provide manufacturer's mechanically anchored seismic pedestal and head assemblies with height adjustments capabilities.
- 3.2 There are two (2) types of seismic pedestal assemblies that shall be used either separately or in unequal numerical combinations pending the project's geographical seismic zone location.
 - a. Pedestal "A" equals the standard seismic pedestal unit assembly.
 - b. Pedestal "B" equals the heavy duty seismic pedestal unit assembly.
 - c. Diagonal seismic bracing is not required for either unit.
 - d. Diagonal perimeter bracing is placed as required.
 - e. Pedestal "A and B" locations per Table 1.2.
- 3.3 To achieve the greatest underfloor cavity area, the dimensional length of the Pedestal A or B in the 24 or 36 inch unit assembly must be verified with the overall finished floor height (Table 1.1) required per seismic zone. The company standard for telecommunication equipment space is the use of the twenty-four inch (24) raised seismic access floor system per AT&T Practice 801-900-160.
- 3.4 The vertical center line of each pedestal is set the intersections of the AT&T Central Office Layout Designer's (COLD) twenty-four (24) inch square floor grid layout as dimensioned from the reference or starting point. Any additional pedestals shall be placed to maintain the System's structural integrity where panel cutouts or perimeter cut panels occur.
- 3.5 PEDESTAL "A" (The standard seismic pedestal unit):
 - 3.5.1 The baseplate measurement shall be 6.0 inches square by 0.1875 inches thick with an approximate bearing area of 36 square inches. Two (2) pre-drilled 0.438 inch diameter anchor holes shall be positioned on diagonally opposite corners at 0.562 inches from each edge to center point. All baseplate corners are to be rounded to eliminate sharp edges.
 - 3.5.2 Pedestals shall be mechanically fastened to subfloor using two (2) anchors. These anchors must have a depth penetration of 2.312 inches to meet the minimum design load of 3,000 pound per square inch (PSI) in concrete. Refer to paragraph 4.0, this Section for anchor type.

- 3.5.3 The pedestal column is a steel tube with a minimum out-side diameter of 1.625 inches and a minimum wall thickness of 0.060 inches. Provide within the upper tube, accommodations for the head assembly with height adjustments. The column must maintain a true vertical alignment of plus or minus one (1) degree with a continuous fillet weld to the baseplate.
- 3.5.4 The plated head assembly shall consist of a 3.0 inch square by 0.1875 inch thick steel plate, or a die stamped steel head of the same dimension welded to a 0.875 inch diameter by 5.5 inches minimum threaded steel stud. The fillet weld shall be continuous or a support plate must be used with the die stamped head. The head assembly top plate must accommodate four (4) 0.250/20 by 2.00 inch plated screws for stringer attachment. Note: A plated .875 inch diameter threaded rolled tube with a minimum wall thickness of 0.105 inches may be substituted for threaded stud.
- 3.5.5 Leveling adjustments shall be provided in a minimum of 0.012 inch increments within an overall vertical adjustment of 2.0 inches. There shall be a minimum engagement of 2.5 inches of threaded stud inside pedestal upon final leveling with an exposed stud length of plus or minus 1.5 inches at finished floor height. A fine adjustment travel of not less than 2.0 inches must be provided with a locking leveling mechanism (vibration-proof) which when set, requires a deliberate action to change the height setting.
- 3.6 PEDESTAL "B" (The heavy duty seismic pedestal unit):
- a. For load requirements, refer to "structural performance", Part I. of this specification.
 - b. Alternate materials and fabrication methods can be submitted provided the structural performance requirements are submitted for AT&T's review and approval.
- 3.6.1 The baseplate measurement shall be 10.0 inches square by .375 inches thick with an approximate bearing area of 100 square inches. Twelve (12) predrilled 0.81 inch diameter anchoring holes are positioned three (3) per side with the four (4) center holes (0,90,180 and 270 degree) set at 1.750 inches from the edge to center point. The center of each corner hole [two (2) per side, eight (8) total] will be set 0.900 inches from leading edge, and 2.40 inches from each corner. All corners to be rounded to eliminate sharp edges.
- 3.6.2 Pedestals are mechanically fastened to subfloor using four (4) expansion type anchors placed one (1) per side of the baseplate. These anchors must have a minimum depth penetration of 80 (mm) millimeters by 18 mm diameter per the manufacturer's instructions meeting the minimum design loads as measured in 3,000 pounds per square inch (PSI) concrete. Field placement of four (4) anchors versus twelve predrilled baseplate holes is for possible embedded subfloor conditions such as rebar. Refer to para-

graph 4.0, this Section for anchor type. If required, an anchor cap shall be provided for network cable protection.

- 3.6.3 The pedestal column is a steel tube with an minimum outside diameter of 3.0 inches and a minimum wall thickness of 0.216 inches. Within the upper tube, accommodations for the head assembly with height adjustments must be provided for. The column must maintain a true vertical alignment of plus or minus one (1) degree with a continuous fillet weld to the baseplate. The top collar insert which is to receive the head assembly is fastened using a continuous fillet weld or a press fitted connection.
- 3.6.4 Provide overall lateral bracing within the total pedestal assembly by fabricating four (4) gusset plates. The gussets, which take the shape of a triangle constructed of 0.1874 thick (min.) steel with an approximate base and height dimension of 4.13 inches and 20.4 inches. The placement of the gussets on the pedestal assembly (plan view) shall be on the diagonal runs of the baseplate. Attachment to the baseplate is done with a continuous fillet weld on both sides of the gusset's base. Also, the vertical leg of the gusset shall receive 3.0 inch long welds starting at the bottom inside corner and up along the pedestal sides at 3.0 inches intervals on both sides of the gusset. Position and weld a 0.250 inch by 1.0 inch by approximately 20.5 inches long reinforcing steel strip on the pitched edge of the gusset leading edge's center point, with alternating 3.0 inch long welds per side.
- 3.6.5 The plate head assembly shall be a 3.0 inch square by 0.375 inch thick steel plate fillet welded to a 0.875 inch diameter high strength threaded rod. The stud length should be a minimum of 6.0 inches and placed within the prefabricated steel "Collar Insert" of the column assembly. Noting that the head assembly top plate must accommodate four (4) 0.250/20 by 2.00 inch plated screws for the stringer attachment.
- 3.6.6 Leveling adjustments shall be provided in a minimum of 0.012 inch increments within an overall vertical adjustment of 2.0 inches. There shall be a minimum engagement of 2.5 inches of threaded stud inside pedestal upon final leveling with an exposed stud length of plus or minus 1.5 inches at finished floor height. A fine adjustment travel of not less than 2.0 inches must be provided with a locking leveling mechanism (vibration-proof) which when set, requires a deliberate action to change the height setting.
 - a. For load requirements, refer to "structural performance", Part I. of this specification.
 - b. Alternate materials and fabrication methods can be submitted provided the structural performance requirements are submitted for AT&T's review and approval.

AT&T — PROPRIETARY
Use pursuant to Company Instructions

4. Pedestal Anchors

- 4.1 PEDESTAL "A" (the standard seismic pedestal unit):
- a. Anchor: Concrete screw type: 3/8 inch Kwik-Con Catalog #002243632; or approved equal pending site particulars, as manufactured by Hilti Inc., Tulsa, Oklahoma.
 - b. Embedment depth: Completely set with a drilled hole depth of 3.0 inches. Drill holes with either a hammer drill or diamond core system utilizing a 8 mm drill bit conforming to ANSI tolerances.
 - c. Approvals: Anchors shall meet ICBO (International Conference of Building Officials Evaluation Report No. 4627-Hilti, COLA (City of Los Angeles) Research Report No. 24946-Hilti, SBCCI (Southern Building Code Congress International, Inc.) Report No. 8913-Hilti, and/or the most current approval issue(s).
- 4.2 PEDESTAL "B" (the heavy duty seismic pedestal unit):
- a. Anchor: Heavy-duty expansion/sleeve type: HSL M 12/25 Catalog #000665927, as manufactured by Hilti Inc., Tulsa, Oklahoma.
 - b. Torque value: Torque value: Sixty (60 ft.lb.) foot-pounds.
 - c. Embedment depth: 80 millimeters (mm) min. with a drilled hole depth of 100 mm maximum. Drill holes with either a hammer or diamond core system utilizing a 18 mm drill bit conforming to ANSI tolerances.
 - c. Approvals: Anchors shall meet ICBO (International Conference of Building Officials) Evaluation Report No. 3987-Hilti, SBCCI (Southern Building Code Congress International, Inc.) Report No. 8913-Hilti, and the most current approval issue(s).

5. Box Stringers

- 5.1 Modular steel stringer system designed and fabricated to interlock with head assembly while providing support for all panel edges. Refer to section 8.0 this section for corrosion protection. Stringers are constructed of boxed cross sectional galvanized steel with a minimum wall thickness of 0.056

inches in a nominal dimension of 0.6 inches wide by 1.25 inches high with an approximate overall dimension of four (4) feet long.

- 5.1.1 The stringers shall be positioned on the pedestal head assemblies in BASKETWEAVE configuration ensuring maximum lateral stability in all directions while spanning three pedestal units per stringer. The stringers shall be mechanically fastened to the pedestal heads using four (4) 0.250/20 by 2.0 inch plated screws that are accessible from above. These screws shall provide a positive electrical contact.
- a. Stringers shall have top applied sound proofing strip.
 - b. All sharp edges must be sanded smooth and corrosion resistant paint re-applied.
 - c. All sharp and/or protruding edges of panel grounding clips that are fastened to the stringers (if used), and shall be sanded smooth.

6. Panel Lifters

- 6.1 Provide the manufacturer's standard portable floor panel lifting device that is compatible with panel covering. The vendor shall assess the number of, and placement of lifters required by the local fire and/or building code ordinance for underfloor accessibility.
- 6.1.1 Mount the lifter's bracket with panel lifter adjacent to each entry/exit door, or on column enclosure opposite of or closest to each point of entry within the raised floor area; or as per the local code. The bracket assemblies shall be mounted to the average line-of-sight of five (5) feet plus/minus above finished floor (aff) as aligned with the horizontal center line of the pre-affixed "panel removal and replacement instructions sticker."

7. Accessories

- 7.1 The vendor is to supply all accessories as "standard items" within their System package per the AT&T/manufacturer's agreement. All finishes that are exposed are to be coordinated with, and approved by the Architect of Record, as is the need for and the design of, stairs, ramps, and railings.
- 7.2 Provide the quantity, shapes, and sizes per location of cut panels as indicated on the drawings. All cut panels shall be fabricated and reinforced to maintain structural integrity referenced herein.
- 7.3 Provide steps of size, tread covering, and arrangement as indicated on the contract drawings.

- 7.4 Provide manufacturer's standard ramp system of width and slope indicated with non-slip surface using the same materials, performance and structural requirements as the floor system. Noting the maximum handicapped (equipment) ramp slope shall comply to the regulatory code agency having jurisdiction.
- 7.5 The vendor shall provide (as an option) the floor manufacturer's standard satin-finish extruded aluminum post-and-rail-type hand/guard rails at ramp(s), stair(s) and open perimeter areas of the raised floor system; or as drawn and/or specified by the Architect. Include handrail, intermediate rails, posts, brackets, end caps, wall returns, wall and floor flanges, plates, guard rails and anchorages as required that conform to Occupational Safety and Health Act (OSHA), and the required local regulatory agency code.
- a. Wall mounted handrails shall have end returns, be supported at the returns, and be wall anchored.
 - b. Floor mounted handrails shall have radius corner sleeves with post and flanges. All posts shall be fastened to the access floor panels and as required, extend through floor panels for mechanical anchoring to the subfloor.
- 7.5.1 Aluminum railings shall be fabricated of pipe sections with an outside diameter (OD) of 1.5 inch mim. to 2.0 inch max., and with a cross sectional dimension not exceeding 2.0 inches; schedule 40. The railings shall have a top, intermediate and vertical members assembled with concealed joint fittings. Fittings and fastenings shall be cast or extruded aluminum. All joints shall be finished flush and shall be designed for concealed pin fastenings or epoxy jointing or welding. Joints shall feel smooth to the touch without sharp edges. All railing work shall be finished with AA-C-20, A31 (chemically etched medium-matte, clear anodized finish.) The necessary anchors shall be provided as required to ensure a rigid installation.
- 7.5.2 The dimensional fabrication requirements as listed herein are within all national code allowances but variance in local code shall be verified by the vendor.
- 7.6 Where underfloor cavity is not enclosed with a interior partition or exterior wall, provide manufacturer's standard metal fascia enclosure assembly. Color and finish as approved by Architect of Record.
- 7.7 As indicated on the drawings, provide the manufacturer's standard aluminum expansion joint assembly.
- 7.8 Provide as a standard item, all lateral/diagonal bracing at floor transitions, stair edges, false walls, and ramps where required to ensure the System's structural integrity.

- 7.8.1 To ensure equal transition with the newly installed access flooring to an adjoining floor(s), provide either perimeter pedestal assemblies or the manufacturer's standard curb angle assembly.
- 7.9 If required, and as directed and coordinated by AT&T, fabricate dimensional cutouts complying with size, quantity, and locations in the floor panels (as shown on drawings) to accommodate cable access penetrations. Provide additional support and cutout trim edge protection as required to maintain panel's structural and electrical grounding performance requirements as referenced herein.

8. Corrosion Protection

- 8.1 All items of the support assembly shall be made of galvanized steel or shall be galvanized after fabrication. The galvanizing shall comply with ASTM A153, ASTM A123 and ASTM 386, as applicable to the specific element to be galvanized. All bare steel surfaces, surfaces burned, sanded and welded during fabrication shall be touched up with a zinc paint.
- 8.2 All items that are to be painted shall receive a durable epoxy paint finish that resists abrasion and dissipates static electricity. All surface preparation and priming shall be done in accordance with the manufacturer's standards. Noting that Pedestal "B" shall be finished with the same paint as used on the floor panels.

PART III: Execution

1. Examination

- 1.1 The vendor (installer) shall review and comply with Part I documentation of this specification, shall not begin installation until all site conditions are met, and all approved plans have been received. Note that AT&T reserves the right to relocate any component of the System within a radius of ten (10) feet at no additional expense before rough-in work is started.
- 1.2 The general contractor and vendor shall review all drawings/specifications in order to ensure completeness of the Work. This review shall include all supplementary items normal to manufacturer's requirements and trade practices that are necessary to complete the Work, although not explicitly shown nor specified.
 - 1.2.1 The general contractor shall be responsible for preparation of sub-floor (slab) trenches, penetrations, removal of vinyl-asbestos floor tile and concrete floor sealer (if required), plus any or all special conditions to allow for proper System installation.
 - 1.2.2 Dimensions, specifications, and actual placement of all interfacing conditions (i.e., walls, columns, etc.) shall be compared for verification with contract document's "Scope-of-Work", and the approved shop drawings prior to commencing Work.
- 1.3 If any conditions exist which are detrimental to the proper and expeditious installation of the Work, the vendor shall notify the AT&T representative(s) in writing. Failure of written notification and commencing with the Work on the part of the vendor means: "Acceptance of the contract with all site conditions as is or as existing".
 - 1.3.1 Installation shall be coordinated and scheduled for day or night hours per AT&T instructions to the general contractor per trade. To maintain the System's integrity, traffic shall not be allowed on any portion of the floor until installed area has been completely anchored or braced, and accepted. Note that traffic can be coordinated/scheduled for Work to be performed with the general contractor on a trade basis.
 - 1.3.2 Note, the vendor shall verify construction sequence with general contractor or AT&T for the order in which the Work is to proceed, i.e., per building bay(s) and/or column lines.

2. Preparation

- 2.1 The vendor shall submit a site specific "METHOD OF PROCEDURE (MOP)" prior to commencement of Work to the AT&T representative(s) for review and approval with execution as noted. The vendor shall verify that the general contractor has provided protection for all facility and telecommunication equipment elements within the work area from damage, dust pollution, or disfigurement prior to commencement of Work. If general contractor is not required to do so, the vendor shall provide complete protection to AT&T's equipment.
- 2.1.1 Any violation of this practice will result in an unacceptable product and it will be the responsibility of the vendor to dismantle and re-install the system at no expense or scheduling delay to AT&T.
- 2.2 Actual arrival time for material on-site staging shall be coordinated with the AT&T representative(s). All materials shall be delivered in original labelled factory packaging, where upon the vendor shall notify the manufacturer of damages to the System that requires repair or replacement, prior to final inspection and acceptance date.
- 2.3 All Work performed under this Section shall be done by a "factory certified installer" held directly responsible to the manufacturer per the AT&T/manufacturer's agreement.

3. Installation

- 3.1 The systems' installation shall be per the approved MOP, and the approved shop drawings and calculations.
- 3.1.1 Any violation of miss layout from the AT&T supplied "reference mark" will result in an unacceptable product, and will be the responsibility of the vendor to dismantle and re-install the System at no expense to AT&T with any delay in the contract time.
- 3.1.2 Mounting or attachment to telecommunication equipment, cable trays, movable walls or other equipment or frames is strictly unacceptable. Installation of this system accompanied with CONTINUAL equipment protection shall be in accordance with AT&T company policies as verified with the AT&T on-site manager.
- 3.1.3 For coordination notes refer to AT&T Building Engineer/On-Site Representative, central office drawings, and AT&T's consultant's construction package for all building, equipment, telecommunication equipment layout, attachment details, cable penetration locations, physical design hardware, underfloor cable layout, special underfloor conditions, electrical grounding

AT&T — PROPRIETARY
Use pursuant to Company Instructions

details/plans, and any or all additional conditions, specifications and construction documentation.

- 3.1.4 Perform cutting, trimming, and other dirt or debris producing operations at an area separate from telecommunication equipment space in a manner to prevent contamination to the telecommunication network. Dust and debris shall not be permitted to fall into or on any telecommunication equipment, cable racks, or allowed to drift throughout the area. A vacuum cleaner equipped with a High Efficiency Particulate Air (HEPA) filter shall collect immediately all particulate generated at point of origination.

3.2 Pedestal Installation:

Pedestal alignment per assemblies shall be installed within manufacturer's alignment tolerances when mechanically anchored. The vertical center line of each pedestal unit shall align with the vertical center line of the floor grid's intersections.

- 3.2.1 The Pedestal "A" baseplate is always positioned on the subfloor so that the anchors are in opposite positions at every other pedestal. The anchor shall be installed per the anchor manufacturer's recommended practices.
- 3.2.2 The Pedestal "B" baseplate is always positioned on the subfloor grid layout so that the predrilled "center hole" per side (0, 90, 180 and 270 degree) are located on the 90 degree grid line intersection. Noting that Pedestal "B" when positioned, shall be supporting at the midpoint of stringer directly overhead, and running perpendicular to network equipment isles. The anchors shall be set so that the bolt head is resting with the washer on the baseplate tighten the fastener with a calibrated torque wrench. Figure 18 presents an example of a typical Pedestal "B" layout.
- 3.2.3 The Pedestal "B" four (4) "primary" drilled anchor locations are always the first predrilled hole on each side of the baseplate as counting from right to left. They are to be drilled first. If the drilling doesn't produce a clean, vertically true and free of embedded re-bar, stone, etc., then move to the alternate anchor location. The predrilled anchor pattern of this baseplate allows the use of alternate locations due to embedded floor conditions. For each primary location, there are two (2) alternate positions. These alternate positions are immediately adjacent to the primary hole, first on the right and then on the left.
- 3.2.4 Anchor drilling procedures shall include a pre-set "depth indicator" in order to produce a clean, vertical true and free of embedded re-bar, stone, etc., hole. The drill bits shall be either carbide tipped or diamond core sized for anchor caliber conforming to ANSI tolerances. The drilled anchor brings are to cleaned during and after the drilling operation to ensure total removal of all dust particles.

- 3.2.5 Refer to anchor manufacturer's required torque value for each fastener type. Adhesives "shall (mastic or other adhesives) not be used."
- 3.3 Stringer Installation:
- Stringer layout shall be square and true with space to permit one-hundred percent (100%) of full panel interchange-ability. The four (4) foot long grid members on the pedestal head assemblies in a basket-weave pattern. Each unit is secured using the four (4) fasteners specified herein.
- 3.4 Panel Installation:
- To position panels within the stringer framework, scribe each panel as required to provide a close fit with voids no greater than 0.125 inch where panels abut vertical surfaces or perimeter. The maximum panel variation in finished height from panel to panel shall not exceed 0.020 inches, where the maximum out of floor level tolerance shall be within plus or minus 0.0625 inches in thirty (30) feet; and plus/ minus 0.100 inches over the entire finished floor surface. The completed system shall be free of rocking, rattles, squeaks, vibration, and other unacceptable performance.
- 3.5 Fascia panels or perimeter containment enclosures shall accurately fit to provide the necessary access.
- 3.6 All accessories shall be install as per manufacturer's instructions as located on the approved shop drawings.
- 3.7 Bracing shall be provided for partially completed raised floor areas which are not yet anchored to brace against shifting to maintain integrity.

4. Electrical Grounding (by others)

- 4.1 The electrical contractor shall provide all material necessary to install the raised floor electrical grounding system to the building ground bar as either specified by the Architect of Record or per AT&T's instructions. Note that at AT&T's discretion, in-house personnel may provide this service.

5. Completion

- 5.1 The completed System shall be free from all defects, excessive vibration, and all exposed surfaces smooth and uniform. The installer must complete the manufacturer's "check list" and make all necessary adjustments for satisfactory inspection/acceptance.

- 5.1.1 The vendor shall advise the AT&T representative(s) if the flooring system was overloaded at any time during construction and prior to substantial completion and acceptance. All access floor panels and other components which are chipped, bent, broken, stained, scratched or otherwise damaged, shall be replaced if condition is not within specified conformance.
- 5.1.2 Before other-trade-work is performed, and before system acceptance and sign off, and possibly after vendor has performed final cleaning; all paths and work areas are to be protected with an AT&T approved method for other trades to complete their work.
- a. The floor vendor shall coordinate with the general contractor the protective walk-way areas of the floor covering until time of substantial completion or AT&T's total project acceptance.
 - b. The floor vendor shall address the general contractor notification after acceptance of any damages to the floor system that requires repair or replacement prior to owner's acceptance of the project.
- 5.2 The vendor with the general contractor, Architect of Record, and the AT&T/manufacture's representatives shall conduct an inspection of the completed System in whole or in part pending project conditions. This inspection shall occur prior to AT&T acceptance per project's construction schedule.
- 5.3 The vendor shall submit all the required documentation with up-to-date project correspondence upon completion of the Work, including but not limited to:
- All "as-built" construction documents, details and catalog part numbers as required.
 - The System's guarantee statement including component vendor name, address, and phone number.
 - The vendor assumes responsibility for replacement, repair, and service of any component which proves defective in material or workmanship for a period as agreed to by AT&T upon final acceptance.
 - Extra material (if required): Submit the type and quantity of materials as specified with verification being made for on-site-storage accessibility with AT&T prior to shipment.
 - Operational material (if required): The vendor shall submit all reference materials/manuals required to assure the proper operational status of the system as designed and installed.
 - Maintenance material (if required): The manufacturer's "hard-copy" maintenance procedures.

- System Details and Part Numbers: Stating the complete system in graphic details with component numbers per manufacturer's "technical" ordering catalog.
- 5.4 General Contractor, AT&T representative, and/or the Architect of Record shall accept the System in whole or in part, pending schedule and Work by other trades. Noting that this total or partial acceptance shall be based upon the completed check/punch list per the manufacturer, AT&T representatives, and the code authority holding jurisdiction.
- 5.5 Upon completion and acceptance of the Work, the vendor shall and at their expense, remove promptly from the premises (both in-house and on-site) all implements, equipment, tools, machines, surplus and waste materials and debris generated by their work.
- 5.5.1 The vendor shall secure permits required by the Department of Environment Protection (State) and/or the Environmental Protection Agency (Federal), and OSHA (if need be), for removal and handling of all hazardous wastes generated by their operations.
- 5.5.2 The vendor shall coordinate with the general contractor and the local authorities the need for waste separation and/or re-cyclable material disposal.
- 5.5.3 If the vendor fails to clean up as provided herein, AT&T and/or the general contractor shall charge the cost thereof or deduct same amount from AT&T and general contractor's payment to vendor.
- 5.6 The attached Part IV, "AT&T Seismic Access Floor (SAF) System Order Form" shall be filed by the ordering party describing the complete System to be installed per project.
- 5.7 The vendor shall submit pedestal anchor certification on a need basis, stating not only that the installer has been instructed in the proper installation procedure, but also, provide the accepted documentation (test reports if required) needed to receive approval by the code authority holding jurisdiction for structural evaluation.
- 5.7.1 This anchor placement acceptance shall be based on the written receipt of the anchor manufacturer's method of installation certification, and/or an independent inspection agency report (i.e., ICBO - with site inspection) for the attained torque value assurances.
- 5.8 For additional product procurement, installation, allowances and warranty issues, etc., refer to the Architect of Record edited specifications as required in Division No. 1, "General Requirements, and other sections as needed.

5. PART IV: Details and Attachments

This section includes the SAF details and attachments.

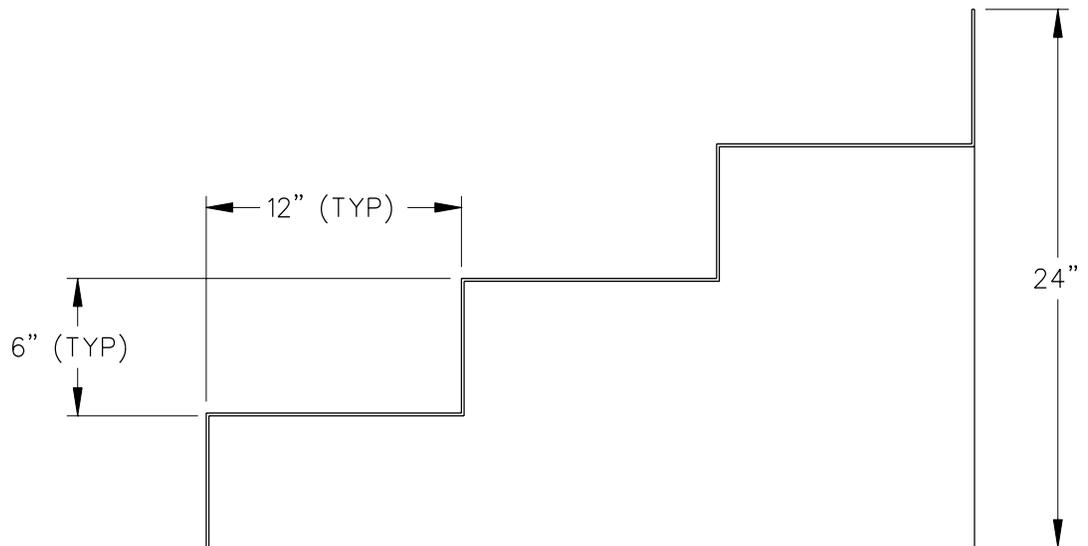


Figure. 1 **Formed Step Assembly @ 24" FFH**

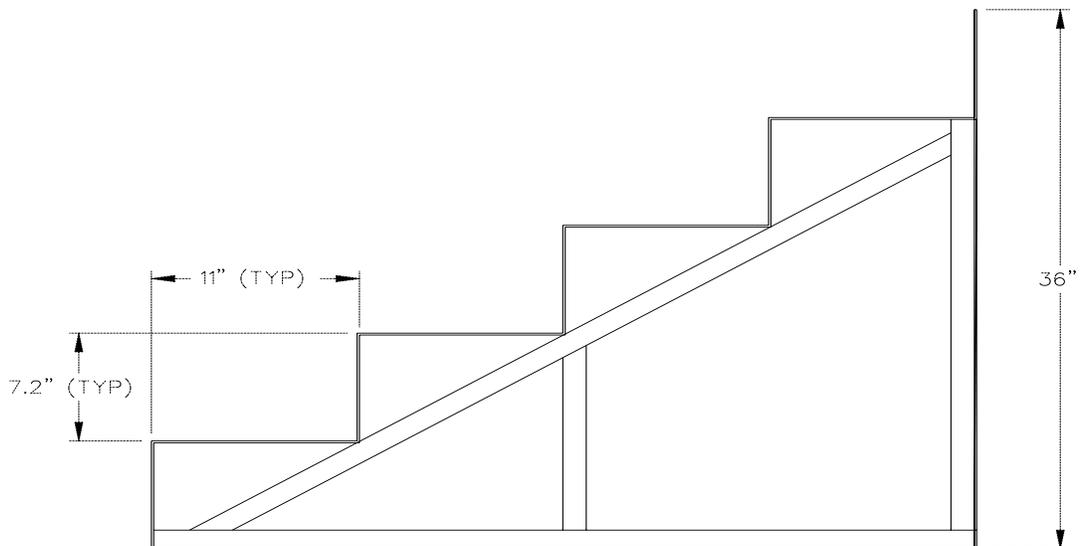


Figure. 2 **Formed Step Assembly @ 36" FFH**

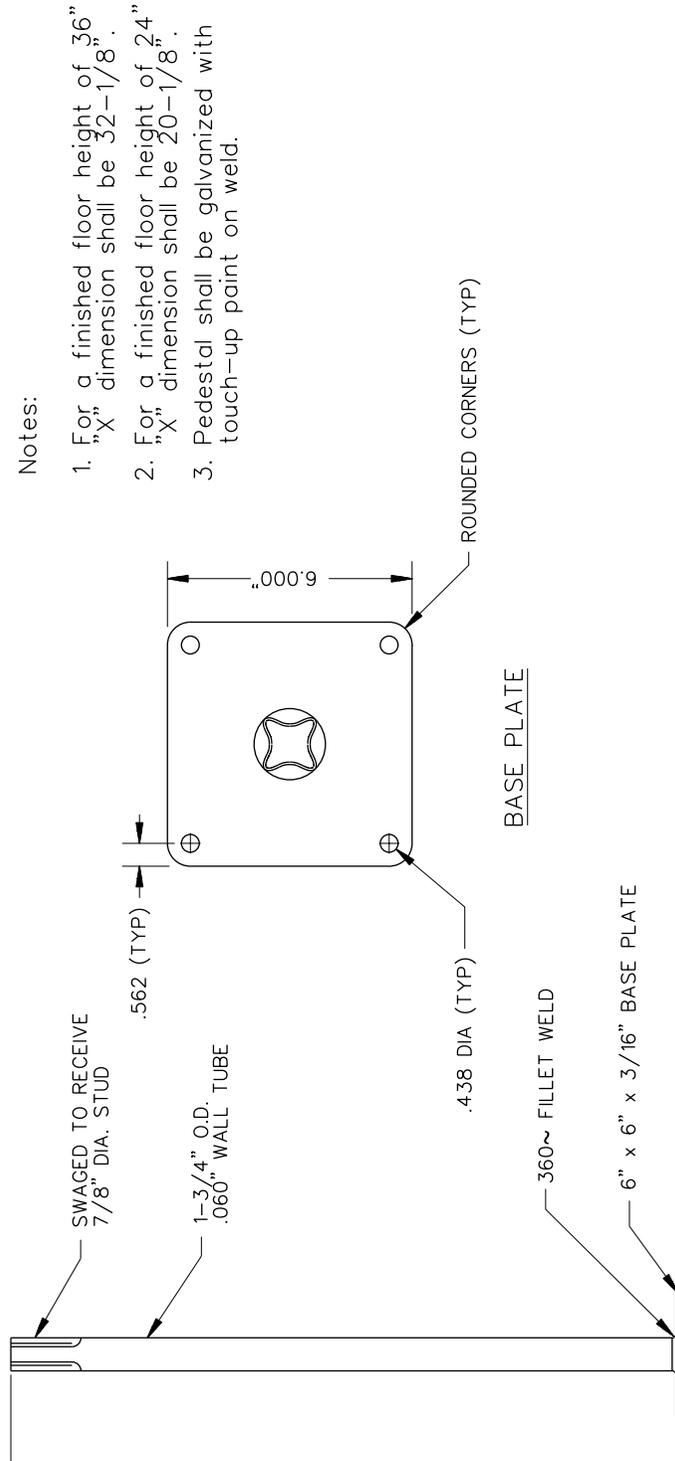


Figure. 3 SAF Pedestal Base (Type A)

AT&T — PROPRIETARY
 Use pursuant to Company Instructions

**INSTALLATION INSTRUCTIONS
3/8" KWIK-CONS**

For the installation of 3/8" Kwik-Cons you will need the following:

A medium size hammer drill such as a Hilti TE-18 or TE-24.

A setting tool made up of the following components:

1. TE-C+ SD 1/2" Drive Shaft
2. Socket Drive Reducer, 1/2" to 3/8"
3. #50 TORX Square Drive.
(Magna part #45029)

1. Drill an 8mm hole (Hilti bit #000529214) 3 inches deep. Use hole depth indicator. Clean hole with a vacuum cleaner or blow-out bulb.

2. Place tip of screw in the hole and drive with drill equipped with a setting tool as described above. Drive the screw with the drill set on rotation only.

Note: If the screw does not set to the full depth check to see that the hole is deep enough and properly cleaned.

The TE-18 Hammer-Drill has a reversing feature to remove a Kwik-Con that has been installed.

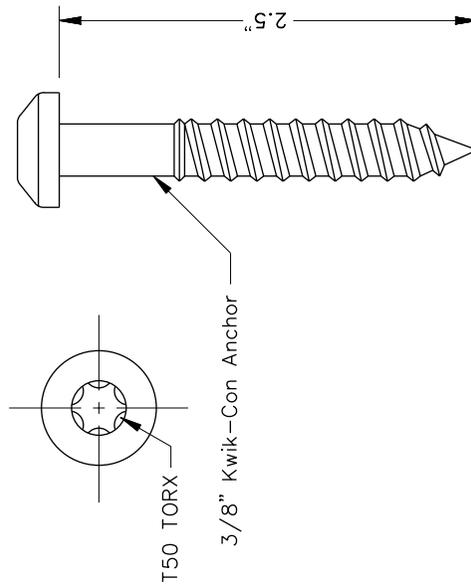


Figure. 4 Type "A" Anchor 3/8" KWIK-CON

AT&T — PROPRIETARY
Use pursuant to Company Instructions

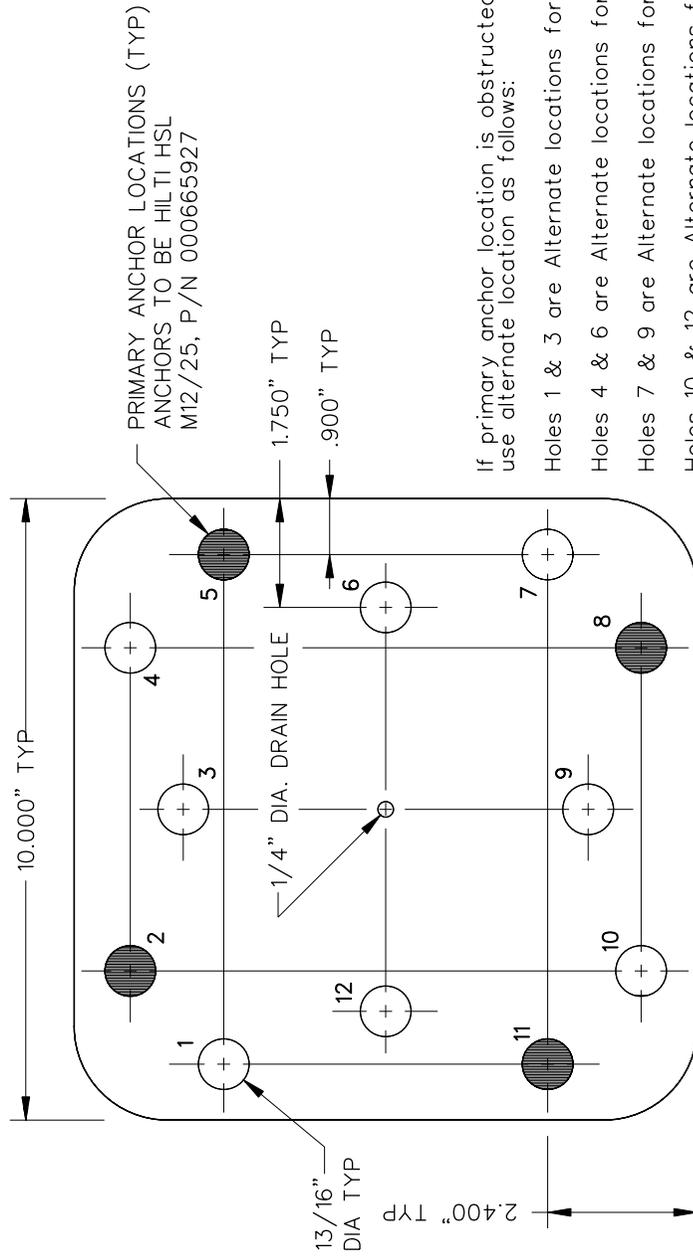


Figure. 5 Anchoring Locations for Type B Pedestal

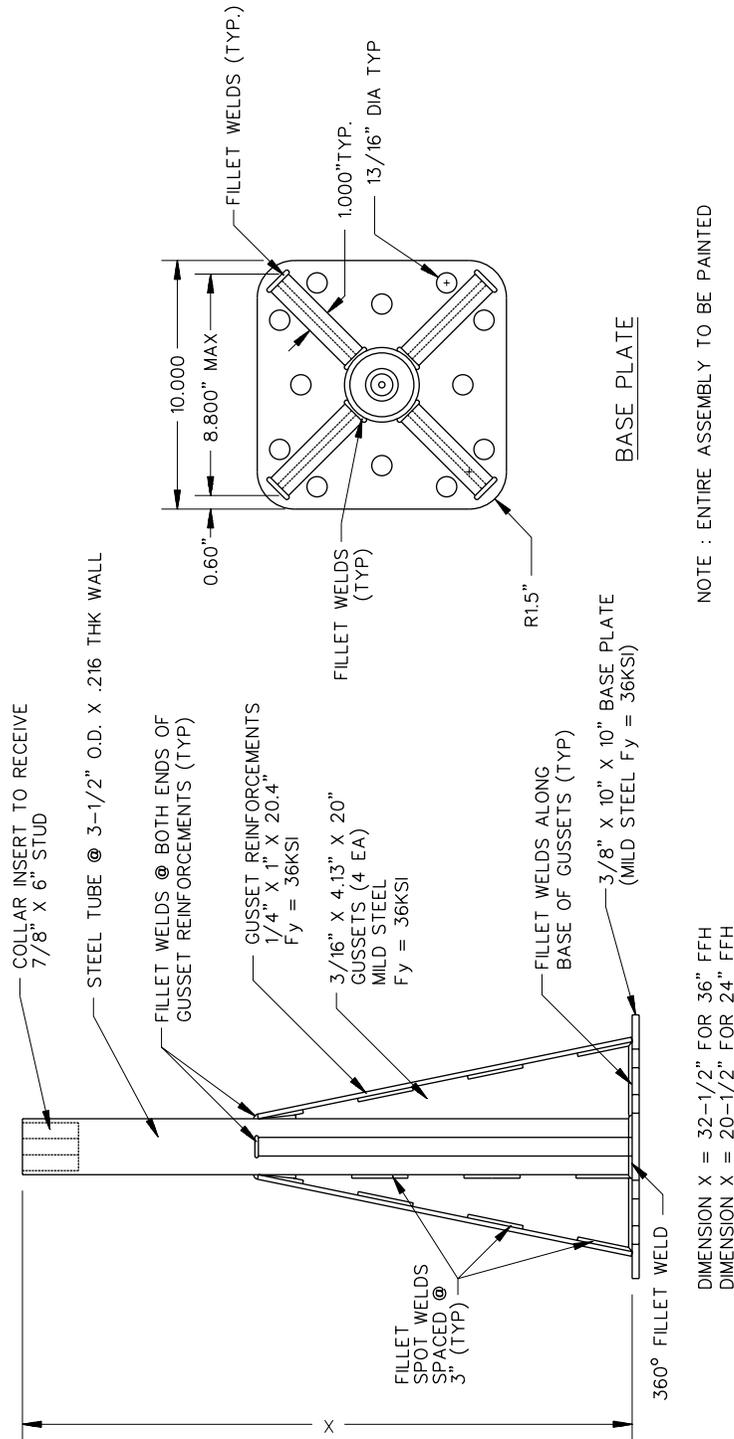


Figure. 6 SAF Seismic Pedestal Base (Type B)

AT&T — PROPRIETARY
 Use pursuant to Company Instructions

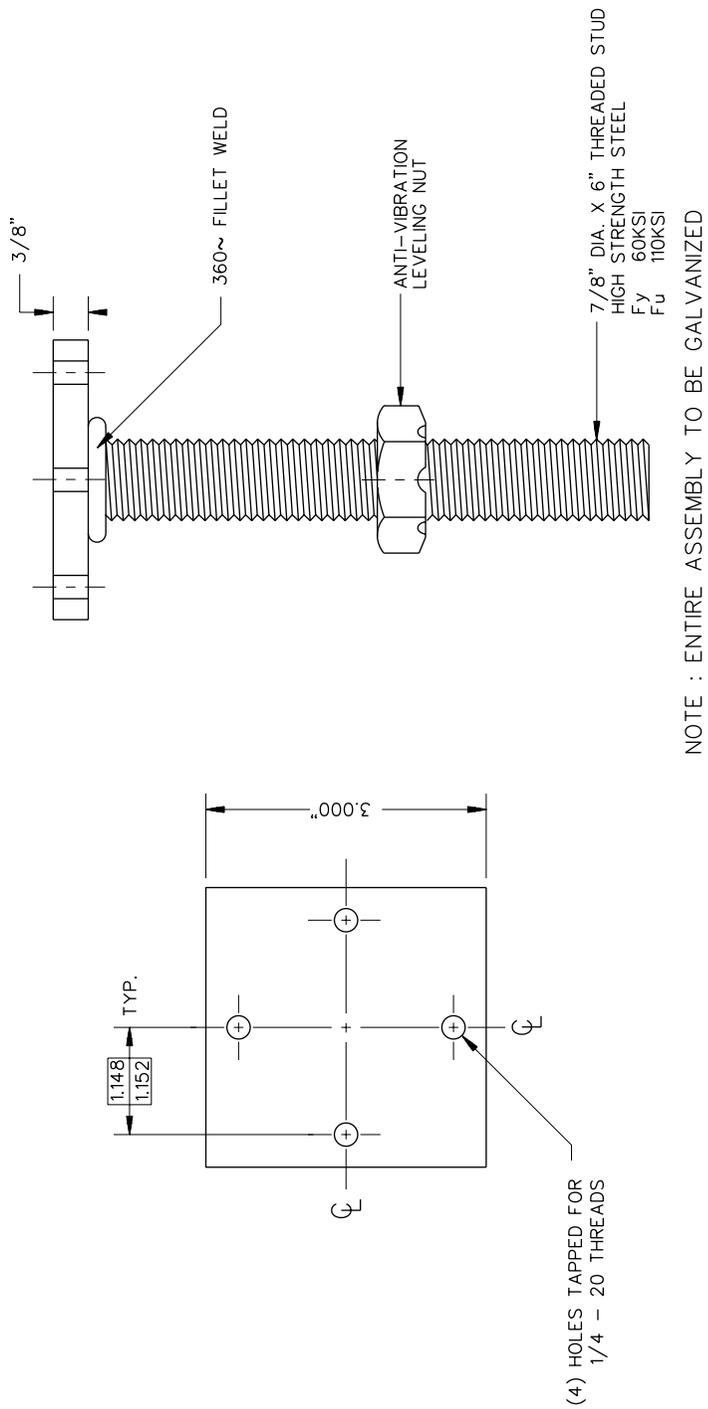


Figure. 7 SAF Seismic Pedestal Head (Type B)

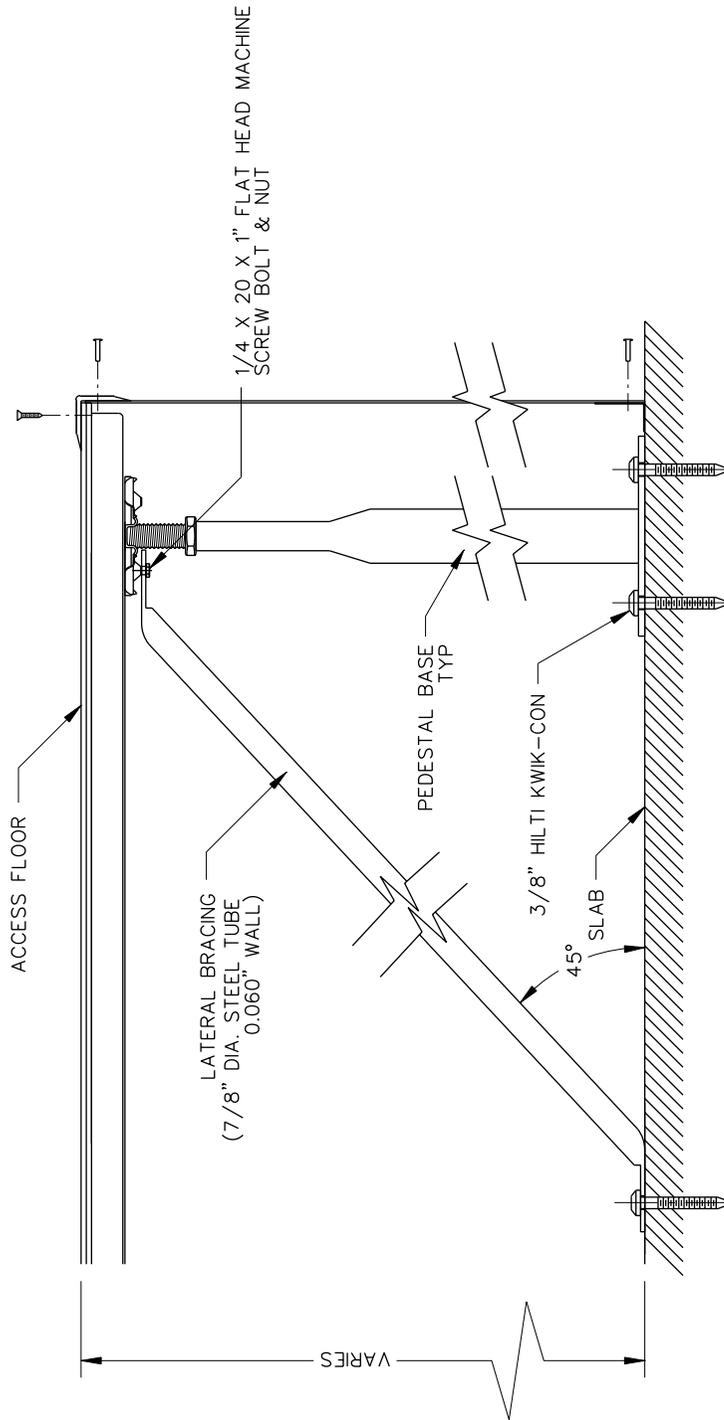


Figure. 8 Lateral Bracing @ Perimeter

AT&T — PROPRIETARY
Use pursuant to Company Instructions

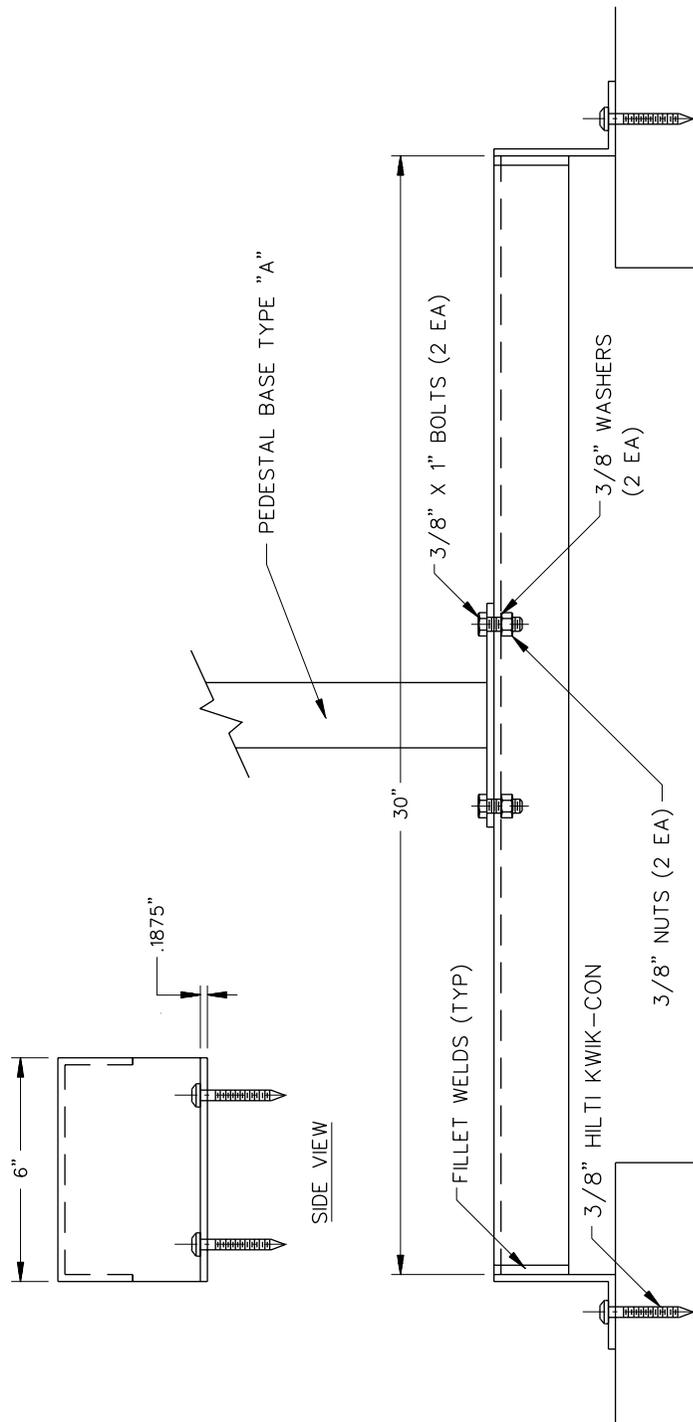


Figure. 9 Bridging Detail

AT&T — PROPRIETARY
Use pursuant to Company Instructions

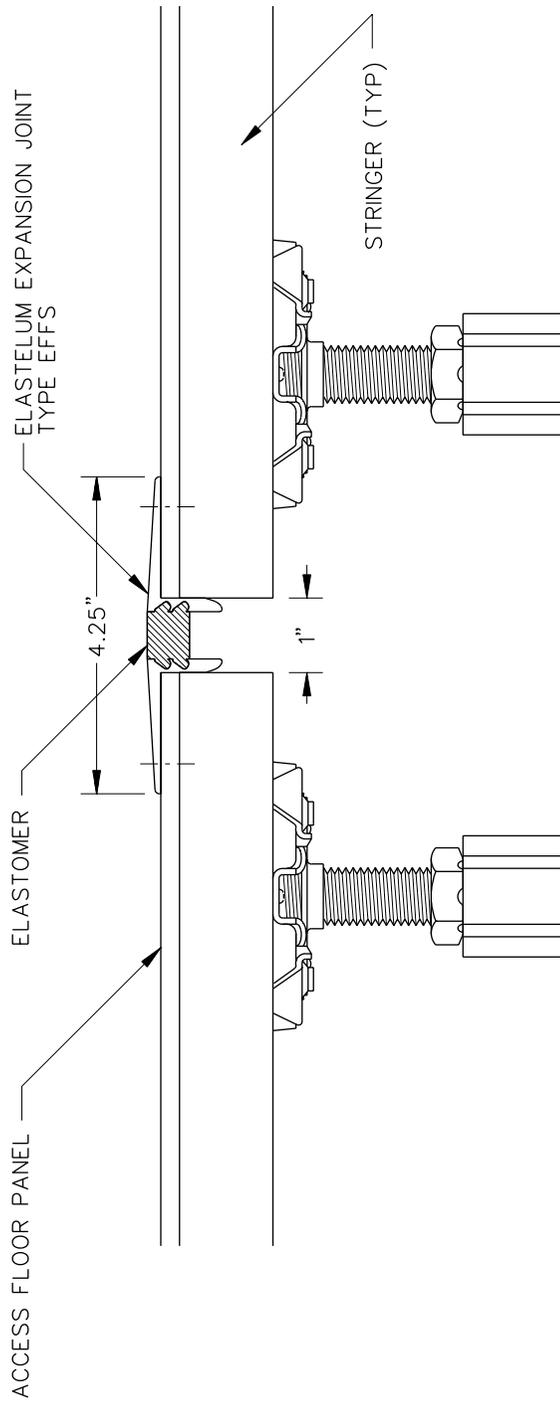


Figure. 10 Expansion Joint

AT&T — PROPRIETARY
Use pursuant to Company Instructions

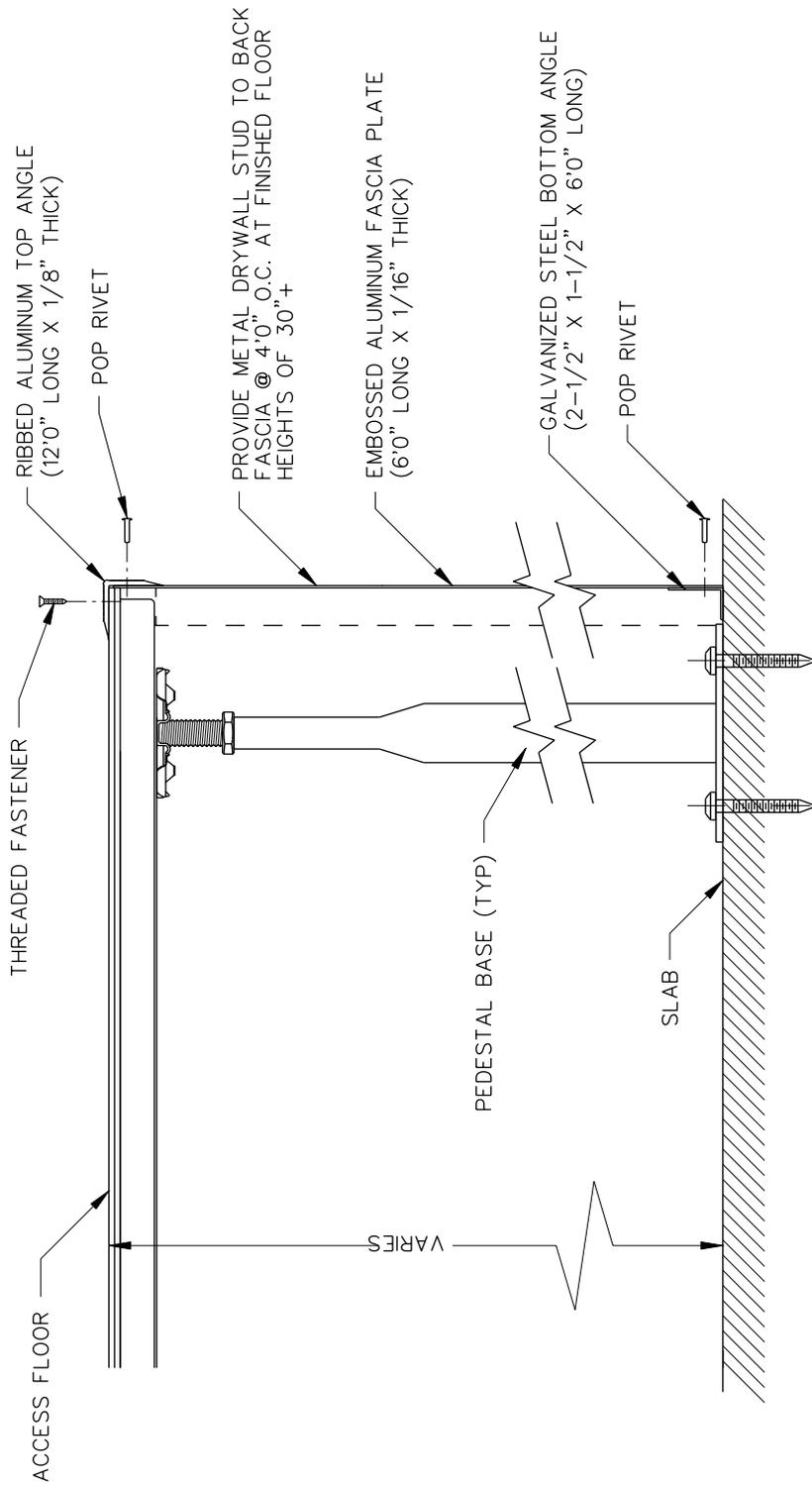


Figure. 11 Fascia Assembly

AT&T — PROPRIETARY
Use pursuant to Company Instructions

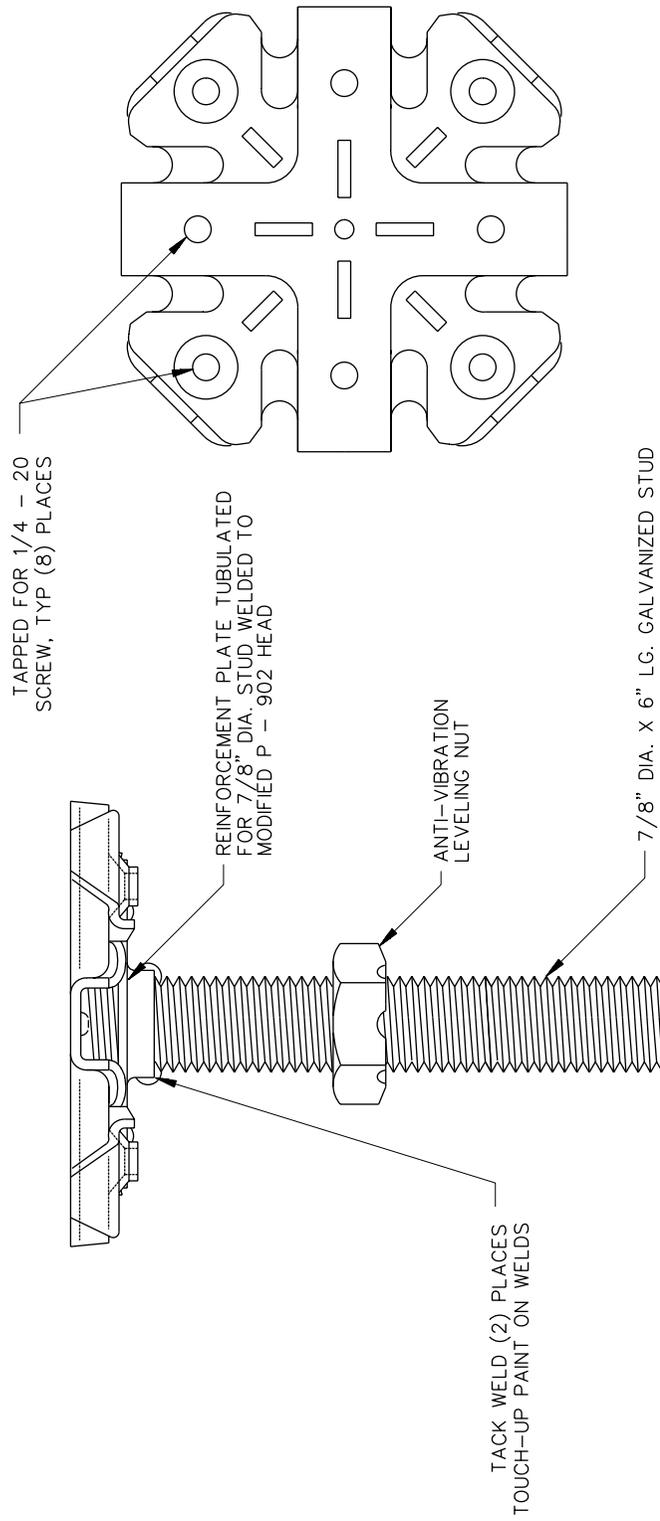


Figure. 12 SAF Pedestal Head (Type A)

AT&T — PROPRIETARY
Use pursuant to Company Instructions

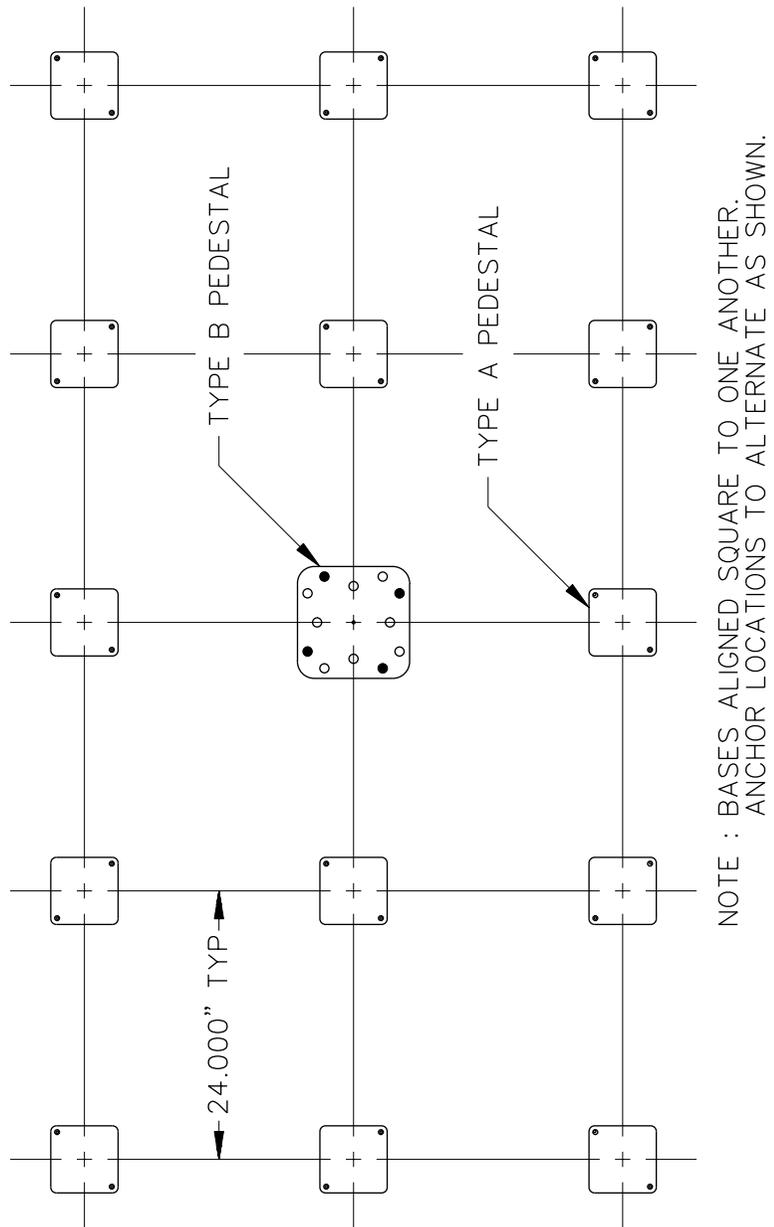


Figure. 13 Typical Base Plate Pattern

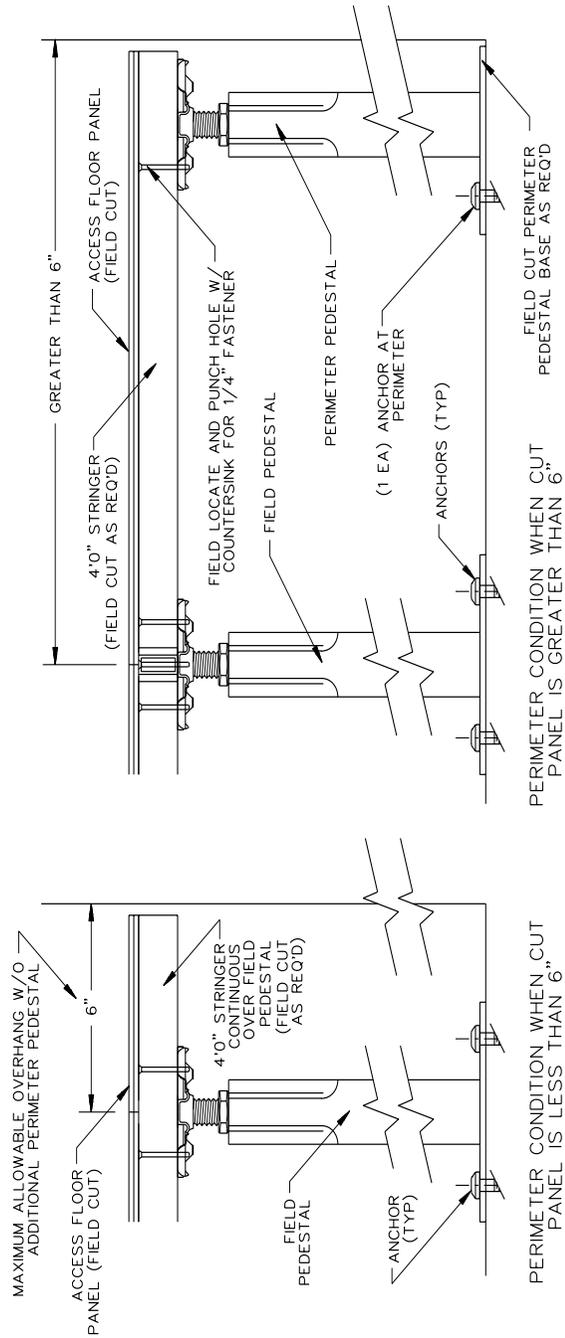


Figure. 14 Perimeter Conditions

AT&T — PROPRIETARY
 Use pursuant to Company Instructions

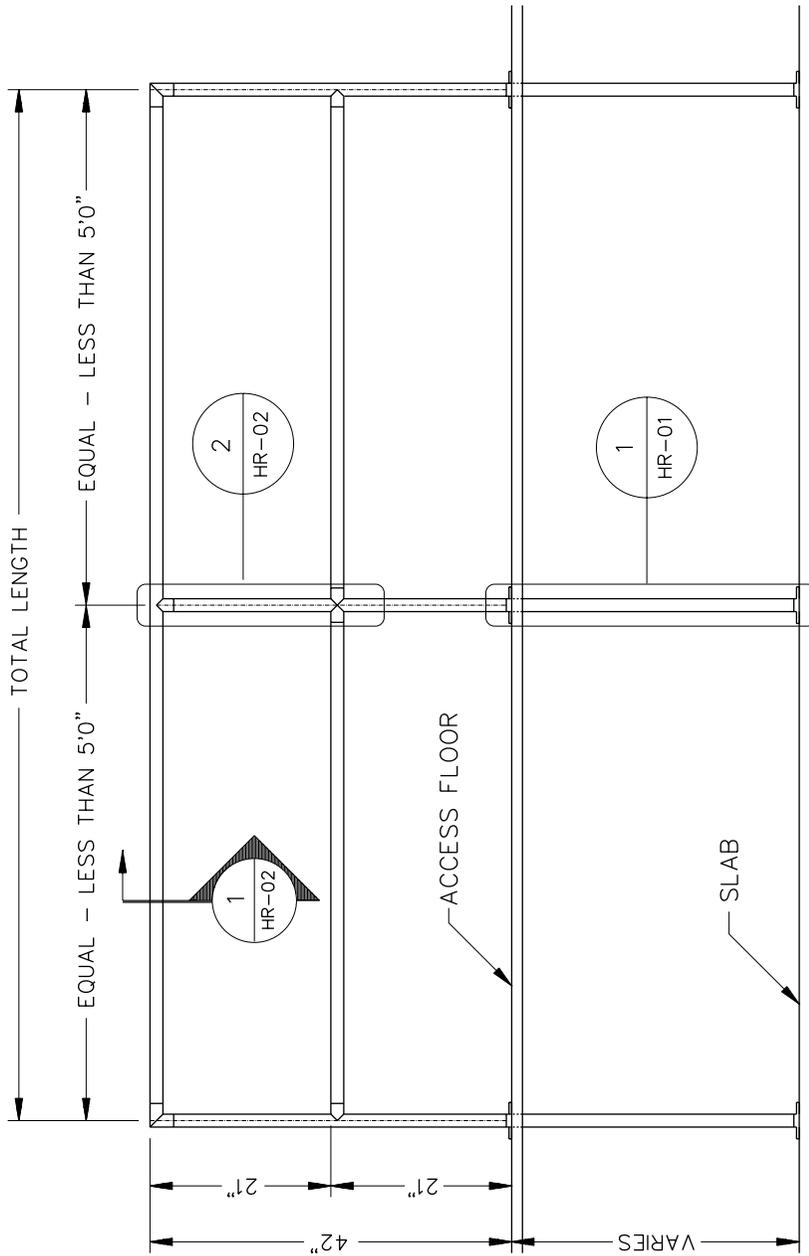


Figure. 15 Standard In-line Guardrail

AT&T — PROPRIETARY
 Use pursuant to Company Instructions

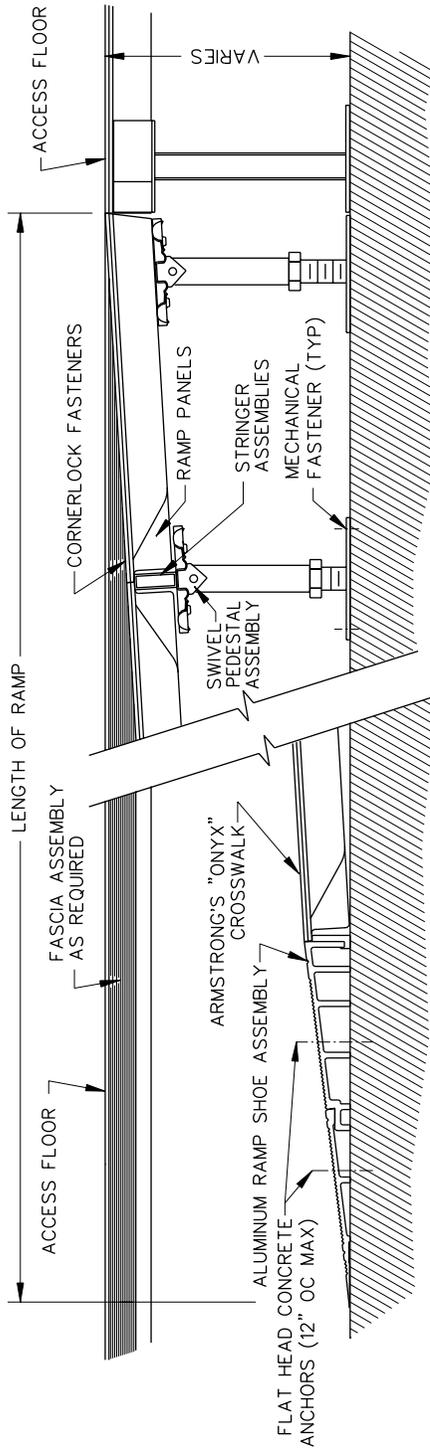


Figure. 16 Access Floor Ramp

AT&T — PROPRIETARY
Use pursuant to Company Instructions

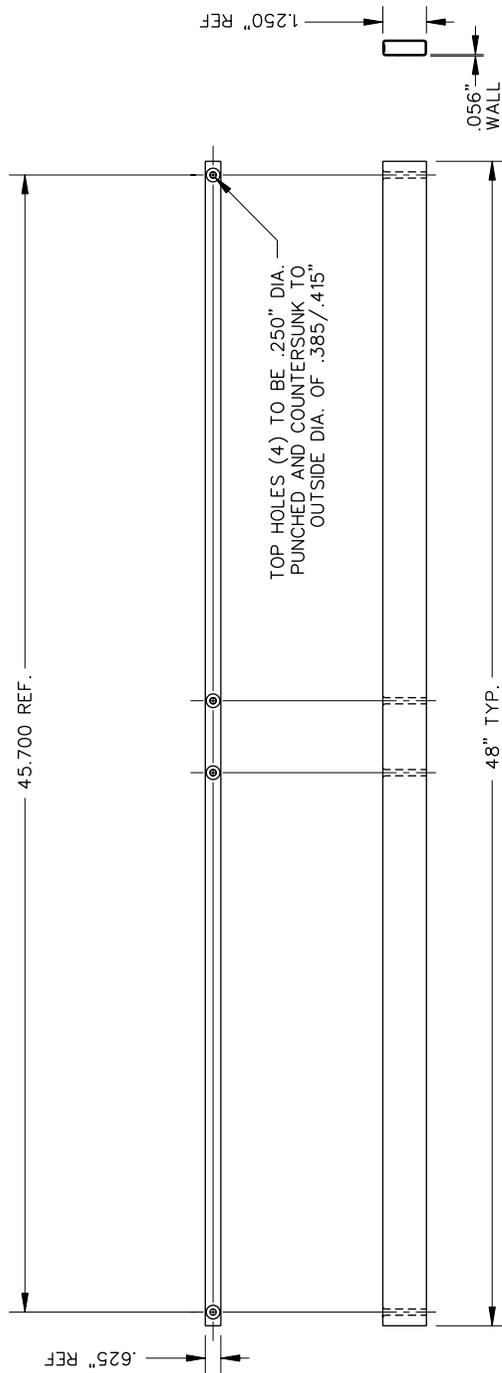


Figure.17 SAF 4'0" Stringer

AT&T — PROPRIETARY
Use pursuant to Company Instructions

4ESS[®] Central Office Of The Future
STANDARD EARTHQUAKE BRACING LAYOUT

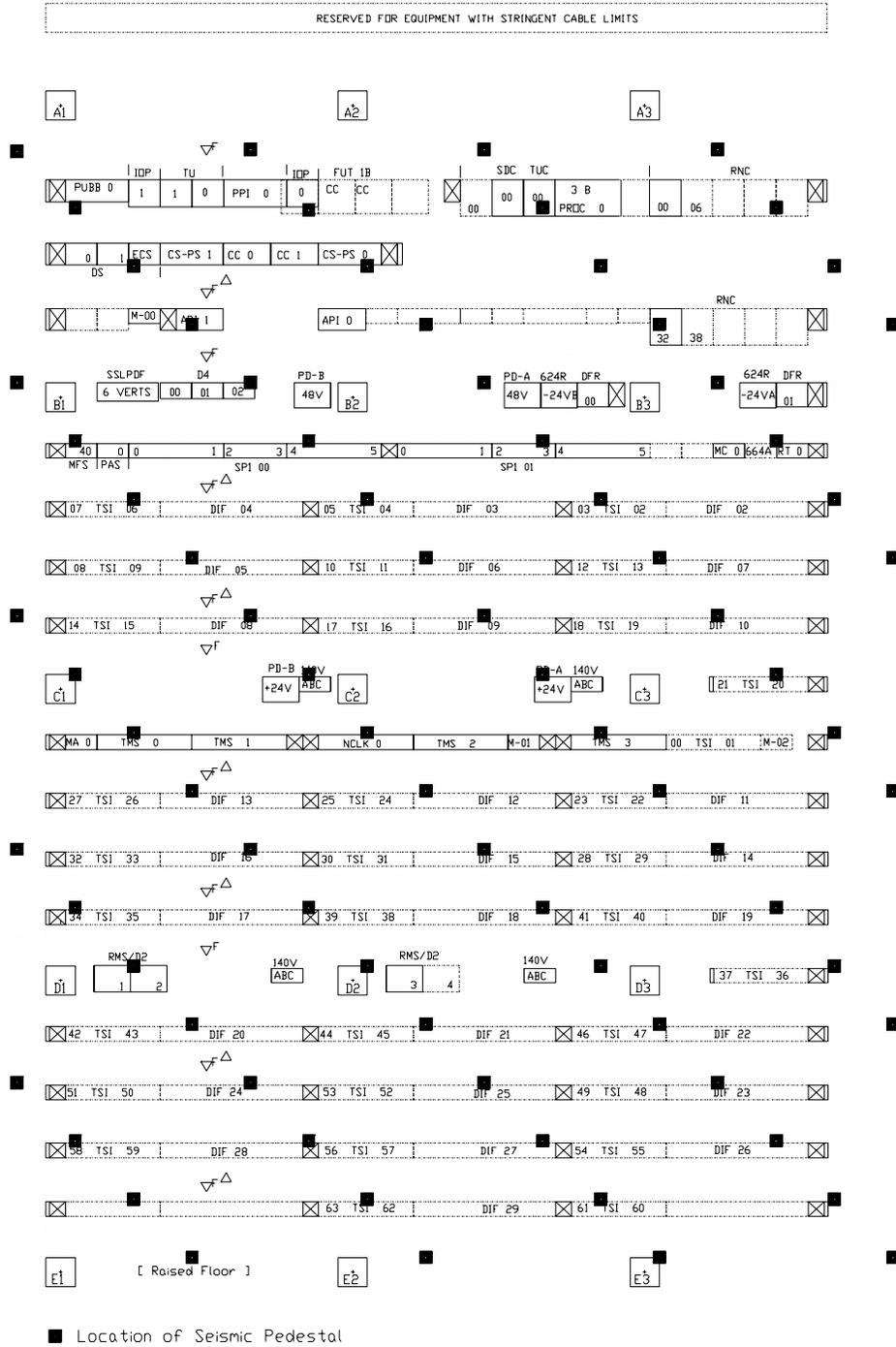


Figure 18 Typical Pedestal B Layout

AT&T — PROPRIETARY
Use pursuant to Company Instructions

[This page intentionally left blank]

AT&T ORDER FORM
AT&T 760-200-120 Appendix 1, Issue 2
RAISED SEISMIC ACCESS FLOORING (SAF) SYSTEM
AT&T Contract No. CH923022AO

Date: _____

To: Mr. Thomas B. Kidd
TATE ACCESS FLOORS, INC.
7510 Montevideo Road
Jessup, Maryland 20794
1-800-242-4304

PO No.: _____
Job No.: _____
Project Name: _____
Project Address: _____

For: Material only:___ Material and Services:___

Ordered By: _____
(Name of ordering party - Address, Phone and FAX No.)

AT&T Representative: _____

General Contractor/CM: _____

Architect/Consultant: _____

Seismic classification:___ Floor Height:___ Project Square Footage:___ Panel capacity:___
Panel color and finish:_____ Pedestal Quantity: Pedestal "A":___ Pedestal "B":___

Accessories: (as per attached drawings and details)
Attached Specification No.: AT&T 760-200-120 Appendix 1, Issue 2
Attached Drawings and Detail No.'s: _____

Construction Schedule: Delivery date(s):_____ Starting date:_____
Completion date:_____ Inspection/Acceptance date:_____

Signed by: _____

(name of ordering party)

Manufacturer to submit an itemized material list and services (if any) based on square footage, including all accessories in a lump sum price format to the General Contractor(s); as in accordance with AT&T/Manufacturer Contract No. CH923022AO with 11/1993 Amendment. Requested return date and time: _____

copy to:
M. H. Clark - AT&T Environmental Design Standards Manager
Room No. 3C120C Phone: 908-234-3035
900 Route 202/206 North, P.O.Box 752
Bedminster, New Jersey 07921-0752

[This page intentionally left blank]

AT&T INSTALLATION CERTIFICATION FORM
FOR TATE SAF SYSTEM
AT&T 760-200-120 Appendix 1, Issue 2
AT&T Contract No. CH923022AO

Date: _____

To: TATE Access Floors Inc.
7510 Montevideo Road
Jessup, Maryland 20794
1-800-242-4304

Attention: Mr. Roger Picker, Vice President

From: _____

PO Number: _____
Job Number: _____
Project Name: _____

Project Address: _____

For: Material only:_____ Material and Services:_____

Seismic Classification:_____ Floor Height:_____ Project Square Footage:_____ Panel capacity:_____

Sir,

This letter serves as our certification that the SAF System as installed at said location is in accordance with your directives and quality requirements which are pursuant to AT&T Contract CH923022AO.

Additionally, the final installation was and accepted by:

(AT&T Representative)

(date)

Thank You,

(TATE Authorized Installer)

(date)

copy to:

M. H. Clark - AT&T Environmental Design Standards Manager
Room No. 3C120C Phone: 908-234-3035
900 Route 202/206 North, P.O.Box 752
Bedminster, New Jersey 07921-0752

[This page intentionally left blank]

How Are We Doing ?

Document Title: _____

Document No.: _____ Issue No. _____ Date: _____

AT&T welcomes your feedback on this document. Your comments can be of great value in helping us to improve our documentation.

1. Please rate the effectiveness of this document in the following areas:

	Excellent	Good	Fair	Poor	Not Applicable
Ease of Use					////////////////////
Clarity					////////////////////
Completeness					////////////////////
Accuracy					////////////////////
Organization					////////////////////
Appearance					////////////////////
Examples					////////////////////
Illustration					
Overall Satisfaction					////////////////////

2. Please check the ways you feel we could improve this document:

- Improve the overview/introduction
- Improve the table of contents
- Improve the organization
- Include more figures
- Add more examples
- Add more detail
- Make it more concise/brief
- Add more step-by-step procedures/tutorials
- Add more troubleshooting information
- Make it less technical
- Add more/better quick reference aids
- Improve the index

Please provide details for the suggested improvement. _____

3. What did you like most about this document?

4. Feel free to write any comments below or on an attached sheet.

If we may contact you concerning your comments, please complete the following:

Name: _____ Telephone Number: (____) _____

Company/Organization: _____ Date: _____

Address: _____

When you have completed this form, please fold, tape, and return to address on back or Fax to: (508) 960-6851.

----- Do Not Cut — Fold Here And Tape -----



Please
Place
Stamp
Here

**Manager
AT&T
NSD Power and Infrastructure Development
Documentation Group
Room 21-2B27
1600 Osgood Street
N. Andover, MA 01845**