

**Technical Specification
for Design and installation of a Dry Fire Sprinkler system
in NGS Storage Warehouse No 4**

<u>REVISION NO.</u>	<u>SPEC STATUS</u>	<u>DATE</u>
3	Issued for Bid	2/15/24

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JEA Dwg Control No	Dwg No	Description
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3) FM Data Sheet 8-9: STORAGE OF CLASS 1, 2, 3, 4 AND PLASTIC COMMODITIES

4) FM Plan Drawing Sheet 7.

Technical Specification for installation of a Dry Fire Sprinkler system in NGS. Storage Warehouse No 4

1.0 SCOPE

1.1 The intent of this specification is for the design, furnish, and install of a Dry fire sprinkler system for NS Storage Warehouse No. 4 which is 53'-6" wide x 121'-6" long and 6500 square feet. The peak building height is 26.5 ft.

2.0 Work and Material To Be Furnished By Others & JEA

The following summarizes the materials and/or work to be provided by JEA:

- 2.1 Power required for air compressor
- 2.2 Power required for Horn Strobes.
- 2.3 NS Main Electric & Diesel Fire Pump Flow Test

3.0 Work and Material To Be Furnished By Contractor

The following summarizes the materials and/or work to be provided by the Contractor:

- 3.1 Furnish design services including shop drawings, calculations, product data submittals, and close-out documents. Design documents to be prepared by a NICET Certified Technician under the supervision of a Licensed Professional Engineer. Electronically signed and sealed drawings are included in this proposal for the purpose of obtaining AHJ approval and permits.
- 3.2 The Contractor shall furnish and install new dry sprinkler system per Spec Section 2.0 Fire Sprinkler System Details.
- 3.3 The Contractor shall Provide administrative and operational project management including contract management, scheduling, coordination, supervision of design, procurement, fabrication, installation safety, and QC/Document control.
- 3.4 The Contractor shall provide inspection and documentation services including inspection logs and testing reports.
- 3.5 The Contractor shall provide programming of the 14 existing FACP located at NGS due to the addition of the new sprinkler system in NS Storeroom Warehouse Bld No. 4.
- 3.6 The Contractor shall be responsible for installing power cable and conduit from the Electric panel to the new fire riser mounted air compressor. The existing Lighting Panel is located in the South West Corner of the NS Storeroom Warehouse Bldg No. 4.

4.0 Fire Sprinkler System Details

4.1 The new dry fire sprinkler system shall be designed in accordance with FM Data Sheet 8-9 for storage occupancies and FM Data Sheet 2-0 Automatic Sprinklers. The system shall also meet the requirements of NFPA 13 [2016 Edition]. Hydraulic calculations shall include 30 ea. K16.8 sprinklers flowing at 22 psi with a hose allowance of 400 gpm outside hose allowance and 100 gpm inside hose allowance. Sprinklers shall be spaced between 80 to 100 square feet per sprinkler. The building is 53'-6" wide x 121'-6" long and 6500 square feet. The peak building height is 26.5 ft.

4.2 The design proposal shall be emailed by the Contractor to FM Global Plan Review at engatlantaplanreview@fmglobal.com for them to review and approve prior to construction.

4.3 The Contractor shall perform hydraulic calculations during the bid phase of the project to confirm the existing water supply is sufficient to support the design and pressures required for the modification of the existing system piping. A 10 psi required safety margin for hydraulic calculations has been included in our preliminary calculations.

4.4 The Contractor shall install a new automatic dry system fire riser with flanged gate valve, dry pipe valve with gauges, test & drain valve, pressure type flow switch, either a water motor alarm or electric bell, and a tamper switch to be monitored by others. Piping shall be sloped in accordance with NFPA 13 for dry pipe systems.

4.5 The Contractor shall provide appropriately sized piping for the new system to be confirmed via final hydraulic calculations and a water flow test once a site survey has been completed. All new grooved pipe shall be galvanized schedule 10 piping with galvanized finish on the fittings. Fittings may be welded, threaded or grooved and will be ductile iron, malleable iron, or cast iron with factory finish. The Contractor shall include up to 96 upright sprinklers at the ceiling level. Should additional sprinklers be required below obstructions it shall be a change order to the contract. All Sprinklers will be standard coverage, standard response brass upright sprinklers rated at 280°F temperature rating.

4.6 The Contractor shall include hydrostatic pressure testing and operational testing of the existing system.

4.7 The Contractor shall furnish new piping fabricated out of carbon steel piping galvanized at the factory. FM Global requires galvanized pipe to be used for all dry systems and the piping must be hot dipped by the pipe manufacturer and not sprinkler installer (or local galvanizing company). [The galvanizing shall be removed at each weld-o-let location on the piping. The galvanized coating shall be repaired with a cold galvanized process of coating the outlets and damaged galvanizing with ZRC® Cold Galvanizing Repair Compound.](#)

4.8 The Contractor shall include a new 1½" manual system for a new 1½" fire hose valve to be located on an exterior wall inside of the existing storage warehouse. Hose, nozzle, reel, and reel cover not included or required. NFPA 13 Section 12.2 states that a hose station shall be provided where required by the authority having jurisdiction (AHJ).

4.9 The Contractor shall include a new riser mounted air compressor with air maintenance device and required dryers and filters. Compressor will be wired in by others.

4.10 The Contractor shall add two manual pull stations, up to 3 new horn strobes mounted at the roof level, and modules for monitoring two flow switches, and two low air pressure switches. All new monitoring and notification points shall be connected to the existing Siemens Fire Alarm Control Panel in located in the adjacent Maintenance Managers Office Building No. 68.

CONSTRUCTION DRAWINGS FOR

NORTHSIDE GENERATING STATION

INDEX OF DRAWINGS

DWG. No.	SHEET No.	TITLE
CS	1 of 11	COVER SHEET
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A-3	6 of 11	RIDGE VENT, ROOF EXHAUST, LOUVER, SKYLIGHT & CANOPY DETAILS
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1370-89

STEEL STORAGE BUILDING

POWER ENGINEERING

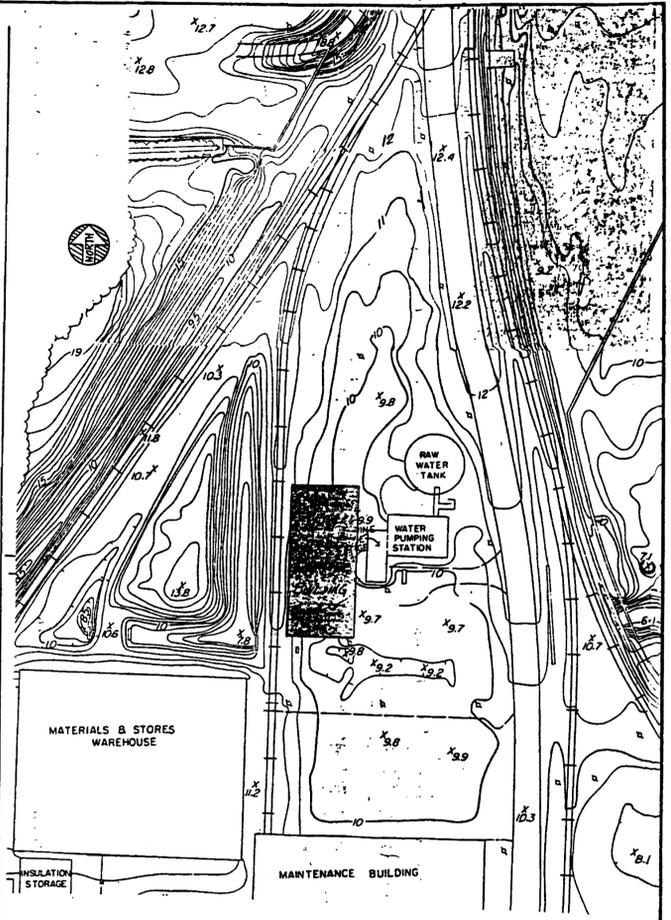
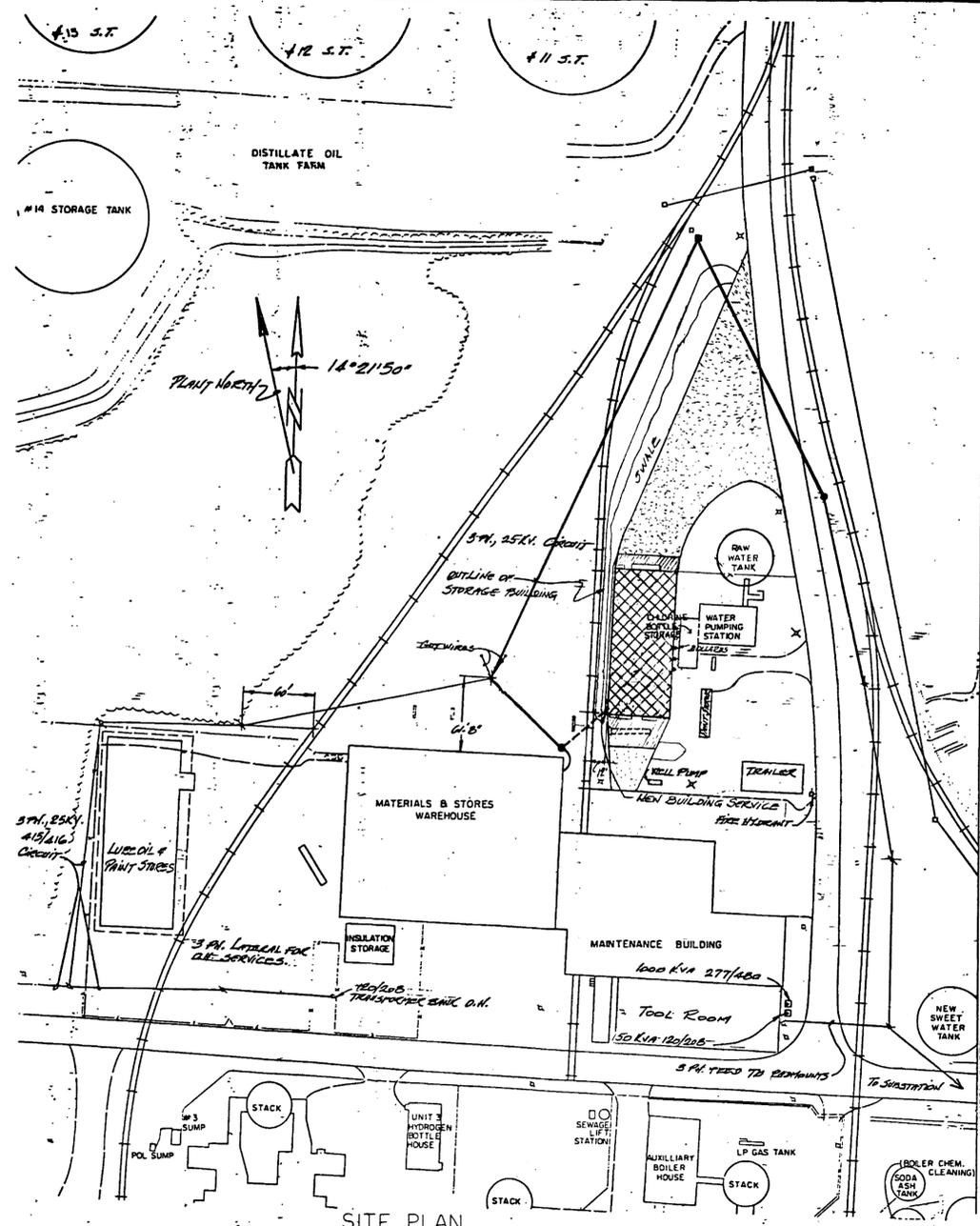
JACKSONVILLE ELECTRIC AUTHORITY

015239

SHEET 1 of 11

REVISION "AS BUILT" SHEETS 3, 4, 5, 6, 7, 8, 10 & 11 L.L.S. 11-15-80

1300137089



TOPOGRAPHIC SITE PLAN

- LEGEND:
- STORAGE BUILDING
 - NEW UNDERGROUND (UNDER R.R.) POWER LINES (BY CONTRACTOR)
 - EXISTING OVERHEAD POWER LINES (NOTE ELEVATIONS FROM GRAUND)
 - WOODEN POLES (PENNAC & TELEPHONE)
 - CONCRETE POWER PILES
 - STEEL POWER PILES
 - RECYCLED CONCRETE FOR PAV. (UNUSED)
 - PAVEMENTS
 - CONCRETE PAVEMENT (NEW)
 - ASPHALT PAVEMENT (NEW)
- OPTION 4A

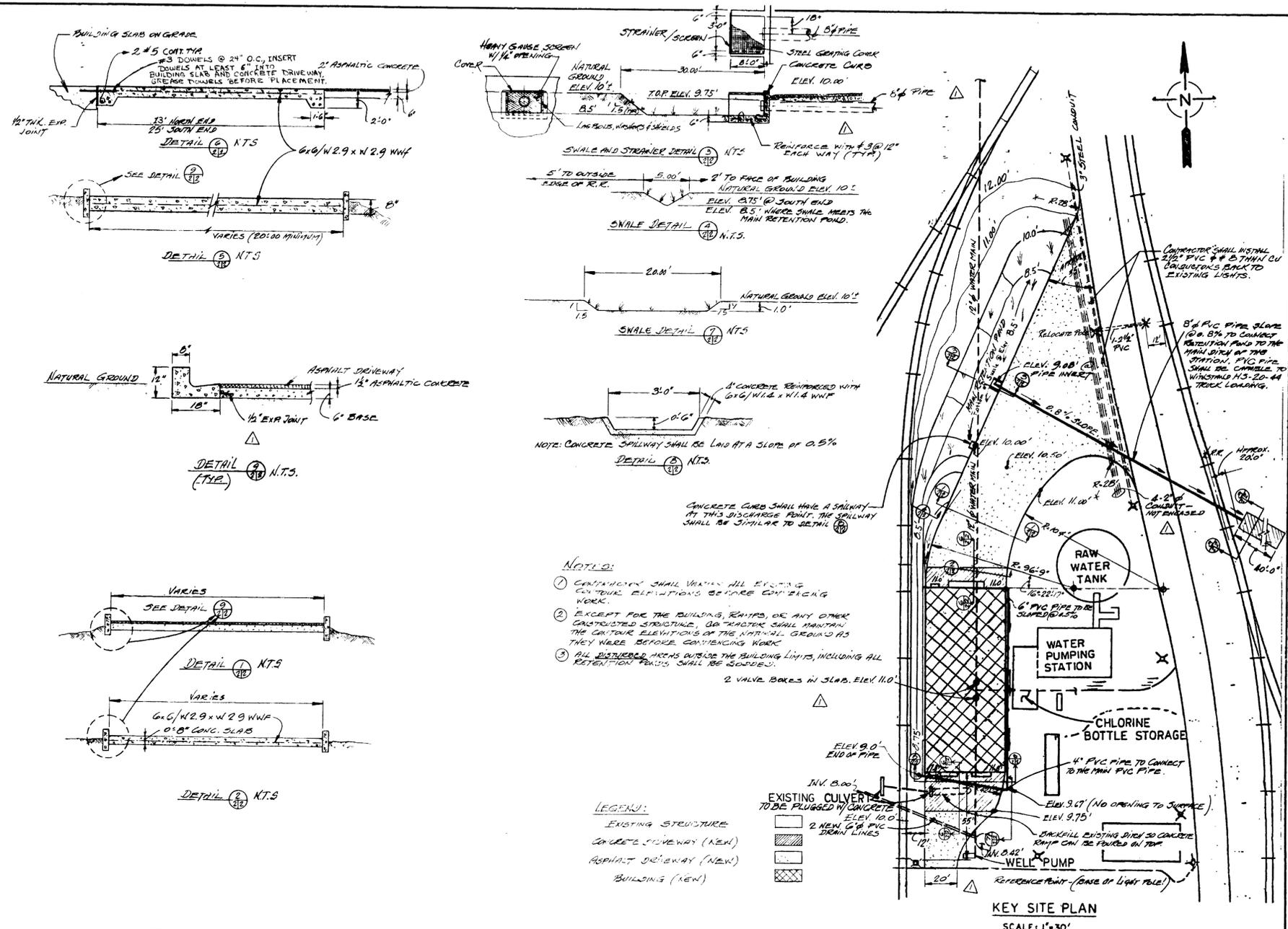
NOTE: FOR REFERENCE SEE DWG. NO. A-1 015240

ENGINEERING RECORD				DRAWING STATUS				PROJECT INFORMATION	
NO.	REVISION	DATE	BY	CH'D	APP'D	ISSUED	DATE	BY	DATE
						PRELIMINARY	10-1-89	L. L. SERRA	6-89
						FOR CONSTRUCTION			
						DESIGNED		L. GABRIELI / F. SALEM	6-89
						CHECKED		L. GABRIELI / F. SALEM	7-89
						APPROVED			
						APPROVED			

COMMENTS IN 1-8-89 MEETING INCORPORATED
 REVISIONS: 1-8-89 L.L.S. F.J.S.
 10-00 L.L.S. F.J.S.

NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED AND DATED. DESTROY ALL PRINTS BEARING EARLIER DATE AND/OR REVISION DATE.

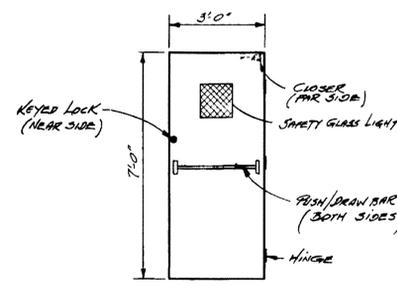
NORTH SIDE GENERATING STATION
 STEEL STORAGE BUILDING
 POWER LINE ROUTING AND TOPOGRAPHIC SITE PLAN.
 JACKSONVILLE ELECTRIC AUTHORITY
 JACKSONVILLE, FLORIDA
 SCALE: 1" = 50'
 POWER ENGINEERING DEPARTMENT
 W.C.N.G. 1370-89
 DRAWING NO. C-1
 SHEET NO. 2 of 11



ENGINEERING RECORD				DRAWING STATUS				NORTHSIDE GENERATING STATION STEEL STORAGE BUILDING SITE PLAN	015241	W.D.N.O. 1370-89
NO.	REVISION	DATE	BY	ISSUED	DATE	BY	DATE			
				PRELIMINARY	10/27/89	DRAWN	L. J. SERRA	10/89		
A	REVISED "AS BUILT"	11/28/89	L.L.S.	FOR COMMENTS		TRACED				
B	COMMENTS OF 11-8-89 MEETING INCORPORATED	12/29/89	L.L.S.	APPROVED FOR CONSTRUCTION		DESIGNED	L. GABRIEL	10/89	C-2	
A	COMMENTS OF 1-4-90 MEETING INCORPORATED	1/22/90	L.L.S.	REVISED AND APPROVED FOR CONSTRUCTION		CHECKED	GABRIEL	2-20		
				NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED AND DATED. DESTROY ALL PRINTS BEARING EARLIER DATE AND/OR REVISION DATE.		APPROVED				

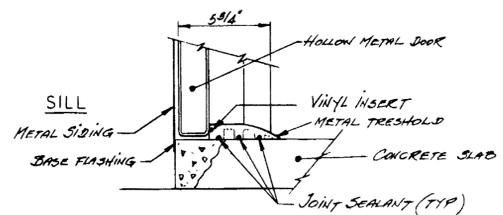
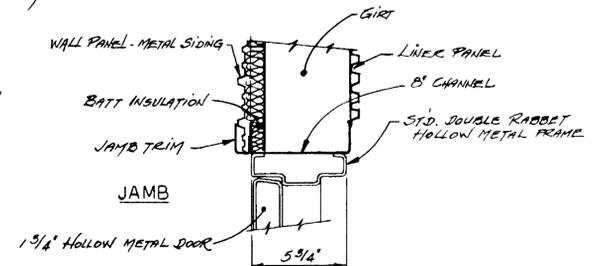
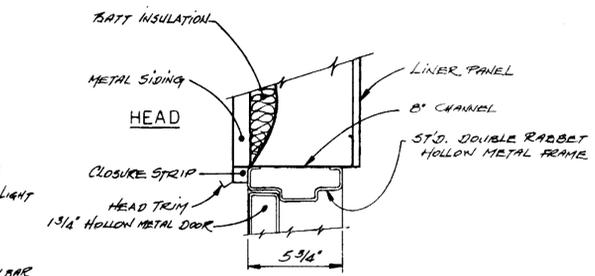
JACKSONVILLE ELECTRIC AUTHORITY
JACKSONVILLE, FLORIDA
POWER ENGINEERING DEPARTMENT

SCALE: AS NOTED
SHEET NO. 3 OF 11

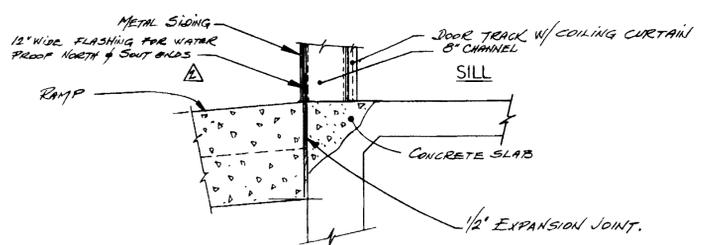
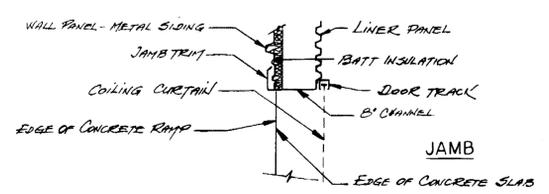
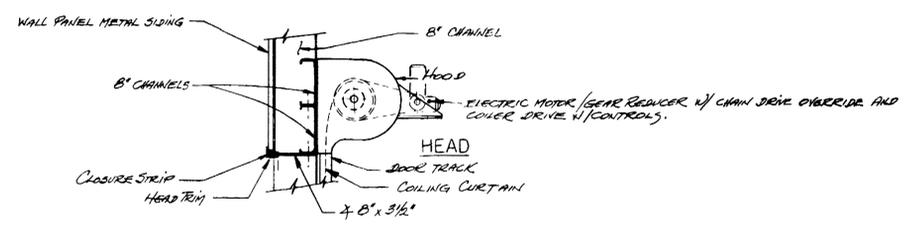


EXTERIOR SINGLE PERSONNEL DOOR 3'x7' - WITH LIGHT WIND SAFETY GLASS, WITH PUSH/DRAIN BAR, CLOSER INSIDE, DOOR OPENER AND A SEPARATE KEYS LOCK ON THE OUTSIDE.
 NOTE: KEY AND LOCK TO MATCH "MASTER" TO BE LOANED FOR LOCKSMITH WORK.

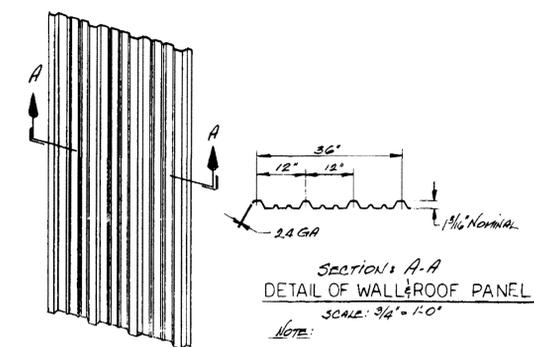
DOOR ELEVATION
(N.T.S.)



EXTERIOR DOOR DETAILS (N.T.S.)



ROLL-UP DOOR DETAILS
SCALE: 1" = 1'-0"



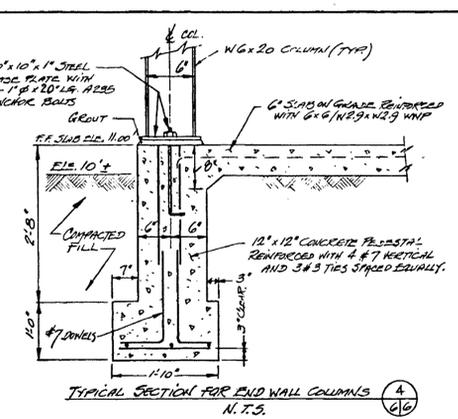
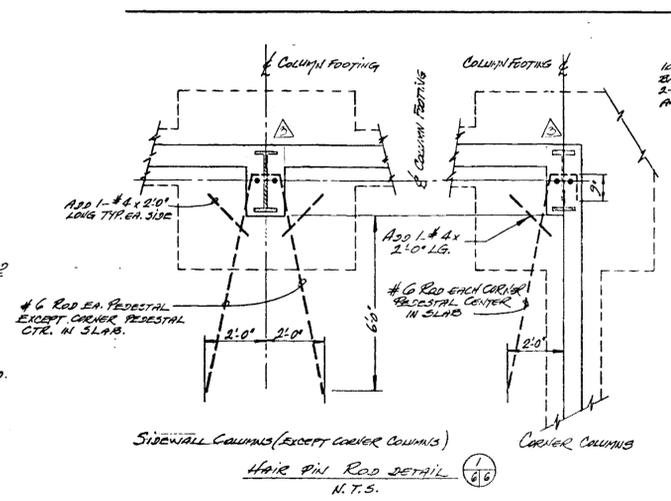
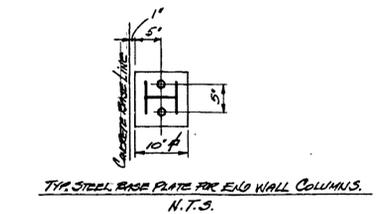
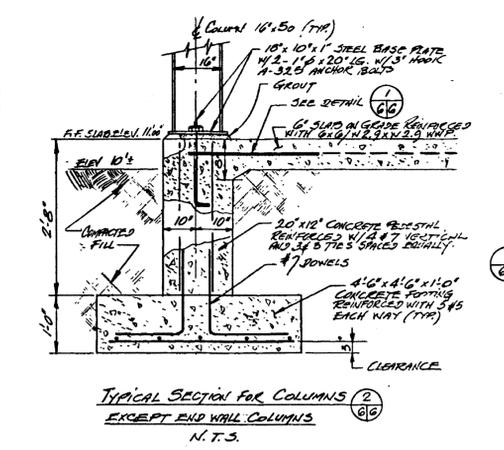
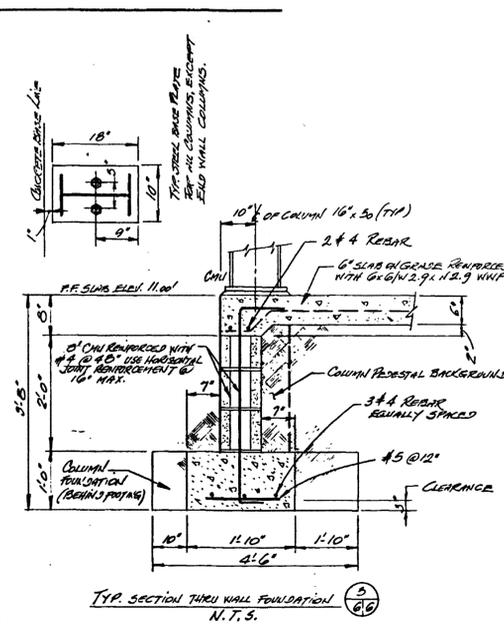
PICTORIAL VIEW OF METAL SIDING WALL & ROOF PANEL

SECTION A-A
DETAIL OF WALL & ROOF PANEL
SCALE: 3/4" = 1'-0"

NOTE:
1. WALL & ROOF PANELS ARE GALVANIZED STEEL (ASTM A-486 GRADE A) FINISHED WITH TWO COATS OF BAKED ENAMEL.

ENGINEERING RECORD				DRAWING STATUS				NORTHSIDE GENERATING STATION STEEL STORAGE BUILDING ROLL-UP, EXTERIOR PERSONNEL DOOR, WALL AND ROOF PANEL DETAILS		W.O. NO. 1370-89
ISSUED	DATE	BY	DATE	DRAWN	BY	DATE	DESIGNED	BY	DATE	DRAWING NO. A-2
PRELIMINARY FOR ESTIMATE AND/OR APPROVAL	7-7-89	L.L. SZABO	6-89	TRACED			CHECKED	L. GABRIEL	6-89	SHEET NO.
APPROVED FOR DISTRIBUTION				DESIGNED	L. GABRIEL	6-89	APPROVED	I. GABRIEL	7-90	5 of 11
REVISED AND APPROVED FOR CONSTRUCTION				CHECKED	I. GABRIEL	7-90	APPROVED			
NO. 1	REVISED AS BUILT	10-20-90	L.L.S.							
NO. 2	CHANGES OF 1-8-90 MATHING INCORPORATED	12-20-90	L.L.S.	R.J.B.	1-8-91					

015243

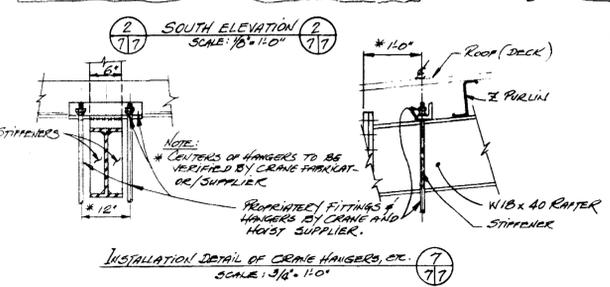
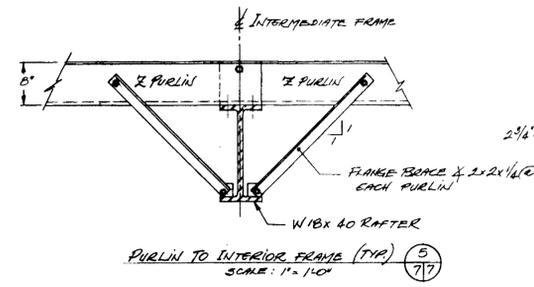
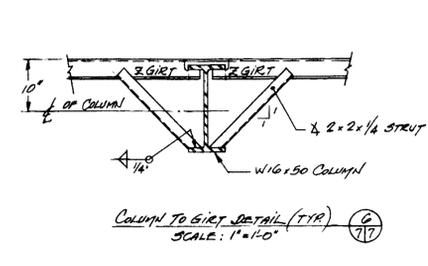
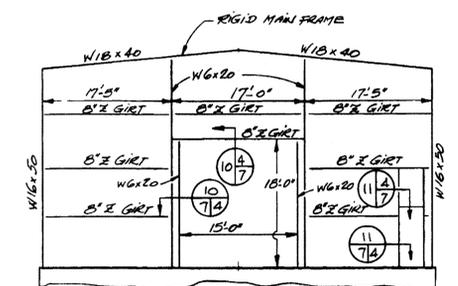
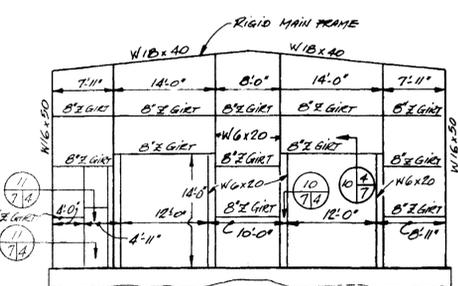
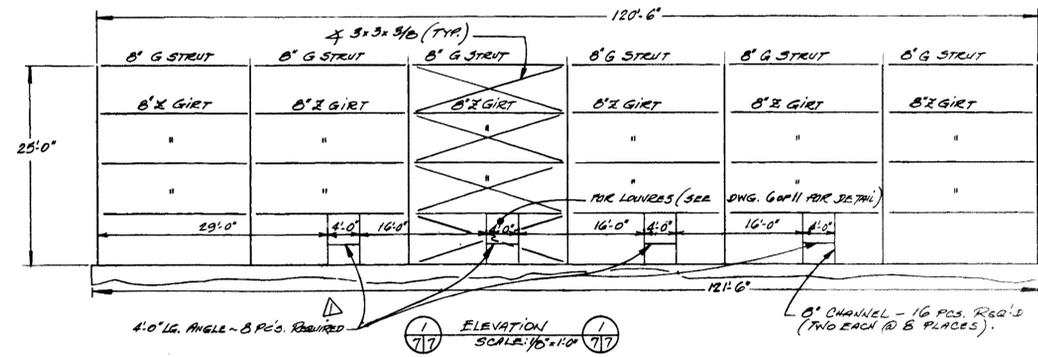
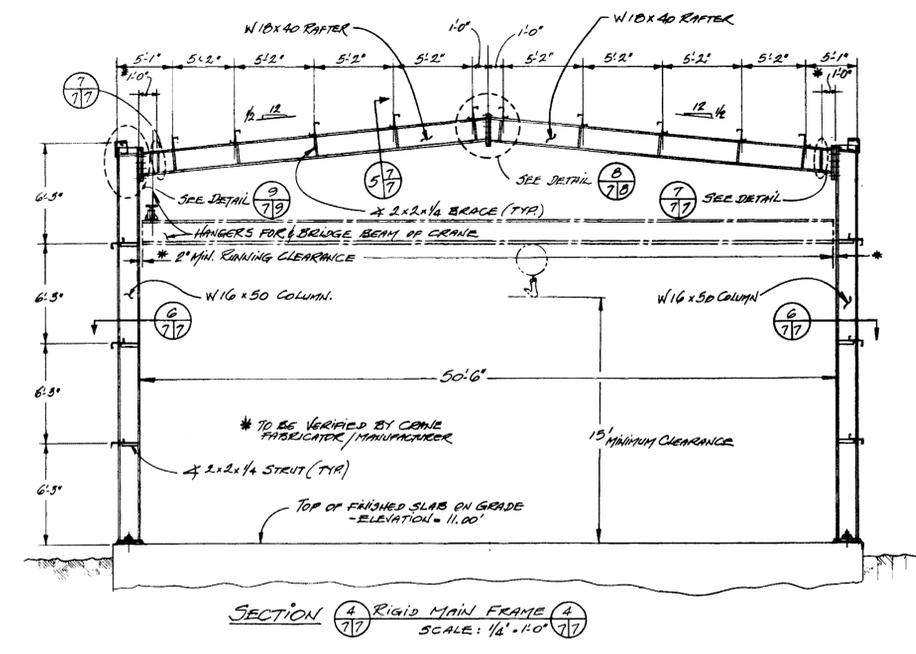
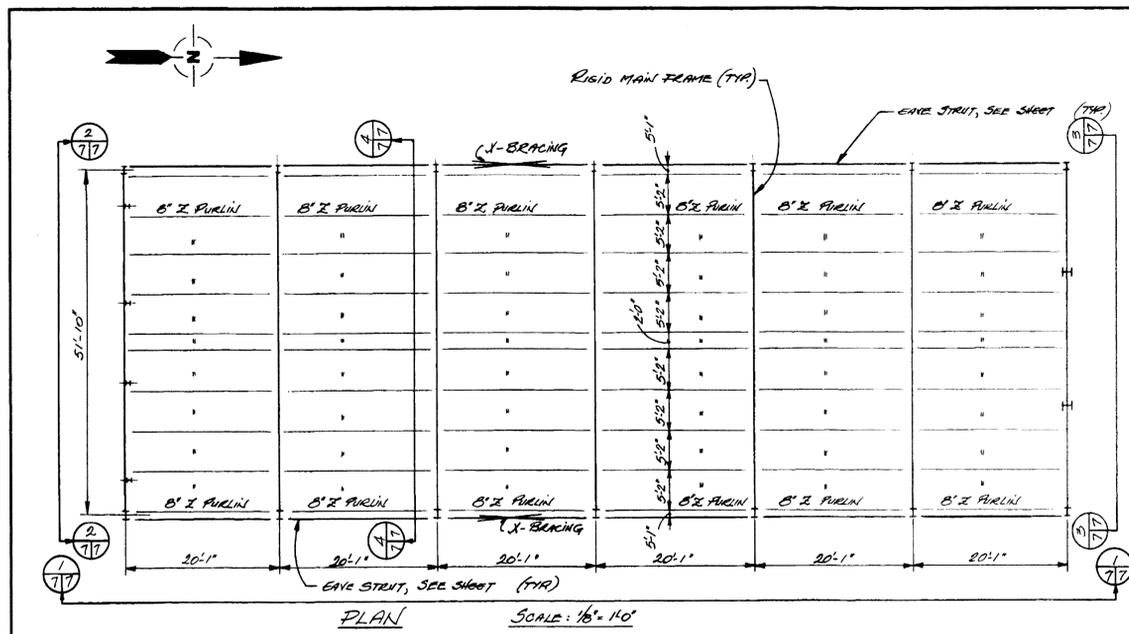


- DESIGN CRITERIA**
- Live Loads
 - Roof.....20 #/Sq. Ft.
 - Crane.....10,000 lb
 - Wind Loads
 - Wind Velocity.....105 Mph
 - Seismic Load (Per ANSI A58.1).....Zone 1
 - Allowable Unit Stresses
 - Concrete (Design Per Current Edition ACI)
 - All Concrete..... $f'_c = 4,000$ Psi
 - Reinforcing Steel..... $f_y = 60,000$ Psi
 - Anchor Bolts.....ASTM-A 325
 - Concrete Masonry Compressive Strength..... $f'_m = 1,350$ Psi
 - Mortar Compressive Strength..... $f'_m = 1,800$ Psi
 - Structural Steel (Design Per Current Edition AISC)
 - All Steel ASTM A36 Unless Otherwise Noted.
 - Soil Bearing Capacity.....3,000 Psf
- GENERAL STRUCTURAL NOTES**
- Unless otherwise shown on drawings, minimum cover for reinforcing steel shall be as follows:
 - Footings.....3"
 - Beams (To Ties).....1-1/2"
 - Slabs on Grade.....Centered
 - All reinforcing shall be held securely in position with standard accessories during placing of the concrete.
 - Splices in reinforcing where permitted shall be as follows:
 - Welded Wire Fabric.....6"
 - Temperature Reinforcing.....12"
 All other in accordance with ACI for the type indicated.
 - Provide 1/4" preswelled expansion joint material where slab on grade is poured around columns and against walls, unless otherwise shown or noted.
 - Minimum size of all fillet welds shall conform to AISC specifications.
 - All welds along the length of members indicated on architectural or structural drawings but not sized shall be a minimum of 3/16 inch.
 - All structural openings around or affected by mechanical, electrical, and plumbing equipment shall be verified with equipment purchased before proceeding with structural work affected.
 - See architectural, mechanical, electrical and plumbing drawings for openings, sleeves, etc., not shown on structural drawings.
 - Verify all existing conditions and dimensions prior to proceeding with construction.
 - Steel beam erection shall take advantage of mill camber to minimize dead load deflection.
 - Beam connections:
 - (A) All connections shall be high strength bolts, minimum 7/8" diameter, ASTM A325, unless noted otherwise.
 - Metal deck shall be continuous over three (3) spans minimum.
 - Metal deck shall be 1-3/16" 24 gage with a minimum section modulus of 0.050 in³ galvanized.
 - Soil under footing locations shall be compacted to 97% maximum density.
 - If unstable or otherwise undesirable soils are discovered, the Engineer shall be notified.

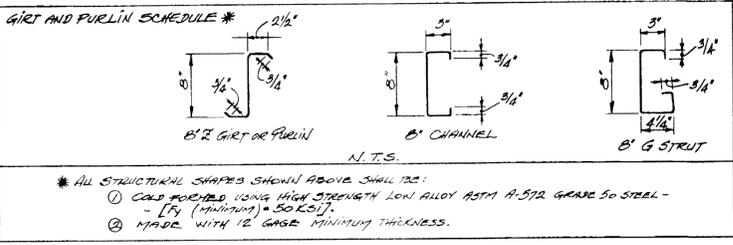
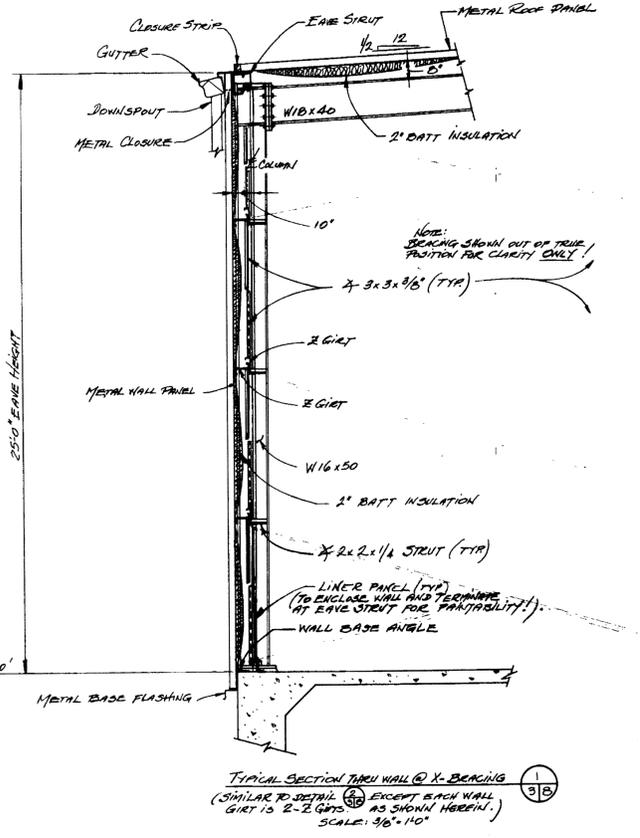
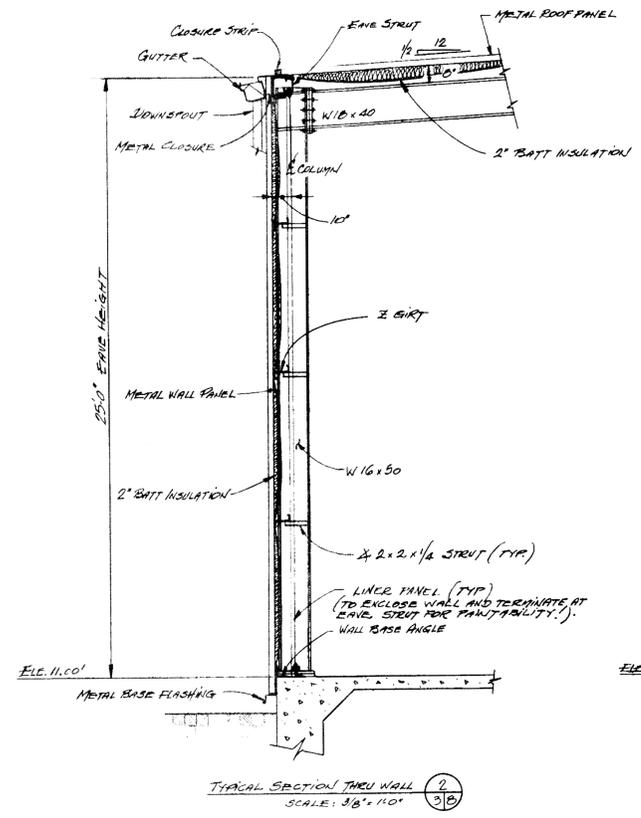
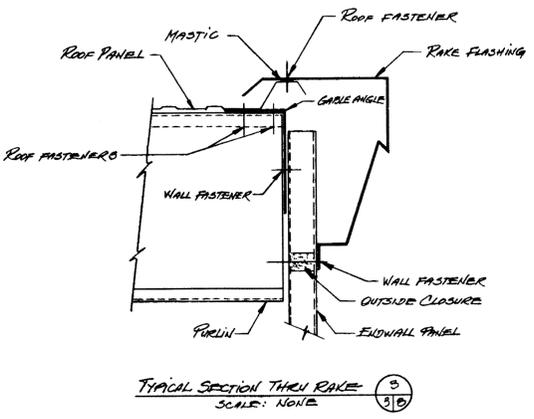
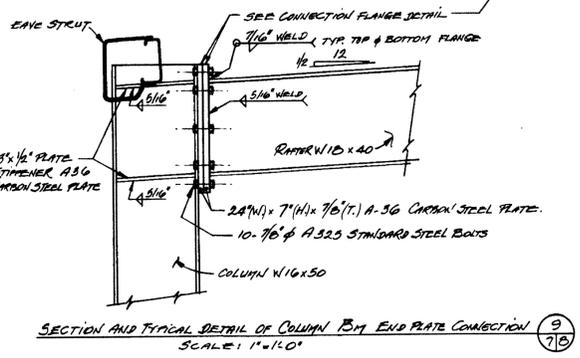
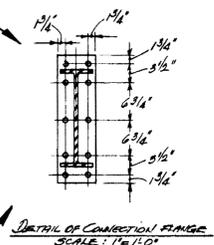
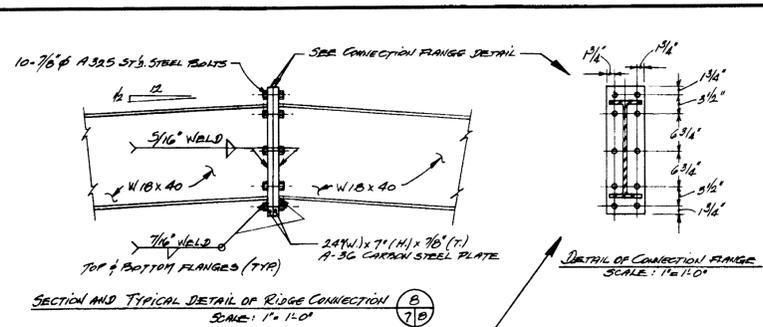
ENGINEERING RECORD				DRAWING STATUS		NORTHSIDE GENERATING STATION - STEEL STORAGE BUILDING FOUNDATION PLAN AND DETAILS	JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FLORIDA	SCALE 1/8" = 1'-0"	POWER ENGINEERING DEPARTMENT	SPEC. NO.
NO.	REVISION	DATE	BY	CH'D	APP'D					
			ISSUED		DATE	BY	DATE			
			PRELIMINARY		DATE	DRAWN	DATE			
			FOR COMMENTS AND/OR APPROVAL			TRACED				
			APPROVED FOR CONSTRUCTION			DESIGNED				
			REVIEWED AND APPROVED FOR CONSTRUCTION			CHECKED				
			NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED AND DATED DESTROY ALL PRINTS BEARING EARLIER DATE AND/OR REVISION DATE.			APPROVED				

015245

W.D.N.O.
1370-8
DRAWING NO.
S-1
SHEET NO.
7 of 11



ENGINEERING RECORD				DRAWING STATUS				NORTHSIDE GENERATING STATION STEEL STORAGE BUILDING STRUCTURAL FRAMING PLAN & DETAILS		JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FLORIDA	
ISSUED	DATE	BY	DATE	TRACED	DATE	SCALE: AS SHOWN		W.C.M.	1370-89		
PRELIMINARY (100%)	2/17/89	L.L. SZARBO	8-89	DESIGNED	8-89	POWER ENGINEERING DEPARTMENT		SPEC. NO.	8 of 11		
APPROVED FOR SUBMITTAL		L. GABRIEL	8-89	CHECKED	8-89			DRAWING NO.	S-2		
REVISED AS BUILT	11.5.91	L.L.S.		APPROVED				SHEET NO.			
NO.	REVISION	DATE	BY	CH'D	APP'D						



015247

ENGINEERING RECORD				DRAWING STATUS				NORTH SIDE GENERATING STATION STEEL STORAGE BUILDING WALL SECTION AND OTHER MISCELLANEOUS DETAILS		W.G.N.O.
ISSUED	DATE	BY	DATE	ISSUED	DATE	BY	DATE	1370-89		
PRELIMINARY (100%)	11/21/89	DRAWN	L.L. SEABO	8-89				DRAWING NO.		
FOR EXAMINATION AND/OR APPROVAL		TRACED						S-3		
APPROVED FOR CONSTRUCTION		DESIGNED	L. GABRIEL	8-89				SHEET NO.		
REVISED AND APPROVED FOR CONSTRUCTION		CHECKED	L. GABRIEL	2-90						
NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED AND DATED HERETO. ALL PRINTS BEARING EARLIER DATE AND/OR REVISION DATE.		APPROVED								
NO.	REVISION	DATE	BY	CH'D	APP'D			JACKSONVILLE ELECTRIC AUTHORITY JACKSONVILLE, FLORIDA	9 of 11	

