4.0 ENVIRONMENTAL EFFECTS OF SITE PREPARATION, PLANT, AND ASSOCIATED TRANSMISSION FACILITIES CONSTRUCTION 4

4.1 SITE PREPARATION AND PLANT CONSTRUCTION

4.1.1 Construction Areas

Approximately 65 acres of the total 960 acres to be cleared for the Stanton Energy Center Unit 1 site will be utilized for a materials and equipment laydown areas. No significant wetlands or red-cockaded woodpecker cavity trees are within the laydown areas. 4

Vegetation and wooden material removed by land clearing will be disposed of by open burning according to the provisions of the Florida Administrative Code, Section 5I-2.07. An open burning permit will be obtained, as required, from the Orange County Pollution Control Department with approvals from the Fire District and Division of Forestry. Other trash and nonhazardous chemical wastes will be removed to the Orange County Landfill adjacent to the site for appropriate disposal.

4.1.2 Land Impact

The construction of Unit 1 of the Stanton Energy Center will require the clearing of approximately 960 acres of land. Included in the area are about 125 acres of wetlands which will be eliminated. The wetland areas that will be effected are isolated and are not connected to other wetland systems or bodies of water. A description of the wetland areas and vegetation on the site is given in Section 2.7. 4

The ultimate development of the site for four generation units would require the clearing of an additional 120 acres for a total of 1,080 acres. An additional 18 acres of wetlands would be effected for a total of 143 acres eliminated by the development of the site for four units. 4

Vegetation removed by clearing will be burned in compliance with the regulations cited in Subsection 4.1.1. Trees suitable for pulp or other commercial uses will be sold.

No explosives will be used during the construction of the Stanton Energy Center.

A "Joint Application, Department of the Army/Florida Department of Environmental Regulation for Activity in Waters of the State of Florida",

SAJ Form 983 (July 21, 1977) has been prepared and is included as part of this application as Appendix 4.1A.

Consistent with the Orange County Growth Management Policy Plan[1] the plant will be located so as to minimize significant environmental effects. A majority of the conservation areas on the site, as defined by the Orange County Planning Department, will be retained in their natural state.[2] In addition, location of the site adjacent to the County Landfill in an area of low residential development potential is logical and consistent with County planning objectives. 3

Utility systems are allowed as a special exception in agriculturally zoned districts.

4.1.3 Impact on Human Population

Construction Noise. Major construction activities consist of site clearing and preparation, foundation construction, and the erection of buildings, equipment, and other structures. Different types of equipment are used in each of these phases, and accurate noise calculations are dependent upon the numbers and type of equipment units in use at a given time, the duty factors for the types of equipment, and characteristic noise emissions levels. For construction equipment that may be used at the Stanton site, noise sources and sound power levels associated with the clearing, foundation, and erection phases of construction are given in Table 4.1-1. Construction sound power levels for each phase, and representative octave band breakdowns also are included in Table 4.1-2.

A computerized sound pressure level contour modeling program was used to determine construction noise contributions in the vicinity of the site. This program considered the characteristic resistance of air, sound pressure level decrease resulting from wave divergence, directivity and height of the sound source, and atmospheric absorption. Acoustic emissions from the construction clearing phase were combined with baseline levels as input to this program. All computations were completed independently, and then combined to obtain overall sound pressure levels.

Figure 4.1-1 shows the predicted 24-hour average noise contours for the clearing and site preparation phase of construction. No area located outside the site boundaries exceeds 55 dBA. There are also no nearby residences or recreational areas to receive noise impacts. Therefore, it is likely that impacts from construction noise will be insignificant.

4.1.4 Work Force

The construction work force will begin to arrive onsite in January 1983 with the site preparation construction. Construction work will be

completed in December 1986. The peak construction force will be 950 personnel in early 1985. The number of construction personnel which will be onsite during each month of the 48-month construction period is shown in Table 4.1-3.

4.1.5 Impact on Landmarks and Sensitive Areas

No known historic or archeological sites, landmarks, or scenic areas will be affected by the proposed project.

4.1.6 Mitigating Measures

Fugitive dust from transportation and construction activities will be controlled by periodic spraying of access ways with water. Major access ways will be paved where appropriate, cleared areas will be revegetated and the site will be landscaped to present a pleasing appearance, and to control dust and erosion.

A buffer zone will be maintained around the plant complex. With Unit 1, the buffer area will consist of approximately 2,320 acres, and a total of about 2,180 acres will be maintained with the ultimate site development of four units. Terrestrial habitat and wetlands will be preserved in these areas. More importantly, 58 cavity trees utilized by the red-cockaded woodpecker, an endangered species, will be preserved. Foraging habitat for the birds also will be provided which will be important for the survival of the woodpecker. A detailed discussion of the impacts on the woodpecker is given in Subsection 4.1.9 5

4.1.7 Benefits From Construction

Site preparation and plant construction will result in certain beneficial impacts on the Orlando area economic environment. As additional employment opportunities associated with the construction workforce, their payrolls and local expenditures for materials and equipment increase demands for goods and services in various sectors of the local economy, demands in still other sectors will be stimulated. The result will be an overall increase in economic activity.

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A buffer zone will be maintained around the plant complex. With Unit 1, the buffer area will consist of approximately 2,290 acres, and a total of about 2,170 acres will be maintained with the ultimate site development of four units. Terrestrial habitat and wetlands will be preserved in these areas. More importantly, 58 cavity trees utilized by the red-cockaded woodpecker, an endangered species, will be preserved. Foraging habitat for the birds also will be provided which will be important for the survival of the woodpecker. A detailed discussion of the impacts on the woodpecker is given in Subsection 4.1.9

4.1.7 Benefits From Construction

Site preparation and plant construction will result in certain beneficial impacts on the Orlando area economic environment. As additional employment opportunities associated with the construction workforce, their payrolls and local expenditures for materials and equipment increase demands for goods and services in various sectors of the local economy, demands in still other sectors will be stimulated. The result will be an overall increase in economic activity.

While the beneficial economic impacts will be significant in absolute amounts, they will be relatively small in the context of the entire Orlando economy. Detailed projections of the beneficial construction impacts are discussed in Subsection 7.2.1.2.

4.1.8 Impact on Water Bodies and Uses

There are no sizeable surface waters on the Stanton site. Small segments of the Cowpen Branch and the Hart Branch extend into the site. The small streams are within the buffer zone of the site which will not be affected by construction activities. Runoff from the construction area will be contained in a collection basin. The basin will be unlined and there will be some exfiltration of the runoff water collected, providing recharge of the water table aquifer. Little effect on ground water quality is expected. The major aquifer associated with the site, the Floridan Aquifer, is at a depth of approximately 200 feet and should be unaffected by construction activities.

4.1.9 Impacts on the Red-Cockaded Woodpecker

Terrestrial surveys of the Stanton site revealed the presence of the red-cockaded woodpecker which is listed as an endangered species by both state and federal wildlife officials. The findings of the surveys are given in Subsection 2.7.6.3. A total of 45 active cavity trees and 35 red-cockaded woodpeckers were observed in the vicinity of the proposed project. Once the presence of the birds was known, the proposed plant facilities arrangement was revised to preserve as many cavity trees and as much foraging habitat as possible.

The following narrative describes the primary impacts to the red-cockaded woodpecker populations of the site, including cavity tree removal, loss of foraging habitat, and loss of potential replacement cavity trees.

Construction of Unit 1 beginning in 1983 will require a total of 960 acres. Clearing operations to accommodate Units 2, 3, and 4 will include an additional 138 acres. The total area to be cleared will be 1,100 acres. Three-hundred and twelve acres of this clearing will occur for

5

the development of the solid waste storage area. This clearing of 312 acres will occur during the construction of Unit 1. The solid waste disposal area for Unit 1 will consist of about 80 acres which will be filled in 15-acre cells. 5

Impacts during plant construction which will affect the red-cockaded woodpecker include limited cavity tree removal and loss of some foraging habitat. Twenty-five active cavity trees and 38 start hole or abandoned cavity trees are associated with the nine clans on the site. Table 2.7-7 of the terrestrial ecology section shows each clan has an average of 2.8 active cavity trees with an additional 4.2 start hole trees or abandoned cavity trees.

Clearing of vegetation will result in the loss of a total of five cavity trees (Table 4.1-4). These trees include one active cavity tree, three cavity trees with start holes, and one abandoned cavity tree. From a population point of view, this represents an overall loss of 8 per cent of all available cavity trees, including 4 per cent of all active cavity trees and 11 per cent of all start hole or abandoned cavity trees (see Figure 4.1-2).

During the construction phase of the proposed plant, the anticipated loss of foraging habitat is approximately 450 acres (43 per cent of the total area proposed for clearing) for onsite clans (Clans A, B, C, D, E, F, G, H, and I), or 25 per cent of the foraging habitat used by the population on site. The foraging range of clans with colonies located offsite will not be directly affected by plant construction. Four clans (Clans E, F, H, and I) have colonies onsite located near the site boundary. It is estimated that portions of their present home range include offsite lands. The estimated onsite foraging ranges for Clans H and I and those portions of the estimated ranges for Clans E, F, H, and I that occur offsite will not be affected significantly by construction of the plant and associated facilities (e.g., railroad).

The largest loss of foraging range will occur in Clans B, C, and D, with smaller losses occurring in Clans E, F, and G (see Table 4.1-4 and Figure 4.1-3). For Clan A and Clan B, there are potentially suitable and

unoccupied foraging areas (approximately 150 acres) on the northern portion of the proposed site and just offsite. There are no known active colonies within 1 mile north of the site. Clans C and D have colonies on each side of their respective home ranges. Some unoccupied foraging habitat (approximately 100 acres) is available for these clans to the southwest.

The estimated number of potential replacement cavity trees (75 years or older) for each clan has not been finalized to date. However, based on general observation, the only colony currently occupying an area with a relatively limited number of potential replacement cavity trees is associated with Clan B. Colony B appears to have between 15 and 20 suitable replacement trees within the colony area. Of this total, three trees will be lost during plant construction. Other clans that will lose a portion of their colony area include Clans A, C, and D. Each of these colonies contains a relatively large number (more than 25) of potential replacement cavity trees. Losses from construction should not be greater than 4 or 5 potential cavity trees for each of these clans.

As indicated in Section 2.7, 19 colonies have been identified in the general vicinity of the proposed power plant. Ten of these colonies occur offsite (see Figures 2.7-7 and 2.7-8). Two of these colonies are located near the proposed railroad corridor; two other colonies are situated on the transmission corridor. None of these proposed corridors will result in the loss of active cavity trees. Both corridors, however, will impact foraging range for these four clans. It is likely that the impacts on foraging range in these clans will be similar to the effects on Clan G (i.e., 4 per cent loss). Other colonies in the area are located more than one-half mile from the various corridors and should not be influenced by these associated facilities.

The red-cockaded woodpecker will experience some unavoidable adverse impacts. Based on surveyed home ranges for four clans and estimated home ranges for the remaining five, 456 acres of occupied habitat will be lost unavoidably due to plant construction. Five cavity trees will also be removed during plant construction. This will involve one active cavity tree. There will also be some loss of potential replacement cavity trees.

These are short-term, unavoidable adverse impacts and may cause some clans to leave the area. The extent of possible movements of these clans off the site cannot be determined. However, it seems that at least five clans (Clans E, F, G, H, and I) will not be significantly influenced by these activities.

The long-term effects of the proposed action may offset some of these initial losses. The proposed energy center will provide a relatively stable and protected environment for onsite red-cockaded woodpeckers. A total of 2,170 acres will be managed for this species. Because of logging activities in this area, most sections on the site support neither the density nor the basal area of pine trees that would otherwise be expected. For one colony located just east of the site, the trees have recently been clear cut. With proper management in the buffer area of the plant site, the quality of foraging habitat could be improved. By excluding logging activities and allowing natural reseeding, the density and basal area within the preserved area could be substantially increased.

4.1.10 References

(1) Orange County Planning Department Growth Management Policy, May 20, 1980.

(2) Memorandum dated July 1, 1981, Tracy Watson, Planning Director, Orange County Planning Department, to Board of Zoning Adjustment, Orange County, Florida.

3

TABLE 4.1-1. CONSTRUCTION NOISE SOURCES

Phase	Equipment	Lp (15m.) (dBA)	Quantity	Usage*	Leq (15m.) (dBA)
Clearing and site preparation	Scraper	88	12	.35	94
	Dozer	87	4	.18	83
	Grader	85	3	.07	78
	Compactor	80	3	.10	75
	Truck	88	4	.16	83
Foundation (Pile Driving)	Driving rig	101	3	.04	92
	Side boom crawler	81	2	.04	70
	Mobile crane	83	1	.04	70
	Concrete delivery truck	88	2	.23	85
Foundation (Concrete Work)	Mobile crane	83	2	.08	75
	Front end loader	84	1	.4	80
	Concrete mixer	85	1	.4	81
	Concrete vibrator	76	3	.2	69
	Concrete pump	82	1	.07	81
	Concrete delivery truck	88	6	.26	90
Erection	Large crane	88	2	.10	78
	Mobile crane	83	3	.12	79
	Tractor trailer	88	2	.13	82
	Stationary hoist	83	3	.12	79
	Small crane	83	2	.12	74
	Impact wrenches	85	3	.13	81

*Fraction of time emitting noise.

TABLE 4.1-2. FREQUENCY DISTRIBUTION OF CONSTRUCTION SOUND POWER LEVELS

Construction Phase	Frequency (Hertz)									
	31	63	125	250	500	1,000	2,000	4,000	8,000	Overall
Clearing (dBA)	/	95	110	120	121	122	120	114	107	127
Foundation (dBA)	/	95	110	120	121	122	120	113	107	127
Erection (dBA)	/	87	102	112	113	114	112	106	99	99

TABLE 4.1-3. CONSTRUCTION WORK FORCE (Personnel per Month)

	1983	1984	1985	1986
January	110	630	950	665
February	110	630	950	625
March	400	630	950	550
April	405	630	950	460
May	405	630	910	410
June	405	770	910	380
July	405	770	840	335
August	405	825	815	230
September	460	880	815	180
October	615	880	815	145
November	615	880	780	125
December	615	880	675	85

TABLE 4.1-4. DESCRIPTION OF CONSTRUCTION IMPACTS ON RED-COCKADED WOODPECKERS

Clan	Total Number of Cavity Trees	Total Number of Cavity Trees Affected		Total Foraging Range	Loss from Construction Impacts
		Active	Other*	acres	per cent
A	6	0	0	380	42
B	6	0	1	200**	50
C	11	0	2	127	58
D	12	1	1	138	49
E	6	0	0	200**	10
F	6	0	0	200**	12
G	7	0	0	172	4
H	7	0	0	200**	0
I	3	0	0	200**	0
Total	64	1	4	1,817	--
Average	7.1	--	--	202	25

*Abandoned and start hole cavity trees.

**Home range estimated as 200 acres.

SOURCE: ESE, 1981.

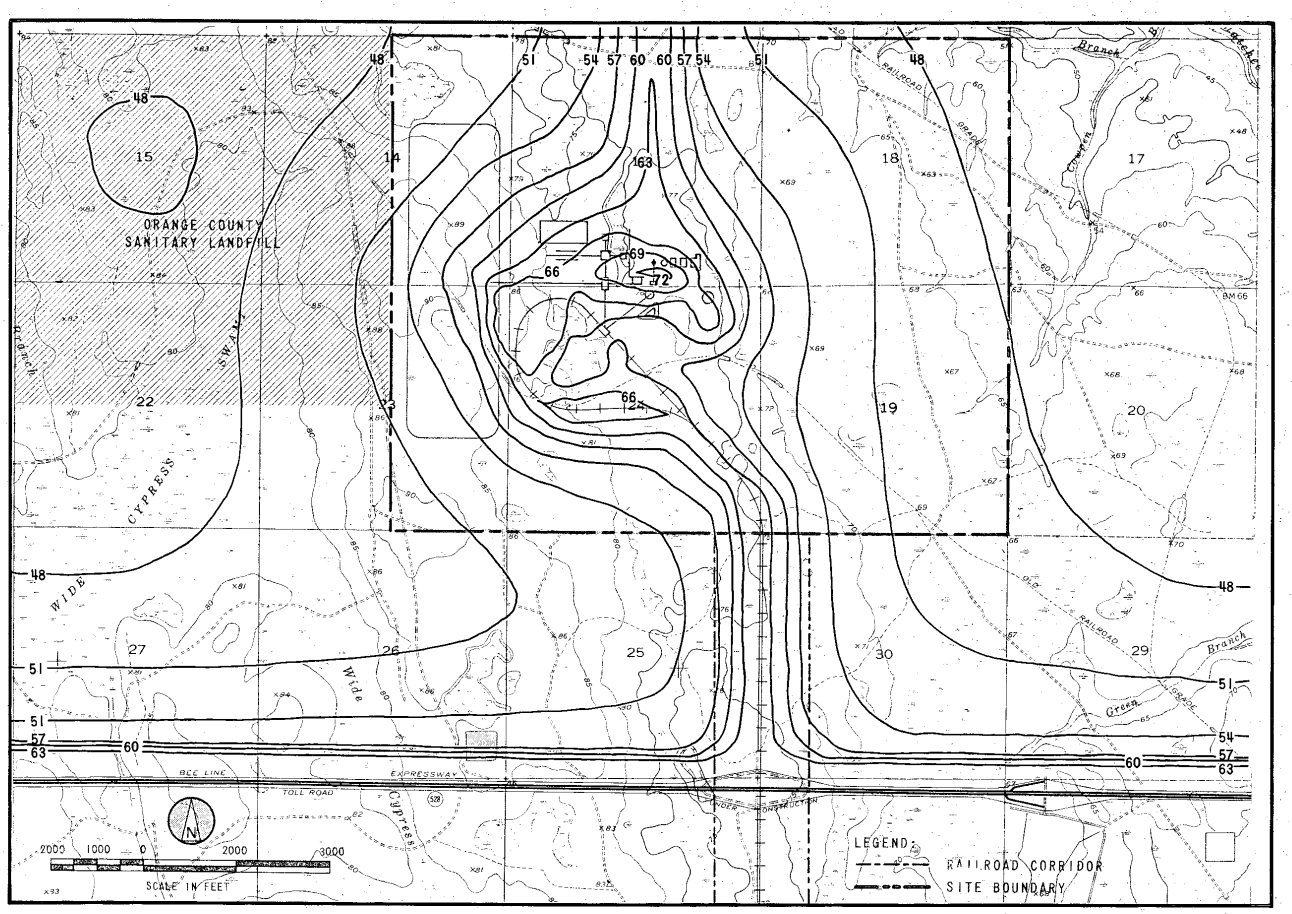


FIGURE 4.1-1. PREDICTED 24 HOUR AVERAGE NOISE CONTOURS (dBA) DURING CONSTRUCTION OF THE PROPOSED CURTIS H. STANTON ENERGY CENTER

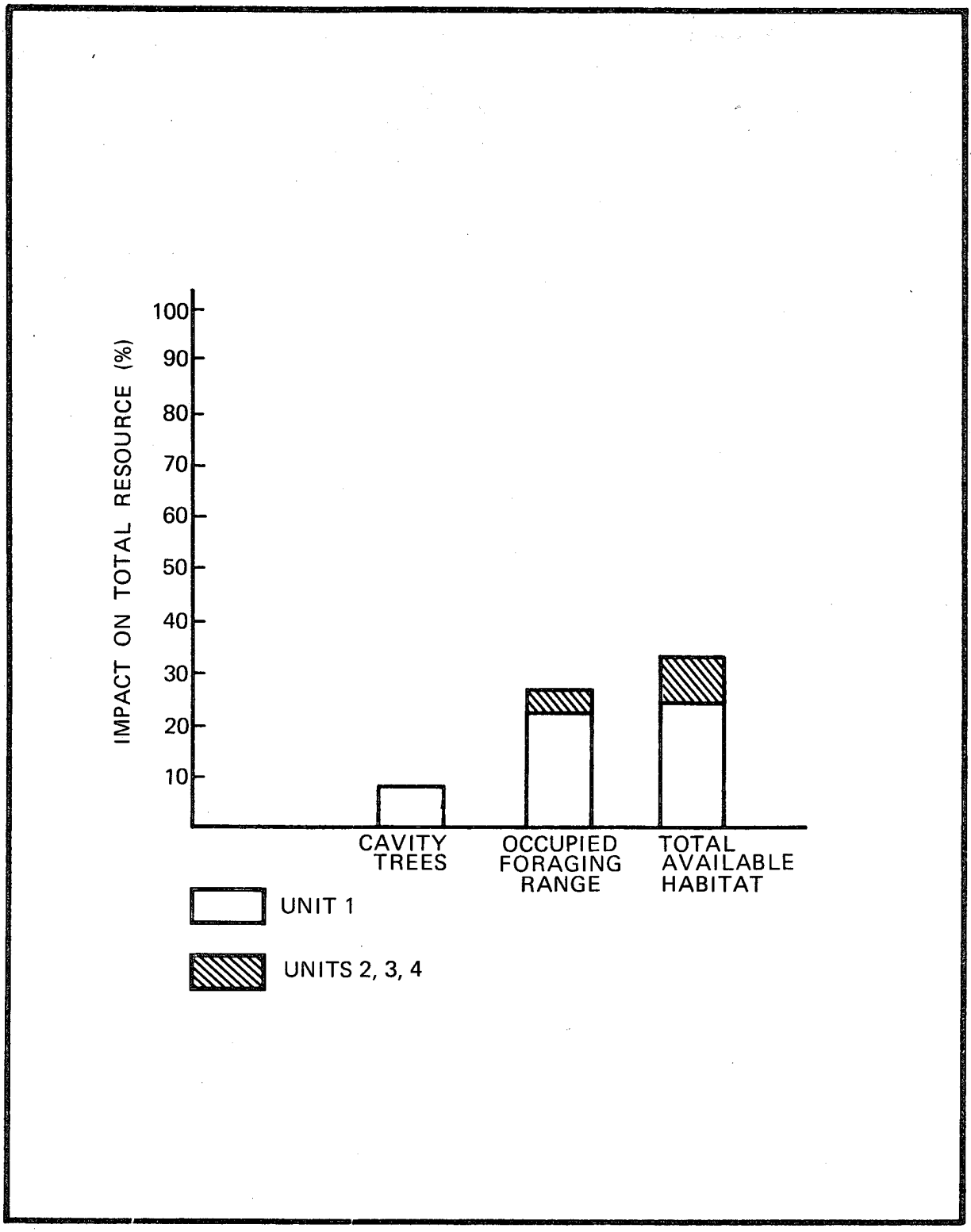


Figure 4.1-2 CONSTRUCTION IMPACTS ON RED-COCKADED WOODPECKERS

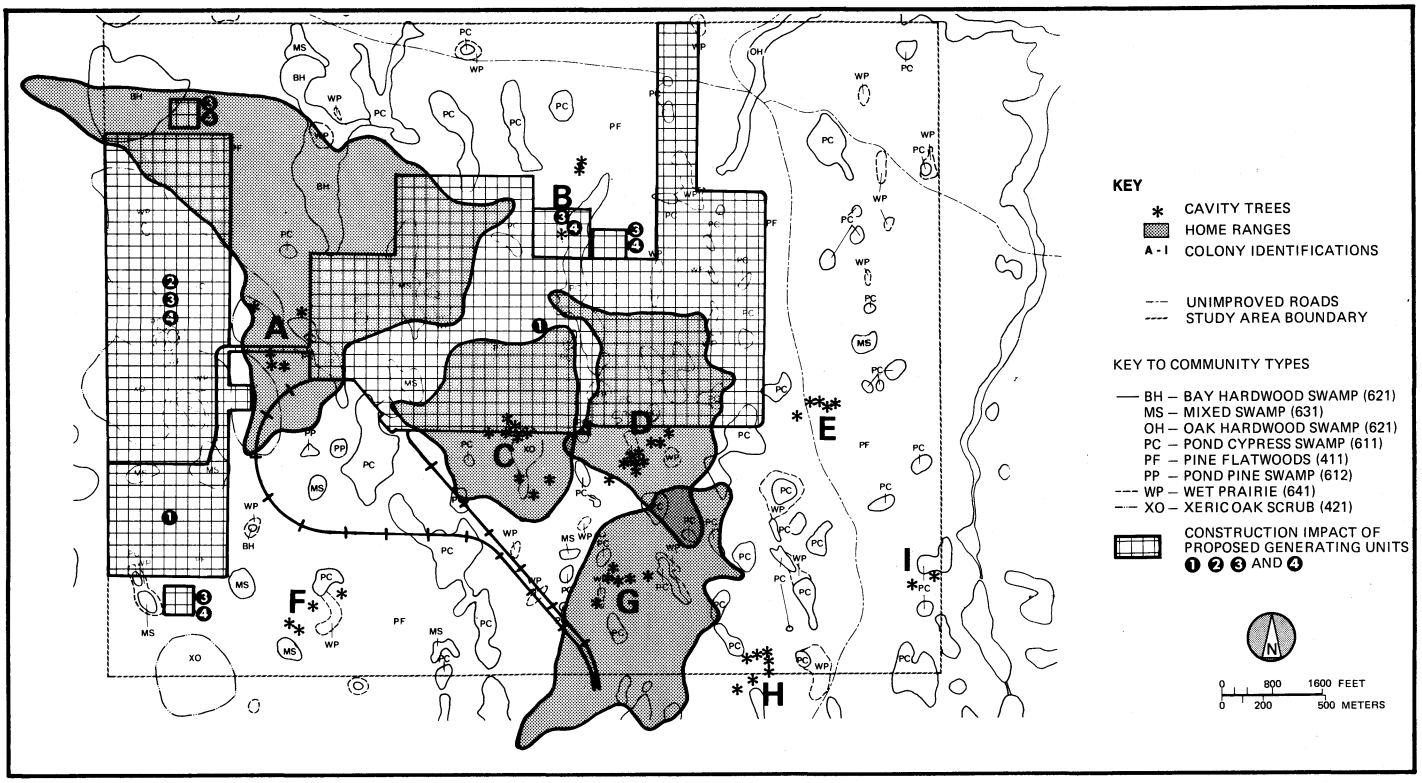


Figure 4.1-3 AREA OF CONSTRUCTION IMPACTS ON RED-COCKADED WOODPECKERS

APPENDIX 4.1A

JOINT APPLICATION
DEPARTMENT OF THE ARMY/FLORIDA DEPARTMENT
OF
ENVIRONMENTAL REGULATION
FOR
ACTIVITIES IN WATERS OF THE STATE OF FLORIDA

JOINT APPLICATION
DEPARTMENT OF THE ARMY/FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
FOR
ACTIVITIES IN WATERS OF THE STATE OF FLORIDA

Refer to Instruction Pamphlet for explanation of numbered items and attachments required.

1. Application number (To be assigned)	2. Date Day Mo. Yr.	3. For official use only

4. Name, address and zip code of applicant

Orlando Utilities Commission
P.O. Box 3193
Orlando, Florida 32802

Telephone Number 305-423-9100

5. Name, address, zip code and title of applicant's authorized agent for permit application coordination

B. E. Shoup, Director
Environmental Divisions
P.O. Box 3193

Telephone Number 305-423-9141

6. Describe the proposed activity, its purpose and intended use, including a description of the type of structures, if any, to be erected on fills, or pipe or float-supported platforms, and the type, composition and quantity of materials to be discharged or dumped and means of conveyance.

See Attached Sheets.

	Dredged/Excavated		Filled/Deposited	
Volume of Material:*	0 CY Waterward of O.H.W. or M.H.W.	3,450,000 CY Landward of O.H.W. or M.H.W.	0 CY Waterward of O.H.W. or M.H.W.	3,444,000 CY Landward of O.H.W. or M.H.W.

*Sum of all dredge/fill quantities.

7. Proposed use

Private [ ] Public [X] Commercial [ ] Other [ ] (Explain in remarks)

8. Name and address including zip code of adjoining property owners whose property also adjoins the waterway.

See Attached Sheets.

9. Location where proposed activity exists or will occur

Street address See Attached Sheets

Longitude _____ Latitude _____ (If known)

Sec. _____ Twp. _____ Rge. _____

Florida	Orange		Orlando
State	County	In City or Town	Near City or Town

10. Name of waterway at location of the activity Various Wetlands

11. Date activity is proposed to commence January 1, 1983
Date activity is expected to be completed August 1, 1986

12. Is any portion of the activity for which authorization is sought now complete? Yes [ ] No [X]
If answer is "Yes" give reasons in the remarks section. Month and year the activity was completed _____
_____ _____. Indicate the existing work on the drawings.

13. List all approvals or certifications required by other Federal interstate, state or local agencies for any structures, construction, discharges, deposits or other activities described in this application, including whether the project is a Development of Regional impact.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval
Florida Board (Governor and his Cabinet)	Site Certification F.S. 403.501 thru 403.517	N/A		Pending
Florida Public Service Commission	Certificate of Need F.S. 403.519	N/A		Pending

14. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein?
Yes [ ] No [X] (If "Yes" explain in remarks)

15. Remarks (see Instruction Pamphlet for additional information required for certain activities)

See Attached Sheets.

16. Application is hereby made for a permit or permits to authorize the activities described herein. I agree to provide any additional information/data that may be necessary to provide reasonable assurance or evidence to show that the proposed project will comply with the applicable State Water Quality Standards or other environmental protection standards both during construction and after the project is completed. I also agree to provide entry to the project site for inspectors from the environmental protection agencies for the purpose of making preliminary analyses of the site and monitoring permitted works, if permit is granted. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

B. E. Sloan — Signature of Applicant

5/12/81 — Date

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

The application must be signed by the person who desires to undertake the proposed activity; however, the application may be signed by a duly authorized agent if accompanied by a statement by that person designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

FEE: Attach Checks/Money Orders on front
Payable to Department of Environmental Regulation
$200 Standard form projects
$20 Short forms and Chapter 403 projects only

INFORMATION NEEDED ON AFFIDAVIT OF OWNERSHIP OR CONTROL

1. The affidavit of ownership or control should be signed by at least one owner of the property, lessee, or easement holder.
2. If subdivided, the property should be described by lot number, block number (if any), name of subdivision, and plat book number and page where recorded.
3. If unplatted, the property should be described by section, township, and range, and subdivision of section.
4. If the description is based on courses and distances not following the plane coordinates, the point of beginning should be identified.

Please contact this office should clarification or further instructions be necessary.

AFFIDAVIT OF OWNERSHIP OR CONTROL

TO THE DEPARTMENT OF ENVIRONMENTAL REGULATION:

I hereby certify that I am the (check one):

SEE ATTACHED AFFIDAVIT

record owner _____

lessee _____

record easement holder _____

applicant to record owner for easement _____

of the below described property situated in _____ County, Florida; and that said property is all the property that is contiguous to and landward of the area in which the work proposed in the permit application is to be conducted. Furthermore, I certify that as record owner, lessee, or record easement holder I have or will have prior to undertaking the work all necessary approvals or permission from all other persons with a legal interest in said property to conduct the work proposed in the permit application.

LEGAL DESCRIPTION

_____

_____

Sworn to and subscribed before me at _____

_____ County, _____, this _____ day

of _____, 19____.

_____

NOTARY PUBLIC

My commission expires:

ALTERNATE AFFIDAVIT OF OWNERSHIP OR CONTROL

I hereby certify that the Orlando Utilities Commission (OUC) is or will become the record owner of sufficient property interests to conduct the proposed activities. After approval of OUC's Site Certification Application, OUC will exercise its condemnation power for ownership of any property not already obtained by purchase. All property requiring dredge and fill activities is located Orange County, Florida. The property described below contains all of the property that is contiguous to and landward of the area where the work will be conducted. As present/future record owner I have or will have, prior to undertaking the work, all necessary approvals or permission from all other persons with a legal interest in said property to conduct the work proposed in the permit application.

LEGAL DESCRIPTION

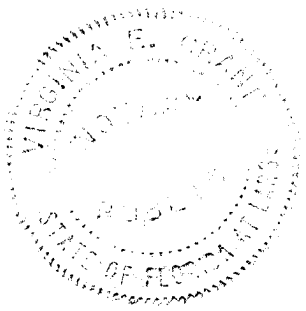
The legal description of the site is given by section, township, and range designations in Section 2.1 of the Site Certification Application. New transmission lines will be located in expansions of existing transmission line rights-of-way. This property is described in Section 3.8 of the Site Certification Application. Other offsite facilities will be sited in corridors described in Section 3.9 of the Site Certification Application. The actual rights-of-way that will be obtained will be within those corridors.

B. E. Thomas

Sworn to and subscribed before me at Orlando, Florida, Orange County, Florida, this 12th day of May, 1981.

Virginia E. Crane
NOTARY PUBLIC

My commission expires: July 21, 1984



JOINT PERMIT APPLICATION
U.S. ARMY CORPS OF ENGINEERS/
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
ATTACHMENT TO SECTION 6

6. DESCRIPTION OF PROPOSED ACTIVITY

The activities that will involve dredge and fill work in wetland areas are related to the proposed Curtis H. Stanton Energy Center, Unit 1, by the Orlando Utilities Commission. The Energy Center will consist of a 460 MW coal-fired power station, its directly associated facilities, access railroad, access road, transmission lines, and makeup water and return pipelines.

The amounts of excavated and fill materials for the various areas are as follows.

A. Main Plant Site. The main structures and coal railroad will be located on fill.

Volume of Dredged/Excavated Material:

0 CY Waterward of MHW 3,400,000 CY Landward of MHW

Volume of Filled/Deposited Material:

0 CY Waterward of MHW 2,826,200 CY Landward of MHW

B. Access Railroad. Approximately 17.5 miles of railroad roadbed will be constructed.

Volume of Dredged/Excavated Material:

0 CY Waterward of MHW 34,600 CY Landward of MHW

Volume of Filled/Deposited Material:

53,500 CY Waterward of MHW 503,750 CY Landward of MHW

5

Originally - 0

C. Access Road. Approximately 7 miles of roadway roadbed will be constructed.

Volume of Dredged/Excavated Material:

$$\frac{0}{\text{Waterward of MHW}}\ \text{CY}\quad\frac{15{,}000}{\text{Landward of MHW}}\ \text{CY}$$

Volume of Filled/Deposited Material:

$$\frac{0}{\text{Waterward of MHW}}\ \text{CY}\quad\frac{113{,}800}{\text{Landward of MHW}}\ \text{CY}$$

D. Transmission Line.

Volume of Dredged/Excavated Material:

$$\frac{0}{\text{Waterward of MHW}}\ \text{CY}\quad\frac{0}{\text{Landward of MHW}}\ \text{CY}$$

Volume of Filled/Deposited Material:

$$\frac{0}{\text{Waterward of MHW}}\ \text{CY}\quad\frac{0}{\text{Landward of MHW}}\ \text{CY}$$

E. Makeup and Return Water Pipelines.

Volume of Dredged/Excavated Material:

$$\frac{0}{\text{Waterward of MHW}}\ \text{CY}\quad\frac{0}{\text{Landward of MHW}}\ \text{CY}$$

Volume of Filled/Deposited Material:

$$\frac{0}{\text{Waterward of MHW}}\ \text{CY}\quad\frac{0}{\text{Landward of MHW}}\ \text{CY}$$

The detailed breakdown of quantities and description of the above activities are presented in Section 15 of this application.

JOINT PERMIT APPLICATION
U.S. ARMY CORPS OF ENGINEERS/
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
ATTACHMENT TO SECTION 8

8. Name and address including zip code of adjoining property owners whose property also adjoins the waterway.*

Richard W. Sherwin, Trust
c/o Thomas H. Warlick, Esq.
210 E. Colonial Dr.
Orlando, FL 32801

Cape Orlando Corp.
c/o Magna Properties, Inc.
P.O. Box 2449
Pompano Beach, FL 33061

Harry H. Hansbrough, Trust
1607 Lee Rd.
Winter Park, FL 32789

Dayron Corp.
P.O. Box 20394
Orlando, FL 32814

John J. & Tosi Jo Brunetti
Frank J. Fiore
200 Route 9
Old Bridge Road, N.J. 08857

Charles E. Bradshaw, Jr.
P.O. Box 7853
Orlando, FL 32854

Leedy Corp. et al.
216 E. Jackson
Orlando, FL 32801

Dorothy W. Edward & James Poitras Trust
c/o Maury Carter
P.O. Box 8821
Orlando, FL 32856

Sun First National Bank of Orlando
c/o Florida Ranch Lands, Inc.
1500 Pan American Bldg.
Orlando, FL 32801

James E. Strates
P.O. Box 55
Orlando, FL 32802

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*Partial List. The complete list will be provided shortly.

JOINT PERMIT APPLICATION
U.S. ARMY CORPS OF ENGINEERS/
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
ATTACHMENT TO SECTION 8

8a. Name and address including zip code of adjoining property owners whose property adjoins* a waterway in which fill is being placed and a 404 Permit is required.

Trestle 3

Richard W. Sherwin, Trust
c/o Thomas H. Warlick, Esq.
210 E. Colonial Dr.
Orlando, FL 32801

Orlando Rifle Association
c/o Odell Warren
910 S. Osceola
Orlando, Florida 32806

Harry H. Hansbrough, Trust
1607 Lee Rd.
Winter Park, FL 32789

Dayron Corp.
P.O. Box 20394
Orlando, FL 32814

Trestle 4

John J. & Tosi Jo Brunetti
Frank J. Fiore
200 Route 9
Old Bridge Road, N.J. 08857

Charles E. Bradshaw, Jr.
P.O. Box 7853
Orlando, FL 32854

Trestle 9

City National Bank of Miami
Trustee #P-258 (5000937)
P. O. Box 013280
Miami, Florida 33101
Orange County, Florida
2450 33rd Street
Orlando, Florida 32805

*Meaning property adjoining future OUC property within the wetland area of concern.

JOINT PERMIT APPLICATION
U.S. ARMY CORPS OF ENGINEERS/
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
ATTACHMENT TO SECTION 9

9. Location where proposed activity exists or will occur.

Street Address: NA.

Longitude:* 81° 09' 40" Latitude:* 28° 28' 50".

Section	Township	Range
33, 34	21S	31E
3, 10, 15, 22, 23, 26, 27, 34, 35	22S	31E
7, 18, 19, 30, 31	23S	32E
2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 23, 24, 25	23S	31E
6	24S	32E
1, 2, 3, 8, 9, 10, 17, 18	24S	31E
13, 16, 17, 18, 21, 22, 23, 24, 26, 27	24S	30E
13, 14	24S	29E

*Coordinates computed at approximate center of main plant site.

JOINT PERMIT APPLICATION
U.S. ARMY CORPS OF ENGINEERS/
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
ATTACHMENT TO SECTION 15

15. REMARKS

A. DESCRIPTION OF PROPOSED PROJECT

The Orlando Utilities Commission proposes to construct a 460 MW, coal-fueled electric generating station to be named the Curtis H. Stanton Energy Center. Unit 1 construction is scheduled to commence January 1, 1983 and to be completed December 31, 1986.

The proposed facility will be located in Orange County, approximately 8 miles northeast of the Orlando International Airport and one mile north of the Bee Line Expressway. The general location of the project is shown on Figure 15-1.

The main plant site will contain approximately 3,280 acres within its boundaries. The proposed energy center facilities are described in Section 3.0 of the Applicants' Site Certification Application (SCA). Figure 15-2 shows the site arrangement.

Additional plant facilities which are not located within the main plant site boundary are as follows.

1. Access Railroad. This single track railroad will connect the plant railroad loop with the Seaboard Coast Line Railroad mainline near Taft, approximately 10 miles southwest of the plant site. Unit train traffic will provide the coal supplies necessary for plant fuel. The track will also provide for delivery of heavy plant equipment and materials such as boiler and turbine-generator parts, transformers, and structural steel components. Figures 15-3 and 15-4 show the proposed alignment of this railroad. The overall length of track, from the south plant site boundary to its connection with the Seaboard Coast Line mainline is 17.5 miles. One mile south of the plant site, the railroad will cross under the Bee Line Expressway. The existing bridges will be raised approximately 9 feet to provide adequate clearance. Figure 3.9-5 of the SCA shows the proposed modification.

JOINT PERMIT APPLICATION
U.S. ARMY CORPS OF ENGINEERS/
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
ATTACHMENT TO SECTION 9

9a. Location where proposed activity exists or will occur. 5

Street Address: NA.

Longitude:* 81° 09' 40" Latitude:* 28° 28' 50".

Section	Township	Range
33, 34	21S	31E
3, 10, 15, 22, 23, 26, 27, 34, 35	22S	31E
7, 18, 19, 30, 31	23S	32E
2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 23, 24, 25	23S	31E
6	24S	32E
1, 2, 3, 8, 9, 10, 17, 18	24S	31E
13, 16, 17, 18, 21, 22, 23, 24, 26, 27	24S	30E
13, 14	24S	29E

9b. Location where proposed activity will occur and requires a 404 Permit.** 5

Area	Section	Township	Range
Trestle 3	11	245	31 E
Trestle 4	10	245	31 E
Trestle 9	21	245	30 E

*Coordinates computed at approximate center of main plant site.

**All other dredge and fill activities associated with other areas must meet the requirements of the Nationwide Permit.

2. Access Road. The main vehicular link of the plant site with the state highway system will be through a new access road, approximately 7 miles long, which will connect with State Highway 50 north of the plant site. The proposed route of the access road is shown on Figures 15-3 and 15-5. A two-mile segment of this road will parallel an existing transmission corridor in the east-west direction approximately one-half mile north of the plant site boundary. Approximately two miles of the access road to its connection with Highway 50, will coincide with an existing county road.

3. Makeup Supply and Return Water Pipelines. These will supply cooling tower makeup water from and return cooling tower blowdown to the new Iron Bridge Road Water Pollution Control Facility located approximately 9 miles north of the plant site. The pipelines will follow the plant access road right-of-way to Highway 50, parallel the highway for approximately one mile, and continue north along the right-of-way of Highway 520. The proposed alignment is shown on Figures 15-3 and 15-5.

4. Transmission Lines. Power generated at the new plant will be fed to the existing transmission system through two new transmission lines. One will utilize available space on existing towers along the line from the Indian River Plant to Pershing Substation located approximately 7 miles west of the plant site. The second line will require new towers which will be placed beside the existing towers by expanding the above corridor to the north. The new transmission lines will be terminated approximately 4 miles west of the plant site at the existing Florida Power Corporation transmission line running north to the Rio Pinar Substation. The proposed transmission route is shown on Figures 15-3 and 15-6.

B. NEED FOR PROPOSED WORK

The proposed energy center will serve the growing demand of the Applicants' service areas. In addition, the new facility will offset the level of oil consumption within the Applicants' system.

The projected need for the facilities is demonstrated in the Need For Power Document submitted by OUC to the Florida Public Service Commission.

The primary fuel for the plant will be midwestern coal which will be transported to the site by unit trains operating on the Seaboard Coast Line Railroad tracks within Florida to just south of the town of Taft. From there, the unit train traffic will operate on the plant access railroad track to bring the coal to the site unloading facility. The interconnection with the Seaboard Coast Line is the most advantageous from an economic and environmental standpoint. Not only will it provide an economical and reliable mode for fuel transportation, but it will allow for an efficient delivery of construction materials and plant equipment which are too large and heavy to be transported over the road.

Access to the plant site during both construction and plant operation will be gained through the plant access road. Connection with Highway 50 was preferred over connection with the Bee Line Expressway so that high speed traffic over the tollway would not be disrupted by slow moving construction vehicles and equipment. In addition, it is expected that the majority of the construction force will travel over Highway 50 to reach the site.

The source of cooling water for the plant will be effluent from the Iron Bridge Facility. The makeup water pipeline will supply cooling tower makeup to the plant for onsite storage. During periods of high rainfall, cooling tower makeup needs will be partially satisfied by site runoff which will be collected in the makeup water supply storage pond.

Blowdown from the cooling towers will be returned to the Iron Bridge Facility for treatment. A second, smaller pipeline, parallel to the water supply pipeline, will return the blowdown to the Iron Bridge Facility.

Power generated at the new plant must be distributed to the various participants' systems. The existing transmission line corridor presently connecting the Indian River Plant with the Pershing Substation, provides the most efficient and economical route for the new transmission lines. Widening of the existing corridor will be the only requirement to accommodate the set of new towers.

C. ALTERNATIVES CONSIDERED

An extensive site study was undertaken to determine the most advantageous site location. This study took into consideration the load center

to be served, available resources, fuel delivery, economics, preservation of the environment, engineering factors, demography, meteorology, access, and availability of labor force. The proposed site location, shown on Figure 15-1, offered the most advantageous combination of the above factors.

Additional studies were performed to determine the optimum orientation of facilities within the selected site area. Major consideration was given to plant operational requirements, preservation of the wetlands, and effects on the environment. The site arrangement depicted on Figure 15-2 represents the configuration which best accommodates both engineering and environmental factors. Wetlands and other environmentally sensitive areas within the plant site boundaries are identified on Figures 2.1-5 and 2.7-2 of the SCA. A detailed discussion of the site selection process is presented in Section 8.1 of the SCA.

Extensive studies were performed on the railroad alignment to maintain economy and to avoid significant impact on the environment and on developed areas. A route was finally selected which crosses the minimum amount of wetlands, and utilizes existing corridors which have already been disturbed by other activities. It becomes evident from Figures 15-3 and 15-4 that even though the route selected is not the most direct between the plant site and the Seaboard Coast Line mainline, it is one that infringes the least on sensitive areas. Wetlands and other environmentally sensitive areas within the proposed railroad corridor are shown on Figure 2.7-7 of the SCA.

The route selected was inspected in the field with a representative from the DER. The DER recommended realignment of the track in the vicinity of Station 32+500 (Figure 15-3) to cross Hart Branch (tributary to Lake Hart) downstream from its confluence with two small tributaries which join it in that area. In addition, the alignment of the railroad will stay as close as feasible to the right-of-way of State Highway 537 in the vicinity of Station 72+000 (Figure 15-4) where it crosses Boggy Creek Canal to minimize the impact on the wetland.

Various transmission line routes were studied and the final route was inspected in the field with a representative of the DER. The recommended

alignment is shown on Figures 15-3 and 15-6. The entire route is along an existing corridor connecting the Indian River Plant with the Pershing Substation. The only impact will result from widening of the corridor. No new access roads will be required.

The plant access road was aligned to follow an existing disturbed corridor along the transmission line, or along an existing graded right-of-way, as shown on Figures 15-3 and 15-5. An alternate route would have connected the plant site with the Bee Line Expressway approximately one mile south. It was determined that the impact of heavy, slow moving construction traffic on the toll expressway would have an undesirable impact. In addition, the majority of the construction work force is expected to come from the area northwest of the site, more easily accessible to Highway 50. The proposed access road route connecting with Highway 50 was also reconnoitered with the DER representative and no changes resulted from this investigation.

The makeup and return water pipelines have been routed within the right-of-way of existing or proposed roads, as shown on Figures 15-3 and 15-5. The impact of such routing is minimal.

D. DREDGE AND FILL

The major dredge and fill impact from the proposed project on the environment will be a result of construction activity within the wetlands, particularly deposition of fill material. Extensive field investigations based on vegetative cover, and soil types have assisted in the identification of such areas within the plant site boundaries and along the various access corridors. These are shown on Figures 2.7-2, 2.7-7, 2.7-8, and 2.7-9 of the Site Certification Application.

Investigations of alternate site arrangements and routes for the access railroad, access road, transmission lines, and pipelines were based on vegetation and soils maps, aerial photographs, and topographic maps produced by the U.S. Geological Survey.

1. Main Plant Site

Existing grade elevations within the plant site vary from approximately 55 feet msl to 90 feet msl. The majority of the plant site drains toward

the Econlockhatchee River to the east through smaller tributaries such as Cowpen Branch, Hart Branch, Green Branch, and an unnamed tributary. These are shown on Figure 2.5-5 of the SCA.

Due to the relatively flat topography, the predominant mode of flooding is overland sheet flow. This mode causes shallow flooding over extensive areas. The 100-year flood levels computed by the U.S. Geological Survey and shown on the Flood Prone Area maps, vary from elevation 60 to elevation 90. These flood prone areas within the plant site are shown on Figure 2.5-6 of the SCA.

Ground floor elevations for plant structures have been established as elevation 82. Due to the extensive flood prone areas present, a significant portion of the plant site will require fill to provide protection from the 100-year flood levels. The areas within the plant site which will require fill or excavation are shown on Figure 15-7. Approximately 380 acres will require fill and 437 acres will require excavation. The total amount of fill to be placed will be 2,826,000 cubic yards. This will require the excavation of 3.4 million cubic yards of material assuming a 20 per cent shrinkage factor. The excavated material will be produced from the upland areas of the plant site. The breakdown of fill required for the various parts of the site is shown in Table 15-1. Approximately 125 acres of isolated wetland areas will be filled and/or cleared. This represents only 24 per cent of the total present within the site boundaries. The environmental considerations of plant construction and operation are described in detail in Sections 4.0 and 5.0 of the SCA.

2. Access Railroad

The main issues considered in the selection of the railroad alignment were the following.

(a) Environmental impacts of dredging and filling within the wetlands present along the way were minimized by selecting a route which avoided wetland areas to the greatest extent possible. A typical railroad cross section is shown on Figure 15-8. Embankment depths average less than 5 feet in height. The total width of disturbance from toe to toe of the embankment will vary from 30 to 74 feet. Where possible, the side slopes

of the embankment will be reduced to steeper than 3H to 1V to reduce the disturbance width, particularly in wetland areas. Environmental impact within the wetlands will be minimized by trestle-type crossings of various lengths at the most sensitive areas and culverts to maintain sheet flow. 5 This type of construction eliminates the necessity to dredge, demuck, or fill, and allows for free passage of sheet flow through the wetland. The required lengths of trestle were computed on the basis of hydrological considerations, as will be described in (b) of this subsection. The locations of the proposed trestles are shown on Figures 15-3 and 15-4. The proposed lengths are shown in Table 15-2. Typical trestle construction is shown on Figures 15-9 and 15-10. Trestles will be constructed of all precast concrete materials which is typical for such structures in this type of environment. The construction shown has been adapted from the standards of the Seaboard Coast Line Railroad. The lengths of trestles were determined as integer multiples of 24-foot spans to standardize the precast component production and achieve economy. In areas where flows are small or where equalization of water levels on two sides of a wetland is required, corrugated metal pipe or arch culverts of the appropriate size will be provided. Their locations are shown on Figures 15-3 and 15-4, and ~~their sizes listed in Table 15-3.~~ A field investigation of the proposed trestle and culvert locations with a representative of the DER revealed complete satisfaction on environmental issues. Detailed descriptions of the environmental considerations within the access railroad corridor are presented in Sections 4.0 and 5.0 of the SCA.

Fill material for embankment construction will be obtained from borrow locations in the upland areas. A certain amount will be produced from cuts in high areas along the route. Table 15-4 shows the amount of excavation or fill required along the alignment stations shown in Figures 15-3 and 15-4.

(b) Surface runoff. When an embankment is constructed across a drainage route it creates a constriction which can cause two effects: excessive flooding upstream and erosion immediately downstream of the flow opening. These effects are both caused by inadequate passage opening provided through the embankment. The impact criteria used to size the trestles under the

railroad embankment at drainage locations were that the flow velocities will be 3 feet per second or less, and that the headwater buildup on the upstream side will be minimal, considering the flatness of the topography. Because of the sandy soils present in the areas, a non-eroding velocity of 3 fps is considered as an upper limit. Additional rip-rap will be provided with trestles T9 and T10 for erosion control since the design flow velocities are slightly greater than 3 fps. The drainage basins contributing flows along the access railroad are shown on Figures 15-11 and 15-12. Flood flows for these areas were determined based on the methodology presented in the publication "Using the Cypress Creek Formula to Estimate Runoff Rates in the Southern Coastal Plain and Adjacent Flatwoods Land Resource Areas" by J. C. Stephens and W. C. Mills. This information, as well as estimated 100-year peak flow rates for the indicated trestle locations, were provided by Mr. Charles A. Hall, Director of the Water Management Division of the South Florida Water Management District. Table 15-5 shows the applicable parameters and computed 100-year flood flows for the various drainage basins. 5

Trestle lengths and culvert sizes resulting from flow requirements are shown in Tables 15-2 and 15-3. Additional considerations, however, also become factors for the final sizing of the trestles. These involve sheet flows through the wetlands and preservation of the environment in its original condition to the greatest extent possible. For this reason, the proposed final lengths of the trestles along the railroad have been modified as presented in Table 15-2. The proposed trestle lengths have been discussed with DER representatives during a field visit and found to be acceptable from the environmental standpoint.

At locations where a culvert is required for water level equalization, a minimum culvert size of 30 inches will be used to prevent plugging by debris, silt, etc. At trestle location T8, because of the interconnection with the Boggy Creek Canal drainage, part of the flow will be allowed to flow directly to Boggy Creek Canal. Therefore, a 24-foot trestle will be provided only for environmental reasons. Boggy Creek Canal drains a significant area upstream of the Bee Line Expressway as well as the entire

Orlando International Airport area. Information provided by the Greater Orlando Airport Authority indicates that the design flow in Boggy Creek Canal is

3,000 cfs. The releases from the airport drainage system have been designed so that they do not cause adverse effects where they meet existing drainage structures such as the bridge on State Highway 527 where it crosses Boggy Creek Canal. The proposed plant access railroad trestle has therefore been sized to match the existing 180 foot long bridge at that location. Since the two structures will be parallel and at close spacing to each other, this configuration will maintain existing conditions.

After initial review of this application, a letter dated December 7, 1981 was sent from Algis G. Taruski of the Department of the Army, Corps of Engineers, to the Orlando Utilities Commission indicating that additional information was required on Trestles 3, 4, 5, 6, 7, and 9. The letter also stated that the fill associated with Trestles 3 and 4 would require a 404 Permit and that the fill associated with Trestles 5, 6, 7, and 9 may qualify under the Nationwide Permit pending review of the requested additional information. On January 28, 1982 a field trip to the above trestle locations was made by the Corps of Engineers, Orlando Utilities Commission, Saint Johns River Water Management District, Black & Veatch, and Environmental Science and Engineering representatives. At this time the additional information requested by the Corps of Engineers was provided and it was concluded that Trestles 3, 4, and 9 would require a 404 Permit while Trestles 5, 6, and 7 met the requirements of the Nationwide Permit. On February 9, 1982 OUC and Black & Veatch again met with the Corps of Engineers representatives to formally submit the information requested to process a 404 Permit for Trestles 3, 4, and 9. The same information appears in the Site Certification Application Amendment 5. 5

Figures 15-8a through 15-8f show plan and profile information for the proposed fill and trestles in trestle areas 3, 4, 5, 6, 7, and 9. Fill activities associated with Trestles 5 and 6 meet the conditions of the Nationwide Permit because of the limited length and quantity of fill within the wetland. Trestle 7 also meets the conditions for a Nationwide Permit since the average annual flow through the trestle is less than 5 cfs.

3. Access Road

The considerations that apply to the access road are the same as those discussed for the access railroad. A typical road section is shown on Figure 15-13. Since the access road follows existing corridors for 4 of the total 7 miles, the environmental impact is minimal. The route is generally along a ridge; therefore the wetland crossings are practically nonexistent. Figures 15-11 and 15-14 show the drainage basins which contribute flows under the road embankment. Table 15-6 shows the size of the basins, the computed design flows, and resulting culvert sizes. No trestles are proposed for the access road. A detailed description of the environmental considerations within the access road corridor is presented in Sections 4.0 and 5.0 of the SCA.

Fill material for embankment construction will be obtained from borrow locations in the upland areas. Table 15-7 shows the amount of fill required for the access road along the alignment stations shown on Figures 15-3 and 15-5.

A field reconnaissance of the proposed culvert locations along the access road with a representative of the DER revealed that the proposed locations and sizes are satisfactory from the environmental standpoint.

4. Transmission Line

Almost the entire length of the proposed transmission line is along an existing transmission corridor, as shown on Figures 15-3 and 15-6.

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Since the existing corridor already includes an access roadway to the transmission towers, no new fill will be required. Detailed descriptions of the environmental considerations for the transmission corridor are presented in Sections 4.0 and 5.0 of the SCA.

5. Makeup and Return Water Pipelines

The entire length of the proposed makeup and return water pipelines is along an existing or new right-of-way, as indicated on Figures 15-3 and 15-5. The pipelines will be laid in a trench in a cut and cover operation. The finished contours along the covered trench will be the same as the undisturbed grade contours. At the point where Highway 50 crosses the Little Econlockhatchee River, the pipelines will be suspended from the existing bridge structure.

E. CONSTRUCTION

Construction methods pertaining to dredge and fill operations for the main plant and associated facilities have been determined on the basis of maps, aerial photos, site reconnaissance, environmental investigations, and preliminary soil exploration.

Preliminary soil investigations indicate that the major plant structures will be supported on piles driven through engineered site fill and in situ material. Clearing of the land will be required prior to placing of site fill material. Any significant layers of incompetent, organic material that might be encountered will be removed prior to fill operations.

The material for site fill will be obtained from onsite sources. A detailed description of the in-situ soils, as obtained from the preliminary soil exploration program, is presented in Section 2.4 of the SCA. No spoil material will be deposited in the wetlands. Since most spoil material is organic in nature and not useful as structural fill, nearly all of what would be spoil material will be utilized for topsoil cover to promote vegetation growth over structural fill areas, slopes, etc.

Site preparation operations will be performed with a variety of construction equipment including scrapers, bulldozers, graders, rollers, haul trucks, water trucks, and draglines. Organic vegetation collected as a result of clearing will be initially logged and the remainder will be

burned. Pond embankments will be constructed from suitable onsite available material. Soil cement slope protection will be provided where required. All other erosion protection will be through vegetative cover. Ponds requiring sealing against seepage will be sealed with a layer of bentonite clay. A detailed description of pond requirements is provided in Section 3.10 of the SCA.

The railroad embankment will be constructed from material borrowed from the highlands or material resulting from local excavation. No spoil material will be deposited in the wetlands. Embankment construction will require vegetation clearing and removal of incompetent organic material. The extent of such removal will be determined at a later time when a detailed soil exploration and topographic mapping program is completed along the corridor. Railroad trestle construction will be from all precast concrete materials as shown on Figures 15-9 and 15-10. Vegetation clearing will be required at trestle locations but no removal of in-situ soil material will be required. The precast concrete construction will eliminate most of the debris resulting from the cast-in-place concrete construction such as forms, concrete spatter, reinforcing steel scrap, etc. Slope protection around trestle abutments will be limestone riprap or soil cement. Culverts will be corrugated metal pipe or arch, galvanized. Soil cement or limestone riprap slope protection will be provided around the inlets and outlets. Minimum size will be 30-inch diameter.

Equipment required for trestle erection will include cranes, trucks, pile drivers, and miscellaneous small equipment. The contractor will be responsible for regrading of disturbed wetland bottom areas to bring the soil conditions to near original condition, particularly in areas adjacent to trestles that may be disturbed during construction. Earthwork will require the same type of equipment as for site preparation. Trackwork construction will proceed from the west end where the access railroad joins the Seaboard Coast Line mainline. Ballast, ties, rail, and other hardware will be brought in by rail car and positioned as required. Access for construction and track maintenance will be provided by the railroad roadbed. No additional maintenance road will be required.

The access road embankment will be constructed from material obtained from the uplands. Paving materials will be brought in by truck. Earthwork construction will proceed with equipment similar to those required for site preparation and railroad embankment. Rollers will be required for the compaction of paving. Vegetation clearing and muck removal requirements are the same as for the railroad. It is not anticipated that trestle construction will be required. However, cast-in-place concrete box culverts may be required at one location. The rest of the culverts will be of the same construction as those under the railroad.

Pipeline construction will be confined along and within the right-of-way of the existing road or the proposed new access road. Trenching will be performed with backhoes. Trenched material will be stored temporarily along the trench. Imported crushed limerock bedding material will be deposited with loaders. Backfill material will be compacted with vibratory compactors and the final contours brought to the same elevation as the original grade. Pre-existing vegetative cover will be re-established.

Transmission line construction will involve the widening of the existing corridor by clearing of trees and tall vegetation as shown on Figure 15-15. The vegetative debris resulting from clearing operations will be stockpiled and burned. New transmission towers will be supported by piles. No earthwork operations are anticipated since access is already available.

F. HAZARDOUS MATERIALS

The proposed project will not involve the handling of hazardous materials in connection with the dredge and fill operations.

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TABLE 15-1. FILL REQUIREMENTS FOR PLANT SITE AREAS

Area	Fill cu-yards in place
Main Plant Complex	1,436,000
Coal Handling Area	170,000
Construction Laydown Area	170,000
Coal Loop Railroad	400,000
Plant Railroad	116,000
Runoff Pond Dike	325,000
Roads	209,000
Total	2,826,000

TABLE 15-2. PROPOSED TRESTLE LENGTHS ALONG ACCESS RAILROAD

Location	Station	100-Year Flood Elevation feet msl	Required Length feet	Proposed Length feet
T1	3+200	75.0	38	192
T2	9+500	74.0	16	72
T3	19+000	72.5	37	96
T4	25+500	75.0	35	144
T5	32+400	77.0	32	96
T6	39+200	76.5	73	288
T7	62+800	77.5	13	48 originally 216
T8	67+800	76.0	1	48 VS
T9	72+200	75.0	75	192
T10	83+800	85.0	32	48
T11	86+700	85.0	27	96
T12	89+100	84.5	14	48

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TABLE 15-2. PROPOSED TRESTLE LENGTHS ALONG ACCESS RAILROAD

Location	Station	100-Year Flood Elevation feet msl	Required Length feet	Proposed Length feet
T1	3+200	75.0	55	192
T2	9+500	74.0	27	72
T3	19+000	73.5	44	96
T4	25+500	75.0	82	144
T5	32+400	77.0	43	96
T6	39+200	76.5	138	288
T7	62+800	77.5	115	216 ~48'
T8	67+800	76.0	24	24 Stream
T9	72+200	75.0	*	192
T10	83+800	85.0	40	48
T11	86+700	85.0	44	96
T12	89+100	84.5	20	48

*No required length due to flow has been computed. Proposed length is based on length of existing highway trestle.

TABLE 15-3. PROPOSED CULVERT SIZES ALONG ACCESS RAILROAD* | 5

Location	Station	Size inches
C1	0+500	30
C2	10+000	30
C3	46+200	30
C4	51+300	30
C5	57+500	30
C6	58+500	30
C7	76+000	30
C8	79+000	30

*These do not include the culverts associated with Trestles 3, 4, 5, 6, 7, and 9 as shown on Figures 15-8a, 15-8b, 15-8c, 15-8d, 15-8e, and 15-8f, respectively. | 5

TABLE 15-4. EXCAVATION AND FILL QUANTITIES ALONG ACCESS RAILROAD*

Station	Fill	Cut	Cumulative Fill	Cumulative Cut
0+000				
	57,000	--	57,000	--
10+000				
	79,000	--	136,000	--
20+000				
	61,000	31,000	197,000	31,000
30+000				
	57,000	1,000	254,000	32,000
40+000				
	30,000	2,000	284,000	34,000
50+000				
	29,000	1,000	313,000	35,000
60+000				
	78,000	--	391,000	35,000
70+000				
	89,000	--	480,000	35,000
80+000				
	62,000	--	542,000	35,000
90+000				
	15,000	--	557,000	35,000
92+650				

*All quantities in cubic yards.

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TABLE 15-4. EXCAVATION AND FILL QUANTITIES ALONG ACCESS RAILROAD*

Station	Fill	Cut	Cumulative Fill	Cumulative Cut
0+000				
	57,000	--	57,000	--
10+000				
	79,000	--	136,000	--
20+000				
	51,000	31,000	187,000	31,000
30+000				
	47,000	1,000	234,000	32,000
40+000				
	20,000	2,000	254,000	34,000
50+000				
	19,000	1,000	273,000	35,000
60+000				
	68,000	--	341,000	35,000
70+000				
	86,000	--	427,000	35,000
80+000				
	62,000	--	489,000	35,000
90+000				
	15,000	--	504,000	35,000
92+650				

*All quantities in cubic yards.

TABLE 15-5. DRAINAGE BASIN FLOOD FLOWS ALONG ACCESS RAILROAD

Basin No.	Drainage Area acres	Flood Flow cfs
1	1,338	330
2	710	200
3	2,676	595
4	5,286	1,045
5	2,301	520
6	6,051	1,170
7	552	160
8	21	10
9	18,500	3,000
10	630	180
11	1,339	330
12	366	120

4 5

Amendment 4
123181
Amendment 5
030382

TABLE 15-5. DRAINAGE BASIN FLOOD FLOWS ALONG ACCESS RAILROAD

Basin No.	Drainage Area acres	Flood Flow cfs
1	1,388	330
2	710	200
3	2,319	530
4	5,644	1,100
5	2,301	520
6	6,474	1,240
7	4,160	860
8	340	110
9	18,500	3,000
10	630	180
11	1,339	330
12	366	120

4

TABLE 15-6. DESIGN FLOWS AND CULVERTS ALONG ACCESS ROAD

Drainage Basin No.	Basin Area acres	Design Flow cfs	Culvert Size inches	
1A	226	75	2-58" x 36"*	
2A	192	65	2-50" x 31"*	
3A	221	75	4-36" x 22"*	
4A	121	45	2-43" x 27"*	
5A	73	30	2-30"	
6A	101	40	2-42"	
7A	43	20	1-43" x 27"*	5
8A	1,295	325	2-8'-2" x 5'-9"*	
9A	121	45	2-43" x 27"*	5
10A	179	65	2-50" x 31"*	
11A	41	20	1-43" x 27"*	

*Pipe-arch culverts.

TABLE 15-6. DESIGN FLOWS AND CULVERTS ALONG ACCESS ROAD

Drainage Basin No.	Basin Area acres	Design Flow cfs	Culvert Size inches
1A	226	75	2-58" x 36"*
2A	192	65	2-50" x 31"*
3A	221	75	4-36" x 22"*
4A	121	45	2-43" x 27"*
5A	73	30	2-30"
6A	101	40	2-42"
7A	43	20	1-42"
8A	1,295	325	2-8'-2" x 5'-9"*
9A	390	120	2-72" x 44"*
10A	69	30	1-42"

*Pipe-arch culverts.

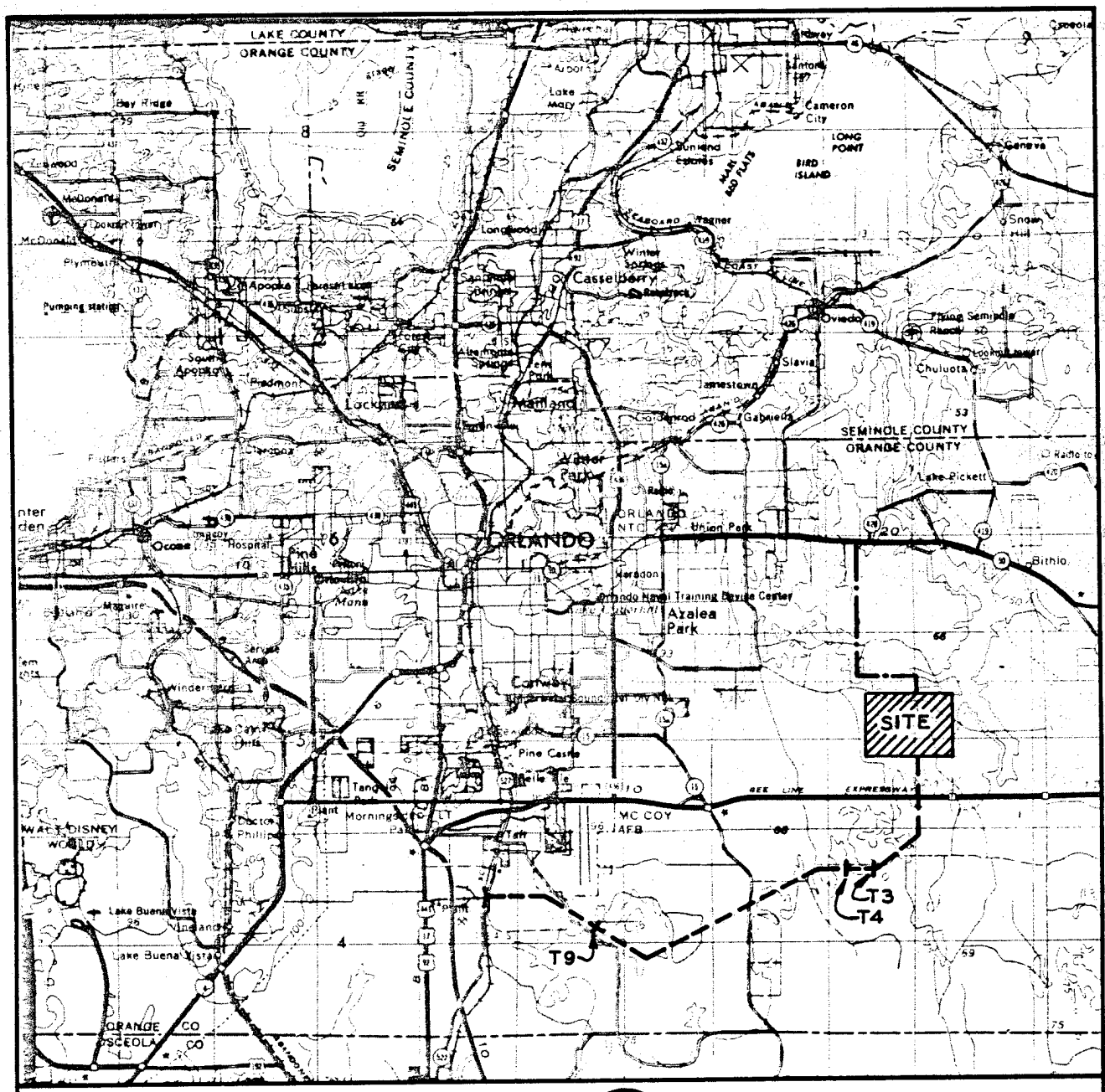
TABLE 15-7. EXCAVATION AND FILL QUANTITIES ALONG ACCESS ROAD*

Station	Fill	Cut	Cumulative Fill	Cumulative Cut
0+000 (HWY 50)				
	43,300	26,291	43,300	26,291
10+000				
	18,900	43,911	62,200	70,202
20+000				
	15,989	39,710	78,189	109,912
30+000				
	19,640	6,003	97,829	115,915
36+300 (Edge of Site)				

*All quantities in cubic yards.

4

Image Quality
As you review the next group of images, Please note that the original documents
were of poor quality.



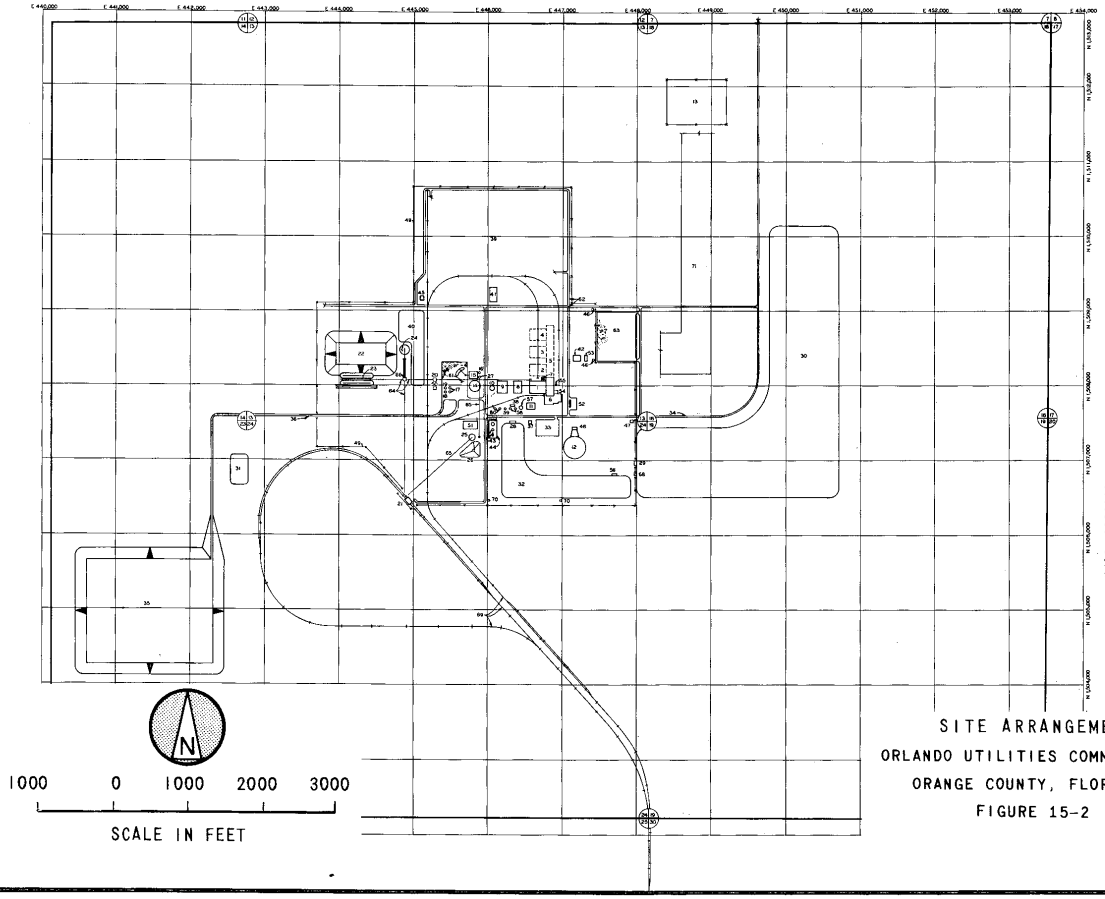
GENERAL SITE VICINITY MAP

ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

FIGURE 15-1

SOURCE: ORLANDO QUADRANGLE FLORIDA
1 MINUTE BY 2 MINUTE SERIES

5

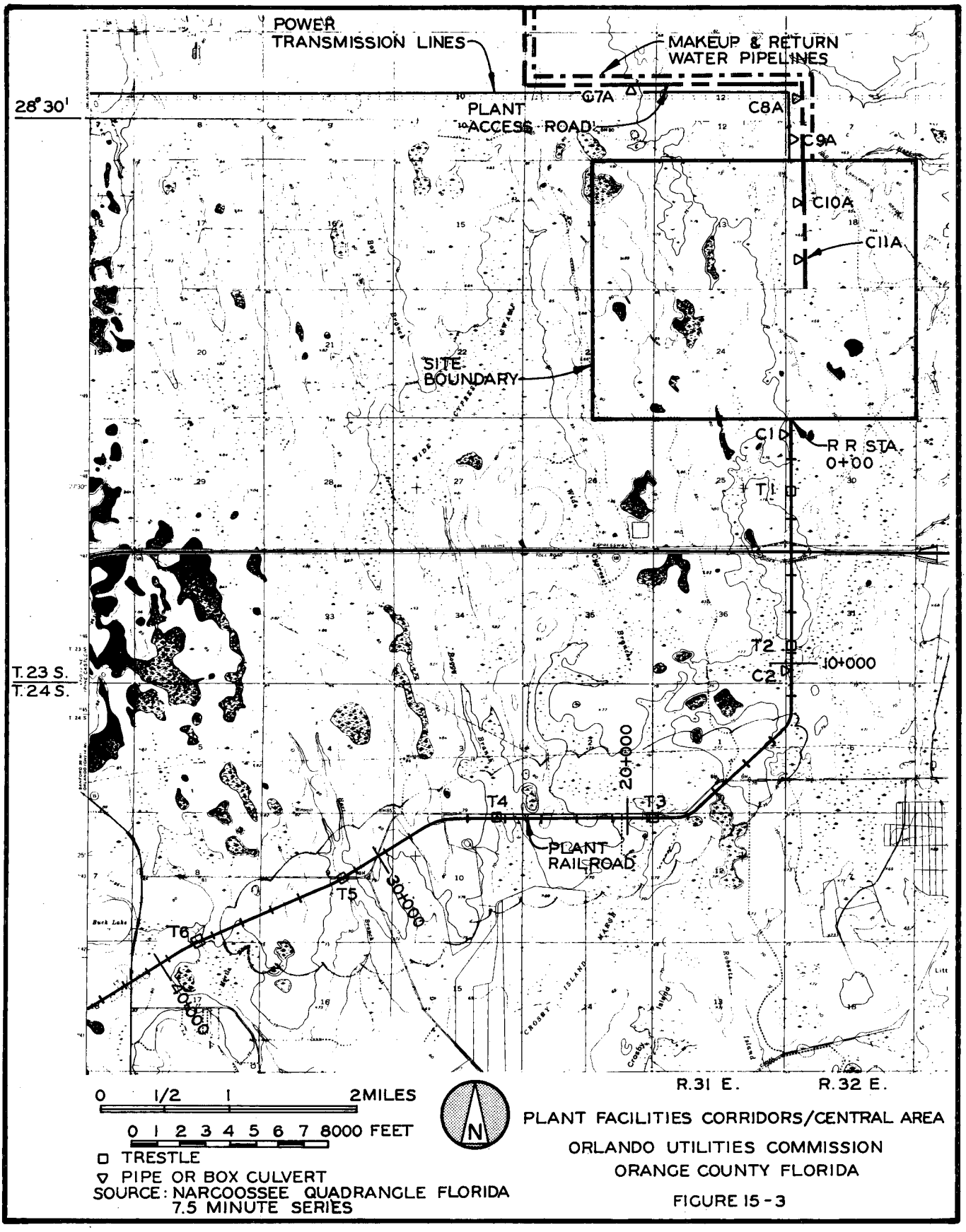


FACILITIES LEGEND

1 UNIT 1 STEAM GENERATOR
2 UNIT 2 STEAM GENERATOR
3 UNIT 3 STEAM GENERATOR
4 UNIT 4 STEAM GENERATOR
5 TURBINE ROOM
6 ADMINISTRATION AND PLANT SERVICES BUILDING
7 CONTROL CENTER BUILDING
8 PRECIPITATOR
9 AIR QUALITY CONTROL BUILDING
10 CHIMNEY
11 WATER MANAGEMENT BUILDING
12 COOLING TOWER
13 SUBSTATION
14 THICKENER
15 SLUDGE CONDITIONING BUILDING
16 FLY ASH SILO
17 ASH DEWATERING TANK
18 ASH SETTLING TANK
19 ASH WATER STORAGE TANK
20 COAL CRUSHER BUILDING
21 COAL CAR UNLOADING BUILDING
22 COAL STORAGE AREA
23 STACKER RECLAIMER
24 EMERGENCY STOCKOUT AND RECLAIM
25 SCRUBBER ADDITIVE STOCKOUT AND RECLAIM
26 SCRUBBER ADDITIVE STORAGE
27 SCRUBBER ADDITIVE STORAGE SILO
28 RECYCLE BASIN PUMP STRUCTURE
29 CIRCULATING WATER MAKEUP PUMP STRUCTURE
30 MAKEUP WATER SUPPLY STORAGE POND
31 ACTIVE COMBUSTION WASTE AREA RUNOFF POND
32 RECYCLE BASIN
33 ADMINISTRATION AND PLANT SERVICES PARKING LOT
34 MAIN PLANT ACCESS ROAD
35 COMBUSTION WASTE STORAGE AREA
36 COMBUSTION WASTE HAUL ROAD
37 COMPRESSED GAS STORAGE BUILDING
38 WATER STORAGE PUMP BUILDING
39 CONSTRUCTION LAYDOWN AREA
40 COAL PILE RUNOFF POND
41 CONSTRUCTION WAREHOUSE
42 CONSTRUCTION OFFICE BUILDING
43 FUEL OIL STORAGE
44 OIL SPILL CONTAINMENT BERM
45 CONCRETE BATCH PLANT
46 GUARD STATION
47 SECURITY BUILDING
48 CIRCULATING WATER PUMP STRUCTURE
49 SECURITY FENCE
50 YARD SERVICES BUILDING
51 PERMANENT WAREHOUSE
52 VISITORS PARKING LOT
53 CONSTRUCTION CHANGE BUILDING
54 LUBE OIL STORAGE ROOM
55 GENERATOR TRANSFORMER AREA
56 ACETEMATOR RETURN PUMP STRUCTURE
57 NEUTRALIZATION BASIN
58 SERVICE WATER STORAGE TANKS
59 DEMINERALIZED WATER STORAGE TANK
60 CONDENSATE STORAGE TANKS
61 COMBUSTION WASTE LOADING AREA
62 PLANT SERVICE ROADS
63 CONSTRUCTION PARKING
64 YARD COAL CONVEYOR
65 YARD SCRUBBER ADDITIVE CONVEYOR
66 COAL TRANSFER STRUCTURE

68 PERMANENT FACILITIES SEWAGE TREATMENT PLANT
69 RAILROAD
70 WELL WATER PUMP HOUSE
71 SITE TRANSMISSION CORRIDOR
72 MAKEUP WATER SUPPLY PUMP STRUCTURE (LOCATED AT IRON BRIDGE SEWAGE TREATMENT PLANT)

SITE ARRANGEMENT
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA
FIGURE 15-2



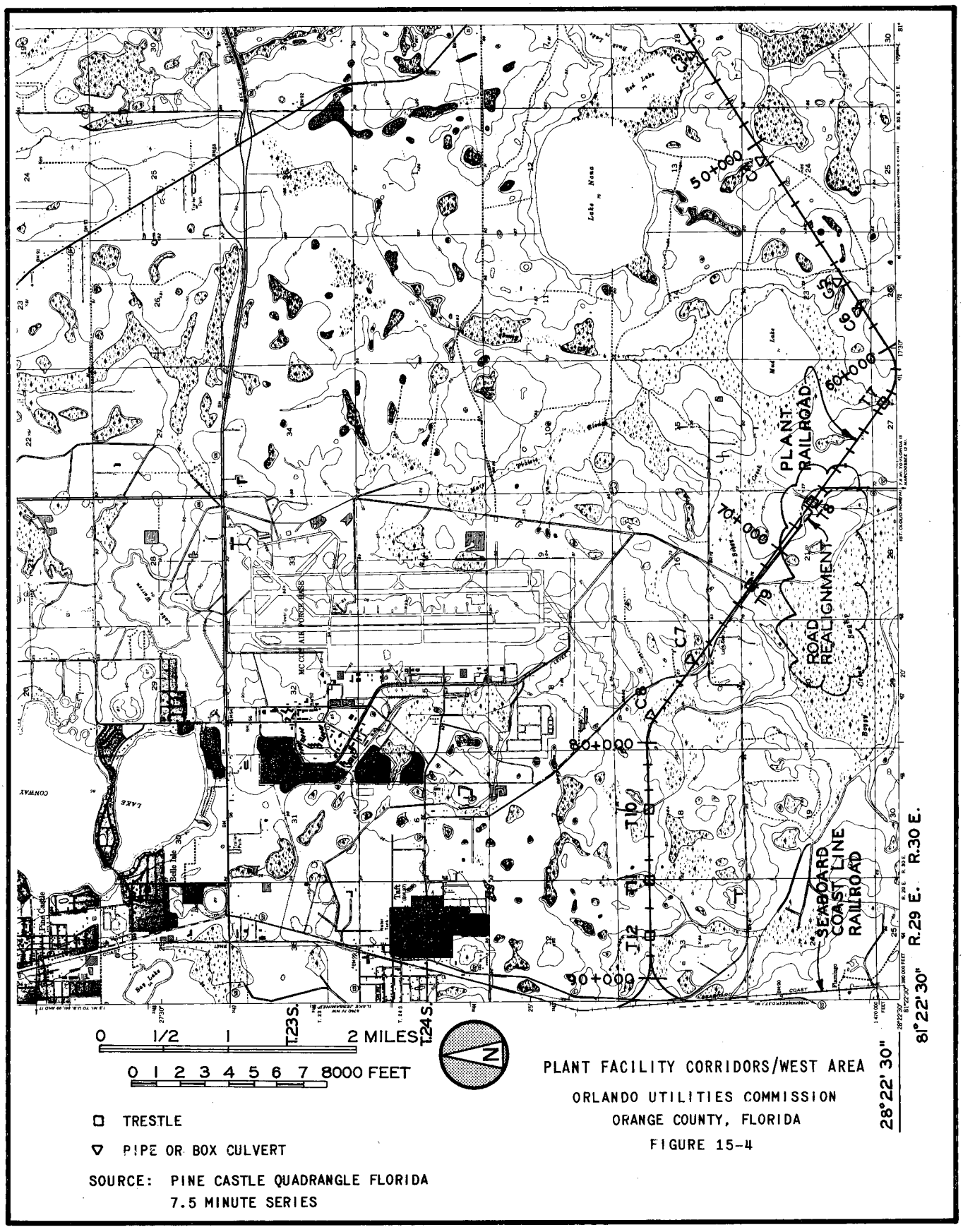
PLANT FACILITIES CORRIDORS/CENTRAL AREA

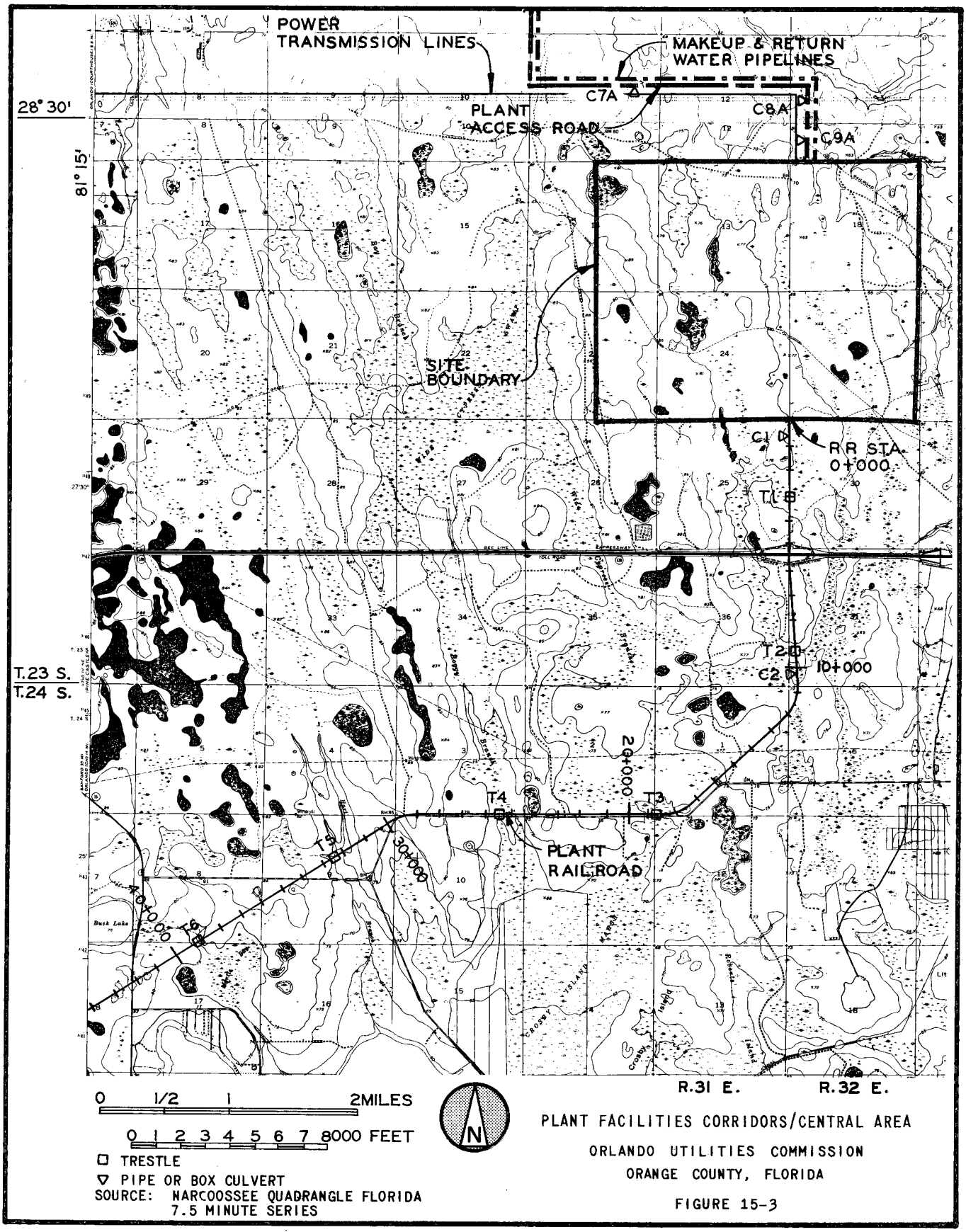
ORLANDO UTILITIES COMMISSION

ORANGE COUNTY FLORIDA

FIGURE 15-3

5


PLANT RAILROAD
ROAD REALIGNMENT
SEABOARD COAST LINE RAILROAD
50+000
60+000
70+000
80+000
90+000
T.23S.
T.24S.
T.11
T.12
R.29 E.
R.30 E.
81°22'30"
28°22'30"
0 1/2 1 2 MILES
0 1 2 3 4 5 6 7 8000 FEET
N
TRESTLE
PIPE OR BOX CULVERT
SOURCE: PINE CASTLE QUADRANGLE FLORIDA
7.5 MINUTE SERIES
PLANT FACILITY CORRIDORS/WEST AREA
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA
FIGURE 15-4

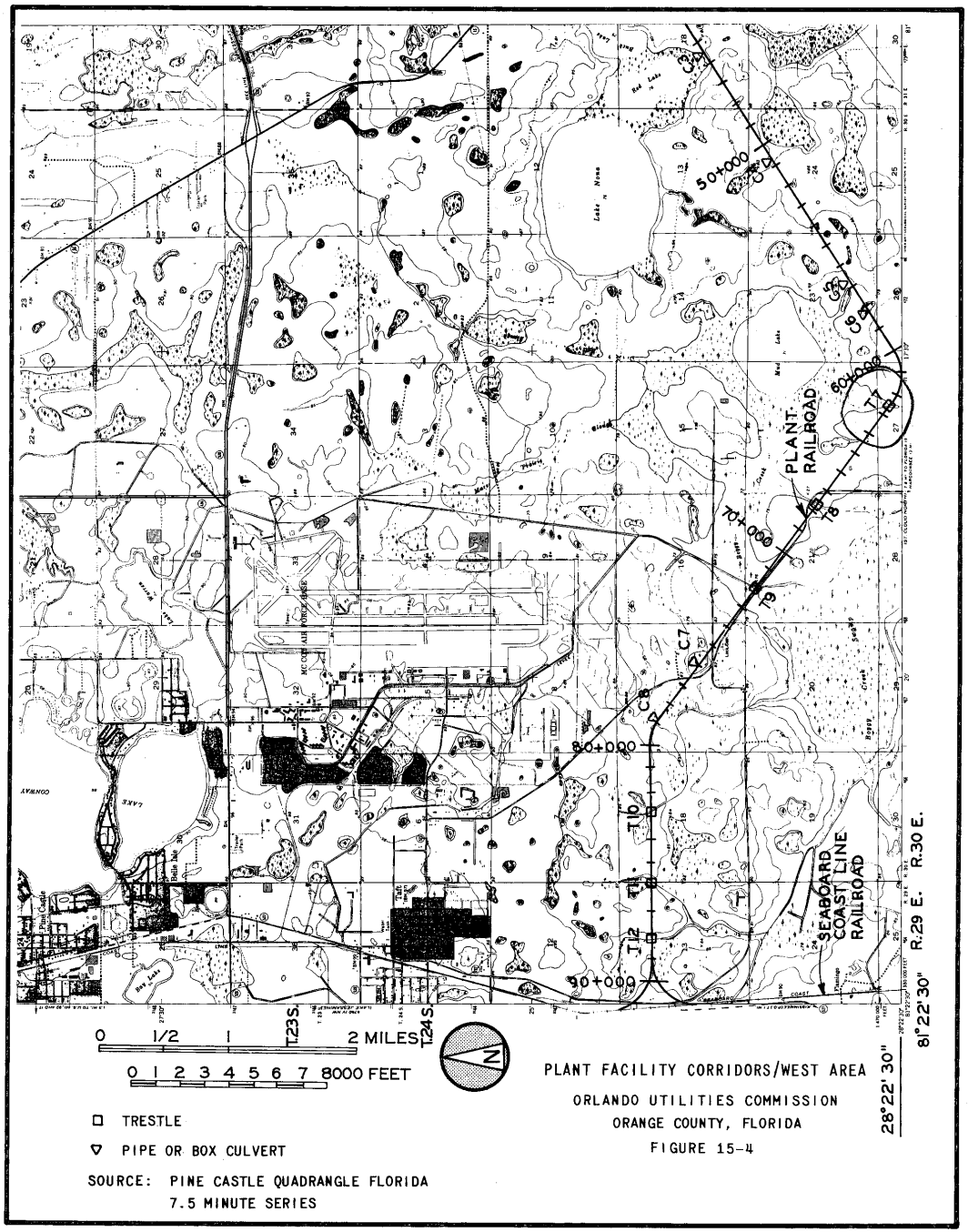


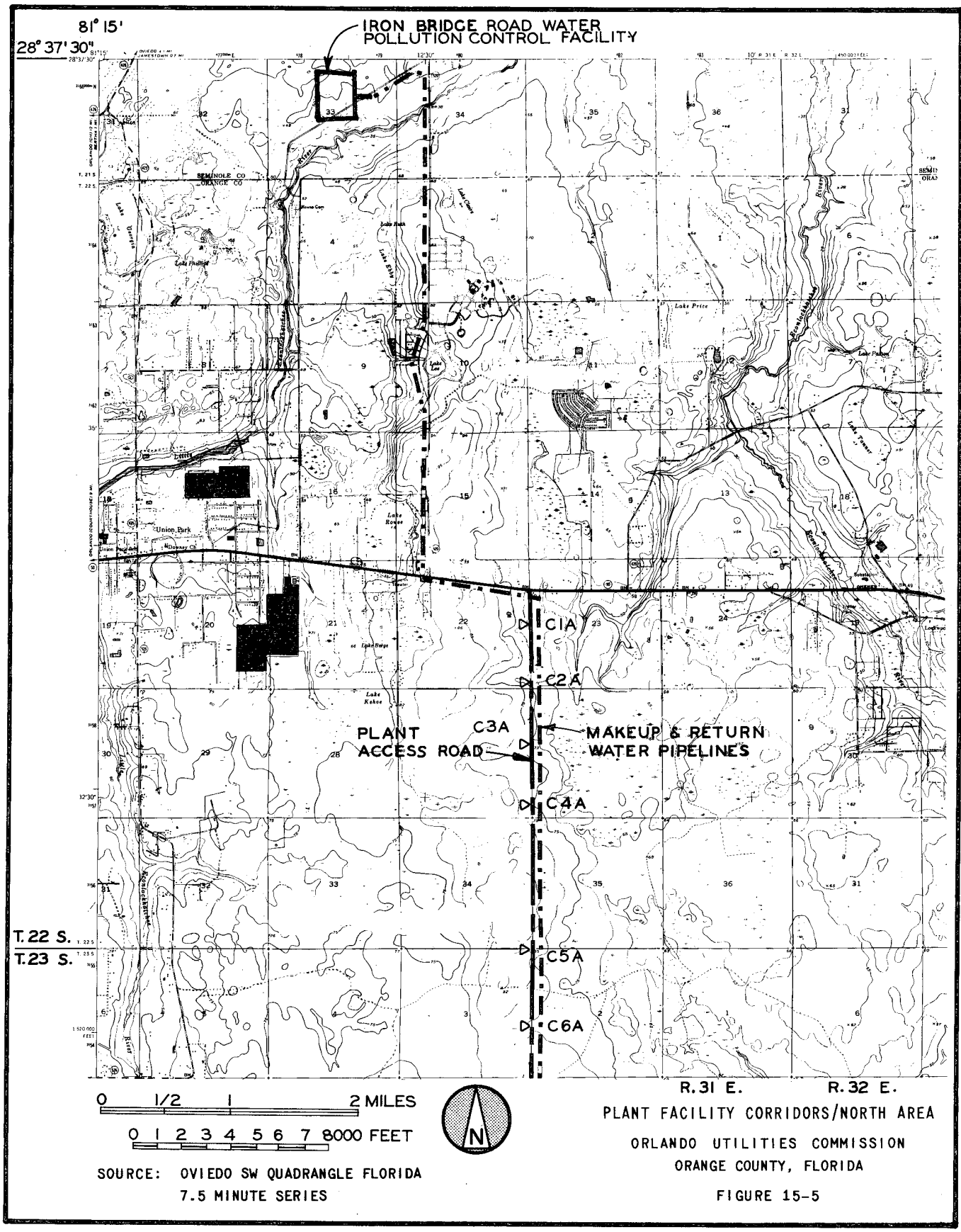
PLANT FACILITIES CORRIDORS/CENTRAL AREA

ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

FIGURE 15-3


PLANT RAILROAD
SEABOARD COAST LINE RAILROAD
50+000
60+000
70+000
80+000
90+000
C6
C7
C8
T10
T11
T12
T18
T19
T23S.
T24S.
R.29 E.
R.30 E.
28°22'30"
81°22'30"
0 1/2 1 2 MILES
0 1 2 3 4 5 6 7 8000 FEET
N
TRESTLE
PIPE OR BOX CULVERT
SOURCE: PINE CASTLE QUADRANGLE FLORIDA
7.5 MINUTE SERIES
PLANT FACILITY CORRIDORS/WEST AREA
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA
FIGURE 15-4

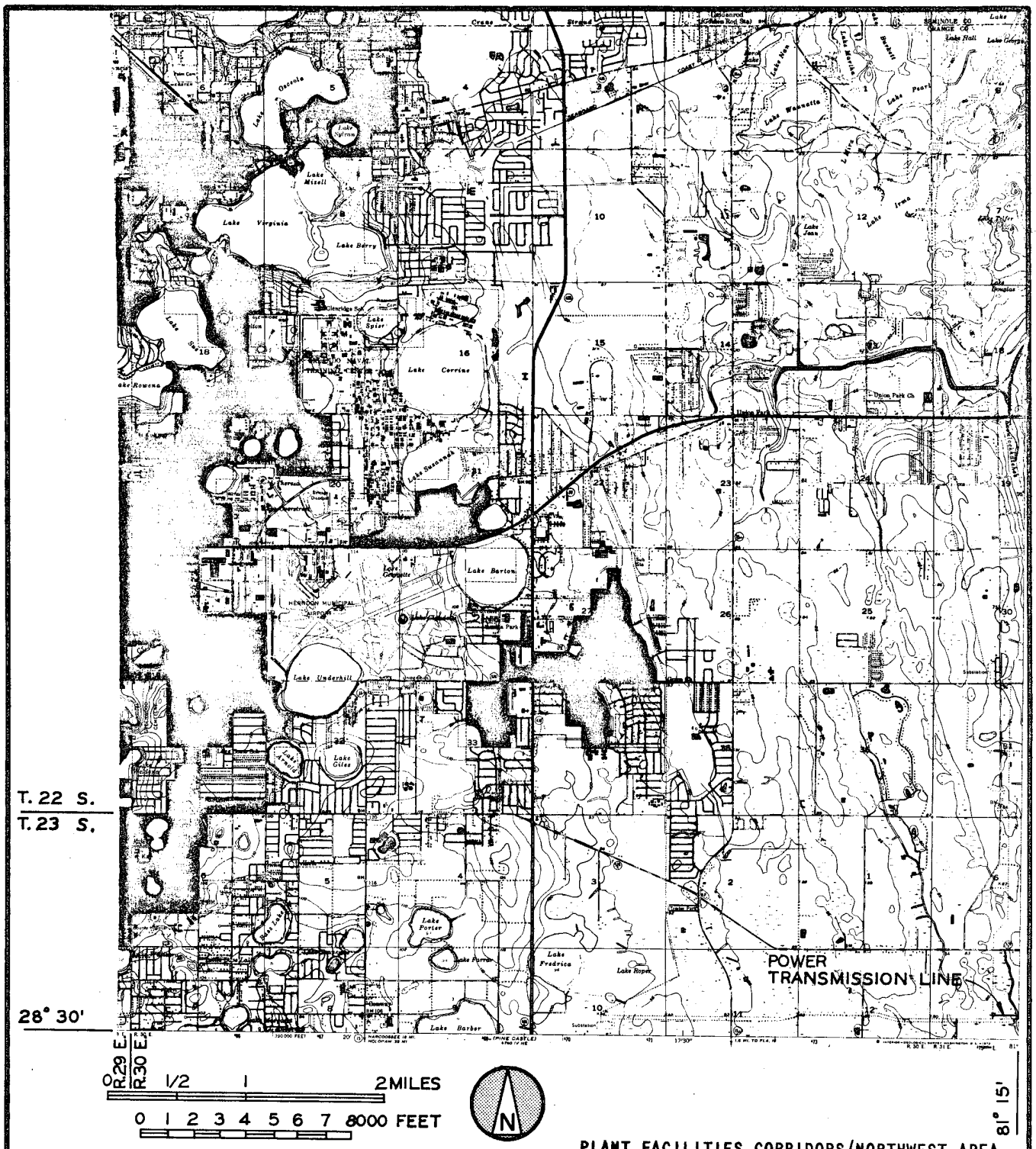


SOURCE: OVIEDO SW QUADRANGLE FLORIDA
7.5 MINUTE SERIES

PLANT FACILITY CORRIDORS/NORTH AREA

ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

FIGURE 15-5



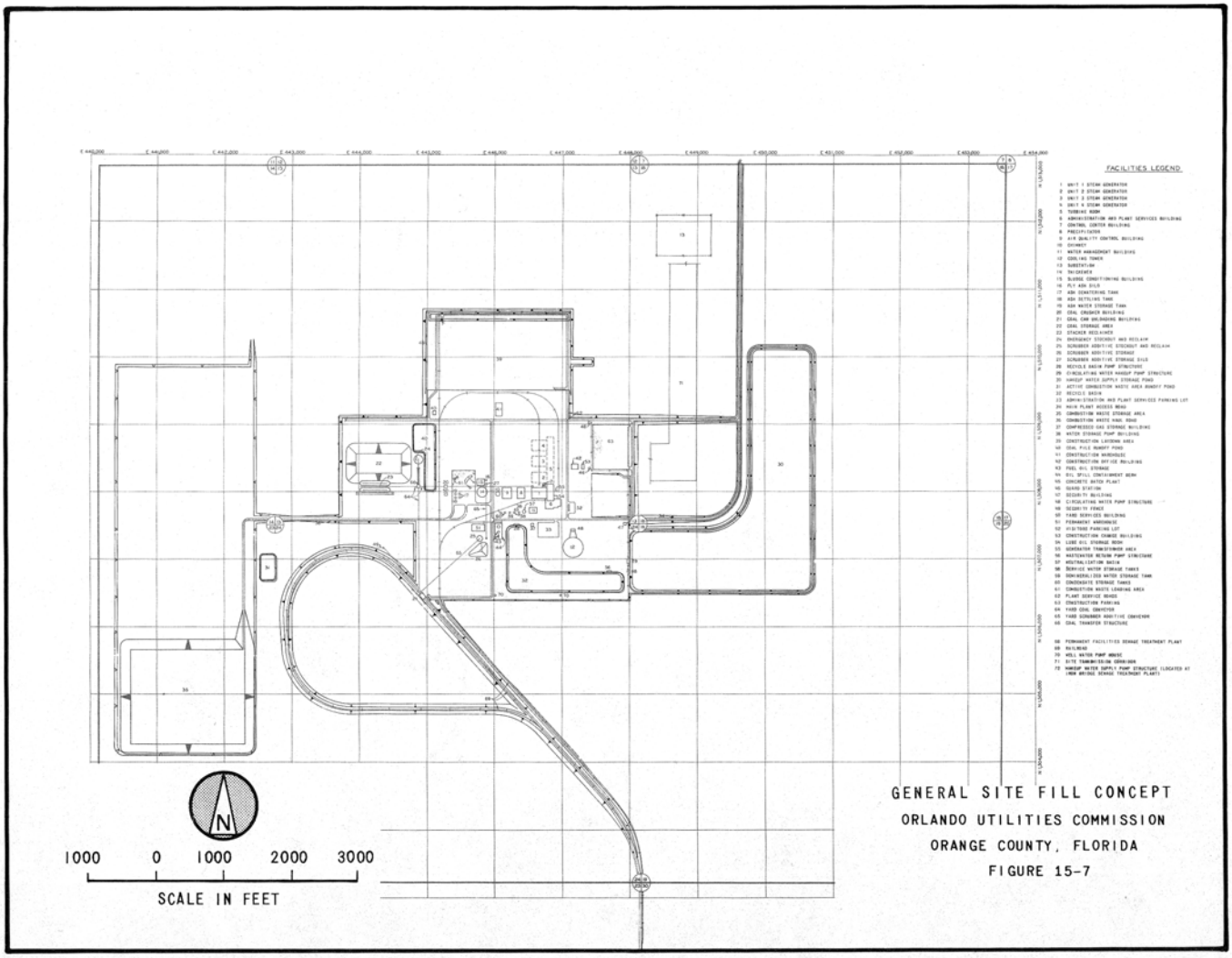
PLANT FACILITIES CORRIDORS/NORTHWEST AREA

ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

FIGURE 15-6

SOURCE: ORLANDO EAST QUADRANGLE
FLORIDA 7.5 MINUTE SERIES



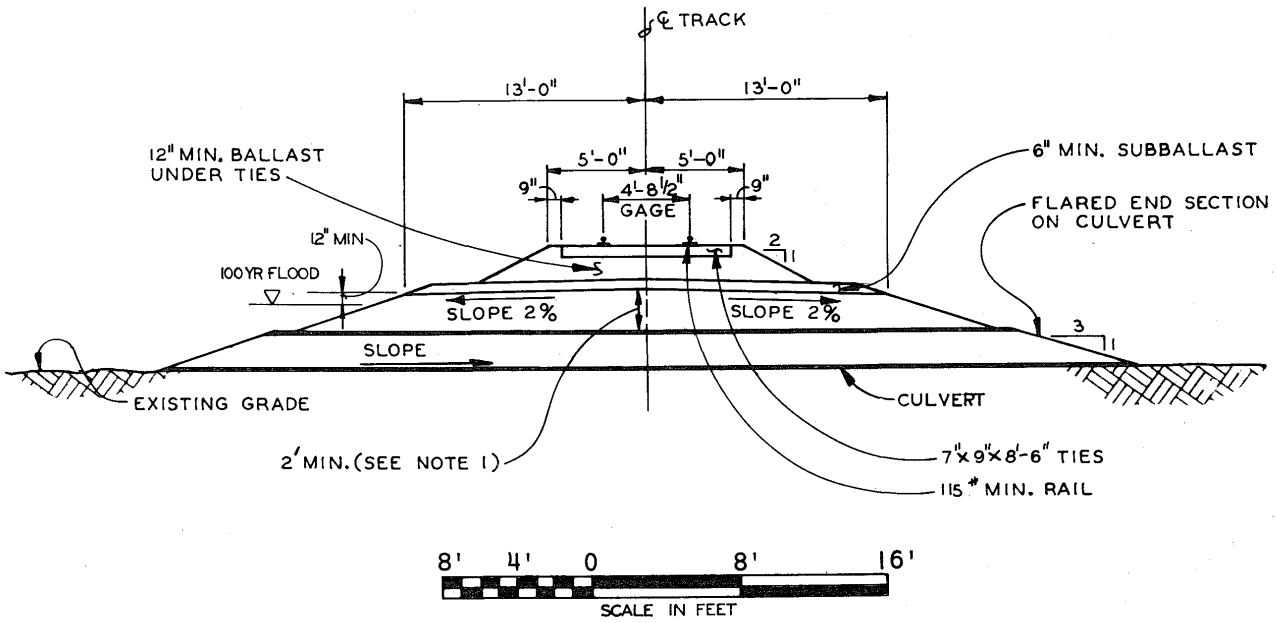
GENERAL SITE FILL CONCEPT

ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

FIGURE 15-7

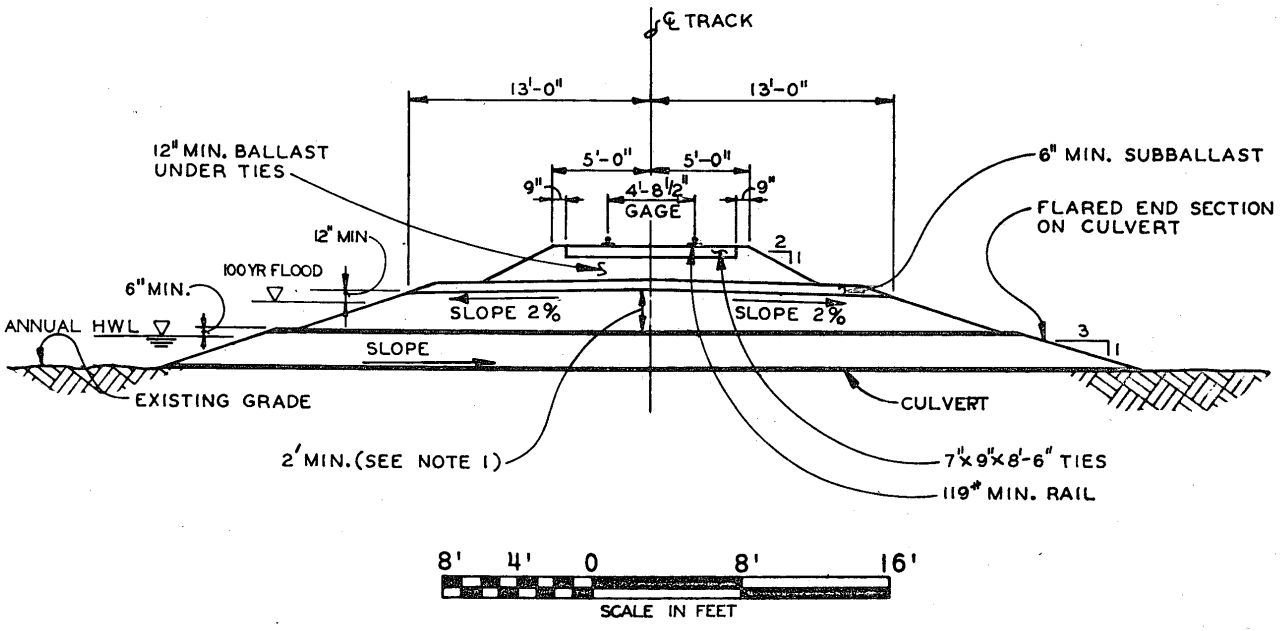
AMENDMENT 5
030382



NOTES

1. COVER DEPTH AS REQUIRED FOR E80 LOADING
2. CULVERT TO BE INSTALLED WHERE REQUIRED

TYPICAL RAILROAD SECTION
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA
FIGURE 15-8

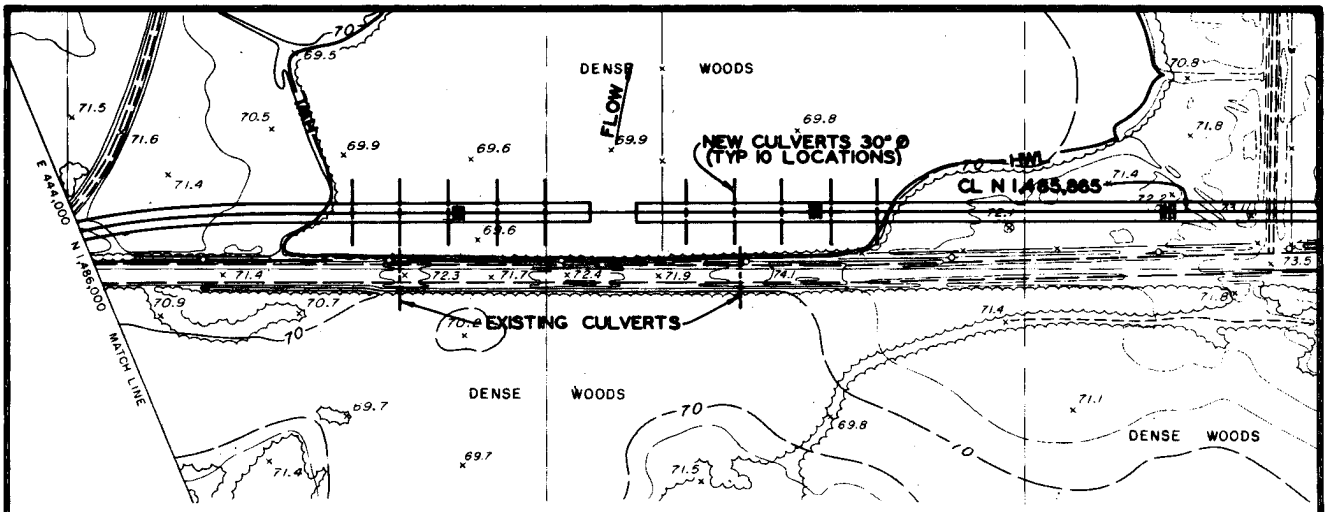


NOTES

1. COVER DEPTH AS REQUIRED FOR E80 LOADING
2. CULVERT TO BE INSTALLED WHERE REQUIRED

TYPICAL RAILROAD SECTION
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA
FIGURE 15-8

Image Quality
As you review the next group of images, Please note that the original documents
were of poor quality.



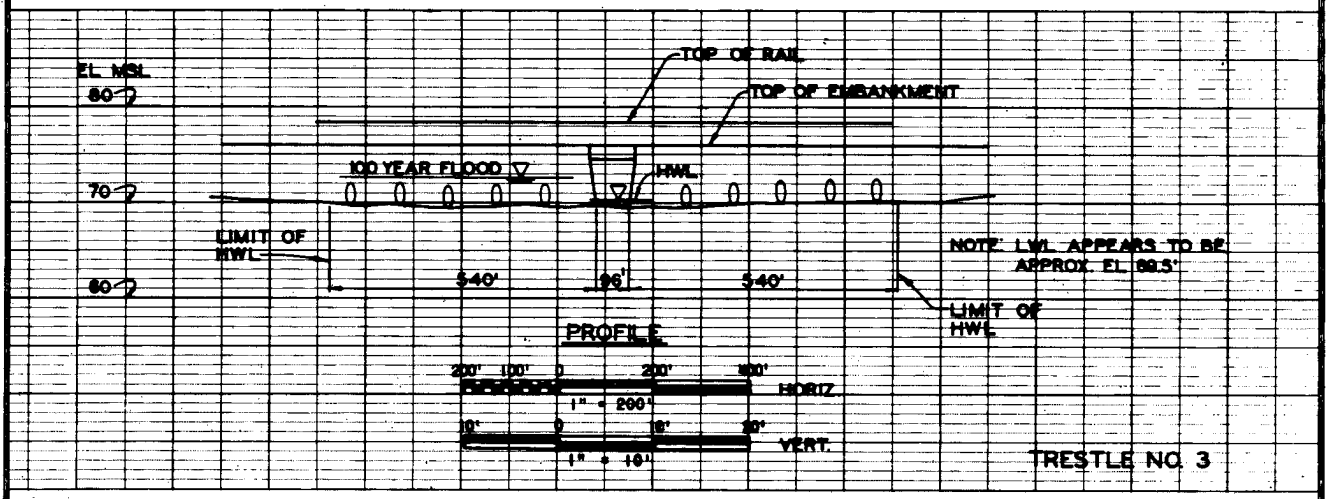
PLAN

200' 100' 0 200' 400'

1" = 200'

FILL QUANTITIES

ABOVE HWL	10,640 CY
BELOW HWL	1,240 CY

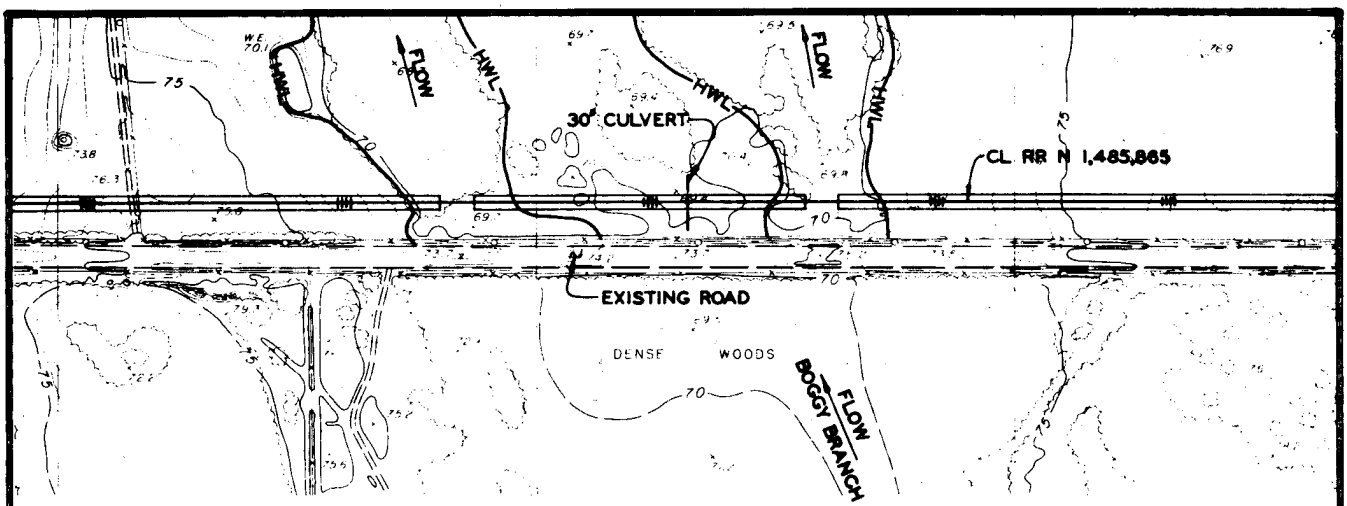


PROPOSED FILL AND TRESTLE NO. 3
IN TRIBUTARY TO CROSBY ISLAND MARSH

ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

PURPOSE:	RAILROAD EMBANKMENT AND TRESTLE
DATUM:	MEAN SEA LEVEL
VICINITY MAP:	SEE FIGURES 15-3 AND 15-4

FIGURE 15-8a

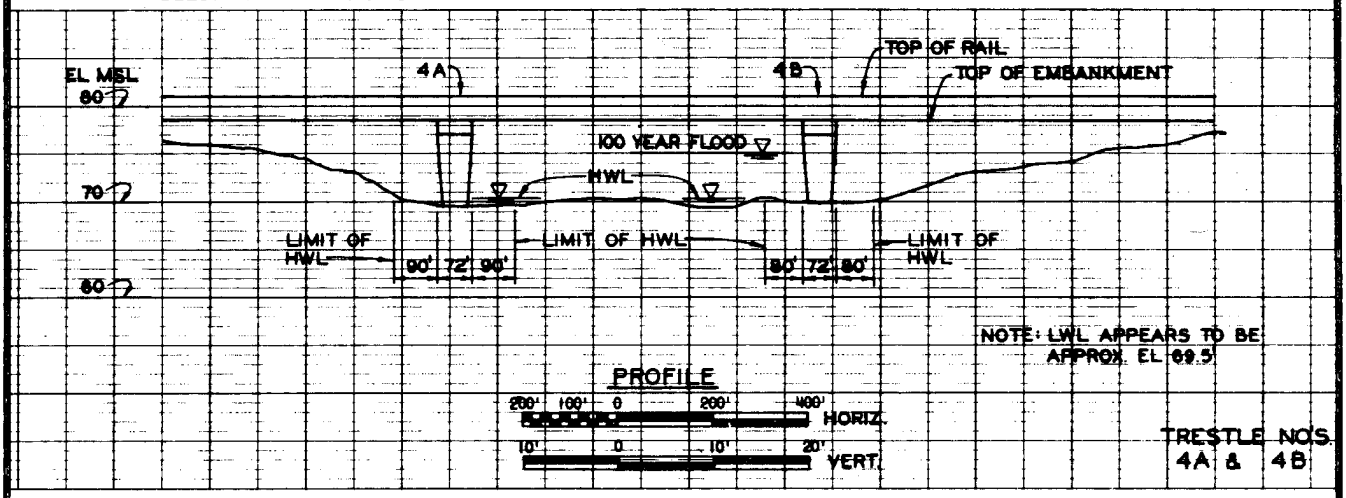


FILL QUANTITIES

4A	ABOVE HWL	2,664 CY
	BELOW HWL	190 CY
4B	ABOVE HWL	2,368 CY
	BELOW HWL	170 CY

PLAN

200' 100' 0 200' 400' HORIZ.



No Culvert Shown in Cross section

PROPOSED FILL AND TRESTLE NO. 4
IN BOGGY BRANCH

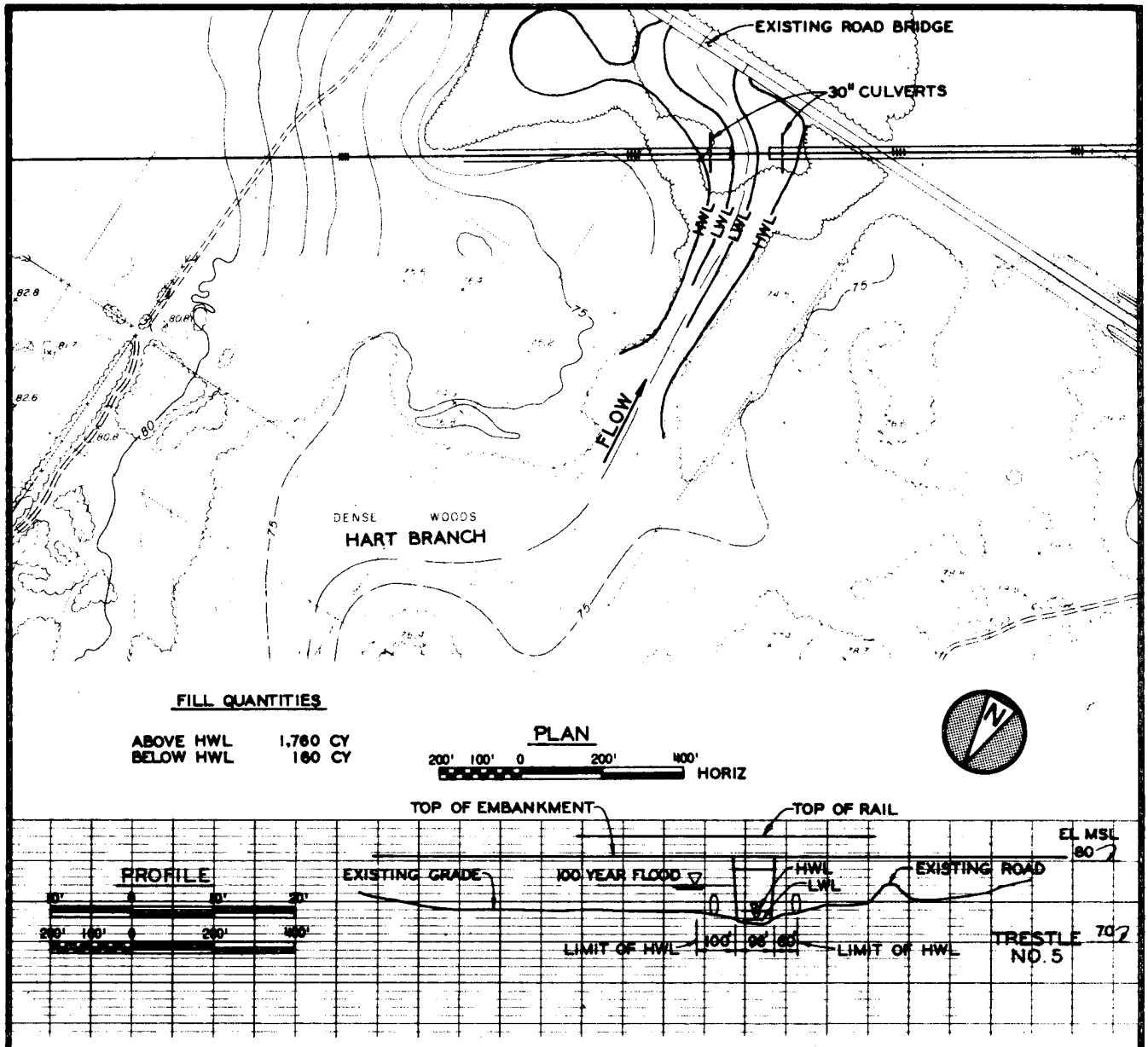
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

PURPOSE: RAILROAD EMBANKMENT AND TRESTLE

DATUM: MEAN SEA LEVEL

VICINITY MAP: SEE FIGURES 15-3 AND 15-4

FIGURE 15-8b



PROPOSED FILL AND TRESTLE NO. 5

IN HART BRANCH

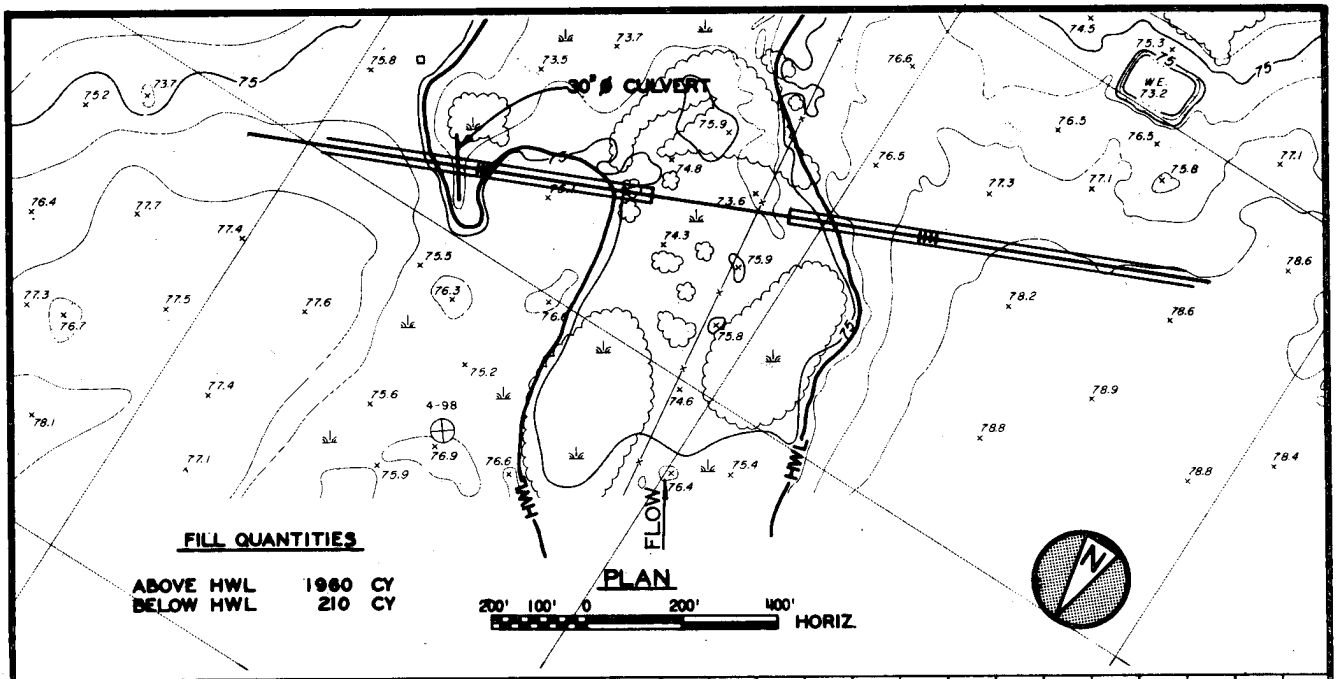
ORLANDO UTILITIES COMMISSION

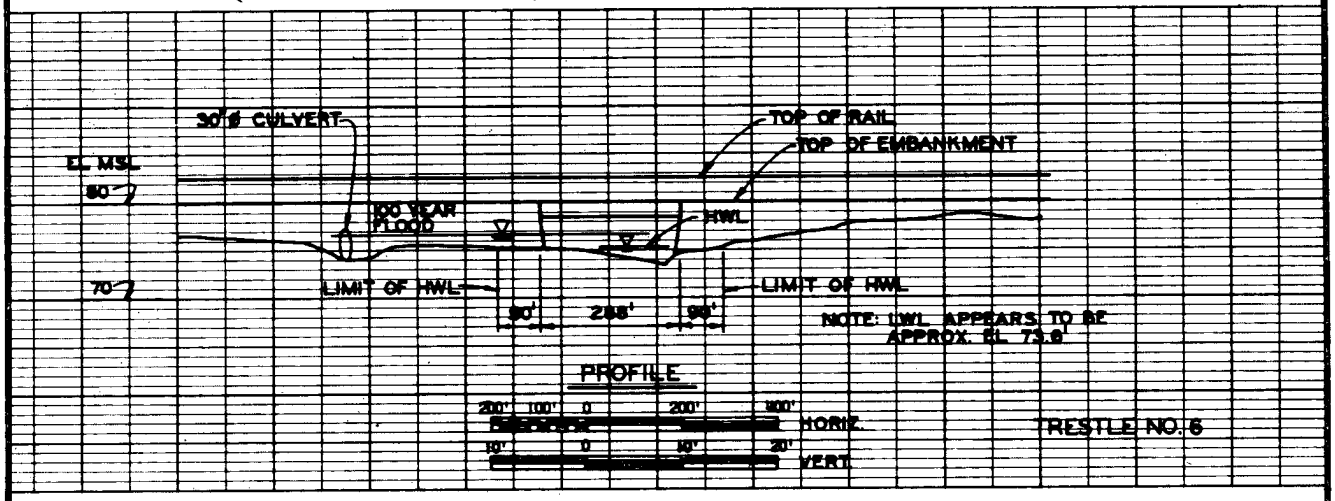
ORANGE COUNTY, FLORIDA

PURPOSE:	RAILROAD EMBANKMENT AND TRESTLE
DATUM:	MEAN SEA LEVEL
VICINITY MAP:	SEE FIGURES 15-3 AND 15-4

FIGURE 15-8c

AMENDMENT 5
030382





PROPOSED FILL AND TRESTLE NO. 6

IN MYRTLE BAY

ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

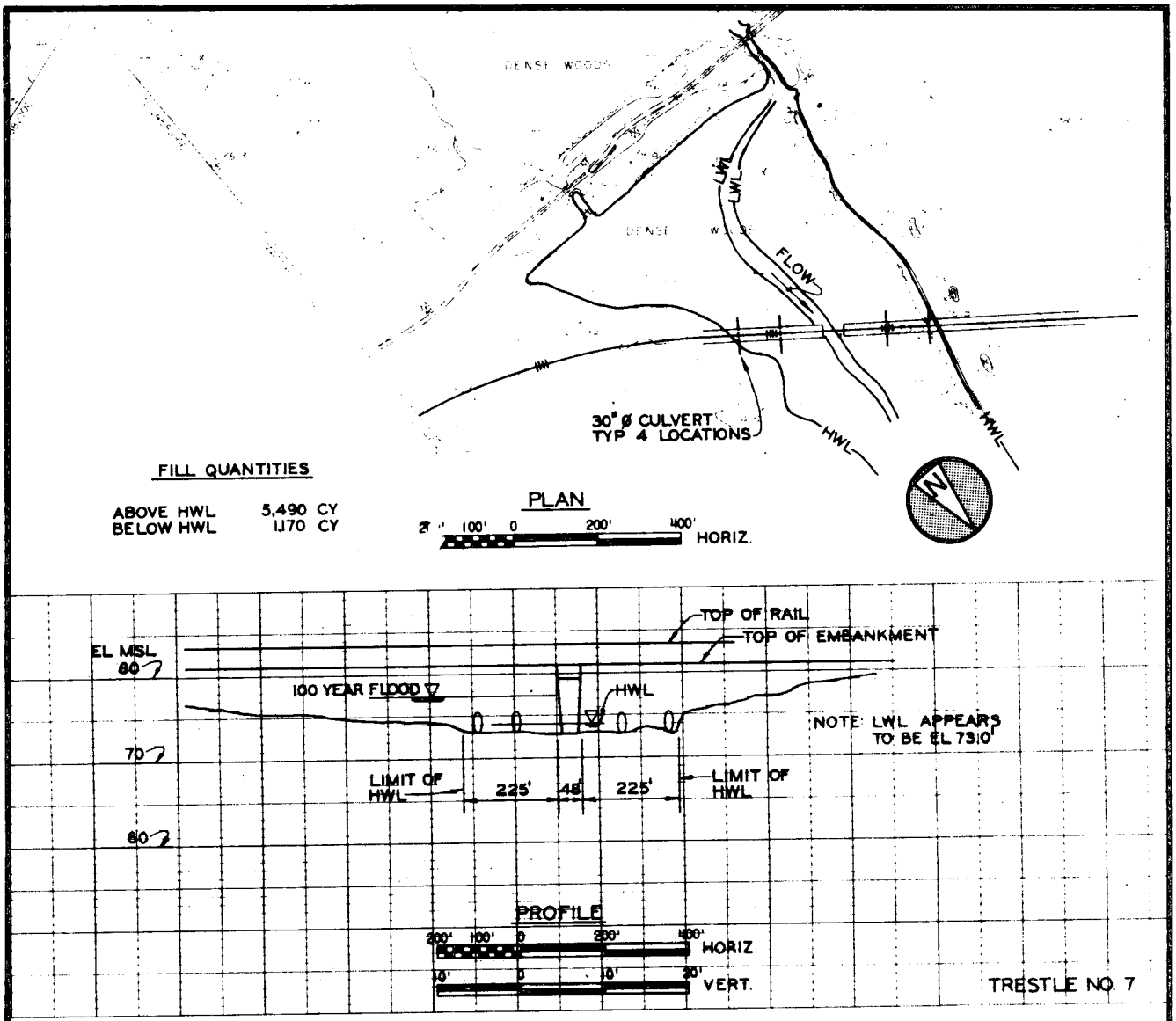
PURPOSE: RAILROAD EMBANKMENT AND TRESTLE

DATUM: MEAN SEA LEVEL

VICINITY MAP: SEE FIGURES 15-3 AND 15-4

FIGURE 15-8d

AMENDMENT 5
030382



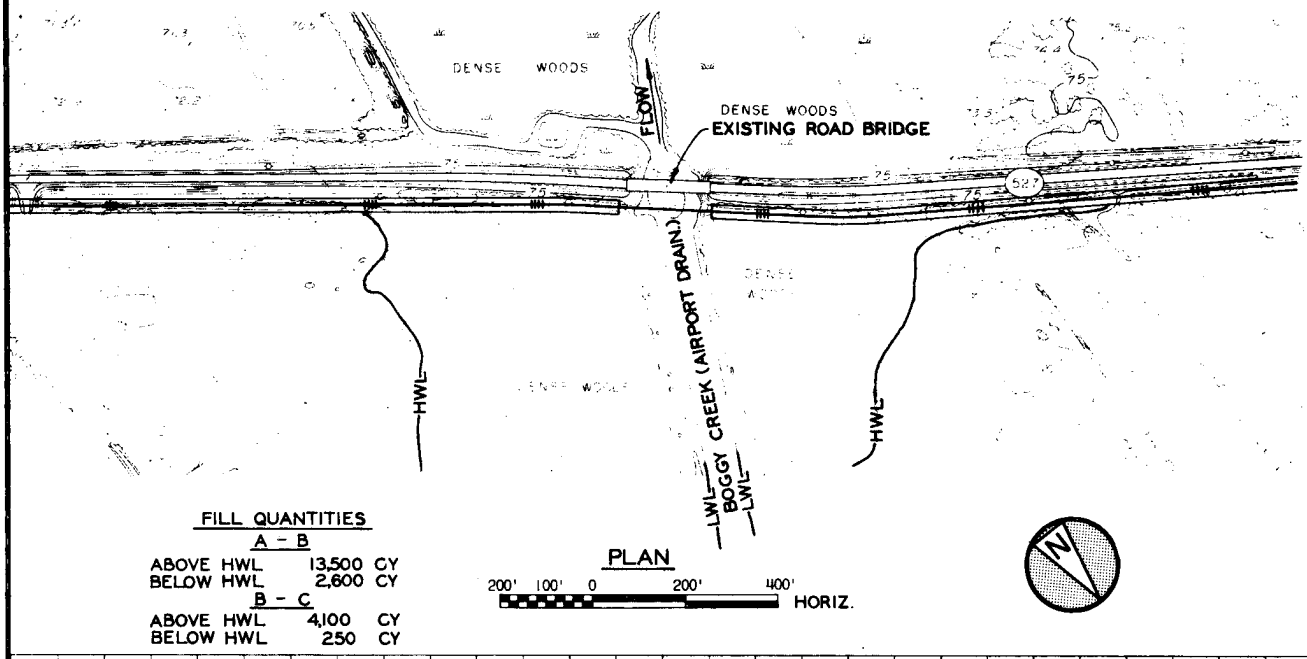
PROPOSED FILL AND TRESTLE NO. 7
IN TRIBUTARY TO MUD LAKE

ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

PURPOSE:	RAILROAD EMBANKMENT AND TRESTLE
DATUM:	MEAN SEA LEVEL
VICINITY MAP:	SEE FIGURES 15-3 AND 15-4

FIGURE 15-8e

AMENDMENT 5
030382

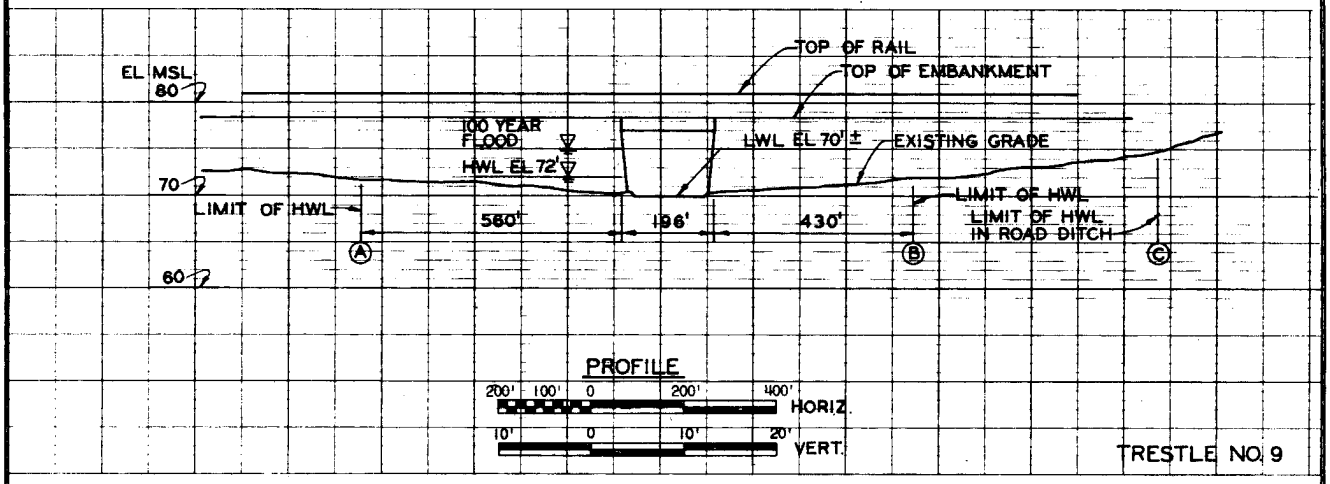


FILL QUANTITIES

A - B	
ABOVE HWL	13,500 CY
BELOW HWL	2,600 CY
B - C	
ABOVE HWL	4,100 CY
BELOW HWL	250 CY

PLAN

200' 100' 0 200' 400' HORIZ.



PROFILE

200' 100' 0 200' 400' HORIZ.

10' 0 10' 20' VERT.

TRESTLE NO. 9

PURPOSE: RAILROAD EMBANKMENT AND TRESTLE

DATUM: MEAN SEA LEVEL

VICINITY MAP: SEE FIGURES 15-3 AND 15-4

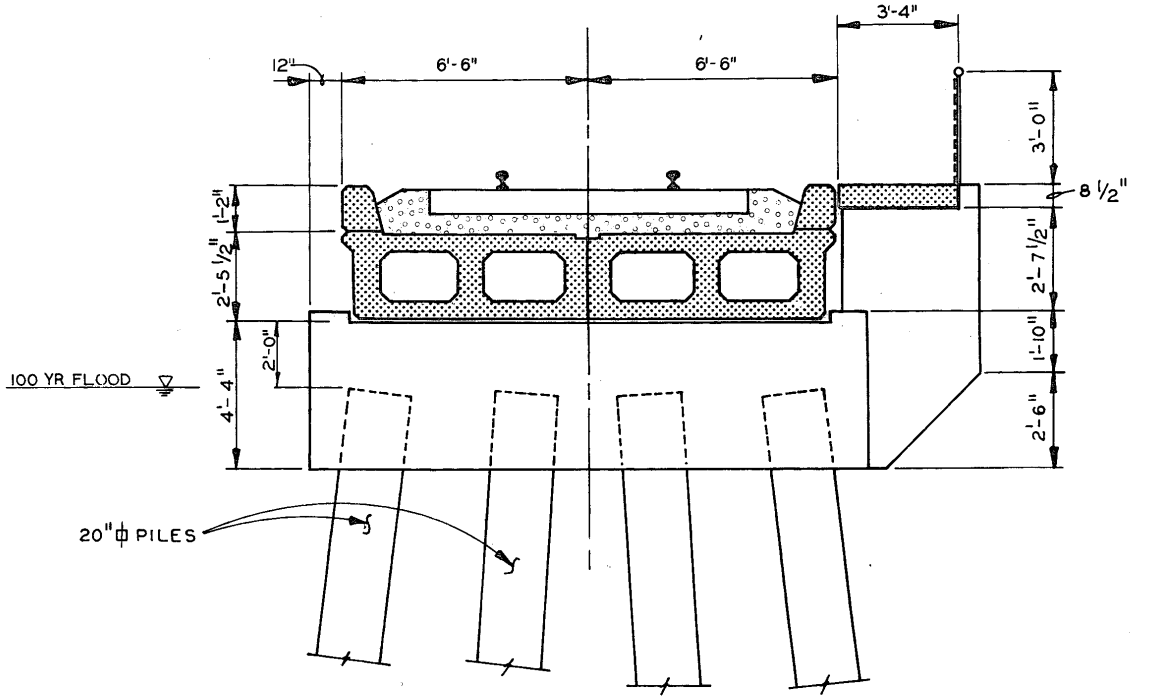
PROPOSED FILL AND TRESTLE NO. 9
IN BOGGY CREEK

ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

FIGURE 15-8f

AMENDMENT 5
030382

AMENDMENT 5
030382



NOTE: ALL STRUCTURAL ELEMENTS CONSTRUCTED OF PRECAST, PRESTRESSED CONCRETE

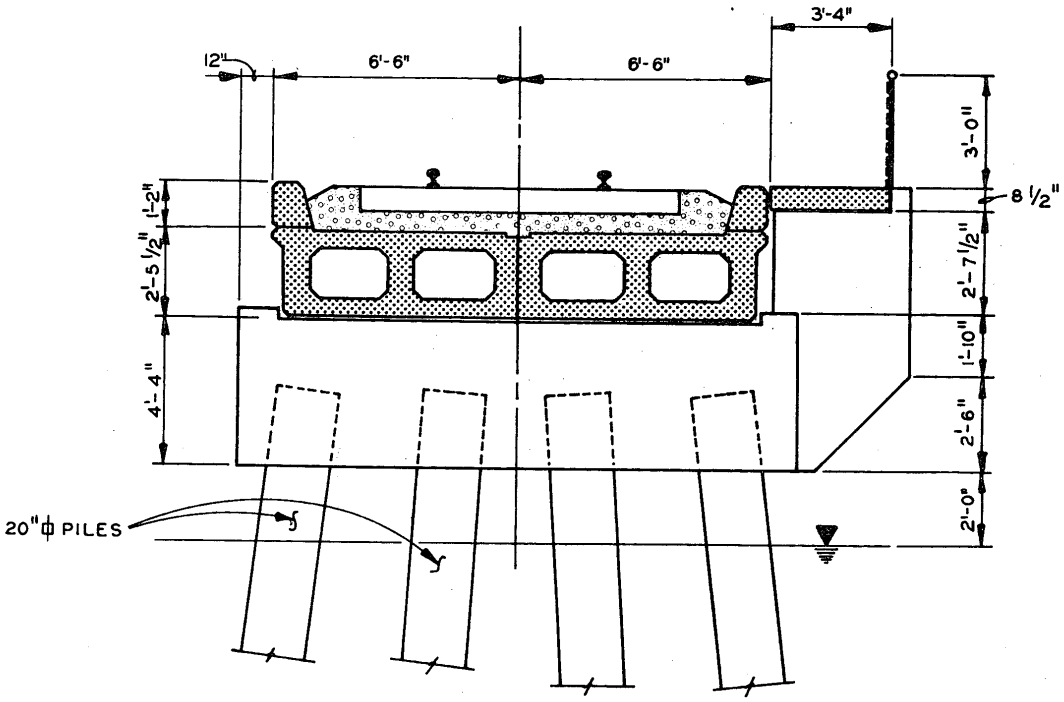
SCALE IN FEET

TYPICAL TRESTLE SECTION

ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

FIGURE 15-9

5



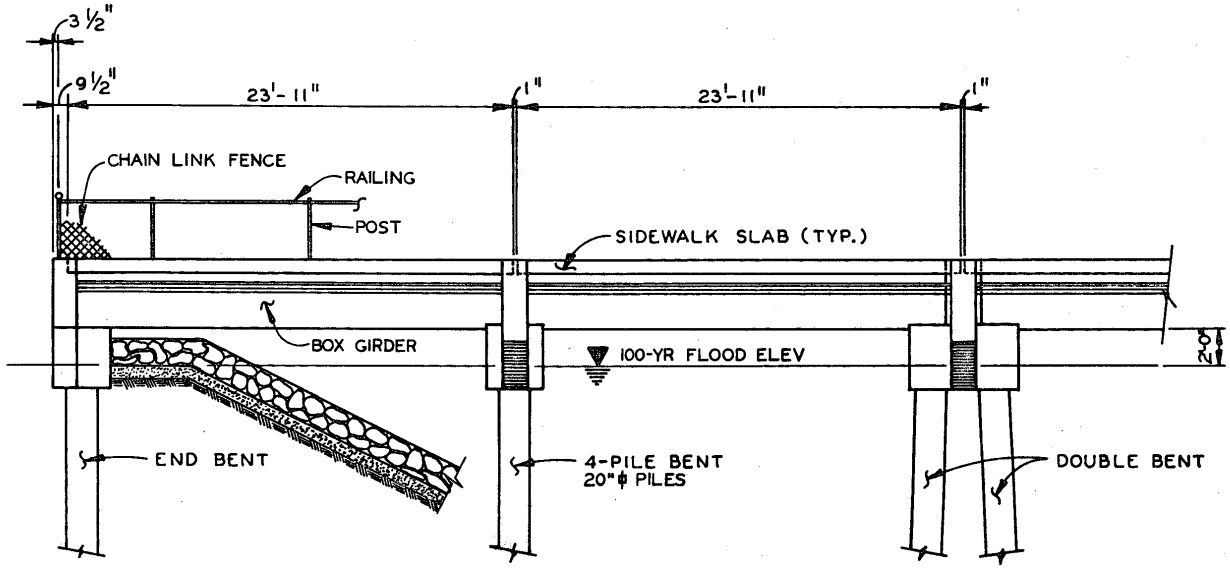
NOTE: ALL STRUCTURAL ELEMENTS CONSTRUCTED OF PRECAST, PRESTRESSED CONCRETE

SCALE IN FEET

TYPICAL TRESTLE SECTION

ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

FIGURE 15-9



NOTE: ALL STRUCTURAL ELEMENTS CONSTRUCTED OF PRECAST, PRESTRESSED CONCRETE

8' 4' 0 8' 16'

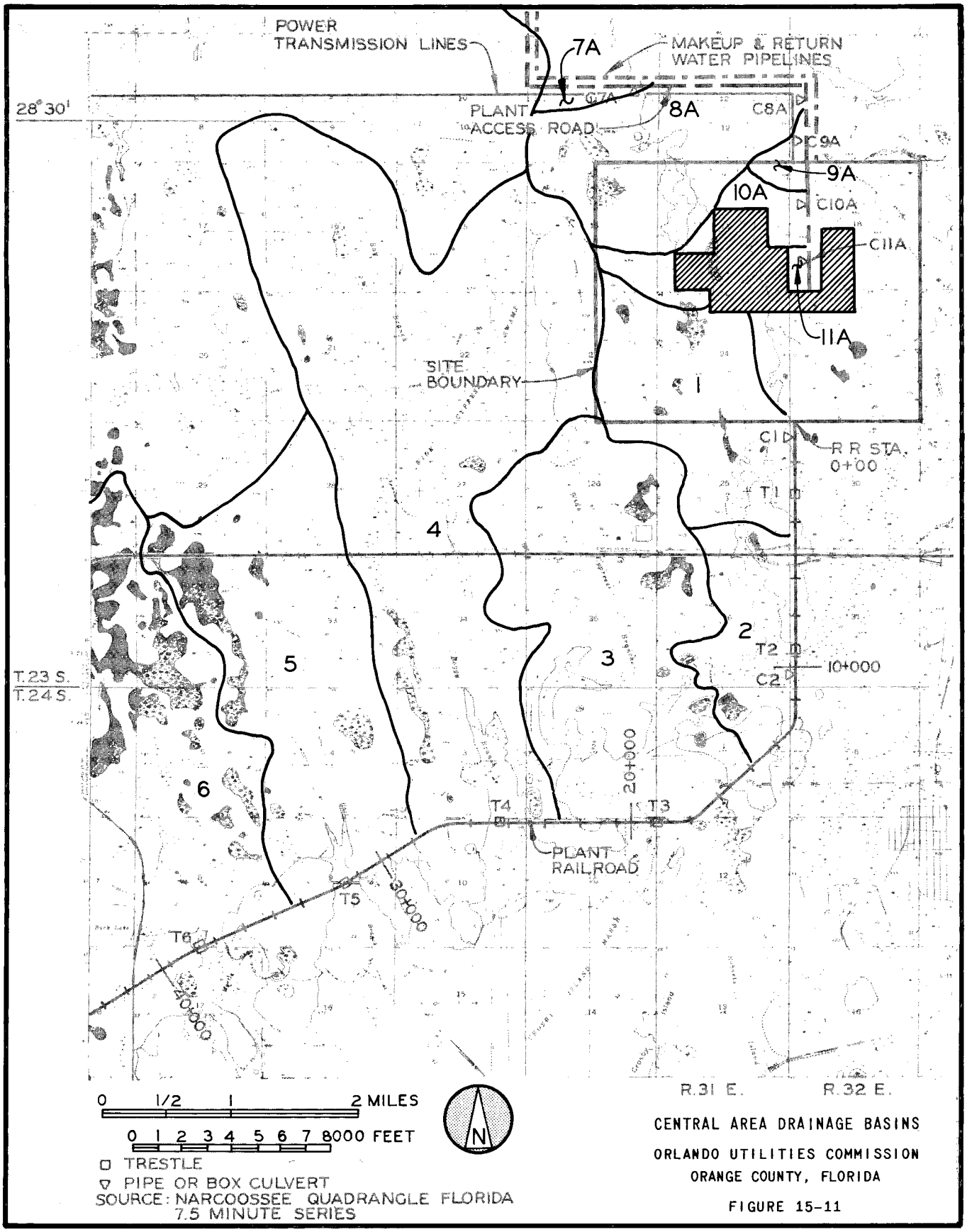
SCALE IN FEET

TYPICAL TRESTLE PROFILE

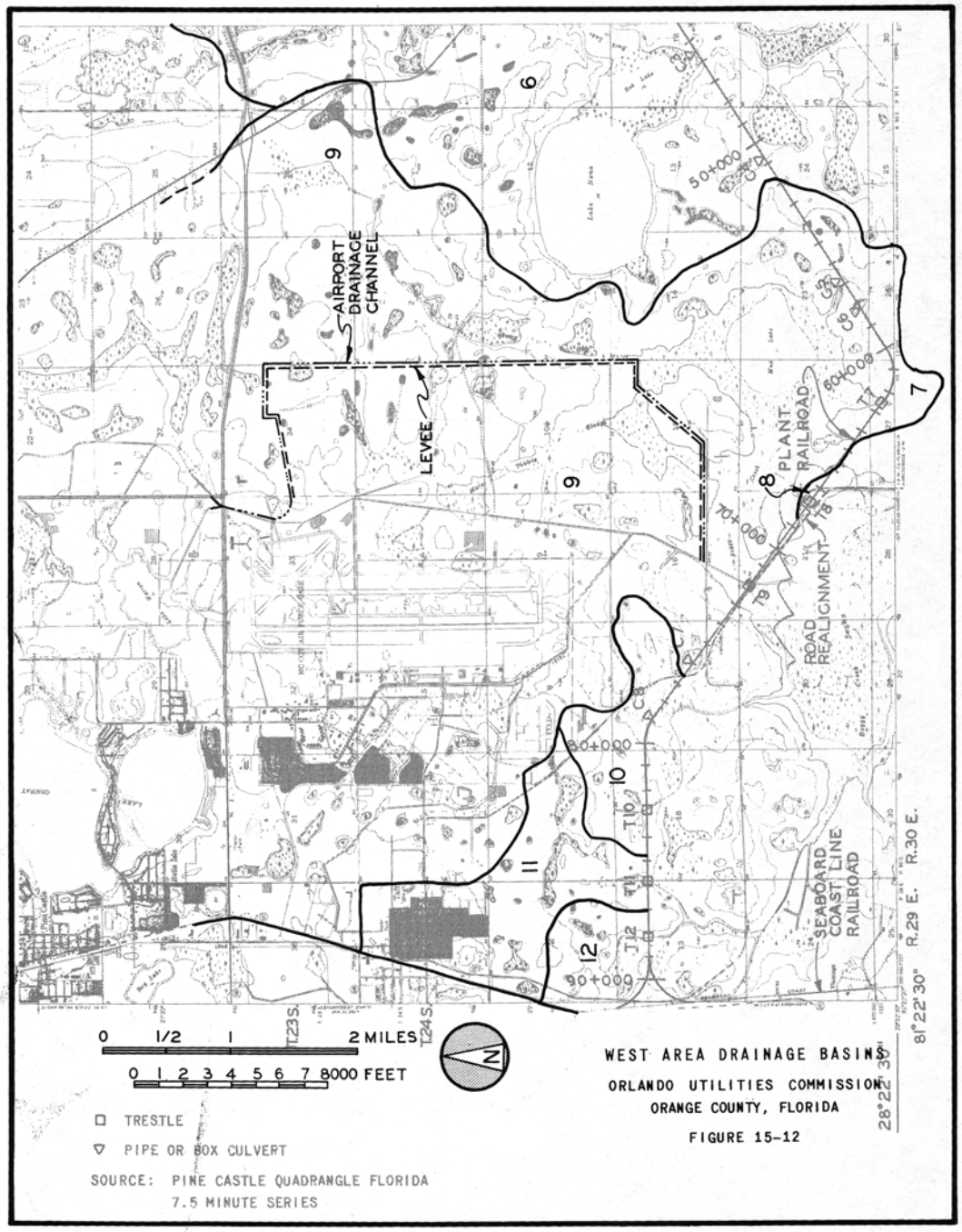
ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

FIGURE 15-10


POWER TRANSMISSION LINES
7A
MAKEUP & RETURN WATER PIPELINES
28°30'
C7A
8A
C8A
PLANT ACCESS ROAD
C9A
9A
10A
C10A
C11A
11A
SITE BOUNDARY
1
C1D
R R STA. 0+00
T1
4
2
T2
10+000
C2
3
5
T.23 S.
T.24 S.
6
20+000
T4
T3
PLANT RAILROAD
T5
30+000
T6
40+000
R.31 E.
R.32 E.
0 1/2 1 2 MILES
0 1 2 3 4 5 6 7 8000 FEET
N
TRESTLE
PIPE OR BOX CULVERT
SOURCE: NARCOOSSEE QUADRANGLE FLORIDA 7.5 MINUTE SERIES
CENTRAL AREA DRAINAGE BASINS
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA
FIGURE 15-11

5



WEST AREA DRAINAGE BASINS
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA

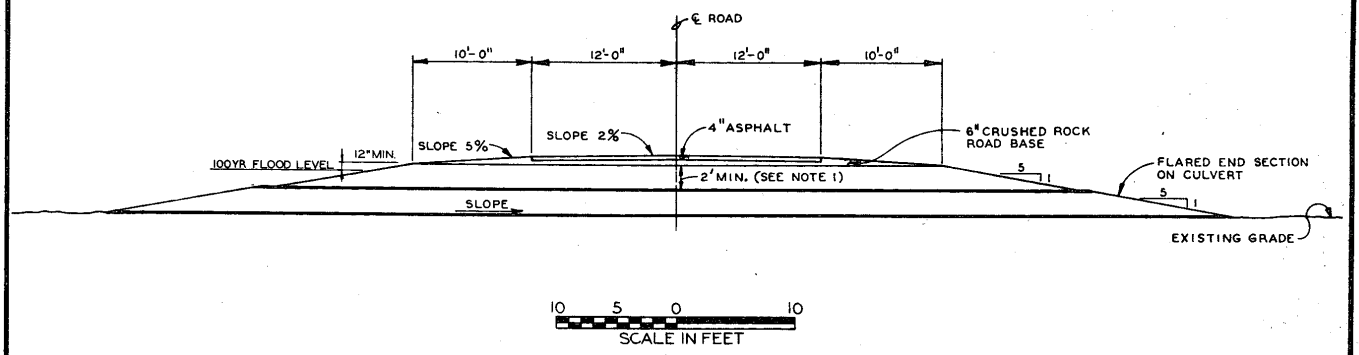
FIGURE 15-12

WEST AREA DRAINAGE BASINS
ORLANDO UTILITIES COMMISSION
ORANGE COUNTY, FLORIDA
FIGURE 15-12

□ TRESTLE

▽ PIPE OR BOX CULVERT

SOURCE: PINE CASTLE QUADRANGLE FLORIDA
7.5 MINUTE SERIES



NOTES

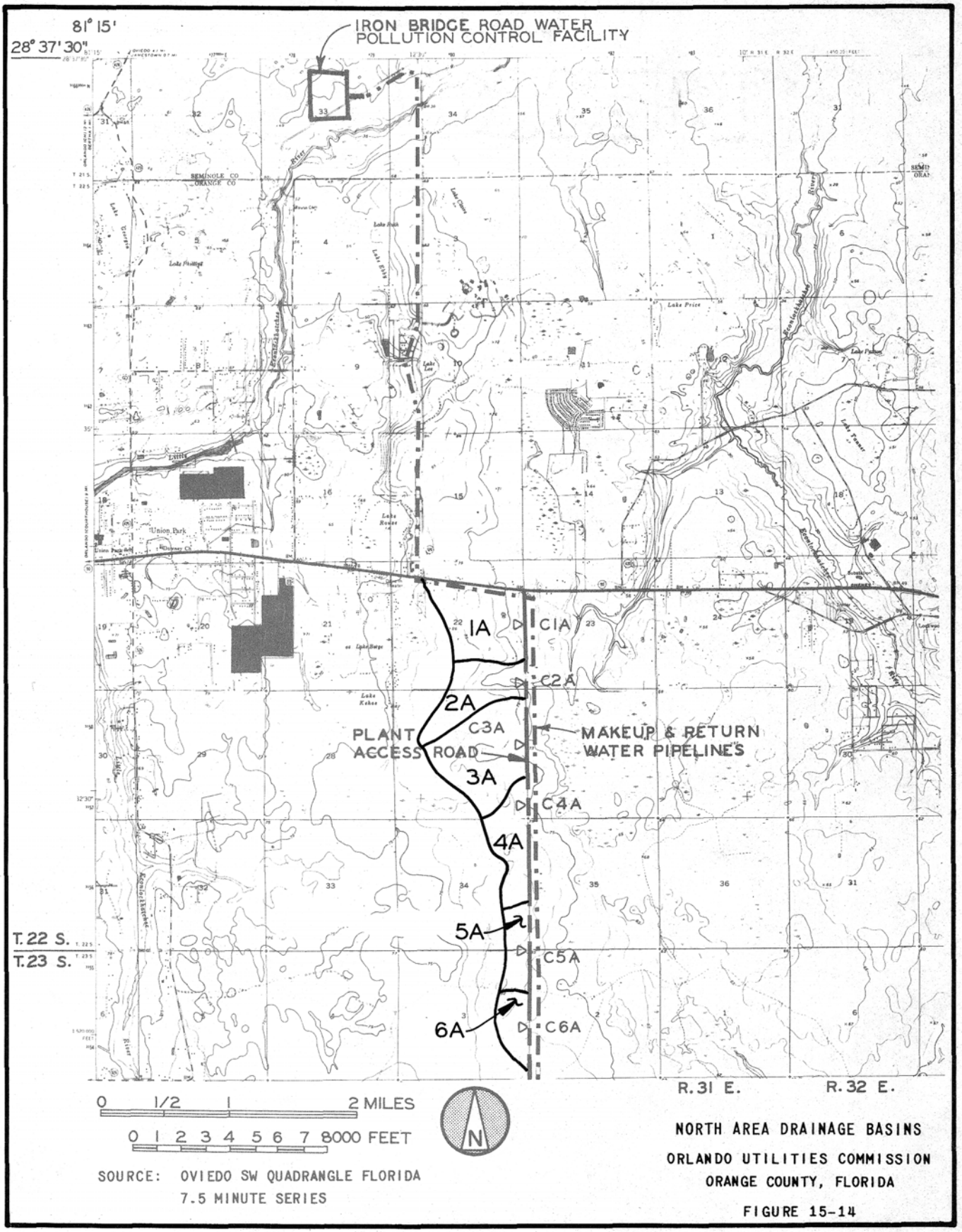
1. COVER DEPTH AS REQUIRED FOR H20 LOADING.

ACCESS ROAD CROSS SECTION

ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

FIGURE 15-13

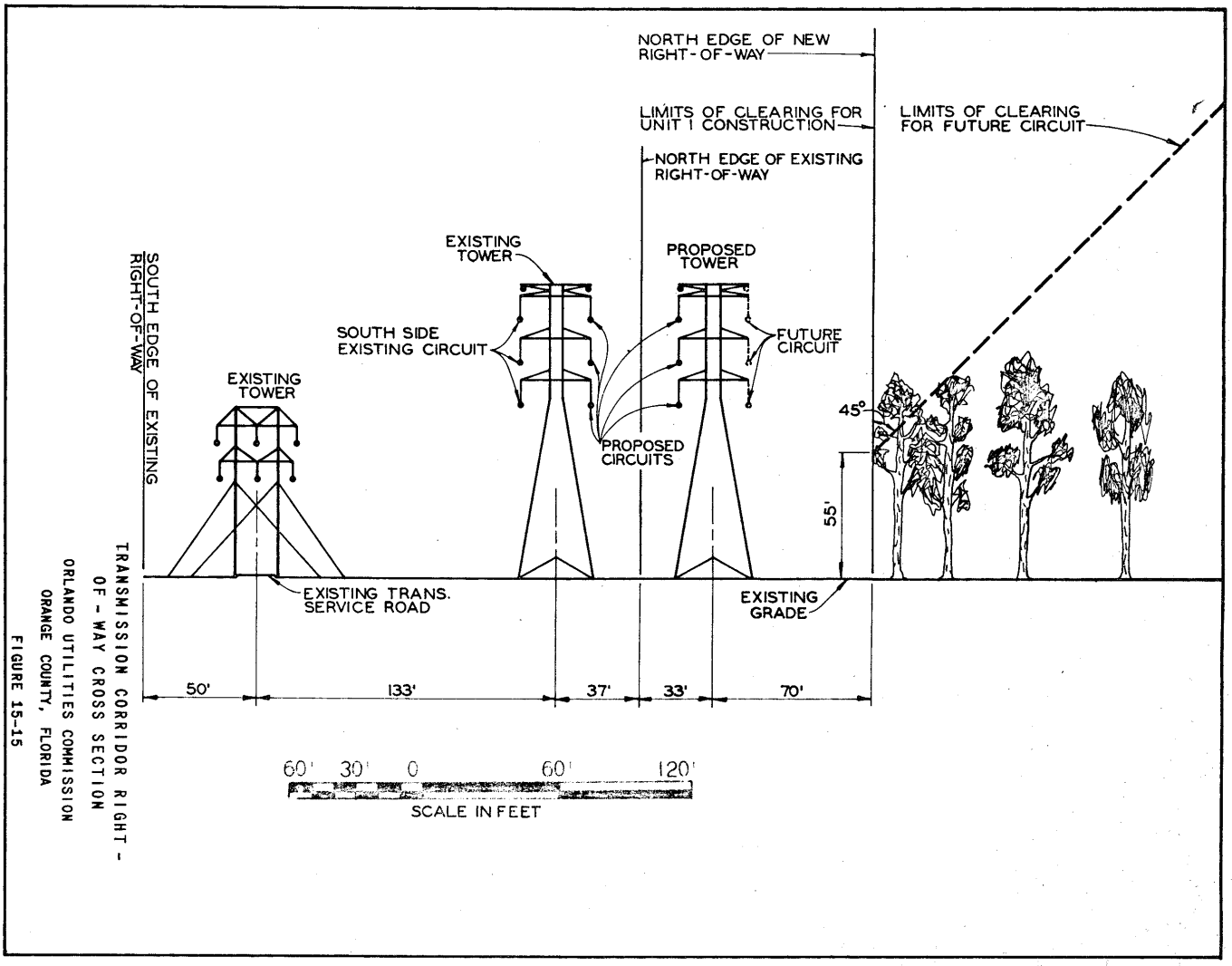


NORTH AREA DRAINAGE BASINS

ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

FIGURE 15-14



TRANSMISSION CORRIDOR RIGHT-OF-WAY CROSS SECTION

ORLANDO UTILITIES COMMISSION

ORANGE COUNTY, FLORIDA

FIGURE 15-15

4.2 SPECIAL FEATURES

Vegetation cleared during site preparation will be burned. Suitable trees will be sold for pulp or other commercial uses. There will be a temporary increase in particulate concentration and combustion products because of these activities. Adverse impacts on air quality will be temporary, and vegetation and wildlife in the vicinity should not be affected. Burning will be carried out according to state regulation (Florida Administrative Code, Section 5I-2.07). Any nonhazardous chemical wastes will be transported to the adjacent Orange County Landfill for disposal in an environmentally acceptable manner.

4.3 CONSTRUCTION OF DIRECTLY ASSOCIATED TRANSMISSION FACILITIES

The new transmission lines associated with Stanton Energy Center Unit 1 have been located to minimize environmental impacts. The transmission lines will require approximately six miles or 141 acres of new right-of-way. The location of the new transmission lines is shown on Figure 3.8-2.

Except for exiting the plant site, the new transmission lines will be placed adjacent and parallel to existing transmission line facilities. The existing rights-of-way will be widened and trees cleared for new construction. The new plant access road and existing maintenance road will be utilized in the construction of the new transmission line facilities.

The primary effect on the land will be the necessary clearing. Following clearing, the land can continue to be used as pasture. A small segment of an orange grove will be crossed; however, no clearing will be done and fruit production will be unaffected. The new transmission facilities should cause little inconvenience to the adjacent landowners since the land may continue to be used as it has in the past. The planned facilities also will not change traffic patterns from those already existing.

4.3.1 Permanent Changes to Vegetation, Wildlife, and Aquatic Life

Right-of-way clearing will affect about 141 acres of existing vegetation. Terrestrial habitat provided by trees and other vegetation will be reduced along the 6 miles of expanded transmission corridor. Of course, the cleared areas will continue to be utilized by some wildlife. Deer, birds, and small mammals are often seen in these areas. The construction is not anticipated to change either the hydrology or topography of the area. Growth retardants, chemicals, biocides, sprays, etc., will not be used during construction.

4.3.2 Extent of Impact on Sensitive Areas

Wetlands are the most sensitive areas associated with the transmission line construction. Approximately 1-1/2 miles of wetlands will be traversed and approximately 25 acres of wetlands will be cleared. Since these wetland

areas have already been disturbed by the construction of the existing transmission corridor, construction impacts will be minimal. The loss of habitat provided by cleared vegetation will be the most significant impact.

There are no natural shorelines, wildlife refuges, parks, national forest areas, shelter belts, steep slopes, or wilderness areas in the vicinity of the new construction.

4.3.3 New Roads

No new roads will be built for the construction of the new transmission lines. An existing permeable surface construction road will be used for the construction of the new facilities. In addition, the new power plant access road discussed in Section 3.9, will be utilized.

4.3.4 Erosion

No significant erosion is anticipated in the construction of the new transmission line facilities. The construction techniques used will be similar to those utilized previously in Florida to construct transmission facilities. No erosion problems have resulted from such past construction projects.

4.3.5 Impact on Land Use

No changes in agricultural activities along the new facilities are anticipated. The land can continue to be used for pasture, and clearing will enhance the growth of grasses. The existing orange grove can remain in production. There are no historic, cultural, or archeologically significant areas along the new transmission line right-of-way.

4.3.6 Mitigative Measures

Clearing and construction performed on the new right-of-way will result in minimum impact on aquatic life or wildlife. Construction waste, including concrete, will be properly collected and transported to disposal sites. Streams will be protected from contamination by construction debris. Felled trees will be trimmed of their branches and cut into logs. Logs

will be stacked at the edge of the right-of-way. Underbrush, tree limbs, and other vegetation will be windrowed and used as mulch. This procedure will enhance environmental benefits by increasing the number of nesting and foraging sites for small animals, control of soil erosion, returning nutrients to the soil, and building and binding top soil because of slow decomposition of organics in place.

No rare or endangered species will likely be impacted by the transmission line construction. No special landmarks or sensitive areas, other than wetlands, have been identified.

4.4 RESOURCES COMMITTED

Some resources will be irreversibly and irretrievably committed as a result of the construction and operation of the Stanton Energy Center. The resources either will be expended or altered so that reuse in other applications will not be feasible.

4.4.1 Land

Approximately 960 acres of land will be cleared for the construction of Unit 1. A total of about 125 acres of wetlands will be included in the land required. Habitat on this land will be altered to such an extent that it will be irretrievably lost. A description of the terrestrial habitat is given in Section 2.7. 5

The railroad corridor from the plant site to the Seaboard Coast Line mainline will convert about 18 miles of land from its present uses. Approximately 2.5 miles of wetlands will be altered by the railroad corridor. Trestles and culverts will be used to preserve the hydrological characteristics of the wetlands, but clearing of trees and vegetation within the corridor will be necessary. It is unlikely that the land used for the construction of the railroad will be returned to its original condition following the useful life of the Stanton Energy Center.

It is not probable that the 8 miles of access road to the plant site will be converted to the present land uses after the Stanton Energy Center is no longer operational.

4.4.2 Vegetation and Cavity Trees

Approximately 960 acres of land on the plant site will be cleared of all vegetative cover. In addition, 18 miles of vegetation within the railroad corridor will be cleared and maintained, and about 8 miles will be cleared for the access road. Vegetation production will be irretrievably lost unless structures and facilities are removed at the end of the plant life. Natural revegetation will require varying lengths of time depending on the errosiveness of the soil and other factors. 5

As discussed in Subsection 4.4.2, clearing of the site will result in the loss of one active cavity tree utilized by the red-cockaded woodpecker, an endangered species. In addition, three cavity trees with start holes and one abandoned cavity tree also will be removed. This loss represents 8 per cent of all available cavity trees on the site, including 4 per cent of all active cavity trees and 11 per cent of all start hole or abandoned cavity trees. The site arrangement of the plant facilities was adjusted so that only one active cavity tree will be lost. The removal of cavity trees will be irreversible.

Approximately 450 acres of red-cockaded woodpecker foraging habitat will be cleared during the construction of the Stanton Energy Center. It is unlikely that this habitat will be completely reestablished following the life of the generating facility.

4.4.3 Materials

The estimated quantities of construction materials committed to the Stanton Energy Center are listed in Table 4.4-1. Recovery of these materials at the end of the 30 year plant life will depend on their relative value at plant decommissioning. Resource recovery may not be economically practical if recovery operations require expenditures of energy and materials exceeding the value of the reclaimed resource.

TABLE 4.4-1. COMMITMENT OF CONSTRUCTION MATERIALS FOR THE STANTON GENERATING STATION--UNIT 1

Material	Quantity
Concrete	60,000 cubic yards
Steel	
Structural	13,000 tons
Rail	5,500 tons
Miscellaneous Metals	1,100 tons
Wood	500,000 board-feet

4.5 CONSTRUCTION OF OTHER ASSOCIATED FACILITIES

4.5.1 Railroad

Approximately 18 miles of railroad will be constructed between the Stanton Energy Center and the Seaboard Coast Line northwest of the site. About 2.5 miles of wetlands will be affected by the railroad construction. A description of the railroad corridor including the wetland areas is given in Subsection 2.7.7.

Trestles will be constructed to span larger wetland areas within the corridor and culverts will be used in other wetland sections to maintain the water flow. The locations of the trestles and culverts together with the details of their design are given in Section 4.1.

The wetlands along the railroad corridor are the most sensitive environmental areas. The water flow between portions of the wetlands should not be affected by the railroad. All trestles and culverts will be sized based on the 100-year peak discharge from the appropriate drainage basin.

It will be necessary to clear trees and other vegetation through wetland areas. The removal of this vegetation canopy will permit more light to reach the water which will stimulate the growth of phytoplankton and various aquatic plant species. The biological composition of the cleared portion of the wetland will be altered. The changes will not necessarily be adverse, but different from the present biological state.

The removal of trees and vegetation from the wetlands will reduce the value of the areas as habitat for various birds and other animals. The 2.5 miles of wetlands that will be affected by the railroad, however, represents only a small percentage of the total amount of wetland habitat in the area.

During construction activities in the wetland areas, there will be an increase in the turbidity of the water. The increased turbidity should be temporary, ending when construction is completed.

4.5.2 Pipeline

Two parallel pipelines approximately 4 miles long will be constructed from the Stanton Energy Center to the new Orange County Easterly Subregional Wastewater Treatment Plant. The pipelines will be entirely within the right-of-way of the new county road which will have been already cleared. RFM-1

The pipelines will be buried along the entire 4 mile corridor, but after the pipelines are installed, the construction area will be returned to its original condition. The right-of-way in which the pipeline will run will already have been disturbed. RFM-1

During construction, there may be a temporary increase in water turbidity. The pipe will be at the bottom of a trench; therefore, the water flow will not be affected. Details of the general design of the pipelines are given in Appendix 4.1A. RFM-1

4.5.3 Access Road

Access road from the Stanton Energy Center to Highway 50 will be provided by a new Orange County highway. The road will be approximately 8 miles long and the right-of-way for the road will also be utilized for the pipeline which will extend from the Stanton Energy Center to the Orange County Plant. RFM-1

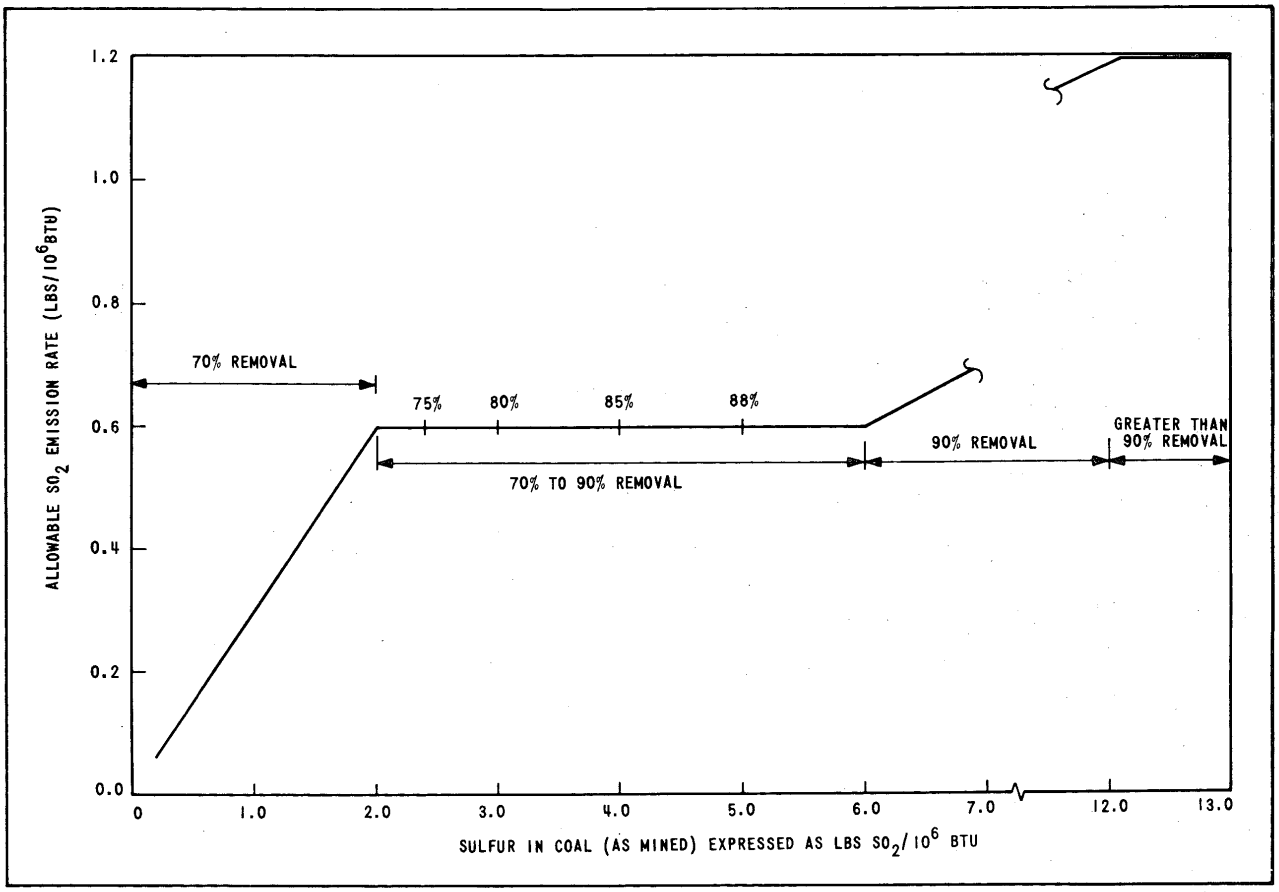


FIGURE 3.7B-1. ALLOWABLE EMISSION RATES
SO_2 EMITTED VS SULFUR IN COAL

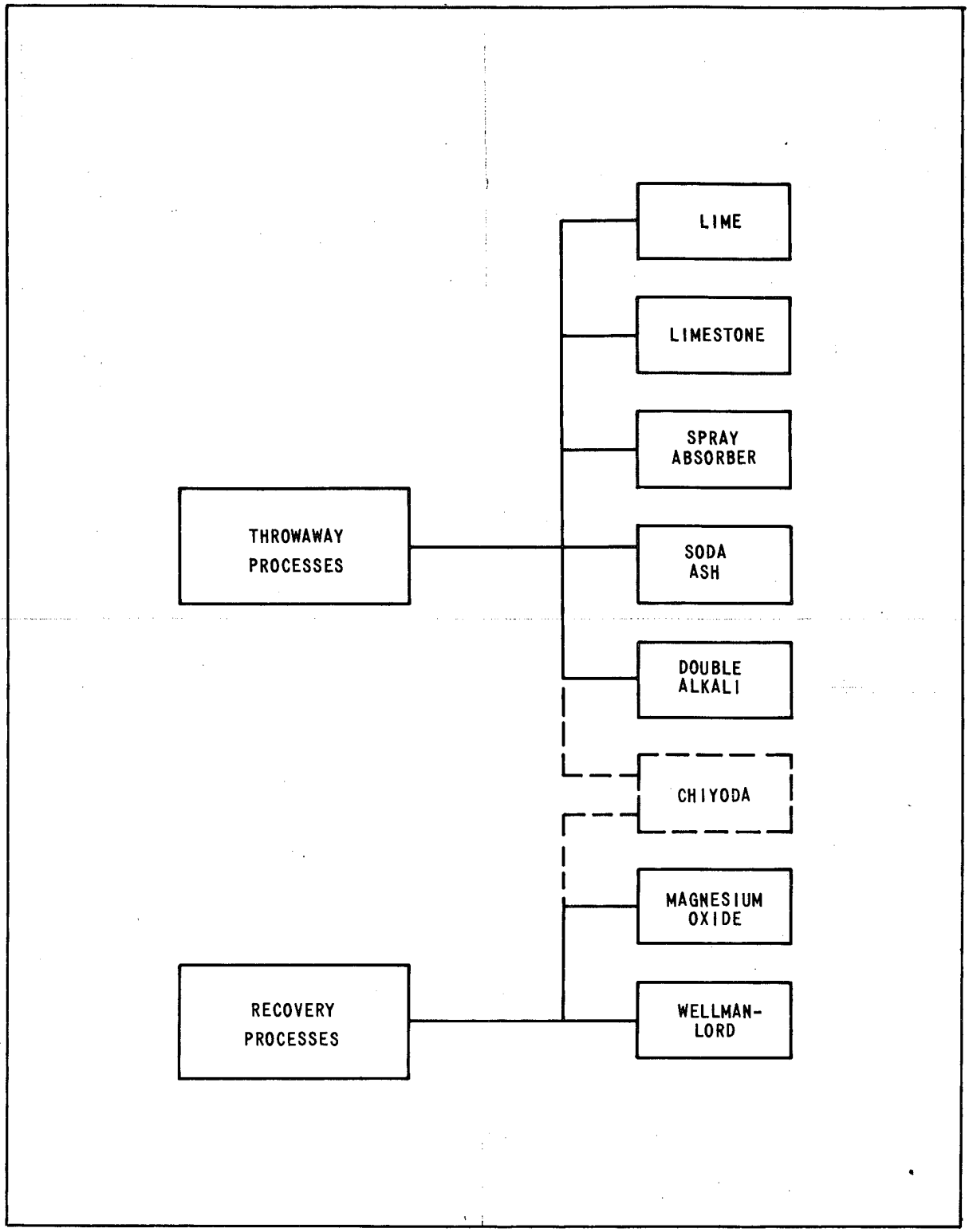


FIGURE 3.7B-2. DESULFURIZATION PROCESSES

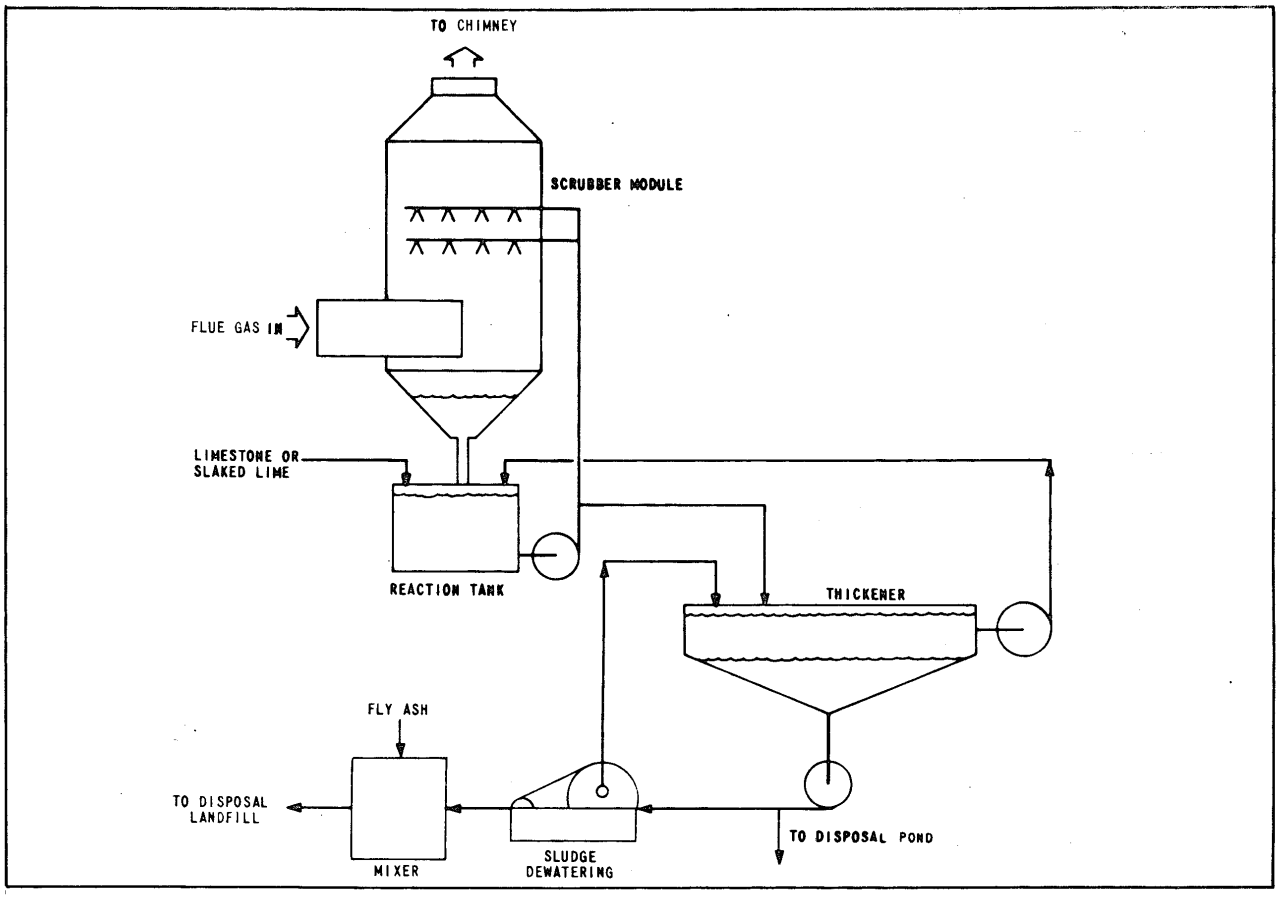


FIGURE 3.7B-3. LIME OR LIMESTONE PROCESS

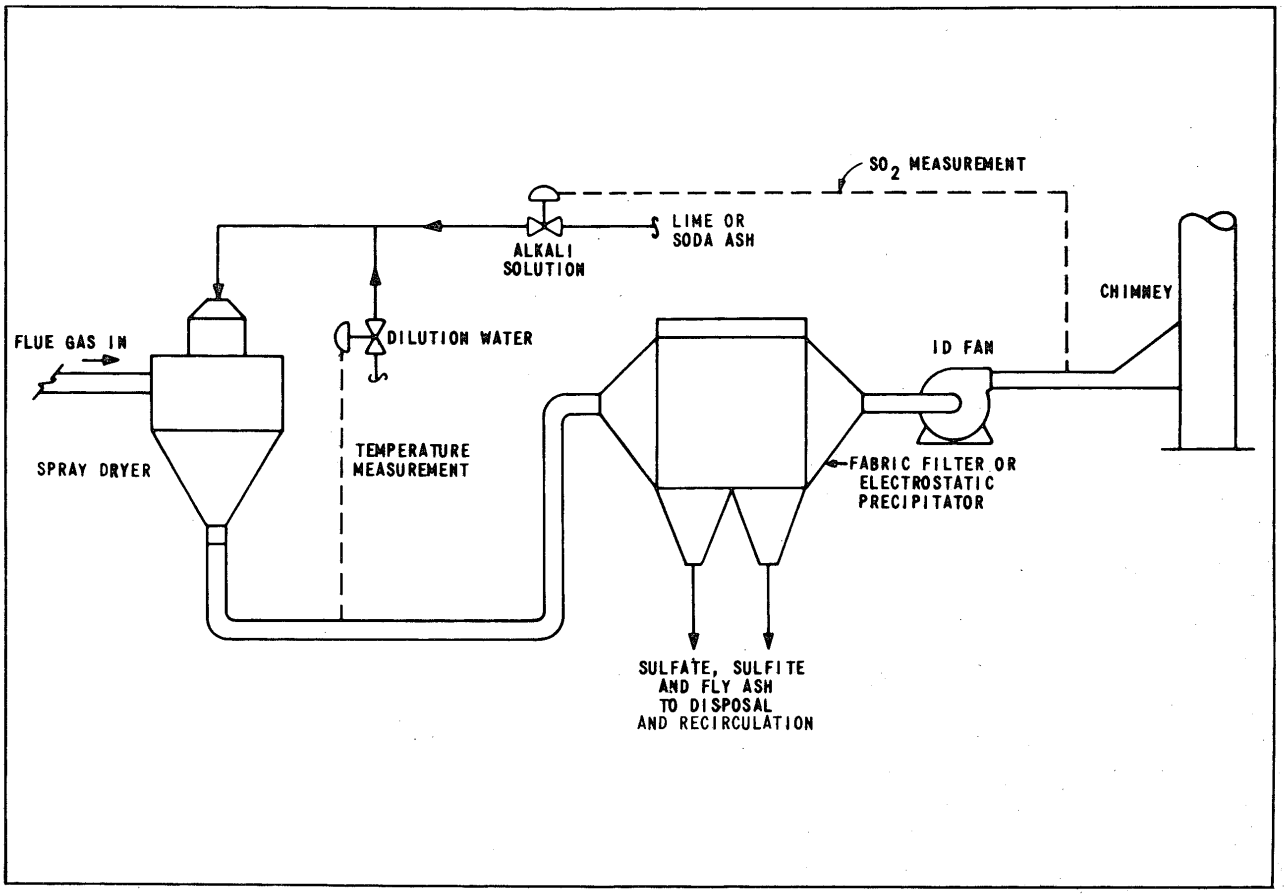


FIGURE 3.7B-4. SPRAY ABSORBER PROCESS

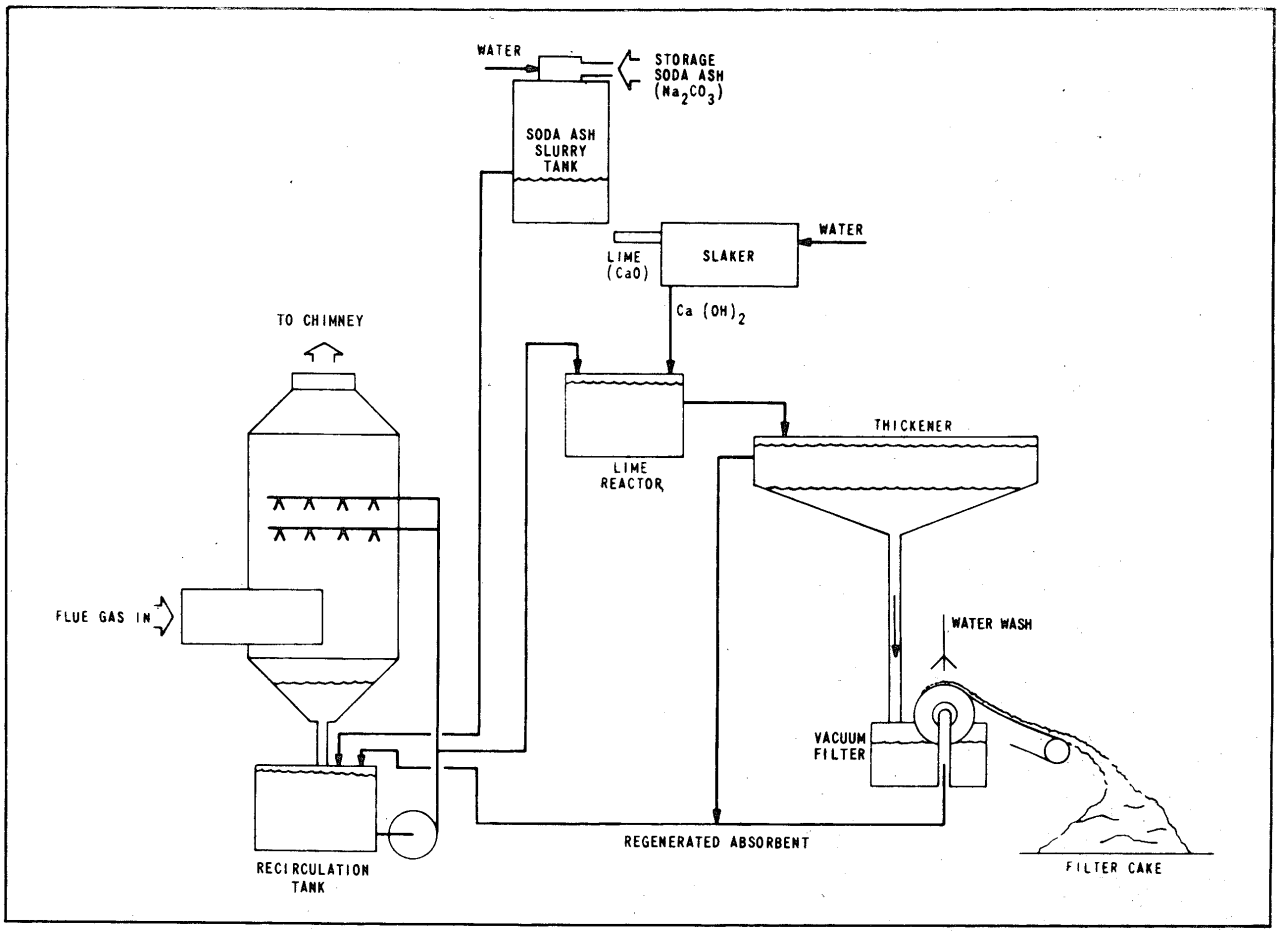


FIGURE 3.7B-5. DOUBLE-ALKALI PROCESS

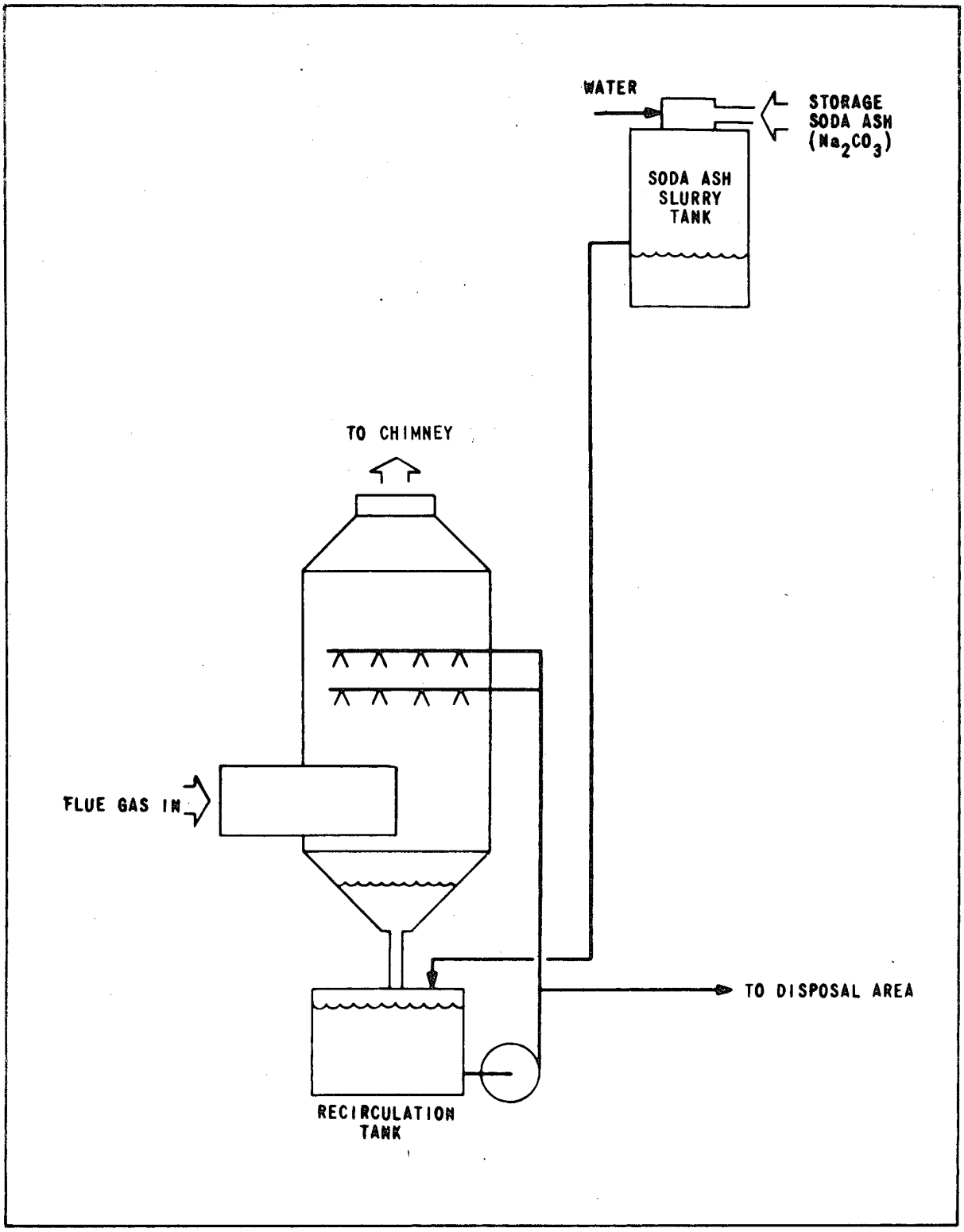


FIGURE 3.7B-6. SODA ASH PROCESS

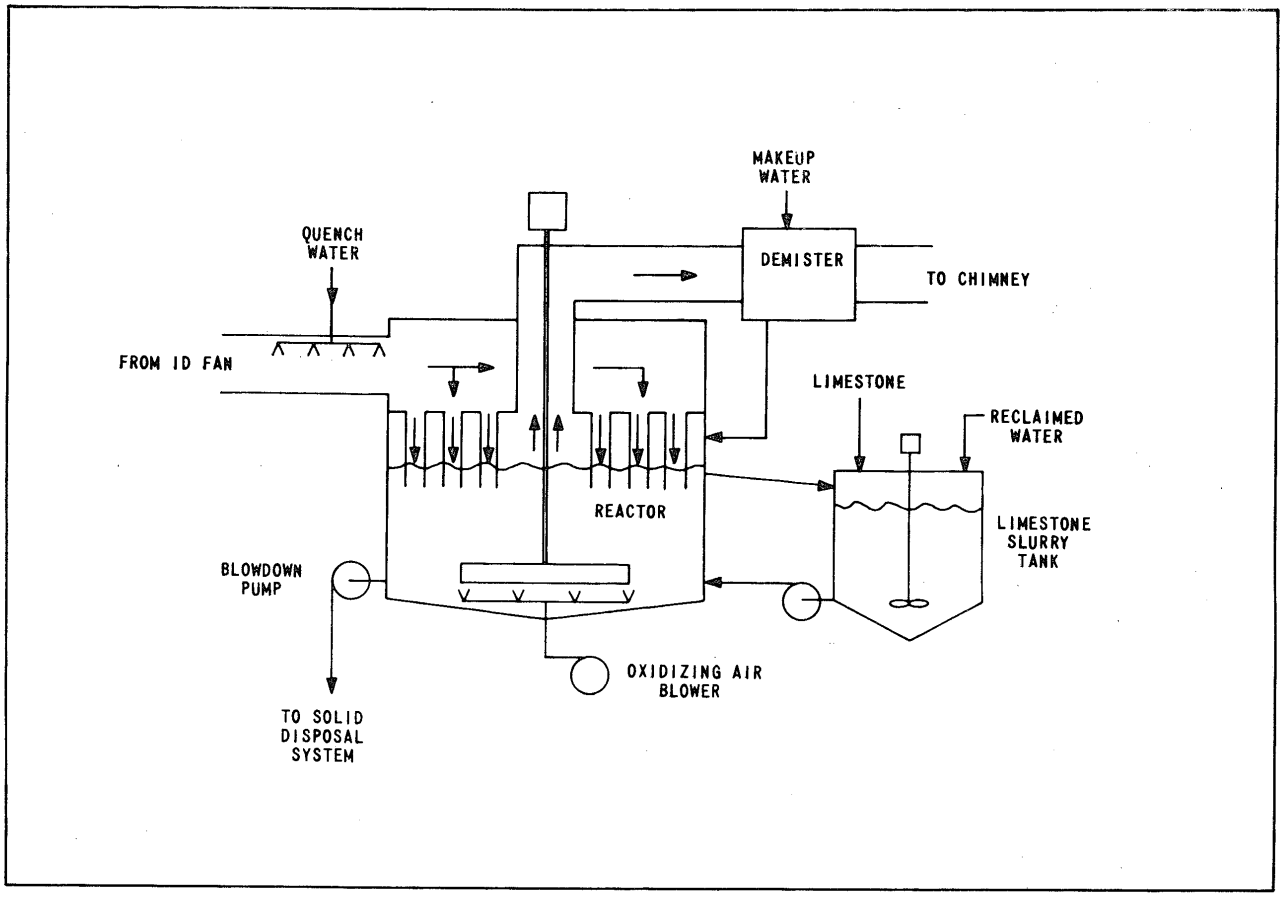


FIGURE 3.7B-7. FLUE GAS SPARGING (CHIYODA) PROCESS

3.8 DIRECTLY ASSOCIATED TRANSMISSION LINES

3.8.1 Route and Size

The existing Orlando Utilities Commission 115 and 230 kV transmission network is shown on Figure 3.8-1. The transmission lines associated with Stanton Energy Center Unit 1 will be routed north from the proposed power plant substation to the existing Orlando Utilities Commission Pershing Substation (No. 6) to Indian River Substation (No. 7) transmision line right-of-way. The Stanton Energy Center Substation (No. 16) will be located in Section 18, T23S, R32E as shown on Figure 3.8-2. A transmission line corridor approximately one half mile long and 590 feet wide will be required to connect the Stanton Energy Center Substation to the existing Pershing to Indian River line right-of-way in Section 7, T23S, R32E.

Existing transmission lines located on the Pershing to Indian River transmission line right-of-way from Pershing Substaion east (approximately 3 miles) to Section 7, T23S, R31E are as follows.

(1) Pershing to Rio Pinar - 230 kV (north circuit on double circuit lattice steel towers).

(2) Pershing to Indian River - 230 kV (south circuit on double circuit lattice steel towers).

(3) Pershing to Indian River - 115 kV (double circuit on guyed wood H-frame structures).

Existing transmission lines located on the Pershing to Indian River transmission line right-of-way in the vicinity of the proposed Stanton Energy Center are as follows.

(1) Pershing to Indian River - 230 kV (south circuit on double circuit lattice steel towers).

(2) Persing to Indian River - 115 kV (double circuit on guyed wood H-frame structures).

The existing Pershing to Indian River 230 kV transmission line will be looped into the proposed Stanton Energy Center Substation resulting in the following directly associated transmission lines.

(1) Stanton Energy Center to Indian River - 230 kV (existing south circuit on double circuit lattice steel towers).

(2) Stanton Energy Center to Pershing - 230 kV (existing south circuit on double circuit lattice steel towers).

A new 103 foot wide right-of-way contiguous to the north edge of the existing Pershing to Indian River right-of-way will be required from Section 7, T23S, R32E to its intersection with the existing Florida Power Corporation Rio Pinar line right-of-way in Section 7, T23S, R31E (approximately 5 1/2 miles). The Stanton Energy Center to Rio Pinar line will exit the proposed power plant substation to the north for a distance of approximately one half mile at which point it will be routed west to the existing Florida Power Corporation Rio Pinar line right-of-way. This line will be the south 230 kV circuit on new galvanized lattice steel towers.

With the installation of the Stanton Energy Center to Rio Pinar line as stated above, the existing Pershing to Rio Pinar 230 kV line is not required. The existing Pershing to Rio Pinar line will be extended, utilizing the open space on the north side of the existing 230 kV double circuit tower from a point in Section 7, T23S, R31E to the proposed Stanton Energy Center Substation. The only new right-of-way required for this circuit will be that connecting the Stanton Energy Center Substation to the Pershing-Indian River line right-of-way.

An elevation of the transmission corridor, looking north, as it leaves the Stanton Energy Center Substation is shown on Figure 3.8-3. An elevation of the transmission corridor, looking west, at a location north of the Stanton Energy Center site, is shown on Figure 3.8-4. An elevation of the transmission corridor, looking west, just east of the intersection of the Pershing to Indian River transmission line right-of-way and the Rio Pinar transmission line right-of-way is shown on Figure 3.8-5.

The maintenance road in the existing right-of-way will be used to maintain the new transmission lines. The plant access road and the makeup water and return water pipelines will parallel the transmission lines from a point where they exit the site and to a point 2 miles west along the existing Pershing to Indian River corridor as shown on Figures 3.8-2 and 3.8-4.

3.8.2 Land Use Impact

The land adjacent to the existing transmission corridor which will be widened, consists mostly of native or improved pasture and wetlands. Two residences exist along the south side of the transmission right-of-way. Since the expansion of the right-of-way will be to the north, those residences will not be affected. One orange grove borders the north side of the corridor.

The transmission corridor consists of three basic sections. The first section is the half mile portion exiting north from the site. This section will be approximately 590 feet wide. No wetlands exist in this area. Only scattered, sparse trees exist in this corridor and these trees will be removed.

The second section of the transmission corridor is the 2 miles paralleling the existing transmission corridor and containing the new transmission towers and the plant access road, water supply pipeline and return water pipeline. This corridor will consist of the 220 foot existing right-of-way plus a new right-of-way 260 feet wide which will be contiguous with the northern edge of the existing right-of-way. This new right-of-way will cross approximately 2,000 feet of wetlands. The wetland trees as well as other scattered trees in the corridor will be cleared.

The third section of the transmission corridor is the 3.5 miles from the point where the plant access road and pipelines turn north to the intersection of the Florida Power Corporation Rio Pinar transmission line with the Pershing to Indian River transmission corridor. This corridor will consist of the 220 foot existing right-of-way plus a new 103 foot wide

right-of-way which will be contiguous with the northern edge of the existing right-of-way. This new right-of-way will cross approximately 5,700 feet of wetlands, the Little Econlockhatchee River and an orange grove. The orange grove and Little Econlockhatchee River will be spanned by the transmission lines. The trees in the wetlands as well as other scattered trees will be cleared.

3.8.3 Beneficial Uses

A portion of the transmission corridor will have multiple uses. This portion is the one half mile long exit corridor going north from the site and the 2 mile length of corridor immediately west of the exit corridor. This portion of the corridor will be parallel to the plant access road and the makeup water supply and return water pipelines. The remaining 3-1/2 miles of new transmission corridor will be used for transmission lines only.

3.8.4 Visibility

The transmission corridor is located approximately 4 miles south of Cheney Highway and 3.5 miles north of the Bee Line Expressway. The new transmission lines will not be visible from Cheney Highway and rarely visible, at a long distance, from the Bee Line Expressway.

The only other road that is frequently traveled and passes under the transmission lines is the access road to the sanitary landfill adjacent to the Stanton Energy Center Site.

3.8.5 Associated Transmission Structures

The new transmission lines will be supported on the existing galvanized steel transmission towers and on new galvanized steel transmission towers along the existing corridor. The new corridor, which exits the site to the north, will utilize new galvanized lattice steel structures as shown on Figure 3.8-3. The steel towers will be approximately 110 feet tall with the tower base dimensions being approximately 22 feet by 30 feet. The average horizontal span between towers will be approximately 1,000 feet. Front and side elevations of a typical tower are shown on Figure 3.8-6.

The only new substation required will be the Stanton Energy Center Substation located onsite. The substation will be a low profile, rigid bus design utilizing galvanized steel structures. The electrical arrangement will consist of a breaker-and-a-half scheme. Initial development will consist of an area approximately 400 feet by 400 feet. The ultimate substation development will be approximately 600 feet by 800 feet. The ultimate substation area will be fenced and surfaced with crushed stone during Unit 1 construction. A side elevation of the proposed Stanton Energy Center Substation is shown on Figure 3.8-7.

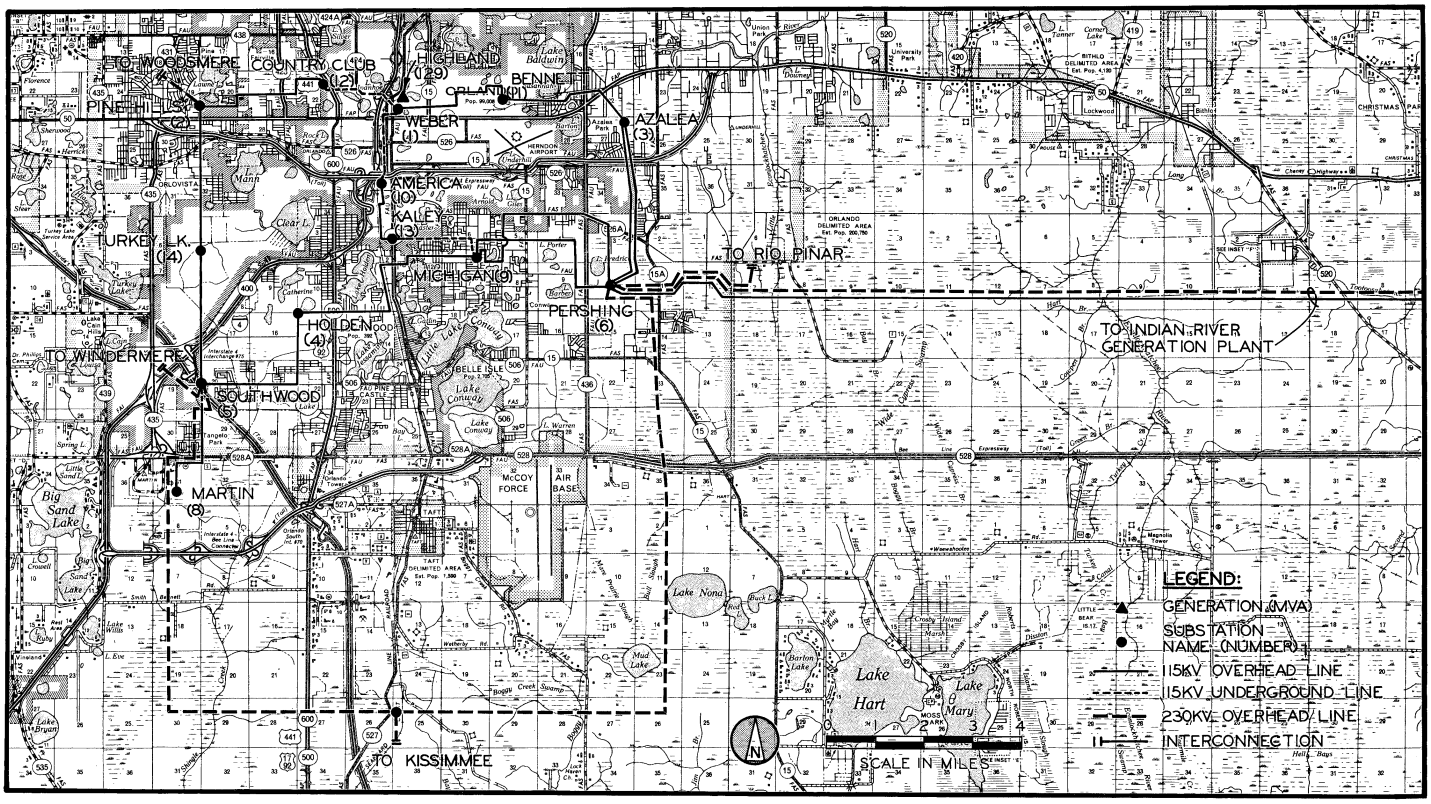


FIGURE 3.8-1. EXISTING OUC ELECTRIC TRANSMISSION NETWORK

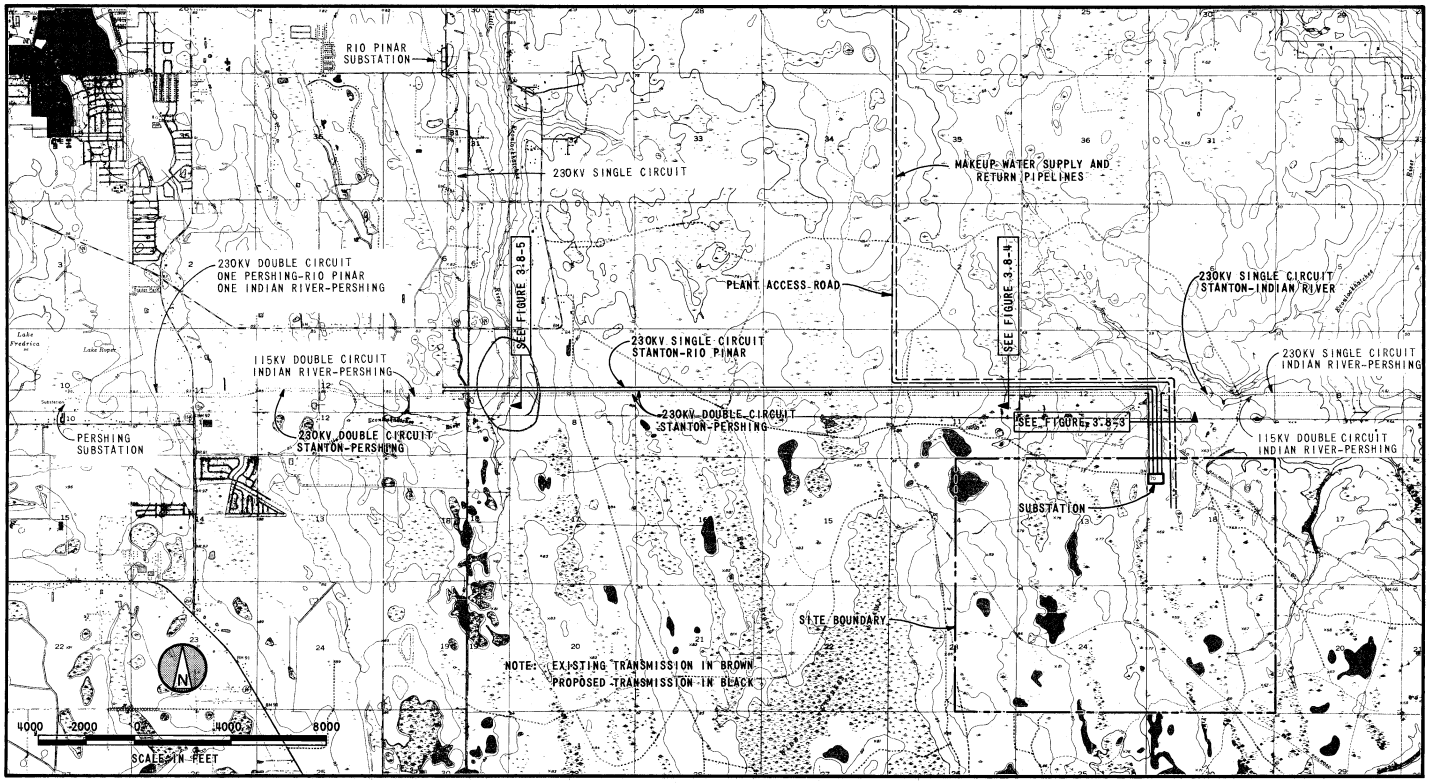


FIGURE 3.8-2. STANTON ENERGY CENTER
UNIT I ASSOCIATED
TRANSMISSION FACILITIES

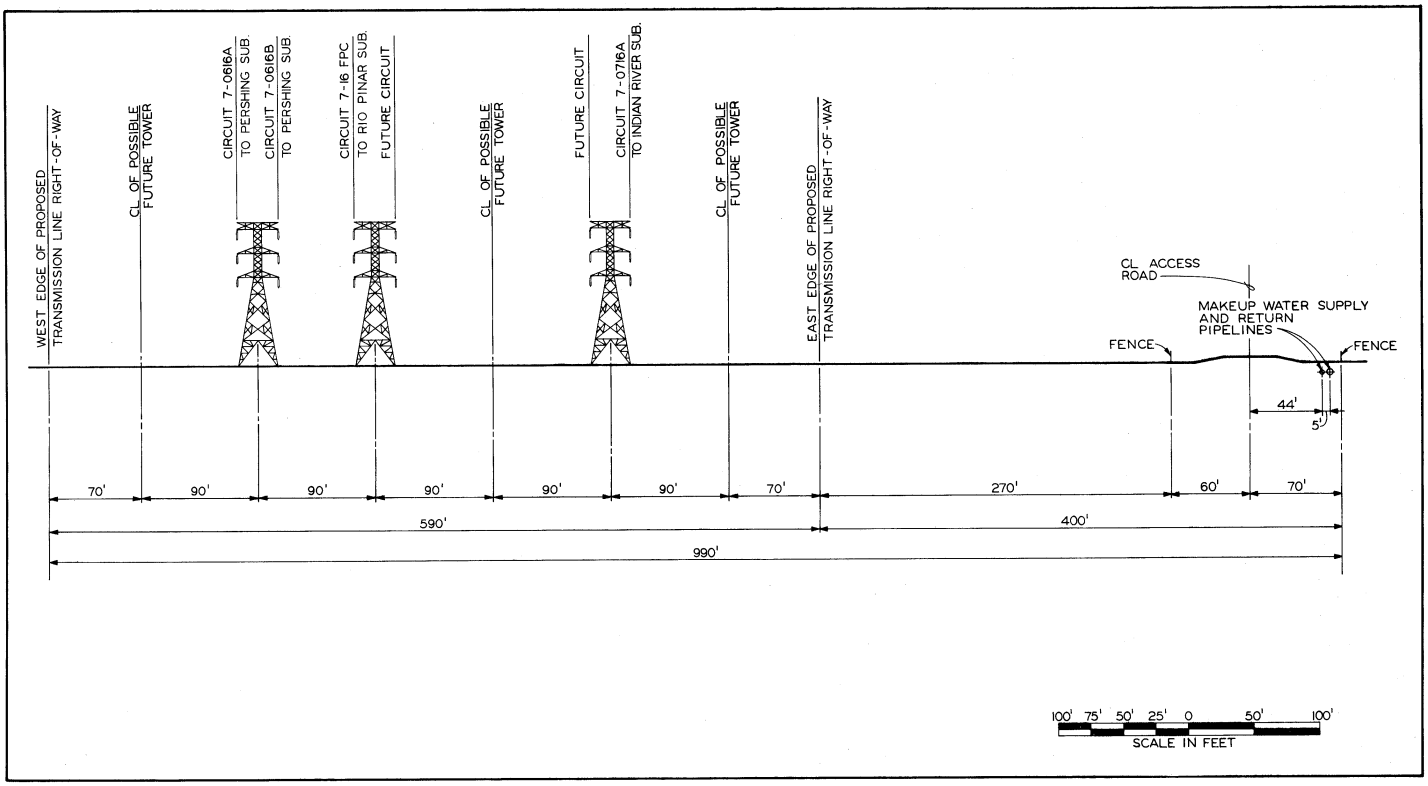


FIGURE 3.8-3. TRANSMISSION CORRIDOR ELEVATION EXITING SITE LOOKING NORTH

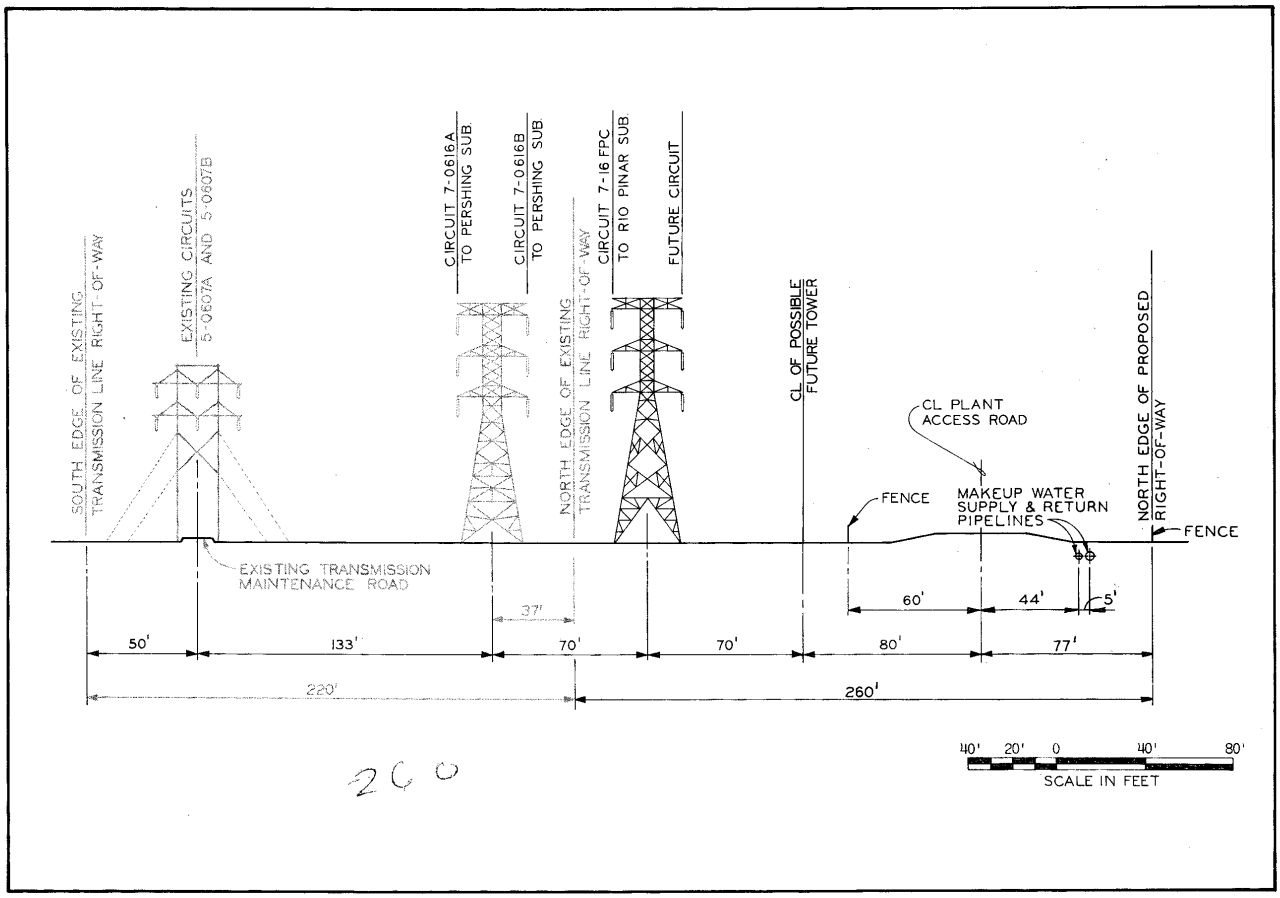


FIGURE 3.8-4. TRANSMISSION CORRIDOR ELEVATION NORTH OF SITE LOOKING WEST

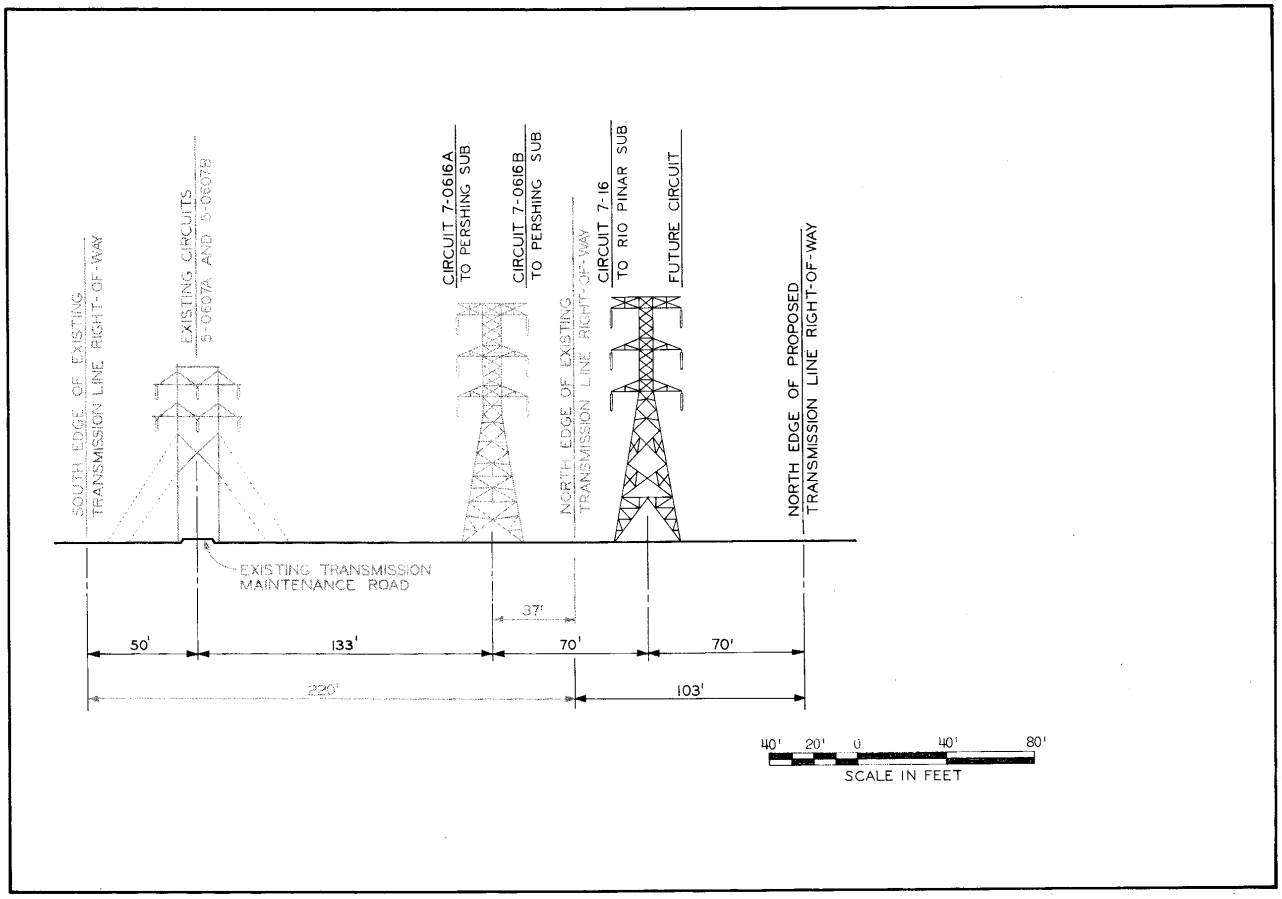


FIGURE 3.8-5. TRANSMISSION CORRIDOR ELEVATION EAST OF RIO PINAR INTERSECTION LOOKING WEST

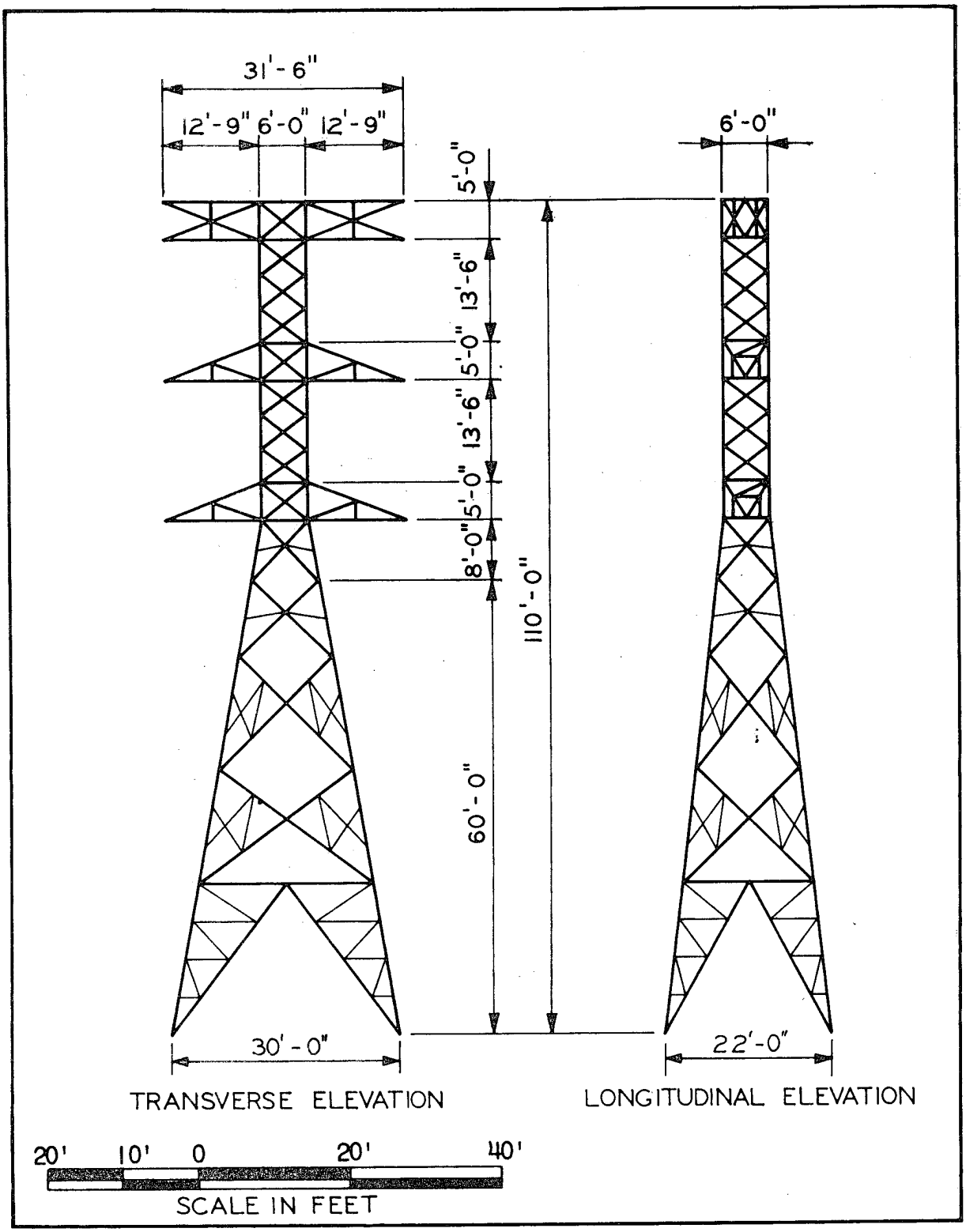


FIGURE 3.8-6. TYPICAL 230KV LATTICE STEEL TRANSMISSION TOWER

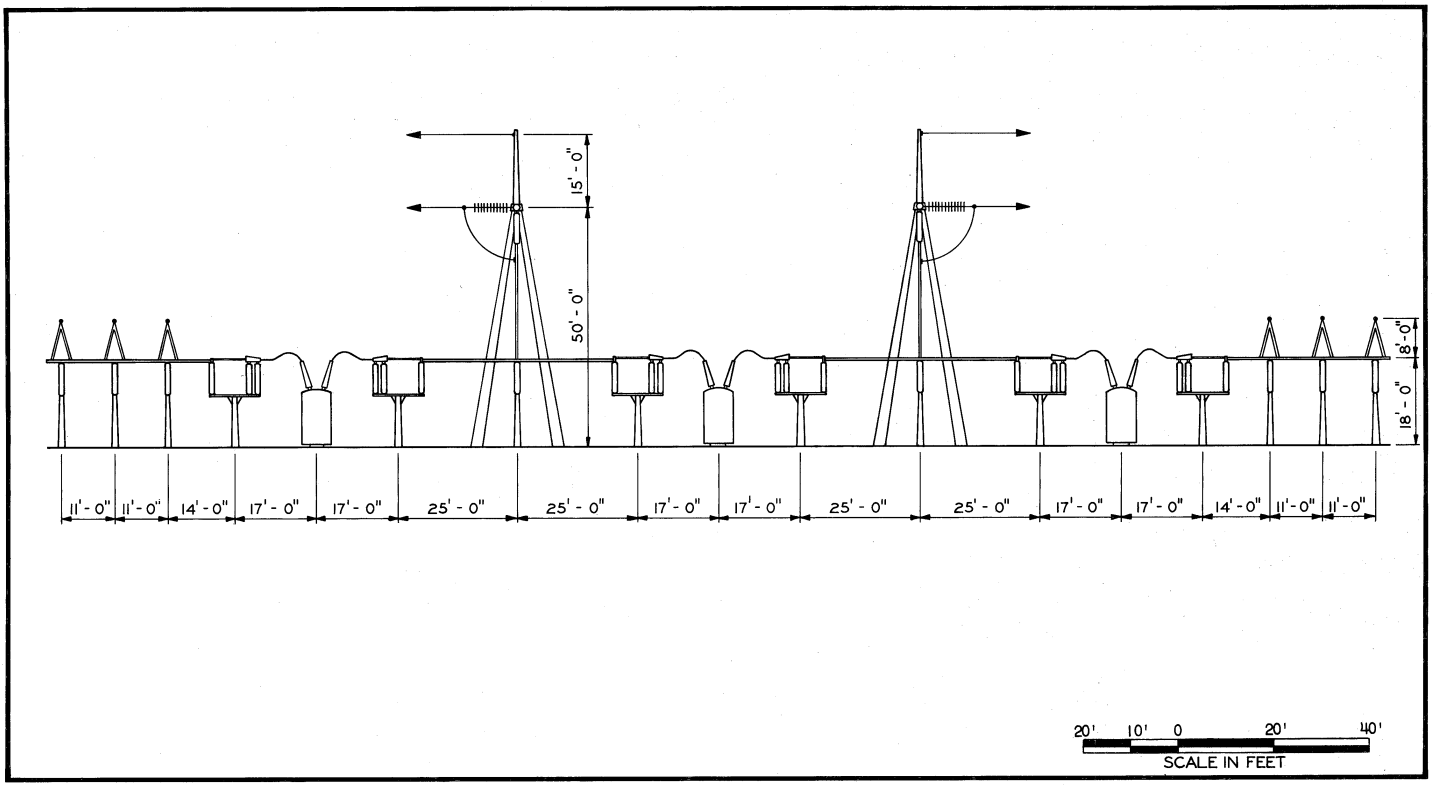


FIGURE 3.8-7. STANTON ENERGY CENTER SUBSTATION ELEVATION LOOKING WEST

3.9 DIRECTLY ASSOCIATED FACILITIES

Directly associated facilities include railroads, access and plant roads, fencing and security, limestone handling facilities, makeup and return water pipelines, and lime handling facilities as described in the following sections. Associated transmission facilities are described in Section 3.8. | 5

3.9.1 Railroads

A system of railroad tracks will be required for coal delivery and transportation of materials and equipment for construction and maintenance. The routing of the railroad to the site and the arrangement of the railroad on-site are shown in Figures 3.9-1 and 3.9-2, respectively. A spur will originate at a turnout from the Seaboard Coast Line (SCL) Railroad mainline approximately one mile west of the Orlando International Airport. The new spur will be approximately 18 miles in length from the SCL turnout to the coal loop at the site.

The railroad to the site will be routed in the modified corridor shown on Figure 3.9-1. The rail corridor consists of 800 feet either side of a centerline originating at the south boundary of the site at State Plane Coordinates (SPC) 1,502,160N; 448,140E; proceeding south, under the Bee Line Expressway to SPC 1,490,030N; 448,100E; turning southwest and proceeding to SPC 1,485,880N; 443,860E; turning west and proceeding to SPC 1,486,150N; 443,400E; turning southwest and proceeding to SPC 1,468,520N; 405,000E; turning northwest and proceeding to SPC 1,478,160N; 392,480E; turning west and running within 3,000 feet either side of the centerline proceeding to SPC 1,477,990N; 379,420E. | RFM-1 | 5

1600' - 0.3 mile

The railroad corridor modification is located southeast of Mud Lake, Lake Nona, and Red Lake and west of State Route 15. It consists of a triangular area approximately 3.25 miles long by 0.42 miles wide at its widest point. This area contains approximately 425 acres of land. The original affected segment included four culverts; four pipe culverts within the corridor modification will be used to maintain existing drainage patterns. Three of the pipe culverts will prevent surface water ponding on | RFM-1

either side of the railroad berms and the fourth will permit surface runoff to drain to the southeast. No significant changes in surface drainage patterns will result from the modification. RFM-1

The railroad spur will be a single track line, elevated above the 100-year flood elevation by an embankment. At locations where the railroad interrupts natural drainage patterns, culverts or trestle drainage structures will be provided. Wetland and swamp crossings will utilize precast concrete pile trestles in addition to embankment construction. Additional openings will be provided as required for wildlife crossings. A typical railroad section is shown in Figure 3.9-3. A typical railroad trestle detail is shown in Figure 3.9-4.

The railroad spur will cross several roads. Where the railroad spur crosses Boggy Creek Road near its intersection with Weatherby Road, Boggy Creek Road will be relocated along the south side of the railroad right-of-way. A grade crossing with Weatherby Road will be required. All railroad road crossings, with the exception of the Bee Line Expressway crossing, will be at grade. The new railroad spur will be constructed under the Bee Line Expressway through an existing interchange. The clearance at the existing interchange is less than that recommended by the American Railway Engineering Association. As a result, new bridges will be constructed to replace the existing bridges to furnish adequate clearance. A section of the Bee Line Expressway at the interchange is shown in Figure 3.9-5.

On-site railroad construction will consist of a coal delivery loop and plant access railroad. The coal delivery loop will be elevated to approximately 10 feet above grade. The loop will be elevated to minimize the depth that the coal unloading system structure must extend into the ground water table. The railroad will be constructed over coal unloading hoppers located within the embankment. A portion of the loop will have a dual track to allow for rail delivery of limestone (scrubber additive) and railcar storage. The limestone unloading system will be similar to the coal handling system unloading facilities. The coal and limestone unloading equipment will be located adjacent to each other in a common building.

The plant access rail will be provided by an extension of the coal delivery spur into the generation facilities immediate area. Rail spurs will be constructed to provide access to the following.

(1) Generator transformer, turbine generator, and condenser areas.

(2) Permanent turbine room access bay.

(3) Boiler construction (remove as construction progresses).

(4) Materials laydown area.

(5) Fuel oil storage.

(6) Lime unloading hopper.

Construction of these spurs will be completed in conjunction with site preparation and construction of the plant access road.

Railroad embankments will be constructed from on-site borrow material or material obtained along the right-of-way. All road and railroad embankment slopes will be seeded to establish grass and provide erosion control. Whenever possible, all slopes will be constructed to no steeper than 3 horizontal on 1 vertical.

3.9.2 Access and Plant Roads

A new Orange County road, named Alafaya Trail Extension, will be constructed from State Highway 50, Cheney Highway, south from the intersection of State Highways 50 and 520. This new road is being constructed by Orange County to serve a new industrial facility being constructed by the Martin-Marietta Corporation, the new Orange County Easterly Subregional Wastewater Treatment Plant, and the Curtis H. Stanton Energy Center. Just southwest of the planned location of the Orange County Plant, the new road turns east along section lines and extends east to the main site entrance of the Stanton Energy Center. Because of this new Orange County road, construction of the main plant access road, as certified, is no longer necessary. In addition to serving as the main plant access road, the new county road will also define the route for the makeup water supply and cooling tower blowdown return pipelines. These parallel lines will follow the new county road from Stanton Energy Center to the Orange County Plant and will not extend to the Iron Bridge Facility in Seminole County. Alternate access to the site from the new county road will be provided by a short access road within the joint-facilities corridor. RFM-1

The main plant road onsite will have an embankment section as shown on Figure 3.9-8, and will provide access to construction parking lots as well as the plant entrance at the construction and permanent security facilities. The roadway will terminate at the main plant perimeter loop road. The main plant access road is expected to be paved initially, except for that portion serving the adminstration area. This unpaved portion will eventually be paved prior to start-up of Unit 1.

The operations and visitor parking lots will initially have space for 150 and 20 vehicles, respectively. Each lot will be surfaced with a limerock base. Prior to Unit 1 start-up, a 4-inch thick bituminous pavement

will be applied to the two lots. The construction parking areas will have a crushed rock surface sprayed with a dust palliative. The main construction parking lot will be sized to accommodate 650 vehicles, while a separate construction management lot will accommodate 80 to 100 vehicles.

The main plant perimeter loop road, including cooling tower and batch plant access roads, will be as shown on Figure 3.9-8. The remaining lesser travelled service roads will also be as shown on Figure 3.9-8. The construction laydown area roads will be similar in width to low density service roads; however, they will have a thinner limerock base.

Road embankments will be slightly elevated above existing grade to ensure proper drainage from the road surface and will be constructed from local material obtained along the road right-of-way or on-site. A limerock base coarse will provide a stable subgrade for the road surface. All road surface elevations will be above the 100-year flood elevation.

Culvert pipe or box culvert drainage structures will be provided at interfaces with existing drainage patterns to ensure proper drainage of storm runoff.

3.9.3 Fencing and Security

Fencing and security will provide for the physical enclosure of secured areas and allow for the monitoring of incoming and outgoing traffic. A security fence will enclose the main plant and construction areas as shown on Figure 3.9-7. Fencing may also be installed around special construction areas such as the electrical laydown areas where required.

The security fence will enclose the main plant area and allow only limited access. An entrance at the construction guard station will be maintained during construction. Outdoor construction lighting will be provided for security. The security facilities, parking lots, and entrance road within 300 feet of the gate will be lighted.

The permanent security building will serve to monitor the passage of visitors and operations personnel to and from the plant. A manually-actuated power operated gate will be provided which could be operated from within the security building or by key from the fence exterior.

3.9.4 Limestone Handling

The additive for the flue gas desulfurization system at Stanton Energy Center will be limestone. The source of supply has not been determined at this time. Potential sources involve the use of both truck and rail delivery of the limestone. Therefore, provisions for delivery by both methods will be included at the plant. Truck delivery will require 15 trucks of 24 tons each per day for five days per week. Railcar delivery will require 18 railcars of 100 tons each per week.

The limestone handling system will be capable of unloading, stocking, reclaiming and long term reserve storage. Figure 3.9-9 shows a schematic of the limestone handling process, Figure 3.9-10 shows the layout of the limestone handling facilities and Figure 3.9-11 shows a perspective of the limestone handling facilities. Limestone delivered by rail will be received by a bottom dump-type unloading facility located adjacent to the coal train unloading facility. As the train is being unloaded, the limestone will be conveyed to a stockout pile located southeast of the Crusher Building. This pile will be used for active storage. Limestone delivered by truck will be dumped directly into the stockout area. A large reserve limestone pile of 38,000 tons (120 days for Unit 1) will be maintained just south of the stockout area. Reclaimed limestone will be conveyed to the scrubber additive storage day bin prior to being ground and mixed with water to produce the additive slurry. RFM-1

Fugitive dust generated by the handling and storage of limestone will be controlled by the use of water spray suppression, enclosed stockout conveyor, totally enclosed reclaim conveyor, and a bag filter at the day silos and shuttle conveyor. The limestone unloading facility receiving hopper will be adjacent to the coal unloading facility within a building. RFM-1 The limestone receiving hopper will be equipped with a water spray dust suppression system. The main stockout conveyor shown on Figure 3.9-11 will be enclosed with a roof and sides and a steel-grate floor except where it passes over roads or other facilities. Solid floors will be provided for such areas. The limestone reclaim conveyor will be totally enclosed with a solid floor because it passes over other plant facilities or service areas.

This conveyor discharges onto a belt-type shuttle conveyor which distributes the limestone to the day silos. At this transfer point, a dust collection hood operating at negative pressure will be provided. The exhaust from this hood will be routed through the bag filter system which controls the exhaust from the day silos during filling. RFM-1

Table 3.9-1 lists the release points and control methods for the limestone handling facilities. Estimated emission levels for the release points are presented in Section 5.5.

3.9.5 Makeup and Return Water Pipelines

A makeup water pipeline and a return water pipeline will connect the Stanton Energy Center to the Orange County Easterly Subregional Wastewater Treatment Plant. The corridor in which the pipeline will be routed is shown on Figure 3.9-6. RFM-1 The makeup pipeline will consist of a 36 inch fiberglass reinforced plastic pipe and will be used to supply Orange County Plant effluent to the site for use as cooling tower makeup. RFM-1 The return pipeline will consist of 10 inch fiberglass reinforced plastic pipe and will be used to return excess plant wastewater to the Orange County Plant. RFM-1

The pipelines will be routed in a common trench and will parallel the new county road for 4 miles from the site to the Orange County Plant. RFM-1 The new county road connects to the Stanton Energy Center site near the northwestern corner of Section 18, T23S, R32E. From the site the road extends north about 2,550 feet to a point of intersection within the existing OUC transmission right-of-way at State Plane Coordinates N 1,515,389 and E 449,068. The road turns northwest at this point for about 4,115 feet to a point of intersection at State Plane Coordinates N 1,518,343 and E 445,550. From this point the road runs due west along a section line for approximately 5,340 feet to a point of intersection at State Plane Coordinates N 1,518,335 and E 440,593. The road turns north-northwest at this point to a true azimuth of approximately 338 degrees for about 5,330 feet to a point of intersection at State Plane Coordinates N 1,523,299 and E 438,695. At this point the road turns nearly due west with the pipelines extending to a point at SPC N 1,523,424 and E 434,444. The pipelines turn due south to enter

the Orange County Easterly Subregional Wastewater Treatment Plant. The new county road continues northward from this location to its intersection with State Highway 50. The total length of the pipeline corridor from the Stanton Energy Site to the Orange County Plant is approximately 4 miles. RFM-1

3.9.6 Lime Handling and Storage

Pebble lime will be used as an additive to condition the scrubber sludge/flyash mixture. The lime will be received by truck or by railcar dumping into an enclosed receiving hopper. A rail/truck unloading facility is served by the plant maintenance rail spur near the Coal Crusher Building as shown on Figure 3.1-4. The lime will be transported from the hopper to a storage silo by a pressurized pneumatic system. The silo will vent through a fabric bag filter system with a removal efficiency of at least 99 per cent. From the storage silo, the lime will be conveyed to a pulverizer and then to the sludge/flyash mixers. 5

3.9.7 Radioactive Level Detection Systems

Radioactive devices will be used to monitor levels of bulk materials, liquids, and combustion wastes. Coal silos, main steam line moisture collection pots, and fly ash hoppers under the electrostatic precipitators are the principal system applications of these devices. The radioactive materials used in these devices are regulated by the Florida Department of Health and Rehabilitative Services. Completed applications for licenses for radioactive materials are included as Appendix 3.9A. RFM-1

TABLE 3.9-1. FUGITIVE LIMESTONE DUST EMISSIONS CONTROL

Source of Emissions	Dust Control Method	Control Efficiency per cent	
Bottom Car Dumper	Water Spray and Building Enclosure	97	5
Stockout Conveyor	Enclosed	90 ~~99+~~	RFM-1
Active Storage			
Load In	Telescopic Chute	85	
Load Out	Dozer	50	
Wind Erosion	Crusting	80	
Reserve Storage			
Load In	Dozer	50	
Load Out	Dozer	50	
Wind Erosion	Crusting	80	
Reclaim Conveyor	Enclosed*	99 ~~+~~	RFM-1
Storage Day Bin	Bag Filter	99+	

*With solid floor to protect other plant facilities and work areas. | RFM-1

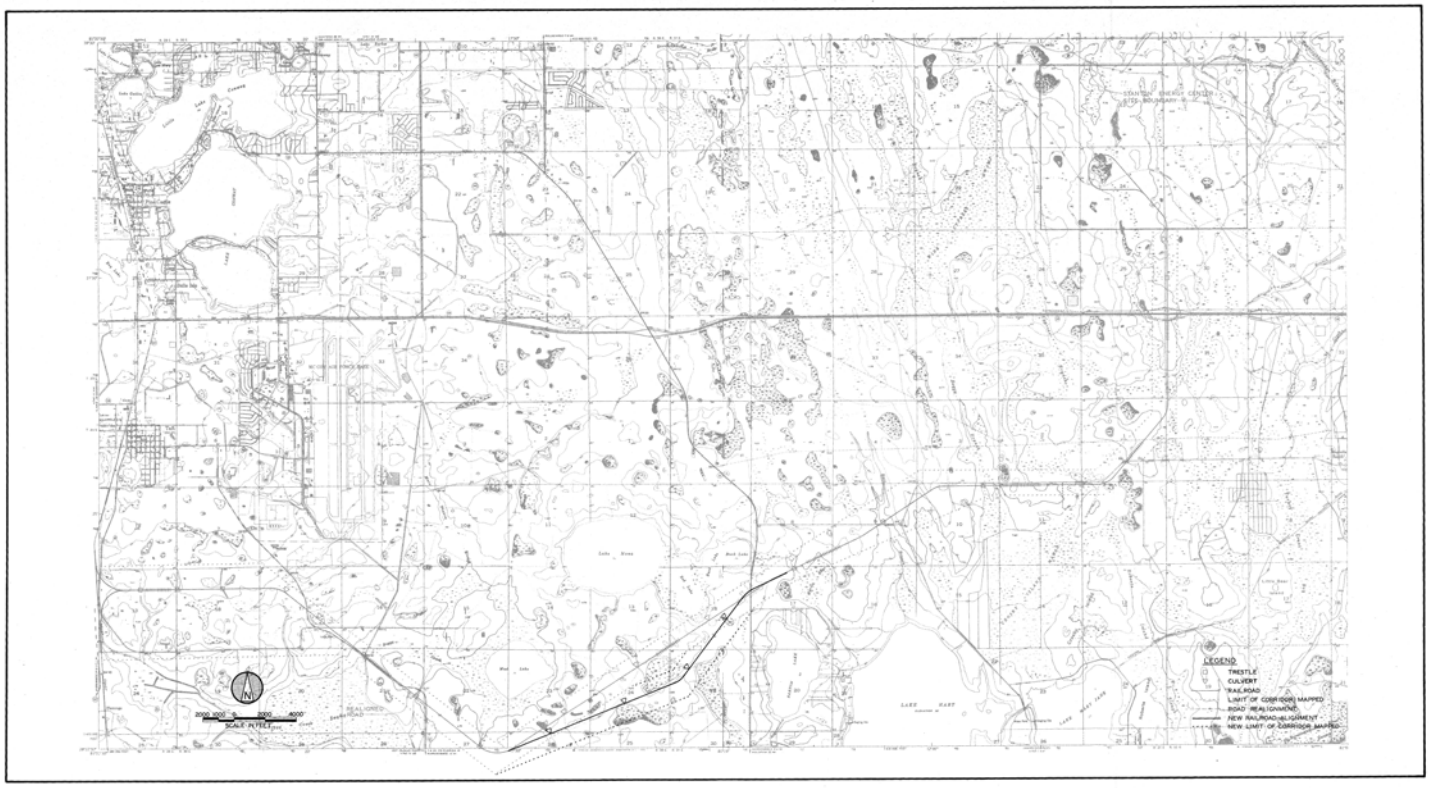


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FIGURE 3.9-1. ROUTING OF RAILROAD TO SITE

New

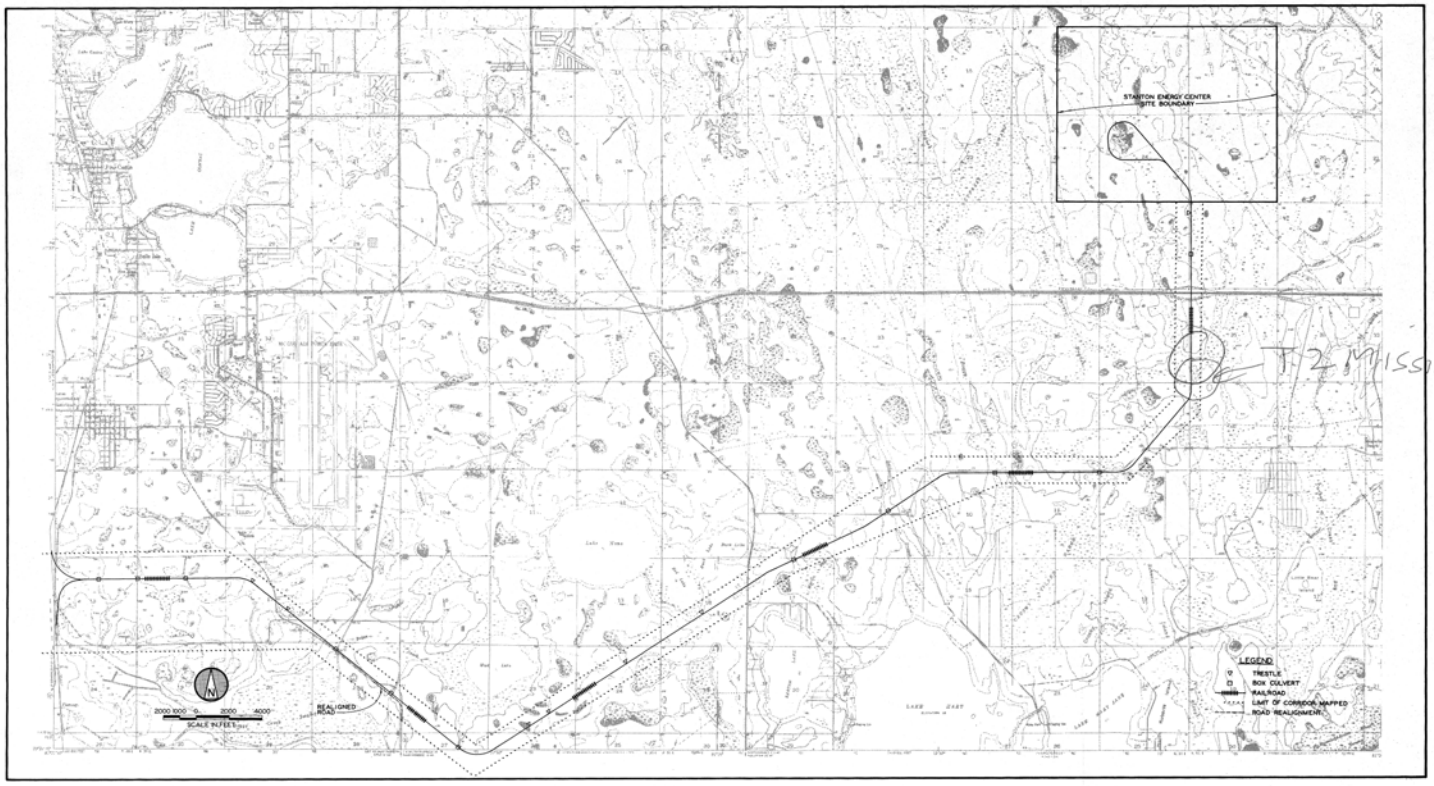

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FIGURE 3.9-1. ROUTING OF RAILROAD TO SITE

OUC-4

original

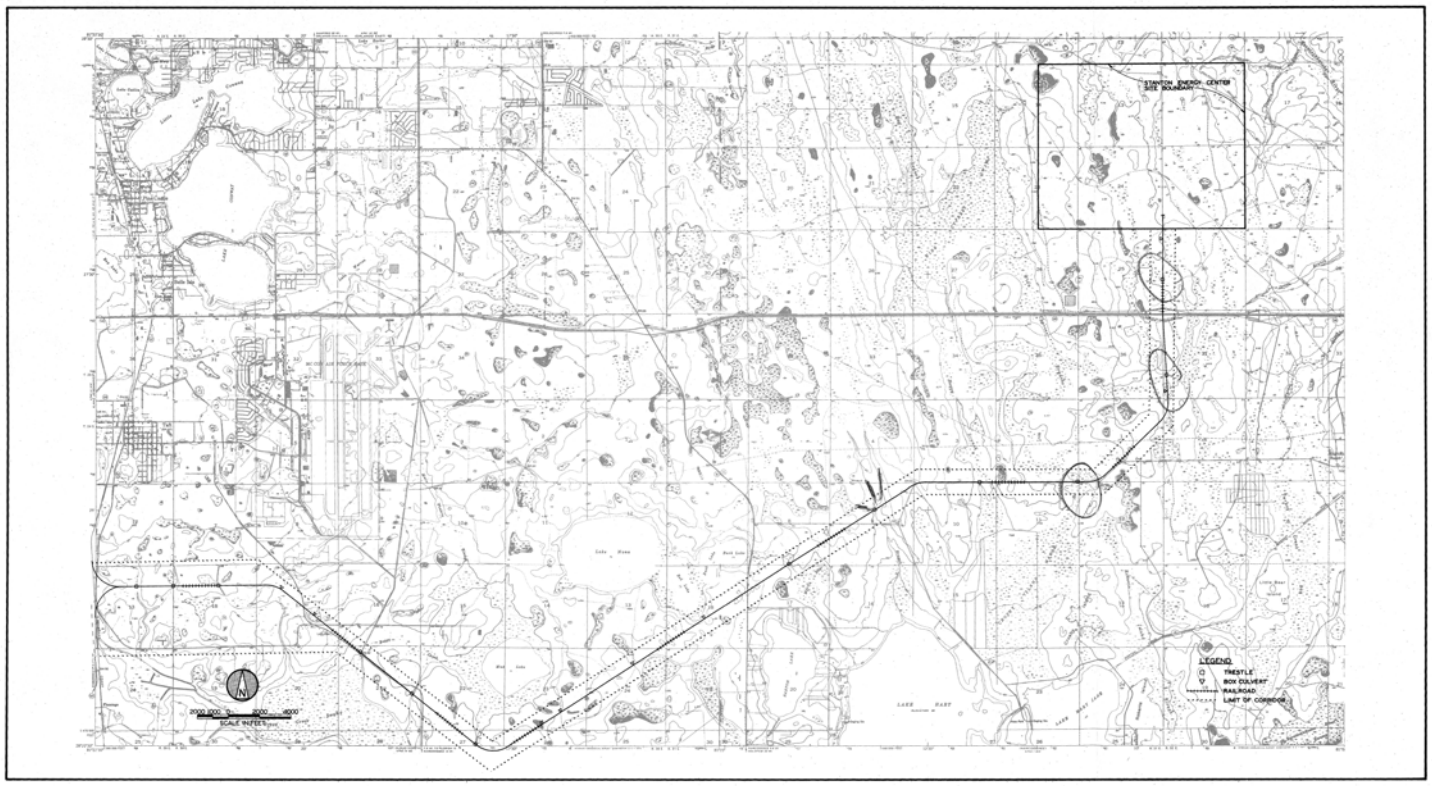

FIGURE 3.9-1. ROUTING OF RAILROAD TO SITE

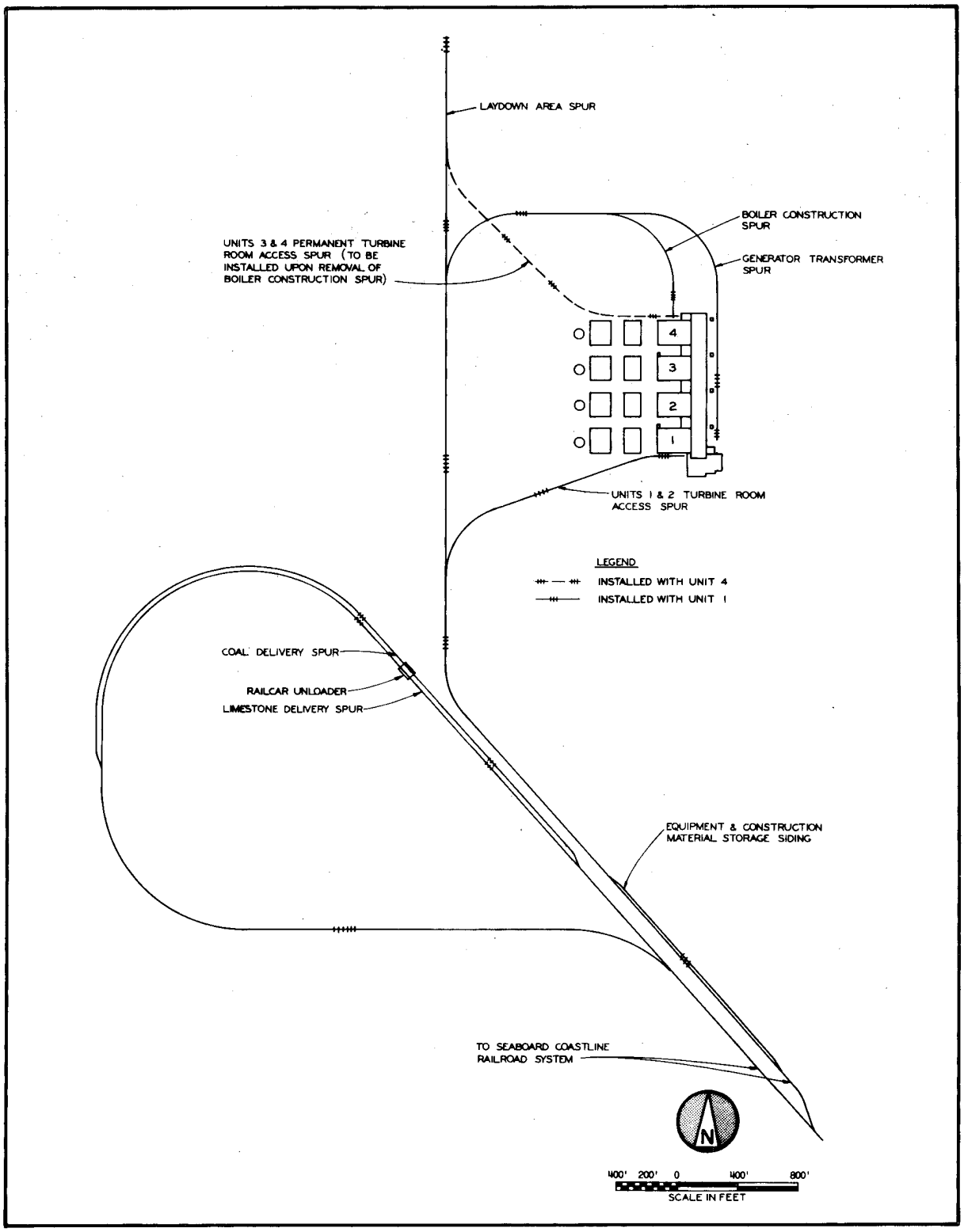

FIGURE 3.9-2. ONSITE RAILROAD

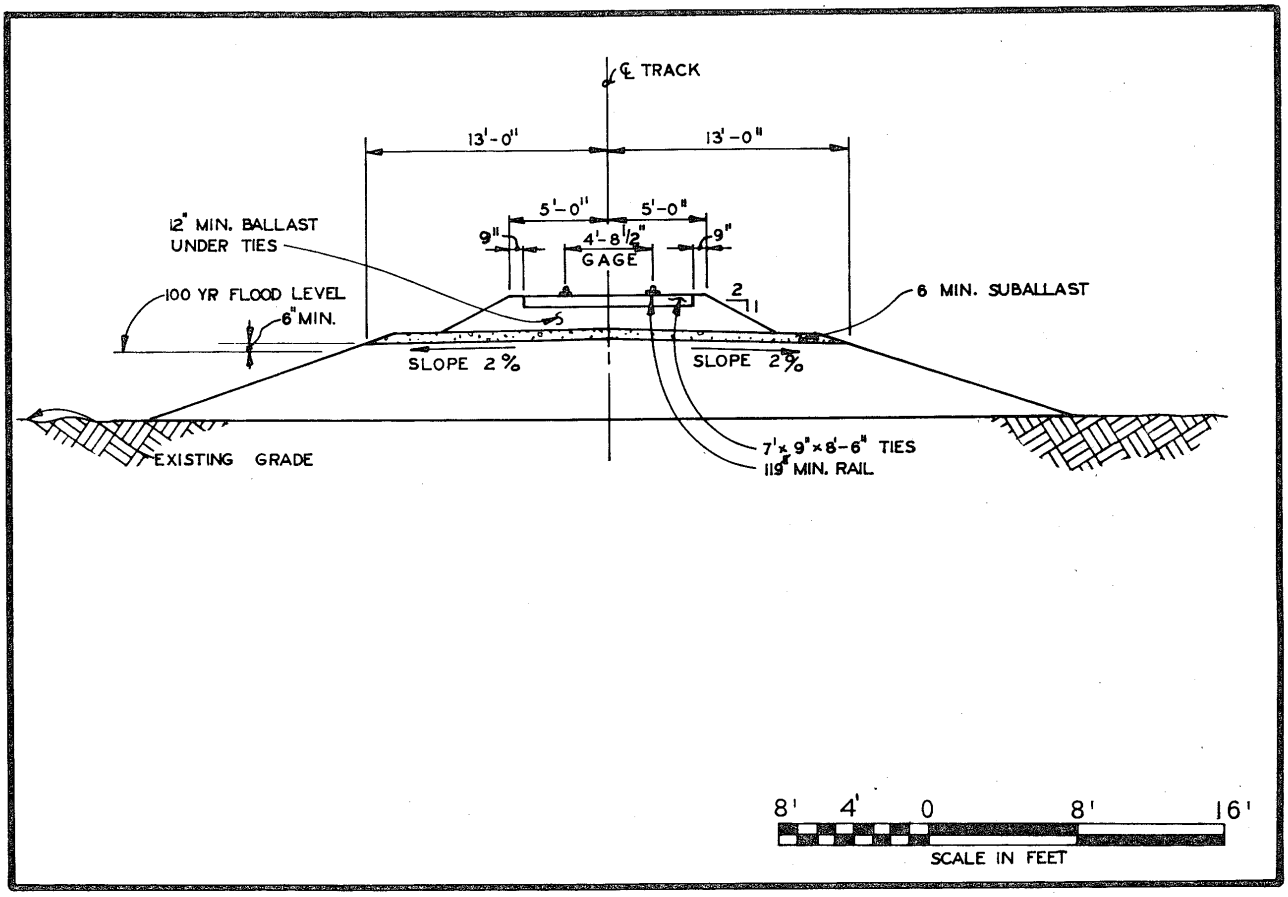

FIGURE 3.9-3. TYPICAL RAILROAD SECTION

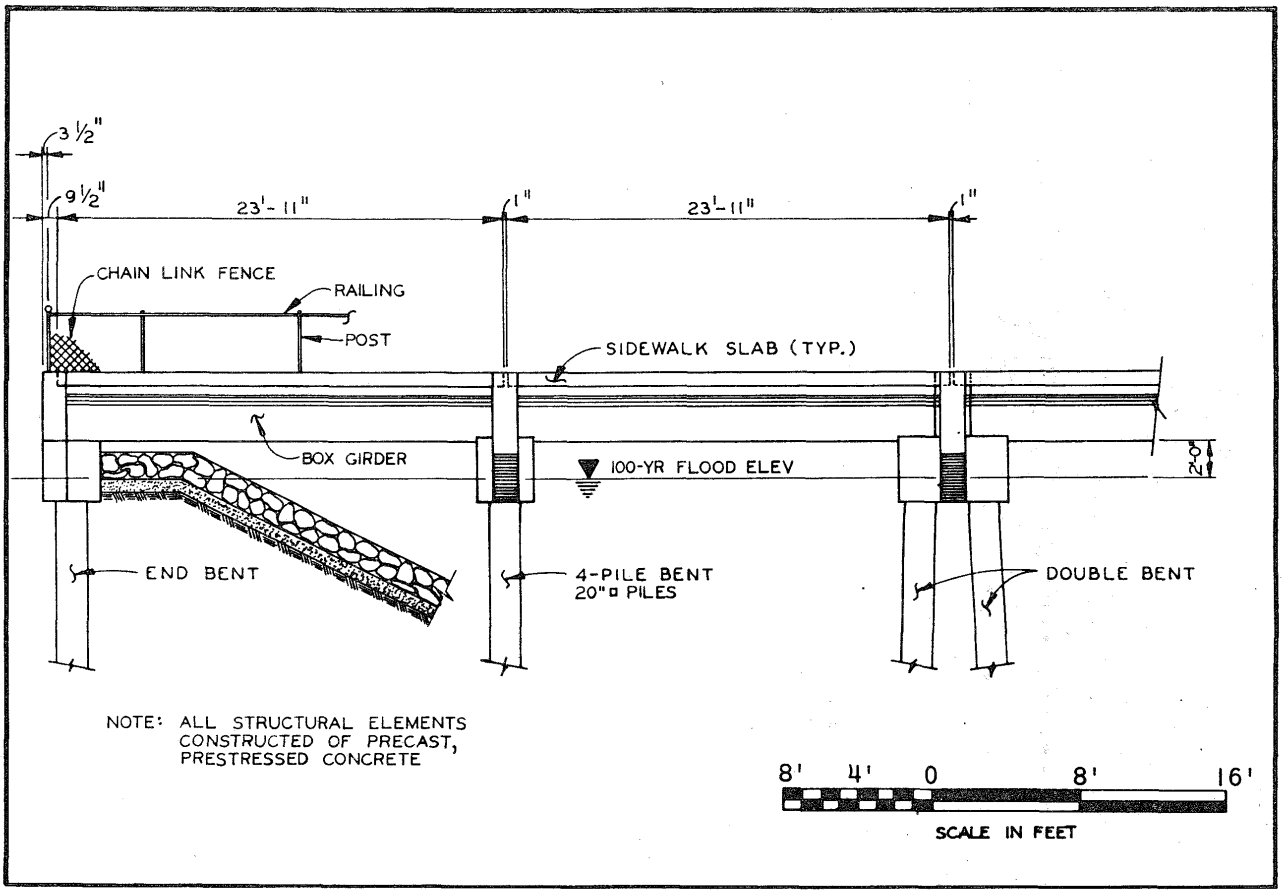

FIGURE 3.9-4. TYPICAL RAILROAD TRESTLE DETAIL

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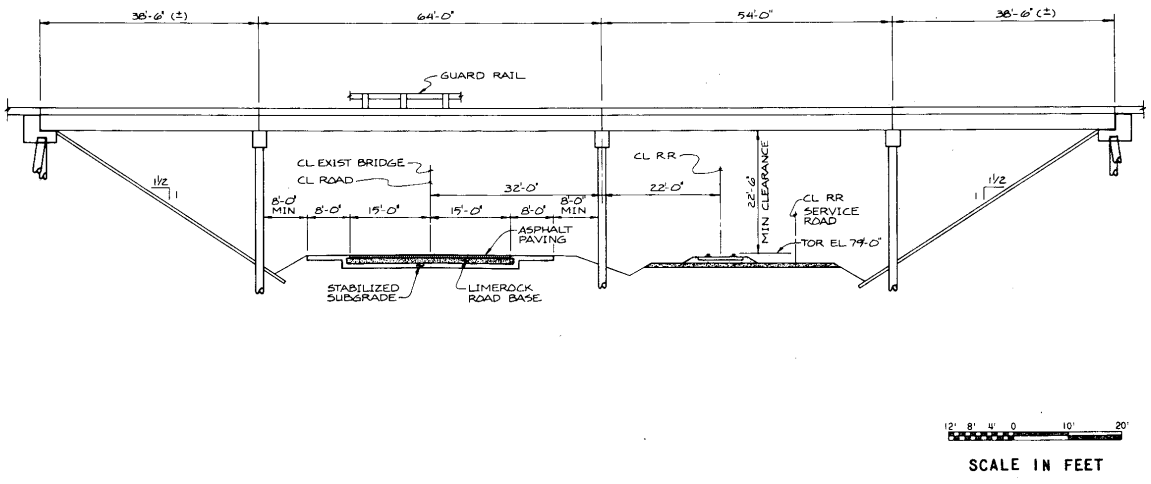

FIGURE 3.9-5. BEE LINE EXPRESSWAY
RAILROAD UNDERPASS

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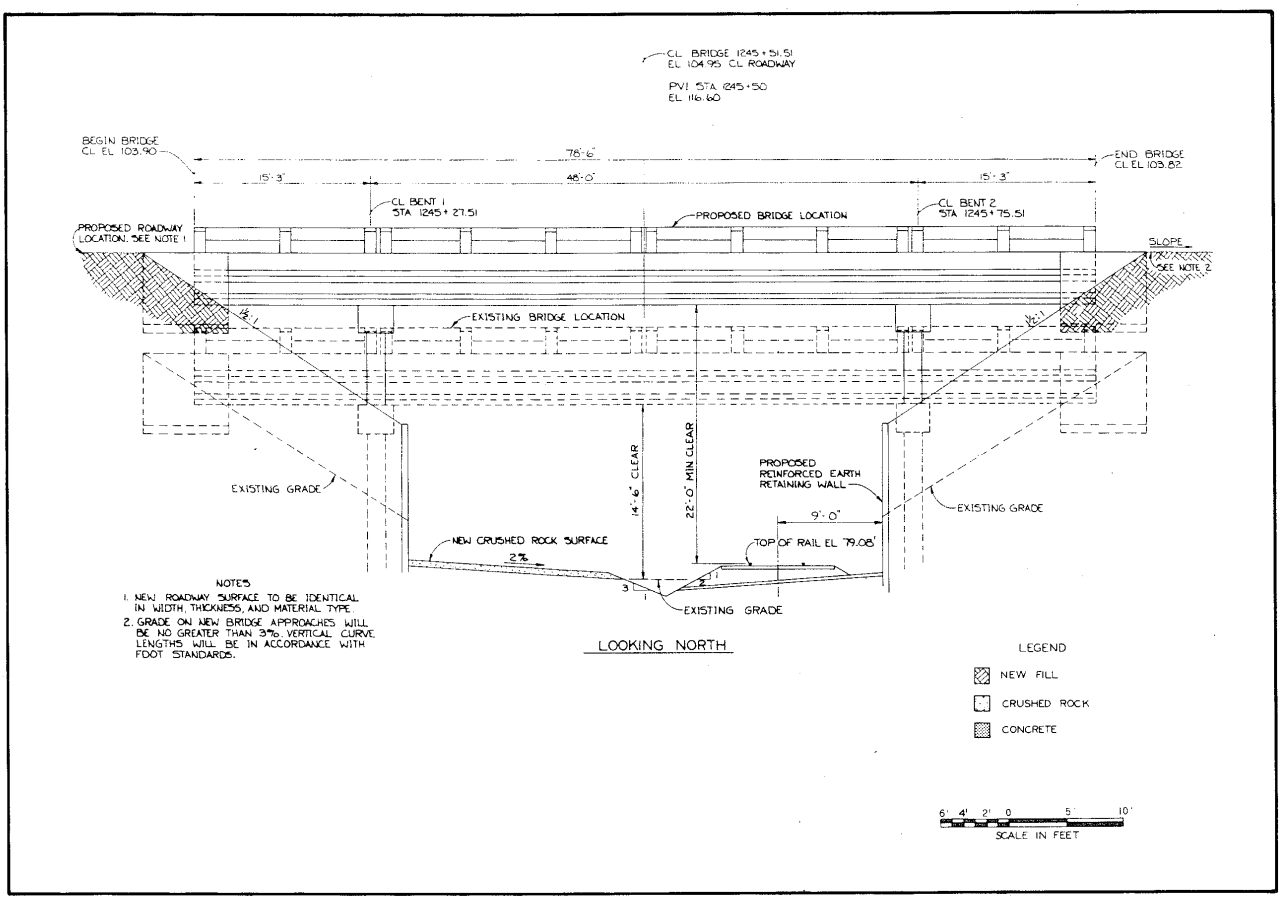

FIGURE 3.9-5. BEE LINE EXPRESSWAY RAILROAD UNDERPASS

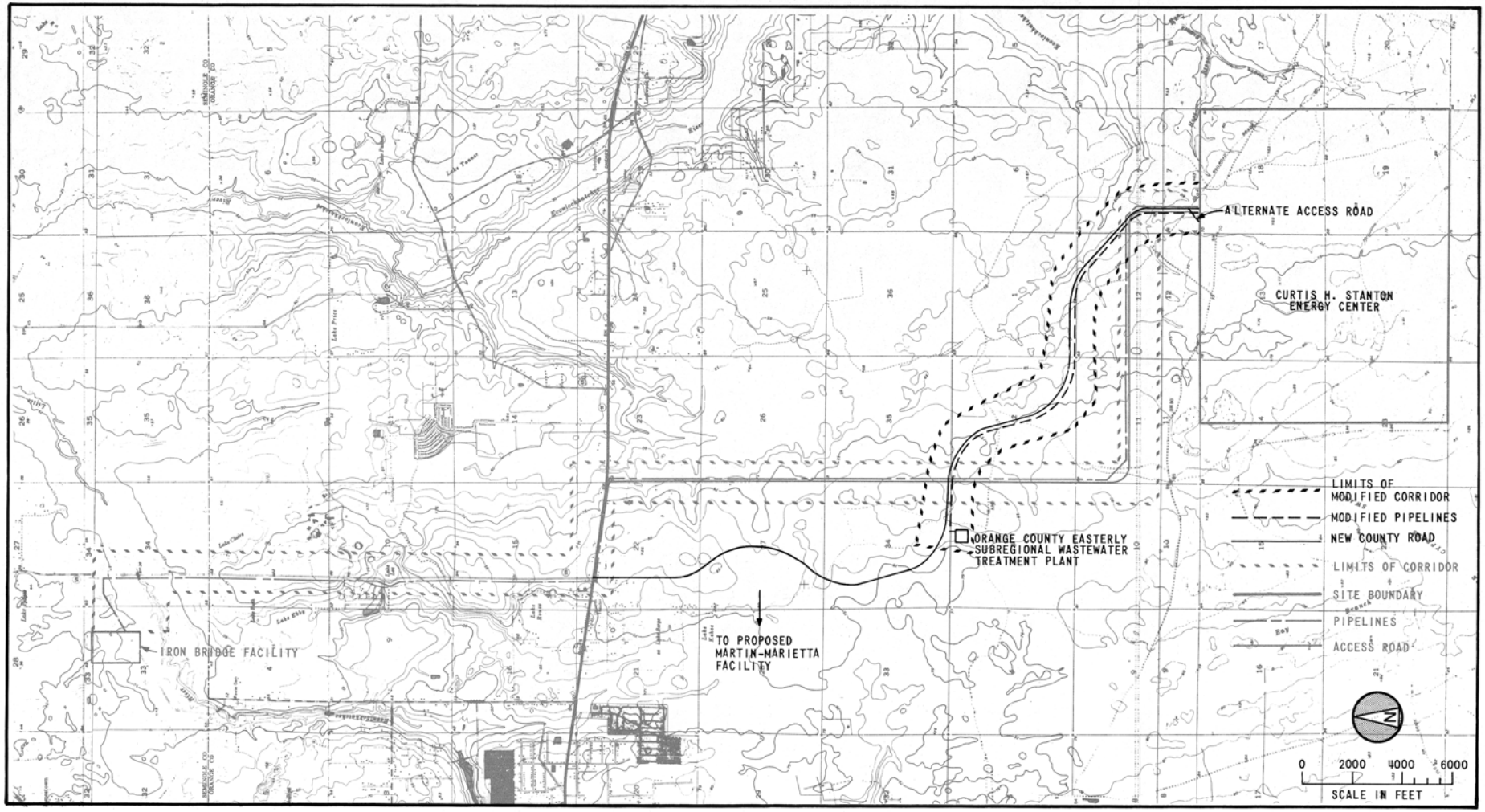

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FIGURE 3.9-6. PROPOSED MODIFIED PIPELINE CORRIDOR AND NEW COUNTY ROAD

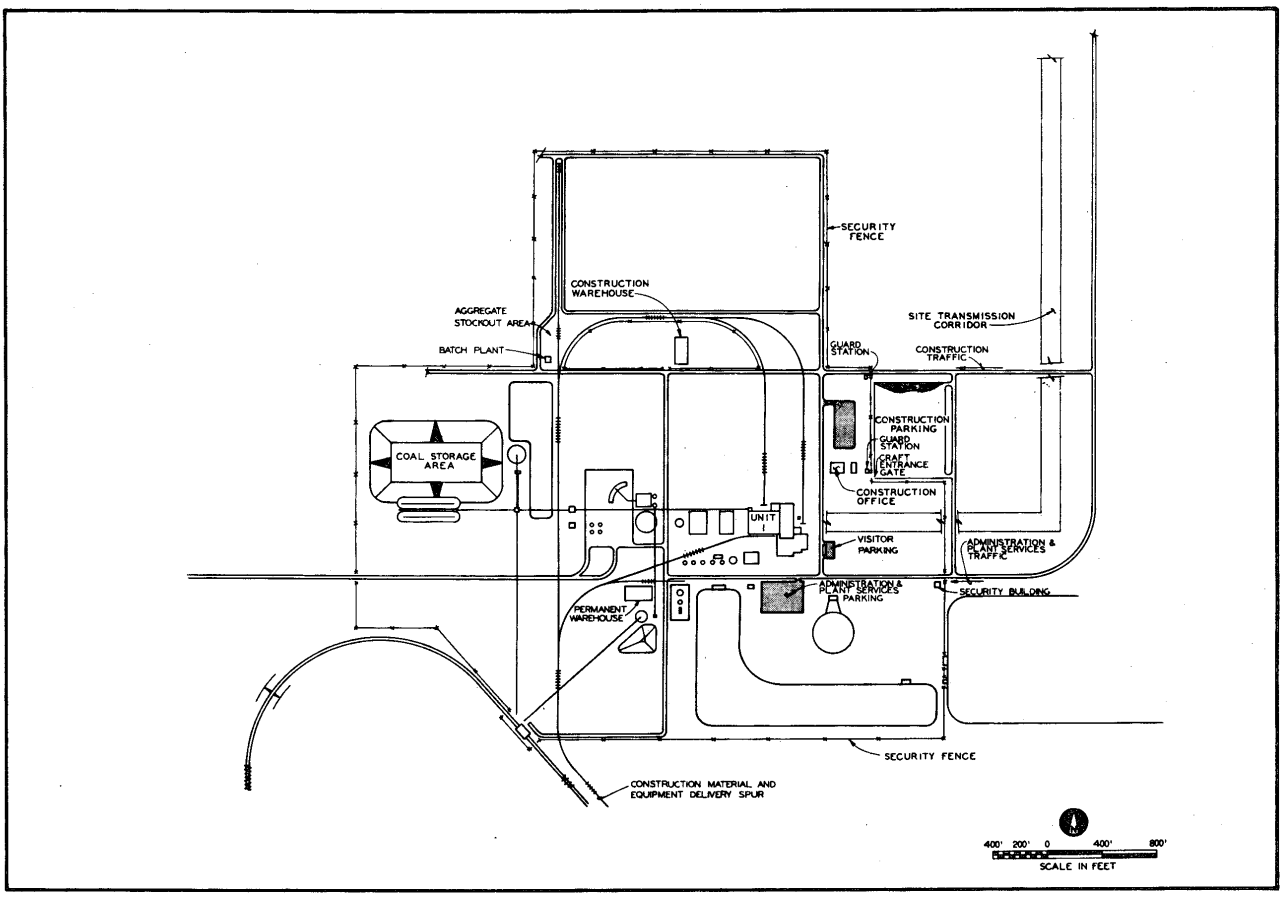
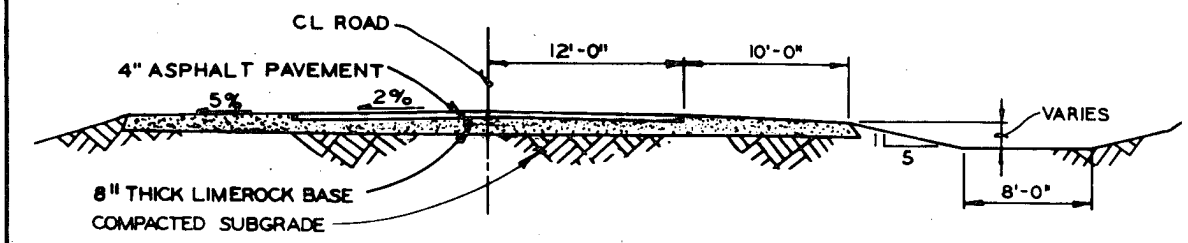
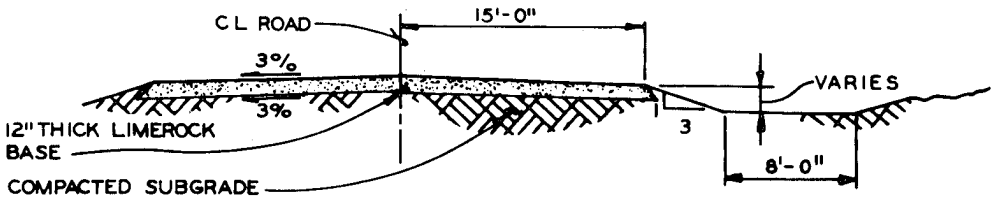


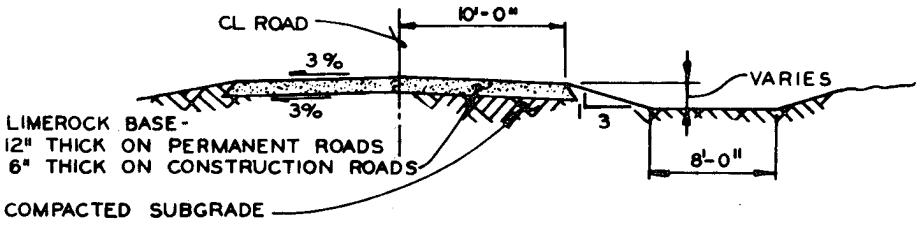
FIGURE 3.9-7. SITE ROADS AND SECURITY



MAIN PLANT ACCESS ROAD



PERIMETER LOOP ROAD



LOW DENSITY SERVICE ROADS

FIGURE 3.9-8. TYPICAL ROAD SECTIONS

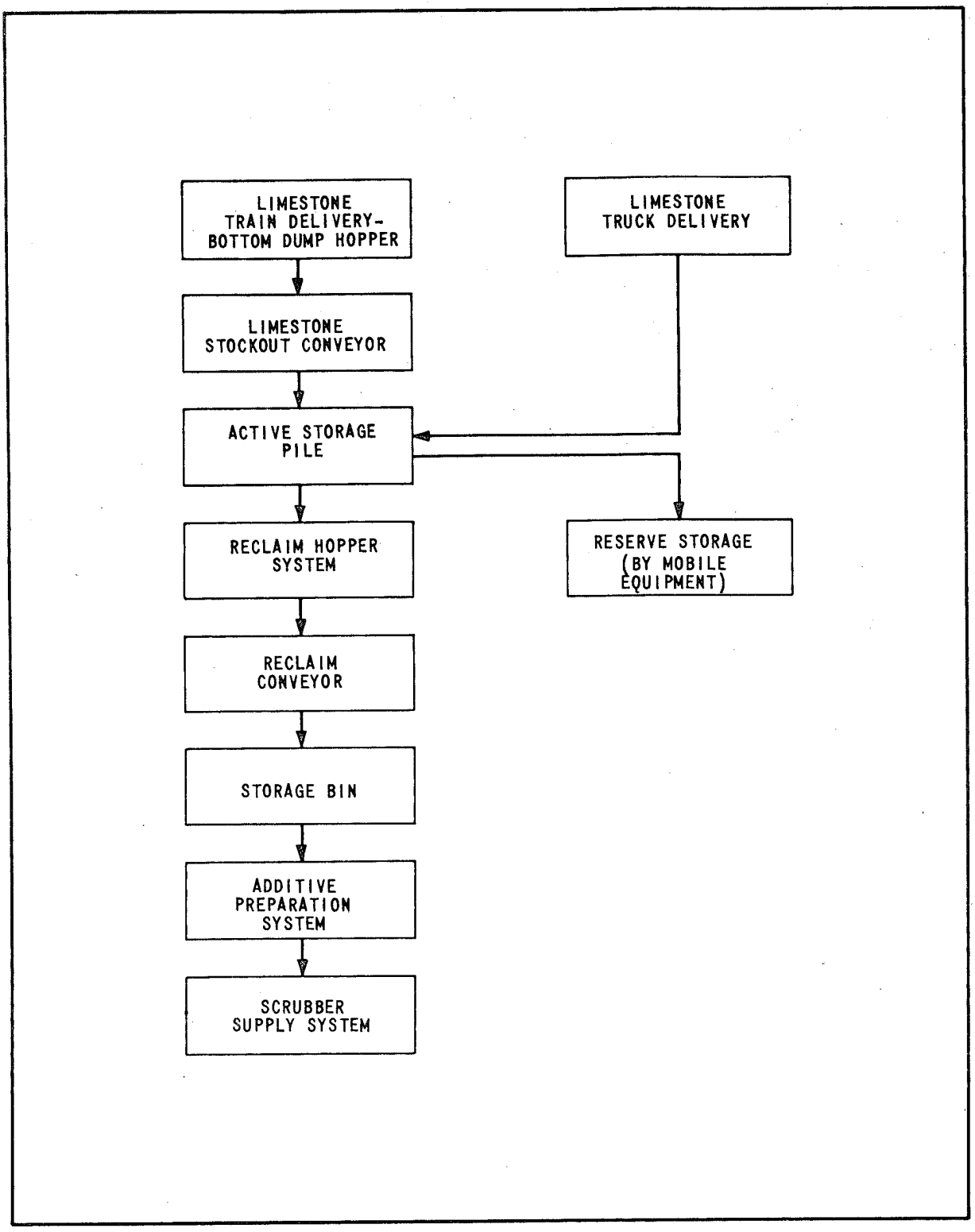


FIGURE 3.9-9. LIMESTONE HANDLING SYSTEM

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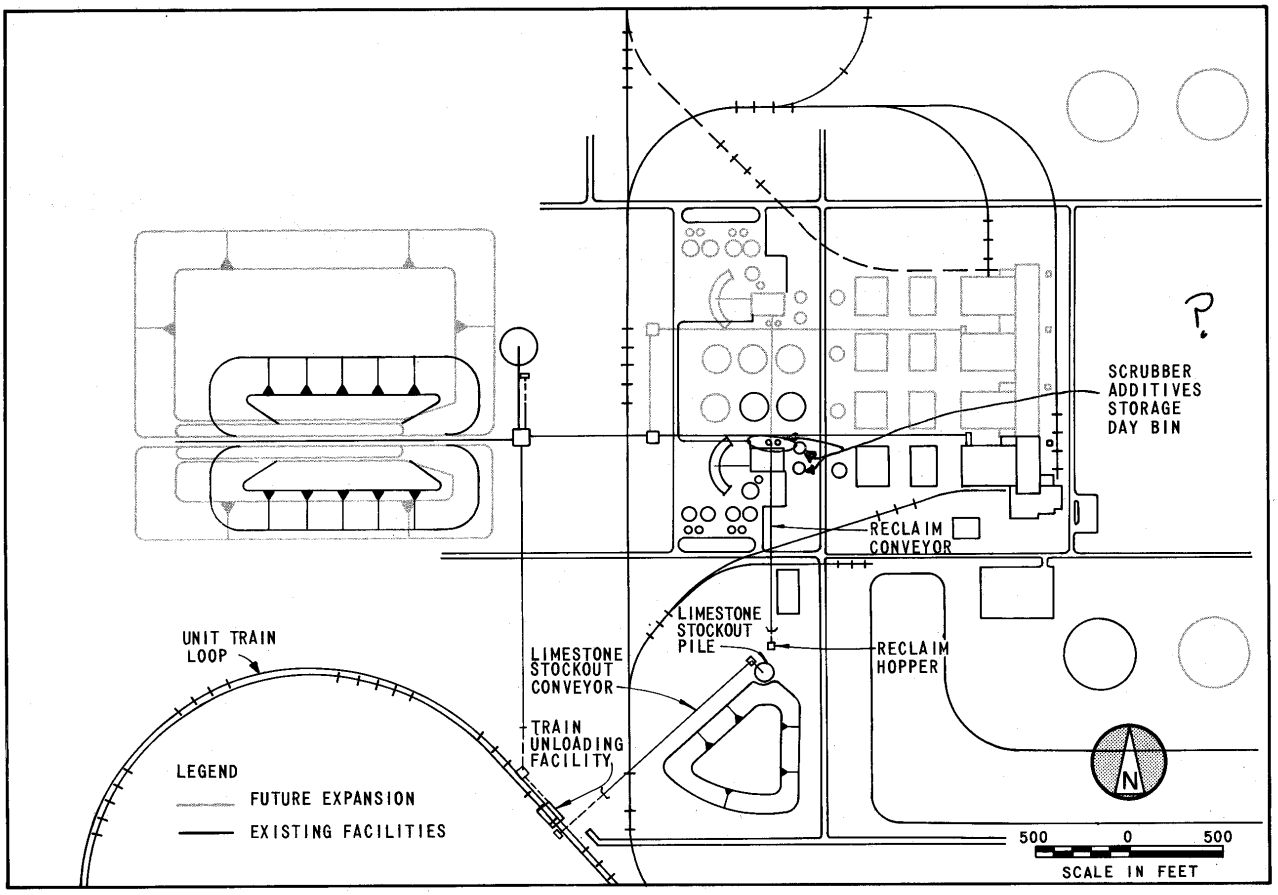

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5
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FIGURE 3.9-10. SCRUBBER ADDITIVE HANDLING SYSTEM LAYOUT

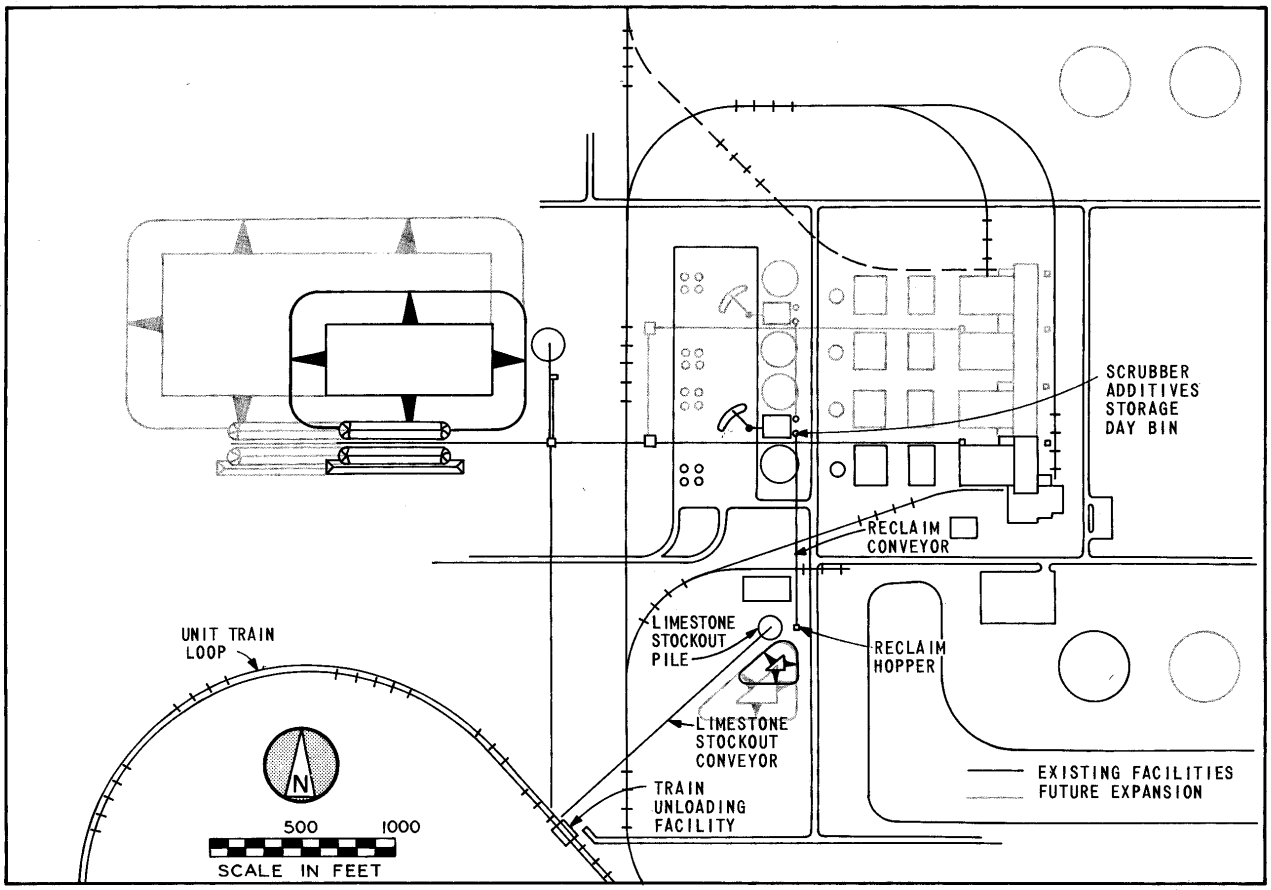

FIGURE 3.9-10. SCRUBBER ADDITIVE HANDLING SYSTEM LAYOUT

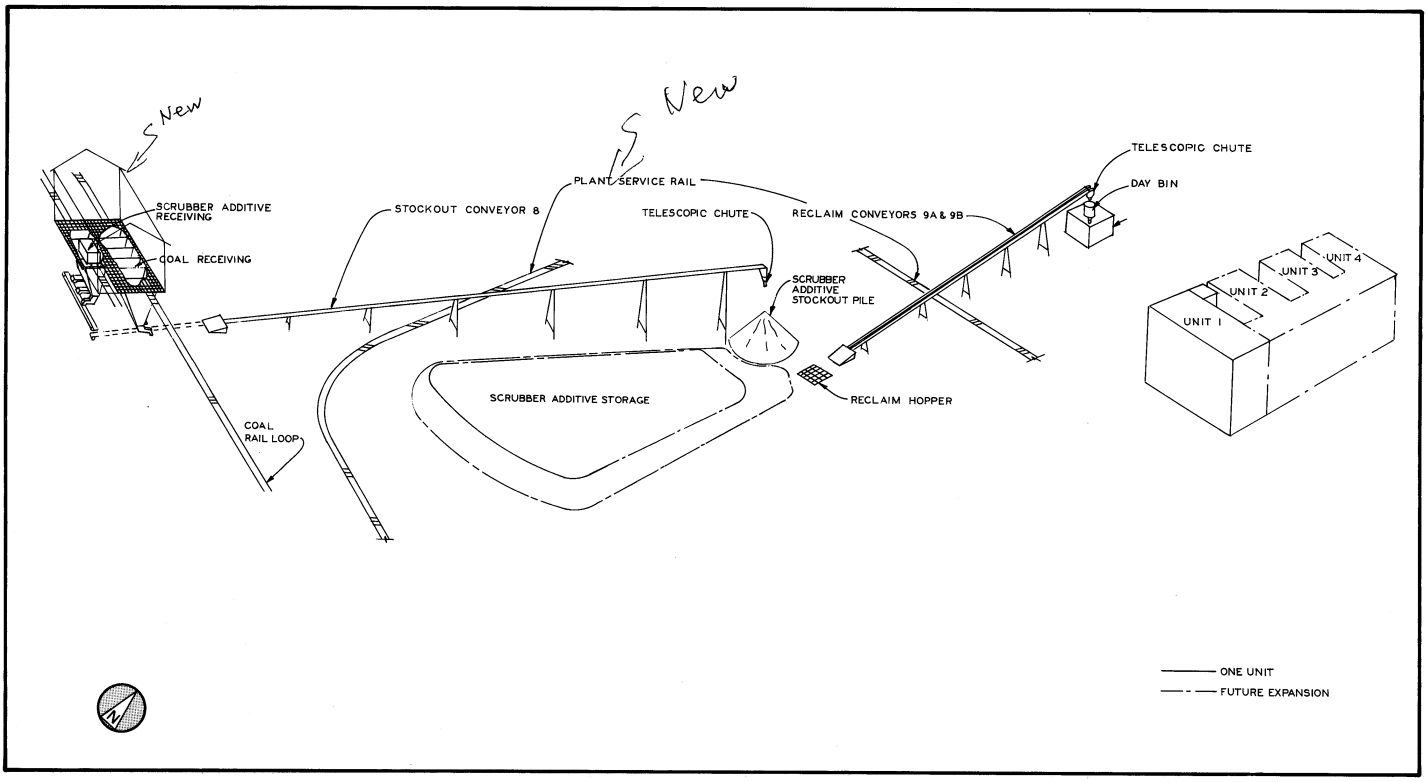

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FIGURE 3.9-11. PERSPECTIVE OF SCRUBBER ADDITIVE HANDLING SYSTEM

APPENDIX 3.9A

APPLICATION

FOR

RADIOACTIVE MATERIALS LICENSE

FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

Request for Modification 1

092383

NON–HUMAN USE

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
RADIATION CONTROL
APPLICATION FOR RADIOACTIVE MATERIALS LICENSE

INSTRUCTIONS—Complete items 1 through 16 if this is an initial application or if application is for renewal of a license. Use supplemental sheets where necesary. Item 16 must be completed on all applications. Mail four copies to: Department of HRS, 1317 Winewood Blvd., Tallahassee, FL 32301. Upon approval of an application, the applicant will receive a "Radioactive Materials License" issued pursuant to statutory and implementing regulatory authority and subject to all applicable rules, regulations and orders of all appropriate regulatory agencies now or hereafter in effect and to any conditions specified in the license.

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, company, person, etc.)

Orlando Utilities Commission
500 South Orange Avenue, P. O. Box 3193
Orlando, Florida 32802

(b) STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED. (If different from 1 (a))

Curtis H. Stanton Energy Center
Orange County, Florida

Phone No. _____

2. FEE ENCLOSED FOR:

[X] New License application [ ] Amendment request

OFFICE USE ONLY:

Fee category: _____ Amount paid: _____

3. (a) PREVIOUS LICENSE NUMBER(S) — (If this is an application for renewal of a license, please give number.)

(b) HAVE YOU EVER BEEN DENIED A LICENSE No [X] Yes [ ] If yes, describe details on additional sheet.

(c) HAS YOUR LICENSE EVER BEEN SUSPENDED OR REVOKED No [X] Yes [ ]

4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of radioactive materials. State training and experience in Items 6 & 7 or documentation attached)

To be named later

5. RADIOLOGICAL SAFETY OFFICER (Name of person designated as radiation safety officer. If other than individual user, attach resume of his training and experience as in Items 6 & 7)

To be named later

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

6. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle Answer)	FORMAL COURSE (Circle Answer)
a. Principles and practices of radiation protection			Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments			Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes No	Yes No
d. Biological effects of radiation			Yes No	Yes No

7. EXPERIENCE WITH RADIATION. (Actual use of radioactive materials or equivalent experience.)

RADIOACTIVE MATERIALS	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

8. (a) RADIOACTIVE MATERIALS. (Element and mass number of each.)	(b) CHEMICAL AND/OR PHYSICAL FORM	(c) MAXIMUM AMOUNT YOU WILL POSSESS AT ANY ONE TIME (If sealed source(s), also state number of sources and maximum activity per source.)
Cs 137	Isotope	57 sources - 100 mc maximum
Ra 226	$RaSO_4$	10 sources - 10 mc maximum

9. DESCRIBE PURPOSE FOR WHICH RADIOACTIVE MATERIALS WILL BE USED. (If radioactive material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

See attached table

10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if neccessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm^2)	USE (Monitoring, surveying, measuring)
N/A					

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

N/A

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier. State frequency of exchange.)

N/A

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached.
(Circle answer) Yes No

N/A

14. RADIATION PROTECTION PROGRAM.

N/A

15. WASTE DISPOSAL

N/A

CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT ALL INFORMATION CONTAINED IN THIS APPLICATION, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Applicant named in Item 1

Date: _____

By: _____

Typed name and title of certifying official

NOTE: Any misrepresentation of any material fact found to have been made in securing a license pursuant to this application shall constitute

ATTACHMENT 1

APPLICATION FOR RADIOACTIVE MATERIALS LICENSE

Item	Purpose	Radioactive Material	Chemical or Physical Form	Expected Activity Per Source	Number of Sources	Number of Detectors	Manufacturer	Source Model No.	Detector Type	Detector Model No.	Detector Sensitivity	Detector Window Thickness
1	Precipitator Hopper High Level Switches	Cs 137	Isotope	100 mc Maximum	24	48	Later[1]	Later	Ion Chamber	Later	Later[2]	NA
2	Economizer Hopper High Level Switches	Cs 137	Isotope	100 mc Maximum	4	8	Later[1]	Later	Ion Chamber	Later	Later[2]	NA
3	Air Heater Hopper High Level Switches	Cs 137	Isotope	100 mc Maximum	2	4	Later[1]	Later	Ion Chamber	Later	Later[2]	NA
4	Coal Unloading Hopper Low Level Switches	Cs 137	Isotope	100 mc Maximum	6	6	Later[1]	Later	Ion Chamber	Later	Later[2]	NA
5	Coal Reclaim Hopper Low Level Switches	Cs 137	Isotope	100 mc Maximum	2	3	Kay-Ray	7062B	Ion Chamber	Later	Later[2]	NA
6	Limestone Reclaim Hopper Low Level Switches	Cs 137	Isotope	100 mc Maximum	2	2	Kay-Ray	7062B	Ion Chamber	Later	Later[2]	NA
7	Coal Crusher Hopper Low Level Switches	Cs 137	Isotope	100 mc Maximum	2	2	Kay-Ray	7062B	Ion Chamber	Later	Later[2]	NA
8	Plant Coal Surge Hopper Low Level Switches	Cs 137	Isotope	100 mc Maximum	2	2	Kay-Ray	7062B	Ion Chamber	Later	Later[2]	NA
9	Scrubber Slurry Density Monitors	Cs 137	Isotope	100 mc Maximum	5	5	Later[1]	Later	Geiger Mueller Tube	Later	Later[3]	NA
10	Scrubber Sludge Density Monitors	Cs 137	Isotope	100 mc Maximum	6	6	Later[1]	Later	Geiger Mueller Tube	Later	Later[3]	NA
11	Scrubber Thickener Influent Sludge Density Monitor	Cs 137	Isotope	100 mc Maximum	2	2	Later[1]	Later	Geiger Mueller Tube	Later	Later[3]	NA
12	Pulverizer Coal Feeder Coal Inlet Monitor	Radium 226	$RaSO_4$ (dehy-drated)	10 mc Maximum	10	10	Stock	RA-01	Geiger Mueller Tube	TGM Detector Co. #1J334X		NA

[1] Manufacturer will be Kay-Ray, Texas Nuclear, or Ohmart.

[2] Typically .25 Mr/Hr, expected range - .2 Mr/Hr to 1 Mr/Hr.

[3] Typically 5 Mr/Hr.

3.10 ONSITE DRAINAGE SYSTEM

Runoff from areas of the site not disturbed by construction activities or plant operations will be directed to the natural drainage systems within the area. Runoff from areas of the site disturbed by construction activities or plant operations will be collected in an engineered system of ditches and ponds as described in the following subsections. A site arrangement showing onsite drainage patterns is shown on Figure 3.10-1.

As described in Subsection 2.5.1, Surface Water Hydrology, the predominant mode of flooding in the vicinity of the site is by sheet flow. The 100-year flood elevations vary from approximately 60 feet, msl at the northeast corner of the plant site, to approximately 90 feet, msl at the southwest. The flood prone areas are shown on Figure 2.5-6. Compacted fill material will be deposited within the plant site so that all major plant facilities are located above the 100-year flood elevation.

3.10.1 Makeup Water Supply Storage Pond

Runoff from the central plant area (excluding the coal storage area, substation, combustion waste storage area, and construction laydown area north of the loop road) will be collected in an engineered ditch system and directed to the unlined makeup water supply storage pond as shown on Figure 3.10-1. Runoff retained within the pond will evaporate, exfiltrate, or be used as cooling tower makeup. Some of the water that seeps out of the pond will rise to the surface on the downstream side of the embankment and be directed to natural drainage systems within the area through the utilization of an embankment toe ditch. The pond will have a surface area of approximately 93 acres and will be surrounded by an embankment having a crest elevation of 80.0 feet, msl. The pond interior will be excavated to an average bottom elevation of 62.0 feet, msl except for a 150-foot wide strip adjacent to the embankment which will be left at existing grade. Excavated material obtained from the pond interior will be used as embankment and/or general site fill. A typical cross section of the makeup water supply storage pond embankment is shown on Figure 3.10-2.

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The construction runoff of Unit 1 will be collected for approximately 3-1/2 years before unit operation. The storage capacity of the makeup water supply storage pond will be adequate to retain surface runoff from

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disturbed areas of the site, and direct pond precipitation for up to 4 years, assuming a total 4-year precipitation of 230 inches. This 4-year total represents the precipitation with a recurrence interval of approximately 25 years. Under these conditions, the maximum potential water surface elevation within the pond would be approximately 77.0 feet. If average annual precipitation were to occur during the entire four years of Unit 1 construction, accumulating to a total of 204 inches, it is estimated that the water surface elevation within the pond would approach an elevation of approximately 72.3 feet. The ratio of total annual surface runoff to total annual precipitation (hereafter denoted as annual runoff ratio) varied from 0.20 for years experiencing average rainfall amounts up to 0.35 for years experiencing total precipitation significantly greater than the annual average. |5 |5 |5 |3

During Unit 1 operation, the makeup water supply storage pond will be maintained at an operating elevation of 72 feet. It is estimated that at this elevation, the total annual pond losses due to evaporation and seepage will nearly equal total annual site runoff and direct pond precipitation during a year having total precipitation of about 51 inches (mean annual precipitation). At this normal operating level, the pond would still be capable of retaining, without discharge, site runoff and direct precipitation from a 100-year, 24-hour precipitation event. The water surface elevation within the pond will be maintained by makeup from the Orange County Easterly Subregional Wastewater Treatment Plant. In the event the makeup system from the Orange County Plant becomes temporarily inoperable, the makeup water supply storage pond would continue to furnish makeup water to the circulating water system until repairs have been made. |5 |5 |5 RFM-1

The basis for the determination of the makeup water supply pond size is shown in Appendix 3.10A.

3.10.2 Coal Storage Area Runoff Pond

Surface runoff from the coal storage area will be collected in a lined coal storage area runoff pond (CSA runoff pond), as shown on Figure 3.10-1. The one unit coal pile will have a surface area of approximately 15.4 acres, while the surrounding coal yard area will have an area of 39.6 acres. The |5

coal pile and yard area are assumed to have pervious surfaces and represent 24 per cent and 60 per cent of the total coal storage area, respectively, which includes the coal pile, coal yard and CSA runoff pond. The CSA runoff pond will have a surface area of approximately 10.4 acres (16 per cent of coal storage area), with an embankment length of 4,100 feet and is designed to retain without discharge the surface runoff and direct pond precipitation from a 24-hour event having a recurrence interval of 10 years. The 10-year, 24-hour precipitation event is considered to be 7.5 inches as indicated in Section 2.6. The capacity of the CSA runoff pond was determined by assuming an average of 50 per cent (3.75 inches) of the design precipitation would occur as surface runoff. This corresponds to a runoff curve number (U.S. Soil Conservation Service) of 67. Runoff from precipitation exceeding the 10-year, 24-hour event will be directed to the recycle basin. 5

The maximum design water surface elevation within the CSA runoff pond is 79.5 feet, msl. This elevation would result from surface runoff and direct pond precipitation during a 10-year, 24-hour event or greater. The pond bottom will be at Elevation 75 feet, msl and will consist of a one-foot thick layer of compacted material providing cover for a 6-inch thick highly impermeable liner. Soil-cement will be utilized to provide slope protection. A section of the proposed CSA runoff pond embankment is shown on Figure 3.10-3. 5

Runoff and direct precipitation retained within the CSA runoff pond will be directed to the recycle basin to be used as makeup for the flue gas desulfurization and ash handling systems. Controlled drainage of the CSA runoff pond to the recycle basin will be accomplished through the use of a buried pipeline. 5

3.10.3 Recycle Basin

The recycle basin, shown on Figure 3.10-1, will be lined to control seepage loss. The recycle basin is designed to provide for the temporary storage of effluents from the neutralization basin and wastewater from the

miscellaneous plant drains. The recycle basin will also receive intermittent flows from the coal storage area runoff pond and the active combustion waste area runoff pond. The recycle basin will provide makeup to the desulfurization and ash handling systems. Blowdown from the cooling tower will provide makeup to the recycle basin as required to maintain proper water surface elevation.

The recycle basin will have a surface area of approximately 15 acres with an embankment length of 5,200 feet. The operating water surface elevation within the recycle basin will be 75 feet, msl corresponding to an average depth of 5 feet. The pond bottom will be at Elevation 70 feet, msl and will consist of a 1-foot thick layer of compacted material providing cover for a 6-inch thick highly impermeable liner. Soil-cement will be utilized to provide slope protection. A section of the proposed recycle basin embankment is shown on Figure 3.10-4. 5

Compacted site fill will be placed to Elevation 80 feet, msl within the area. The site fill material will be sloped away from the perimeter of the recycle basin to prevent surface runoff from entering the basin. Surface runoff from the area will be directed to the makeup water supply storage pond. 5

3.10.4 Active Combustion Waste Area Runoff Pond

Surface runoff from the active portion of the combustion waste storage area will be directed to the lined active combustion waste area runoff pond (ACWA runoff pond) shown on Figure 3.10-1. Runoff from both the developed and undeveloped portions of the combustion waste storage area will be directed to natural drainage systems within the area. The developed portion of the waste storage area is defined as a formerly active portion which has been reclaimed by covering with topsoil and reestablished with vegetation. The undeveloped portion is that which has not yet been utilized for combustion waste storage. The undeveloped portion of the area will be reseeded subsequent to site borrow operations.

Approximately 312 acres have been allocated for combustion waste storage. This area will be developed in active increments of approximately

PLANT NAME Stanton UNIT 1

UTILITY	orlando U.C.	NAME PLATE CAP. mw	425
COUNTY	Orange	ANN. GENERATION mwh	
TOWN	orlando	HEAT RATE mm btu/h	
LONG/LAT GRW	81°09'40" 28°26'50"	CONSTRUCTION DATE	
LONG/LAT UTM	484000E 3150500N	ON-LINE DATE	NOV 1987
AQCR REG.		RETIREMENT DATE	+30
RIVER BASIN		No. UNITS	1 (UNIT 2 online 1994)

UNIT DATA

	1	2	3	4	5	6
STATUS	P					
FIRING CAPAB.						
FUEL	C					
UNIT CAPACITY mw						
UNIT FACTOR	53.6					
HEAT RATE mm btu/h						
FUEL CONS. #/h	154-191 (750,000 - 1,100,000 tons/year)					
BOILER MFGR.						
STACK DATA						
HEIGHT ft						
DIAMETER ft						
EXIT VEL. ft/s						
EXIT TMP. °F						
SO2 CONTROL						
TYPE	limestone scrubbing (1800 tons/wk by rail & truck)					
EFFICIENCY						
PARTIC. CONTROL						
TYPE	cold side ESP					
EFFICIENCY						

FUEL DATA

	OIL	COAL
% SULFUR		.71 - 3.1
% ASH		7.0 - 11.0
HEAT CONTENT	btu/gal	11,000-13,500 btu/lb
source		wash scr. or washed 1 ppl.

WATER SUPPLY

	COOLING	BOILER	ASH TRANSPORT
SOURCE			
MINIMUM 7-Q-10			
TYPE SYSTEM			
INTAKE cfs			
DISCHARGE cfs			
CONSUMPTION cfs			
DISCH. POINT			
DISCH. PH			
DISCH. SS ppm			
DELTA T			
HEAT REJECTION (btu x 10^9)/h			

Coal Transportation — UNIT Trains, 90-100 100-ton cars, 2-3 trains/wk Seaboard Coastline RR — spur 800 ST corridor single track, elevated above 100 r flood by embankments w. trestles & wildlife openings ± 20 miles 8 mile plant access road

pot. csp receiving considered

Limestone storage 38,000 tn reserve, (120 day supply)

PLANT NAME________________________
(Con't)

ASH/ASH POND DATA

(80 acres in 15 acre cells for unit 3 sludge; 312 acres closed for unit 3, unit 2)

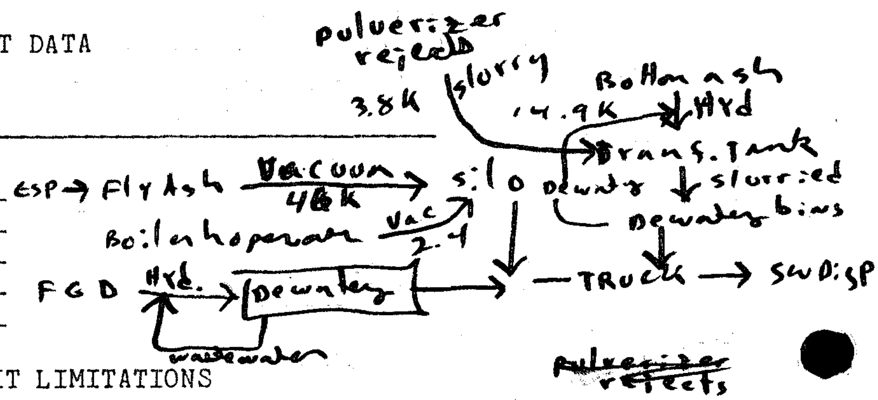
Vacuum - FLY ASH	t/y	46 K + 2.4 K	~~POND~~ Landfill AREA		312 acres
Hydraul. BOTTOM ASH	t/y	14.9 K	ORIG. VOLUME	ft^3	
TOTAL ASH	t/y	63.3	ORIG. CAPAC.	t ash	
Truck SLUDGE	t/y	201,000	REMAINING VOL.	ft^3	
POND CONST. DATE			REMAINING CAPAC.	t ash	
POND TYPE			FILL DATE		Retirement
			vol. reg.		5,220 AF for the 30 years plant life

COAL STORAGE

BASAL AREA	ft^2		STORAGE CAPAC.	t	
HEIGHT	ft		SUPPLY	days	

PERMIT DATA

SIP PERMIT
ALLOWABLE SO_2 EMISSION (lbs/mm btu)________________
NPDES
PERMIT NUMBER ____________
EFFECTIVE DATE ____________
REISSUE DATE ____________
EXPIRATION DATE ____________
RECEIVING WATER ____________



OUTFALL PERMIT LIMITATIONS

SERIAL No.	TYPE	FLOW MGD	Cl mg/l	HEAT REJ. mm btu/h	PH	TSS lbs/day ave.	TSS lbs/day max.	TOT Fe mg/l	TOT Cu mg/l

CONVERSION HISTORY

	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
1										
2										
3										
4										
5										
6										

COAL FIRING — ON-LINE DATE — RETIREMENT DATE
OIL FIRING — CONVERSION DATE

15 acres. The ACWA runoff pond is designed to collect surface runoff from the active combustion waste storage area and direct precipitation from a 24-hour event having a 100-year recurrence interval (10.8 inches). The capacity of the runoff pond was determined by assuming an average of 90 per cent or 9.72 inches of the design precipitation would occur as surface runoff. The surface area of the runoff pond will be approximately 5.0 acres. | 5

Because of the relatively low relief in the area the maximum potential water surface elevation within the active combustion waste area runoff pond caused by a 100-year, 24-hour event was limited to 83 feet, msl. Existing grade at this location is approximately 88 feet. The pond bottom will be | 5
at Elevation 78 feet and will consist of a 1-foot thick layer of compacted material covering a 6-inch thick impermeable liner. Soil-cement will be utilized to provide slope protection. A section of the proposed active combustion waste area runoff pond embankment is shown on Figure 3.10-5. A low berm will be constructed to Elevation 89 feet around the perimeter of | 5
the ACWA runoff pond to prevent the inflow of surface runoff from undisturbed areas. Surface runoff from undisturbed areas surrounding the ACWA runoff pond will be directed to natural drainage systems within the area.

Runoff and direct precipitation retained within the ACWA runoff pond will be directed to the recycle basin to be used as makeup for the desulfurization and ash handling systems. Controlled drainage of the ACWA runoff pond to the recycle basin will be accomplished through the use of a buried pipeline.

3.10.5 Construction Laydown Area

The construction laydown area north of the loop road, as shown on Figure 3.10-1, will be graded to direct runoff to a ditch and embankment system located on the north side of the area. The ditch system is designed to retain the annual runoff and direct precipitation resulting from a year with total precipitation having a 10-year recurrence interval. Runoff | 5
collected will either evaporate or exfiltrate from the ditch system. Runoff from precipitation exceeding the 10-year annual precipitation will | 5
be directed to the general site drainage system in the area.

15 acres. The ACWA runoff pond is designed to collect surface runoff from the active combustion waste storage area and direct precipitation from a 24-hour event having a 100-year recurrence interval (10.8 inches). The capacity of the runoff pond was determined by assuming an average of 90 per cent or 9.72 inches of the design precipitation would occur as surface runoff. The surface area of the runoff pond will be approximately 4.0 acres.

The maximum potential water surface elevation within the active combustion waste area runoff pond caused by a 100-year, 24-hour event is 88 feet. Existing grade at this location is approximately 89 feet. The pond bottom will be at Elevation 81 feet and will consist of a 1-foot thick layer of compacted material covering a 6-inch thick impermeable liner. Soil-cement will be utilized to provide slope protection. A section of the proposed active combustion waste area runoff pond embankment is shown on Figure 3.10-5. A low berm will be constructed to Elevation 90 feet around the perimeter of the ACWA runoff pond to prevent the inflow of surface runoff from undisturbed areas. Surface runoff from undisturbed areas surrounding the ACWA runoff pond will be directed to natural drainage systems within the area.

Runoff and direct precipitation retained within the ACWA runoff pond will be directed to the recycle basin to be used as makeup for the desulfurization and ash handling systems. Controlled drainage of the ACWA runoff pond to the recycle basin will be accomplished through the use of a buried pipeline.

3.10.5 Construction Laydown Area

The construction laydown area north of the loop road, as shown on Figure 3.10-1, will be graded to direct runoff to a ditch and embankment system located on the north side of the area. The ditch system is designed to collect the surface runoff and direct precipitation from a 24-hour event having a 100-year recurrence interval (10.8 inches). Runoff collected will either evaporate or exfiltrate from the ditch system. Runoff from precipitation exceeding the 100-year, 24-hour event will be directed to the general site drainage system in the area.

The maximum design water surface elevation within the runoff retention area is 79.5 feet. The top elevation of the embankment and grade elevation of the site fill material will be at Elevation 80 feet. The average bottom elevation of the ditch system will be 73 feet, resulting in an average water depth at design capacity of 6.5 feet. A section of the proposed construction laydown area runoff retention system is shown on Figure 3.10-6. The capacity of the runoff retention area was determined by assuming an average of 60 per cent of the design annual precipitation would occur as surface runoff. The surface area of the runoff retention system will be approximately 7.7 acres. This represents about 15 per cent of the total contributing drainage area (50 acres). 5 5 5

3.10.6 Substation

The substation location is shown on Figure 3.10-1. The substation area will be raised above the 100-year flood elevation by the placement of compacted fill material. The top of this material will be covered with a layer of crushed stone and graded nearly level to promote percolation. Storm water runoff from the substation area will be directed to natural drainage systems within the area. Foundations of structures supporting equipment containing oil will be curbed to provide for cleanup of potential spills. 5

The maximum design water surface elevation within the runoff retention area is 77 feet, corresponding to the top elevation of the embankment and grade elevation of the site fill material. The average bottom elevation of the ditch system will be 73 feet, resulting in an average water depth at design capacity of 4 feet. A section of the proposed construction laydown area runoff retention system is shown on Figure 3.10-6. The capacity of the runoff retention area was determined by assuming an average of 40 per cent (4.32 inches) of the design precipitation would occur as surface runoff. This corresponds to a runoff curve number of 52. The surface area of the runoff retention system will be approximately 5.7 acres. This represents about 6 per cent of the total contributing drainage area (90 acres).

3.10.6 Substation

The substation location is shown on Figure 3.10-1. The substation area will be raised above the 100-year flood elevation by the placement of compacted fill material. The top of this material will be covered with a layer of crushed stone, graded nearly level to promote percolation. A perimeter ditch and embankment system will be constructed around the substation. This system will be designed to retain the runoff and direct precipitation from a 24-hour event having a 100-year recurrence interval.