BEFORE THE

LOUISIANA PUBLIC SERVICE COMMISSION

ENTERGY LOUISIANA, LLC'S NOTICE OF EXEMPTION REGARDING THE AUDUBON SUBSTATION AND RELATED TRANSMISSION FACILITIES CONSISTENT WITH LOUISIANA PUBLIC SERVICE COMMISSION GENERAL ORDER DATED OCTOBER 10, 2013	)	**DOCKET NO. _____**

AFFIDAVIT

OF

CATHERINE WARD

ON BEHALF OF

ENTERGY LOUISIANA, LLC

PUBLIC REDACTED VERSION

JANUARY 2024

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EXHIBIT LIST

AFFIDAVIT OF CATHERINE WARD

SUPPORTING NOTICE OF EXEMPTION OF ENTERGY LOUISIANA, LLC

STATE OF LOUISIANA §

PARISH OF ORLEANS §

Before me, the undersigned authority, on this day appeared CATHERINE WARD, who having been placed under oath by me, did depose as follows:

"My name is Catherine Ward. I am over the age of 18 years of age and a resident of the State of Louisiana. I am competent to make this Affidavit. Based upon my 24 years of experience described below, I have personal knowledge of the matters addressed in this Affidavit, and my statements concerning these matters are true and correct.

I present this Affidavit before the Louisiana Public Service Commission ("LPSC" or the "Commission") on behalf of Entergy Louisiana, LLC ("ELL" or the "Company") in support of the Company's Notice of Exemption in the above-styled docket.

I. BACKGROUND

I am employed by Entergy Services, LLC ("ESL")[1] as Director, Project Management – Capital Projects in the Project Delivery – Capital Projects ("PDCP") group. My business address is 9585 Pecue Lane, Baton Rouge, Louisiana 70810.

[1] ESL is the service company affiliate of the Entergy Operating Companies ("EOCs") that provides engineering, planning, accounting, technical, regulatory, and other administrative support services to each of the EOCs. The EOCs include ELL; Entergy Mississippi, LLC; Entergy Arkansas, LLC; Entergy New Orleans, LLC; and Entergy Texas, Inc.

I graduated from Louisiana State University in 1999 with a degree in Civil Engineering. I later received a Master of Business Administration degree from LSU in 2003. I began my career at Entergy Gulf States, Inc. as a Transmission Line Construction Engineer and Transmission Line Maintenance Engineer from 2000-2005. From 2006-2010, I served as Transmission Project Manager for ESL, managing transmission line and substation projects. From January 2010 to February 2013, I served as Substation Operations Manager for the Louisiana grid, directing the planning and scheduling of substation and transmission line maintenance and planned capital projects. From February 2013 to January 2014, I served as the Regional Customer Service Manager for ELL. Then, from June 2014 to November 2020, I served as Senior Manager, Project Management for Capital Projects-Transmission in the PDCP group, in which role I directly managed projects ranging in cost from $20-135 million and a team of five internal project management personnel. Since November 2020, I have served in my current role as Director, Project Management - Capital Projects in the PDCP group, where I am responsible for managing the work of a group of employees whose job is to safely execute a portfolio of projects in locations across the areas served by the Entergy Operating Companies ("EOCs") in Arkansas, Texas, Mississippi, and Louisiana. My current team includes 21 internal Project Managers and multiple contract project management resources responsible for developing a variety of projects, including greenfield and brownfield projects, substations, transmission line projects (69 kilovolt ("kV") to 500kV), and distribution line projects (13.2-34.5kV).

The PDCP group is responsible for the Project Delivery System that is used for the development and execution of the largest, most complex capital projects undertaken on behalf of the EOCs. The Project Delivery System exists to ensure that capital projects are consistently

and effectively developed, implemented, and managed on behalf of the EOCs. It provides the framework for project planning and execution to achieve high quality outcomes such as safely and efficiently delivering projects within budget and schedule with clear lines of accountability for project delivery and application of strong project management fundamentals and tools. The PDCP group has responsibility for both oversight and execution of certain capital projects. Project oversight involves the systematic evaluation of the completeness and quality of each project's business case, project management, and technical deliverables as the project progresses through the stage gate process. Assurance is performed through rigorous stage gate reviews, independent project assessments, and reporting to ensure that projects are not only compliant with the Project Delivery Standard, but that the project is well positioned to be successfully delivered.

Lastly, from an execution perspective, the PDCP group is responsible for new generation project development and execution; large, new transmission project development and execution; and large capital-intensive transmission projects that may be implemented at Fossil power plants. Project execution refers to the performance of business, project management, project control, and technical activities in accordance with stage gate process requirements with the objective of achieving project goals safely, on-schedule, within budget, and with the most effective use of capital.

II. PURPOSE OF AFFIDAVIT

In the above-styled docket, the Company is providing notice that, consistent with the terms of the Commission's Transmission Siting Order,[2] it is undertaking a portfolio of transmission projects required to add a new 500/230kV Substation in Ascension Parish, Louisiana and approximately 7.8 miles of new transmission line to connect the new substation to existing 230kV and 500kV transmission lines (the "Project," which is described in more detail below) for the primary purpose of accommodating a new clean energy complex ("Customer Complex") being developed by a new customer (the "Customer") in Louisiana.[3] As such, per my understanding of the Siting Order, the Project qualifies for an exemption from the requirement that the Company obtain a Certificate of Convenience and Necessity prior to the construction of the Project. This Affidavit provides certain factual information to support the application of the exemption established at section VIII(6) of the Siting Order. In his affidavit supporting the Company's Notice of Exemption, Company affiant Mr. Bradley Skok describes the needs and drivers of the Project, including a discussion of the studies conducted by both ESL and MISO that led to the determination that the Project is the most effective portfolio of projects necessary to enable the Company to reliably provide electric service to the Customer Complex; and Mr. Skok further provides testimony and documentation to show that the primary purpose of the Project is to accommodate the needs of the Customer Complex. In further support of the Company's notice filing, I describe the different elements of the Company's proposed construction of the Project. In particular, my Affidavit:

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2 *See* General Order No. R-26018 (October 10, 2013), *In Re: Determination as to Whether the Commission Should Issue a General Order Asserting Jurisdiction Over the Certification of Utility Transmission Projects and the Determination of Whether Those Projects Are in the Public Interest,* Docket No. R-26018 ("Siting Order").

3 *Id.* at Section VIII(6).

- describes and illustrates the components of the Project, which will enable the Company to serve the new industrial load created by the Customer Complex in Louisiana; and
- summarizes key details of the Project, including the projected costs, proposed location, siting, and project schedule.

III. THE CUSTOMER'S COMPLEX

The Customer announced in October 2021 the construction of the Customer Complex. As discussed in more detail by Mr. Skok, the Project is necessary for the Company to be able to provide reliable electric service to the Customer Complex and is being undertaken primarily for that purpose. The Project includes a new substation and several related transmission components, the primary purpose of which, as discussed by Mr. Skok and me, is to provide electric service to the Customer Complex.

As Director of Project Management – Capital Projects, I am responsible for the oversight of the design, engineering, procurement, construction, commissioning, and turnover to operations of the multiple components of the Project described below. Working alongside and through my team, I have worked with ESL Power Delivery Planning to define the scope and design of the Project components in order to manage the project schedule, cost, quality, and performance. Accordingly, my involvement with the Project will be to manage the design and construction of its components, consistent with good utility practice.

As Company affiant Ms. Laura Beauchamp explains in her affidavit, the Customer executed an Electric Services Agreement ("ESA") with ELL in December 2023, to supply up to [redacted] to support the Customer

Complex. The Customer has requested initial service to the Customer Complex in [redacted].

Development and construction of the following Project elements will be required for ELL to provide service to the Customer's Complex, and as explained by Mr. Skok, each of these Project elements is being undertaken primarily for the purpose of serving the Customer's Complex:

New Substation

To accommodate the needs of the Customer Complex, ELL will construct a new 500/230kV substation (Audubon Substation) in Sorrento, Louisiana, including the following elements:

- The design will be a 500kV four-breaker ring bus containing four (4) 500kV breakers and four nodes.
  - Two nodes will cut into and out of the existing Waterford – Willow Glen 500kV line.
  - Two nodes will support seven (7) 400 MVA 500kV/230kV single-phase auto transformers.
- The 230kV Switchyard design will be a seven-bay breaker-and-a-half configuration with at least fifteen (15) breakers and 15 nodes to accommodate initial buildout and future connections.
  - Two nodes in support of the two new 230kV transmission lines from the Audubon 500kV/230 kV Substation to the customer substation named Blue Stream; with the ability to expand to four nodes for future development.
  - Two nodes to cut into and out of the existing Conway – Panama 230kV transmission line.
  - Two nodes to cut into and out of the existing Bagatelle – Conway 230kV transmission line.
  - One node in support of a 60 MVAR capacitor bank.
  - Provisions to accommodate six (6) future nodes.

Substation Upgrades

To accommodate the needs of the Customer Complex, ELL will need to construct upgrades at the following substations:

- Waterford 500kV Substation – Replace existing line relaying and settings;
- Willow Glen 500kV Substation – Replace existing line relaying and settings;
- Conway 230kV Substation – Replace two (2) breakers and existing line relaying and settings;
- Panama 230kV Substation – Replace two (2) breakers and existing line relaying and settings;
- Bagatelle 230kV Substation – Replace existing line relaying and settings; and
- Sunshine 230kV Substation – Replace four (4) breakers and existing breaker relaying and settings.

Transmission Line Additions and Upgrades

To serve the Customer Complex, ELL will install cut-ins of the following existing transmission lines into the new Audubon Substation:

- Waterford to Willow Glen 500kV transmission line (the addition of approximately 2.0 miles of new 500kV transmission line)
  - Build 1.0 mile of 500kV line on single-circuit structures from Audubon Substation to Waterford Substation
  - Build 1.0 mile of 500kV line on single-circuit structures from Audubon Substation to Willow Glen Substation
- Conway to Panama 230kV transmission line (the addition of 1.4 miles of new 230kV transmission line)
  - Build 0.7 miles of single circuit 230kV line from Conway Substation to Audubon Substation (#1)
  - Build 0.7 miles of single circuit 230kV line from Panama Substation to Audubon Substation

- Conway to Bagatelle 230kV transmission line (the addition of 1.6 miles of new 230kV transmission line)
    - Build 0.9 miles of single circuit 230kV line from Bagatelle Substation to Audubon Substation
    - Build 0.7 miles of single circuit 230kV line from Conway Substation to Audubon Substation (#2)
- Audubon Substation to the Customer Complex (the addition of approximately 2.8 miles of new 230kV transmission line)
    - Build 1.4 miles of single-circuit 230kV line from Audubon Substation to Customer station #1
    - Build 1.4 miles of single-circuit 230kV line from Audubon Substation to Customer station #2

To accommodate the needs of the Customer Complex, ELL will also need to perform the following transmission line upgrades:

- Reconductor two spans on the Point Pleasant to Willow Glen transmission line to increase ampacity to 1,607 amps; and
- Reconductor two spans on the Willow Glen to Wise transmission line to increase ampacity to 1,607 amps.

The substation structures and overhead transmission lines will be built to 150-mph wind loadings, and the substation pad will be built above base flood elevation.

Distribution Upgrades

To serve the Customer Complex, ELL will perform distribution relocations near the 230kV cut-ins and install new distribution circuit to feed station service requirements.

IV. LOCATION AND MAPPING OF THE PROJECT

For illustrative purposes, I include the following exhibits with my Affidavit:

- Exhibit CRW-1 (HSPM): A map detailing the routing and location of the Project facilities;
- Exhibit CRW-2: A scoping diagram of the Project facilities;
- Exhibit CRW-3: Diagrams of the standard typical pole sections for construction of the transmission lines; and
- Exhibit CRW-4: Audubon Substation One-Line diagrams.

The location and siting presented in these exhibits are subject to change during the course of Project development.

V. PROJECT SCHEDULE

ELL anticipates completing the Project by [redacted]. The current Project schedule is as follows:

Activity	Date
Land Acquisition	[redacted]
Begin Construction	[redacted]
Transmission Line ROW Acquisition	[redacted]
Transmission Line Permitting	[redacted]
Audubon 230kV Substation Completion	[redacted]
Audubon 500kV Substation Completion	[redacted]
Overall In-Service Date	[redacted]

The Company anticipates using existing rights-of-way ("ROW") where possible. [redacted] However, it is important to note that some additional ROW may need to be acquired to accommodate the width and final alignment required for the new lines.

VI. PROJECT COSTS

The estimated cost to complete the Project is $209.1 million, [redacted]. This estimate is a Class 3 estimate with a range of accuracy of -20% to +30%. I have attached an itemized estimate of project costs as Highly Sensitive Exhibit CRW-5 to my Affidavit. At this time, funding for the Project is expected to come from the operating funds of the Company.

Further affiant sayeth not."

Catherine Ward
CATHERINE WARD

SWORN AND SUBSCRIBED TO before me, the undersigned authority, on this 23rd day of January, 2024.

Notary Public

MATTHEW T. BROWN
NOTARY PUBLIC
State of Louisiana
My Commission Is Issued for Life
La Notary No. 61591

BEFORE THE

LOUISIANA PUBLIC SERVICE COMMISSION

ENTERGY LOUISIANA, LLC'S NOTICE OF EXEMPTION REGARDING THE AUDUBON SUBSTATION AND RELATED TRANSMISSION FACILITIES CONSISTENT WITH LOUISIANA PUBLIC SERVICE COMMISSION GENERAL ORDER DATED OCTOBER 10, 2013	)	**DOCKET NO. U-____**

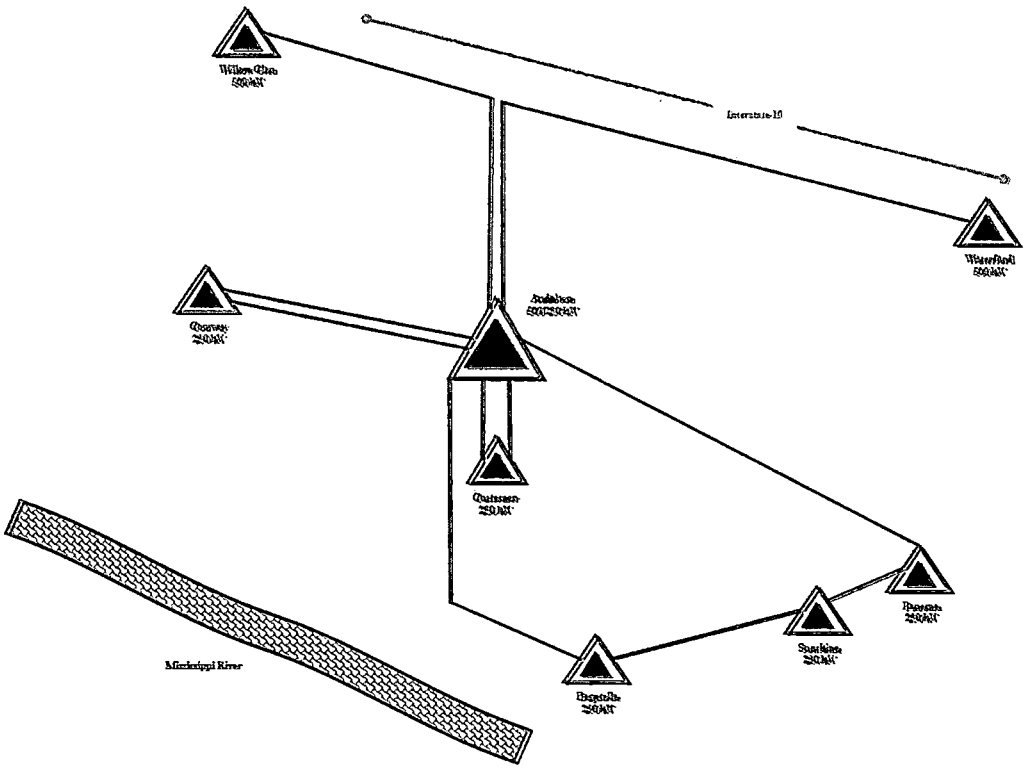
EXHIBIT CRW-1

HIGHLY SENSITIVE PROTECTED MATERIAL

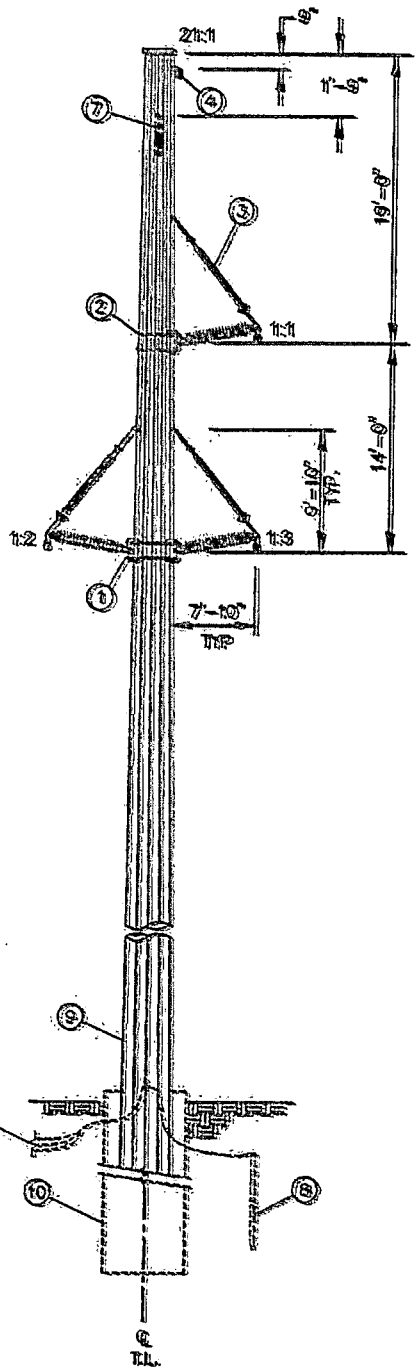
INTENTIONALLY OMITTED

JANUARY 2024

Exhibit CRW-2
Scoping Diagram of the Project Facilities



0°-1.5°, DELTA, SINGLE CIRCUIT, BRACED POST 2-1/2", STEEL 230kV



ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	1	BLT-2P-S
2	1	BLT-P-S
3	3	BP2-230-XX
4	1	GHG-SUS-XX
5		
6		
REFERENCE DRAWINGS		
7	1	SGN-S
8	–	GND-S-XX
9	–	POLE INDEX
10	1	FOOTING
11	–	ANODE-XX (IF REQ.)

NOTES:

1) All dimensions are to centerline of attachment.
2) See Pole Fabricator's drawings for attachment details.
3) See Staking Sheet and CU Drawings for line angles, pole, footing, grounding, and sign requirements.
4) Refer to Assembly drawings for part details.

SaltPhase

NO.	DATE	REVISION	BY	APPR
1	4-8-05	ADDED DIMS, GROUNDING AND ANODE OPTIONS	ITRON	

A-D-BP2-S 230

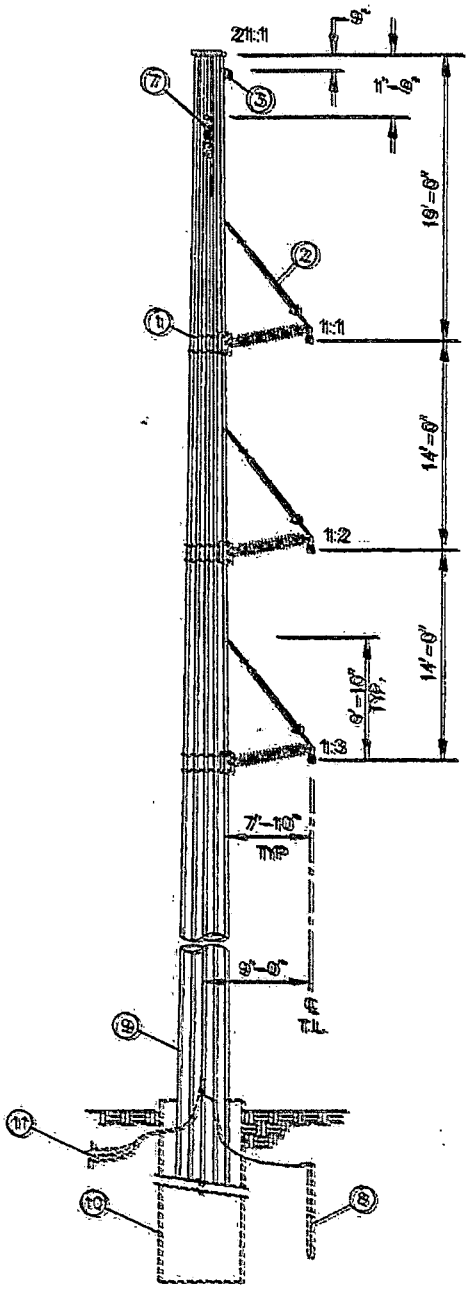
ENTERGY STANDARD DWG.

DESIGN APPROVAL		STANDARDS APPROVAL	
SIGNED	DATE	SIGNED	DATE

BRACED POST STEEL 230kV
0°-1.5° SINGLE CIRCUIT

APPROVED BY:		DATE: 2-9-95	
CHECKED BY:		SCALE: NONE	
DRAWN BY: ECSI		ESI NO. TDS313A1	
Entergy		NO.	
		PLOT 1=130	SH. 1 OF 1

0°–1.5°, VERTICAL, SINGLE CIRCUIT, BRACED POST 2–1/2", STEEL 230kV



ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	3	BLT-P-S
2	3	BP2-230-XX
3	1	OHG-SUS-XX
4		
5		
6		
REFERENCE DRAWINGS		
7	1	SGN-S
8	–	GND-S-XX
9	–	POLE INDEX
10	1	FOOTING
11	–	ANODE-XX (IF REQ.)

NOTES:

1) All dimensions are to Centerline of attachment.
2) See Pole Fabricator's drawings for attachment details.
3) See Staking Sheet and CU Drawings for line angles, pole, footing, grounding, and sign requirements.
4) Refer to Assembly drawings for part details.

Set Phase

NO.	DATE:	REVISION	BY:	APPR.
1	4-6-05	ADDED DIMS, GROUNDING, AND ANODE OPTIONS	LTRON	

A-V-BP2-S 230

ENTERGY STANDARD DWG.

DESIGN APPROVAL	STANDARDS APPROVAL
SIGNED / DATE	SIGNED / DATE

BRACED POST STEEL 230kV 0°–1.5° SINGLE CIRCUIT

APPROVED BY:	DATE: 2-9-96
CHECKED BY:	SCALE: NONE
DRAWN BY: ECSI	ESI NO. TDS323A1

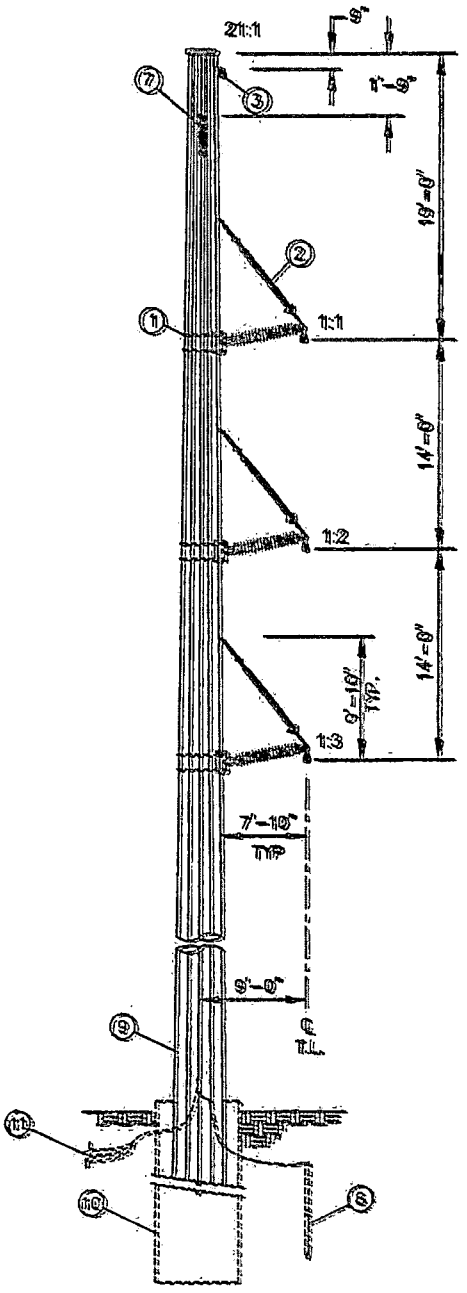
Entergy

NO.

PLOT 1=130 | SH. 1 OF 1

6°–20°, SELF SUPPORTING VERTICAL, SINGLE CIRCUIT,
BRACED POST 2–1/2", STEEL 230kV

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	3	BLT-P-S
2	3	BP2-230-XX
3	1	CHG-SUS-XX
4		
5		
6		
REFERENCE DRAWINGS		
7	1	SGN-S
8	–	GND-S-XX
9	–	POLE INDEX
10	1	FOOTING
11	–	ANODE-XX (IF REQ.)



NOTES:

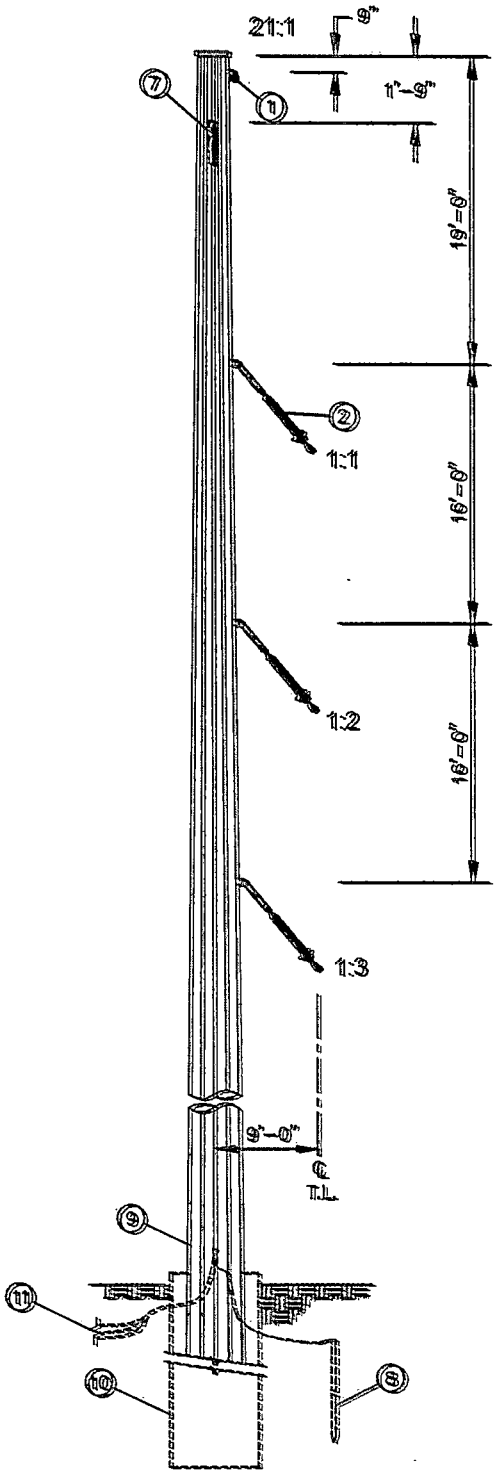
1) All dimensions are to Centerline of attachment.
2) See Pole Fabricator's drawings for attachment details.
3) See Staking Sheet and GU Drawings for line angles, pole, footing, grounding, and sign requirements.
4) Refer to Assembly drawings for part details.

Set/Phase

SC-V-BP2-S 230	
ENTERGY STANDARD DWG.	
DESIGN APPROVAL	STANDARDS APPROVAL
SIGNED / DATE	SIGNED / DATE
BRACED POST STEEL 230kV 6°–20° SINGLE CIRCUIT	
APPROVED BY:	DATE: 2-9-96
CHECKED BY:	SCALE: NONE
DRAWN BY: ECSI	ESI NO. TDS402A1
Entergy	No.
	PLOT 1=130 SH. 1 OF 1

NO.	DATE	REVISION	BY	APPR.
1	4-22-05	GENERAL DRAWING REVISIONS	LTRON	

15°–30°, SELF SUPPORTING SUSPENSION, VERTICAL,
SINGLE CIRCUIT, SUSPENSION HEAVY POLYMER w//LINK, STEEL 230kV



ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	1	CHG–SUS–XX
2	3	SHR–LINK–230–XX
3		
4		
5		
6		
REFERENCE DRAWINGS		
7	1	SGN–S
8	–	GND–S–XX
9	–	POLE INDEX
10	1	FOOTING
11	–	ANODE–XX (IF REQ.)

Set Phase

NOTES:

1) All dimensions are to Centerline of attachment.
2) See Pole Fabricator's drawings for attachment details.
3) See Staking Sheet and CU Drawings for line angles, pole, footing, grounding, and sign requirements.
4) Refer to Assembly drawings for part details.
5) For Insulator Swing Angle see Swing Angle Chart.

NO.	DATE	REVISION	BY	APPR.
1	4–28–03	ADDED DIMS, GROUNDING AND ANODE OPTIONS	TRON	

SF–V–SHR–S 230

ENTERGY STANDARD DWG.

DESIGN APPROVAL	STANDARDS APPROVAL
SIGNED / DATE	SIGNED / DATE

SUSP ANGLE STEEL 230kV
15°–30° SINGLE CIRCUIT

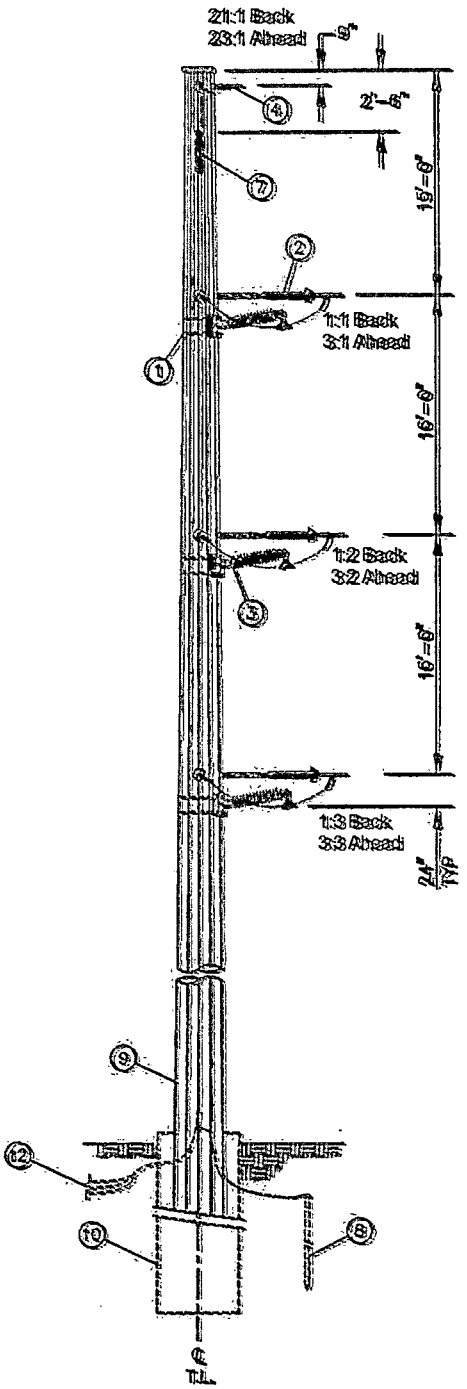
APPROVED BY:	DATE: 2–9–96
CHECKED BY:	SCALE: NONE
DRAWN BY: ECSI	ESI NO. TDS423A1

Entergy

No.

PLOT 1=130 | SH. 1 OF 1

5°–70°, SELF SUPPORTING, DE, JUMPER, VERTICAL, SINGLE CIRCUIT, DE POLYMER, STEEL 230kV



ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	3	SLT-P-S
2	6	DEP/TRB-230-XX
3	3	JUP-230-XX
4	2	OHS-DE-XX
REFERENCE DRAWINGS		
7	1	SSN-S
8	–	GND-S-XX
9	–	POLE INDEX
10	1	FOOTING
11	–	PVD, SHT 1, VW PV-19
12	–	ANODE-XX (IF REQ.)

NOTES:

1) All dimensions are to Centerline of top attachment or SLT-XX.
2) See Pole Fabricator's drawings for attachment details.
3) See Staking Sheet and CU Drawings for line angles, pole, footing, grounding, and sign requirements.
4) Refer to Assembly drawings for part details.
5) Conductor attachment vangs shall be placed within 5 degrees of Ahead and Back locations.
6) This structure shall not be used for single insulator bundled conductor applications unless the combined phase tension is less than 18.4 kips. For two insulator attachment bundled conductor applications, use the appropriate bundled framing.

SetPhase

NO.	DATE	REVISION	BY	APPR.
3	8-18-04	REVISED DIMENSION FOR SIGN	ITRON	
2	4-3-03	REV., DIM., GND., NOTE 1, ADD ITEM 12, NOTE 6	ITRON	
1	9-14-01	CHANGED ANGLE RANGE	LSFT	

SDJ–V–DEP–S 230

ENTERGY STANDARD DWG.

DESIGN APPROVAL	STANDARDS APPROVAL
SIGNED / DATE	SIGNED / DATE

DEADEND STEEL 230kV 5°–70° SINGLE CIRCUIT

APPROVED BY:	DATE: 10-18-96
CHECKED BY:	SCALE: NONE
DRAWN BY: LINESOFT	ES! NO. TDS4117A3
Entergy	No.
PLOT t=130	SHT 1 OF 1

0°–5°, SELF SUPPORTING, DE, JUMPER, VERTICAL, SINGLE CIRCUIT, DE POLYMER, STEEL

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	3	BLT–P–S
2	6	INSUL (SEE TABLE 1)
3	3	INSUL2 (SEE TABLE 1)
4	2	OHG–DE–XX
REFERENCE DRAWINGS		
7	1	SGN–S
8	–	GND–S–XX
9	–	SEE MFR. DWG.
10	1	FOUNDATION TYPE T.B.D.
11	–	PVO, SHT 1, VW PV–19
12	–	ANODE–XX (IF REQ.)

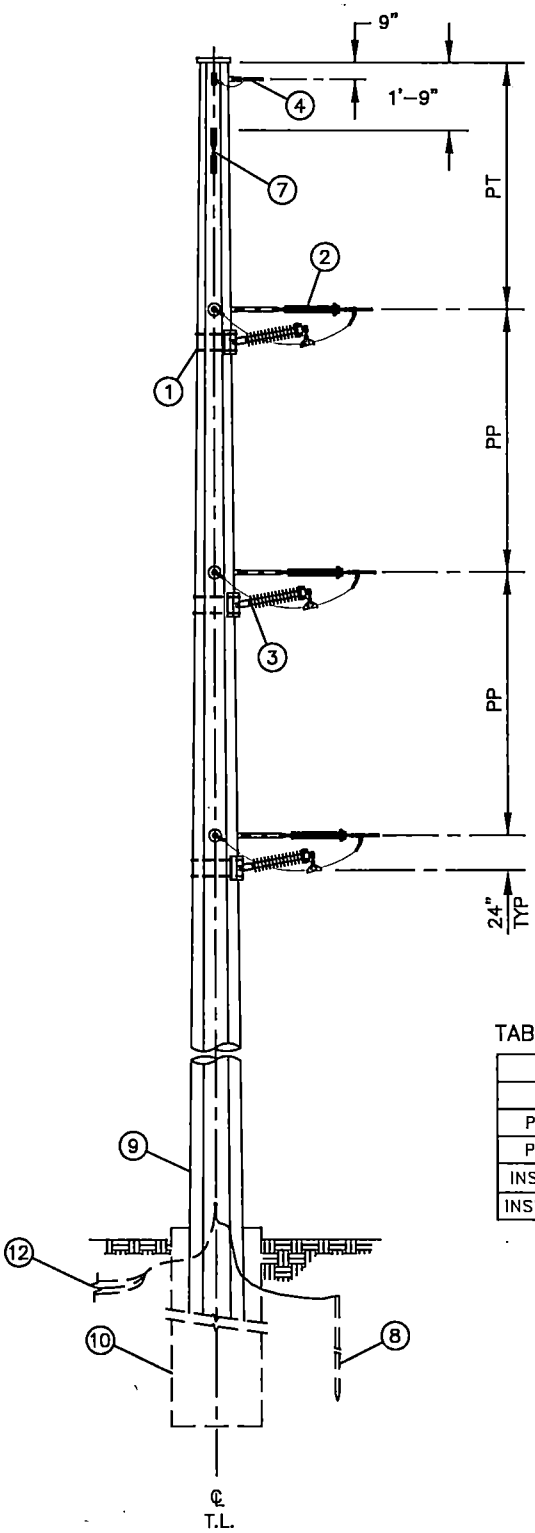


TABLE 1

VARIABLE DIMENSIONS & REF. DWGS.			
	69 kV	161 kV	230 kV
PT	10'–6"	13'–0"	15'–0"
PP	9'–0"	14'–0"	16'–0"
INSUL	DEP/TRB–69–XX	DEP/TRB–161–XX	DEP/TRB–230–XX
INSUL2	JLP–69–XX	JLP–161–XX	JLP–230–XX

NOTES:
1. For General Notes, See Dwg. TMS220.

SDJA–V–DEP–S

ENTERGY SERVICES, INC.

Transmission LineDesign Standard
0–5° SC S. SPPT. DE, DEP W/J, STL
STRUCTURE DRAWING & DETAIL

STD NO. | SCALE: NONE

Entergy

No. TMS642A0

PLOT 1=1 | SH. 1 OF 1

NO.	DATE	REVISION	BY	CHK	APPR
0	01–02–16	REPLACES DWS TAS528A0, TCS629A1, & TDS559A1	WRK	KC	ECW

rkugl90 12/2/2015

70'–120', SELF SUPPORTING, DE, VERTICAL,
SINGLE CIRCUIT, DE POLMER, STEEL

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	6	INSUL (SEE TABLE 1)
2	2	OHG–DE–XX
REFERENCE DRAWINGS		
7	1	SGN–S
8	–	GND–S–XX
9	–	SEE MFR. DWG.
10	1	FOUNDATION TYPE T.B.D.
11	–	PVO, SHT 2, VW PV–15
12	–	ANODE–XX (IF REQ.)

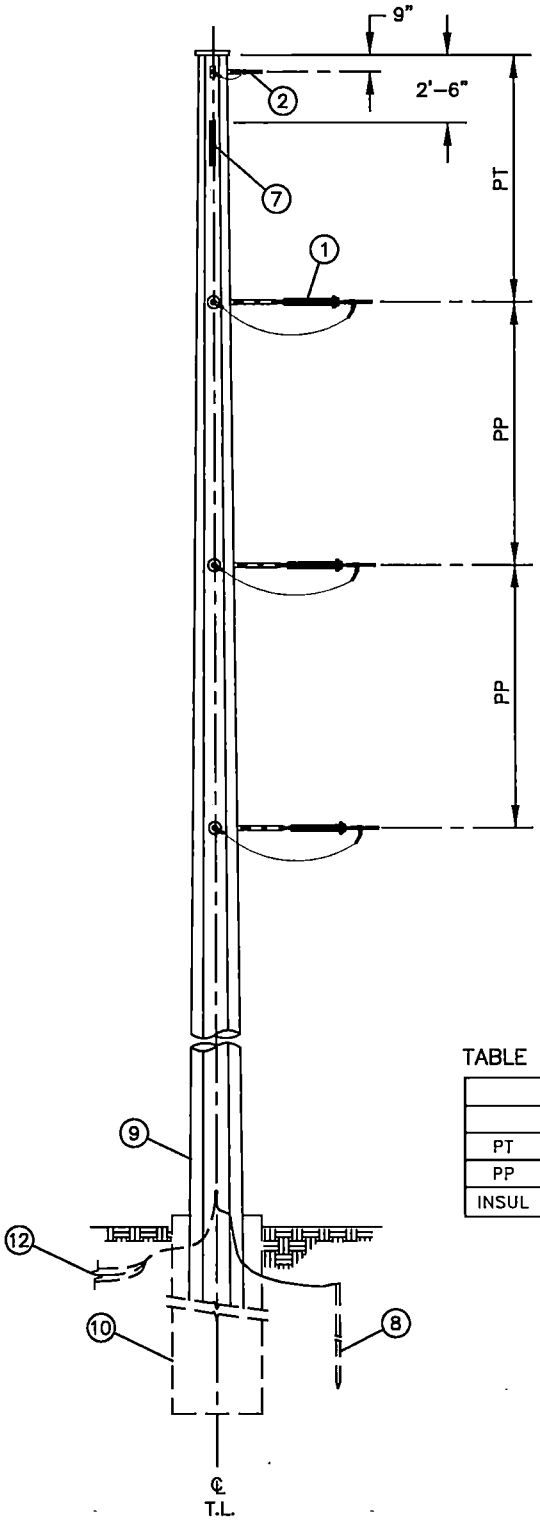


TABLE 1

VARIABLE DIMENSIONS & REF. DWGS.			
	69 kV	161 kV	230 kV
PT	10'–6"	13'–0"	15'–0"
PP	9'–0"	14'–0"	16'–0"
INSUL	DEP/TRB–69–XX	DEP/TRB–161–XX	DEP/TRB–230–XX

NOTES:
1. For General Notes, See Dwg. TMS220.

SD–V–DEP–S

ENTERGY SERVICES, INC.

Transmission LineDesign Standard
70–120' SC S. SPPT. DE, DEP, STL
STRUCTURE DRAWING & DETAIL

STD NO. | SCALE: NONE

No. TMS640A0

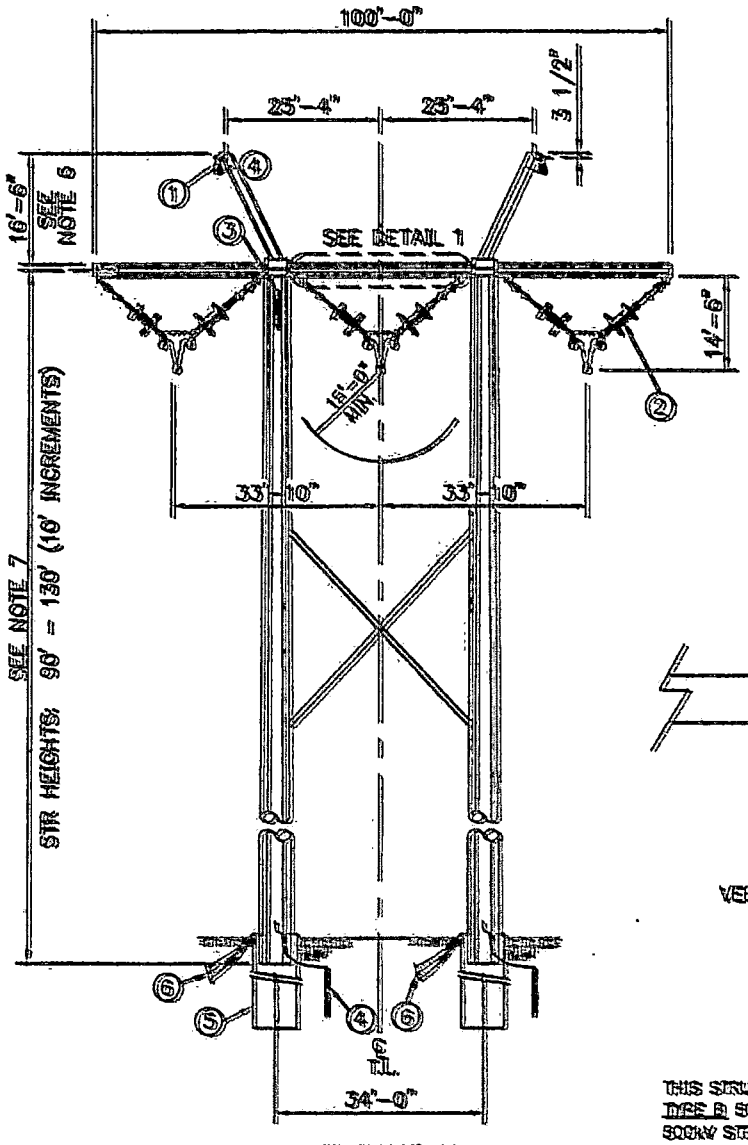
PLOT 1=1 | SH. 1 OF 1

NO.	DATE	REVISION	BY	CHK	APPR
0	01–02–16	REPLACES DWS TAS389A2, TCS446A3, & TDS419A3	WRK	KC	ECW

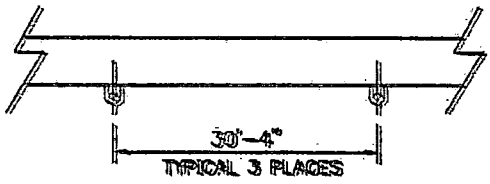
rkugl90 12/2/2015

H-FRAME 0-6", 2-POLE, SINGLE CROSS BRACE
SINGLE CIRCUIT, V-STRING, w//YOKE PLATE, STEEL, 500KV

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	2	OHG-SUS-XX
2	3	VSPY-500-XX
REFERENCE DRAWINGS		
3	1	SGN-S
4	2	GND-S
5	2	FND-XXX-XX
6	-	ANODE-XX (IF REQD)



ELEVATION



DETAIL 1
VEE STRING ATTACHMENT SPACING

THIS STRUCTURE MAY BE REFERRED TO AS TYPE A OR TYPE B 500kV STRUCTURE OR AS STD-1 or STD-2 500kV STRUCTURE. NOTES AND DIMENSIONS OF THIS DRAWING HAVE PRECEDENCE OVER THOSE OF PREVIOUS DRAWINGS OF THOSE STRUCTURE TYPES.

NOTES:

1. ALL DIMENSIONS ARE TO CENTERLINE OF ATTACHMENT.
2. SEE POLE FABRICATOR'S DRAWINGS FOR ATTACHMENT DETAILS.
3. SEE STAKING SHEETS FOR LINE ANGLES, POLES, FOOTINGS, GROUNDING, AND SIGN REQUIREMENTS.
4. REFER TO ENTERGY ASSEMBLY DRAWINGS FOR PART DETAILS.
5. CROSS BRACING REQUIREMENTS TO BE DETERMINED BY POLE MANUFACTURER.
6. DIMENSION FROM CENTERLINE OF BOLT HOLES IN STATIC MAST BRACKET BASE TO TOP OF MAST.
7. STRUCTURE REFERENCE HEIGHT IS FROM BOTTOM OF SHAFT TO CENTERLINE OF CROSSARM.

RE: T&D DWG xxx HA2-X-VSPY-S 500

ENTERGY SERVICES, INC.

H-FRAME,0-6,1 X-BR, V-STR, YOKE, STL 500KV

STD NO. | SCALE: 1"=1"

NO.	DATE	REVISION	BY	CHK	APPR
0	02-14-07	CREATED	TMF	HSK	HSK

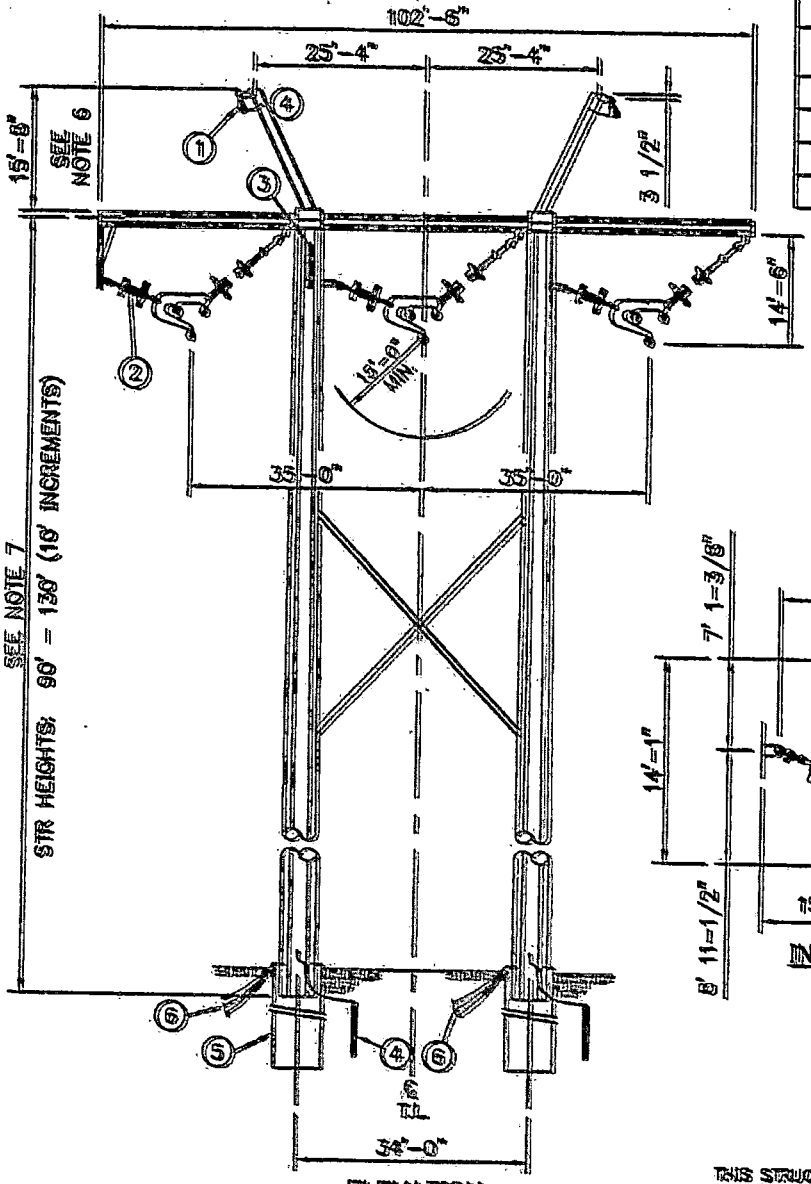
Entergy

No. TFS200A0

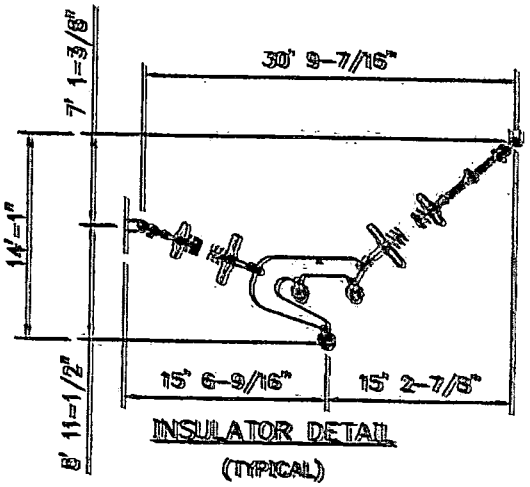
PLOT 1=1 | SH. 1 OF 1

H-FRAME 6-15', 2-POLE, SINGLE CROSS BRACE
SINGLE CIRCUIT, V-STRING RUNNING ANGLE, w//YOKE PLATE, STEEL, 500KV

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	2	OHG-SUS-XX
2	3	VSPR-500-XX
REFERENCE DRAWINGS		
3	1	SGN-S
4	2	GND-S
5	2	FND-XXX-XX
6	1	ANODE-XX (IF REQD)



ELEVATION



INSULATOR DETAIL
(TYPICAL)

THIS STRUCTURE MAY BE REFERRED TO AS TYPE C 500kV STRUCTURE OR AS SID-2 500kV STRUCTURE. NOTES AND DIMENSIONS OF THIS DRAWING HAVE PRECEDENCE OVER THOSE OF PREVIOUS DRAWINGS OF THOSE STRUCTURE TYPES

NOTES:

1. ALL DIMENSIONS ARE TO CENTERLINE OF ATTACHMENT.
2. SEE POLE FABRICATOR'S DRAWINGS FOR ATTACHMENT DETAILS.
3. SEE STAKING SHEETS FOR LINE ANGLES, POLES, FOOTINGS, GROUNDING, AND SIGN REQUIREMENTS.
4. REFER TO ENTERGY ASSEMBLY DRAWINGS FOR PART DETAILS.
5. CROSS BRACING REQUIREMENTS TO BE DETERMINED BY POLE MANUFACTURER.
6. DIMENSION FROM CENTERLINE OF BOLT HOLES IN STATIC MAST BRACKET BASE TO TOP OF MAST.
7. STRUCTURE REFERENCE HEIGHT IS FROM BOTTOM OF SHAFT TO CENTERLINE OF CROSSARM.

REF. T&B DWG xxxx HC2-X-VSPR-S 500

ENTERGY SERVICES, INC.

H-FRAME,6-15,1 X-SR,V-STR,RA,YOKE,STL 500kV

SID NO. _____ SCALE: 1"=1"

Entergy

No. TFS201A0

PLOT 1=1 SH. 1 OF 1

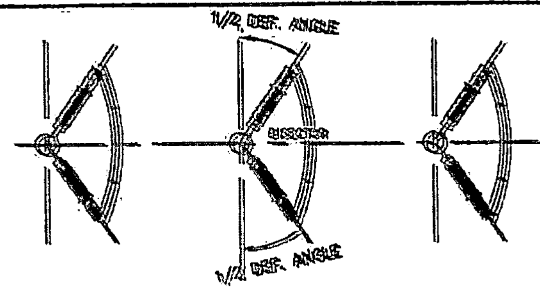
HC2-X-VSPR-S 500

NO.	DATE	REVISION	BY	CHK	APPR
0	12-14-07	CREATED	TMF	HSK	NSK

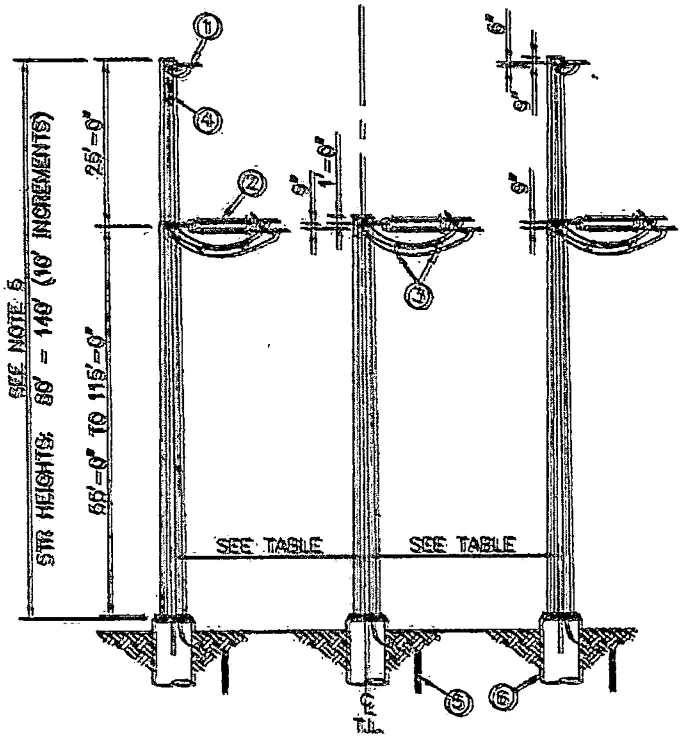
tfm290 2/27/2007

DEADEND 70°-120° SELF SUPPORTING, 3-POLE SINGLE CIRCUIT, DE POLY w/YOKE, STEEL 500kV

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	4	OHG-DE-XX
2	6	DEPY-500-XX
REFERENCE DRAWINGS		
3	NOTE 6	SD-CG318-XX
4	1	SGN-S
5	2	GND-S
6	2	FND-XXX-XX



PLAN



ELEVATION

POLE SPACING TABLE	
DEF ANGLE RANGE	POLE SPACING
53 - 63	40
63 - 71	42
71 - 78	44
78 - 84	46
84 - 89	48
89 - 94	50
94 - 98	52
98 - 101	54
101 - 105	40
105 - 108	42
108 - 110	44
110 - 113	46
113 - 115	48
115 - 117	50
117 - 120	52
120 - 121	54

(SEE NOTE 7)

NOTES:

1. ALL DIMENSIONS ARE TO CENTERLINE OF ATTACHMENT.
2. SEE POLE FABRICATOR'S DRAWINGS FOR ATTACHMENT DETAILS.
3. SEE STAKING SHEETS FOR LINE ANGLES, POLES, FOOTINGS, GROUNDING, AND SIGN REQUIREMENTS.
4. REFER TO ENTERGY ASSEMBLY DRAWINGS FOR PART DETAILS.
5. STRUCTURE REFERENCE HEIGHT IS FROM BOTTOM OF SHAFT TO TOP OF POLE.
6. PLACE SPACERS ON JUMPERS AS REQUIRED TO MAINTAIN UNIFORM DISTANCE BETWEEN SUB-CONDUCTORS.
7. LEG SPACING BASED ON MAINTAINING 34' PHASE TO PHASE SPACING.

THIS STRUCTURE MAY BE REFERRED TO AS DPE-E 500kV STRUCTURE OR AS STD-B 500kV STRUCTURE. NOTES AND DIMENSIONS OF THIS DRAWING HAVE PRECEDENCE OVER THOSE OF PREVIOUS DRAWINGS OF THOSE STRUCTURE TYPES

SLE3-DEPY-S 500

ENTERGY SERVICES, INC.

Transmission LineDesign Standard

DE 70-120 SS, 3-POLE, POLY, YOKE, STL 500kV STRUCTURE DRAWING & DETAIL

STD NO.	SCALE: 1"=1"

NO.	DATE	REVISION	BY	CHK	APPR
1	12-15-10	VERT. DIMENSION FOR SW VANGS	TWF	KSK	KSK
0	02-04-07	CREATED	TWF	KSK	KSK

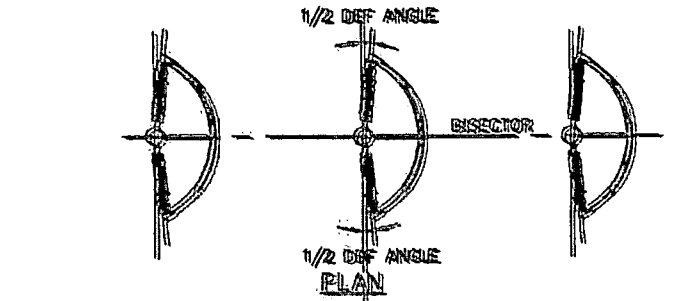
Entergy

No. TFS202A1

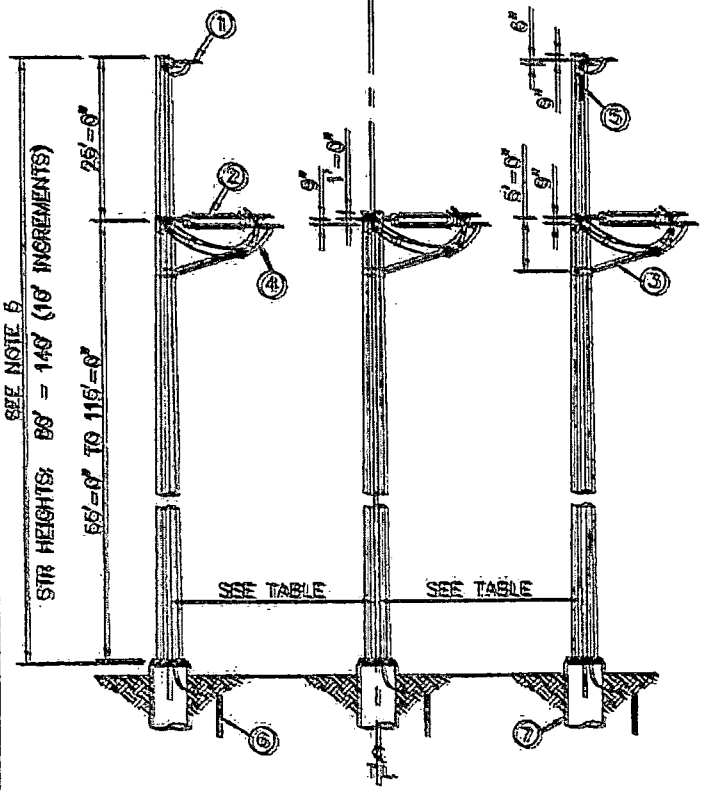
PLOT 1=1 SHL 1 OF 1

DEADEND 5°–70° SELF SUPPORTING, JUMPER, 3–POLE SINGLE CIRCUIT, DE POLY w//YOKE, STEEL 500kV

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	2	CHG–DE–XX
2	6	DEPY–500–XX
3	3	JLPH–500–XX
REFERENCE DRAWINGS		
4	NOTE 6	SD–CGSIB–XX
5	1	SGN–S
6	3	GND–S
7	3	FND–XXX–XX



PLAN



ELEVATION

POLE SPACING TABLE	
DEF ANGLE RANGE	POLE SPACING
00 – 27	35
27 – 38	36
38 – 46	37
46 – 53	38
53 – 58	39
58 – 63	40
63 – 67	41
67 – 71	42

(SEE NOTE 7)

NOTES:

1. ALL DIMENSIONS ARE TO CENTERLINE OF ATTACHMENT.
2. SEE POLE FABRICATOR'S DRAWINGS FOR ATTACHMENT DETAILS.
3. SEE STAKING SHEETS FOR LINE ANGLES, POLES, FOOTINGS, GROUNDING, AND SIGN REQUIREMENTS.
4. REFER TO ENTERGY ASSEMBLY DRAWINGS FOR PART DETAILS.
5. STRUCTURE REFERENCE HEIGHT IS FROM BOTTOM OF SHAFT TO TOP OF POLE.
6. PLACE SPACERS ON JUMPERS AS REQUIRED TO MAINTAIN UNIFORM DISTANCE BETWEEN SUB–CONDUCTORS.
7. USE SPACING BASED ON MAINTAINING 34' PHASE TO PHASE SPACING.

THIS STRUCTURE MAY BE REFERRED TO AS DEE D 500kV STRUCTURE OR AS SID–4 500kV STRUCTURE. NOTES AND DIMENSIONS OF THIS DRAWING HAVE PRECEDENCE OVER THOSE OF PREVIOUS DRAWINGS OF THOSE STRUCTURE TYPES

RE: T&D DWG xxx SLDJG–DEPY–S 500

NO.	DATE	REVISION	BY	CHK	APPR
1	12–15–10	VERT DIM OF STR & COND VANS, POLE SPACING REVISED ALLOWABLE DEFLECTION ANGLE	TMF	KSK	KSK
0	02–16–07	CREATED	TMF	KSK	KSK

timc90 12/15/2010

ENTERGY SERVICES, INC.

Transmission LineDesign Standard

DE 5–70 SS, JUMPER, 3–POLE, POLY, STL 500kV STRUCTURE DRAWING & DETAIL

STD NO. | SCALE: 1"=1"

Entergy

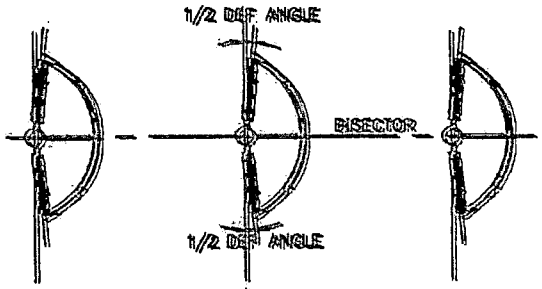
No. TFS203A1

PLOT 1=1 | SH. 1 OF 1

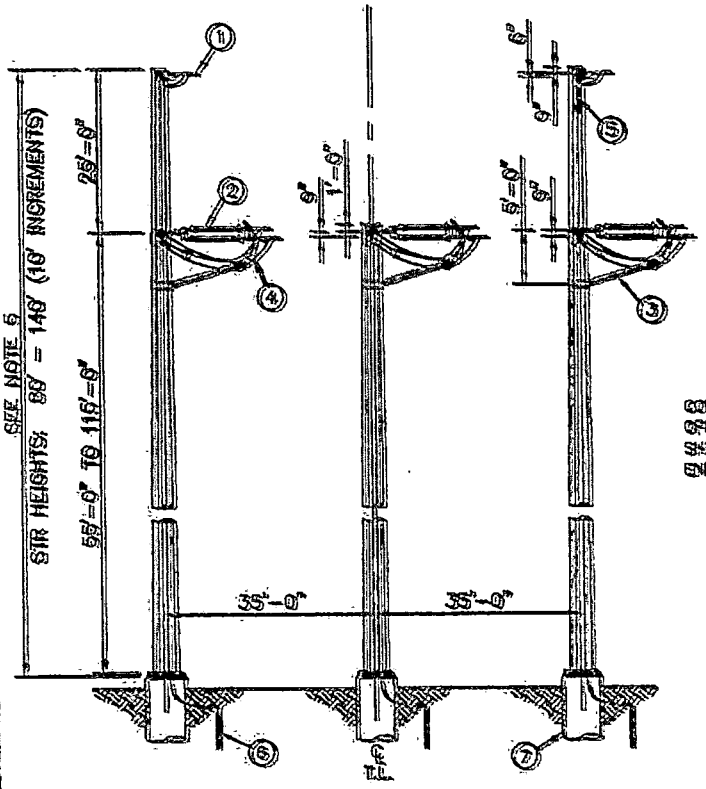
SLJD3–DEPY–S 500

DEADEND 0°-5° SELF SUPPORTING, JUMPER, 3-POLE SINGLE CIRCUIT, DE POLY w//YOKE, STEEL 500kV

ASSEMBLY LIST		
ITEM	QTY.	ASSEMBLY/DRAWING
1	2	OHG-DE-XX
2	6	DEPY-500-XX
3	3	JUPH-500-XX
REFERENCE DRAWINGS		
4	NOTE 6	SD-06318-XX
5	1	SGN-S
6	3	GND-S
7	3	FND-XXX-XX



PLAN



ELEVATION

CONDUCTOR INSULATOR PULLOFF IS TO BE MADE ON OPPOSING ENDS OF A SINGLE VANG ON EACH POLE. SHIELD WIRE PULLOFF IS TO BE MADE ON OPPOSING ENDS OF A SINGLE VANG ON EACH OUTSIDE POLE.

NOTES:
1. ALL DIMENSIONS ARE TO CENTERLINE OF ATTACHMENT.
2. SEE POLE FABRICATOR'S DRAWINGS FOR ATTACHMENT DETAILS.
3. SEE STAKING SHEETS FOR LINE ANGLES, POLES, FOOTINGS, GROUNDING, AND SIGN REQUIREMENTS.
4. REFER TO ENTERGY ASSEMBLY DRAWINGS FOR PART DETAILS.
5. STRUCTURE REFERENCE HEIGHT IS FROM BOTTOM OF SHAFT TO TOP OF POLE.
6. PLACE SPACERS ON JUMPERS AS REQUIRED TO MAINTAIN UNIFORM DISTANCE BETWEEN SUB-CONDUCTORS.

THIS STRUCTURE MAY BE REFERRED TO AS TYPE F 500kV STRUCTURE OR AS SID-6 500kV STRUCTURE. NOTES AND DIMENSIONS OF THIS DRAWING HAVE PRECEDENCE OVER THOSE OF PREVIOUS DRAWINGS OF THOSE STRUCTURE TYPES

RE: TRB DWG xxx SLJF3-DEPY-S 500

NO.	DATE	REVISION	BY	CHK	APPR
1	12-16-10	VERT DIM OF SW VANG, VERT DIM OF COND VANG REVISED ALLOWABLE DEFLECTION ANGLE	TMF	HSK	HSK
0	12-14-07	CREATED	TMF	HSK	HSK

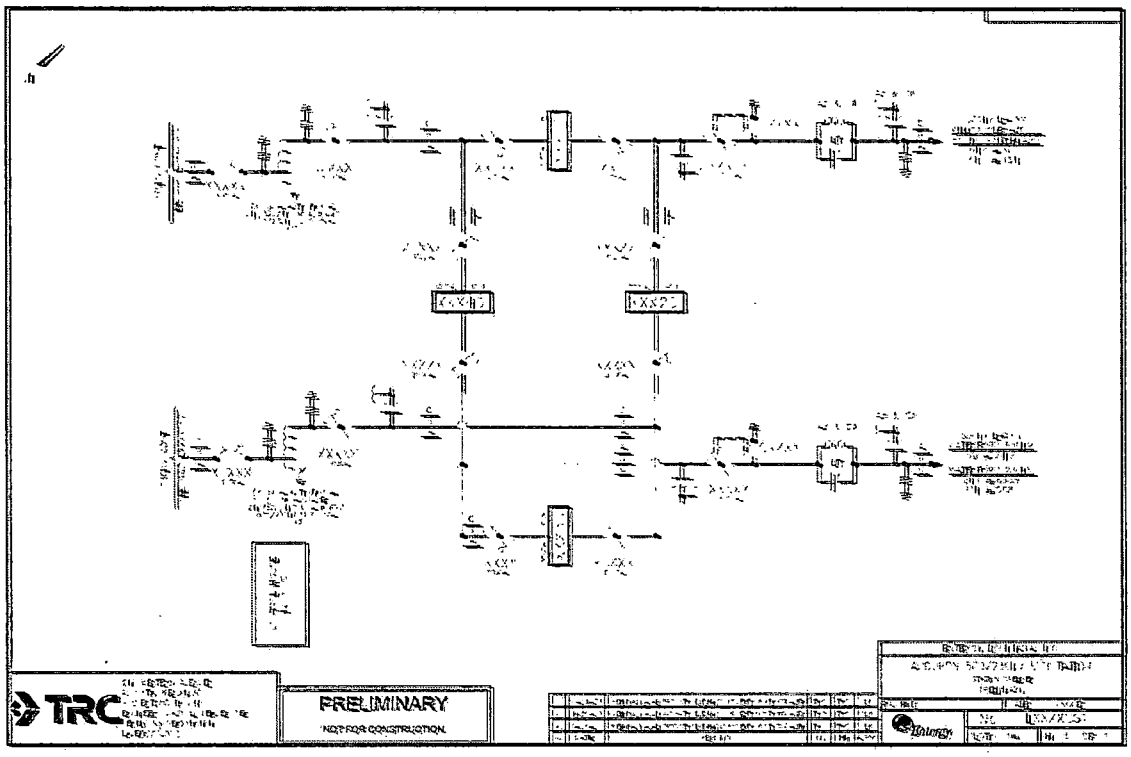
ENTERGY SERVICES, INC.

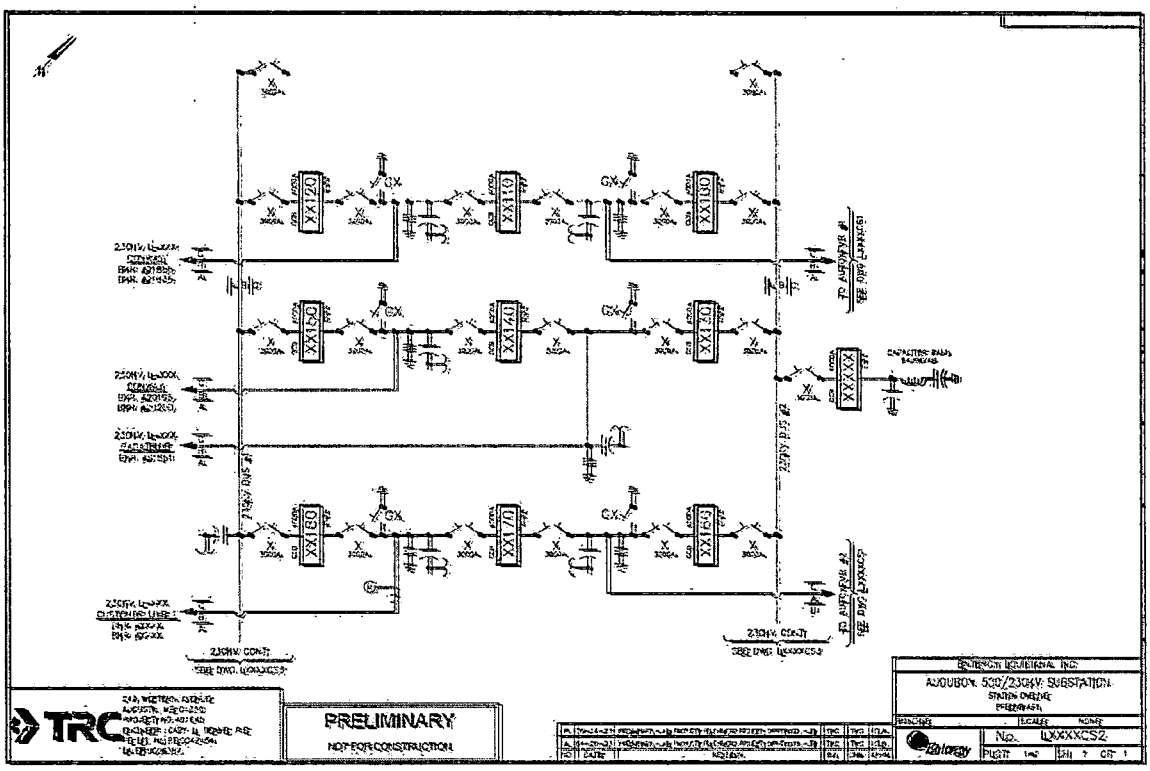
DE 0-5 SS, JUMPER, 3-POLE, POLY, STL 500kV STRUCTURE DRAWING & DETAIL

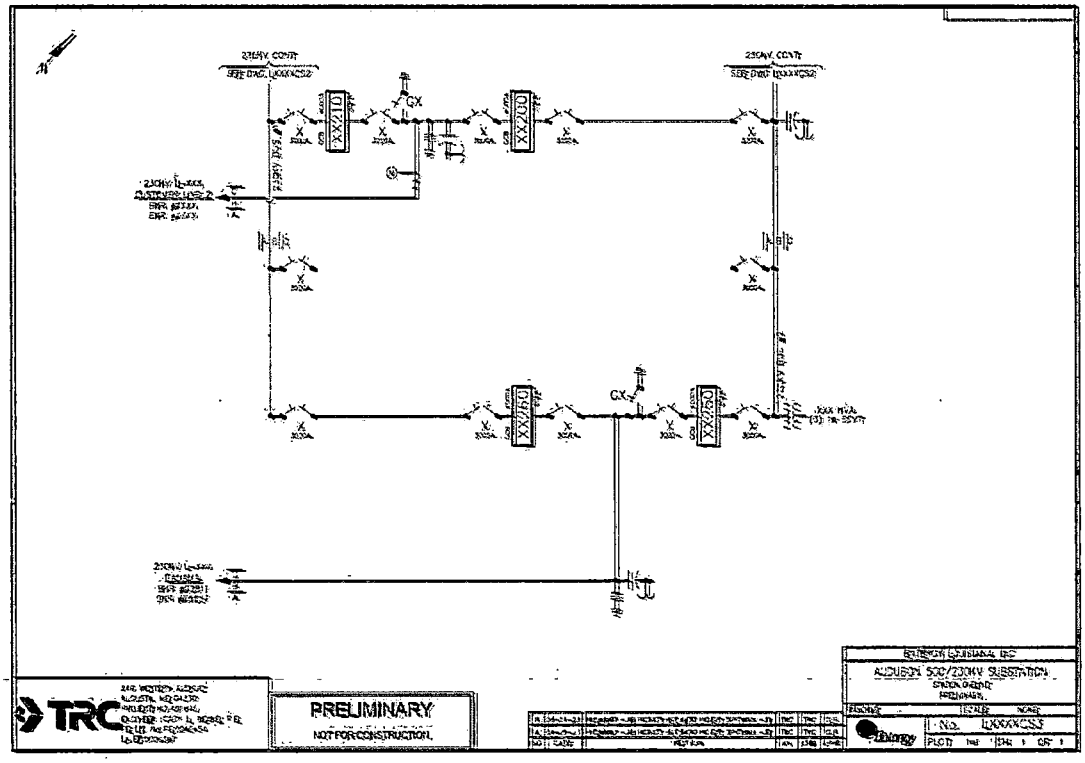
JOB NO.	SCALE: 1"=1"
Entergy	No. TFS204A1
PLOT 1=1	SHT 1 OF 1

tfm250 1/14/2011 SLJF3-DEPY-S 500

Exhibit CRW-4 (HSPM)
Audubon Substation One-line Diagrams




PRELIMINARY
NOT FOR CONSTRUCTION


PRELIMINARY
NOT FOR CONSTRUCTION

BEFORE THE

LOUISIANA PUBLIC SERVICE COMMISSION

ENTERGY LOUISIANA, LLC'S NOTICE OF EXEMPTION REGARDING THE AUDUBON SUBSTATION AND RELATED TRANSMISSION FACILITIES CONSISTENT WITH LOUISIANA PUBLIC SERVICE COMMISSION GENERAL ORDER DATED OCTOBER 10, 2013	)	DOCKET NO. U-_____

EXHIBIT CRW-5

HIGHLY SENSITIVE PROTECTED MATERIAL

INTENTIONALLY OMITTED

JANUARY 2024