

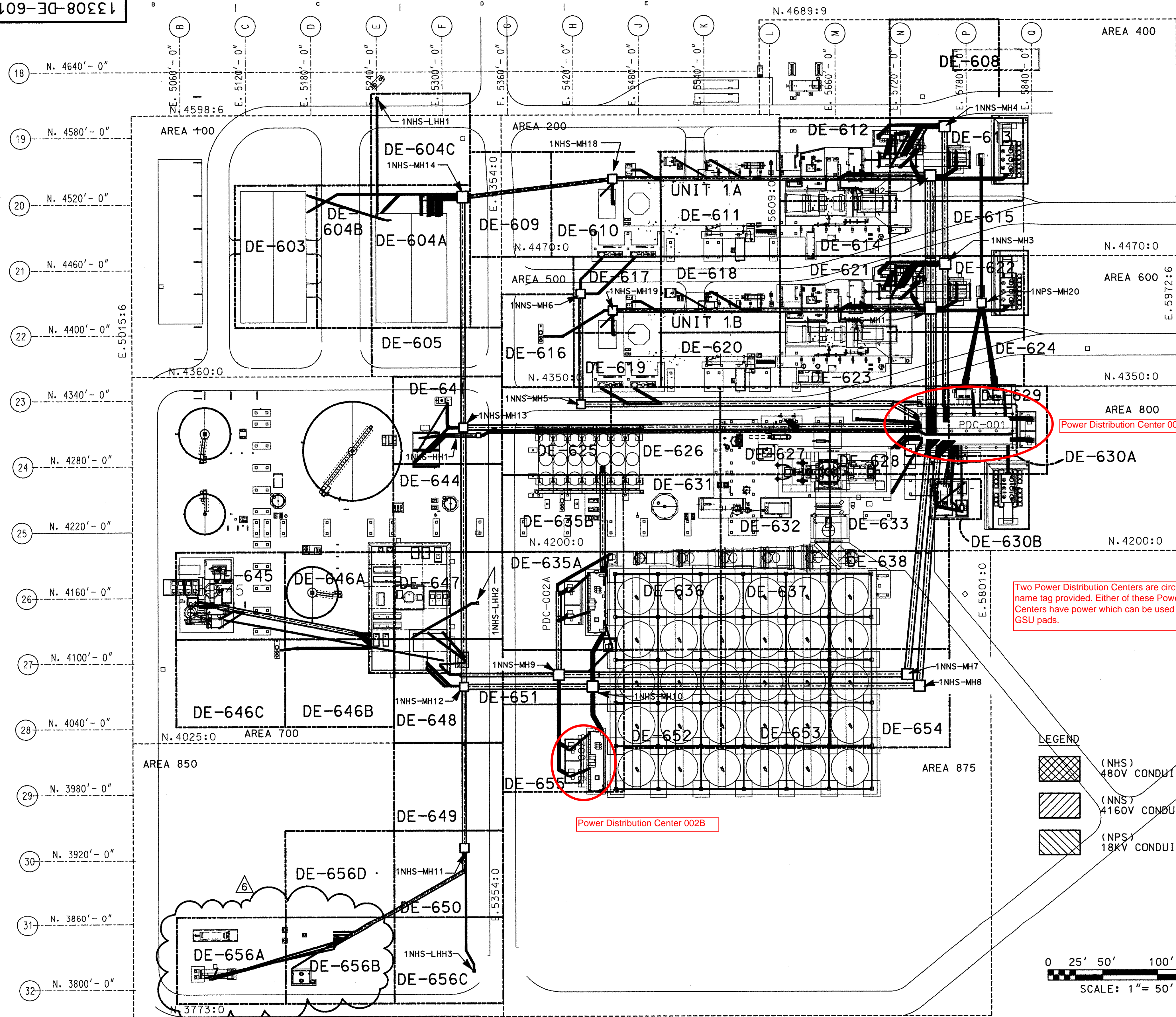


SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY

## ATTACHMENT G



13308-DE-601



## NOTES:

- UNDERGROUND DUCT BANKS ARE SHOWN DIAGRAMMATICALLY, EXCEPT WHERE DIMENSIONS AND ELEVATIONS ARE SHOWN. WHEN COORDINATES ARE SHOWN, THE CONTRACTOR SHALL INSTALL THE DUCT BANKS ACCORDINGLY.
- ALL UNDERGROUND DUCTS, FITTINGS, SPACERS & SUPPORTS SHALL BE COMPLETELY INSTALLED AND INSPECTED BEFORE BEING ENCASED WITH CONCRETE OR BACKFILLED PER PLAN/DETAIL DRAWINGS.
- ALL UNDERGROUND DUCTS SHALL HAVE PULLING WIRES INSTALLED.
- ALL UNDERGROUND DUCT BANK CONCRETE MATERIAL SHALL BE COLORED WITH RED OXIDE. HAZARD WARNING TAPES SHALL BE PLACED IN THE TRENCH ABOVE THE DUCT BANKS.
- CONCEALED, BURIED OR CONCRETE ENCLOSED CONDUITS SHALL BE SLOPED NOT LESS THAN 3" PER 100 FT. TOWARD BOXES, HANDHOLES OR MANHOLES FOR DRAINAGE.
- THE LENGTH OF DUCT BETWEEN PULLING POINTS SHALL NOT EXCEED:

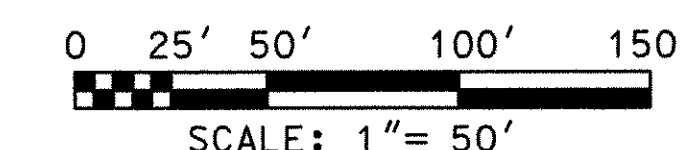
EQUIVALENT BENDS	MAX PULLING LENGTH
THE LENGTH OF DUCT STRAIGHT RUN (WITH UP TO 30° IN BENDS)	550 FT.
UP TO 90° IN BENDS	350 FT.
UP TO 180° IN BENDS	150 FT.
- ALL SPARES SHALL HAVE A PULLING WIRE AND BE PLUGGED FOR FUTURE USE.
- MANHOLES SHALL BE DESIGNED AND REINFORCED FOR MAXIMUM LOAD PRODUCED BY H-20 TRUCK LOADING PLUS 30% IMPACT.
- PULLING-IN IRONS TO BE LOCATED OPPOSITE AND BELOW DUCT LINE ENTRANCES AND HOOK-ENDS TO BE PLACED BACK OF REINFORCING RODS. ADDITIONAL IRONS MAY BE LOCATED ON ADJACENT WALLS TO FACILITATE CABLE PULLING ARRANGEMENT.
- DUCT LINES SHALL TERMINATE IN MANHOLES WITH END BELLS.
- MANHOLE COVER AND FRAME SHALL BE SIZED TO ALLOW A 3'-0" MINIMUM INSIDE DIAMETER ACCESS OPENING.
- ELECTRICAL UNDERGROUND INSTALLATION LOCATIONS PER PLAN COORDINATE. FOR REFERENCE TP SITE COORDINATES SEE DWG #13308-DY-05 AND CONVERSION CHART.
- FOR CONDUIT PENETRATION LOCATIONS INTO VENDOR PROVIDED ENCLOSURES USE VENDOR PROVIDED DRAWINGS.
- IF A LESSER EARTH DEPTH IS DESIRED, 1IN OF CONCRETE ON TOP OF DUCT MAY BE SUBSTITUTED FOR 6IN OF EARTH.

## REFERENCE DRAWINGS

DE-201	SITE GROUNDING PLAN
DE-658-A	MANHOLE DETAILS
DE-659-A THRU F	UNDERGROUND RACEWAY SECTIONS
DE-660-A THRU B	UNDERGROUND RACEWAY DETAILS
DC-351A	ACC FOUNDATIONS SHT 1
DY-05	PLANT GRID SYSTEM
DY-20A	ROUGH GRADING PLAN
DY-20B	ROUGH GRADING PLAN

## LEGEND

(NHS)	480V CONDUIT DUCT
(NNS)	4160V CONDUIT DUCT
(NPS)	18KV CONDUIT DUCT

APEX GENERATING STATION  
UNIT NO. 1  
ELECTRICAL

## UNDERGROUND DRAWING LAYOUT

MIRANT CORPORATION  
CLARK COUNTY, NEVADA

STONE &amp; WEBSTER A SHAW GROUP COMPANY

DRAWING NO. 13308-DE-601-6

DESIGNED BY J. VACLAVIK	DRAWN BY R. CASTLE	CAD MODEL	LEVELS	WORK PKG	PCT
DSGN CHK'D BY W. GEBAUER	CHK'D BY J. MARTINUK	de601.dgn			

REVISION	3	DESCRIPTION	CHECKED	REVISION	6	DESCRIPTION	CHECKED	REVISION	5	DESCRIPTION	CHECKED	REVISION	4	DESCRIPTION	CHECKED
ISSUED FOR CONSTRUCTION			LJS 10/5/01	RE-ISSUED FOR CONSTRUCTION - ONLY AREA IDENTIFIED AS REV.6			LJS 08/21/02	ISSUED FOR CONSTRUCTION - ONLY AREAS IDENTIFIED AS REV.5			LJS 12/19/01	ISSUED FOR CONSTRUCTION 1CES-PDC002A & 1CES-PDC002B			LJS 11/30/01
			CORRECT				CORRECT				CORRECT				
			WIG 10/5/01				WIG 08/21/02				JV 12/19/01				
			JV 10/5/01				JV 12/19/01				WIG 11/30/01				
			APPR DATE				APPR DATE				APPR DATE				
			RCC 10/5/01				RCC 12/19/01				MP 11/30/01				



13308-DE-638



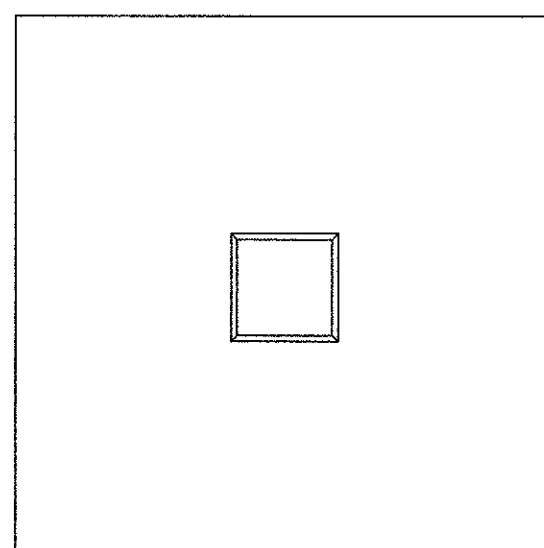
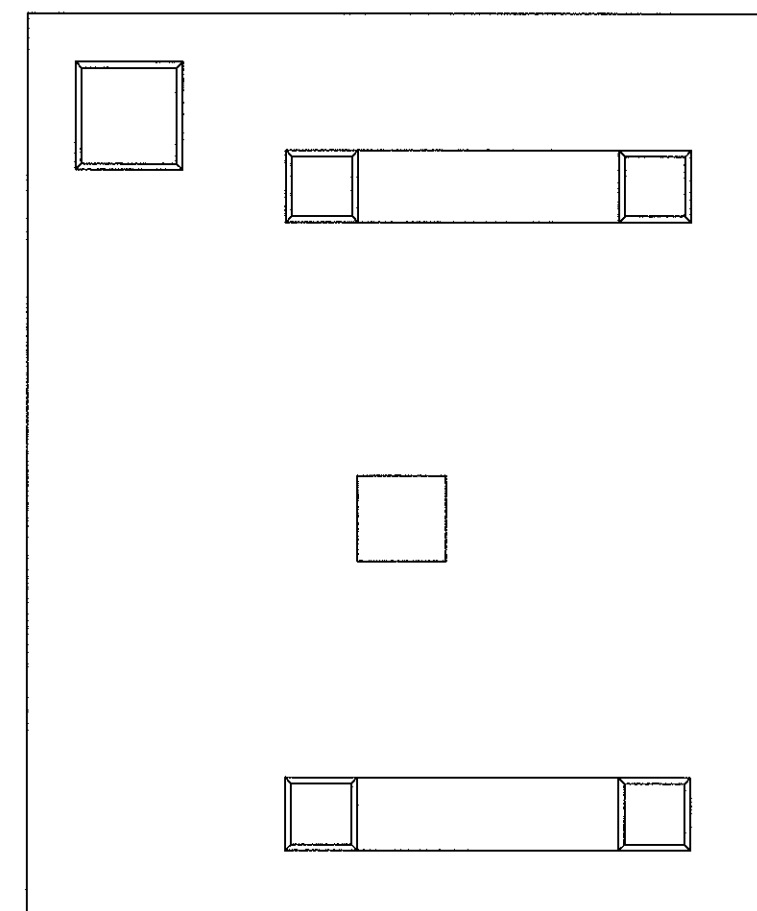
E. 5660' - 0"

MATCHLINE N. 4200' - 0" FOR CONTINUATION SEE DWG. DE-633

E. 5720' - 0"

MATCHLINE E. 5654' - 0" FOR CONTINUATION SEE DWG. DE-637

AIR COOLED  
CONDENSER



6A

6A (DE-659B)

4160V

480V

DRAWING LIMIT E. 5763' - 0"

N. 4160' - 0" 26

NOTES:  
FOR ELECTRICAL SYMBOLS, GENERAL NOTES, LEGEND AND  
DRAWING INDEX SEE DRAWING DE-601

REFERENCE DRAWINGS:  
DE-601 UNDERGROUND RACEWAY SITE PLAN  
DE-201 SITE GROUNDING PLAN

SCANNED  
AUG 17 2001

0 2' 4' 8' 12' 16'  
SCALE: 3/16" = 1' - 0"

APEX GENERATING STATION  
UNIT NO. 1  
ELECTRICAL  
AREA 875  
ACC UNDERGROUND

MIRANT CORPORATION  
CLARK COUNTY, NEVADA

STONE & WEBSTER A SHAW GROUP COMPANY

DRAWING NO. 13308-DE-638-0

DESIGNED BY J. VACLAVIK DRAWN BY J. VACLAVIK CAD MODEL LEVELS WORK PKG PCT  
DSGN CHK'D BY L. STANEVICH CHK'D BY W. GEBAUER de638.dgn

MATCHLINE N. 4110' - 0" FOR CONTINUATION SEE DWG. DE-654

REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED
		CORRECT			CORRECT			CORRECT	0	ISSUE FOR CONSTRUCTION	LJS 8/15/01
											Wig 8/15/01
											8/15/01
		APPR DATE			APPR DATE			APPR DATE			8/15/01

RESP. ENGR. M. PRAW  
SUPV. L. STANEVICH

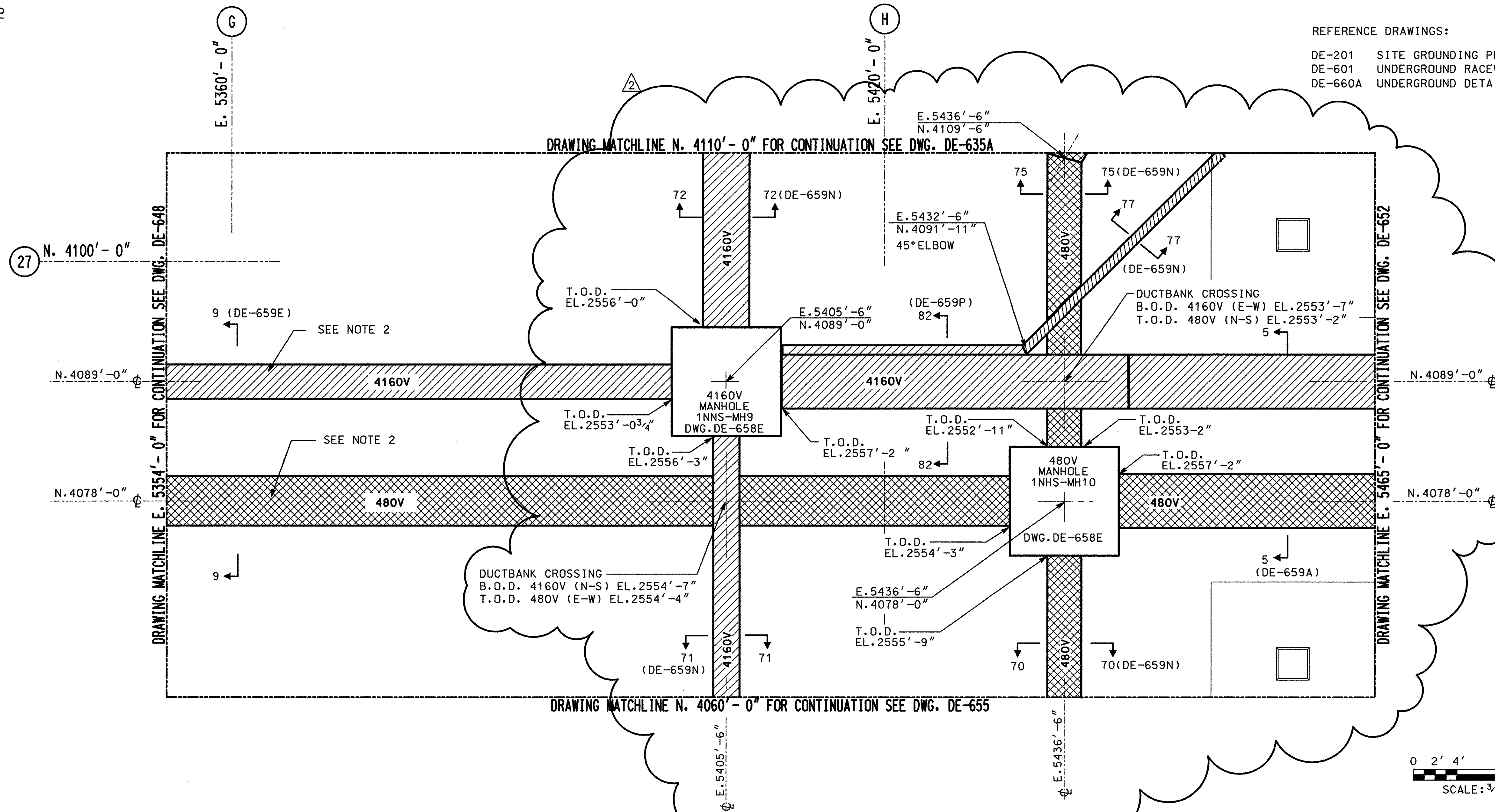


## NOTES:

- FOR ELECTRICAL SYMBOLS, GENERAL NOTES, LEGEND AND DRAWING INDEX SEE DRAWING DE-601
- DUCT BANKS RUNNING BELOW ROADWAYS & HEAVY TRAFFIC AREAS SHALL BE REINFORCED, AND SHALL BE INSTALLED WITH A MINIMUM COVER OF 2'-6".

## REFERENCE DRAWINGS:

- DE-201 SITE GROUNDING PLAN  
DE-601 UNDERGROUND RACEWAY SITE PLAN  
DE-660A UNDERGROUND DETAILS AND SECTIONS.



SCANNED  
DEC 03 2001

APEX GENERATING STATION  
UNIT NO. 1  
ELECTRICAL  
AREA 875  
ACC UNDERGROUND DUCT BANK

MIRANT CORPORATION  
CLARK COUNTY, NEVADA

STONE & WEBSTER A SHAW GROUP COMPANY

DRAWING NO. 13308-DE-651-2

DESIGNED BY J. VACLAVIK DRAWN BY J. VACLAVIK CAD MODEL LEVELS WORK PKG PCT  
DSGN CHK'D BY L. STANEVICH CHK'D BY W. GEBAUER de651.dgn

REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED
2	ADDED DUCTBANK TO PDC-002A AND PDC-002B	11/30/01	1	RE-ISSUED FOR CONSTRUCTION ADDED MANHOLES AND DUCTBANKS	9/7/01

REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED
0	ISSUED FOR CONSTRUCTION	9/7/01			

REVISION	DESCRIPTION	CHECKED
0	ISSUED FOR CONSTRUCTION	9/7/01

RESP. ENGR. IN CHARGE

E. 5480' - 0" J

H1

J1

12

E. 5540' - 0" (K)

26E

N. 4100' - 0" (27)

N. 4089' - 0''

N. 4078' - 0"

27A

NOTES:  
FOR ELECTRICAL SYMBOLS, GENERAL NOTES, LEGEND AND  
DRAWING INDEX SEE DRAWING DE-601

REFERENCE DRAWINGS:

DE-601 UNDERGROUND RACEWAY SITE PLAN  
DE-201 SITE GROUNDING PLAN

N. 4040' - 0" (28)

DRAWING LIMIT N. 4020'-0"

[illegible]

APEX GENERATING STATION  
UNIT NO. 1  
ELECTRICAL  
AREA 875  
ACC UNDERGROUND DUCT BANK

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MIRANT CLARK COUNTY, NEVADA

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STONE & WEBSTER A SHAW GROUP COMPANY

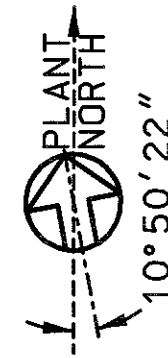
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DRAWING NO. 13308-DE-652-0

DESIGNED BY J. VACLAVIK	CAD MODEL	LEVELS	WORK PKG
DSGN CHK'D BY EDWARD L. HOLDEN	CHK'D BY W. GEBAUER		



13308-DE-653-0



MATCHLINE N. 4110' - 0" FOR CONTINUATION SEE DWG. DE-637

E. 5600' - 0"

N. 4100' - 0" (27)

N. 4089' - 0"

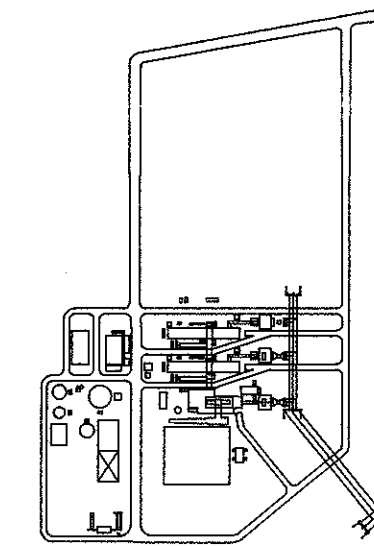
N. 4078' - 0"

MATCHLINE E. 5654' - 0" FOR CONTINUATION SEE DWG. DE-654

N. 4040' - 0" (28)

MATCHLINE E. 5554' - 0" FOR CONTINUATION SEE DWG. DE-652

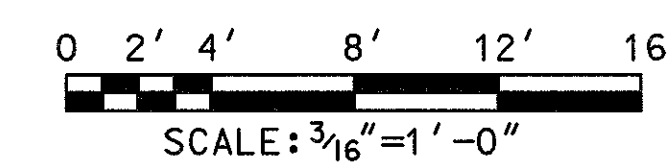
DRAWING LIMIT N. 4020' - 0"



KEY PLAN

NOTES:  
FOR ELECTRICAL SYMBOLS, GENERAL NOTES, LEGEND AND  
DRAWING INDEX SEE DRAWING DE-601

REFERENCE DRAWINGS:  
DE-601 UNDERGROUND RACEWAY SITE PLAN  
DE-201 SITE GROUNDING PLAN



APEX GENERATING STATION  
UNIT NO. 1  
ELECTRICAL  
AREA 875  
ACC UNDERGROUND DUCT BANK

MIRANT CORPORATION  
CLARK COUNTY, NEVADA  
**STONE & WEBSTER** A SHAW GROUP COMPANY

DRAWING NO. 13308-DE-653-0

DESIGNED BY J. VACLAVIK  
DSGN CHK'D BY EDWARD L. HOLDEN  
DRAWN BY J. VACLAVIK  
CHK'D BY W. GEBAUER

CAD MODEL LEVELS WORK PKG PCT

REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED	REVISION	DESCRIPTION	CHECKED
		CORRECT			CORRECT			CORRECT	0	ISSUED FOR CONSTRUCTION	CORRECT
		APPR DATE			APPR DATE			APPR DATE			APPR DATE

— T.O.D.  
EL. 2557' - 10'

F. 5660' - 0"

E. 5720' - 0"

T.O.D. EL.2557'-10"-

5 (DE-659A)

4160V

1 NNS-MH7  
4160V  
(DE-658-D

6A (DE-659B)

N. 4089' -0''

— T.O.D. EL. 2557' - 10'

T.O.D. EL.2557' -10"

480V

1NHS-MH8  
480V  
(DE-658-D

6 N. 4078' - 0"

**MATCHLINE E. 5654' - 0" FOR CONTINUATION SEE DWG. DE-653**

DRAWING LIMIT E. 5763' - 0"

NOTES:

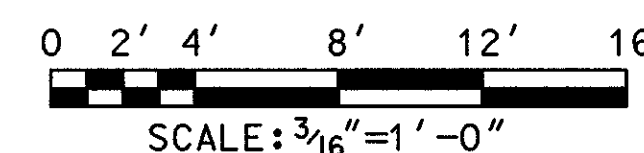
1. FOR ELECTRICAL SYMBOLS, GENERAL NOTES, LEGEND AND  
DRAWING INDEX SEE DRAWING DE-601

REFERENCE DRAWINGS:

DE-601 UNDERGROUND RACEWAY SITE PLAN  
DE-201 SITE GROUNDING PLAN

N. 4040' - 0"

RECEIVED  
AUG 17 2001



APEX GENERATING STATION  
UNIT NO. 1  
ELECTRICAL  
AREA 875  
ACC UNDERGROUND DUCT BANK

MIRANT CORPORATION  
CLARK COUNTY, NEVADA



STONE & WEBSTER A SHAW GROUP COMPANY

DRAWING NO. 13308-DE-654-1

DESIGNED BY J. VACLAVIK  
DSGN CHK'D BY L. STANEVICH

DRAWN BY J. VACLAVIK  
CHK'D BY W. GEBAUER

CAD MODEL
de654.dgn

LEVELS
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RESP ENGR: M. PRAWL

REVISION		DESCRIPTION	CHECKED	REVISION		DESCRIPTION	CHECKED	REVISION	0	DESCRIPTION	CHECKED
			CORRECT				LJS 8/15/01 CORRECT			ISSUED FOR CONSTRUCTION	MP 7/2/01 CORRECT
						REMOVED HOLD-REISSUE FOR CONSTRUCTION	Wig 8/15/01 				MP 7/2/01
							JV 8/15/01				WIG 7/2/01
			APPR DATE				APPR DATE				JV 7/2/01
							mp 8/15/01				RCC 7/2/01