APPENDIX B
STRUCTURAL ENGINEERING DESIGN CRITERIA

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1.0 INTRODUCTION

Control of the design, engineering, procurement, and construction activities on the project will be completed in accordance with various predetermined standard practices and project specific programs/practices. An orderly sequence of events for the implementation of the project is planned consisting of the following major activities:

- Conceptual design
- Licensing and permitting
- Detailed design
- Procurement
- Construction and construction management
- Start-up, testing, and checkout
- Project completion

The purpose of this appendix is to summarize the codes and standards and standard design criteria and practices that will be used during the project engineering, design and construction. These criteria form the basis of the design for the structural components and systems for the project. More specific design information will be developed during detailed design to support equipment procurement and construction specifications. Section 2.0 summarizes the applicable codes and standards and Section 3.0 includes the general criteria for natural phenomena, design loads, architectural features, concrete, steel, and seismic design. Section 4.0 describes the structural design methodology for structures and equipment. Section 5.0 describes the hazard mitigation for the project.

The following Attachments are part of this design criteria:

Attachment	Representative Drawings

2.0 DESIGN CODES, STANDARDS, LAWS AND ORDINANCES

The design and specification of work shall be in accordance all applicable laws and regulations of the federal government, the State of California, and the applicable local codes and ordinances. The following Laws, Ordinances, Codes and Standards have been identified as applying to structural engineering design and construction.

When an edition date is not indicated, the latest edition and addenda at time of plant design and construction shall apply.

2.1 FEDERAL

Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards.

2.2 STATE

Business and Professions Code Section 6704, et seq.; Sections 6730 and 6736. Requires state registration to practice as a Civil Engineer or Structural Engineer in California.

- Labor Code Section 6500, et seq. Requires a permit for construction of trenches or excavations 5 feet or deeper where personnel have to descend. This also applies to construction or demolition of any building, structure, false work or scaffolding which is more than three stories high or equivalent.

- Title 24, California Administration Code (CAC) Section 2-111, et seq.; Section 3-100, et seq.; Section 4-106 et seq.; Section 5-102, et seq.; Section 6-T8-769, et seq.; Section 6-T8-3233, et seq.; Section ST8-3270, et seq.; Section 6-T8-5138, et seq.; Section 6-T8- 5465, et seq.; Section 6-T8-5531, et seq.; and Section 6-T8-5545, et seq. Adopts current edition of UBC as minimum legal building standards.

- State of California Department of Transportation (Caltrans), Standard Specifications.

2.3 COUNTY

- Rancho Cucamonga City Building Code 2001.

2.4 INDUSTRY CODES AND STANDARDS

The following general design requirements and procedures will be followed in development of project specifications regarding the use of Codes and Industry Standards.

- Specifications for materials will generally follow the standard specifications of the American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI).

- Field and laboratory testing procedures for materials will follow standard ASTM specifications.

- Design and placement of structural concrete will follow the recommended practices and the latest version of the American Concrete Institute (ACI), the International Conference of Building Officials, California Building Code (CBC), 2001 with Emergency Supplements and the Concrete Reinforcing Steel Institute (CRSI).

- Design, fabrication, and erection of structural steel will follow the recommended practices and the latest version of the American Institute of Steel Construction Code (AISC) and CBC.

- Steel components for metal wall panels and roof decking will conform to the American Iron and Steel Institute (AISI) Specification for the Design of Light Gage Cold-Formed Structural Members.

- Welding procedures and qualifications for welders will follow the recommended practices and codes of the American Welding Society (AWS).

- Preparation of metal surfaces for coating systems will follow the specifications and standard practices of the Steel Structures Painting Council (SSPC), National Association for Corrosion Engineers (NACE), and the specific instructions of the coatings manufacturer.

- Fabrication and erection of grating will follow applicable standards of the National Association of Architectural Metals Manufacturers (NAAMM).

- Design and erection of masonry materials will follow the recommended practices and codes of the latest revision of the ACI Concrete Masonry Structures Design and

Construction Manual and the International Conference of Building Officials, California Building Code, 2001 Edition (CBC).

- Plumbing will conform to the Uniform Plumbing Code (UPC).
- Design will conform to the requirements of the Federal and California Occupational Safety and Health Administration (OSHA and CALOSHA).
- Design of roof coverings will conform to the requirements of the National Fire Protection Association (NFPA) and Factory Mutual (FM).

The following Codes and Industry Standards shall be used:

- California Energy Commission (CEC), "Recommended Seismic Design Criteria for Non-Nuclear Power Generating Facilities in California."
- International Conference of Building Officials, "Uniform Building Code" (UBC), 1997 Edition.
- California Building Code (CBC) 2001 Edition and Emergency Supplements.
- American Society of Civil Engineers (ASCE 7), Minimum Design Loads for Buildings and Other Structures.
- American Institute of Steel Construction (AISC).
  - §335 – "Specification for Structural Steel Buildings-Allowable Stress Design and Plastic Design, and Commentary."
  - §303 – "Code of Standard Practice for Steel Buildings and Bridges."
  - §3295 - "Allowable Stress Design Specifications for Structural Joints Using ASTM A325 or A490 Bolts."
  - M016 - "Manual of Steel Construction Allowable Stress Design, 9th Edition."
- American Iron and Steel Institute (AISI) "Specification for the Design of Cold-Formed Steel Structural Members."
- AWS D1.1 American Welding Society (AWS) "Structural Welding Code-Steel, Fifteenth Edition."
- American Concrete Institute (ACI).
  - ACI 318/318R "Building Code Requirements for Structural Concrete (ACI 318) and Commentary," (ACI 318R).
  - ACI 318-1/318-1R "Building Code Requirements for Structural Plain Concrete (ACI 318.1) and Commentary" (ACI 318.1R).

- ACI 349 "Code Requirements for Nuclear Safety Related Structures, Appendix D (Steel Embedments) (ACI 349) and Commentary (ACI 349R)", except that anchor bolts will be embedded to develop their yield strength.
- ACI 530 "Building Code Requirements for Concrete Masonry Structures and Commentary (ASCE 5) (TMS 402)."
- ACI 212.3R "Chemical Admixtures for Concrete."
- ACI 302.1R "Guide for Concrete Floor and Slab Construction."
- ACI 350R "Environmental Engineering Concrete Structures."

- Structural and Miscellaneous Steel
  - ASTM A569/A569M-Standard Specifications for Steel Carbon (0.15 maximum percent) Hot-Rolled Sheet and Strip, Commercial Quality.
  - ASME STS-1-Steel stacks, except that seismic design shall be in accordance with CBC 2001.

- American Society for Testing and Materials (ASTM). The following codes and standards shall be included as a minimum.
  - ASTM A36/A36M "Standard Specification for Structural Steel"
  - ASTM A53 "Standard Specification for Pipe, Steel Black and Hot-Dipped, Zinc Coated, Welded and Seamless"
  - ASTM A276 "Standard Specification for Stainless and Heat Resisting Steel Bars and Shapes"
  - ASTM A500 "Standard Specification for Cold-formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes"
  - ASTM A695 "Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel"
  - ASTM A307 "Standard Specification for Carbon Steel Bolts and Studs"
  - ASTM A123 "Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products"
  - ASTM A153/A153 "Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware"
  - ASTM A82 "Standard Specification for Steel Wire, Plain, for Concrete Reinforcement"
  - ASTM A185 "Standard Specification for Welded Steel Wire Fabric, Plain, for Concrete Reinforcement"

  - ASTM A615/A615 "Standard Specification Deformed and Plain Billet-Steel Bars for Concrete Reinforcement"

- Masonry Institute of America, "Reinforced Masonry Engineering."
- American Water Works Association (AWWA).
  - AWWA D100 - "Welded Steel Tanks for Water Storage, (AWS D5.2) "Addendum D100A - 1989 (AWS D5.2-84A)"
  - AWWA C301 "Prestressed Concrete Pressure Pipe, Steel Cylinder Type for Water and Other Liquids"
  - AWWA C302 "Standards for Reinforced Concrete Water Pipe Noncylinder Type, Not Prestressed"
- American Association of State Highway and Transportation Officials (AASHTO) (GDHS-2), "A Policy on Geometric Design of Highways and Streets."
- Heating, Ventilating, and Air Conditioning Guide by American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE).
- Uniform Plumbing Code (UPC).
- International Association of Plumbing and Mechanical Officials.
- National Fire Protection Association Standards (NFPA).
- Steel Structures Painting Council Standards (SSPC).
- American Society of Nondestructive Testing (ASNT-TC-1A).

The following general design rules and guidelines will be used in development of project specification regarding Codes and Industry Standards.

- International Standard Organization (ISO) 3945 "Mechanical Vibration of Large Rotating Machines with Speed Range from 10 to 200 revs/sec — Measurement and Evaluation of Vibration Severity In Situ."

3.0 STRUCTURAL DESIGN CRITERIA

3.1 NATURAL PHENOMENA

3.1.1 Rainfall

The in-plant surface drainage system will be constructed to accommodate the 10-year 24-hour storm event, as defined by US Bureau Technical Paper No. 40, without flooding roads and the 50-year storm event without flooding plant facilities and equipment.

3.1.2 Wind Speed

Wind loads will be determined from ASCE 7-05, American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures. Consideration will be given to along-wind and across-wind

responses. This design wind speed will be used to determine wind loads for all structures as discussed in Subsection 3.2.3, Wind Loads.

3.1.3 Temperature

Systems and system component design criteria which require ambient temperature extremes shall use the range from 18°F to 114°F for dry-bulb temperatures.

3.1.4 Seismicity

The plant site is located within 5 miles from a geological fault and in seismic Zone 4, as determined from Figure No. 16A-2 of CBC 2001.

3.1.5 Snow

The plant site is located in a zero ground snow load area.

3.2 DESIGN LOADS, LOAD COMBINATIONS AND ALLOWABLE STRESSES

Design loads for all structures will be determined according to the criteria described below, unless the applicable building code requires more severe design conditions.

3.2.1 Dead Loads

Dead loads will consist of the weights of the structure and all equipment of a permanent or semipermanent nature including tanks, bins, wall panels, partitions, roofing, piping, drains, electrical trays, bus ducts, and the contents of tanks and bins measured at full operating capacity. The contents of tanks and bins shall not be considered as effective in resisting column uplift due to wind forces, but shall be considered effective for seismic forces.

3.2.2 Live Loads

Live loads will consist of uniform live loads and equipment live loads. Uniform live loads are assumed unit loads which are sufficient to provide for movable and transitory loads, such as the weight of people, portable equipment and tools, planking and small equipment, or parts which may be moved over or placed on floors during maintenance operations. These uniform live loads shall not be applied to floor areas which will be permanently occupied by equipment.

Equipment live loads are calculated loads based upon the actual weight and size of the equipment and parts to be placed on floors during dismantling and maintenance, or to be temporarily placed on or moved over floors during installation.

Consideration will be given to designing appropriate areas of the ground floor for support of heavy equipment such as construction and maintenance cranes. Grating floors will be designed for a minimum live loading of 75 pounds per square foot (psf).

Live loads may be reduced in accordance with the provisions of CBC Section 1607. Live load reduction will not be permitted in areas where equipment laydown loads are considered.

All roof areas will be designed for wind loads as indicated in Subsection 3.2.3, Wind Loads. Pending loading effect due to roof deck and framing deflections will be investigated in accordance with AISC

Specification Article K2. All roof areas will be designed for a minimum of 20 psf live load in addition to calculated dead loads.

Pipe hanger loads for the major piping systems will be specifically determined and located. Piping expansion and dynamic loads will be considered on an individual basis for their effect on the structural systems. Loads imposed on perimeter beams around pipe chase areas will also be considered on an individual basis.

Pipe loads for other areas will be treated as uniform loads per unit floor area, and will be carried to the columns and foundations as dead loads. Pipe loads will not be considered as reliable dead load for uplift.

Equipment loads will be specifically determined and located. For major equipment, structural members and bases will be specifically located and designed to carry the equipment load into the structural system. For equipment weighing less than the uniform live load, the structural system will be designed for the live load.

The combustion turbine support systems will be designed for the following loads:

- Dead loads
- Live loads
- Normal torque loads (turbine)
- Temperature and pressure loads
- Seismic loads
- Emergency loads, such as turbine accident loads, and any temperature and pressure loads present during the emergency

3.2.3 Wind Loads

Wind loads for all structures will be based on ASCE 7-05. A step function of pressure with height under Exposure C conditions will be used (Exposure D if within 1/4 mile of the Pacific Ocean). The importance factor shall equal 1.0. Allowance shall not be made for the effect of shielding by other structures.

The overturning moment calculated from wind pressure shall not exceed two-thirds of the dead load resisting moment. The uplift forces calculated from the wind load pressure shall not exceed 2/3 of the resisting dead load. For determining stresses, all vertical design loads, except roof live loads, shall be considered to act simultaneously with the wind pressure.

3.2.4 Steel Stacks

The steel exhaust stacks and supports shall be capable of enduring specified normal and abnormal design operating conditions in combination with wind or seismic loads for the design life of the facility. Effects of wind will include along-wind and across-wind responses. The design will address the design considerations, meet the requirements, and utilize the design methods of Steel Stacks, ASME STS-1. Stack ladders, platforms, and ancillary structures will be designed in accordance with AISC Manual of Steel Construction Allowable Stress Design, Ninth Edition. Design values for yield strength and modules of elasticity of the stack material will depend on the composition of the material and the maximum temperature of the metal at design operating conditions, and will be as prescribed by the ASME Pressure

Vessel Code, Section VIII, Division 2, Part AM. Seismic loads shall be in accordance with CBC 2001. The maximum lateral displacement at the top of the stack due to design loads shall be 6 inches/100 ft, assuming a rigid base (normal industry accepted deflection).

3.2.5 Seismic Loads

Seismic loads will be determined in accordance with the requirements specified in Section 3.6, Seismic Design Criteria.

3.2.6 Construction Loads

The integrity of the structures will be maintained without use of temporary framing struts or ties and cable bracing insofar as possible. However, construction or crane access considerations may dictate the use of temporary structural systems.

3.2.7 Load Combinations

At a minimum, the following load combinations will be considered. Applicable code prescribed load combinations will also be considered.

- Dead load
- Dead load plus live load plus all loads associated with normal operation of the equipment, e.g., temperature and pressure loads, piping loads, normal torque loads, impact loads, etc.
- Dead load plus live load plus all loads associated with normal operation plus wind load
- Dead load plus live load plus all loads associated with normal operation plus seismic load
- Dead load plus construction loads
- Dead load plus live load plus emergency loads
- Dead load plus wind load
- Dead load plus seismic load

Every building component shall be provided with the strength adequate to resist the most critical effect resulting from the following combination of loads.

- Dead plus floor live plus roof live
- Dead plus floor live plus wind
- Dead plus floor live plus seismic
- Dead plus floor live plus wind plus roof live/2
- Dead plus floor live plus roof live plus wind/2
- Dead plus floor live plus roof live plus seismic

Note: Use live load only where required by CBC 2001 in combination with seismic.

3.2.8 Allowable Stresses

Each load combination shall not exceed the allowable stress permitted by the appropriate code for that combination.

3.2.8.1 Concrete Structures

The required strength (U) shall be at least equal to the following:

- U = 1.2 Dead + 1.6 Live
- U = 1.2 Dead + 1.6 Live + 0.8 Wind
- U = 0.9 Dead + 1.6 Wind + 1.6 Earth Pressure
- U = 1.2 Dead + 1.0 Live + 1.6 Wind
- U = 1.2 Dead + 1.0 Live + 1.0 Seismic
- U = 0.9 Dead + 1.0 Seismic
- U = 1.2 Dead + 1.6 Live + 1.6 Earth Pressure
- U = 0.9 Dead + 1.6 Earth Pressure + 1.0 Seismic

3.2.8.2 Steel Structures

The required strength (S) based on the elastic design methods and the allowable stresses (F_s) defined in Part 1 of the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings is as follows.

- S = Dead = 1.0 F_s
- S = Dead + Wind = 1.0 F_s
- S = Dead + 0.7 Seismic = 1.0 F_s; frame members and connections will conform to the additional requirements of CBC 2001 Sections 1629A and 2213A.
- S = Dead + Live = 1.0 F_s
- S = Dead + 0.75 Live + 0.75 Wind = 1.0 F_s
- S = Dead + 0.75 Live + 0.53 Seismic = 1.0 F_s; frame members and connections will conform to the additional requirements of CBC 2001 Sections 1629A and 2213A.
- S = 0.6 Dead + Wind = 1.0 F_s
- S = 0.6 Dead + 0.7 Seismic = 1.0 F_s

3.3 BUILDINGS

General design criteria for the architectural systems are discussed in the following subsections.

3.3.1 Architectural System

General design criteria for materials and installation of architectural systems or components will be as follows:

- **Exterior Walls**. These will be metal wall panel systems of the factory assembled or field erected type with exposed fasteners and minimum thickness of exterior sheet of 24 gauge galvanized steel. Installed walls will be watertight and will provide a "U" factor in accordance with the California Administrative Code, Title 24 and the ASHRAE Handbook. Added insulation will be provided for sound absorption on walls enclosing equipment generating excessive noise.

- **Interior Walls**. Where durability is required, interior walls may be constructed of concrete block masonry, structurally designed and reinforced as required. In offices, shops, etc., metal studs with gypsum board will usually be used to form interior partitions. Insulation for sound control will be used where required by design.

- **Fire Exits and Doors**. Fire exits will be provided at outside walls as required by code. Exit signs will be provided. Fire doors will bear an Underwriters Laboratory (UL) certification level for class of opening and rating for door, frame, and hardware. Doors will conform to hollow metal door requirements and have fillers adequate to meet the fire rating.

- **Large Access Exterior Doors**. Large access exterior doors will be rolling steel type with weather seals and windlocks. Components will be formed from galvanized steel, factory assembled, and field painted. Doors will be motor-operated with override manual operation.

- **Metal Roof Deck and Insulation System**. Roof deck and insulation system will be fluted steel decking with minimum depth of 1 1/2 inches. The deck will have interlocking side laps.

  – The completed roof system shall carry an Underwriters Laboratory (UL) Class 90 rating in accordance with Underwriters Laboratory UL 580.

  – The roof system will have a minimum slope of l/4 inch per foot. Deflection of the roof panels shall not exceed 1/180 of their span.

- **Painting**. Exterior steel material that is not galvanized or factory finished will be painted. Painted color will match or harmonize with the color of the exterior face of the wall panels.

- **Color Schemes**. Color schemes will be selected for overall compatibility.

3.3.2 Prefabricated Metal Buildings

Prefabricated metal buildings (packaged to include exterior doors, wall louvers, windows, skylights, and related enclosure components) will be furnished as follows:

- Building Enclosure. Building enclosures will be of manufacturer's standard modular rigid frame construction with tapered or uniform depth rafters rigidly connected at ends to pinned-base tapered or uniform depth columns. Purlins and girts will be cold-formed "C" or "Z" sections conforming to "Specifications for Design of Cold-Formed Steel Structural Members" of American Iron and Steel Institute. All other members will be hot rolled shapes conforming to "Specification for Design, Fabrication and Erection of

Structural Steel for Buildings" of American Institute of Steel Construction. Metal roof coverings will be of pre-finished standing seam panels of 24 gauge minimum.

- Steel. Cold-formed components will conform to ASTM A570, Grade E, 42,000 pounds per square inch (psi) minimum yield for material thickness equal to or less than 0.23 inch, or to ASTM A375, 50,000 psi minimum yield for high tensile strength purlin or girt sections with material thickness equal to or less than 0.23 inch. Roof covering and wall covering will conform to ASTM A446, Grade A, galvanized 33,000 psi minimum yield. All cold-formed components will be manufactured by precision roll or break forming.

3.4 CONCRETE STRUCTURES

Reinforced concrete structures will be designed in accordance with ACI 318-05, Building Code Requirements for Reinforced Concrete.

3.4.1 Materials

The materials described below will be specified and used as a basis for design.

- Reinforcing Steel. Reinforcing steel shall meet the requirements of ASTM A615, Grade 60.
- Cement. Cement used in all concrete mixes will be portland cement meeting the requirements of ASTM C150, Type I or Type II, unless design requires a different type.
- Aggregates. Fine aggregates will be clean natural sand. Coarse aggregates will be crushed gravel or stone. All aggregates shall meet the requirements of ASTM C33.
- Admixtures. Plasticizers and retarders will be used to control setting time and to obtain optimum workability. Air entrainment of 4 to 6 percent by volume will be used in all concrete mixes. Calcium chloride will not be permitted. Interior slabs to be trowel finished may use less air entrainment.
- Water. Clean water of potable quality shall be used in all concrete.

3.4.2 Design

The system of concrete and steel reinforcing strength combinations will be used as follows:

- Concrete strength 4,000 psi minimum (at 28 days)
- Reinforcing strength - 60,000 psi, Grade 60.

3.4.3 Mixes

Concrete strength will be determined by ASTM C39.

3.4.4 Reinforcing Steel Test

Test reports certifying that reinforcing steel is in accordance with ASTM and project specifications will be required.

3.5 STRUCTURAL STEEL

Steel framed structures will be designed in accordance with the CBC 2001 and the AISC Specification for the Structural Steel Building, Allowable Stress Design and Plastic Design. In addition, steel framed structures will be designed in accordance with the criteria discussed in the following subsections.

3.5.1 Materials

Structural steel shapes, plates, and appurtenances for general use will conform to ASTM A36. Structural steel required for heavy framing members may consider use of ASTM A572. Structural steel required for tube girts will conform to ASTM A500, Grade B. Connection bolts will conform to ASTM A325. Connections will conform to AISC Specification for Structural Joints. Welding electrodes will be as specified by the AWS. All structural steel will be shop primed after fabrication.

3.5.2 Design

All steel framed structures will be designed as "simple" space frames (AISC Specification Type 2), utilizing single span beam systems, vertical diagonal bracing at main column lines, and horizontal bracing at the roof and major floor levels.

Suspended concrete slabs will be considered as horizontal diaphragms after setup and curing. Deflections of the support steel will be controlled to prohibit "ponding" of the fresh concrete as it is placed. Metal roof decks attached with welding washers or fasteners may be considered to provide a structure with lateral force diaphragm action.

Connections will be in accordance with AISC standard connection design for field bolted connections.

3.6 SEISMIC DESIGN CRITERIA

This section provides the general criteria and procedures which will be used for seismic design of building and non-building structures.

The project is located within 5 miles from a geological fault and in Seismic Zone 4 according to the California Building Code (CBC), 2001 Edition. The seismic performance objectives for this facility are as follows:

- Resist minor levels of earthquake ground motion without damage
- Resist moderate levels of earthquake ground motion without structural damage, but possibly experience some nonstructural damage
- Resist major levels of earthquake ground motion without collapse, but possibly with some structural as well as nonstructural damage

To achieve these objectives, the facility will be designed in accordance with the 2001 edition of the California Building Code.

It should be noted that structures having one or more of the features listed in Table 16-L and Table 16-M of CBC 2001 shall be designated as having a vertical and a plan irregularity, respectively. All structures, regular or irregular, shall be designed by static or dynamic procedures in accordance with CBC 2001 Section 1629A - Criteria Selection.

It should be also noted that additional provisions for torsional irregularity, overturning, discontinuous lateral load-resisting element, story drift limitation and P-Delta effects, etc., shall be considered in accordance with Section 1630A of the CBC 2001.

3.6.1 Buildings

The building structural system shall be constructed of steel framing supported on spread footings tied together by perimeter grade beams and floor slab. Lateral forces will be resisted by moment-frames in the short direction, braced-frames in the long direction, and by bracing in the roof steel.

Seismic forces will be computed by the Static Force Procedure given by Chapter 16 of CBC 2001. The seismic dead load, W, will include the total dead load of the structural system, architectural enclosure, and the weight of any attached permanent equipment.

3.6.2 Non-Building Structures

Non-building structures such as tanks and equipment skids will be designed to resist seismic forces in accordance with Section 1634A of CBC 2001.

Nonstructural components and equipment, including piping and cable tray and their supports, will be seismically designed in accordance with Sections 1632A and 1633A of CBC 2001.

4.0 STRUCTURAL DESIGN METHODOLOGY

This section describes the structural aspects of the design of the proposed facility. Each major structural component of the plant is addressed by defining the design criteria and analytical techniques that will be employed.

4.1 STRUCTURES

4.1.1 Turbine Foundation (STG and CTG)

Turbine foundation will be designed to support the turbine and generator components. The foundation will be designed to resist the loadings furnished by the Supplier and will be constructed of reinforced concrete.

4.1.1.1 Loads

Foundation loads will be furnished by the turbine Supplier and will be superimposed with loads for the foundation itself. Typical loading data will include the following:

- Dead loads
- Live loads
- Wind loads from project specific criteria
- Seismic loads from project specific criteria
- Hydrostatic loads
- Temperature and pressure loads
- Emergency loads such as turbine accident loads

4.1.1.2 Anchor Bolts

The turbines and associated equipment will be securely anchored to the foundation using cast-in-place steel anchor bolts designed to resist the equipment and seismic forces.

4.1.1.3 Structural Design

The foundations will be designed and constructed as monolithic reinforced concrete structures using the criteria from Section 3.1, Natural Phenomena and Section 3.4, Concrete Structures. The foundation system will be a rigid mat supported on soils.

The foundation design will address the following considerations:

- Soil bearings and earth pressures
- Soil liquefaction, if any
- Allowable settlements
- Equipment, structure, and environmental loads
- Natural frequencies of rotating equipment
- Access and maintenance
- Equipment performance criteria
- Dynamic effects of the rotating machinery

Design loads will be determined in accordance with Section 3.1, Natural Phenomena. Seismic loads on foundation from the turbine will be calculated using equivalent lateral forces applied at the center-of-gravity of the equipment in accordance with the criteria specified in Section 3.6, Seismic Design Criteria.

Load combinations and their respective strength factors for the foundation designs will be as indicated in Subsection 3.2.7, Load Combinations and Subsection 3.2.8, Allowable Stresses.

4.1.1.4 Analysis

The turbine foundations will be designed using static analysis techniques assuming a rigid mat supported directly on soil. The mats will be sized such that the allowable settlement and soil bearing from geotechnical investigation report are not exceeded.

The turbine foundations will be checked for dynamic response of the operating turbine. Manual calculations and simple computer models based on the fundamental principles of dynamic behavior of structures will be used to determine the natural frequencies of the support system. Where soil structure interaction effects are important, low strain soil properties will be used to calculate soil springs using the procedures from Vibrations of Soils and Foundation by Richart, Hall, and Woods or a similar procedure. Each concrete foundation will be analyzed as a rigid body on soil with the equipment modeled as a rigid mass located at its center of gravity and rigidly attached to the foundation. The foundation will be proportioned such that the principal natural frequencies will be at least 25 percent removed from the equipment operating speed. Should the resulting foundation design prove to be uneconomical, the dynamic behavior of the foundation will be evaluated and compared to ISO (3945) Criteria for Vibration Severity. The resultant vibration level will be within the "Good" range of this standard.

A procedure for the dynamic analysis of large fan foundations supported by soil may be used to evaluate the dynamic behavior of the turbine foundations.

4.1.2 HRSG Foundation

The HRSG and its self-supported stacks will be installed on a reinforced concrete mat foundation.

4.1.2.1 Loads

The design of the HRSG and stack foundation will include the following loads.

- Dead loads
- Live loads
- Wind loads
- Seismic loads
- Temperature and pressure loads

4.1.2.2 Anchor Bolts

The HRSG and its stack will be securely anchored to the foundation using cast-in-place steel anchor bolts.

4.1.2.3 Structural System

The HRSG stacks will resist lateral loading as a fixed base cantilevered structure. Lateral stability shall be provided for by integral structural steel columns inherent in the HRSG casing structure.

4.1.2.4 Structural Design

The predominant forces acting on the HRSG and its stack will result from wind or seismic loading.

Wind loads will be determined from ASCE 7-05, American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures. Consideration will be given to along-wind and across-wind responses.

Seismic loads will be determined in accordance with CBC 2001 Section 1634A, Nonbuilding Structures. The fundamental period will be determined using CBC 2001 Equation 30A-10, and will be calculated by both considering and ignoring the structural contribution of lining material. The lower period will be used in the development of the seismic forces. A simultaneous vertical seismic force equal to two thirds of the horizontal seismic force will be considered.

The shell thickness of the stack will account for corrosion allowance. The corrosion allowance will be considered in the generation of seismic loads, but not in the resistance to seismic or wind loads.

Allowable stresses for stiffeners, platform members, and other details will be in accordance with the American Institute of Steel Construction, Allowable Stress Design, Ninth Edition. Allowable stresses for the shell will not be increased for wind or seismic loadings.

The stack will be supported using an octagonal shaped pier on a combined reinforced concrete mat. The foundation will be designed and constructed as a monolithic reinforced concrete structure using the criteria from Section 3.1, Natural Phenomena and Section 3.4, Concrete. The foundation system will likely be a soil supported rigid mat.

The foundation design will address the following considerations.

- Soil bearings and earth pressures
- Allowable settlements
- Structure and environmental loads
- Access and maintenance

Load combinations and allowable strengths will be as indicated in Subsection 3.2.7, Load Combinations and Subsection 3.2.8, Allowable Stresses.

4.1.2.5 Analysis

Moments, shears, and axial forces for the stack will be calculated using static analysis procedures on a cantilevered member. Longitudinal stresses resulting from axial loads and flexure will be combined and compared to a single allowable stress.

The HRSG and stack foundation will be designed using static analysis techniques assuming a combined rigid mat. The mat will be sized such that the allowable settlement in the geotechnical investigation report is not exceeded. The mat will be proportioned to resist the vertical gravity loads concurrent with the controlling lateral loads.

4.1.3 Buildings and Non-Building Structures

4.1.3.1 Loads

Foundation loads will be determined from the analysis and design of the superstructure and from the support of the equipment contained within the structure. The following loads will be considered:

- Dead loads
- Live loads
- Equipment and piping loads
- Wind loads
- Seismic loads

4.1.3.2 Anchor Bolts

The buildings and non-building structures will be securely anchored to the foundations using cast-in-place steel anchor bolts designed to resist any induced forces.

4.1.3.3 Structural System

The buildings will be designed as an AISC Type 2 simple braced frame and AISC Type 1 moment frames. For the purpose of resisting seismic lateral loads, structures will be classified as regular structures with concentric braced frames in accordance with the definitions of Chapters 16 and 22 of the California Building Code 2001.

4.1.3.4 Structural Design

The steel frames of the buildings will be designed and constructed using the materials and criteria set forth in Section 3.5, Structural Steel.

Design loads will be determined in accordance with Section 3.1 Natural Phenomena.

Seismic loading for the buildings will be calculated using equivalent lateral forces applied to the structure in accordance with the procedures of CBC 2001, Chapter 16.

The foundations will be designed and constructed using reinforced concrete according to the criteria set forth in Section 4.1.2, HRSG Foundation, and Section 3.4, Concrete Structures. The foundation systems will likely be comprised of shallow soil supported spread footings to resist the column loads and an isolated slab on grade floor system.

The foundation design will consider the following:

- Soil bearing and earth pressures
- Allowable settlements
- Equipment, structure, and environmental loads
- Access and maintenance
- Equipment performance criteria

Load combinations and their respective allowable stresses will be as indicated in Subsection 3.2.7, Load Combinations and Subsection 3.2.8, Allowable Stresses.

4.1.3.5 Analysis

The steel frames will be analyzed using stiffness matrix-analysis techniques on a two- dimensional plane frame or a three-dimensional space frame model. All loads will be applied as static forces. The foundations will be designed using static analysis techniques assuming rigid spread footings. Spread footings will be sized such that the allowable settlement in the geotechnical investigation report is not exceeded.

4.1.4 Air Cooled Condenser Foundation

The air cooled condenser will be designed and supplied by the air cooled condenser Subcontractor. The air cooled condenser foundation will be on a soil supported rigid mat.

4.1.4.1 Loads

The design of the air cooled condenser foundation will include the following loads:

- Dead loads
- Live loads (including water)
- Equipment weight and piping loads
- Wind loads
- Seismic loads
- Temperature loads
- Hydrodynamic loads

4.1.4.2 Anchor Bolts

The air cooled condenser will be supported by steel columns which will be securely anchored to the foundation using cast-in-place steel anchor bolts.

4.1.4.3 Structural System

The structural system will be determined by the air cooled condenser Subcontractor, and designed in accordance with CBC provisions.

4.1.4.4 Structural Design

The predominant forces acting on the air cooled condenser will result from wind or seismic loading. Wind loads will be determined from ASCE 7-05, American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures. Consideration will be given to along wind and across-wind responses.

Seismic loads will be determined in accordance with CBC 2001 Section 1634A - Non-building Structures.

The foundation design will address the following consideration:

- Soil bearing and earth pressures
- Allowable settlements
- Structure and environment loads

Load combinations and their respective strengths will be as indicated in Subsection 3.2.8.1 Concrete Structures.

4.1.4.5 Analysis

The air cooled condenser foundation will be analyzed using static analysis techniques assuming rigid mat. The mat will be sized in accordance with the requirements of the geotechnical report. The mat will be proportioned to resist the vertical gravity loads concurrent with the controlling lateral loads.

4.2 TANKS

4.2.1 Vertical, Cylindrical Field Erected Storage Tanks

The tank roof will be of the self-supported dome or cone type. The tank bottom will be ground supported, flat bottomed, with a slope of 1 percent. The tank will be provided with ladders, landing platforms, and handrails as required to provide access to all working areas. Vents, manholes, overflow piping, and grounding lugs will also be provided as necessary.

The typical foundation will consist of a circular ringwall. The interior of the ring will be comprised of compacted backfill with a layer of compacted sand or asphalt to serve as a bearing surface for the tank bottom.

4.2.1.1 Loads

The design of tanks and foundations will include the following loads.

- Dead loads
- Live loads
- Wind loads
- Seismic loads
- Hydrodynamic loads

Allowable soil bearing and settlements values will not be exceeded.

4.2.1.2 Anchor Bolts

Storage tanks will be securely anchored to the foundation using cast-in-place steel anchor bolts designed to resist all induced forces in accordance with AWWA D100.

4.2.1.3 Structural System

Storage tanks will resist lateral loading through shear in the tank walls. Overturning will be resisted by anchor bolts connecting the tank wall to the foundation.

4.2.1.4 Structural Design

The foundation will be designed and constructed as a reinforced concrete ringwall using the criteria from Section 3.1, Natural Phenomena, and Section 3.4, Concrete Structures.

The tank structures will be designed and constructed using the criteria established in AWWA D100.

Design loads will be determined in accordance Section 3.1, Natural Phenomena. Wind loads will be determined using the velocity pressures specified in Subsection 3.2.3, Wind Loads, multiplied by the appropriate pressure coefficient from CBC Table No. 16-H.

Seismic loads will be determined in accordance Section 3.6, Seismic Design Criteria and AWWA D100, Section 13.

The seismic overturning moment will be determined from AWWA D100, Section 13.3.3.1 for Z = 0.4. The structure coefficient will be determined from AWWA Table 16.

The value of C_1 will be determined from Section 13.3.3.1. The site amplification factor, S, will be determined from Table 17.

Load combinations and their respective allowable strengths will be as indicated in Subsection 3.2.7 Load Combinations, Subsection 3.2.8, Allowable Stresses, and Section 3 of AWWA D100.

Design loads will be applied at the center of gravity of the tank. The design of the tank foundation will include the moment resulting from lateral displacement (hydrodynamics) of the tank contents in accordance with AWWA D100, Section 133.3.2.

Piping connections will be designed with a minimum 2 inches of flexibility in all directions as specified in AWWA D100, Section 135.

4.2.1.5 Analysis

The tank foundation will be designed using static analysis techniques of a circular ringwall. The ringwall will be proportioned to resist the dead load of the tank and the overturning moment determined from AWWA D100. The ringwall will also be proportioned to resist maximum anchor bolt uplift force. Circumferential reinforcing steel hoops will be provided in the ringwall to develop the hoop stress produced by lateral soil pressure within the ringwall. The ringwall will be proportioned to resist the vertical gravity loads concurrent with the controlling lateral loads. The tank structure will be designed and proportioned such that during the application of any load, or combination of loads, the maximum stresses as stipulated in AWWA D100 will not be exceeded.

4.2.2 Horizontal, Cylindrical, Shop Fabricated Storage Tanks

4.2.2.1 Loads

Foundation loads will be furnished by the tank Supplier and will be superimposed with loads for the foundation itself. Typical loads supplied by the Supplier include the following:

- Dead loads
- Live loads
- Wind loads
- Seismic loads
- Temperature loads
- Hydrodynamic loads

4.2.2.2 Anchor Bolts

The tanks will be securely anchored to the foundation using cast-in-place steel anchor bolts designed to resist all induced forces.

4.2.2.3 Structural System

The tanks will be supported by integral legs or saddle supports designed to resist gravity and environmental loadings.

4.2.2.4 Structural Design

The foundation will be designed and constructed as a monolithic reinforced concrete structure using the criteria from Section 3.1 Natural Phenomena and Section 3.4, Concrete Structures. The foundation will likely be a rigid mat supported directly on soil. When required, the foundation will incorporate an integral containment basin capable of holding 130 percent of the tank's contents.

Environmental loading will be determined in accordance Section 3.1, Natural Phenomena. Wind loads will be determined using the velocity pressures specified in Subsection 3.2.3, Wind Loads, multiplied by the appropriate pressure coefficient from Table No. 16-H of CBC.

Seismic loading will be calculated using equivalent lateral forces applied at the center of gravity of the tank or tank component in accordance with the criteria specified in Section 3.6 Seismic Design Criteria.

Load combinations and their respective allowable strengths will be as indicated Subsection 3.2.7 Load Combinations and Subsection 3.2.8 Allowable Stresses.

4.2.2.5 Analysis

The tank foundations will be designed using static analysis techniques assuming a rigid mat. The mat will be sized such that the allowable settlement criteria developed from a detailed subsurface investigation will not be exceeded.

The tanks will be designed by a tank manufacturer in accordance with the AWWA code, ANSI code, and the ASTM standards. Gravity and lateral loadings will be transferred to the foundation by integral legs or a saddle support system.

4.3 EQUIPMENT

4.3.1 Turbine Accessories

The foundations for turbine accessories will be designed to resist the loads furnished by the Supplier, and will be constructed of reinforced concrete.

4.3.1.1 Equipment Loads

Equipment loads will be determined by the Supplier based on project design criteria. Typical loads used for design include the following:

- Dead loads
- Live loads
- Operating loads
- Construction loads
- Wind loads
- Seismic loads
- Temperature loads
- Emergency loads such as turbine accident loads

4.3.1.2 Anchorage

The turbine and associated equipment will utilize steel anchor bolts, fasteners, welds, and other equipment anchorage devices to resist equipment and seismic induced forces.

4.3.1.3 Structural Design

The turbine, generator and accessories will be designed to resist project specific design loads. Design loads will be determined in accordance Section 3.1, Natural Phenomena.

Wind loads will be determined using the velocity specified in Subsection 3.2.3, Wind Loads, multiplied by the appropriate pressure coefficient from Table No. 16-H of CBC 2001.

The seismic loading and design of the turbine and accessories will be in accordance with project specific criteria and the CBC. Seismic loading will be calculated using equivalent lateral forces applied at the center of gravity of the equipment or component in accordance with the criteria specified in Section 3.6, Seismic Design Criteria.

The turbine inlet air filtration equipment and inlet air duct support structures shall be designed to resist the loading specified in CBC 2001, Chapter 16. For the purpose of resisting seismic lateral loads, the inlet air duct support structure will be classified as regular or irregular in accordance with the criteria established in CBC 2001 Chapter 16. The procedures for the analysis of regular and irregular structures will be as specified in CBC 2001 Chapter 16 and Subsection 3.6.1, Buildings.

The air duct support structure will resist lateral seismic loading as a Concentric Braced Frame or as an Ordinary Moment Resisting Space Frame as defined by CBC 2001. The design and detailing of the members and connections will comply with the provisions of CBC 2001, Chapter 22.

Lateral forces on elements of structural and nonstructural components will be determined in accordance with CBC 2001 Section 1632A with Ip equal to 1.50, and a_p and Rp in accordance with CBC 2001 Table 16-0. These seismic forces will be combined with forces due to normal operating loads.

Lateral forces on equipment will be determined in accordance with CBC 2001 Section 1632A with Ip to 1.50, and a_p and Rp in accordance with CBC Table 16-0. Equipment bases, foundations, support frames, and structural members used to transfer the equipment seismic forces to the main lateral load resisting system will be designed for the same seismic load as the equipment.

Load combinations will be as indicated in Subsection 3.2.7, Load Combinations. These load combinations are in addition to those normally used in design and those specified in applicable codes and standards. For all load combinations, including seismic, the stresses in the structural supporting members and connections will remain in the elastic range.

4.3.1.4 Analysis

The turbines and auxiliary equipment will be designed and constructed in accordance with applicable requirements of codes and standards. Stamps will be affixed to denote conformance to the appropriate codes.

4.3.2 Main and Auxiliary Transformers

The main and auxiliary power transformers, transformer equipment, material and accessories will conform to the applicable standards of ANSI C57.12, NEMA TR1, ANSI/IEEE C59.94 and 98, and project specific criteria. The power transformer will be designed, fabricated, and tested in accordance with ANSI C57.12 series, NEMA TR 1, and project specific criteria.

The foundations will be designed to resist the loads furnished by the Supplier and will be constructed of reinforced concrete.

4.3.2.1 Loads

Foundations loads will be furnished by the transformer supplier and will be superimposed with loads for the foundation itself. Typical loads include the following:

- Dead loads
- Live loads
- Wind loads
- Seismic loads

4.3.2.2 Anchorage

The power transformers, transformer equipment, and accessories will utilize steel anchor bolts, fasteners, welds; and other equipment anchorage devices to resist equipment and seismic induced forces.

4.3.2.3 Structural System

The transformer will be regarded as a rigid body for foundation design purposes.

4.3.2.4 Structural Design

The foundations will be designed and constructed as a reinforced concrete structure using the criteria from Section 3.1, Natural Phenomena and Section 3.4, Concrete Structure. The foundation will likely be a soil supported rigid mat. The foundation will incorporate an integral containment basin capable of holding 130 percent of the transformer coolant contents prior to passage through an oil-water separator. Design loads will be determined in accordance with Section 3.1, Natural Phenomena. Wind loads will be determined using the velocity pressures specified in Subsection 3.2.3, Wind Loads, multiplied by the appropriate pressure coefficients from CBC 2001 Table No. 16-H.

The seismic loading and design of the power transformers, transformer equipment, accessories, and foundations will be in accordance with project specific criteria and CBC 2001 Chapter 16. Loading will be approximated using equivalent lateral forces applied to the center of gravity of the equipment or component using the criteria specified Section 3.6, Seismic Design Criteria.

Lateral forces on equipment will be determined in accordance with CBC Section 1632A with Ip equal to 1.50, a_p and Rp in accordance with CBC 2001 Table 16-0. Equipment bases, foundations, support frames, and structural members used to transfer the equipment seismic forces to the foundation system will be designed for the same seismic load as the equipment.

Load combinations will be as indicated in Subsection 3.2.7, Load Combinations. These load combinations are in addition to those normally used in design and those specified in applicable codes and standards. For all load combinations, including seismic, the stresses in the structural members and connections will remain in the elastic range. Structural allowable strengths will be as indicated in Subsection 3.2.8, Allowable Stresses.

4.3.2.5 Analysis

The power transformer foundations will be designed using static analysis techniques assuming a rigid mat. The mat will be sized such that the allowable settlements in the geotechnical report are not exceeded.

4.3.3 Miscellaneous Equipment

4.3.3.1 Loads

Foundation loads will be furnished by the equipment supplier and will be superimposed with loads for the foundation itself. Typical load include the following:

- Dead loads
- Live loads
- Wind loads
- Seismic loads
- Temperature and pressure loads (as applicable)

4.3.3.2 Anchorage

All miscellaneous equipment will utilize steel anchor bolts, fasteners, welds, and other equipment anchorage devices to resist equipment and seismic induced forces.

4.3.3.3 Structural System

Each individual piece of equipment will have its own unique structural system, and it is the responsibility of each manufacturer to assure its adequacy.

4.3.3.4 Structural Design

All miscellaneous equipment will be designed to resist project specific and CBC 2001 specified loads where possible and loads from applicable codes and standards.

Seismic loading and design of miscellaneous equipment will be in accordance with project specific criteria and CBC 2001 Chapter 16. The seismic loading will be calculated using equivalent lateral forces applied to the center of gravity of the equipment or component in accordance with the criteria specified Section 3.6, Seismic Design Criteria.

Lateral forces on equipment will be determined in accordance with CBC Section 1632A with Ip equal to 1.50, and a_p and Rp in accordance with UBC 2001 Table 16-0. Equipment bases, foundations, support frames, and structural members used to transfer the equipment seismic forces to the main lateral load resisting system will be designed for the same seismic load as the equipment.

Load combinations will be as indicated in Subsection 3.2.7, Load Combinations. These load combinations are in addition to those normally used in design and those specified in applicable codes and standards. For all load combinations, including seismic, the stresses in the structural supporting members and connections shall remain in the elastic range. Structural allowable strengths will be as indicated in Subsection 3.2.8, Allowable Stresses.

4.3.3.5 Analysis

All miscellaneous equipment and accessories will be designed and constructed in accordance with applicable requirements of codes and standards.

All structural supports required for the miscellaneous equipment will be designed using static analysis techniques.

4.4 PIPING

The project will include all piping systems necessary for a complete installation. Piping will include all high point vents, low point drains, instrument piping, lube oil piping, steam piping and other piping as required for the complete system. Insulation, hangers, valves, and other piping accessories will also be provided. Piping, pipe supports, and pipe accessories will be constructed of carbon, alloy, and stainless steel.

The foundations and support superstructures will be designed to resist the loads generated by the piping system.

4.4.1 Loads

All piping loads will be determined using project specified loading and CBC specified loads. Typical loadings for a piping system include the following:

- Dead loads
- Live loads

- Wind loads
- Seismic loads
- Temperature and pressure loads
- Test loads

4.4.2 Anchorage

The design and configuration of all hangers and accessories will utilize steel anchor bolts, fasteners, welds, and other pipe anchorage devices. All pipe anchorages will be designed to resist induced forces.

4.4.3 Structural Design

All piping, pipe supports, and pipe accessories will be designed to resist project specific loads, CBC 2001 specified loads, and loads from applicable codes and standards.

Environmental loading will be determined in accordance with Section 3.1, Natural Phenomena. Wind loads will be determined using the velocity pressures specified Subsection 3.2.3, Wind Loads, multiplied by the appropriate pressure coefficients from Table No. 6.7 of ASCE 7-05.

The seismic loading and design of piping systems and pipe supports will be in accordance with project specific criteria. Seismic analysis of piping and components will be designed in accordance with Sections 1632A and 1633A of CBC 2001.

Load combinations will be as indicated in Subsection 3.2.7, Load Combinations. These load combinations are in addition to those normally used in design and the applicable codes and standards specified in mechanical engineering design criteria. For all load combinations, including seismic, the stresses in the structural supporting members will remain in the elastic range. Structural allowable strengths will be as indicated in Subsection 3.2.8, Allowable Stresses.

4.4.4 Analysis

All piping, piping supports, and pipe accessories will be designed and constructed in accordance with applicable requirements of the codes and standards referenced in Mechanical Engineering Design Criteria.

Structural supports required for piping shall be designed using static analysis techniques using the procedures established in Mechanical Engineering Design Criteria.

5.0 HAZARD MITIGATION

The project will be designed to mitigate natural and environmental hazards caused by seismic and meteorological events. This section addresses the structural design criteria used to mitigate such hazards.

5.1 SEISMIC HAZARD MITIGATION CRITERIA

The seismic design criteria for the project will be based on the following considerations:

- Compliance with applicable laws, ordinances, regulations, and standards
- Life safety
- Structural behavior and performance
- Reliability of the plant

- Financial impacts from seismic induced outages
- Seismic probability and magnitude

The project seismic design criteria will be developed to incorporate these considerations using a systematic approach to correlate performance criteria with assumed risk level. The following procedure will be used to establish the design criteria.

The seismic hazards will be assessed by studying the geologic features of the surrounding area. Major faults will be identified and information collected regarding each fault's proximity, capability, recurrence, and magnitude.

- The seismic risk associated with each source will be assessed considering historical magnitudes.

- Acceleration levels for various structural frequencies will be based on CBC 2001 Figure No. 16A-3, Normalized Response Spectra Shapes.

- Appropriate design criteria and analysis methods will be established for each major plant structure, equipment, and component consistent with the seismic performance criteria.

Specific design features that will be incorporated into the plant to mitigate the identified seismic hazards include the following:

- Appropriate analysis techniques will be employed to calculate structure specific seismic loads.

- Plant structures, equipment, piping, and other components will be designed to resist the project specific seismic loads.

- All equipment will be positively anchored to its supporting structure. Nominal uplift capacity will be provided in the absence of calculated overturning forces.

- Anchorages will be designed to resist the project specific seismic loadings.

- The design of piping connections to structures, tanks, and equipment will consider the differential seismic displacements between components.

- Adjacent structures will be seismically isolated from one another.

- Structural elements will be designed to comply with special detailing requirements intended to provide ductility.

- Connections for steel structures will have a minimum load carrying capability without regard to the calculated load.

- Lateral and vertical displacements of structures and elements of structures will be limited to specified values.

The foregoing design features are intended to provide the following degrees of safety for structures and equipment:

- Resist minor earthquakes without damage. Plant remains operational.
- Resist moderate earthquakes without structural damage but with some nonstructural damage. Plant remains operational or is returned to service following visual inspection and minor repairs.
- Resist major earthquakes without collapse but with some structural and nonstructural damage. Plant is returned to service following visual inspection and minor repairs.

5.2 METEOROLOGICAL AND CLIMATIC HAZARD MITIGATION

Meteorological and climatic data will form the design basis for the project. Portions of the data and the design bases that pertain to structural engineering have been provided in this Appendix.

Specific design features that will be incorporated into the plant to mitigate meteorological and climatic hazards include the following:

- Structures and cladding will be designed to resist the wind forces.
- Sensitive structures will be designed for wind induced vibrational excitation.
- Roofs will be sloped and equipped with drains to prevent accumulation of rainfall.
- Plant drainage systems will be designed to convey the runoff from a rainfall event in accordance with Civil Engineering Design Criteria.
- Ground floor levels of structures will be placed above probable flood levels.
- The plant site will be graded to convey runoff away from structures and equipment.

The foregoing design features will be incorporated in accordance with applicable codes and standards identified in this Appendix.

The degree of safety offered by these features is consistent with the requirements of the applicable codes and standards and the economic benefits provided by these features.

ATTACHMENT

Representative Drawings

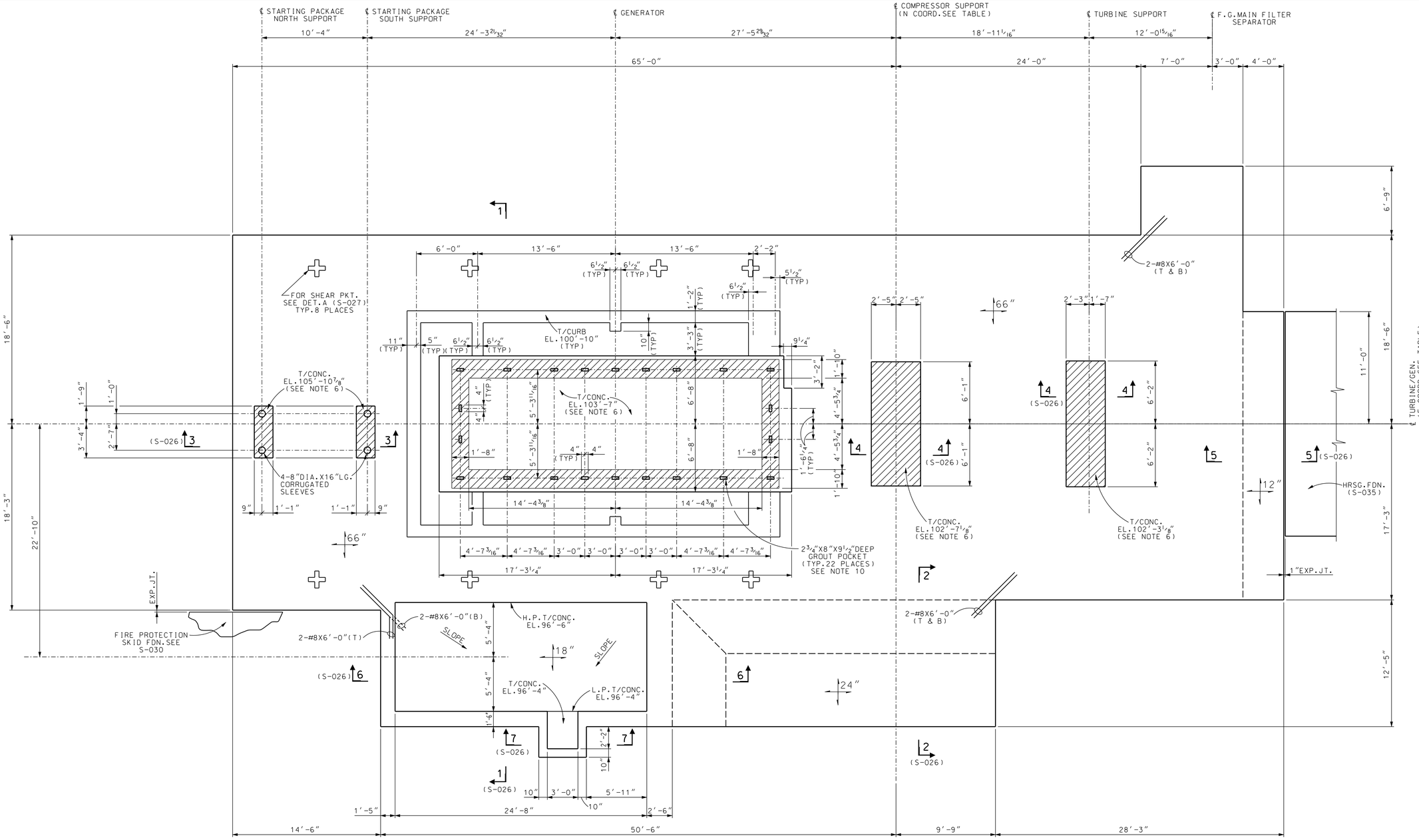
Representative Drawings

Representative drawings of major equipment, structures and systems are listed in Table B-1 below. These drawings are for illustration purposes only, and are not to be used for design and construction.

TABLE B-1

Item No.	Description	Figure No.
1	Typical CT Foundation Plan	B-1
2	Typical CT Foundation Sections & Details	B-2
3	Typical CT Generator Area Foundation Embedments	B-3
4	Typical CT Turbine Area Foundation Embedments	B-4
5	Typical CT Embedment Details	B-5
6	Typical ST/Generator Foundation Base Mat Plan	B-6
7	Typical ST/Generator Sectional Plan	B-7
8	Typical ST/Generator Foundation Top Plan	B-8
9	Typical ST/Generator Foundation Sections Sht. 1	B-9
10	Typical ST/Generator Foundation Sections Sht. 2	B-10
11	Typical ST/Generator Foundation Sections Sht. 3	B-11
12	Typical ST/Generator Foundation Sections Sht. 4	B-12
13	Typical HRSG Foundation Plan	B-13
14	Typical HRSG Foundation Sections & Details	B-14
15	Typical Sulfuric Acid & Sodium Bisulfite Tote Foundation	B-15
16	Typical Sulfuric Acid & Sodium Bisulfite Tote Foundation Masonry Wall Details	B-16
17	Typical Control/Administration Building Foundation Plan	B-17
18	Typical Control/Administration Building Foundation Sections	B-18
19	Typical Control/Administration Building Floor Plan	B-19
20	Typical Control/Administration Building Elevations	B-20

Item No.	Description	Figure No.
21	Typical ST Main & Aux. Transformer Foundation Plans and Sections	B-21
22	Typical Tank Foundations	B-22
23	Typical Air Cooled Condenser Foundation Plan	B-23
24	Typical Air Cooled Condenser Foundation Details	B-24
25	Typical Air Cooled Condenser Area Foundation Details	B-25
26	Typical Air Cooled Condenser	B-26
27	Typical Combustion Turbine	B-27
28	Typical ST Main & Aux. Transformer	B-28
29	Typical ST/Generator Plan View	B-29
30	Typical ST/Generator Sections	B-30
31	Typical Heat Recovery Steam Generator (HRSG)	B-31
32	Typical HRSG Plan View	B-32
33	Typical HRSG Generator Elevation	B-33
34	Typical Tank	B-34



COMBUSTION TURBINE FOUNDATION PLAN

T/CONC.EL.100′-6″ U.N.
FOR GENERATOR & TURBINE AREA EMBEDMENTS SEE S-027 & S-028.

NORTH

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR ANCHOR BOLT DETAILS & SCHEDULE SEE S-004.
4. FOR GROUNDING SEE E-002 SERIES DRAWINGS.
5. FOR ELECTRICAL DUCT RUNS IN THIS AREA SEE E-101 SERIES DRAWINGS.
6. THE TOP OF ALL CONCRETE PIERS (WITHIN THE CROSS HATCHED AREA) SHALL BE ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4″. THE CONTRACTOR SHALL VERIFY THAT THE TOP OF THE PIER IS SOUND CONCRETE PRIOR TO THE GROUTING OF THE SEATING PLATES. CONTRACTOR SHALL CHIP OUT ANY UNSOUND CONCRETE AND REPLACE WITH NONSHRINK GROUT.
7. FOR EMBEDDED CONDUIT SEE E-200 SERIES DWGS.
8. FOR EMBEDDED DRAIN PIPING SEE C-066B.
9. FOR TYP.MAT FOUNDATION DETAILS SEE S-003.
10. CONTRACTOR SHALL ROUGHEN INSIDE OF SLEEVE/POCKET PRIOR TO GROUTING ANCHOR BOLTS.
11. SEAL ALL CONCRETE SURFACES INSIDE GENERATOR ENCLOSURE PER NOTE 28 ON SIEMENS WESTINGHOUSE DRAWING 2310J94.

REFERENCE DRAWINGS

SIEMENS WESTINGHOUSE POWER CORP.	
2275J64/1	CT PB FOUNDATION PIER PLAN & ELEV.
2292J52/1	CT PB MECH./ELECT. PACKAGE AREA FOUNDATION PLAN
2311J15	STARTING PACKAGE FDN.ARRANGEMENT
2292J69/1-3	CT PB GENERATOR AREA FOUNDATION ARRANGEMENT
2310J93/1-3	CT PB TURBINE AREA FOUNDATION ARRANGEMENT
4214C81	EXHAUST END PLATFORM & LADDER FDN.
4231C61	FUEL GAS FILTER SEPARATOR FDN.
4231C73	PILOT FUEL GAS FILTER SEPARATOR FDN.
4232C30	COMPRESSOR BLEED PIPE SUPPORTS FDN.
4269C16	CONTROL OIL SKID FDN.
4232C90	COMPRESSOR WASH SKID FOUNDATION
2310J94	CT PB FDN.ARRANGEMENT/ANCHOR BOLTS

FIGURE B-1

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

FILE I.D. S025 1.DGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/4″=1′-0″

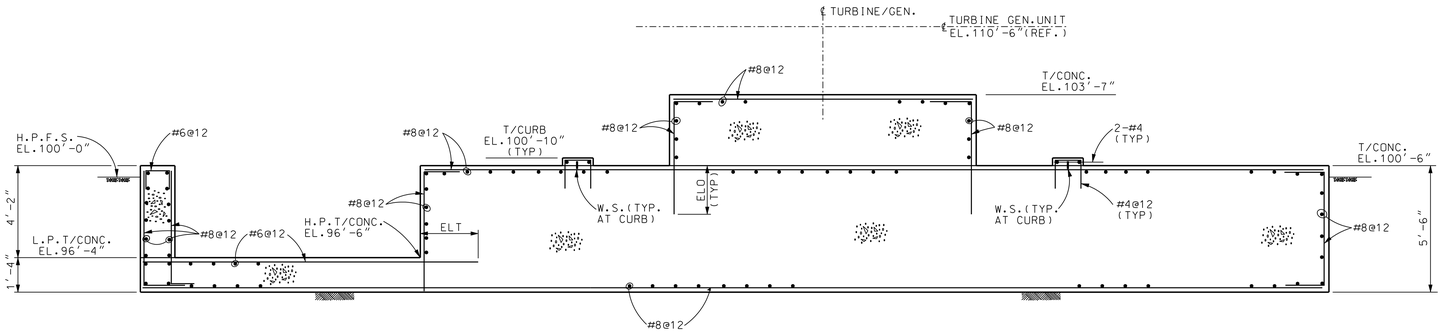
PROJECT NUMBER: 11962-003

TYPICAL COMBUSTION TURBINE FOUNDATION PLAN

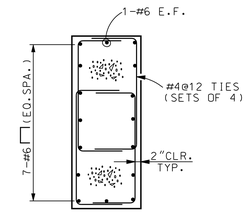
Sargent & Lundy LLC

DRAWING NO.	REV.
S-025	A
SHEET	OF

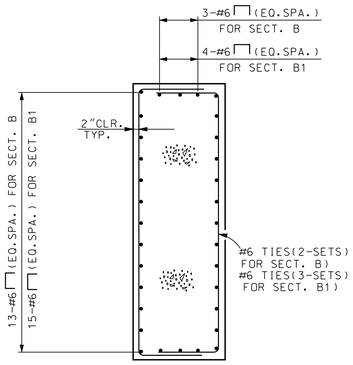
(FORM SDS 2.6.1 REV. 1 (05/93))



SECTION - 1

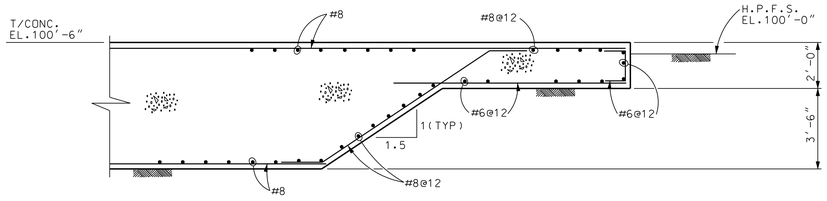


SECTION - A
(STARTER SUPPORT PIER)

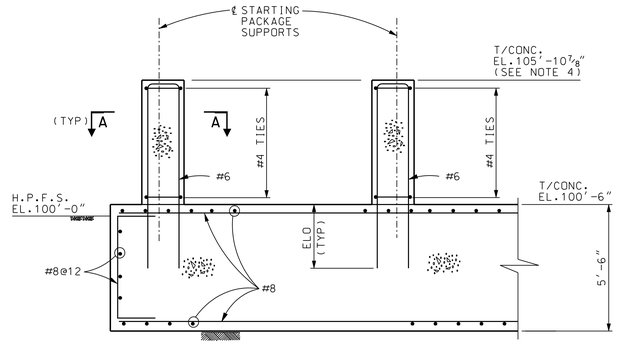


SECTION - B
(TURBINE SUPPORT PIER)

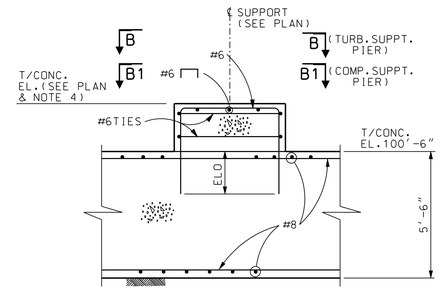
SECTION - B1
(COMPRESSOR SUPPORT PIER)



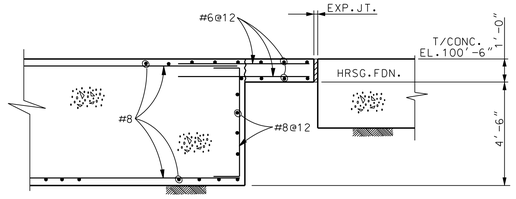
SECTION - 2



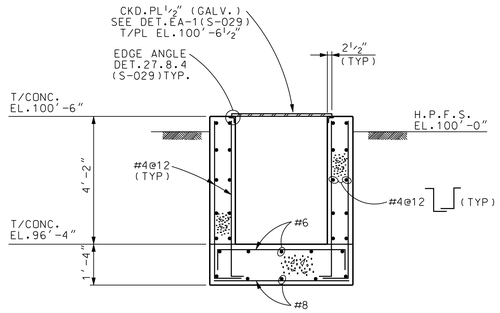
SECTION - 3



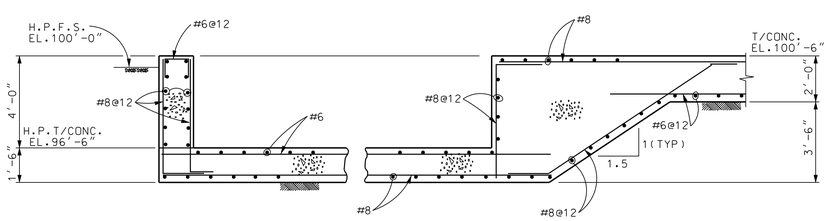
SECTION - 4



SECTION - 5



SECTION - 7
SCALE:1/2″=1′-0″



SECTION - 6

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR TYPICAL MAT FOUNDATION DETAILS SEE S-003.
4. THE TOP OF ALL CONC. PIERS (AS INDICATED BY CROSS HATCHED AREA ON S-025) SHALL BE ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4″. THE CONTRACTOR SHALL VERIFY THAT THE TOP OF THE PIER IS SOUND CONCRETE PRIOR TO THE GROUTING OF THE SEATING PLATES. CONTRACTOR SHALL CHIP OUT ANY UNSOUND CONCRETE AND REPLACE WITH NONSHRINK GROUT.

REFERENCE DRAWINGS

FIGURE B-2

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 3/8″=1′-0″

PROJECT NUMBER: 11962-003

TYPICAL COMBUSTION TURBINE FDN. SECTIONS & DETAILS

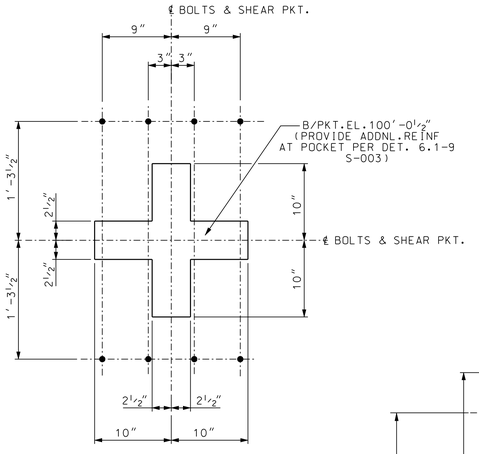
FILE I.D. S026 1.DGN

Sargent & Lundy LLC

DRAWING NO. S-026 REV. A

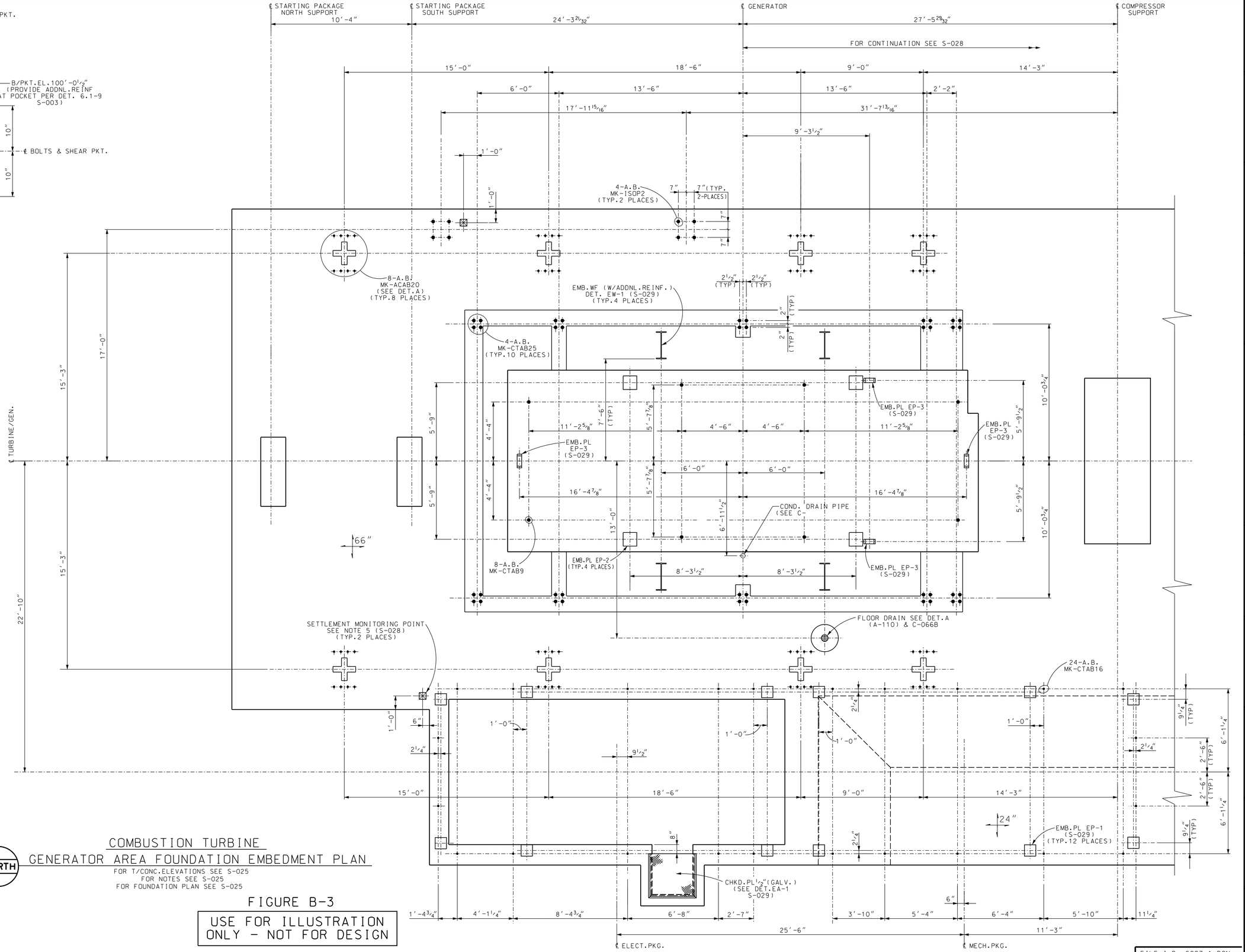
SHEET OF

FORM 005.2.4.1 REV. 1 (05/93)



DETAIL - A

SCALE: 1 1/2"=1'-0"



NORTH

COMBUSTION TURBINE
GENERATOR AREA FOUNDATION EMBEDMENT PLAN

FOR T/CONC.ELEVATIONS SEE S-025
FOR NOTES SEE S-025
FOR FOUNDATION PLAN SEE S-025

FIGURE B-3

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS			ISSUED FOR PLANNING	

SCALE: 3/8"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL COMBUSTION TURBINE GENERATOR AREA FOUNDATION EMBEDMENTS

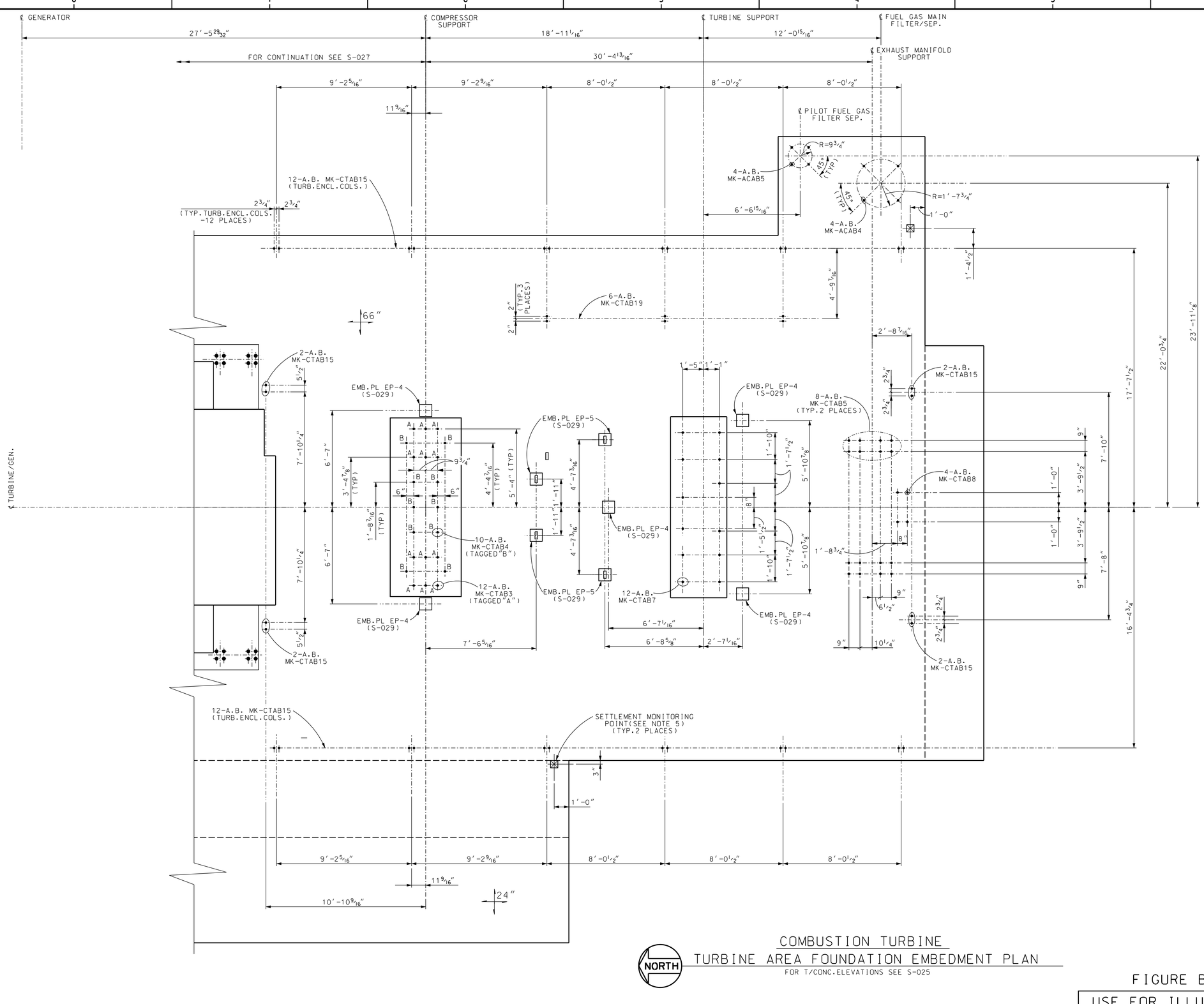
Sargent & Lundy LLC

FILE I.D. S027 1.DGN

DRAWING NO. S-027 REV. A

SHEET OF

(SDM 005 2.6-1 REV. 1 (05/93))



NORTH

COMBUSTION TURBINE
TURBINE AREA FOUNDATION EMBEDMENT PLAN

FOR T/CONC.ELEVATIONS SEE S-025

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR ADDITIONAL NOTES SEE S-025.
4. FOR FOUNDATION PLAN SEE S-025.
5. SETTLEMENT MONITORING POINT (⊠) SHALL BE AN EMBEDDED BRASS MARKER WITH A MINIMUM 3" LONG SHANK. THE ELEVATION AT EACH POINT SHALL BE DETERMINED AND INSCRIBED ON THE MARKER PRIOR TO SETTING ANY EQUIPMENT.

REFERENCE DRAWINGS

FIGURE B-4

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

SCALE 3/8″=1′-0″

PROJECT NUMBER 11962-003

TYPICAL COMBUSTION TURBINE TURBINE AREA FOUNDATION EMBEDMENTS

FILE I.D. S028 1.DGN

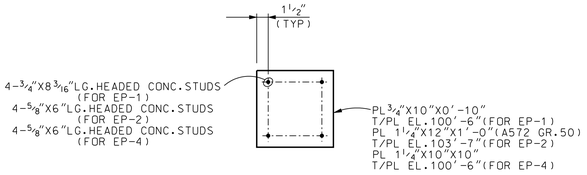
Sargent & Lundy LLC

DRAWING NO. S-028

REV. A

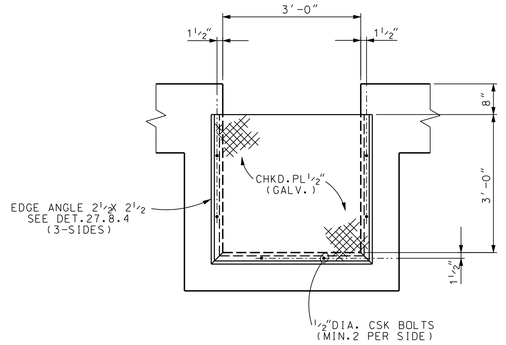
SHEET OF

FORM 005 2.6.1 REV. 1 (05/93)



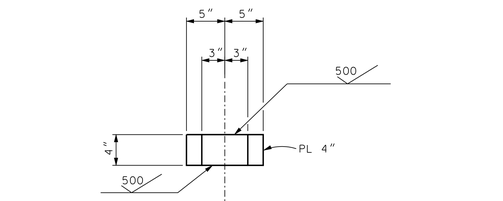
EMBEDDED PLATE EP-1 (12 REQD./UNIT)
EMBEDDED PLATE EP-2 (4 REQD./UNIT)
EMBEDDED PLATE EP-4 (5 REQD./UNIT)

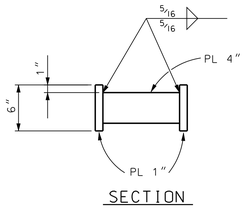
SCALE :NONE



DETAIL EA-1 (1 REQD./UNIT)

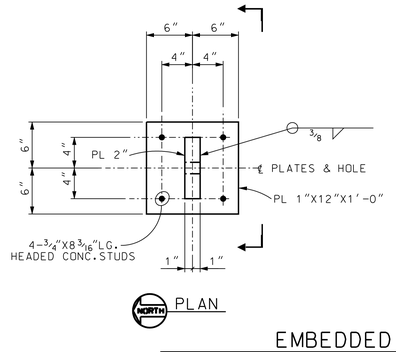
SCALE: 3/4"= 1'-0"

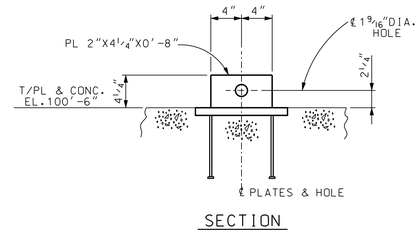




EMBEDDED PLATE EP-3 (4 REQD./UNIT)

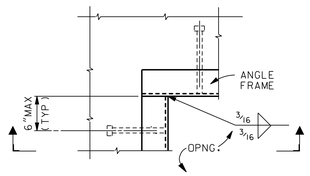
SCALE: 1 1/2"= 1'-0"

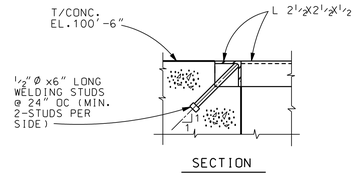




EMBEDDED PLATE EP-5 (4 REQD./UNIT)

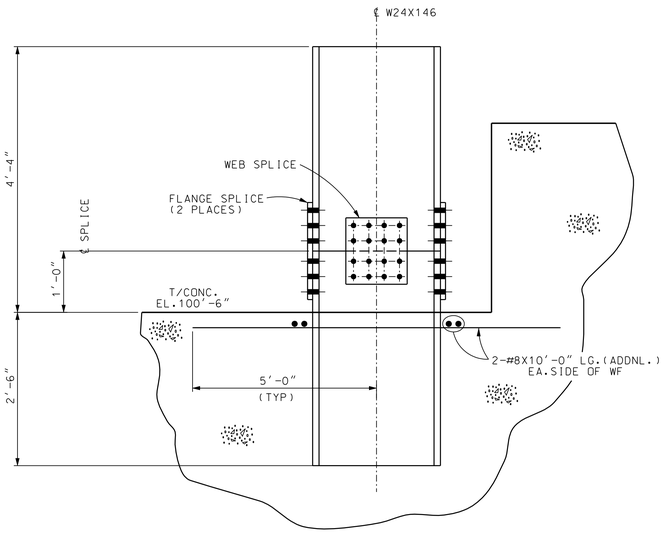
SCALE: 1 1/2"= 1'-0"

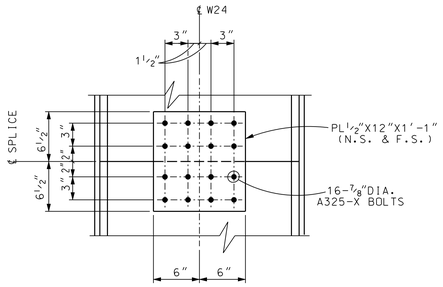


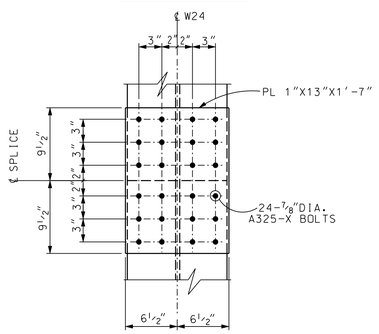


DETAIL 27.8.4

FOR CONCRETE EDGE PROTECTION
SCALE:NONE







DETAIL EW-1 (4 REQD./UNIT)

SCALE: NONE

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. ALL BARS, STEEL SHAPES, PLATES, AND RODS SHALL BE ASTM A36, UNLESS NOTED.
4. HEADED CONCRETE STUDS SHALL BE NELSON STUD OR EQUAL.
5. ALL MATERIALS SHALL BE PACKED PROPERLY AND PROTECTED AGAINST RUST/CORROSION DURING SHIPMENT. ALL EMBEDDED ITEMS SHALL BE CLEANED FREE OF GREASE, OILY SURFACES, RUST AND DRIED PRIOR TO PLACEMENT IN CONCRETE.

REFERENCE DRAWINGS

S-025	COMBUSTION TURBINE FOUNDATION PLAN UNITS 1& 2
S-027	CT GENERATOR AREA FDN. EMBEDDMENT PLAN UNITS 1& 2
S-028	CT TURBINE AREA FDN. EMBEDDMENT PLAN UNITS 1& 2

FIGURE B-5

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: AS NOTED

PROJECT NUMBER: 11962-003

TYPICAL COMBUSTION TURBINE EMBEDMENT DETAILS

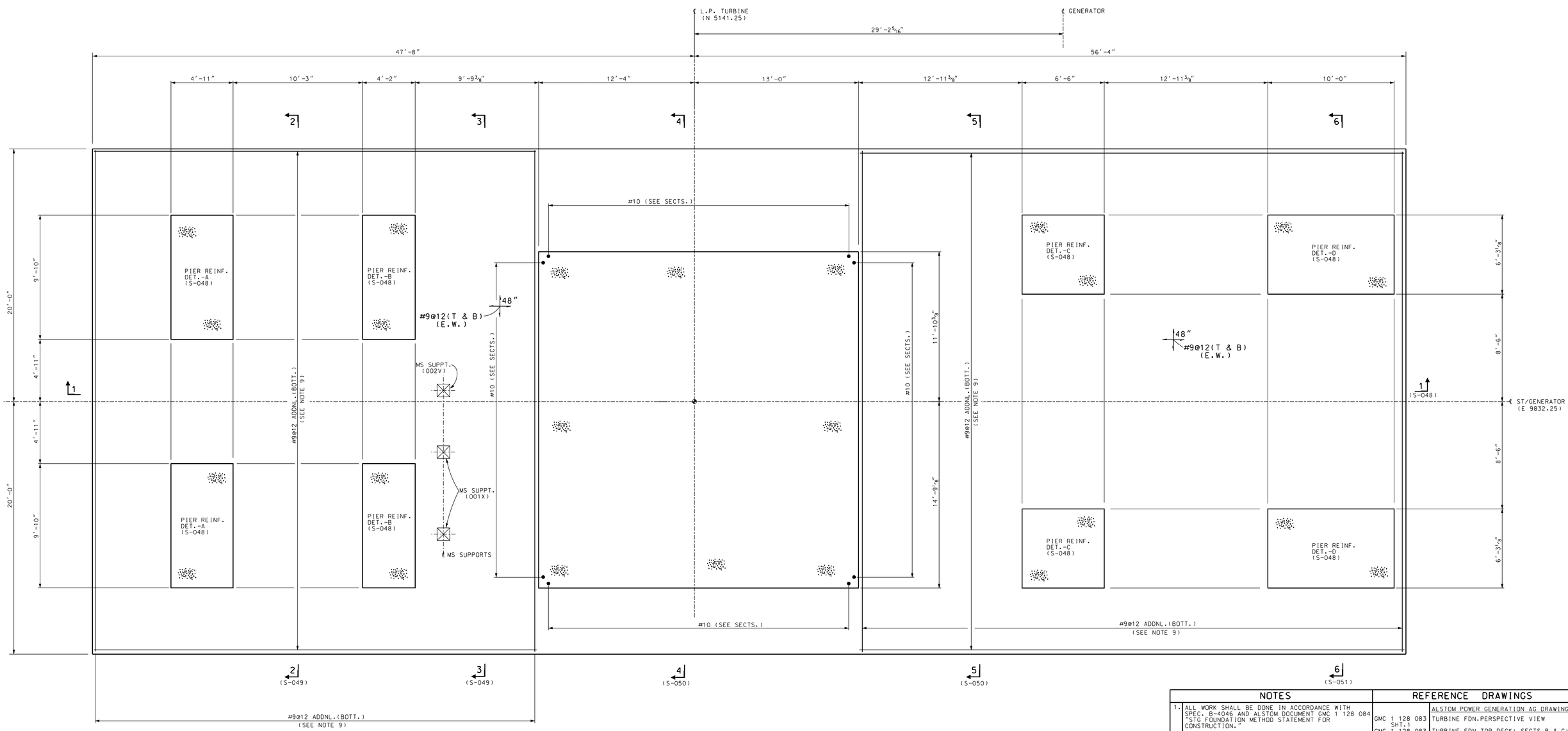
Sargent & Lundy LLC

DRAWING NO. S-029 REV. A

SHEET OF

FILE I.D. S029 1.DGN

FORM 035 2.4+1 REVs. 1 (05/93)



STEAM TURBINE/GENERATOR FOUNDATION BASE MAT PLAN EL. 100′-6″

T/BASE MAT EL. 100′-6″

NORTH

FIGURE B-6

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046 AND ALSTOM DOCUMENT GMC 1 128 084 "STG FOUNDATION METHOD STATEMENT FOR CONSTRUCTION."
2. FOR GENERAL NOTES SEE S-002.
3. FOR ANCHOR BOLT SCHEDULE & DETAILS SEE S-004.
4. FOR GROUNDING SEE E-002 SERIES DWGS.
5. FOR ELECTRICAL DUCT RUNS IN THIS AREA, SEE E-101 SERIES DRAWINGS.
6. FOR LOCATION & DETAILS OF EMBEDDED ITEMS INCLUDING CONDUIT IN ST FOUNDATION, SEE ALSTOM POWER REFERENCE DRAWINGS.
   ALL EMBEDDED ITEMS EXCEPT ITEMS SPECIFICALLY NOTED ON THE DESIGN DRAWINGS SHALL BE FABRICATED & SUPPLIED BY ALSTOM POWER.
7. FOR MAT FOUNDATION DETAILS SEE S-003.
8. FOR DIMENSION TOLERANCES SEE ALSTOM POWER DRAWING GMC 1 128 083.
9. ALTERNATE ADDITIONAL BARS WITH MAIN REINF.AT EQUAL SPACING.
10. FOR WELDING OF ALSTOM'S STEEL LINER, FRAME & BOTTOM PLATE, SEE ALSTOM POWER DRAWINGS HTGD 380 450 SHTS.13-18.
    ALL WELDING MATERIAL REQUIRED SHALL BE PROVIDED BY SPEC.B-4046.

REFERENCE DRAWINGS

	ALSTOM POWER GENERATION AG DRAWINGS
GMC 1 128 083 SHT.1	TURBINE FDN.PERSPECTIVE VIEW
GMC 1 128 083 SHT.2	TURBINE FDN.TOP DECK: SECTS.B & C: DETAILS
GMC 1 128 083 SHT.3	TURBINE FDN.BOTTOM VIEW: SECT.F
GMC 1 128 083 SHT.4	TURBINE FDN.SECTS.A, D & E
GMC 1 128 083 SHT.5	TURBINE FDN.EMBEDDED PARTS
GMC 1 121 658	TURBINE FDN.EMBEDDED PARTS LIST
GMC 1 028 331, 332,335,336, 337,365,411	FIXED POINTS
GMC 1 028 326, 327,328,370, 372	ANCHOR BOXES
GMC 1 028 347	X-FIXED POINT GENERATOR
GMC 1 028 349	Y-FIXED POINT GENERATOR
GMC 1 183 069	STG CHK'D.PLATES
HTGD 380 450 SHTS.1-43	STANDARD STEEL LINING
GMC 1 028 330, 338.378	VALVE SUPPORT PLATES

FILE I.D. s045 1.dgn

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 3/8″=1′-0″

PROJECT NUMBER: 11962-003

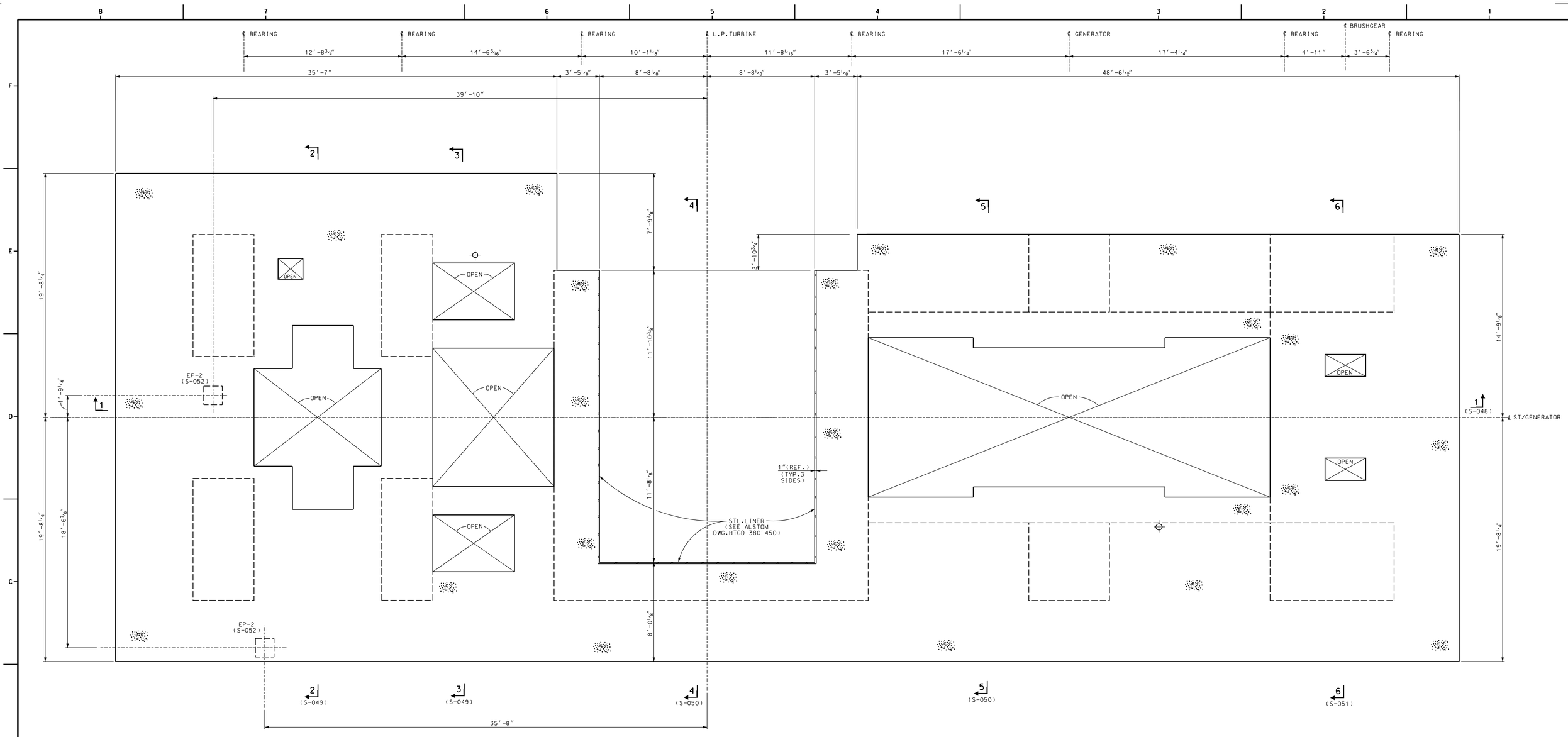
TYPICAL STEAM TURBINE/GENERATOR FOUNDATION BASE MAT PLAN

Sargent & Lundy LLC

DRAWING NO. S-045 REV. A

SHEET OF

FORM GDS 3-6-1 REV. 1 (05/93)



STEAM TURBINE/GENERATOR FOUNDATION SECTIONAL PLAN AT EL.115′-1⅝″

NORTH

FOR EMBEDDED ITEMS INCLUDING CONDUITS IN ST FOUNDATION SEE NOTE 6 (S-045)

ALL EMBEDDED PLATES SHOWN THUS [ ] ARE LOCATED ON UNDERSIDE OF SLAB

NOTES	REFERENCE DRAWINGS
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046 AND ALSTOM DOCUMENT GMC 1 128 084 "STG FOUNDATION METHOD STATEMENT FOR CONSTRUCTION." 2. FOR GENERAL NOTES SEE S-002. 3. FOR ADDITIONAL NOTES SEE S-045. 4. FOR COORDINATE LOCATION SEE S-045.	FOR REFERENCE DRAWINGS SEE S-045

FIGURE B-7

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

FILE I.D. S046 1.DGN

SCALE: ⅜″=1′-0″

PROJECT NUMBER: 11962-003

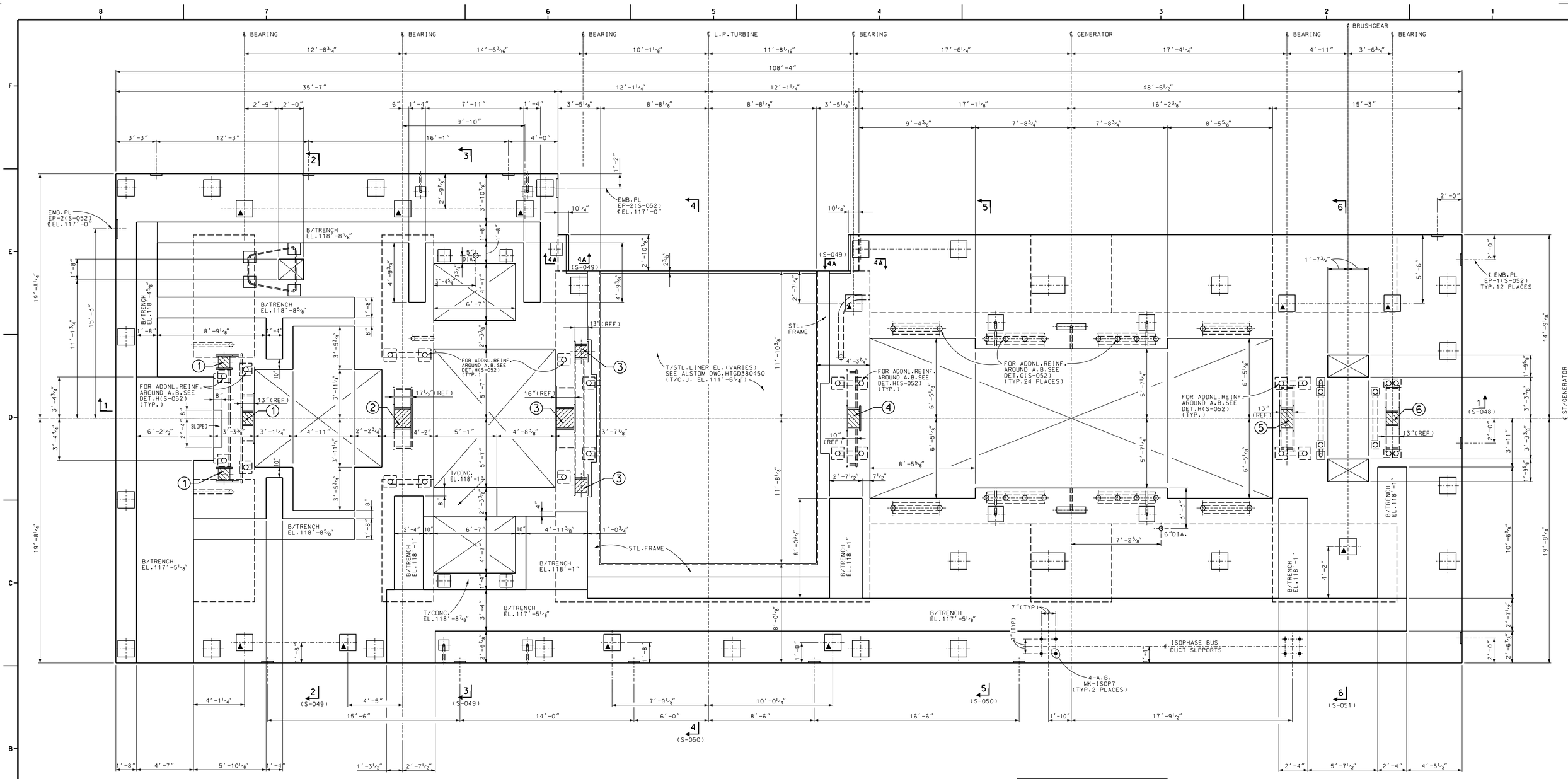
TYPICAL STEAM TURBINE/GENERATOR SECTIONAL PLAN EL.115′-1⅝″

Sargent & Lundy LLC

DRAWING NO. S-046 REV. A

SHEET OF

(SW 05 2.6.1 REV. 1 05/31)



STEAM TURBINE/GENERATOR FOUNDATION TOP PLAN

NORTH

T/CONC.EL.120'-0⅝" U.N.
FOR NOTES & REFERENCES SEE S-045
FOR TRENCH EMBEDMENTS & DETAILS SEE S-053

FOR EMBEDDED ITEMS INCLUDING CONDUITS IN ST FOUNDATION SEE NOTE 6 (S-045)

▲ INDICATES 16"X16"X2½" DEEP POCKET FOR SETTLEMENT MONITORING POINT

FIGURE B-8

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

1. FIXED POINT T/CONC.EL.119'-7⅞"
2. FIXED POINT T/CONC.EL.119-6⅞"
3. FIXED POINT T/CONC.EL.119'-7⅞"
4. FIXED POINT T/CONC.EL.119'-7⅞"
5. FIXED POINT T/CONC.EL.119'-7⅞"
6. FIXED POINT T/CONC.EL.119'-7⅞"

(FOR FIXED POINT DETAILS SEE ALSTOM REFERENCED DRAWINGS)

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046 AND ALSTOM DOCUMENT GMC 1 128 084 "STG FOUNDATION METHOD STATEMENT FOR CONSTRUCTION."
2. FOR GENERAL NOTES SEE S-002.
3. FOR ADDITIONAL NOTES SEE S-045.
4. FOR COORDINATE LOCATION SEE S-045.
5. CHIPPING OF CONCRETE UNDERNEATH ABB SOLE PLATES SHALL BE AS DIRECTED BY ALSTOM FIELD REPRESENTATIVE PRIOR TO GROUTING.

REFERENCE DRAWINGS

FOR REFERENCE DRAWINGS SEE S-045

FILE I.D. S047 1.DGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: ⅜"=1'-0"

PROJECT NUMBER: 11962-003

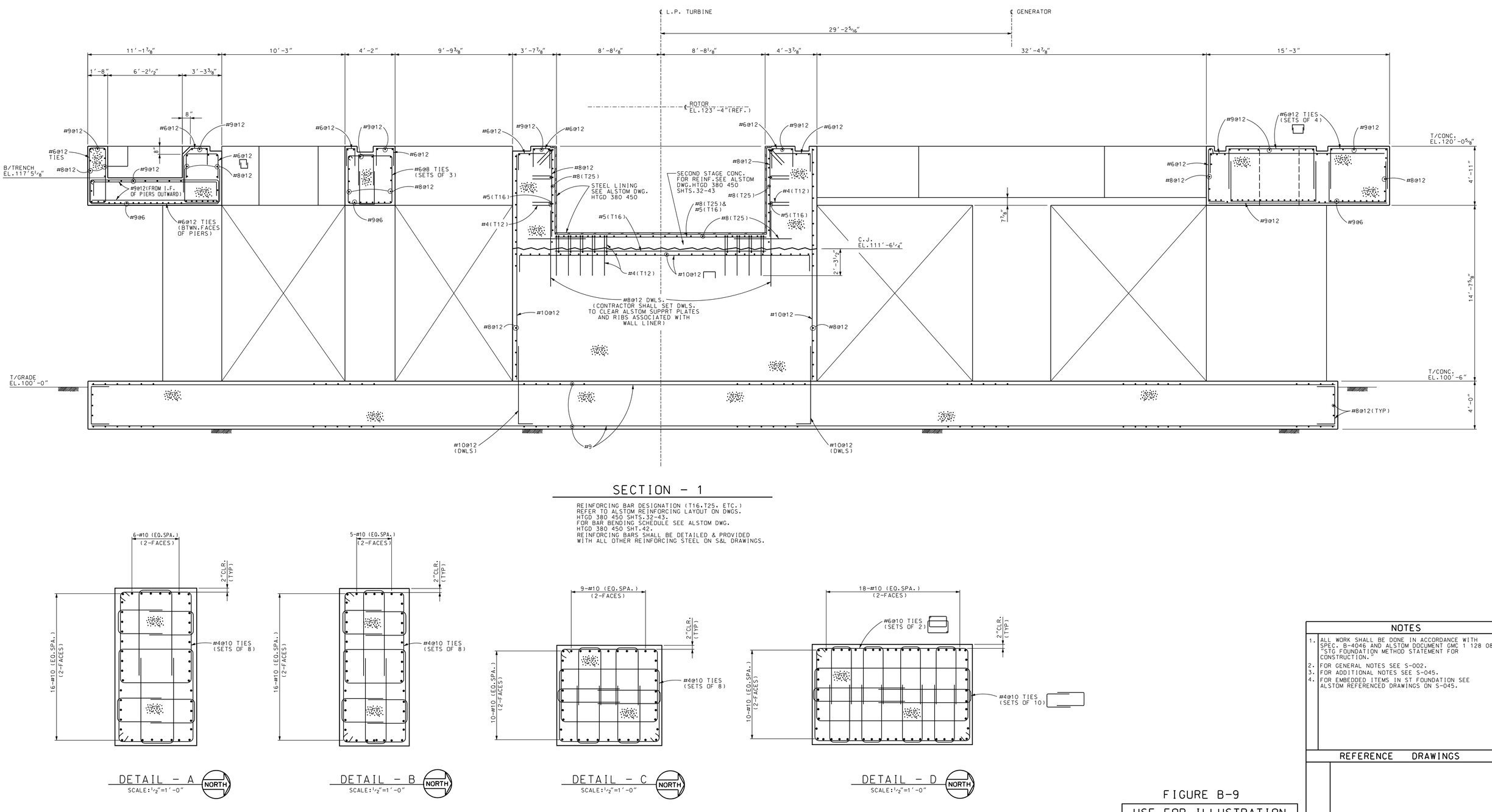
TYPICAL STEAM TURBINE/GENERATOR FOUNDATION TOP PLAN EL.120'-0⅝"

Sargent & Lundy LLC

DRAWING NO. S-047 REV. A

SHEET OF

FORM 005.2.6.1 REV. 1 (05-01)



SECTION - 1

REINFORCING BAR DESIGNATION (T16.T25. ETC.)
REFER TO ALSTOM REINFORCING LAYOUT ON DWGS.
HTGD 380 450 SHTS.32-43.
FOR BAR BENDING SCHEDULE SEE ALSTOM DWG.
HTGD 380 450 SHT.42.
REINFORCING BARS SHALL BE DETAILED & PROVIDED
WITH ALL OTHER REINFORCING STEEL ON S&L DRAWINGS.

DETAIL - A
SCALE: 1/2"=1'-0"

DETAIL - B
SCALE: 1/2"=1'-0"

DETAIL - C
SCALE: 1/2"=1'-0"

DETAIL - D
SCALE: 1/2"=1'-0"

NORTH

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046 AND ALSTOM DOCUMENT GMC 1 128 084 "STG FOUNDATION METHOD STATEMENT FOR CONSTRUCTION."
2. FOR GENERAL NOTES SEE S-002.
3. FOR ADDITIONAL NOTES SEE S-045.
4. FOR EMBEDDED ITEMS IN ST FOUNDATION SEE ALSTOM REFERENCED DRAWINGS ON S-045.

REFERENCE DRAWINGS

FIGURE B-9

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 3/8"=1'-0"
PROJECT NUMBER: 11962-003

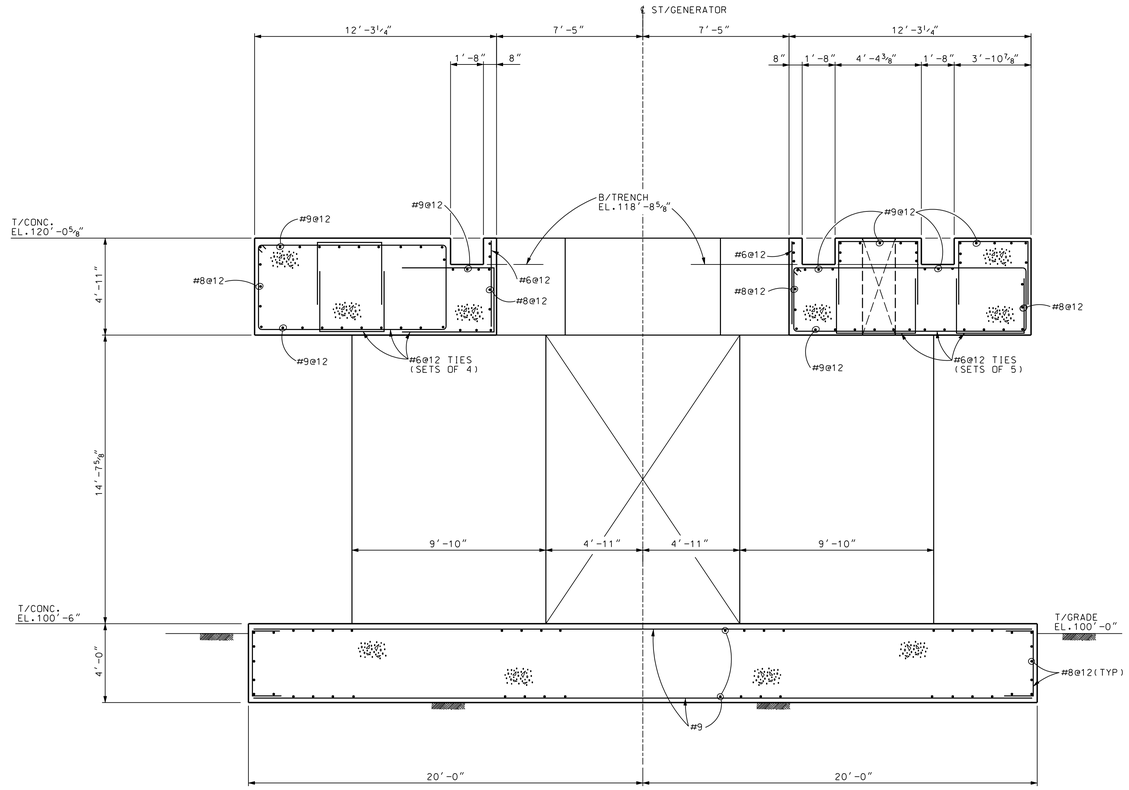
TYPICAL STEAM TURBINE/GENERATOR FOUNDATION SECTIONS SHEET 1 OF 4

FILE I.D. S048 1.DGN

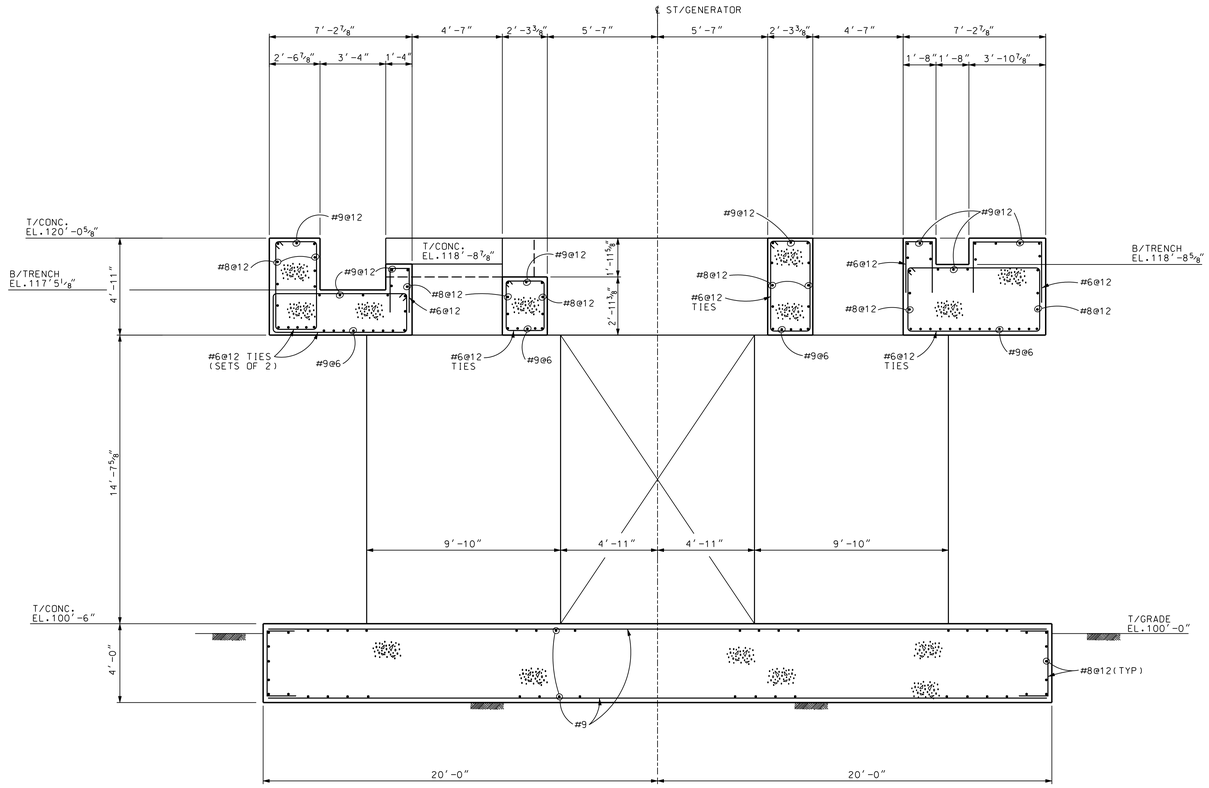
Sargent & Lundy LLC

DRAWING NO. S-048 REV. A
SHEET OF

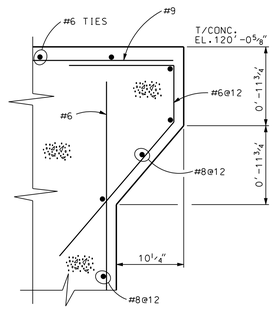
FORM 005 2.6.1 REV. 1 (10/03)



SECTION - 2



SECTION - 3



SECTION - 4A

SCALE: 1½″=1′-0″

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046 AND ALSTOM DOCUMENT GMC 1 128 084 "STG FOUNDATION METHOD STATEMENT FOR CONSTRUCTION."
2. FOR GENERAL NOTES SEE S-002.
3. FOR ADDITIONAL NOTES SEE S-045.
4. FOR EMBEDDED ITEMS IN ST FOUNDATION SEE ALSTOM REFERENCED DRAWINGS ON S-045.

REFERENCE DRAWINGS

FIGURE B-10

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: ⅜″=1′-0″

PROJECT NUMBER: 11962-003

TYPICAL STEAM TURBINE/GENERATOR FOUNDATION SECTIONS SHEET 2 OF 4

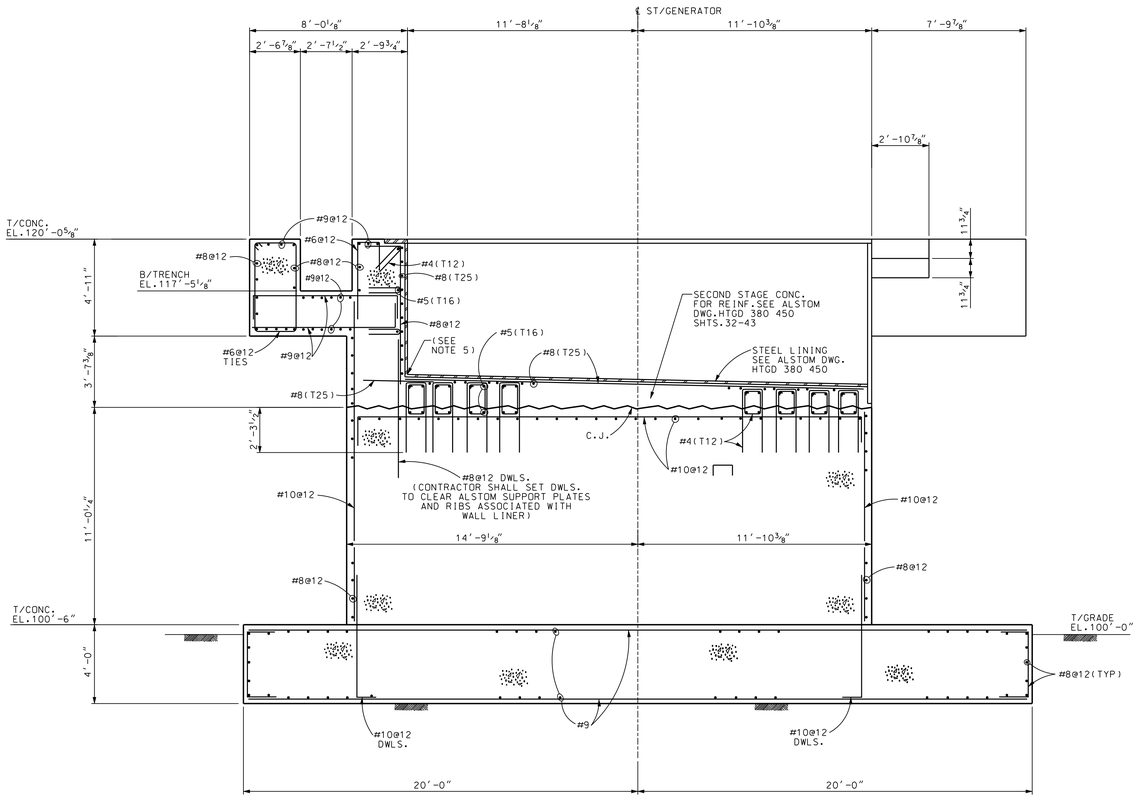
Sargent & Lundy

FILE I.D. S049 1.DGN

DRAWING NO. S-049 REV. A

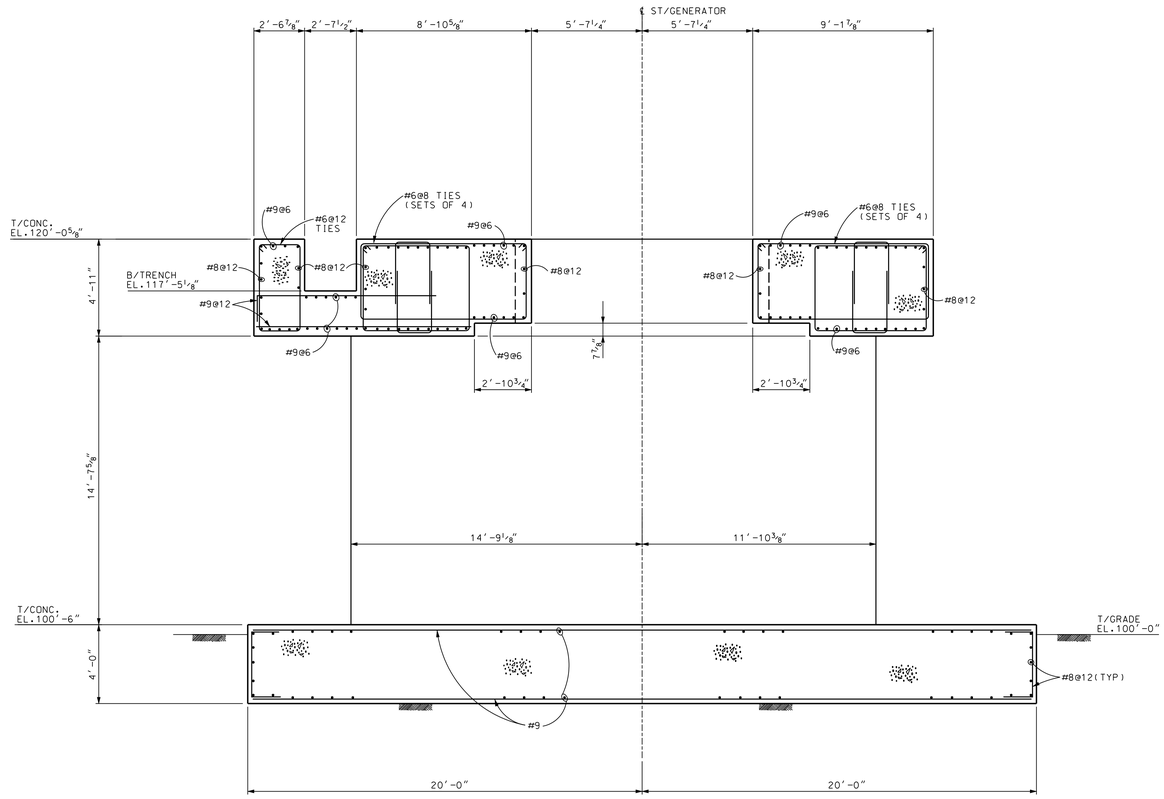
SHEET OF

FORM GDS 3-6.1 REV. 1 (05/93)



SECTION - 4

REINFORCING BAR DESIGNATION (T12,T16, ETC.)
REFER TO ALSTOM REINFORCING LAYOUT ON DWGS.
HTGD 380 450 SHTS.32-43.
FOR BAR BENDING SCHEDULE SEE ALSTOM DWG.
HTGD 380 450 SHT.42.
REINFORCING BARS SHALL BE DETAILED & PROVIDED
WITH ALL OTHER REINFORCING STEEL ON S&L DRAWINGS.



SECTION - 5

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046 AND ALSTOM DOCUMENT GMC 1 128 084 "STG FOUNDATION METHOD STATEMENT FOR CONSTRUCTION."
2. FOR GENERAL NOTES SEE S-002.
3. FOR ADDITIONAL NOTES SEE S-045.
4. FOR EMBEDDED ITEMS IN ST FOUNDATION SEE ALSTOM REFERENCED DRAWINGS ON S-045.
5. T/LINER PLATE EL.113′-5 7/8″(REF.FOR REINFORCING BAR DETAILING ONLY).

REFERENCE DRAWINGS

FIGURE B-11

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

FILE I.D. S050 1.DGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

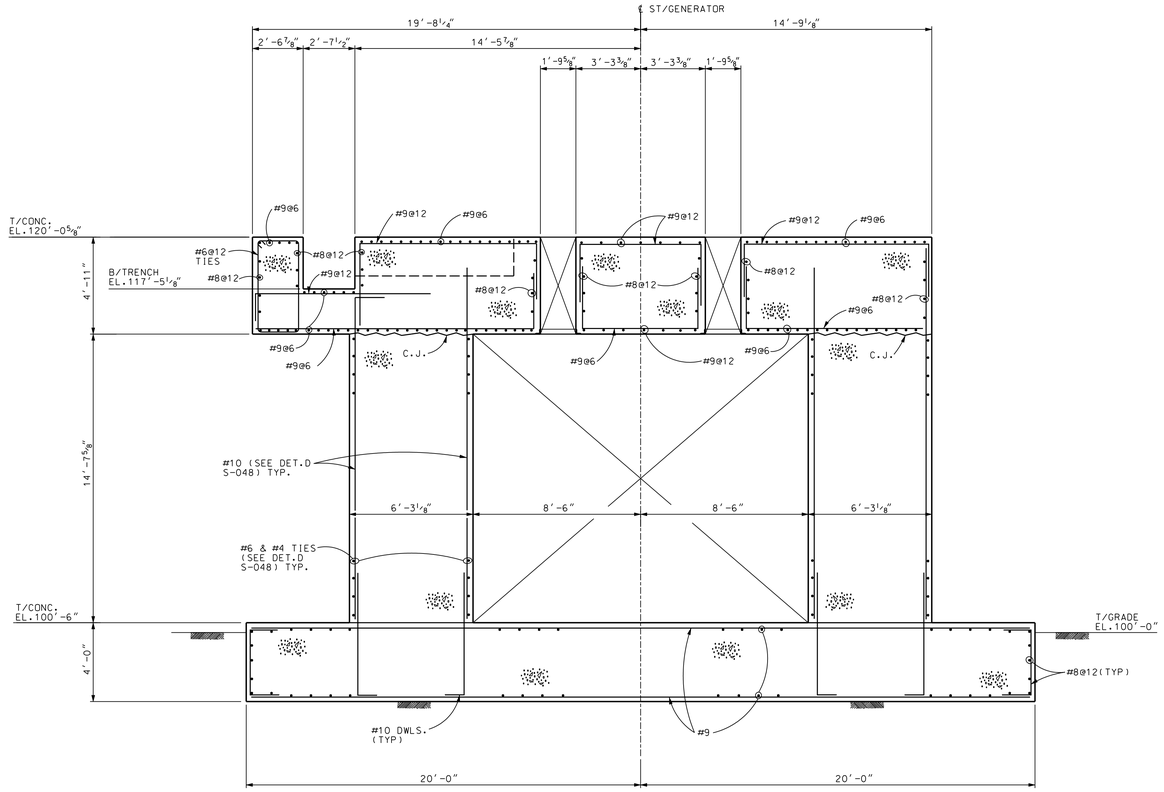
SCALE	
3/8″=1′-0″	
PROJECT NUMBER	
11962-003	

TYPICAL STEAM TURBINE/GENERATOR FOUNDATION SECTIONS SHEET 3 OF 4

Sargent & Lundy LLC

DRAWING NO.	REV.
S-050	A
SHEET	OF

FORM 055 2.4x1 REV. 1 (05/93)



SECTION - 6

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046 AND ALSTOM DOCUMENT GMC 1 128 084 "STG FOUNDATION METHOD STATEMENT FOR CONSTRUCTION."
2. FOR GENERAL NOTES SEE S-002.
3. FOR ADDITIONAL NOTES SEE S-045.
4. FOR EMBEDDED ITEMS IN ST FOUNDATION SEE ALSTOM REFERENCED DRAWINGS ON S-045.

REFERENCE DRAWINGS

FIGURE B-12

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: ⅜″=1′-0″

PROJECT NUMBER: 11962-003

TYPICAL STEAM TURBINE/GENERATOR FOUNDATION SECTIONS SHEET 4 OF 4

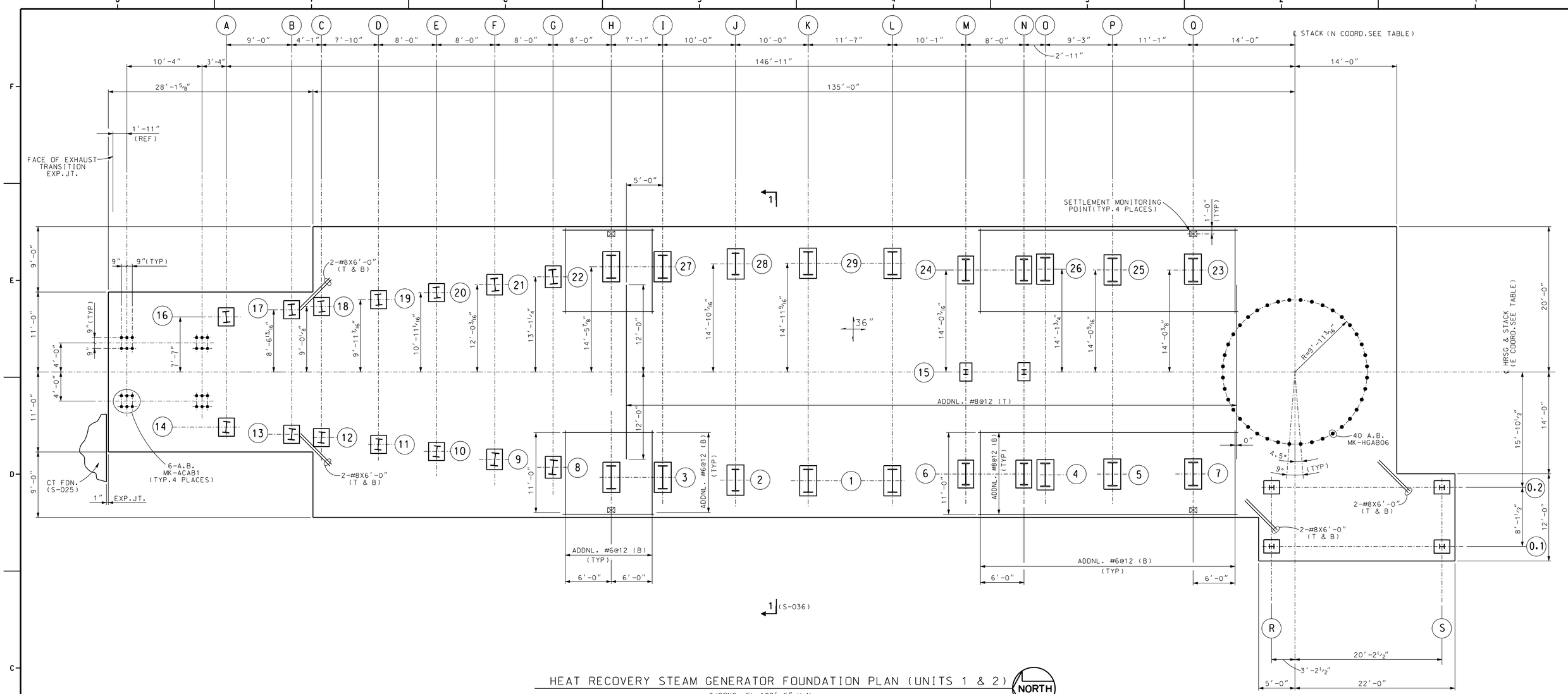
FILE I.D. S051 1.DGN

Sargent & Lundy LLC

DRAWING NO. S-051 REV. A

SHEET OF

(DM GS 24.1 REV. 1 (9/93))



1 (S-036)

HEAT RECOVERY STEAM GENERATOR FOUNDATION PLAN (UNITS 1 & 2)

NORTH

T/CONC. EL.100'-6" U.N.
COLUMN LOCATIONS SYMM. ABOUT ℄ OF HRSG.(U.N.)
(FOR ANCHOR BOLTS AND COL.POCKETS SEE DETAILS S-036)
FOR COLUMNS, BASE PLATES AND SHEAR BARS SEE ALSTOM REFERENCED DWGS.
ADDITIONAL REINFORCING SYMM.ABT.℄ OF HRSG.

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR ANCHOR BOLT SCHEDULE & DETAILS SEE S-004.
4. FOR GROUNDING SEE E-002 SERIES DRAWINGS.
5. FOR ELECTRICAL DUCT RUNS IN THIS AREA, SEE E-101 SERIES DRAWINGS.
6. ALTERNATE ADDITIONAL BARS WITH MAIN REINFORCING AT EQUAL SPACING.
7. SETTLEMENT MONITORING POINT (⊠) SHALL BE AN EMBEDDED BRASS MARKER WITH A MINIMUM 3" LONG SHANK. THE ELEVATION AT EACH POINT SHALL BE DETERMINED AND INSCRIBED ON THE MARKER PRIOR TO SETTING ANY EQUIPMENT.

REFERENCE DRAWINGS

	ALSTOM POWER INC. DWGS.
05101-1E2000	HRSG COLUMN LOCATION
05101-1E2001	BASE PLATE & ANCHOR BOLT DETAILS
	WESTINGHOUSE ELECT.CORP.DRAWINGS
4231C71	EXHAUST TRANSITION FDN. DETAILS

FIGURE B-13

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

FILE I.D. s035 1.dgn

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE 3/16"=1'-0"

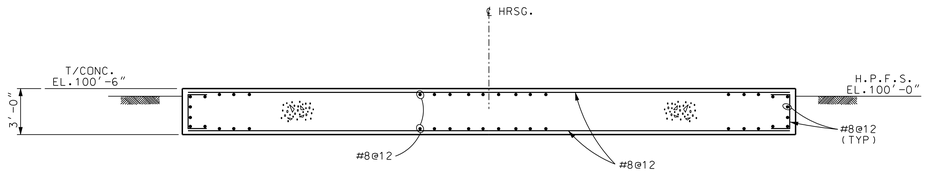
PROJECT NUMBER 11962-003

TYPICAL HEAT RECOVERY STEAM GEN. FOUNDATION PLAN

Sargent & Lundy LLC

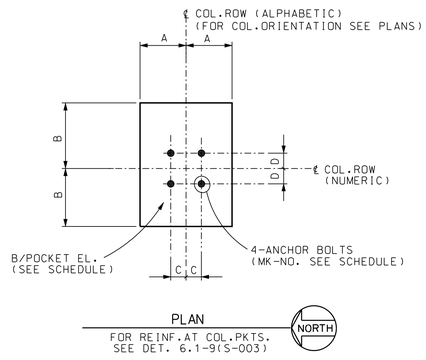
DRAWING NO.	REV.
S-035	A
SHEET OF	

(FORM 035 2.4-1 REV. 1 (05/93))



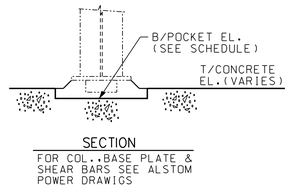
SECTION - 1
SCALE: 1/4" = 1'-0"

ANCHOR BOLT & COLUMN POCKET SCHEDULE							
COLUMN DESIGNATION	POCKET DIMS. A	POCKET DIMS. B	B/POCKET ELEVATION	ANCHOR BOLTS C	ANCHOR BOLTS D	ANCHOR BOLTS MARK NO.	REMARKS
A-14, A-16, B-13, B-17 C-12, C-18, D-11, D-19	1'-1"	1'-3"	100'-2"	5"	4"	HGAB01	
E-10, E-20	1'-1"	1'-3"	100'-4"	5"	4"	HGAB01	
F-9, F-21	1'-1"	1'-5"	100'-4"	5"	4"	HGAB01	
G-8, G-22	1'-1"	1'-6"	100'-4"	5"	4"	HGAB01	
H-3, H-27, I-3, I-27	1'-2"	2'-1"	100'-2"	6"	1'-0"	HGAB03	
J-2, J-28	1'-1"	1'-11"	100'-2"	5"	8"	HGAB04	
K-1, K-29, L-1, L-29	1'-2"	2'-1"	100'-1"	5"	8"	HGAB04	
M-6, M-24, N-6, N-24	1'-1"	1'-11"	100'-1"	5"	8"	HGAB04	
M-15, N-15	0'-10"	1'-3"	100'-4"	3"	8"	HGAB02	
O-4, O-26, P-5, P-25 O-7, O-23	1'-2"	2'-1"	99'-11"	5"	8"	HGAB05	
R-0.1, R-0.2, S-0.1, S-0.2	1'-1"	11"	100'-2"	6 1/4"	3"	HGAB07	
FOR ANCHOR BOLT DETAILS & SCHEDULE SEE S-004							



PLAN
FOR REINF.AT COL.PKTS.
SEE DET. 6.1-9(S-003)

NORTH



SECTION
FOR COL.,BASE PLATE & SHEAR BARS SEE ALSTOM POWER DRAWIGS

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR ANCHOR BOLT SCHEDULE & DETAILS SEE S-004.

REFERENCE DRAWINGS

FIGURE B-14

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 3/16" = 1'-0"

PROJECT NUMBER: 11962-003

TYPICAL HEAT RECOVERY STEAM GEN. FOUNDATION SECTION & DETS.

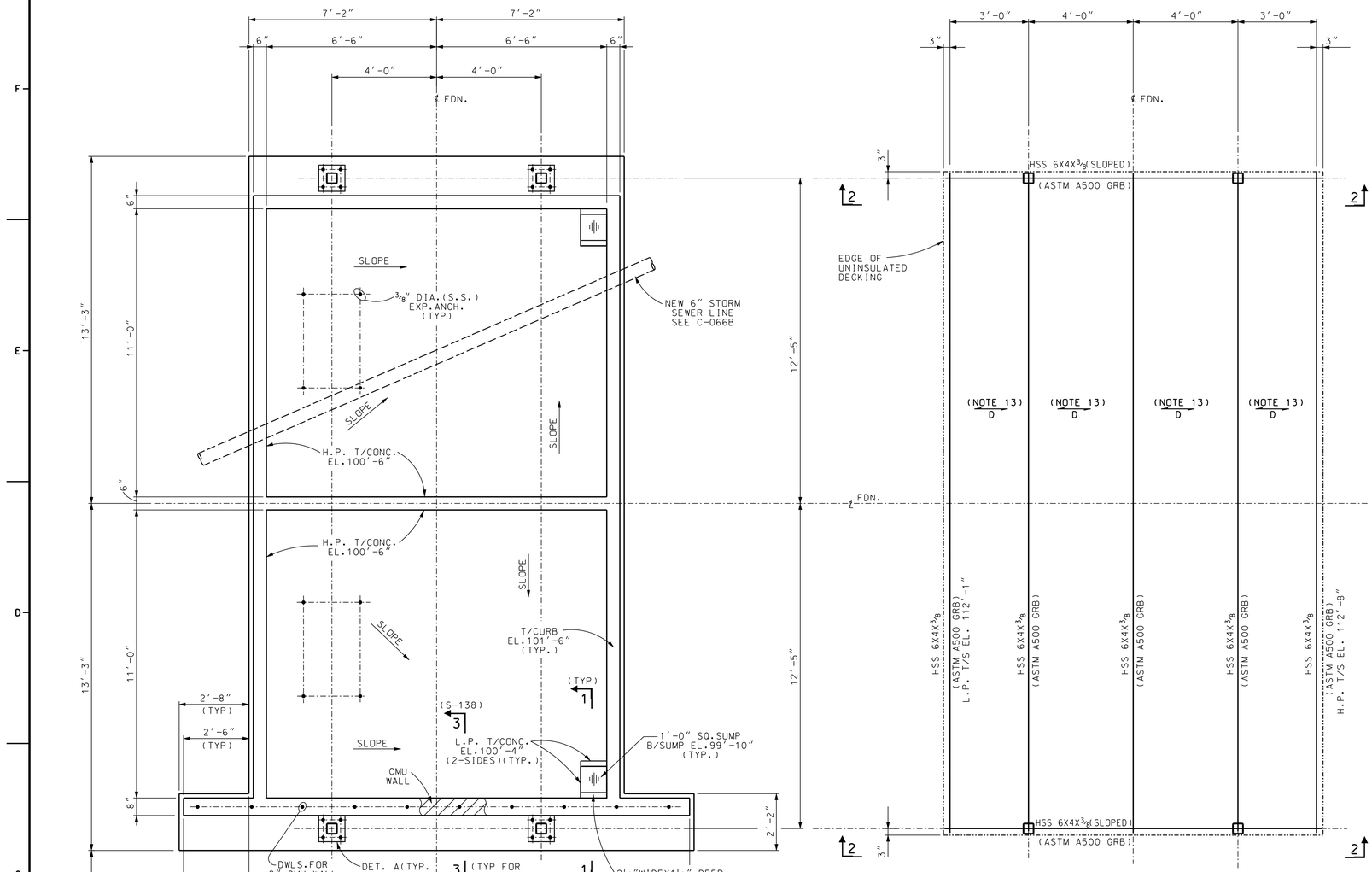
FILE I.D. s036 1.dgn

Sargent & Lundy LLC

DRAWING NO. S-036 REV. A

SHEET OF

FORM 005 2.6.1 REV. 1 (05/93)



SULFURIC ACID & SODIUM BISULFITE TOTE FOUNDATION PLAN

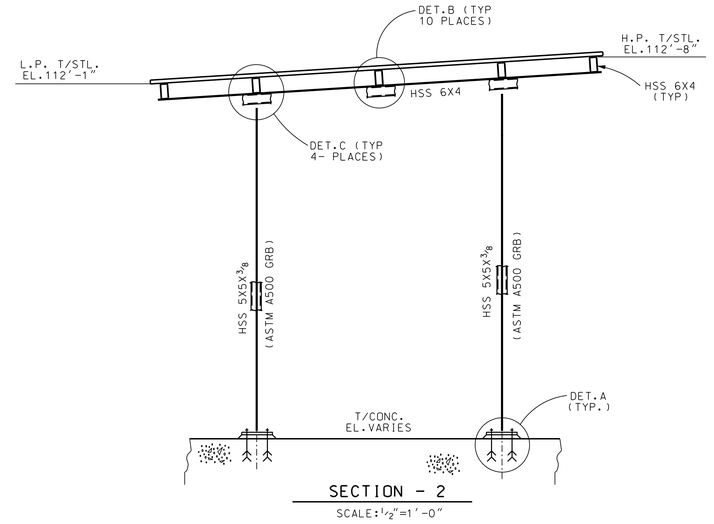
SCALE: 1/2"=1'-0"

SLOPE T/CONC.SLAB FROM H.P. EL.100'-6" TO L.P. EL.100'-4" AT SUMPS

SULFURIC ACID & SODIUM BISULFITE SHADE ROOF FRAMING PLAN

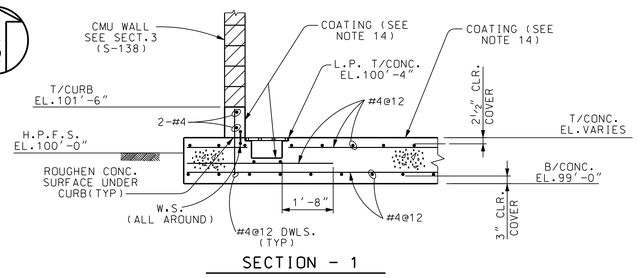
SCALE: 1/2"=1'-0"

T/STL EL.VARIES



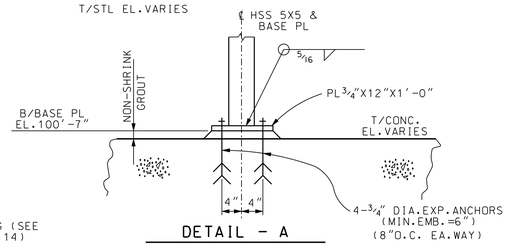
SECTION - 2

SCALE: 1/2"=1'-0"



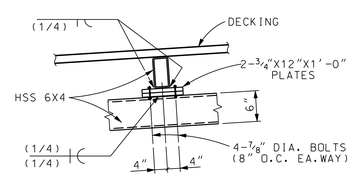
SECTION - 1

SCALE: 1/2"=1'-0"



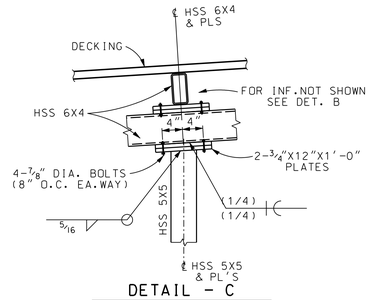
DETAIL - A

SCALE: 1"=1'-0"



DETAIL - B

SCALE: NONE



DETAIL - C

SCALE: NONE

NOTES(CONT.)

14. THE CONTAINMENT COATING SYSTEM SHALL BE CEILCOTE FLAKELINE 2000 AS MANUFACTURED BY CEILCOTE CORROSION CONTROL, 6611 WEST SNOWVILLE RD, BRECKSVILLE, OH 44141 (877 234-5268). THE APPLICATION, MIXING AND CURING SHALL BE PERFORMED IN STRICT ACCORDANCE WITH COATING MANUFACTURERS WRITTEN INSTRUCTIONS AND THE FOLLOWING: PREPARE SURFACES IN ACCORDANCE WITH ASTM D4258 AND D4259. PRIME COAT: CEILCOTE 680 APPLIED TO A RATE OF 150 TO 200 SQUARE FEET PER GALLON FOR THE FIRST COAT AND 250 TO 325 SQUARE FEET PER GALLON FOR THE RECOAT. FINISH COATS: CEILCOTE FLAKELINE 2000, 2 COATS, EACH APPLIED AT 15 TO 20 MILS DFT TO A TOTAL THICKNESS OF 30 TO 40 MILS DFT.
15. FOR ELECTRICAL DUCT RUNS IN THIS AREA SEE DWGS. E-100 AND E-101 SHEET 15.
16. FOR ELECTRICAL GROUNDING SEE DWGS E-002 SHTS 1 AND 7.
17. FOR UNDERGROUND PIPING SEE DWGS M-500, M-516, M-540, AND M-554.
18. PROOFROLL THE SUBGRADE BENEATH THE FOUNDATION & COMPACT TO A DENSITY NOT LESS THAN 95% OF MODIFIED PROCTOR AT OPTIMUM MOISTURE CONTENT ± 2% PER ASTM D1557.
19. BACKFILL COMPACTION DENSITY: 85% OF RELATIVE DENSITY PER ASTM D4253 & D4254, OR IN ACCORDANCE WITH NOTE 18.
20. THE FOLLOWING DESIGN STANDARDS WERE USED IN THE FOUNDATION AND STEEL CALCULATIONS: 1997 UBC WITH SOUTHERN NEVADA AMENDMENTS ACI 318-99 AISC-MANUAL OF STEEL CONSTRUCTION, 9TH ED.
21. SOIL REPORT USED IN THE FOUNDATION CALCULATIONS IS URS GEOTECHNICAL ENGR. REPORT FOR THE BIGHORN POWER PLANT (URS JOB NO. 48085-002-169), DATED 05-30-2001. SOIL PROPERTIES USED IN THE TOTE FOUNDATION CALCULATIONS WERE AMENDED BY SARGENT & LUNDY (S&L) AS NOTED IN THE "GEOTECHNICAL DESIGN PARAMETER" DOCUMENT IN S&L CALCULATION GD083001.
22. ALLOWABLE SOIL PRESSURE FOR DESIGN IS 4.5 KSF.
23. THE MAXIMUM FOUNDATION BEARING PRESSURE IS 0.3 KSF.
24. THE TOTE FOUNDATION AND SUNSHADE SHALL NOT REQUIRE SPECIAL INSPECTION.

NOTES

1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AND THE AISC, CODE OF STANDARD PRACTICE.
2. ALL STRUCTURAL STEEL PLATES SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.
3. ALL BOLTS SHALL BE HIGH STRENGTH, 7/8" DIAMETER, A325, TYPE 1 STEEL. NUTS SHALL BE HEAVY HEX PER ASTM A563 GRADE DH OR DH3 OR ASTM A194 GRADE 2H. WASHERS SHALL BE PER ASTM F 436. BOLTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A 153.
4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES.
5. ALL STEEL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A385.
6. GRATING SHALL BE GALVANIZED AMICO 19-4-53 WELDED STEEL GRATING OR APPROVED EQUAL.
7. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301.
8. ALL CONCRETE SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
9. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
10. NON-SHRINK GROUT SHALL BE FIVE STAR GROUT AS MANUFACTURED BY FIVE STAR PRODUCTS INC. FAIRFIELD CT.
11. ALL CONCRETE EXPANSION ANCHORS SHALL BE HILTI KWIK-BOLT II, INSTALLED TO THE MANUFACTURERS SPECIFICATIONS.
12. WATERSTOPS SHALL BE 6" PVC DUMBELL TYPE, STYLE NO. 748 BY GREENSTREAK OR APPROVED EQUAL.
13. DECKING SHALL BE ASTM A924, GRADE A, 24 GA. MIN., ZINC COATED PER ASTM A525, COATING DESIGNATION G90, AND THE TOP SURFACE FINISH COATED WITH A BAKED-ON KYNAR 500 COATING SYSTEM HAVING A MINIMUM OF 70% KYNAR RESIN. THE COLOR SHALL BE WHITE. DECKING SHALL BE FASTENED TO SUPPORTING STEEL BY MEANS OF #14 WAFER HEAD CADMIUM PLATED SELF-TAPPING SCREWS WITH NEOPRENE WASHERS, SPACED AT 12" ON CENTER, MIN.

ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL: (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS; (B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL OR, WHERE PERMITTED, THAT OF ITS SUBCONTRACTOR(S); AND (C) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.

UNDERGROUND OR EMBEDDED UTILITIES MAY BE LOCATED WITHIN OR ADJACENT TO THE AREA IN WHICH EXCAVATION, DEMOLITION, FOUNDATION, OR MODIFICATION WORK IS TO BE PERFORMED.

REFERENCES RELATING TO THE UNDERGROUND OR EMBEDDED UTILITIES ARE PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING THOSE UTILITIES AND OTHER POSSIBLE UNDERGROUND OR EMBEDDED INTERFERENCES WITH THE WORK.

THE CONTRACTOR/INSTALLER SHALL EXERCISE DUE CAUTION DURING ALL EXCAVATION/FOUNDATION/DEMOLITION WORK.

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.

FIGURE B-15

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS			ISSUED FOR PLANNING	

SCALE	
AS NOTED	
PROJECT NUMBER	
11962-003	

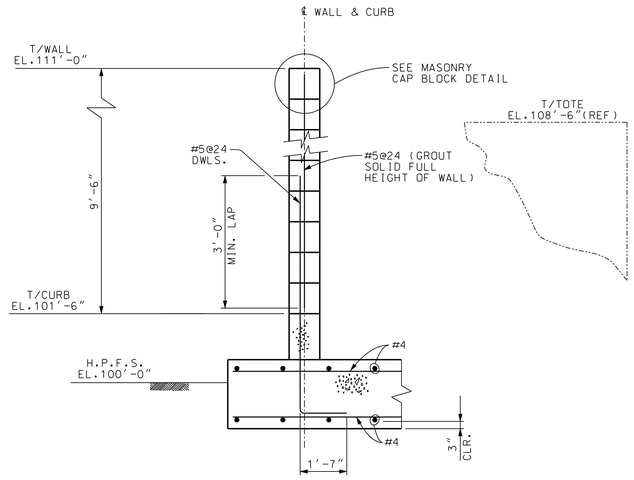
TYPICAL.
SULFURIC ACID & SODIUM BISULFITE TOTE FDN.

FILE I.D. S137 1.DGN

Sargent & Lundy LLC

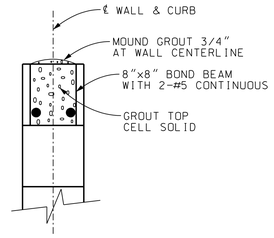
DRAWING NO.	REV.
S-137	A
SHEET	OF

FORM 405 2.4.1 REV. 1 (05/93)



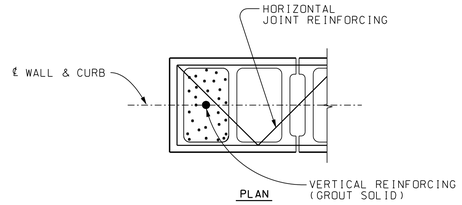
WALL SECTION 3 (S-137)

SCALE:3/4"=1'-0"



MASONRY CAP BLOCK DETAIL

SCALE:1 1/2"=1'-0"



WALL END

NTS

MASONRY NOTES

1. ALL MASONRY WORK SHALL BE FURNISHED & INSTALLED BY THE CONTRACTOR, & SHALL CONFORM TO THE LATEST VERSION OF ACI 530.1.
2. CONCRETE MASONRY UNITS SHALL BE MEDIUM WEIGHT, TYPE I, CONFORMING TO ASTM C90.
3. GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000psi AT 28 DAYS & CONFORM TO ASTM C476.
4. MORTAR SHALL BE TYPE "S" OR "M" PER ASTM C270.
5. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF THE INSTALLED CONSTRUCTION f'm SHALL BE 1420psi.
6. ALL UNITS IN RUNNING BOND.
7. JOINT (HORIZONTAL) REINFORCEMENT:
   - A. MATERIAL: ASTM A82.
   - B. SIZE: STANDARD CONTINUOUS TRUSS TYPE CONSISTING OF (2) 9 GAUGE DEFORMED LONGITUDINAL WIRES WITH 9 GAUGE PLAIN CROSS TIES HOT DIP GALVANIZED AFTER FABRICATION.
   - C. SPACING 16" OC VERTICALLY. PLACE ADDITIONAL JOINT REINFORCEMENT AS FOLLOWS:
     1. CONTINUOUS IN FIRST & SECOND JOINT BELOW TOP OF WALLS.
   - D. LAP JOINT REINFORCEMENT ENDS 6" MINIMUM.
8. CELL (VERTICAL) REINFORCEMENT:
   - A. MATERIAL: DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60.
   - B. REINFORCED CELL HORIZONTAL SPACING: 2'-0" MAXIMUM.
   - C. LAP #5 REINFORCING BARS 3'-0".
   - D. REINFORCING SHALL EXTEND FULL HEIGHT OF WALL.
   - E. EACH REINFORCED CELL SHALL BE GROUTED FULL & PROPERLY CONSOLIDATED.
9. BOND BEAM REINFORCEMENT:
   - A. 2-#5 BARS UNLESS NOTED OTHERWISE.
10. FOR EXPOSED MASONRY JOINTS, STRIKE OFF JOINTS FLUSH WITH WALL SURFACE. AFTER MORTAR IS PARTIALLY STIFFENED, FIRMLY COMPACT THE JOINT WITH A JOINT STRIKING TOOL & FINISH TO A SLIGHTLY CONCAVE SHAPE.
11. WORK THIS DRAWING WITH S-137.
12. THE MASONRY WALL SHALL REQUIRE SPECIAL INSPECTION REPORTS SUBMITTED TO THE BUILDING OFFICIAL IN ACCORDANCE WITH THE 1997 UBC FOR STRUCTURAL MASONRY.

ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL: (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS; (B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL OR, WHERE PERMITTED, THAT OF ITS SUBCONTRACTOR(S); AND (C) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.

UNDERGROUND OR EMBEDDED UTILITIES MAY BE LOCATED WITHIN OR ADJACENT TO THE AREA IN WHICH EXCAVATION, DEMOLITION, FOUNDATION, OR MODIFICATION WORK IS TO BE PERFORMED.

REFERENCES RELATING TO THE UNDERGROUND OR EMBEDDED UTILITIES ARE PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING THOSE UTILITIES AND OTHER POSSIBLE UNDERGROUND OR EMBEDDED INTERFERENCES WITH THE WORK.

THE CONTRACTOR/INSTALLER SHALL EXERCISE DUE CAUTION DURING ALL EXCAVATION/FOUNDATION/DEMOLITION WORK.

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.

FIGURE B-16

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

FORM 005 2.4.1 REV. 1 (05/93)

FILE I.D. S138 1.DGN

SCALE: AS NOTED

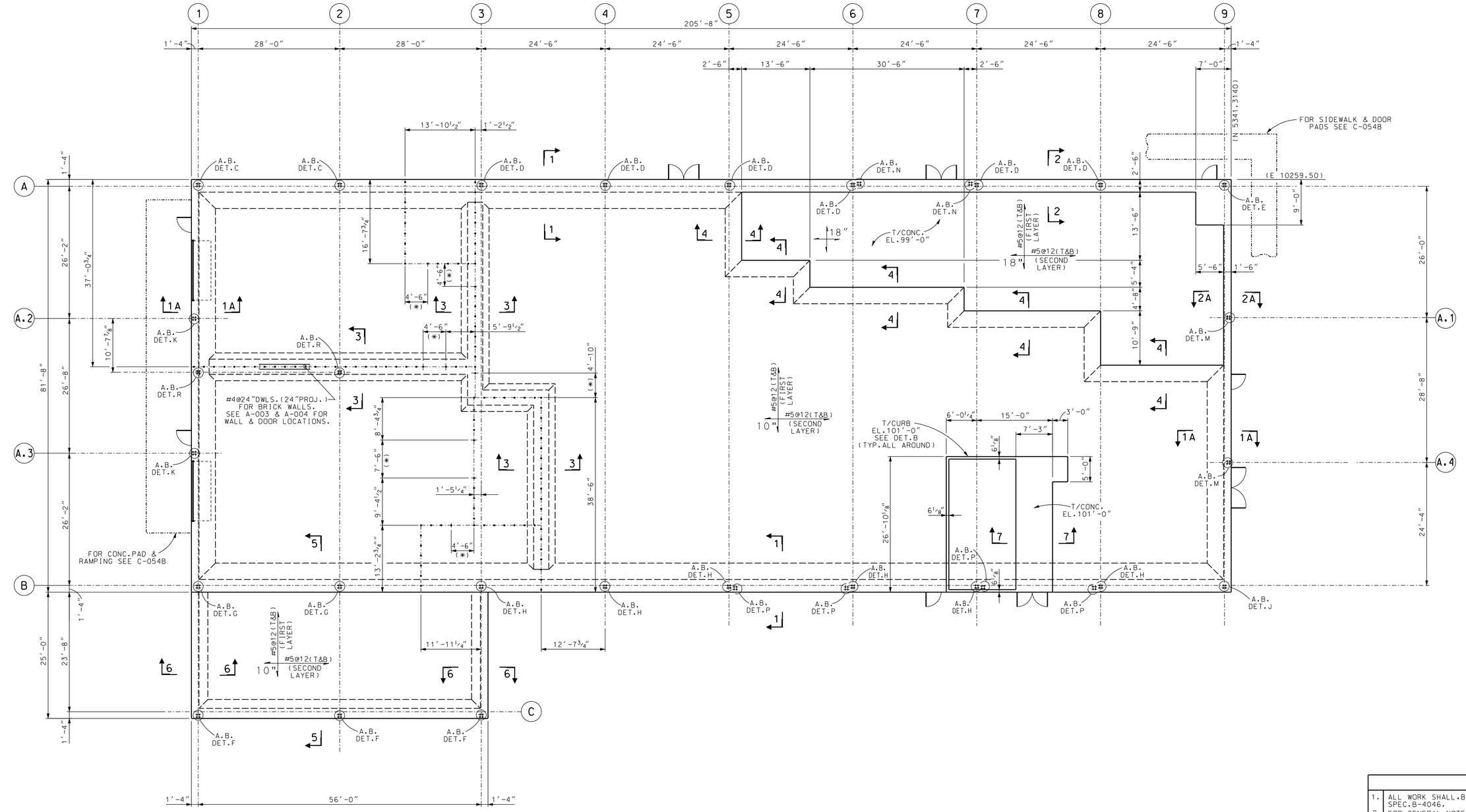
PROJECT NUMBER: 11962-003

TYPICAL SULFURIC ACID & SODIUM BISULFITE TOTE FDN. MASONRY WALL DETAILS

Sargent & Lundy LLC

DRAWING NO. S-138 REV. A

SHEET OF



CONTROL/ADMINISTRATION BUILDING FOUNDATION PLAN

T/CONC.SLAB EL.100'-6" (U.N.)
(*)INDICATES DOOR OPENING - NO DOWELS REQD.

FOR ANCHOR BOLTS EMBEDDED IN CONC. SLAB SEE DETAILS S-121

FOR FLOOR FINISHES SEE S-122

NORTH

NOTES

1. ALL WORK SHALL.BE DONE IN ACCORDANCE WITH SPEC.B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR SECTIONS AND DETAILS SEE S-121.
4. FOR GROUNDING SEE E-002 SERIES DRAWINGS.
5. FOR ELECTRICAL DUCT RUNS IN THIS AREA SEE E-101 SERIES DRAWINGS.
6. FOR EMBEDDED PLUMBING SEE A-016 & A-017.
7. FOR ANCHOR BOLT SCHEDULE & DETAILS SEE S-004.
8. FOR BURIED & EMBEDDED CONDUIT SEE E-201.
9. FOR EMBEDDED PIPING SEE UNDERGROUND COMPOSITE DRAWINGS M-508 & M-512.

REFERENCE DRAWINGS

A-003	CONTROL/ADMINISTRATION BULDING FLOOR PLAN - SOUTH AREA
A-004	CONTROL/ADMINISTRATION BULDING FLOOR PLAN - NORTH AREA

FIGURE B-17

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

FILE I.D. S120 1.DGN

SCALE: 1/8"=1'-0"

PROJECT NUMBER: 11962-003

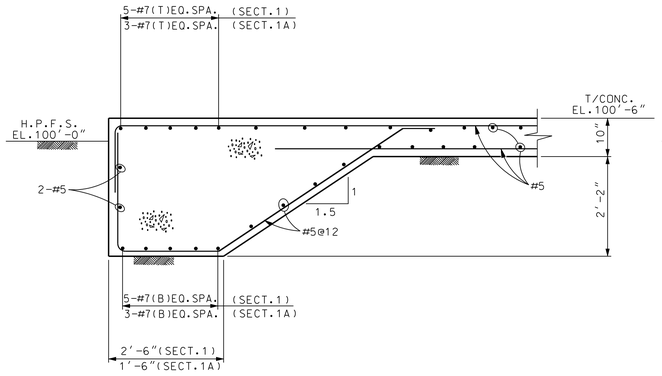
TYPICAL CONTROL/ADMINISTRATION BUILDING FOUNDATION PLAN

Sargent & Lundy LLC

DRAWING NO. S-120 REV. A

SHEET OF

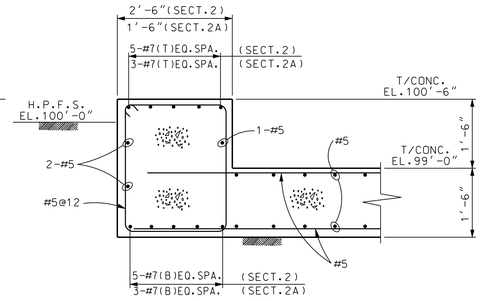
FORM 405.2.6.1 REV. 1 (05/93)



SECTION 1

SECTION 1A

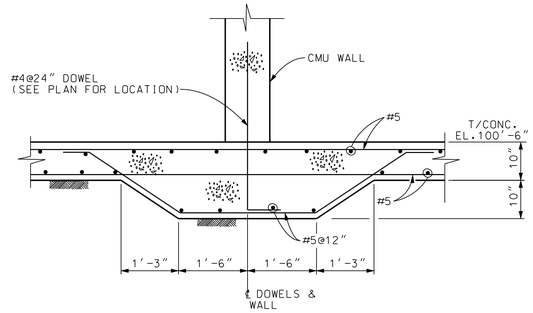
SCALE: 3/4"=1'-0"



SECTION 2

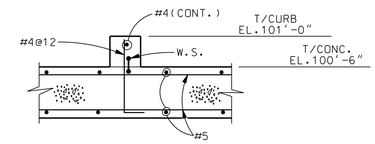
SECTION 2A

SCALE: 3/4"=1'-0"



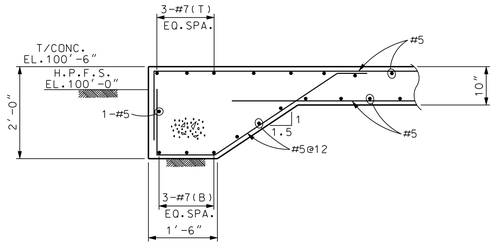
SECTION 3

SCALE: 3/4"=1'-0"



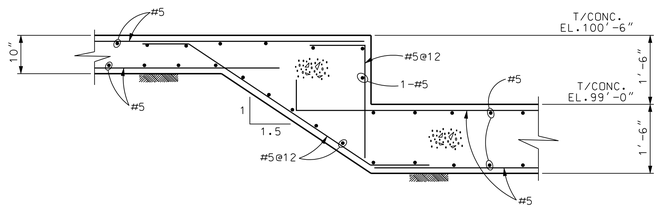
DETAIL B

SCALE: 1"=1'-0"



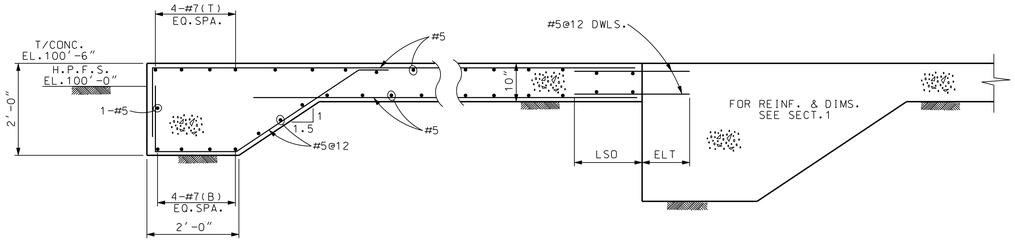
SECTION 6

SCALE: 3/4"=1'-0"



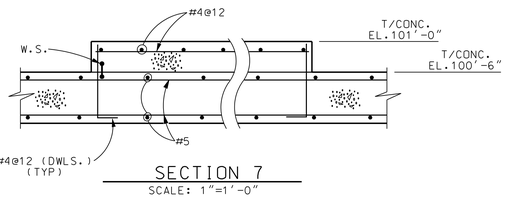
SECTION 4

SCALE: 3/4"=1'-0"



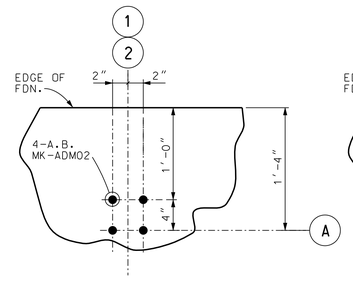
SECTION 5

SCALE: 3/4"=1'-0"



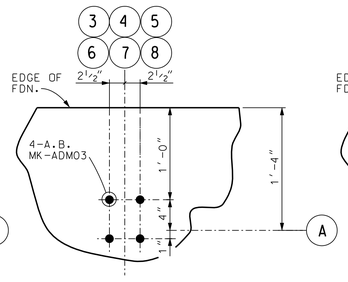
SECTION 7

SCALE: 1"=1'-0"



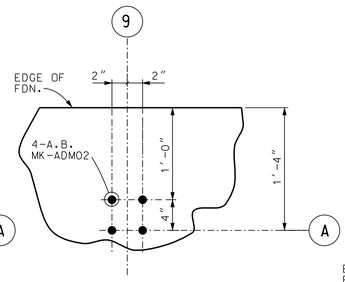
DETAIL C

(2 PLACES)



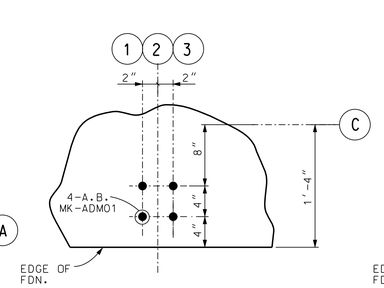
DETAIL D

(6 PLACES)



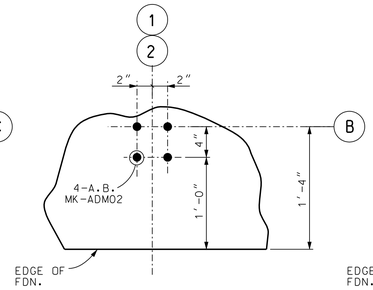
DETAIL E

(1 PLACE)



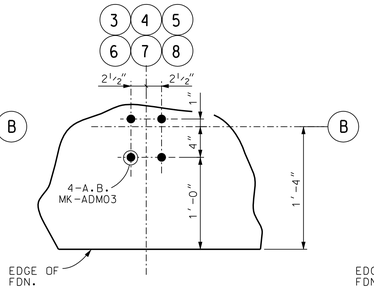
DETAIL F

(3 PLACES)



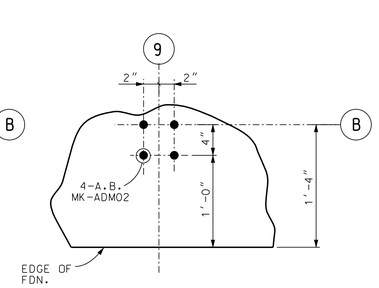
DETAIL G

(2 PLACES)



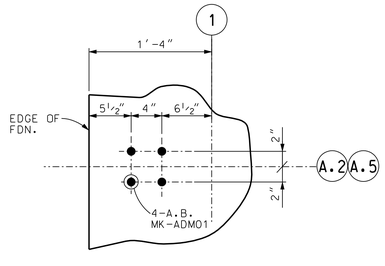
DETAIL H

(6 PLACES)



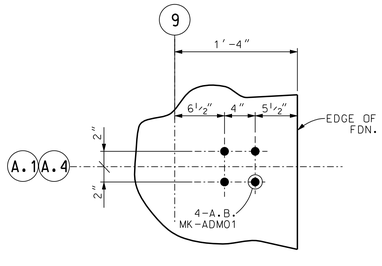
DETAIL J

(1 PLACE)



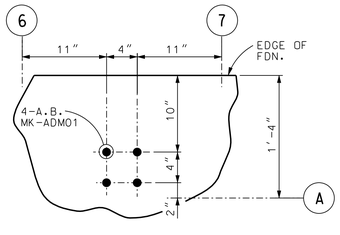
DETAIL K

(2 PLACES)



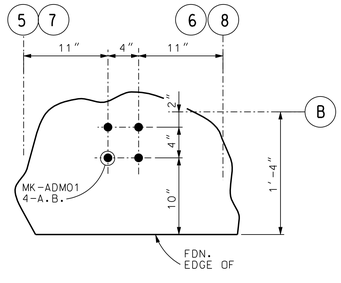
DETAIL M

(2 PLACES)



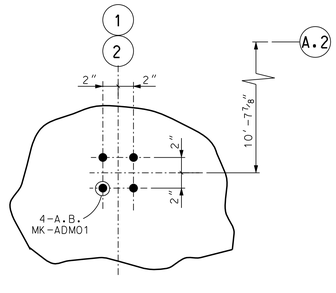
DETAIL N

(2 PLACES)



DETAIL P

(4 PLACES)



DETAIL R

(2 PLACES)

ANCHOR BOLT DETAILS

SCALE: 1½"=1'-0"

FIGURE B-18

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

NORTH

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC.B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR FOUNDATION PLAN SEE S-120.

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/8"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL CONTROL/ADMINISTRATION BUILDING FDN. SECTIONS & DETAILS

FILE I.D. S121 1.DGN

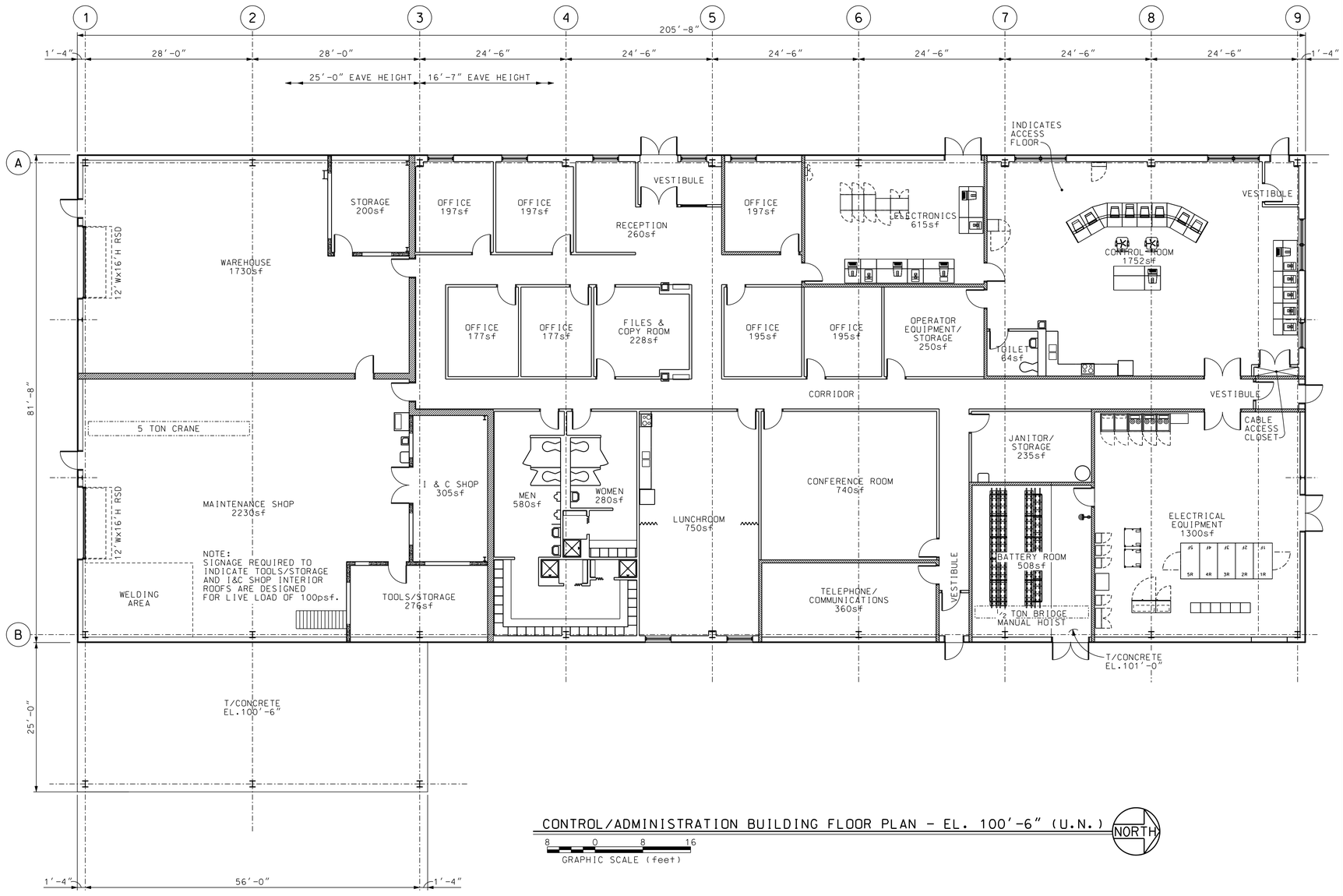
Sargent & Lundy LLC

DRAWING NO. S-121

REV. A

SHEET OF

FORM 005 2.4.1 REV. 1 (05/93)



CONTROL/ADMINISTRATION BUILDING FLOOR PLAN - EL. 100'-6" (U.N.)

NORTH

8 0 8 16
GRAPHIC SCALE (feet)

FIGURE B-19

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

GENERAL NOTES

1. ALL WORK SHOWN ON THESE DRAWINGS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATION B-4048, UNLESS OTHERWISE NOTED.
   ALL DESIGN SHALL CONFORM TO THE LATEST EDITIONS (INCLUDING AMENDMENTS AND SUPPLEMENTS) OF STATE/LOCAL CODES AND THE FOLLOWING NATIONAL CODES:
   UNIFORM BUILDING CODE - UBC
   NATIONAL ELECTRICAL CODE - NEC
   UNIFORM MECHANICAL CODE - UMC
   UNIFORM PLUMBING CODE - UPC
2. CODE ANALYSIS:
   THE CONTROL/ADMINISTRATION BUILDING HAS BEEN DESIGNED AS OCCUPANCY GROUP F2, INDUSTRIAL. CONSTRUCTION TYPE II-N, NON-COMBUSTIBLE. ACTUAL FLOOR AREA IS 16605sf. MAXIMUM ALLOWABLE FLOOR AREA FOR THIS BUILDING IS 18000sf PER UBC SECTION 504. THE BUILDING IS SINGLE STORY, 28'-11" HIGH. THE MAXIMUM ALLOWABLE BUILDING HEIGHT IS TWO STORY, 55'-0" HIGH, PER UBC SECTION 504. THE OCCUPANCY LOAD FOR THIS OCCUPANCY GROUP IS 150 PER UBC SECTION 1003, HOWEVER ACTUAL OCCUPANCY IS NOT EXPECTED TO EXCEED 50. THE BUILDING CONTAINS EIGHT COMPARTMENTS SEPARATED FROM EACH OTHER AND ADJACENT AREAS BY 2HR FIRE RATED AREA SEPARATION PARTITIONS.
3. ALL CONTRACTOR-PREPARED DRAWINGS, INCLUDING ERECTION DRAWINGS FOR PRE-ENGINEERED BUILDINGS, SHALL BE SEALED AND DATED BY THE REGISTERED PROFESSIONAL ENGINEER, CERTIFIED IN THE STATE OF NEVADA, WHO SUPERVISED THE DESIGN.
4. CONTRACTOR'S DRAWINGS SHALL BE COMPLETE AND DETAILED AND SHALL MEET STATE AND LOCAL BUILDING CODE REQUIREMENTS. SUBMITTALS SHALL INCLUDE ELEVATIONS, CROSS-SECTIONS, STRUCTURAL STEEL FRAMING DETAILS, BOLTED CONNECTIONS, WELDING DETAILS, ANCHORAGE REQUIREMENTS, WALL AND ROOF SYSTEM DIMENSIONS, PANEL LAYOUT, OPENINGS FOR DOORS/WINDOWS/LOUVERS, DOORS AND FRAMES, FINISH HARDWARE, WINDOWS, LOUVERS, PLUMBING PLANS, ELECTRICAL PLANS AND SINGLE LINE ELECTRICAL DIAGRAMS, MECHANICAL PLANS, & etc.
5. BUILDINGS SHALL BE PROVIDED WITH WELDING STATIONS, POWER RECEPTACLES, TELEPHONE AND COMMUNICATION CONNECTIONS AS SPECIFIED ON ARRANGEMENT DRAWING ES-27.
6. CONTRACTOR SHALL SUBMIT FOUNDATION OUTLINE DIMENSIONS, ANCHOR BOLT LAYOUT, ANCHOR BOLT DIAMETER AND PROJECTION ABOVE CONCRETE, AND LOADS WITHIN TWO WEEKS OF AWARD, FOR FOUNDATION BY OTHERS.
7. BIDDERS SHALL PROVIDE, AS AN OPTION, THE FOLLOWING UNIT PRICES FOR CHANGES IN BUILDING SIZE AFTER BID AND AWARD:
   UNIT PRICE PER SQUARE FOOT INCREASE/DECREASE OF BUILDING FOOTPRINT
   UNIT PRICE PER FOOT INCREASE/DECREASE IN BUILDING HEIGHT.

ARCHITECTURAL NOTES

1. WALLS INDICATED THUS (▨) ON FLOOR PLANS REPRESENT 2 HOUR FIRE RATED PARTITIONS, WHICH SHALL SPAN FROM TOP OF FLOOR TO UNDERSIDE OF ROOF, UNLESS OTHERWISE NOTED.
2. INTERIOR PARTITIONS SHOWN IN PLAN ARE DESIGNATED BY A PARTITION CODE (i.e., GYPA, CMUA). FOR CORESPONDING PARTITION DETAILS REFER TO DRAWING A-008.
   FOR GYPSUM BOARD/METAL STUD PARTITION CODES FOLLOWED BY A STAR (☆), REFER TO DET. A008-1.
   FOR GYPSUM BOARD/METAL STUD PARTITION CODES FOLLOWED BY A TRIANGLE (△), REFER TO DET. A008-2. FOR GYPSUM BOARD/METAL STUD PARTITION CODES FOLLOWED BY AN ASTERISK (*), REFER TO DET. A008-3. FOR ALL OTHER GYPSUM BOARD/METAL STUD PARTITIONS, REFER TO DETS. A008-4 & A008-5.
3. WINDOWS, SIZES AS INDICATED IN PLAN AND ELEVATION, SHALL BE FIXED TYPE, WITH DARK BRONZE ANODIZED EXTRUDED ALUMINUM HEADS, JAMBS AND SILLS. 1" INSULATED GLAZING SHALL BE TWO SHEETS ¼" TEMPERED SAFETY GLASS, SOLAR BRONZE TINTED (EXTERIOR), CLEAR (INTERIOR) WITH ½" AIR SPACE, UNLESS NOTED.
4. INSULATED METAL SIDING WALL PANELS SHALL BE FORMED FROM 26GA.(MIN.) SHEET STEEL. INSULATED METAL STANDING SEAM ROOF PANELS SHALL BE FORMED FROM 24GA.(MIN.) SHEET STEEL. SHEET STEEL FOR METAL PANELS AND ACCESSORIES SHALL BE G-90 HOT-DIPPED GALVANIZED CONFORMING TO BOTH ASTM A525 AND A446, GRADE A.
   WALL AND ROOF PANELS SHALL HAVE A PROTECTIVE COATING EQUIVALENT TO A FACTORY APPLIED OVEN BAKED FINISH. EXTERIOR SURFACES SHALL HAVE A TWO COAT SYSTEM CONSISTING OF 0.2 MILS OF A CORROSIVE INHIBITIVE PRIMER AND 0.8 MILS OF FLUOROCARBON TOPCOAT. FINISH SHALL BE A DISPERSION COATING BASED ON 70% KYNAR 500. INSULATED METAL WALLS AT UNFINISHED AREAS (DESIGNATED "MS" IN ROOM FINISHING SCHEDULE, DWG. A-007) SHALL BE SUPPLIED W/10' HIGH LINER PANELS, FORMED FROM 26GA. SHEET STEEL, G-90 HOT-DIPPED GALVANIZED. INTERIOR SURFACES OF METAL SIDING WALL AND STANDING SEAM ROOF PANELS AND BOTH SIDES OF LINER PANELS SHALL HAVE 0.2 MILS OF CORROSION INHIBITIVE PRIMER AND A BACKER COAT.
   METAL FLASHING, GUTTERS AND DOWNSPOUTS SHALL BE FORMED FROM THE SAME MATERIAL AND FINISHED IN THE SAME MANNER AS THE WALL AND ROOF PANELS.
   METAL AND PREMOLDED NEOPRENE CLOSURES SHALL BE THE MANUFACTURERS STANDARD PRODUCT.
   SEALANTS AND SEALING TAPE SHALL BE THE MANUFACTURERS STANDARD MATERIALS.
   FASTENERS SHALL BE TYPE 305 STAINLESS STEEL WITH CADMIUM PLATED FINISH AND COMBINATION STAINLESS STEEL/NEOPRENE WASHERS. EXTERIOR EXPOSED FASTENER HEADS AND WASHERS SHALL HAVE A COLOR COATING TO MATCH EXTERIOR WALL AND ROOF PANELS.
   WARRANTIES SHALL BE PROVIDED AS FOLLOWS:
   1a) STANDARD 10 YEAR WARRANTY FOR EXTERIOR PREFINISHED SURFACE AGAINST CHIPPING, CRACKING, CRAZING, BLISTERING, PEELING, CHALKING OR FADING.
   1b) RESISTANCE TO EXCESSIVE COLOR CHANGE BASED ON NOT MORE THAN 5 NBS UNITS PER ASTM D2244.

(CONTINUED ABOVE, RIGHT)

ARCHITECTURAL NOTES

(CONTINUED FROM BELOW, LEFT)

   2) 20 YEAR WARRANTY FOR WEATHERTIGHTNESS OF ROOFS, WALLS AND PENETRATION FLASHINGS.
5. PRE-ENGINEERED BUILDINGS OCCUPIED SPACES AND SANITARY FACILITIES SHALL COMPLY WITH ACCESSIBILITY REQUIREMENTS OF ADA AND SATISFY REQUIREMENTS OF STATE AND LOCAL ACCESSIBILITY CODES.
6. WALL ASSEMBLIES SHALL HAVE MINIMUM R-13 FIBERGLASS BATT INSULATION WITH UL25 VAPOR RETARDANT, U-VALUE SHALL NOT EXCEED 0.10 BTU/HR/SF/°F. ROOF ASSEMBLIES SHALL HAVE MINIMUM R-19 FIBERGLASS BATT INSULATION WITH UL25 VAPOR RETARDANT. U-VALUE SHALL NOT EXCEED 0.08 BTU/HR/SF/°F. WALL AND ROOF ASSEMBLIES SHALL SATISFY REQUIREMENTS OF STATE AND LOCAL ENERGY CODES.
7. PRE-ENGINEERED BUILDINGS SHALL BE DESIGNED IN ACCORDANCE WITH LATEST EDITIONS OF AISC MANUAL OF STEEL CONSTRUCTION AND MBMA LOW-RISE BUILDING SYSTEMS MANUAL. ALL STRUCTURAL STEEL MATERIALS SHALL BE APPROVED FOR USE AND AS LISTED IN THE LATEST AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN. THE BUILDINGS SHALL BE DESIGNED FOR THE FOLLOWING MINIMUM LOADS:
   BASIC WIND SPEED (50 YR.MEAN RECURRENCE)= 75mph, IMPORTANCE FACTOR 1.0, EXPOSURE TYPE C
   GROUND SNOW LOAD (50 YR.MEAN RECURRENCE) 0psf.
   SEISMIC: ZONE=2B, SOIL PROFILE=SD, SEISMIC IMPORTANCE FACTOR=1.0
   MINIMUM ROOF LIVE LOAD: 20psf.
   MINIMUM AUXILIARY DEAD LOAD: 10psf.
   ROOF PURLINS AND ASSOCIATED FRAMING SHALL ALSO BE DESIGNED FOR CONCENTRATED LOADS IMPOSED BY CABLE TRAYS, SUSPENDED CEILING, CONDUITS, PIPING, HVAC DUCTS, & etc. THE STRUCTURAL SHAPE OF ROOF PURLINS AND ASSOCIATED FRAMING SHALL ACCOMODATE DIRECT ATTACHMENT OF CABLE TRAY, HVAC DUCTWORK, AND OTHER UTILITY HANGER AND RELATED SUPPORT SYSTEMS.
8. OVERALL BUILDING DIMENSIONS AND GIRT LINES MAY BE ADJUSTED TO ACCOMODATE CONTRACTOR'S STANDARD OFFERINGS, SUBJECT TO APPROVAL BY PURCHASER. BAY SPACING, VERTICAL BRACING LOCATIONS, ROOM LAYOUT AND NOMINAL ROOM DIMENSIONS SHALL BE MAINTAINED.
9. BUILDING FOUNDATION WILL BE FURNISHED AND INSTALLED BY PURCHASER. TOP OF CONCRETE WILL BE AT EL.100'-6". BUILDING COLUMNS SHALL NOT BE RECESSED IN POCKETS. BASE PLATES SHALL NOT EXTEND BEYOND THE BUILDING GIRT LINES, AND SHALL BE DESIGNED TO BE SET ON 1" OF GROUT.
10. ANCHOR BOLTS SHALL BE LOCATED AND SIZED BY THE CONTRACTOR TO SUIT THE BUILDING DESIGN. PURCHASER WILL DETERMINE APPROPRIATE EMBEDMENT LENGTHS BASED ON LOADS FURNISHED BY CONTRACTOR. CONTRACTOR SHALL SPECIFY MINIMUM PROJECTION OF ANCHOR BOLTS ABOVE TOP OF ROUGH CONCRETE. ANCHOR BOLTS WILL BE FURNISHED AND INSTALLED BY THE PURCHASER.
11. FRAME TYPE SHALL BE CONTINUOUS, SUPPORTING THE WIDTH OF THE BUILDING, CONSISTING OF RAFTERS RIGIDLY CONNECTED TO VERTICAL PIN BASED COLUMNS, BOTH SERVING AS SUPPORT FOR SECONDARY FRAMING FOR ROOF AND WALL COVER, AND SUPPORT OF STRUCTURE.
    VENDOR SHALL PROVIDE MATERIAL CERTIFICATION DOCUMENTATION FOR ALL HIGH STRENGTH BOLTING. CONFIGURATION OF DIAGONAL BRACING SHALL BE SUBJECT TO REVIEW BY PURCHASER. BRACING SHALL NOT OBSTRUCT WINDOWS, NOR UNREASONABLY REDUCE THE USEABLE SPACE IN ANY ROOM.
12. CONTRACTOR SHALL SUBMIT COLOR CHARTS FOR SELECTION OF BUILDING EXTERIOR AND INTERIOR COLOR SCHEMES. FOR APPROVAL BY PURCHASER.
13. ALL STRUCTURAL STEEL SHALL RECEIVE SHOP SURFACE PREPARATION PER SSPC-SP6 AND 2-3 MILS DFT OXIDE PRIMER. IN ADDITION, ALL MISCELLANEOUS STEEL INCLUDING HANDRAILS, STAIRS, TOEPLATES AND LADDERS SHALL RECEIVE 3-5 MILS DFT POLYURETHANE FINISH COAT. ALL PLATFORM AND STAIR GRATING SHALL BE HOT-DIPPED GALVANIZED AND FINISH COATED WITH 3-5 MILS DFT POLYURETHANE.
14. ALL WALL AND ROOF OPENINGS SHALL BE FLASHED AND SEALED AS REQUIRED TO MAINTAIN THE WEATHERTIGHTNESS, FIRE RATING AND HVAC BARRIER OF THE CONSTRUCTION.
15. STRUCTURAL STEEL FRAMING MEMBERS OVER THE ELECTRICAL EQUIPMENT ROOM 19 AND TELEPHONE/COMMUNICATIONS ROOM 15 SHALL BE DESIGNED AND FURNISHED BY CONTRACTOR FOR CABLE TRAY SUPPORT IN ACCORDANCE WITH SPECIFICATION B-4048, ATTACHMENT 7.

REFERENCE DRAWINGS

A-002	CONTROL/ADMIN. BUILDING ELEVATIONS
A-003	CONTROL/ADMIN. BUILDING FLOOR PLAN-SOUTH
A-004	CONTROL/ADMIN. BUILDING FLOOR PLAN-NORTH
A-005	BULK STORAGE AND SAMPLE PANEL BUILDINGS FLOOR PLANS AND ELEVATIONS
A-006	STORAGE BUILDING/VEHICLE SHED FLOOR PLAN AND ELEVATIONS
A-007	ROOM FINISHING SCHEDULE
A-008	INTERIOR PARTITION DETAILS
A-009	MASONRY SECTIONS AND DETAILS
A-010	MISCELLANEOUS SECTIONS AND DETAILS
A-011	DOOR AND HARDWARE SCHEDULE
A-012	DOOR HEAD AND JAMB DETAILS
A-016	CONTROL/ADMINISTRATION PLUMBING PLAN - SOUTH AREA
A-017	CONTROL/ADMINISTRATION PLUMBING PLAN - NORTH AREA
A-018	CONTROL/ADMINISTRATION POTABLE WATER SUPPLY DIAGRAM
A-019	CONTROL/ADMINISTRATION SANITARY DRAIN, WASTE & VENT DIAGRAM
A-020	SAMPLE PANEL BUILDING PLUMBING PLAN AND DIAGRAMS
ES-27	RECEPTACLE AND COMMUNICATION LAYOUT
E-301	CABLE TRAYS
ES-38	CABLE TRAYS - TYPICAL DETAILS

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/8"=1'-0"

PROJECT NUMBER: 11962-003

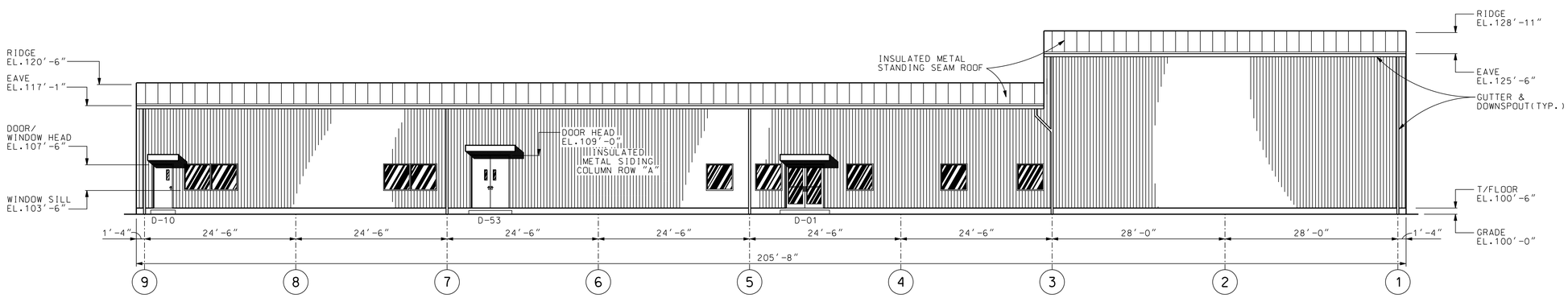
TYPICAL CONTROL/ADMINISTRATION BUILDING FLOOR PLAN

Sargent & Lundy LLC

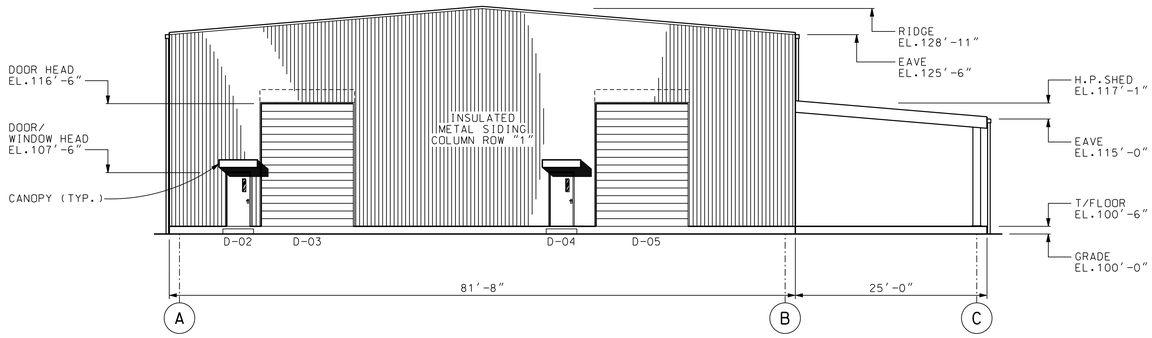
DRAWING NO.	REV.
A-001	A

SHEET OF

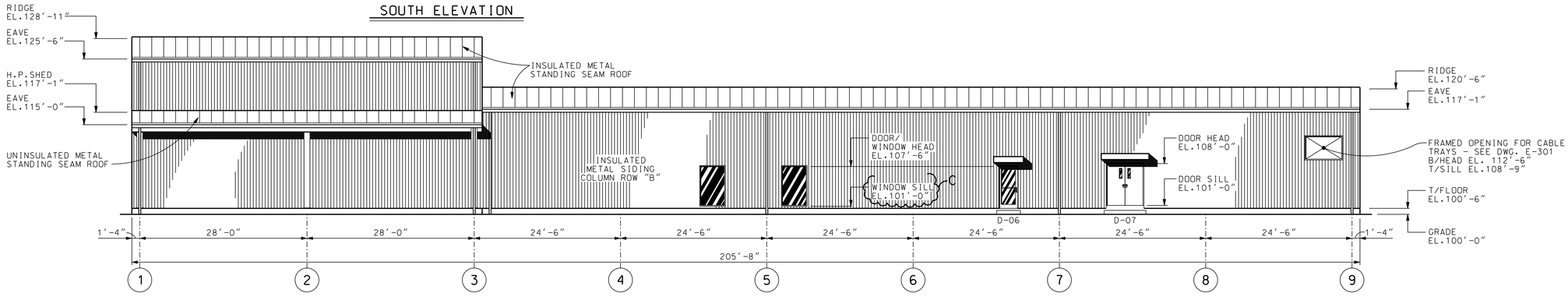
CDM 005 3.4.1 REV. 2 (12/1999)



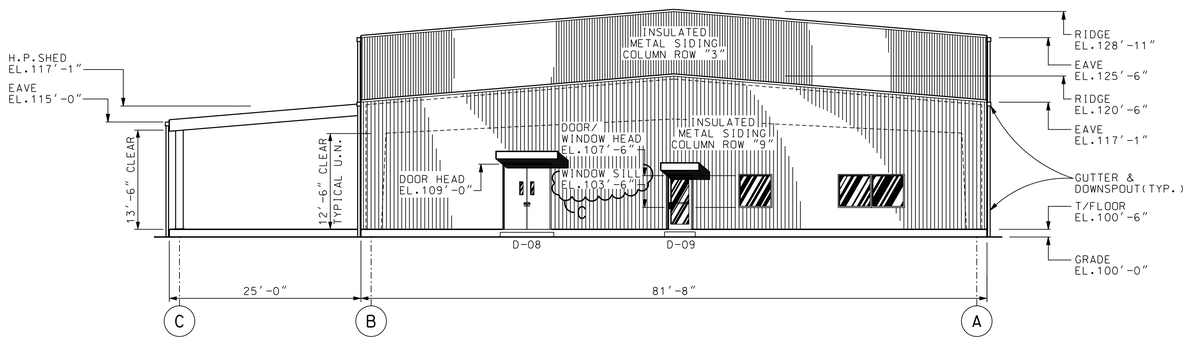
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

NOTES

1. FOR GENERAL AND ARCHITECTURAL NOTES SEE DRAWING A-001.

REFERENCE DRAWINGS

A-001	CONTROL/ADMINISTRATION BUILDING ELEVATIONS
A-003	CONTROL/ADMINISTRATION BUILDING FLOOR PLAN - SOUTH AREA
A-004	CONTROL/ADMINISTRATION BUILDING FLOOR PLAN - NORTH AREA
A-007	ROOM FINISHING SCHEDULE
A-011	DOOR AND HARDWARE SCHEDULE

FIGURE B-20

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE 1/8"=1'-0"

PROJECT NUMBER 11962-003

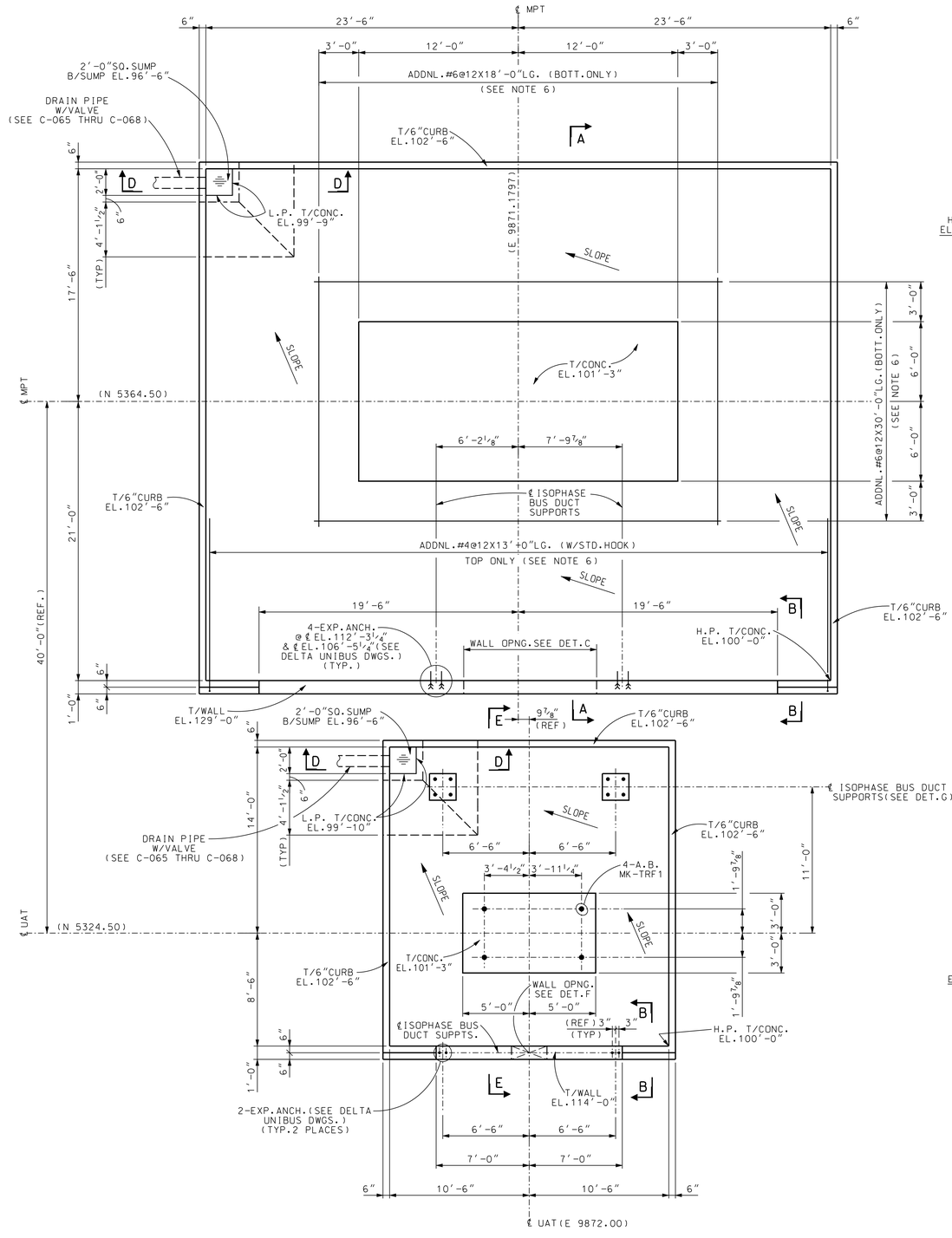
TYPICAL CONTROL/ADMINISTRATION BUILDING ELEVATIONS

Sargent & Lundy LLC

DRAWING NO. A-002 REV. A

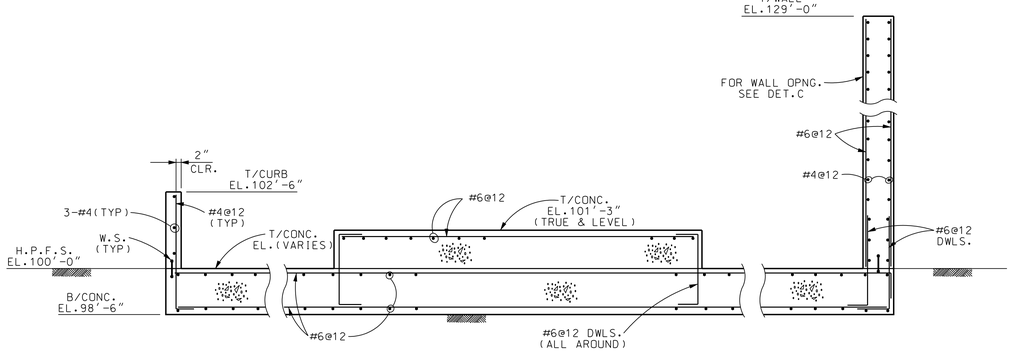
SHEET OF

FORM 005 2.4x1 REV. 2 (12/1999)



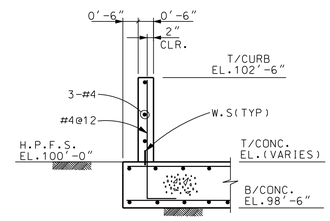
ST MAIN & UNIT AUX. TRANSFORMER FOUNDATION PLAN

(1 - REQUIRED)
SLOPE T/CONC.SLAB FROM H.P.EL.100'-0" TO SUMP



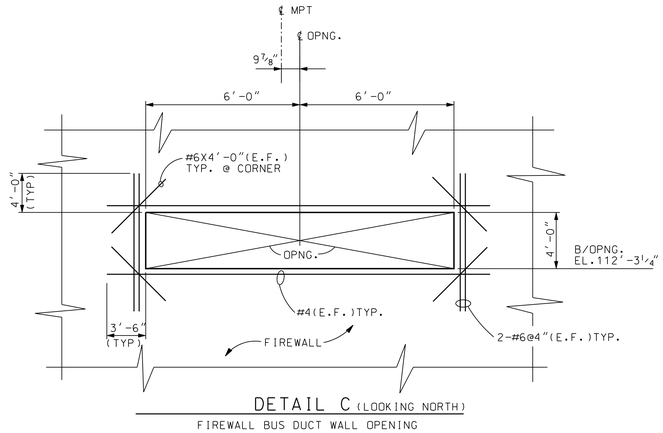
SECTION A

SCALE:1 1/2"=1'-0"
(ADDNL. REINF. BARS NOT SHOWN FOR CLARITY)



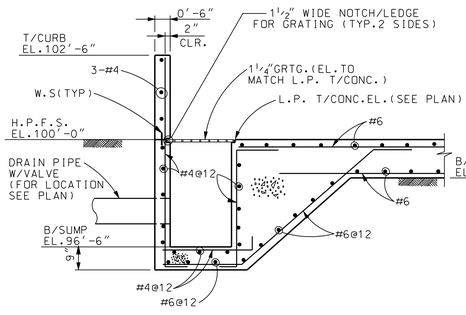
SECTION B

SCALE 1/2"= 1'-0"



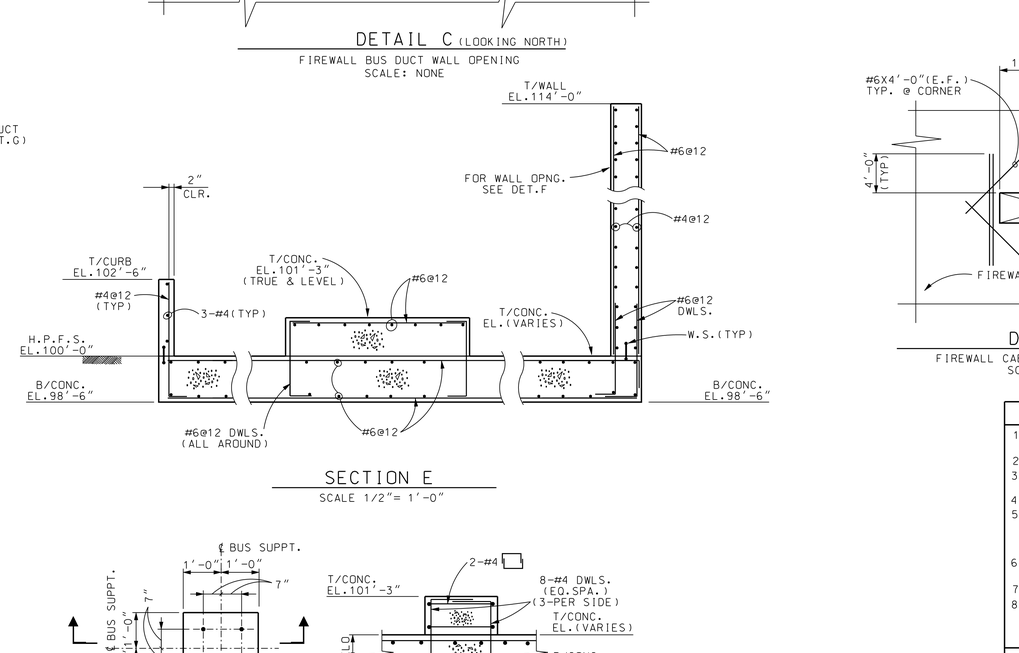
DETAIL C (LOOKING NORTH)

FIREWALL BUS DUCT WALL OPENING
SCALE: NONE



SECTION D

SCALE 1/2"= 1'-0"



SECTION E

SCALE 1/2"= 1'-0"

DETAIL F (LOOKING NORTH)

FIREWALL CABLE BUS DUCT WALL OPNG.
SCALE: NONE

DETAIL G

SCALE: NONE

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR ELECTRICAL DUCT RUNS IN THIS AREA SEE E-101 SERIES DRAWINGS.
4. FOR GROUNDING SEE E-002 SERIES DRAWINGS.
5. ALL CONDUIT STUB-UPS FROM DUCT RUNS SHALL TERMINATE WITH COUPLINGS FLUSH WITH THE TOP OF CONCRETE AT EL.101'-3". PLUG AND CAP FOR FUTURE USE.
6. ALTERNATE ADDITIONAL BARS WITH MAIN REINFORCING AT EQUAL SPACING.
7. FOR ANCHOR BOLT SCHEDULE & DETAILS SEE S-004.
8. CONTRACTOR SHALL PLACE REINFORCING STEEL TO AVOID INTERFERENCE WITH EXP.ANCHORS FOR FUTURE ISOPHASE BUS DUCT SUPPORTS.

REFERENCE DRAWINGS

	HAWKER SIDDELEY POWER DRAWINGS
OD100006	340MVA 21/235.75KV TRANSFORMER G.A.
OD200006	340MVA 21/235.75KV TRANSF. FDN. PLAN
	ABB KRAFTWERKE AG
HB1037201	SMALL POWER TRANSFORMER
	DELTA UNIBUS CORP.
U-123056X61 SHT.1-3	ANCHOR BOLT & CONN.LAYOUT OF ISOPHASE BUS

FIGURE B-21

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/4"=1'-0"
PROJECT NUMBER: 11962-003

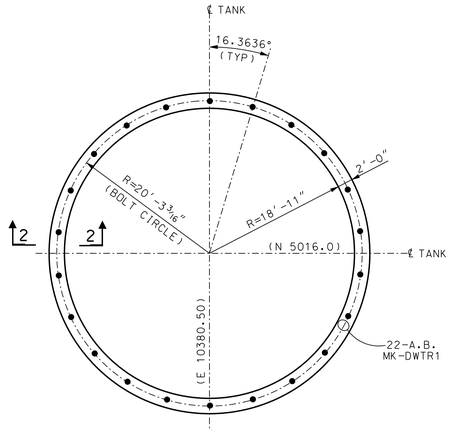
TYPICAL ST MAIN & AUX. TRANSFORMER FOUNDATION PLAN & SECTIONS

FILE I.D. S060 1.DGN

Sargent & Lundy LLC

DRAWING NO. S-060 REV. A
SHEET OF

FORM 005 2.6.1 REV. 1 (05-93)



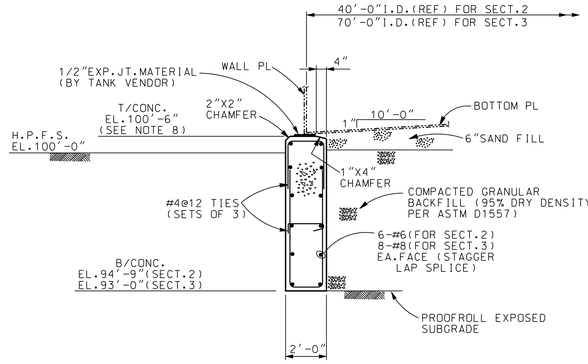
DEMIN. WATER TANK FOUNDATION

SCALE: 1/8"=1'-0"

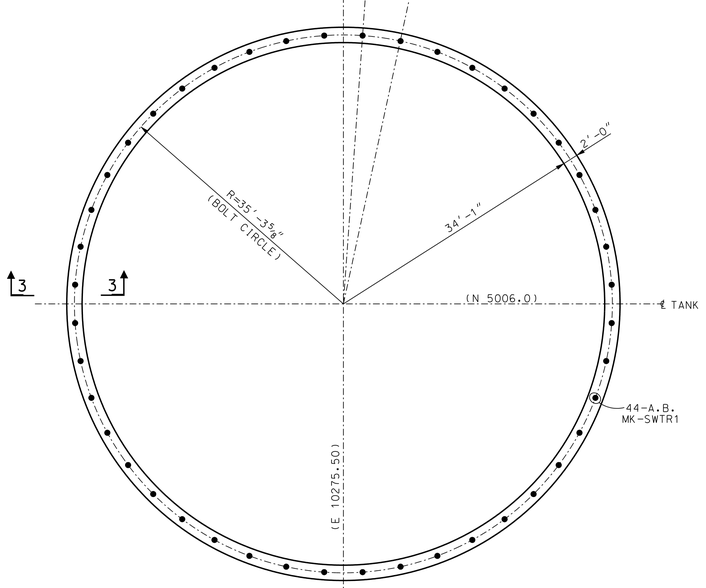
NORTH

DEFERRAL: SUPERSTRUCTURE DESIGN OF DEMIN. WATER TANK.

SOIL UNIT WEIGHT FOR DESIGN = 120 PCF
MAX. OVERTURNING MOMENT = 4202 KIP-FT (SEISMIC)
MAX. SLIDING FORCE = 307 KIPS (SEISMIC)
MAX. BEARING PRESSURE = 2.0 KSF < 4.5 KSF (NORMAL/OPERATING)
MAX. BEARING PRESSURE = 3.3 KSF < 4.5 KSFX1.33 (SEISMIC)
MIN. BEARING PRESSURE (EXTREME FIBER) = 0 KSF (SEISMIC)



SECTION - 2
SECTION - 3
SCALE: 1/2"=1'-0"



FIRE/SERVICE WATER TANK FOUNDATION

SCALE: 1/8"=1'-0"

NORTH

DEFERRAL: SUPERSTRUCTURE DESIGN OF FIRE/SERVICE WATER TANK.

SOIL UNIT WEIGHT FOR DESIGN = 120 PCF
MAX. OVERTURNING MOMENT = 16803 KIP-FT (SEISMIC)
MAX. SLIDING FORCE = 997 KIPS (SEISMIC)
MAX. BEARING PRESSURE = 2.5 KSF < 4.5 KSF (NORMAL/OPERATING)
MAX. BEARING PRESSURE = 4.2 KSF < 4.5 KSFX1.33 (SEISMIC)
MIN. BEARING PRESSURE (EXTREME FIBER) = 0 KSF (SEISMIC)

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR EQUIPMENT ANCHOR BOLT DETAILS & SCHEDULE SEE S-004.
4. FOR GROUNDING SEE E-002 SERIES DRAWINGS.
5. FOR ELECTRICAL DUCT RUNS IN THIS AREA SEE E-101 SERIES DRAWINGS.
6. FOR UNDERGROUND PIPING SEE M-206, M-210, M-211, M-212, & M-213 SERIES DWGS.
7. FOR TYP. MAT FOUNDATION DETAILS SEE S-003.
8. TOP OF CONCRETE RING WALL SHALL BE LEVEL WITHIN ±1/4" IN ANY 30'-0" SECTION OF CIRCUMFERENCE UNDER THE SHELL & THE OVERALL LEVELNESS SHALL NOT VARY BY MORE THAN ±1/4" FROM AN ESTABLISHED PLANE.
9. THE FOLLOWING DESIGN STANDARDS WERE USED IN THE TANK FOUNDATION CALCULATIONS:
   1997 UBC WITH SOUTHERN NEVADA AMENDMENTS
   ACI 318-99
   AWWA D100-1996
   STEEL TANK DESIGN IS BY SCHUFF STEEL.
10. SOIL REPORT USED IN THE TANK FOUNDATION CALCULATIONS IS URS GEOTECHNICAL ENGR. REPORT FOR BIGHORN POWER PLANT(URS JOB NO.48085-002-169) DATED 05-30-2001.
    SOIL PROPERTIES USED IN TANK FOUNDATION CALCULATIONS WERE AMMENDED BY SARGENT & LUNDY AS NOTED IN THE "GEOTECHNICAL DESIGN PARAMETER" DOCUMENT IN SARGENT & LUNDY CALCULATION GD083001.
    ALLOWABLE SOIL PRESSURE FOR DESIGN IS 4.5 KSF.
11. FIRE/SERVICE WATER & DEMIN. WATER TANK FDNS. SHALL REQUIRE SPECIAL INSPECTION REPORTS SUBMITTED TO THE BUILDING OFFICIAL IN ACCORDANCE WITH THE 1997 UBC FOR EARTHWORK. CONCRETE. REINFORCING & ANCHOR BOLT PLACEMENT.

REFERENCE DRAWINGS

	FIRE WATER PUMPING SYS.FLO-PAK DWGS.
0123150	APEX PUMPING EQUIPMENT
	SCHUFF STEEL CO.DWGS.
SHT.100-112	FIRE/SERVICE WATER TANK
SHT.200-209	250.000 GAL.TANK OOWMOO1T

FIGURE B-22

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

FILE I.D. S131 1.DGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: AS NOTED

PROJECT NUMBER: 11962-003

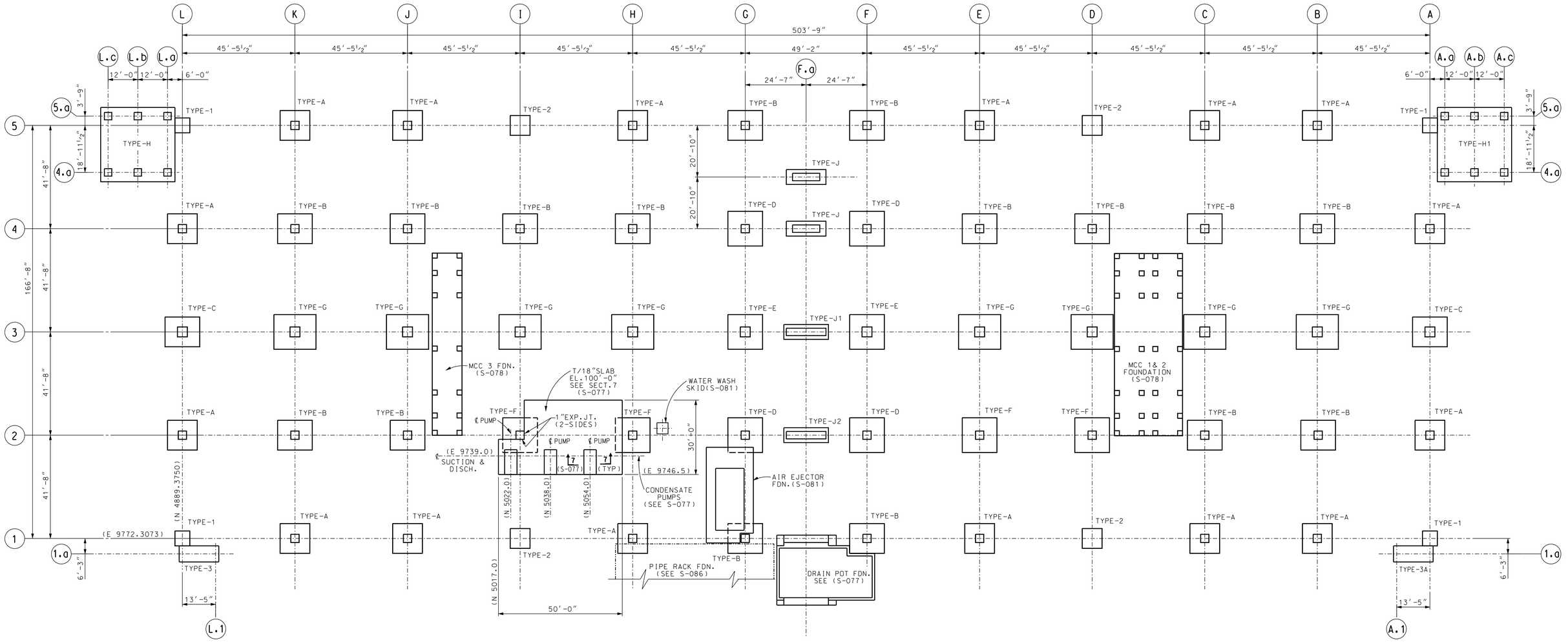
TYPICAL TANK FOUNDATIONS

Sargent & Lundy LLC

DRAWING NO. S-131 REV. A

SHEET OF

(SDM 005 2.6.1 REV. 1 05/03)



AIR COOLED CONDENSER FOUNDATION PLAN

NORTH

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. FOR GENERAL NOTES SEE S-002.
3. FOR EQUIPMENT ANCHOR BOLT DETAILS & SCHEDULE SEE S-004.
4. FOR GROUNDING SEE E-002 SERIES DRAWINGS.
5. FOR ELECTRICAL DUCT RUNS IN THIS AREA SEE E-101 SERIES DRAWINGS.
6. FOR UNDERGROUND PIPING SEE M-211 SHT.2, M-212 SHT.3, M-213 SHTS.1 & 6.
7. FOR TYP.MAT FOUNDATION DETAILS SEE S-003.
8. FOR FOUNDATION TYPES SEE DETAILS S-076.

REFERENCE DRAWINGS

HAMON DRY COOLING

DWG 101	AIR COOLED CONDENSER FDN. LOADING

FIGURE B-23

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/16"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL AIR COOLED CONDENSER FOUNDATION PLAN

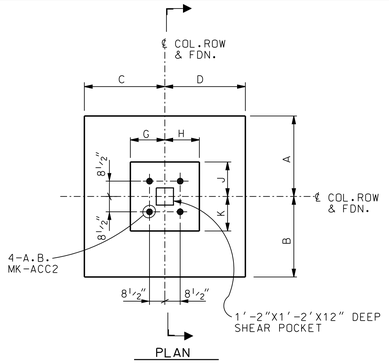
FILE I.D. s075 1.dgn

Sargent & Lundy LLC

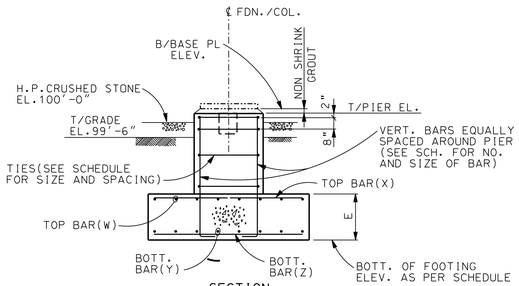
DRAWING NO.	REV.
S-075	A

SHEET OF

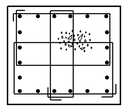
FORM 405.2.4.1 REV. 1 (05/93)



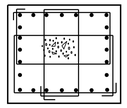
PLAN



SECTION



DETAIL - R1
(PIER REINF.ARRANGMT.)



DETAIL - R2
(PIER REINF.ARRANGMT.)

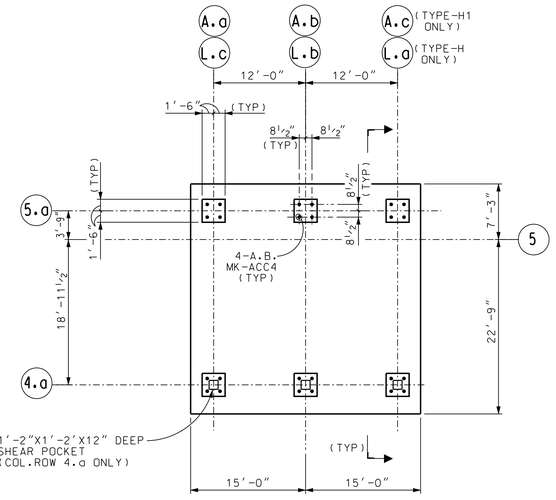
FOUNDATION TYPE - A, B, C, D, E, F, & G

SCALE: NONE

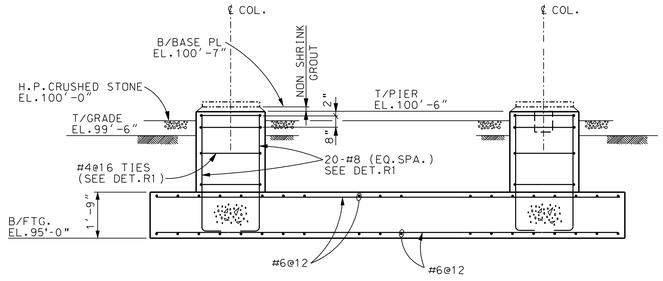
NORTH

FOOTING AND PIER SCHEDULE

TYPE	NO. REQD.	DIMENSIONS													REINFORCING							REMARKS
		FOOTING						PIER							FOOTING				PIER			
		A	B	C	D	THICK-NESS E	ELEV. B/ FOOTING	ELEV. B/ EQUIPMT. OR B/BASE PL.	G	H	J	K	M	ELEV. T/PIER	TOP REINF. (W)	TOP REINF. (X)	BOTT. REINF. (Y)	BOTT. REINF. (Z)	DETAIL TYPE	VERTICAL BARS	TIES	
1	4	3'-0"	3'-0"	3'-0"	3'-0"	2'-0"	98'-6"	100'-7"	—	—	—	—	—	—	#4@9	#4@9	#6@9	#6@9	—	—	—	
2	4	4'-0"	4'-0"	4'-0"	4'-0"	2'-0"	98'-6"	100'-7"	—	—	—	—	—	—	#4@9	#4@9	#6@9	#6@9	—	—	—	
A	16	6'-0"	6'-0"	6'-0"	6'-0"	1'-9"	93'-0"	100'-7"	1'-8"	1'-8"	1'-8"	1'-8"	—	100'-6"	#4@12	#4@12	#8@12	#8@12	R1	20-#8	#4@16"	
B	16	6'-0"	6'-0"	7'-0"	7'-0"	2'-0"	93'-0"	100'-7"	1'-8"	1'-8"	1'-8"	1'-8"	—	100'-6"	#4@12	#4@12	#8@8	#8@8	R1	20-#8	#4@16"	
C	2	6'-0"	6'-0"	7'-0"	7'-0"	2'-0"	93'-0"	100'-7"	2'-0"	2'-0"	2'-0"	2'-0"	—	100'-6"	#4@12	#4@12	#8@8	#8@8	R2	24-#9	#4@16"	
D	4	7'-0"	7'-0"	7'-0"	7'-0"	1'-9"	93'-0"	100'-7"	1'-8"	1'-8"	1'-8"	1'-8"	—	100'-6"	#4@8	#4@8	#8@8	#8@8	R1	20-#8	#4@16"	
E	2	7'-0"	7'-0"	7'-0"	7'-0"	1'-9"	93'-0"	100'-7"	2'-0"	2'-0"	2'-0"	2'-0"	—	100'-6"	#4@8	#4@8	#8@8	#8@8	R2	24-#9	#4@16"	
F	4	7'-0"	7'-0"	7'-0"	7'-0"	2'-0"	93'-0"	100'-7"	1'-8"	1'-8"	1'-8"	1'-8"	—	100'-6"	#4@12	#4@12	#8@8	#8@8	R1	20-#8	#4@16"	
G	8	7'-0"	7'-0"	8'-6"	8'-6"	2'-0"	92'-0"	100'-7"	2'-0"	2'-0"	2'-0"	2'-0"	—	100'-6"	#6@12	#6@12	#8@6	#8@6	R2	24-#9	#4@16"	
J	2	3'-0"	3'-0"	8'-0"	8'-0"	1'-9"	96'-0"	104'-0"	5'-6"	5'-6"	1'-6"	1'-6"	3'-5 1/2"	103'-11"	#6@12	#6@12	#6@12	#6@12	SEE SECT-S2	32-#8	#6@10"	
J1	1	3'-0"	3'-0"	9'-0"	9'-0"	1'-9"	96'-0"	104'-0"	8'-0"	8'-0"	1'-6"	1'-6"	4'-11"	103'-11"	#6@12	#6@12	#6@12	#6@12	SEE SECT-S2	44-#8	#6@10"	
J2	1	3'-0"	3'-0"	9'-0"	9'-0"	1'-9"	96'-0"	104'-0"	8'-0"	8'-0"	1'-6"	1'-6"	5'-11 1/4"	103'-11"	#6@12	#6@12	#6@12	#6@12	SEE SECT-S2	44-#8	#6@10"	



PLAN

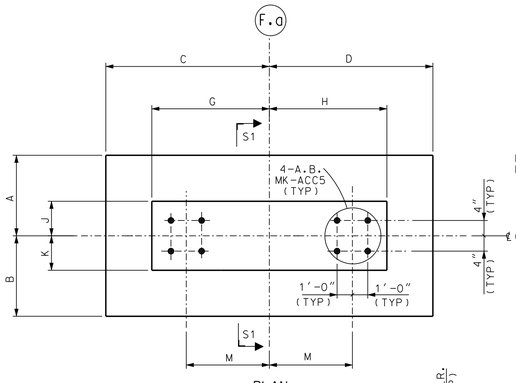


SECTION

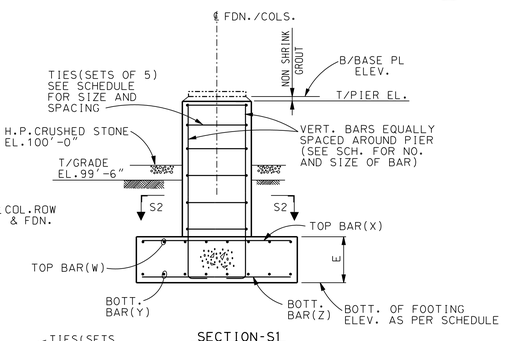
FOUNDATION TYPE - H & H1

(2-REQUIRED)
SCALE: NONE

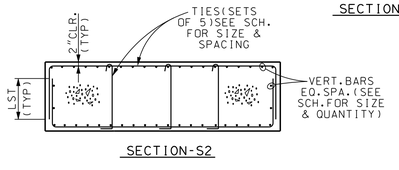
NORTH



PLAN



SECTION-S1

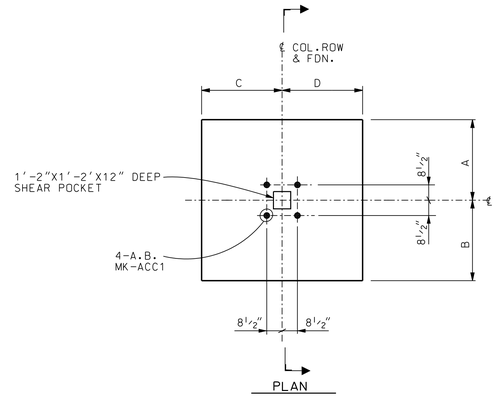


SECTION-S2

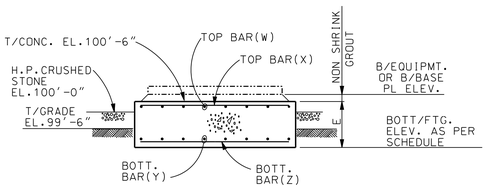
FOUNDATION TYPE - J, J1 & J2

SCALE: NONE

NORTH



PLAN

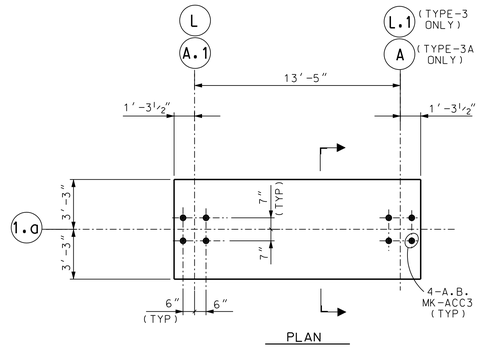


SECTION

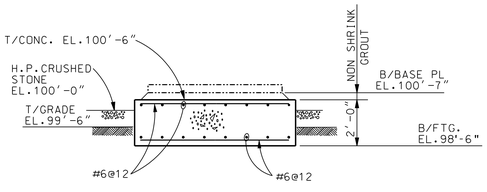
FOUNDATION TYPE - 1 & 2

SCALE: NONE

NORTH



PLAN



SECTION

FOUNDATION TYPE - 3 & 3A

(2-REQUIRED)
SCALE: NONE

NORTH

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. WORK THIS DRAWING WITH S-075.
3. FOR NOTES & REFERENCES SEE S-075.

REFERENCE DRAWINGS

FIGURE B-24

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: NONE

PROJECT NUMBER: 11962-0031

TYPICAL AIR COOLED CONDENSER FOUNDATION DETAILS

Sargent & Lundy LLC

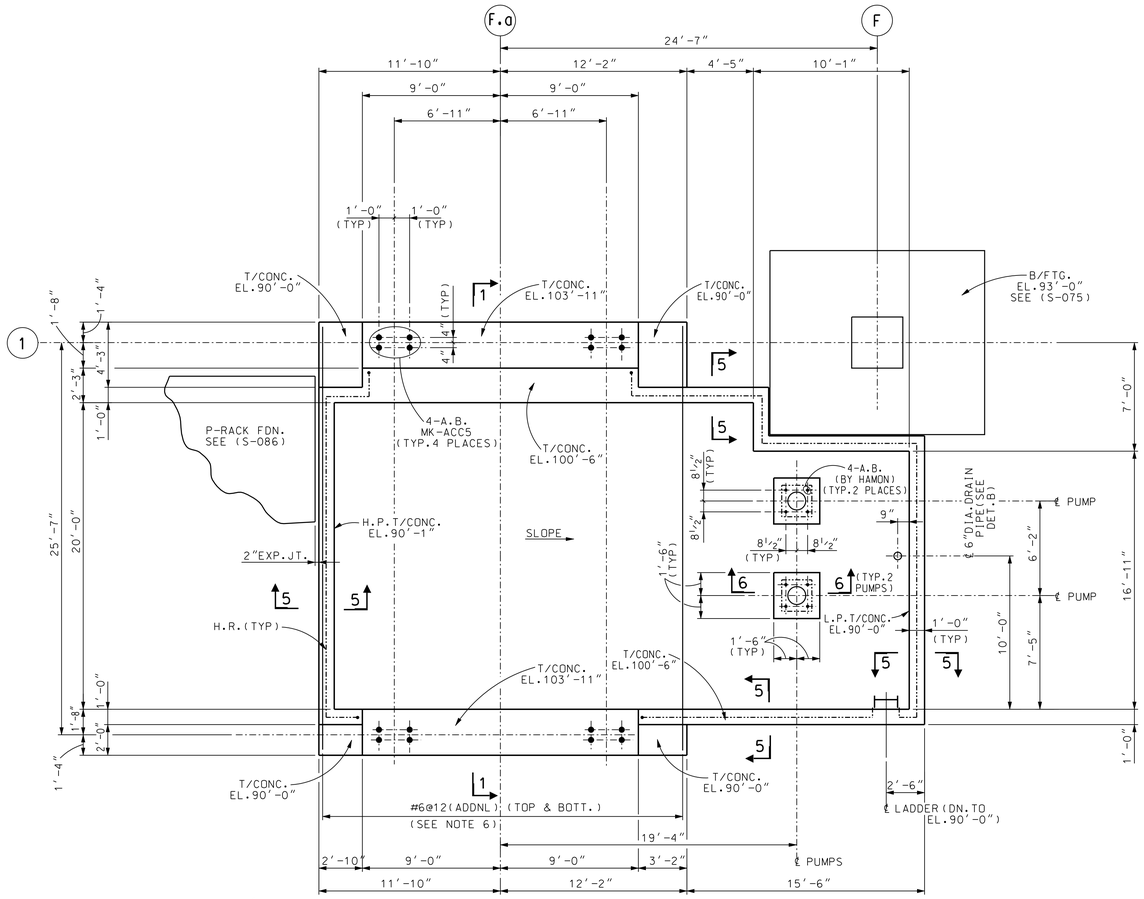
FILE I.D. s076 1.dgn

DRAWING NO. S-076

REV. A

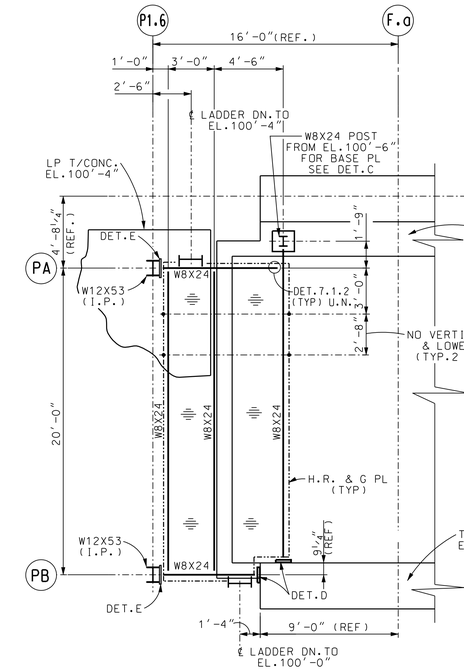
SHEET OF

FORM 005 2.4.1 REV. 1 (05/93)



DRAIN POT PUMP & DUCT SUPPORT FDN.PLAN

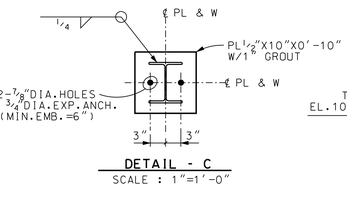
NORTH



GALLERY FRAMING PLAN

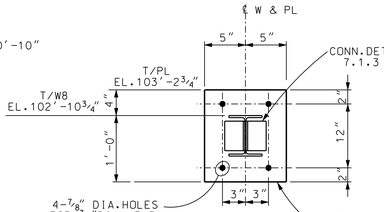
T/1¼" GRATING EL.103'-0"
T/S EL.102'-10¾"
FOR CONN.DETS.SEE S-010

NORTH



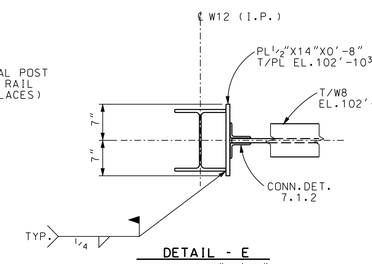
DETAIL - C

SCALE : 1"=1'-0"



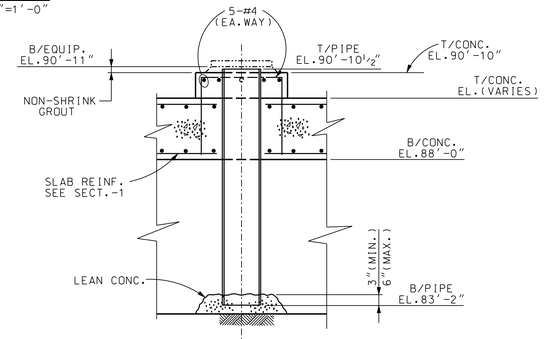
DETAIL - D

SCALE : 1"=1'-0"



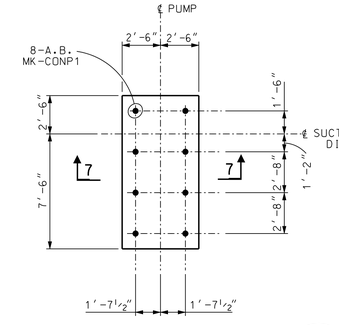
DETAIL - E

SCALE : 1"=1'-0"



SECTION - 6

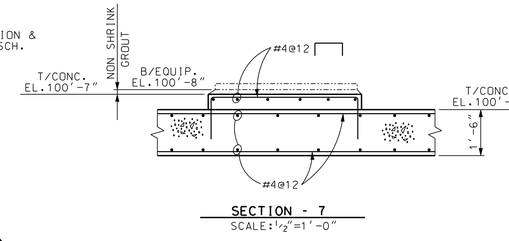
SCALE:½"=1'-0"



CONDENSATE PUMP FDN.

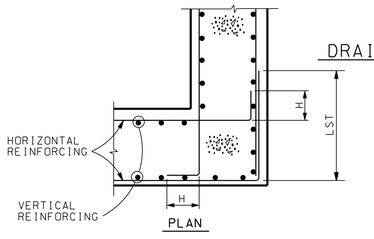
(3-REQD.)
(FOR LOCATION SEE S-075)

NORTH



SECTION - 7

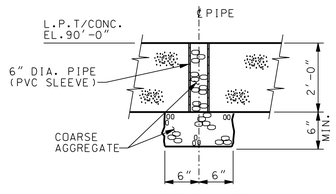
SCALE:½"=1'-0"



PLAN

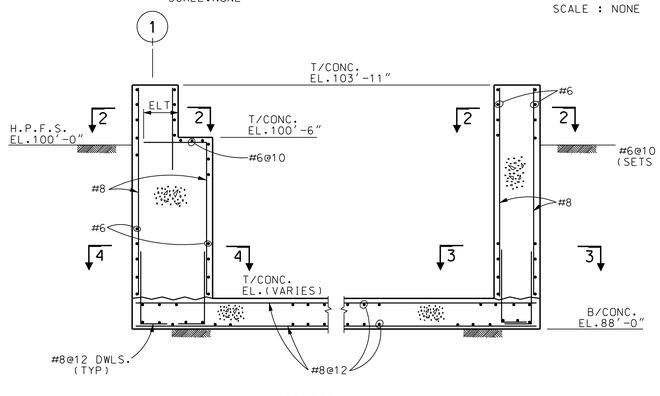
DETAIL - A

TYPICAL WALL CORNER REINF.
SCALE:NONE

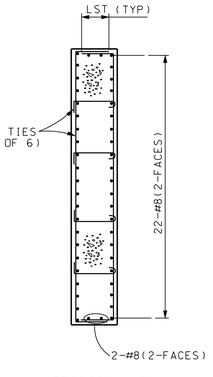


DETAIL - B

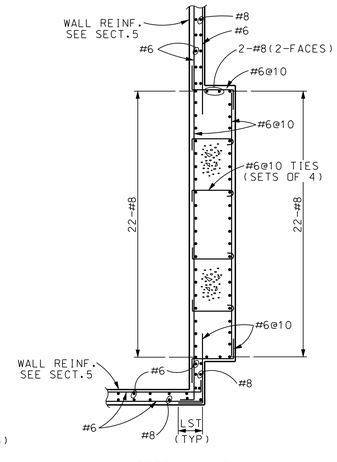
SCALE : NONE



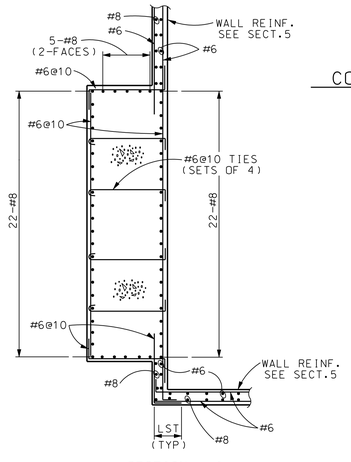
SECTION - 1



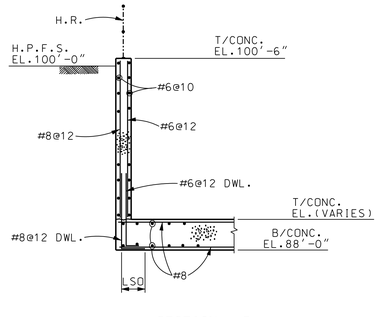
SECTION - 2



SECTION - 3



SECTION - 4



SECTION - 5

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SPEC. B-4046.
2. WORK THIS DRAWING WITH S-075.
3. FOR NOTES SEE S-075.
4. FOR ANCHOR BOLT SCHEDULE & DETAILS SEE S-004.
5. FOR HANDRAIL & LADDER DETAILS SEE S-014 THRU S-016.
6. ALTERNATE ADDITIONAL BARS WITH MAIN REINFORCING AT EQUAL SPACING.
7. MINIMUM INSIDE DIAMETER OF PIPE SHALL BE 14".
8. CONTRACTOR SHALL TAKE CARE IN BACKFILLING AROUND THE PIPES TO AVOID DAMAGING THE PIPES.

REFERENCE DRAWINGS

FIGURE B-25

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: ¼"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL AIR COOLED COND. AREA FOUNDATION DETAILS

FILE I.D. SO77 1.DGN

Sargent & Lundy LLC

DRAWING NO. S-077 REV. A

SHEET OF

FORM 005 2.6.1 REV. 1 (05/93)

℄ COMPRESSOR SUPPORT

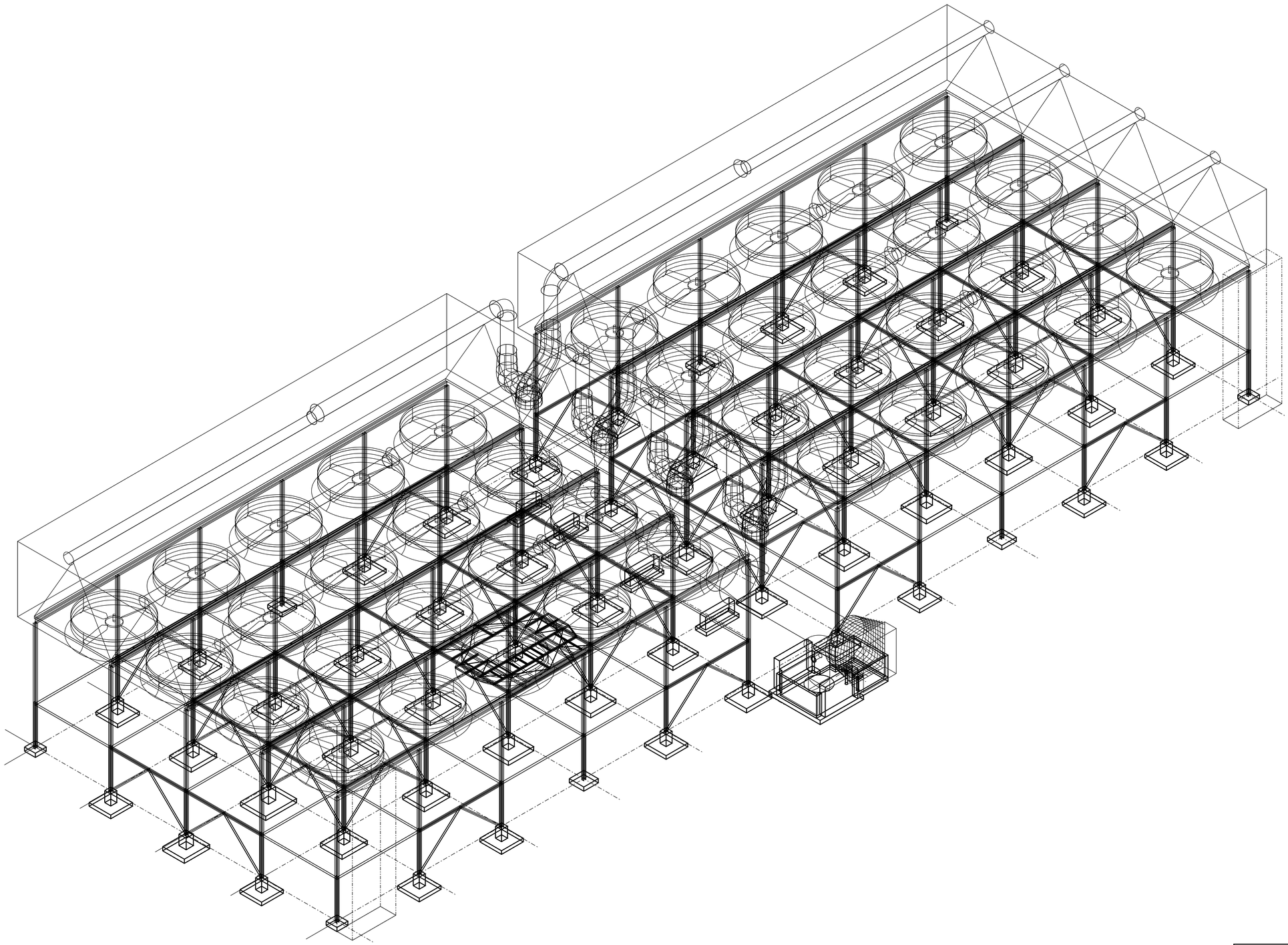


FIGURE B-26

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

FILE I.D. SK-1.DGN

SCALE: 1/4"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL
AIR COOLED CONDENSER

Sargent & Lundy LLC

DRAWING NO.	REV.
SK- 1	A
SHEET OF	

(SDM 005 2.6.1 REV. 1 05/93)

℄ COMPRESSOR SUPPORT

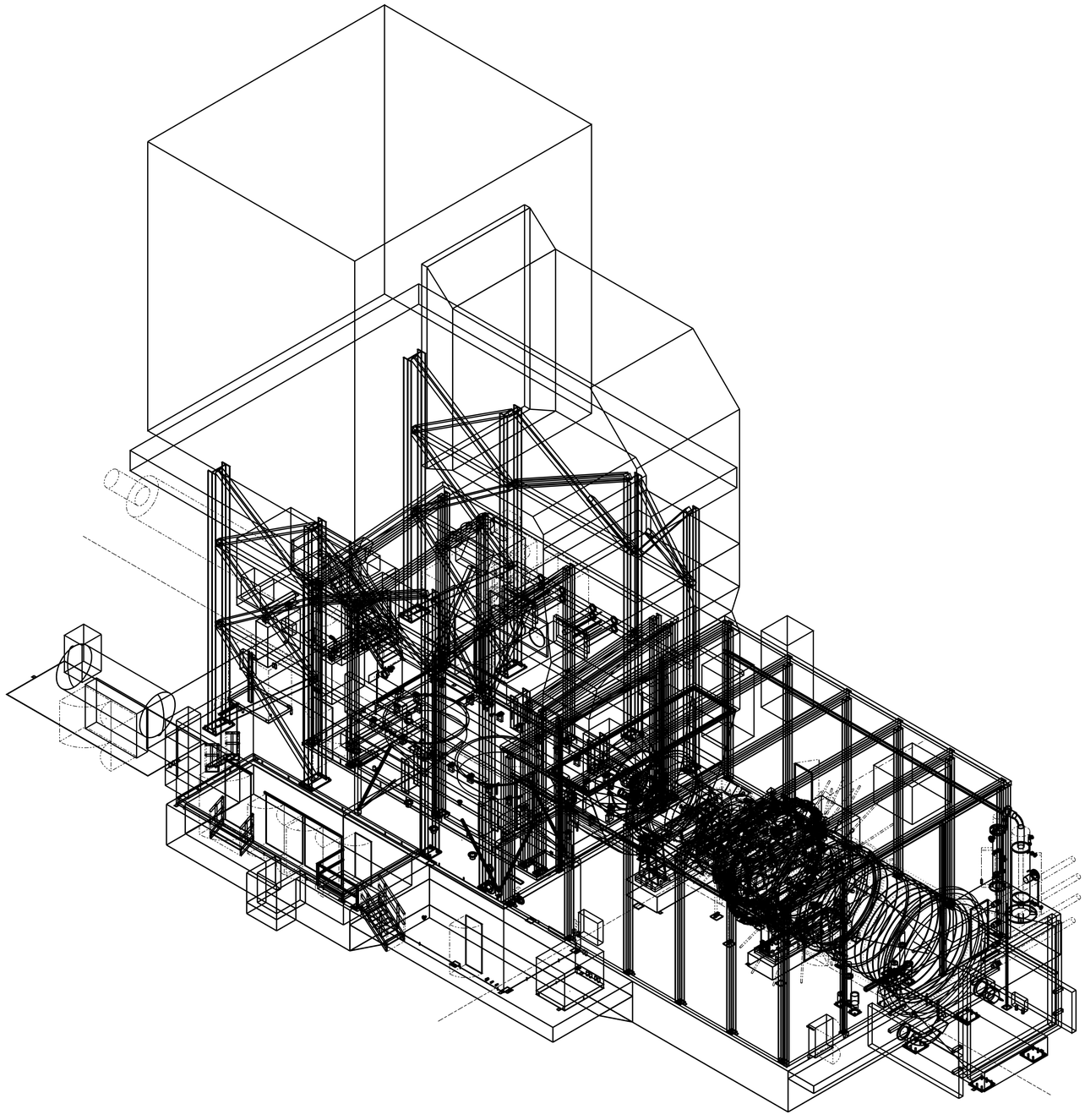


FIGURE B-27

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/4"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL COMBUSTION TURBINE

FILE I.D.

Sargent & Lundy LLC

DRAWING NO.	REV.
SK-2	A

SHEET OF

FORM 005 2.6.1 REV. 1 (05/93)

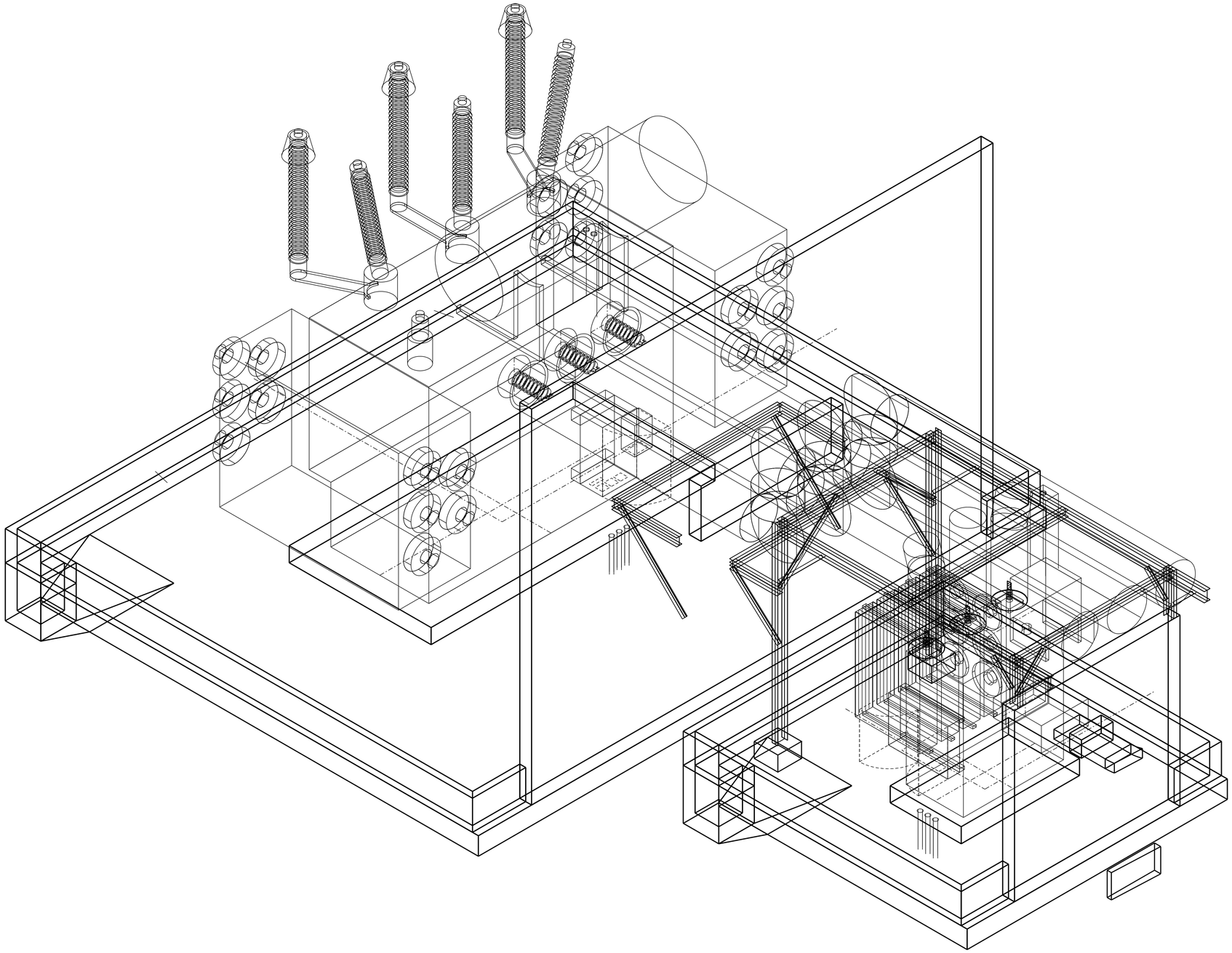


FIGURE B-28

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/4"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL
ST MAIN & AUX. TRANSF.

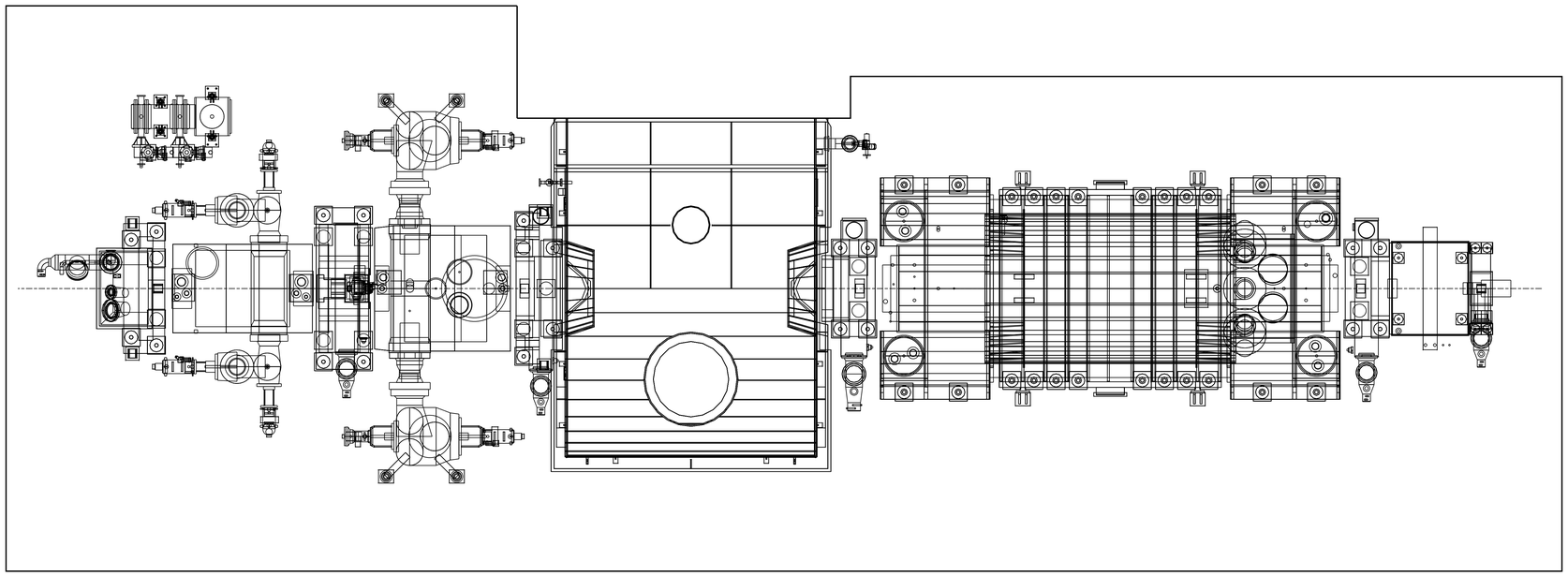
FILE I.D.

Sargent & Lundy LLC

DRAWING NO.	REV.
SK- 3	A
SHEET OF	

FORM 405.2.6.1 REV. 1 (05/93)

℄ COMPRESSOR SUPPORT



PLAN VIEW

FIGURE B-29

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/4"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL STEAM TURBINE/GENERATOR PLAN VIEW

FILE I.D.

Sargent & Lundy LLC

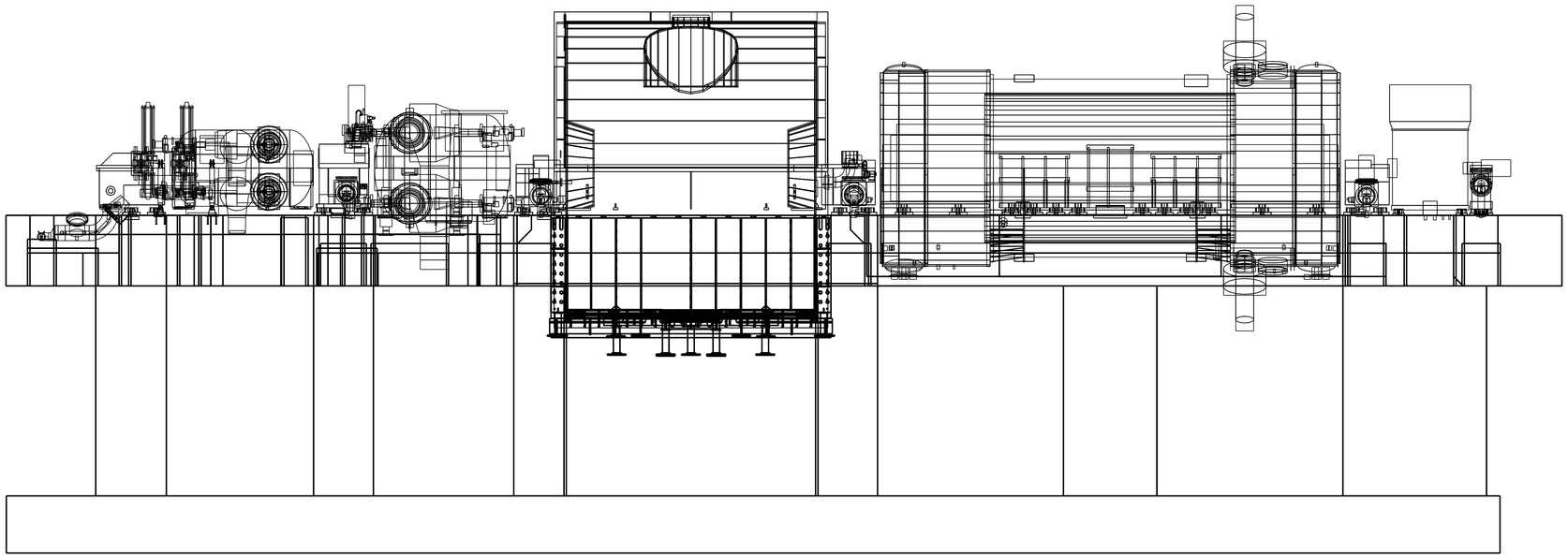
DRAWING NO.: SK-4

REV.: A

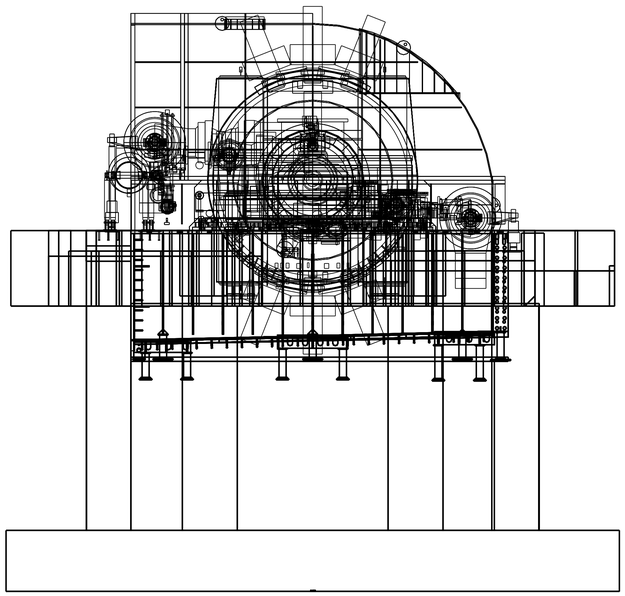
SHEET OF

FORM SDS 2.6-1 REV. 1 (05/93)

℄ COMPRESSOR SUPPORT



LONGITUDINAL SECTION



END VIEW

FIGURE B-30

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE	
	1/4"=1'-0"
PROJECT NUMBER	
	11962-003

TYPICAL STEAM TURBINE/GENERATOR SECTIONS

FILE I.D.

Sargent & Lundy LLC

DRAWING NO.	REV.
SK-5	A
SHEET	OF

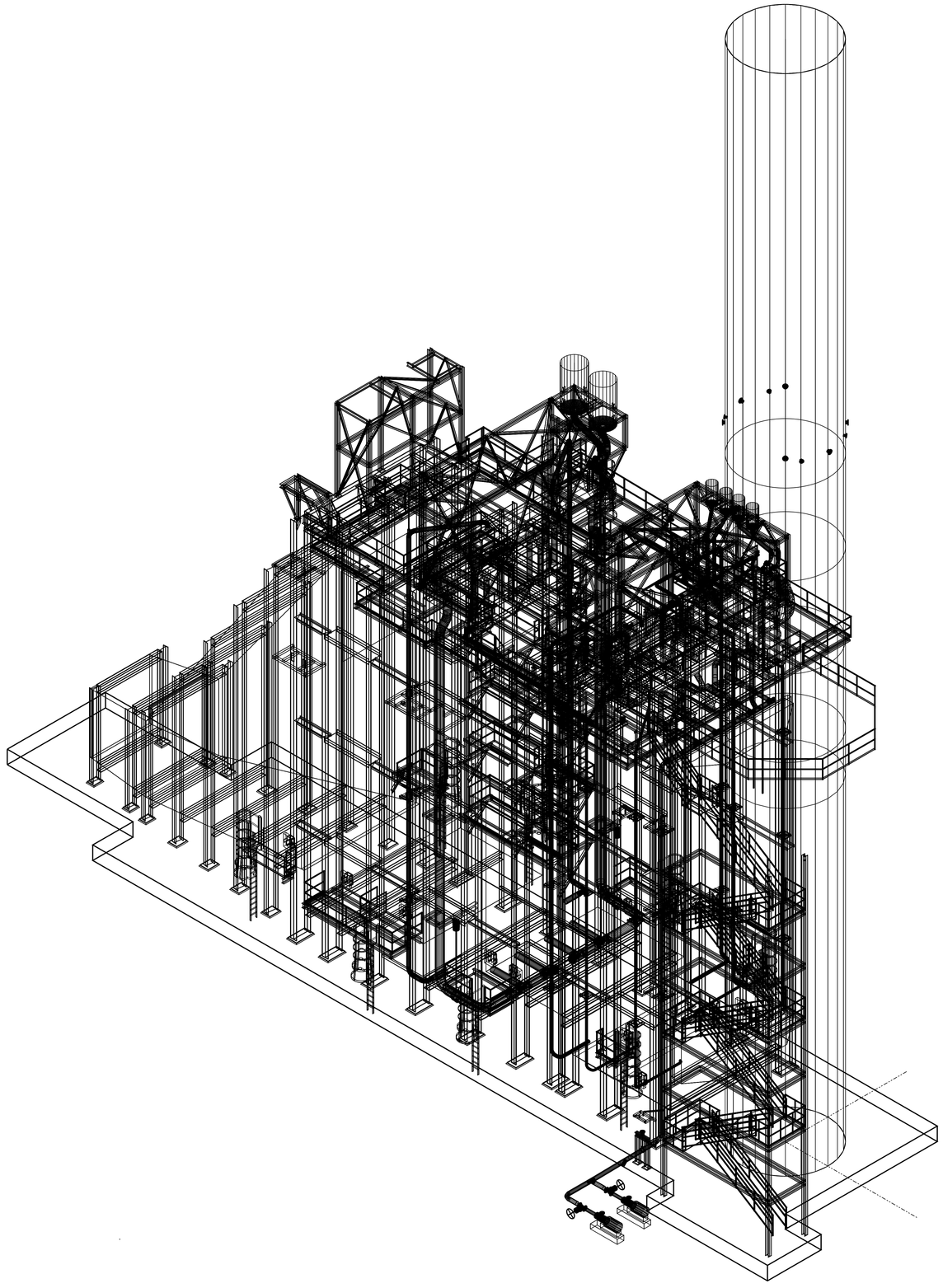


FIGURE B-31

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE	1/4"=1'-0"
PROJECT NUMBER	11962-003

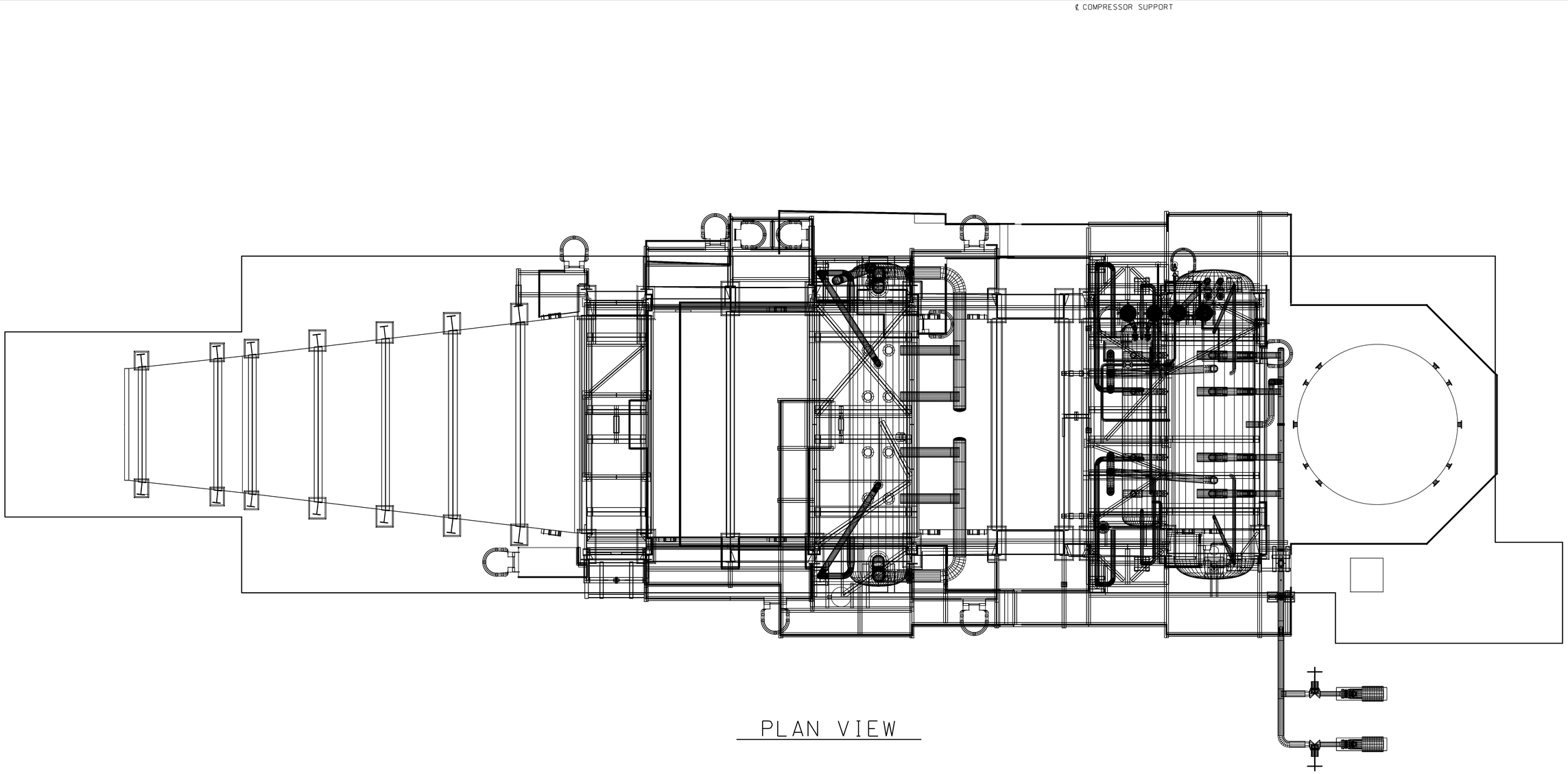
TYPICAL
HEAT RECOVERY STEAM GEN

FILE I.D.

Sargent & Lundy LLC

DRAWING NO.	REV.
SK-6	A
SHEET OF	

FORM 005 2.6.1 REV. 1 (05/93)



PLAN VIEW

FIGURE B-32

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE	$1/4"=1'-0"$
PROJECT NUMBER	11962-003

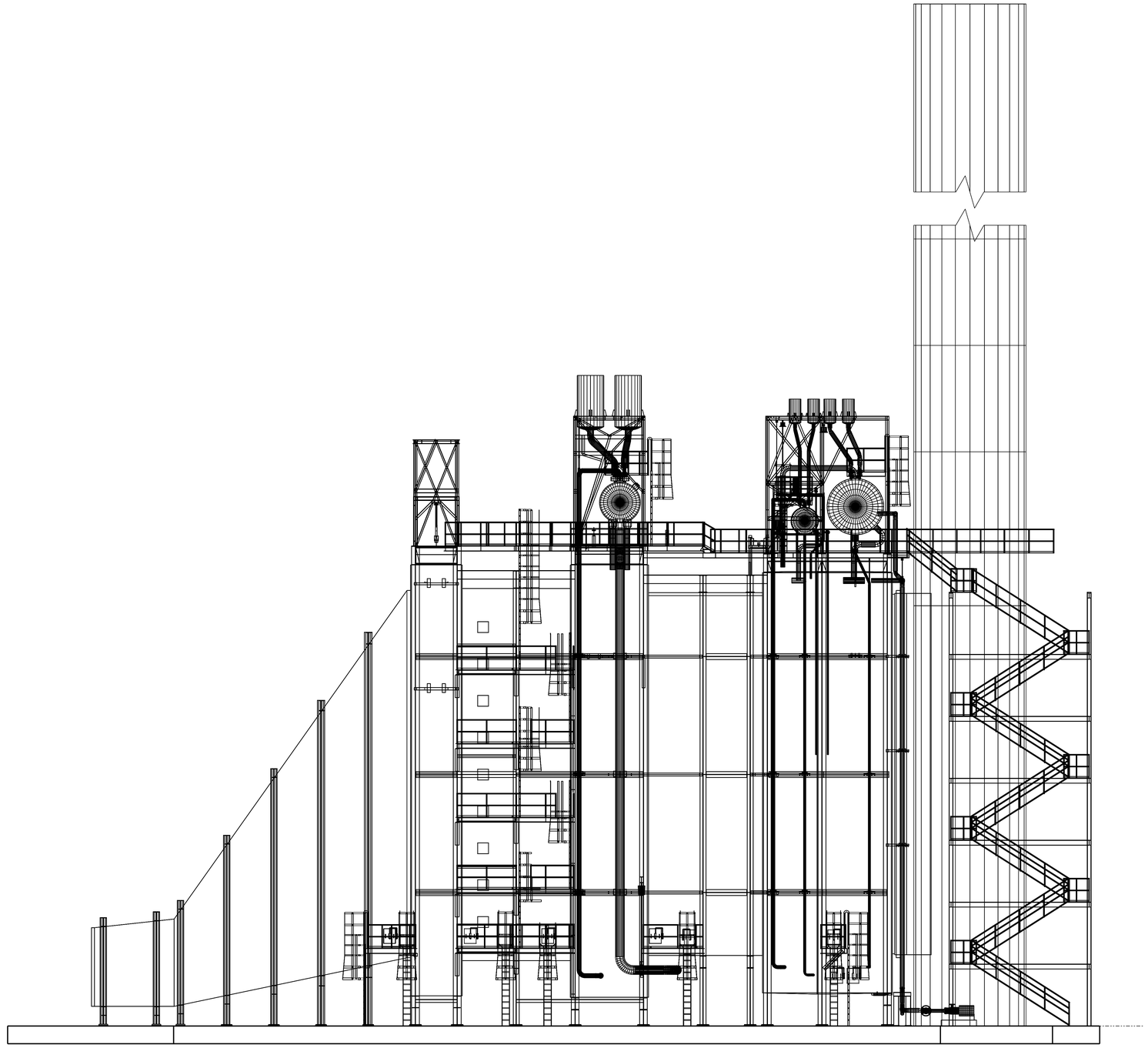
TYPICAL
HEAT RECOVERY STEAM GEN.
PLAN VIEW

FILE I.D.

Sargent & Lundy LLC

DRAWING NO.	REV.
SK- 7	A
SHEET OF	

FORM 025 2.4-1 REV. 1 (05/93)



ELEVATION

FIGURE B-33

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE	1/4"=1'-0"
PROJECT NUMBER	11962-003

TYPICAL
HEAT RECOVERY STEAM GEN.
ELEVATION

FILE I.D.

Sargent & Lundy LLC

DRAWING NO.	REV.
SK-8	A
SHEET OF	

FORM 025 2.6.1 REV. 1 (05/93)

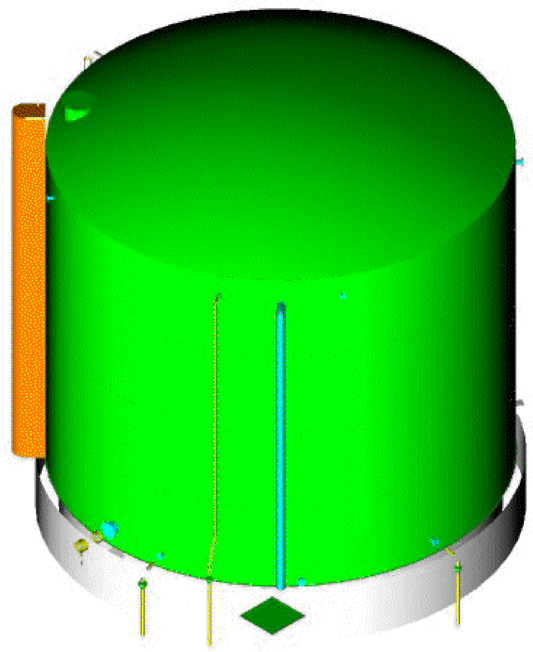


FIGURE B-34

USE FOR ILLUSTRATION ONLY - NOT FOR DESIGN

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
A	12-08-2006	L.EIDUKAS	———	———	ISSUED FOR PLANNING	

SCALE: 1/4"=1'-0"

PROJECT NUMBER: 11962-003

TYPICAL TANK

FILE I.D.

Sargent & Lundy LLC

DRAWING NO.: SK-9

REV.: A

SHEET OF

FORM 005 2.4x1 REV. 1 (05/93)