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RAYTHEON SERVICES NEVADA

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

TITLE I

DESIGN SUMMARY REPORT

FOR THE EXPLORATORY STUDIES FACILITY

REVISION 1

DRAFT H

VOLUME 3

DESIGN DRAWINGS

SEPTEMBER 03, 1991

Prepared by:

RAYTHEON SERVICES NEVADA

101 Convention Center Drive

LOS VEGAS, NEVADA

9112020061 - Part 4

102.8



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APERTURE  
CARD**

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RAYTHEON SERVICES NEVADA

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

TITLE I

DESIGN SUMMARY REPORT

FOR THE EXPLORATORY STUDIES FACILITY

REVISION 1

DRAFT H

VOLUME 3

SOUTH PORTAL

DESIGN DRAWINGS

SEPTEMBER 03, 1991

Prepared by:

RAYTHEON SERVICES NEVADA

101 Convention Center Drive

Las Vegas, Nevada

9112020061-12

# UNITED STATES DEPARTMENT OF ENERGY

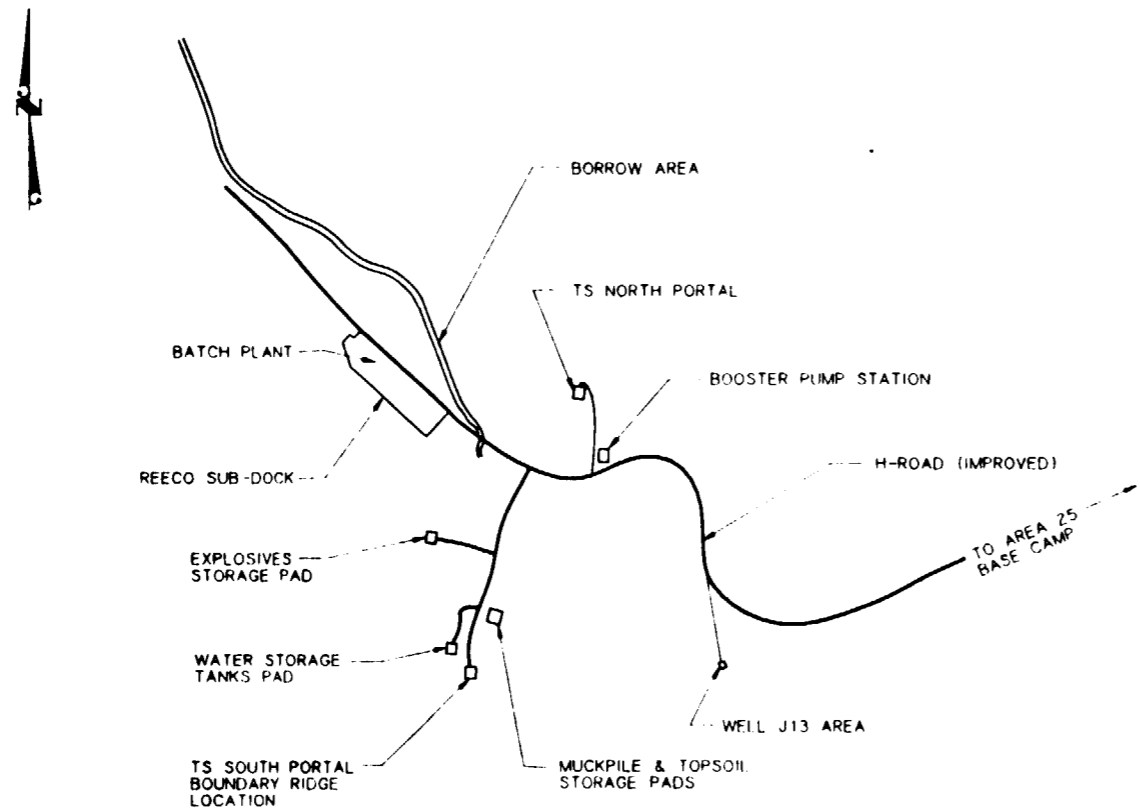
## YUCCA MOUNTAIN PROJECT

### EXPLORATORY STUDIES FACILITY

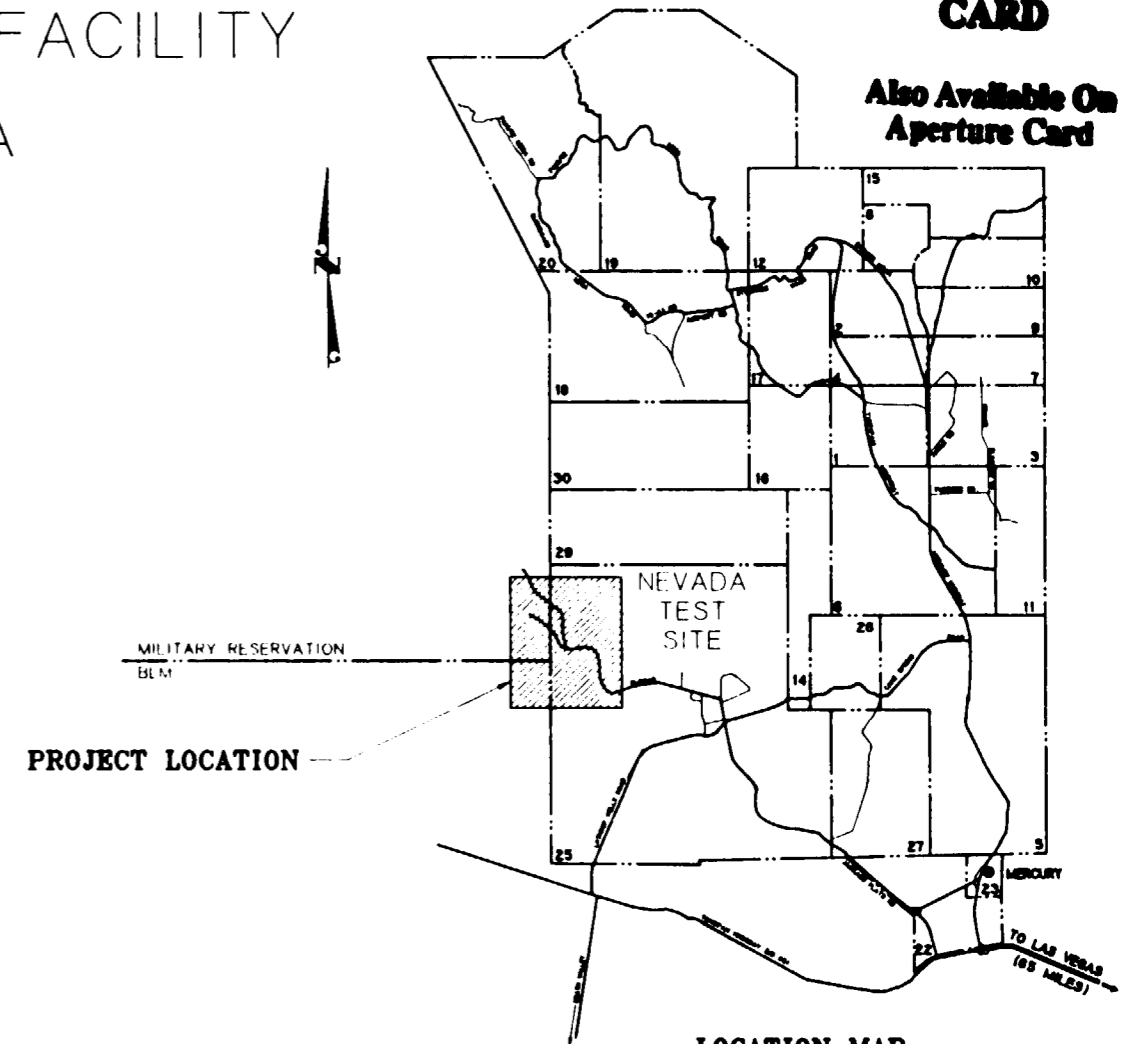
LAS VEGAS, NEVADA

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**PROJECT VICINITY MAP**  
NOT TO SCALE



**LOCATION MAP**  
NOT TO SCALE

Prepared By



9112020061-12/01

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPG
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>APPROVALS</b> DESIGN: CLG DRAWN: CLG CHECKED: [Signature] DEC: [Signature] DESIGN MANAGER: B.C.H. VERIFICATION: N/A ENV: SAF: [Signature] QUALITY ASSURANCE: [Signature]													
<b>RSNI Raytheon Services Nevada</b> LAS VEGAS, NEVADA EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT <b>TITLE SHEET</b>													
SUBMITTED BY: [Signature] DATE: 8-16-91 DRAWING NO: YMP-025-2-CIVL-GEO1 REV: 0 YMPG APPROVED: [Signature] DATE: SHT OF													

TS SOUTH PORTAL	
GENERAL SUPPORT	
TITLE SHEET	YMP-025-2-CIVL-GE01
DRAWING INDEX	YMP-025-2-CIVL-GE02
PERSPECTIVE	YMP-025-2-ARCH-GA01
MATERIAL FLOW DIAGRAM	YMP-025-1-ARCH-GA02
CIVIL	
OVERALL SITE PLAN	YMP-025-1-CIVL-PL01
TS SOUTH PORTAL SURFACE SITE PLAN	YMP-025-2-CIVL-PL01
TS SOUTH PORTAL GRADING PLAN	YMP-025-2-CIVL-OP01
TS SOUTH PORTAL WASTE WATER FACILITIES GRADING PLAN	YMP-025-2-CIVL-PL03
TS SOUTH PORTAL UTILITIES PLAN	YMP-025-2-CIVL-PL04
TS SOUTH PORTAL WATER STORAGE TANK SITE & GRADING PLAN	YMP-025-2-CIVL-PL05
BATCH PLANT FACILITIES SITE & GRADING PLAN	YMP-025-2-CIVL-PL07
TS SOUTH PORTAL ACCESS ROAD PLAN & PROFILE (SHT 1)	YMP-025-2-CIVL-PR01
TS SOUTH PORTAL ACCESS ROAD PLAN & PROFILE (SHT 2)	YMP-025-2-CIVL-PR02
TS SOUTH PORTAL ACCESS ROAD PLAN & PROFILE (SHT 3)	YMP-025-2-CIVL-PR03
WATER STORAGE TANK ACCESS RD 'A' PLAN & PROFILE (SHT 1)	YMP-025-2-CIVL-PR06
WATER STORAGE TANK ACCESS RD 'B' PLAN & PROFILE (SHT 2)	YMP-025-2-CIVL-PR07
TS SOUTH PORTAL H-ROAD IMPROVEMENTS PLAN & PROFILE (SHT 9)	YMP-025-2-CIVL-PR09
TS SOUTH PORTAL H-ROAD IMPROVEMENTS PLAN & PROFILE (SHT 10)	YMP-025-2-CIVL-PR10
EXPLOSIVES STORAGE PAD ACCESS ROAD PLAN & PROFILE	YMP-025-2-CIVL-PR12
ARCHITECTURAL	
TS SOUTH PORTAL SURFACE PLOT PLAN	YMP-025-2-ARCH-PL01
TS SOUTH PORTAL OVERALL PLOT PLAN	YMP-025-2-ARCH-PL02
STRUCTURAL	
TS SOUTH PORTAL CONVEYOR PLAN & ELEVATION	YMP-025-2-STRU-GA01
TS SOUTH PORTAL CONSTRUCTION / OPERATIONS PHASE PLAN & SECT	YMP-025-2-STRU-GA02
TS SOUTH PORTAL VENTILATION FANS PLAN & SECTION	YMP-025-2-STRU-GA03
TS SOUTH PORTAL SURFACE CONVEYORS PROFILE (SHT 1)	YMP-025-2-STRU-GA04
TS SOUTH PORTAL UNDERGROUND CONVEYORS PROFILE (SHT 2)	YMP-025-2-STRU-GA05
TS SOUTH PORTAL UNDERGROUND CONVEYORS PROFILE (SHT 3)	YMP-025-2-STRU-GA06
TS SOUTH PORTAL UNDERGROUND CONVEYORS PROFILE (SHT 4)	YMP-025-2-STRU-GA07

TS SOUTH PORTAL	
MINING	
SUBSURFACE ACCESS GENERAL ARRANGEMENT PLAN	YMP-025-1-MING-MI01
TS LEVEL EXPLORATORY DRIFTS PLAN	YMP-025-2-MING-MI01
TS MAIN DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI02
TS MAIN DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI03
TS EAST DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI04
TS WEST DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI05
TS IMBRICATE DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI06
TS NORTH & TS SOUTH RAMP'S PLAN	YMP-025-2-MING-MI07
TS NORTH RAMP PLAN & PROFILE SECTION	YMP-025-2-MING-MI08
TS NORTH RAMP PLAN & PROFILE SECTION	YMP-025-2-MING-MI09
TS SOUTH RAMP PLAN & PROFILE SECTION	YMP-025-2-MING-MI10
TS SOUTH RAMP PLAN & PROFILE SECTION	YMP-025-2-MING-MI11
CH LEVEL EXPLORATORY DRIFTS PLAN	YMP-025-2-MING-MI13
CH MAIN DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI14
CH MAIN DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI15
CH IMBRICATE DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI17
CH WEST GHOST DANCE DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI18
CH EAST GHOST DANCE DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI19
CH SOLITARIO DRIFT PLAN & PROFILE SECTION	YMP-025-2-MING-MI20
CH NORTH & CH SOUTH RAMP'S PLAN	YMP-025-2-MING-MI21
CH NORTH RAMP PLAN & PROFILE SECTION	YMP-025-2-MING-MI22
CH SOUTH RAMP PLAN & PROFILE SECTION	YMP-025-2-MING-MI23
TS MAIN TEST AREA PLAN AND SECTIONS	YMP-025-2-MING-MI25
TS SOUTH RAMP PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI26
TS SOUTH RAMP PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI27
TS MAIN DRIFT PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI30
TS MAIN DRIFT PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI31
TS MAIN TEST AREA PRELIMINARY TEST LOCATIONS PLAN	YMP-025-2-MING-MI33
TS EAST & WEST DRIFTS PRELIM TEST LOCATIONS P & P	YMP-025-2-MING-MI37
CH LEVEL DRIFTS PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI38
CH MAIN DRIFT PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI39
CH MAIN DRIFT PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI40
CH SOUTH RAMP PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI42
CH LEVEL DRIFTS PRELIM TEST LOCATIONS PLAN & PROFILE	YMP-025-2-MING-MI43
TS/CH SOUTH RAMP INTERSECTION PLAN & SECTION	YMP-025-2-MING-MI45
TS/CH SOUTH RAMP INTERSECTION SECTIONS	YMP-025-2-MING-MI46
RAMP CONSTRUCTION SEQUENCE SECTIONS	YMP-025-2-MING-MI48
RAMP STATION CONSTRUCTION SEQUENCE PLANS & SECTIONS	YMP-025-2-MING-MI49
RAMP STATION CONSTRUCTION SEQUENCE PLANS & SECTIONS	YMP-025-2-MING-MI50
TS/CH PRELIM VENTILATION (OPERATION PHASE) PLAN	YMP-025-2-MING-MI51
TS MAIN TEST AREA VENTILATION PLAN	YMP-025-2-MING-MI52
DEVELOPMENT VENTILATION SEQUENCE PLAN	YMP-025-2-MING-MI53
FACE VENTILATION (CONSTRUCTION PHASE) SECTIONS	YMP-025-2-MING-MI54
ELECTRICAL	
TS MAIN DRIFT/NORTH FEEDERS ONE LINE DIAGRAM (SHT 1)	YMP-025-2-ELEC-EL10
TS MAIN DRIFT/NORTH FEEDERS ONE LINE DIAGRAM (SHT 2)	YMP-025-2-ELEC-EL11
CH MAIN DRIFT/NORTH FEEDERS ONE LINE DIAGRAM (SHT 1)	YMP-025-2-ELEC-EL16
CH MAIN DRIFT/NORTH FEEDERS ONE LINE DIAGRAM (SHT 2)	YMP-025-2-ELEC-EL17
SOUTH PORTAL SURFACE SUBSTATION ONE LINE DIAGRAM	YMP-025-2-ELEC-EL20
SOUTH PORTAL SURFACE ELECTRICAL ONE LINE DIAGRAM (SHT 1)	YMP-025-2-ELEC-EL21
SOUTH PORTAL SURFACE ELECTRICAL ONE LINE DIAGRAM (SHT 2)	YMP-025-2-ELEC-EL22
TS SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHT 1)	YMP-025-2-ELEC-EL23
TS SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHT 2)	YMP-025-2-ELEC-EL24
TS SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHT 3)	YMP-025-2-ELEC-EL25
TS MAIN DRIFT/SOUTH FEEDERS ONE LINE DIAGRAM (SHT 1)	YMP-025-2-ELEC-EL26
TS MAIN DRIFT/SOUTH FEEDERS ONE LINE DIAGRAM (SHT 2)	YMP-025-2-ELEC-EL27
CH SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHT 1)	YMP-025-2-ELEC-EL29
CH SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHT 2)	YMP-025-2-ELEC-EL30
CH SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHT 3)	YMP-025-2-ELEC-EL31
CH MAIN DRIFT/SOUTH FEEDERS ONE LINE DIAGRAM (SHT 1)	YMP-025-2-ELEC-EL32
CH MAIN DRIFT/SOUTH FEEDERS ONE LINE DIAGRAM (SHT 2)	YMP-025-2-ELEC-EL33
TS/CH TYPICAL ARRANGEMENT ELECTRICAL POWER CENTER	YMP-025-2-ELEC-EL34

TS NORTH & TS SOUTH RAMP	
MECHANICAL	
UNDERGROUND WATER DISTRIBUTION SCHEMATIC FLOW DIAGRAM	YMP-025-2-MECH-PI01
UNDERGROUND WASTE WATER COLLECTION SYSTEM	YMP-025-2-MECH-PI03
COMPRESSED AIR DISTRIBUTION SYSTEM	YMP-025-2-MECH-PI05

SHOP / WAREHOUSE BLDG #7010	
ARCHITECTURAL	
SHOP / WAREHOUSE BUILDING FLOOR PLANS	YMP-025-2-7010-AR01
SHOP / WAREHOUSE BUILDING ELEVATIONS & SECTIONS	YMP-025-2-7010-AR02
MECHANICAL	
SHOP / WAREHOUSE BUILDING HVAC PLAN	YMP-025-2-7010-HV01
SHOP / WAREHOUSE BUILDING PLUMBING PLAN	YMP-025-2-7010-PP01

CHANGE HOUSE BLDG #7011	
ARCHITECTURAL	
CHANGE HOUSE BUILDING FLOOR PLAN	YMP-025-2-7011-AR01
CHANGE HOUSE BUILDING ELEVATIONS & SECTION	YMP-025-2-7011-AR02
MECHANICAL	
CHANGE HOUSE BUILDING HVAC PLAN	YMP-025-2-7011-HV01
CHANGE HOUSE BUILDING PLUMBING PLAN	YMP-025-2-7011-PP01

PORTAL CONTROL CENTER BLDG #7012	
ARCHITECTURAL	
PORTAL CONTROL CENTER BLDG PLAN, SECTION & ELEV'S	YMP-025-2-7012-AR01
MECHANICAL	
PORTAL CONTROL CENTER BLDG HVAC PLAN	YMP-025-2-7012-HV01
PORTAL CONTROL CENTER BLDG PLUMBING PLAN	YMP-025-2-7012-PP01

CONVEYOR DRIVE & TRANSFER BLDG #7013	
ARCHITECTURAL	
CONVEYOR DRIVE & TRANSFER BLDG PLANS & SECTIONS	YMP-025-2-7013-AR01
MECHANICAL	
CONVEYOR DRIVE & TRANSFER BLDG HVAC PLAN	YMP-025-2-7013-HV01
CONVEYOR DRIVE & TRANSFER BLDG PLUMBING PLAN	YMP-025-2-7013-PP01

FAN HYDRAULIC CONTROL BLDG # 7014	
ARCHITECTURAL	
VENT FAN HYDRAULIC CONTROL BLDG PLAN & ELEV'S	YMP-025-2-7014-AR01


AIRLOCK BLDG # 7015	
ARCHITECTURAL	
AIRLOCK BLDG (OPER PHASE) PLAN & SECTIONS	YMP-025-2-7015-AR01

ELECT SUBSTATION CONTROL BLDG # 7016	
ARCHITECTURAL	
ELECT SUBSTATION CONTROL BLDG PLAN & ELEV'S	YMP-025-2-7016-AR01

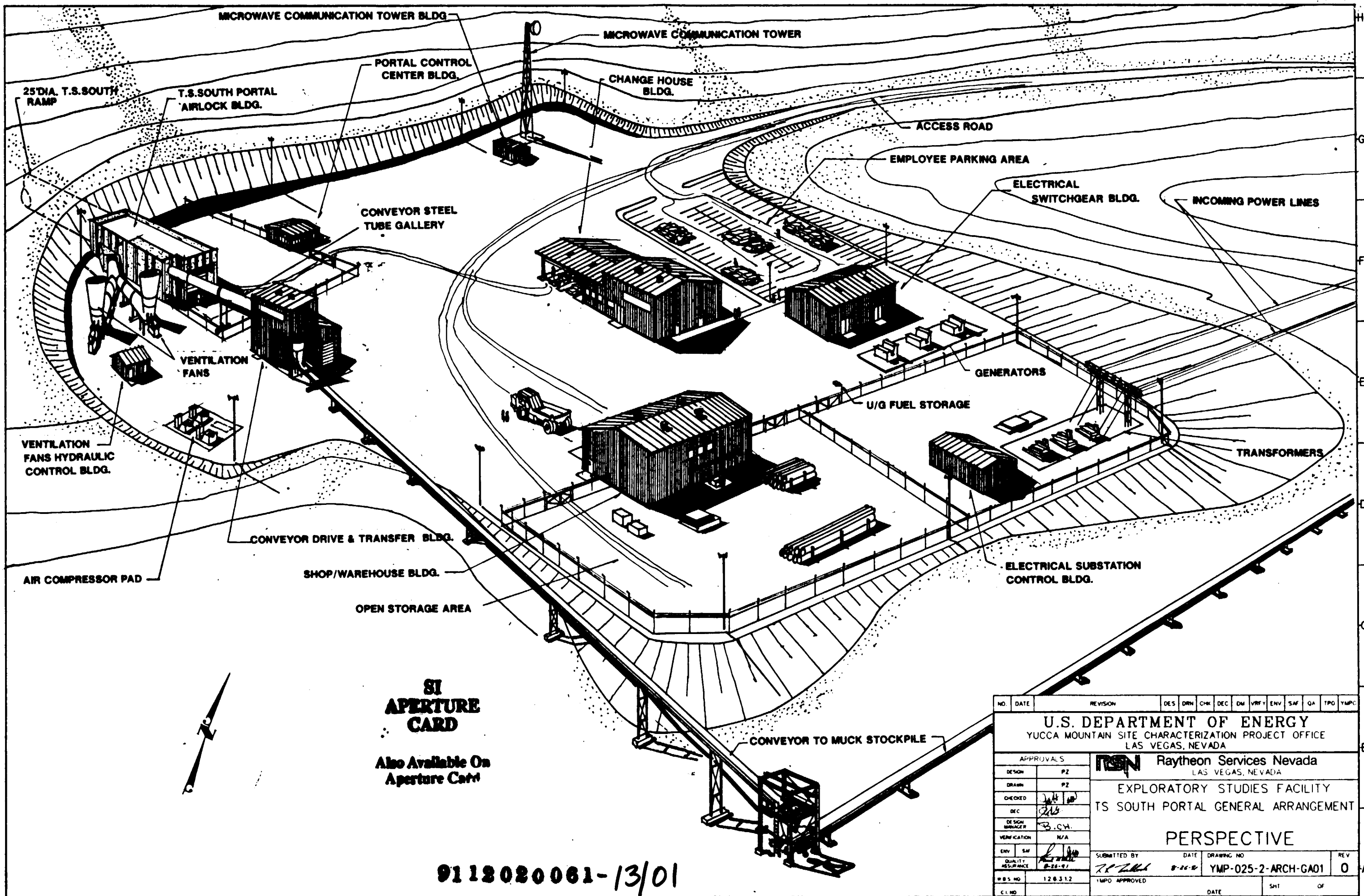
ELECTRICAL SWITCHGEAR BUILDING # 7017	
ARCHITECTURAL	
ELECTRICAL SWITCHGEAR BUILDING PLAN & ELEV'S	YMP-025-2-7017-AR01

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NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VERF	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		 LAS VEGAS, NEVADA											
DESIGN	MAJ	EXPLORATORY STUDIES FACILITY											
DRAWN	MAJ	TS SOUTH PORTAL GENERAL ARRANGEMENT											
CHECKED	<i>[Signature]</i>	<b>DRAWING INDEX</b>											
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>	SUBMITTED BY	DATE	DRAWING NO	REV								
QUALITY ASSURANCE	<i>[Signature]</i>	<i>[Signature]</i>	8-25-91	YMP-025-2-CIVL-GE02	0								
PCN	YMP0214	YMP0 APPROVED											
8-23-91	1,2,6,3,1,2	DATE SHT OF											

**9118080061-13**

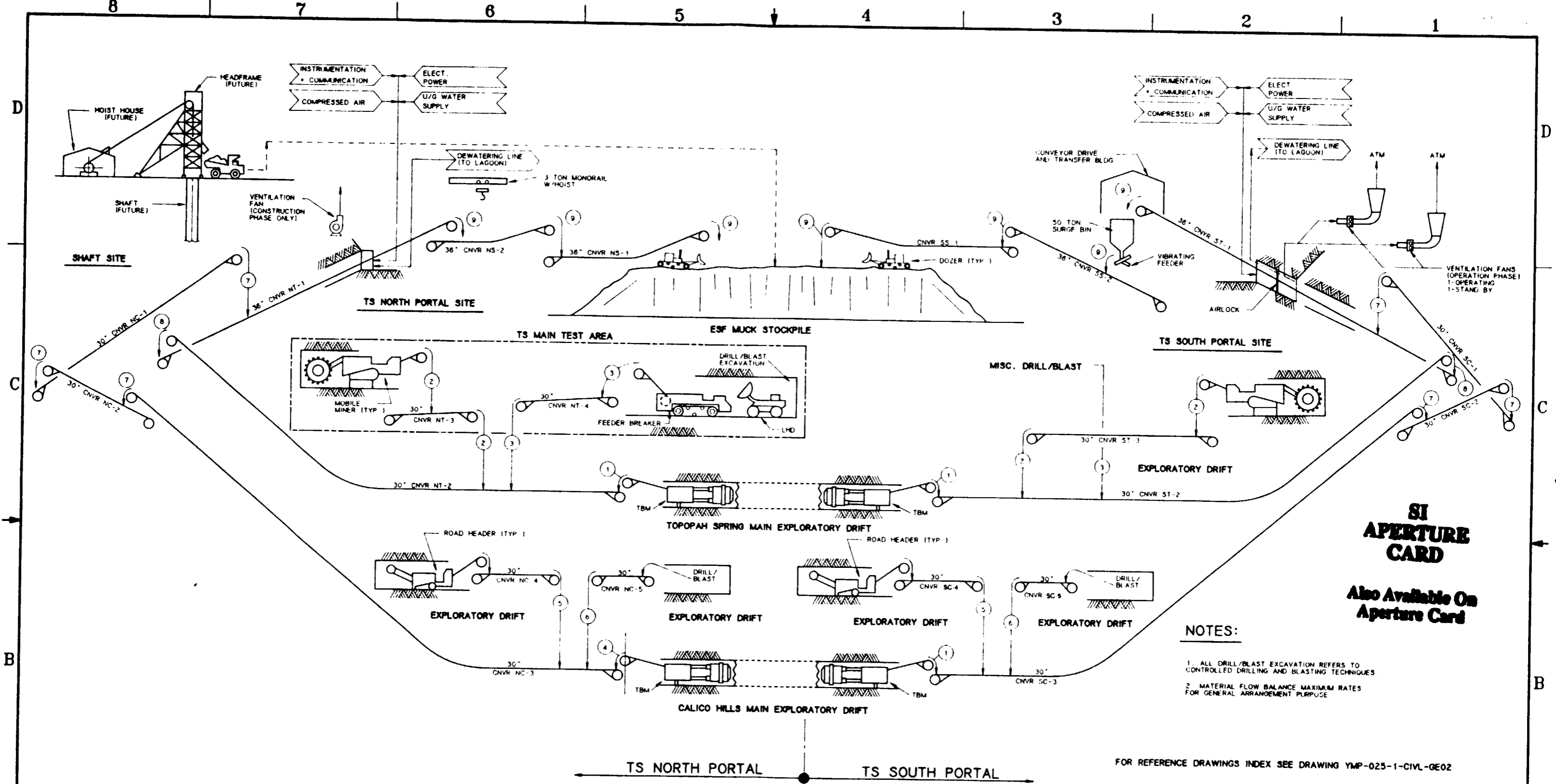


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9112020061-13/01

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT  <b>PERSPECTIVE</b>										
DESIGN	PZ												
DRAWN	PZ												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF	<i>[Signature]</i>											
QUALITY ASSURANCE	8-28-91												
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C.I. NO			<i>[Signature]</i>		8-16-91	YMP-025-2-ARCH-GA01		0					
IMPO APPROVED										DATE		SHT OF	



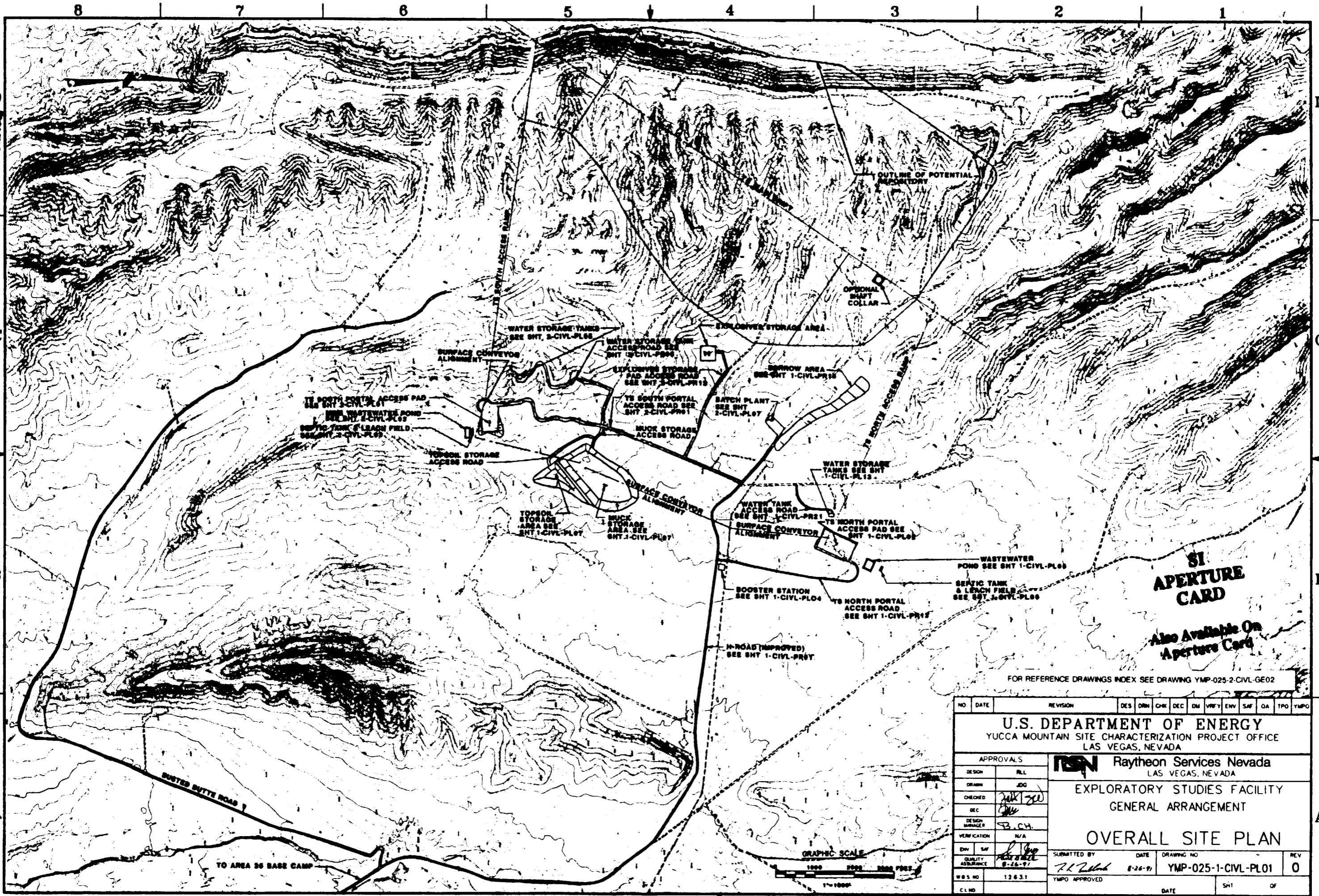
- NOTES:**
1. ALL DRILL/BLAST EXCAVATION REFERS TO CONTROLLED DRILLING AND BLASTING TECHNIQUES
  2. MATERIAL FLOW BALANCE MAXIMUM RATES FOR GENERAL ARRANGEMENT PURPOSE

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

	MATERIAL FLOW BALANCE								
	①	②	③	④	⑤	⑥	⑦	⑧	⑨
TON/HR. (NOMINAL)	302	75	94	189	71	60	300	471	771
TON/HR. (DESIGN)	332	83	103	186	78	66	330	518	848
MAX. LUMP SIZE (INCHES)	-6"	-6"	-6"	-6"	-6"	-6"	-6"	-6"	-6"
MATERIAL DENSITY (#/FT <sup>3</sup> ) (BROKEN)	98	98	98	98	98	98	98	98	98
TEMPERATURE (°F)	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB

9112020061-14

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	NBT		EXPLORATORY STUDIES FACILITY										
DRAWN	TAN		GENERAL ARRANGEMENT										
CHECKED	[Signature]		TS NORTH & TS SOUTH PORTALS										
DEC	[Signature]		MATERIAL FLOW DIAGRAM										
DESIGN MANAGER	[Signature]												
VERIFICATION	N/A												
ENV SAF	[Signature]												
QUALITY ASSURANCE	[Signature]												
SUBMITTED BY			DATE		DRAWING NO		REV.						
[Signature]			8-20-91		YMP-025-1-ARCH-GA02		0						
YMPD APPROVED			DATE		SHT		OF						



**SI APERTURE CARD**

Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

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APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLI		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT										
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CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	S.B. CH.												
VERIFICATION	N/A		SUBMITTED BY: <i>[Signature]</i> DATE: 8-26-91 DRAWING NO: YMP-025-1-CIVL-PL01 REV: 0										
DW	SAF	<i>[Signature]</i>	W.B.S. NO: 128.31 YMPO APPROVED: DATE: SH1 OF										
QUALITY ASSURANCE	8-26-91												
C.I. NO.													

9112020061-14/01

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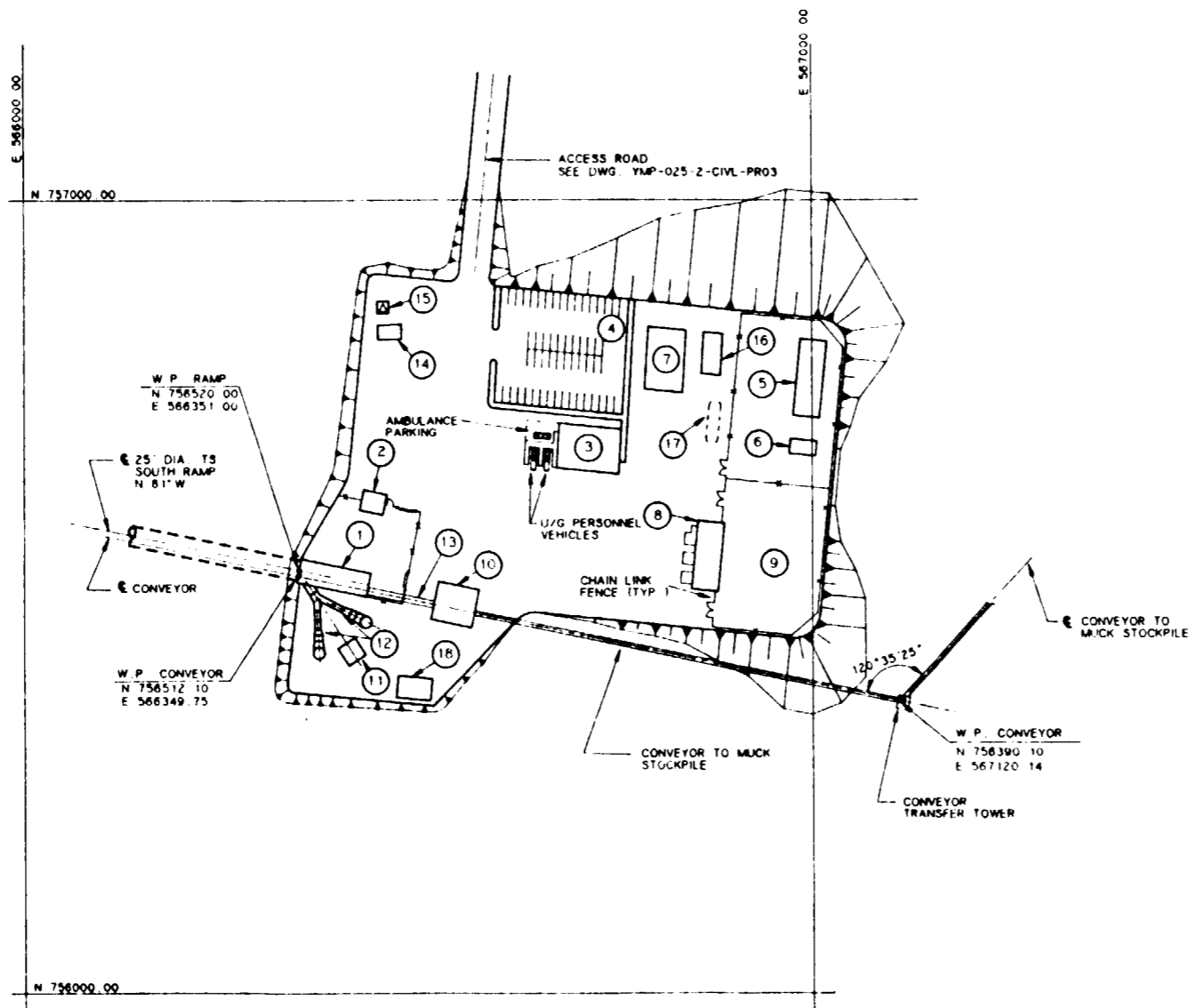
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LEGEND

- ① SOUTH PORTAL AIRLOCK BLDG
- ② PORTAL CONTROL CENTER BLDG.
- ③ CHANGE HOUSE BLDG
- ④ EMPL PARKING AREA (50 CARS)
- ⑤ TRANSFORMER PAD
- ⑥ ELECTRICAL SUBSTATION CONTROL BLDG
- ⑦ ELECTRICAL SWITCHGEAR BLDG
- ⑧ SHOP / WAREHOUSE BLDG.
- ⑨ OPEN STORAGE AREA
- ⑩ CONVEYOR DRIVE AND TRANSFER BLDG
- ⑪ VENT FANS HYDRAULIC CONTROL BLDG
- ⑫ VENTILATION FANS
- ⑬ BELT CONVEYOR STEEL TUBE GALLERY
- ⑭ MICROWAVE COMMUNICATION BLDG.
- ⑮ MICROWAVE COMMUNICATION TOWER
- ⑯ GENERATOR PAD
- ⑰ UNDERGROUND FUEL STORAGE TANK
- ⑱ AIR COMPRESSOR PAD

**SI APERTURE CARD**

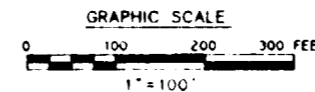
**Also Available On Aperture Card**



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

SITE PLAN

SCALE 1" = 100'



9118080061-15

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRF	ENV	SAF	QA	TPO	YMP	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS			 <b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	WTM													
DRAWN	TAM													
CHECKED	<i>[Signature]</i>													
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DESIGN MANAGER	<i>[Signature]</i>													
VERIFICATION	N/A													
ENV	SAF	<i>[Signature]</i> QUALITY ASSURANCE 8-26-91												
SUBMITTED BY		DATE	DRAWING NO		REV									
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YMP-0 APPROVED												DATE	SHT	OF



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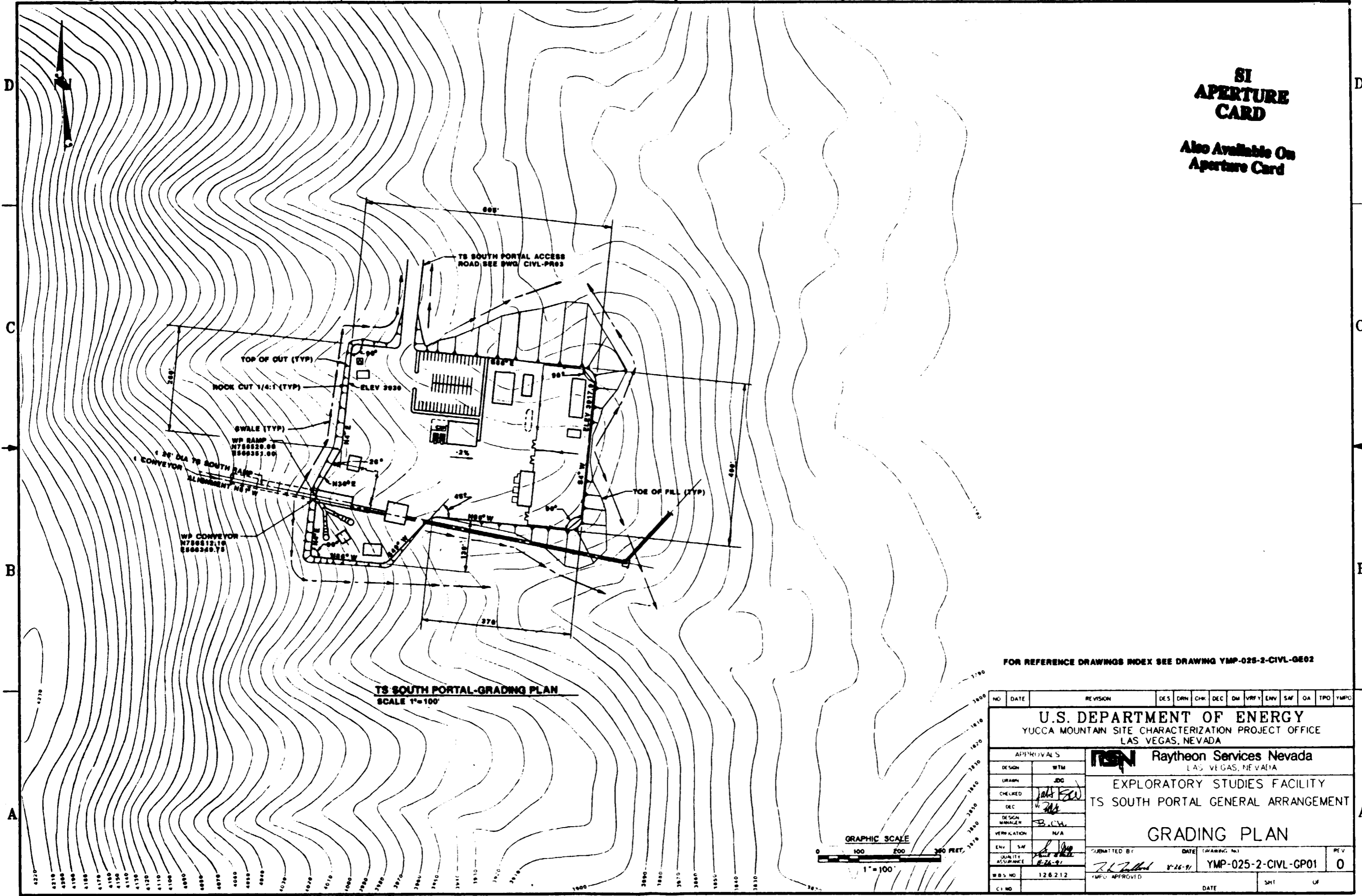
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# SI APERTURE CARD

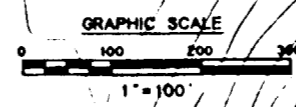
Also Available On Aperture Card



TS SOUTH PORTAL-GRADING PLAN  
SCALE 1"=100'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

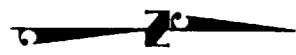
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WIM		EXPLORATORY STUDIES FACILITY										
DRAWN	JDC		TS SOUTH PORTAL GENERAL ARRANGEMENT										
CHECKED	<i>[Signature]</i>		<b>GRADING PLAN</b>										
DEC	<i>[Signature]</i>		SUBMITTED BY: <i>[Signature]</i> DATE: 8-16-91										
DESIGN MANAGER	<i>[Signature]</i>		DRAWING NO: YMP-025-2-CIVL-GP01										
VERIFICATION	N/A		REV: 0										
ENV. SAF. QUANTITY ASSURANCE	<i>[Signature]</i>		YMPD APPROVED: <i>[Signature]</i> DATE: _____										
WBS NO	126212		SHEET NO: _____ OF _____										
CI NO													



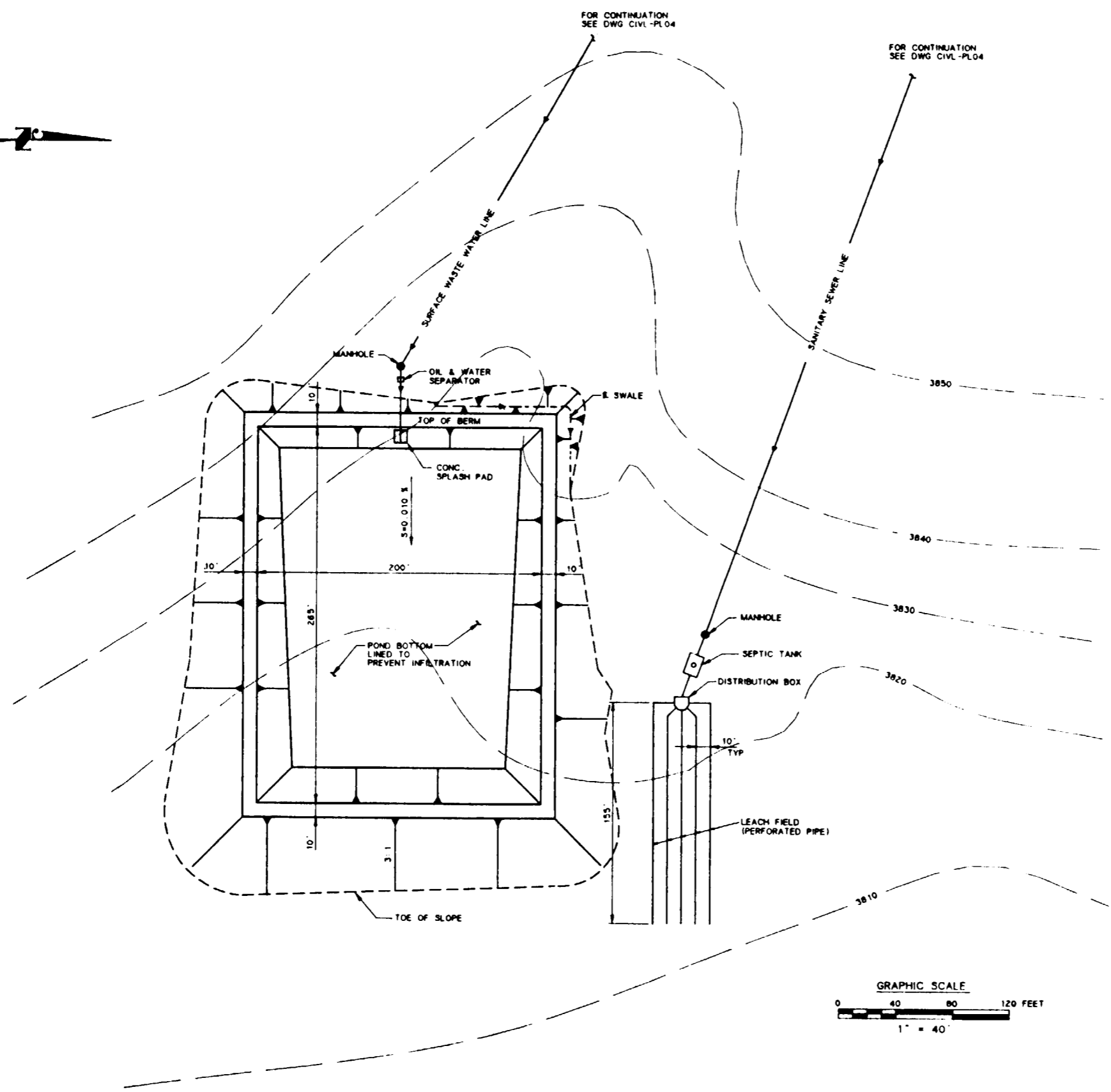
9112020061-16

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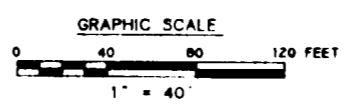
D  
C  
B  
A



**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



**WASTE WATER FACILITIES SITE & GRADING PLAN**

SCALE 1"=40'

9112020061-17

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RDC		<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>WASTE WATER FACILITIES</b> <b>GRADING PLAN</b>										
DRN	MJP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	S.C.H.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY: <i>[Signature]</i> DATE: 8-26-91 DRAWING NO: YMP-025-2-CIVL-PL03 REV: 0 YMP0 APPROVED: <i>[Signature]</i> DATE: _____ SH: _____ OF: _____											
QUALITY ASSURANCE	P. SA-91												
FOR YMP025-2 8-21-91 U.S. NO. 1, 2, 3, 3, 1, 2 E.I. NO. 2													

8 7 6 5 4 3 2 1

LEGEND

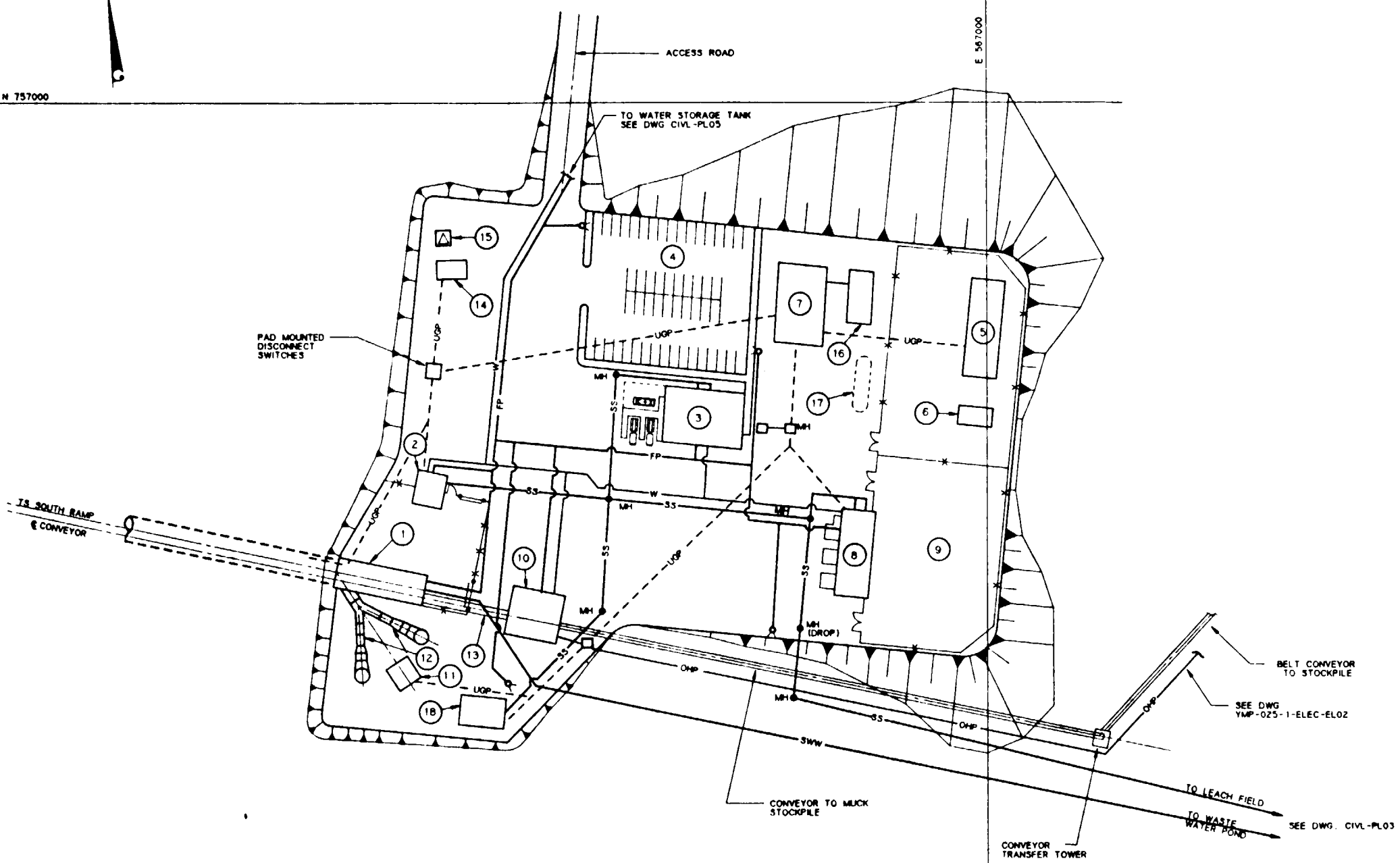
- ① SOUTH PORTAL AIRLOCK BLDG.
- ② PORTAL CONTROL CENTER BLDG.
- ③ CHANGE HOUSE BLDG.
- ④ EMPL. PARKING AREA (50 CARS)
- ⑤ TRANSFORMER PAD
- ⑥ ELECTRICAL SUBSTATION CONTROL BLDG.
- ⑦ ELECTRICAL SWITCHGEAR BLDG.
- ⑧ SHOP / WAREHOUSE BLDG.
- ⑨ OPEN STORAGE AREA
- ⑩ CONVEYOR DRIVE AND TRANSFER BLDG.
- ⑪ VENT FANS HYDRAULIC CONTROL BLDG.
- ⑫ VENTILATION FANS
- ⑬ BELT CONVEYOR STEEL TUBE GALLERY
- ⑭ MICROWAVE COMMUNICATION BLDG.
- ⑮ MICROWAVE COMMUNICATION TOWER
- ⑯ GENERATOR PAD
- ⑰ UNDERGROUND FUEL STORAGE TANK
- ⑱ AIR COMPRESSOR PAD

**SI APERTURE CARD**  
Also Available On Aperture Card

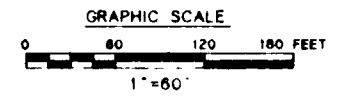
- FP FIRE PROTECTION WATER LINE
- SWW SURFACE WASTEWATER LINE
- SS SANITARY SEWER LINE
- W POTABLE WATER LINE
- MH SANITARY SEWER MANHOLE
- Fire Hydrant
- MH ELECTRICAL MANHOLE
- PP POWER POLE W/GUY ANCHORS
- OHP OVERHEAD POWER LINE
- UGP UNDERGROUND POWER LINE

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

D  
C  
B  
A



UTILITIES PLAN  
SCALE: 1" = 60'



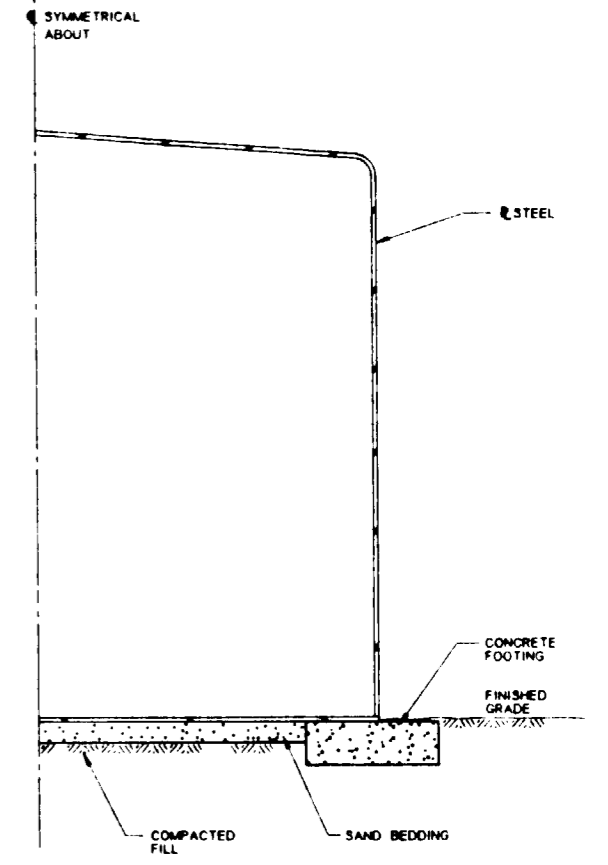
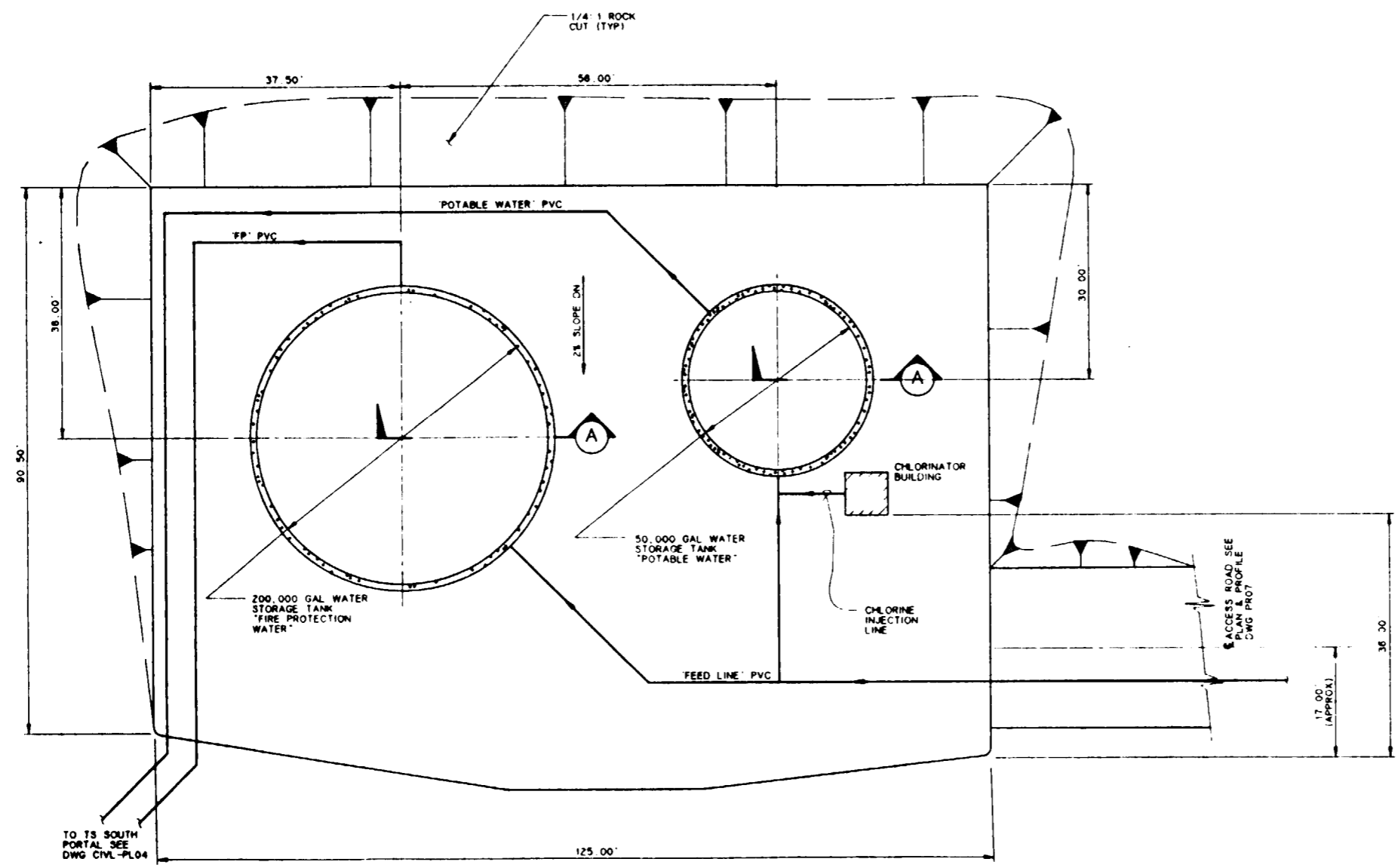
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RC		EXPLORATORY STUDIES FACILITY										
DRAWN	TAM		T.S. SOUTH PORTAL GENERAL ARRANGEMENT										
CHECKED	<i>[Signature]</i>		SOUTH PORTAL										
DEC	<i>[Signature]</i>		UTILITIES PLAN										
DESIGN MANAGER	S.B. CH.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>		SUBMITTED BY										
QUALITY ASSURANCE	<i>[Signature]</i>		DATE										
FOR YMP0102 8-22-91	1.2.0.2.2.2		YMP0 APPROVED										
			DRAWING NO. YMP-025-2-CIVL-PL04										
			REV 0										
			DATE										
			SHT OF										

8 7 6 5 4 3 2 1

**SI  
APERTURE  
CARD**

Also Available On  
Aperture Card

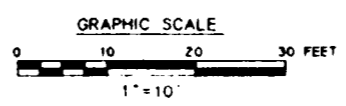


**NOTE**  
SEE PLAN FOR TANK  
CAPACITIES

**SECTION A**  
NOT TO SCALE

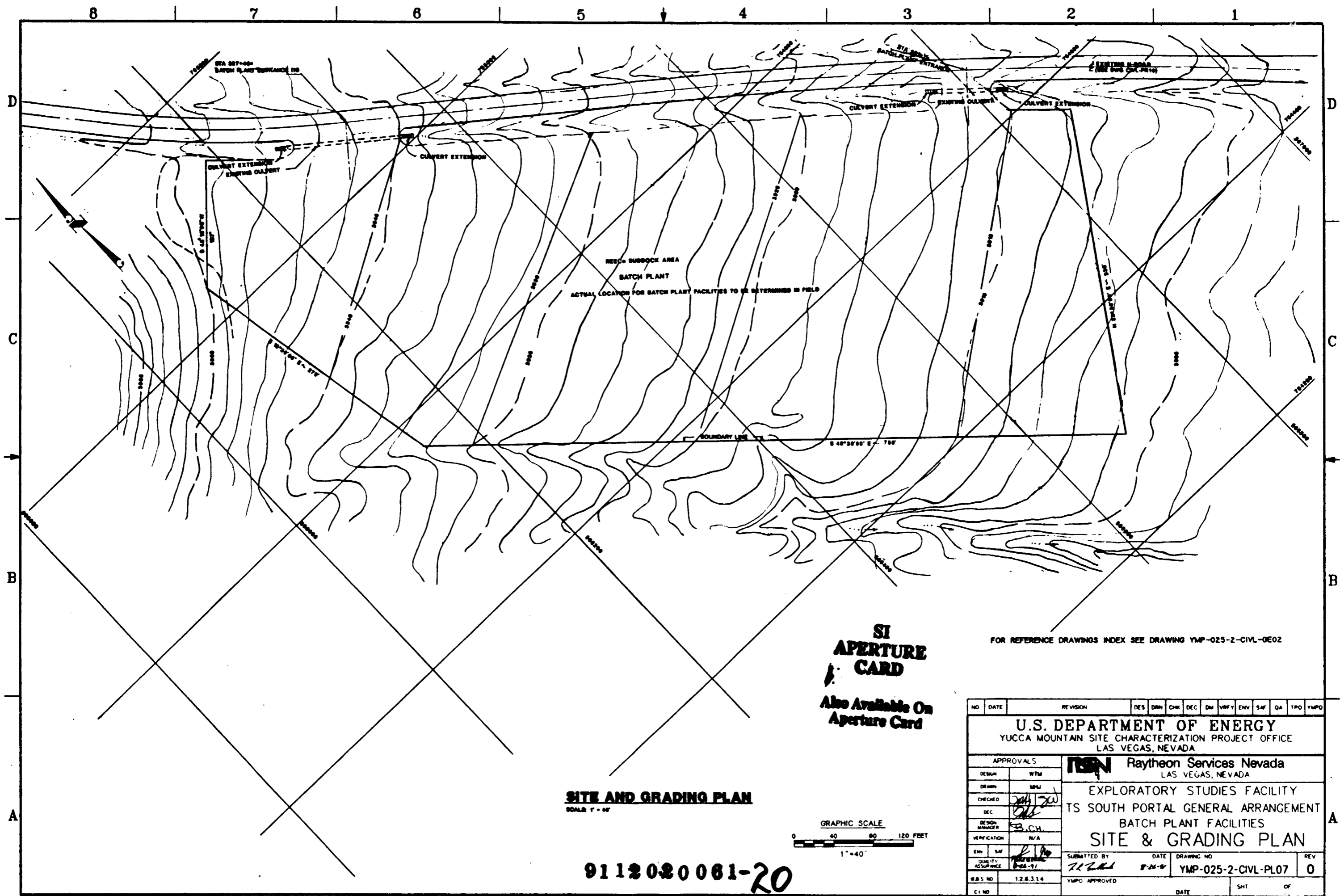
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**WATER STORAGE TANK SITE & GRADING PLAN**  
SCALE: 1" = 10'

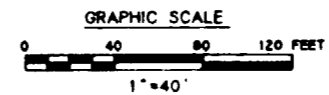


9112020061-19

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RL		EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT <b>WATER STORAGE TANK SITE &amp; GRADING PLAN</b>										
DRAWN	CLG												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A		SUBMITTED BY		DATE		DRAWING NO.		REV				
ENR	SAF	<i>[Signature]</i>		7/22/91		8-26-91		YMP-025-2-CIVL-PL05		0			
QUALITY ASSURANCE	8-26-91		YMPD APPROVED		DATE		SHT		OF				
FCN	YMP0210		8-22-91		C.I. JR.								



**SITE AND GRADING PLAN**  
SCALE: 1" = 40'

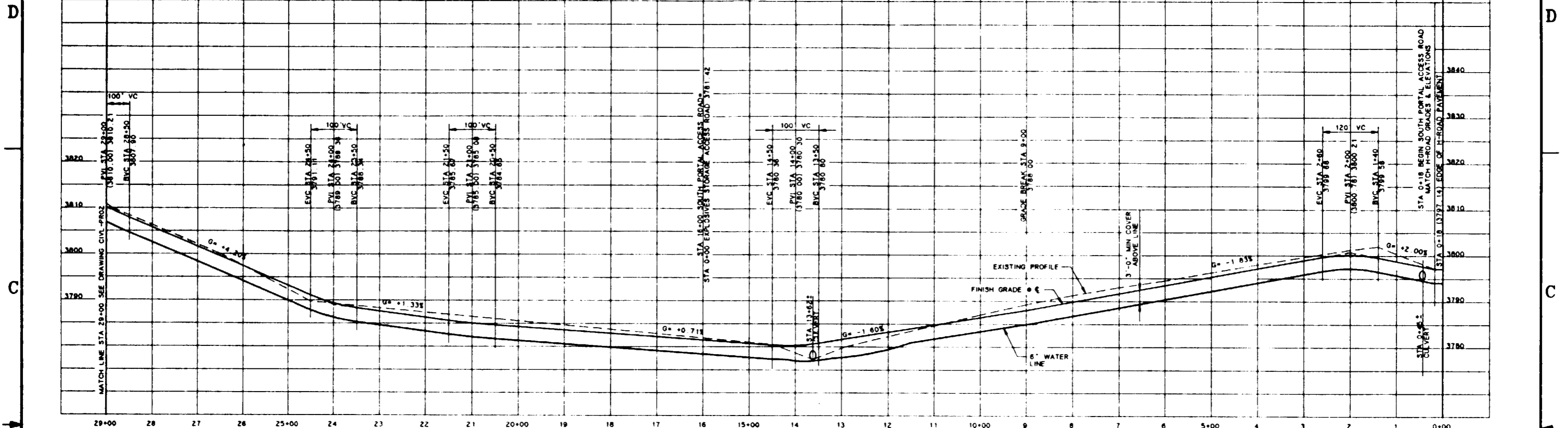


9112020061-20

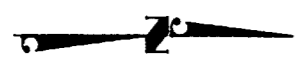
**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-0E02

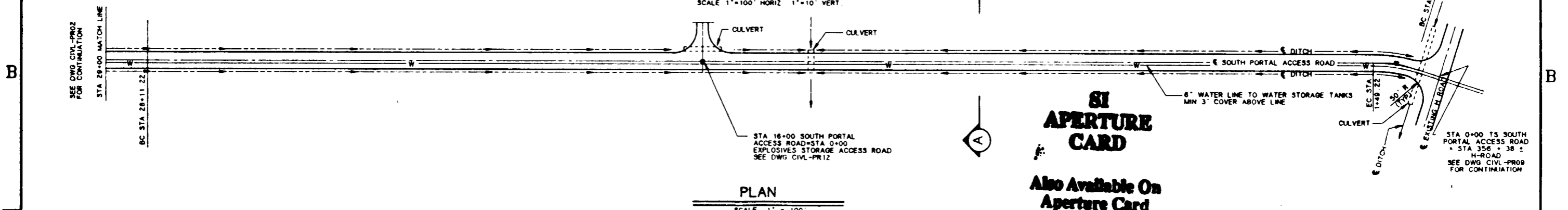
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WTM		EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT BATCH PLANT FACILITIES <b>SITE &amp; GRADING PLAN</b>										
DRAWN	MNU		SUBMITTED BY: <i>[Signature]</i> DATE: 8-26-97 DRAWING NO: YMP-025-2-CIVL-PL07 REV: 0										
CHECKED	<i>[Signature]</i>		YMPD APPROVED: _____ DATE: _____ SHT: _____ OF: _____										
DEC	<i>[Signature]</i>												
DESIGN MANAGER	K.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	8-26-97												
W.B.S. NO.	12.8.3.14												
C.I. NO.													



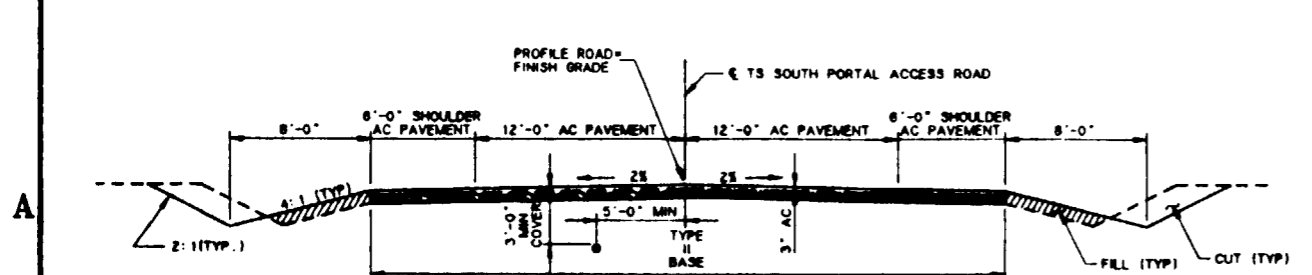
P1 STA 1+00  
 $\Delta = 17^\circ 30' 00''$  LT  
 $R = 324.86$   
 $T = 50.00$   
 $L = 99.22'$



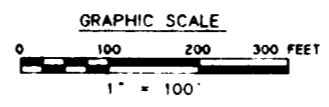
**PROFILE**  
 SCALE 1" = 100' HORIZ 1" = 10' VERT.



**PLAN**  
 SCALE 1" = 100'



**TYPICAL ROAD SECTION**  
 SCALE 1" = 5'



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE													
LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLI	EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL-GENERAL ARRANGEMENT ACCESS ROAD <b>PLAN AND PROFILE</b>											
DRAWN	TAN												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A	SUBMITTED BY		DATE		DRAWING NO.		REV.					
ENV SAF	<i>[Signature]</i>	<i>[Signature]</i>		7-22-91		YMP-025-2-CIVL-PRO1		0					
QUALITY ASSURANCE	<i>[Signature]</i>	YMPO APPROVED		DATE		SHT		OF					
FCN	W.B.S. NO.	G.I. NO.		DATE		SHT		OF					
YMP-155	1.2.6.2.1.4	8-22-91											

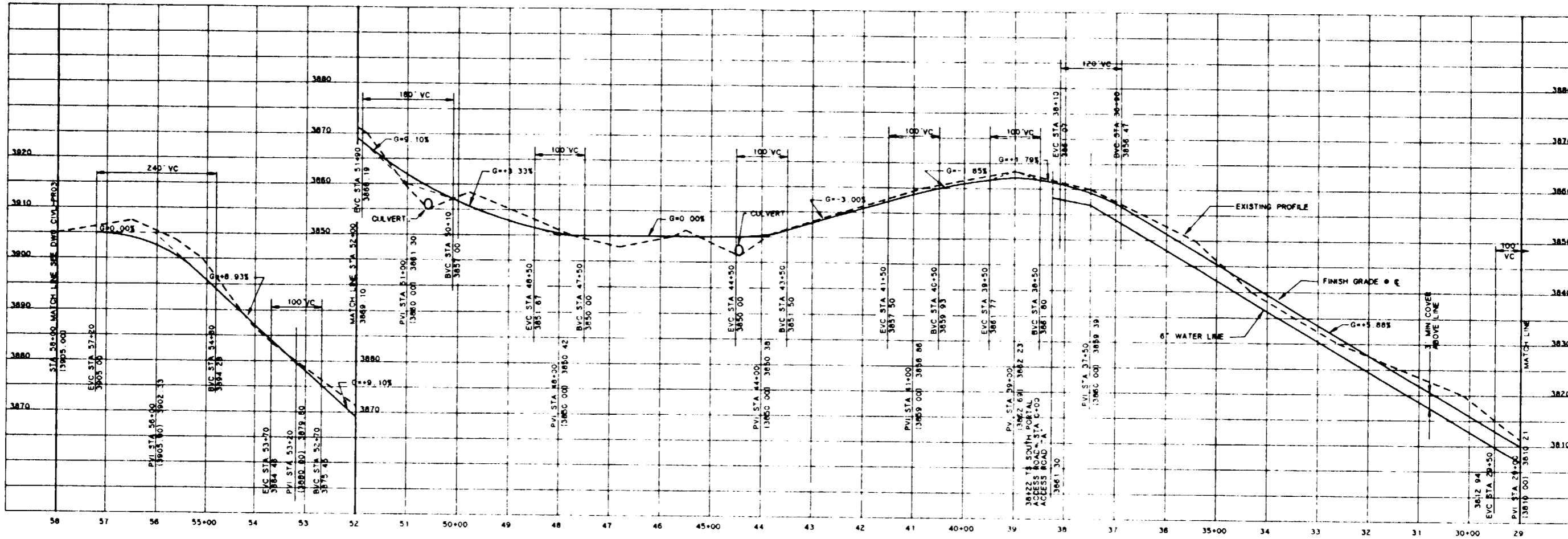
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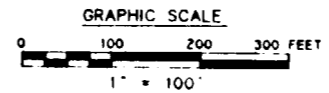
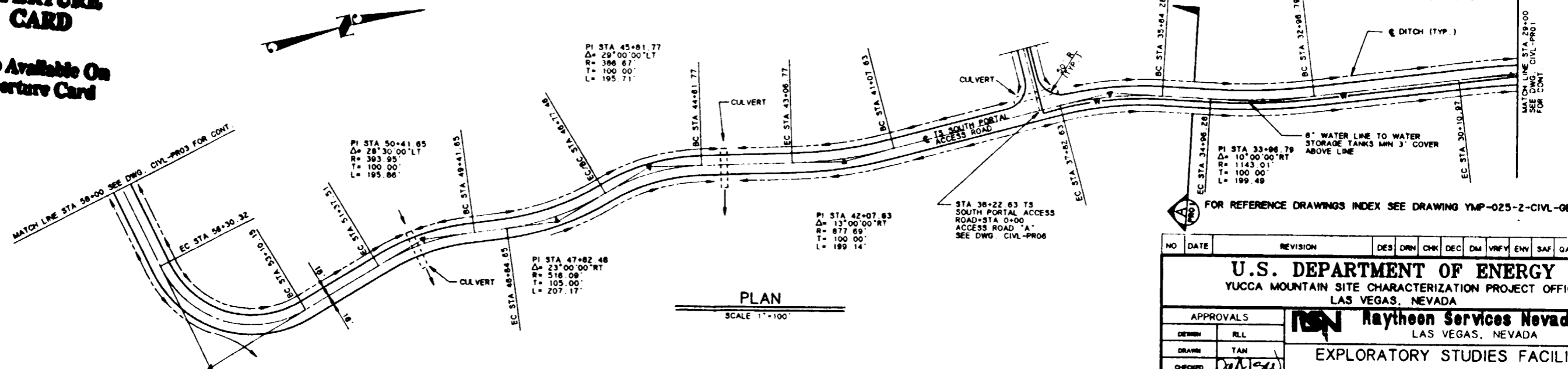
B

A



**SI APERTURE CARD**

Also Available On Aperture Card



9112020061-22

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENW	SAF	GA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RL	EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL-GENERAL ARRANGEMENT ACCESS ROAD <b>PLAN AND PROFILE</b>											
DRAWN	TAN												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	[Signature]												
VERIFICATION	N/A	SUBMITTED BY		DATE		DRAWING NO.		REV.					
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QUALITY ASSURANCE	[Signature]	YMPD APPROVED		DATE		SHT		OF					
FOR	YMPD 158	W.B.S. NO. 1, 2, 3, 4		DATE		SHT		OF					
8-22-91													

D

C

B

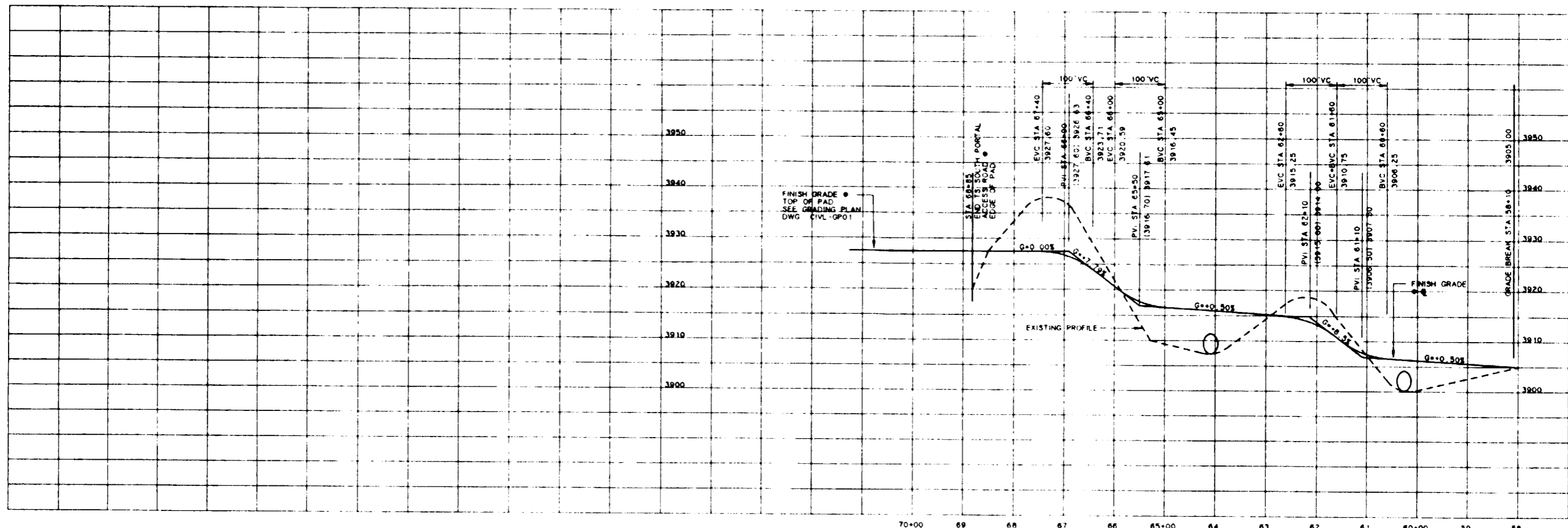
A

D

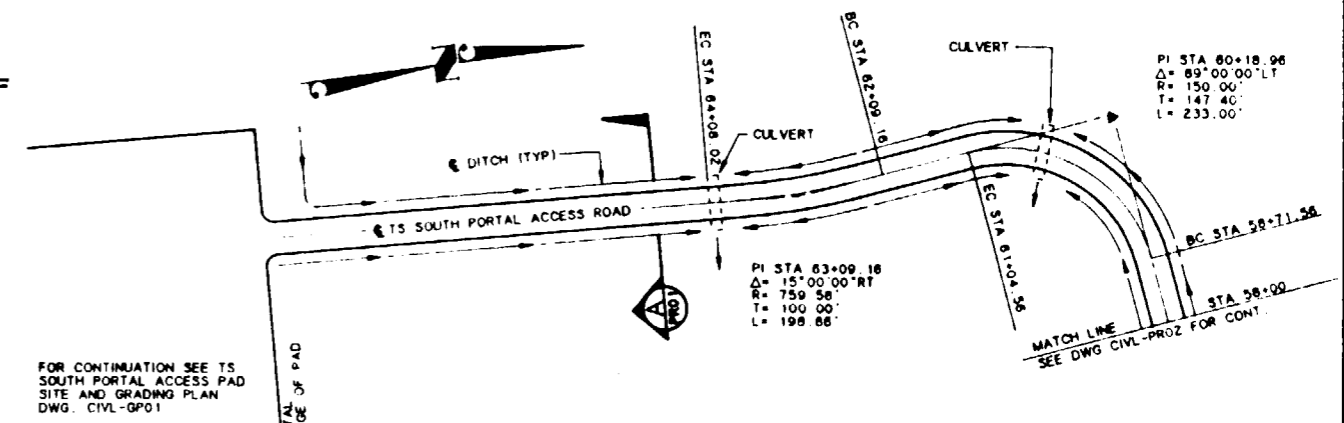
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B

A

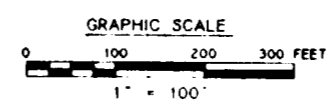


**PROFILE**  
SCALE 1"=100' HORIZ 1"=10' VERT



**SI APERTURE CARD**  
Also Available On Aperture Card

**PLAN**  
SCALE 1" = 100'



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	GHS	SAF	QA	TPO	YMPO
-----	------	----------	-----	-----	-----	-----	----	------	-----	-----	----	-----	------

**U.S. DEPARTMENT OF ENERGY**  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
LAS VEGAS, NEVADA

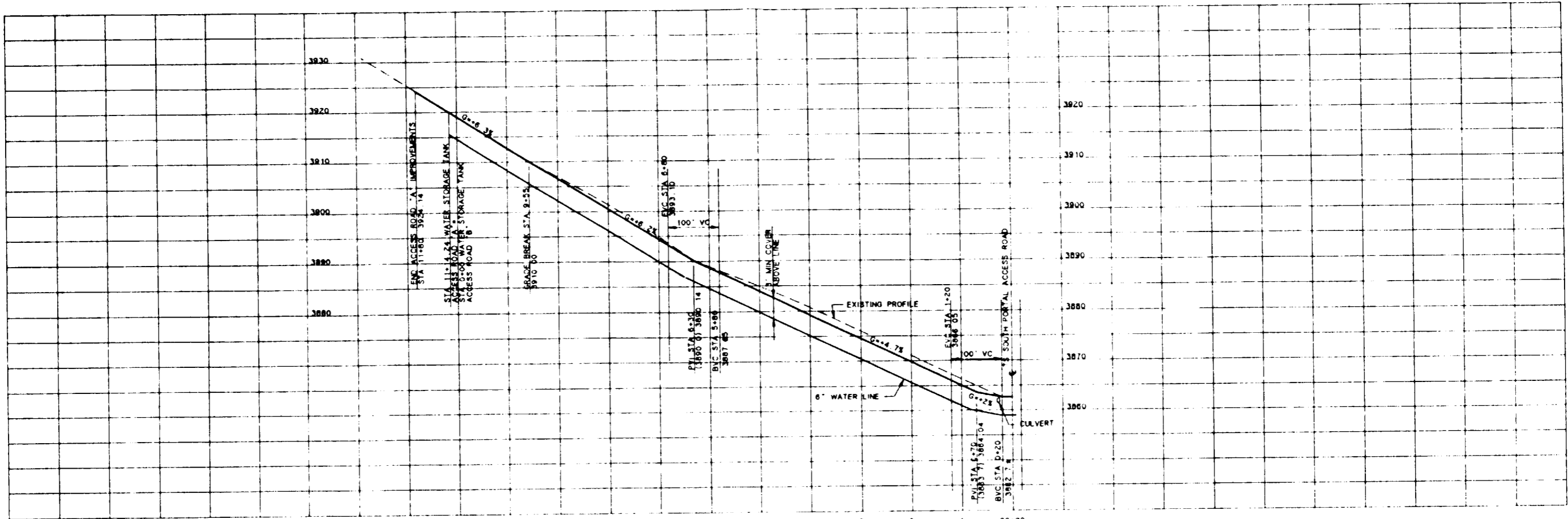
APPROVALS	
DESIGN	RL
DRAWN	TAN
CHECKED	[Signature]
DEC	[Signature]
DESIGN MANAGER	B.C.H.
VERIFICATION	N/A
ENR	SAF
QUALITY ASSURANCE	[Signature]

**Raytheon Services Nevada**  
LAS VEGAS, NEVADA  
EXPLORATORY STUDIES FACILITY  
TS SOUTH PORTAL GENERAL ARRANGEMENT  
ACCESS ROAD  
**PLAN AND PROFILE**

SUBMITTED BY	DATE	DRAWING NO	REV
[Signature]	8-26-91	YMP-025-2-CIVL-PRO3	0

9118080061-23





PROFILE

SCALE 1"=100' HORIZ 1"=10' VERT

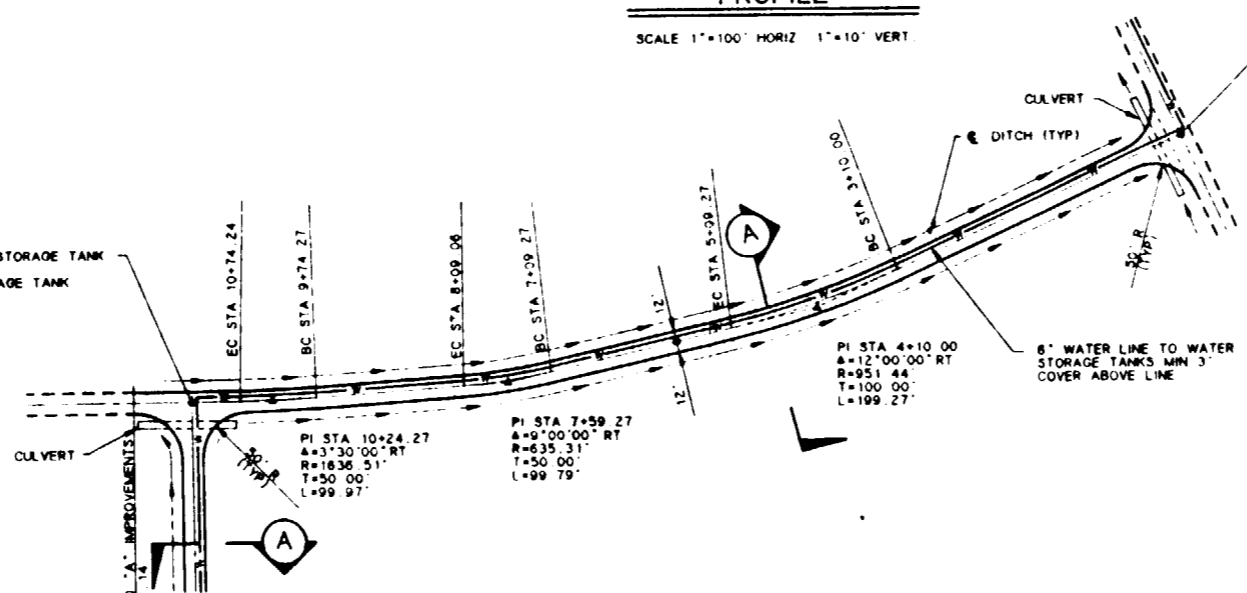
SI APERTURE CARD

Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

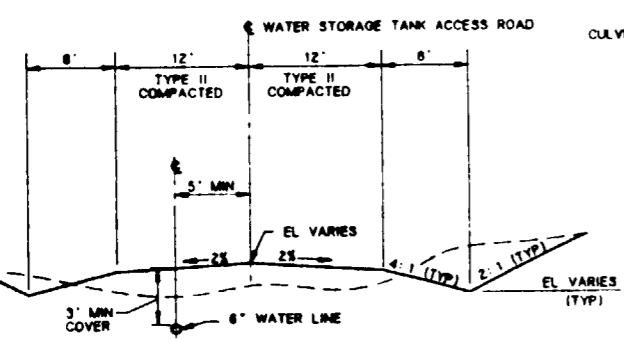
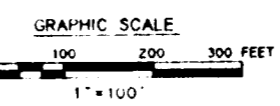


STA 11+14.24 WATER STORAGE TANK ACCESS ROAD "A"  
STA 0+00 WATER STORAGE TANK ACCESS ROAD "B"  
SEE DWG CIVL-PRO7



PLAN

SCALE 1"=100'

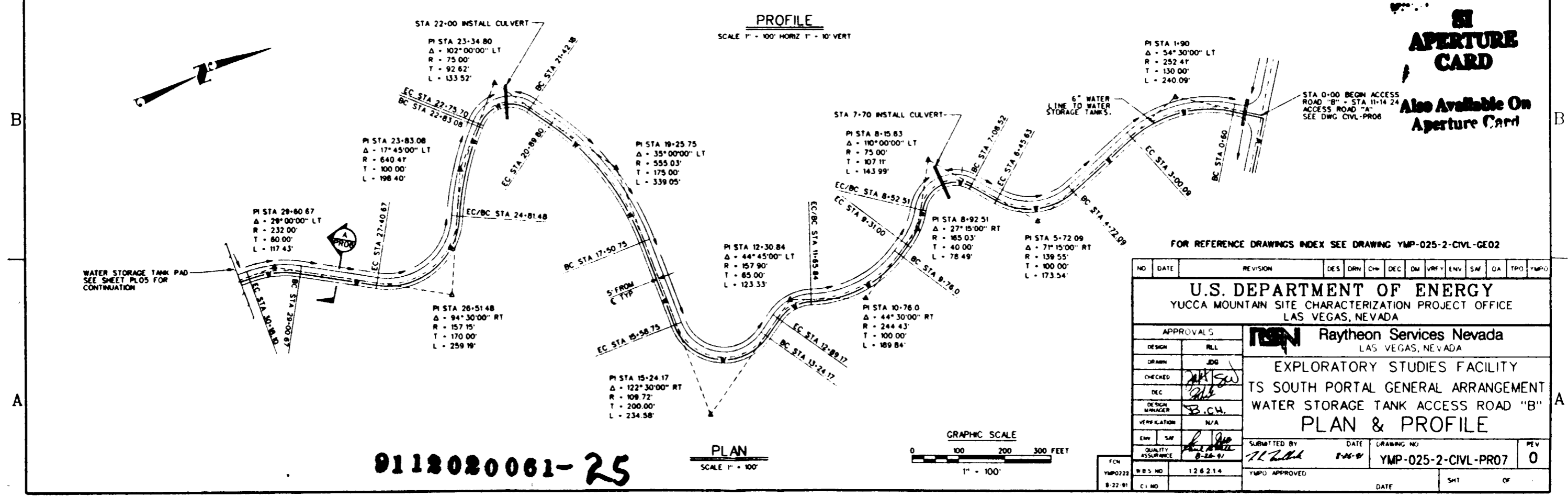
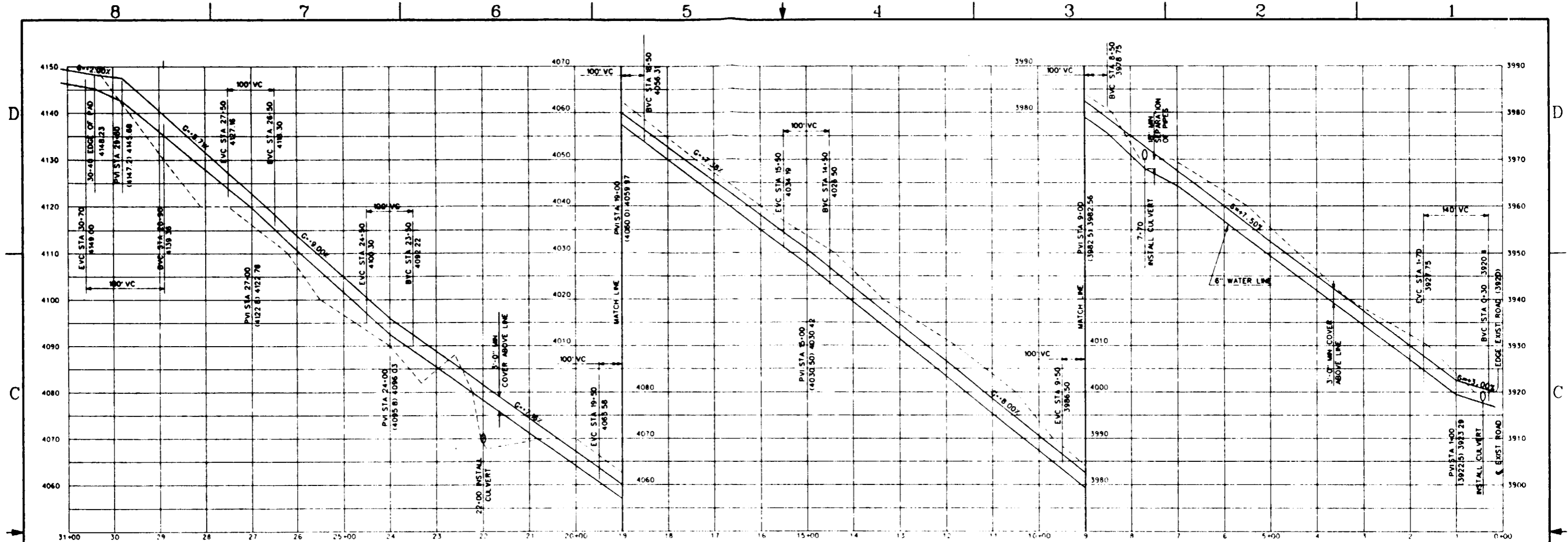


SECTION A

NOT TO SCALE

NO	DATE	REVISION	DES	DRN	CHK	IDR	DM	VRFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT WATER STORAGE TANK ACCESS ROAD "A" PLAN & PROFILE													
APPROVALS													
DESIGN	RL												
DRAWN	MJM												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO.		REV.								
7.2.201		8-22-91	YMP-025-2-CIVL-PRO6		0								
YMP0 APPROVED		DATE	SHT		OF								
8-22-91													

9112020081-24



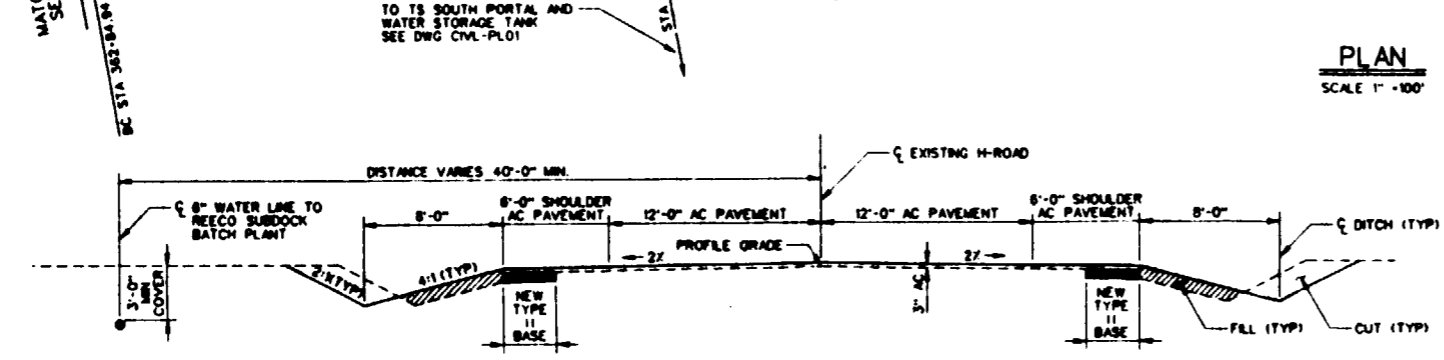
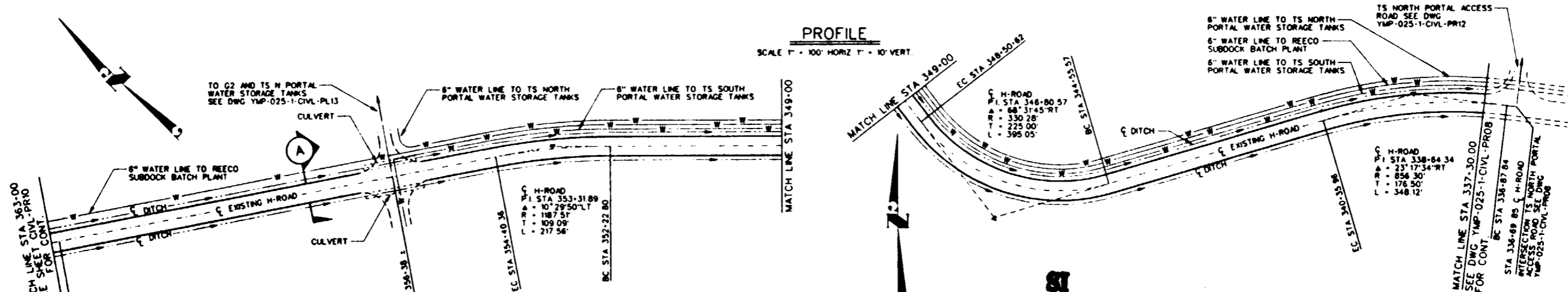
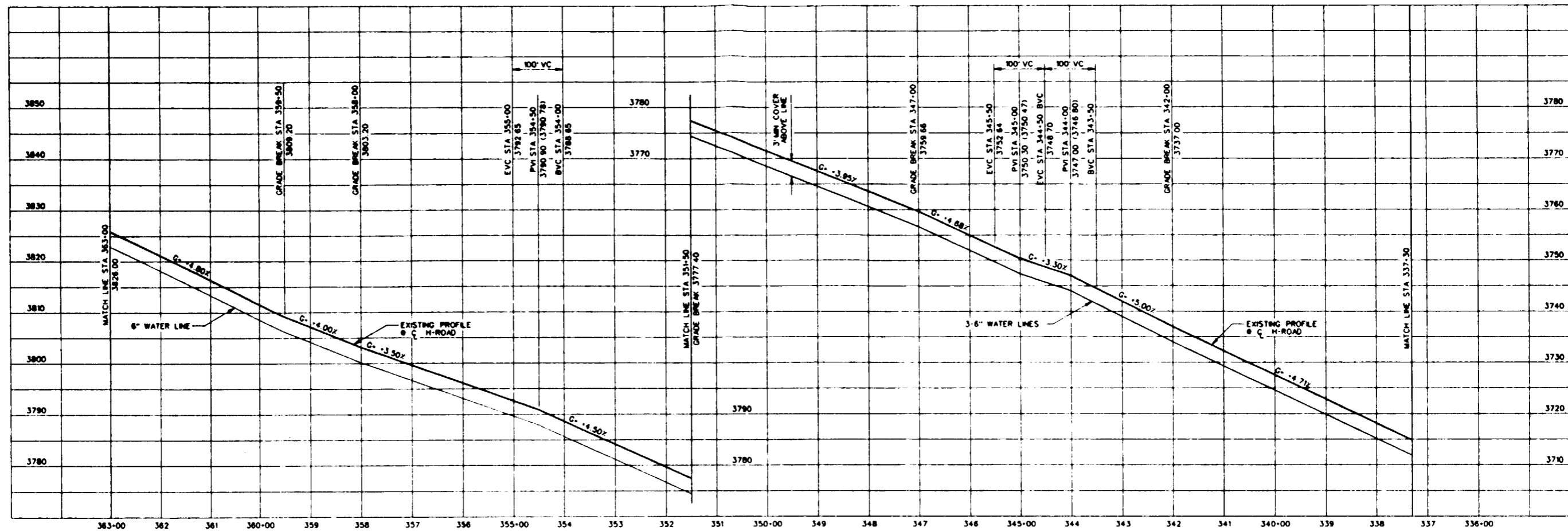
**SI APERTURE CARD**

Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TRD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>APPROVALS</b> DESIGN: RLL DRAWN: JMG CHECKED: [Signature] DEC: [Signature] DESIGN MANAGER: B.C.H. VERIFICATION: N/A ENV: [Signature] SAF: [Signature] QUALITY ASSURANCE: [Signature]													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT WATER STORAGE TANK ACCESS ROAD "B" <b>PLAN &amp; PROFILE</b>													
SUBMITTED BY: [Signature] DATE: 8-22-91 DRAWING NO: YMP-025-2-CIVL-PRO7 REV: 0 YMPD APPROVED: [Signature] DATE: [ ] SH: [ ] OF: [ ]													

9112020061-25



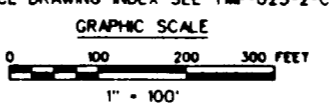
**PROFILE**  
SCALE 1" = 100' HORIZ 1" = 10' VERT.

**PLAN**  
SCALE 1" = 100'

**SI APERTURE CARD**

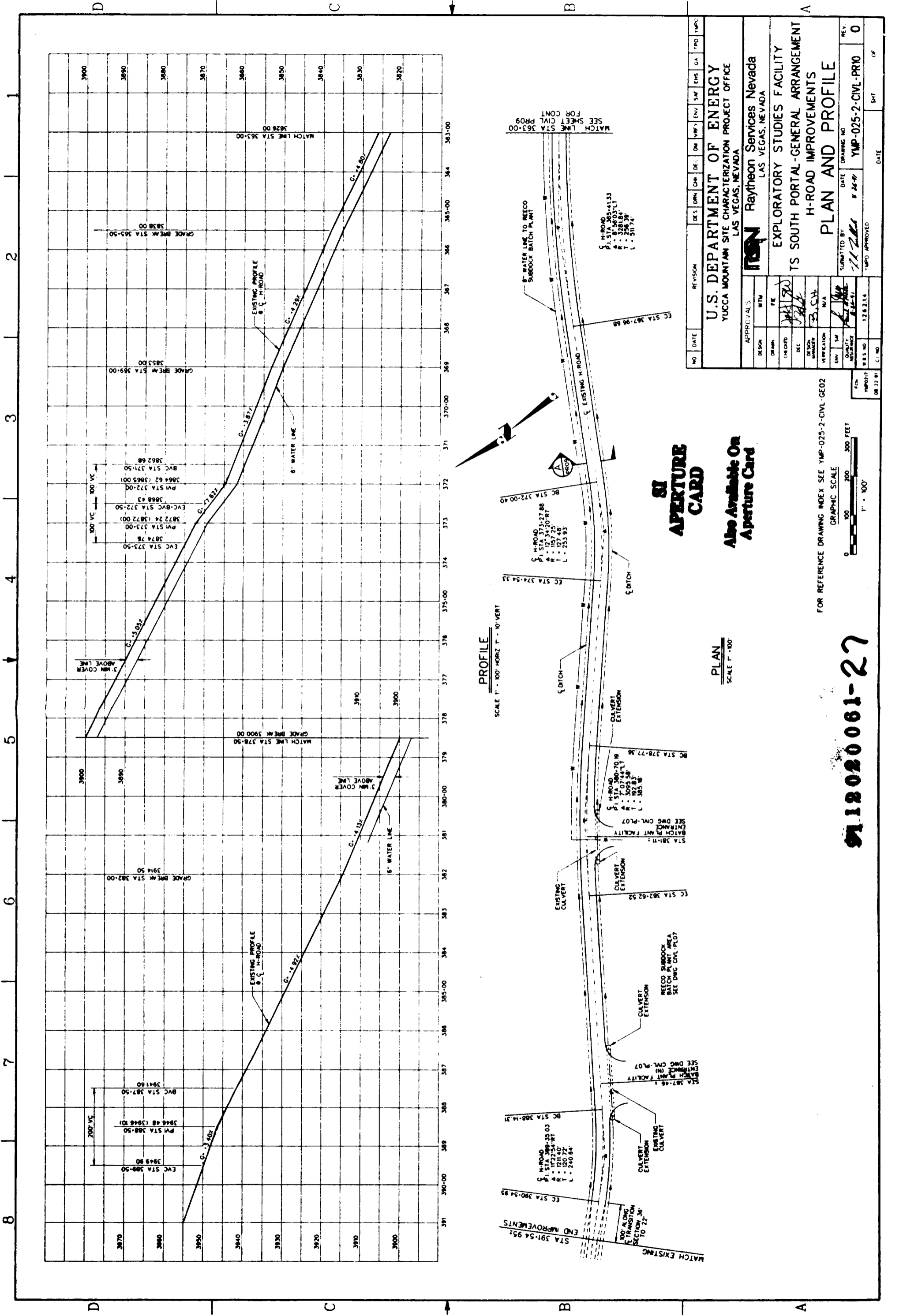
Also Available On Aperture Card

FOR REFERENCE DRAWING INDEX SEE YMP-025-2-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	EHS	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>APPROVALS</b>														
DESIGN	WTM													
DRAWN	FIE													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	S.C.H.													
VERIFICATION	N/A													
ENV	SAF													
QUALITY ASSURANCE	<i>[Signature]</i>													
YMPD NO	1.2.6.2.1.4													
C.I. NO														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> TS SOUTH PORTAL-GENERAL ARRANGEMENT H-ROAD IMPROVEMENTS <b>PLAN AND PROFILE</b>														
SUBMITTED BY		DATE		DRAWING NO.		REV								
<i>[Signature]</i>		8-26-91		YMP-025-2-CIVL-PRO9		0								
YMPD APPROVED														
DATE														
SHT OF														

9112020061-26



B 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

NO	DATE	REVISION	DES	CHK	APP	ENV	SAF	QA	TPC

APPROVALS		Raytheon Services Nevada LAS VEGAS, NEVADA	
DESIGN	BTM		
DRAWN	FE		
CHECKED			
DESIGN			
VERIFICATION			
ENV SAF			
QUALITY			
ASSURANCE			
B.S. NO.	12.8.21.14	DATE	12.8.21.14
C.I. NO.		SHT	

U.S. DEPARTMENT OF ENERGY YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA	EXPLORARY STUDIES FACILITY TS SOUTH PORTAL-GENERAL ARRANGEMENT H-ROAD IMPROVEMENTS PLAN AND PROFILE
DATE: 8/26/97	DRAWING NO: YMP-025-2-CIVL-PRV0
REV: 0	

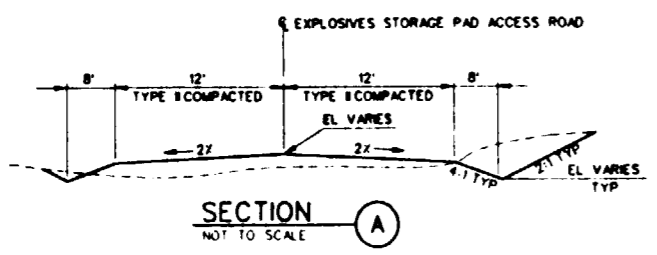
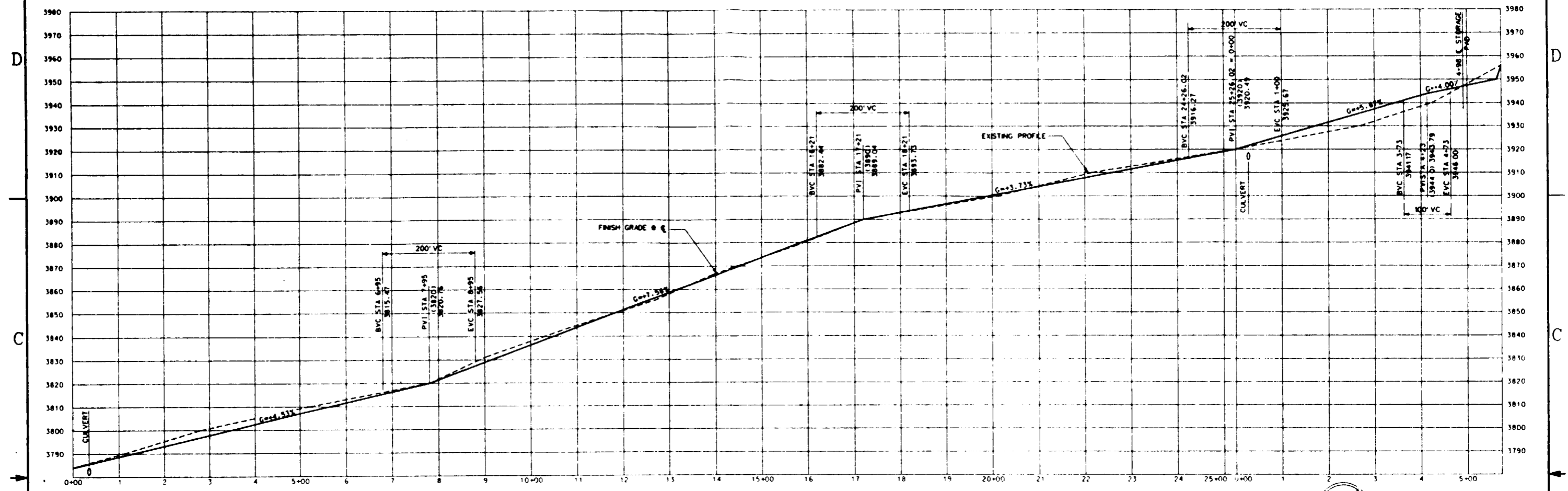
**SI**  
**APERTURE**  
**CARD**

Also Available On  
Aperture Card

FOR REFERENCE DRAWING INDEX SEE YMP-025-2-CIVL-GE02

GRAPHIC SCALE  
0 100 200 300 FEET  
1" = 100'

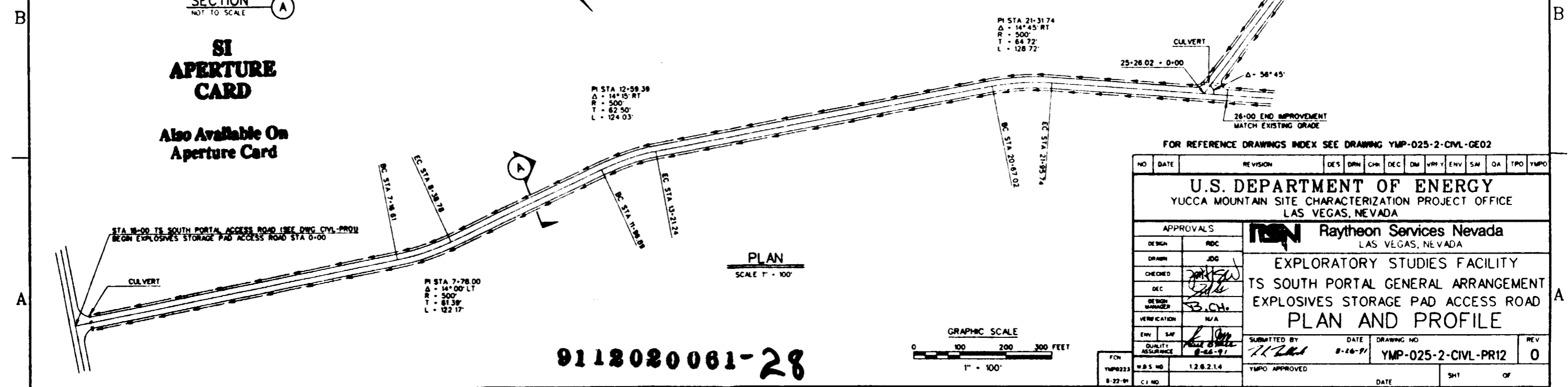
**9118020061-27**



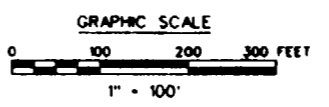
**PROFILE**  
SCALE 1" = 100' HORIZ 1" = 20' VERT

**SI APERTURE CARD**

Also Available On Aperture Card



**PLAN**  
SCALE 1" = 100'



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	ENV	SAF	QA	TPO	YMP0

**U.S. DEPARTMENT OF ENERGY**  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
LAS VEGAS, NEVADA

**Raytheon Services Nevada**  
LAS VEGAS, NEVADA

**EXPLORATORY STUDIES FACILITY**  
TS SOUTH PORTAL GENERAL ARRANGEMENT  
EXPLOSIVES STORAGE PAD ACCESS ROAD  
**PLAN AND PROFILE**

DESIGN	RDC
DRAWN	JOG
CHECKED	[Signature]
DEC	[Signature]
DESIGN MANAGER	B.C.H.
VERIFICATION	N/A
ENV	SAF
QUALITY ASSURANCE	[Signature]

SUBMITTED BY	DATE	DRAWING NO	REV
[Signature]	8-16-91	YMP-025-2-CIVL-PR12	0
YMP0 APPROVED	DATE	SHT	OF
[Signature]			

9112020061-28

8 7 6 5 4 3 2 1

LEGEND

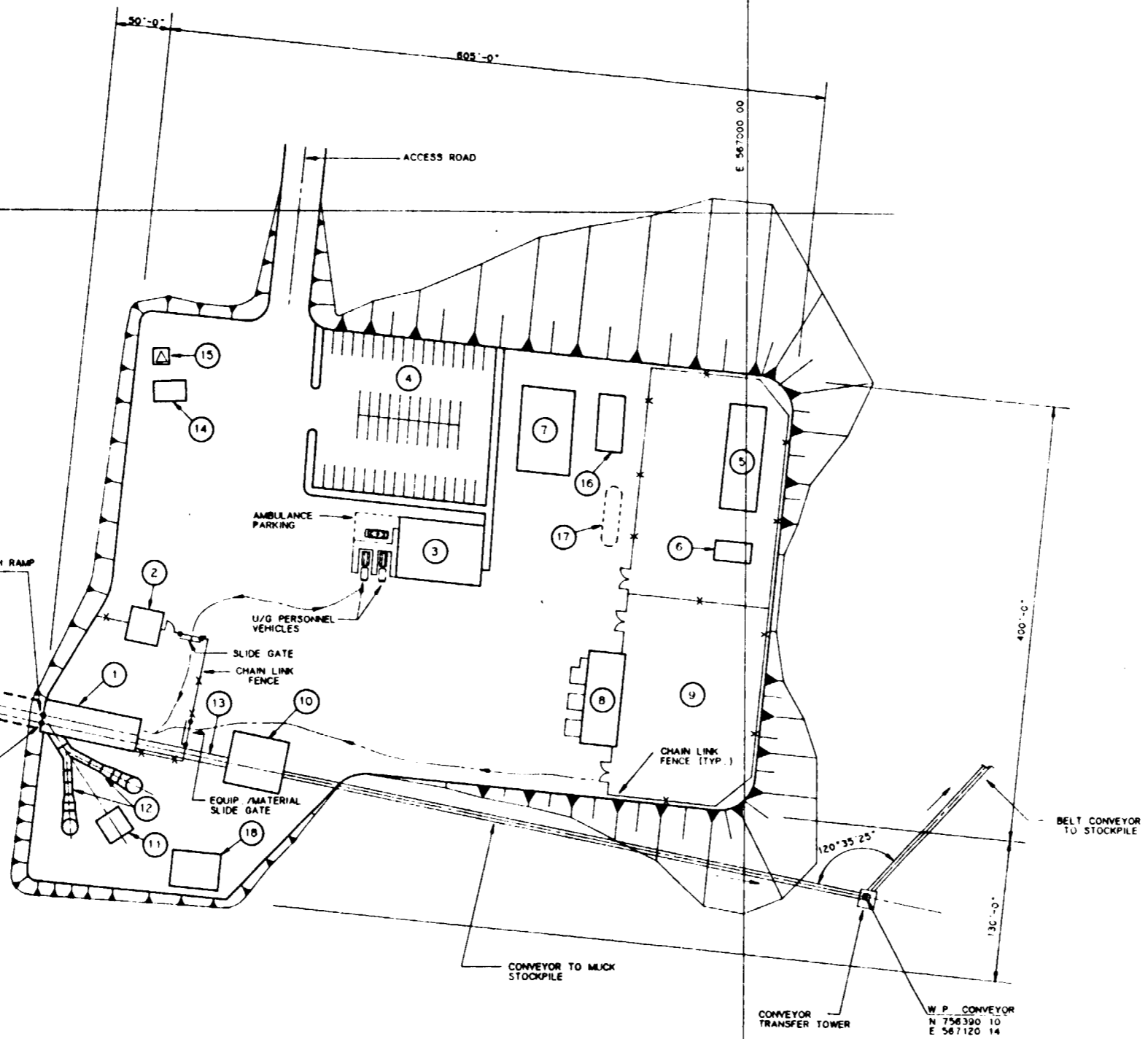
- ① SOUTH PORTAL AIRLOCK BLDG.
- ② PORTAL CONTROL CENTER BLDG.
- ③ CHANGE HOUSE BLDG.
- ④ EMPL. PARKING AREA (50 CARS)
- ⑤ TRANSFORMER PAD
- ⑥ ELECTRICAL SUBSTATION CONTROL BLDG.
- ⑦ ELECTRICAL SWITCHGEAR BLDG.
- ⑧ SHOP / WAREHOUSE BLDG.
- ⑨ OPEN STORAGE AREA
- ⑩ CONVEYOR DRIVE AND TRANSFER BLDG.
- ⑪ VENT FANS HYDRAULIC CONTROL BLDG.
- ⑫ VENTILATION FANS
- ⑬ BELT CONVEYOR STEEL TUBE GALLERY
- ⑭ MICROWAVE COMMUNICATION BLDG.
- ⑮ MICROWAVE COMMUNICATION TOWER
- ⑯ GENERATOR PAD
- ⑰ UNDERGROUND FUEL STORAGE TANK
- ⑱ AIR COMPRESSOR PAD

**SI  
APERTURE  
CARD**

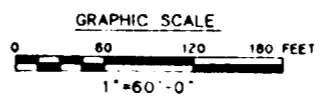
Also Available On  
Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

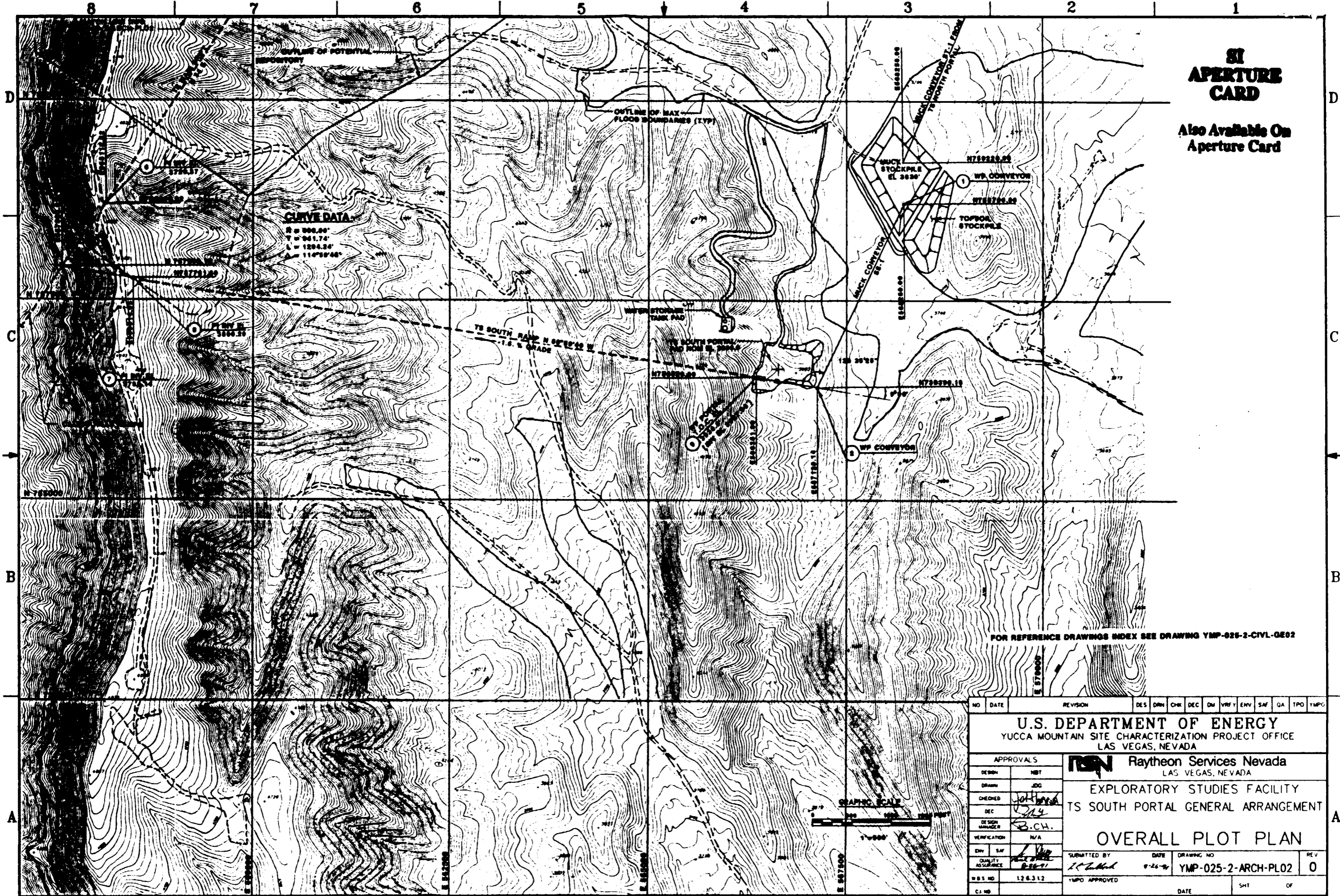
NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE													
LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	PZ		<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>SURFACE</b> <b>PLOT PLAN</b>										
DRAWN	TAN / RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE		DRAWING NO				REV				
<i>[Signature]</i>			8-22-91		YMP-025-2-ARCH-PL01				0				
YMP0115			W.B.S. NO		1,2,3,1,2				YMP0 APPROVED				
8-22-91			S.I. NO		DATE				SHT OF				



**PLOT PLAN**  
SCALE: 1" = 60'-0"



**9112020061-29**



**SI  
APERTURE  
CARD**

Also Available On  
Aperture Card

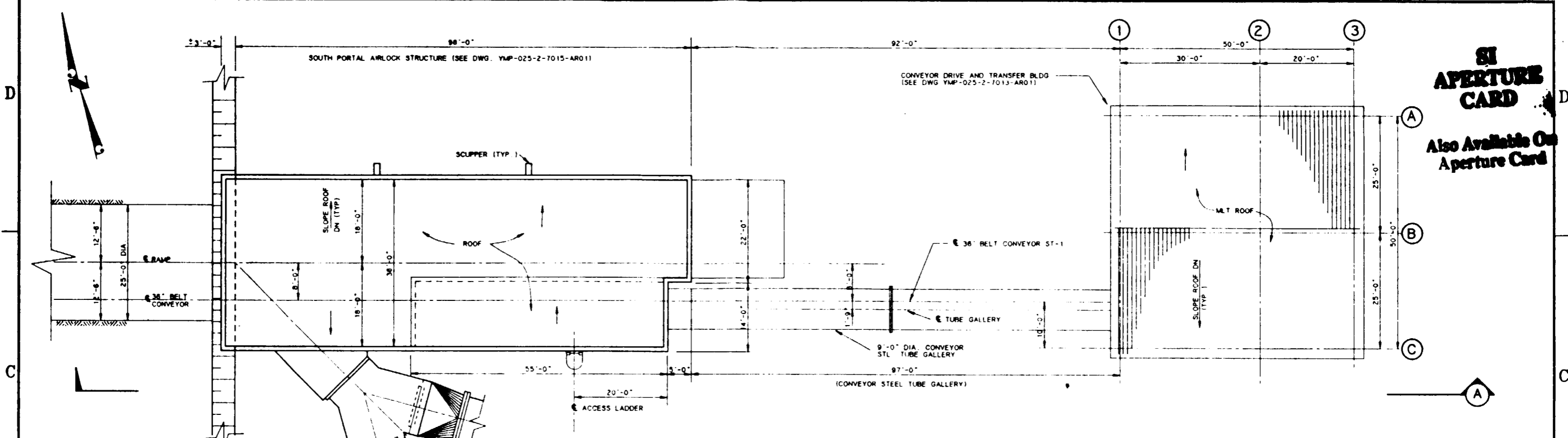
**CURVE DATA**

R = 806.00'  
T = 941.74'  
L = 1204.24'  
A = 114°59'48"

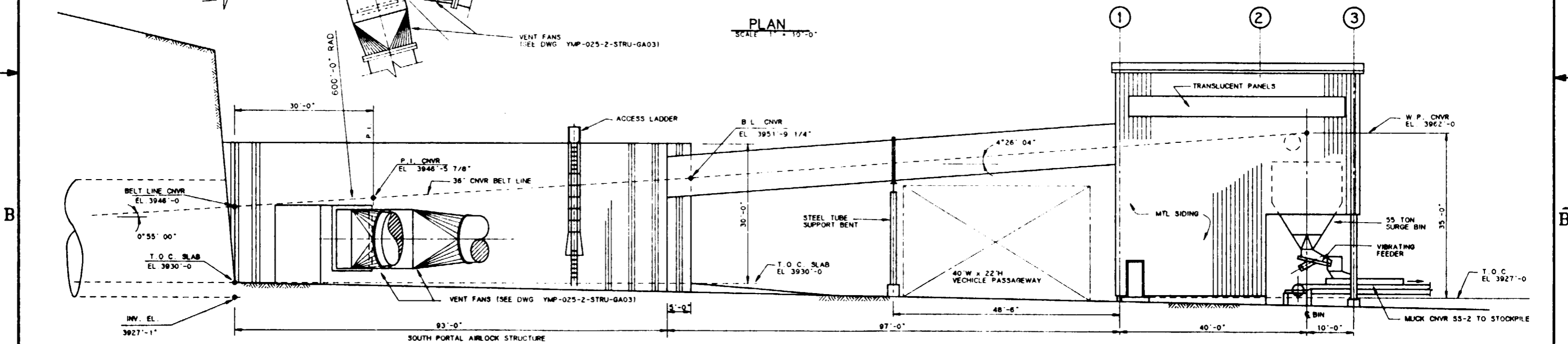
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPG	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA												
DESIGN	NBT													
DRAWN	JDC													
CHECKED	J.H. [Signature]													
DEC	S.L. [Signature]													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV	SAF [Signature]													
QUALITY ASSURANCE	B.C.H. [Signature]													
WBS NO	1.2.6.3.1.2													
CI NO														
SUBMITTED BY												DATE	DRAWING NO	REV
[Signature]												9-26-94	YMP-025-2-ARCH-PL02	0
YMPG APPROVED												DATE	SHT	OF

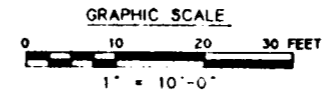
8 7 6 5 4 3 2 1



PLAN  
SCALE 1" = 10'-0"

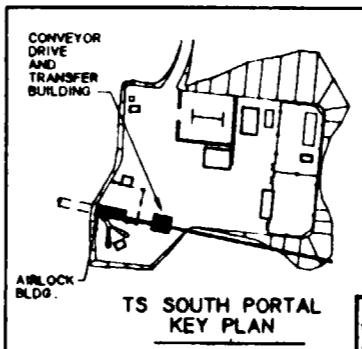


ELEVATION (A) (LOOKING NORTH)  
SCALE 1" = 10'-0"



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

9112020061-31



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAP	QA	TPO	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Haytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>PORTAL-CONVEYOR</b> <b>PLAN AND ELEVATION</b>													
APPROVALS													
DESIGN	NBT												
DRAWN	TAM												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV. SAP	<i>[Signature]</i>												
QUALITY ASSURANCE	8-26-91												
W.B.S. NO.	1,2,3,1,2												
S.I. NO.													
SUBMITTED BY			DATE	DRAWING NO.		REV.							
<i>[Signature]</i>			8-26-91	YMP-025-2-STRU-GA01		0							
YMP/O APPROVED			DATE		SHT OF								

**SI APERTURE CARD**  
Also Available On Aperture Card



8

7

6

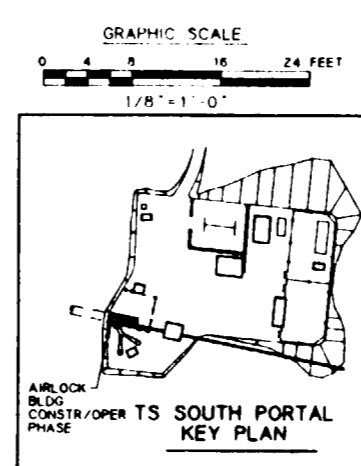
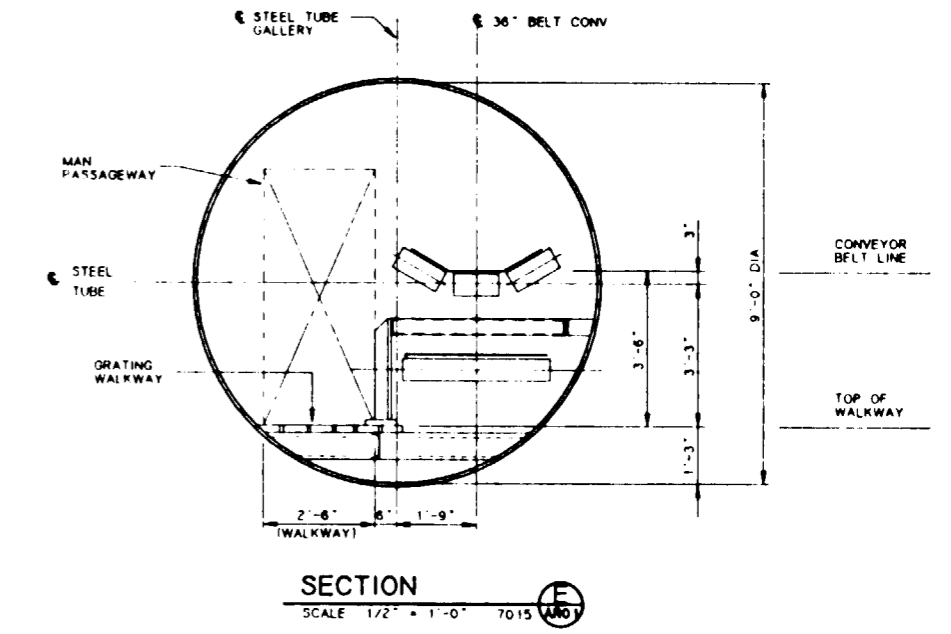
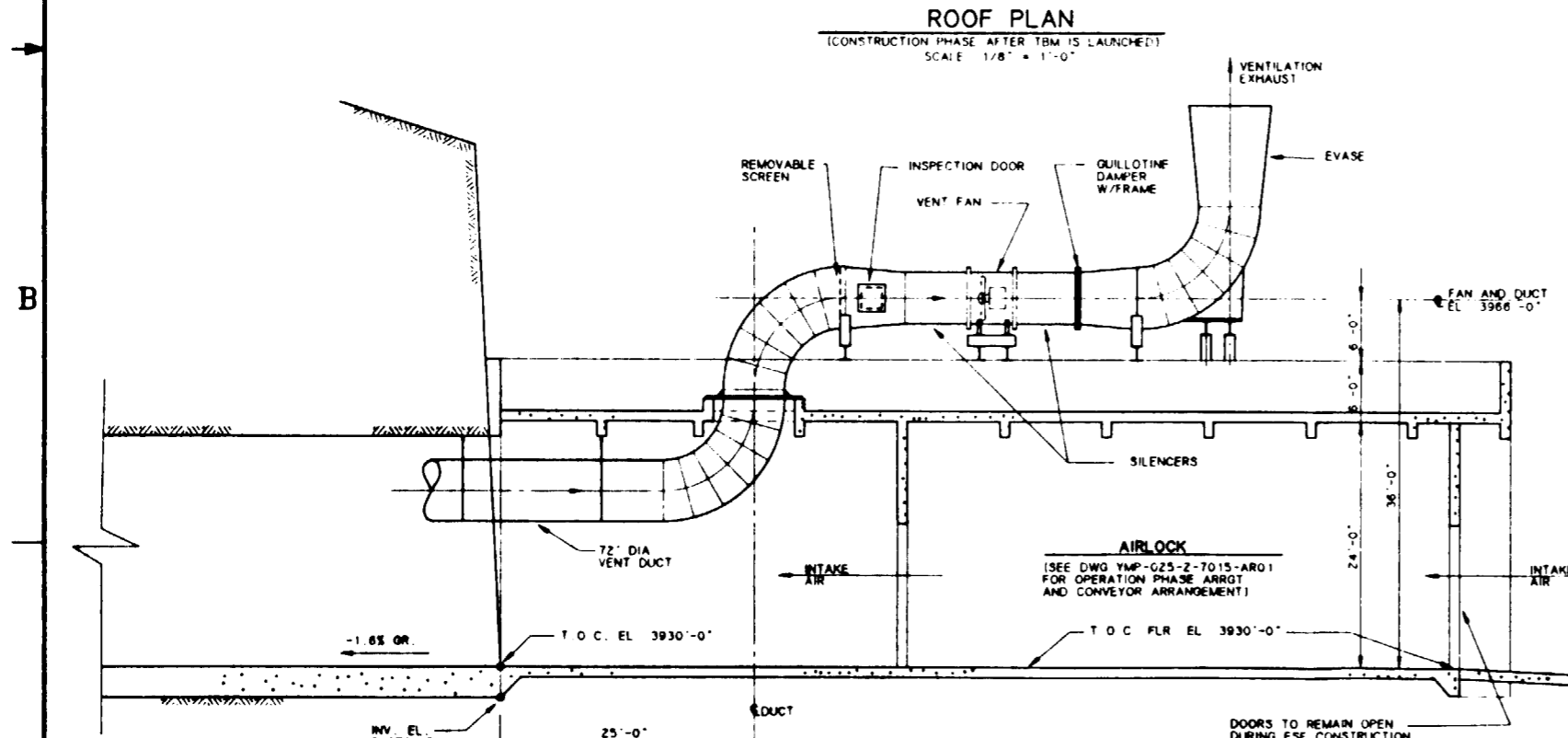
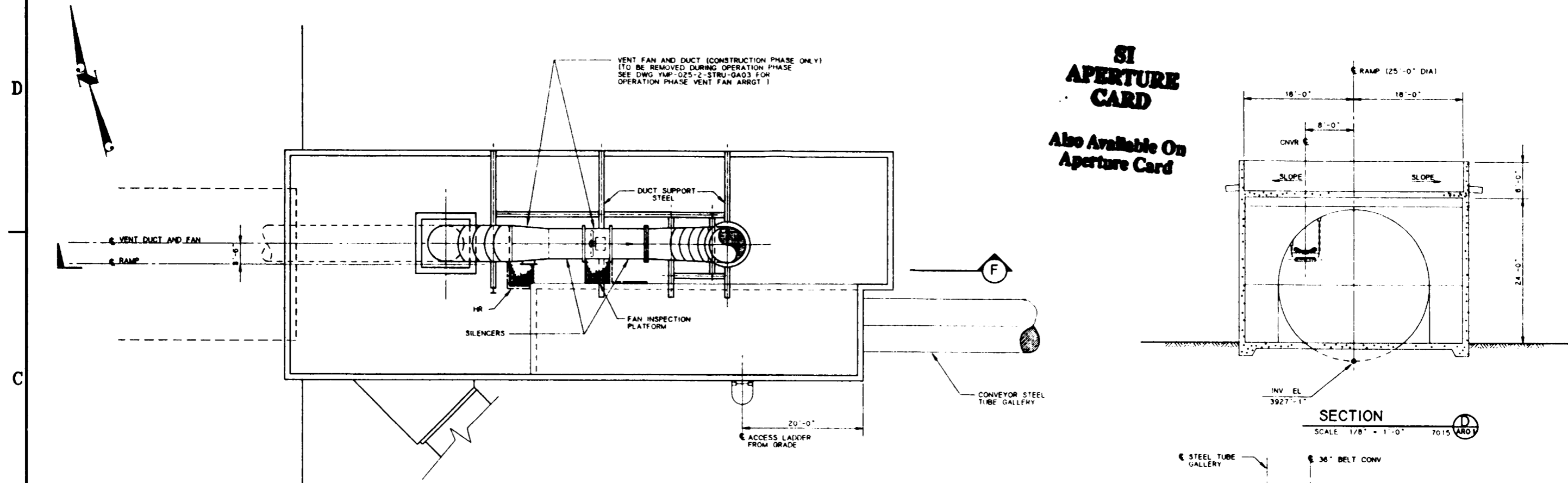
5

4

3

2

1



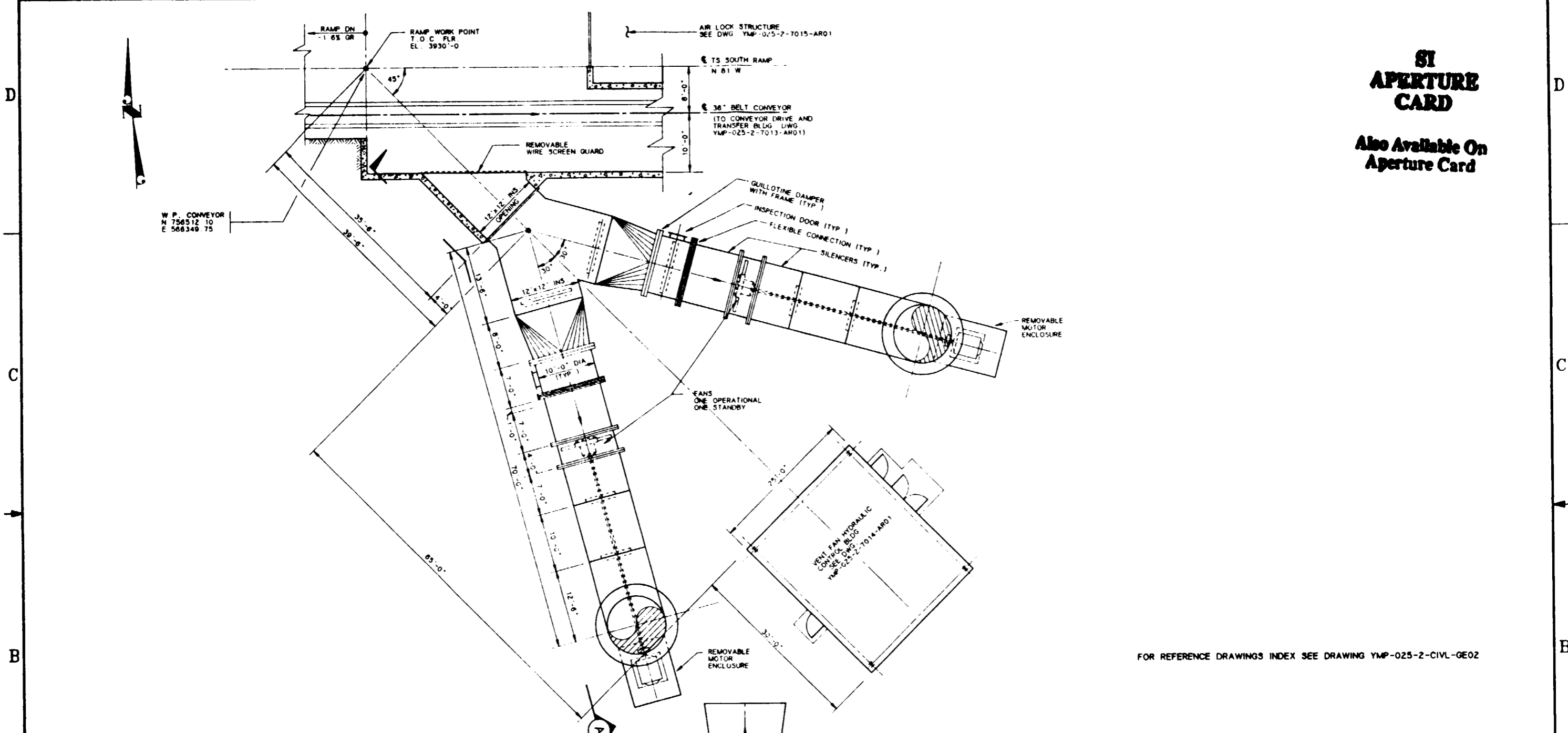
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>PORTAL CONSTR/OPER. PHASE</b> <b>PLAN AND SECTIONS</b>														
APPROVALS														
DESIGN	NET													
DRAWN	TAN													
CHECKED	[Signature]													
DEC	[Signature]													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV SAF	[Signature]													
QUALITY ASSURANCE	[Signature]													
W.B.S. NO.	126311													
C.I. NO.														
SUBMITTED BY		DATE		DRAWING NO		REV.								
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YMP0 APPROVED												DATE	SHT	OF

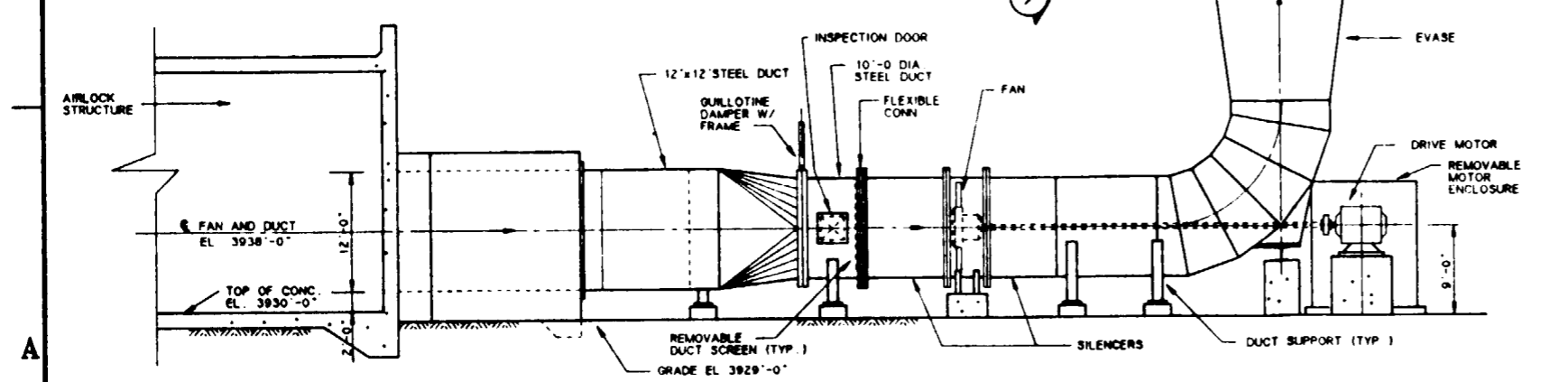
9112020061-32

8 7 6 5 4 3 2 1

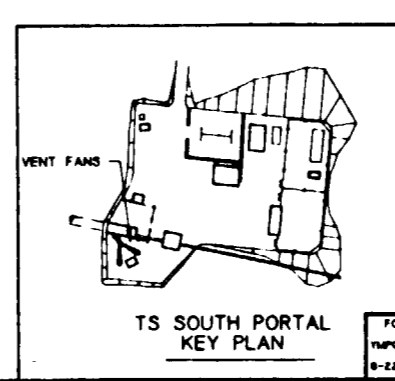
**SI APERTURE CARD**  
 Also Available On Aperture Card



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



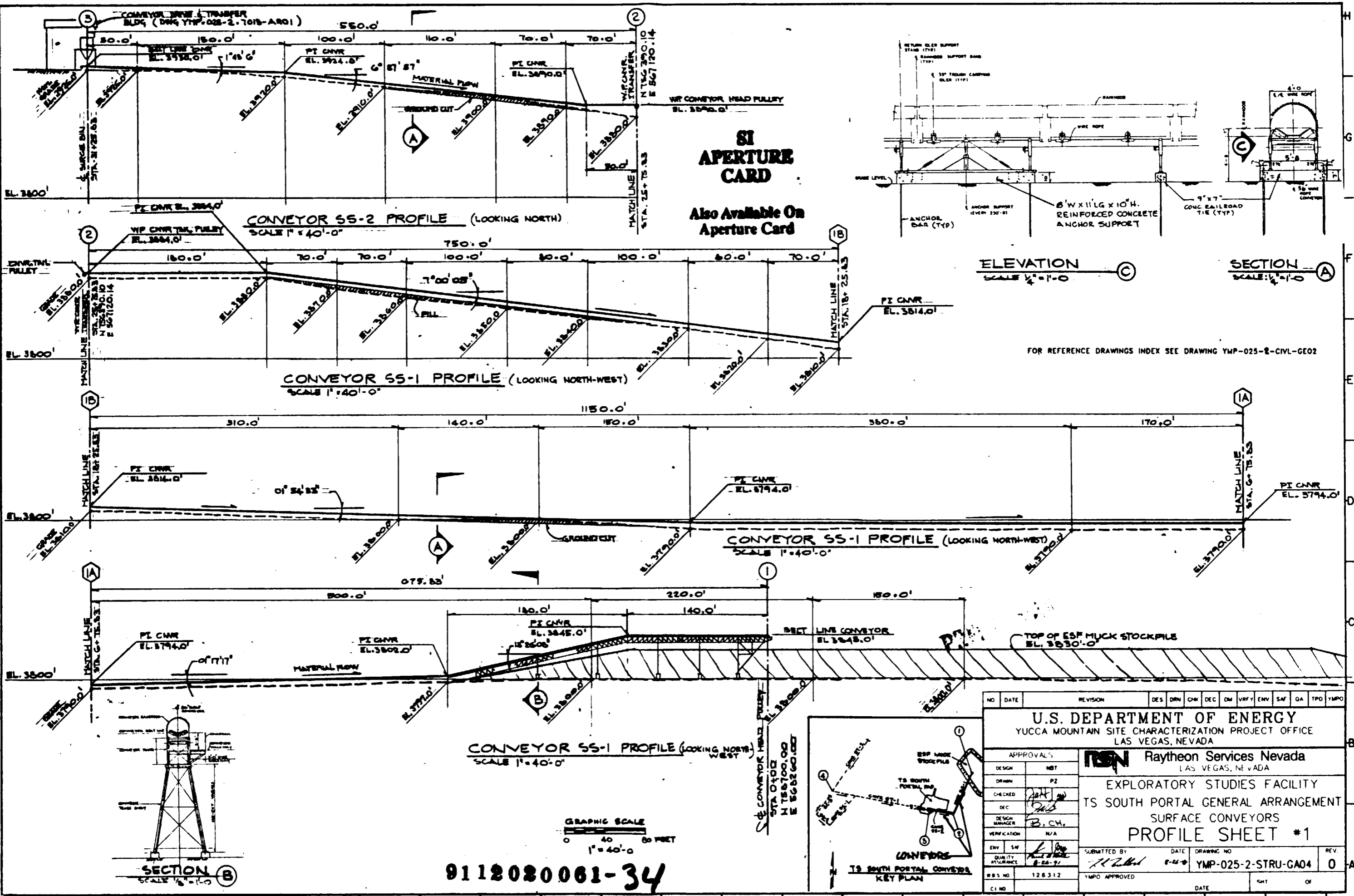
**SECTION A**  
 SCALE: 1/8"=1'-0"



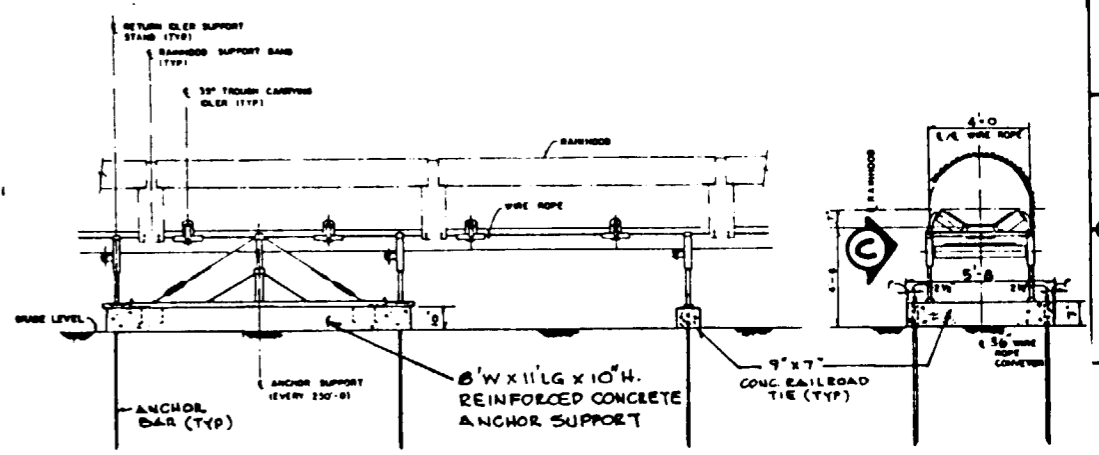
**9112080061-33**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD
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<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>VENTILATION FANS</b> <b>PLAN AND SECTION</b>													
APPROVALS													
DESIGN	NBT												
DRAWN	TAN												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
<i>[Signature]</i>		8-16-91	YMP-025-2-STRU-GA03		0								
YMPD APPROVED		DATE	SHT		OF								
<i>[Signature]</i>													

25



**SI APERTURE CARD**  
Also Available On Aperture Card



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVIL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	CM	VRFY	ENV	SAF	QA	TPD	YMPD	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>SURFACE CONVEYORS</b> <b>PROFILE SHEET #1</b>														
APPROVALS														
DESIGN	HBT													
DRAWN	PZ													
CHECKED	[Signature]													
DEC	[Signature]													
DESIGN MANAGER	B. CH.													
VERIFICATION	N/A													
ENV SAF	[Signature]													
QUALITY ASSURANCE	[Signature]													
# B S NO	126312	SUBMITTED BY		[Signature]	DATE	8-28-91	DRAWING NO		YMP-025-2-STRU-GA04				REV.	0
CI NO		YMPD APPROVED		[Signature]	DATE		CHT	OF						

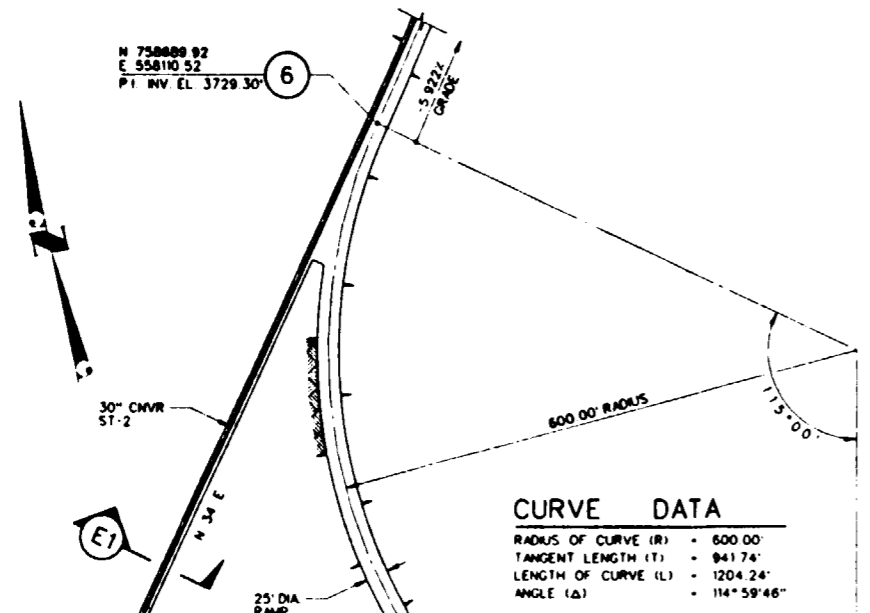
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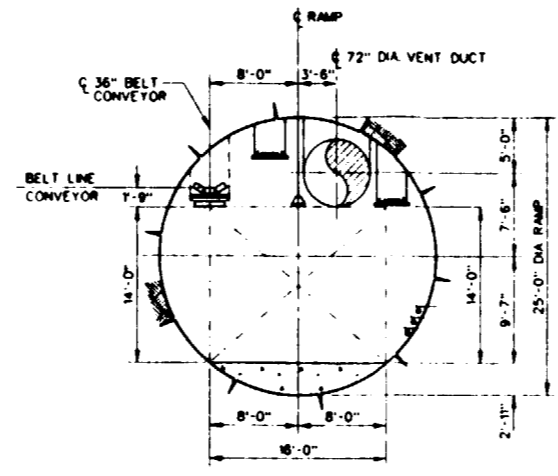
**SI APERTURE CARD**

Also Available On Aperture Card

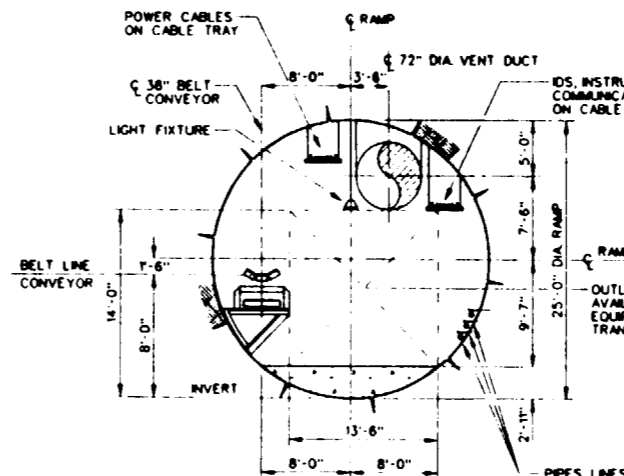
N 750000 82  
E 55810 52  
P.I. INV. EL. 3729.30'



**CURVE DATA**  
 RADIUS OF CURVE (R) = 600.00'  
 TANGENT LENGTH (T) = 941.74'  
 LENGTH OF CURVE (L) = 1204.24'  
 ANGLE (Δ) = 114°59'46"



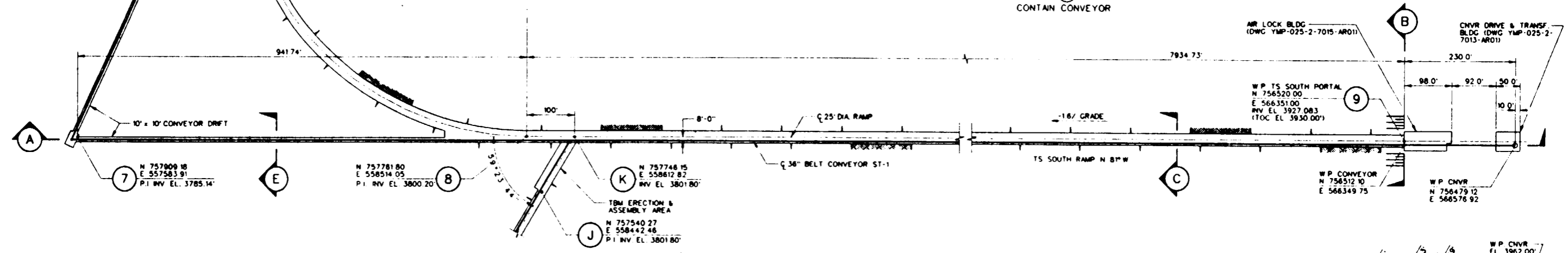
**SECTION B**  
SCALE 1/8" = 1'-0"



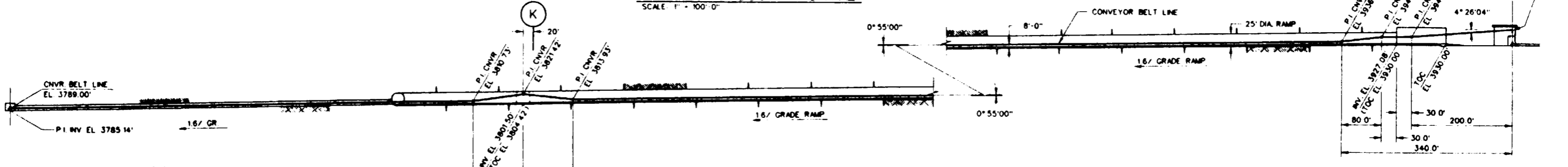
**SECTION C D**  
SCALE 1/8" = 1'-0"

NOTE: SECTION (B) & (C) REPRESENT A RAMP CROSS-SECTION DURING OPERATION PHASE. THESE SECTIONS DO NOT APPLY TO AREA 250 FT. BEHIND TBM TRAILING GEAR, WHERE GEOLOGIC MAPPING IS REQUIRED.

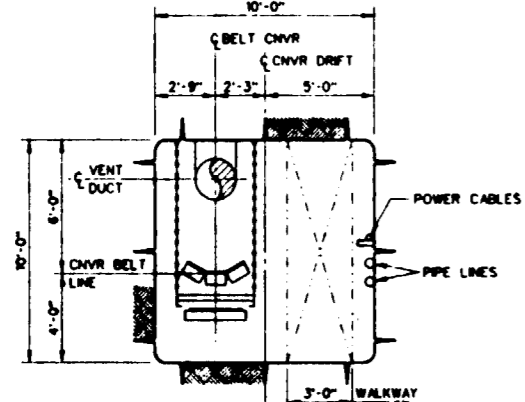
NOTE: SECTION (D) DOES NOT CONTAIN CONVEYOR



**PLAN - TS SOUTH PORTAL**  
SCALE 1" = 100'-0"

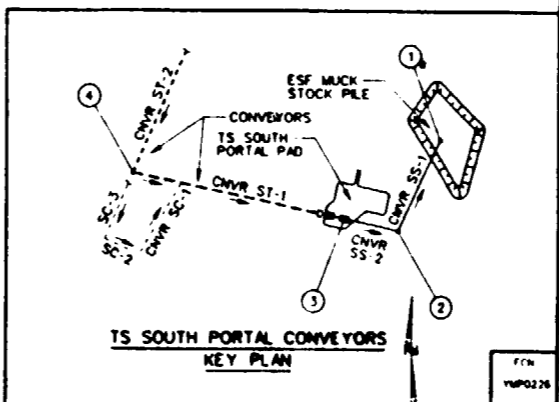
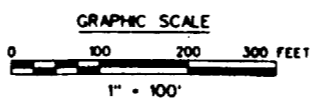


**SECTION A**  
SCALE 1" = 100'-0"



**SECTION E E1**  
SCALE 1/4" = 1'-0"  
NOTE: SECTION (E1) DOES NOT CONTAIN CONVEYOR

**9112020061-35**

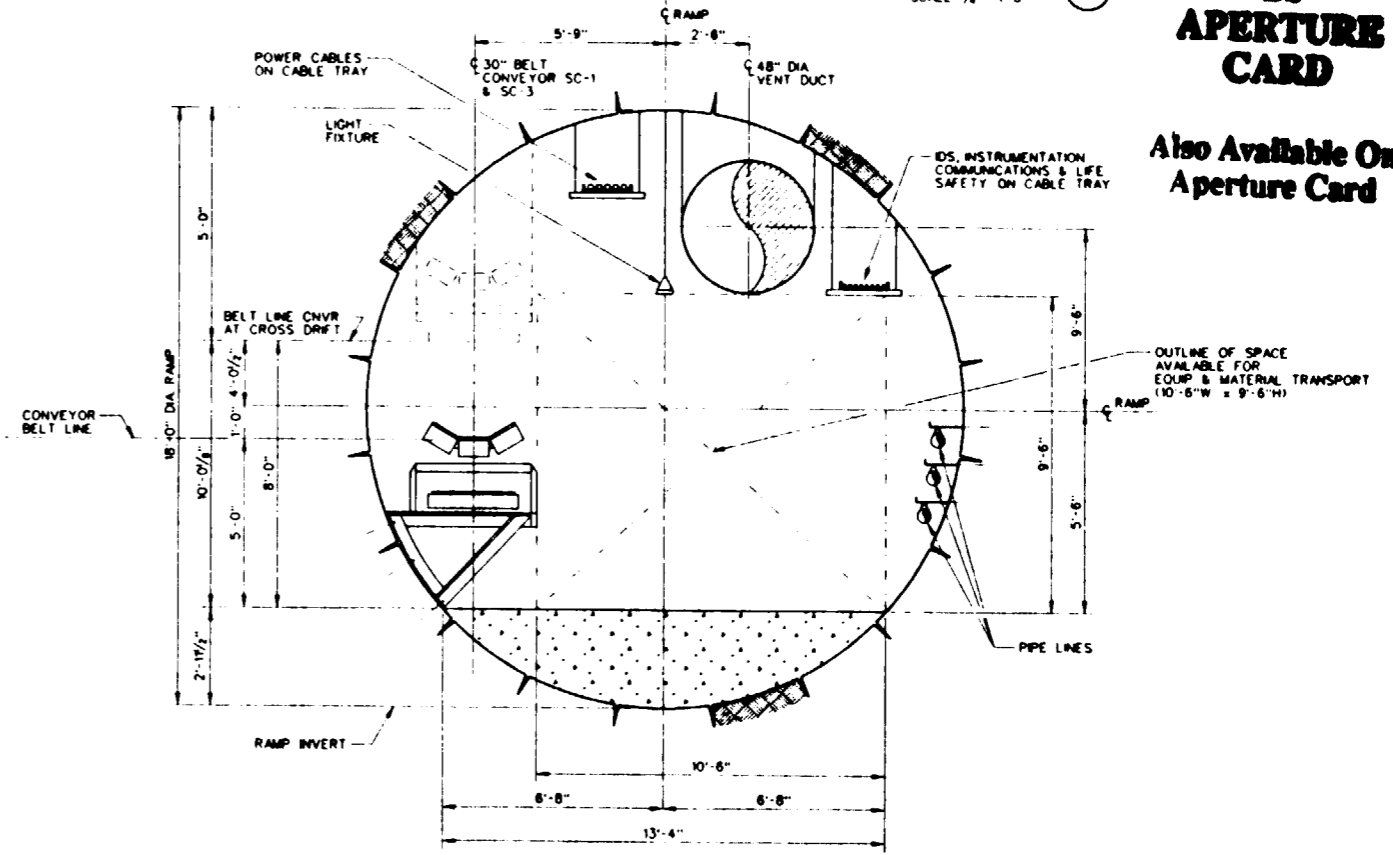
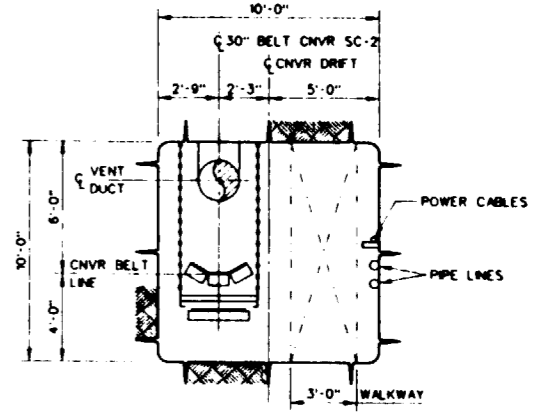
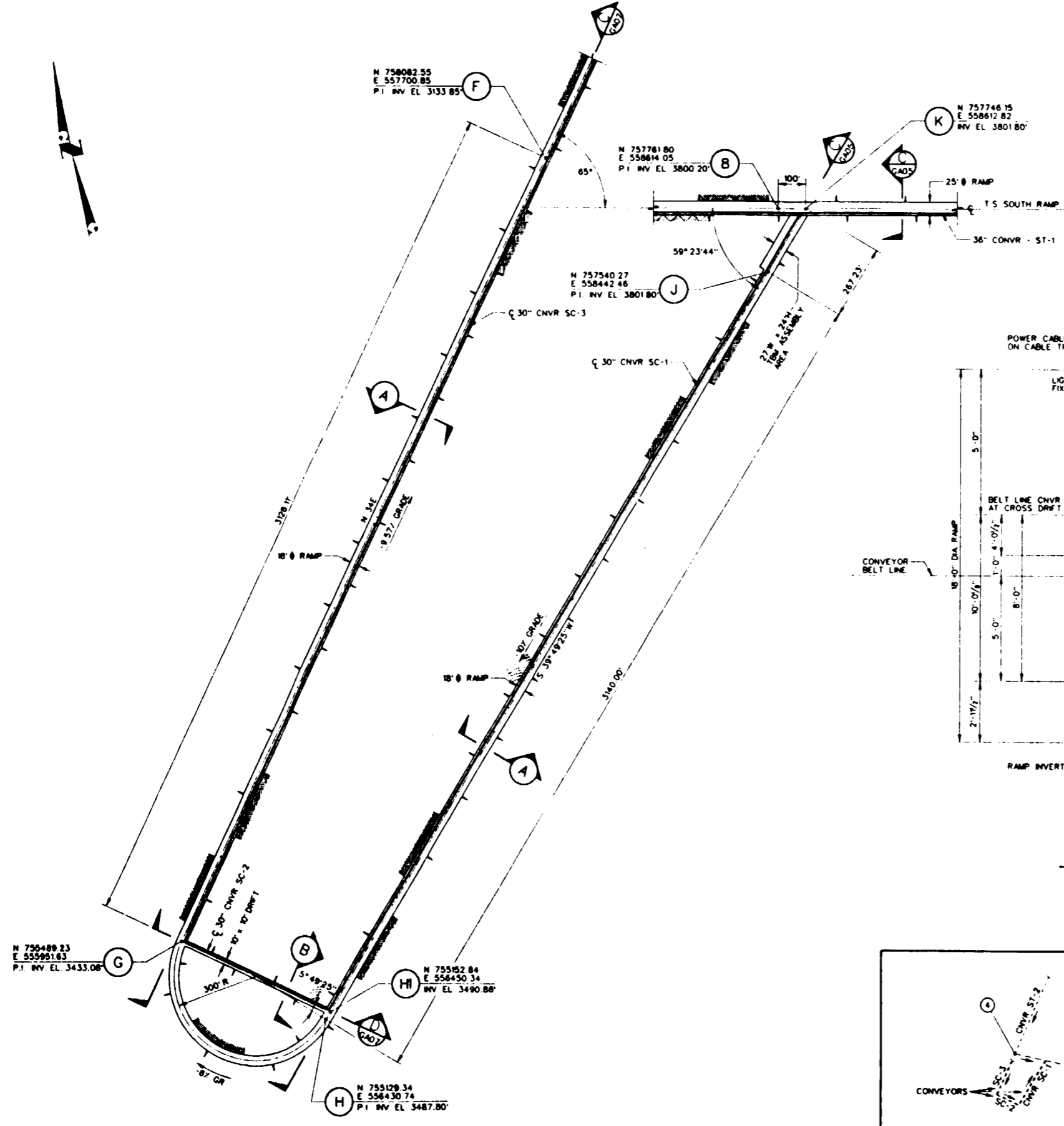


FOR REFERENCE DRAWING INDEX SEE YMP-025-2-CIVL-GE02

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	EMS	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVAL'S			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	HBT		<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>UNDERGROUND CONVEYORS</b> <b>PROFILE SHEET * 2</b>											
DRAWN	FE													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	S.C.H.													
VERIFICATION	N/A													
ENV	SAF	SUBMITTED BY: <i>[Signature]</i> DATE: 8-25-91 DRAWING NO: YMP-025-2-STRU-GA05 REV: 0												
QUALITY ASSURANCE	YMP-025-2-STRU-GA05													
YMP-025-2-STRU-GA05														
DATE: _____ SHT: _____ OF: _____														

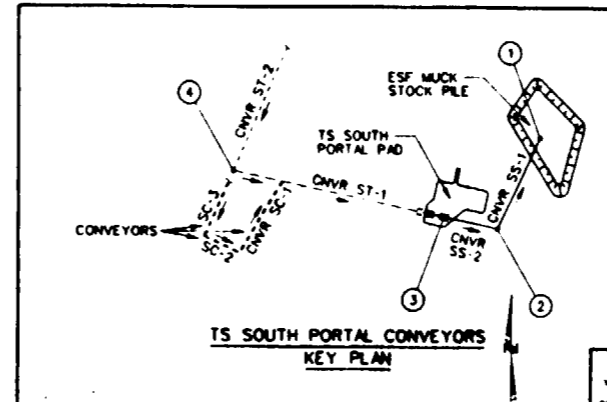
8 7 6 5 4 3 2 1

D  
C  
B  
A

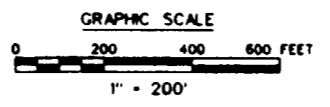


**SI APERTURE CARD**  
Also Available On Aperture Card

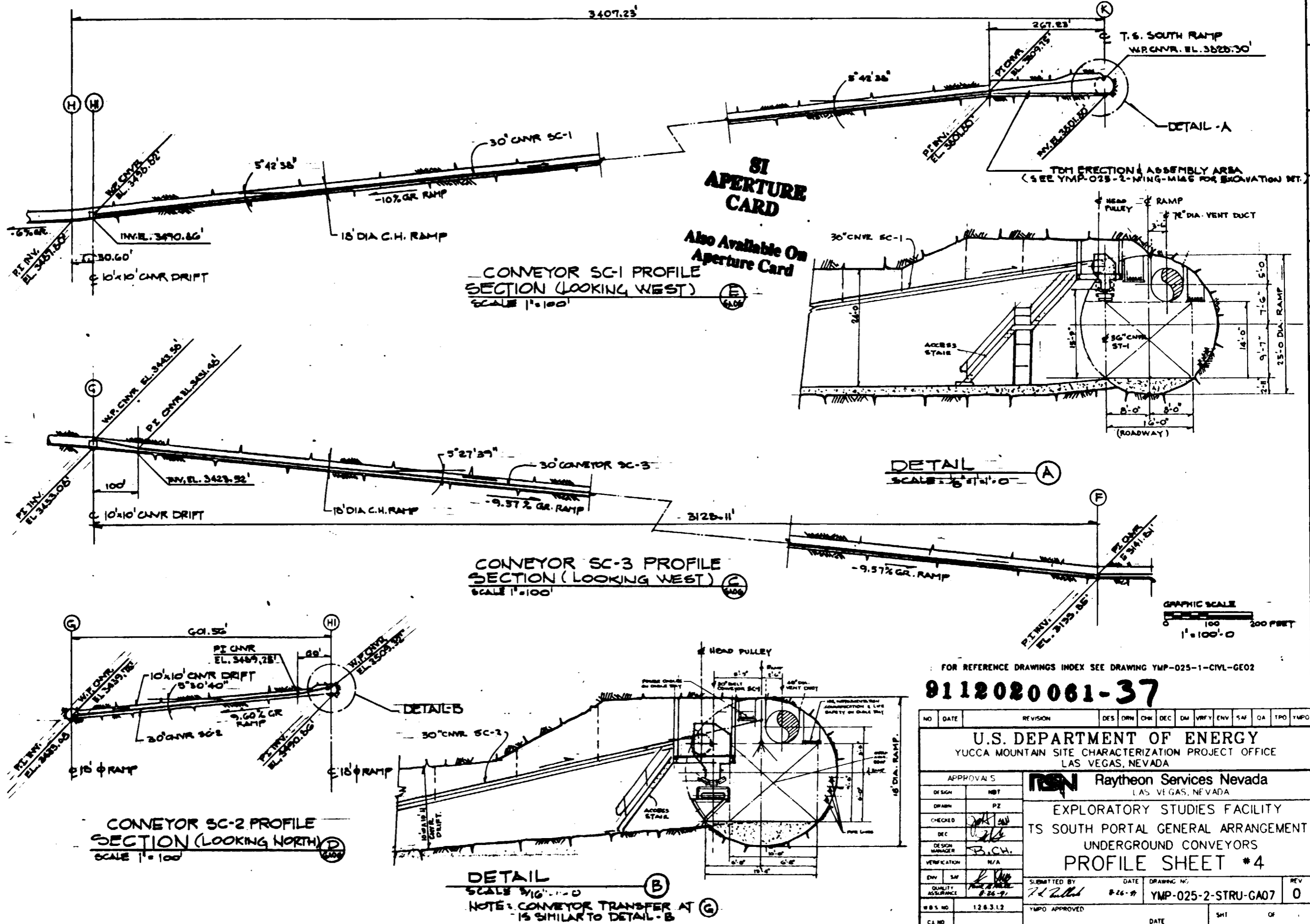
FOR REFERENCE DRAWING INDEX SEE YMP-025-2-CIVL-GE02



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFT	ENV	SAF	EHS	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> TS SOUTH PORTAL GENERAL ARRANGEMENT UNDERGROUND CONVEYORS <b>PROFILE SHEET # 3</b>														
APPROVALS														
DESIGN	NBT													
DRAWN	FE													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	<i>[Signature]</i>													
VERIFICATION	N/A													
ENV	SAF													
QUALITY ASSURANCE	<i>[Signature]</i>													
SUBMITTED BY		DATE	DRAWING NO.		REV									
<i>[Signature]</i>		8-26-91	YMP-025-2-STRU-GA06		0									
YMPD APPROVED		DATE	SHT		OF									
<i>[Signature]</i>														



0112020061-36



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

**9112020061-37**

NO.	DATE	REVISION	DES	DRW	CHK	DEC	DM	VERFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN</b> Raytheon Services Nevada LAS VEGAS, NEVADA EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT UNDERGROUND CONVEYORS <b>PROFILE SHEET # 4</b>										
DESIGN	HBT		SUBMITTED BY: <i>R. J. ...</i> DATE: 8-26-99 DRAWING NO: YMP-025-2-STRU-GA07 REV: 0										
DRAWN	PZ		YUCCA MOUNTAIN PROJECT										
CHECKED	<i>[Signature]</i>		YMP0 APPROVED										
DEC	<i>[Signature]</i>		DATE										
DESIGN MANAGER	B.C.W.		SHI OF										
VERIFICATION	N/A		CA NO.										
ENV. SAF.	<i>[Signature]</i>												
QUALITY ASSURANCE	8-26-99												
WBS NO.	126.3.1.2												
CA NO.													

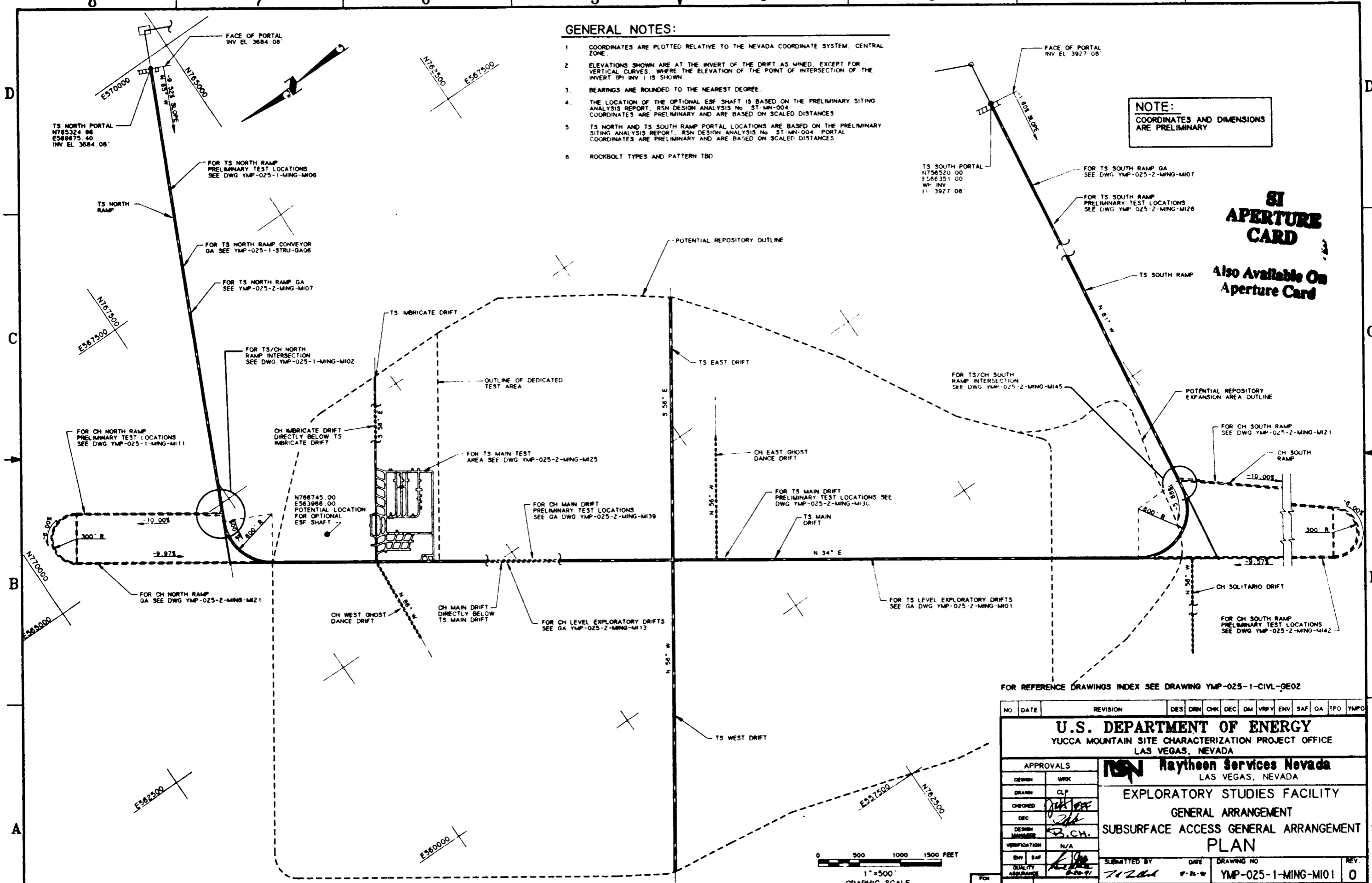
8 7 6 5 4 3 2 1

**GENERAL NOTES:**

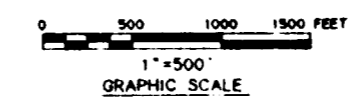
1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN.
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
4. THE LOCATION OF THE OPTIONAL ESF SHAFT IS BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RSN DESIGN ANALYSIS NO. ST-MN-004. COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES.
5. TS NORTH AND TS SOUTH RAMP PORTAL LOCATIONS ARE BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RSN DESIGN ANALYSIS NO. ST-MN-004. PORTAL COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES.
6. ROCKBOLT TYPES AND PATTERN TBD

**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

**SI APERTURE CARD**  
Also Available On Aperture Card



**SUBSURFACE ACCESS GENERAL ARRANGEMENT PLAN**  
SCALE: 1"=500'



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

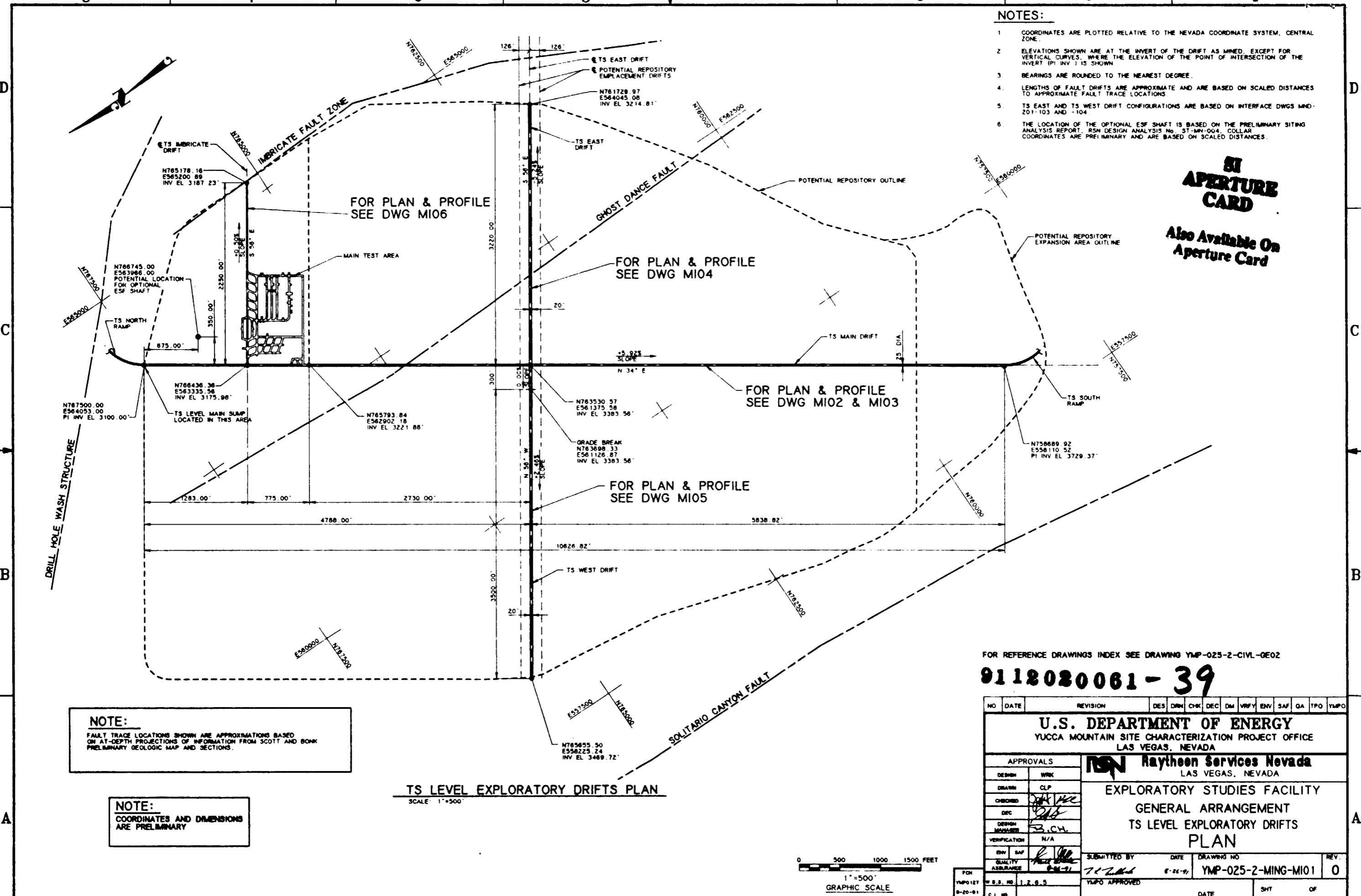
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		EXPLORATORY STUDIES FACILITY										
DRAWN	CLP		GENERAL ARRANGEMENT										
CHECKED	<i>[Signature]</i>		SUBSURFACE ACCESS GENERAL ARRANGEMENT										
DEC	<i>[Signature]</i>		PLAN										
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO		REV.							
<i>[Signature]</i>			7-26-91	YMP-025-1-MING-M101		0							
YMP0 APPROVED			DATE	SHT		OF							
<i>[Signature]</i>													

0112020061-38

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- NOTES:**
- 1 COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
  - 2 ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN.
  - 3 BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
  - 4 LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRACE LOCATIONS.
  - 5 TS EAST AND TS WEST DRIFT CONFIGURATIONS ARE BASED ON INTERFACE DWGS MND-201-103 AND -104.
  - 6 THE LOCATION OF THE OPTIONAL ESF SHAFT IS BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RSM DESIGN ANALYSIS No. ST-MN-004, COLLAR COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES.

**SI APERTURE CARD**  
Also Available On Aperture Card



**NOTE:**  
FAULT TRACE LOCATIONS SHOWN ARE APPROXIMATIONS BASED ON AT-DEPTH PROJECTIONS OF INFORMATION FROM SCOTT AND BOMK PRELIMINARY GEOLOGIC MAP AND SECTIONS.

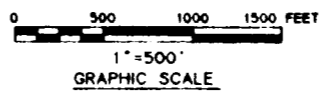
**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

**TS LEVEL EXPLORATORY DRIFTS PLAN**  
SCALE: 1"=500'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

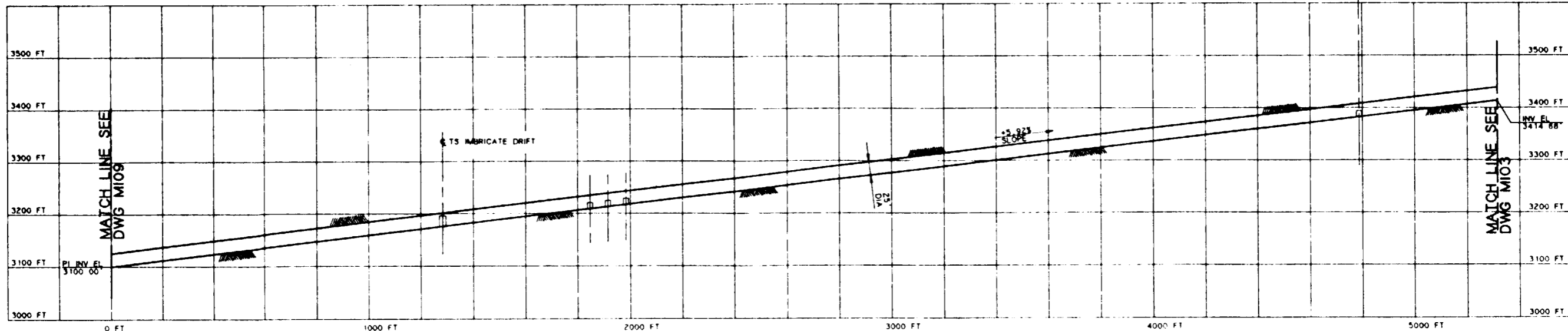
**9112020061-39**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE													
LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY													
GENERAL ARRANGEMENT													
TS LEVEL EXPLORATORY DRIFTS													
<b>PLAN</b>													
APPROVALS													
DESIGN	WRK												
DRAWN	CLP												
CHECKED													
DEC													
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF													
QUALITY ASSURANCE													
SUBMITTED BY		DATE	DRAWING NO		REV.								
YMP0 APPROVED		8-26-91	YMP-025-2-MING-MIO1		0								
DATE													
SHT OF													





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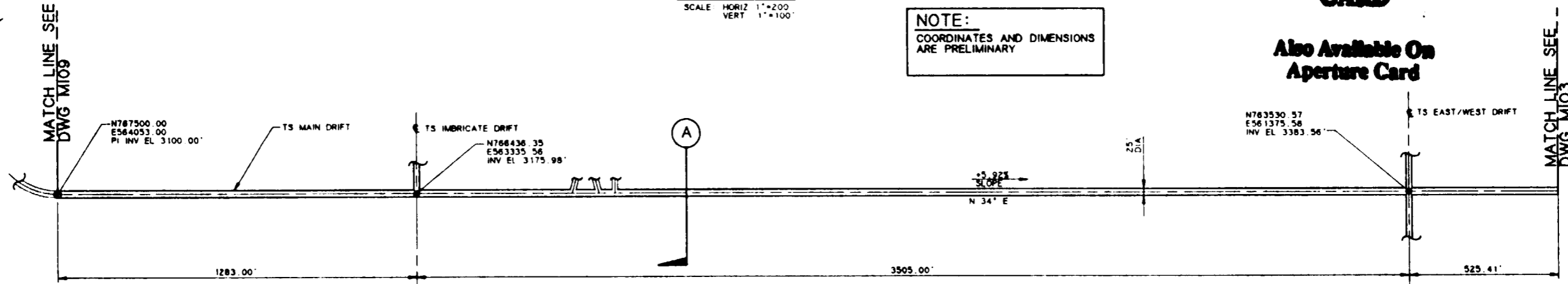


**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI  
APERTURE  
CARD**

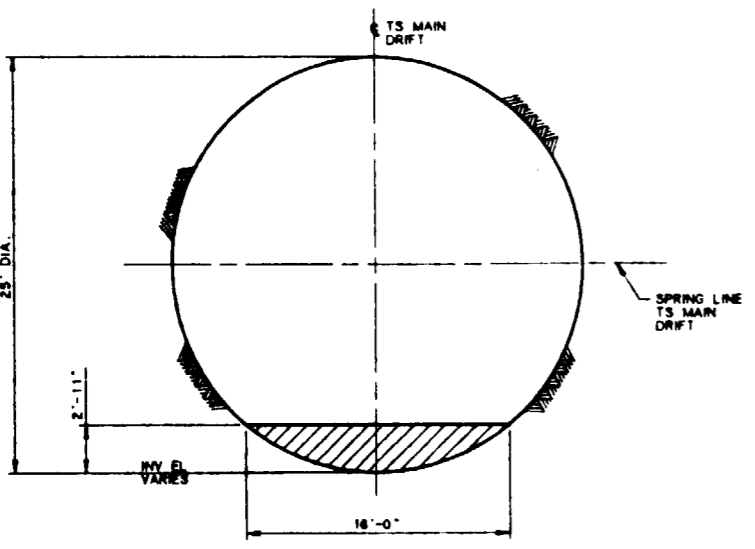
Also Available On  
Aperture Card



**PLAN**  
SCALE: 1"=200'

**9112020061-40**

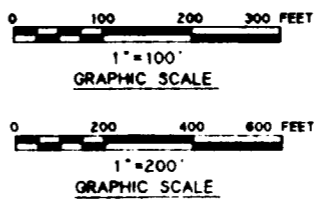
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-0E02



**SECTION**  
SCALE: 3/16"=1'-0" (A)

**NOTES:**

- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN.
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
- BY-PASSES AND TURN-AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS.



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENW	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS MAIN DRIFT <b>PLAN &amp; PROFILE, SECTION</b>													
APPROVALS													
DESIGN	MRK												
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	S.B.C.H.												
VERIFICATION	N/A												
ENW	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV.								
<i>[Signature]</i>		8-26-91	YMP-025-2-MING-MIO2		0								
YMPD APPROVED		DATE	SHT	OF									
<i>[Signature]</i>													

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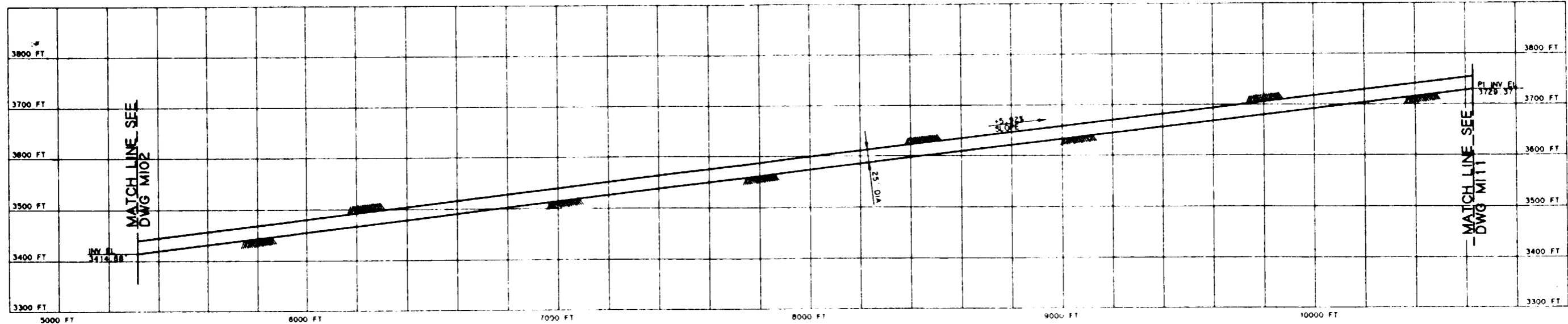
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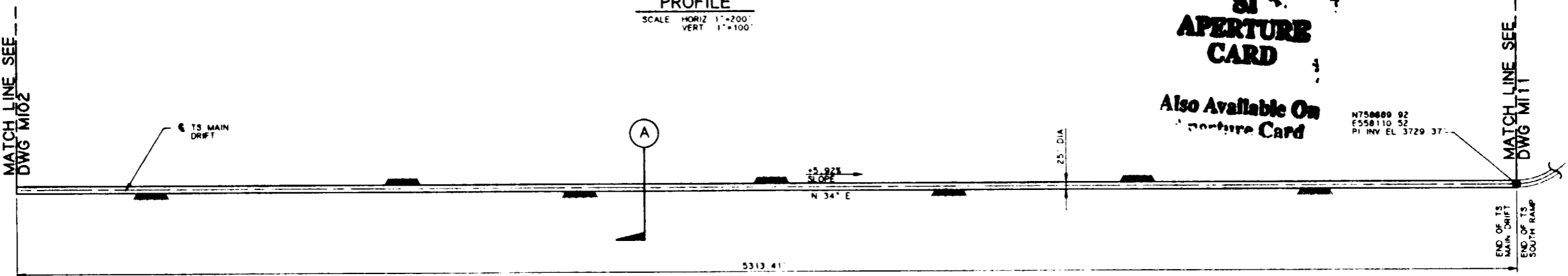


**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

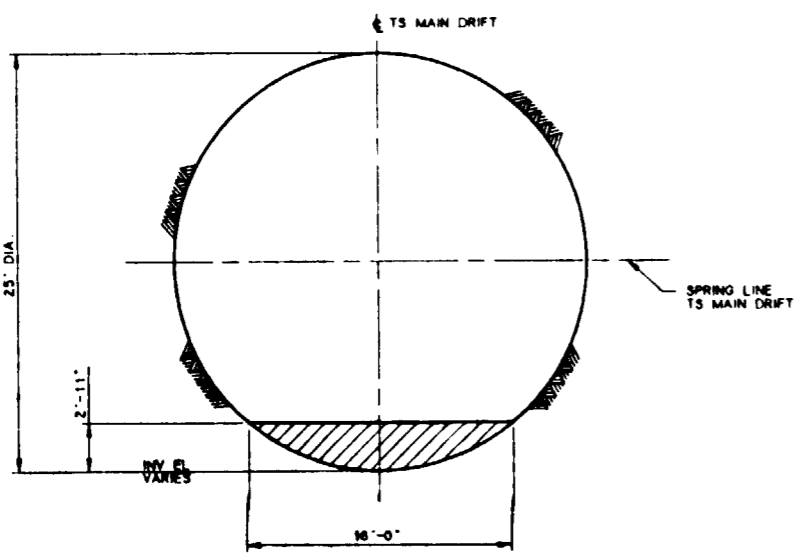
**SI APERTURE CARD**

Also Available On Aperture Card

N750000 92  
E558110 52  
PI INV EL 3729.37



**PLAN**  
SCALE 1"=200'

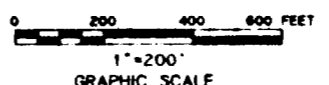
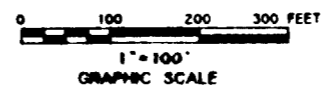


**SECTION A**  
SCALE: 3/16"=1'-0"

**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

**NOTES:**

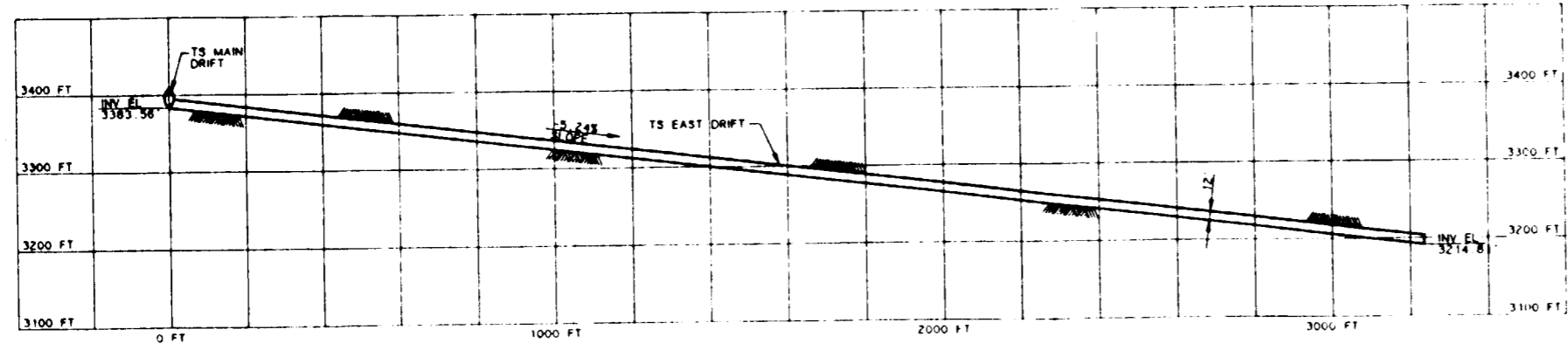
1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN.
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
4. BY-PASSES AND TURN-AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS.



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-41**

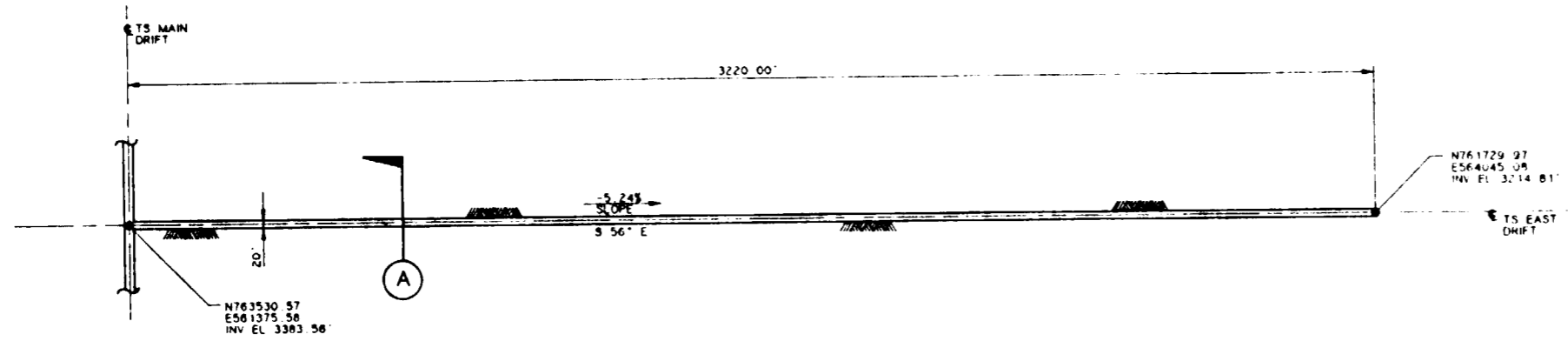
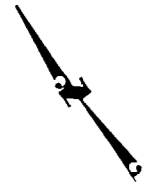
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Haytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK												
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
OWNER REPRESENTATIVE	S.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE			DRAWING NO			REV				
<i>[Signature]</i>			8-20-91			YMP-025-2-MING-M103			0				
YMPD ACCEPTED												DATE	SHT OF



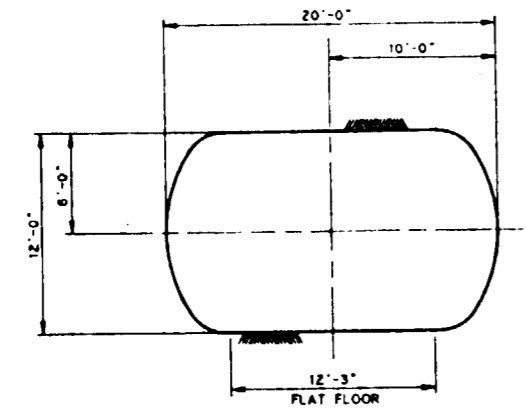
**PROFILE**  
SCALE: HORIZ. 1"=200'  
VERT. 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card



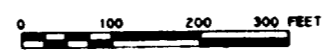
**PLAN**  
SCALE: 1"=100'



**SECTION A-A**  
SCALE: 3/16"=1'-0"

**NOTES:**

- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV.) IS SHOWN.
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
- LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRACE LOCATIONS.
- TS EAST AND TS WEST DRIFT CONFIGURATIONS ARE BASED ON INTERFACE DWGS MND-201-103 AND -104.



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-42**

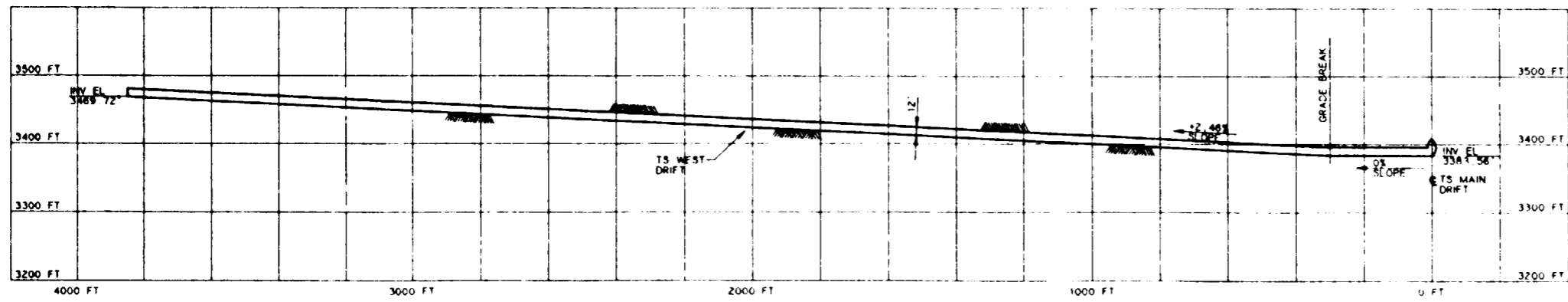
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<b>U.S. DEPARTMENT OF ENERGY</b>														
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	WRK													
DRAWN	CLP													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MEMBER	<i>[Signature]</i>													
VERIFICATION	N/A													
ENR	SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>													
PCN	YMP-025-2-1.2.8.3													
YMP-025-2-1.2.8.3	C.I. 10													
<b>EXPLORATORY STUDIES FACILITY</b>												<b>PLAN &amp; PROFILE, SECTION</b>		
<b>GENERAL ARRANGEMENT</b>														
SUBMITTED BY			DATE			DRAWING NO.			REV.					
<i>[Signature]</i>			8-25-91			YMP-025-2-MING-M104			0					
YMP-025-2-MING-M104												DATE	SHT	OF

8 7 6 5 4 3 2 1

**NOTES:**

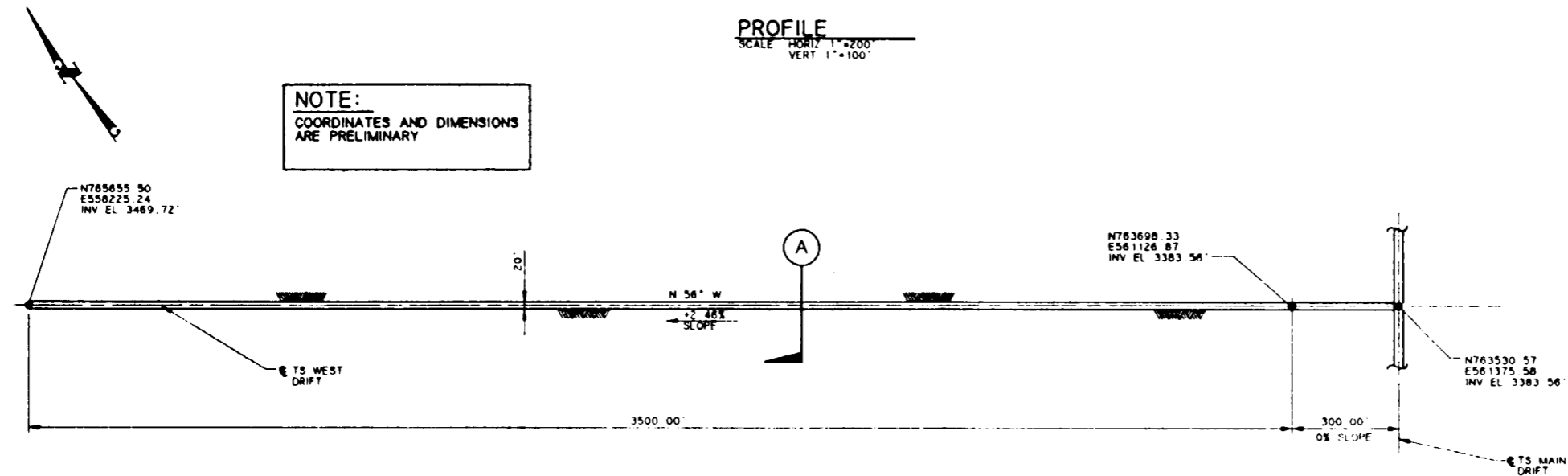
1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN.
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
4. LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRACE LOCATIONS.
5. TS EAST AND TS WEST DRIFT CONFIGURATIONS ARE BASED ON INTERFACE DWGS MND-201-103 AND -104.

**SI  
APERTURE  
CARD**  
  
Also Available On  
Aperture Card

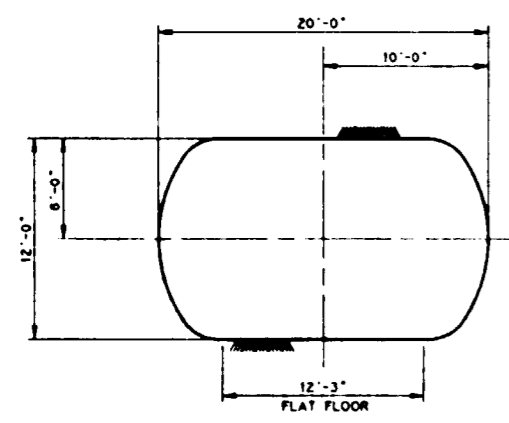


**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY



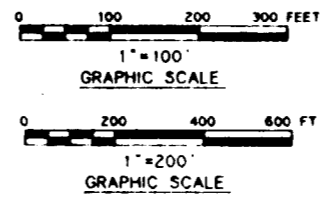
**PLAN**  
SCALE 1"=200'



**SECTION A**  
SCALE 3/16"=1'-0"

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-43**



NO	DATE	REVISION	DES	DRW	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
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APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS WEST DRIFT <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
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FCN	YMP-025-2		SUBMITTED BY		DATE		DRAWING NO.		REV.				
YMP-025-2	8-20-91		YMP-025-2-MING-M105		0								
8-20-91	S.I. NO.		DATE		SHT		OF						

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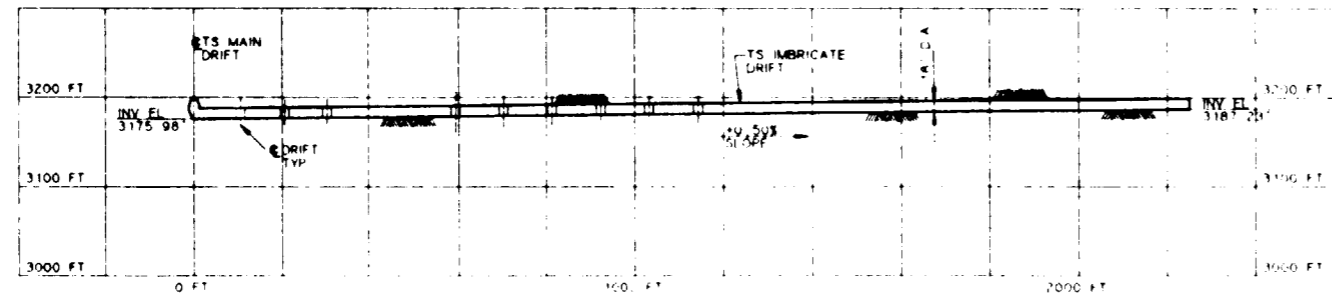
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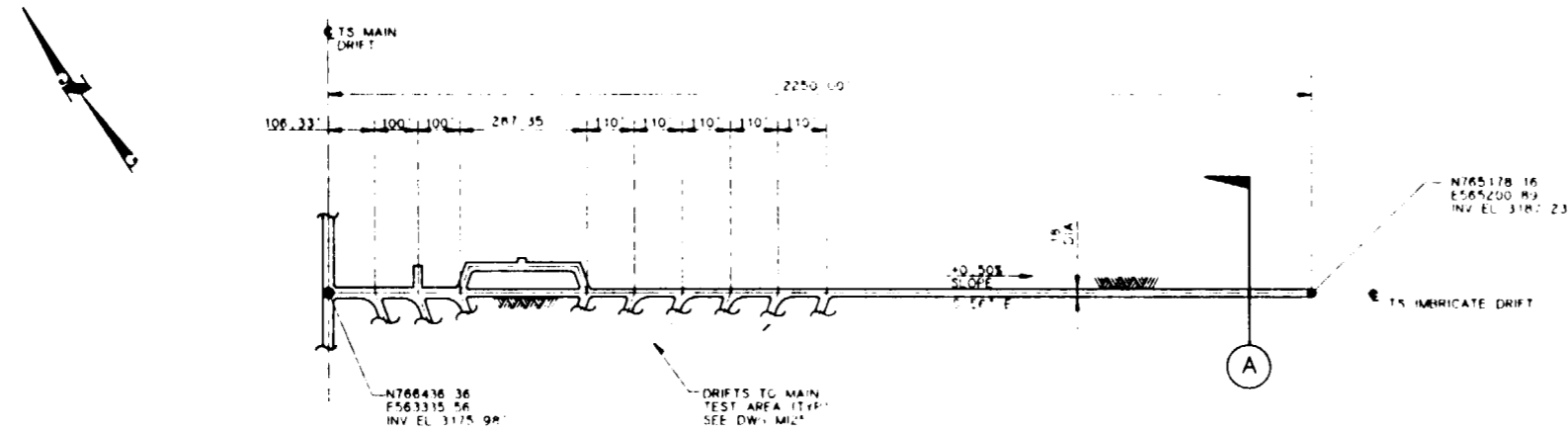
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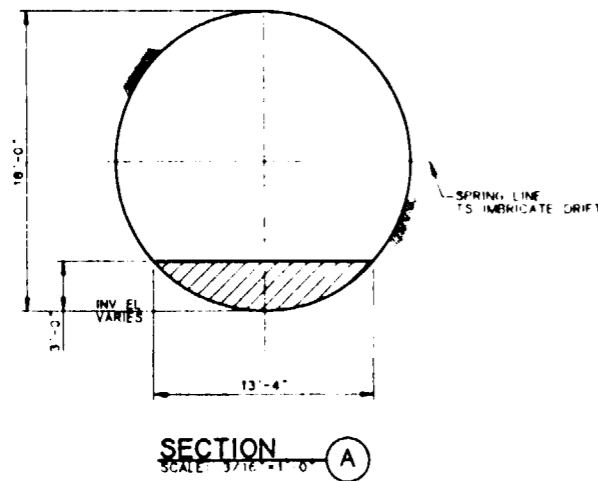
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**PROFILE**  
SCALE: HORIZ. 1"=200'  
VERT. 1"=20'

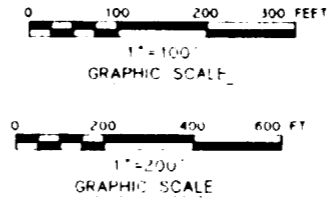


**PLAN**  
SCALE: 1"=200'



**SECTION A-A**  
SCALE: 3/16"=1'-0"

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY



**NOTES:**

- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI) INVERT IS SHOWN.
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
- LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRAIL LOCATIONS.

**SI  
APERTURE  
CARD**

**Also Available On  
Aperture Card**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-44**

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0	
<b>U.S. DEPARTMENT OF ENERGY</b>														
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE														
LAS VEGAS, NEVADA														
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	WHR		EXPLORATORY STUDIES FACILITY											
DRAWN	CLP		GENERAL ARRANGEMENT											
CHECKED	[Signature]		TS IMBRICATE DRIFT											
DEC	[Signature]		<b>PLAN &amp; PROFILE, SECTION</b>											
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV	SAF													
QUALITY ASSURANCE	[Signature]													
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# 20-81	W.B.S. NO. 1, 2, 6, 5		[Signature]		8-26-91		YMP-025-2-MING-MI06		0					
C.I. NO.	YMP-0 APPROVED		DATE		SHT		OF							

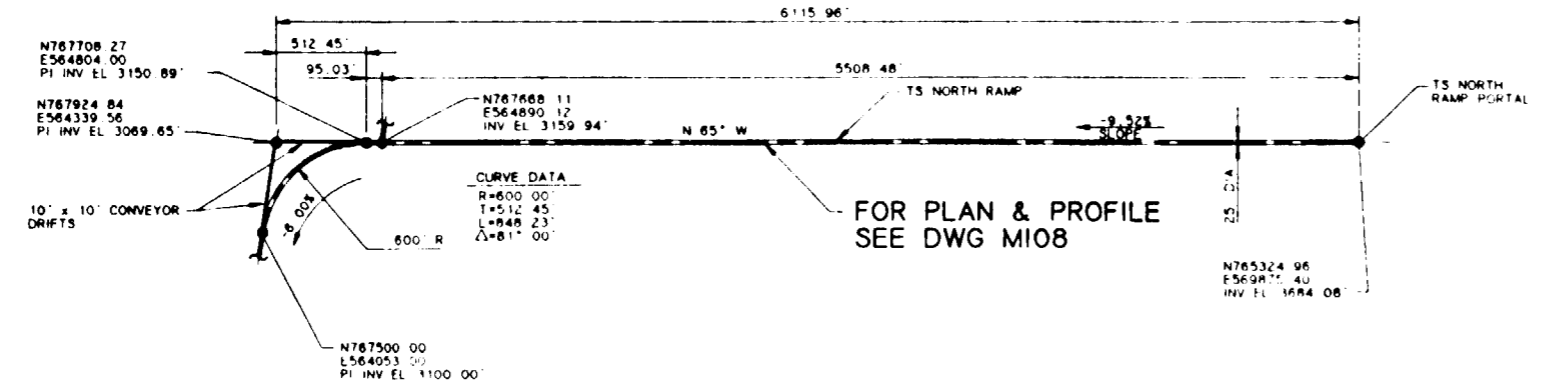
8 7 6 5 4 3 2 1

**NOTES:**

1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI) INV. IS SHOWN
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
4. TS NORTH AND TS SOUTH RAMP PORTAL LOCATIONS ARE BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RSN DESIGN ANALYSIS NO. 01-MN-004. PORTAL COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES

**SI  
APERTURE  
CARD**

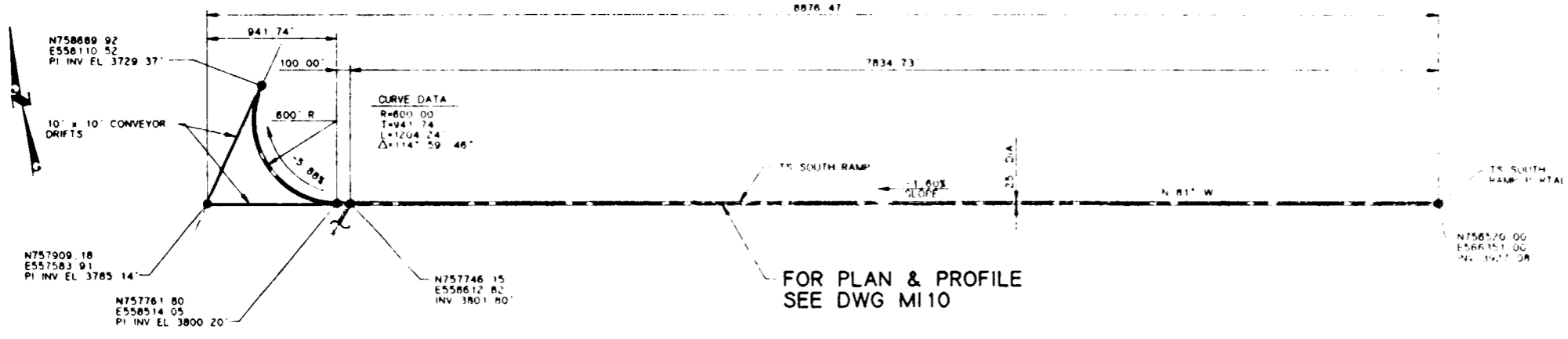
**Also Available On  
Aperture Card**



**TS NORTH RAMP PLAN**  
SCALE: 1"=500'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

FOR PLAN & PROFILE  
SEE DWG M108



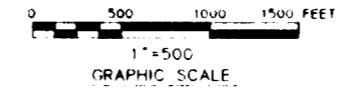
**TS SOUTH RAMP PLAN**  
SCALE: 1"=500'

FOR PLAN & PROFILE  
SEE DWG M110

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-45**

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	WRK	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT <b>TS NORTH &amp; TS SOUTH RAMPS PLAN</b>											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A	SUBMITTED BY		DATE	DRAWING NO.		REV.						
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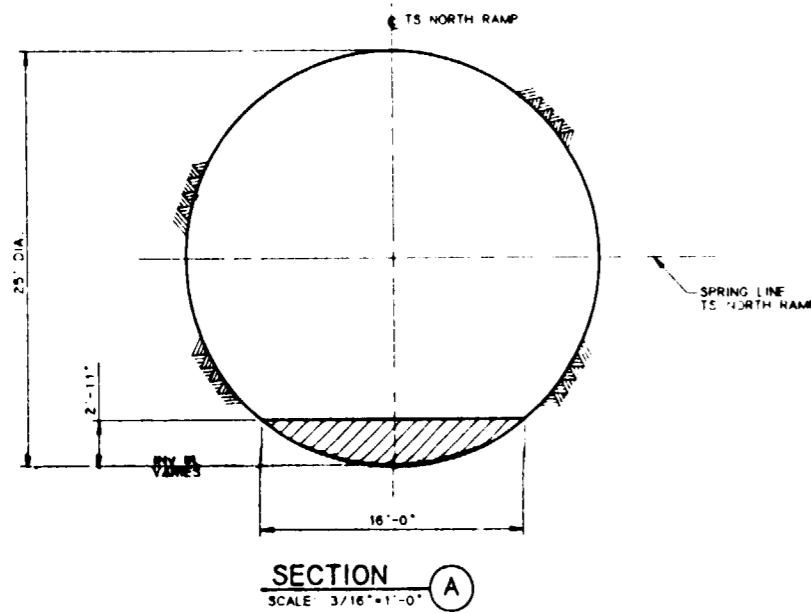
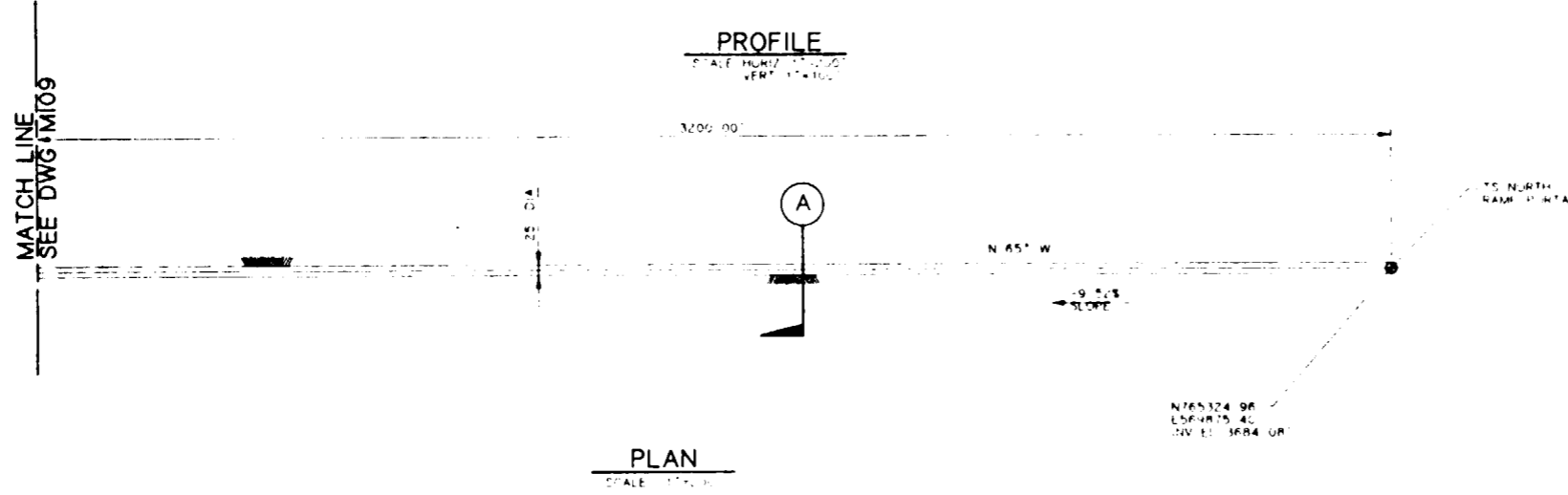
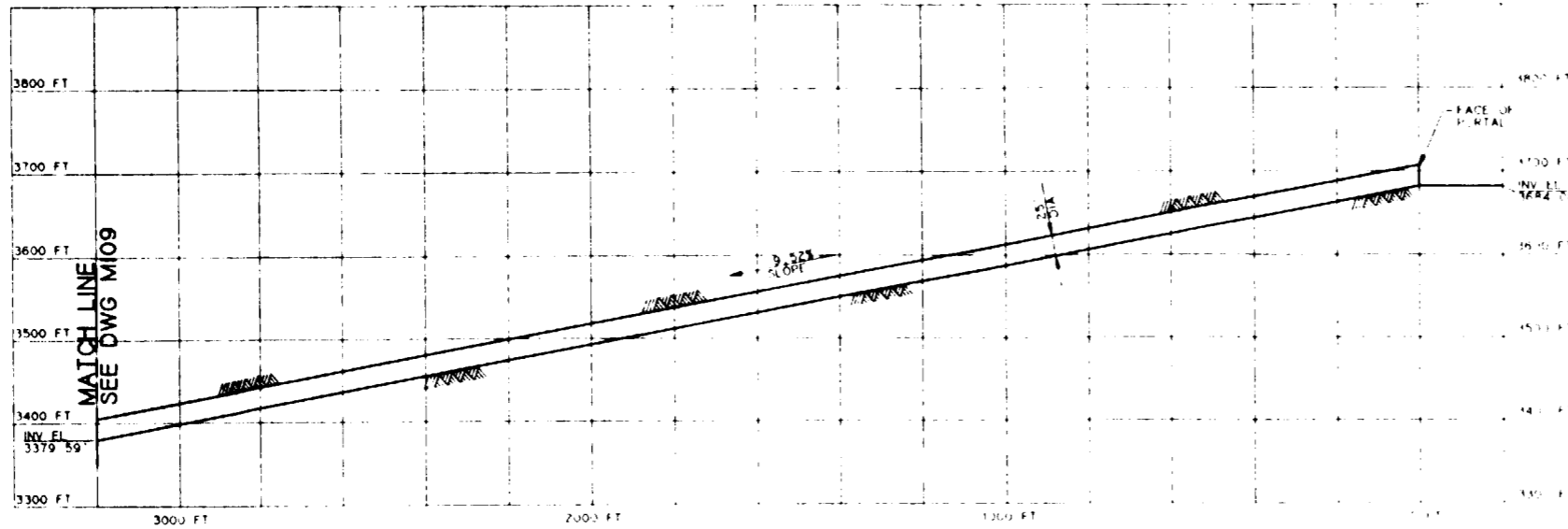
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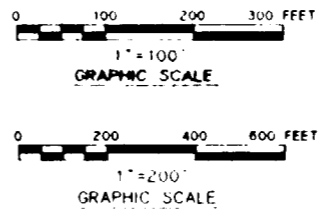
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**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY



**NOTES:**

- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT, AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INVERT) IS SHOWN.
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
- TS NORTH AND TS SOUTH RAMP PORTAL LOCATIONS ARE BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RCN DESIGN ANALYSIS TO DETERMINE PORTAL COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES.
- BY-PASSES AND TURN-AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS.

**SI  
APERTURE  
CARD**

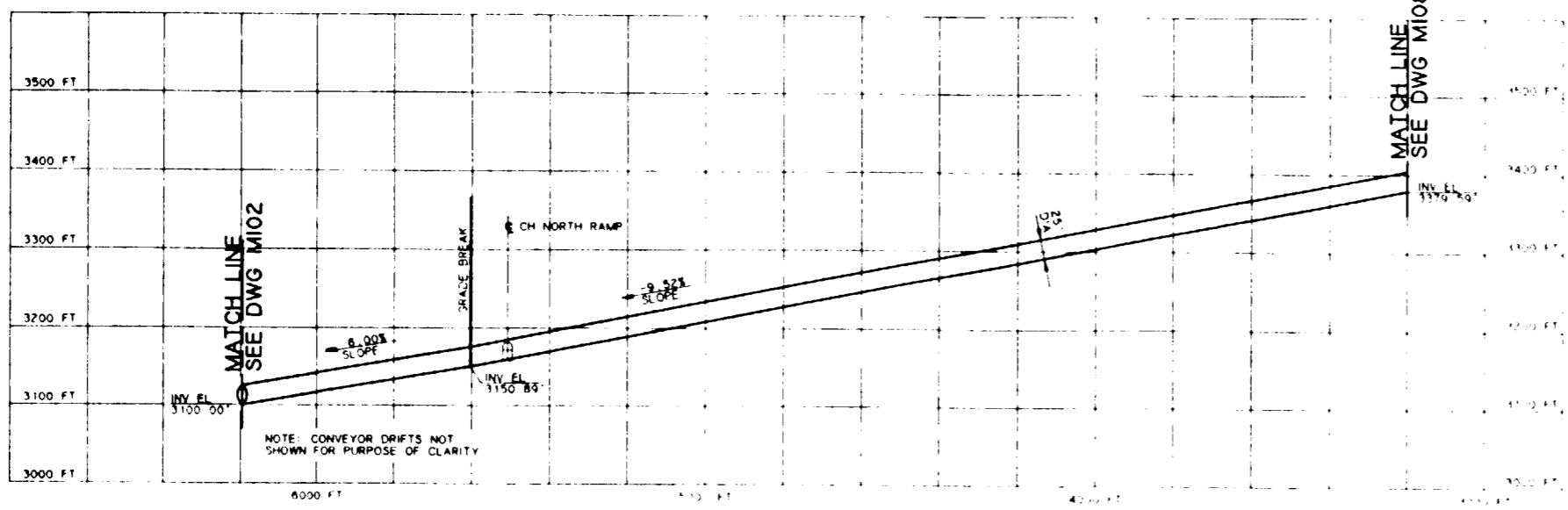
**Also Available On  
Aperture Card**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

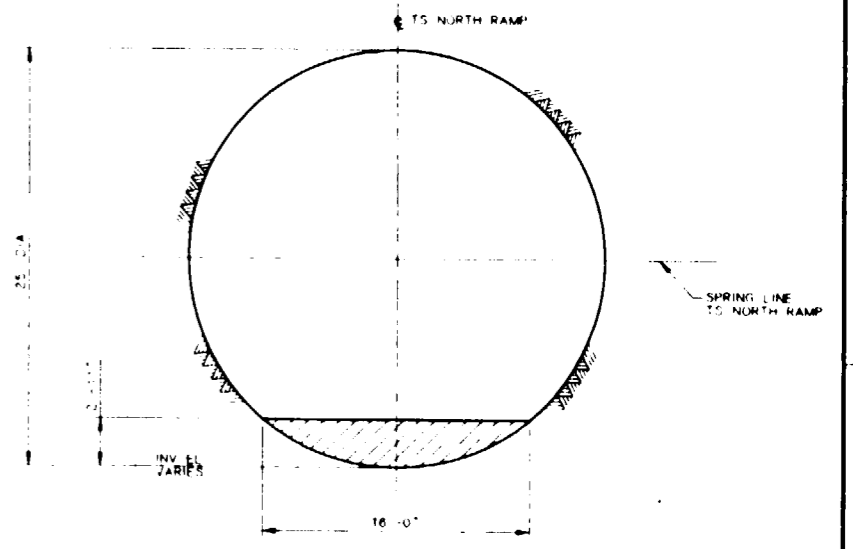
**9112080061-46**

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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WKK		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS NORTH RAMP <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	GLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>		SUBMITTED BY	DATE	DRAWING NO	REV							
QUALITY ASSURANCE	<i>[Signature]</i>		<i>[Signature]</i>	8-25-91	YMP-025-2-MING-M108	0							
TCN	YMP0141		W B S NO	1 2 6 5	YMPO APPROVED								
8-20-91	C.I. NO		DATE SHT OF										

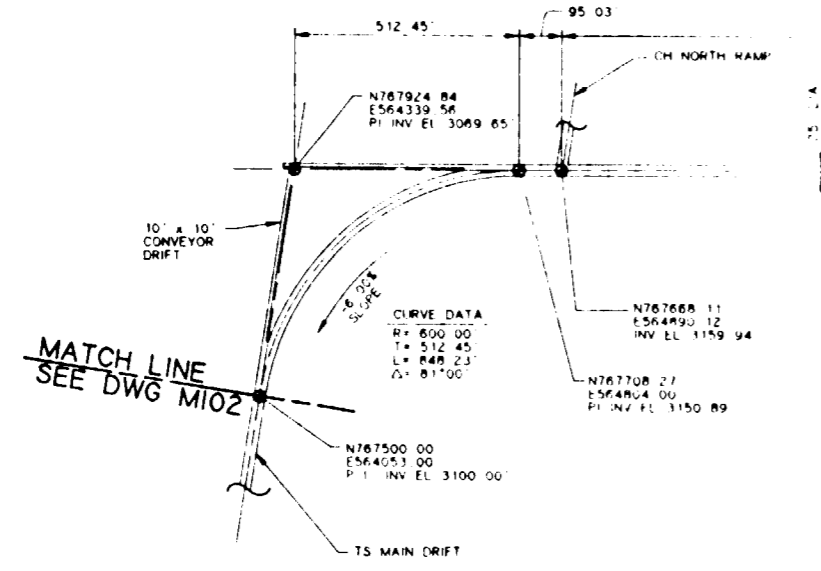
8 7 6 5 4 3 2 1



**PROFILE**  
SCALE HORIZ 1"=100'  
VERT 1"=100'



**SECTION A**  
SCALE 1"=18'-0"



**PLAN**  
SCALE 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI APERTURE CARD**  
Also Available On Aperture Card

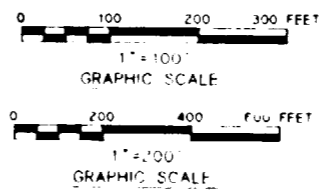
**NOTES:**

- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM - CENTRAL ZONE
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECT OR OF THE INVERT (PI INV.) IS SHOWN
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
- BY-PASSES AND TURN ARROWS WILL BE PROVIDED AT REGULAR INTERVALS

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-47**

NO.	DATE	REVISION	DESIGN	DRN	CHK	DEC	DM	ENV	SAF	QA	TPO	YMP	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		<b>EXPLORATORY STUDIES FACILITY</b> <b>GENERAL ARRANGEMENT</b> <b>TS NORTH RAMP</b> <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF		SUBMITTED BY		DATE		DRAWING NO		REV				
QUALITY ASSURANCE	<i>[Signature]</i>		<i>[Signature]</i>		8-26-91		YMP-025-2-MING-M109		0				
YMP0147			W B S NO 1 2 6 5			YMP0 APPROVED			DATE			SHT	OF





8

7

6

5

4

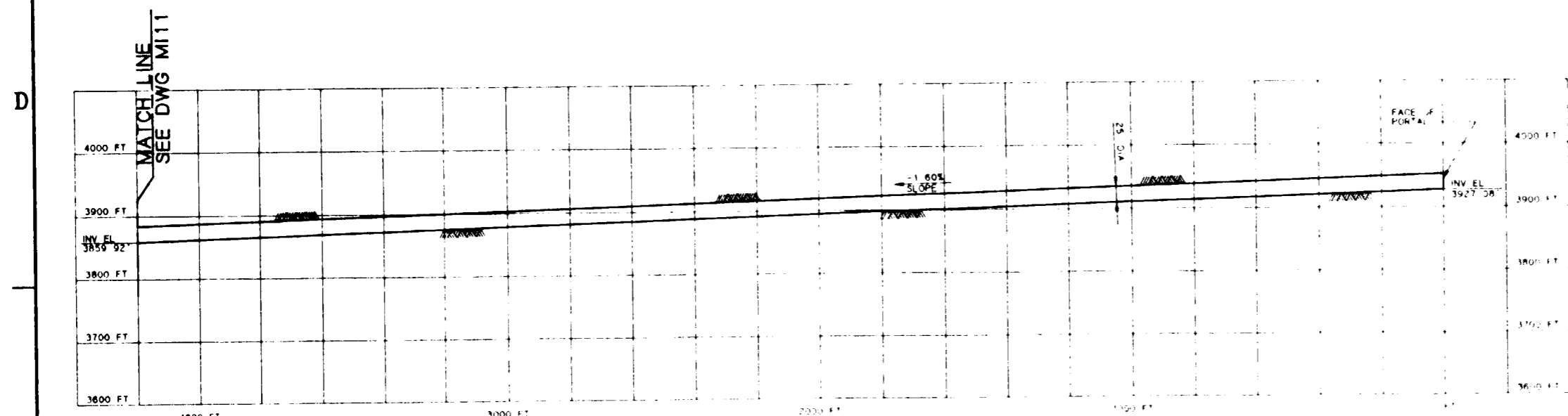
3

2

1

# SI APERTURE CARD

Also Available On Aperture Card

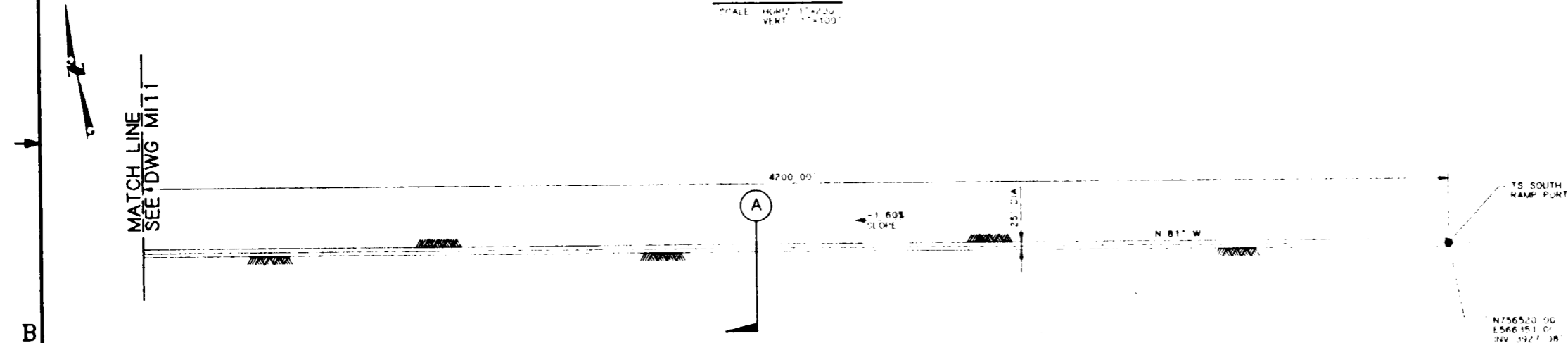


**PROFILE**

SCALE: HORIZ. 1"=200'  
VERT. 1"=100'

### NOTES:

1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIET AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (P.I.) IS SHOWN.
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
4. TS NORTH AND TS SOUTH RAMP PORTAL LOCATIONS ARE BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RSN DESIGN ANALYSIS NO. ST-MN-004. PORTAL COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES.
5. BY-PASSES AND TURN-AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS.



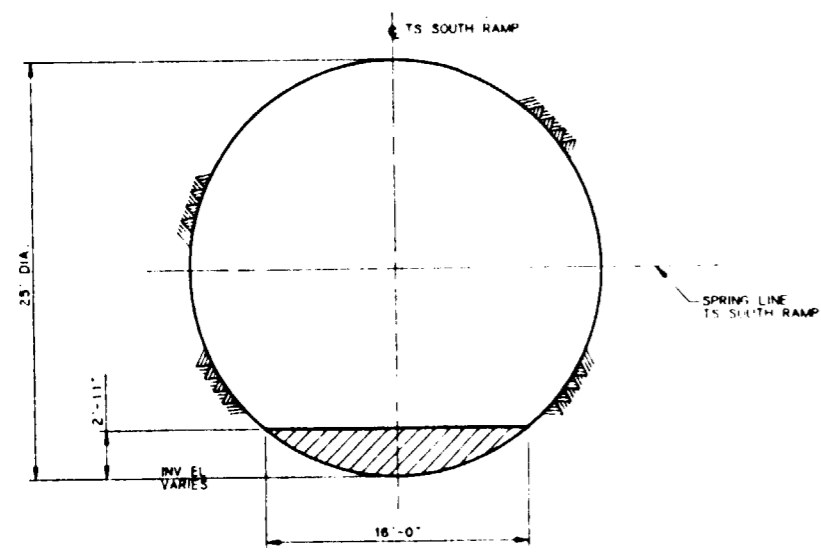
**PLAN**

SCALE: 1"=200'

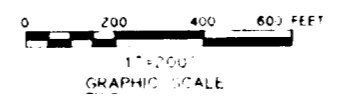
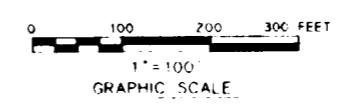
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

## 9112020061-48

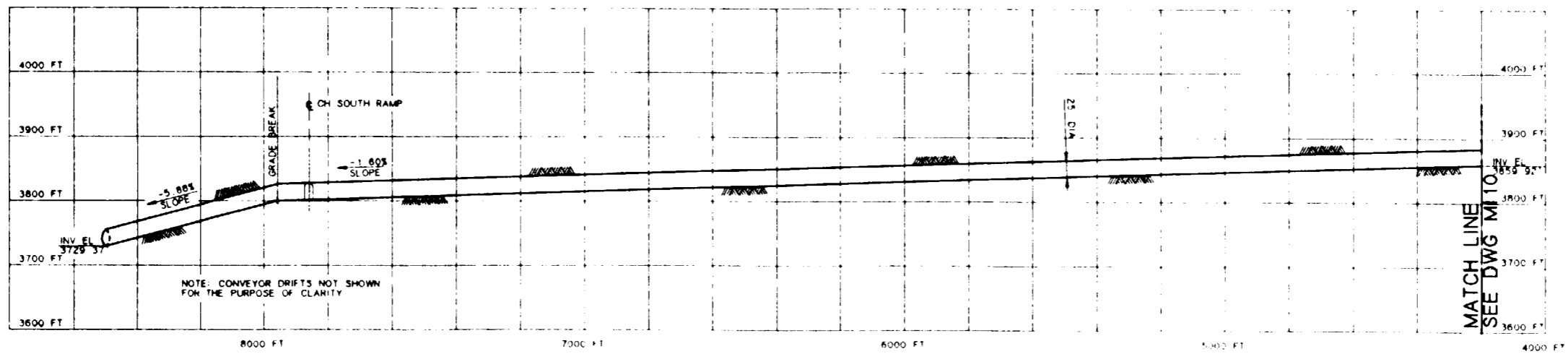
**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY



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



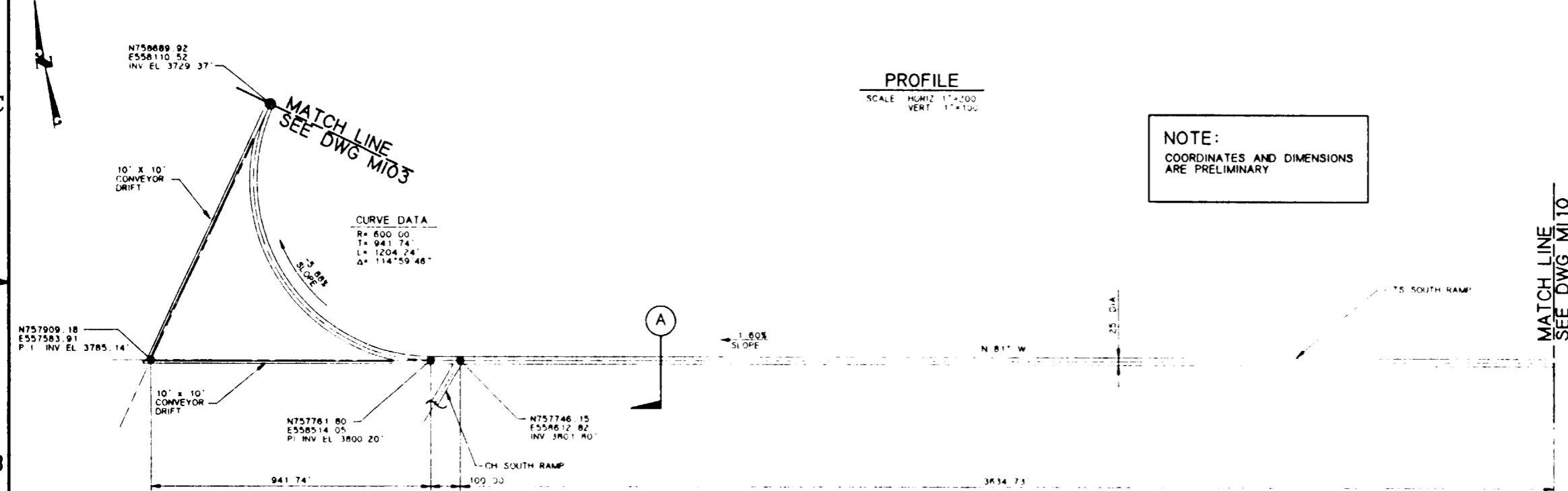
NO.	DATE	REVISION	DES.	DRN.	CHK.	DEC.	DM.	VRFY.	ENV.	SAF.	QA.	TPO.	YMP/O.
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	WRK	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS SOUTH RAMP <b>PLAN &amp; PROFILE, SECTION</b>											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC.	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A	SUBMITTED BY	DATE	DRAWING NO.	REV.								
ENV.	SAF.	<i>[Signature]</i>	8-20-91	YMP-025-2-MING-MI10	0								
QUALITY ASSURANCE		<i>[Signature]</i>											
FCN	YMP0148	W.B.S. NO.	1, 2, 6, 5										
8-20-91	C.I. NO.												



**SI APERTURE CARD**  
 Also Available On Aperture Card

**PROFILE**  
 SCALE HORIZ 1"=200'  
 VERT 1"=100'

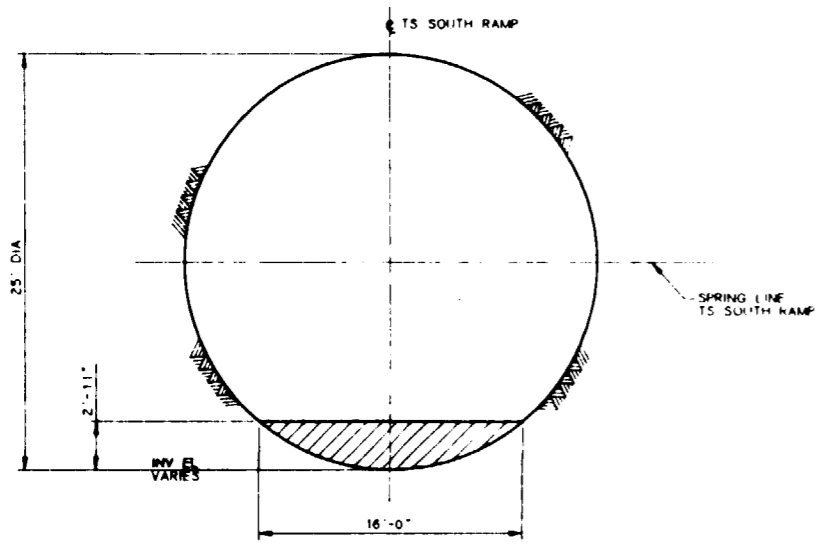
**NOTE:**  
 COORDINATES AND DIMENSIONS ARE PRELIMINARY



**PLAN**  
 SCALE 1"=200'

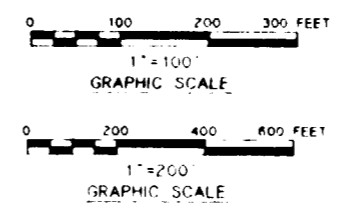
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112080061-49**



**SECTION A**  
 SCALE 3/16"=1'-0"

- NOTES:**
- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
  - ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI) INVERT IS SHOWN
  - BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
  - BY PASSES AND TURN AROUNDINGS WILL BE PROVIDED AT REGULAR INTERVALS



NO.	DATE	REVISION	DES.	DRN.	CHK.	DEC.	DM.	VER.	ENV.	SAF.	QA.	TPO.	YMPC.
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS SOUTH RAMP <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC.	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A		SUBMITTED BY <i>[Signature]</i>	DATE 8-26-91	DRAWING NO. YMP-025-2-MING-M111	REV 0							
ENV. SAF.	<i>[Signature]</i>		YMPC APPROVED										
QUALITY ASSURANCE	<i>[Signature]</i>		DATE										
FCN	YMP0149		SHT OF										
W.B.S. NO.	8-20-91												
C.I. NO.	1, 2, 3, 4												

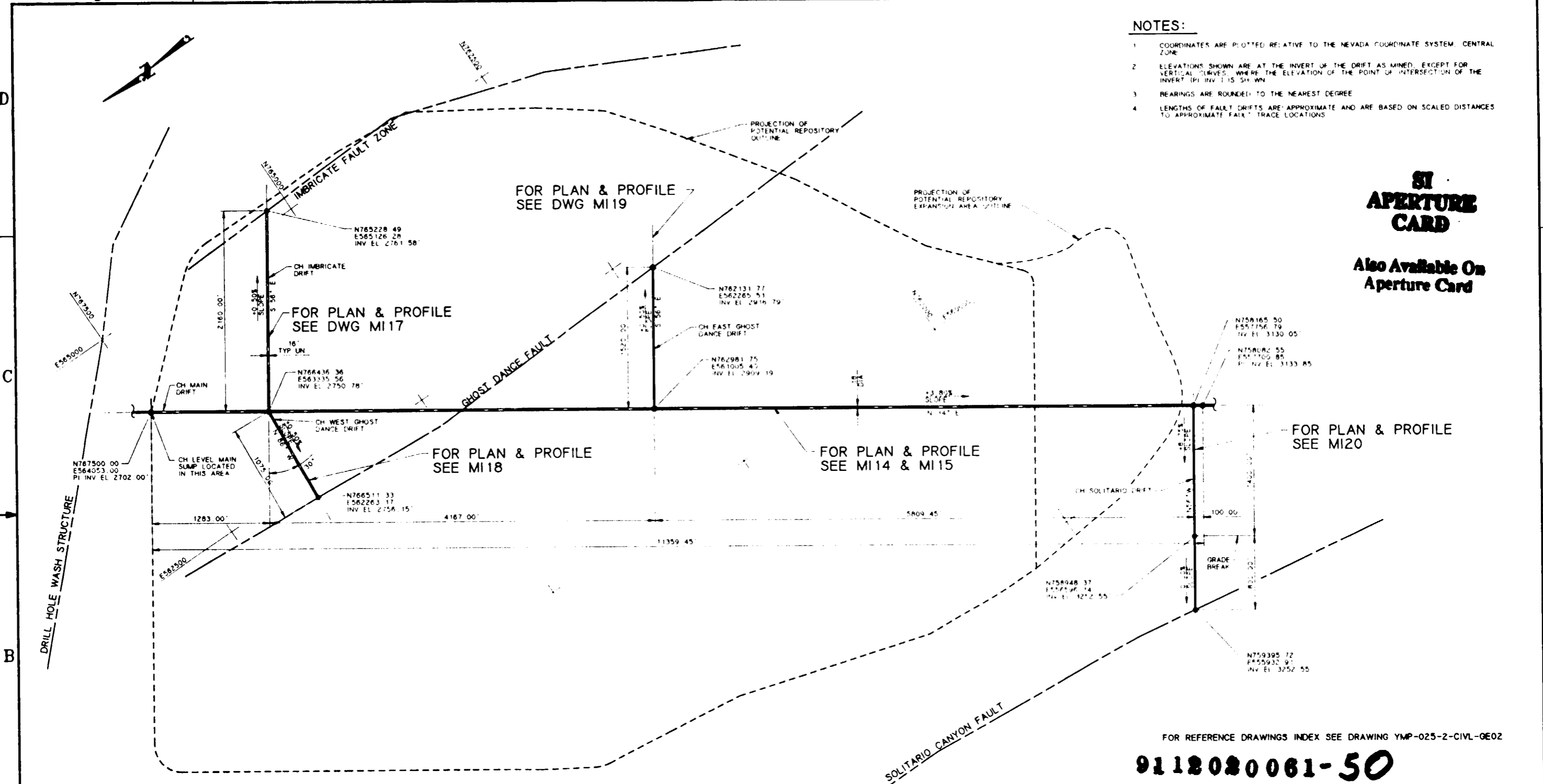
8 7 6 5 4 3 2 1

**NOTES:**

- 1 COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
- 2 ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI) INV. IS SHOWN
- 3 BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
- 4 LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRACE LOCATIONS

**SI APERTURE CARD**

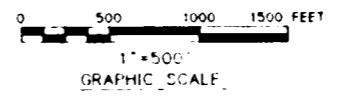
Also Available On Aperture Card



**CH LEVEL EXPLORATORY DRIFTS PLAN**  
SCALE: 1"=500'

**NOTES:**  
FAULT TRACE LOCATIONS SHOWN ARE APPROXIMATIONS BASED ON AT-DEPTH PROJECTIONS OF INFORMATION FROM SCOTT AND BOND PRELIMINARY GEOLOGIC MAP AND SECTIONS

**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY



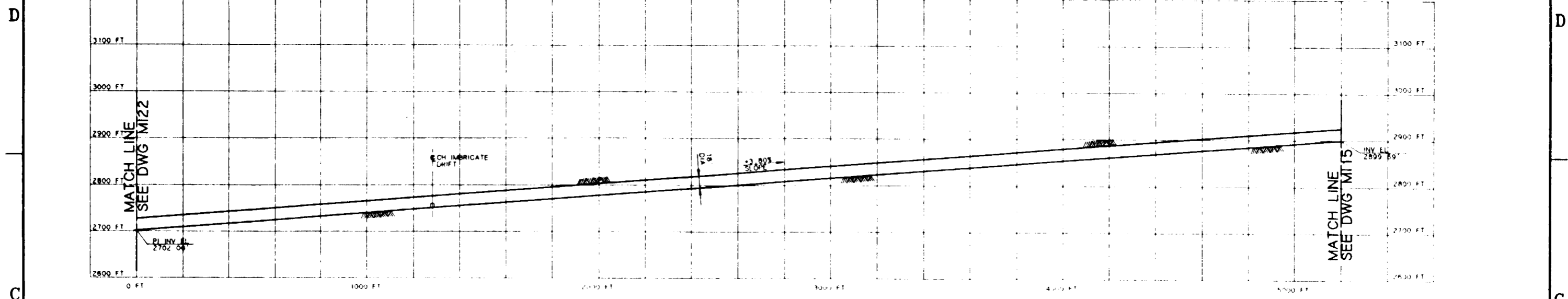
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112080061-50**

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPQ	YMP/
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE													
LAS VEGAS, NEVADA													
<b>APPROVALS</b>										<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA			
DESIGN	WRK												
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO.		REV.								
<i>[Signature]</i>		8-26-91	YMP-025-2-MING-MI13		0								
YMP/ APPROVED		DATE	SHT		OF								

42

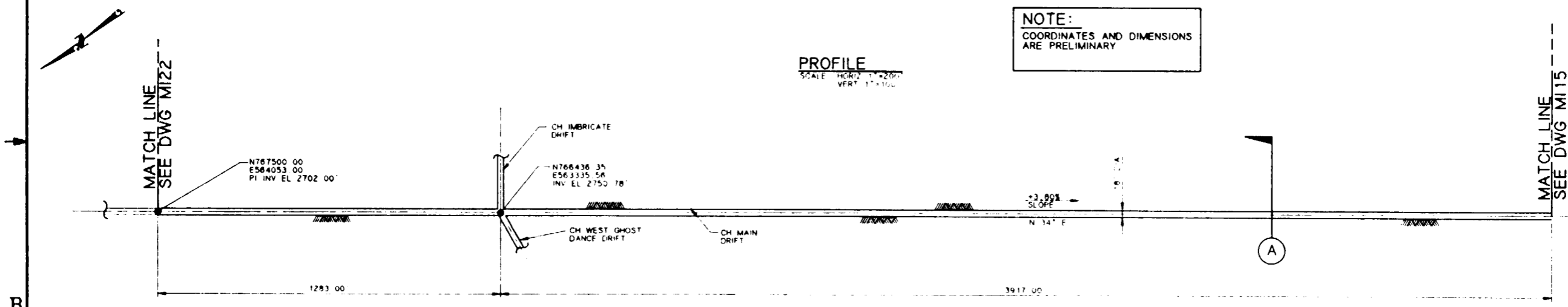
8 7 6 5 4 3 2 1



**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

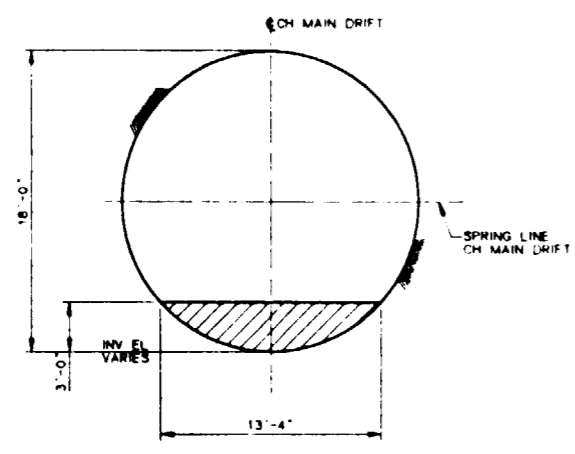
**SI APERTURE CARD**  
Also Available On Aperture Card



**PLAN**  
SCALE: 1"=200'

**9112020061-51**

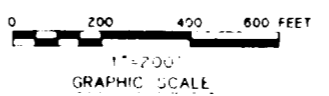
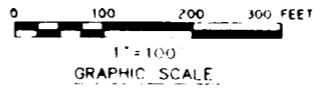
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



**SECTION**  
SCALE: 3/16"=1'-0" (A)

**NOTES:**

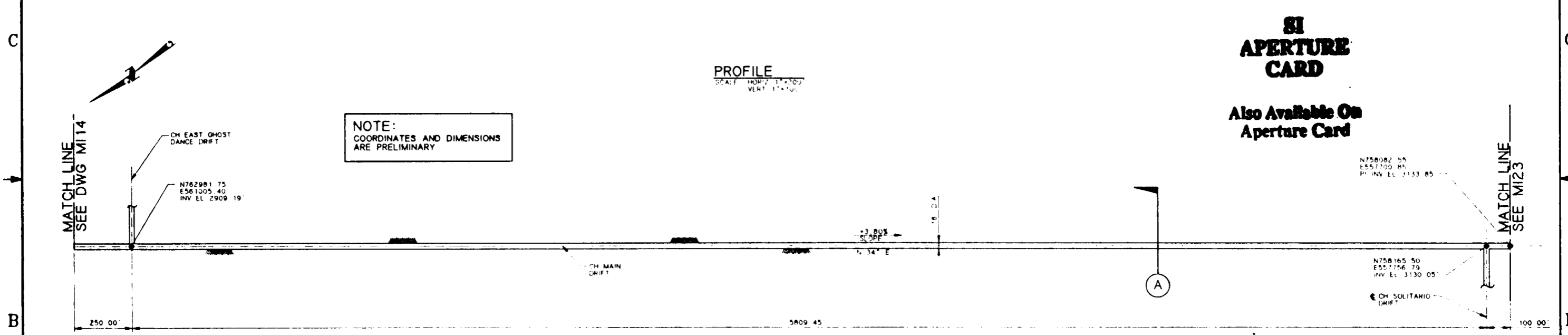
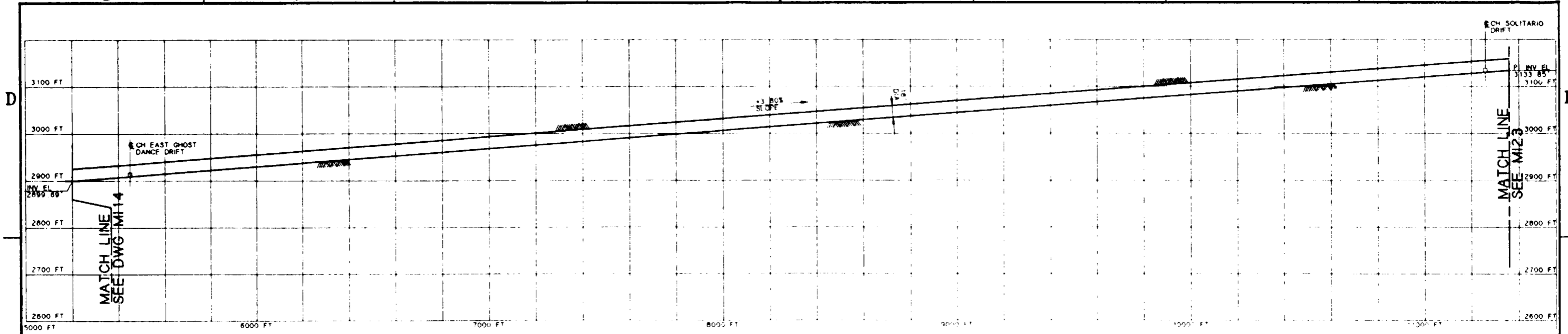
- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
- BY-PASSES AND TURN-AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VER	ENV	SAP	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT CH MAIN DRIFT <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A		SUBMITTED BY		DATE		DRAWING NO		REV				
ENV SAF	<i>[Signature]</i>		<i>[Signature]</i>		8-21-91		YMP-025-2-MING-M114		0				
QUALITY ASSURANCE	<i>[Signature]</i>		YMP-O APPROVED		DATE		SHT		OF				
FOR YMP-0154	8-21-91		NO. 8.3. NO. 1.2.6.5										

43

8 7 6 5 4 3 2 1

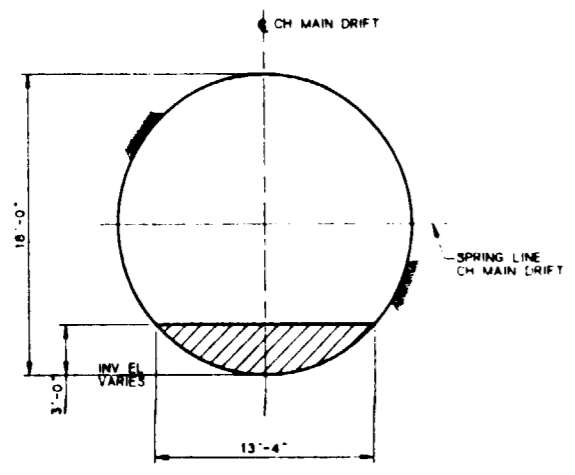


**PROFILE**  
SCALE: HORIZ. 1"=300'  
VERT. 1"=100'

**PLAN**  
SCALE: 1"=200'

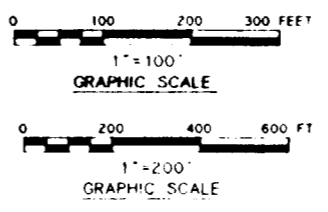
**SI APERTURE CARD**

Also Available On Aperture Card



**SECTION**  
SCALE: 3/16"=1'-0" (A)

- NOTES:**
- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM CENTRAL ZONE
  - ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT IS SHOWN
  - BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
  - BY-PASSES AND TURN-AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112080061-52**

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV. SAF. QUALITY ASSURANCE	<i>[Signature]</i>		SUBMITTED BY	DATE	DRAWING NO.	REV.							
YMP-025-2-1.2.8.5			<i>[Signature]</i>	5/12/91	YMP-025-2-MING-MI15	0							
C.I. NO.			YMP-025-2-1.2.8.5		YMP-025-2-MING-MI15		DATE						
							SHT OF						

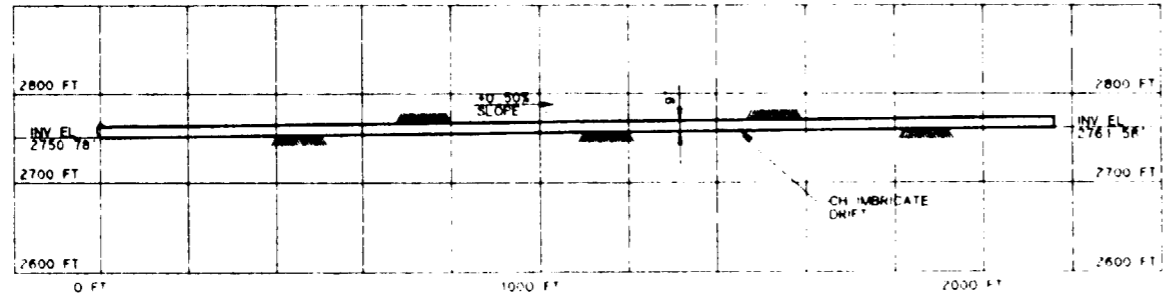
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**NOTES:**

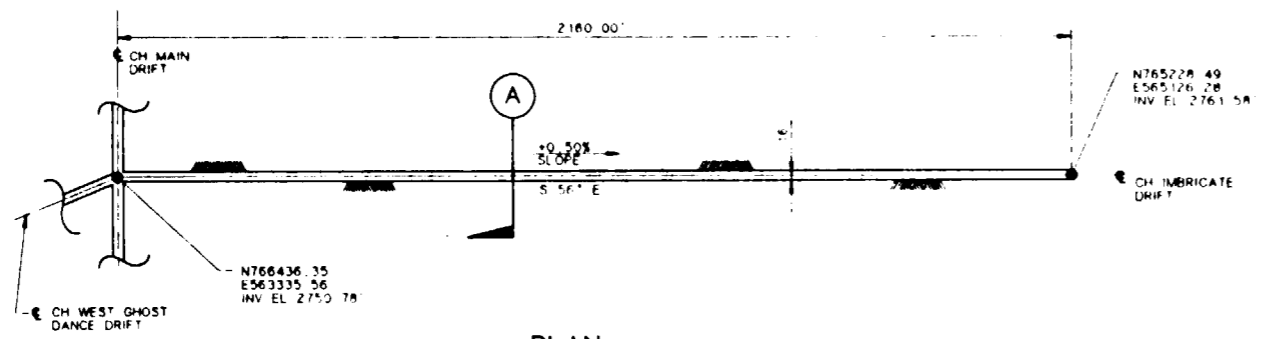
- 1 COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
- 2 ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI) INV. IS SHOWN
- 3 BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
- 4 LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRACE LOCATIONS

**SI APERTURE CARD**

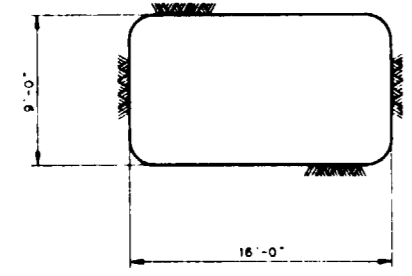
Also Available On Aperture Card



**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

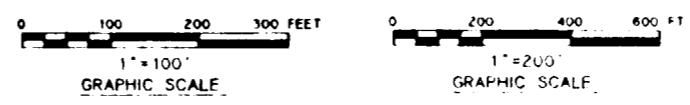


**PLAN**  
SCALE 1"=200'



**SECTION**  
SCALE 3/16"=1'-0" (A)

**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY



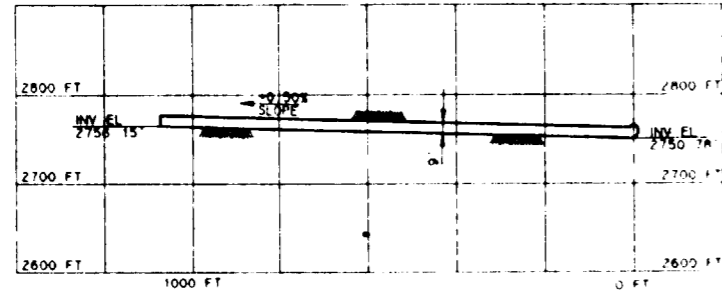
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-53**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> GENERAL ARRANGEMENT CH IMBRICATE DRIFT <b>PLAN &amp; PROFILE, SECTION</b>													
APPROVALS													
DESIGN	WRK												
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MEMBER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
<i>[Signature]</i>		8-26-91	YMP-025-2-MING-M117		0								
YMP-025-2-MING-M117		YMP-025-2-MING-M117											
8-21-91		DATE											
C.I. NO.		SHT OF											

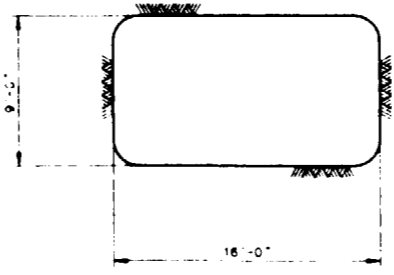
**NOTES:**

1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INVT) IS SHOWN
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
4. LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRACE LOCATIONS



**PROFILE**  
SCALE HORIZ. 1"=200'  
VERT. 1"=100'

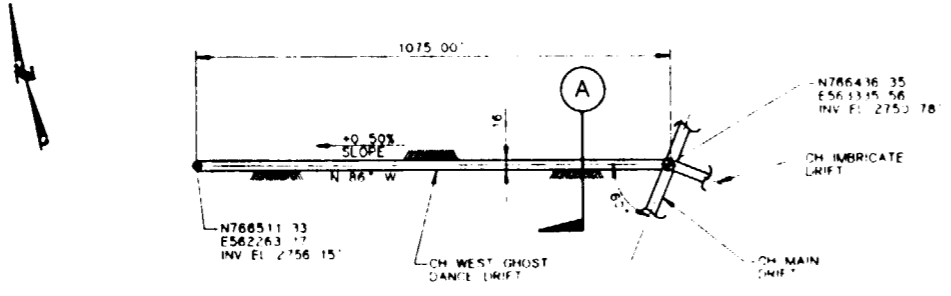
**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY



**SECTION A**  
SCALE 1/4"=1'-0"

**SI  
APERTURE  
CARD**

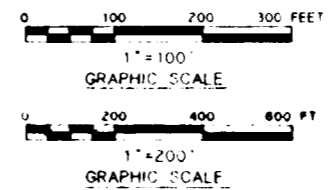
**Also Available On  
Aperture Card**



**PLAN**  
SCALE 1"=200'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-54**



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	ITP	YMP/C
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		<b>EXPLORATORY STUDIES FACILITY</b> <b>GENERAL ARRANGEMENT</b> <b>CH WEST GHOST DANCE DRIFT</b> <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
USER/ISSUANCE	RSN, CH												
VERIFICATION	N/A		SUBMITTED BY		DATE		DRAWING NO.		REV				
ENV	SAF		<i>[Signature]</i>		8-26-91		YMP-025-2-MING-MI 18		0				
QUALITY ASSURANCE	<i>[Signature]</i>		YMPD APPROVED		DATE		SHT		OF				
FCH	YMP0171		B.S. NO.		1,2,5,5		C.I. NO.						

46

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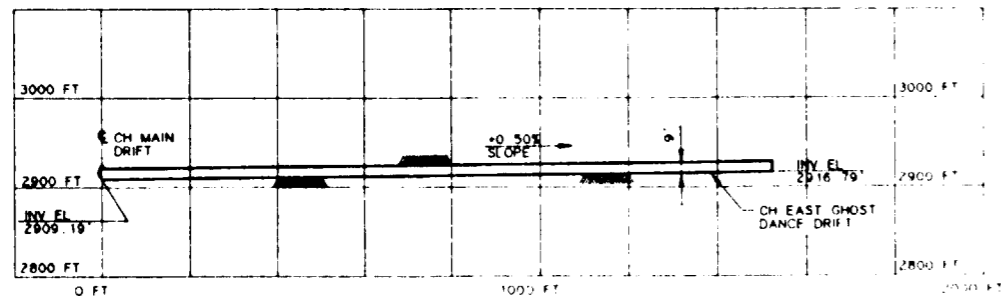
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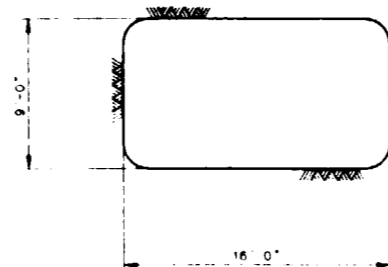
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D

D



**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'



**SECTION A**  
SCALE: 3/16"=1'-0"

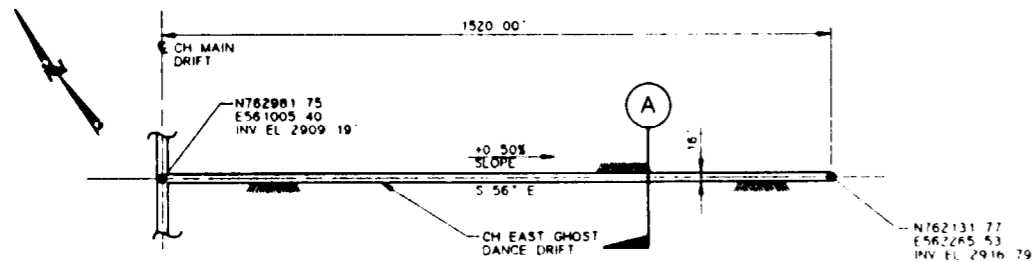
**SI  
APERTURE  
CARD**

**Also Available On  
Aperture Card**

C

C

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY



**PLAN**  
SCALE: 1"=200'

B

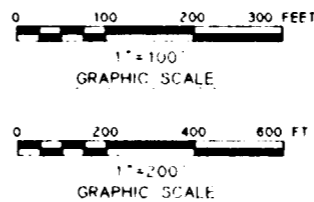
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FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-55**

A

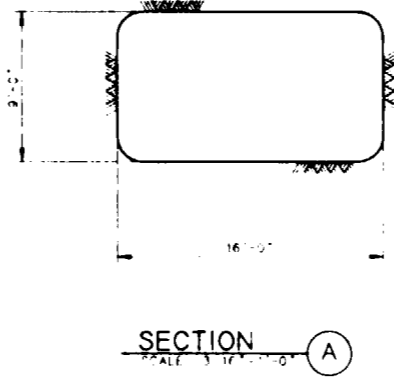
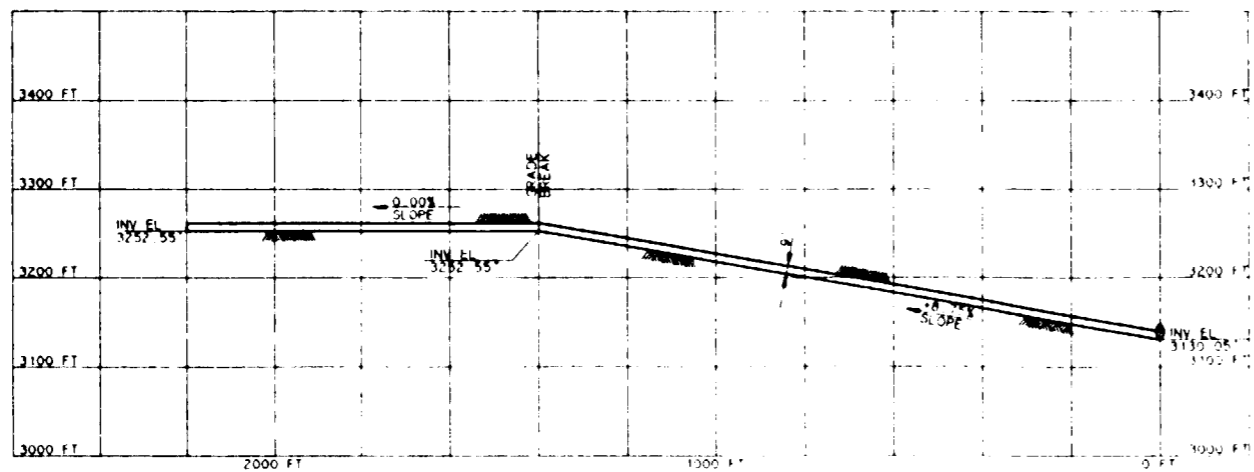
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NO.	DATE	REVISION	DES.	DRN.	CHK.	DEC.	DM.	VRFY.	ENV.	SAF.	QA.	TPO.	YMP.
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		<b>EXPLORATORY STUDIES FACILITY</b> GENERAL ARRANGEMENT CH EAST GHOST DANCE DRIFT <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC.	<i>[Signature]</i>												
DESIGN MANAGER	B.S.H.												
VERIFICATION	N/A												
ENV.	SAF.	SUBMITTED BY: <i>[Signature]</i> DATE: <i>[Date]</i> DRAWING NO: YMP-025-2-MING-MI19 REV: 0											
QUALITY ASSURANCE	B.S.H.		YMPD APPROVED: <i>[Signature]</i> DATE: SHT OF										
FCH	W.B.S. NO. 1,2,6,5 C.I. NO.												



D  
C  
B  
A



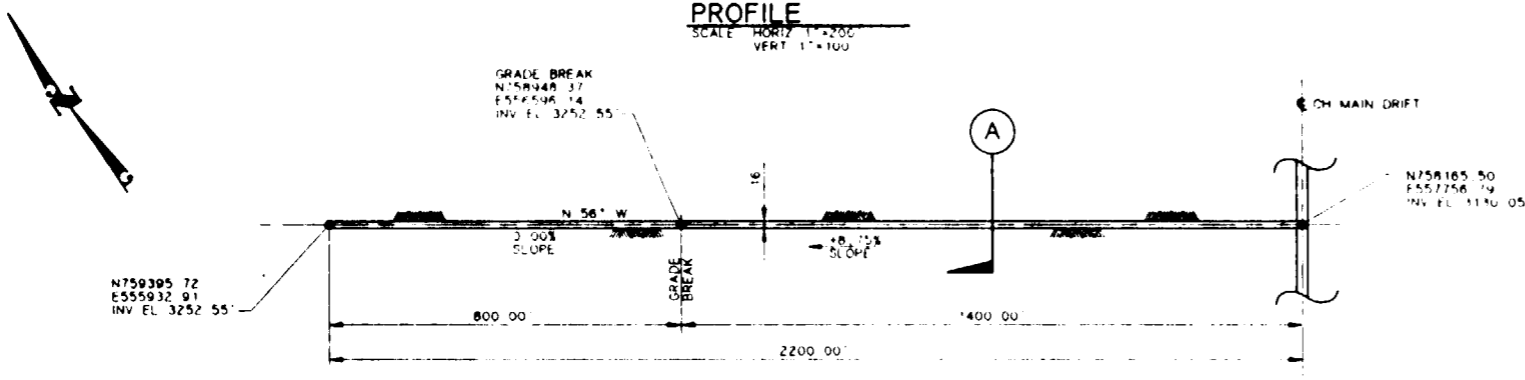
**NOTES:**

- 1 COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
- 2 ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI) INVERT IS SHOWN
- 3 BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
- 4 LENGTHS OF FAULT DRIFTS ARE APPROXIMATE AND ARE BASED ON SCALED DISTANCES TO APPROXIMATE FAULT TRACE LOCATIONS

**SI  
APERTURE  
CARD**  
  
**Also Available On  
Aperture Card**

**PROFILE**

SCALE HORIZ 1"=200'  
VERT 1"=100'



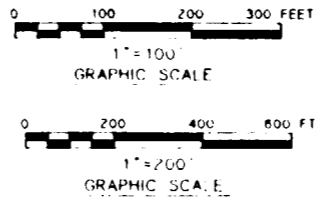
**PLAN**

SCALE 1"=200'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**9112020061-56**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	GA	TPO	YMPG
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT CH SOLITARIO DRIFT <b>PLAN &amp; PROFILE, SECTION</b>										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>		SUBMITTED BY		DATE		DRAWING NO		REV				
QUALITY ASSURANCE	<i>[Signature]</i>		<i>[Signature]</i>		8-26-91		YMP-025-2-MING-M120		0				
FCN	YMP0173		W.B.S. NO		1,2,5,5		YMPG APPROVED		DATE		SHT OF		
8-21-91	C.I. NO												

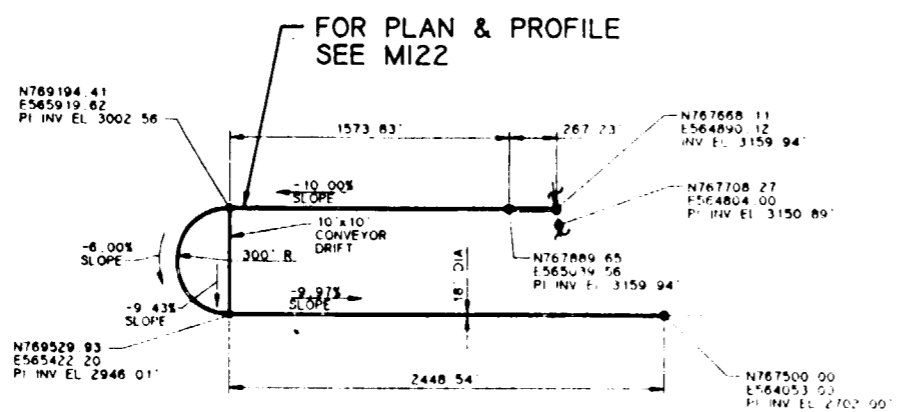
48

8 7 6 5 4 3 2 1

**NOTES:**

- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV.) IS SHOWN
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE

**CURVE DATA**  
 R=300.00'  
 L=942.48'  
 Δ=180°00'00"

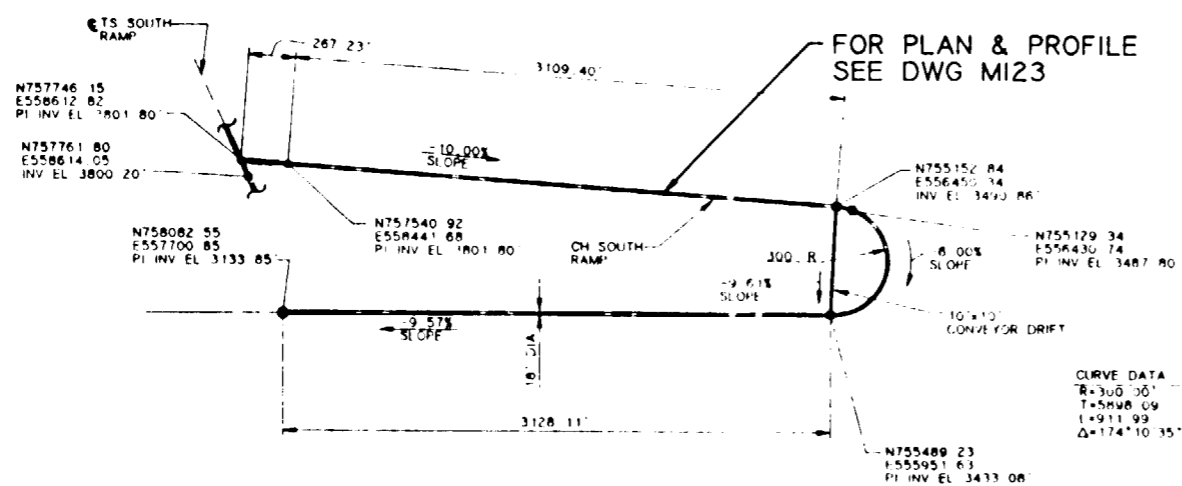


FOR PLAN & PROFILE  
 SEE M122

**SI  
 APERTURE  
 CARD**  
 Also Available On  
 Aperture Card

**NOTE:**  
 COORDINATES AND DIMENSIONS  
 ARE PRELIMINARY

**CH NORTH RAMP PLAN**  
 SCALE: 1"=500'



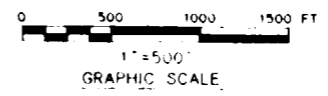
FOR PLAN & PROFILE  
 SEE DWG M123

**CURVE DATA**  
 R=300.00'  
 L=598.09'  
 Δ=174°10'35"

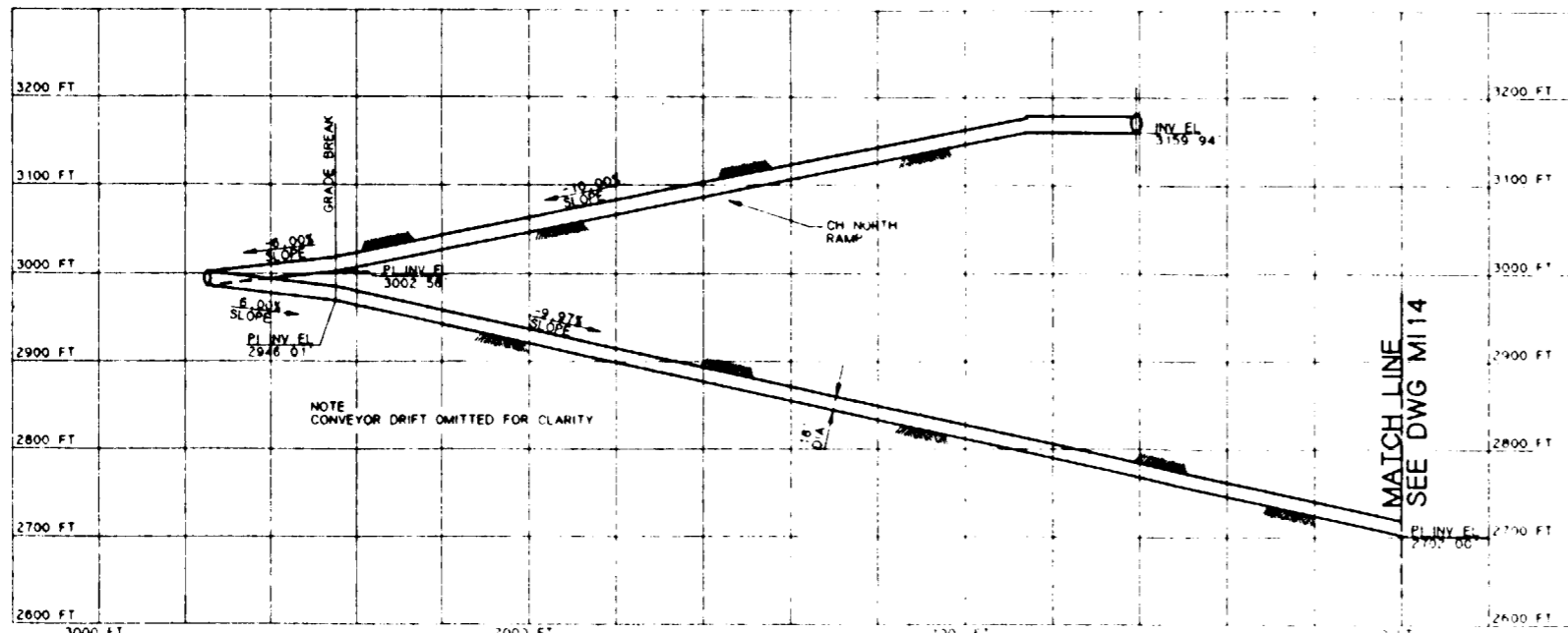
**CH SOUTH RAMP PLAN**  
 SCALE: 1"=500'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-57**



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WHK	<b>EXPLORATORY STUDIES FACILITY</b> <b>GENERAL ARRANGEMENT</b> <b>CH NORTH &amp; CH SOUTH RAMPS</b> <b>PLAN</b>											
DRAWN	CLP												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A	SUBMITTED BY		DATE		DRAWING NO.		REV.					
ENV	SAF	[Signature]		8-26-91		YMP-025-2-MING-M121		0					
QUALITY ASSURANCE	[Signature]	YMP/O APPROVED											
FOR YMP0157	NO. 3	NO. 1	NO. 2	NO. 3									
8-21-91	C.I. NO.	DATE		SHT		OF							

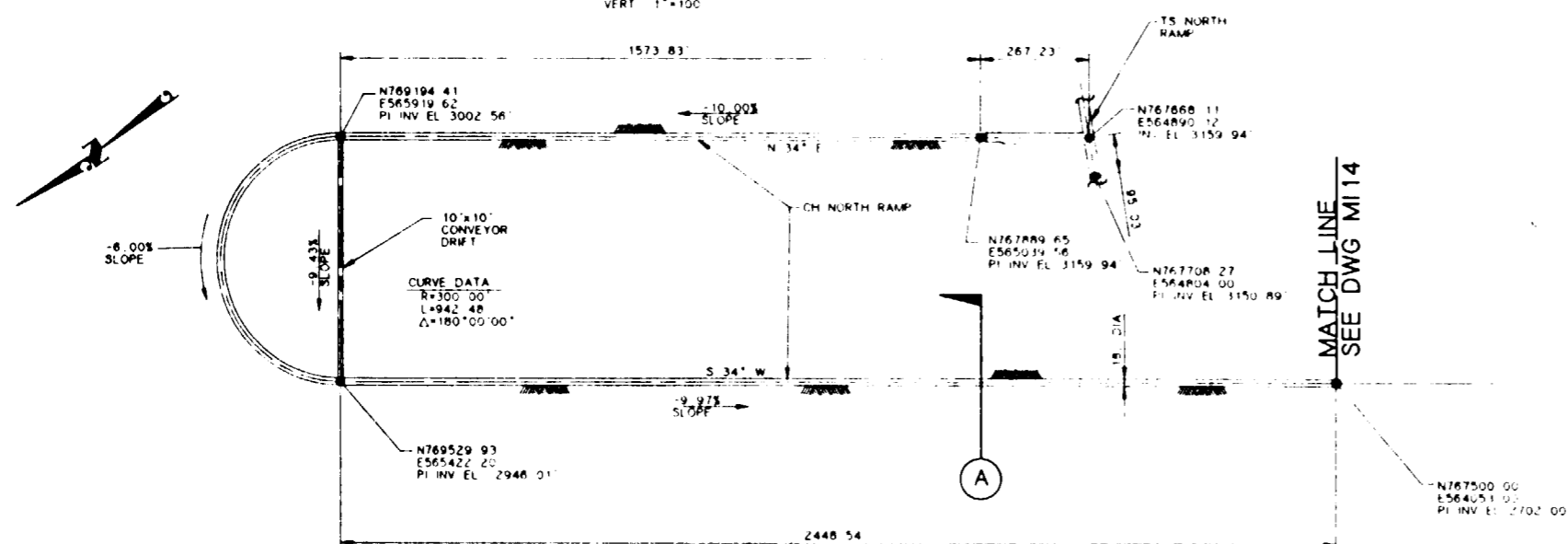


**PROFILE**  
SCALE HORIZ 1"=200'  
VERT 1"=100'

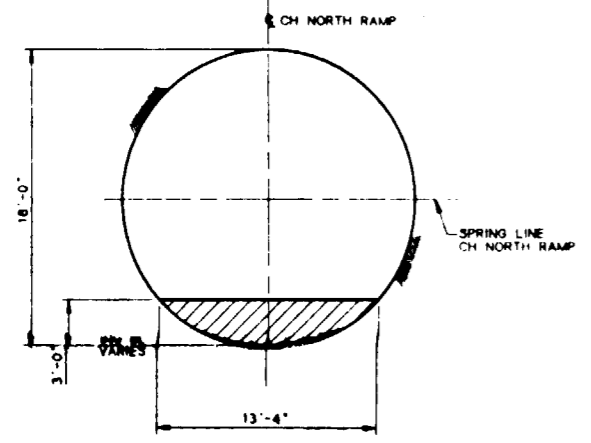
**NOTES:**

1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE
4. BY-PASSES AND TURN-AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS

**SI APERTURE CARD**  
**Also Available On Aperture Card**



**PLAN**  
SCALE 1"=200'

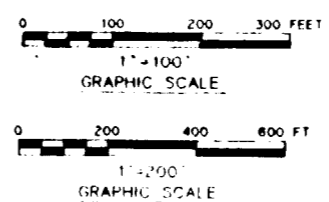


**SECTION**  
SCALE 3/16"=1'-0" (A)

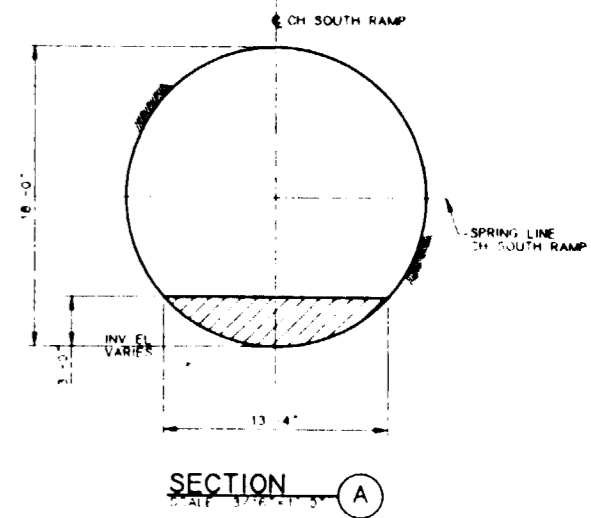
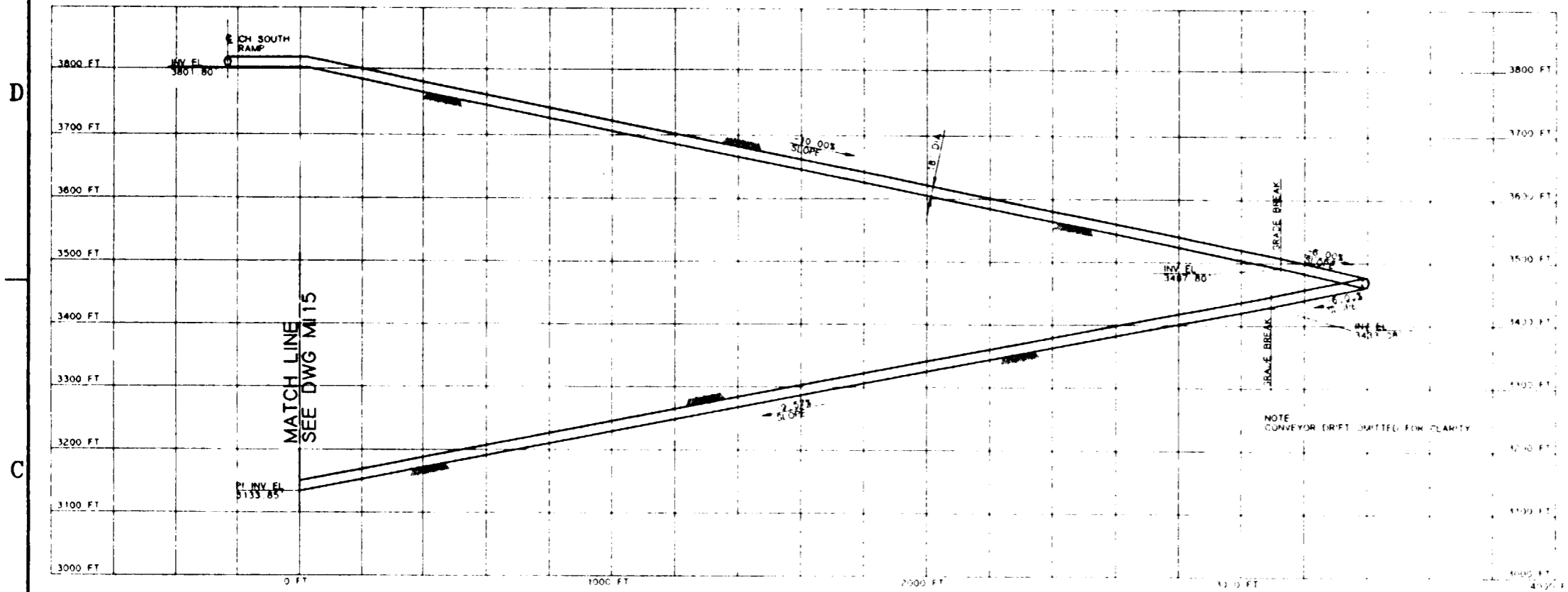
**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

**9112020001-58**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>GENERAL ARRANGEMENT</b> <b>CH NORTH RAMP</b> <b>PLAN &amp; PROFILE, SECTION</b>													
DESIGN	WRK												
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
<i>[Signature]</i>		8-26-91	YMP-025-2-MING-M122		0								
YMP/O APPROVED													
DATE													
SMT OF													



**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

**SI APERTURE CARD**

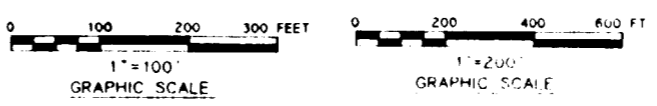
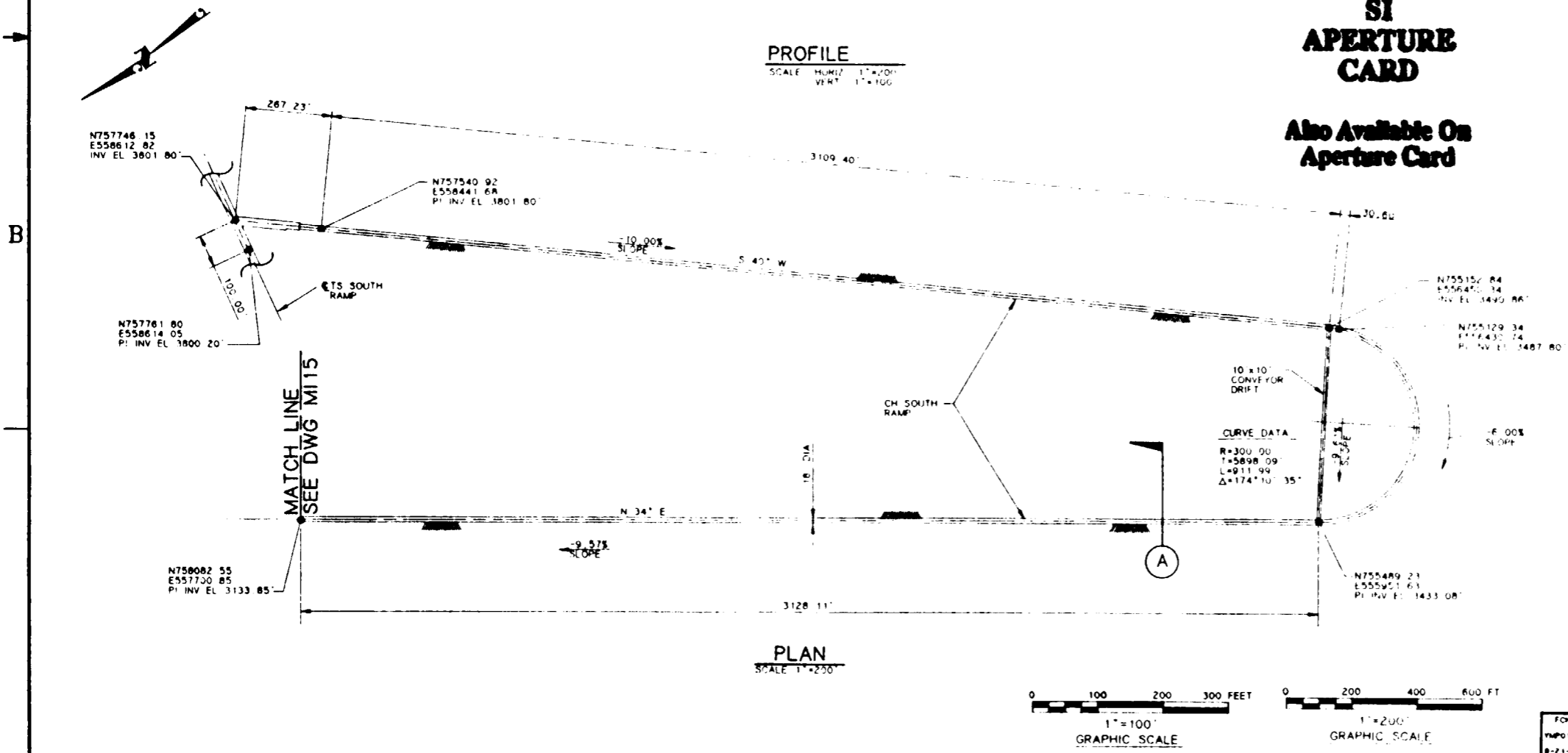
Also Available On Aperture Card

**NOTES:**

- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INVERT) IS SHOWN.
- BEARINGS ARE ROUNDLY TO THE NEAREST DEGREE.
- BY-PASSES AND TURN AROUNDS WILL BE PROVIDED AT REGULAR INTERVALS.

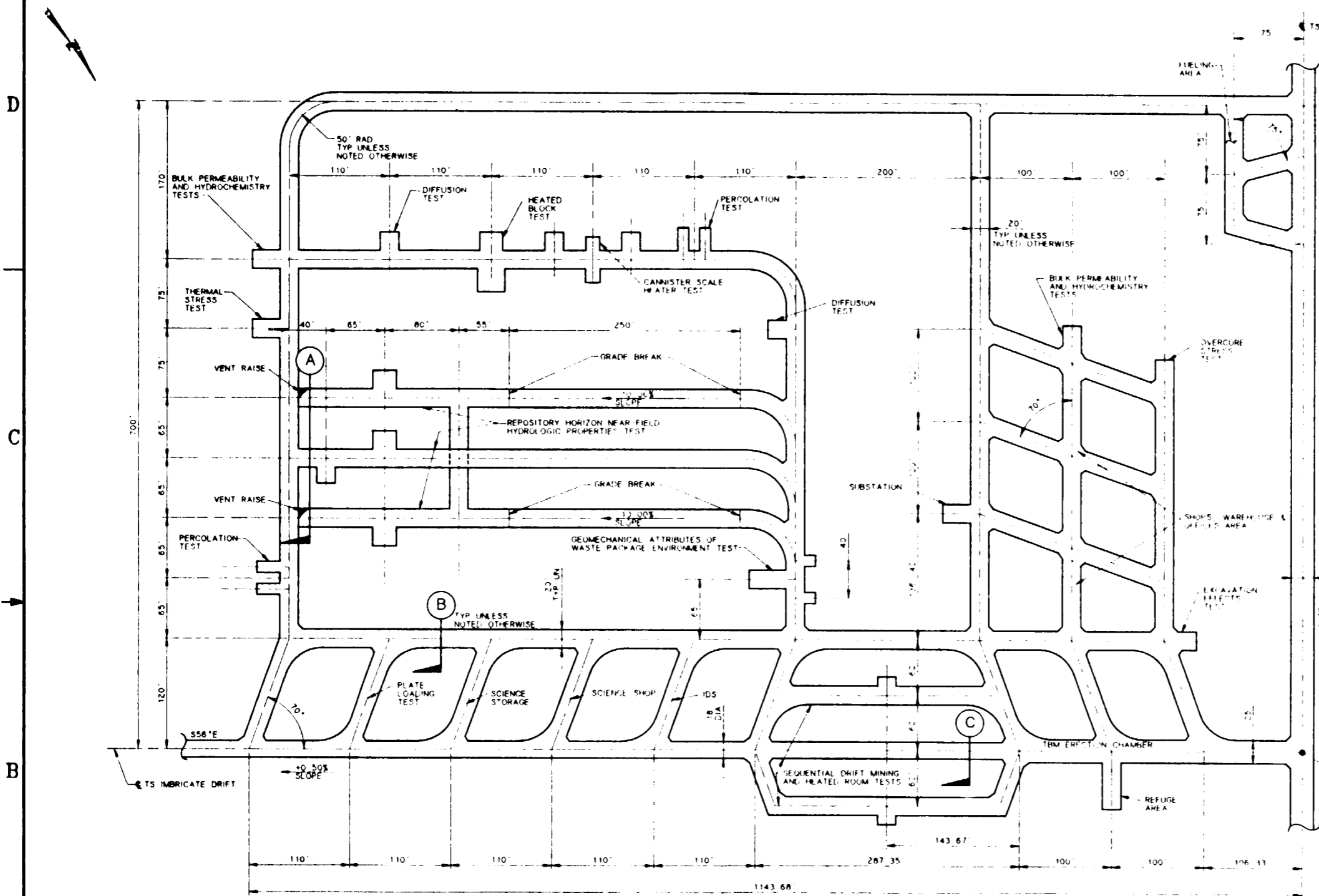
**9112020061-59**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT CH SOUTH RAMP <b>PLAN &amp; PROFILE, SECTION</b>											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A	SUBMITTED BY		DATE		DRAWING NO.		REV					
ENV SAF	<i>[Signature]</i>	<i>[Signature]</i>		8-26-91		YMP-025-2-MING-MI23		0					
QUALITY ASSURANCE	<i>[Signature]</i>	YMPD APPROVED		DATE		SHT		OF					
FCN	YMP0159	W.B.S. NO.		1, 2, 8, 5		C.I. NO.							

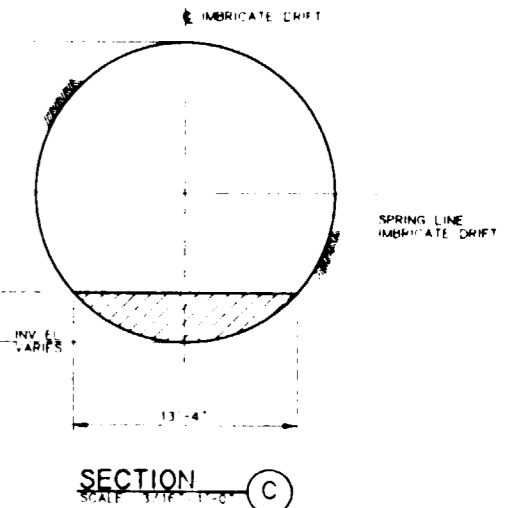
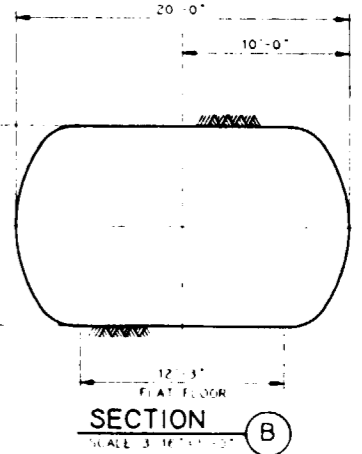
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NOTE:  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI  
APERTURE  
CARD**

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Aperture Card



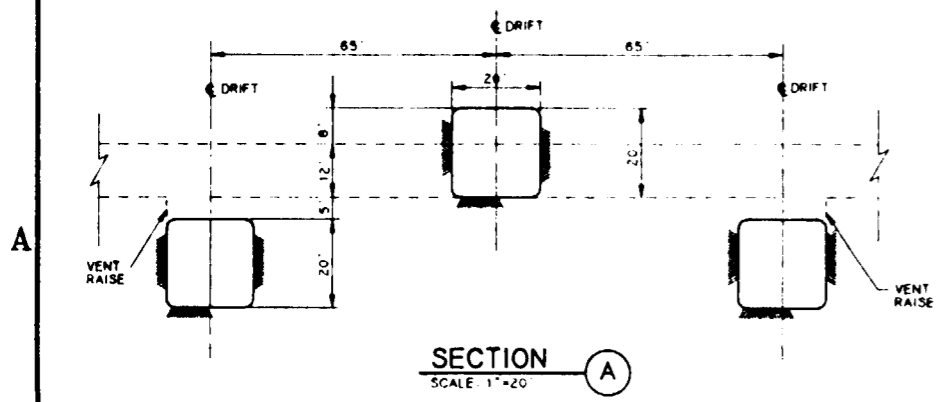
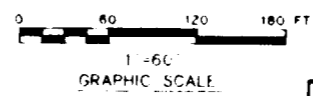
**TS MAIN TEST AREA PLAN**  
SCALE 1"=60'

**9112020061-60**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**NOTES:**

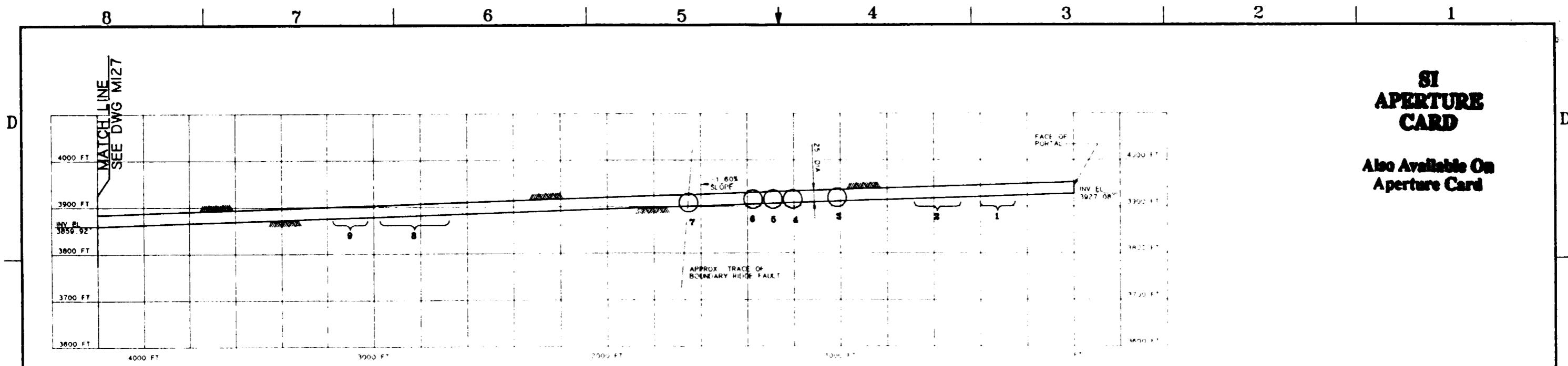
- COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
- ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE "INVERT" (PI INV.) IS SHOWN.
- BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
- THE MAIN TEST AREA LAYOUT IS BASED ON EXCAVATION BY MOBILE MINER. ACTUAL EXCAVATION METHODS/SEQUENCE TO BE EMPLOYED IN THIS AREA (B'D THE TS IMBRICATE DRIFT IS TO BE EXCAVATED BY TBM).
- TEST AREA LAYOUT GEOMETRY IS BASED ON PRELIMINARY TESTING REQUIREMENTS DESCRIBED IN YMP/CC-0013, REV 7/29/91 VOL 2 ESDR.
- TEST LOCATIONS AND ORIENTATIONS AS SHOWN ARE PRELIMINARY AND CANNOT BE FINALLY DETERMINED UNTIL INITIAL DRIFTING AND GEOLOGICAL MAPPING ARE COMPLETED.



NO	DATE	REVISION	DES	DRN	CHK	DEC	M	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK	EXPLORATORY STUDIES FACILITY											
DRAWN	CLP	GENERAL ARRANGEMENT											
CHECKED	<i>[Signature]</i>	TS MAIN TEST AREA											
DEC	<i>[Signature]</i>	PLAN AND SECTIONS											
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
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YMP/CC APPROVED		DATE	SHT		OF								

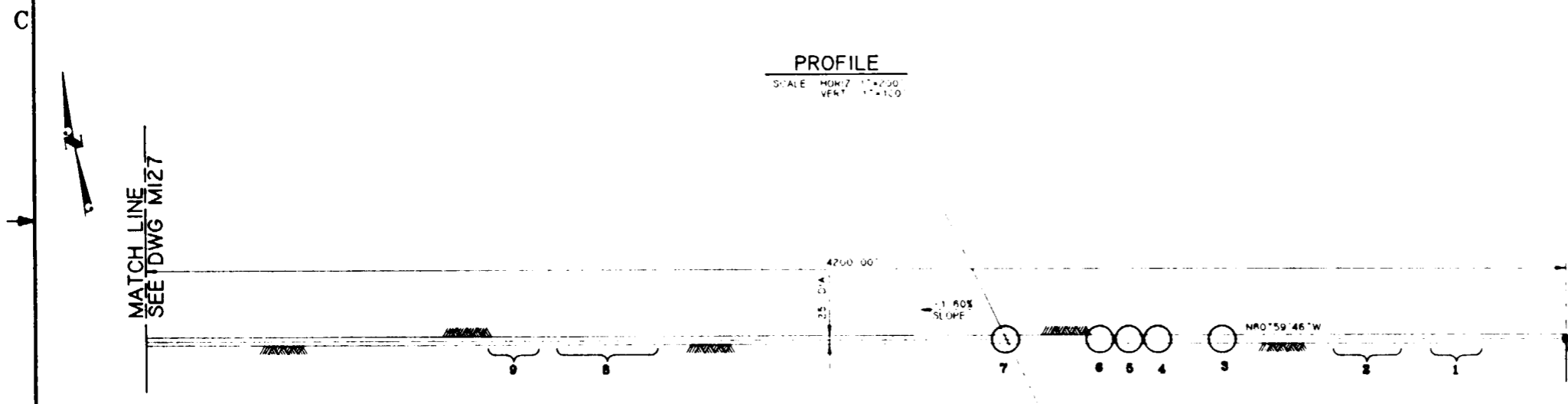
# SI APERTURE CARD

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### PROFILE

SCALE: HORIZ 1"=200' VERT 1"=100'



### PLAN

SCALE: 1"=200'

### NOTES:

1. THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROLITHOLOGIC AND THE THERMAL MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SML DATA AND IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
2. REFER TO YMP/00-0113 REV. 7/24/91 VOL. 2 ESEDR FOR TEST DESCRIPTIONS.
3. REFER TO YMP/025-2-MING-M149-M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN RAMP.
4. IN-SITU SEALS TESTING WILL REQUIRE ALCOVES. THESE ALCOVES AND THEIR LOCATIONS CANNOT BE IDENTIFIED AT THIS TIME.

### LEGEND:

- INDICATES UNCERTAINTY OF TEST ALCOVE LOCATION
- INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGICAL INFORMATION

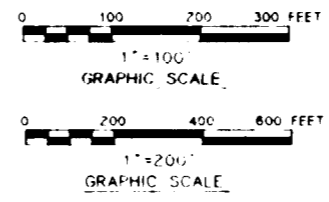
N756520.00  
E566111.00  
INV. 3927.08

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

9112020061-61

TS SOUTH RAMP		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
1	RADIAL BORE HOLE (ANISOTROPY) HYDROCHEMISTRY	24" W x 20" L x 22" H SAME AS ANISOTROPY TEST
2	PLATE LOADING	15" W x 60" L x TBD H
3	RADIAL BORE HOLE (ANISOTROPY) HYDROCHEMISTRY	24" W x 20" L x 22" H USE SAME ALCOVE
4	RADIAL BORE HOLE (CONTACT) HYDROCHEMISTRY PERCOLATION	24" W x 20" L x TBD H SAME ALCOVE AS RADIAL BORE HOLE (CONTACT) 2 DRIFTS 12" W x 23" L x 14" H
5	RADIAL BORE HOLE (ANISOTROPY) HYDROCHEMISTRY	24" W x 20" L x 22" H USE SAME ALCOVE
6	RADIAL BORE HOLE (CONTACT) HYDROCHEMISTRY PERCOLATION	24" W x 20" L x TBD H SAME ALCOVE AS RADIAL BORE HOLE (CONTACT) 2 DRIFTS 12" W x 23" L x 14" H
7	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (NEAR BOUNDARY RIDGE)	TBD
8	RADIAL BORE HOLE (ANISOTROPY) HYDROCHEMISTRY PLATE LOADING	24" W x 20" L x 22" H USE SAME ALCOVE 15" W x 60" L x 12" H
9	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (BETWEEN GHOST DANCE AND BOUNDARY RIDGE FAULTS)	TBD

NOTE:  
COORDINATES AND DIMENSIONS ARE PRELIMINARY



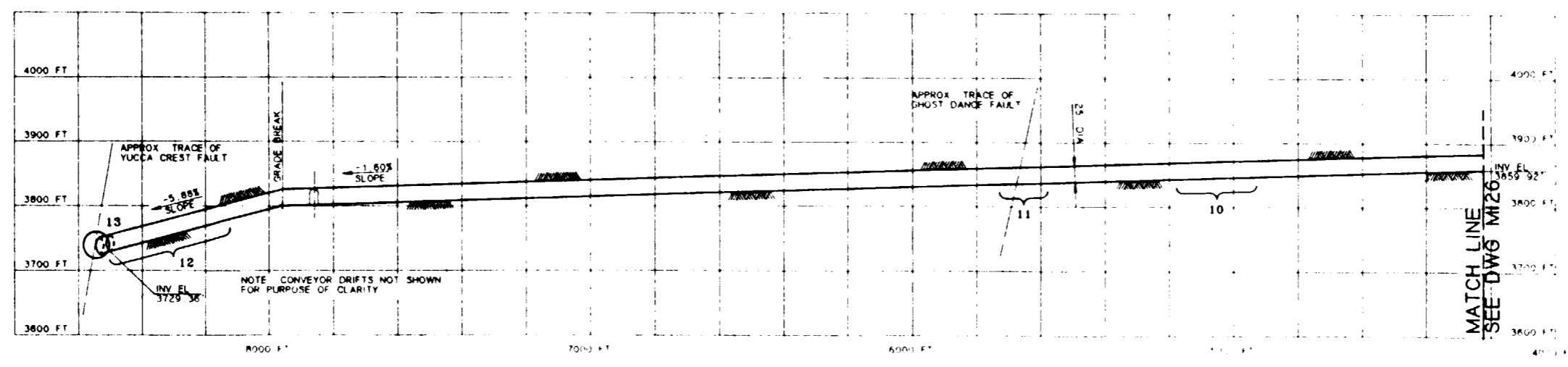
NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VERFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS:			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLC		EXPLORATORY STUDIES FACILITY										
DRAWN	CLP		GENERAL ARRANGEMENT										
CHECKED	J.H. LEE		TS SOUTH RAMP PRELIMINARY TEST LOCATIONS										
DEC.	A.C.		PLAN AND PROFILE										
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	SUBMITTED BY: <i>R.C. Ball</i> DATE: 8-26-91 DRAWING NO: YMP-025-2-MING-M126 REV: 0												
YMPD APPROVED													
DATE												SHT	OF

53

8 7 6 5 4 3 2 1

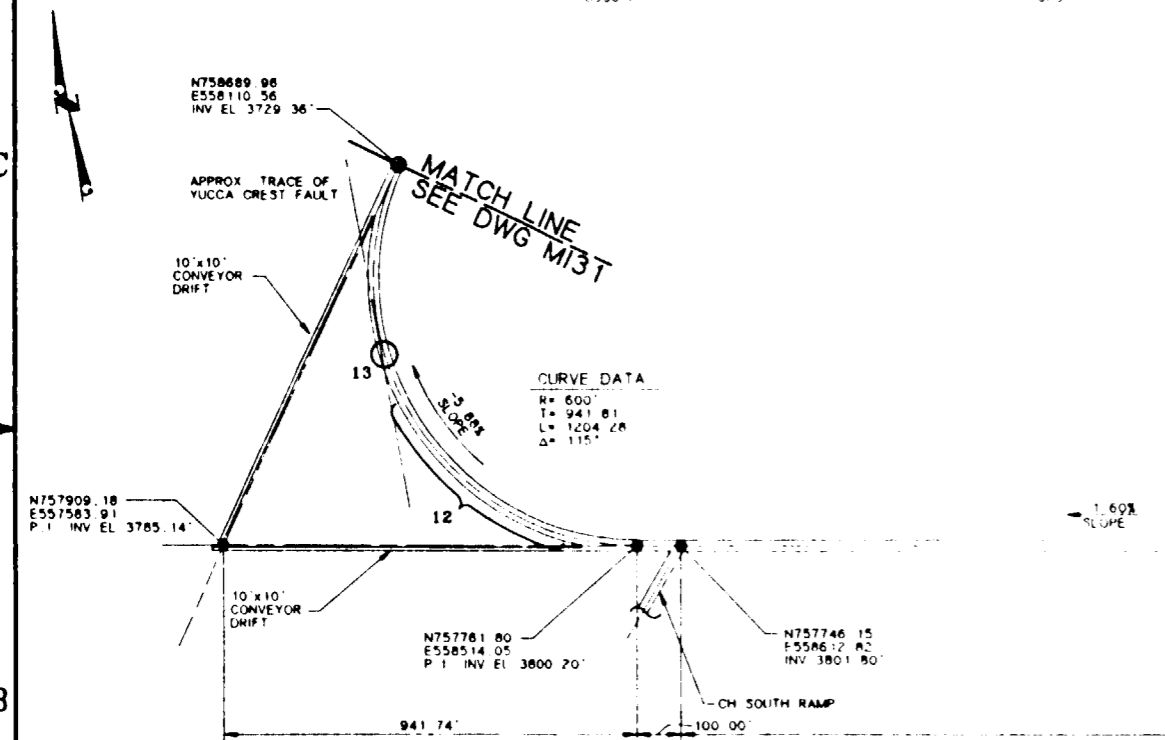
**SI APERTURE CARD**

Also Available On Aperture Card



**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY



**PLAN**  
SCALE 1"=200'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-62**

TS SOUTH RAMP		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
10	OVERCORE STRESS TEST	15' W x 30' L x 12' H
11	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (GHOST DANCE) HYDROCHEMISTRY	50' W x 80' L x 26' H USE SAME ALCOVE
12	RADIAL BOREHOLE (ANISOTROPY) HYDROCHEMISTRY PLATE LOADING	24' W x 20' L x 22' H SAME ALCOVE AS ANISOTROPY 15' W x 80' L x 160' H
13	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (NEAR YUCCA CREST)	TBD

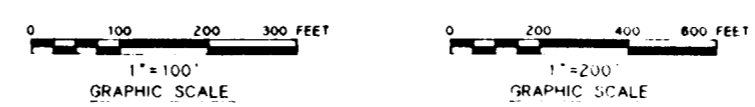
**NOTES:**

- THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROGEOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SNL, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
- REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESRDR FOR TEST DESCRIPTIONS.
- REFER TO YMP-025-2-MING-M149, M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN RAMP.
- IN SITU SEALS TESTING WILL REQUIRE ALCOVES. THESE ALCOVES AND THEIR LOCATIONS CANNOT BE IDENTIFIED AT THIS TIME.

**LEGEND**

— INDICATES UNCERTAINTY OF TEST ALCOVE LOCATION

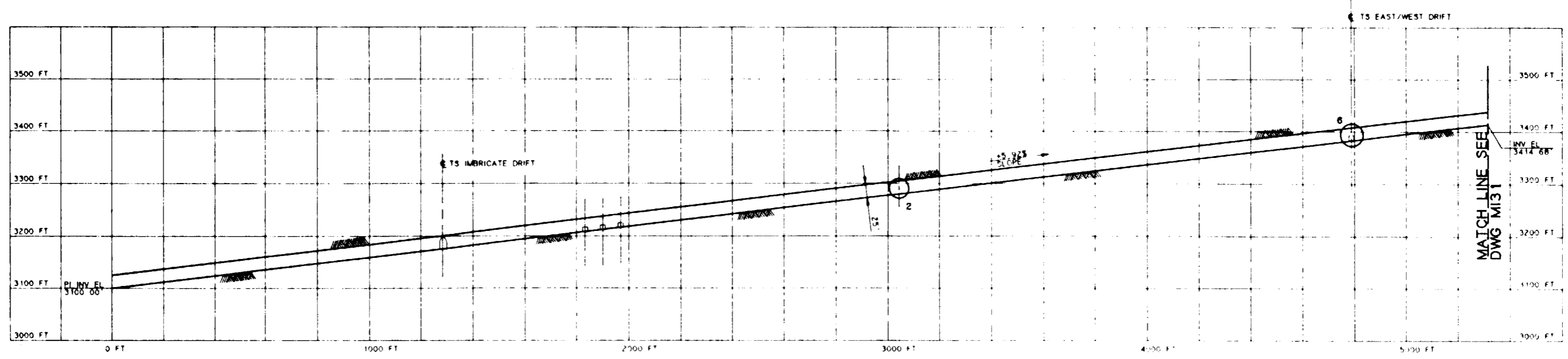
○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGIC INFORMATION



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP/O		
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA															
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA															
<b>EXPLORATORY STUDIES FACILITY</b> GENERAL ARRANGEMENT TS SOUTH RAMP PRELIMINARY TEST LOCATIONS <b>PLAN AND PROFILE</b>															
DESIGN		RLC		DRAWN		CLP		CHECKED		J. J. [Signature]		DEC		J. [Signature]	
DESIGN MANAGER		B. C. H.		VERIFICATION		N/A		ENV. SAF.		[Signature]		QUALITY ASSURANCE		[Signature]	
SUBMITTED BY		DATE		DRAWING NO.		REV.		YMP/O APPROVED		DATE		SHT		OF	
[Signature]		8-26-91		YMP-025-2-MING-M127		0		[Signature]		8-26-91		[Signature]		[Signature]	

54

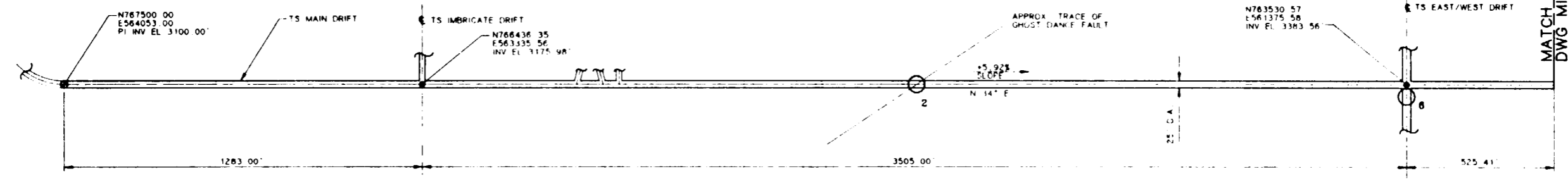
8 7 6 5 4 3 2 1



**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**PROFILE**  
SCALE: HORIZ. 1"=200'  
VERT. 1"=100'

**SI  
APERTURE  
CARD**  
  
Also Available On  
Aperture Card



**PLAN**  
SCALE: 1"=200'

**9112020061-63**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

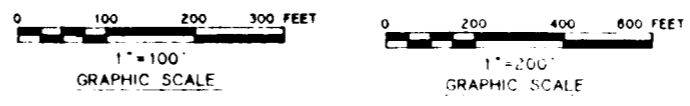
TS MAIN DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
2	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (GHOST DANCE FAULT) HYDROCHEMISTRY	TBD USE SAME ALCOVE
6	EXCAVATION EFFECTS TEST	22' W x 20' L x 12' H (MIN)

**NOTES:**

- 1 THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROGEOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SML, SAKI, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
- 2 REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 E5FDR FOR TEST DESCRIPTIONS
- 3 REFER TO YMP-025-2-MING-M149, M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN DRIFT
- 4 IN SITU SEALS TESTING AND ROCK MASS STRENGTH WILL REQUIRE ALCOVES. THESE ALCOVES AND THEIR LOCATIONS CANNOT BE IDENTIFIED AT THIS TIME

**LEGEND:**

○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGICAL INFORMATION



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD		
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA															
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA												
DESIGN	RLC		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS MAIN DRIFT PRELIMINARY TEST LOCATIONS PLAN AND PROFILE												
DRAWN	CLP														
CHECKED	[Signature]														
DEC	[Signature]														
DESIGN MANAGER	B.C.H.														
VERIFICATION	N/A														
ENV	SAF	SUBMITTED BY: [Signature] DATE: 8-26-91 DRAWING NO: YMP-025-2-MING-M130 REV: 0													
QUALITY ASSURANCE	YMPD APPROVED														
FCN	YMP0178	WBS NO	1, 2, 6, 5	DATE										SHT	OF
C.I. NO															



8

7

6

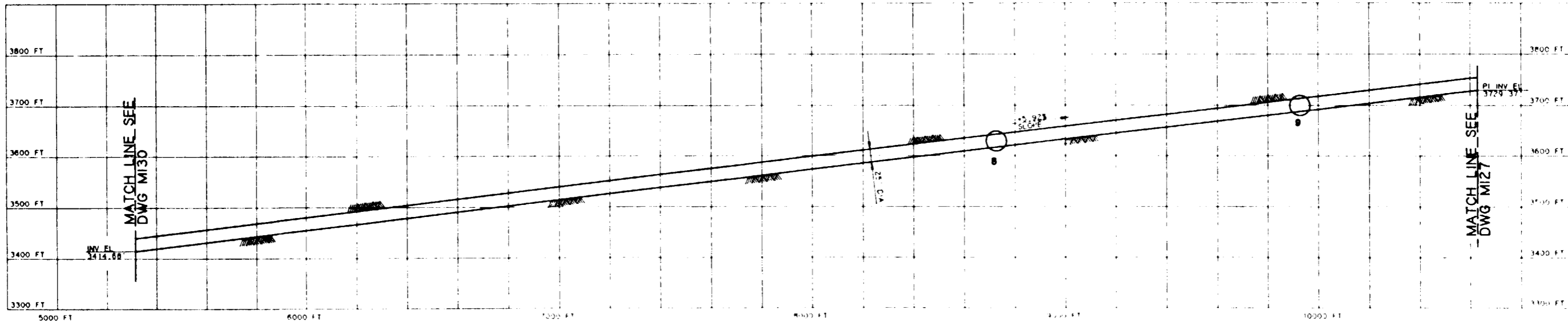
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4

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2

1

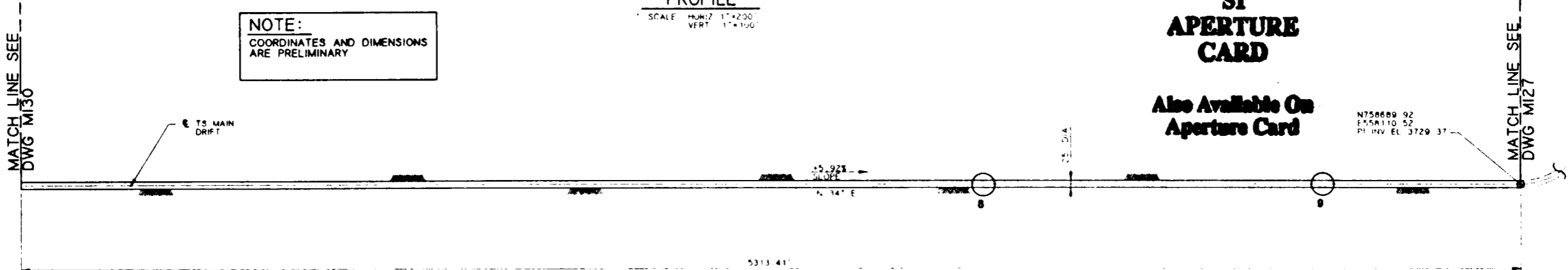


**PROFILE**  
SCALE: HORIZ. 1"=200'  
VERT. 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI  
APERTURE  
CARD**

Also Available On  
Aperture Card



**PLAN**  
SCALE: 1"=200'

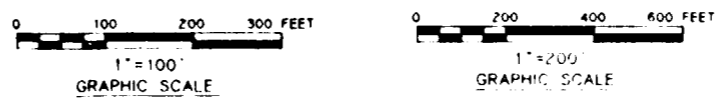
**9112020061-64**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

TS MAIN DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
8	OVERCORE STRESS TEST	15' W x 30' L x 12' H (ALLOWS FOR ANY ORIENTATION)
9	BULK PERMEABILITY HYDROCHEMISTRY	12' W x 15' L x TBD H USE SAME ALCOVE

**NOTES:**

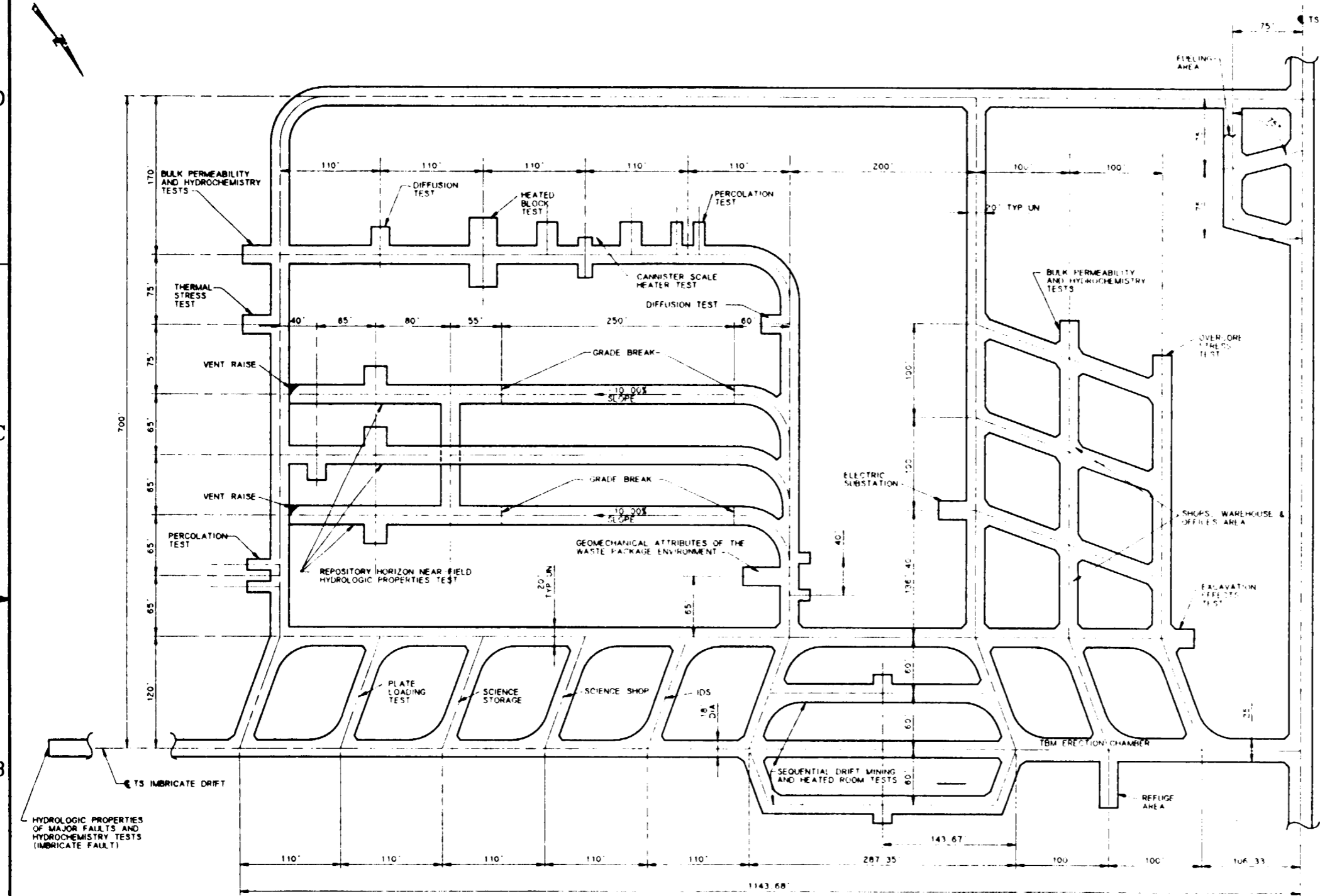
1. THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROLITHOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SNE, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE, THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
  2. REFER TO YMP-00 0013 REV 7/29/91 VOL 2 ESRDR FOR TEST DESCRIPTIONS.
  3. REFER TO YMP-025-2-MING-M149, M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN DRIFT.
  4. IN SITU SEALS TESTING MAY REQUIRE ALCOVES. THESE ALCOVES AND THEIR LOCATIONS CANNOT BE IDENTIFIED AT THIS TIME.
  5. ROCK MASS STRENGTH TESTS MAY REQUIRE ALCOVES. THESE ALCOVES LOCATIONS CANNOT BE IDENTIFIED AT THIS TIME.
- LEGEND: ○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGIC INFORMATION



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0	
<b>U.S. DEPARTMENT OF ENERGY</b>														
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RLC													
DRAWN	CLP													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV	SNF													
QUALITY ASSURANCE	<i>[Signature]</i> B-24-91													
SUBMITTED BY			DATE			DRAWING NO			REV					
<i>[Signature]</i>			9-25-91			YMP-025-2-MING-MI31			0					
YMP0 APPROVED												DATE	SHT	OF
DATE														

FOR YMP0177 8-21-91

56



- NOTES:**
- THIS DRAWING AS SHOWN WAS DEVELOPED USING TITLE I AND ESF ALTERNATIVES STUDY INPUTS FOR THE PURPOSE OF ESTABLISHING AN INITIAL TEST PROGRAM BASIS.
  - THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SML, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
  - MANY INTERFERENCE STANDOFF ZONES MAY INCREASE AS A RESULT OF ONGOING PERFORMANCE EVALUATIONS, ESPECIALLY FOR HEATER TESTS. ALL CURRENTLY DEFINED (TITLE II) STANDOFF ZONES ARE APPLIED. FLEXIBILITY TO ALLOW STANDOFF EXPANSIONS HAS BEEN CONSIDERED.
  - ROCK MASS STRENGTH AND IN SITU SEALS TESTS MAY REQUIRE ALCOVES, BUT CANNOT BE PRESENTLY LOCATED.
  - REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESFR FOR TEST DESCRIPTIONS.
  - TEST LOCATIONS AND ORIENTATIONS ARE PRELIMINARY AND CANNOT BE FINALLY DETERMINED UNTIL INITIAL DRIFTING AND GEOLOGICAL MAPPING ARE COMPLETED.

- LEGEND:**
- TBM TUNNEL BORING MACHINE
  - IDS INTEGRATED DATA SYSTEM

**SI APERTURE CARD**

Also Available On Aperture Card

**NOTE :**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

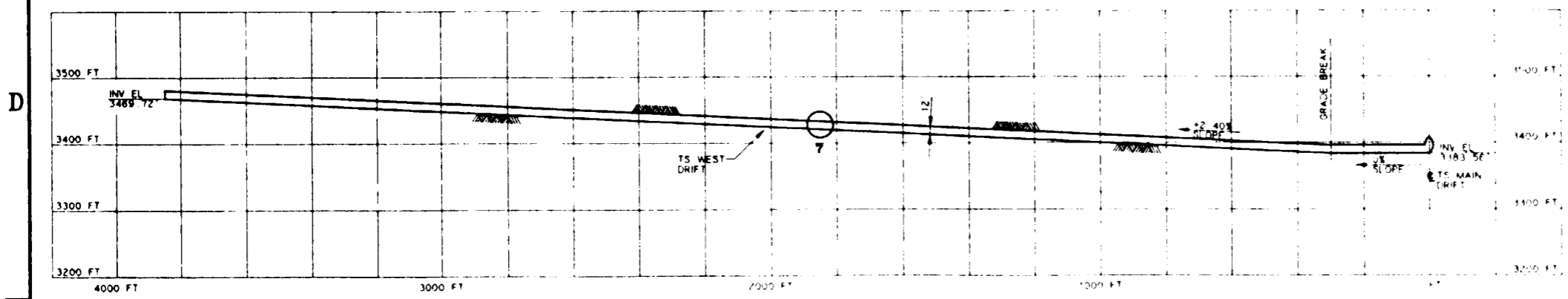
**TS MAIN TEST AREA PRELIMINARY TEST LOCATIONS PLAN**  
SCALE 1"=50'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RLC	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS MAIN TEST AREA PRELIMINARY TEST LOCATIONS PLAN											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
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QUALITY ASSURANCE	<i>[Signature]</i>	YMPD APPROVED		DATE		SHT		OF					
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9118020081-65

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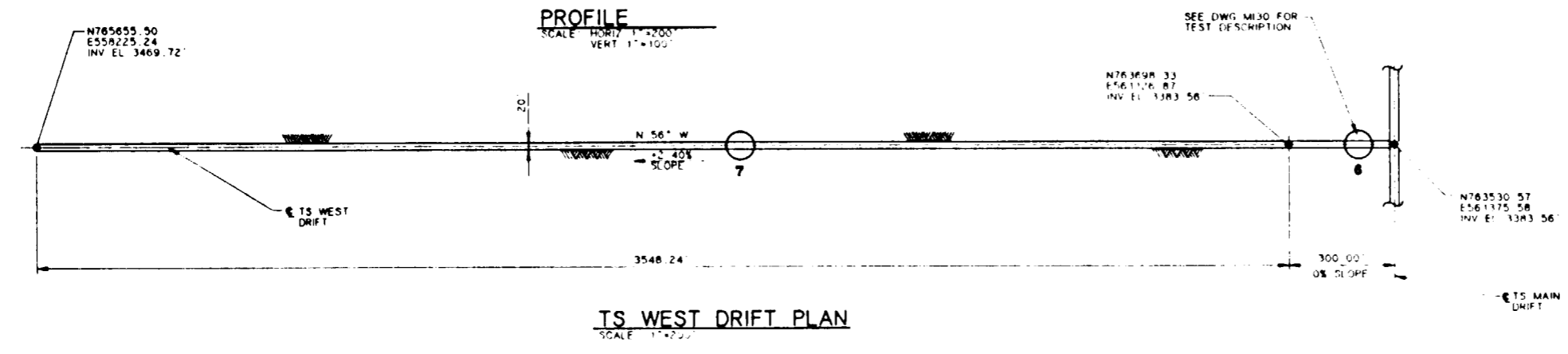
**NOTES:**

- 1 THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROLITHOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SNL SAIC AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AT EXCAVATION AND TESTING PHASES.
- 2 REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESFOR FOR TEST DESCRIPTIONS
- 3 REFER TO YMP-025-2-MING-M149, M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN DRIFTS
- 4 IN SITU SEALS TESTING AND ROCK MASS STRENGTH TESTS MAY REQUIRE ALCOVES. THESE ALCOVES AND THEIR LOCATIONS CANNOT BE IDENTIFIED AT THIS TIME

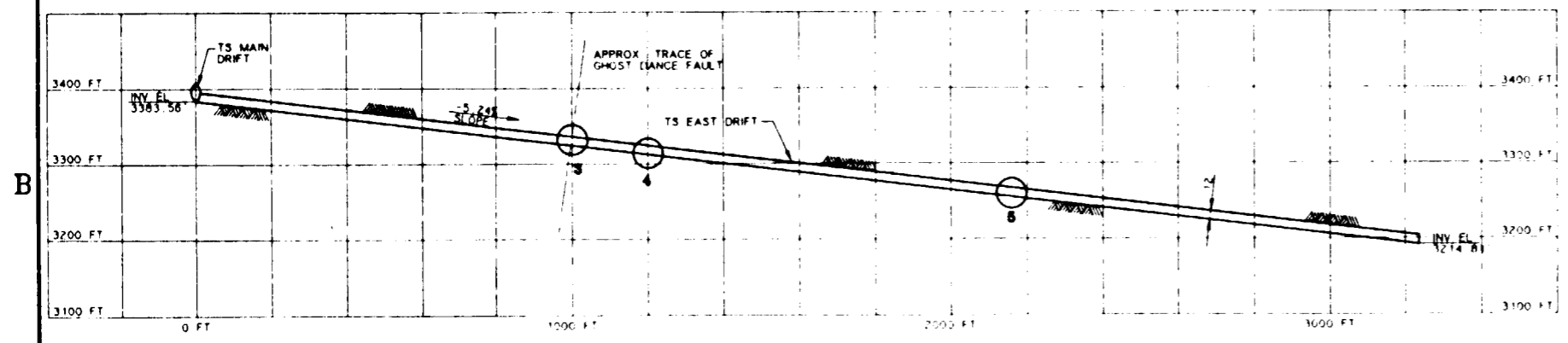
LEGEND ○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGICAL INFORMATION

**SI APERTURE CARD**

Also Available On Aperture Card

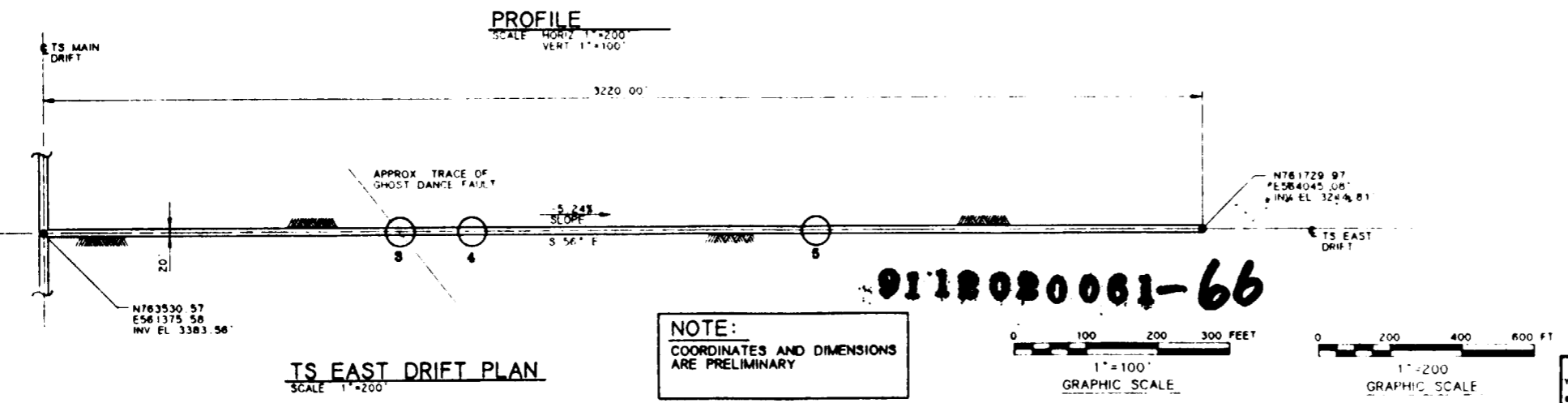


TS WEST DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
7	BULK PERMEABILITY HYDROCHEMISTRY	12' W x 15' L x TBD H USE SAME ALCOVE

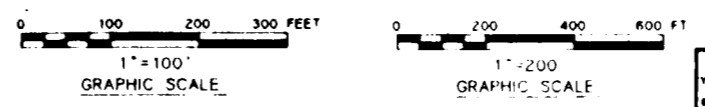


TS EAST DRIFT		
TEST ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
3	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (NEAR GHOST DANCE FAULT)	TBD USE SAME ALCOVE
4	PLATE LOADING	15' W x 60' L x TBD H
5	BULK PERMEABILITY HYDROCHEMISTRY	12' W x 15' L x TBD H USE SAME ALCOVE

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



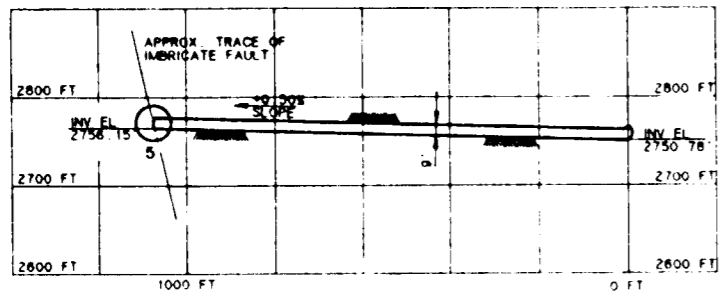
**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRP	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS													
DESIGN	RLC	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS EAST & WEST DRIFTS PRELIMINARY TEST LOCATIONS PLAN AND PROFILE											
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ENV	SAF	DATE: SHT: OF:											
QUALITY ASSURANCE	<i>[Signature]</i>	DATE: SHT: OF:											

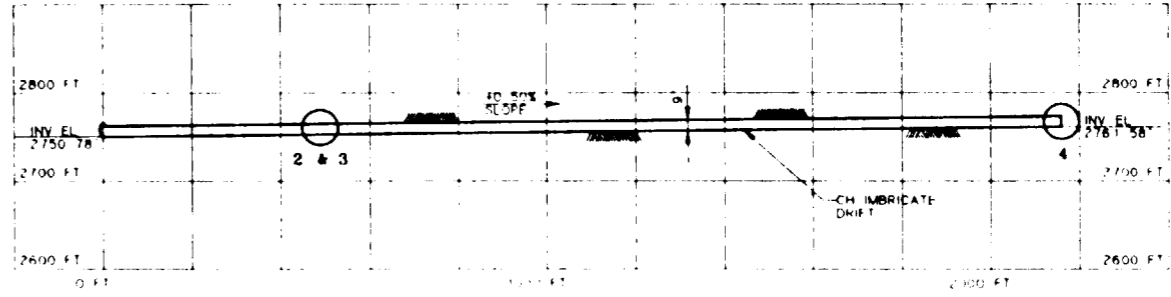
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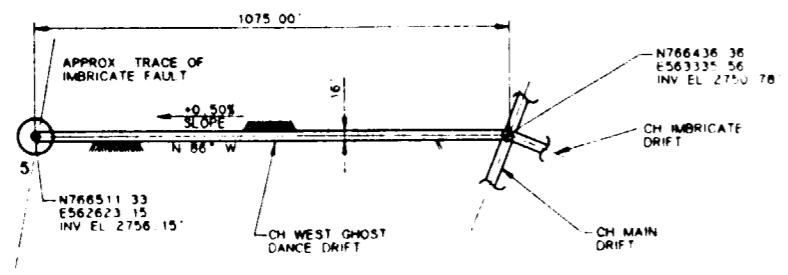
**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

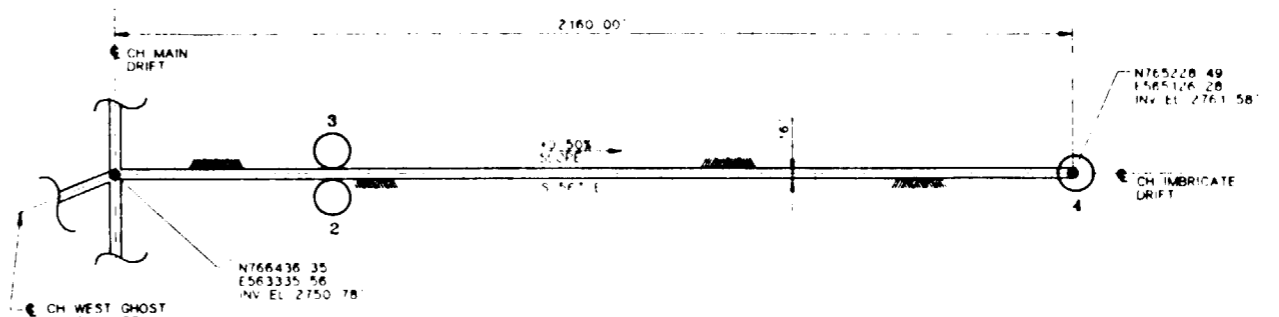


**PROFILE**  
SCALE: HORIZ 1"=200'  
VERT 1"=100'

**SI APERTURE CARD**  
Also Available On Aperture Card



**CH WEST GHOST DANCE DRIFT PLAN**  
SCALE: 1"=200'



**CH IMBRICATE DRIFT PLAN**  
SCALE: 1"=200'

CH WEST GHOST DANCE DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
5	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (GHOST DANCE) HYDROCHEMISTRY	TBD; USE SAME ALCOVE

CH IMBRICATE DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
2	RADIAL BOREHOLE (TS/CH CONTACT) HYDROCHEMISTRY	24' W x 20' L x TBD H SAME DRIFT AS 4BT (CONTACT)
3	RADIOCLIDE MIGRATION (TS/CH)	2 ROOMS 33' W x 33' L x 9'H
4	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (IMBRICATE) HYDROCHEMISTRY	TBD; SAME ALCOVE AS HYDROLOGIC PROPERTIES

**NOTES:**

1. THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROLITHOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SRI, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
2. REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESFR FOR TEST DESCRIPTIONS.
3. REFER TO YMP-025-2-MING MI49 MI50 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN DRIFT.
4. THREE ADDITIONAL TESTS WHICH MAY REQUIRE ALCOVES CANNOT PRESENTLY BE LOCATED DUE TO CURRENT STATUS OF TEST PLANNING OR DEPENDENCE ON SITE SPECIFIC GEOLOGY. THESE TESTS ARE: 1) BULK PERMEABILITY, 2) ROCK MASS STRENGTH, AND 3) IN SITU TESTING OF SEAL COMPONENTS. ALCOVE LOCATIONS FOR THESE TESTS WILL BE DETERMINED AS PLANNING IS COMPLETED OR UPON EXAMINATION OF GEOLOGIC FEATURES FOLLOWING EXCAVATION.

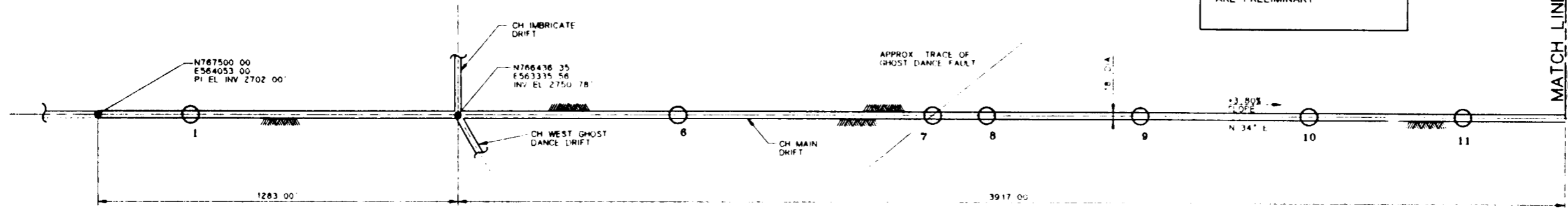
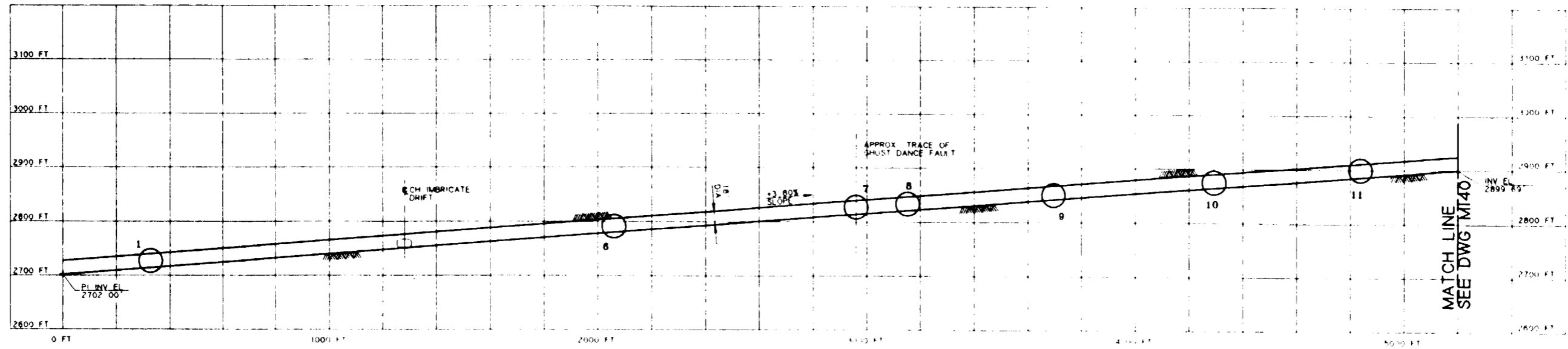
LEGEND ○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGIC INFORMATION



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112080081-67**

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT CH LEVEL DRIFTS PRELIMINARY TEST LOCATIONS <b>PLAN AND PROFILE</b>													
APPROVALS		DESIGN: RLC DRAWN: CLP CHECKED: [Signature] DEC: [Signature] DESIGN MANAGER: B.C.H. VERIFICATION: N/A ENV SAF: [Signature] QUALITY ASSURANCE: [Signature] 8-26-91											
SUBMITTED BY: [Signature]		DATE: 8-26-91		DRAWING NO: YMP-025-2-MING-MI38				REV: 0					
YMP/O APPROVED		DATE: _____ SHIT OF _____											



**PROFILE**  
SCALE: HORIZ. 1"=200'  
VERT. 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI  
APERTURE  
CARD**

Also Available On  
Aperture Card

**PLAN**  
SCALE: 1"=200'

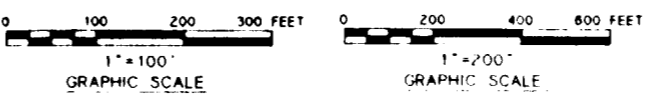
**9112020061-68**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**NOTES:**

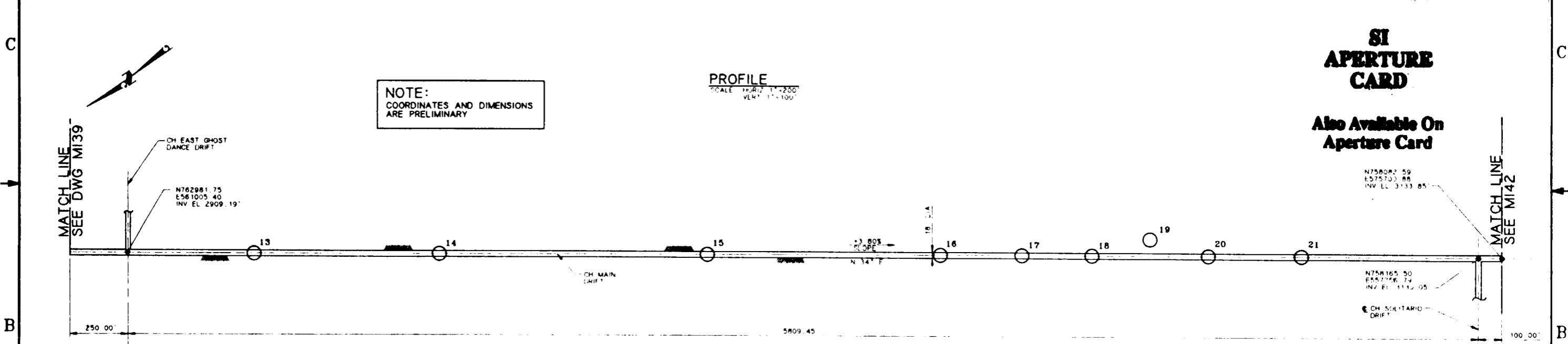
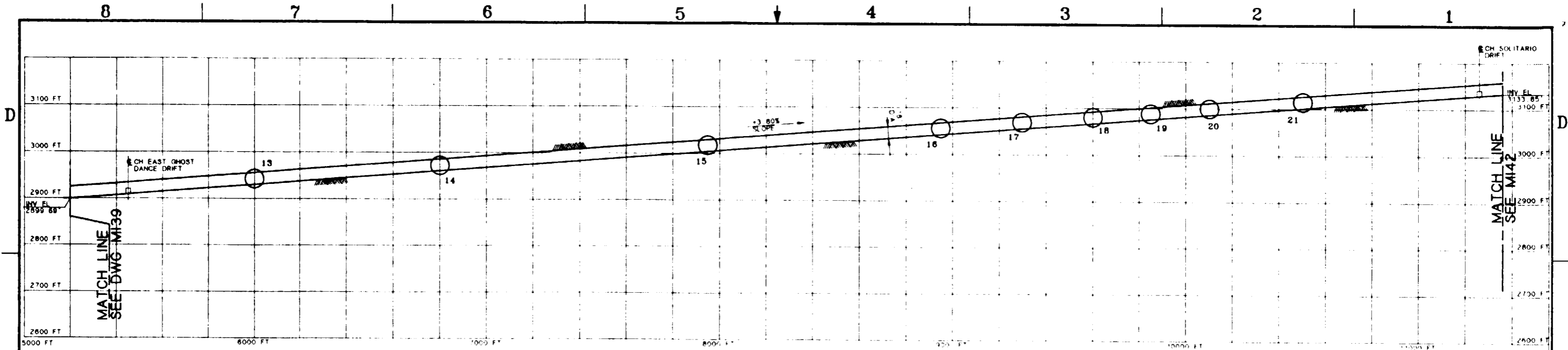
1. THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROLITHOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SNE, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE, THE FINAL LOCATIONS OF TESTS AND TEST ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
2. REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESDR FOR TEST DESCRIPTIONS.
3. REFER TO YMP-025-2-MING M149, M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN MAINS.
4. THREE ADDITIONAL TESTS WHICH MAY REQUIRE ALCOVES CANNOT PRESENTLY BE LOCATED DUE TO CURRENT STATUS OF TEST PLANNING OR DEPENDENCE ON SITE-SPECIFIC GEOLOGY. THESE TESTS ARE: 1) BULK PERMEABILITY, 2) ROCK MASS STRENGTH, AND 3) IN SITU TESTING OF SEAL COMPONENTS. ALCOVE LOCATIONS FOR THESE TESTS WILL BE DETERMINED AS PLANNING IS COMPLETED OR UPON EXAMINATION OF GEOLOGIC FEATURES FOLLOWING EXCAVATION.

**LEGEND:**  
○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGIC INFORMATION



CALICO HILLS MAIN DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
1	RADIAL BORE HOLE (V/Z CONTACT) HYDROCHEMISTRY	24' W x 20' L x TBD H SAME ALCOVE AS RADIAL BORE HOLE TEST
6	PLATE LOADING (VITRIC)	15' W x 60' L x TBD H
7	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (GHOST DANCE MIDDLE) HYDROCHEMISTRY	TBD SAME ALCOVE AS HYDROLOGIC PROPERTIES
8	PLATE LOADING (FAULT CONTACT)	15' W x 60' L x TBD H
9	DIFFUSION (VITRIC)	20' W x 20' L x 12' H
10	PERCOLATION (VITRIC)	2 DRIFTS 12' W x 23' L x 14' H
11	RADIAL BORE HOLE (ANISOTROPY CHN1) HYDROCHEMISTRY	24' W x 20' L x 22' H SAME ALCOVE AS RADIAL BORE HOLE

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> GENERAL ARRANGEMENT CH MAIN DRIFT PRELIMINARY TEST LOCATIONS PLAN AND PROFILE													
APPROVALS													
DESIGN	RLC												
DRAWN	CLP												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	[Signature]												
SUBMITTED BY		DATE	DRAWING NO		REV								
[Signature]		8-26-91	YMP-025-2-MING-M139		0								
YMPO APPROVED													
DATE SHT OF													



**PROFILE**  
SCALE HORIZ 1"=200'  
VERT 1"=100'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI  
APERTURE  
CARD**

Also Available On  
Aperture Card

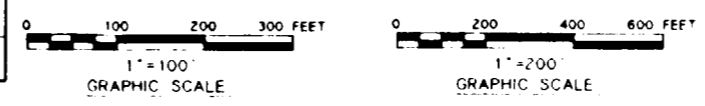
**PLAN**  
SCALE 1"=200'

CALICO HILLS MAIN DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
13	OVERCORE STRESS	15' W x 30' L x 12' H
14	DIFFUSION (VITRIC)	20' W x 20' L x 12' H
15	RADIAL BORE HOLE (ANISOTROPY CH#2) HYDROCHEMISTRY	24' W x 20' L x 22' H SAME ALCOVE AS RADIAL BORE HOLE TEST
16	RADIAL BORE HOLE (1/2 CONTACT) HYDROCHEMISTRY	24' W x 20' L x 180' H SAME ALCOVE AS RADIAL BORE HOLE
17	DIFFUSION (ZEOLITIC)	20' W x 20' L x 12' H
18	OVERCORE STRESS	15' W x 30' L x 12' H
19	RADIONUCLIDE MIGRATION (ZEOLITIC/WELDED PROW PASS)	2 ROOMS 33' W x 33' L x 9' H
20	PERCOLATION (ZEOLITIC)	2 DRIFTS 12' W x 23' L x 14' H
21	RADIAL BORE HOLE (ANISOTROPY CH#3) HYDROCHEMISTRY	24' W x 20' L x 22' H SAME ALCOVE AS RADIAL BORE HOLE TEST

**NOTES:**

- 1 THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROGEOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SA, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND TEST ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
- 2 REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESEDM FOR TEST DESCRIPTIONS.
- 3 REFER TO YMP-025-2 MING-M149, M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN MAINS.
- 4 THREE ADDITIONAL TESTS WHICH MAY REQUIRE ALCOVES CANNOT PRESENTLY BE LOCATED DUE TO CURRENT STATUS OF TEST PLANNING OR DEPENDENCE ON SITE SPECIFIC GEOLOGY. THESE TESTS ARE: 1) BULK PERMEABILITY, 2) ROCK MASS STRENGTH, AND 3) IN SITU TESTING OF SEAL COMPONENTS. ALCOVE LOCATIONS FOR THESE TESTS WILL BE DETERMINED AS PLANNING IS COMPLETED OR UPON EXAMINATION OF GEOLOGIC FEATURES FOLLOWING EXCAVATION.

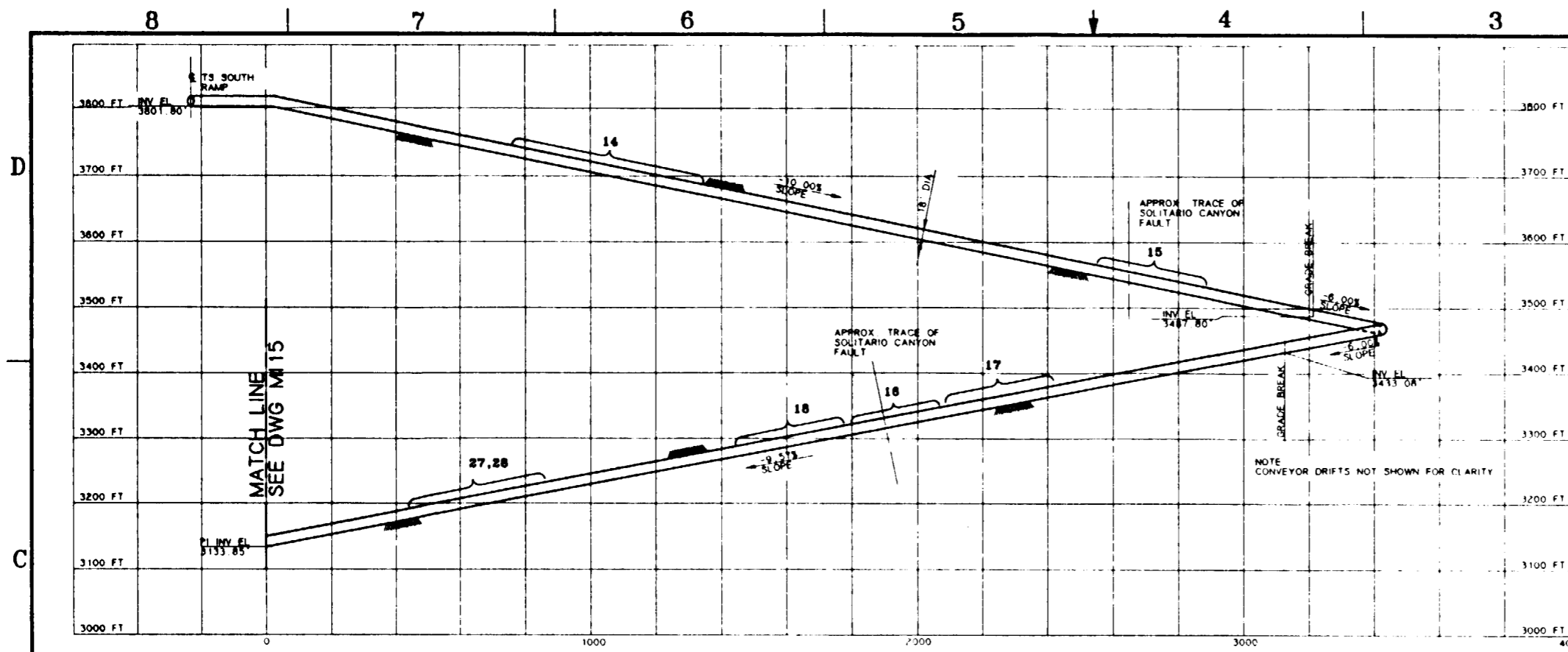
LEGEND ○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGIC INFORMATION



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-69**

NO.	DATE	REVISION	DES.	DRN.	CHK.	DEC.	DM.	VRFY.	ENV.	SAF.	QA.	TPD.	YMPD.
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE													
LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RLC	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT CH MAIN DRIFT PRELIMINARY TEST LOCATIONS <b>PLAN AND PROFILE</b>											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC.	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A	SUBMITTED BY	DATE	DRAWING NO.	REV.								
ENV.	SAF.	<i>[Signature]</i>	8-21-91	YMP-025-2-MING-M140	0								
QUALITY ASSURANCE	<i>[Signature]</i>	YMPD APPROVED											
CON.	YMPD179	B.S. NO.	1,2,5,9										
8-21-91	C.I. NO.												



**NOTES:**

- 1 THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROLITHOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SML, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED
- 2 REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESDR FOR TEST DESCRIPTIONS
- 3 REFER TO YMP-025-2-MING-M149, M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN RAMP
- 4 IN SITU SEALS TEST WHICH MAY REQUIRE ALCOVES CANNOT PRESENTLY BE LOCATED DUE TO CURRENT STATUS OF TEST PLANNING OR DEPENDENCE ON SITE-SPECIFIC GEOLOGY AND FACILITY DESIGN. ALCOVE LOCATIONS FOR THESE TESTS WILL BE DETERMINED AS PLANNING IS COMPLETED OR UPON EXAMINATION OF GEOLOGIC FEATURES

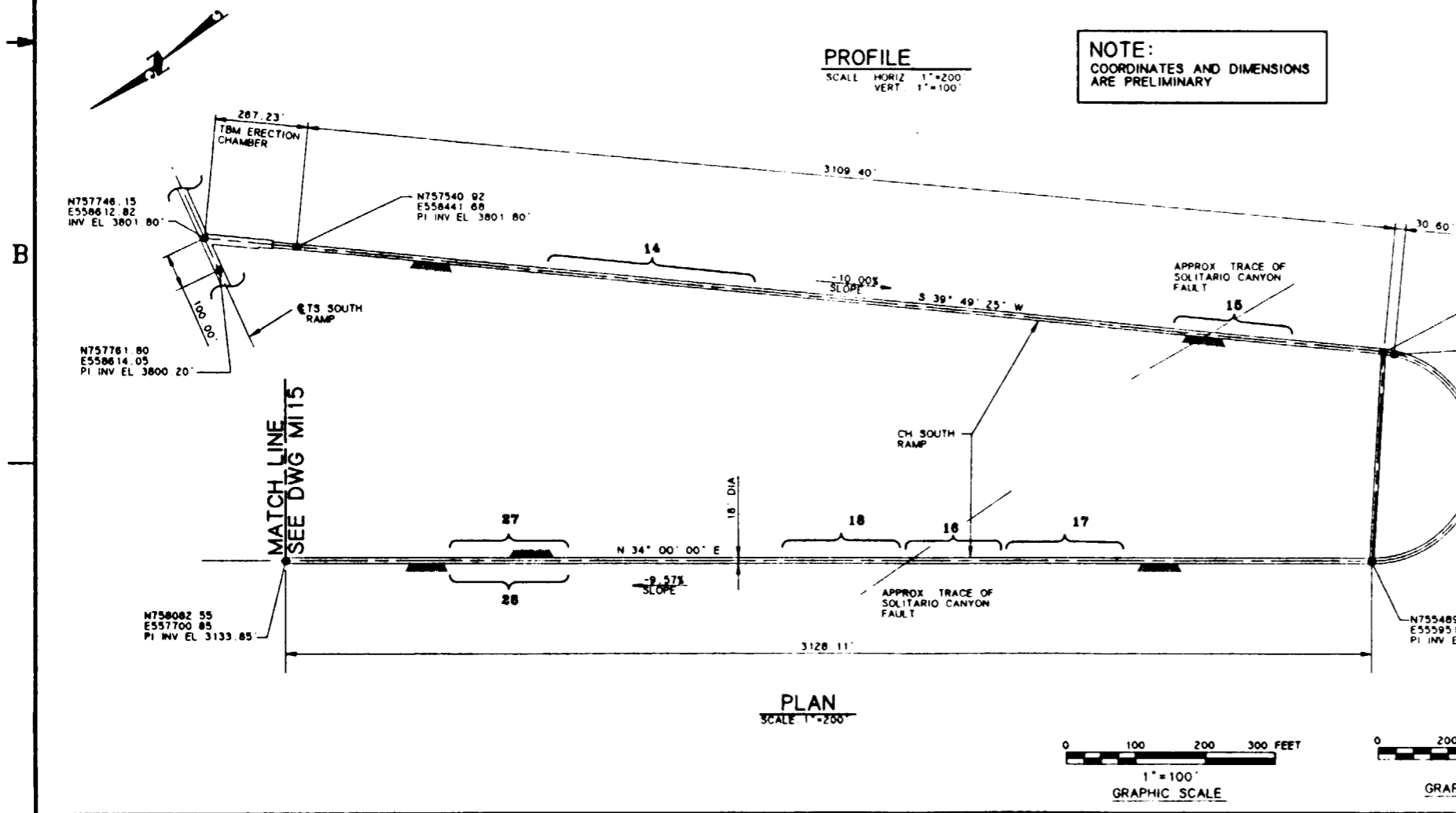
**LEGEND:**

- INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGICAL INFORMATION
- ⌋ INDICATES UNCERTAINTY OF TEST ALCOVE LOCATION

**SI APERTURE CARD**

Also Available On Aperture Card

CALICO HILLS SOUTH RAMP		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED ON ALCOVE	EXCAVATION SIZE REQUIRED
14	RADIAL BORE HOLE (ANIS) HYDROCHEMISTRY PLATE LOADING (TS=3)	24' W x 20' L x 22' H SAME ALCOVE AS RADIAL BORE HOLE 15' W x 60' L x TBD H
15	RADIAL BORE HOLE (CONTACT) HYDROCHEMISTRY PLATE LOADING (CH=1) HYDROLOGIC PROPERTIES OF MAJOR FAULTS (SOLITARIO CANYON) RADIOMUCLIDE MIGRATION (TS/CH)	24' W x 20' L x TBD H USE SAME ALCOVE AS RADIAL BORE HOLE 15' W x 60' L x TBD H TBD W x TBD W x TBD H 33' W x 33' L x 9' H 2 RMS REQ'D
16	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (SOLITARIO CANYON) PLATE LOADING (CH=2)	TBD W x TBD L x TBD H 15' W x 60' L x TBD H
17	PLATE LOADING (CH=3) RADIOMUCLIDE MIGRATION (VITRIC)	15' W x 60' L x TBD H 33' W x 33' L x 9' H
18	RADIOMUCLIDE MIGRATION (VITRIC)	33' W x 33' L x 9' H 2 ROOMS REQUIRED
27	RADIAL BORE HOLE (V/2 CONTACT) HYDROCHEMISTRY	24' W x 20' L x TBD H USE SAME ALCOVE AS RADIAL BORE HOLE
28	RADIOMUCLIDE MIGRATION (VITRIC / ZEOLITIC)	33' W x 33' L x 9' H 2 ROOMS REQUIRED

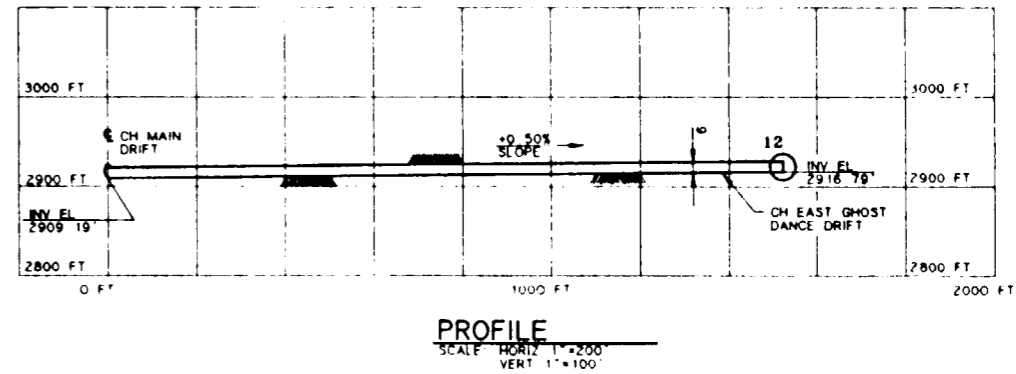
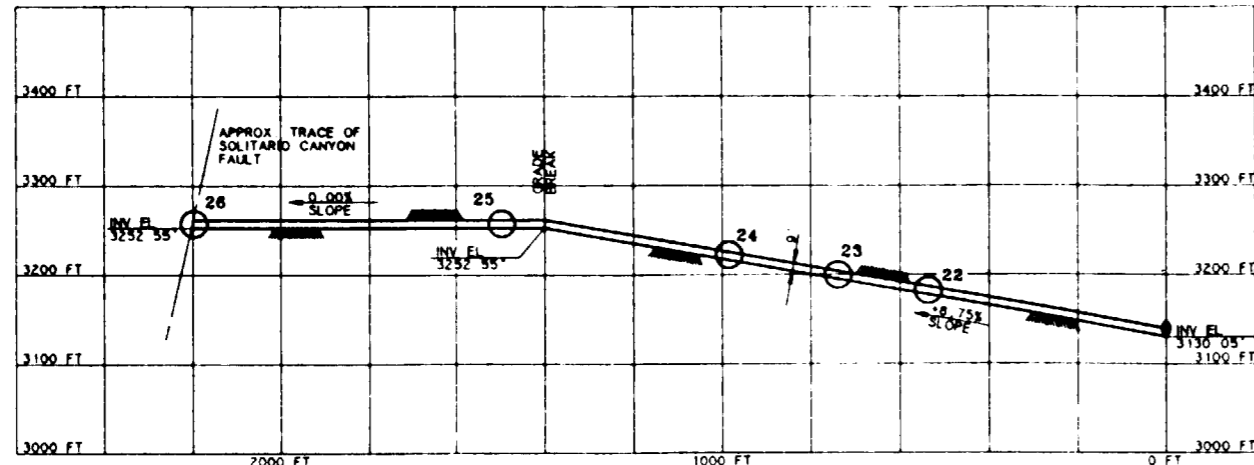


**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

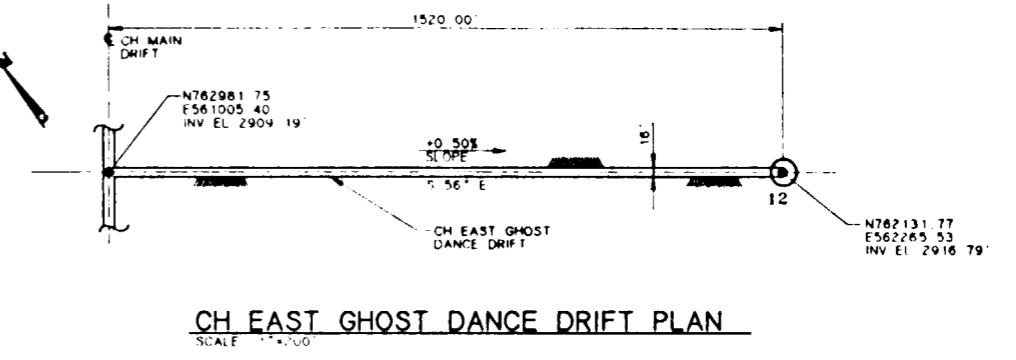
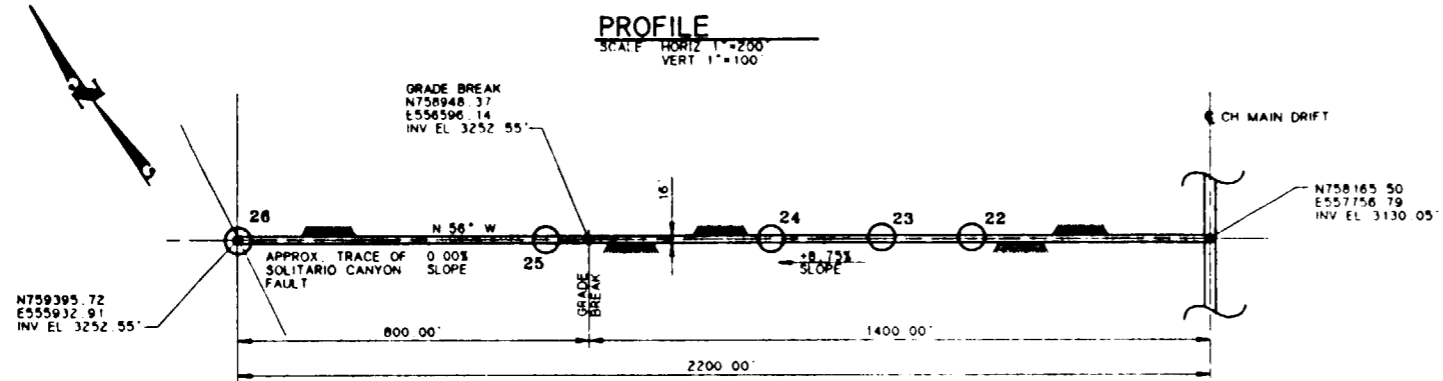
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112080061-70**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD	
<b>U.S. DEPARTMENT OF ENERGY</b>														
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA												
DESIGN	RLC	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT CH SOUTH RAMP PRELIMINARY TEST LOCATIONS <b>PLAN &amp; PROFILE</b>												
DRAWN	CLP													
CHECKED	[Signature]													
DEC	[Signature]													
DESIGN MANAGER	[Signature]													
VERIFICATION	N/A	SUBMITTED BY		DATE	DRAWING NO		REV							
ENV SAF	[Signature]	[Signature]		8-26-91	YMP-025-2-MING-M142		0							
QUALITY ASSURANCE	[Signature]	YMPD APPROVED												
FCN														
YMPD 190	W.B.S. NO	1, 2, 6, 5												
B-21-91	C.I. NO													
												DATE	SHT	OF



**SI APERTURE CARD**  
Also Available On Aperture Card



CALICO HILLS EAST GHOST DANCE DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED ON ALCOVE	EXCAVATION SIZE REQUIRED
12	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (GHOST DANCE) HYDROCHEMISTRY	TBD USE SAME ALCOVE

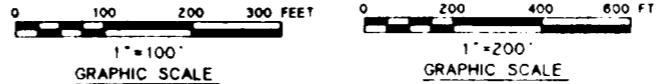
**CH SOLITARIO DRIFT PLAN**  
SCALE 1"=200'

CALICO HILLS SOLITARIO DRIFT		
TEST/ALCOVE LOCATION	TEST(S) TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED
22	RADIONUCLIDE MIGRATION (ZEOLITIC/VITRIC)	33' W x 33' L x 9' H 2 RMS REQUIRED
23	PLATE LOADING (ZEOLITIC) HYDROCHEMISTRY	15' W x 80' L x TBD H USE SAME ALCOVE
24	RADIONUCLIDE MIGRATION (ZEOLITIC)	33' W x 33' L x 9' H 2 RMS REQUIRED
25	DIFFUSION TEST (ZEOLITIC)	20' W x 20' L x 9' H
26	HYDROLOGIC PROPERTIES OF MAJOR FAULTS (SOLITARIO CANYON) HYDROCHEMISTRY	TBD USE SAME ALCOVE

**NOTES:**

- THE TEST LOCATIONS ARE CLOSELY DEPENDENT UPON THE HYDROLITHOLOGIC AND THE THERMAL/MECHANICAL CONTACTS. THE CURRENT GEOLOGIC INFORMATION SUPPLIED BY SNL, SAIC, AND RSN IS PRELIMINARY AND UNCERTAIN. THEREFORE THE FINAL LOCATIONS OF TESTS AND TEST ACCESS DRIFTS AND THEIR ORIENTATIONS WILL BE DEPENDENT UPON OBSERVED GEOLOGY AS EXCAVATION AND TESTING PROCEED.
- REFER TO YMP/CC 0013 REV 7/29/91 VOL 2 ESNDR FOR TEST DESCRIPTIONS.
- REFER TO YMP-028-2-MING-M149.M150 FOR TYPICAL ALCOVE EXCAVATION SEQUENCE IN MAINS.
- THREE ADDITIONAL TESTS WHICH MAY REQUIRE ALCOVES CANNOT PRESENTLY BE LOCATED DUE TO CURRENT STATUS OF TEST PLANNING OR DEPENDENCE ON SITE-SPECIFIC GEOLOGY. THESE TESTS ARE: 1) BULK PERMEABILITY, 2) ROCK-MASS STRENGTH, AND 3) IN SITU TESTING OF SEAL COMPONENTS. ALCOVE LOCATIONS FOR THESE TESTS WILL BE (DETERMINED) AS PLANNING IS COMPLETED OR UPON EXAMINATION OF GEOLOGIC FEATURES FOLLOWING EXCAVATION.

LEGEND: ○ INDICATES PRELIMINARY TEST ALCOVE LOCATION BASED UPON AVAILABLE GEOLOGIC INFORMATION



**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

**9112020061-71**

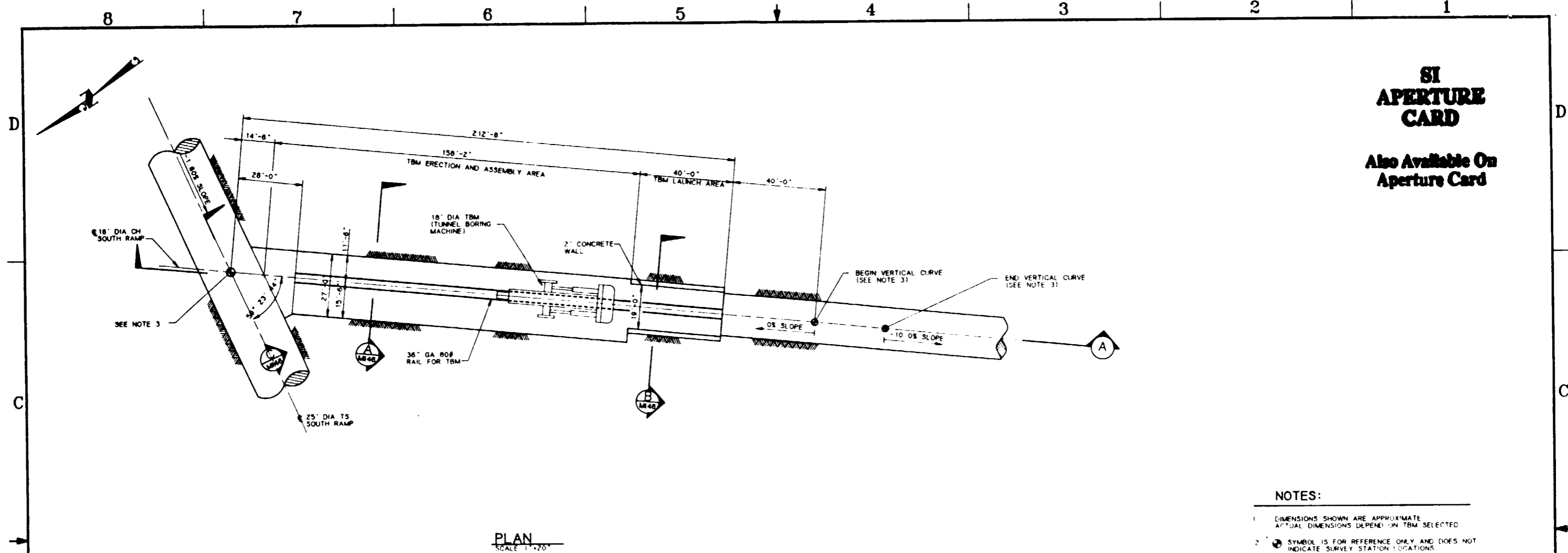
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

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<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT CH LEVEL DRIFTS PRELIMINARY TEST LOCATIONS <b>PLAN AND PROFILE</b>													
APPROVALS													
DESIGN	RLC												
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
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YMPD APPROVED													
DATE		SHT											
		CF											



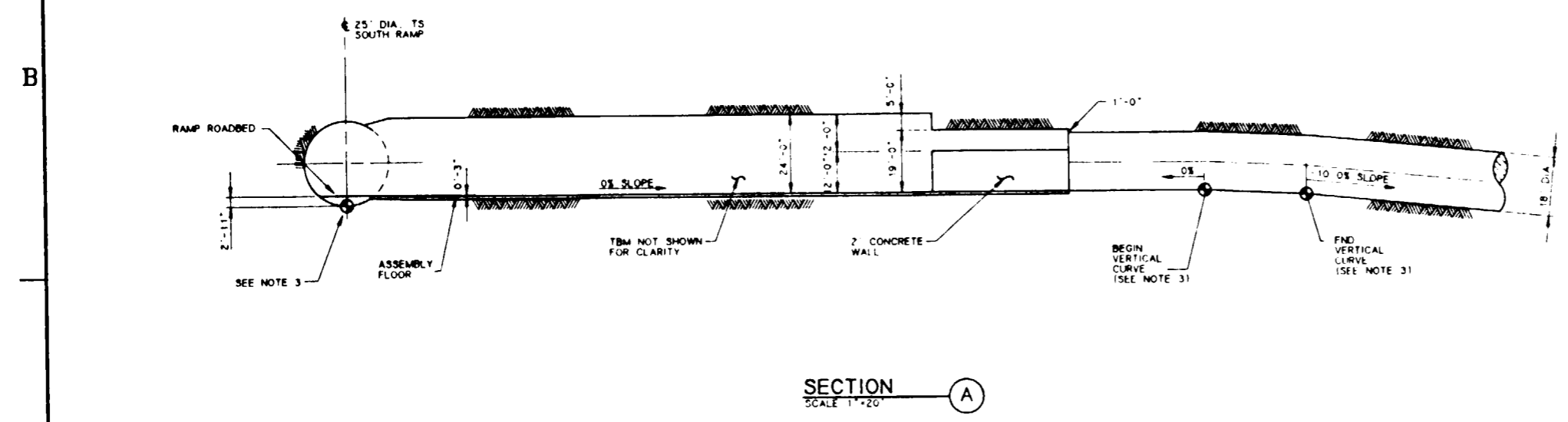
**SI  
APERTURE  
CARD**

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**NOTES:**

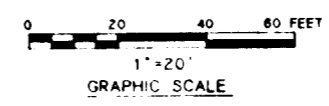
- DIMENSIONS SHOWN ARE APPROXIMATE. ACTUAL DIMENSIONS DEPEND ON TBM SELECTED.
- ⊙ SYMBOL IS FOR REFERENCE ONLY AND DOES NOT INDICATE SURVEY STATION LOCATIONS.
- SEE CALCULATION ST-SA-001 FOR MAJOR COORDINATES AND VERTICAL CURVE DATA.



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-72**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
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APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MJE		<b>EXPLORATORY STUDIES FACILITY</b> GENERAL ARRANGEMENT TS/CH SOUTH RAMP INTERSECTION <b>PLAN &amp; SECTION</b>										
DRAWN	CLP / RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY <i>[Signature]</i> DATE 8-26-91 DRAWING NO. YMP-025-2-MING-MI45 REV. 0											
QUALITY ASSURANCE	<i>[Signature]</i>												
YMPD APPROVED			DATE			SHT			OF				



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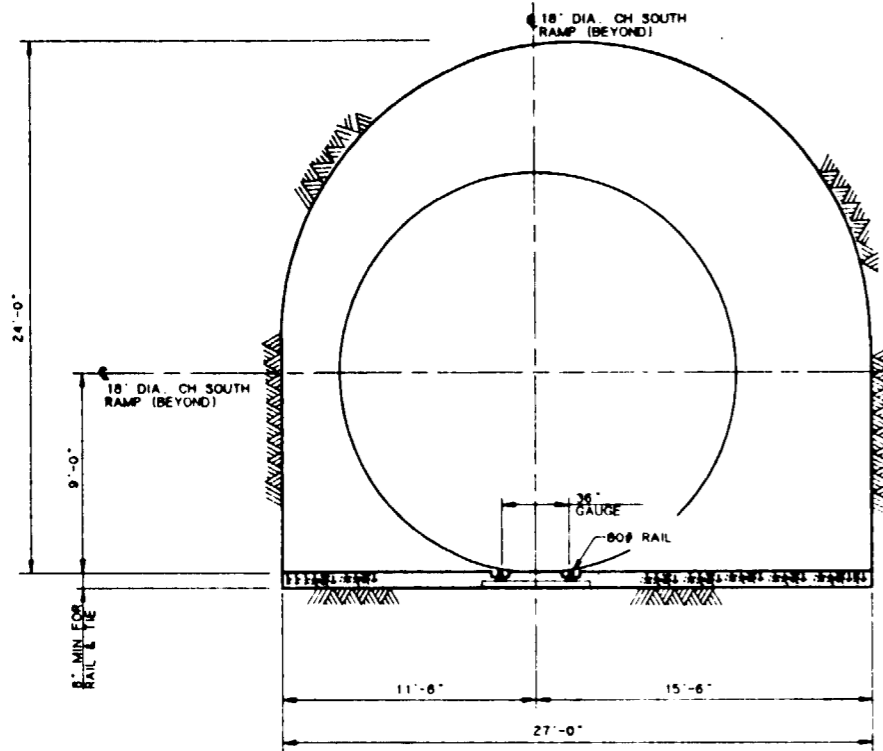
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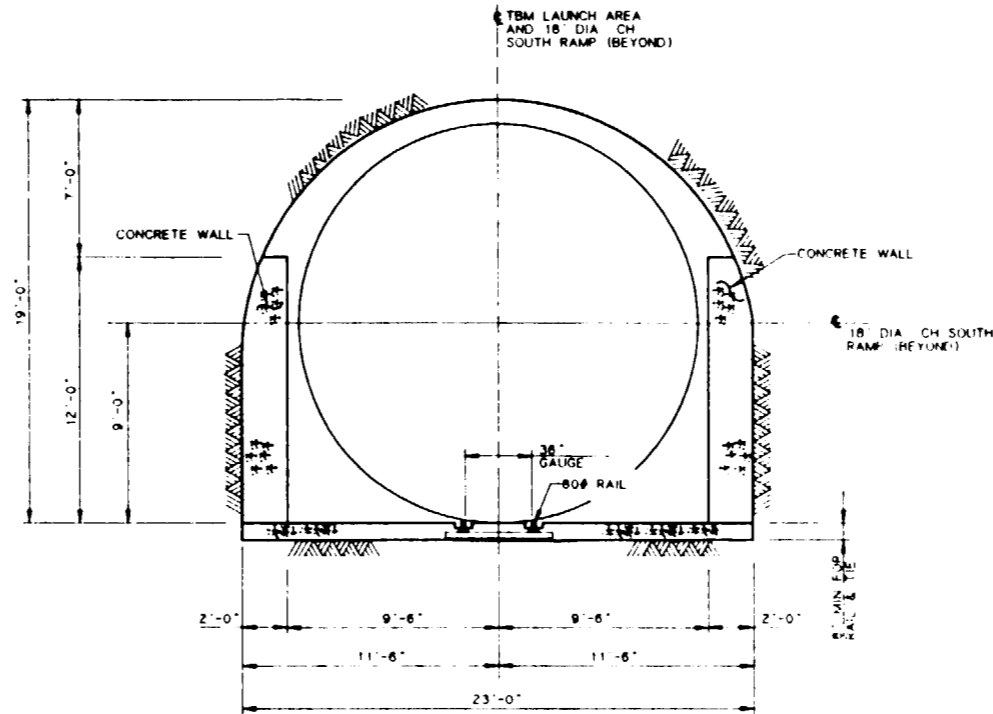
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# SI APERTURE CARD

Also Available On Aperture Card

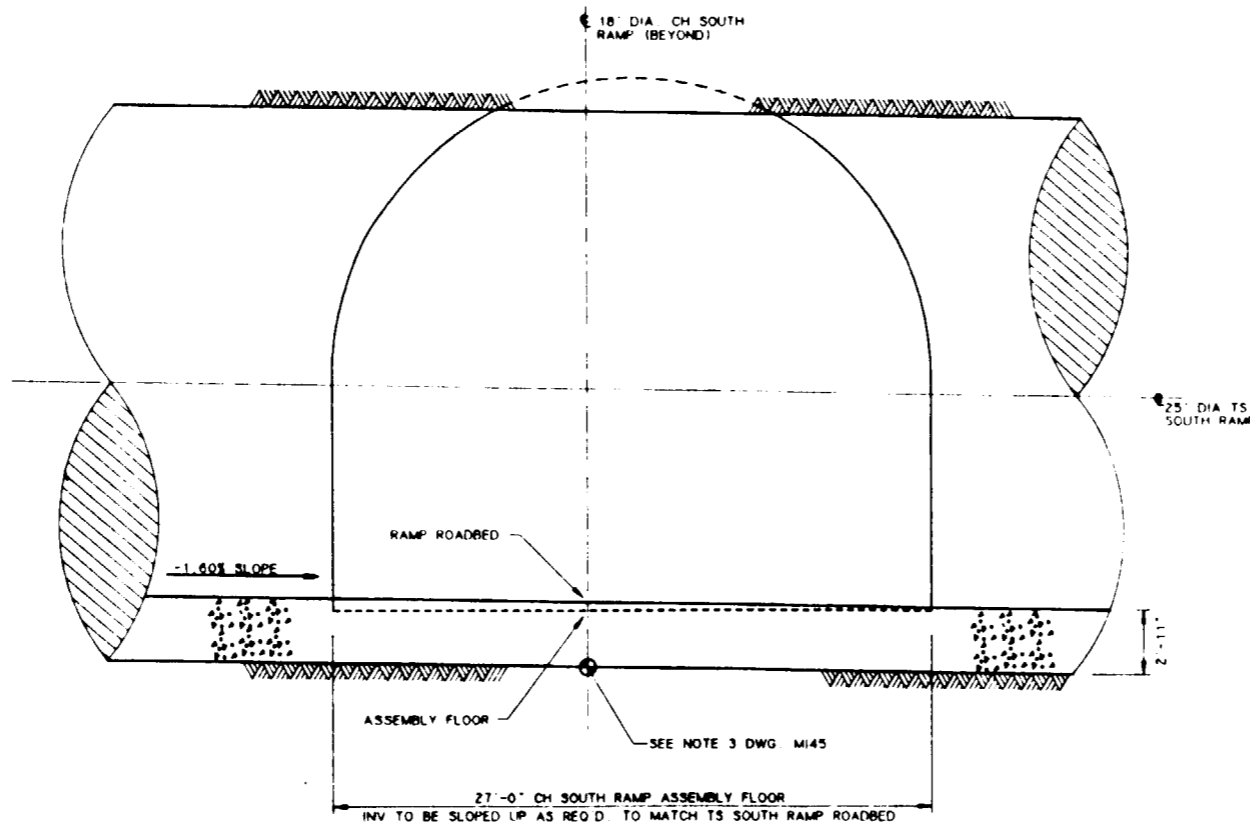


SECTION A  
SCALE 1/4" = 1'-0"



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

**NOTE:**  
DIMENSIONS SHOWN ARE APPROXIMATE  
ACTUAL DIMENSIONS DEPEND ON TBM SELECTED

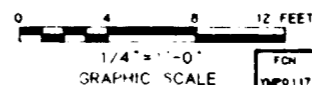


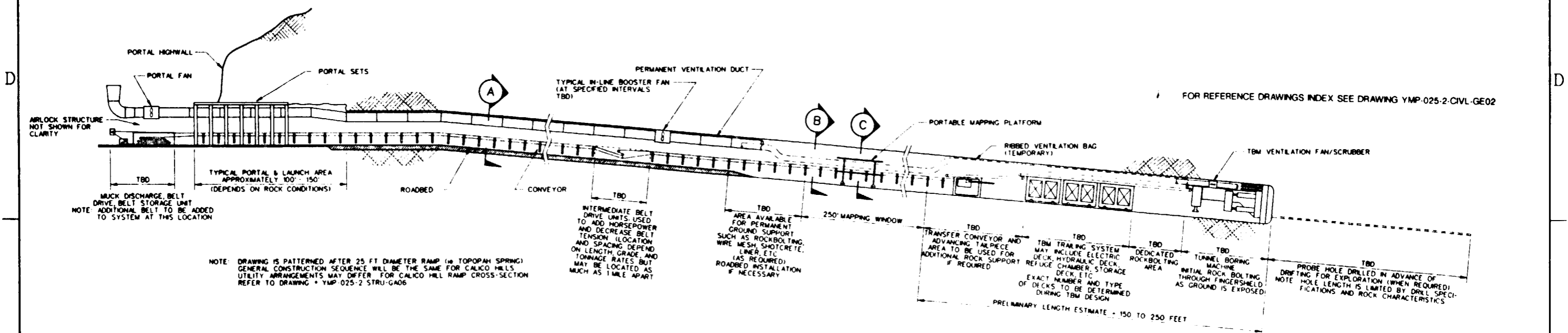
SECTION C  
SCALE 1/4" = 1'-0"

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02  
FOR NOTES SEE DRAWING YMP-025-2-MING-MI45

## 9112020061-73

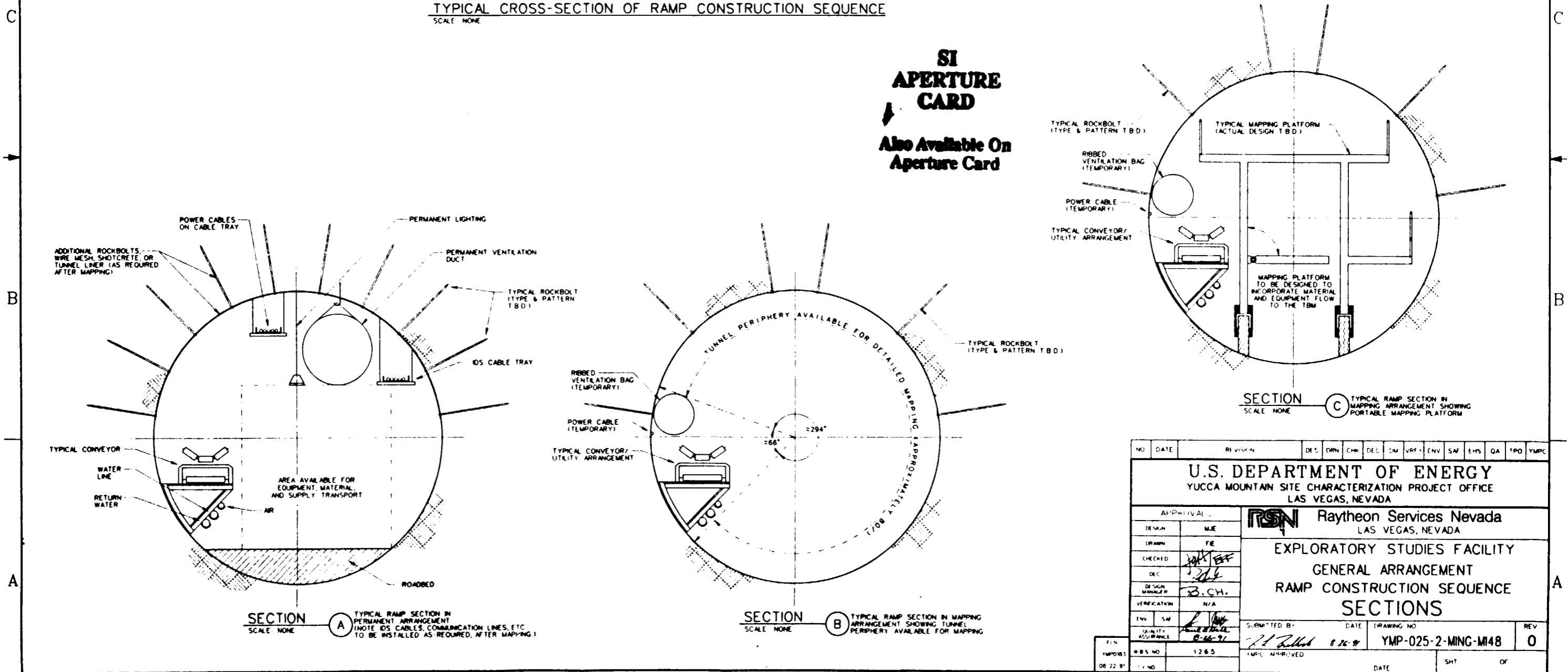
NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MJE		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT TS/CH SOUTH RAMP INTERSECTION SECTIONS										
DRAWN	CLP / RFC												
CHECKED	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY <i>[Signature]</i> DATE 8-26-91 DRAWING NO. YMP-025-2-MING-MI46 REV. 0											
QUALITY ASSURANCE	YMP/O APPROVED DATE SHT OF												
FCH YMP0117 8-21-91 W.B.S. NO. 1, 2, 6, 5 C.I. NO.													





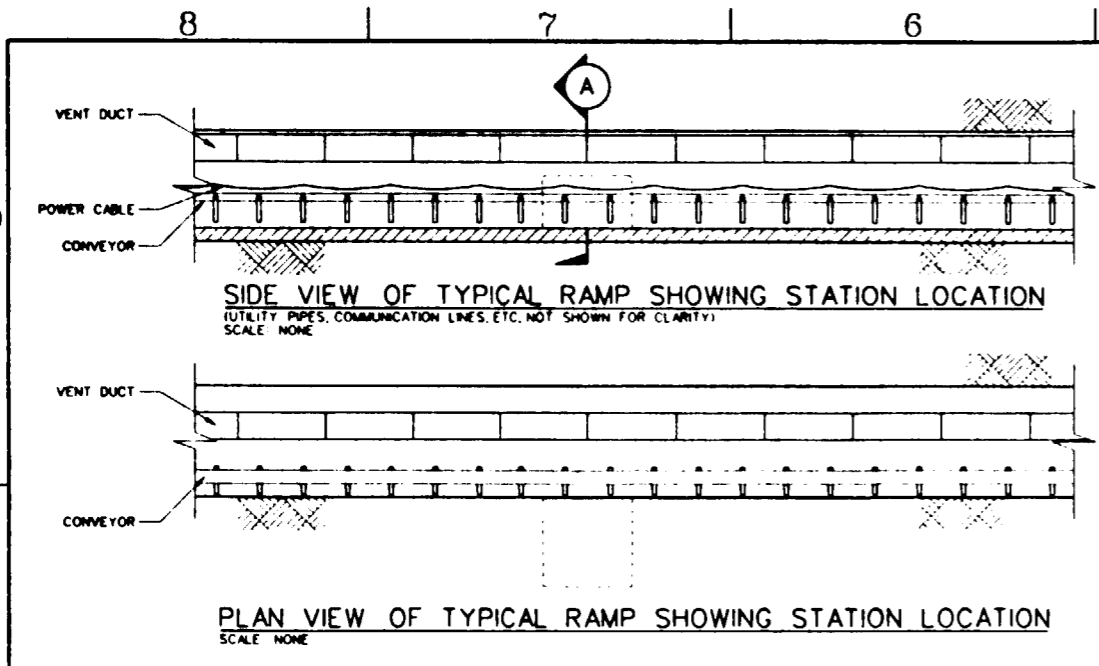
TYPICAL CROSS-SECTION OF RAMP CONSTRUCTION SEQUENCE  
SCALE NONE

**SI APERTURE CARD**  
Also Available On Aperture Card



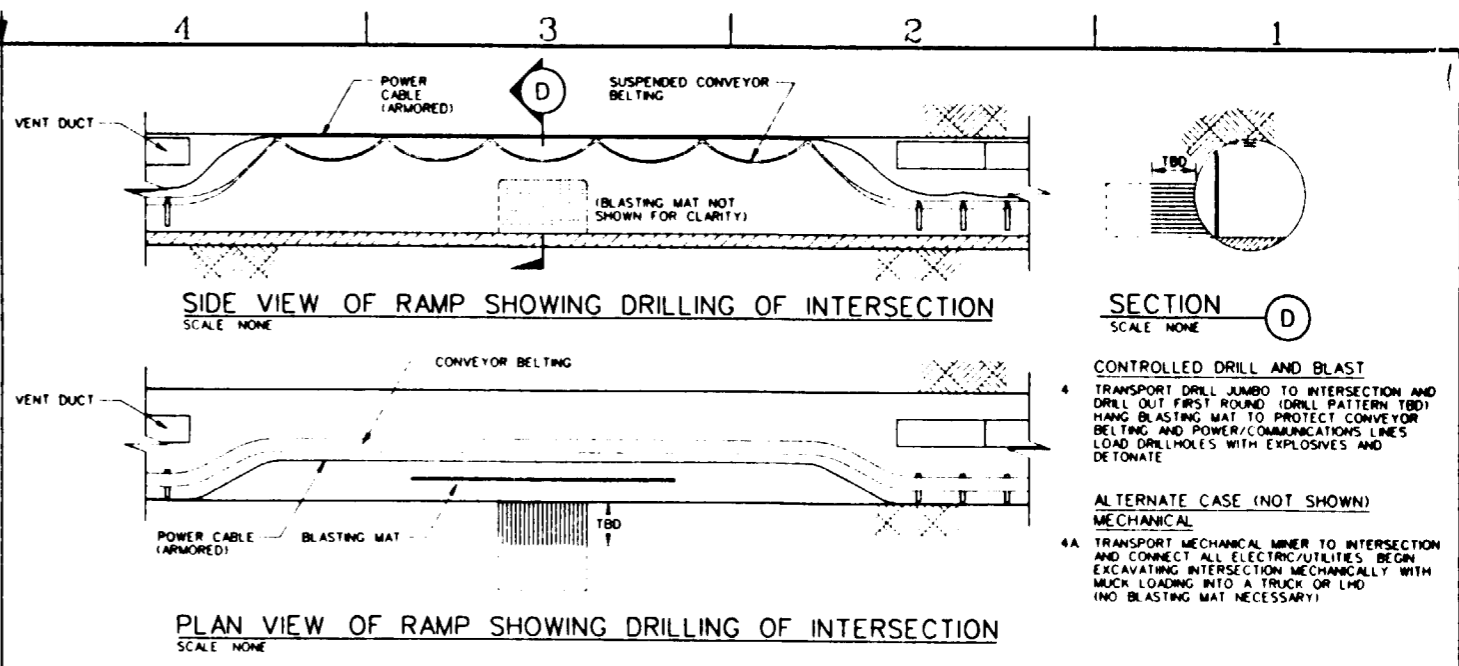
NO.	DATE	REVISION	DES.	DRN.	CHK.	DEC.	ENV.	SAF.	EHS.	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA												
APPROVAL: DESIGN: MJE DRAWN: FE CHECKED: [Signature] DEC: [Signature] DESIGN MANAGER: B.C.H. VERIFICATION: N/A ENV. SAF: [Signature] QUALITY ASSURANCE: [Signature]			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT RAMP CONSTRUCTION SEQUENCE SECTIONS									
SUBMITTED BY: [Signature] DATE: 8-26-91			DRAWING NO: YMP-025-2-MING-M148			REV: 0			DATE: [ ] [ ] [ ]			SHEET OF:

9112020061-74



**SECTION A**  
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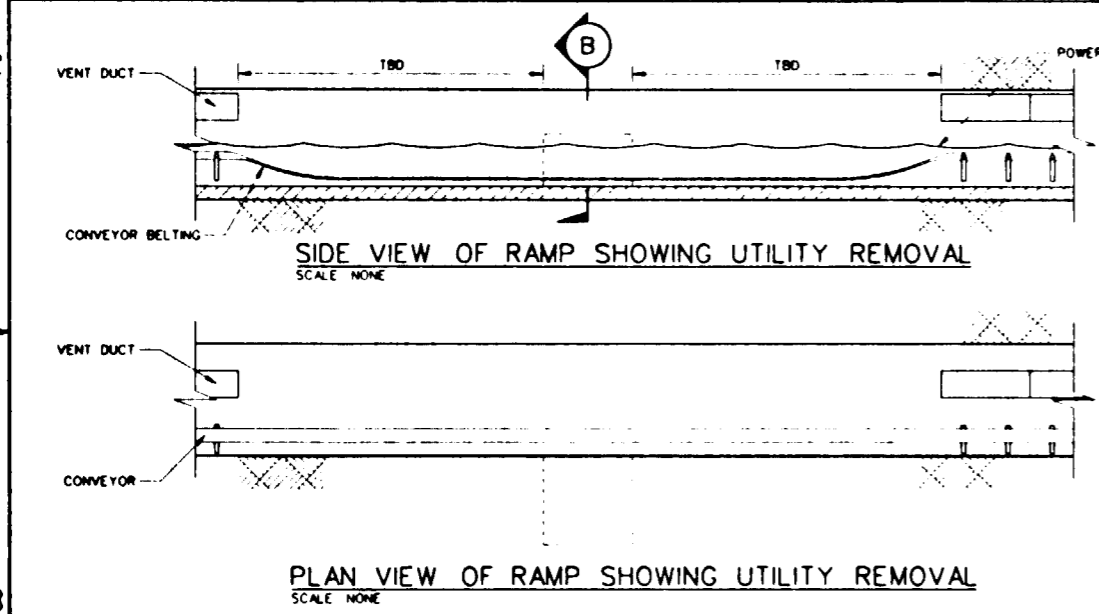
1. TYPICAL STATION IS LOCATED IN THE RAMP



**SECTION D**  
 SCALE NONE

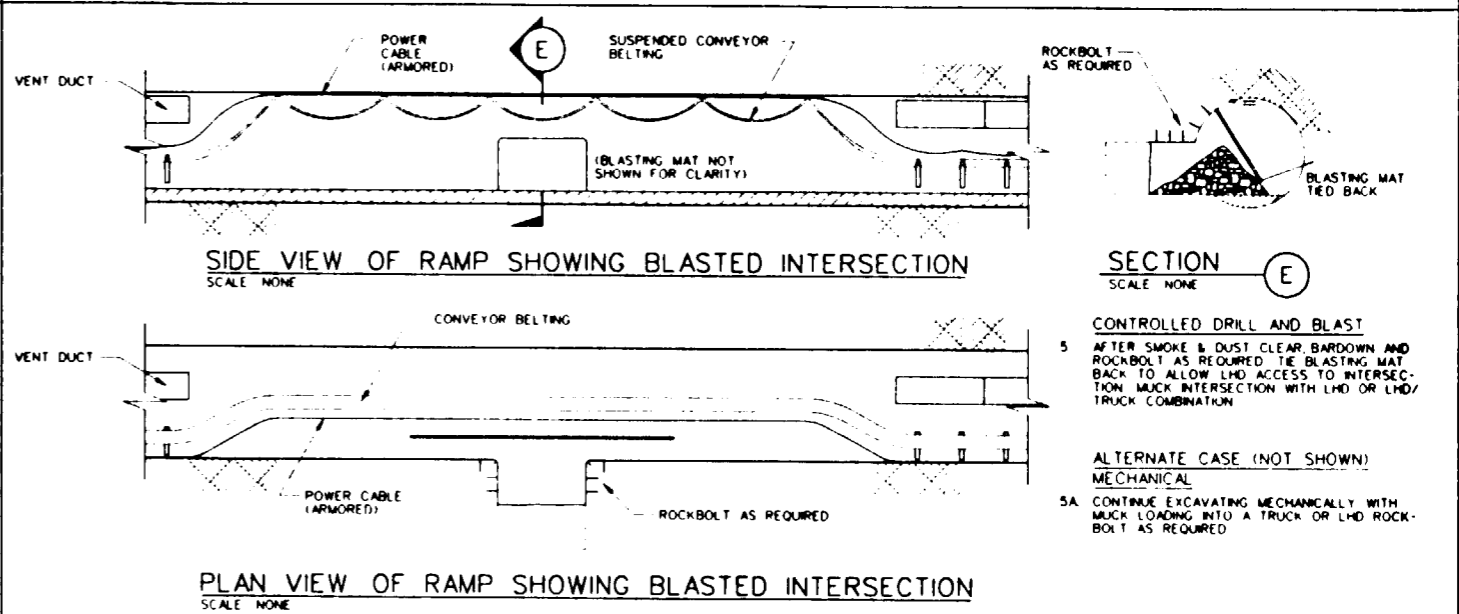
**CONTROLLED DRILL AND BLAST**  
 4. TRANSPORT DRILL JUMBO TO INTERSECTION AND DRILL OUT FIRST ROUND (DRILL PATTERN TBD). HANG BLASTING MAT TO PROTECT CONVEYOR BELTING AND POWER/COMMUNICATION LINES. LOAD DRILLHOLES WITH EXPLOSIVES AND DETONATE.

**ALTERNATE CASE (NOT SHOWN) MECHANICAL**  
 4A. TRANSPORT MECHANICAL MINER TO INTERSECTION AND CONNECT ALL ELECTRIC/UTILITIES. BEGIN EXCAVATING INTERSECTION MECHANICALLY WITH MUCK LOADING INTO A TRUCK OR LHD. (NO BLASTING MAT NECESSARY)



**SECTION B**  
 SCALE NONE

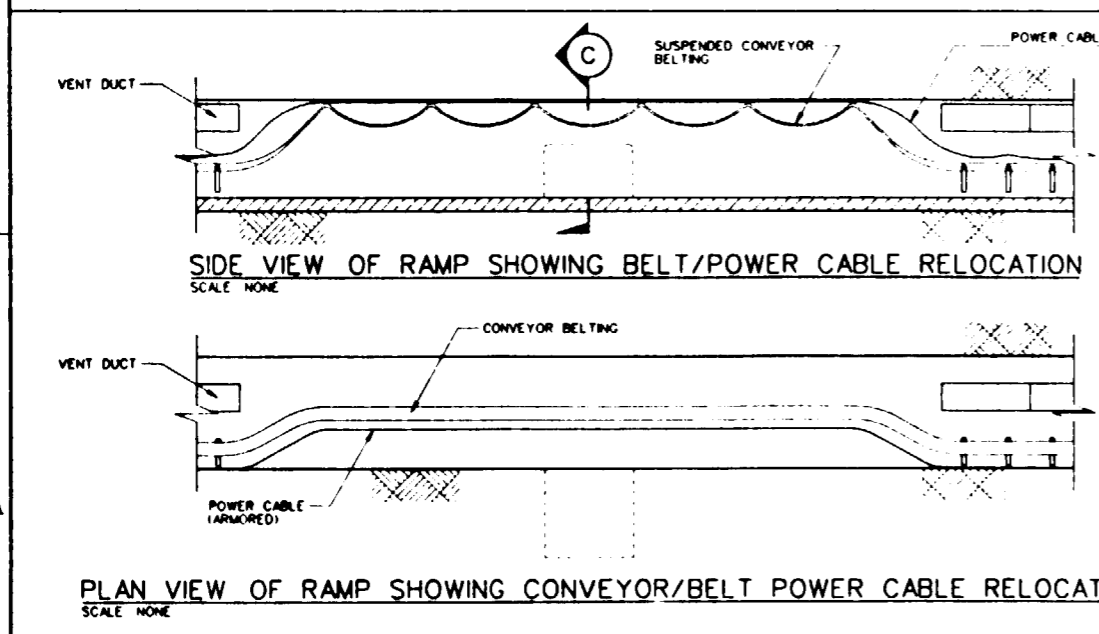
2. UTILITIES SUCH AS VENT DUCT, AIRLINE, WATERLINES, ETC. ARE REMOVED FROM RAMP FOR A SPECIFIED (TBD) DISTANCE FROM PLANNED INTERSECTION. CONVEYOR HARDWARE SUCH AS IDLERS, FRAME, AND SUPPORTS ARE REMOVED FOR SAME DISTANCE. CONVEYOR BELTING IS LEFT SUSPENDED THROUGH PLANNED INTERSECTION.



**SECTION E**  
 SCALE NONE

**CONTROLLED DRILL AND BLAST**  
 5. AFTER SMOKE & DUST CLEAR, BARNDOWN AND ROCKBOLT AS REQUIRED. THE BLASTING MAT BACK TO ALLOW LHD ACCESS TO INTERSECTION. MUCK INTERSECTION WITH LHD OR LHD/TRUCK COMBINATION.

**ALTERNATE CASE (NOT SHOWN) MECHANICAL**  
 5A. CONTINUE EXCAVATING MECHANICALLY WITH MUCK LOADING INTO A TRUCK OR LHD. ROCKBOLT AS REQUIRED.



**SECTION C**  
 SCALE NONE

3. EXCESS BELT IS FED OUT OF BELT STORAGE UNIT TO ALLOW ENOUGH SLACK TO HANG BELT OUT OF THE WAY THROUGH INTERSECTION. POWER CABLE, COMMUNICATION LINES, ETC. ARE HUNG OUT OF THE WAY AND PROTECTED BY ARMOR CASINGS BOLTED TO THE BACK OR OPPOSITE RB.

**APERTURE CARD**  
 Also Available On Aperture Card

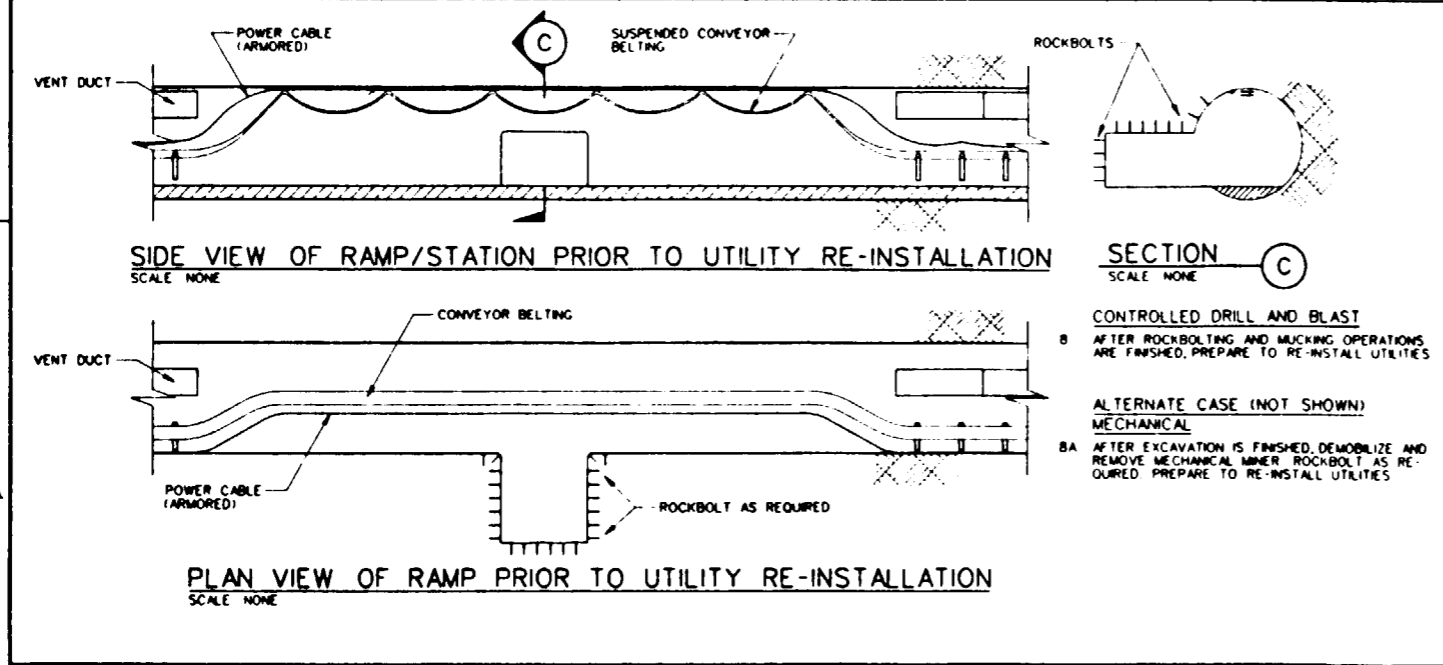
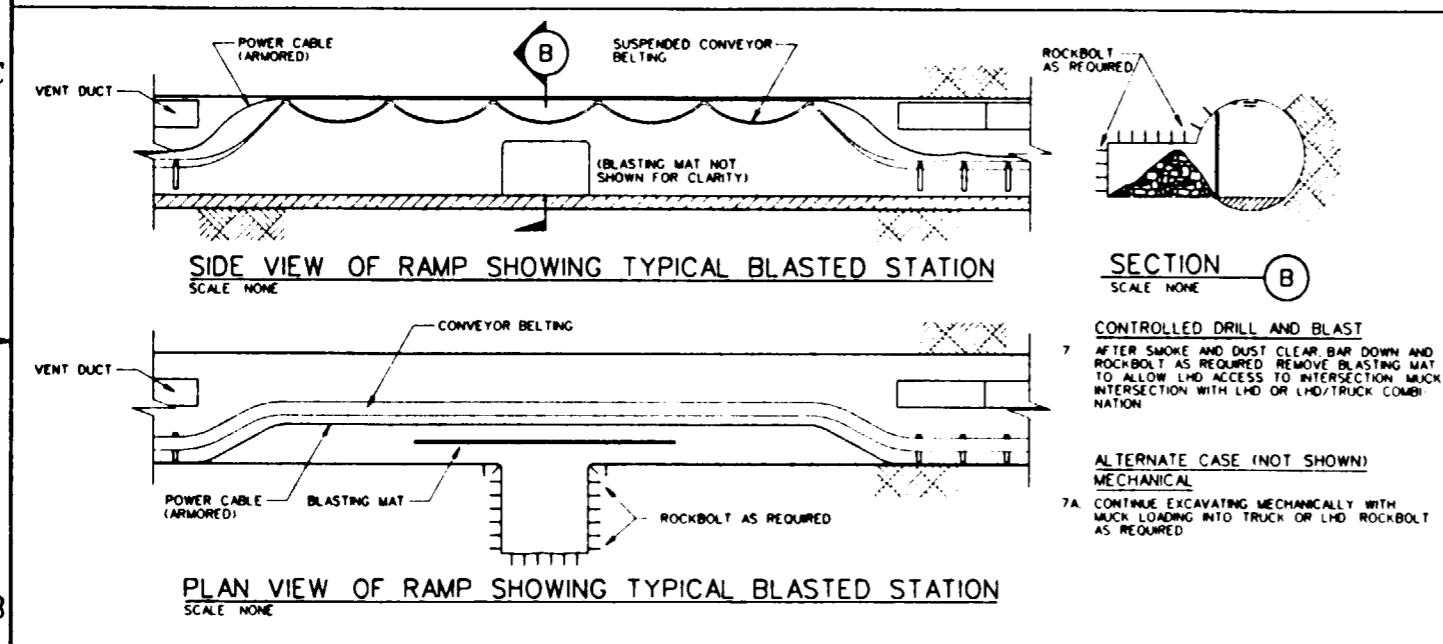
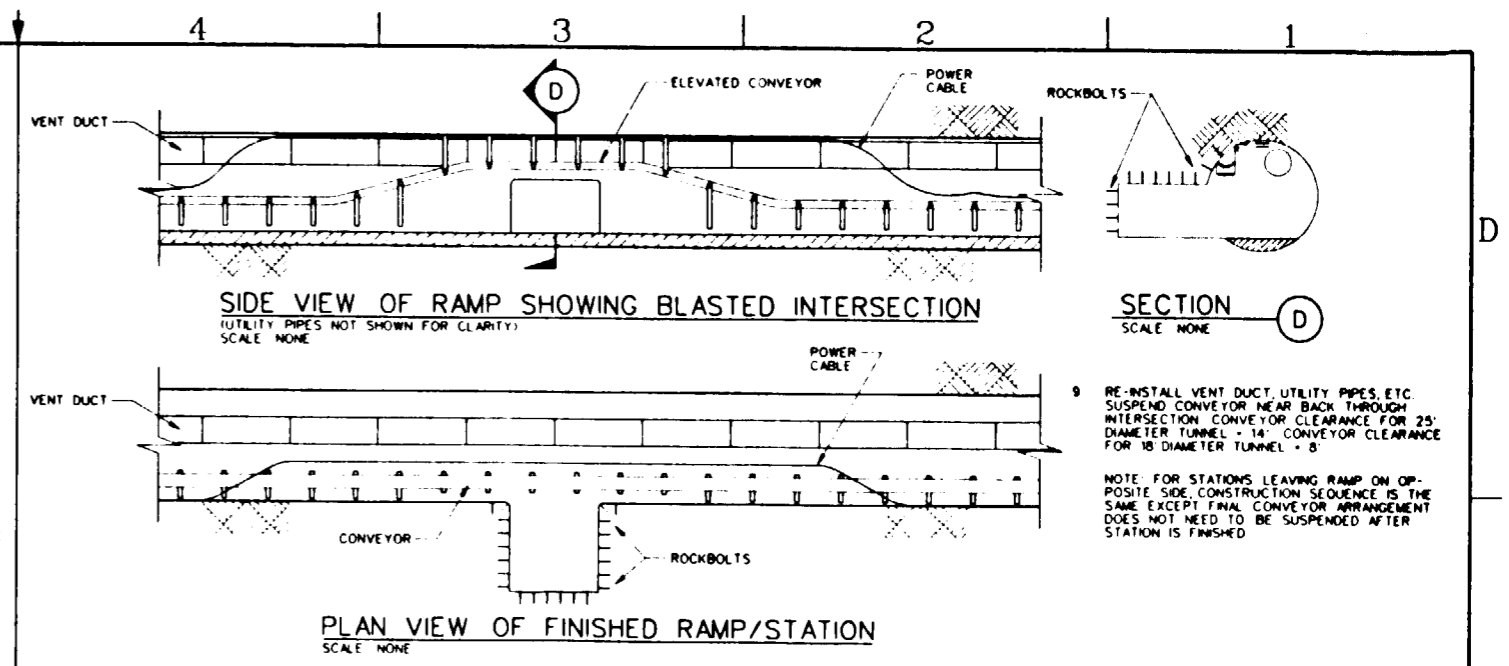
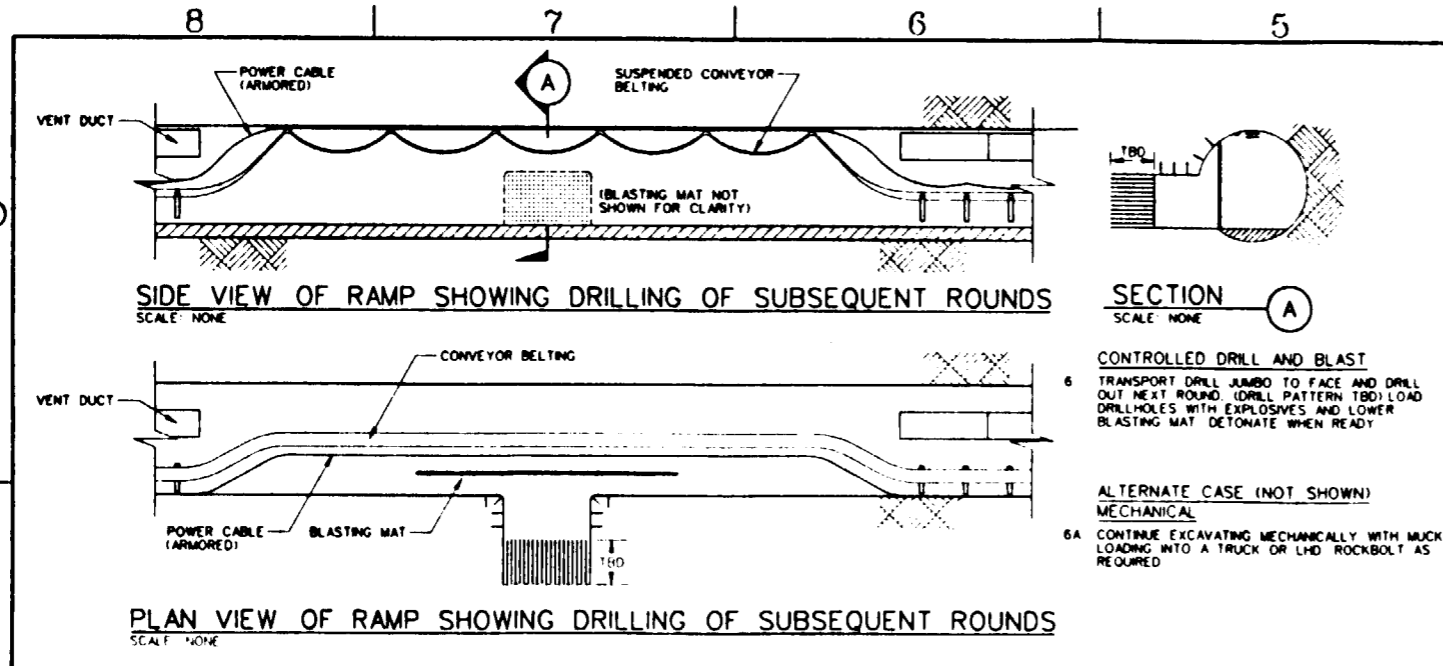
**9112020061-75**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**GENERAL NOTES**

- RAMP STATION CONSTRUCTION SEQUENCE CONTINUED ON YMP-025-2-MING-M150
- MECHANICAL EXCAVATION METHODS WILL BE USED WHEN FEASIBLE AND PRACTICAL. CONTROLLED DRILL AND BLAST SCENARIO IS SHOWN TO ILLUSTRATE THE CYCLIC NATURE OF THE SYSTEM UTILITY RE-ARRANGEMENTS WILL BE SIMILAR FOR A MECHANICAL MINER.
- RAMP STATION CONSTRUCTION SEQUENCE APPLIES TO ALL RAMP SIZES UNDER CONSIDERATION.
- ROCKBOLT TYPES & PATTERN TBD.

NO.	DATE	REVISION	DES	DRN	CHK	DEL	DM	VRY	ENV	SAF	EMS	QA	TPO	YMPG
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>APPROVALS</b>														
DESIGN	MJE													
DRAWN	FE													
CHECKED	[Signature]													
DATE	[Signature]													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV	SAF													
QUANTITY ASSISTANCE	[Signature]													
DATE	8-26-91													
YMPG APPROVED	[Signature]													
DATE	8-26-91													
YMPG NO.	1265													
YMPG APPROVED	[Signature]													
DATE	8-22-91													
<b>EXPLORARY STUDIES FACILITY</b> <b>GENERAL ARRANGEMENT</b> <b>RAMP STATION CONSTRUCTION SEQUENCE</b> <b>PLANS AND SECTIONS</b>														
SUBMITTED BY	DATE	DRAWING NO.	REV											
[Signature]	8-26-91	YMP-025-2-MING-M149	0											
DATE	8-22-91													
SHT	OF													



**SI APERTURE CARD**

Also Available On Aperture Card

9112020061-76

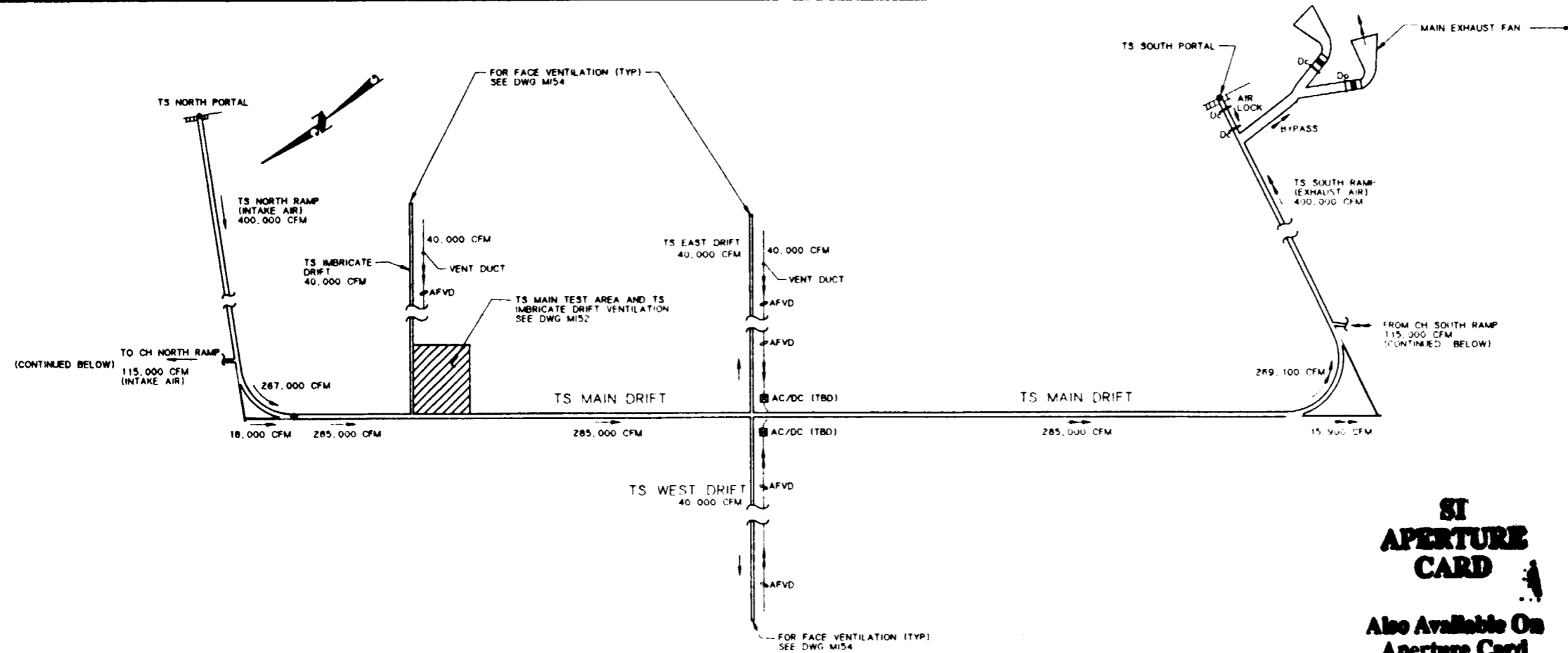
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**GENERAL NOTES**

- RAMP STATION CONSTRUCTION SEQUENCE CONTINUED FROM YMP-025-2-MING-M49
- MECHANICAL EXCAVATION METHODS WILL BE USED WHEN FEASIBLE AND PRACTICAL. CONTROLLED DRILL AND BLAST SCENARIO IS SHOWN TO ILLUSTRATE THE CYCLIC NATURE OF THE SYSTEM UTILITY RE ARRANGEMENTS WILL BE SIMILAR FOR A MECHANICAL MINER
- RAMP STATION CONSTRUCTION SEQUENCE APPLIES TO ALL RAMP SIZES UNDER CONSIDERATION
- ROCKBOLT TYPES & PATTERN TBD

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VER	ENV	SAF	EMS	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS			<b>RSN</b> Raytheon Services Nevada LAS VEGAS, NEVADA											
DESIGN	MJE		EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT RAMP STATION CONSTRUCTION SEQUENCE PLANS AND SECTIONS											
DRAWN	F/E													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV	SM													
QUALITY ASSURANCE	<i>[Signature]</i> 8-26-91													
SUBMITTED BY: <i>[Signature]</i>			DATE: <i>[Signature]</i>			DRAWING NO: YMP-025-2-MING-M150			REV: 0					
YMP0 APPROVED:			DATE:			SHT: 01			C1: NO					

D  
C  
B  
A



- MAIN EXHAUST FAN FEATURE**
- AIR QUANTITY - 420,000 CFM (INCLUDES 20,000 CFM LEAKAGE)
  - STATIC PRESSURE - 7.0" WATER GAGE
  - MOTOR - 700 BHP
  - PROVIDED W/ SILENCERS, INTAKE SCREEN, AND ACCESS DOOR
  - ONE IDENTICAL FAN INSTALLED AS BACK-UP

**AIRFLOW ALLOCATION**

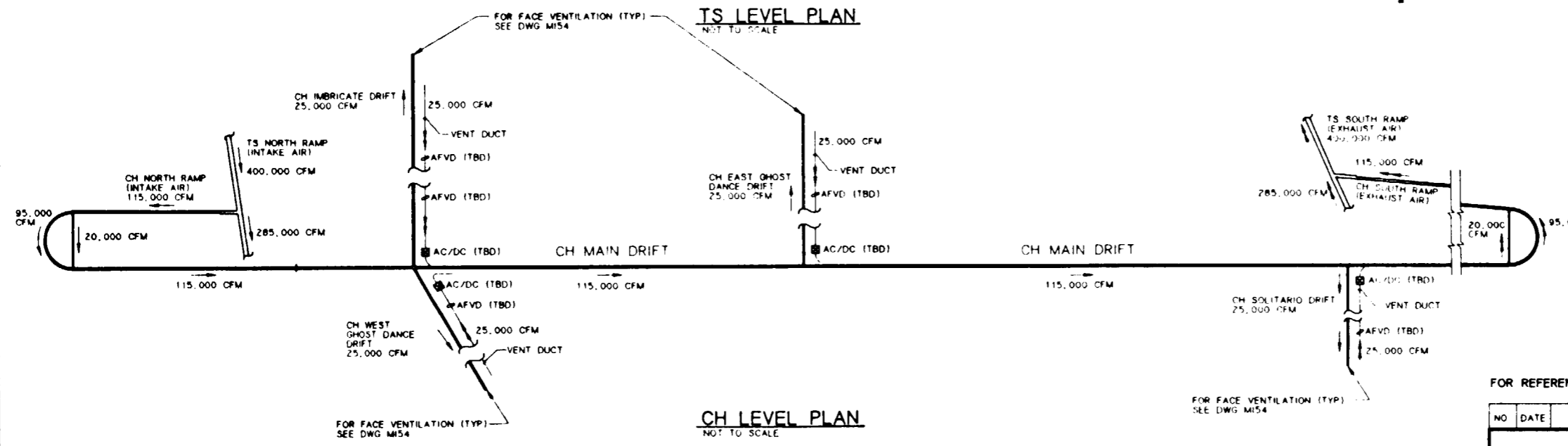
TOPOPAH SPRING LEVEL	VOLUME IN CFM
TS IMBRICATE DRIFT	40,000
TS WEST DRIFT	40,000
TS EAST DRIFT	40,000
TS MAIN TEST AREA (MTA)	130,000
TS MECHANICS SHOP	35,000
<b>TS TOTAL</b>	<b>285,000 CFM</b>

CALICO HILLS LEVEL	VOLUME IN CFM
CH IMBRICATE DRIFT	25,000
CH WEST GHOST DANCE	25,000
CH EAST GHOST DANCE	25,000
CH SOLITARIO DRIFT	25,000
CH MECHANICS SHOP	15,000
<b>CH TOTAL</b>	<b>115,000 CFM</b>

ESF TOTAL = 400,000 CFM

**NOTE**  
LEAKAGES ALONG DOORS AND VENT DUCTS WILL BE ANALYZED SEPARATELY

**ST APERTURE CARD**  
Also Available On Aperture Card



- LEGEND**
- AC/DC AIR CLEANER/DUST COLLECTOR (TBD)
  - AFVD AUXILIARY FAN IN VENT DUCT (TBD)
  - CFM CUBIC FEET PER MINUTE
  - Dc DOOR (CLOSED POSITION)
  - Do DOOR (OPEN POSITION)
  - FRESH AIRFLOW DIRECTION
  - ← RETURN AIRFLOW DIRECTION

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
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APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RSJ	EXPLORATORY STUDIES FACILITY											
DRAWN	CLP/CLG	GENERAL ARRANGEMENT											
CHECKED	<i>[Signature]</i>	TS/CH PRELIMINARY VENTILATION (OPERATION PHASE) PLAN											
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
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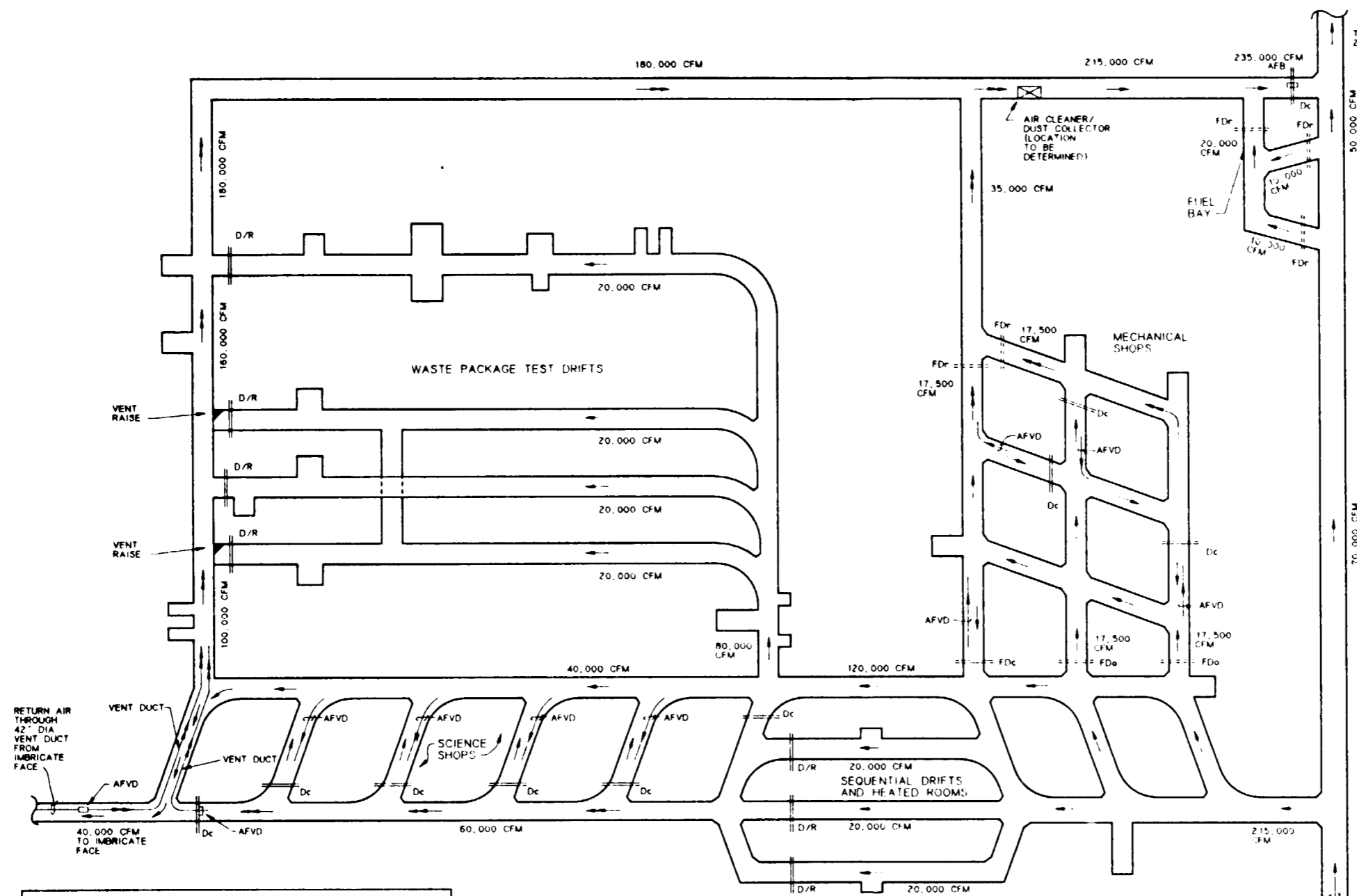
9118030061-77

**SI APERTURE CARD**  
 Also Available On Aperture Card

- GENERAL NOTES:**
- 1 SYSTEM WILL ACCOMMODATE FLEXIBLE AIRFLOW DISTRIBUTION TO THE DIFFERENT ROOMS OR HEADINGS AS NEEDED DURING SITE CHARACTERIZATION PHASE BY WAY OF REGULATORS
  - 2 MECHANICAL SHOP AND FUEL BAY ARE PROVIDED WITH ISOLATION FIRE DOORS AND AUTOMATIC FIRE SUPPRESSION TO SATISFY 30 CFR 57.4161
  - 3 LEAKAGE ALONG DOORS AND VENT DUCTS WILL BE ANALYZED SEPARATELY
  - 4 SEE DRAWING YMP-025-2-MING-MI25 FOR INDIVIDUAL TEST LOCATIONS AND DRIFT NAMES

**AIR DISTRIBUTION (FRESH AIR ALLOCATION)**

WASTE PACKAGE TEST DRIFTS	80,000 CFM
SEQUENTIAL DRIFTS & HEATED ROOMS	60,000 CFM
MECHANICAL SHOP	35,000 CFM
IMBRICATE DRIFT	40,000 CFM
<b>TOTAL</b>	<b>215,000 CFM</b>



SYMBOL LEGEND	
SYMBOL/ABBR	DESCRIPTION
→	FRESH AIRFLOW DIRECTION
←	RETURN AIRFLOW DIRECTION
AFB	AUXILIARY FAN IN BULKHEAD WITH ACCESS DOOR IN CLOSED POSITION
AFVD	AUXILIARY FAN IN VENT DUCT
CFM	CUBIC FEET PER MINUTE
Dc	DOOR (CLOSED POSITION)
D/R	DOOR AND REGULATOR (LOCATION TO BE DETERMINED)
FDC	FIRE DOOR (CLOSED POSITION)
FDO	FIRE DOOR (OPEN POSITION)
FDR	FIRE DOOR (REGULATOR)
R	REGULATOR WITH ACCESS DOOR IN CLOSED POSITION

**VENTILATION PLAN  
 TS MAIN TEST AREA  
 (OPERATION PHASE)**  
 NOT TO SCALE

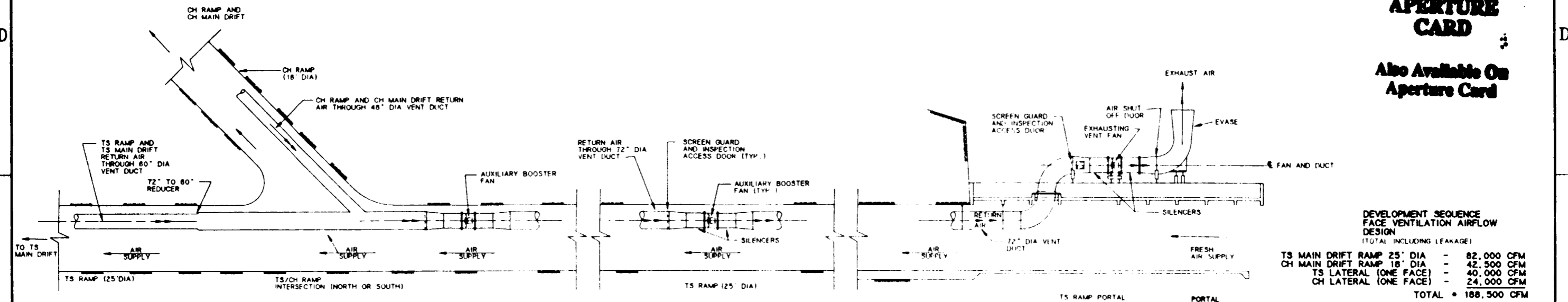
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-78**

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APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RSJ		EXPLORATORY STUDIES FACILITY AIRFLOW GENERAL ARRANGEMENT TS MAIN TEST AREA VENTILATION PLAN										
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CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	B-26-91												
SUBMITTED BY			DATE	DRAWING NO		REV							
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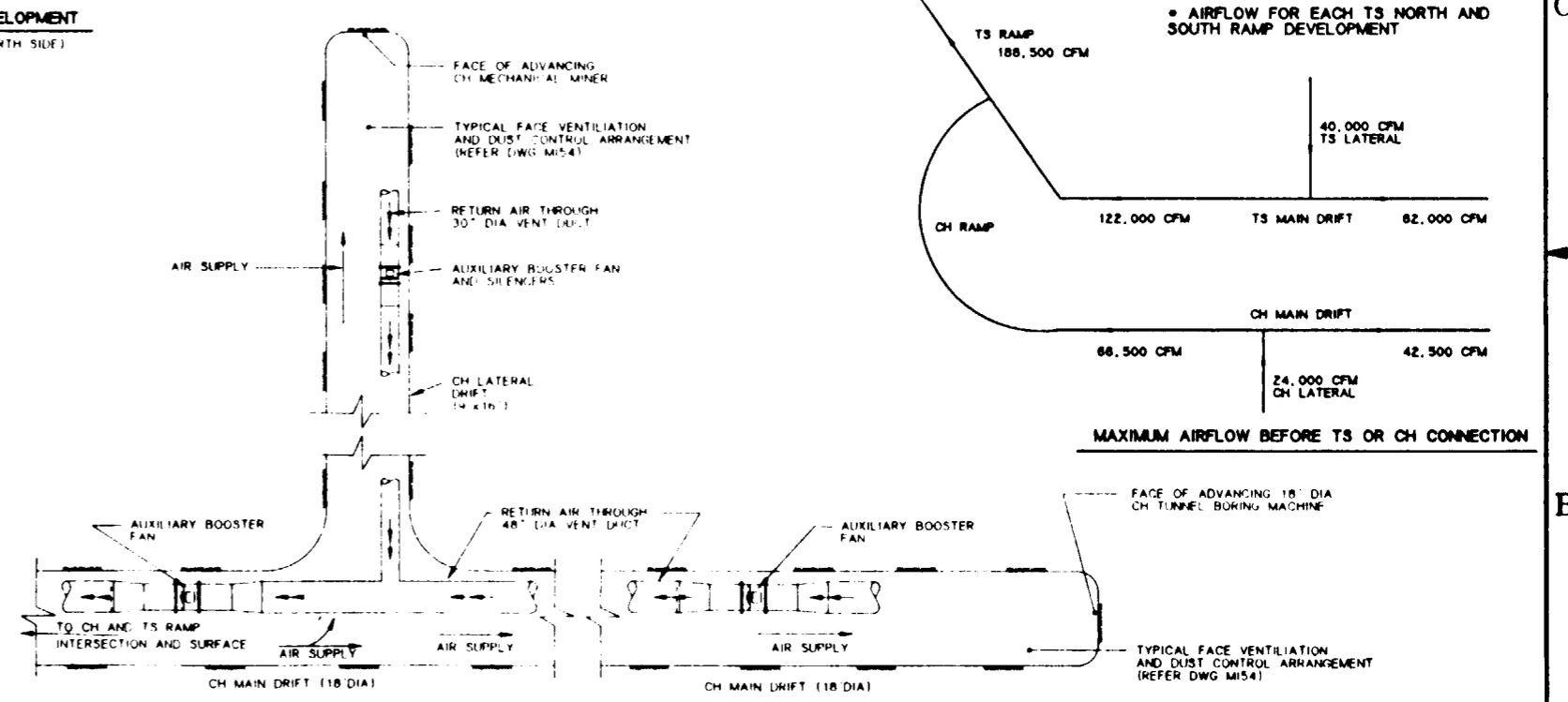
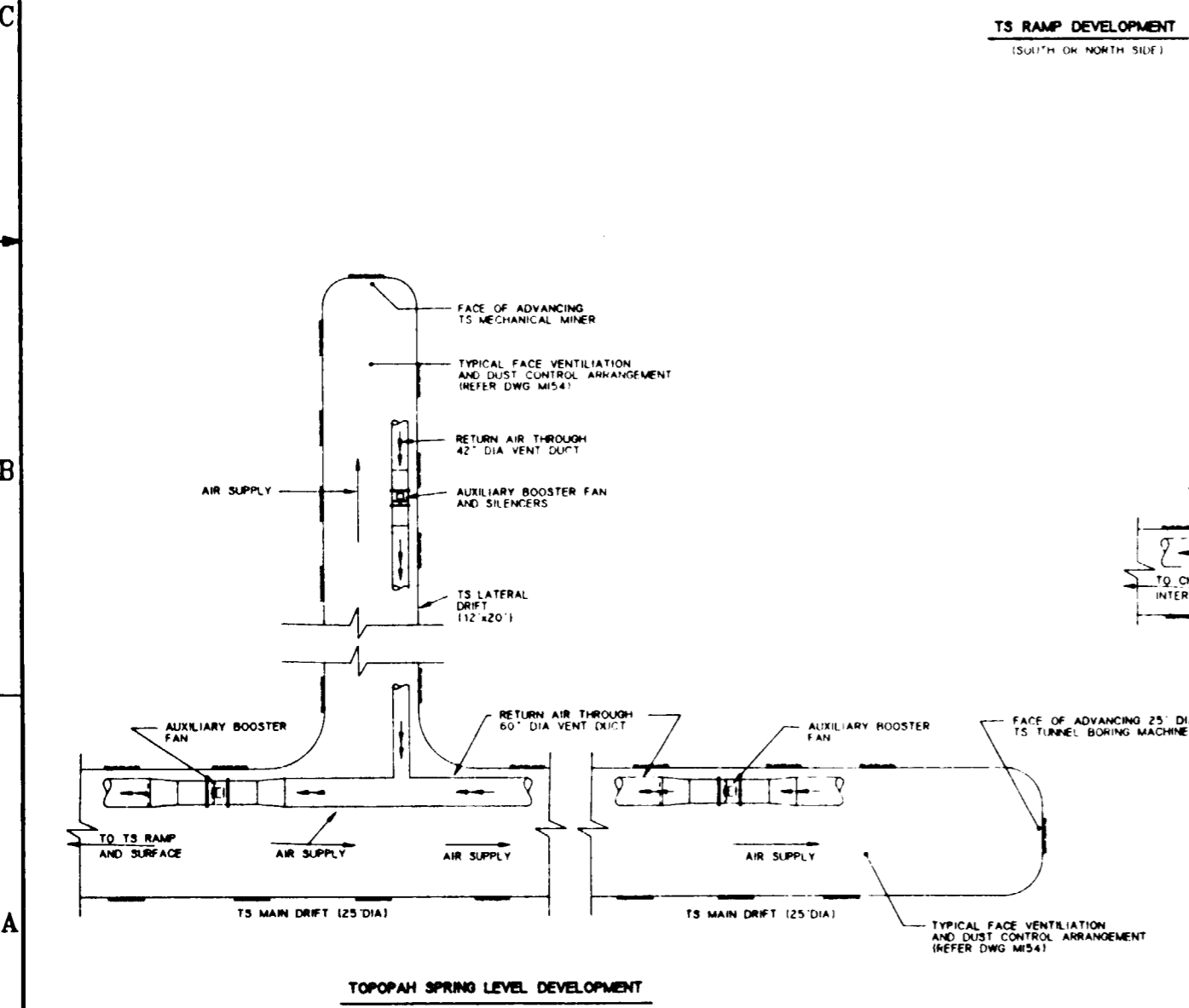
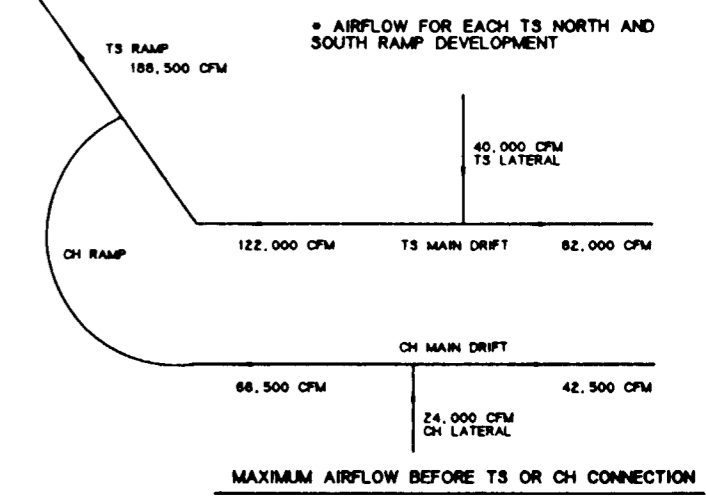
# SI APERTURE CARD

Also Available On Aperture Card



**DEVELOPMENT SEQUENCE FACE VENTILATION AIRFLOW DESIGN (TOTAL INCLUDING LEAKAGE)**

TS MAIN DRIFT RAMP 25' DIA	-	82,000 CFM
CH MAIN DRIFT RAMP 18' DIA	-	42,500 CFM
TS LATERAL (ONE FACE)	-	40,000 CFM
CH LATERAL (ONE FACE)	-	24,000 CFM
<b>TOTAL</b>	<b>=</b>	<b>188,500 CFM</b>

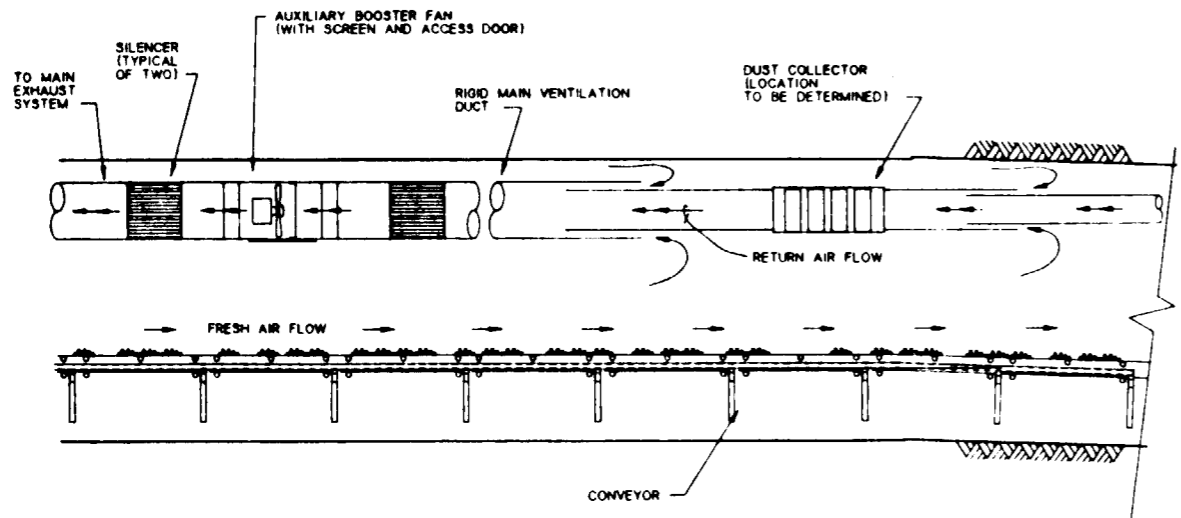


FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

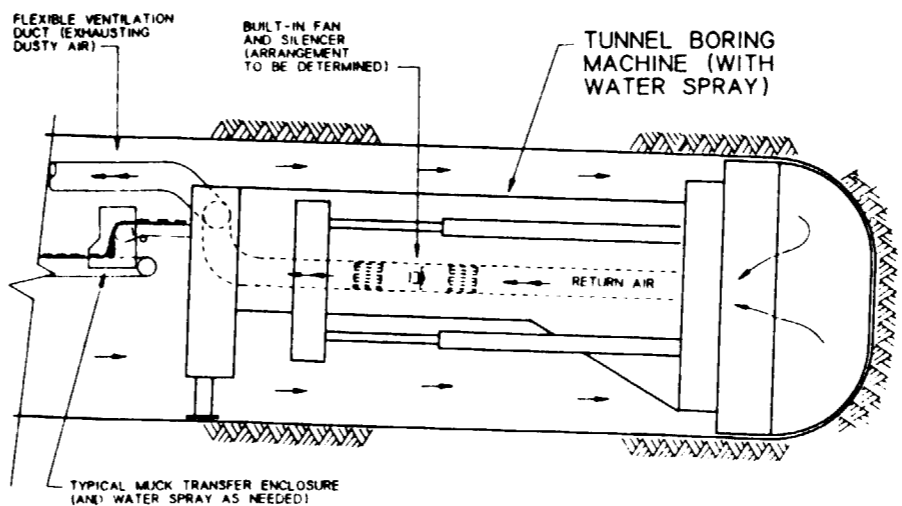
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<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS:			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
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DRAWN	TAN												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. C. H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>		SUBMITTED BY		DATE		DRAWING NO		REV.				
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8-21-91			C.I. NO										

9112020061-79

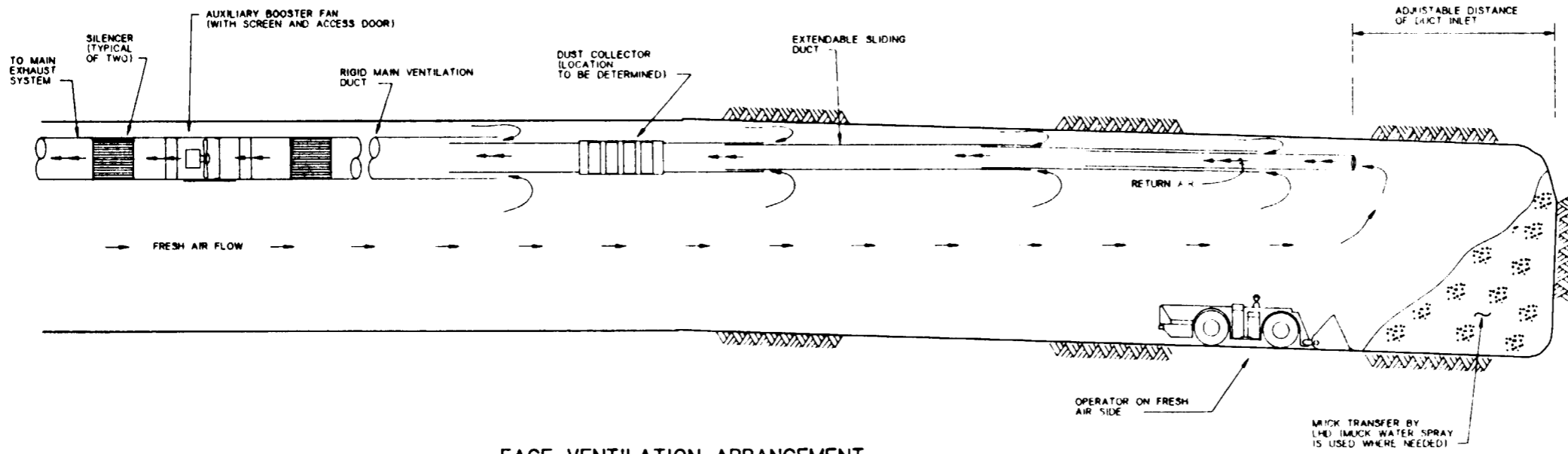




**FACE VENTILATION ARRANGEMENT**  
 TYPICAL AIR FLOW DIRECTION AND  
 DUST CONTROL CONCEPT  
 FOR MECHANICAL MINERS  
 NOT TO SCALE



**FACE VENTILATION ARRANGEMENT**  
 TYPICAL AIR FLOW DIRECTION AND  
 DUST CONTROL CONCEPT  
 FOR LOADING MUCK BY LHD  
 NOT TO SCALE



**SI**  
**APERTURE**  
**CARD**  
 Also Available On  
 Aperture Card

**DEVELOPMENT FACE VENTILATION**  
**AIRFLOW DESIGN**  
**(TOTAL INCLUDING LEAKAGES)**

TS RAMP OR DRIFT 25' DIA.	82,000 CFM
CH RAMP OR DRIFT 18' DIA.	42,500 CFM
TS LATERAL (ONE FACE)	40,000 CFM
CH LATERAL (ONE FACE)	24,000 CFM
<b>TOTAL</b>	<b>188,500 • CFM</b>

• AIRFLOW FOR EACH TS NORTH AND SOUTH RAMP DEVELOPMENT

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-80**

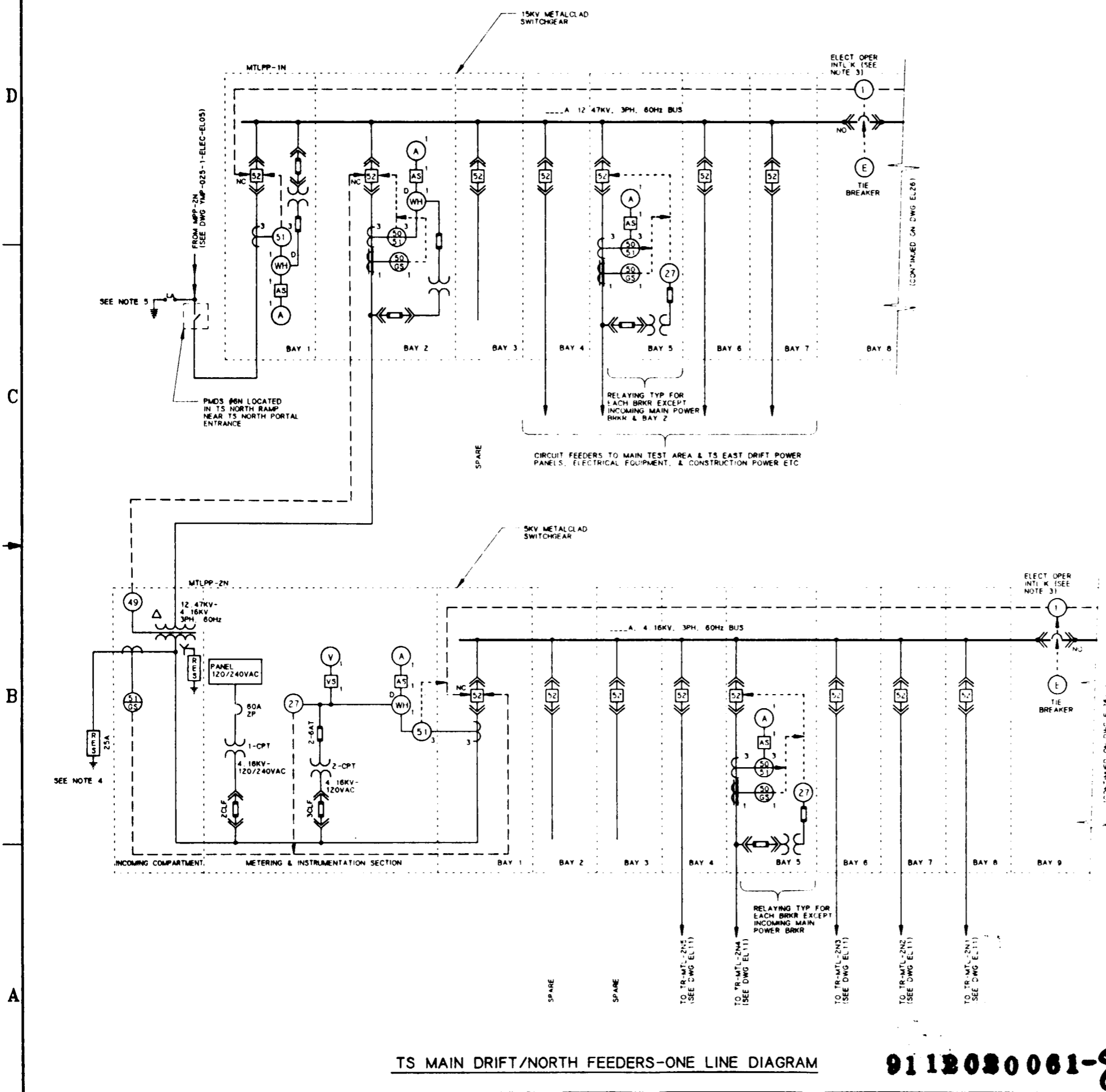
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<b>U.S. DEPARTMENT OF ENERGY</b>														
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA												
DESIGN	RSJ	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT FACE VENTILATION (CONSTRUCTION PHASE) SECTIONS												
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YMPD APPROVED												DATE	SHT	OF

**SI APERTURE CARD**

Also Available On Aperture Card

**NOTES:**

- 1 ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS AND FEEDERS SHALL HAVE GROUND CHECK CONDUCTORS.
- 2 SPARE 4 16KV CIRCUITS MAY BE UTILIZED FOR LONG EXPLORATORY DRIFT MINING.
- 3 THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE TIE CIRCUIT BREAKER NORMALLY OPEN. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE, THE AFFECTED BREAKER OPENS AND SIMULTANEOUSLY THE TIE CIRCUIT BREAKER CLOSURES TO ENERGIZE THE TOTAL BUS.
- 4 THE RESISTOR GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY.
- 5 THE GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY.



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

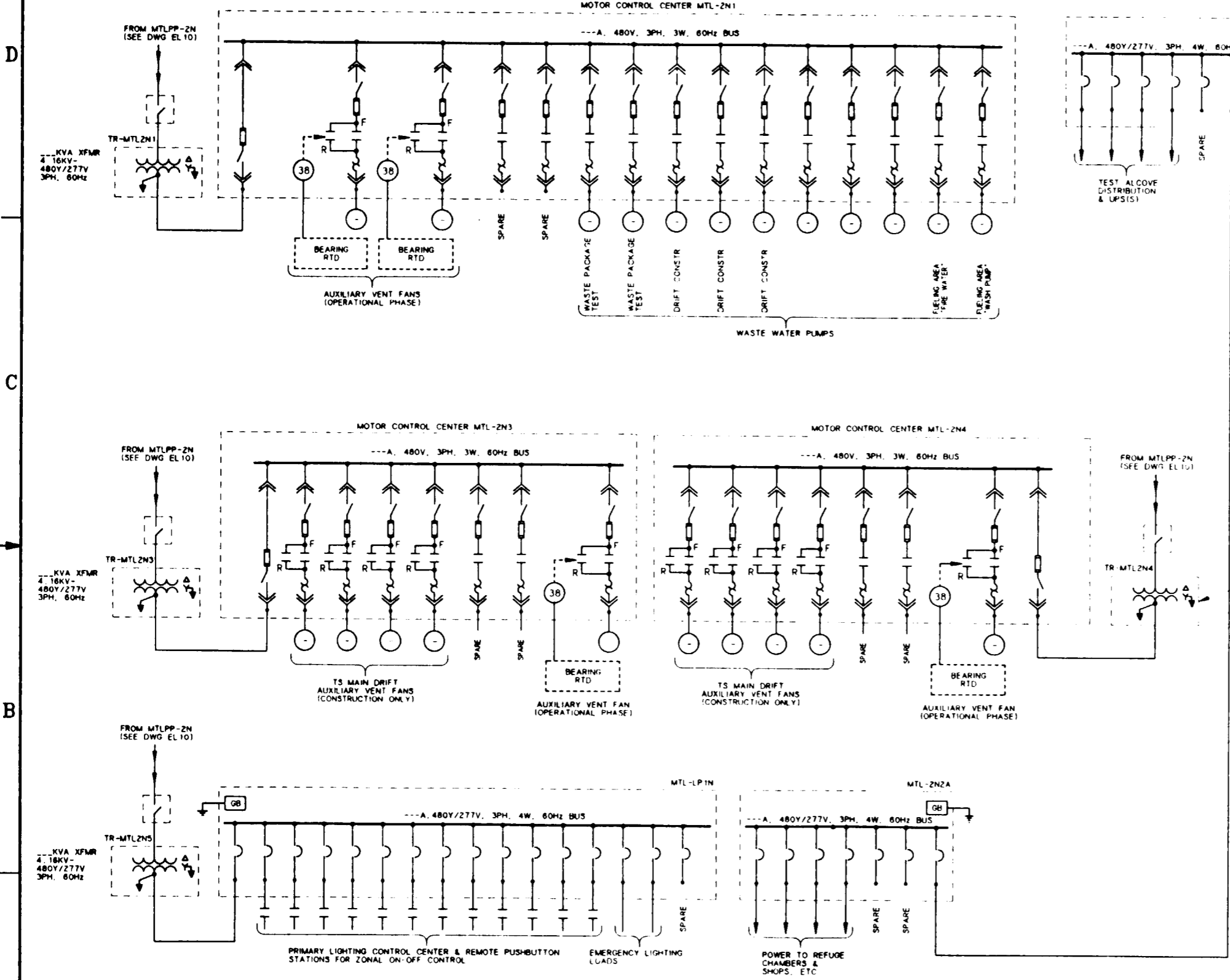
**TS MAIN DRIFT/NORTH FEEDERS-ONE LINE DIAGRAM**

9112080061-81

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPG
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MSF	EXPLORATORY STUDIES FACILITY											
DRAWN	CLG	TS MAIN DRIFT/NORTH FEEDERS											
CHECKED	[Signature]	ELECTRICAL											
DEC	[Signature]	ONE LINE DIAGRAM											
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	B-26-91												
SUBMITTED BY		DATE	DRAWING NO		REV								
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YMPG APPROVED		DATE		SHT		OF							
[Signature]													

**SI APERTURE CARD**

Also Available On Aperture Card



TS MAIN DRIFT/NORTH FEEDERS-ONE LINE DIAGRAM

**NOTES:**

- FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL10
- DURING CONSTRUCTION, THE AUXILIARY VENT FANS WILL BE INTERLOCKED & CAN BE MANUALLY REVERSED AS NEEDED
- ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
- ALL MAIN 480V CIRCUITS SHALL HAVE GROUND-FAULT & UNDERVOLTAGE PROTECTION
- QUANTITIES FOR FANS & PUMPS, ETC WILL BE DETERMINED DURING THE TITLE II EFFORT

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

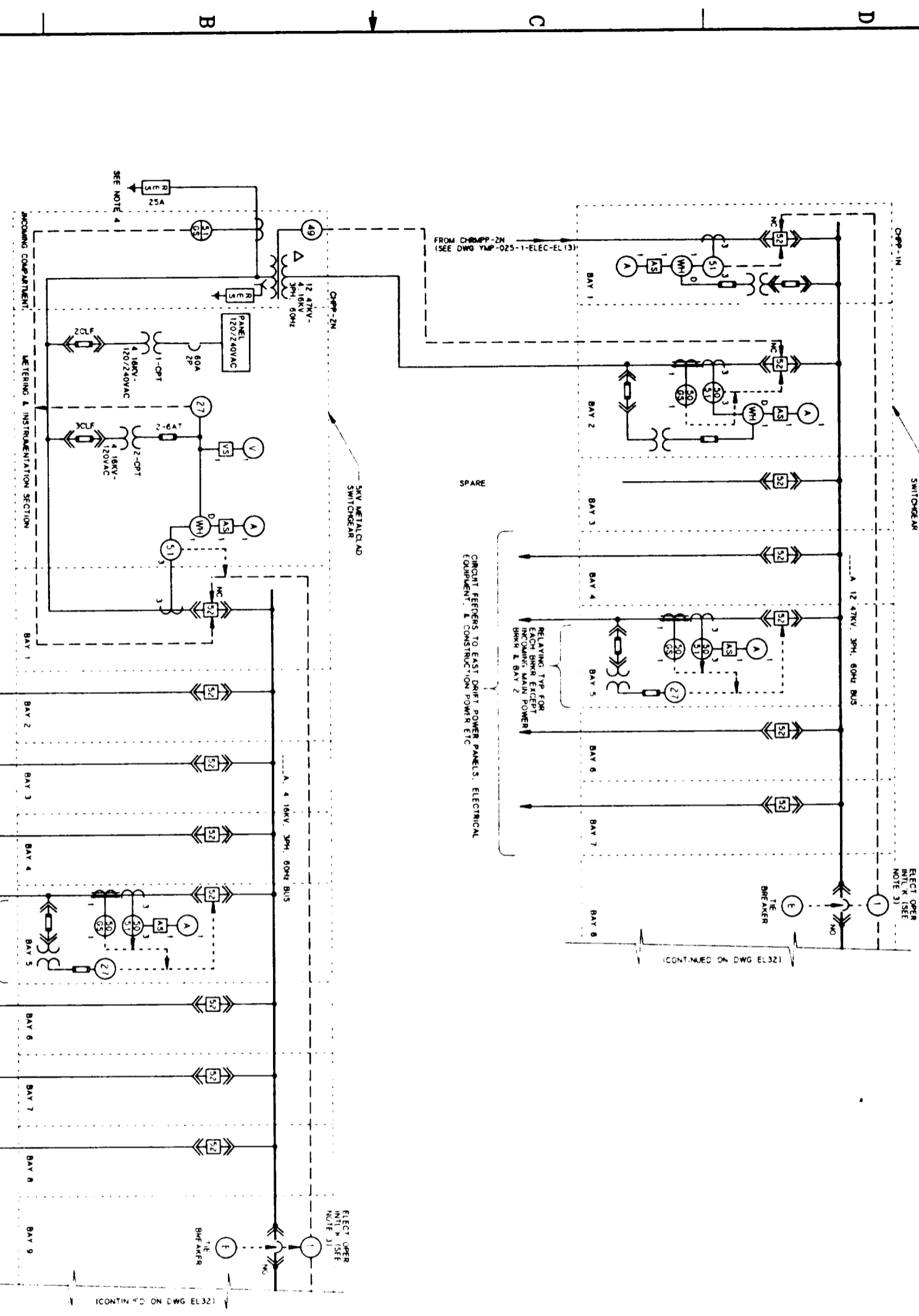
FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS MAIN DRIFT/NORTH FEEDERS ELECTRICAL <b>ONE LINE DIAGRAM</b>													
APPROVALS													
DESIGN	MSF												
DRAWN	CLG												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENR	SM												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
<i>[Signature]</i>		8-26-91	YMP-025-2-ELEC-EL11		0								
YMP0 APPROVED													
DATE		SHT		OF									

9112020061-82

**SI APERTURE CARD**  
Also Available On Aperture Card

- NOTES:**
- 1 ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND CHECK CONDUCTORS
  - 2 SPARE 4.18KV CIRCUITS MAY BE UTILIZED FOR LONG EXPLORATORY DRIFT MINING
  - 3 THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE TIE CIRCUIT BREAKER NORMALLY OPEN. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR AN OVERCURRENT FEEDER BREAKER CLOSURE AND SIMULTANEOUSLY THE TIE CIRCUIT BREAKER CLOSURES TO ENERGIZE THE TOTAL BUS
  - 4 THE RESISTOR GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY



**CH MAIN DRIFT/NORTH FEEDERS-ONE LINE DIAGRAM**

OR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.  
**912020061-83**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	WPT	ENV	SAT	QA	TPO	YMP

**U.S. DEPARTMENT OF ENERGY**  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
LAS VEGAS, NEVADA

**RSN Raytheon Services Nevada**  
LAS VEGAS, NEVADA

EXPLORATORY STUDIES FACILITY  
CH MAIN DRIFT/NORTH FEEDERS  
ELECTRICAL  
ONE LINE DIAGRAM

APPROVALS

DESIGN: G.S.  
CHECKED: [Signature]  
DESIGN: [Signature]  
DRAWN: [Signature]  
VERIFICATION: N/A

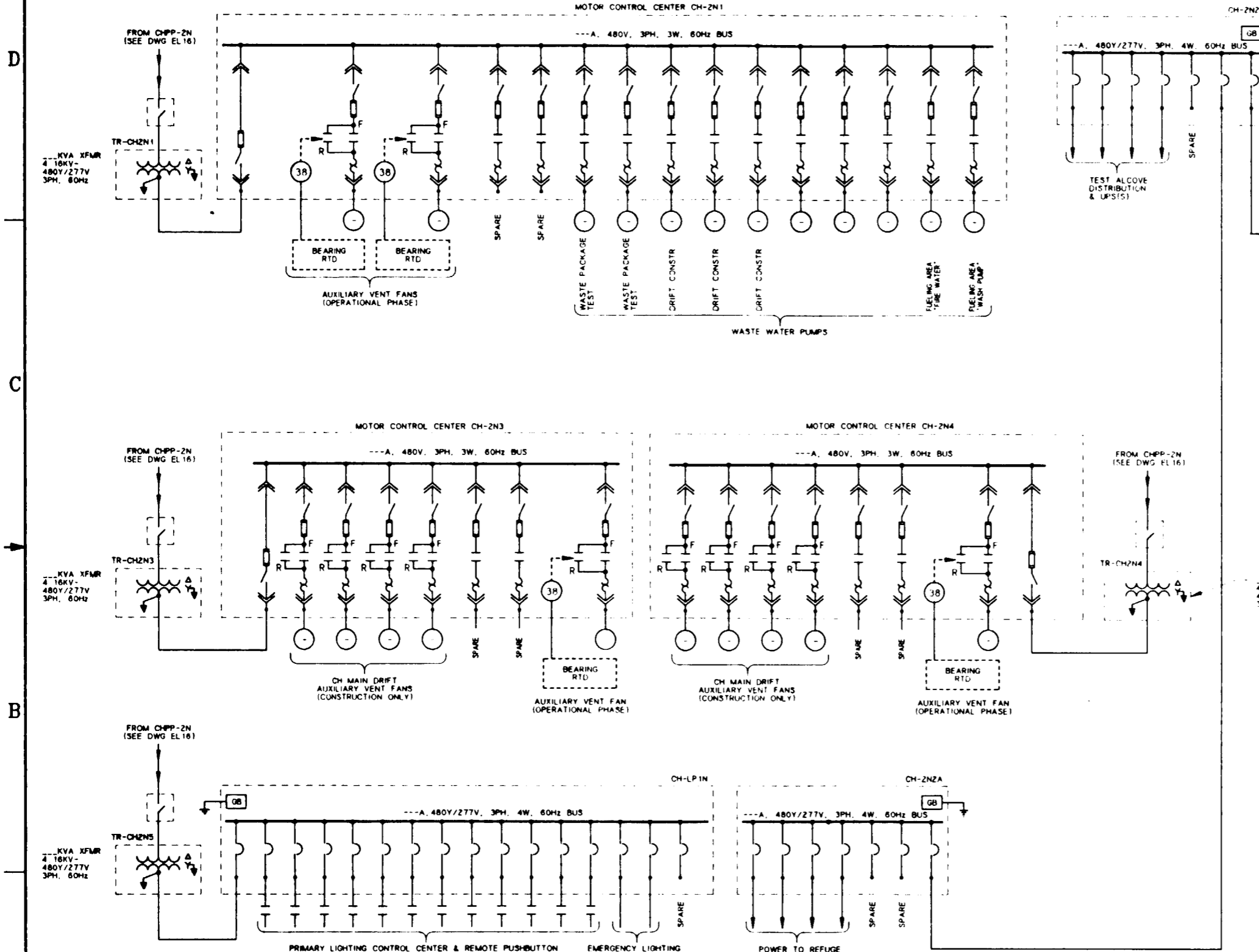
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DATE: 8-21-91  
CL. NO. 1, 2, 3, 4, 2.1

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DATE: [Signature]  
YMP-025-2-ELEC-EL-16

REV. 0

8 7 6 5 4 3 2 1

**SI APERTURE CARD**  
Also Available On Aperture Card



CH MAIN DRIFT/NORTH FEEDERS-ONE LINE DIAGRAM

**NOTES:**

- FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL16
- DURING CONSTRUCTION, THE AUXILIARY VENT FANS WILL BE INTERLOCKED & CAN BE MANUALLY REVERSED AS NEEDED
- ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
- ALL MAIN 480V CIRCUITS SHALL HAVE GROUND-FAULT & UNDERVOLTAGE PROTECTION
- QUANTITIES FOR FANS & PUMPS, ETC WILL BE DETERMINED DURING THE TITLE II EFFORT

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

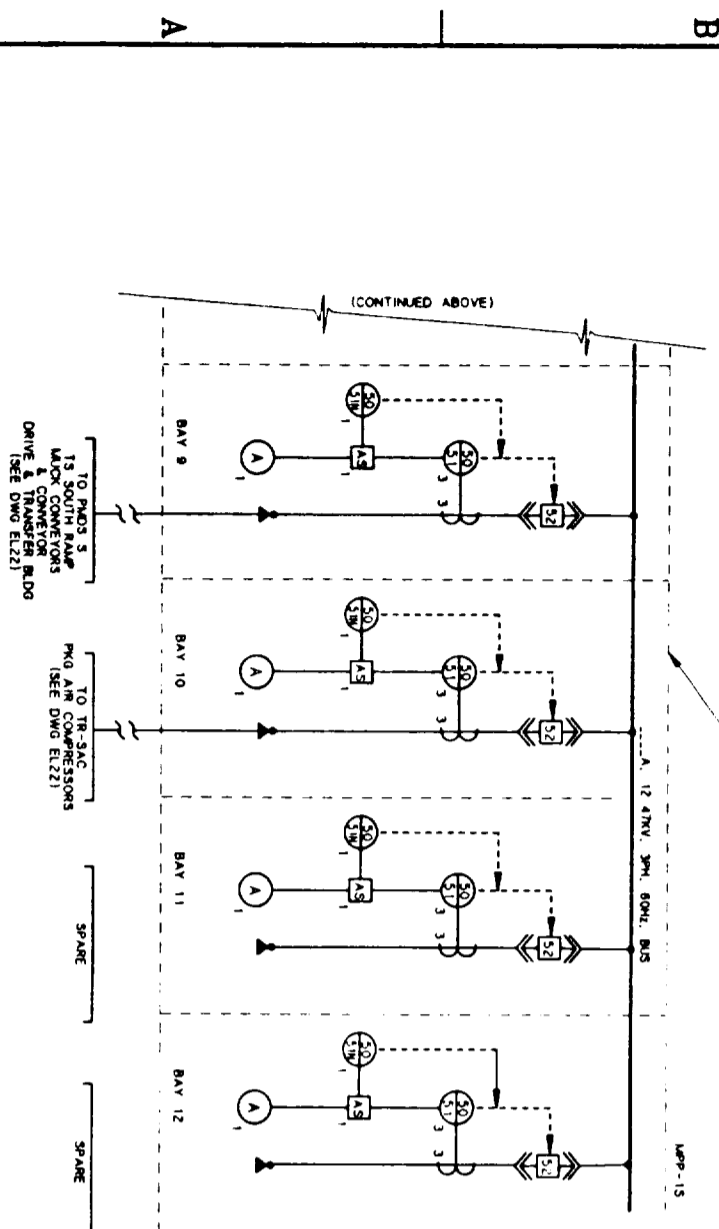
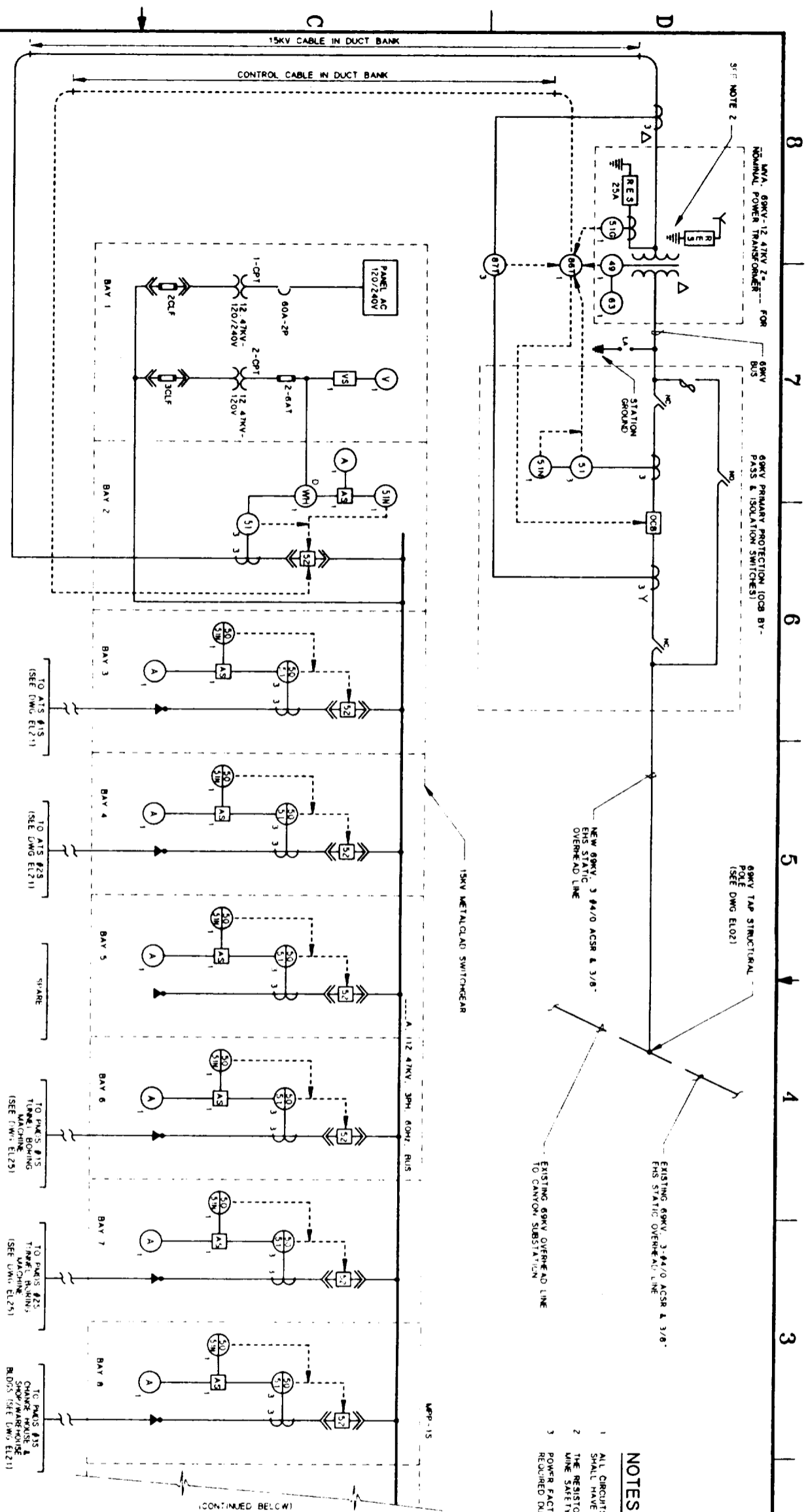
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<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY CH MAIN DRIFT/NORTH FEEDERS ELECTRICAL <b>ONE LINE DIAGRAM</b>													
APPROVALS													
DESIGN	MSF												
DRAWN	CLG												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV SAF	[Signature]												
QUALITY ASSURANCE	[Signature]												
SUBMITTED BY		DATE	DRAWING NO		REV								
[Signature]		8-16-91	YMP-025-2-ELEC-EL17		0								
YMPD APPROVED		DATE		SHT		OF							
[Signature]													

9112020061-84

**SI**  
**APERTURE**  
**CARD**

Also Available On  
**Aperture Card**

- NOTES:**
- 1 ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
  - 2 THE RESISTOR GROUND IS CONNECTED TO THE SURFACE WIRE SAFETY GROUND SYSTEM ONLY
  - 3 POWER FACTOR CAPACITORS WILL BE INCLUDED AS REQUIRED DURING THE TITLE II EFFORT



**SOUTH PORTAL SURFACE SUBSTATION-ONE LINE DIAGRAM**

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.  
**912020061-85**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVIL-GE02

NO.	DATE	REVISION	DES	CHK	DEC	DM	WR	EN	SA	QA	TR	YMP
1	8-21-91											

**U.S. DEPARTMENT OF ENERGY**  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
LAS VEGAS, NEVADA

**RSN Raytheon Services Nevada**  
LAS VEGAS, NEVADA

EXPLORATORY STUDIES FACILITY  
SOUTH PORTAL  
SURFACE SUBSTATION  
ONE LINE DIAGRAM

DESIGN: CLS  
CHECKED: [Signature]  
DESIGN: B. CH.  
REVISION: N/A  
DATE: 8-21-91  
DRAWING NO: YMP-025-2-ELEC-EL20  
DATE: 8-21-91  
YMP APPROVED: [Signature]

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# SI APERTURE CARD

Also Available On Aperture Card

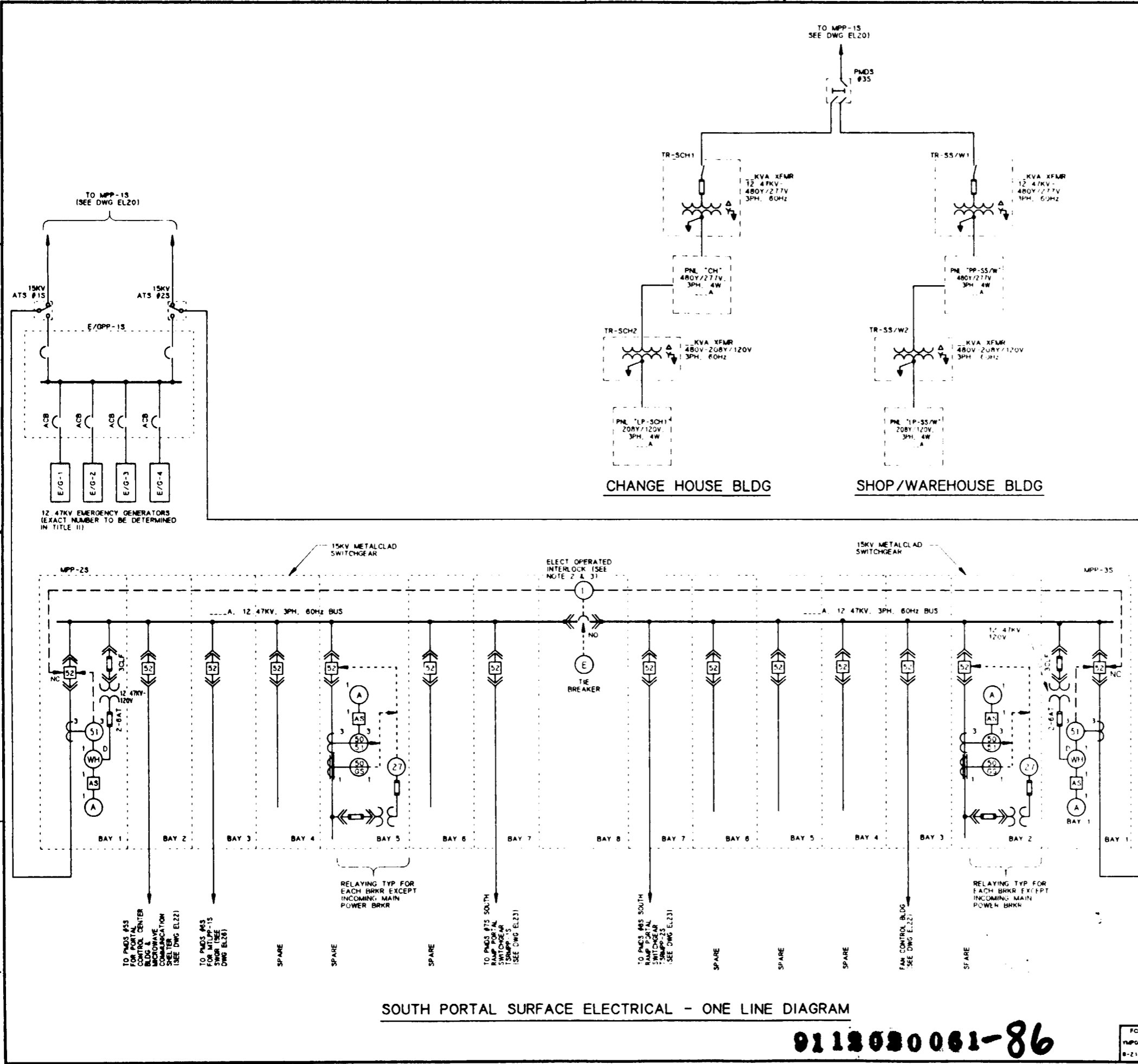
### NOTES:

1. ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS AND FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
2. THE ELECTRICALLY OPERATED INTERLOCK IS INTERLOCKED WITH THE AUTOMATIC TRANSFER SWITCH AND IS TO INITIATE EMERGENCY GENERATORS TO ENERGIZE SWITCHGEAR BUS DURING A POWER FAILURE
3. THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE TIE CIRCUIT BREAKER NORMALLY OPEN. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE, THE AFFECTED BREAKER OPENS AND SIMULTANEOUSLY THE TIE CIRCUIT BREAKER CLOSES TO ENERGIZE THE TOTAL BUS.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
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DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV ASSURANCE	SAF	<i>[Signature]</i>	SUBMITTED BY: <i>[Signature]</i> DATE: 8-24-91 DRAWING NO: YMP-025-2-ELEC-EL21 REV: 0										
YMP-025-2-ELEC-EL21													SHT OF

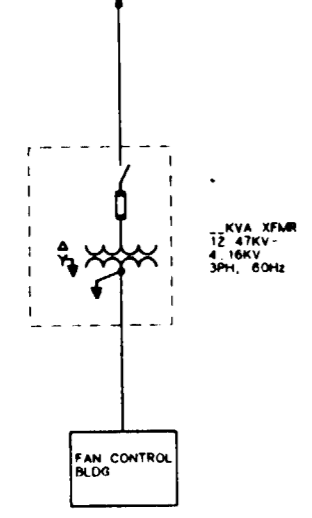


9112020061-86

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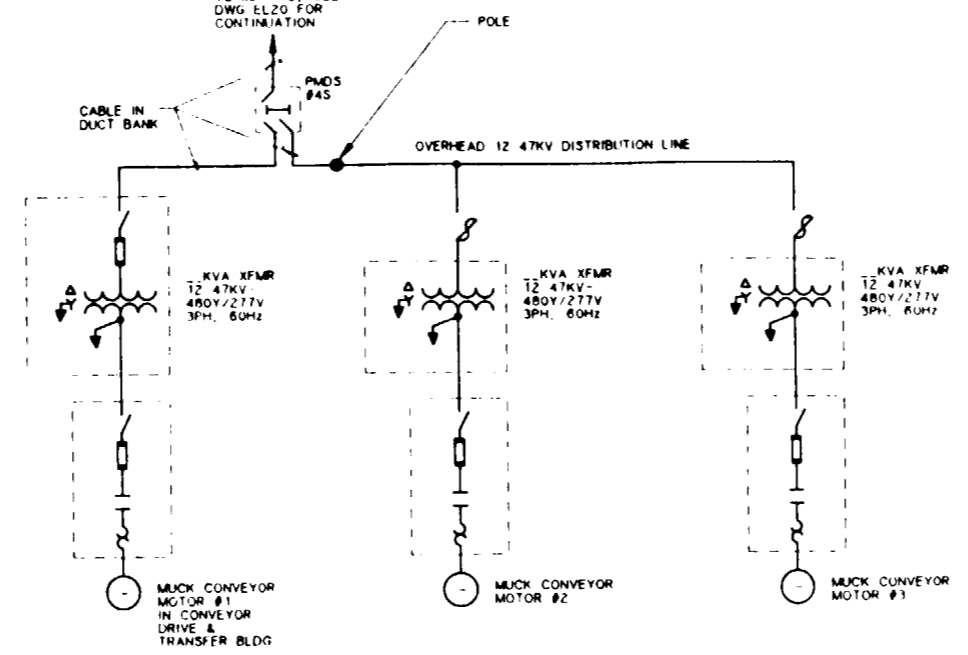
D  
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B  
A

TO MPP-35, SEE DWG EL21 FOR CONTINUATION



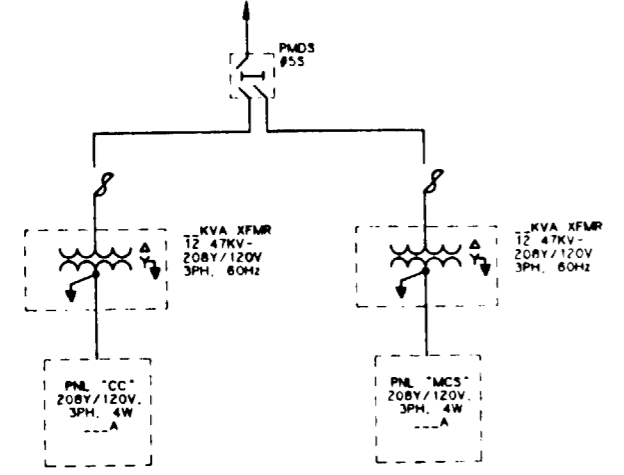
FAN CONTROL BLDG

TO MPP-15, SEE DWG EL20 FOR CONTINUATION



SOUTH RAMP MUCK CONVEYORS

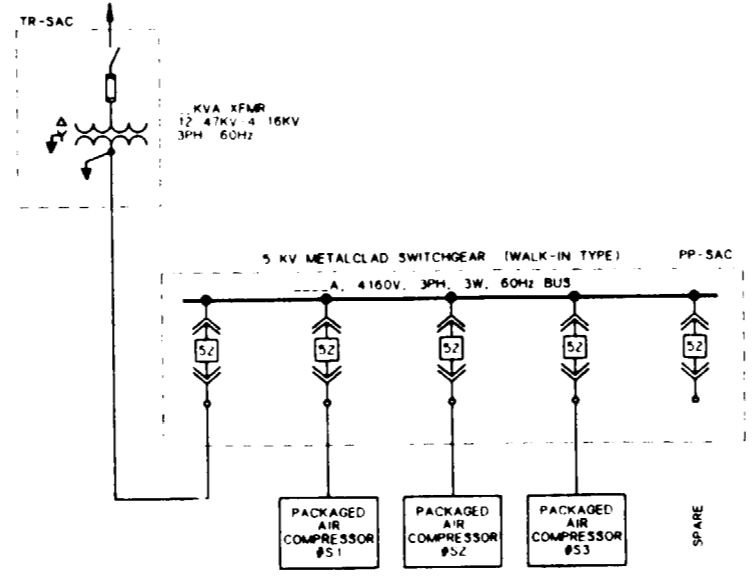
TO MPP-25, SEE DWG EL21 FOR CONTINUATION



PORTAL CONTROL CENTER BLDG

MICROWAVE COMMUNICATION SHELTER

TO MPP-15, SEE DWG EL20 FOR CONTINUATION



PACKAGED AIR COMPRESSORS

**NOTES:**

- FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL21
- CONTROL & INTERLOCK DETAILS FOR THE VENT FANS, CONVEYORS, & PACKAGED AIR COMPRESSOR SYSTEMS WILL BE DEPICTED DURING THE TITLE II EFFORT

**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	JD	EXPLORATORY STUDIES FACILITY											
DRAWN	CLG	SOUTH PORTAL											
CHECKED	<i>[Signature]</i>	SURFACE ELECTRICAL											
DEC	<i>[Signature]</i>	ONE LINE DIAGRAM											
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO.		REV								
<i>[Signature]</i>		<i>[Date]</i>	YMP-025-2-ELEC-EL22		0								
YMPO APPROVED		DATE		SHT	OF								
<i>[Signature]</i>													

9112020061-87

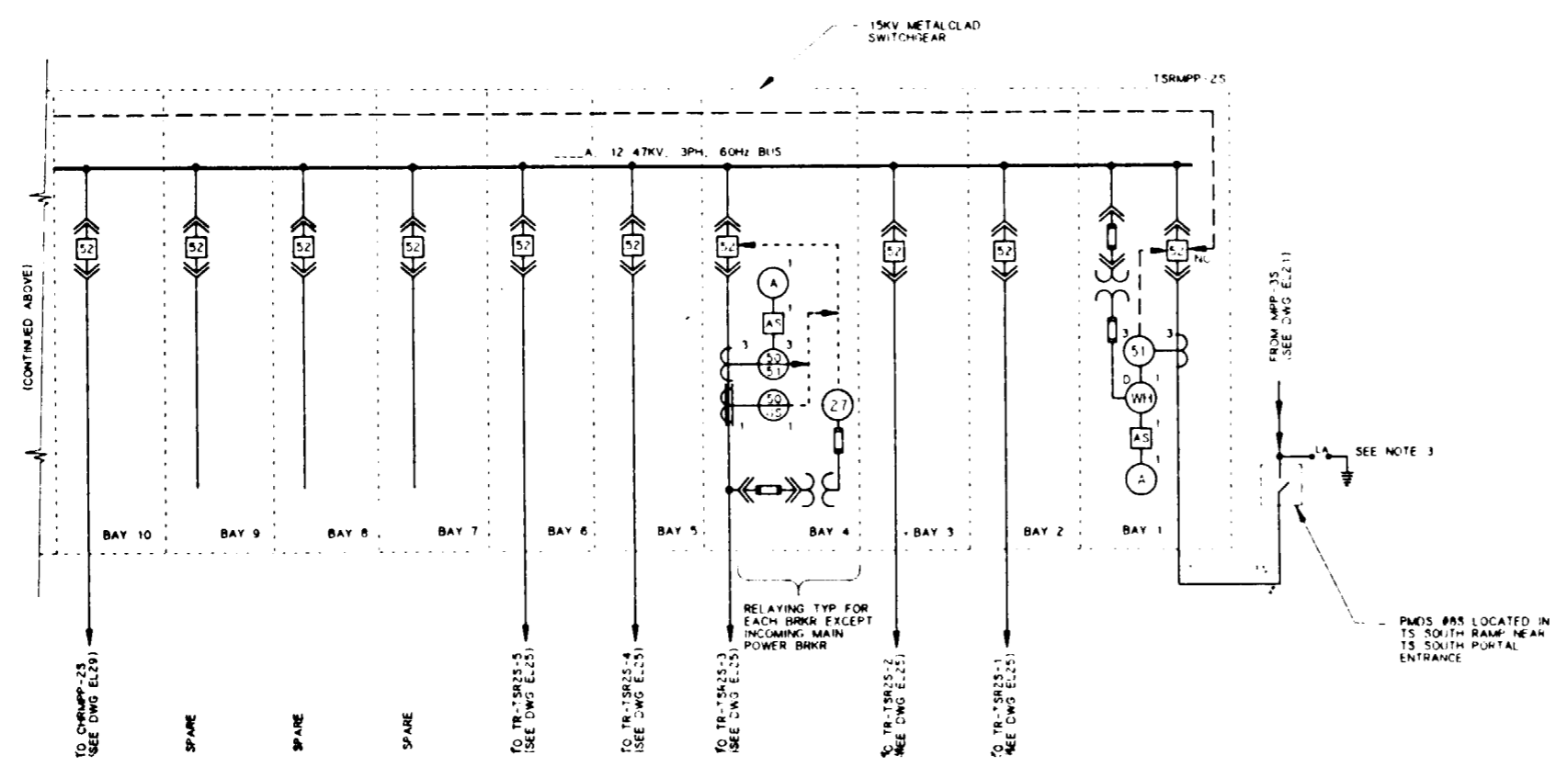
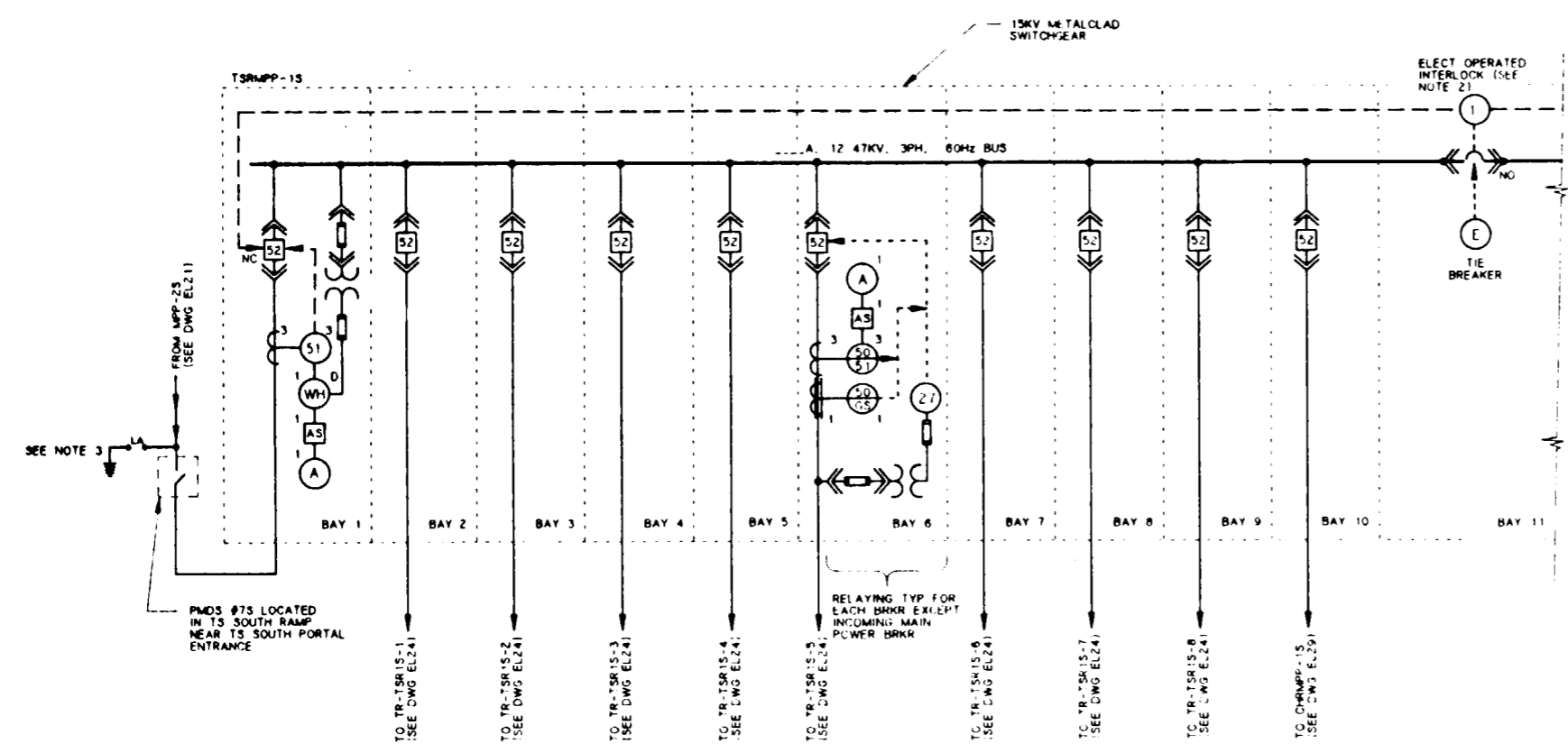


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**SI APERTURE CARD**  
Also Available On Aperture Card

- NOTES:**
- ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS AND FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS.
  - THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE TIE CIRCUIT BREAKER NORMALLY OPEN. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE, THE AFFECTED BREAKER OPENS AND SIMULTANEOUSLY THE TIE CIRCUIT BREAKER CLOSURES TO ENERGIZE THE TOTAL BUS.
  - THE GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY.



TS SOUTH RAMP - ONE LINE DIAGRAM

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MSF		EXPLORATORY STUDIES FACILITY TS SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM										
DRAWN	CLG												
CHECKED	[Signature]												
LEC	[Signature]												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY [Signature] DATE 8-21-91 DRAWING NO. YMP-025-2-ELEC-EL23 REV. 0											
QUALITY ASSURANCE	YMPD APPROVED												
DATE												SHT	OF

9112020061-88

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	WRF	ENV	SAF	QA	TPO	WMPG
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE <b>NSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA <b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH RAMP</b> <b>ELECTRICAL</b> <b>ONE LINE DIAGRAM</b>													
REV	DATE	BY											
0													
VMPG APPROVED YMP-025-2-ELEC-EL24 DATE DRAWING NO.													

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02.

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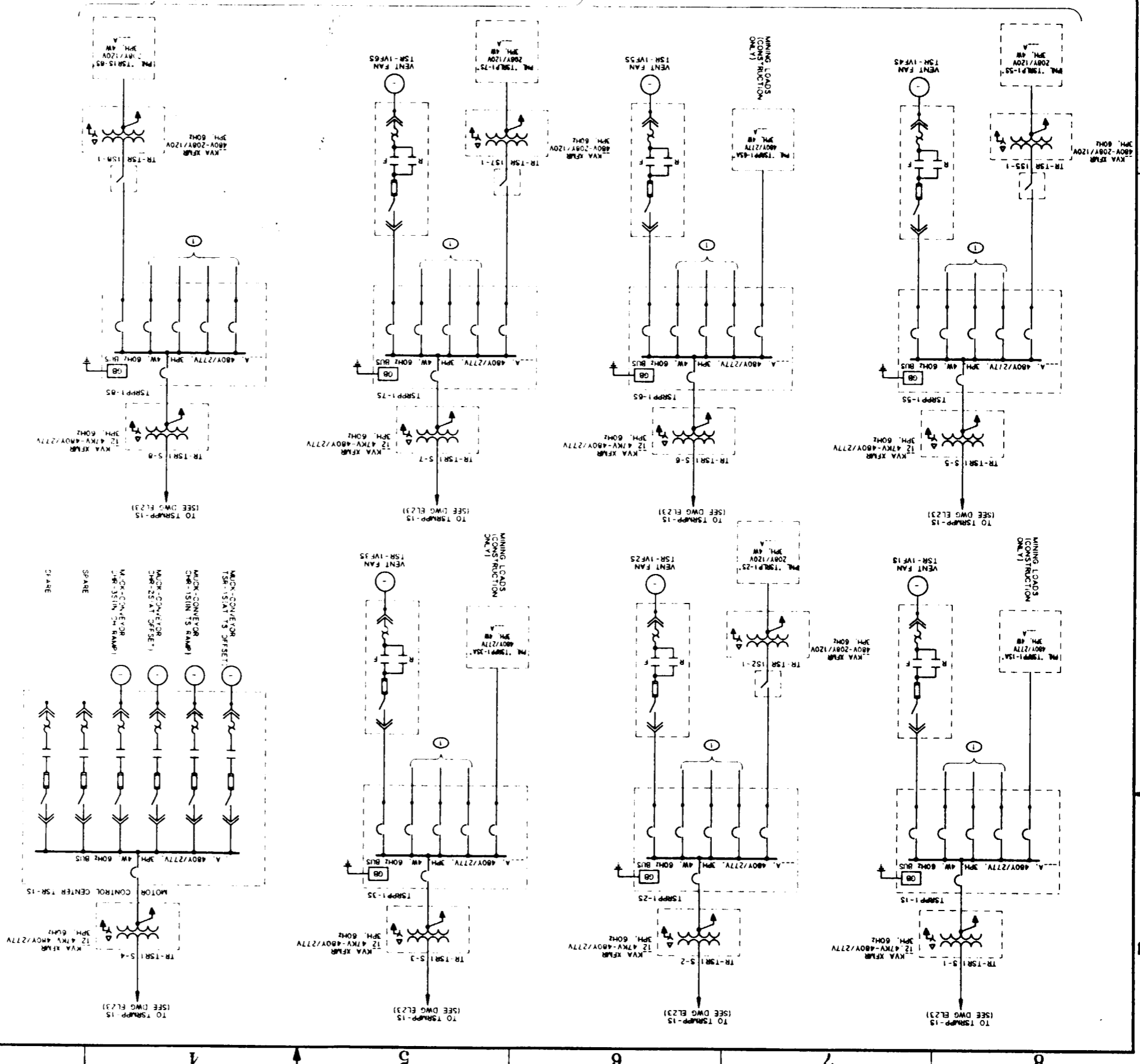
1. FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL23.

2. Also Available On Aperture Card

3. SI APERTURE CARD

# TS SOUTH RAMP - ONE LINE DIAGRAM

POWER PANELS LOCATED IN TS SOUTH RAMP AT VARIOUS FACILITIES REQUIRING POWER FOR INSTRUMENTATION TESTING, LIGHTING, UPS(S) ETC.



012020061-89

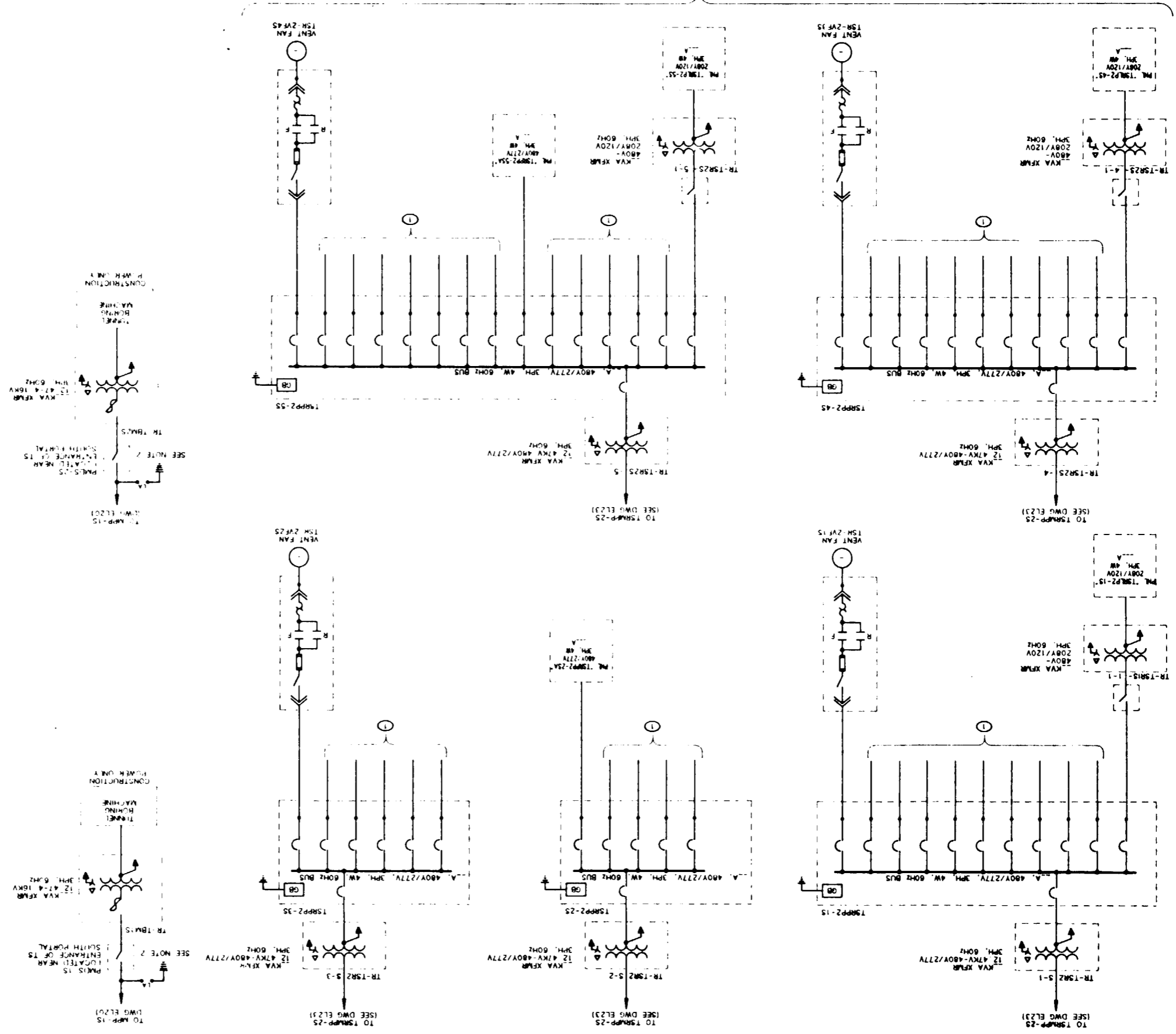
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U.S. DEPARTMENT OF ENERGY YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA																	
APPROVALS																	
NSN Haytheon Services Nevada LAS VEGAS, NEVADA																	
EXPLORATORY STUDIES FACILITY TS SOUTH RAMP ELECTRICAL ONE LINE DIAGRAM																	
SUBMITTED BY: <i>[Signature]</i> DATE: <i>[Date]</i> YMP-025-2-ELEC-EL25																	
VMPD APPROVED																	
REV: 0																	
FOR: 1, 2, 3, 2																	
C.I. NO. 8-21-91																	

012080061-90

TS SOUTH RAMP - ONE LINE DIAGRAM

POWER PANELS LOCATED IN TS SOUTH RAMP AT VARIOUS FACILITIES REQUIRING INSTRUMENTATION TESTING, LIGHTING, UPS(S), ETC



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02  
FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

**APERTURE CARD**  
Also Available On  
Aperture Card

NOTES:  
1 FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL23  
2 THE GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY

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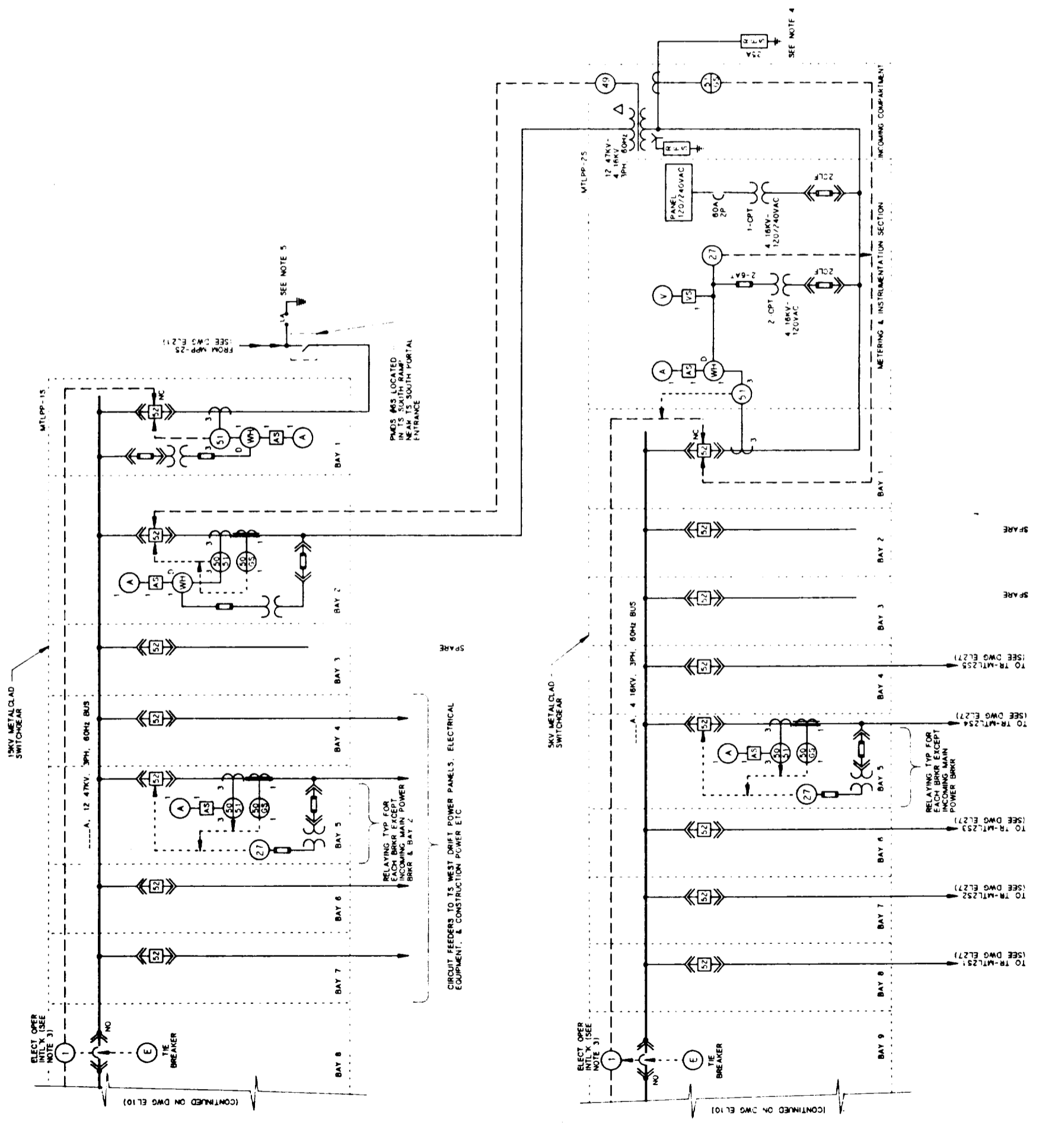
1 2 3 4 5 6 7 8

# 81 APERTURE CARD

Also Available On Aperture Card

### NOTES:

- 1 ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
- 2 SPARE 4.18KV CIRCUITS MAY BE UTILIZED FOR LONG EXPLORATORY DRIFT MINING
- 3 THE TWO INCOMING FEEDER CIRCUITS SHALL BE OPENED BY THE MAIN CIRCUIT BREAKER NORMALLY. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE, THE AFFECTED BREAKER OPENS. THE OTHER FEEDER CIRCUIT BREAKER OPENS TO ENERGIZE THE TOTAL BUS.
- 4 THE RESISTOR GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY.
- 5 THE GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY.



9112080061-91

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025 2 CIVIL GEO2  
FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/O

APPROVALS	
DESIGN	INSF
DRAWN	CLG
CHECKED	MAI (P)
DEC	MAI
DESIGN MANAGER	BAJCH
VERIFICATION	N/A
ENV	SAF
QUALITY ASSURANCE	BAJCH

U.S.S. NO	DATE	DRAWING NO	REV
1.2.8.1.1	8-21-81	YMP-025-2-ELEC-EL26	0

FOR	DATE	DATE	SHT	OF
YMP/O 197	8-21-81			

TS MAIN DRIFT/SOUTH FEEDERS - ONE LINE DIAGRAM

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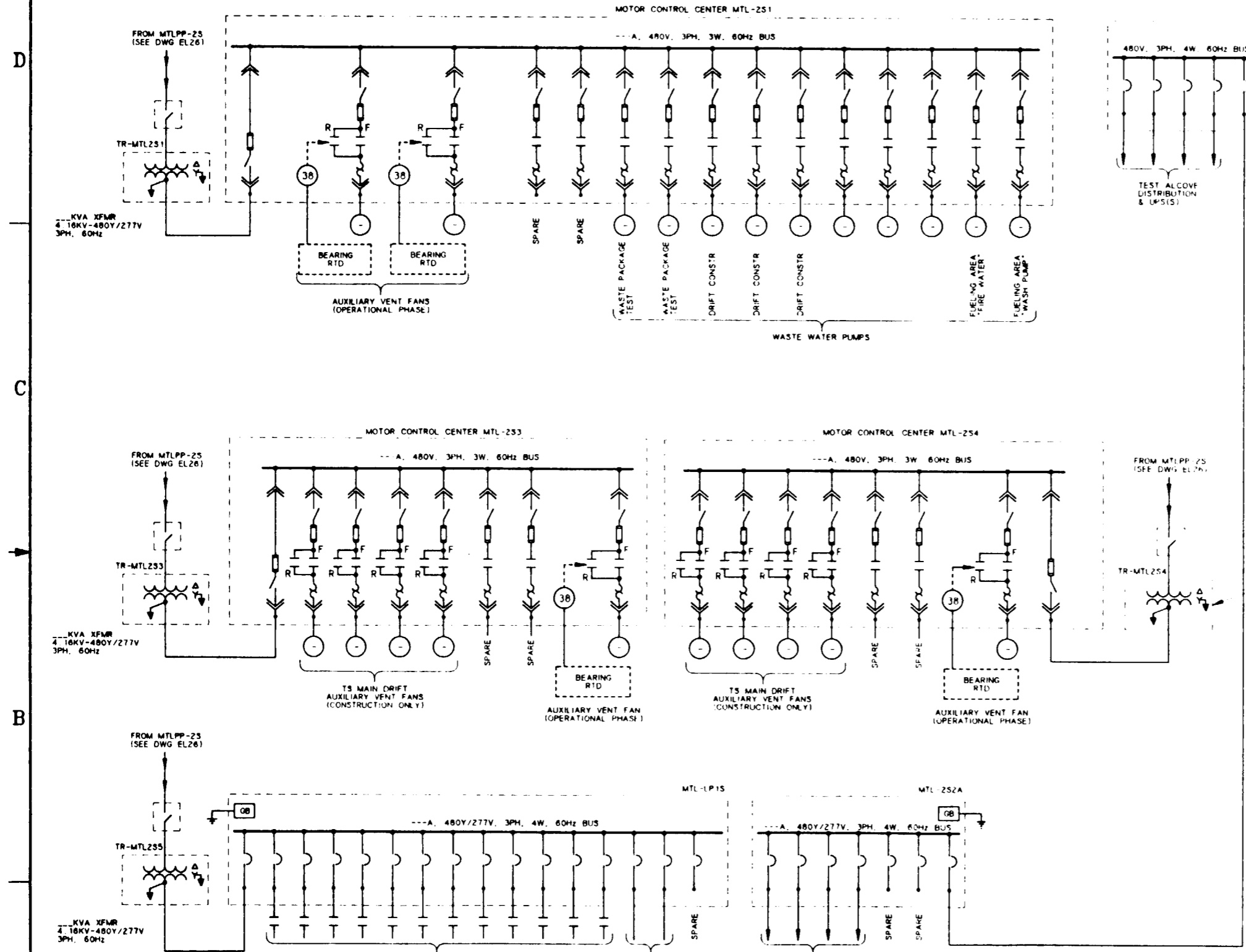
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# SI APERTURE CARD

Also Available On Aperture Card



### NOTES:

- FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL26
- DURING CONSTRUCTION, THE AUXILIARY VENT FANS WILL BE INTERLOCKED & CAN BE MANUALLY REVERSED AS NEEDED
- ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
- ALL MAIN 480V CIRCUITS SHALL HAVE GROUND-FAULT & UNDERVOLTAGE PROTECTION
- QUANTITIES FOR FANS & PUMPS, ETC WILL BE DETERMINED DURING THE TITLE II EFFORT

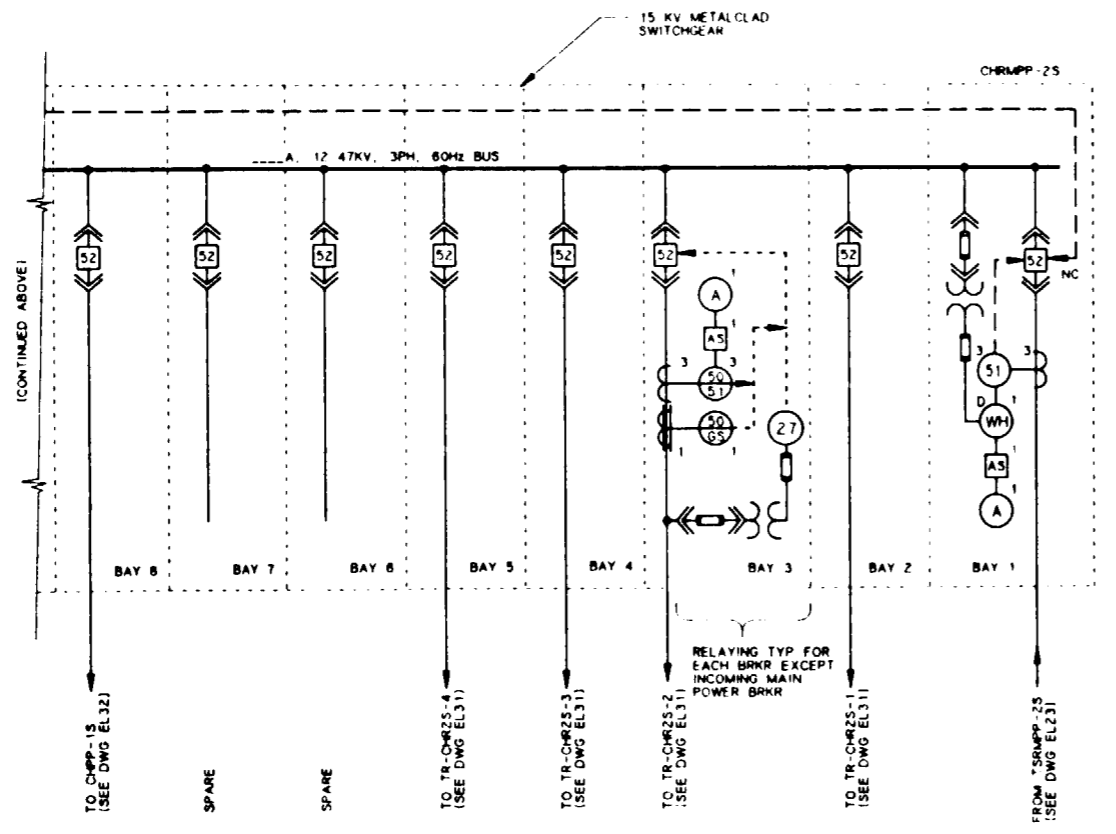
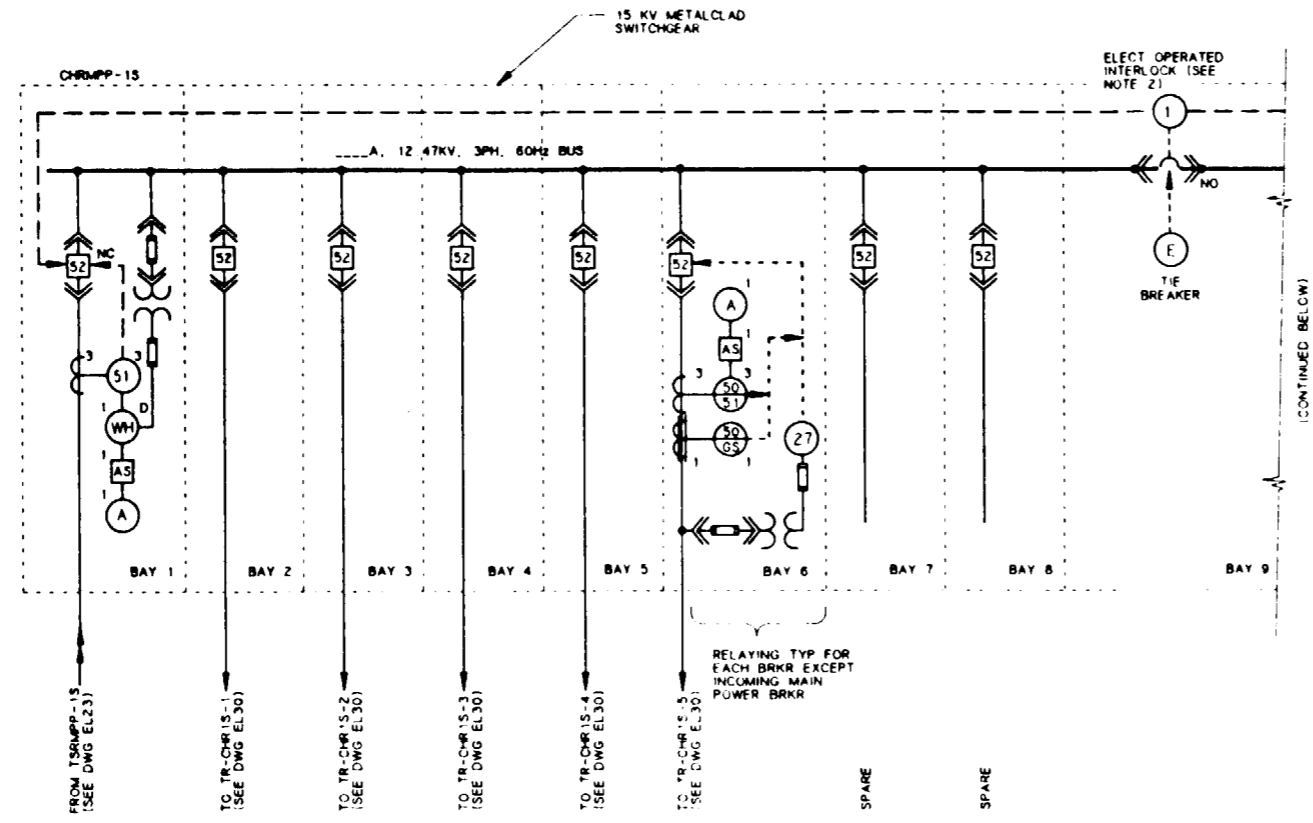
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2 CIVL GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

TS MAIN DRIFT/SOUTH FEEDERS - ONE LINE DIAGRAM

9112020061-92

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MSF		EXPLORATORY STUDIES FACILITY TS MAIN DRIFT/SOUTH FEEDERS ELECTRICAL ONE LINE DIAGRAM										
DRAWN	CLG												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY <i>[Signature]</i> DATE <i>8-25-91</i> DRAWING NO. YMP-025-2-ELEC-EL27 REV. 0											
QUALITY ASSURANCE	<i>[Signature]</i>												
YMP-025-2-ELEC-EL27			YMP-025-2-ELEC-EL27										
C.I. NO.			DATE										
SHT			OF										



CH SOUTH RAMP - ONE LINE DIAGRAM

**SI APERTURE CARD**  
Also Available On Aperture Card

**NOTES:**

- ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS AND FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS.
- THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE TIE CIRCUIT BREAKER NORMALLY OPEN. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE, THE AFFECTED BREAKER OPENS AND SIMULTANEOUSLY THE TIE CIRCUIT BREAKER CLOSES TO ENERGIZE THE TOTAL BUS.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPQ	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
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CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>		SUBMITTED BY	<i>[Signature]</i>		DATE	8-26-91		DRAWING NO	YMP-025-2-ELEC-EL29		REV.	0
QUALITY ASSURANCE	<i>[Signature]</i>		YMPO APPROVED		DATE		SHT		OF				

9112020061-93

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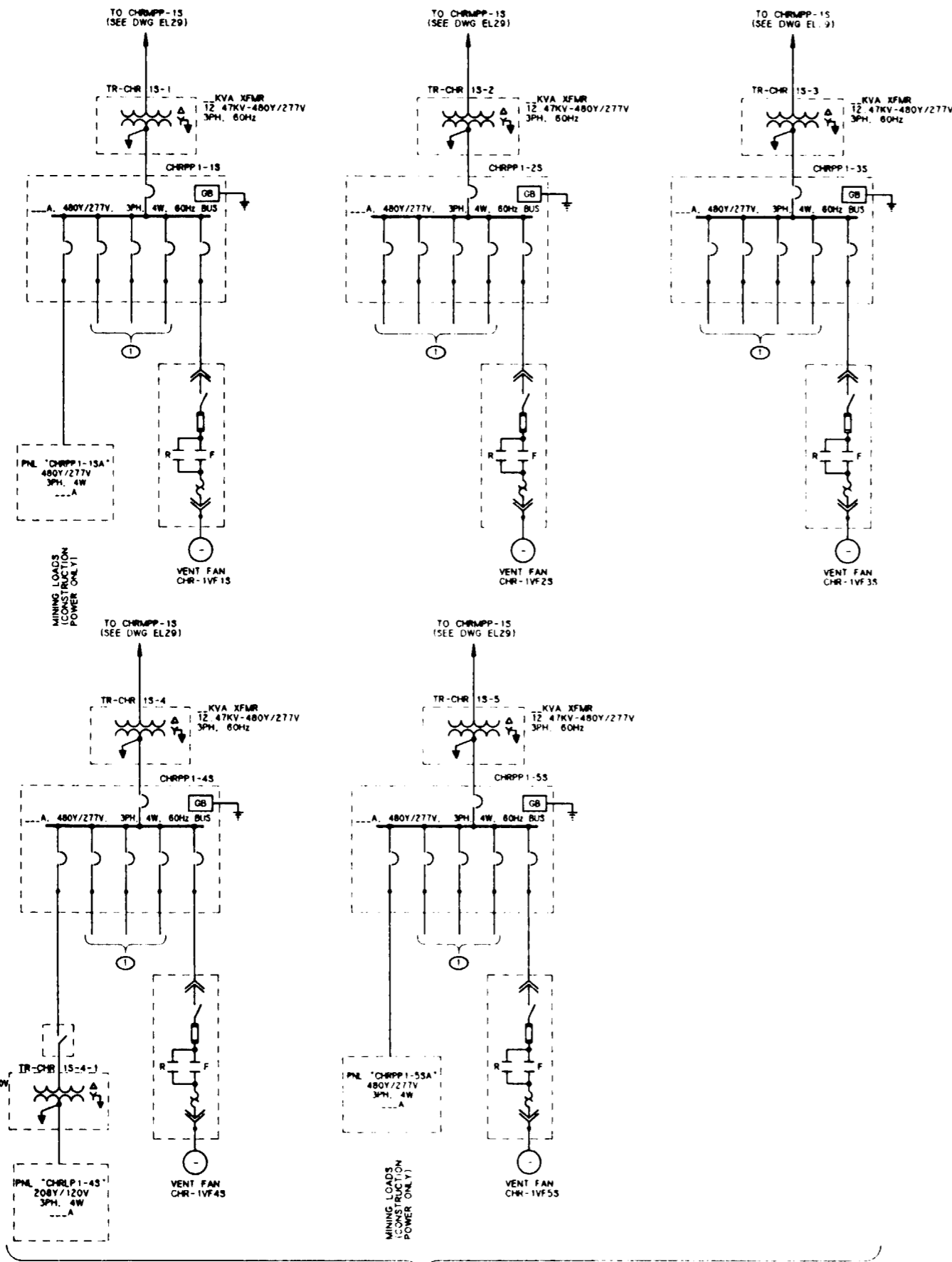
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Ⓢ POWER PANELS LOCATED IN CH SOUTH RAMP AT VARIOUS FACILITIES REQUIRING POWER FOR INSTRUMENTATION, TESTING, LIGHTING, UPS, ETC.

**CH SOUTH RAMP - ONE LINE DIAGRAM**

**NOTE:**

1. FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL29

**SI  
APERTURE  
CARD**

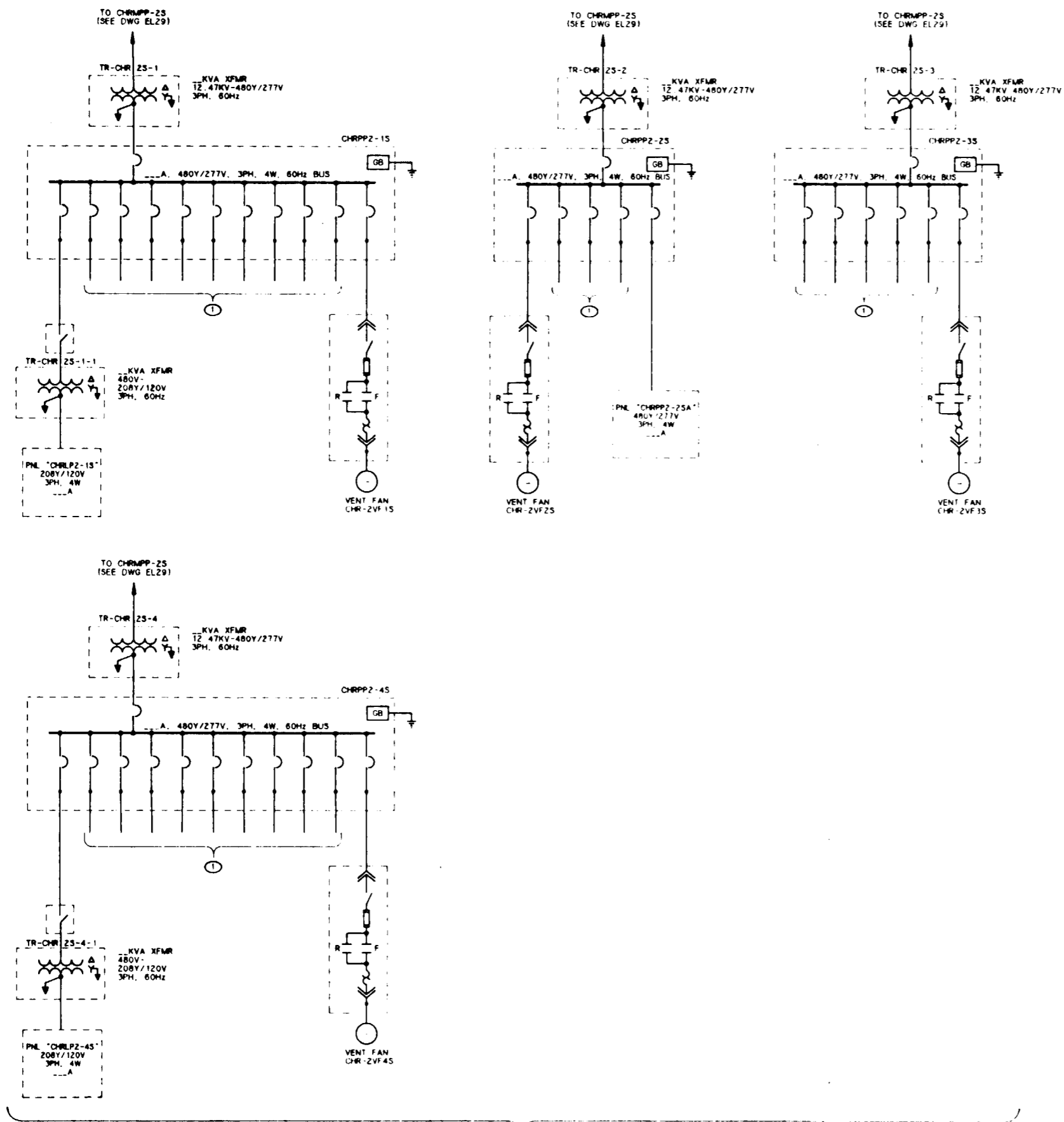
**Also Available On  
Aperture Card**

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ERV	SAF	QA	TPD	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
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DEC	[Signature]												
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VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	[Signature]												
SUBMITTED BY			DATE		DRAWING NO							REV	
[Signature]			8-25-99		YMP-025-2-ELEC-EL30							0	
YMPO APPROVED			DATE		SHT							OF	
[Signature]													

9112020061-94



NOTE:

1. FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL29

SI APERTURE CARD

Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

① POWER PANELS LOCATED IN CH SOUTH RAMP AT VARIOUS FACILITIES REQUIRING POWER FOR INSTRUMENTATION, TESTING, LIGHTING, UPS(S), ETC

CH SOUTH RAMP - ONE LINE DIAGRAM

9112020061-95

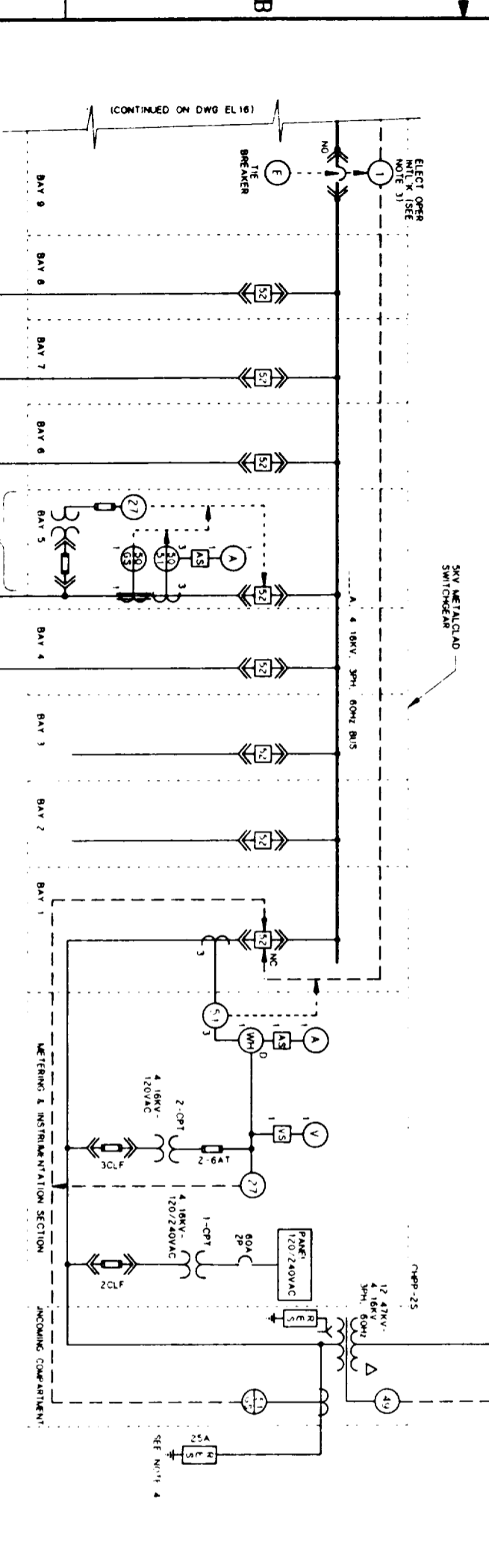
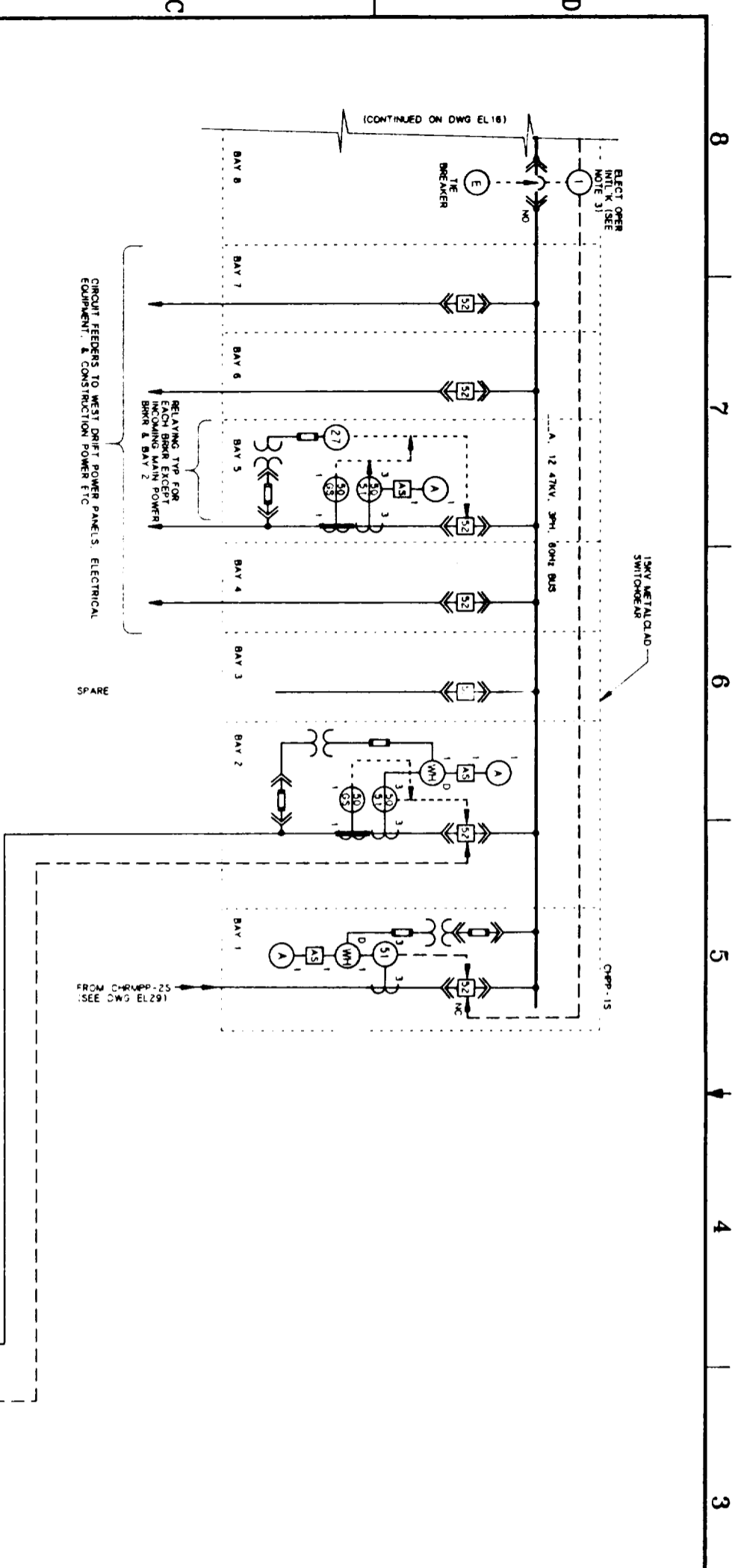
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APPROVALS			<p align="center"><b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA</p>										
DESIGN	MSF												
DRAWN	CLG												
CHECKED	JAM												
DEC	JAM												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV SAF	N/A												
QUALITY ASSURANCE	N/A												
SUBMITTED BY			DATE	DRAWING NO									
YMP0152			8-2-91	YMP-025-2-ELEC-EL31									
YMP0 APPROVED			DATE	SHT	OF								
8-21-91													



**SI**  
**APERTURE**  
**CARD**

Also Available On  
Aperthive Card

- NOTES:**
- 1 ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND-CHECK CONDUCTIONS
  - 2 SPARE 4 18KV CIRCUITS MAY BE UTILIZED FOR LOW VOLTAGE DRIFT MINING
  - 3 THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE CIRCUIT BREAKER NORMALLY OPENED. IN THE EVENT OF A FAILURE, THE AFFECTED BREAKER OPENS AND SHUT TANGERS TO THE CIRCUIT (LOCAL BUS)
  - 4 THE RESISTOR GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY



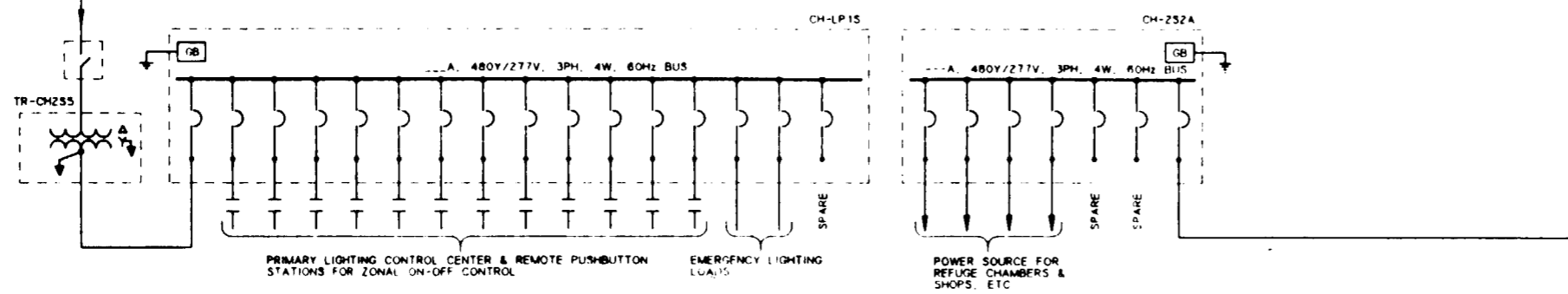
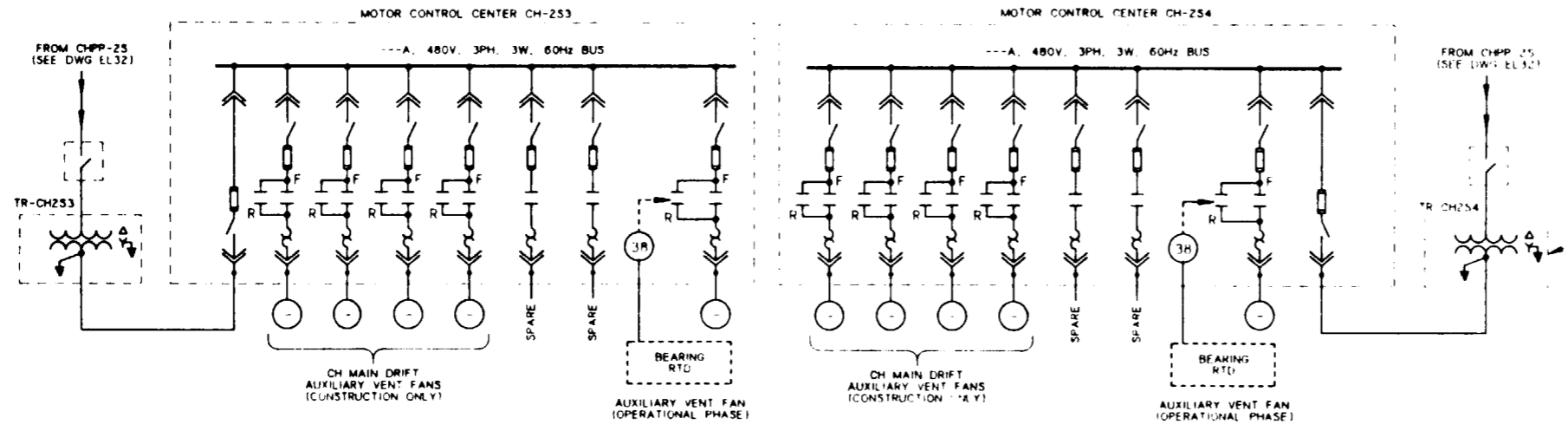
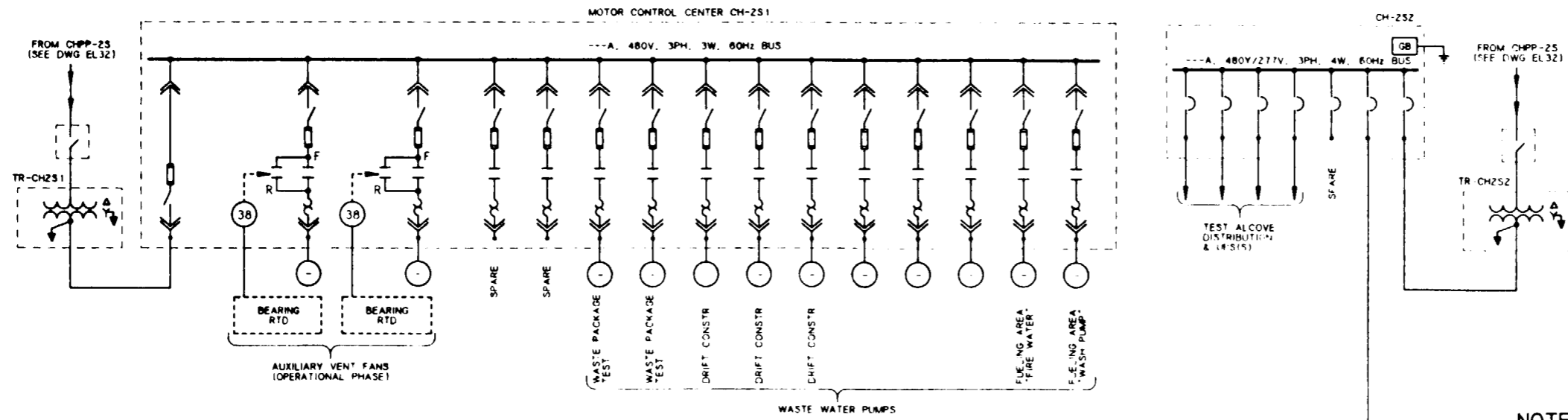
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-0E02

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DM	CHK	DEC	EN	WBY	EW	SAF	QA	PO	YMP/0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY CH MAIN DRIFT/SOUTH FEEDERS ELECTRICAL <b>ONE LINE DIAGRAM</b>													
APPROVALS DESIGN: MSF DRAWN: GUG CHECKED: [Signature] DEC: [Signature] DESIGN MANAGER: B. CH. VERIFICATION: N/A ENW: SAJ QUALITY ASSURANCE: [Signature] WBS NO: 1.2.5.8.2.1 SUBMITTED BY: [Signature] DATE: [Date] DRAWING NO: YMP-025-2-ELEC-EL32 YMP/0 APPROVED: [Signature] DATE: [Date]													

CH MAIN DRIFT/SOUTH FEEDERS - ONE LINE DIAGRAM 9118080061-96

**SI APERTURE CARD**  
 Also Available On Aperture Card



CH MAIN DRIFT/SOUTH FEEDERS - ONE LINE DIAGRAM

**NOTES:**

- FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-2-ELEC-EL32
- DURING CONSTRUCTION, THE AUXILIARY VENT FANS WILL BE INTERLOCKED & CAN BE MANUALLY REVERSED AS NEEDED.
- ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS & FEEDERS SHALL HAVE GROUND CHECK CONDUCTORS
- ALL MAIN 480V CIRCUITS SHALL HAVE GROUND FAULT & UNDERVOLTAGE PROTECTION
- QUANTITIES FOR FANS & PUMPS, ETC WILL BE DETERMINED DURING THE TITLE II EFFORT

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GEO2

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

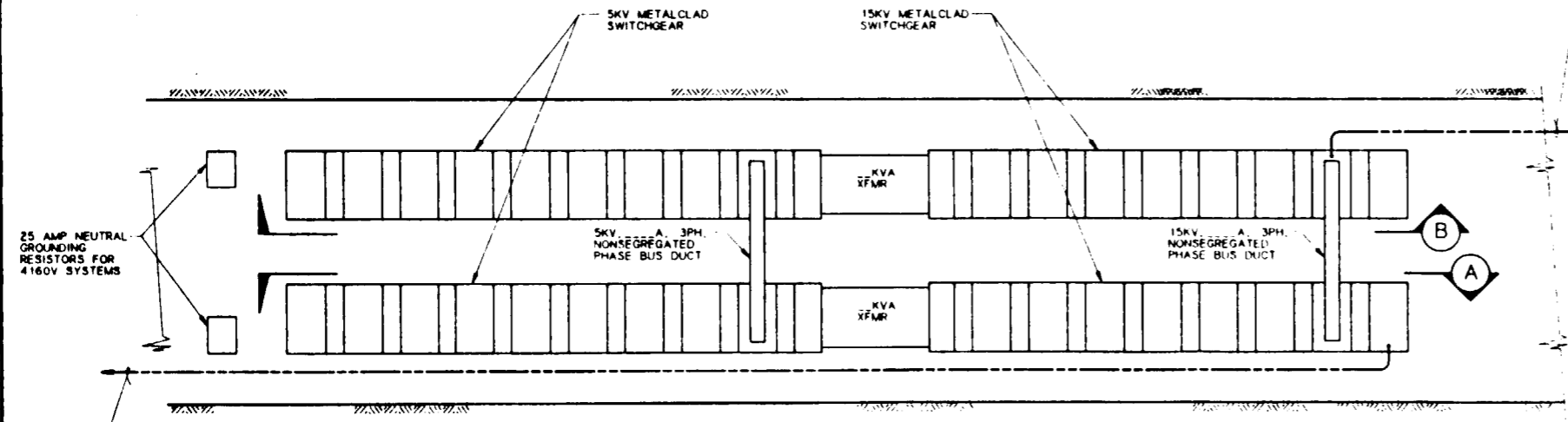
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MSF		EXPLORATORY STUDIES FACILITY CH MAIN DRIFT/SOUTH FEEDERS ELECTRICAL <b>ONE LINE DIAGRAM</b>										
DRAWN	CLG												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A		SUBMITTED BY		DATE		DRAWING NO		REV				
ENV	SAF	<i>[Signature]</i>	<i>[Signature]</i>		8-29		YMP-025-2-ELEC-EL33		0				
QUALITY ASSURANCE	<i>[Signature]</i>		YMP APPROVED		DATE		SHT		OF				
FOR YMP0204	W.B.S. NO. 1,2,6,6,2,1		C.I. NO.		DATE		SHT		OF				

9112020061-97

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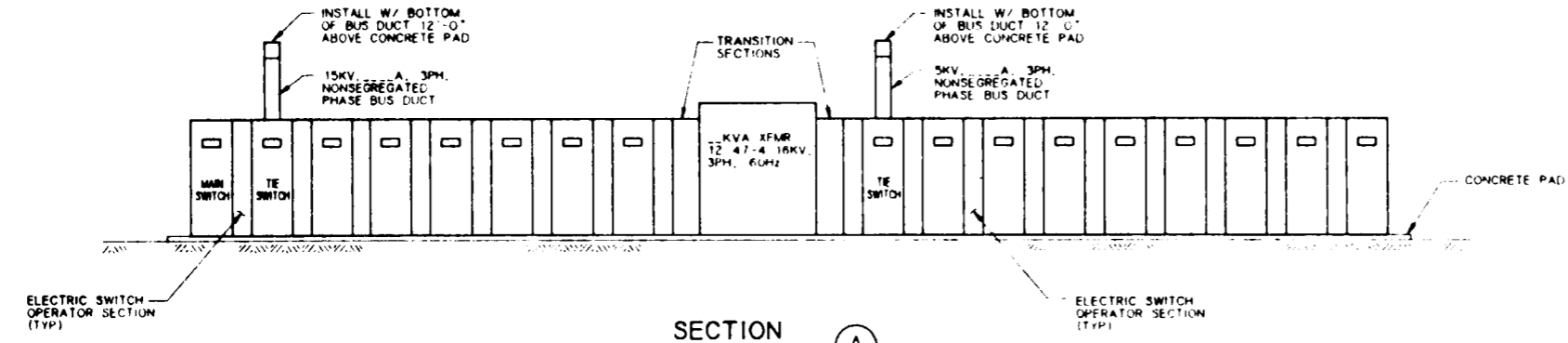
**SI APERTURE CARD**  
Also Available On Aperture Card

3/C 15KV CABLE TYPE MPF-GC WITH GROUND-CHECK WIRE FOR FEEDER TO TS MAIN DRIFT SWITCHGEAR. SEE ONE LINE DIAGRAM DWG EL00 & FOR FEEDER TO CH MAIN DRIFT SWITCHGEAR. SEE ONE LINE DIAGRAM DWG EL02



**ELECTRICAL POWER CENTER - PLAN**  
NOT TO SCALE

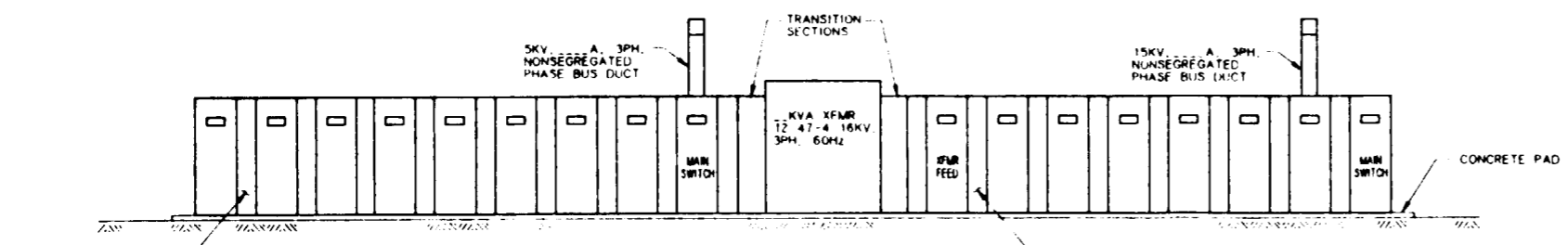
3/C 15KV CABLE TYPE MPF-GC WITH GROUND-CHECK WIRE FOR FEEDER TO TS MAIN DRIFT SWITCHGEAR. SEE ONE LINE DIAGRAM DWG EL00 & FOR FEEDER TO CH MAIN DRIFT SWITCHGEAR. SEE ONE LINE DIAGRAM DWG EL02



**SECTION A**  
NOT TO SCALE

ELECTRIC SWITCH OPERATOR SECTION (TYP)

ELECTRIC SWITCH OPERATOR SECTION (TYP)



**SECTION B**  
NOT TO SCALE

ELECTRIC SWITCH OPERATOR SECTION (TYP)

ELECTRIC SWITCH OPERATOR SECTION (TYP)

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

FOR GENERAL NOTES. SEE DRAWING YMP-025-1-ELEC-EL01

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VER	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS MAIN DRIFT/CH MAIN DRIFT TYPICAL ARRANGEMENT ELECTRICAL POWER CENTER													
APPROVALS													
DESIGN	MSF												
DRAWN	CLG												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	B-24-91												
SUBMITTED BY			DRAWING NO			REV							
<i>[Signature]</i>			YMP-025-2-ELEC-EL34			0							
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9113020061-98

GENERAL NOTES :

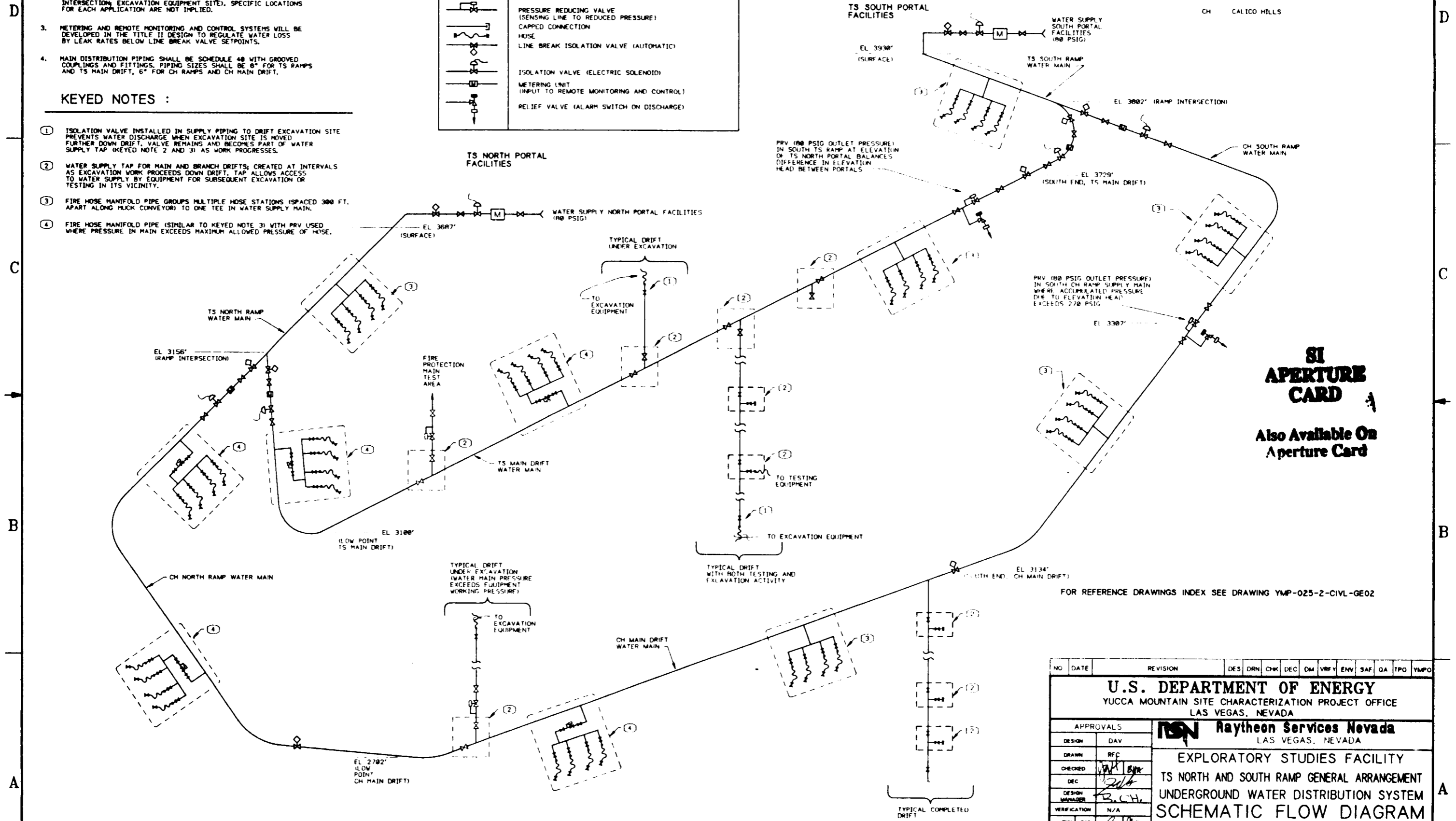
- 1. SYSTEM SHOWN SCHEMATICALLY, NOT TO SCALE. MAJOR PIPING RUNS CURVED TO SHOW RELATIVE ELEVATIONS BETWEEN SALIENT POINTS.
- 2. DASHED BOXES IN DRIFT PIPING DEPICT THE GENERIC WATER FACILITY TYPICAL FOR A SPECIFIC APPLICATION (i.e., WATER TAP AT DRIFT INTERSECTION, EXCAVATION EQUIPMENT SITE). SPECIFIC LOCATIONS FOR EACH APPLICATION ARE NOT IMPLIED.
- 3. METERING AND REMOTE MONITORING AND CONTROL SYSTEMS WILL BE DEVELOPED IN THE TITLE II DESIGN TO REGULATE WATER LOSS BY LEAK RATES BELOW LINE BREAK VALVE SETPOINTS.
- 4. MAIN DISTRIBUTION PIPING SHALL BE SCHEDULE 40 WITH GROOVED COUPLINGS AND FITTINGS. PIPING SIZES SHALL BE 8" FOR TS RAMPS AND TS MAIN DRIFT, 6" FOR CH RAMPS AND CH MAIN DRIFT.

KEYED NOTES :

- ① ISOLATION VALVE INSTALLED IN SUPPLY PIPING TO DRIFT EXCAVATION SITE PREVENTS WATER DISCHARGE WHEN EXCAVATION SITE IS MOVED FURTHER DOWN DRIFT. VALVE REMAINS AND BECOMES PART OF WATER SUPPLY TAP (KEYED NOTE 2 AND 3) AS WORK PROGRESSES.
- ② WATER SUPPLY TAP FOR MAIN AND BRANCH DRIFTS, CREATED AT INTERVALS AS EXCAVATION WORK PROCEEDS DOWN DRIFT. TAP ALLOWS ACCESS TO WATER SUPPLY BY EQUIPMENT FOR SUBSEQUENT EXCAVATION OR TESTING IN ITS VICINITY.
- ③ FIRE HOSE MANIFOLD PIPE GROUPS MULTIPLE HOSE STATIONS (SPACED 300 FT. APART ALONG MUCK CONVEYOR) TO ONE TEE IN WATER SUPPLY MAIN.
- ④ FIRE HOSE MANIFOLD PIPE (SIMILAR TO KEYED NOTE 3) WITH PRV USED WHERE PRESSURE IN MAIN EXCEEDS MAXIMUM ALLOWED PRESSURE OF HOSE.

SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	ISOLATION VALVE (MANUAL)
	PRESSURE REDUCING VALVE (SENSING LINE TO REDUCED PRESSURE)
	CAPPED CONNECTION
	HOSE
	LINE BREAK ISOLATION VALVE (AUTOMATIC)
	ISOLATION VALVE (ELECTRIC SOLENOID)
	METERING UNIT (INPUT TO REMOTE MONITORING AND CONTROL)
	RELIEF VALVE (ALARM SWITCH ON DISCHARGE)

ABBREVIATIONS	
PRV	PRESSURE REDUCING VALVE
TS	TOPOPAH SPRING
CH	CALICO HILLS



**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

9112020061-99

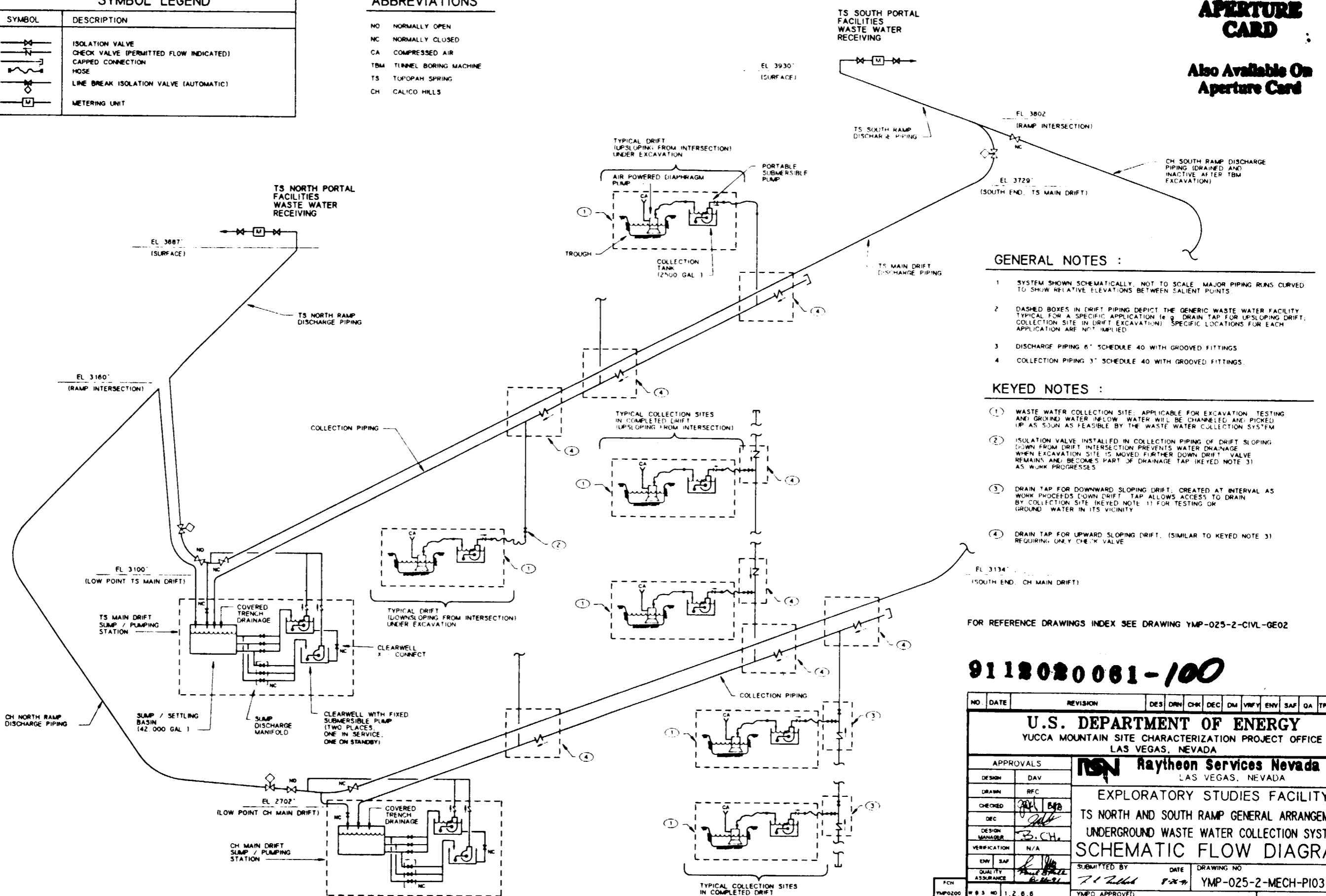
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH AND SOUTH RAMP GENERAL ARRANGEMENT</b> <b>UNDERGROUND WATER DISTRIBUTION SYSTEM</b> <b>SCHEMATIC FLOW DIAGRAM</b>													
DESIGN		DAV		DRAWN		RFC		CHECKED		JFK/BJM		DEC	
DESIGN MANAGER		B. CH.		VERIFICATION		N/A		ENV		SAF		TPD	
SUBMITTED BY		DATE		DRAWING NO		REV		YMPD APPROVED		DATE		SHT OF	
7.10.91		8-20-91		YMP-025-2-MECH-PI01		0							

SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	ISOLATION VALVE
	CHECK VALVE (PERMITTED FLOW INDICATED)
	CAPPED CONNECTION
	HOSE
	LINE BREAK ISOLATION VALVE (AUTOMATIC)
	METERING UNIT

ABBREVIATIONS	
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
CA	COMPRESSED AIR
TBM	TUNNEL BORING MACHINE
TS	TOPOPAH SPRING
CH	CALICO HILLS

# SI APERTURE CARD

Also Available On Aperture Card



- GENERAL NOTES :**
- 1 SYSTEM SHOWN SCHEMATICALLY, NOT TO SCALE. MAJOR PIPING RUNS CURVED TO SHOW RELATIVE ELEVATIONS BETWEEN SALIENT POINTS.
  - 2 DASHED BOXES IN DRIFT PIPING DEPICT THE GENERIC WASTE WATER FACILITY TYPICAL FOR A SPECIFIC APPLICATION (e.g. DRAIN TAP FOR UPSLOPING DRIFT, COLLECTION SITE IN DRIFT EXCAVATION). SPECIFIC LOCATIONS FOR EACH APPLICATION ARE NOT IMPLIED.
  - 3 DISCHARGE PIPING 6" SCHEDULE 40 WITH GROOVED FITTINGS.
  - 4 COLLECTION PIPING 3" SCHEDULE 40 WITH GROOVED FITTINGS.

- KEYED NOTES :**
- 1 WASTE WATER COLLECTION SITE, APPLICABLE FOR EXCAVATION TESTING AND GROUND WATER INFLOW. WATER WILL BE CHANNLED AND PICKED UP AS SOON AS FEASIBLE BY THE WASTE WATER COLLECTION SYSTEM.
  - 2 ISOLATION VALVE INSTALLED IN COLLECTION PIPING OF DRIFT SLOPING DOWN FROM DRIFT INTERSECTION PREVENTS WATER DRAINAGE WHEN EXCAVATION SITE IS MOVED FURTHER DOWN DRIFT. VALVE REMAINS AND BECOMES PART OF DRAINAGE TAP (KEYED NOTE 3) AS WORK PROGRESSES.
  - 3 DRAIN TAP FOR DOWNWARD SLOPING DRIFT, CREATED AT INTERVAL AS WORK PROCEEDS DOWN DRIFT. TAP ALLOWS ACCESS TO DRAIN BY COLLECTION SITE (KEYED NOTE 1) FOR TESTING OR GROUND WATER IN ITS VICINITY.
  - 4 DRAIN TAP FOR UPWARD SLOPING DRIFT, (SIMILAR TO KEYED NOTE 3) REQUIRING ONLY CHECK VALVE.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-100**

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YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	DAY	EXPLORATORY STUDIES FACILITY											
DRAWN	RFC	TS NORTH AND SOUTH RAMP GENERAL ARRANGEMENT											
CHECKED	BYB	UNDERGROUND WASTE WATER COLLECTION SYSTEM											
DEC		SCHEMATIC FLOW DIAGRAM											
DESIGN MANAGER	B.C.H.	SUBMITTED BY											
VERIFICATION	N/A	DATE											
ENV	SAF	DRAWING NO											
QUALITY ASSURANCE		YMP-025-2-MECH-PI03											
FCN	YMP0200	YMPD APPROVED											
W.B.S. NO	1.2.0.0	DATE											
S.I. NO		SHT											
												OF	

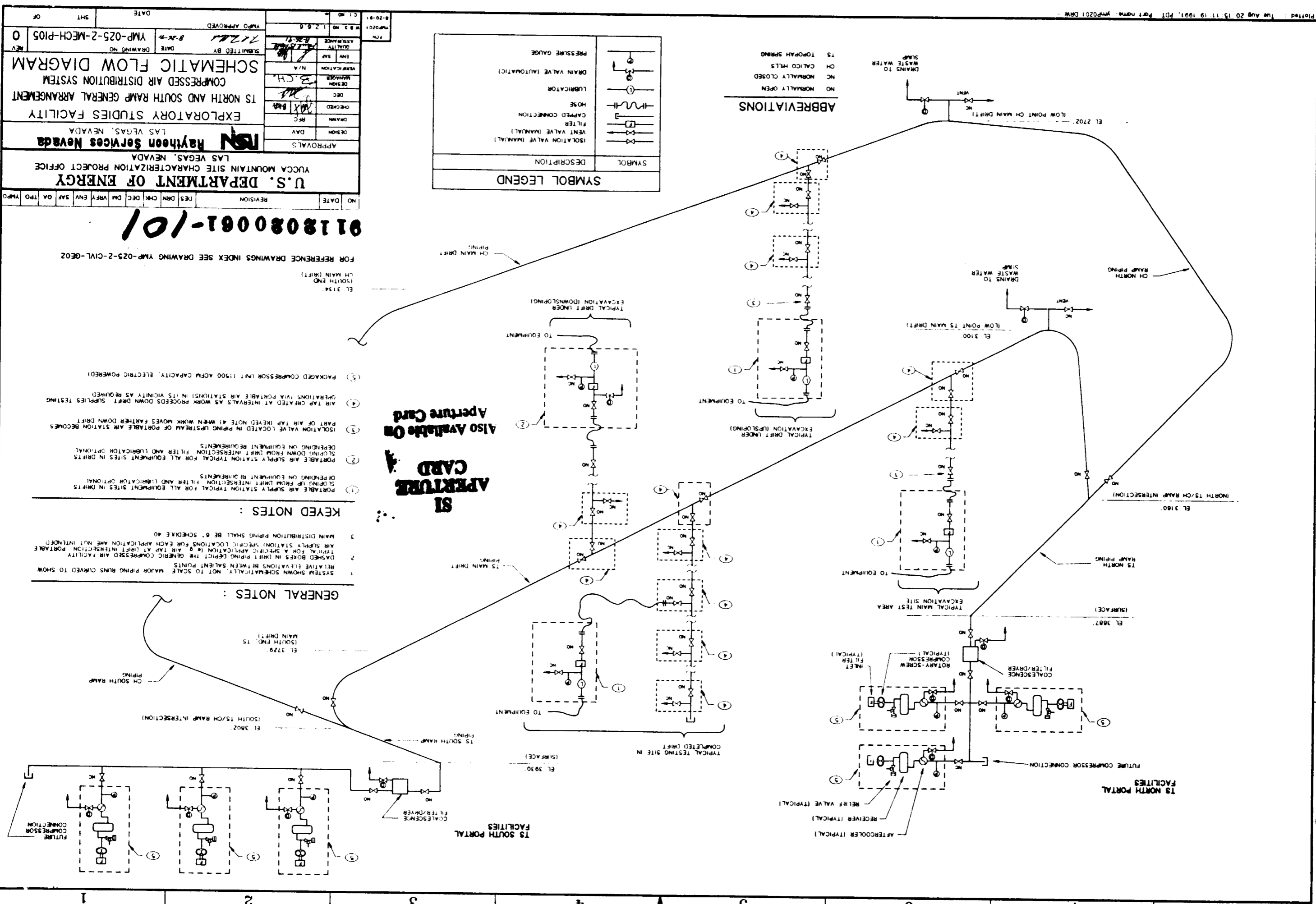
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9118080061-101

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-0E02  
EL 3174 (SOUTH END CH MAIN DRIFFT)  
EL 3100 (LOW POINT TS MAIN DRIFFT)

SYMBOL	DESCRIPTION
	ISOLATION VALVE (MANUAL)
	FILTER
	CAPRED CONNECTION
	HOSE
	LUBRICATOR
	PRESSURE GAUGE

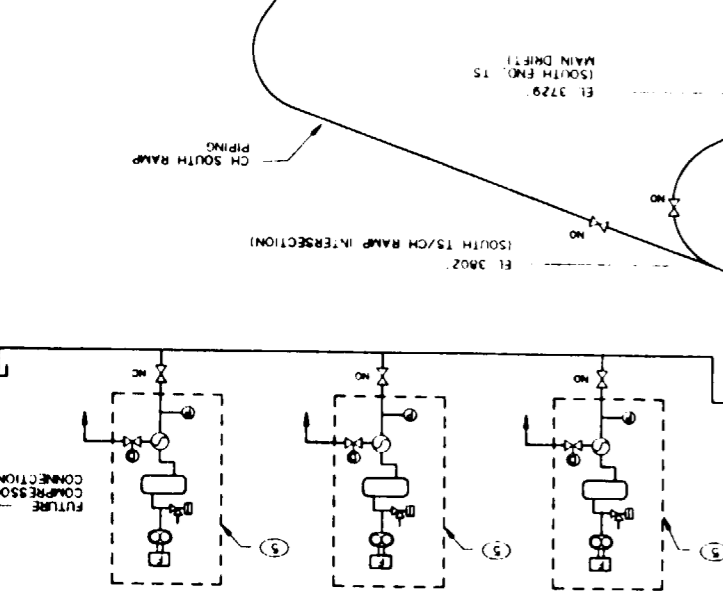
ABBREVIATIONS
NO NORMALLY OPEN
NC NORMALLY CLOSED
CH CALICO HILLS
TS TOPGRAPH SPRING



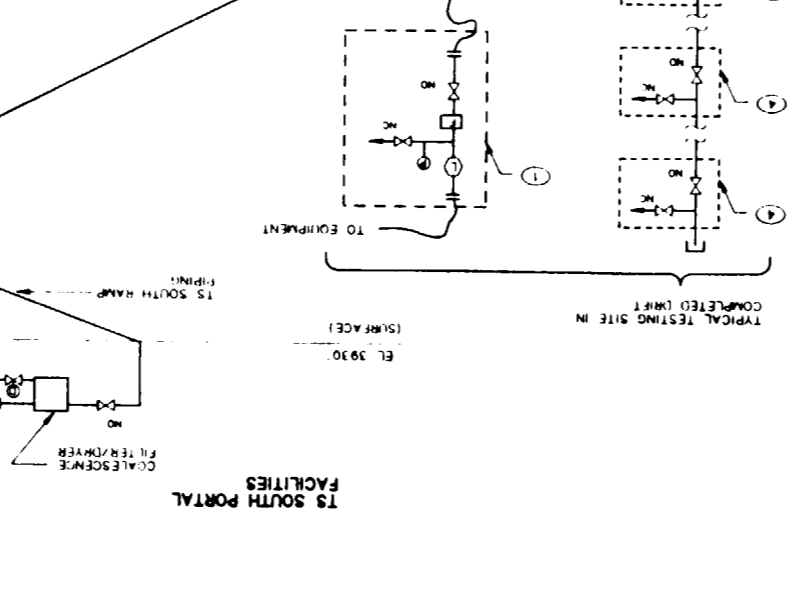
**SI**  
**APERTURE CARD**  
**Also Available On Aperture Card**

- KEYED NOTES :**
1. SYSTEM SHOWN SCHEMATICALLY. NOT TO SCALE. MAJOR PIPING RUNS CURVED TO SHOW RELATIVE ELEVATIONS BETWEEN SALIENT POINTS.
  2. DASHED BOXES IN DRIFT PIPING DEPICT THE GENERIC COMPRESSED AIR FACILITY TYPICAL FOR A SPECIFIC APPLICATION. AIR TAP AT DRIFT INTERSECTION. PORTABLE AIR SUPPLY STATION SPECIFIC LOCATIONS FOR EACH APPLICATION ARE NOT INTENDED.
  3. MAIN DISTRIBUTION PIPING SHALL BE 6\"/>

**GENERAL NOTES :**



1 2 3



4 5 6 7 8

8

7

6

5

4

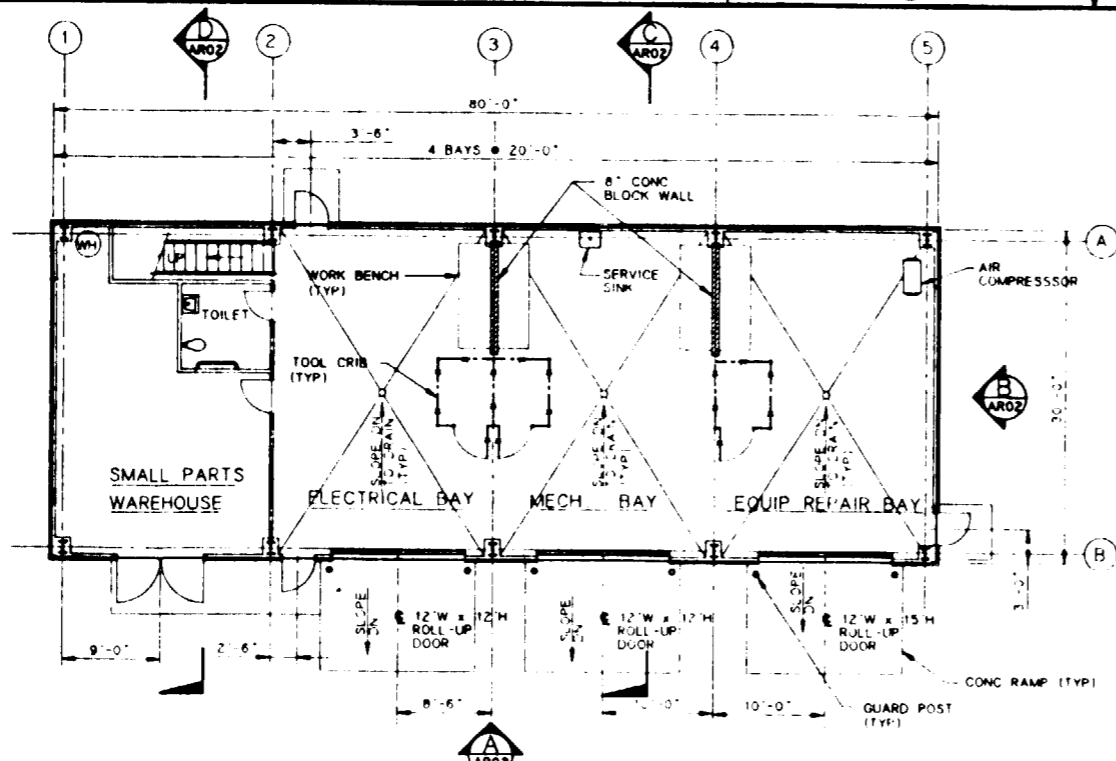
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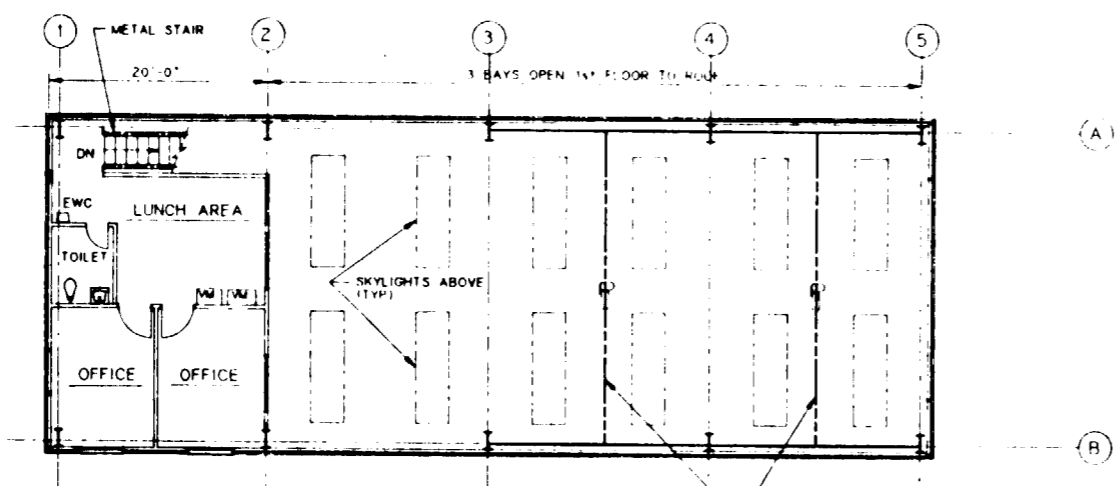
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SI  
APERTURE  
CARD

Also Available On  
Aperture Card



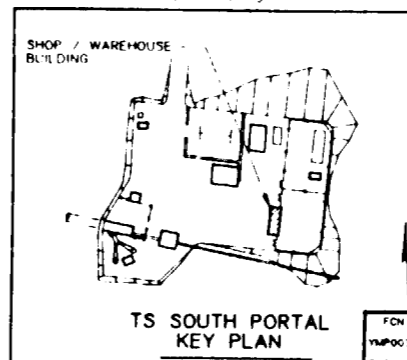
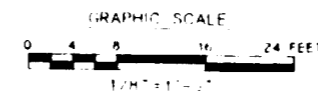
FIRST FLOOR PLAN  
SCALE 1/8" = 1'-0"



SECOND FLOOR PLAN  
SCALE 1/8" = 1'-0"

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

9112020061-102

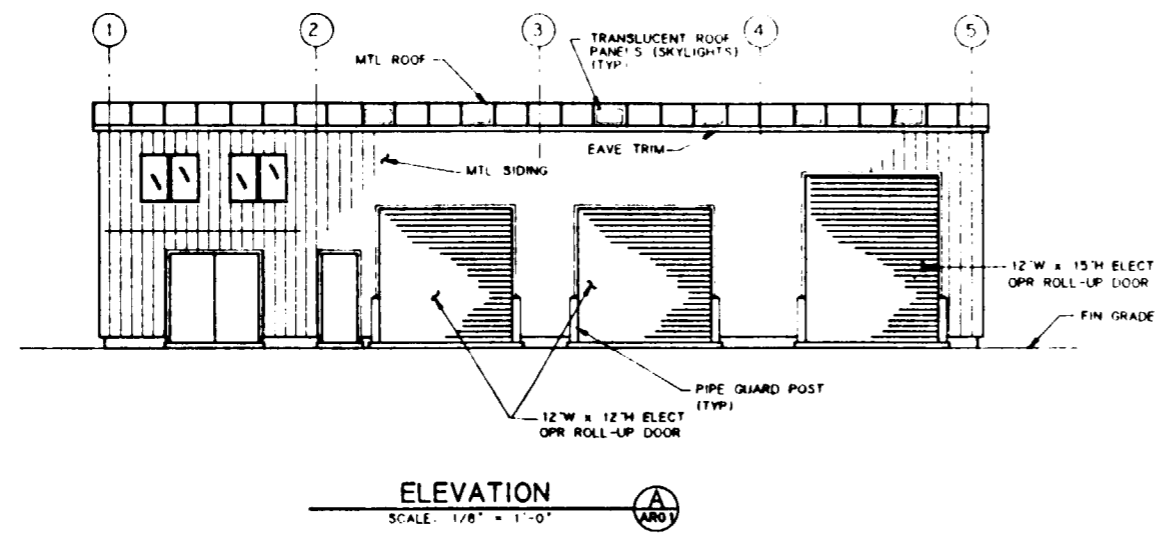
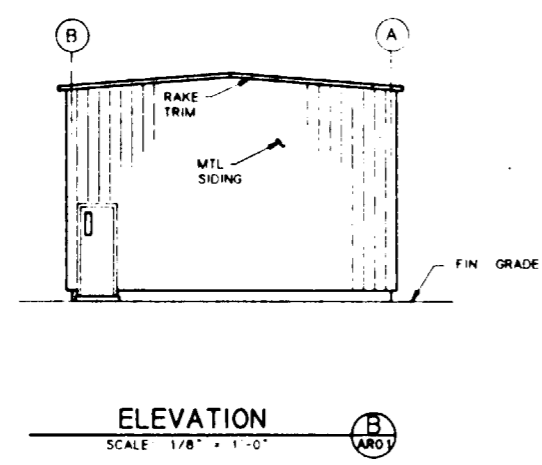
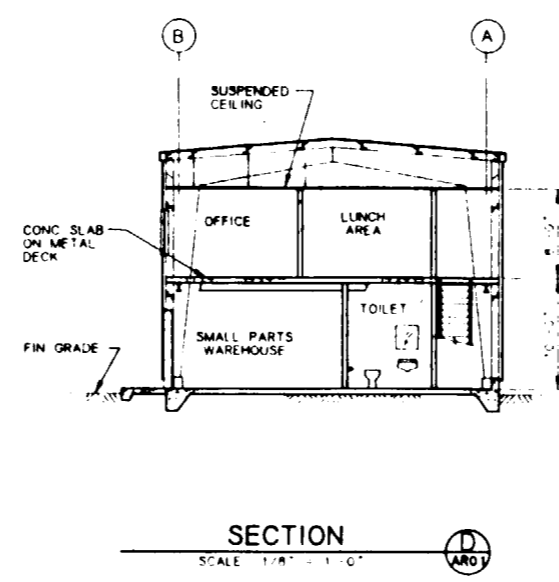
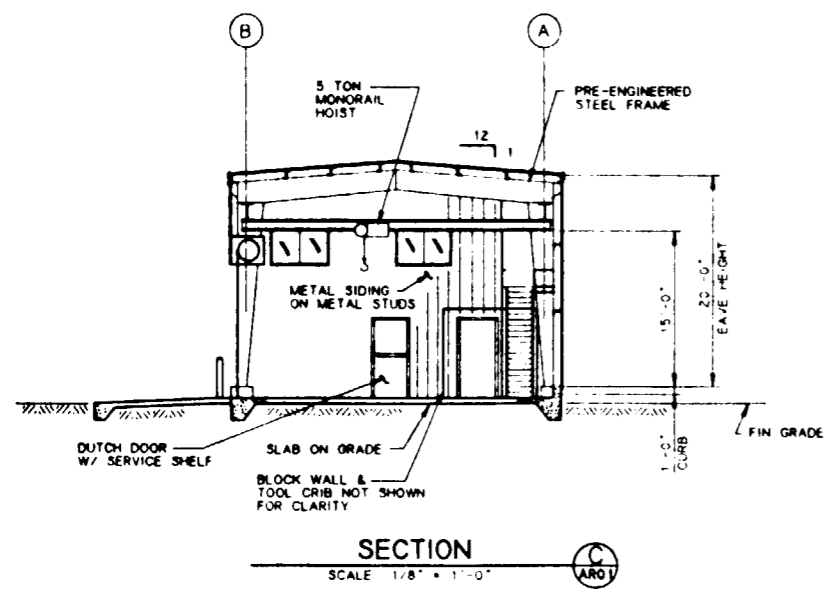


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APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	PZ													
DRAWN	MJM													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
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QUALITY ASSURANCE	<i>[Signature]</i>													
SUBMITTED BY		DATE	DRAWING NO		REV									
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YMPD APPROVED												DATE	SHT	OF

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**SI  
APERTURE  
CARD**

Also Available On  
Aperture Card



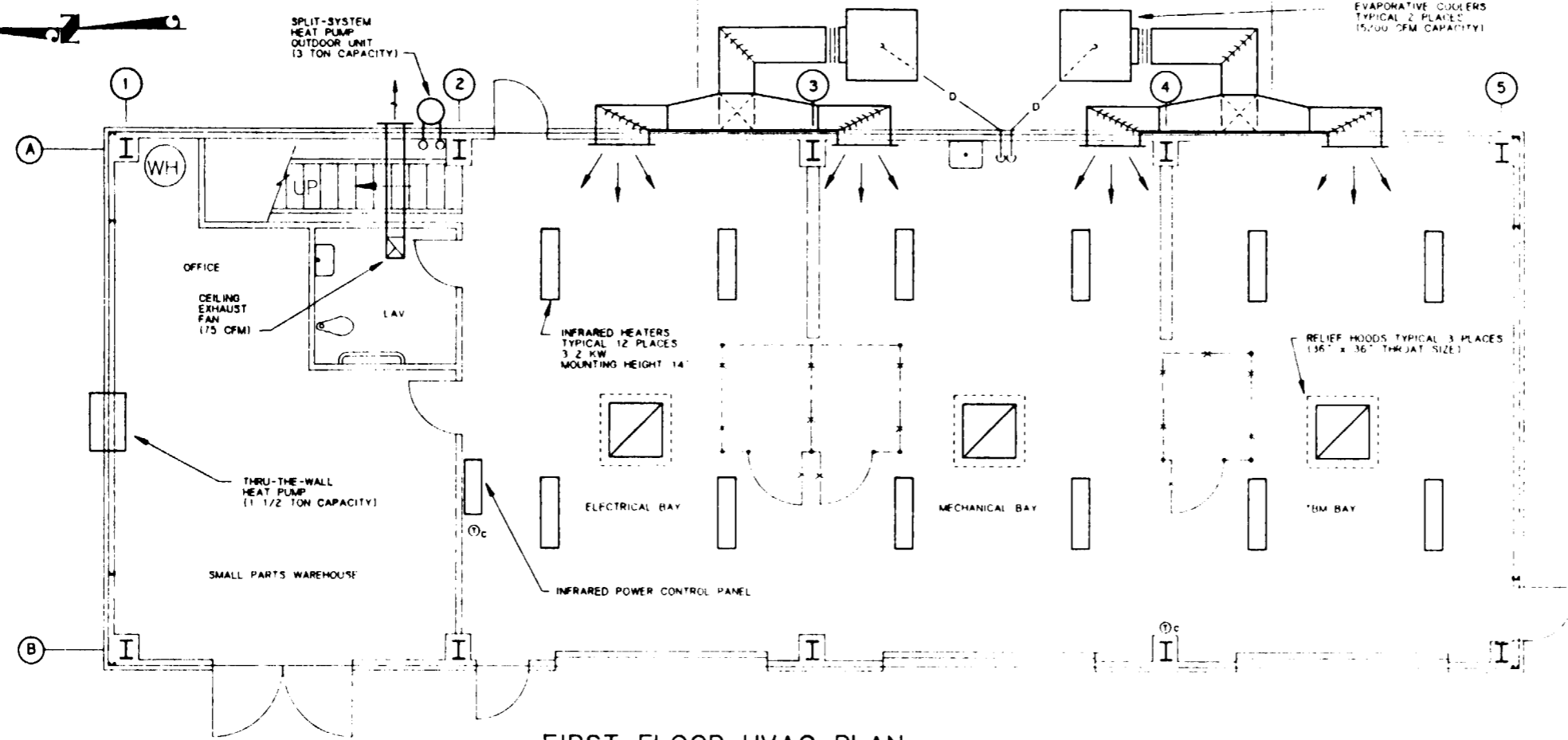
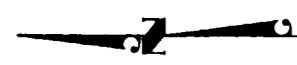
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-103**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/O
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APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	PZ		EXPLORATORY STUDIES FACILITY										
DRAWN	M.J.H.		TS SOUTH PORTAL GENERAL ARRANGEMENT										
CHECKED	[Signature]		SHOP / WAREHOUSE BUILDING										
DEC	[Signature]		<b>ELEVATIONS &amp; SECTIONS</b>										
DESIGN MANAGER	B.C.H.		SUBMITTED BY										
VERIFICATION	N/A		DATE		DRAWING NO		REV.						
ENV SAF	[Signature]		8-29-91		YMP-025-2-7010-AR02		0						
QUALITY ASSURANCE	[Signature]		YMP/O APPROVED		DATE		SHT OF						
FCN	8-25-91												
YMP/O 134	C.I. NO												



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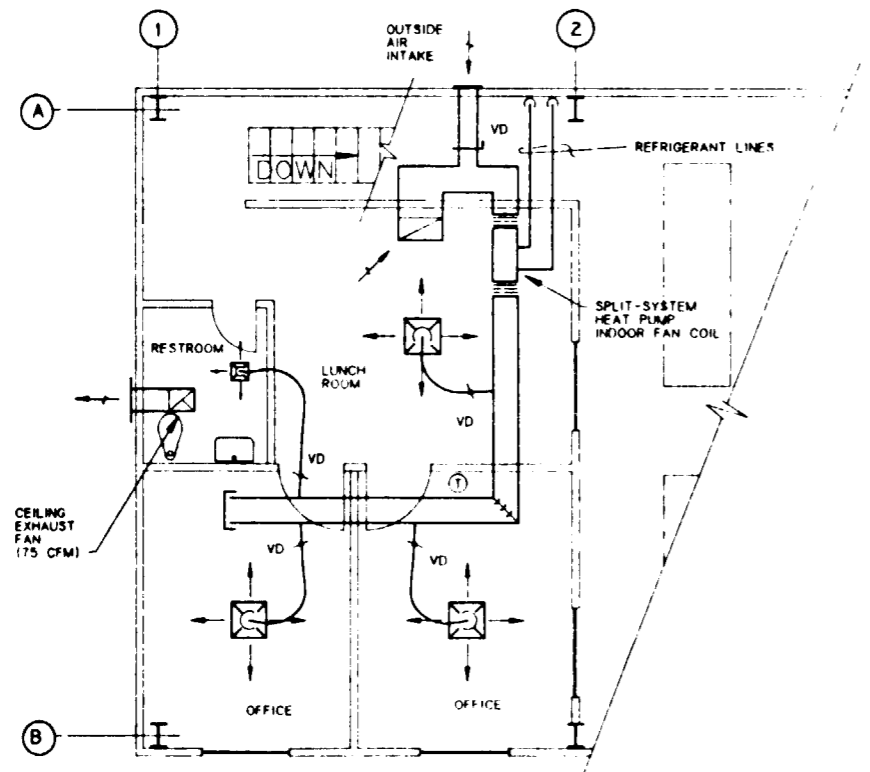


**FIRST FLOOR HVAC PLAN**  
SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**  
THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**SI APERTURE CARD**

Also Available On Aperture Card

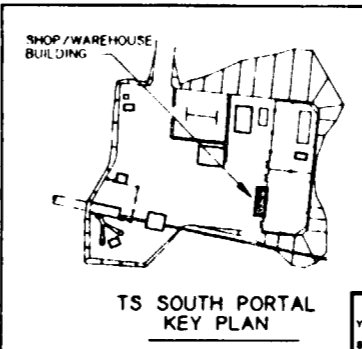
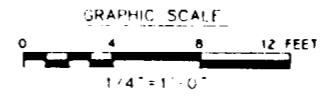


**SECOND FLOOR HVAC PLAN**  
SCALE: 1/4" = 1'-0"

HVAC LEGEND	
SYMBOL	DESCRIPTION
— RL —	REFRIGERANT LIQUID LINE
— HG —	REFRIGERANT HOT GAS LINE
— RS —	REFRIGERANT SUCTION LINE
— D —	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR "T" WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	DIRECTION OF AIR FLOW

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-104**



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	BHA	EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT SHOP / WAREHOUSE BUILDING HVAC PLAN											
DRAWN	RFG												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY		DATE	DRAWING NO.		REV						
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YMP/O APPROVED		DATE		SHT		OF							

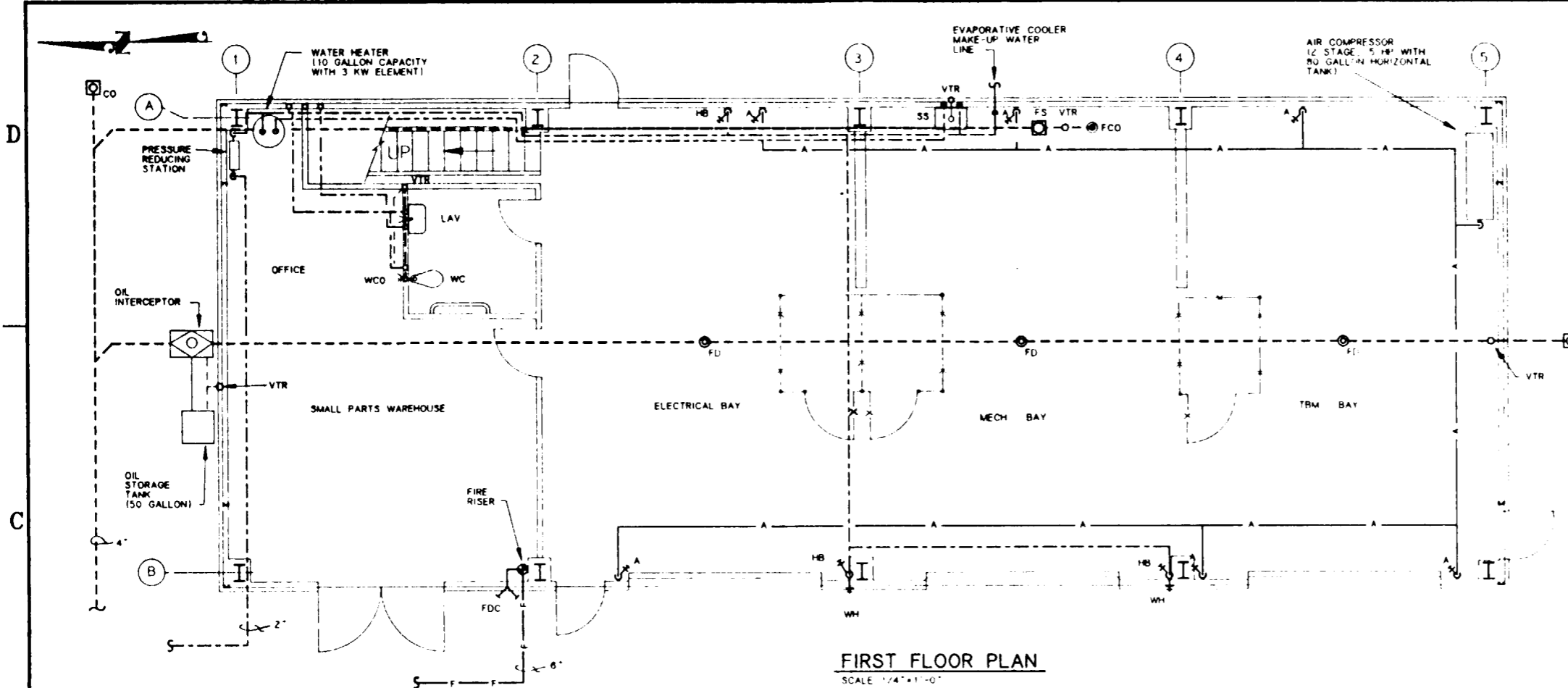
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**GENERAL NOTES:**

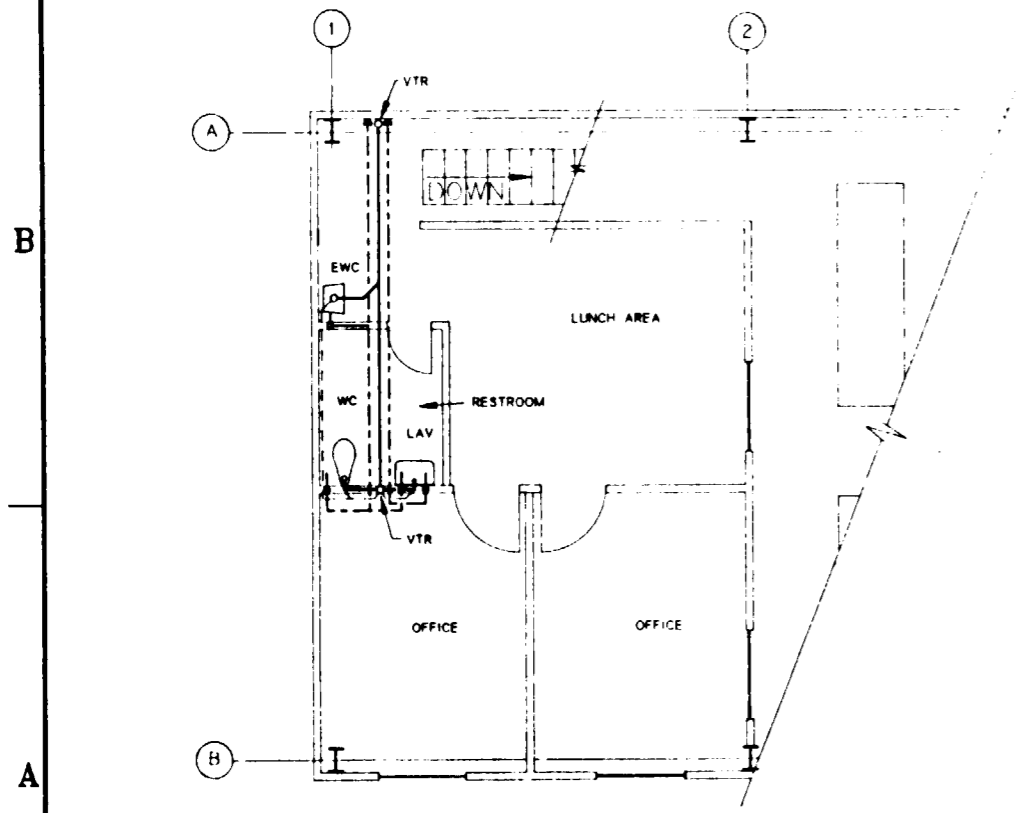
1 THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**SI APERTURE CARD**

Also Available On Aperture Card



**FIRST FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

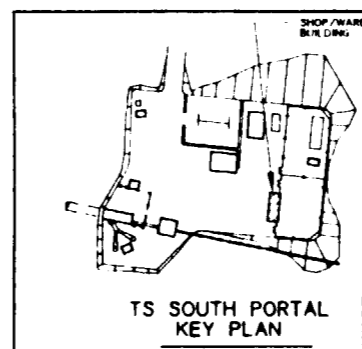
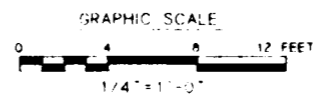


**2ND FLOOR PLUMBING PLAN**  
SCALE: 1/4" = 1'-0"

PLUMBING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	SOIL/WASTE (ABOVE GRADE)
	SOIL/WASTE (BELOW GRADE)
	VENT PIPING
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	FIRE LINE
	COMPRESSED AIR
	FIRE RISER
	FIRE DEPARTMENT CONNECTION
	FLOOR CLEAN OUT
	FLOOR DRAIN
	FLOOR SINK
	WALL CLEAN OUT
	CLEAN OUT AT FINISH GRADE
	VENT THRU ROOF
	HOSE BIBB
	WALL HYDRANT
	SHOWER
	WATER CLOSET
	URINAL
	SERVICE SINK
	COUNTER TOP LAVATORY
	WALL MOUNTED LAVATORY
	COUNTER TOP SINK
	WASH FOUNTAIN
	EYE WASH/SHOWER
	BOOT WASH
	ELECTRIC WATER COOLER
	COMPRESSED AIR STATION

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-105**

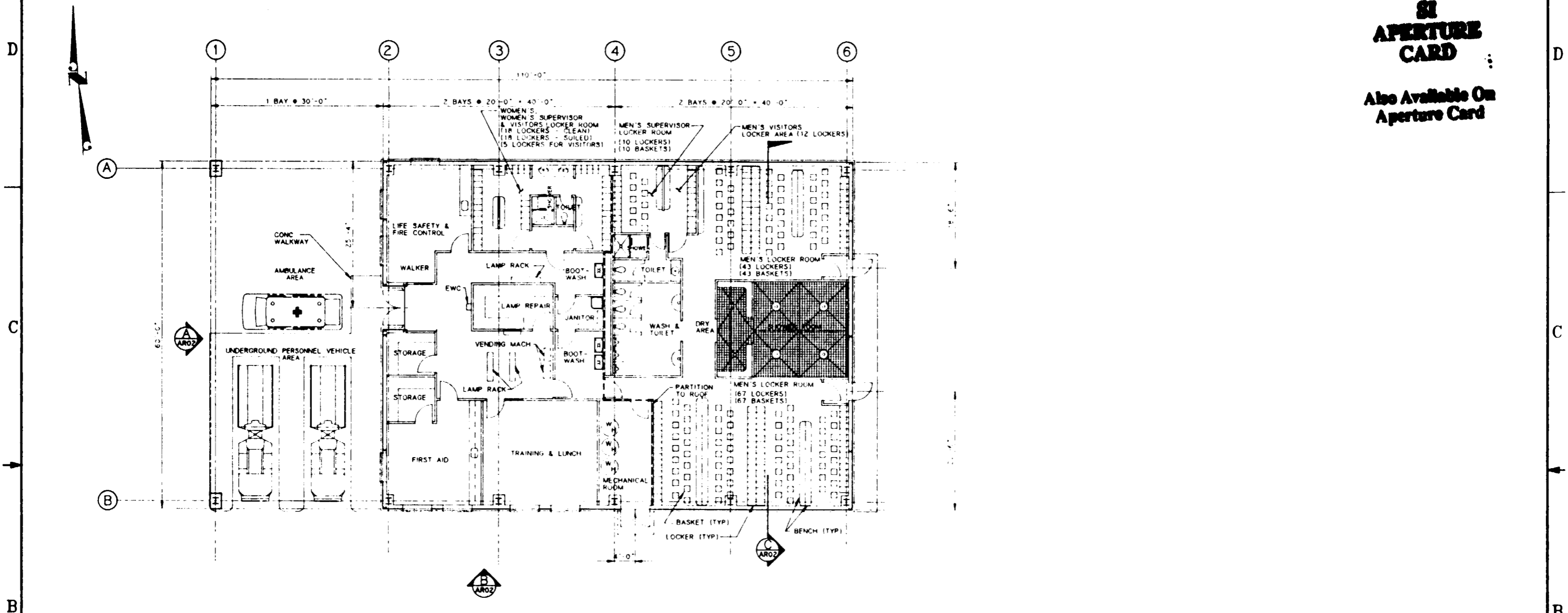


NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT SHOP / WAREHOUSE BUILDING <b>PLUMBING PLAN</b>													
APPROVALS													
DESIGN	TAN												
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO.		REV.								
<i>[Signature]</i>		8-26-91	YMP-025-2-7010-PP01		O								
YMP/O APPROVED		DATE	SHT		OF								
<i>[Signature]</i>													

8 7 6 5 4 3 2 1

**SI  
APERTURE  
CARD**

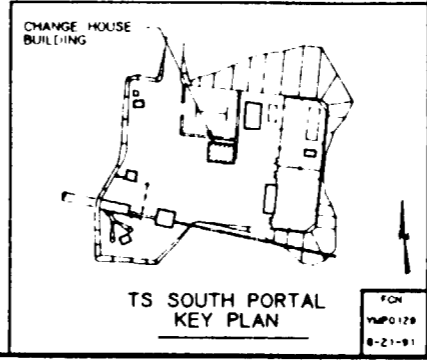
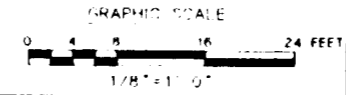
Also Available On  
Aperture Card



**FLOOR PLAN**  
SCALE 1/8" = 1'-0"

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-106**

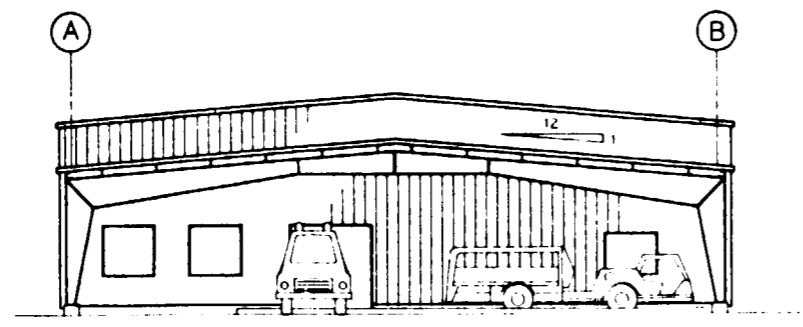


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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS SOUTH PORTAL GENERAL ARRANGEMENT CHANGE HOUSE BUILDING <b>FLOOR PLAN</b>													
APPROVALS													
DESIGN	PZ												
DRAWN	MB												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO		REV							
<i>[Signature]</i>			8-26-91	YMP-025-2-7011-AR01		0							
YMP APPROVED			DATE		SHT OF								

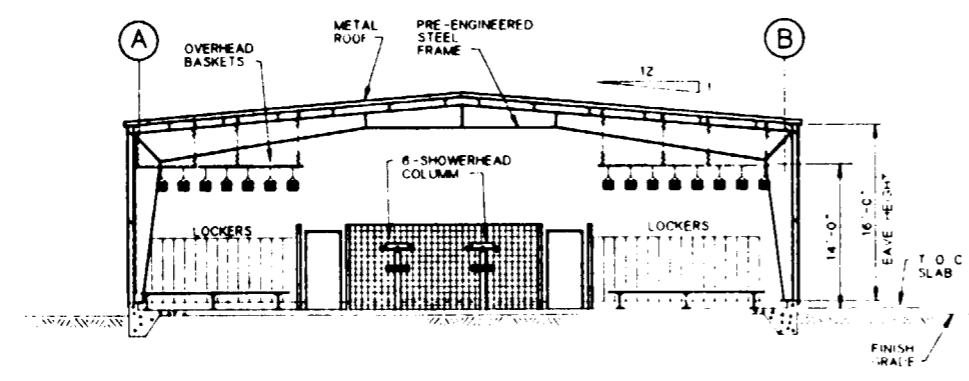
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**SI  
APERTURE  
CARD**

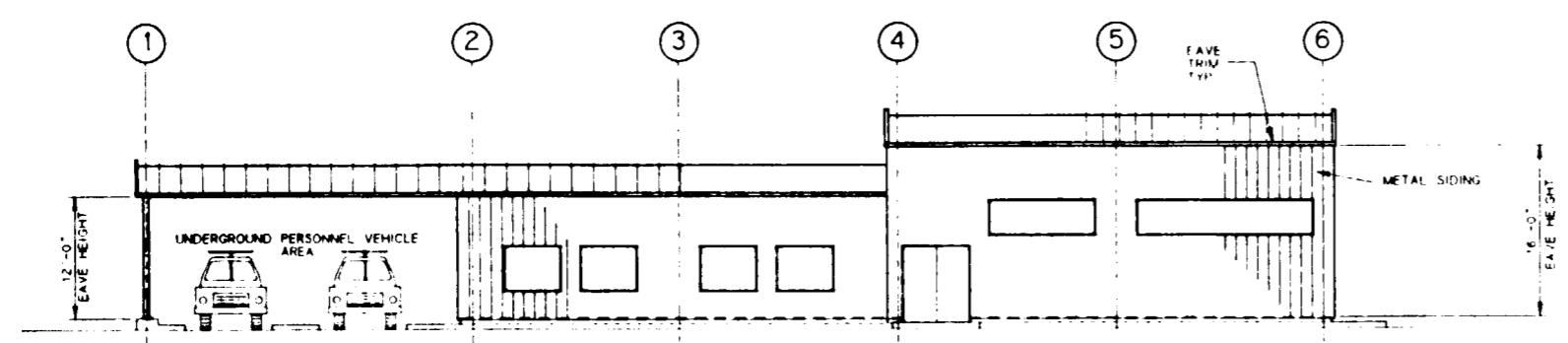
Also Available On  
Aperture Card



**ELEVATION**  
SCALE 1/8" = 1' - 0"  
A  
ARO V



**SECTION**  
SCALE 1/8" = 1' - 0"  
C  
ARO V



**ELEVATION**  
SCALE 1/8" = 1' - 0"  
B  
ARO V

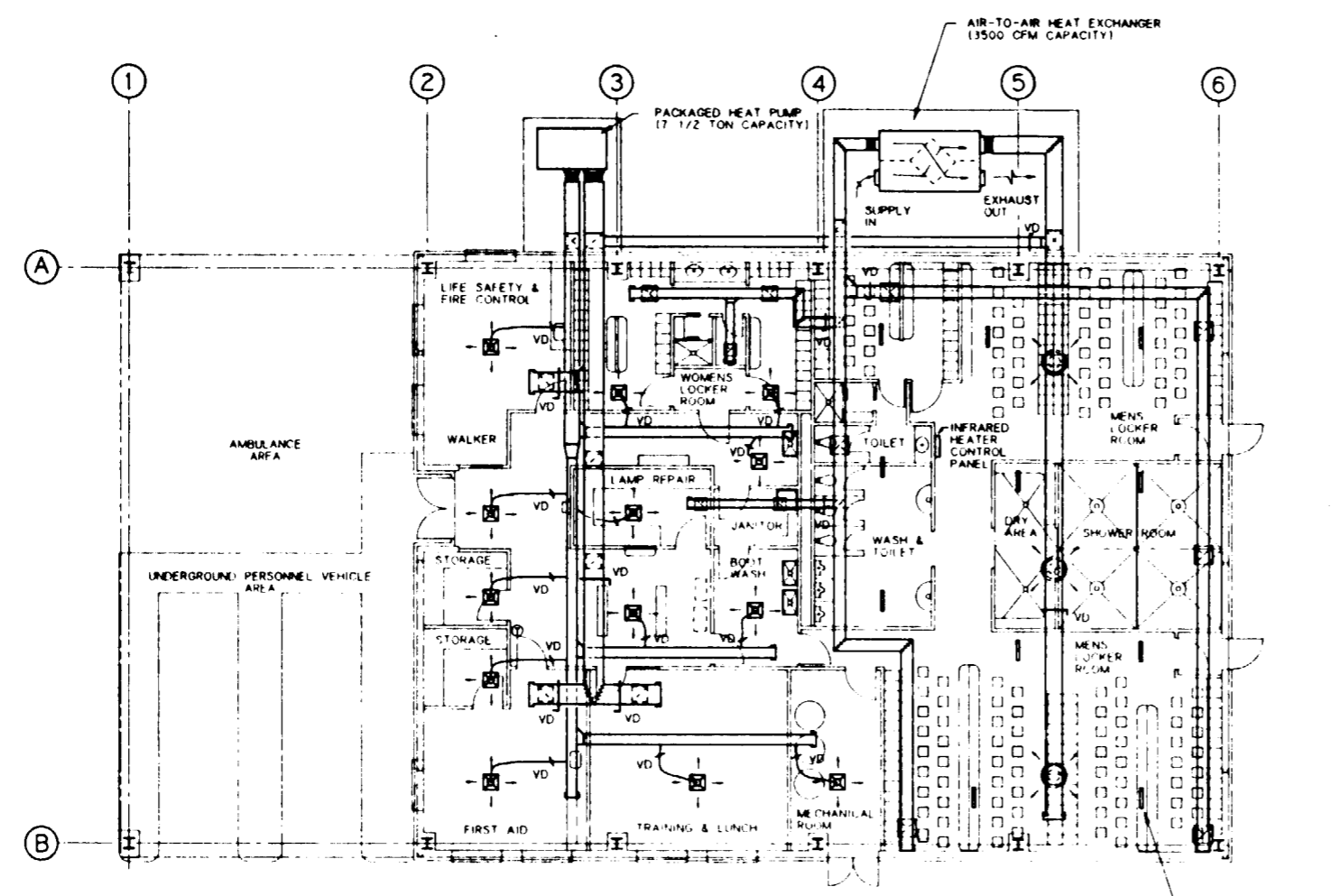
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-107**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	PZ		EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT CHANGE HOUSE BUILDING <b>ELEVATIONS &amp; SECTION</b>										
DRAWN	MJM		SUBMITTED BY: <i>[Signature]</i> DATE: 8-26-91 DRAWING NO: YMP-025-2-7011-AR02 REV: 0										
CHECKED	<i>[Signature]</i>		YMPD APPROVED: _____ DATE: _____ SHT: _____ OF: _____										
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	8-26-91												
FCN													
YMPD 130	W.B.S. NO.	1, 2, 6, 3, 1, 2											
8-21-91	C.I. NO.												

19

8 7 6 5 4 3 2 1



**GENERAL NOTES:**  
 THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**APERTURE CARD**  
 Also Available On Aperture Card

**HVAC PLAN**  
 SCALE 1/8" = 1'-0"

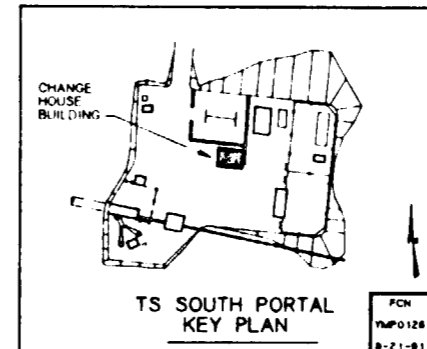
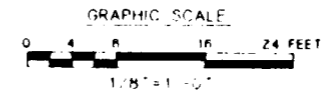
INFRARED HEATER  
 TYPICAL 11 PLACES  
 13.2 KW CAPACITY

HVAC LEGEND	
SYMBOL	DESCRIPTION
	REFRIGERANT LIQUID LINE
	REFRIGERANT HOT GAS LINE
	REFRIGERANT SUCTION LINE
	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR "T" WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)

HVAC LEGEND CONTINUATION	
SYMBOL	DESCRIPTION
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

9112020061-108

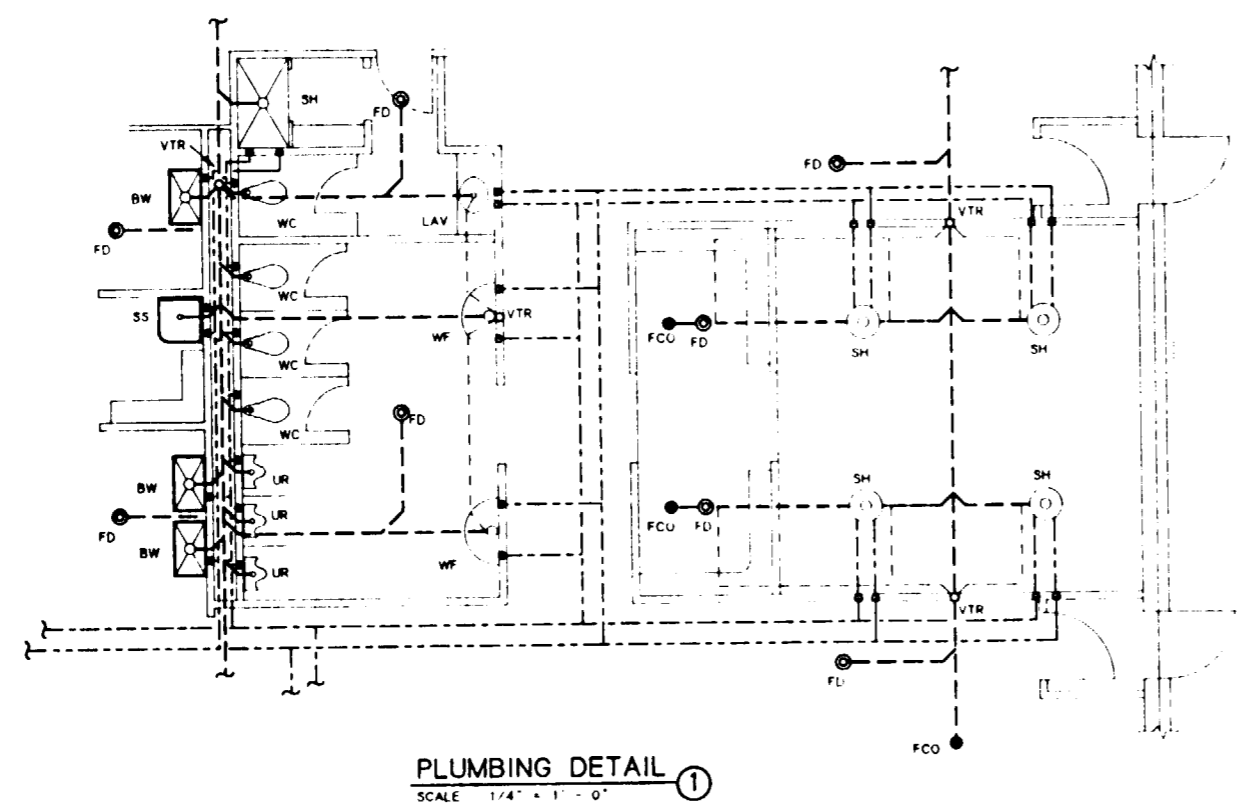
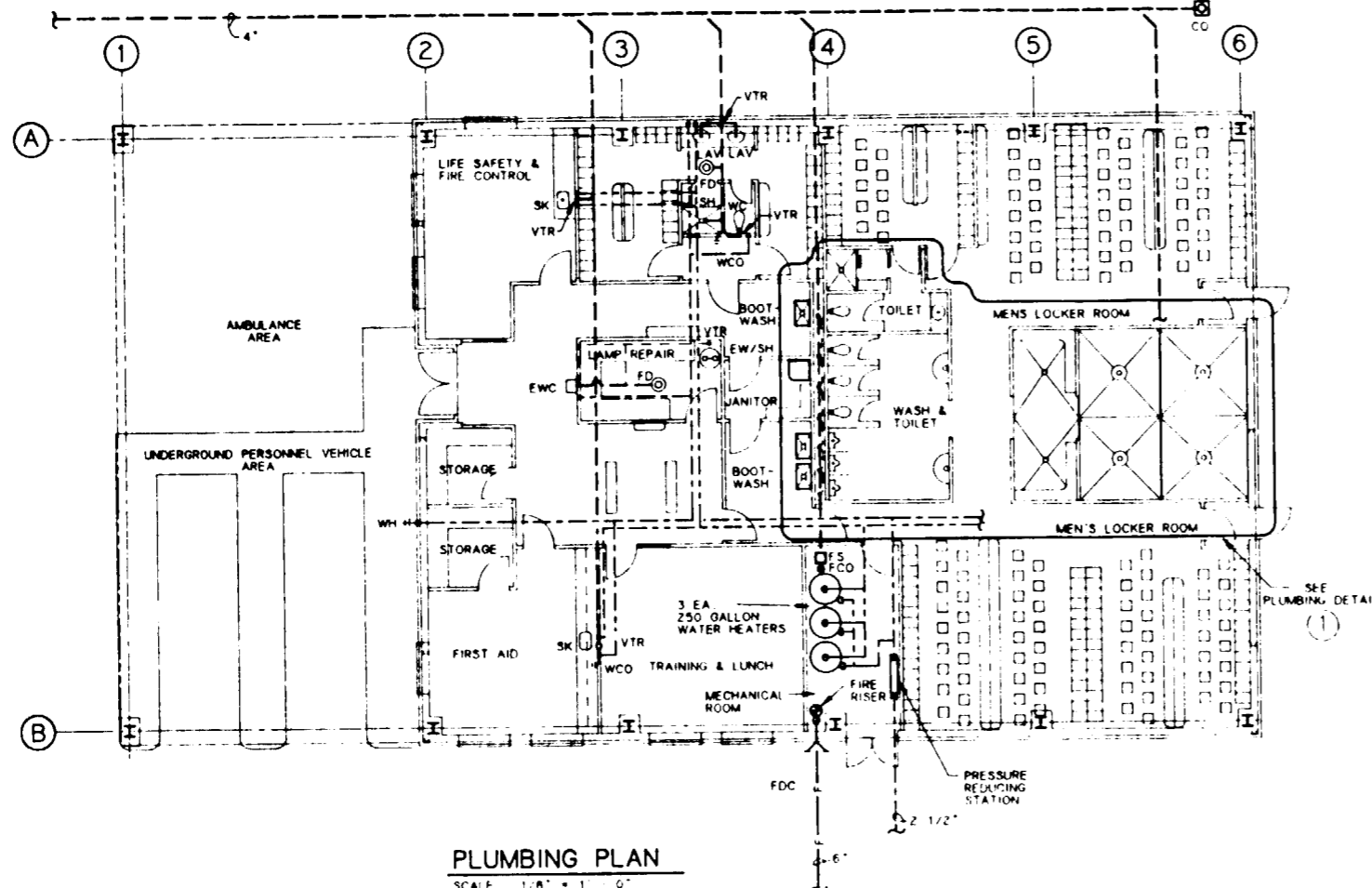


NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS SOUTH PORTAL GENERAL ARRANGEMENT CHANGE HOUSE BUILDING <b>HVAC PLAN</b>													
APPROVALS													
DESIGN	BMA												
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC.	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV.	SAF												
SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	8-26-91												
SUBMITTED BY			DATE	DRAWING NO.		REV.							
<i>[Signature]</i>			8-26-91	YMP-025-2-7011-HV01		0							
YMP0 APPROVED			DATE		SHT		OF						

8 7 6 5 4 3 2 1

**SI APERTURE CARD**  
Also Available On Aperture Card

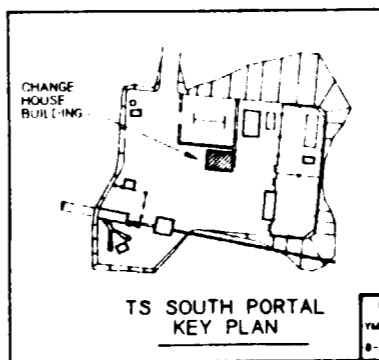
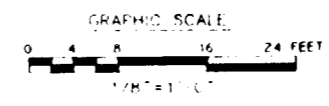
PLUMBING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	SOIL/WASTE (ABOVE GRADE)
	SOIL/WASTE (BELOW GRADE)
	VENT PIPING
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	FIRE LINE
	FIRE RISER
	FIRE DEPARTMENT CONNECTION
	FLOOR CLEAN OUT
	FLOOR DRAIN
	FLOOR SINK
	WALL CLEAN OUT
	CLEAN OUT AT FINISH GRADE
	VENT THRU ROOF
	HOSE BIBB
	WALL HYDRANT
	SHOWER STALL
	COLUMN SHOWER
	WATER CLOSET
	URINAL
	SERVICE SINK
	COUNTER TOP LAVATORY
	WALL MOUNTED LAVATORY
	COUNTER TOP SINK
	WASH FOUNTAIN
	EYE WASH/SHOWER
	BOOT WASH
	ELECTRIC WATER COOLER



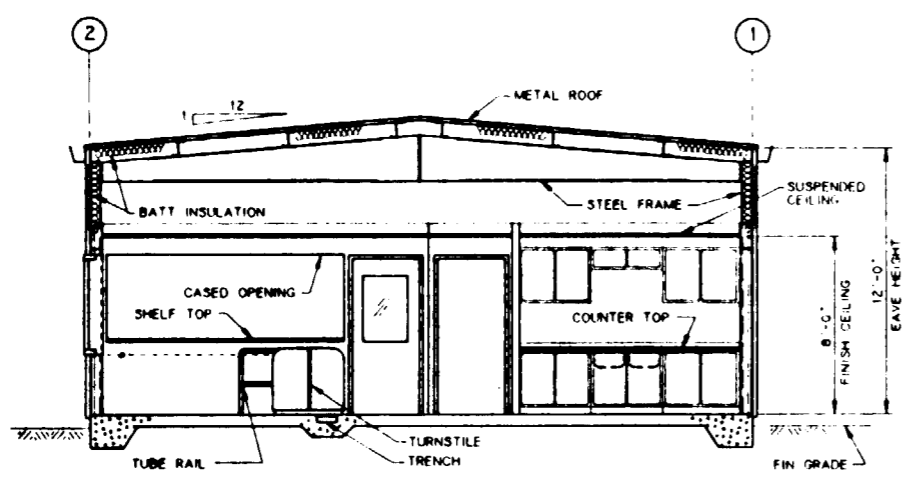
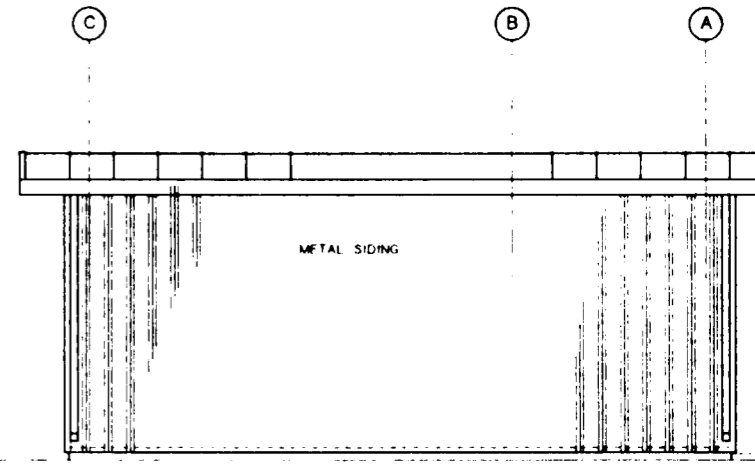
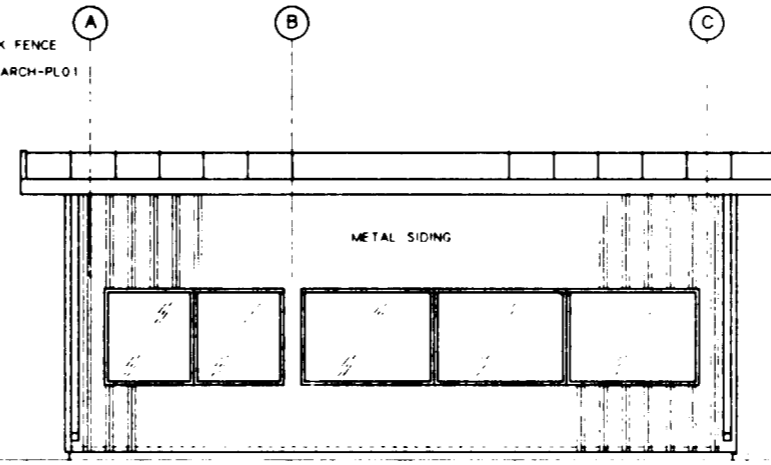
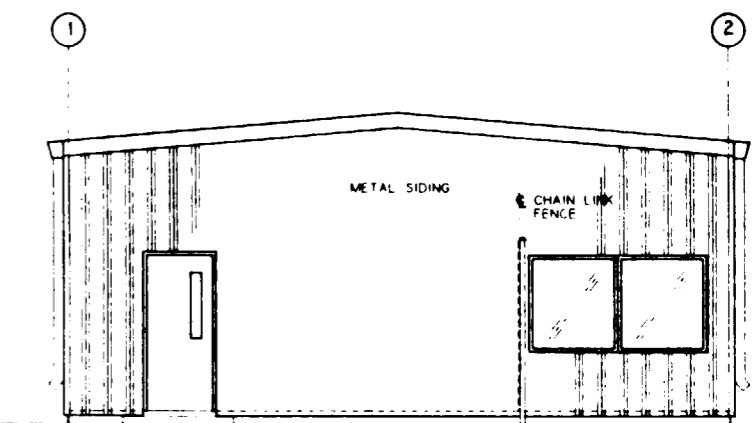
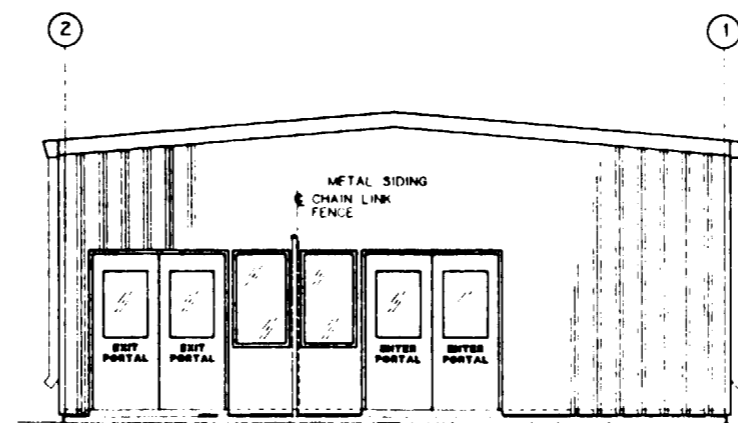
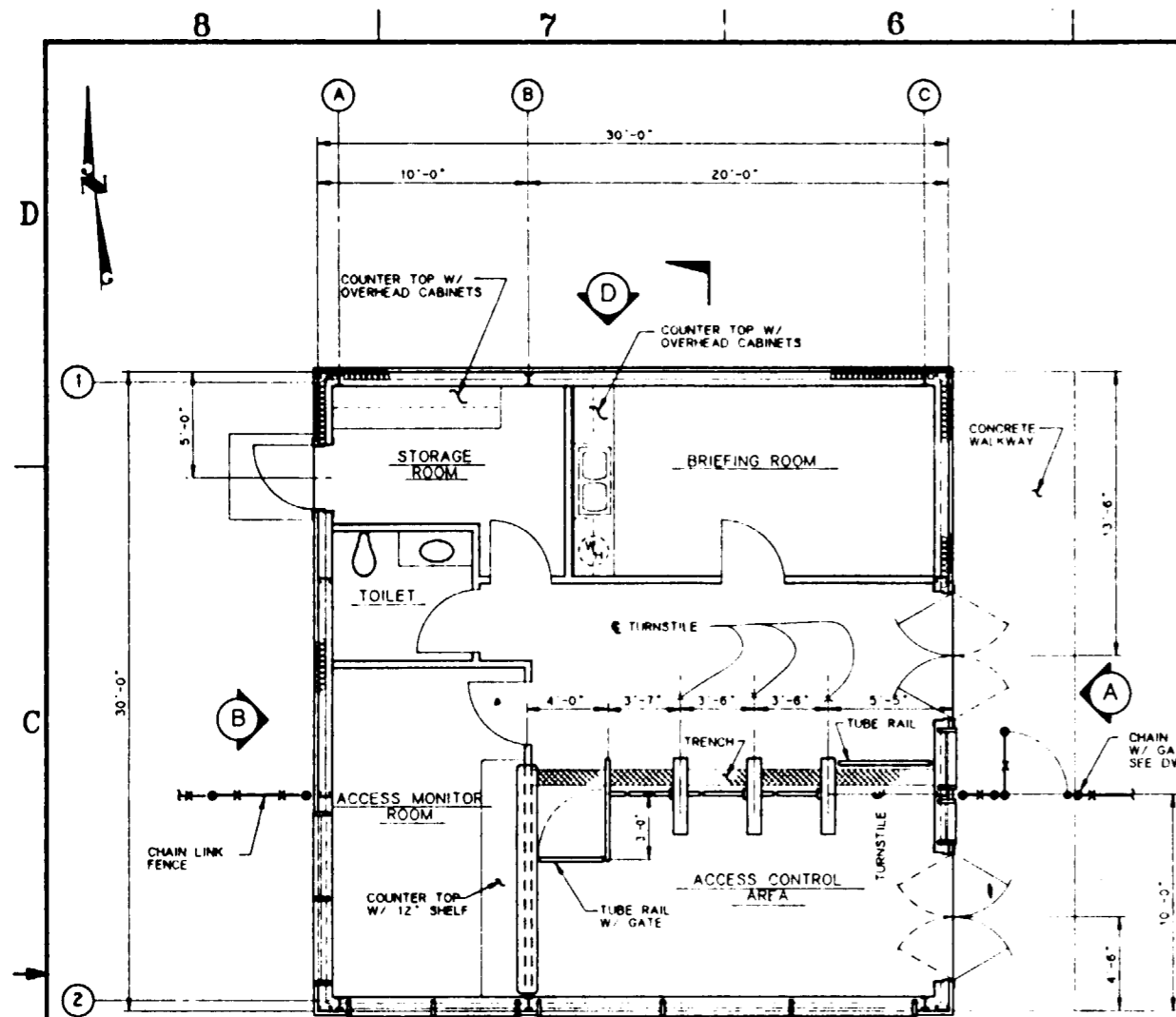
**GENERAL NOTES:**  
1. THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

**9112020061-109**

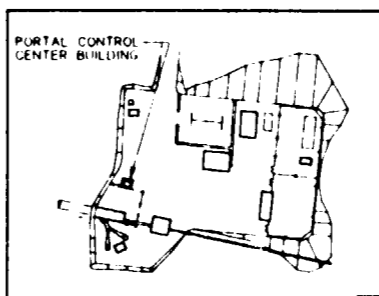
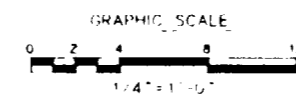


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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b>													
<b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b>													
<b>CHANGE HOUSE BUILDING</b>													
<b>PLUMBING PLAN</b>													
APPROVALS													
DESIGN	TAN												
DRAWN	TAN												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
<i>[Signature]</i>		8-21-91	YMP-025-2-7011-PP01		0								
YMPO APPROVED:		DATE	SHT		OF								
<i>[Signature]</i>													



**SI APERTURE CARD**

Also Available On Aperture Card

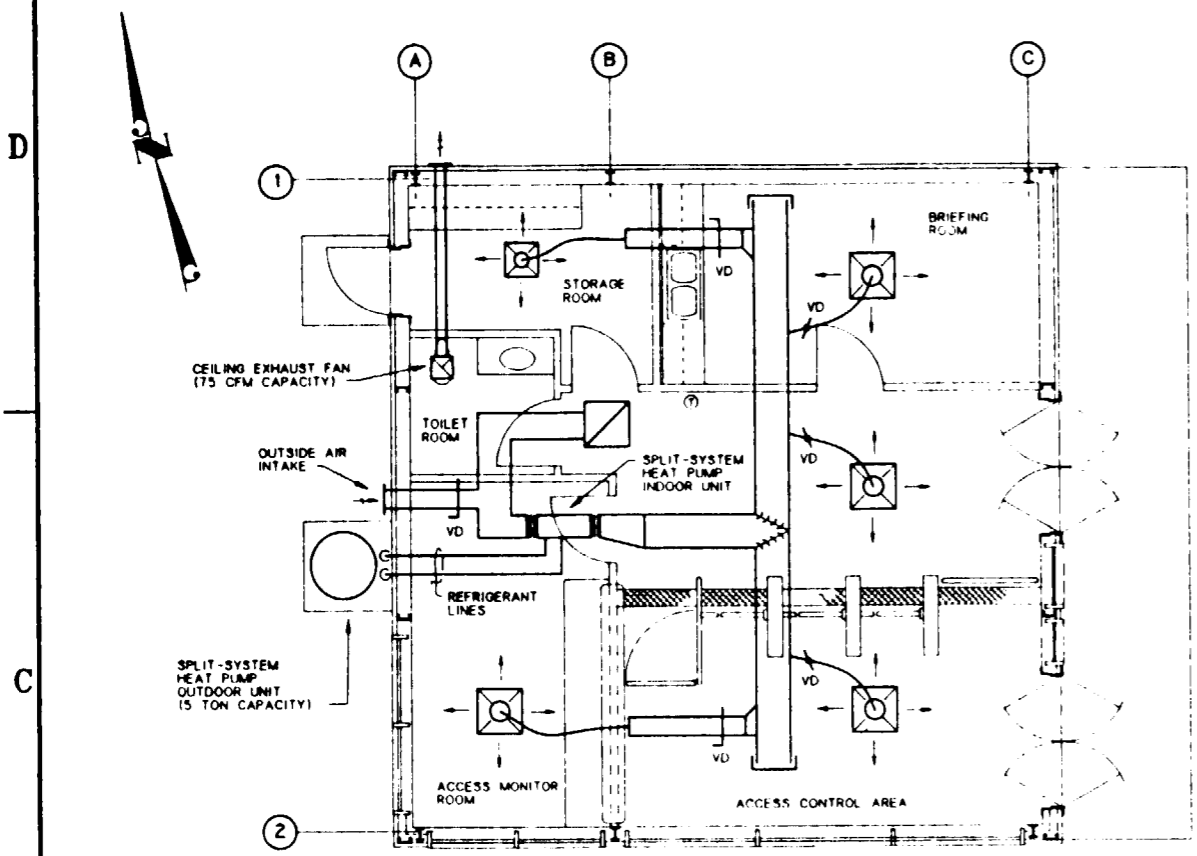


FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CJW-GE02

**9112020061-110**

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<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>PORTAL CONTROL CENTER BLDG</b> <b>PLAN, SECT &amp; ELEV'S</b>													
APPROVALS													
DESIGN	RLR												
DRAWN	MLM												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
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SUBMITTED BY		DATE	DRAWING NO		REV								
[Signature]		8-21-91	YMP-025-2-7012-AR01		0								
YMP/O APPROVED													
DATE      SHT      OF													

8 7 6 5 4 3 2 1



**HVAC PLAN**  
SCALE 1/4" = 1'-0"

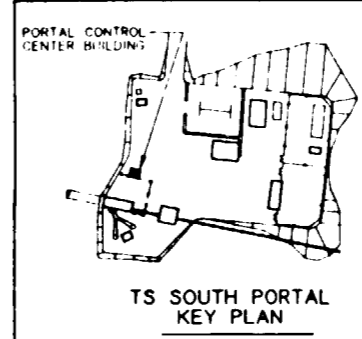
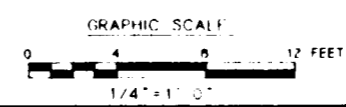
HVAC LEGEND	
SYMBOL	DESCRIPTION
— RL —	REFRIGERANT LIQUID LINE
— HG —	REFRIGERANT HOT GAS LINE
— RS —	REFRIGERANT SUCTION LINE
— D —	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR "T" WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

**GENERAL NOTES:**  
THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

9112020061-111



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT PORTAL CONTROL CENTER BLDG <b>HVAC PLAN</b>													
APPROVALS													
DESIGN	BHA												
DRAWN	RFJ												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	BCH												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV.								
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YMPD APPROVED		DATE	SHT	OF									
<i>[Signature]</i>													

103

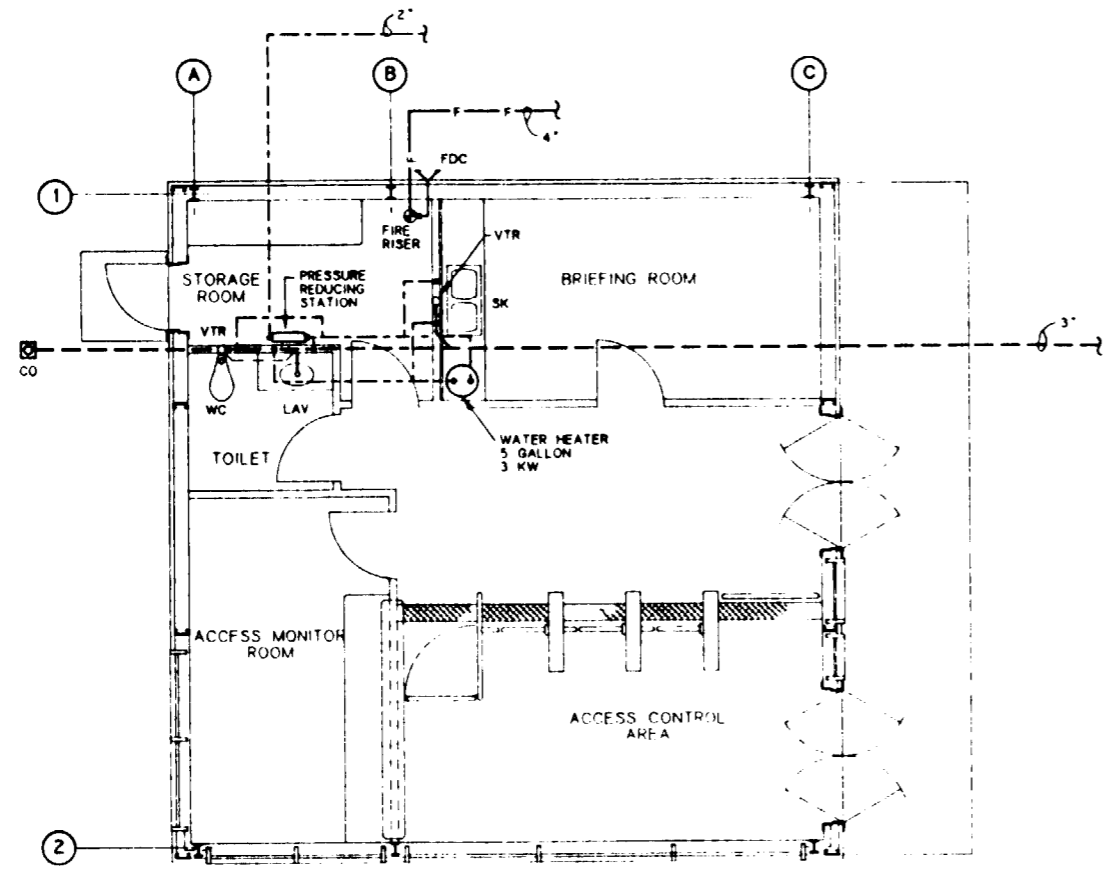


8 7 6 5 4 3 2 1

**GENERAL NOTES:**  
 1 THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**SI APERTURE CARD**

**Also Available On Aperture Card**

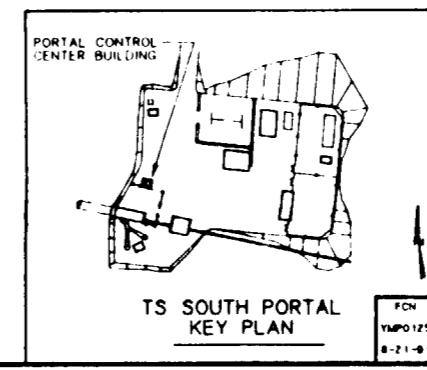
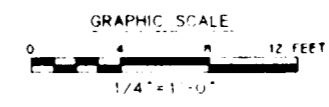


**PLUMBING PLAN**  
 SCALE: 1/4" = 1'-0"

PLUMBING LEGEND	
SYMBOL / ABBREVIATION	DESCRIPTION
(---)	SOIL/WASTE (ABOVE GRADE)
(---)	SOIL/WASTE (BELOW GRADE)
(---)	VENT PIPING
(---)	DOMESTIC COLD WATER
(---)	DOMESTIC HOT WATER
(---)	FIRE LINE
(---)	FIRE RISER
(---)	FIRE DEPARTMENT CONNECTION
(---)	FLOOR CLEAN OUT
(---)	FLOOR DRAIN
(---)	FLOOR SINK
(---)	WALL CLEAN OUT
(---)	CLEAN OUT AT FINISH GRADE
(---)	VENT THRU ROOF
(---)	HOSE BIBB
(---)	WALL HYDRANT
(---)	SHOWER
(---)	WATER CLOSFT
(---)	URINAL
(---)	SERVICE SINK
(---)	COUNTER TOP LAVATORY
(---)	WALL MOUNTED LAVATORY
(---)	COUNTER TOP SINK
(---)	WASH FOUNTAIN
(---)	EYE WASH/SHOWER
(---)	BOOT WASH
(---)	ELECTRIC WATER COOLER

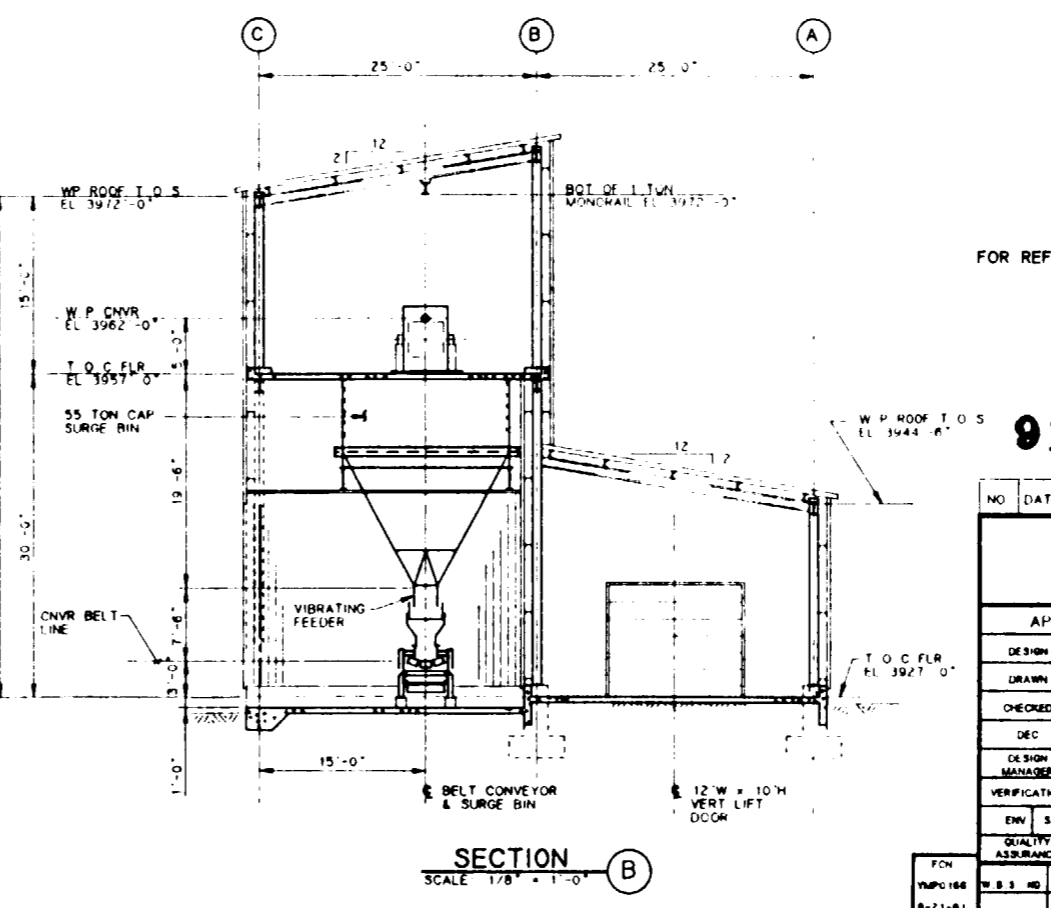
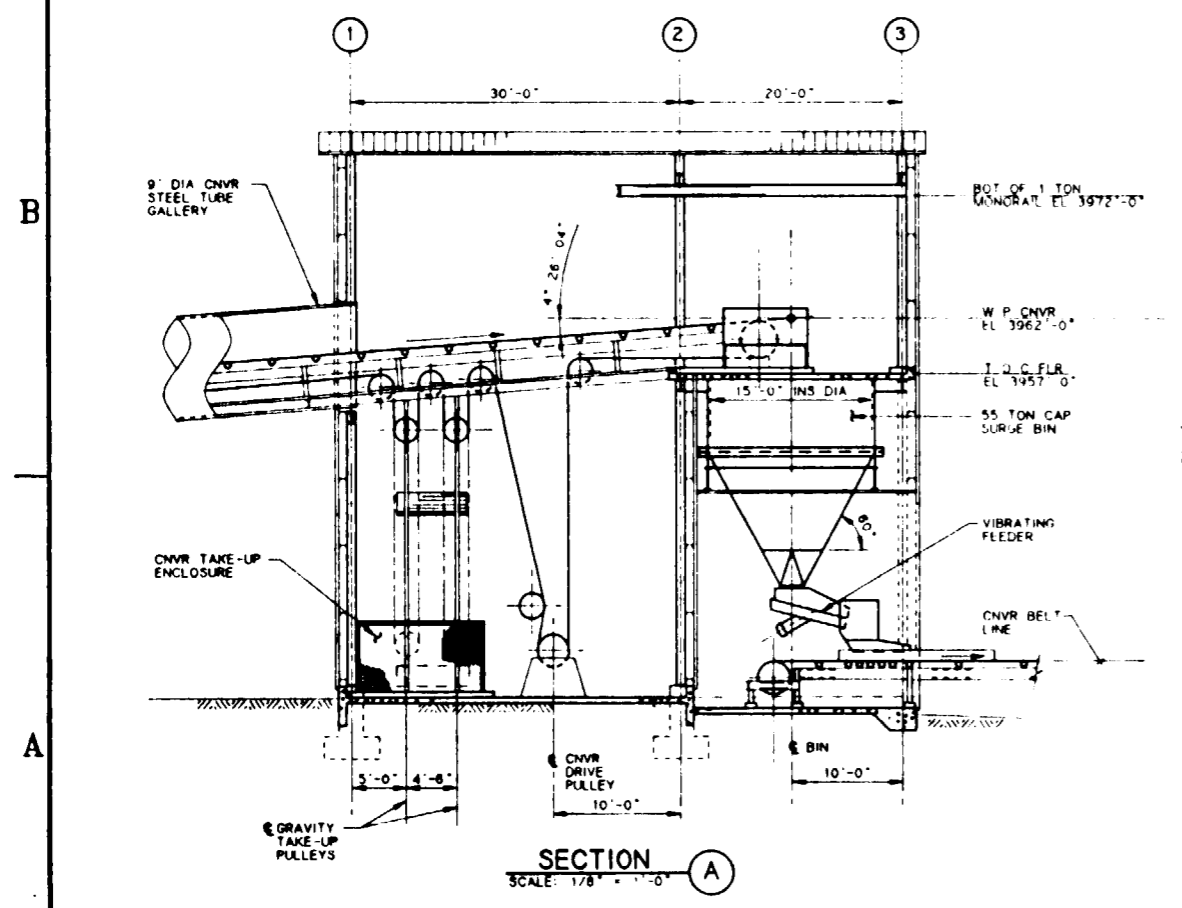
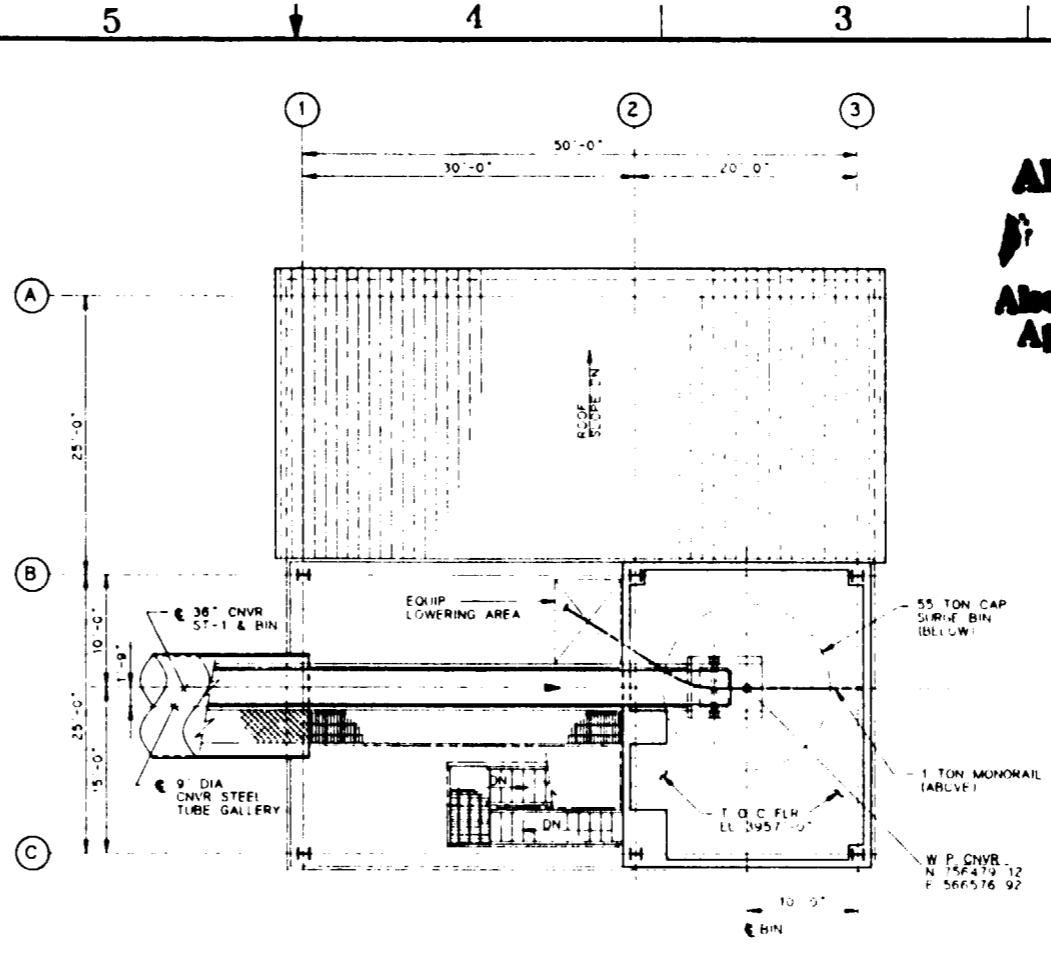
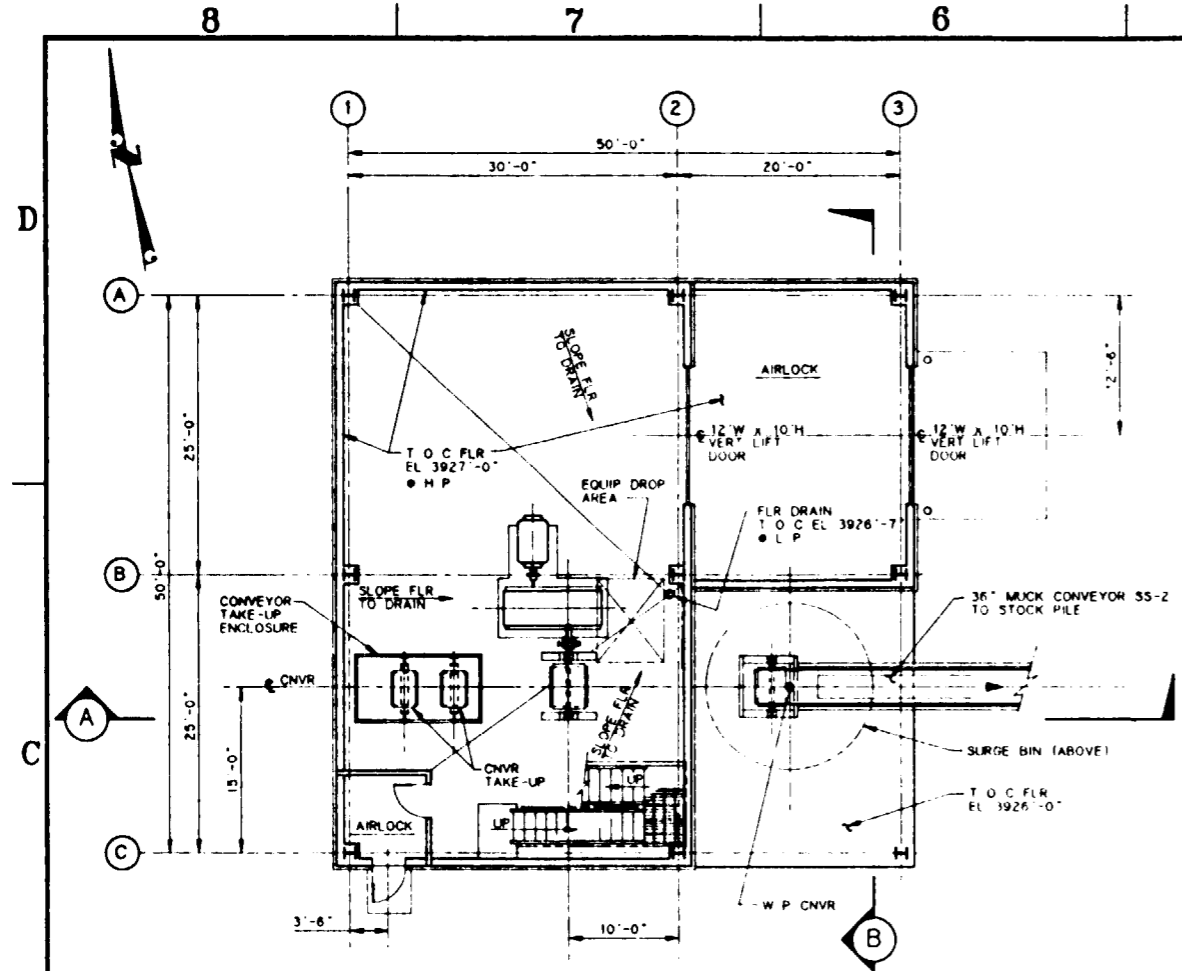
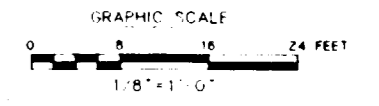
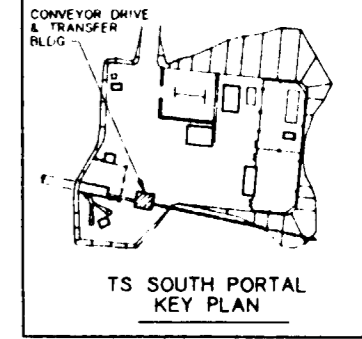
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-QJVL-GE02

**9112020061-112**



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT PORTAL CONTROL CENTER BLDG <b>PLUMBING PLAN</b>													
APPROVALS													
DESIGN	TAN												
DRAWN	TAN												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENR	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
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YMPD APPROVED													
DATE													
SHT OF													

**SI APERTURE CARD**  
**Also Available On Aperture Card**



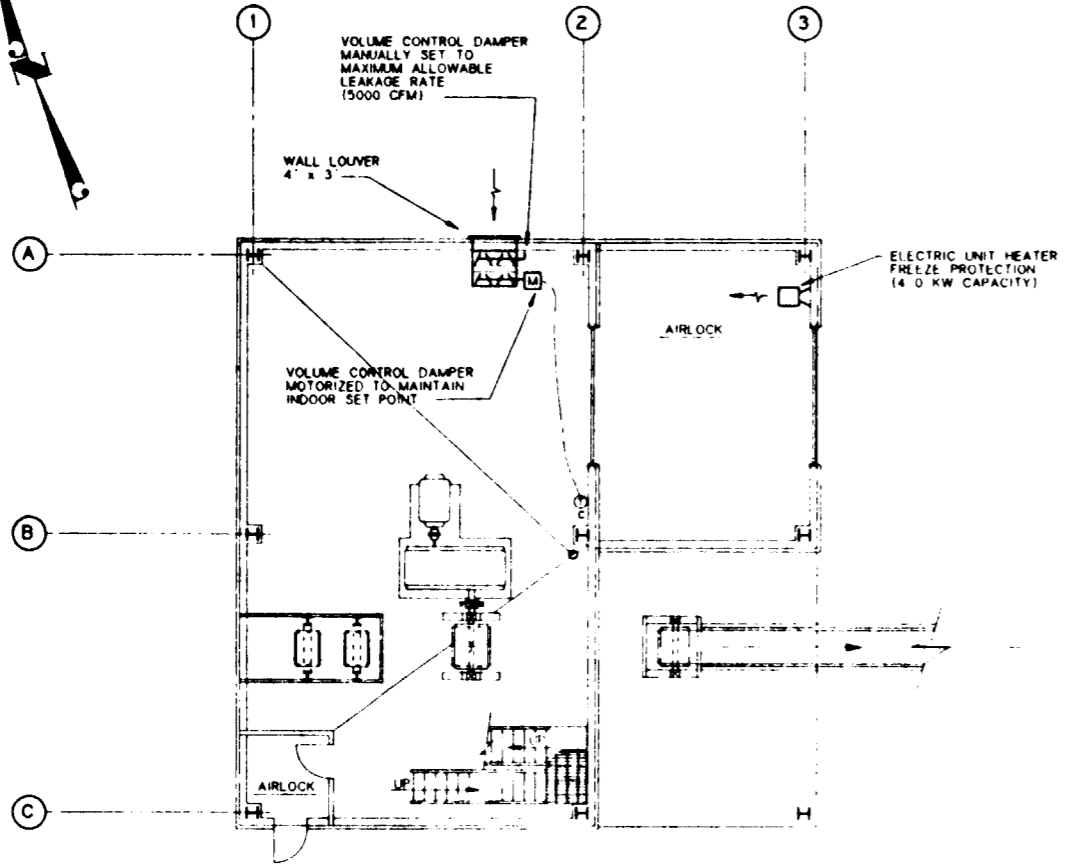
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9112020061-113

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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS SOUTH PORTAL GENERAL ARRANGEMENT</b> <b>CONVEYOR DRIVE &amp; TRANSFER BLDG</b> <b>PLANS &amp; SECTIONS</b>													
APPROVALS													
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DRAWN	MJM												
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DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO.		REV.								
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YMP-166		YMP-025-2-7013-AR01		YMP-025-2-7013-AR01									
8-21-91		8-21-91		8-21-91									
C.I. NO.		DATE		SHT OF									

105

8 7 6 5 4 3 2 1



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

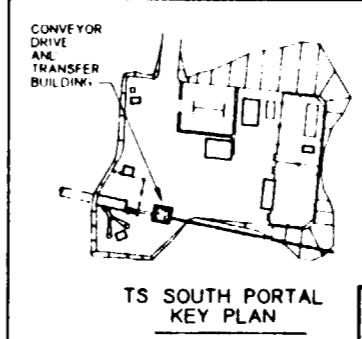
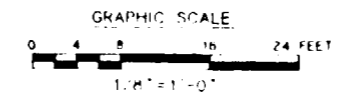
HVAC LEGEND	
SYMBOL	DESCRIPTION
— RL —	REFRIGERANT LIQUID LINE
— HG —	REFRIGERANT HOT GAS LINE
— RS —	REFRIGERANT SUCTION LINE
— D —	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR 'T' WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

GENERAL NOTES:  
1. THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS, AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

9112020061-114



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
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APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
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DRAWN	REC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV. SAF. QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO.									
<i>[Signature]</i>			8-26-91	YMP-025-2-7013-HV01									
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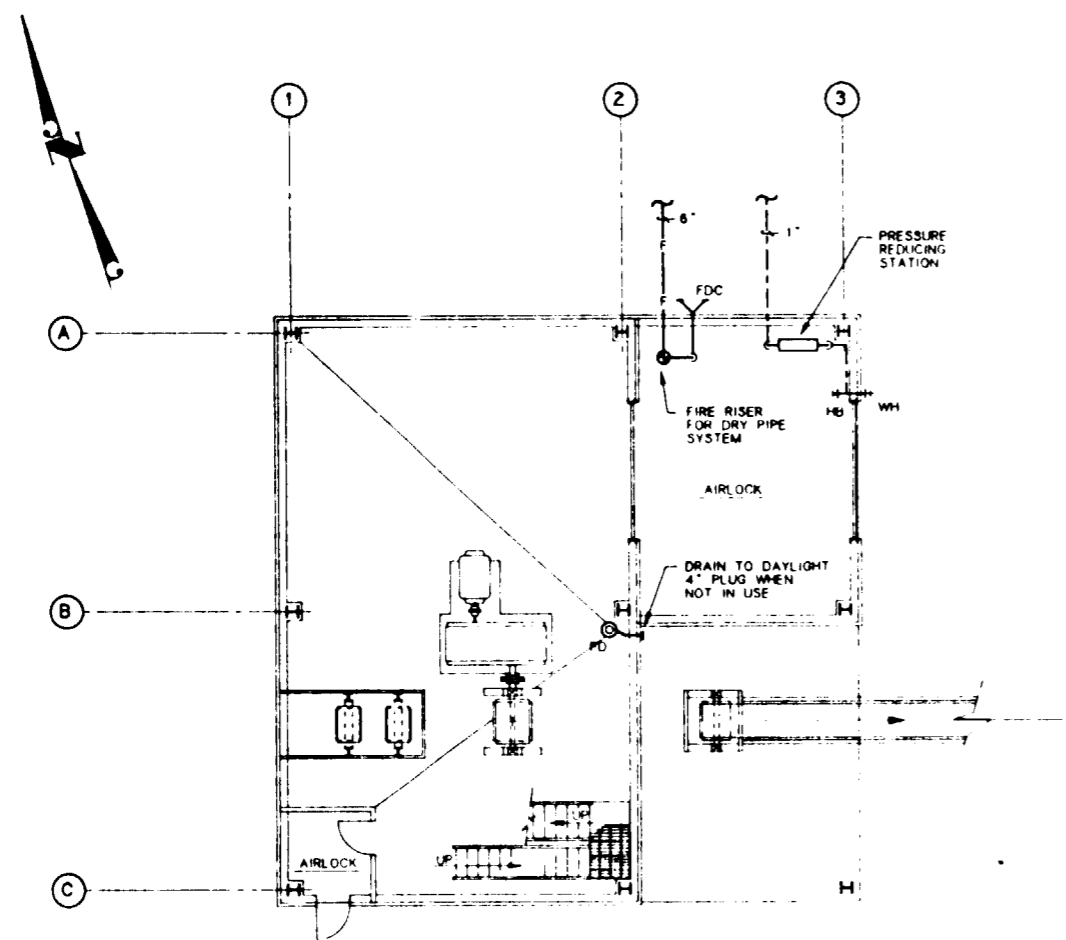
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8 7 6 5 4 3 2 1

**GENERAL NOTES:**  
 1. THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**SI APERTURE CARD**  
 Also Available On Aperture Card

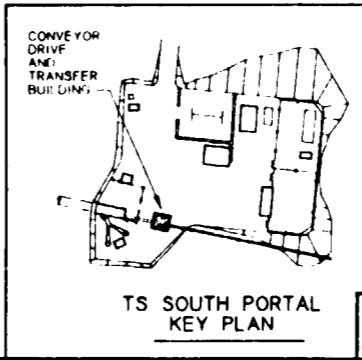
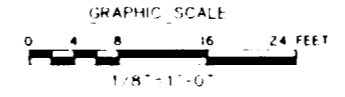
PLUMBING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	SOIL/WASTE (ABOVE GRADE)
	SOIL/WASTE (BELOW GRADE)
	VENT PIPING
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	FIRE LINE
	FIRE RISER
	FIRE DEPARTMENT CONNECTION
	FLOOR CLEAN OUT
	FLOOR DRAIN
	FLOOR SINK
	WALL CLEAN OUT
	CLEAN OUT AT FINISH GRADE
	VENT THROUGH ROOF
	HOSE BIBB
	WALL HYDRANT
	SHOWER
	WATER CLOSET
	URINAL
	SERVICE SINK
	COUNTER TOP LAVATORY
	WALL MOUNTED LAVATORY
	COUNTER TOP SINK
	WASH FOUNTAIN
	EYE WASH/SHOWER
	BOOT WASH
	ELECTRIC WATER COOLER



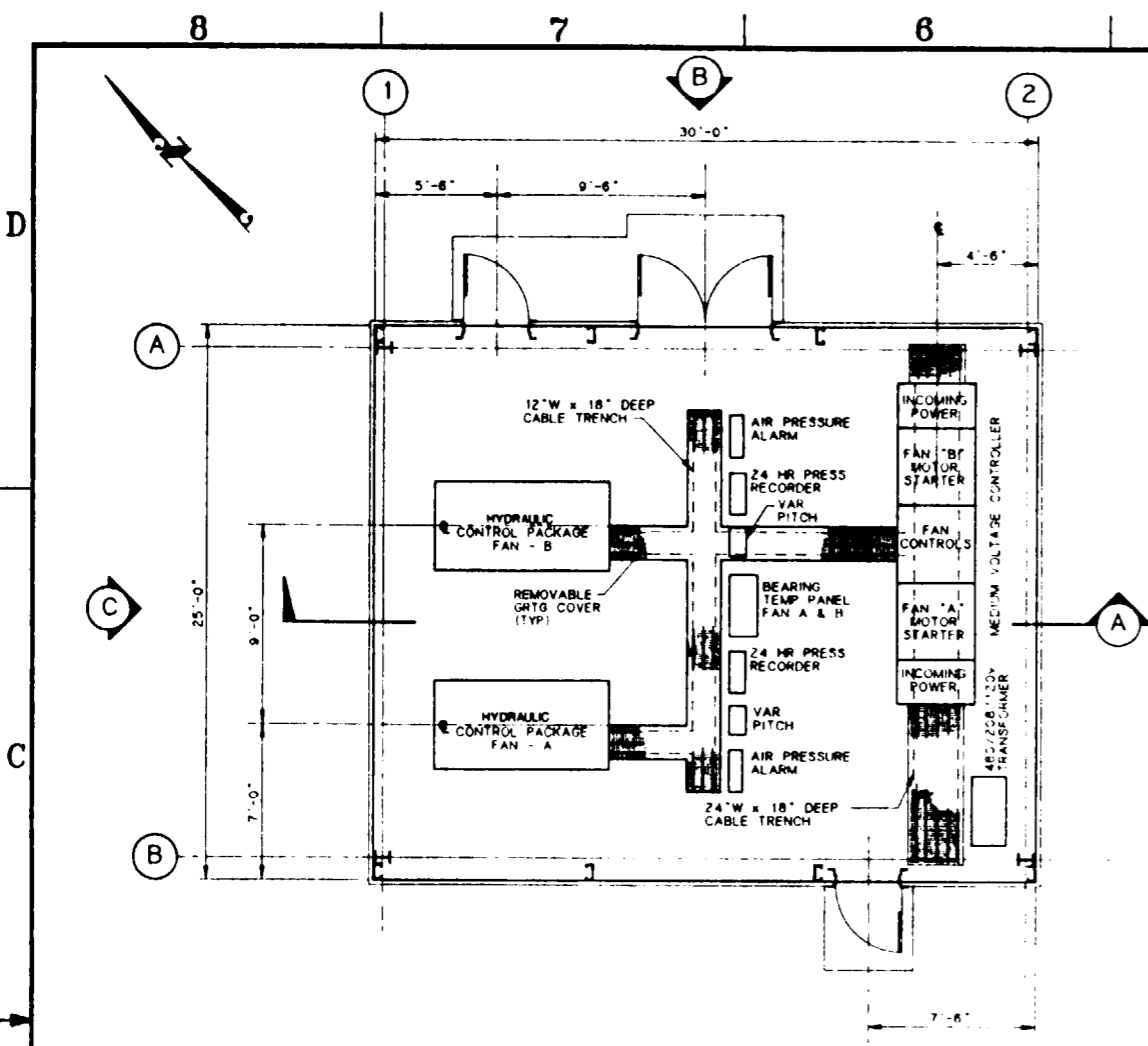
**FLOOR PLAN**  
 SCALE: 1/8" = 1'-0"

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

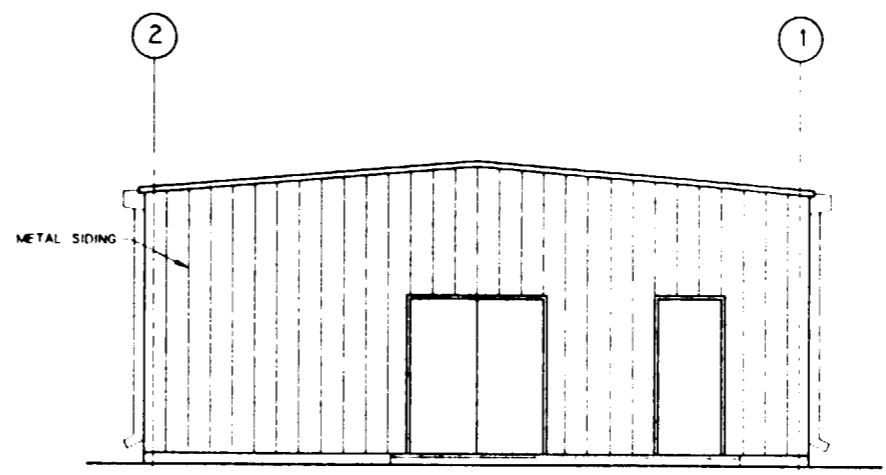
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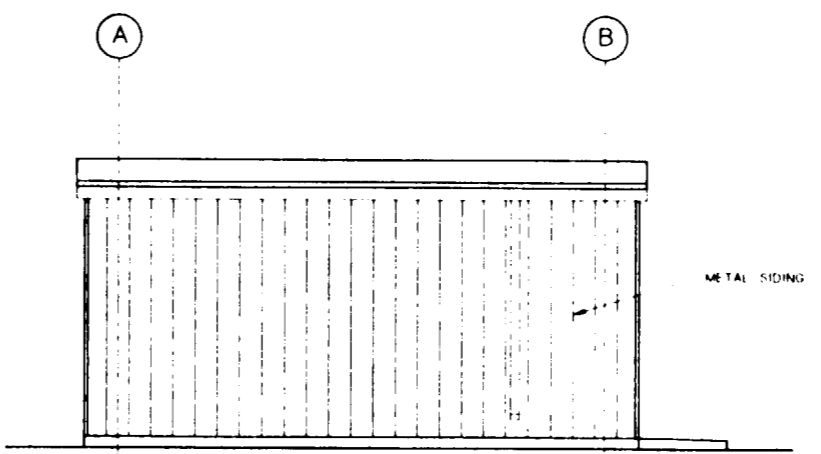
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APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	BHA	EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT CONVEYOR DRIVE AND TRANSFER BUILDING <b>PLUMBING PLAN</b>											
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY		DATE	DRAWING NO		REV						
QUALITY ASSURANCE	<i>[Signature]</i>	<i>[Signature]</i>		8-26-91	YMP-025-2-7013-PP01		0						
YMPC APPROVED	DATE		SHT		OF								



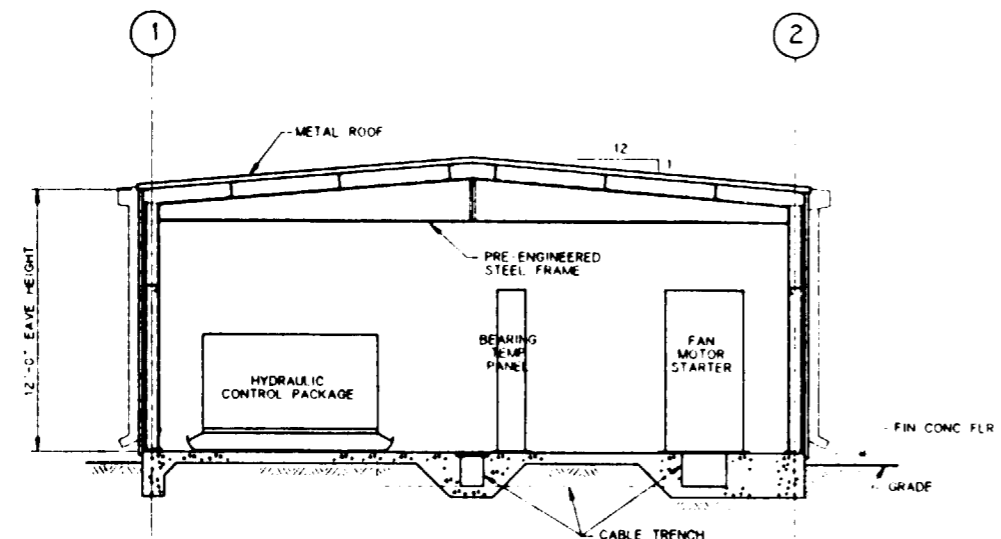
PLAN  
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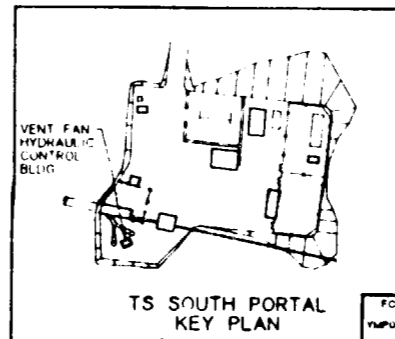
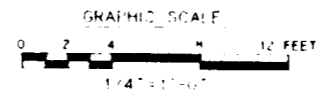
ELEVATION  
SCALE 1/4" = 1'-0"



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



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



TS SOUTH PORTAL  
KEY PLAN

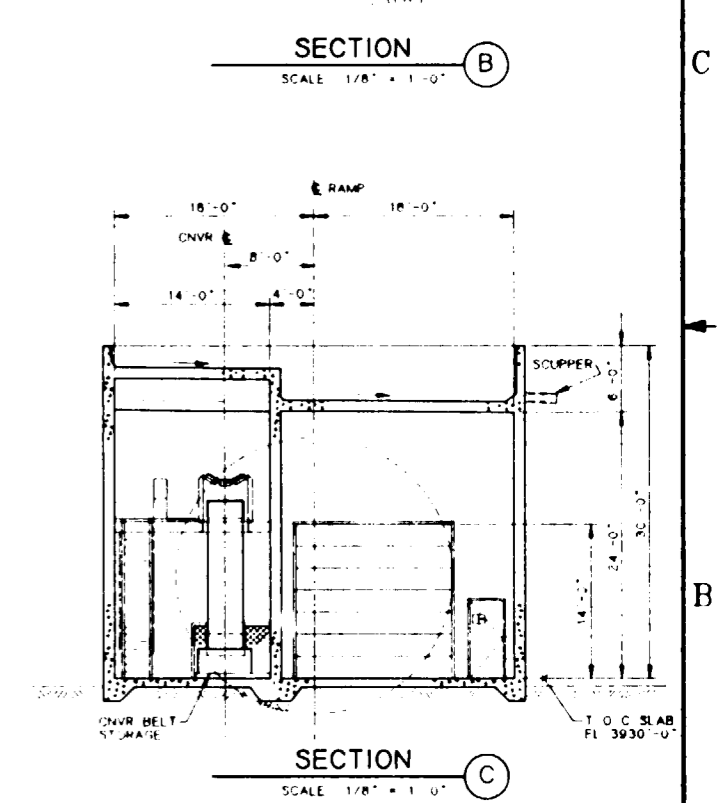
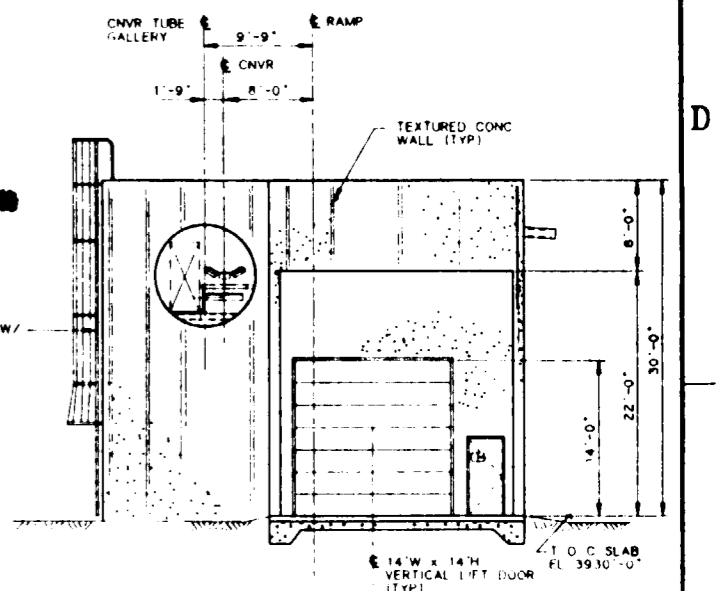
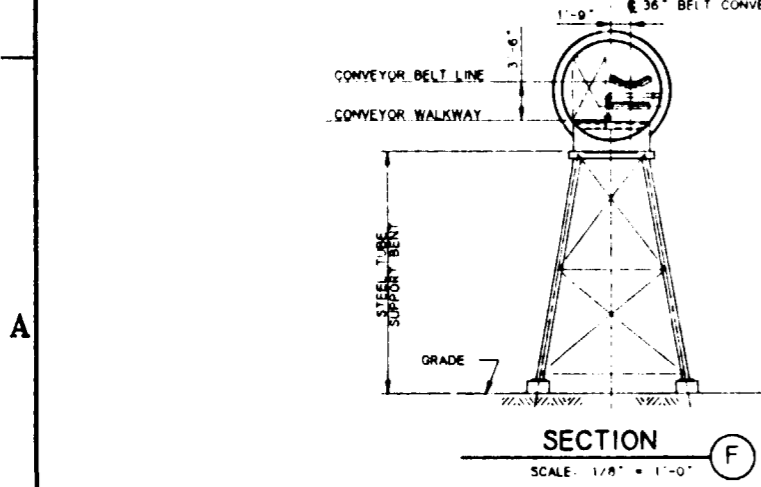
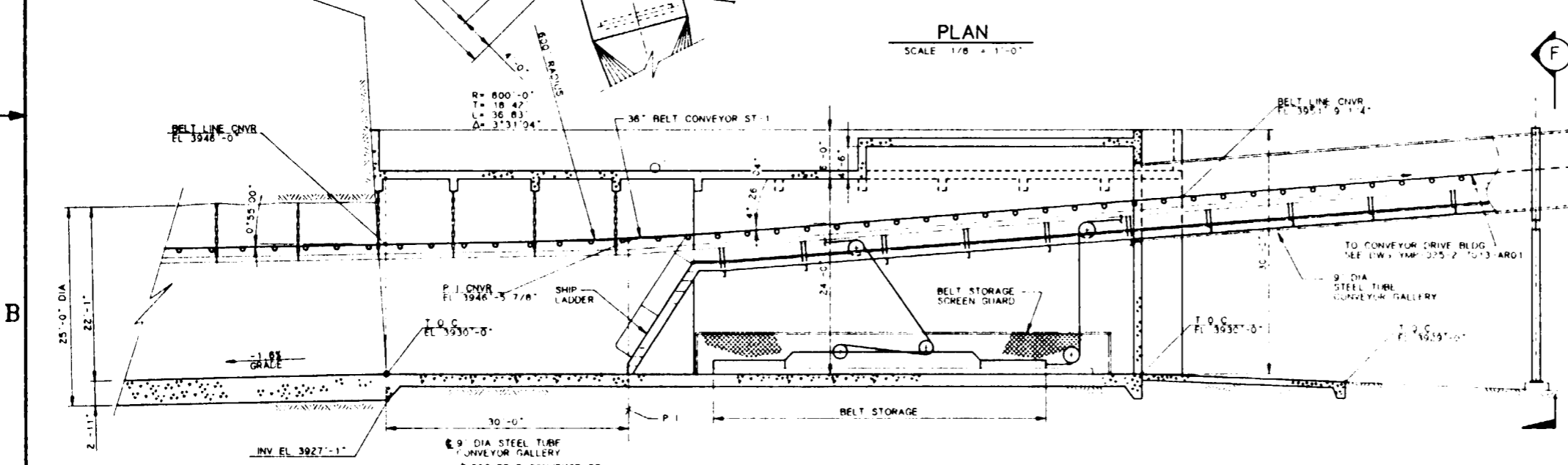
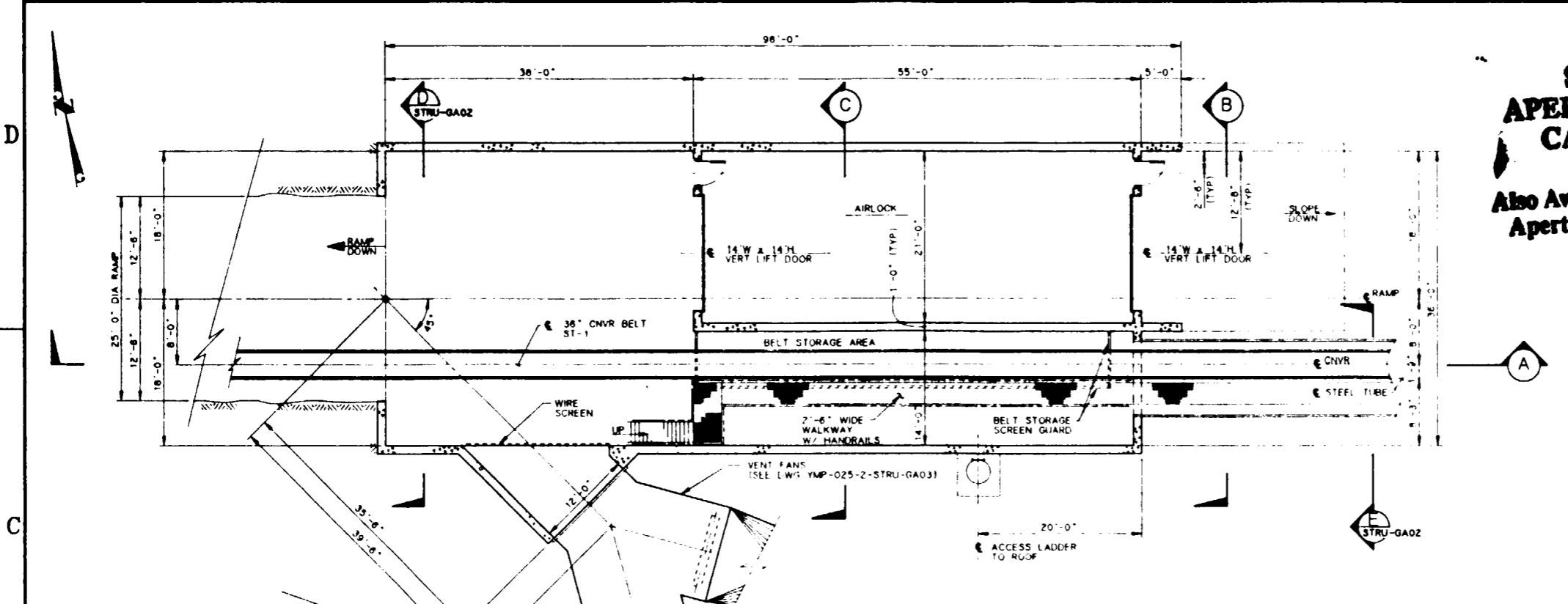
**SI**  
**APERTURE**  
**CARD**  
Also Available On  
Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

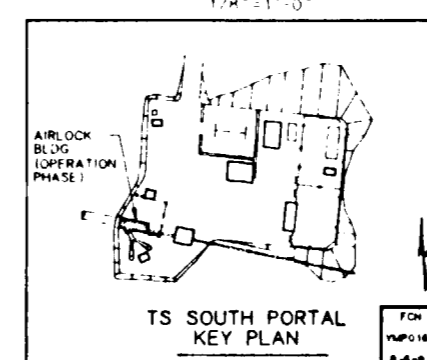
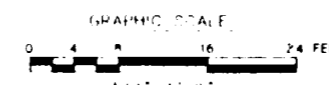
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NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	GA	TPO	YMP
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<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS SOUTH PORTAL GENERAL ARRANGEMENT VENT FAN HYDRAULIC CONTROL BLDG <b>PLAN AND ELEVATIONS</b>													
APPROVALS													
DESIGN	NBT												
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DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
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QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
<i>[Signature]</i>		8-24-91	YMP-025-2-7014-AR01		0								
YMP-O APPROVED		DATE	SHT	OF									

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NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP

**U.S. DEPARTMENT OF ENERGY**  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
LAS VEGAS, NEVADA

**Raytheon Services Nevada**  
LAS VEGAS, NEVADA

**EXPLORATORY STUDIES FACILITY**  
TS SOUTH PORTAL GENERAL ARRANGEMENT  
AIRLOCK BLDG (OPER PHASE)  
**PLAN & SECTIONS**

APPROVALS	DESIGN	CHKD	DEC	DESIGN MANAGER	VERIFICATION	ENV SAF	QUALITY ASSURANCE	SUBMITTED BY	DATE	DRAWING NO	REV

YMP-025-2-7015-AR01

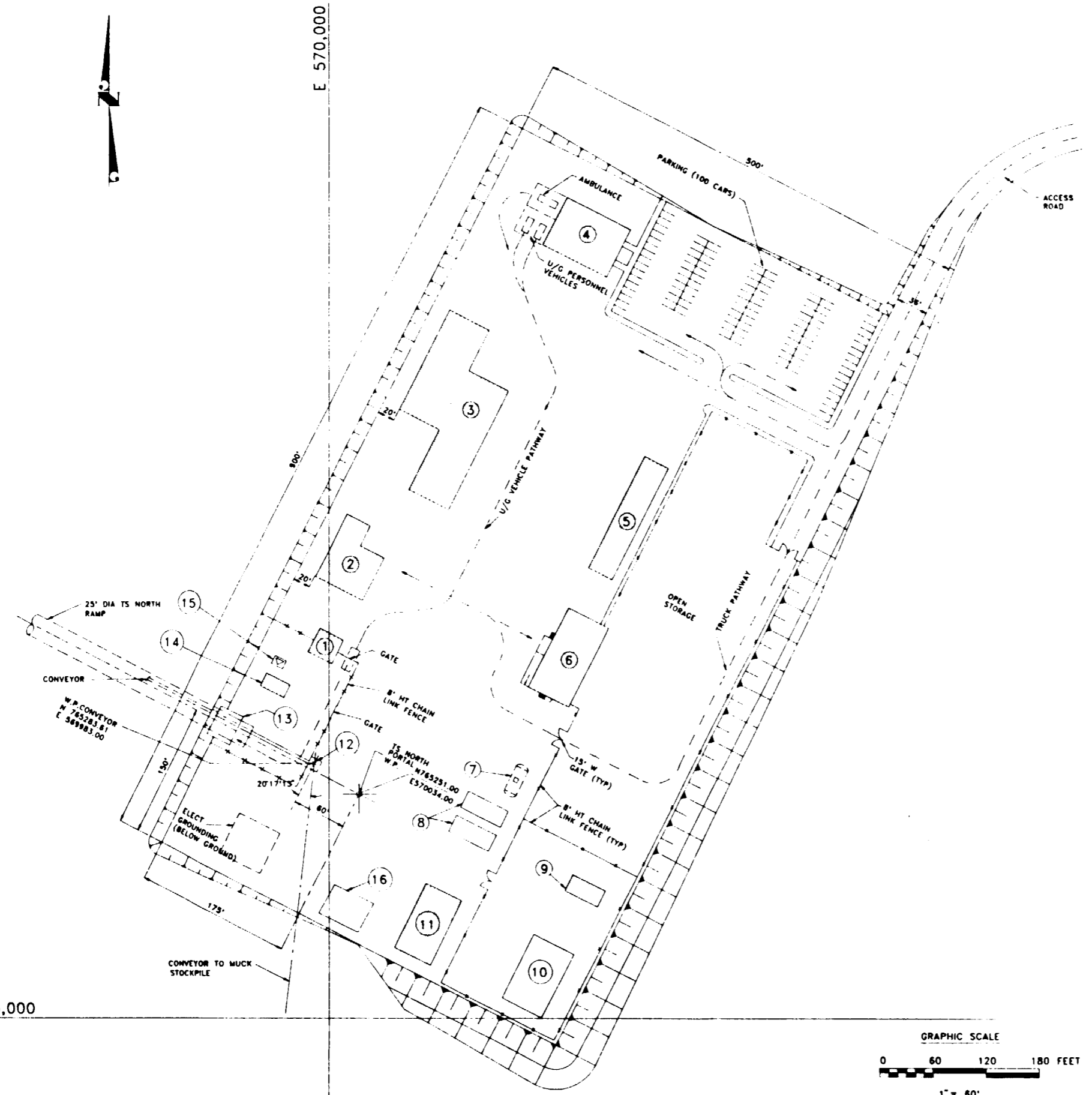
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**LEGEND**

- (1) PORTAL CONTROL CENTER BUILDING
- (2) SURFACE DATA BUILDING
- (3) TEST SUPPORT BUILDING
- (4) CHANGE HOUSE BUILDING
- (5) SHOP/WAREHOUSE BUILDING
- (6) MAIN WAREHOUSE BUILDING
- (7) UNDERGROUND FUEL STORAGE
- (8) GENERATORS PADS
- (9) ELECT. SUB-STATION CONTROL BUILDING
- (10) TRANSFORMER PAD
- (11) ELECTRICAL SWITCHGEAR BUILDING
- (12) CONVEYOR TRANSFER TOWER
- (13) NORTH PORTAL
- (14) MICROWAVE COMMUNICATION BLDG.
- (15) MICROWAVE COMMUNICATION TOWER
- (16) AIR COMPRESSOR PAD

**SI APERTURE CARD**  
 Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
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APPROVAL:		Raytheon Services Nevada LAS VEGAS, NEVADA											
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DEC.	<i>[Signature]</i>	<b>PLOT PLAN</b>											
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7

6

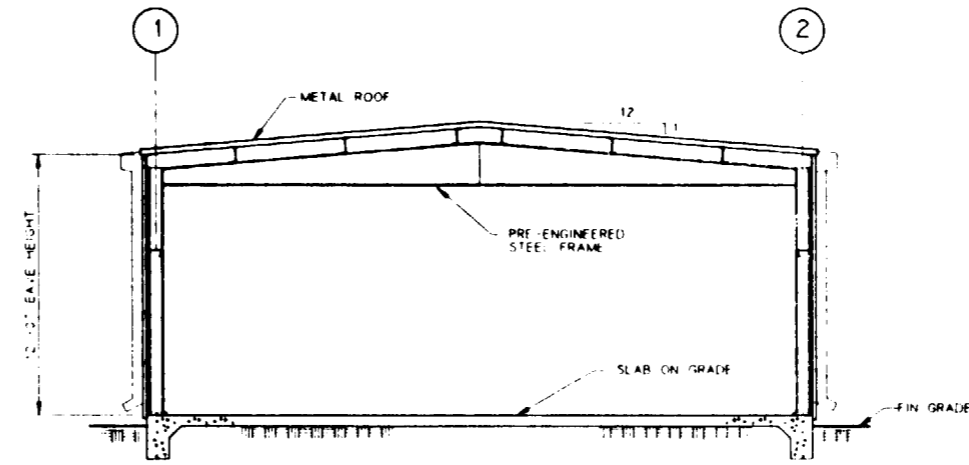
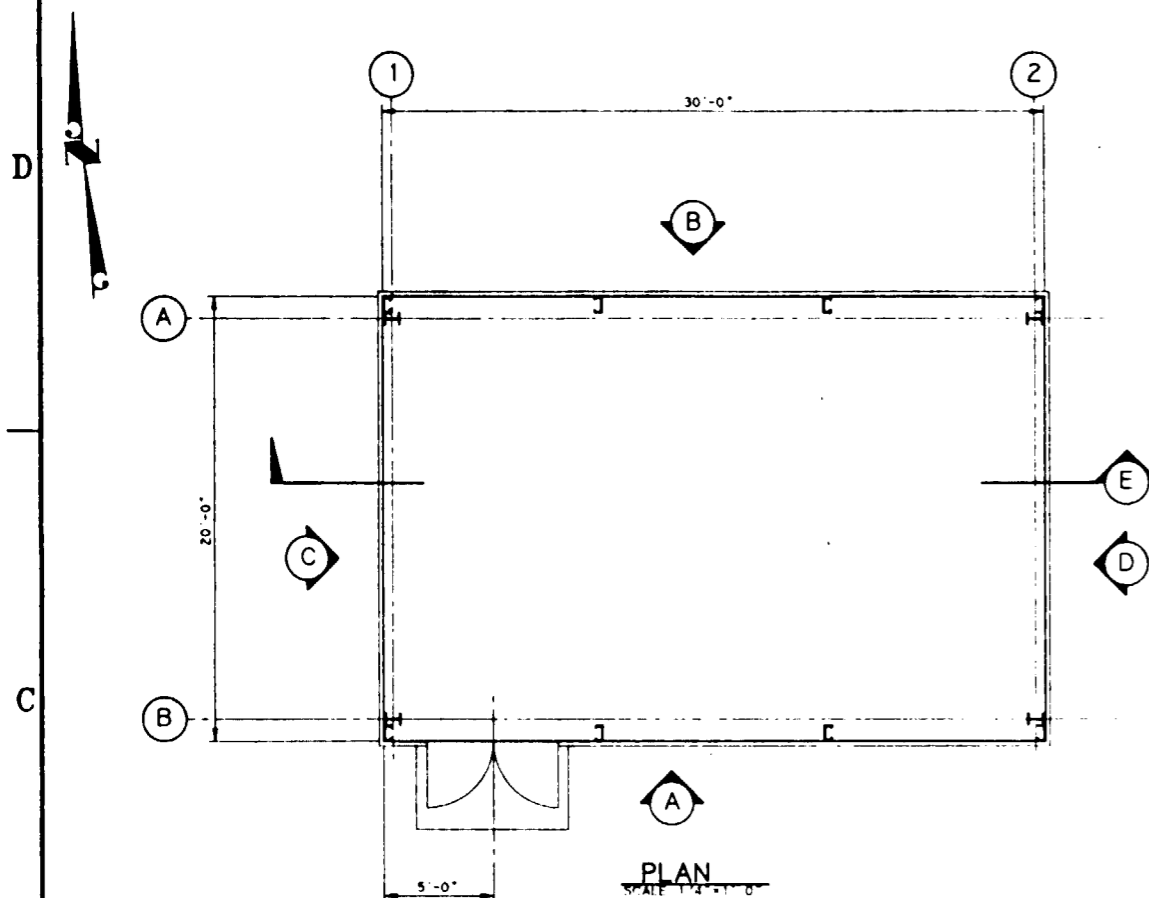
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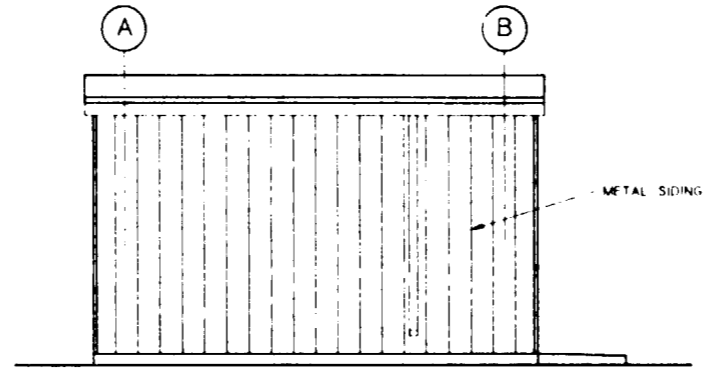
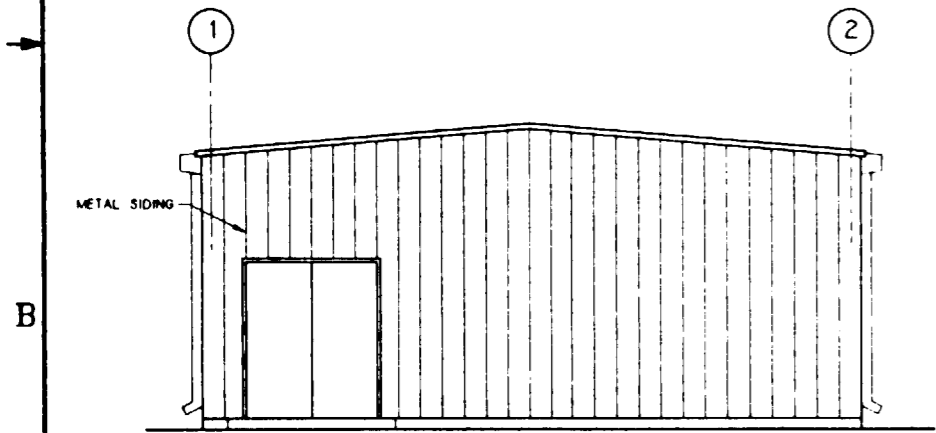
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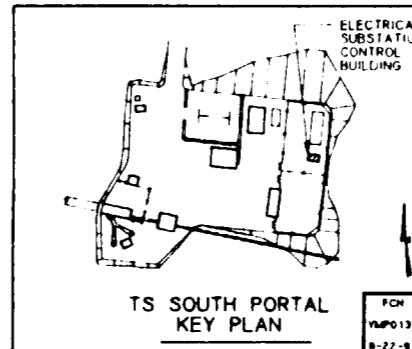
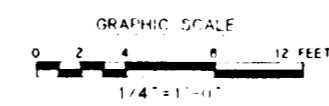
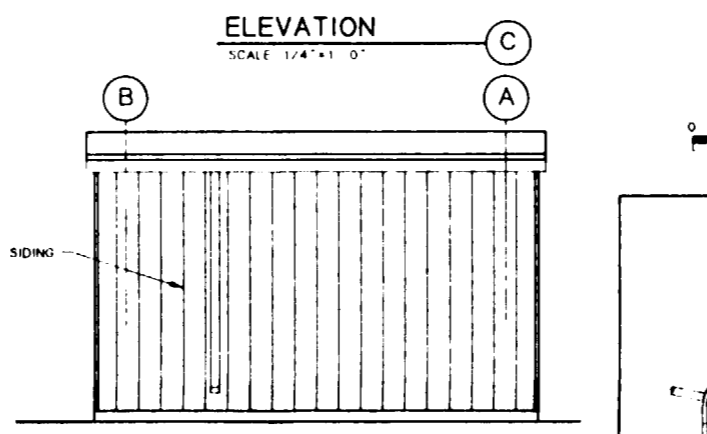
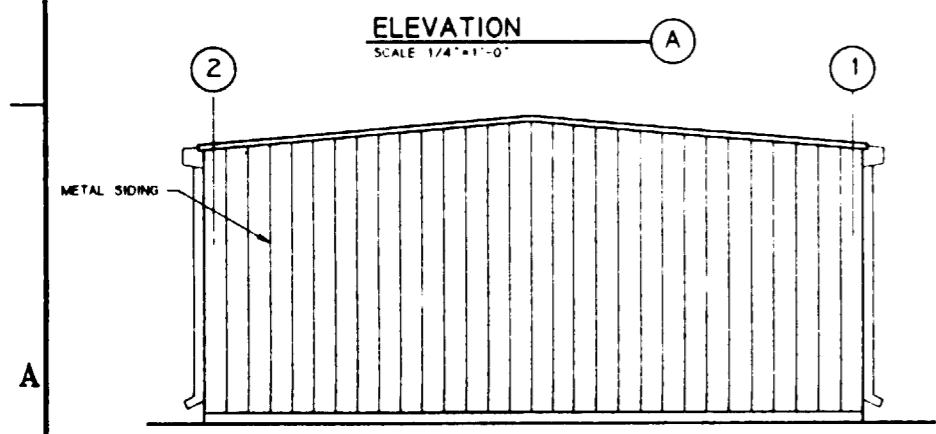
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**SI APERTURE CARD**  
Also Available On Aperture Card



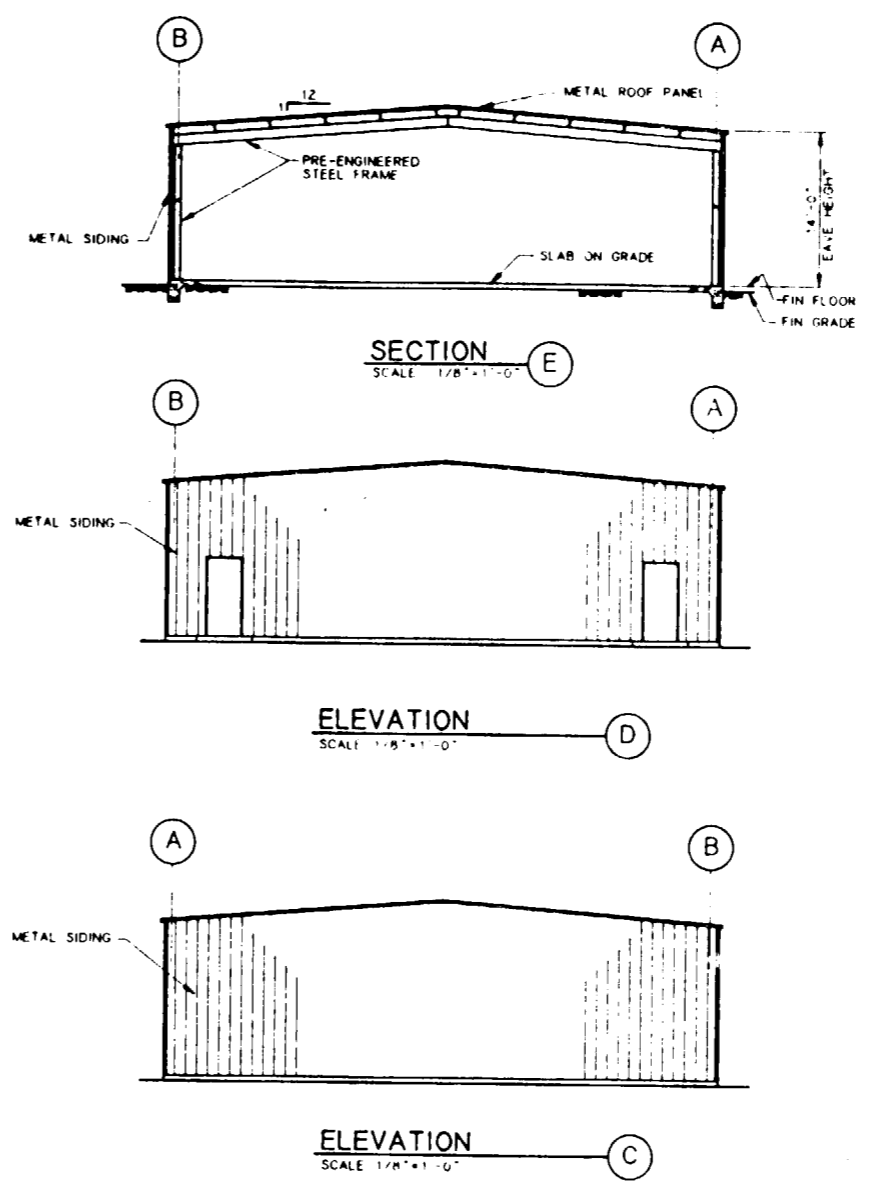
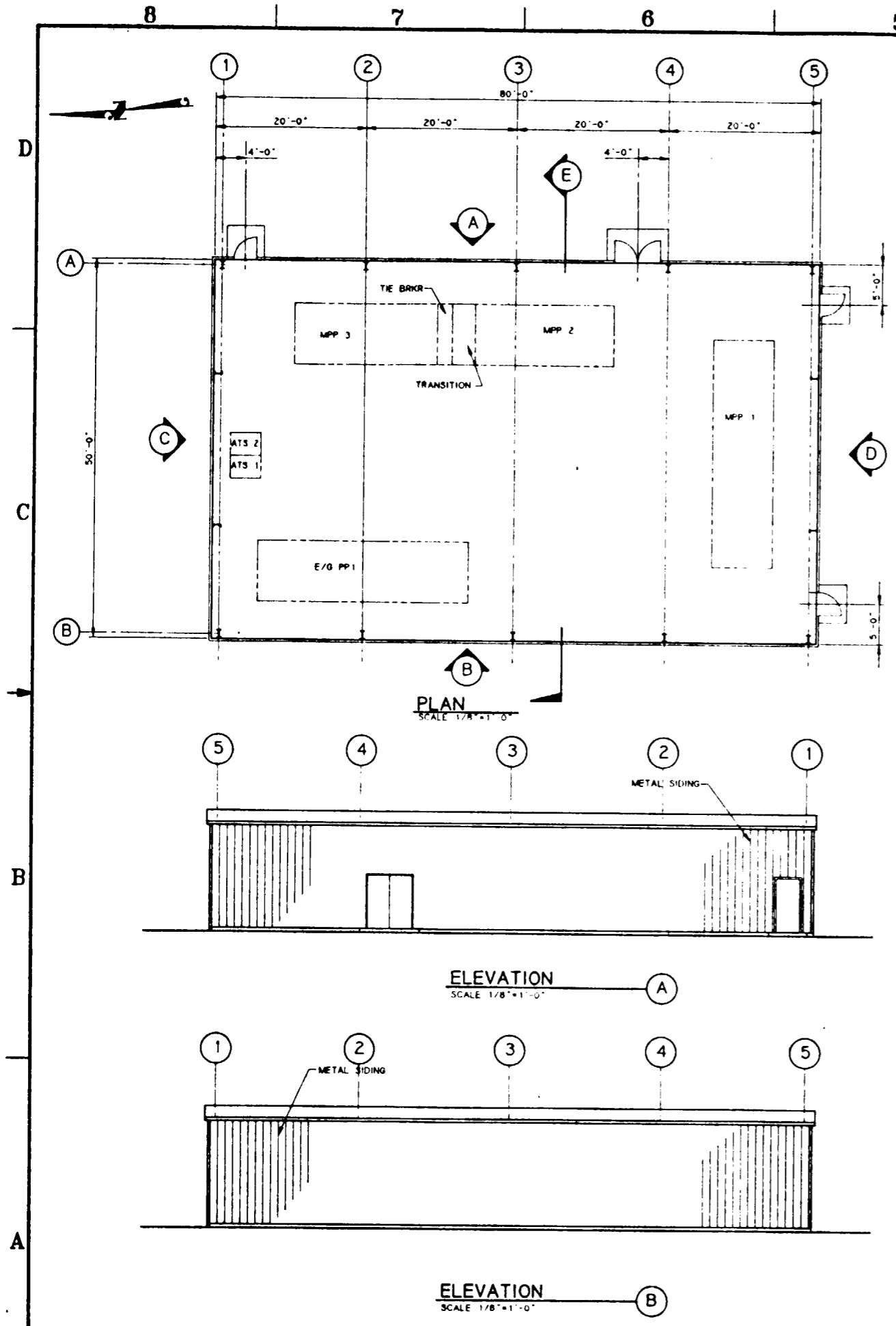
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NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS SOUTH PORTAL GENERAL ARRANGEMENT ELECTRICAL SUBSTATION CONTROL BLDG <b>PLAN AND ELEVATIONS</b>													
APPROVALS													
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SUBMITTED BY		DATE	DRAWING NO		REV								
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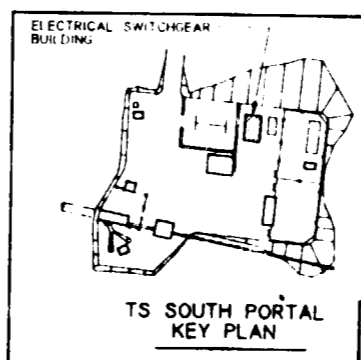
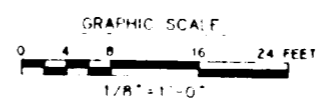
9112020061-119





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FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS SOUTH PORTAL GENERAL ARRANGEMENT ELECTRICAL SWITCHGEAR BUILDING <b>PLAN AND ELEVATIONS</b>													
APPROVALS													
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VERIFICATION	N/A												
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QUALITY ASSURANCE	B-26-91												
SUBMITTED BY			DATE	DRAWING NO		REV.							
<i>[Signature]</i>			8-24-91	YMP-025-2-7017-AR01		0							
YMPD APPROVED			DATE		SHT OF								



RAYTHEON SERVICES NEVADA

REYCA MOUNTAIN SITE CHARACTERIZATION PROJECT

TITLE I

DESIGN SUMMARY REPORT

FOR THE EXPLORATORY STUDIES FACILITY

REVISION 1

DRAFT H

VOLUME 3

NORTH PORTAL

DESIGN DRAWINGS

SEPTEMBER 03, 1991

Prepared by:

RAYTHEON SERVICES NEVADA

101 Convention Center Drive

Las Vegas, Nevada

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APERTURE  
CARD**  
Also Available On  
Aperture Card

9112020061-121

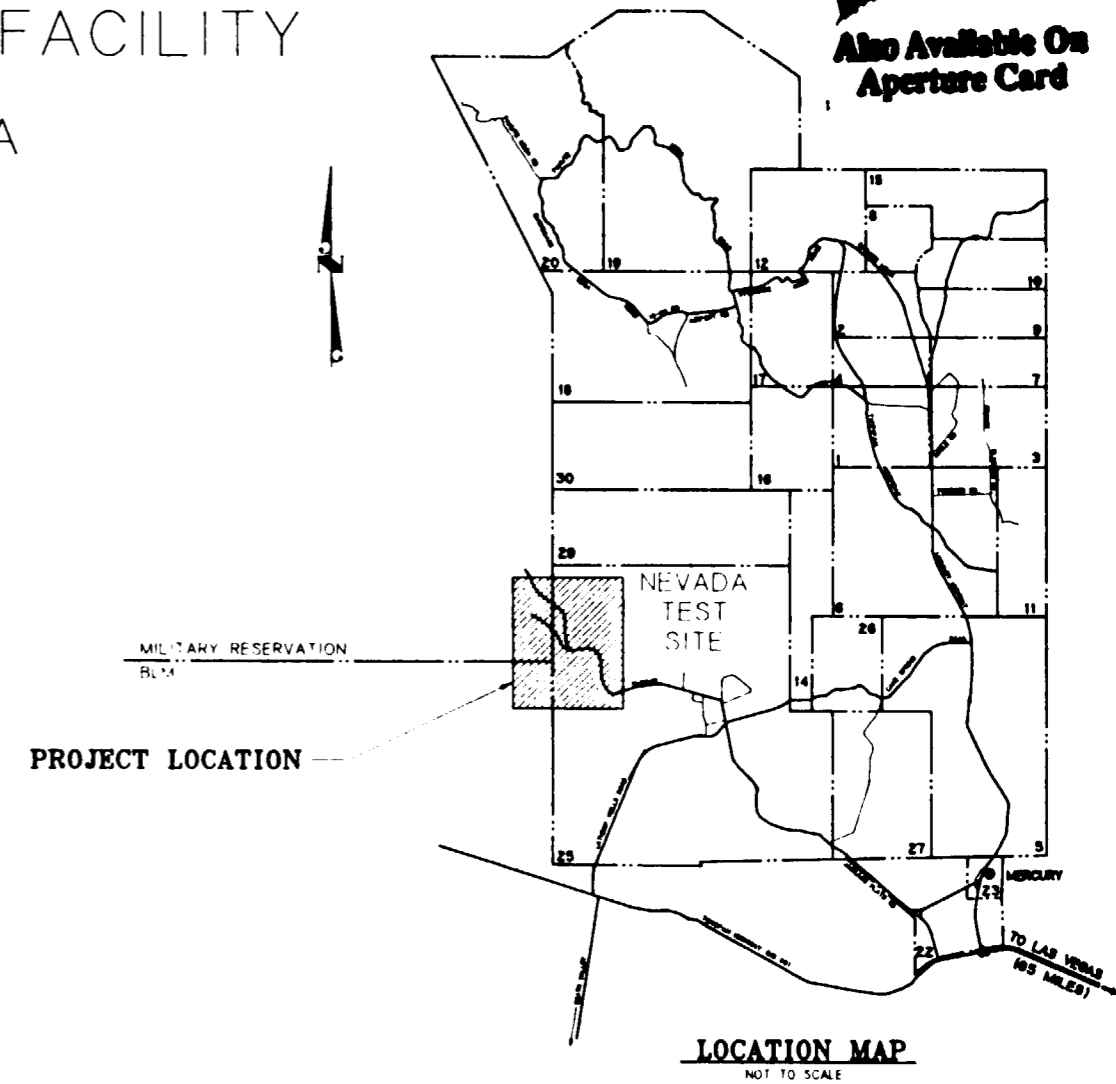
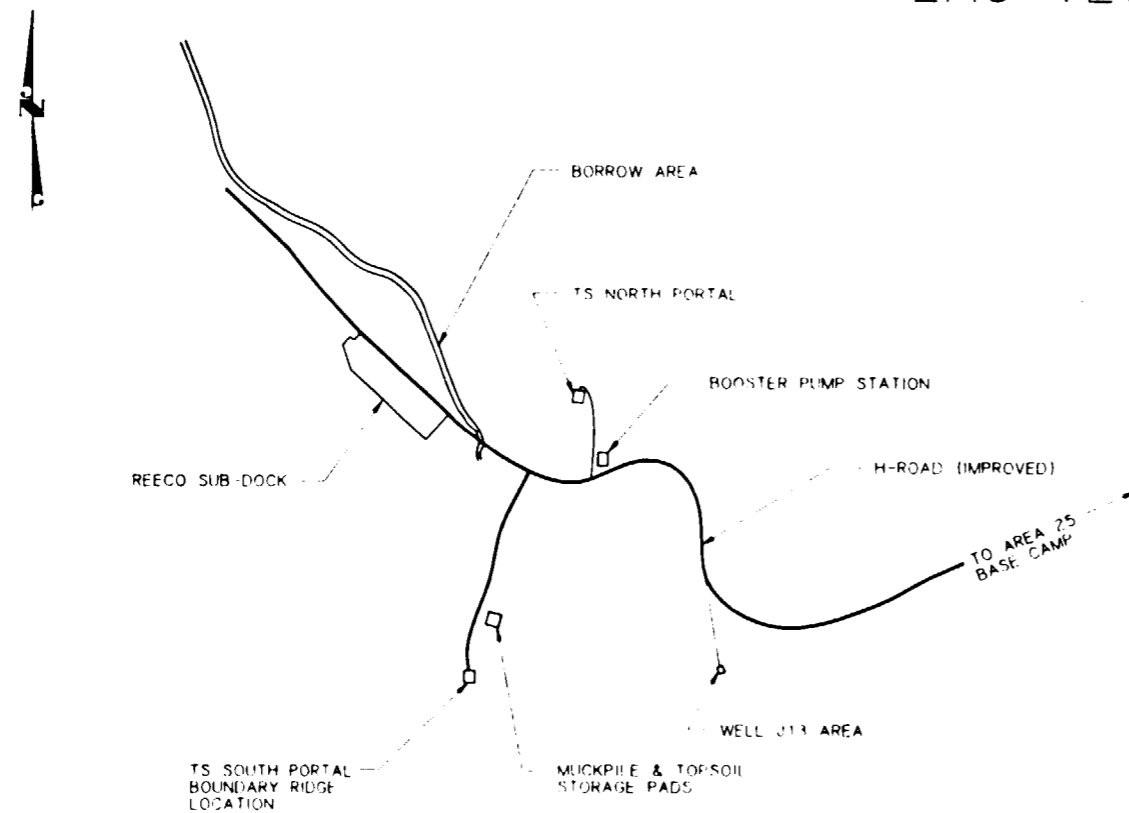
# UNITED STATES DEPARTMENT OF ENERGY

## YUCCA MOUNTAIN PROJECT

### EXPLORATORY STUDIES FACILITY

LAS VEGAS, NEVADA

**SI APERTURE CARD**  
Also Available On Aperture Card



Prepared By



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>RSNI Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT													
<b>TITLE SHEET</b>													
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DESIGN MANAGER		B.C.H.		N/A		ENV		SAF		DATE		DRAWING NO	
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YMPO APPROVED		DATE		SHT		OF		REV		O		O	

TS NORTH PORTAL	
GENERAL SUPPORT	
TITLE SHEET	YMP-025-1-CIVL-GE01
DRAWING INDEX	YMP-025-1-CIVL-GE02
PERSPECTIVE	YMP-025-1-ARCH-GA01
MATERIAL FLOW DIAGRAM	YMP-025-1-ARCH-GA02
CIVIL	
OVERALL SITE PLAN	YMP-025-1-CIVL-PL01
SURFACE SITE PLAN	YMP-025-1-CIVL-PL02
NORTH PORTAL GRADING PLAN	YMP-025-1-CIVL-GP01
BOOSTER PUMP STATION SITE PLAN	YMP-025-1-CIVL-PL04
WASTE WATER FACILITIES SITE & GRADING PLAN	YMP-025-1-CIVL-PL06
MUCK & TOPSOIL STORAGE PADS PLAN	YMP-025-1-CIVL-PL07
MUCK & TOPSOIL STORAGE PADS SECTION	YMP-025-1-CIVL-PL08
MUCK & TOPSOIL STORAGE PADS SECTION	YMP-025-1-CIVL-PL09
OVERALL UTILITY PLAN	YMP-025-1-CIVL-PL11
NORTH PORTAL UTILITIES PLAN	YMP-025-1-CIVL-PL12
WATER STORAGE TANK SITE & GRADING PLAN	YMP-025-1-CIVL-PL13
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 1	YMP-025-1-CIVL-PR01
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 2	YMP-025-1-CIVL-PR02
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 3	YMP-025-1-CIVL-PR03
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 4	YMP-025-1-CIVL-PR04
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 5	YMP-025-1-CIVL-PR05
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 6	YMP-025-1-CIVL-PR06
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 7	YMP-025-1-CIVL-PR07
H-ROAD IMPROVEMENTS PLAN & PROFILE SHT 8	YMP-025-1-CIVL-PR08
ACCESS ROAD PLAN & PROFILE	YMP-025-1-CIVL-PR12
ACCESS ROAD PLAN & PROFILE	YMP-025-1-CIVL-PR13
BORROW AREA STA 0+00-15+00 PLAN & PROFILE	YMP-025-1-CIVL-PR16
BORROW AREA STA 15+00-30+00 PLAN & PROFILE	YMP-025-1-CIVL-PR17
BORROW AREA STA 30+00-45+00 PLAN & PROFILE	YMP-025-1-CIVL-PR18
BORROW AREA STA 45+00-48+00 03 PLAN & PROFILE	YMP-025-1-CIVL-PR19
WATER STORAGE TANK ACCESS ROAD PLAN & PROFILE	YMP-025-1-CIVL-PR21
CONVEYOR ALIGNMENT PLAN & PROFILE	YMP-025-1-CIVL-PR24
CONVEYOR ALIGNMENT PLAN & PROFILE	YMP-025-1-CIVL-PR25
CONVEYOR ALIGNMENT PLAN & PROFILE	YMP-025-1-CIVL-PR26
PROBABLE MAXIMUM FLOOD (PMF) FLOOD PLAIN	YMP-025-1-CIVL-C102
ARCHITECTURAL	
SURFACE PLOT PLAN	YMP-025-1-ARCH-PL01
OVERALL PLOT PLAN	YMP-025-1-ARCH-PL02
STRUCTURAL	
PORTAL & CONVEYOR PLAN & SECTIONS	YMP-025-1-STRU-GA01
PORTAL CONST / OPER PHASE PLAN SECT & ELEV'S	YMP-025-1-STRU-GA02
CONVEYOR TRANSFER TOWER PLANS & SECTIONS	YMP-025-1-STRU-GA03
SURFACE CONVEYOR PROFILE SHEET 1	YMP-025-1-STRU-GA04
SURFACE CONVEYOR PROFILE SHEET 2	YMP-025-1-STRU-GA05
UNDERGROUND CONVEYOR PROFILE SHEET 3 & SECT'S	YMP-025-1-STRU-GA06

TS NORTH PORTAL	
MINING	
SUBSURFACE ACCESS GENERAL ARRANGEMENT PLAN	YMP-025-1-MING-MI01
TS/CH RAMP INTERSECTION PLAN & SECTION	YMP-025-1-MING-MI02
TS/CH RAMP INTERSECTION SECTIONS	YMP-025-1-MING-MI03
TS/CH RAMP INTERSECTION TBM TRANS / LAUNCH SECT'S	YMP-025-1-MING-MI04
TS PRELIMINARY TEST LOCATIONS PLAN	YMP-025-1-MING-MI06
TS PRELIMINARY TEST LOCATIONS ELEVATION	YMP-025-1-MING-MI07
TS PRELIMINARY TEST LOCATIONS ENLARGED PLAN	YMP-025-1-MING-MI09
TS PRELIMINARY TEST LOCATIONS ENLARGED PLAN	YMP-025-1-MING-MI10
CH PRELIMINARY TEST LOCATIONS PLAN & ELEVATION	YMP-025-1-MING-MI11
CH PRELIMINARY TEST LOCATIONS ENLARGED PLANS	YMP-025-1-MING-MI12
ELECTRICAL	
POWER TRANSMISSION LINE SITE PLAN (SHEET 1)	YMP-025-1-ELEC-EL01
POWER TRANSMISSION LINE SITE PLAN (SHEET 2)	YMP-025-1-ELEC-EL02
NORTH PORTAL SURFACE SUBSTATION ONE LINE DIAGRAM	YMP-025-1-ELEC-EL04
NORTH PORTAL SURFACE ELECTRICAL ONE LINE DIAGRAM (SHEET 1)	YMP-025-1-ELEC-EL05
NORTH PORTAL SURFACE ELECTRICAL ONE LINE DIAGRAM (SHEET 2)	YMP-025-1-ELEC-EL06
TS NORTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHEET 1)	YMP-025-1-ELEC-EL07
TS NORTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHEET 2)	YMP-025-1-ELEC-EL08
TS NORTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHEET 3)	YMP-025-1-ELEC-EL09
CH NORTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHEET 1)	YMP-025-1-ELEC-EL13
CH NORTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHEET 2)	YMP-025-1-ELEC-EL14
CH NORTH RAMP ELECTRICAL ONE LINE DIAGRAM (SHEET 3)	YMP-025-1-ELEC-EL15

SHOP / WAREHOUSE BLDG # 7000	
ARCHITECTURAL	
SHOP / WAREHOUSE BUILDING FLOOR PLANS	YMP-025-1-7000-AR01
SHOP / WAREHOUSE BUILDING ELEVATIONS & SECTION	YMP-025-1-7000-AR02
MECHANICAL	
SHOP / WAREHOUSE BUILDING HVAC PLAN	YMP-025-1-7000-HV01
SHOP / WAREHOUSE BUILDING PLUMBING PLAN	YMP-025-1-7000-PP01

TEST SUPPORT BLDG # 7005	
ARCHITECTURAL	
TEST SUPPORT BUILDING FLOOR PLAN	YMP-025-1-7005-AR01
TEST SUPPORT BUILDING ELEVATIONS & SECTION	YMP-025-1-7005-AR02
MECHANICAL	
TEST SUPPORT BUILDING HVAC PLAN	YMP-025-1-7005-HV01
TEST SUPPORT BUILDING PLUMBING PLAN	YMP-025-1-7005-PP01
TEST SUPPORT BUILDING PLUMBING DETAIL	YMP-025-1-7005-PP02

MAIN WAREHOUSE BLDG # 7001	
ARCHITECTURAL	
MAIN WAREHOUSE BUILDING FLOOR PLANS	YMP-025-1-7001-AR01
MAIN WAREHOUSE BUILDING ELEVATIONS & SECTION	YMP-025-1-7001-AR02
MECHANICAL	
MAIN WAREHOUSE BUILDING HVAC PLAN	YMP-025-1-7001-HV01
MAIN WAREHOUSE BUILDING PLUMBING PLAN	YMP-025-1-7001-PP01

ELECT SUBSTATION CONTROL BLDG # 7006	
ARCHITECTURAL	
ELECT SUBSTATION CONTROL BLDG PLAN & ELEV'S	YMP-025-1-7006-AR01

CHANGE HOUSE BLDG # 7002	
ARCHITECTURAL	
CHANGE HOUSE BUILDING FLOOR PLAN	YMP-025-1-7002-AR01
CHANGE HOUSE BUILDING ELEVATIONS & SECTION	YMP-025-1-7002-AR02
MECHANICAL	
CHANGE HOUSE BUILDING HVAC PLAN	YMP-025-1-7002-HV01
CHANGE HOUSE BUILDING PLUMBING PLAN	YMP-025-1-7002-PP01

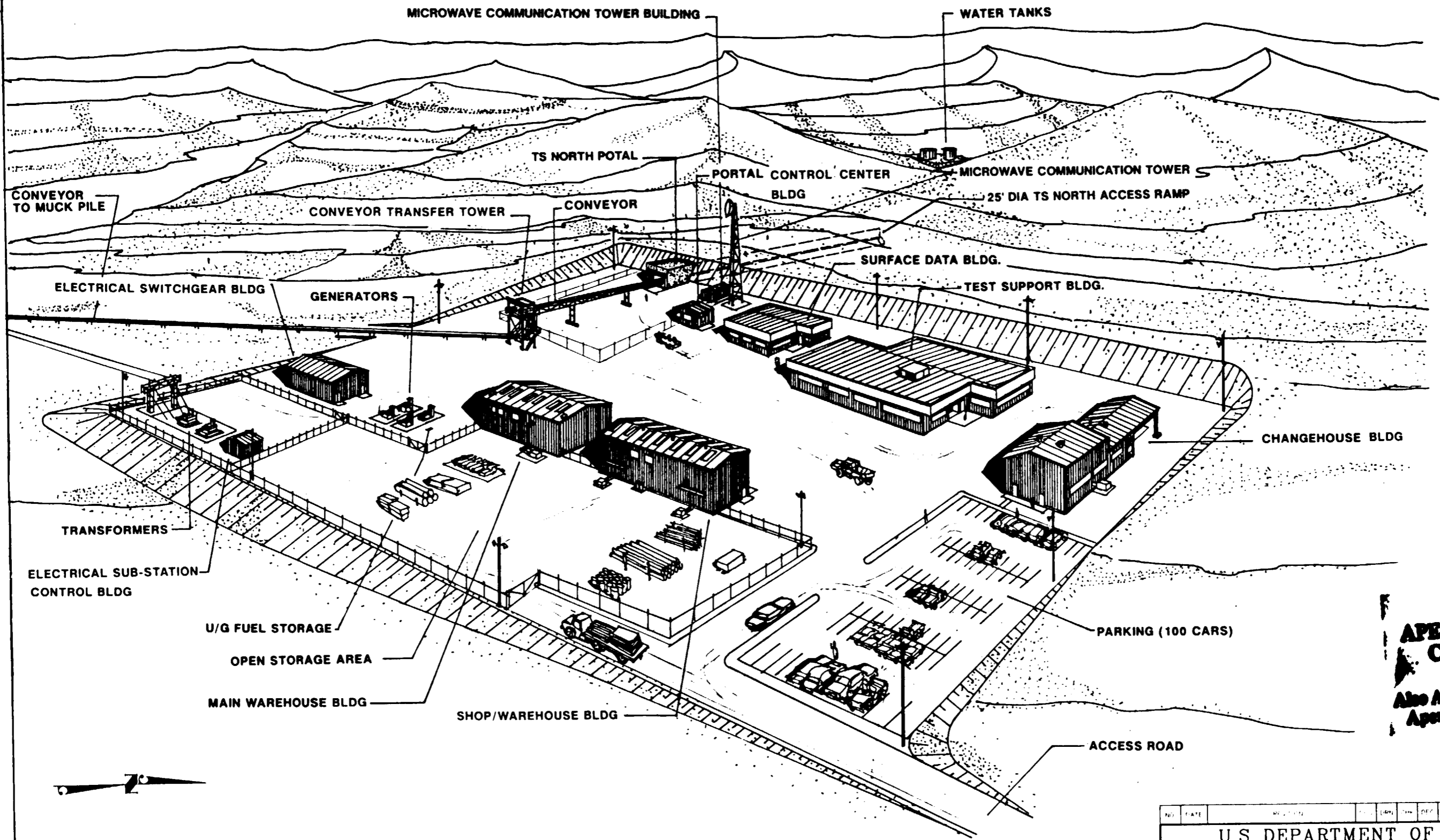
ELECTRICAL SWITCHGEAR BUILDING # 7007	
ARCHITECTURAL	
ELECTRICAL SWITCHGEAR BUILDING PLAN & ELEV'S	YMP-025-1-7007-AR01

SURFACE DATA BLDG # 7003	
ARCHITECTURAL	
SURFACE DATA BUILDING FLOOR PLAN	YMP-025-1-7003-AR01
SURFACE DATA BUILDING ELEVATIONS & SECTION	YMP-025-1-7003-AR02
MECHANICAL	
SURFACE DATA BUILDING HVAC PLAN	YMP-025-1-7003-HV01
SURFACE DATA BUILDING PLUMBING PLAN	YMP-025-1-7003-PP01

PORTAL CONTROL CENTER BLDG # 7004	
ARCHITECTURAL	
PORTAL CONTROL CENTER BLDG PLAN, SECTION & ELEV'S	YMP-025-1-7004-AR01
MECHANICAL	
PORTAL CONTROL CENTER BLDG HVAC PLAN	YMP-025-1-7004-HV01
PORTAL CONTROL CENTER BLDG PLUMBING PLAN	YMP-025-1-7004-PP01

**SI APERTURE CARD**  
Also Available On Aperture Card

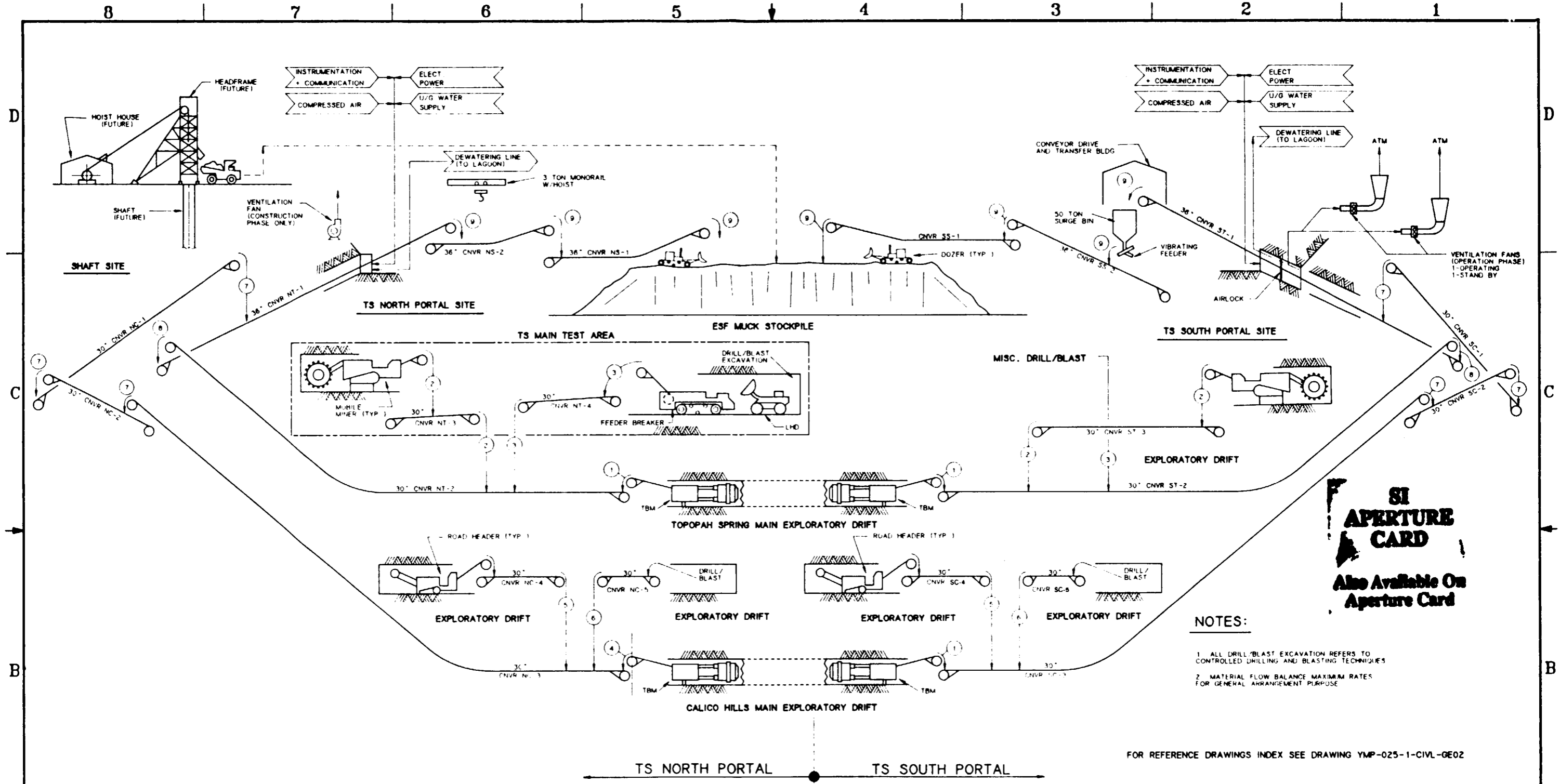
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	MJM	EXPLORATORY STUDIES FACILITY											
DRAWN	MJM	TS NORTH PORTAL GENERAL ARRANGEMENT											
CHECKED	<i>[Signature]</i>	<b>DRAWING INDEX</b>											
DEC	<i>[Signature]</i>	SUBMITTED BY <i>[Signature]</i> DATE <i>01-11-91</i> DRAWING NO. YMP-025-1-CIVL-GE02 REV 0											
DESIGN MANAGER	<i>[Signature]</i>	YMP0 APPROVED _____ DATE _____ SHT _____ OF _____											
VERIFICATION	N/A	FCN YMP0108 WBS NO 1,2,6,3,1,1 8-22-91 C.I. NO.											



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CARD**  
Also Available On  
Aperture Card

NO.	DATE	REV.	BY	CHK.	APP.	ENV.	SAF.	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA										
REGION PZ		<b>RSN</b> Raytheon Services Nevada LAS VEGAS, NEVADA								
DRAWN PZ		EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT								
CHECKED H. B. S.		<b>PERSPECTIVE</b>								
DESIGN B. C. H.		PROJECT NO. YMP-025-1-ARCH-GA01	DATE 8/4/91	DRAWING NO. 	REV. 0					
VERIFIED BY N/A										
ENV. NO. 										
NO. 126311										
DATE										

9112020061-124



**SI APERTURE CARD**  
 Also Available On Aperture Card

**NOTES:**

- 1. ALL DRILL/BLAST EXCAVATION REFERS TO CONTROLLED DRILLING AND BLASTING TECHNIQUES
- 2. MATERIAL FLOW BALANCE MAXIMUM RATES FOR GENERAL ARRANGEMENT PURPOSE

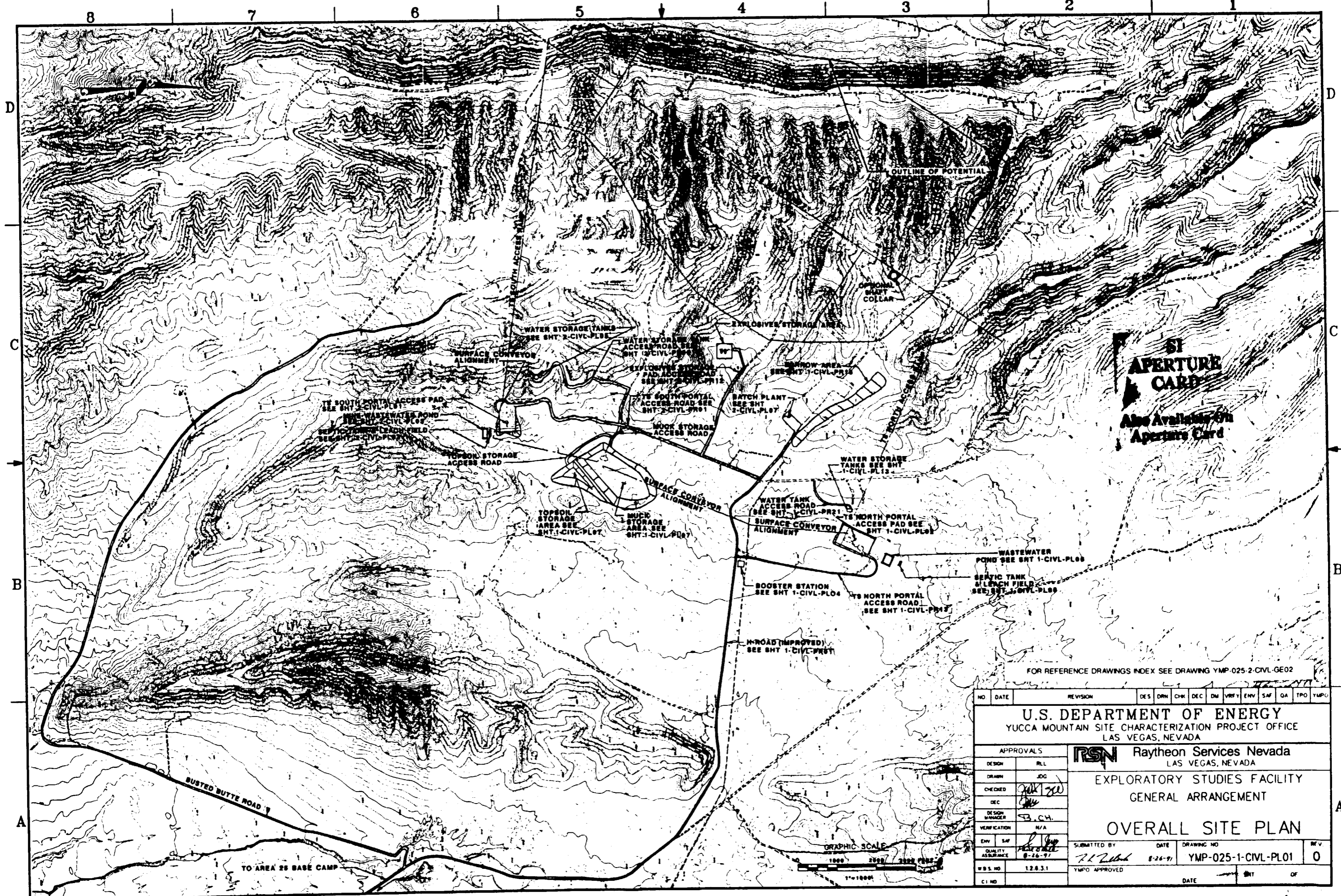
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

	MATERIAL FLOW BALANCE								
	①	②	③	④	⑤	⑥	⑦	⑧	⑨
TON/HR. (NOMINAL)	302	75	94	169	71	60	300	471	771
TON/HR. (DESIGN)	332	83	103	186	78	66	330	516	848
MAX. LUMP SIZE (INCHES)	-6"	-6"	-6"	-6"	-6"	-6"	-6"	-6"	-6"
MATERIAL DENSITY (#/FT <sup>3</sup> ) (BROKEN)	98	98	98	98	98	98	98	98	98
TEMPERATURE (°F)	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	HBT	EXPLORATORY STUDIES FACILITY											
DRAWN	TAN	GENERAL ARRANGEMENT											
CHECKED	<i>[Signature]</i>	TS NORTH & TS SOUTH PORTALS											
DEC	<i>[Signature]</i>	<b>MATERIAL FLOW DIAGRAM</b>											
DESIGN MANAGER	<i>[Signature]</i>	SUBMITTED BY <i>[Signature]</i> DATE 8-26-91											
VERIFICATION	N/A	DRAWING NO. YMP-025-1-ARCH-GA02											
ENV SAF	<i>[Signature]</i>	REV. 0											
QUALITY ASSURANCE	<i>[Signature]</i>	YMPQ APPROVED											
FOR YMP0143 8-22-91	W.B.S. NO. 1,2,6,3,1,1	DATE											
C.I. NO.		SHT OF											

Plotted: Thu Aug 27 07:37:13 1991, PDT Part name YMP0143 DRW

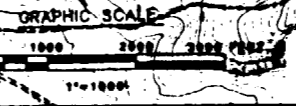
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**SI APERTURE CARD**  
 Also Available on Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-2-CIVL-GE02

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APPROVALS		<b>RSN</b> Raytheon Services Nevada LAS VEGAS, NEVADA											
DESIGN	RLI	EXPLORATORY STUDIES FACILITY GENERAL ARRANGEMENT  <b>OVERALL SITE PLAN</b>											
DRAWN	JDC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	S.B. CH.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY		DATE		DRAWING NO.		REV.					
QUALITY ASSURANCE	<i>[Signature]</i>	<i>[Signature]</i>		8-26-91		YMP-025-1-CIVL-PL01		0					
U.S. NO.	128.3.1	YMPU APPROVED		DATE		SHT		OF					
CI NO.													



TO AREA 28 BASE CAMP

211202061-126

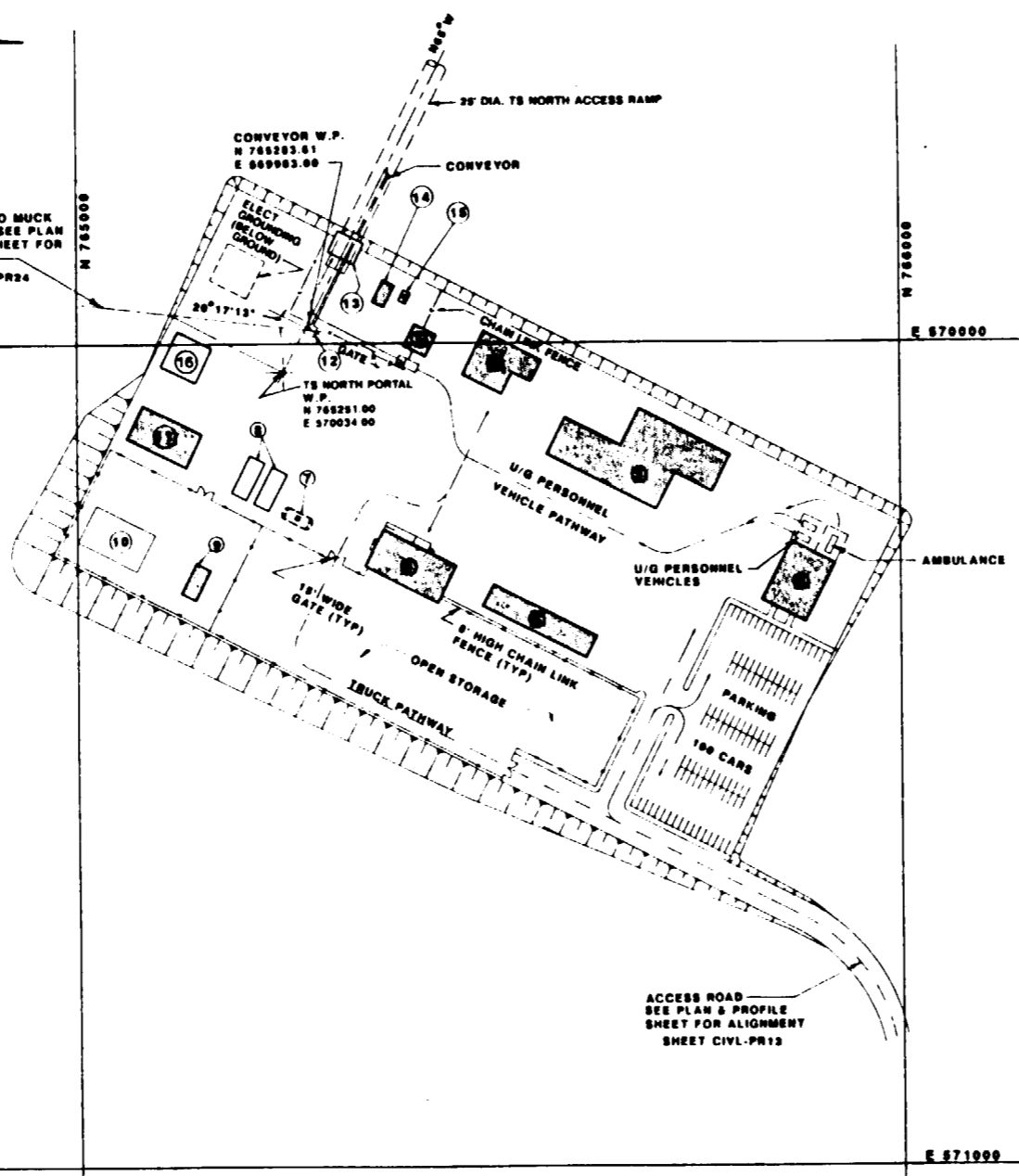
8 7 6 5 4 3 2 1

**LEGEND**

- ① PORTAL CONTROL CENTER BUILDING
- ② SURFACE DATA BUILDING
- ③ TEST SUPPORT BUILDING
- ④ CHANGEHOUSE BUILDING
- ⑤ SHOP/WAREHOUSE BUILDING
- ⑥ MAIN WAREHOUSE BUILDING
- ⑦ UNDERGROUND FUEL STORAGE
- ⑧ GENERATORS PADS
- ⑨ ELECTRICAL SUB-STATION CONTROL BUILDING
- ⑩ TRANSFORMER PAD
- ⑪ ELECTRICAL SWITCHGEAR BUILDING
- ⑫ CONVEYOR TRANSFER TOWER
- ⑬ NORTH PORTAL
- ⑭ MICROWAVE COMMUNICATION BLDG.
- ⑮ MICROWAVE COMMUNICATION TOWER
- ⑯ AIR COMPRESSOR PAD



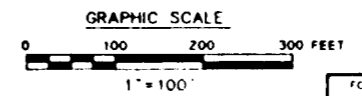
CONVEYOR TO MUCK STOCKPILE SEE PLAN & PROFILE SHEET FOR ALIGNMENT SHEET CIVL-PR24



**PLAN**  
SCALE: 1"=100'

**SI APERTURE CARD**  
Also Available On Aperture Card

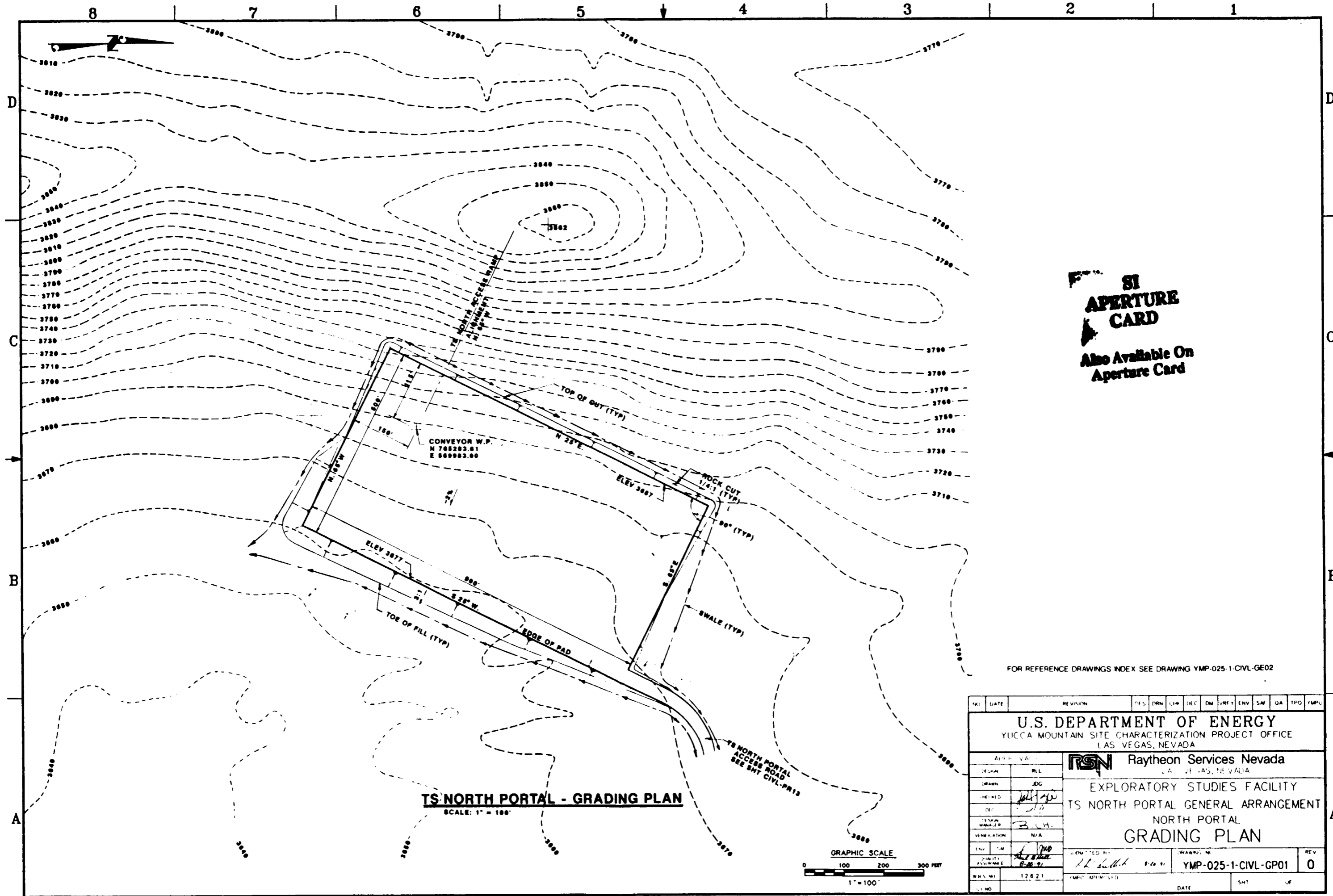
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NO.	DATE	REVISION	DES.	DRN.	CHK.	DEC.	DM.	VRFY.	ENV.	SAF.	QA.	TPO.	YMPD.
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVAL:			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RL		<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>SURFACE</b> <b>SITE PLAN</b>										
DRAWN	JDC												
CHECKED	[Signature]												
DEC.	[Signature]												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV. SAF.	[Signature]		APPROVED BY:	DATE:		DRAWING NO.:		REV.					
YMPD. APPROVED	[Signature]		0-26-91		YMP-025-1-CIVL-PL02		0						
FCN	YMPD.37		W.B. NO. 126311		DATE		SHT. OF						
B.22.81	C.I. NO.												

2112020061-127



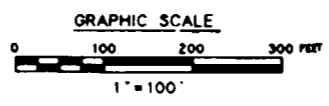


**TS NORTH PORTAL - GRADING PLAN**  
SCALE: 1" = 100'

**SI APERTURE CARD**  
Also Available On Aperture Card

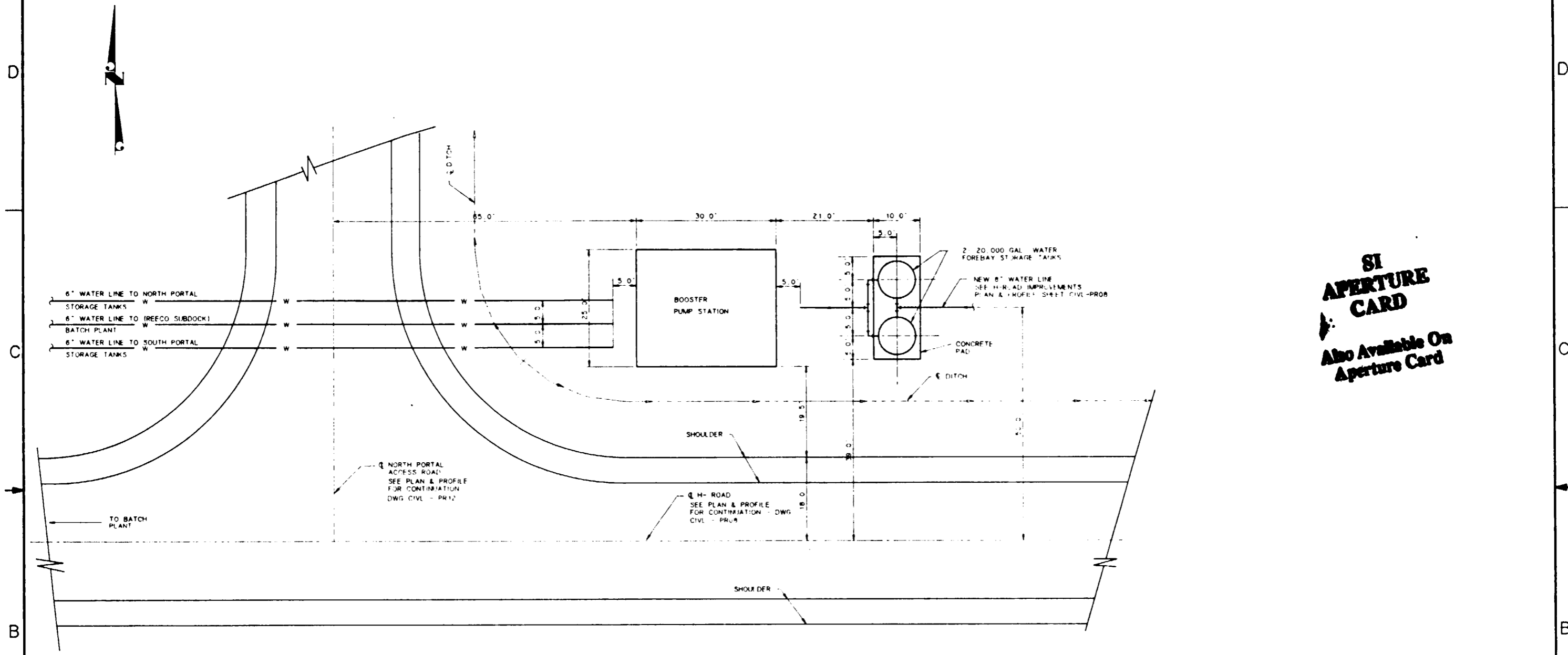
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO.	DATE	REVISION	DES.	DRN.	ENV.	SAF.	QA	TPD.	YMP.
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA									
DESIGN: RLL DRAWN: JDC CHECKED: [Signature] DESIGNED BY: B.H. VERIFICATION: N/A			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT NORTH PORTAL <b>GRADING PLAN</b>						
ENGR: [Signature] QUALITY ASSURANCE: [Signature]	DESIGNED BY: [Signature]	DRAWING NO.: YMP-025-1-CIVL-GP01	REV: 0						
WBS NO.: 12621	YMP APPROVED: [Signature]	DATE:	SHEET NO.:						



9118080061-128

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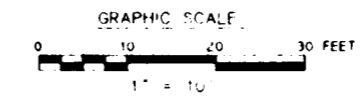
**SI APERTURE CARD**  
Also Available On Aperture Card

**BOOSTER PUMP SITE PLAN**

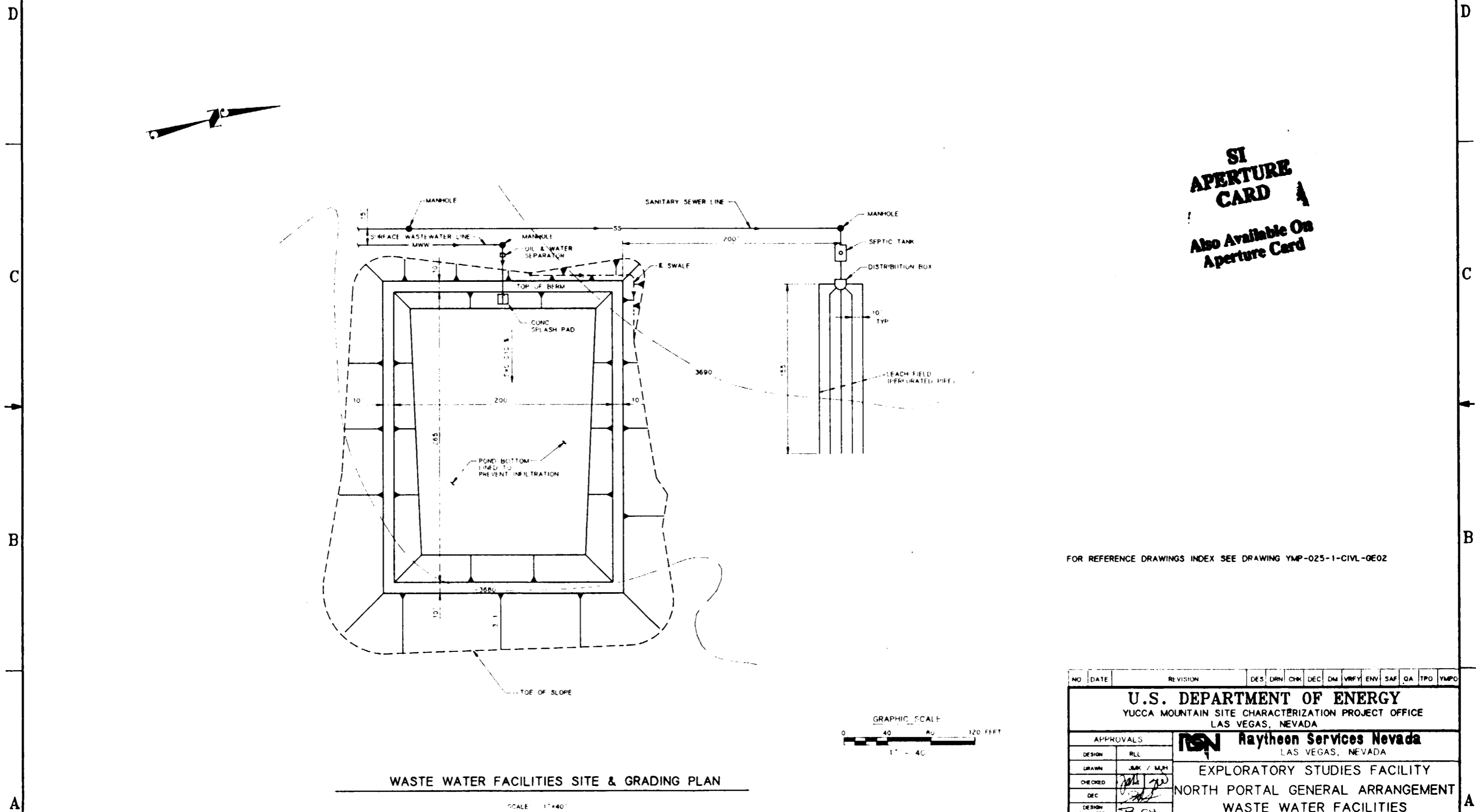
SCALE: 1" = 10'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLI		EXPLORATORY STUDIES FACILITY										
DRAWN	JMK		TS NORTH PORTAL GENERAL ARRANGEMENT										
CHECKED	<i>[Signature]</i>		BOOSTER PUMP STATION										
DEC	<i>[Signature]</i>		SITE PLAN										
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO		REV.							
<i>[Signature]</i>			8-21-91	YMP-025-1-CIVL-PL04		0							
YMPD APPROVED			DATE										



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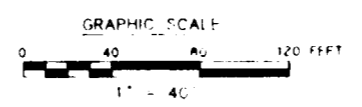


**SI APERTURE CARD**  
 Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02

**WASTE WATER FACILITIES SITE & GRADING PLAN**

SCALE: 1" = 40'



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLI		EXPLORATORY STUDIES FACILITY NORTH PORTAL GENERAL ARRANGEMENT WASTE WATER FACILITIES GRADING PLAN										
DRAWN	JMK / MJK												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A		SUBMITTED BY		DRAWING NO				REV				
ENV	SAF	<i>[Signature]</i>		<i>[Signature]</i>		YMP-025-1-CIVL-PL06				0			
QUALITY ASSURANCE	<i>[Signature]</i>		YMPD APPROVED		DATE				SHT OF				
FCN	YMP0052												
YMP0052	N.B.S. NO.		1, 2, 5, 3, 1, 1										
8-22-91	S.I. NO.												

9112020061-130

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D

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B

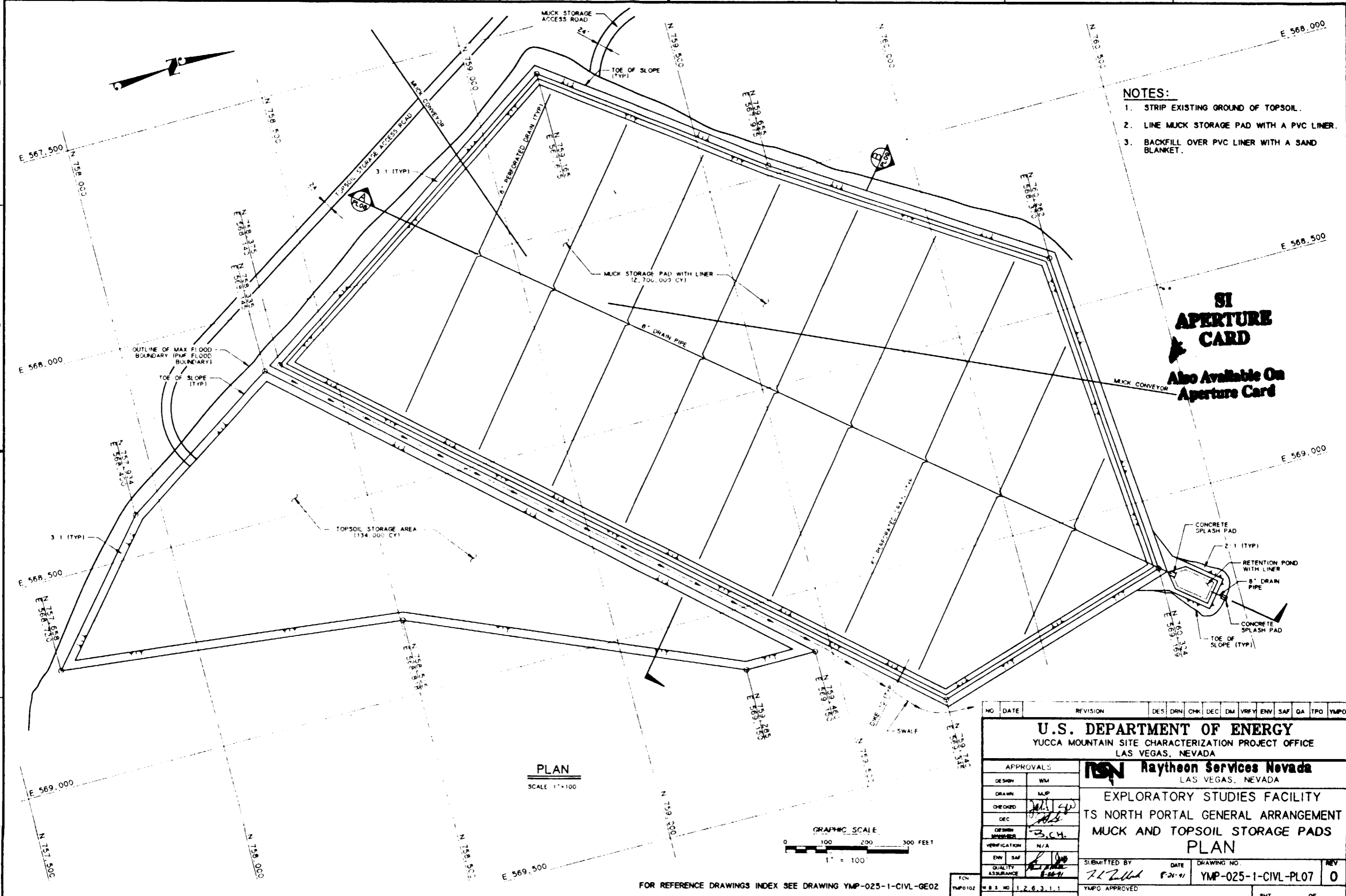
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D

C

B

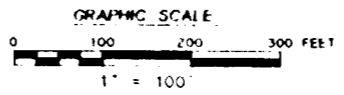
A



- NOTES:**
1. STRIP EXISTING GROUND OF TOPSOIL.
  2. LINE MUCK STORAGE PAD WITH A PVC LINER.
  3. BACKFILL OVER PVC LINER WITH A SAND BLANKET.

**SI APERTURE CARD**  
 Also Available On Aperture Card

**PLAN**  
 SCALE 1" = 100'



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WM												
DRAWN	MJP												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	[Signature]												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	[Signature]												
SUBMITTED BY		DATE	DRAWING NO.		REV								
[Signature]		8-21-91	YMP-025-1-CIVL-PL07		0								
YMP0 APPROVED													
											DATE	SHT	OF

8

7

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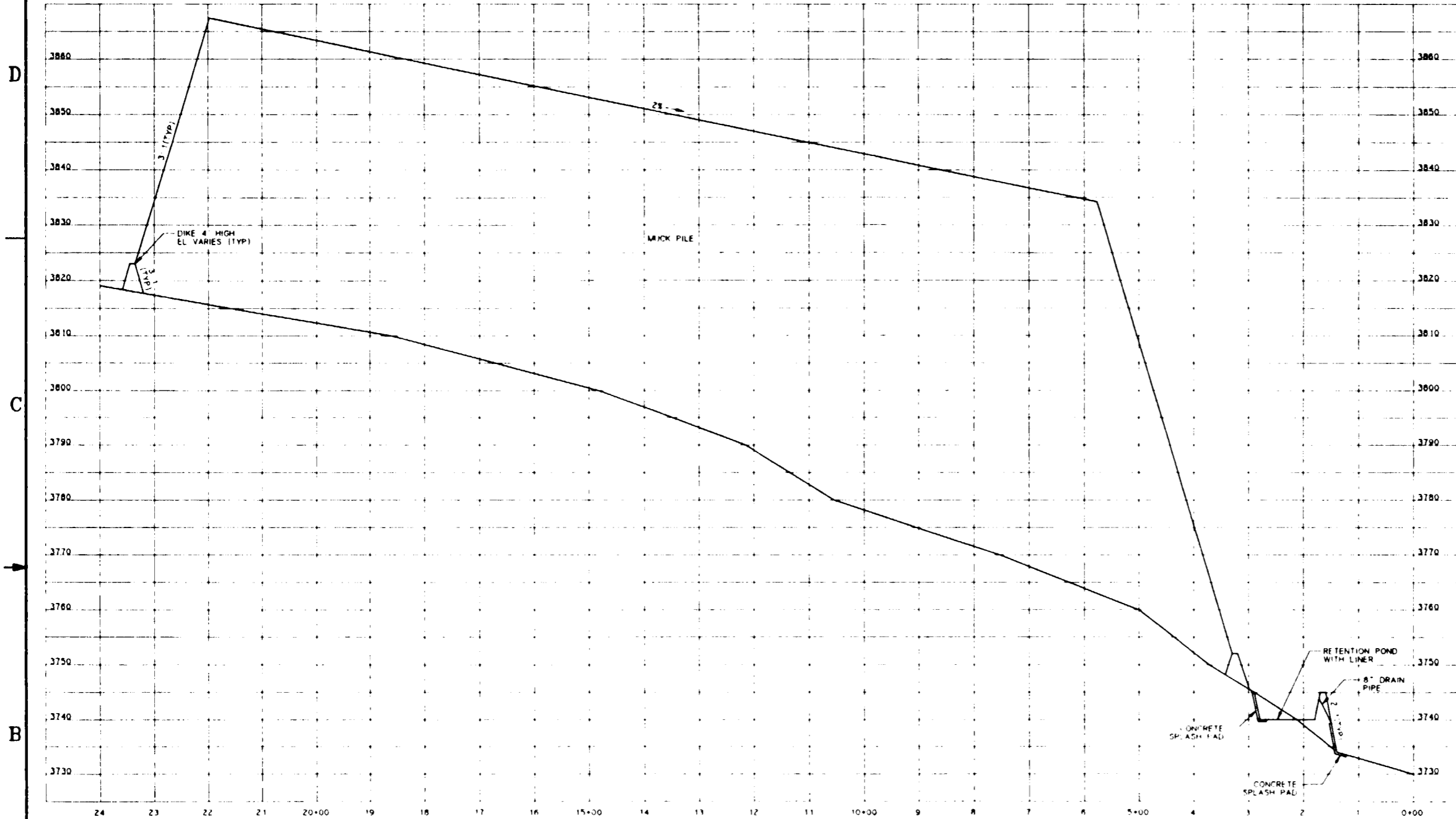
5

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3

2

1



**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card

**SECTION** A  
SCALE 1"=100' HORIZ 1"=10' VERT PL07

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VMFY	ENV	SAF	QA	TPD	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	WM	EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT MUCK AND TOPSOIL STORAGE PADS <b>SECTION</b>											
DRAWN	M.P.												
CHECKED	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>	SUBMITTED BY	DATE	DRAWING NO	REV.								
QUALITY ASSURANCE	<i>[Signature]</i>	<i>[Signature]</i>	8-21-91	YMP-025-1-CIVL-PL08	0								
YMP-0103		WBS NO 1.2.6.3.1.1		YMPO APPROVED		DATE		SHT		OF			
8-21-91		C.I. 80											

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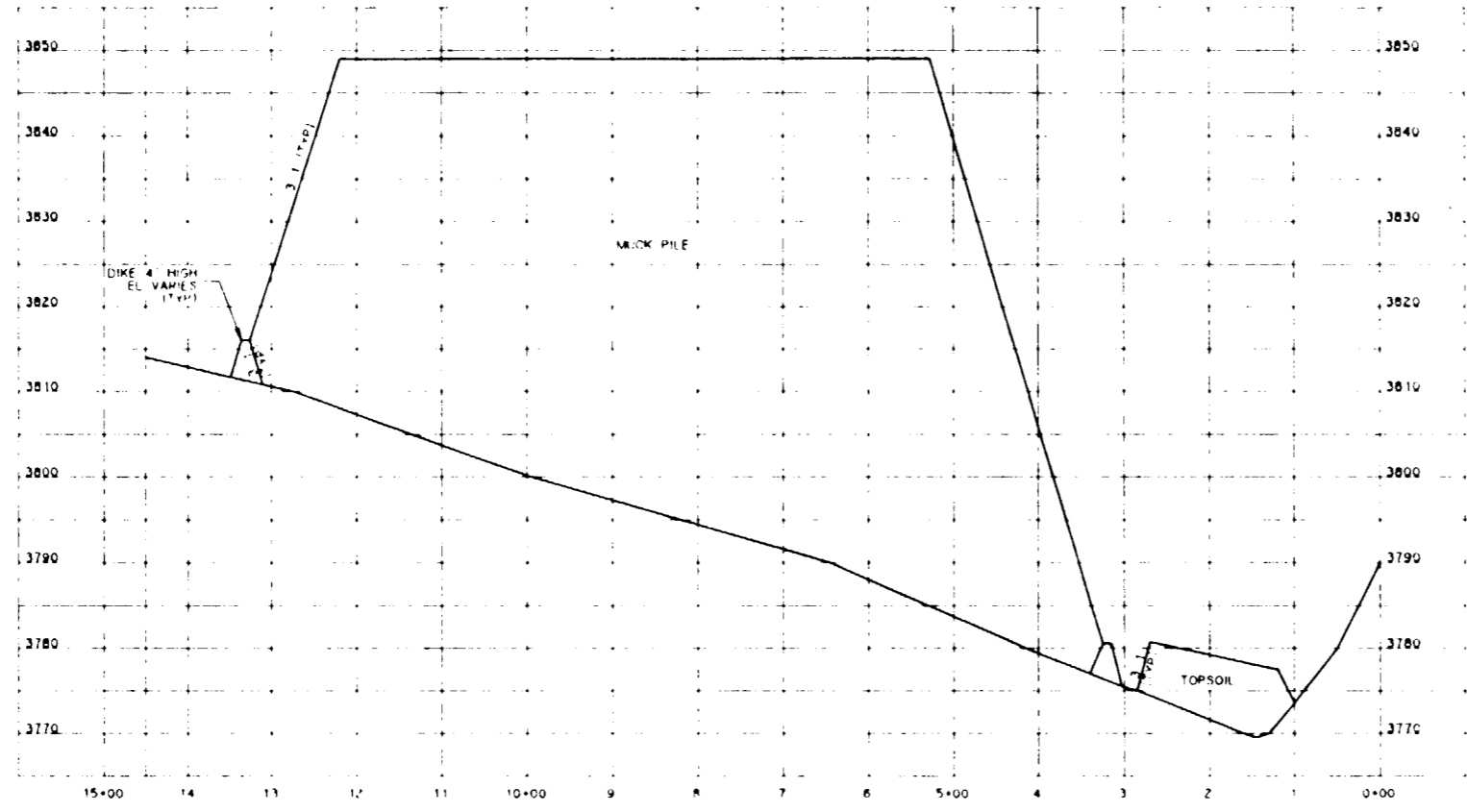
A

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A



SECTION B  
 SCALE 1" = 100' HORIZ 1" = 10' VERT PL07

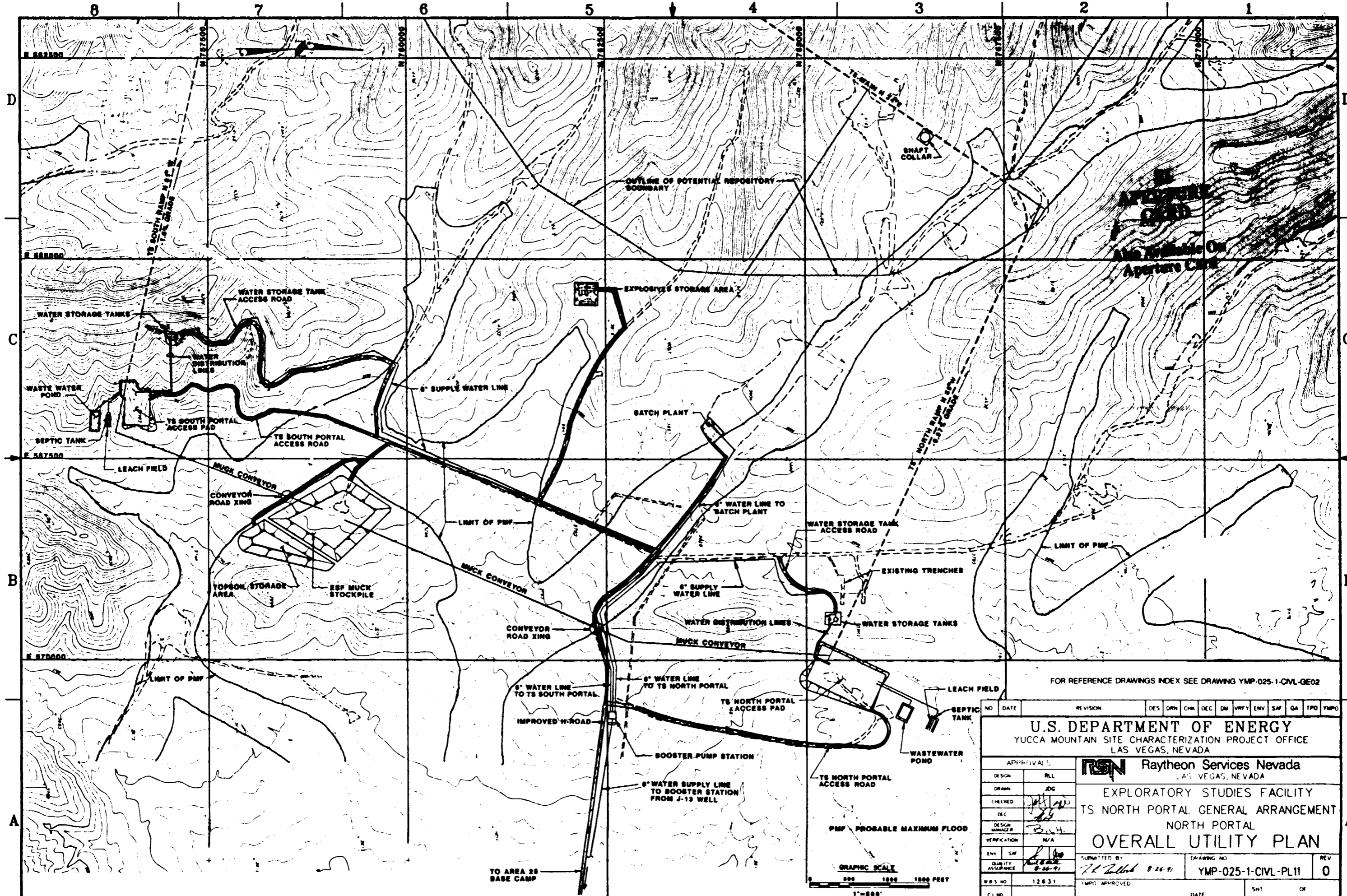
**SI APERTURE CARD**  
 Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	EXPLORARY STUDIES FACILITY												
DRAWN	TS NORTH PORTAL GENERAL ARRANGEMENT												
CHECKED	MUCK AND TOPSOIL STORAGE PADS												
DEC	SECTION												
DESIGN MANAGER													
VERIFICATION													
ENV SAF													
QUALITY ASSURANCE													
SUBMITTED BY		DATE	DRAWING NO		REV								
R. J. [Signature]		8-26-91	YMP-025-1-CIVL-PL09		0								
YMPO APPROVED		DATE	SHT		OF								

FCN  
YMP0108  
8-21-91

2118020061-133



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

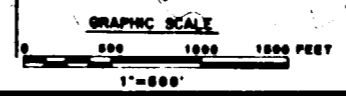
NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD

U.S. DEPARTMENT OF ENERGY  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
LAS VEGAS, NEVADA

**RSN** Raytheon Services Nevada  
LAS VEGAS, NEVADA

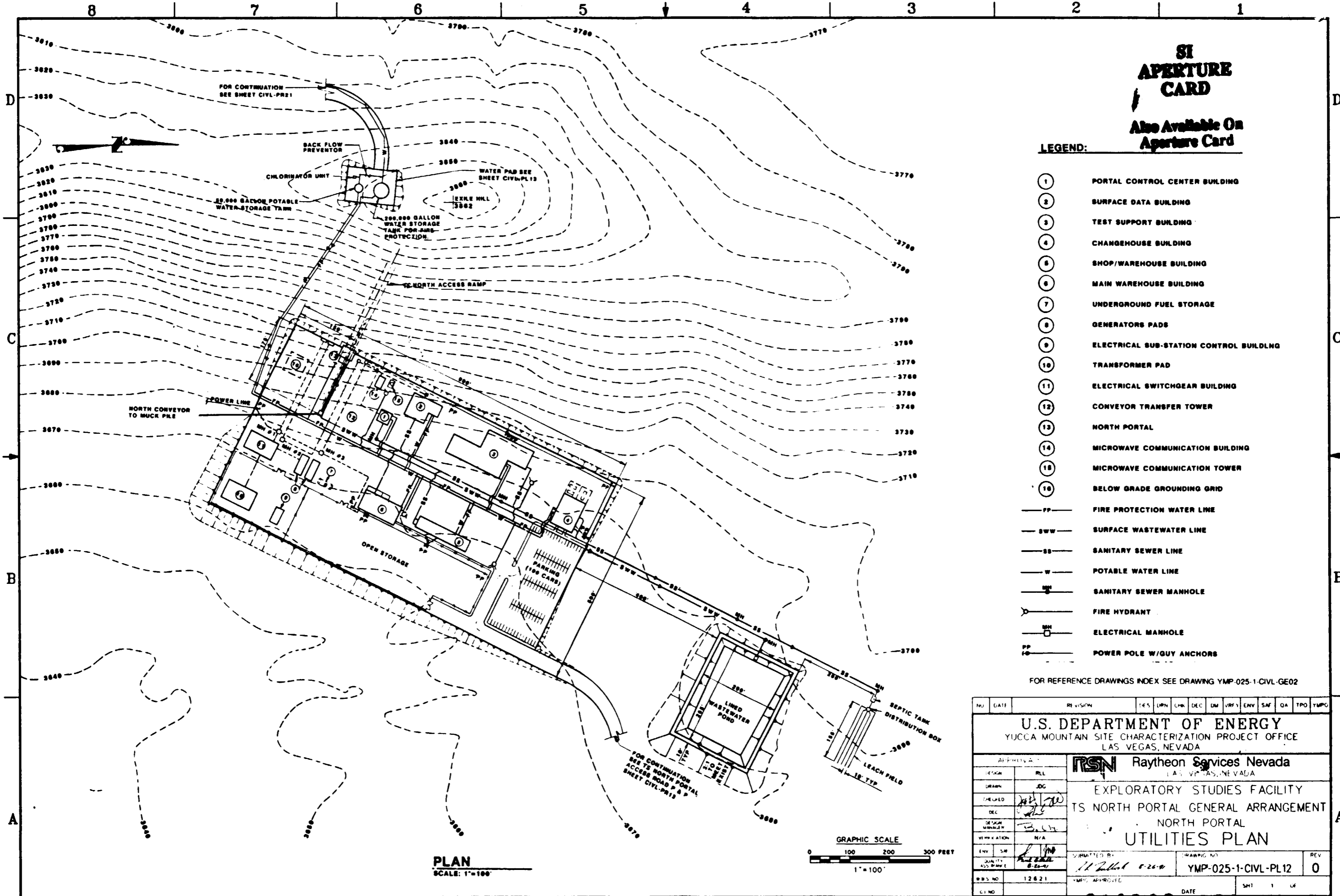
EXPLORATORY STUDIES FACILITY  
TS NORTH PORTAL GENERAL ARRANGEMENT  
NORTH PORTAL  
**OVERALL UTILITY PLAN**

DESIGN	RLI	APPROVED BY	DATE	REV
DRAWN	JDC	7.2.2008	8-16-91	0
CHECKED				
DEC				
DESIGN MANAGER				
VERIFICATION	N/A			
ENV	SAF			
QUALITY ASSURANCE				
WBS NO	12631	YMPD APPROVED	DATE	SHT
CI NO				OF



TO AREA 28  
BASE CAMP

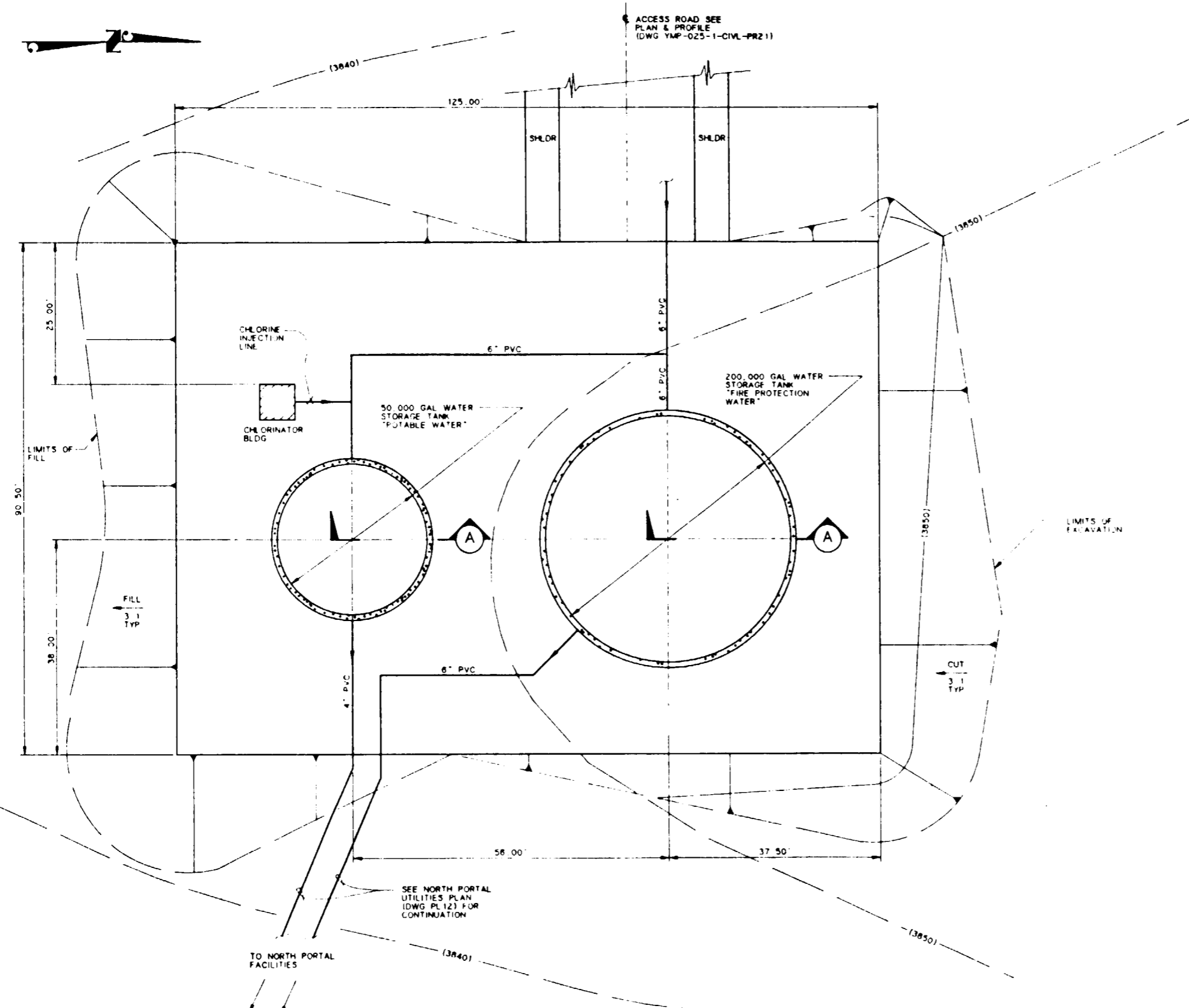
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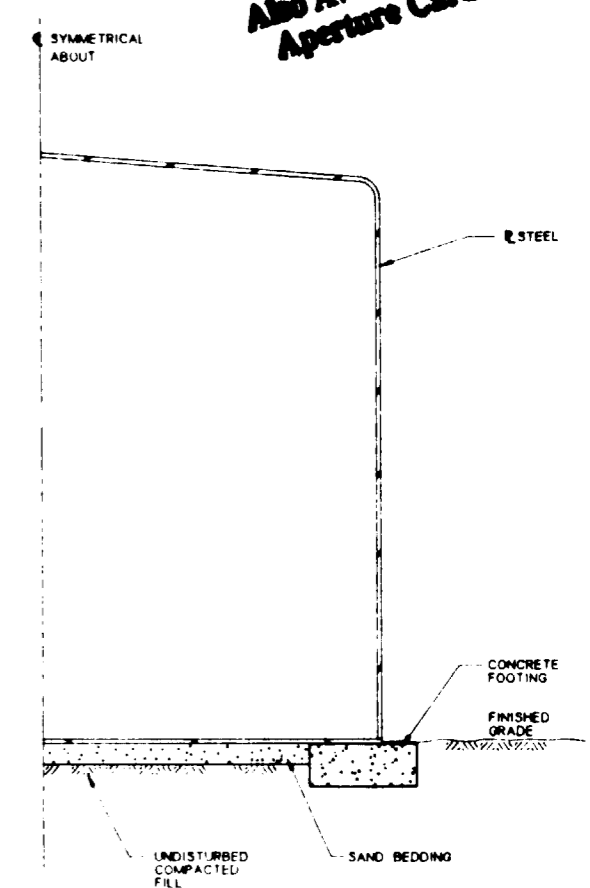
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8 7 6 5 4 3 2 1



**SI APERTURE CARD**  
 Also Available On Aperture Card

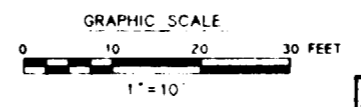


NOTE  
 SEE PLAN FOR TANK CAPACITIES

SECTION A  
 NOT TO SCALE

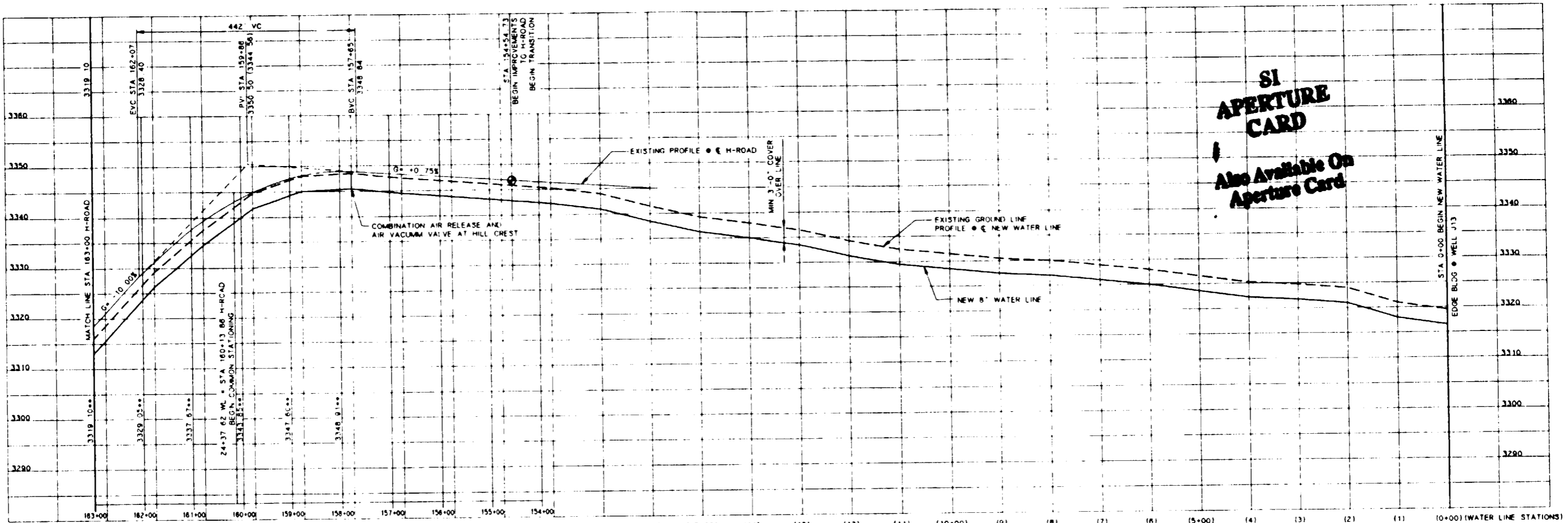
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

**WATER STORAGE TANK SITE & GRADING PLAN**  
 SCALE 1" = 10'



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RLI	EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT WATER STORAGE TANK SITE & GRADING PLAN											
DRAWN	CLG	SUBMITTED BY: <i>R.L. Bell</i> DATE: 8-26-91 DRAWING NO: YMP-025-1-CIVL-PL13 REV: 0 YMPO APPROVED: _____ DATE: _____ SHIT OF _____											
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV	SAF	FCH: YMP0050 W.B. NO: 1,2,3,1,1 C.U. NO:											

9112020061-136

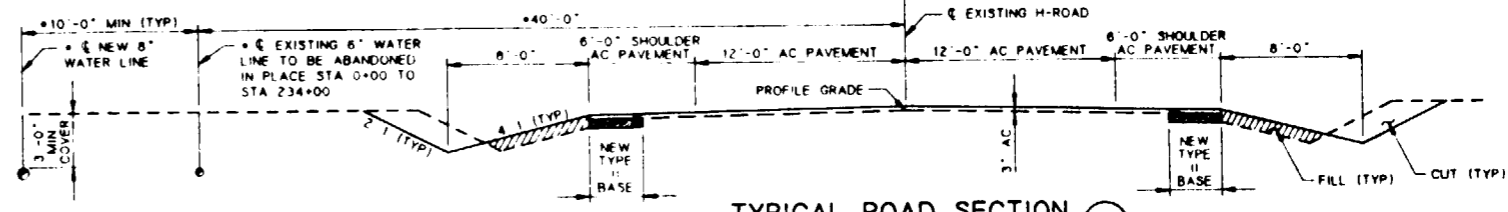


**SI APERTURE CARD**  
 Also Available On Aperture Card

\*\* TOP OF EXISTING H-ROAD IMPROVEMENTS

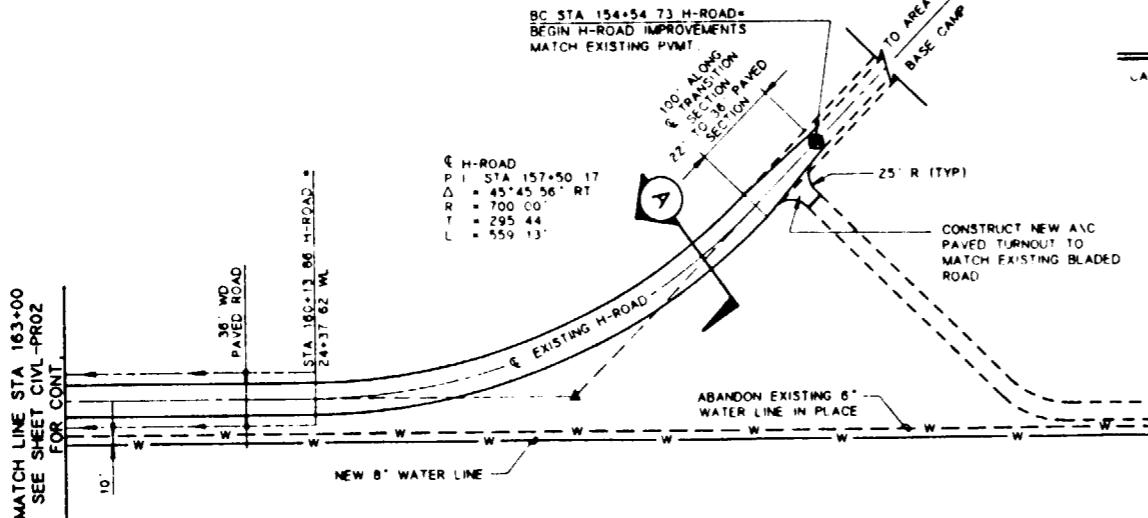
**PROFILE**

SCALE 1"=100' HORIZ 1"=10' VERT



**TYPICAL ROAD SECTION A**

SCALE 1"=5'

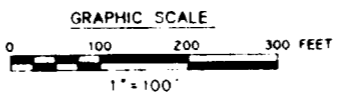


**PLAN**

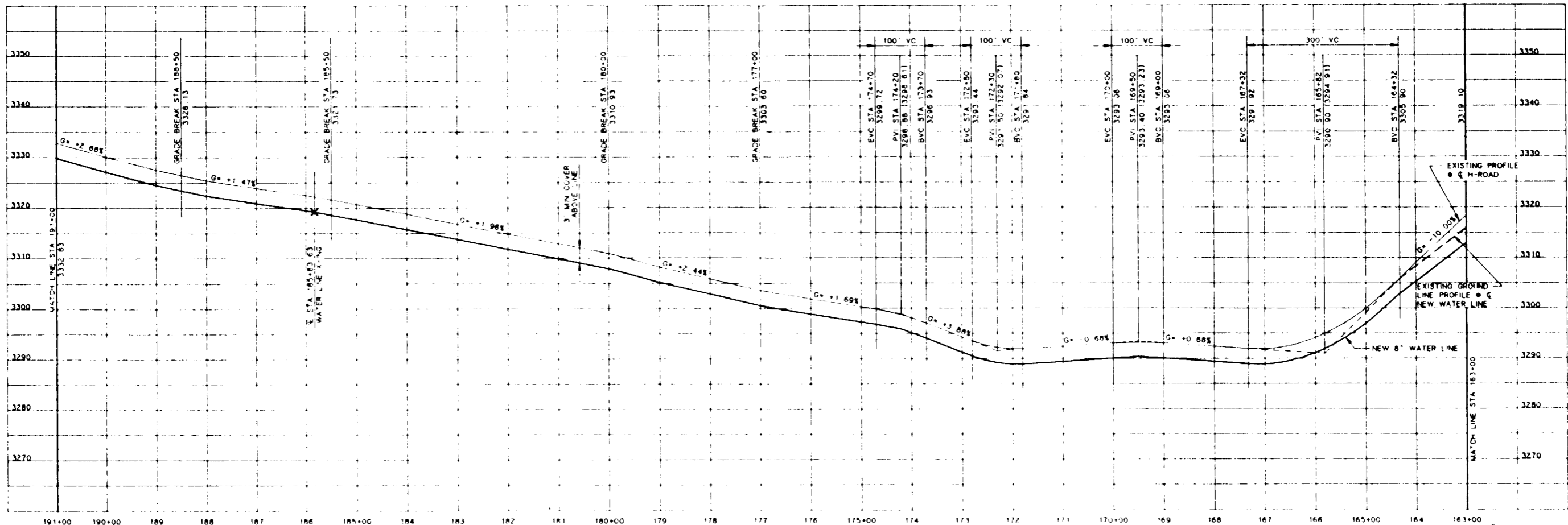
SCALE 1"=100'

**NOTE:**  
 1. EXACT LOCATION OF UTILITIES SHALL BE VERIFIED BY CONTRACTOR IN THE FIELD BEFORE CONSTRUCTION.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

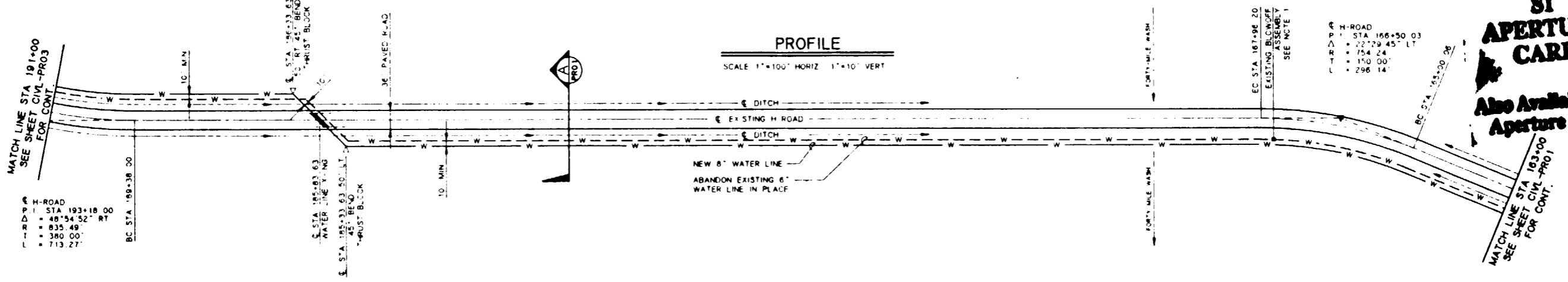


NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	MRFY	ENV	SAF	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT H-ROAD IMPROVEMENTS <b>PLAN AND PROFILE</b>													
APPROVALS													
DESIGN	RLI												
DRAWN	MJP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV.								
R.L. Sullivan		8-26-91	YMP-025-1-CIVL-PR01		0								
YMPD APPROVED		DATE	SHT		OF								



PROFILE

SCALE 1"=100' HORIZ 1"=10' VERT



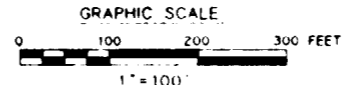
PLAN

SCALE 1"=100'

NOTE:

- 1. EXACT LOCATION OF UTILITIES SHALL BE VERIFIED BY CONTRACTOR IN THE FIELD BEFORE CONSTRUCTION.

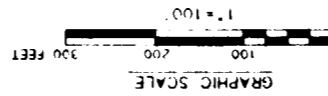
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



**SI APERTURE CARD**  
 Also Available On Aperture Card

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RL	EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT H-ROAD IMPROVEMENTS <b>PLAN AND PROFILE</b>											
DRAWN	MLP	SUBMITTED BY		DATE		DRAWING NO		REV.					
CHECKED	Jett	7.12.91		8-26-91		YMP-025-1-CIVL-PRO2		0					
DEC	Jett	YMPO APPROVED		DATE		SHT		OF					
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	SAF												
QUALITY ASSURANCE	SAF												
FCN													
YMP0069													
9-21-91													

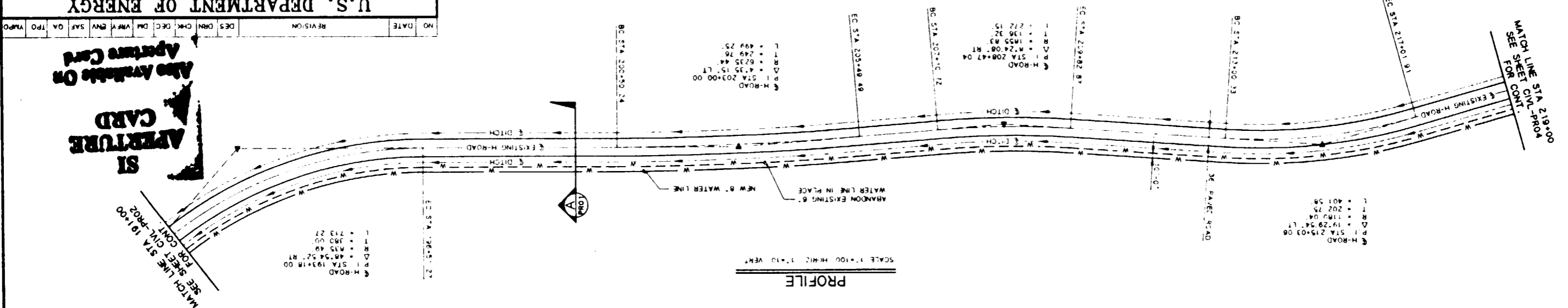
U.S. DEPARTMENT OF ENERGY YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA		APPROVALS	
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL-GENERAL ARRANGEMENT H-ROAD IMPROVEMENTS PLAN AND PROFILE		DESIGN M.P.	DATE
DRAWN		DATE	DATE
CHECKED		DATE	DATE
REVISION		DATE	DATE
NO.		DATE	DATE
DES. DRN.		CHK.	DEC.
DM		VM	RM
SAF.		QA	TPO
YMP			



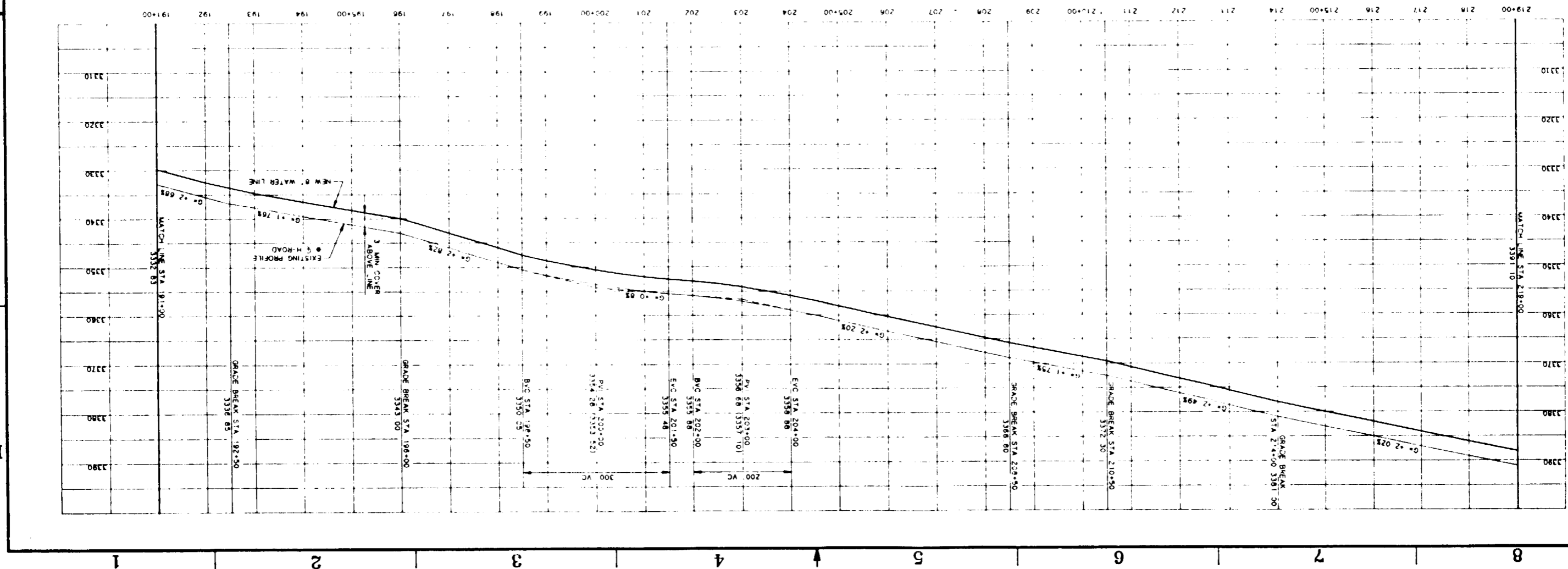
FOR REFERENCE DRAWINGS REFER SEE DRAWING YMP-025-1-CIVL-GEOL

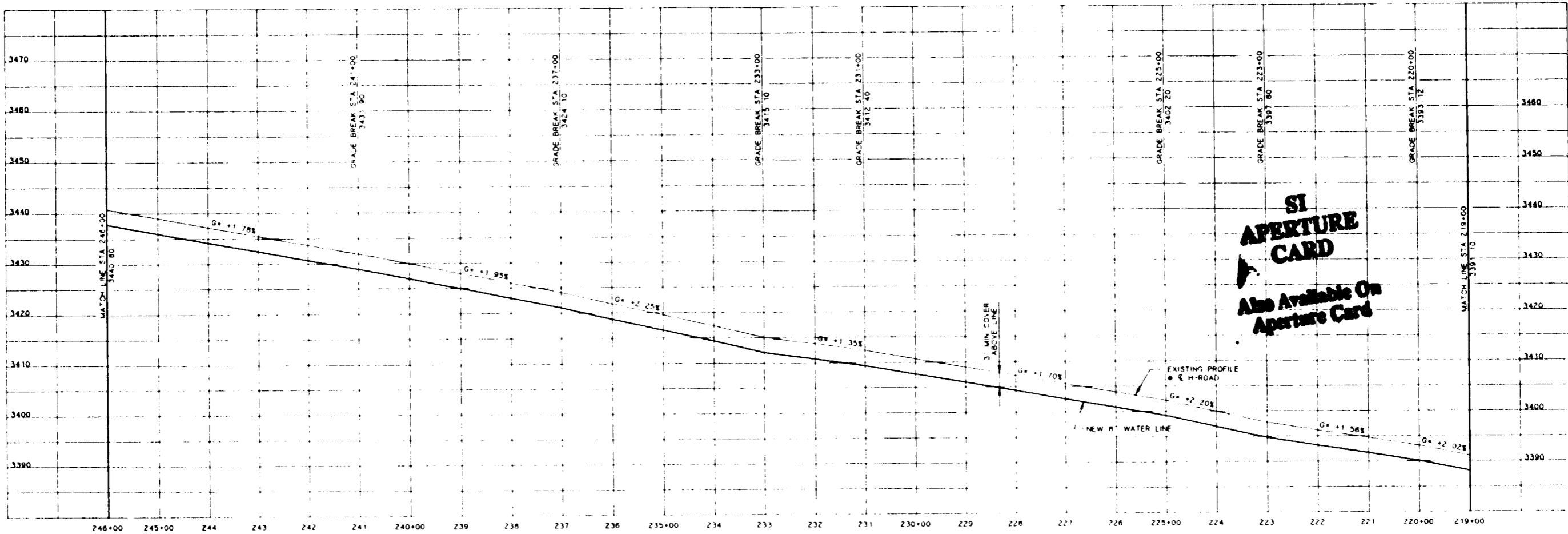
PLAN  
SCALE 1"=100'

**SI**  
**APERTURE**  
**CARD**  
Also Available On  
Aperture Card



PROFILE  
SCALE 1"=100' HORIZ. 1"=10' VERT.



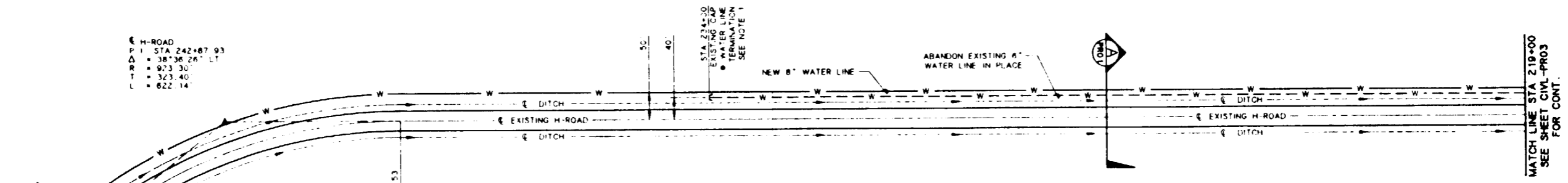


**SI APERTURE CARD**  
 Also Available On Aperture Card

**PROFILE**

SCALE 1"=100' HORIZ 1"=10' VERT

H-ROAD  
 P I STA 242+87.93  
 Δ = 38°36'26" LT  
 R = 923.30  
 T = 323.40  
 L = 622.14'



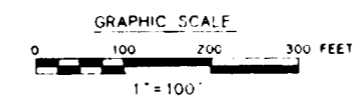
**PLAN**

SCALE 1"=100'

**NOTE:**

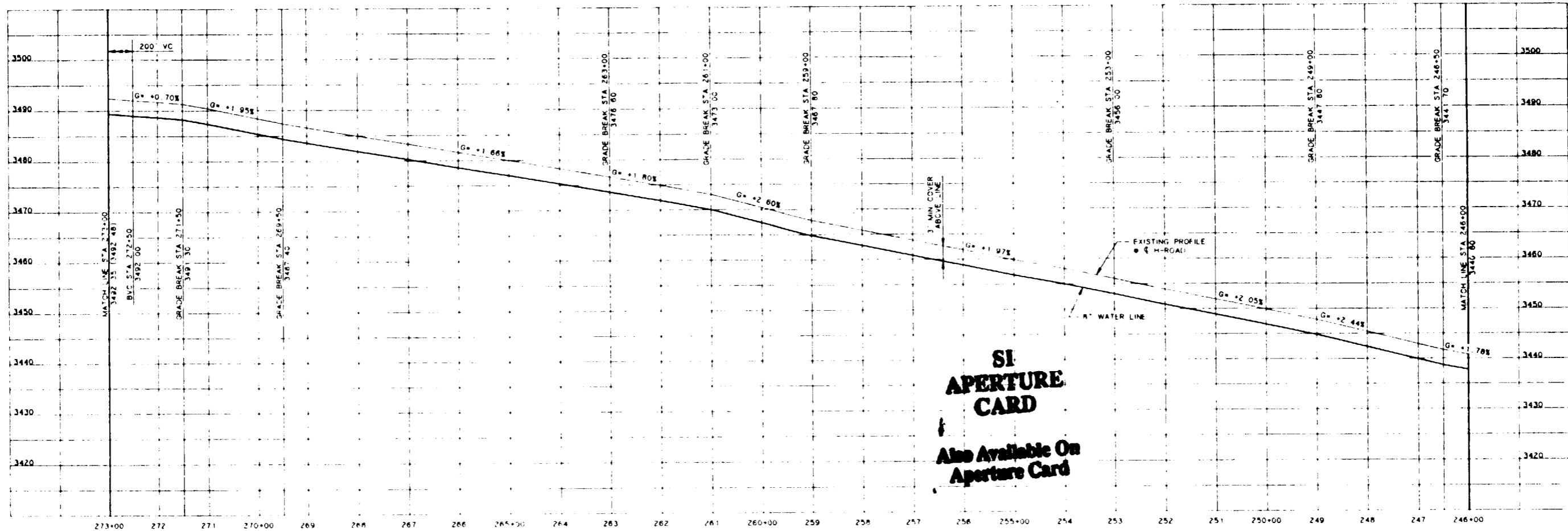
- EXACT LOCATION OF UTILITIES SHALL BE VERIFIED BY CONTRACTOR IN THE FIELD BEFORE CONSTRUCTION.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GEO2



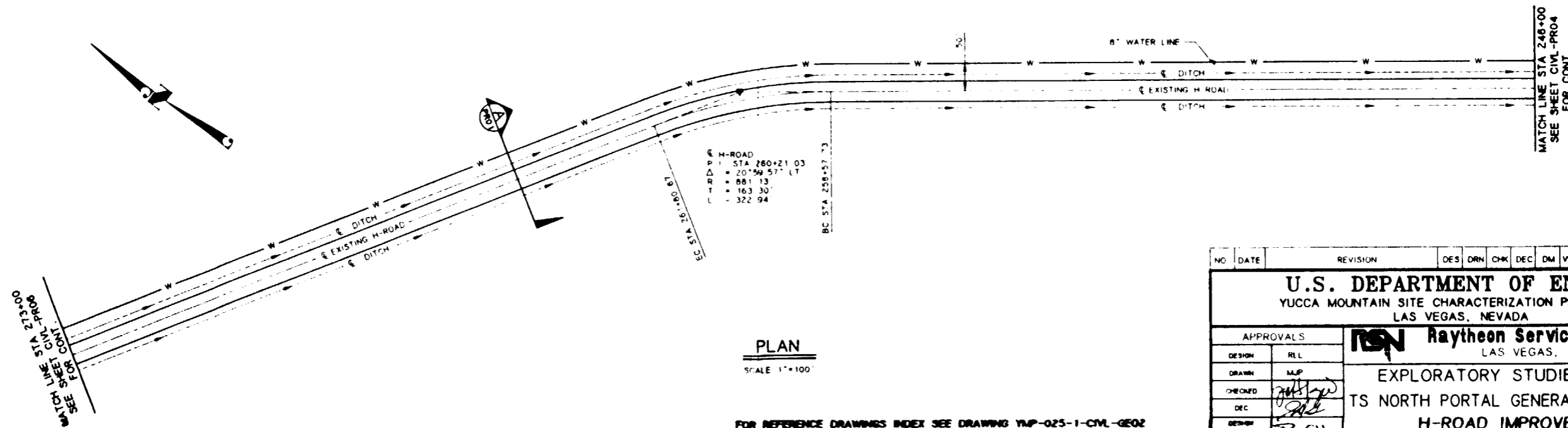
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RL		EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT H-ROAD IMPROVEMENTS <b>PLAN AND PROFILE</b>										
DRAWN	MJP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A		SUBMITTED BY		DATE		DRAWING NO.		REV.				
ENV SAF	<i>[Signature]</i>		<i>[Signature]</i>		8-21-91		YMP-025-1-CIVL-PR04		0				
QUALITY ASSURANCE	8-21-91		YMP-025-1-CIVL-PR04		DATE		SHT		OF				
FCN	YMP0071		W.B.S. NO		1, 2, 3, 1, 1		DATE		SHT		OF		
C.I. NO.	8-21-91		DATE		SHT		OF						

9118020061-140



PROFILE

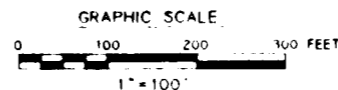
SCALE 1"=100' HORIZ 1"=10' VERT



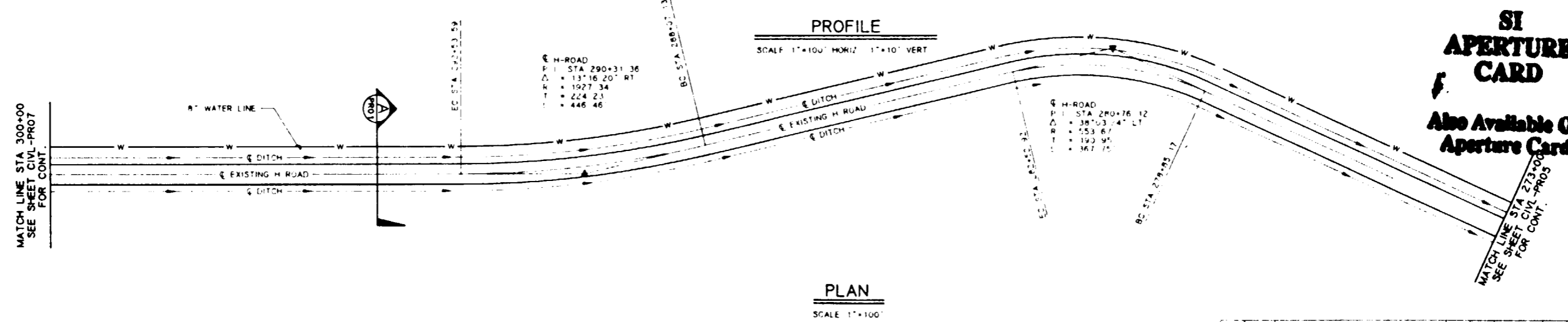
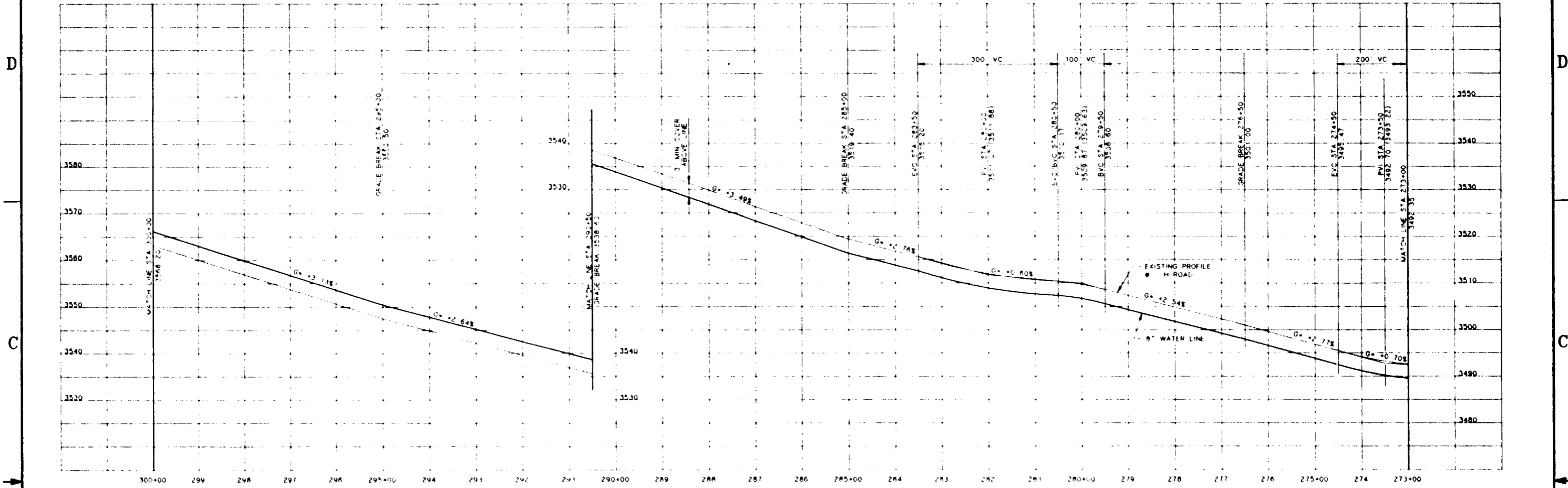
PLAN

SCALE 1"=100'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



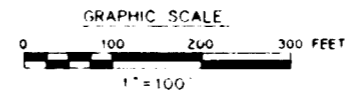
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APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	EXPLORATORY STUDIES FACILITY												
DRAWN	TS NORTH PORTAL GENERAL ARRANGEMENT												
CHECKED	H-ROAD IMPROVEMENTS												
DEC	PLAN AND PROFILE												
DESIGN	SUBMITTED BY <i>[Signature]</i> DATE <i>8-26-91</i> DRAWING NO. <b>YMP-025-1-CIVL-PR05</b> REV. <b>0</b> YMP/O APPROVED _____ DATE _____ SHT _____ OF _____												
VERIFICATION													
ENV													
SAF													
QUALITY ASSURANCE	W.B.S. NO. 1.2.6.3.1.1 C.I. NO.												

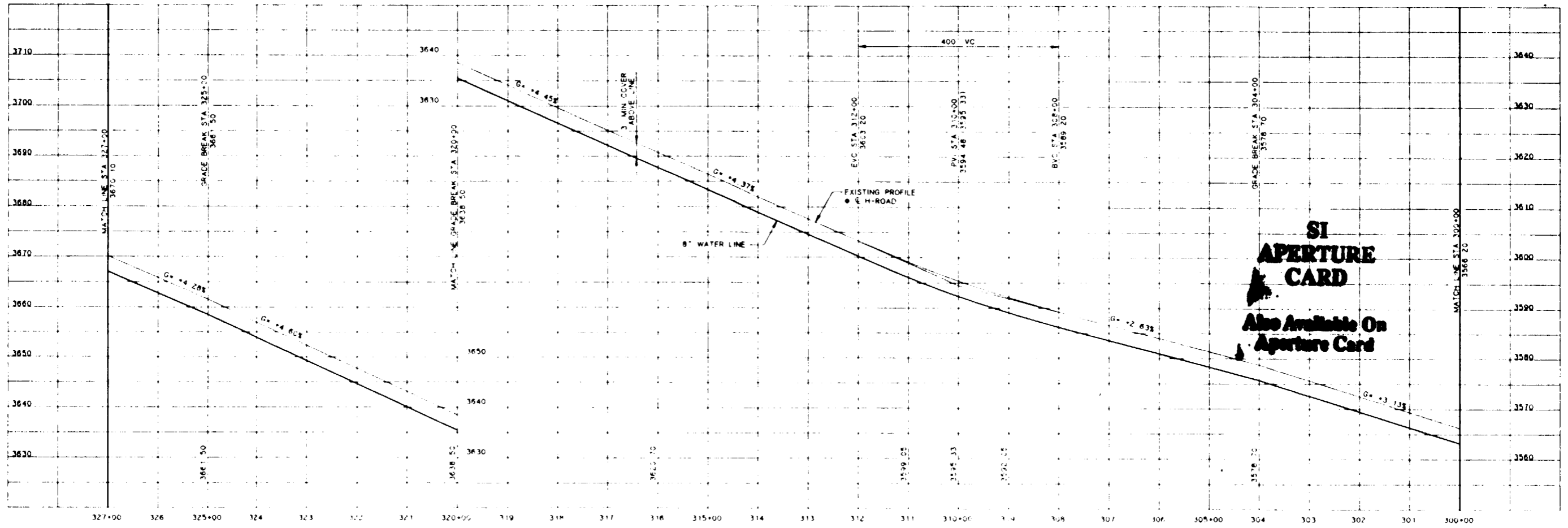


**SI APERTURE CARD**  
Also Available On Aperture Card

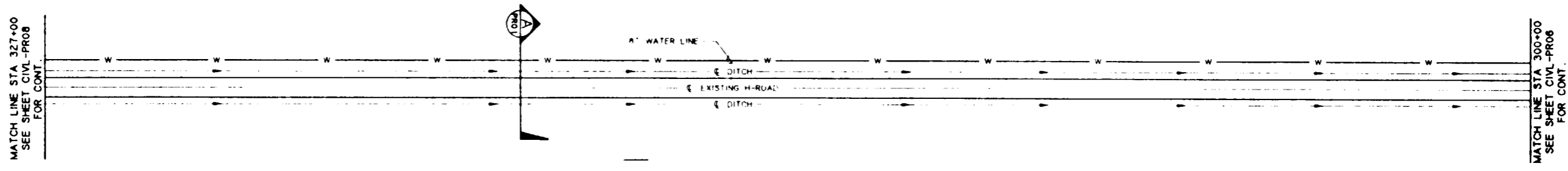
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	REL	EXPLORATORY STUDIES FACILITY TS NORTH PORTAL-GENERAL ARRANGEMENT H-ROAD IMPROVEMENTS <b>PLAN AND PROFILE</b>											
DRAWN	MJP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A	SUBMITTED BY		DATE		DRAWING NO		REV.					
ENV SAF	<i>[Signature]</i>	71 <i>[Signature]</i>		5-2-91		YMP-025-1-CIVL-PRO6		0					
QUALITY ASSURANCE	<i>[Signature]</i>	YMPO APPROVED		DATE		SHT		OF					
FCN													
YMP0073													
W B S NO	1, 2, 5, 3, 1, 1												
D I NO													

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GEO2



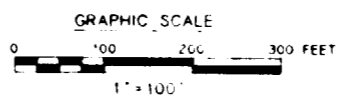


**PROFILE**  
SCALE 1"=100' HORIZ 1"=10' VERT



**PLAN**  
SCALE 1"=100'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMP/C
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLI		<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>H-ROAD IMPROVEMENTS</b> <b>PLAN AND PROFILE</b>										
DRAWN	MJP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	Z.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>		SUBMITTED BY		DATE		DRAWING NO		REV.				
QUALITY ASSURANCE	8-26-91		<i>[Signature]</i>		8-26-91		YMP-025-1-CIVL-PR07		0				
YMP/C APPROVED			DATE		SHT		OF						

911800061-148



D

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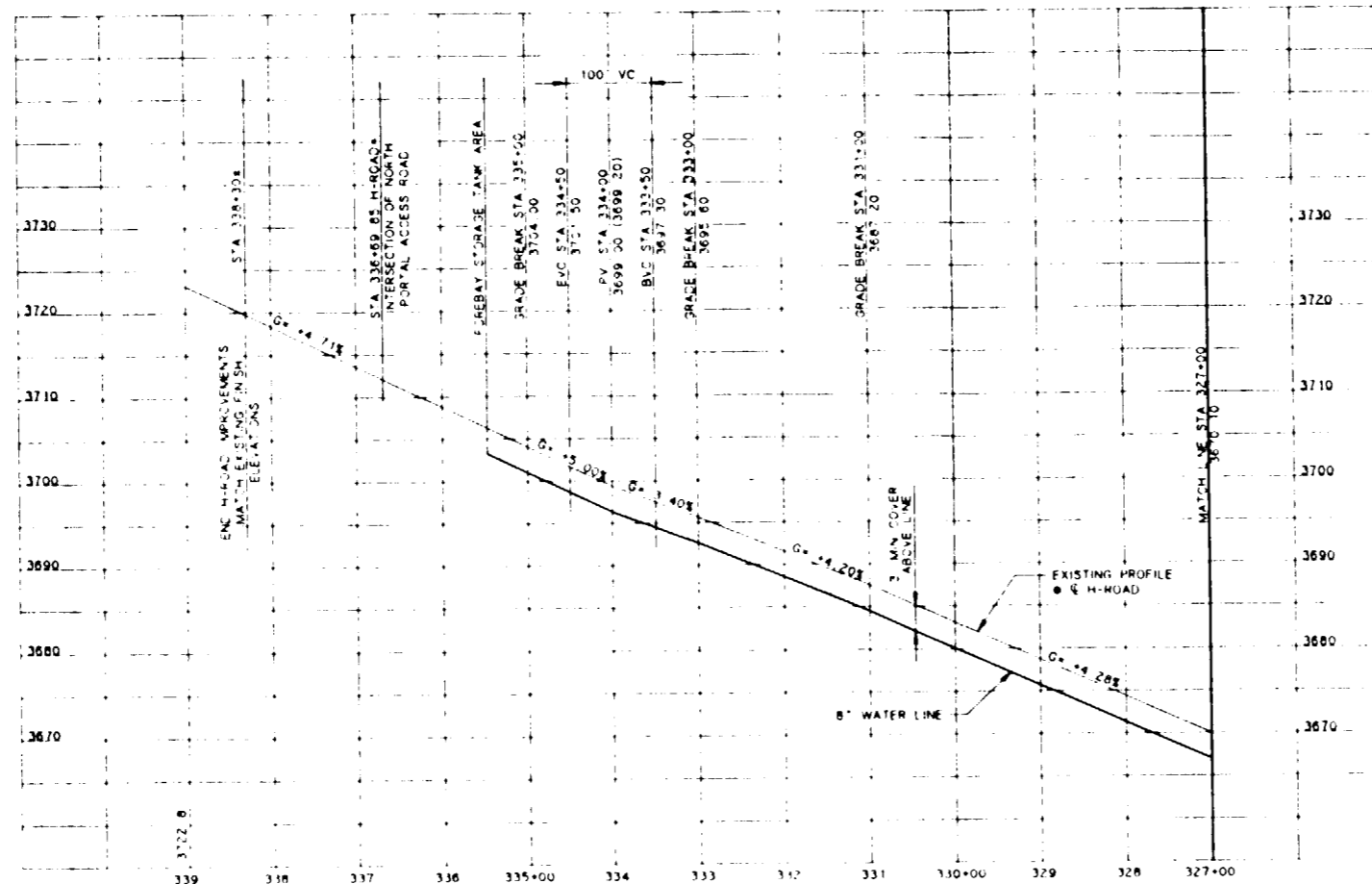
A

D

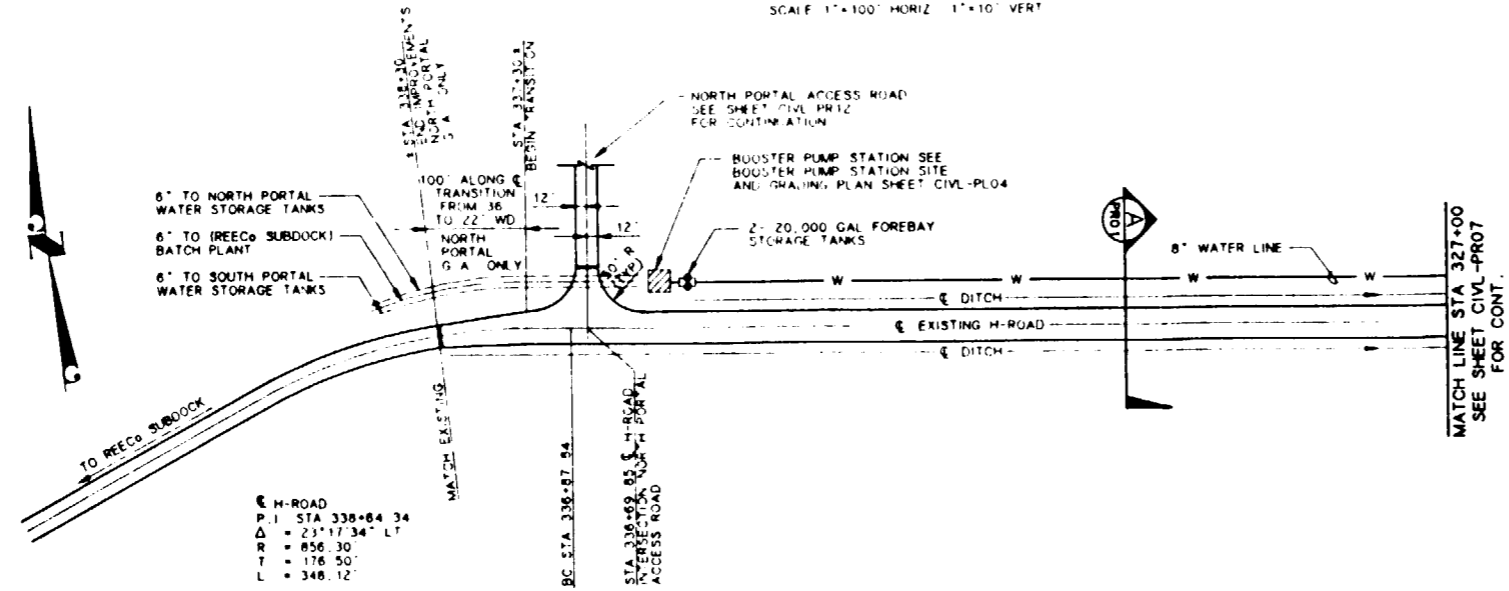
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B

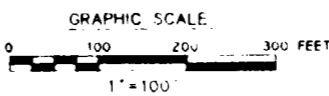
A



**PROFILE**  
SCALE 1"=100' HORIZ 1"=10' VERT



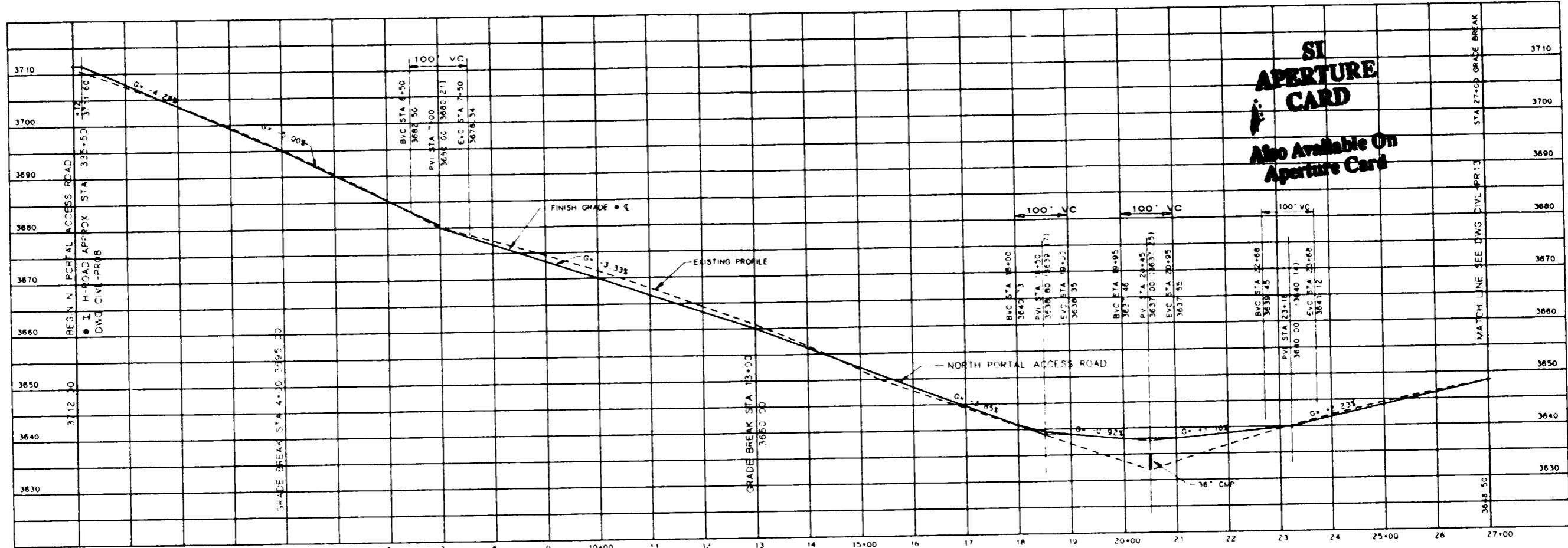
**PLAN**  
SCALE 1"=100'



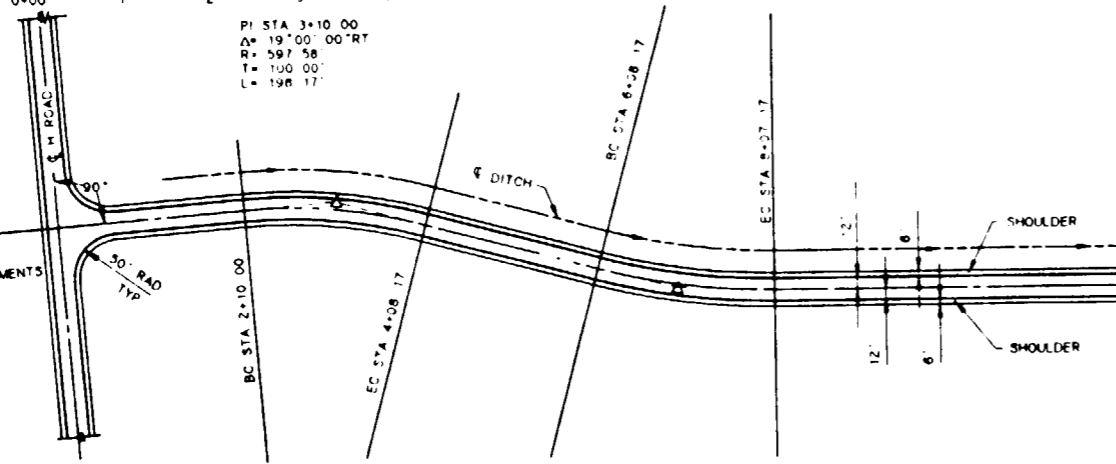
**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VMFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL-GENERAL ARRANGEMENT</b> <b>H-ROAD IMPROVEMENTS</b> <b>PLAN AND PROFILE</b>													
APPROVALS													
DESIGN	RLI												
DRAWN	MJP												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV SAF ASSURANCE	[Signature]												
SUBMITTED BY		DATE	DRAWING NO		REV								
[Signature]		8-26-91	YMP-025-1-CIVL-PR08		0								
YMP0 APPROVED		DATE		SHT		OF							
[Signature]													

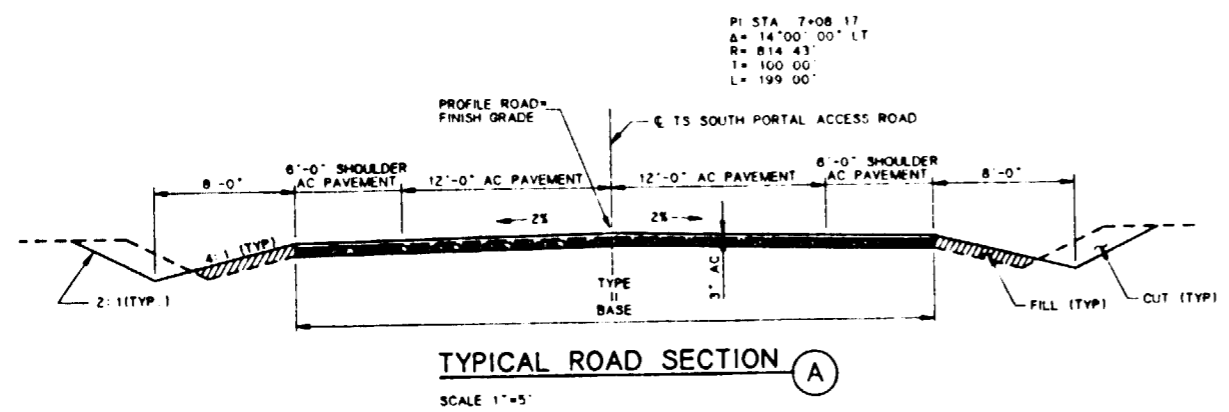


**SI APERTURE CARD**  
Also Available On Aperture Card



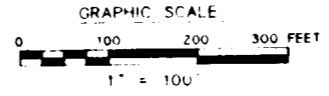
**PROFILE**  
SCALE 1" = 100' HORIZ  
1" = 10' VERT

**PLAN**  
SCALE 1" = 100'

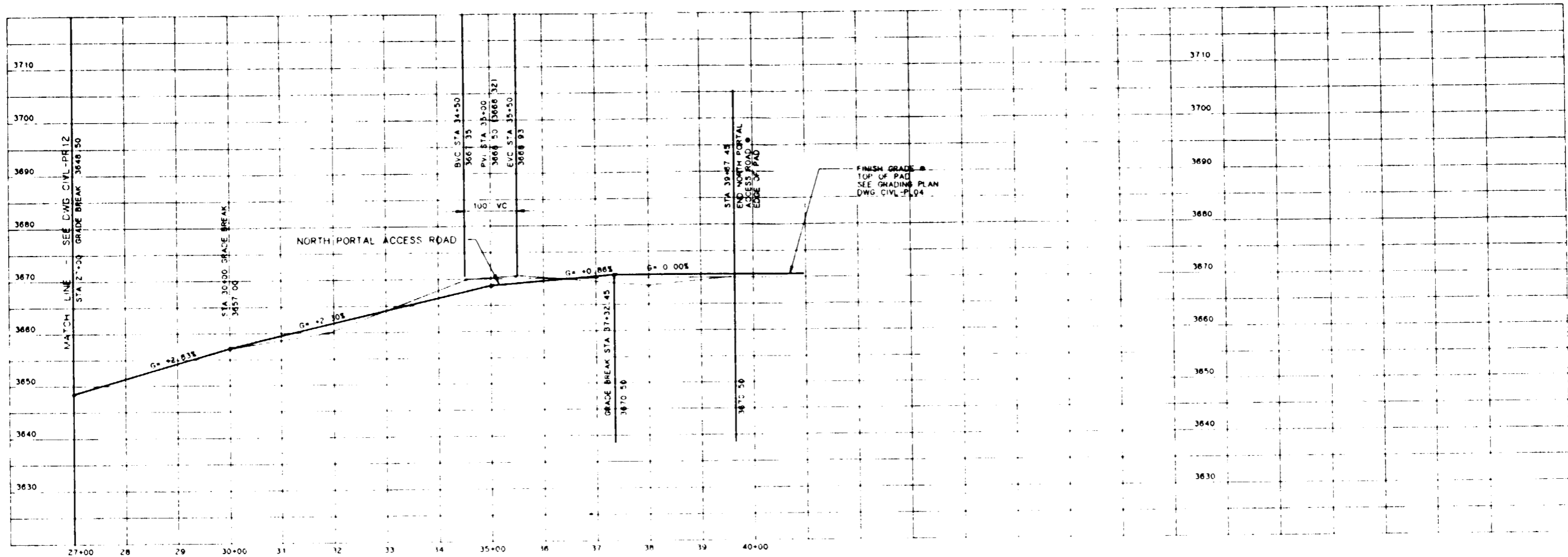


**TYPICAL ROAD SECTION A**  
SCALE 1" = 5'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

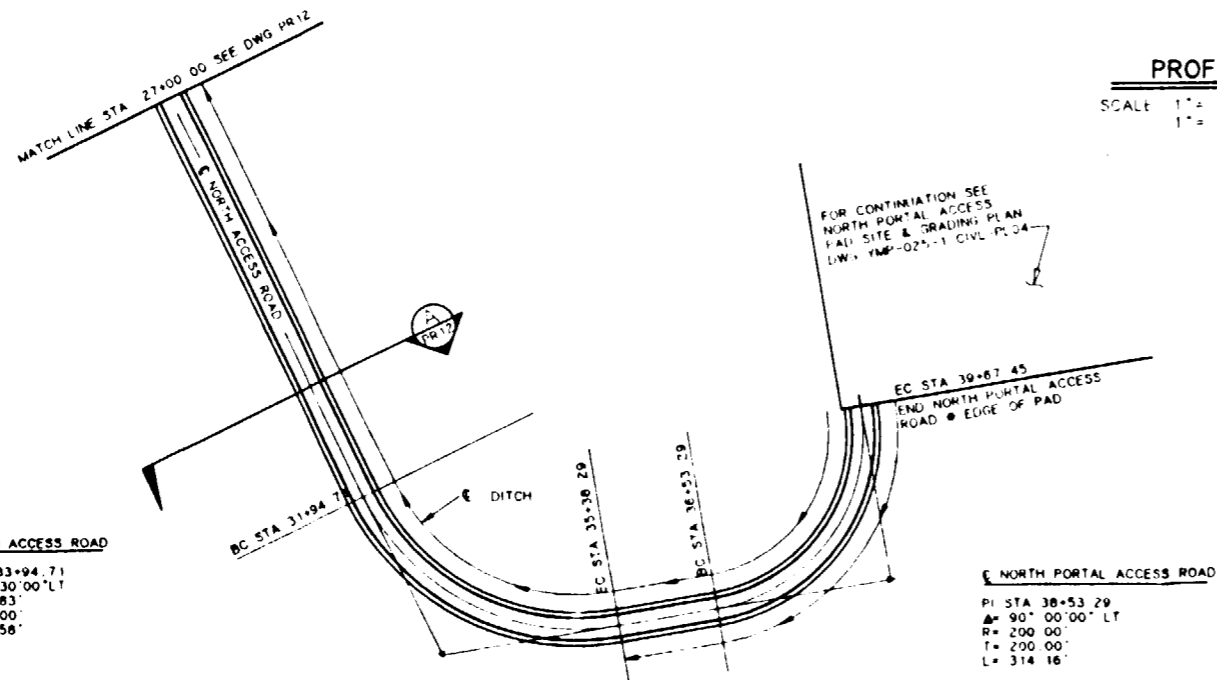


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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>APPROVALS</b>														
DESIGN	RLL													
DRAWN	JMK													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV SAF	<i>[Signature]</i>													
QUALITY ASSURANCE	<i>[Signature]</i>													
SUBMITTED BY			DATE			DRAWING NO.			REV.					
J.L. [Signature]			8-16-91			YMP-025-1-CIVL-PR12			0					
YMPC APPROVED												DATE	SHT	OF



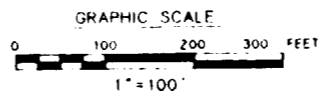
PROFILE

SCALE 1" = 100' HORIZ  
1" = 10' VERT



PLAN

SCALE 1" = 100'



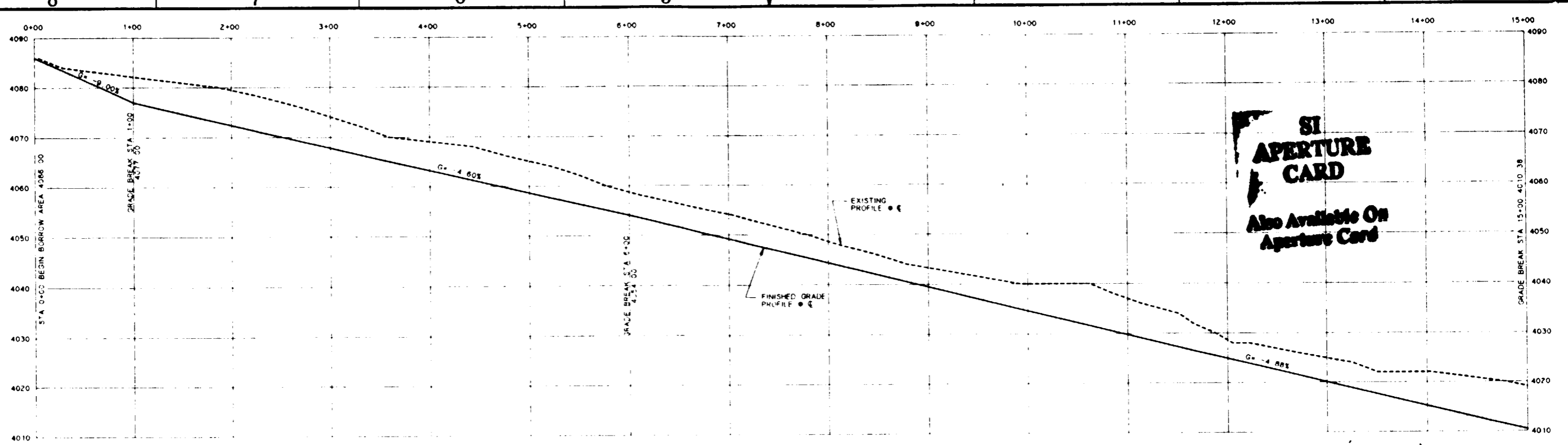
**SI**  
**APERTURE**  
**CARD**

Also Available On  
Aperture Card

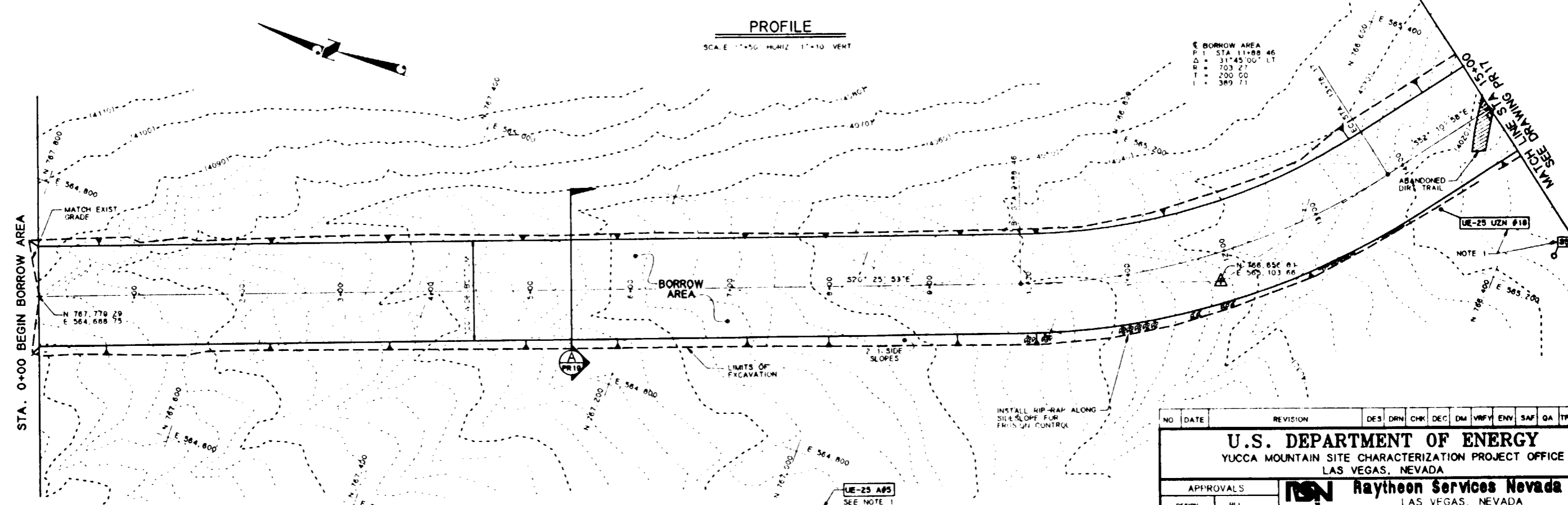
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL-GENERAL ARRANGEMENT ACCESS ROAD <b>PLAN AND PROFILE</b>													
DESIGN		RLI		DRAWN		DRT		CHECKED		DEC		DESIGN MANAGER	
VERIFICATION		N/A		ENV SAF		QUALITY ASSURANCE		SUBMITTED BY		DATE		DRAWING NO	
FCN		YMP0077		W B S NO		1 2 6 3 1 1		YUCCA APPROVED		DATE		REV	
8-21-81		C I NO						7-26-91		YMP-025-1-CIVL-PR13		0	

**SI APERTURE CARD**  
 Also Available On Aperture Card



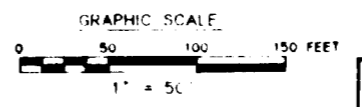
**PROFILE**  
 SCALE: 1" = 50' HORIZ. 1" = 10' VERT.



**PLAN**  
 SCALE: 1" = 50'

- NOTES**
1. ITEMS REQUIRE INTERFACE CONTROL MEASURES PER AP5 190
  2. ALL CONSTRUCTION FEATURES, MATERIALS TEST AND DETAILS SHALL CONFORM TO THE PROJECT SPECIFICATIONS
  3. CONTRACTOR TO REMOVE DESIGNATED MATERIAL FROM SITE AND TRANSFER TO STORAGE AREA AT TOPSOIL STORAGE PAD

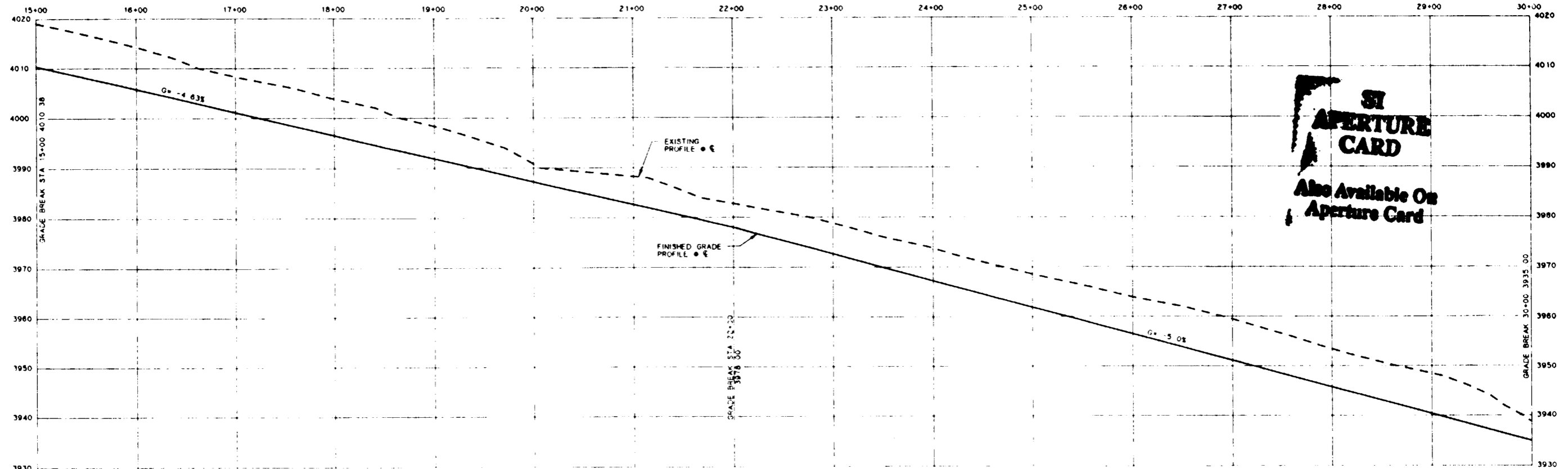
FOR REFERENCE DRAWINGS INDEX  
 SEE DRAWING YMP-025-1-CIVL-GEO2



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>APPROVALS</b>			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	HLL												
DRAWN	DRT												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
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VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO.		REV.								
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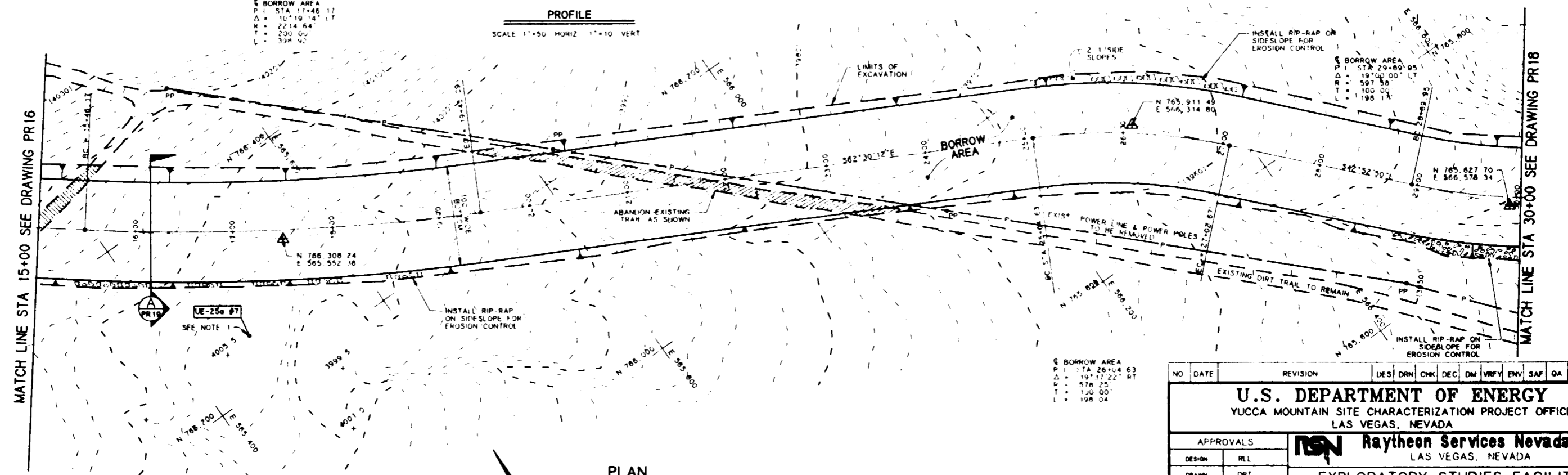
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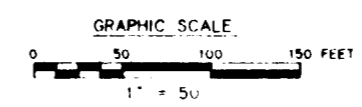
**SI APERTURE CARD**  
Also Available On Aperture Card

**PROFILE**  
SCALE 1"=50' HORIZ 1"=10' VERT

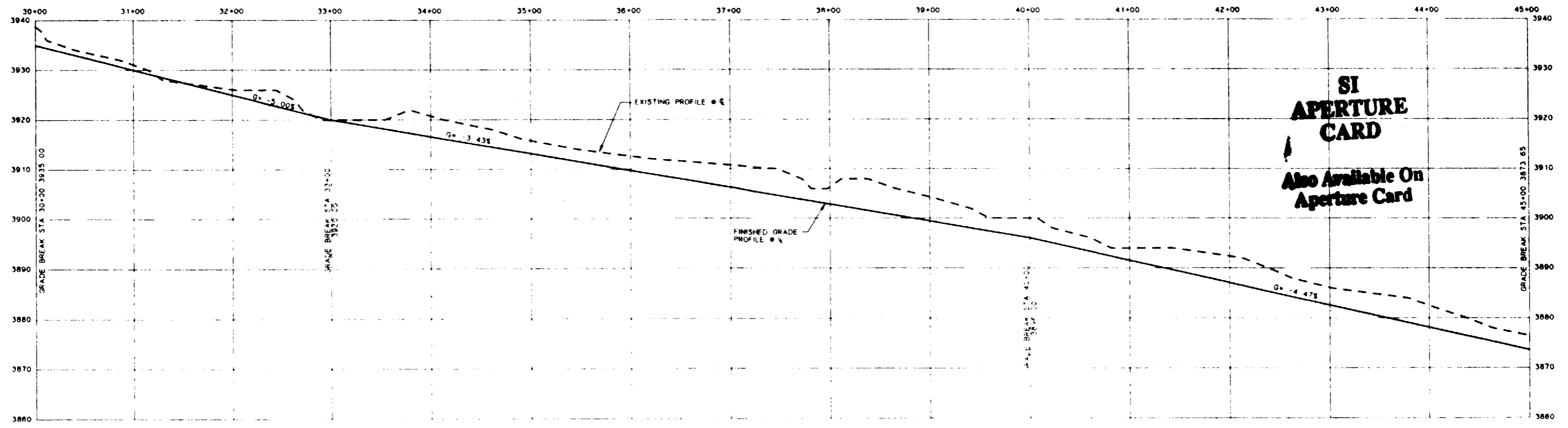


**PLAN**  
SCALE 1"=50'

- NOTES
1. ITEMS REQUIRE INTERFACE CONTROL MEASURES PER APD 190
  2. ALL CONSTRUCTION FEATURES, MATERIALS TEST AND DETAILS SHALL CONFORM TO THE PROJECT SPECIFICATIONS
  3. CONTRACTOR TO REMOVE DESIGNATED MATERIAL FROM SITE AND TRANSFER TO STORAGE AREA AT TOPSOIL STORAGE PAD

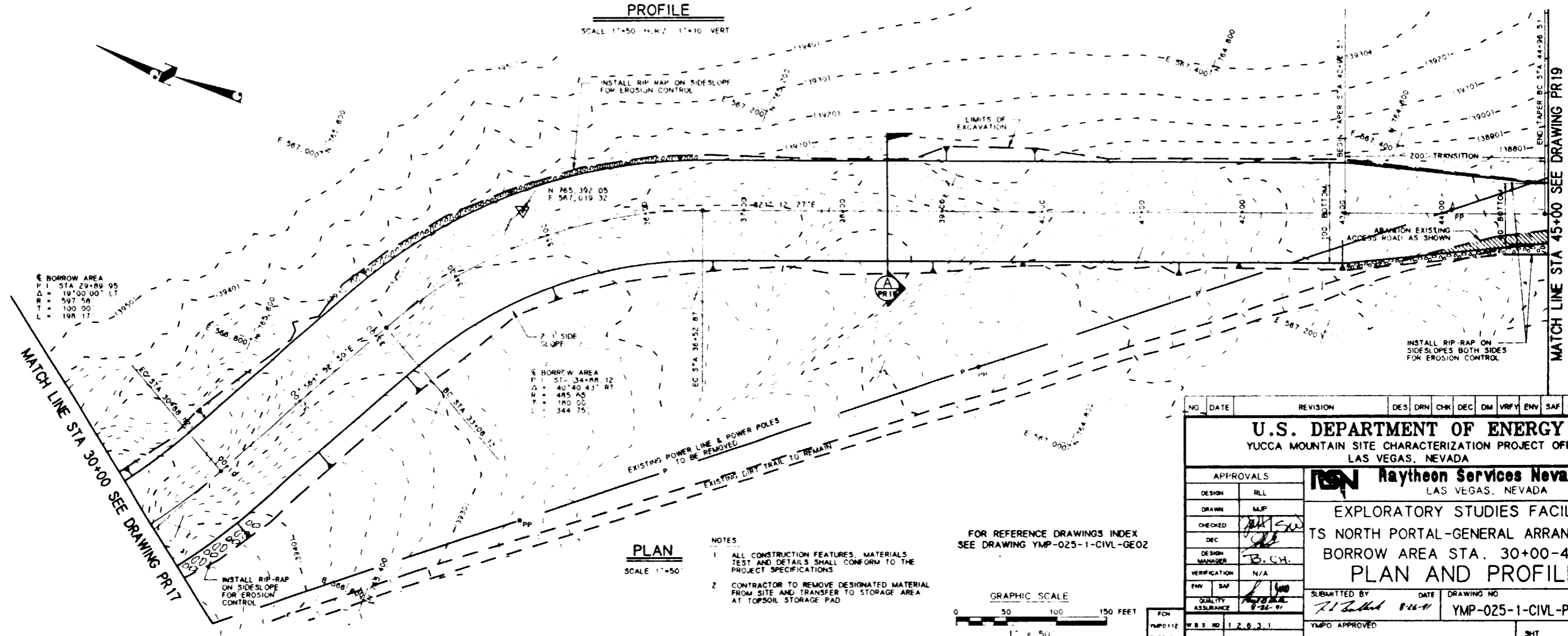


NO.	DATE	REVISION	UES	DRM	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLI		EXPLORATORY STUDIES FACILITY TS NORTH PORTAL-GENERAL ARRANGEMENT BORROW AREA STA. 15+00-30+00 <b>PLAN AND PROFILE</b>										
DRAWN	DRT		SUBMITTED BY: <i>[Signature]</i> DATE: 8-22-91 DRAWING NO: YMP-025-1-CIVL-PR17 REV: 0										
CHECKED	<i>[Signature]</i>		YMPO APPROVED: _____ DATE: _____ SHT: _____ OF: _____										
DEC	<i>[Signature]</i>												
DESIGN	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
YMPO 111	W.B.S. NO.	1, 2, 6, 3, 1											
8-22-91	C.I. NO.	16 XXX											



**SI APERTURE CARD**  
 Also Available On Aperture Card

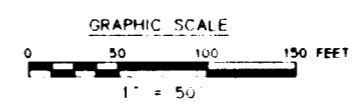
**PROFILE**  
 SCALE 1"=50' HORIZ 1"=10' VERT



**PLAN**  
 SCALE 1"=50'

- NOTES**
1. ALL CONSTRUCTION FEATURES, MATERIALS TEST AND DETAILS SHALL CONFORM TO THE PROJECT SPECIFICATIONS
  2. CONTRACTOR TO REMOVE DESIGNATED MATERIAL FROM SITE AND TRANSFER TO STORAGE AREA AT TOPSOIL STORAGE PAD

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



NO.	DATE	REVISION	DES.	DRN.	CHK.	DEC.	DM.	VRFY.	ENV.	SAF.	QA.	TPD.	YMPD.	
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<p><b>APPROVALS</b></p>			<p align="center"><b>RSN Raytheon Services Nevada</b>                  LAS VEGAS, NEVADA</p>											
DESIGN	RLL													
DRAWN	MJP													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	B. CH.													
VERIFICATION	N/A													
ENV.	SAF													
QUALITY ASSURANCE	<i>[Signature]</i>													
SUBMITTED BY <i>[Signature]</i> DATE 8-26-91			DRAWING NO. YMP-025-1-CIVL-PR18			REV. 0			YMPD APPROVED			DATE		
YMPD0112 8-22-91			W.B.S. NO. 1.2.6.3.1			C.I. NO. 16.XXX			SHT			OF		

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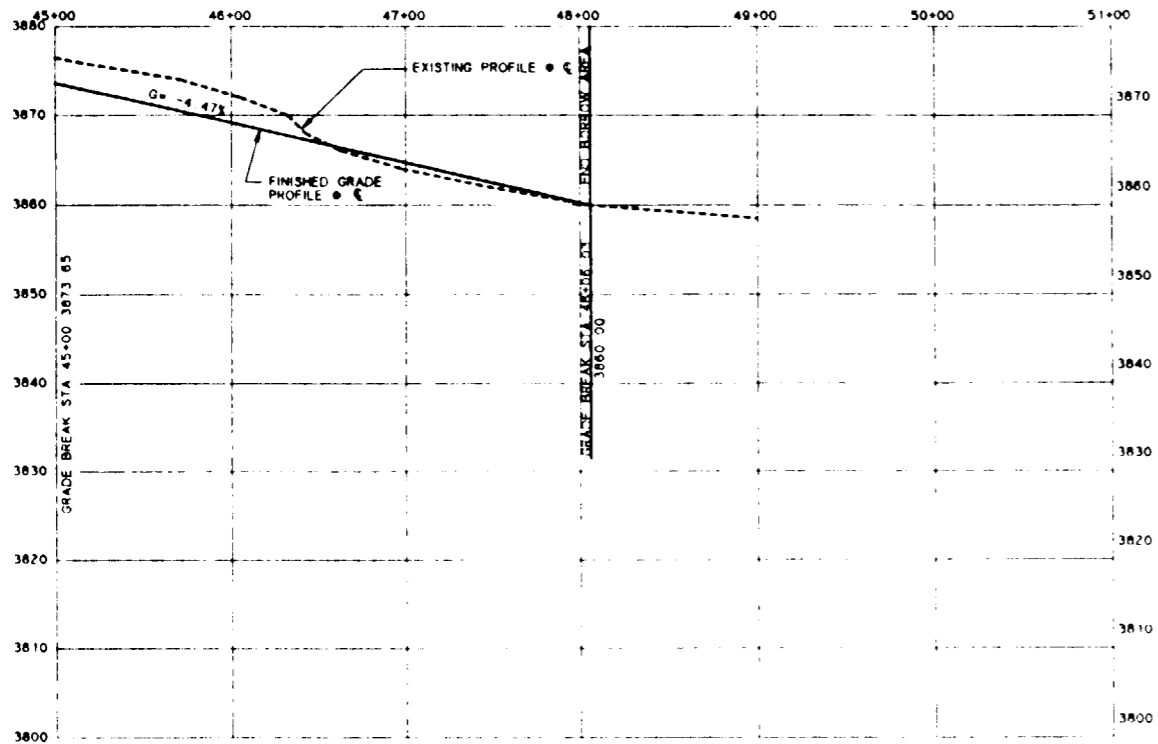
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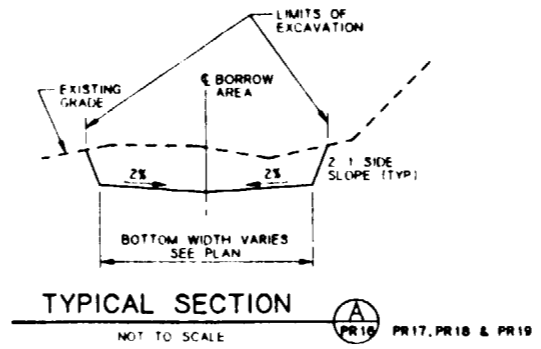
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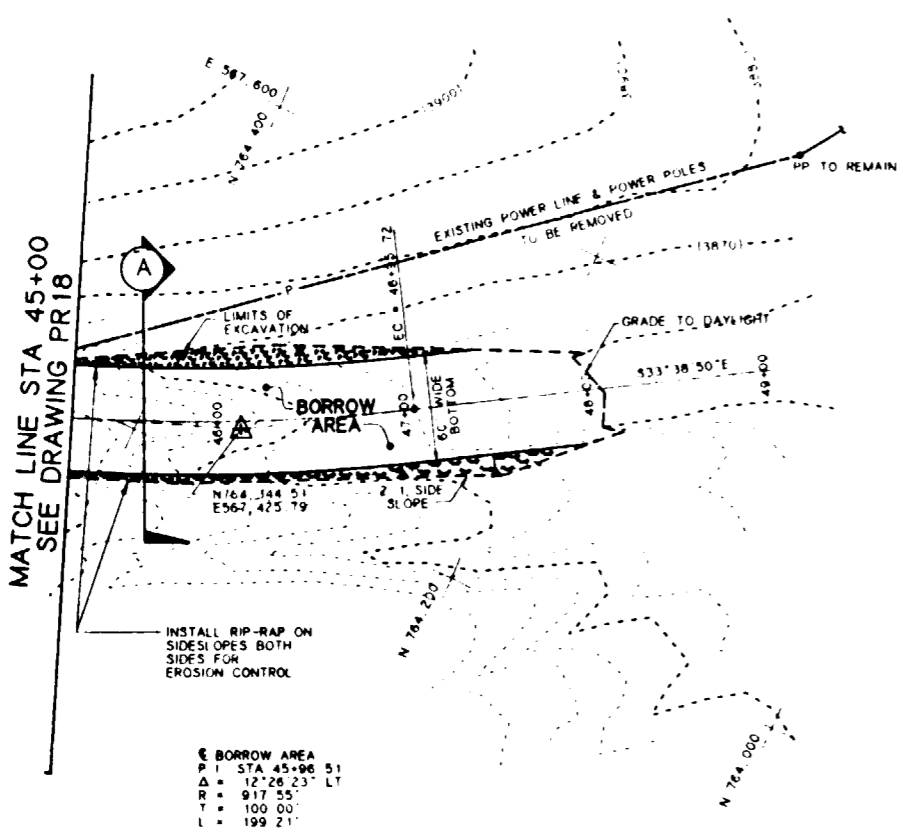
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**PROFILE**  
SCALE 1"=50' HORIZ 1"=10' VERT

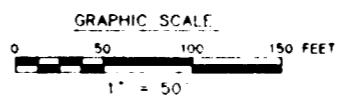


**SI APERTURE CARD**  
Also Available On Aperture Card



**PLAN**  
SCALE 1"=50'

- NOTES**
1. ALL CONSTRUCTION FEATURES, MATERIALS TEST AND DETAILS SHALL CONFORM TO THE PROJECT SPECIFICATIONS
  2. CONTRACTOR TO REMOVE DESIGNATED MATERIAL FROM SITE AND TRANSFER TO STORAGE AREA AT TOPSOIL STORAGE PAD



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GEO2

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VERFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLI		<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL-GENERAL ARRANGEMENT <b>BORROW AREA STA. 45+00-48+06.03</b> <b>PLAN AND PROFILE</b>										
DRAWN	MJP												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF		SUBMITTED BY: [Signature] DATE: 8-26-91 DRAWING NO: YMP-025-1-CIVL-PR19 YMPO APPROVED: [Signature] DATE: [ ] SHY: [ ]										
QUALITY ASSURANCE	[Signature]												
FCN	YMP0113												
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C.I. NO	16 XXX		DATE: [ ] SHY: [ ]										

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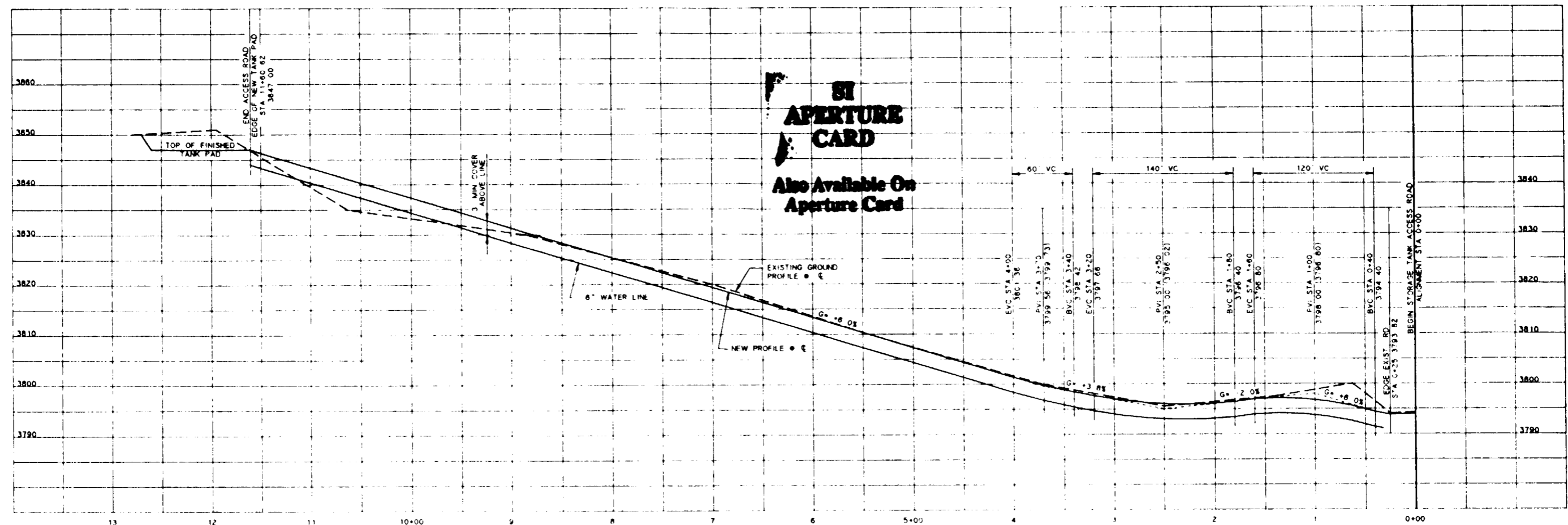
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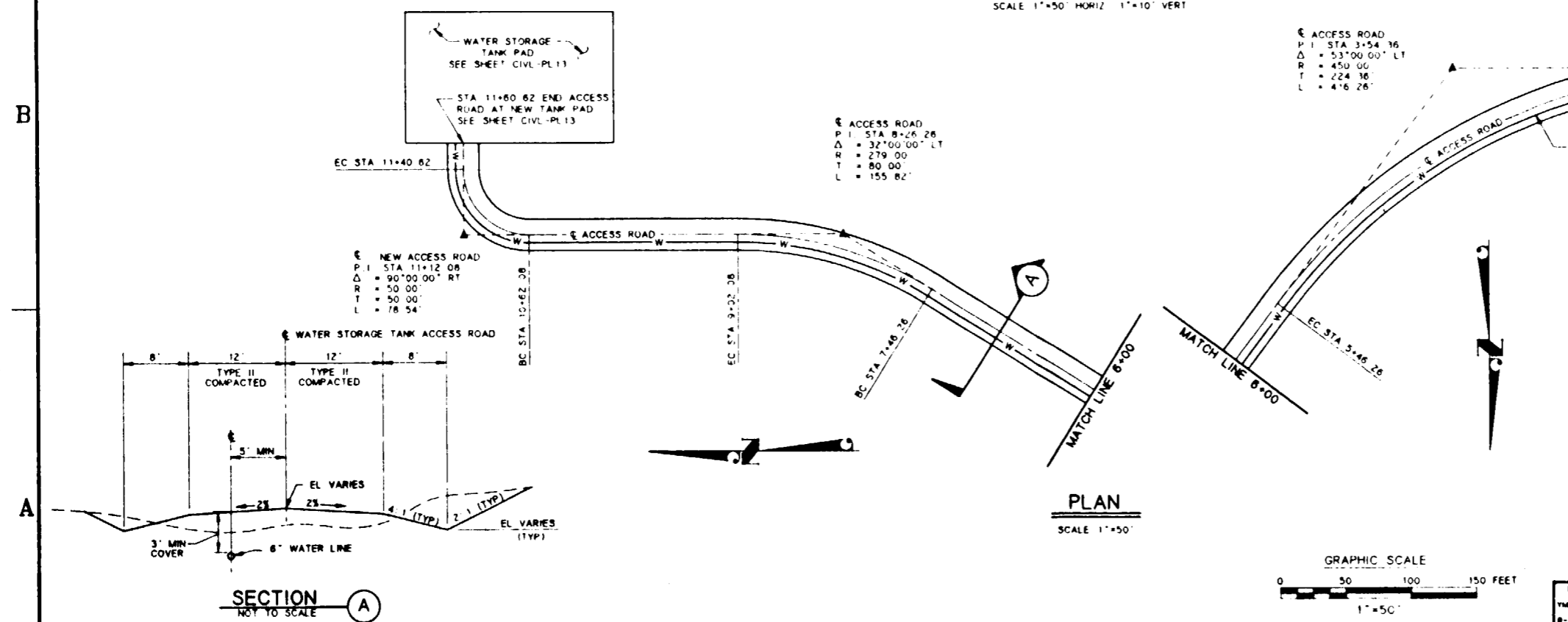
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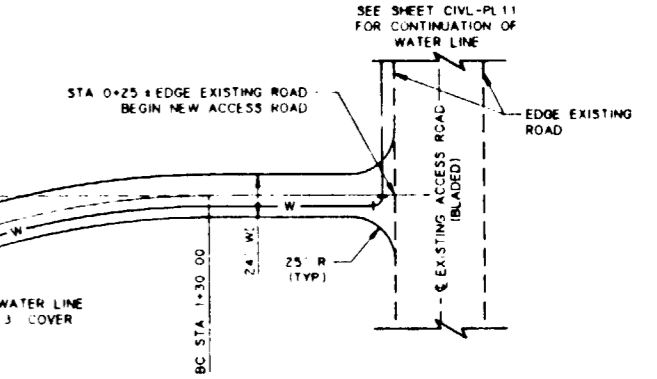
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**PROFILE**  
SCALE 1"=50' HORIZ 1"=10' VERT

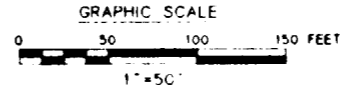


**PLAN**  
SCALE 1"=50'



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

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<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL-GENERAL ARRANGEMENT WATER STORAGE TANK ACCESS ROAD <b>PLAN AND PROFILE</b>													
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ENV SAF		N/A		VERIFICATION		N/A		SUBMITTED BY		DATE		DRAWING NO	
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YMPD APPROVED		DATE		SHT		OF							



**SECTION**  
NOT TO SCALE



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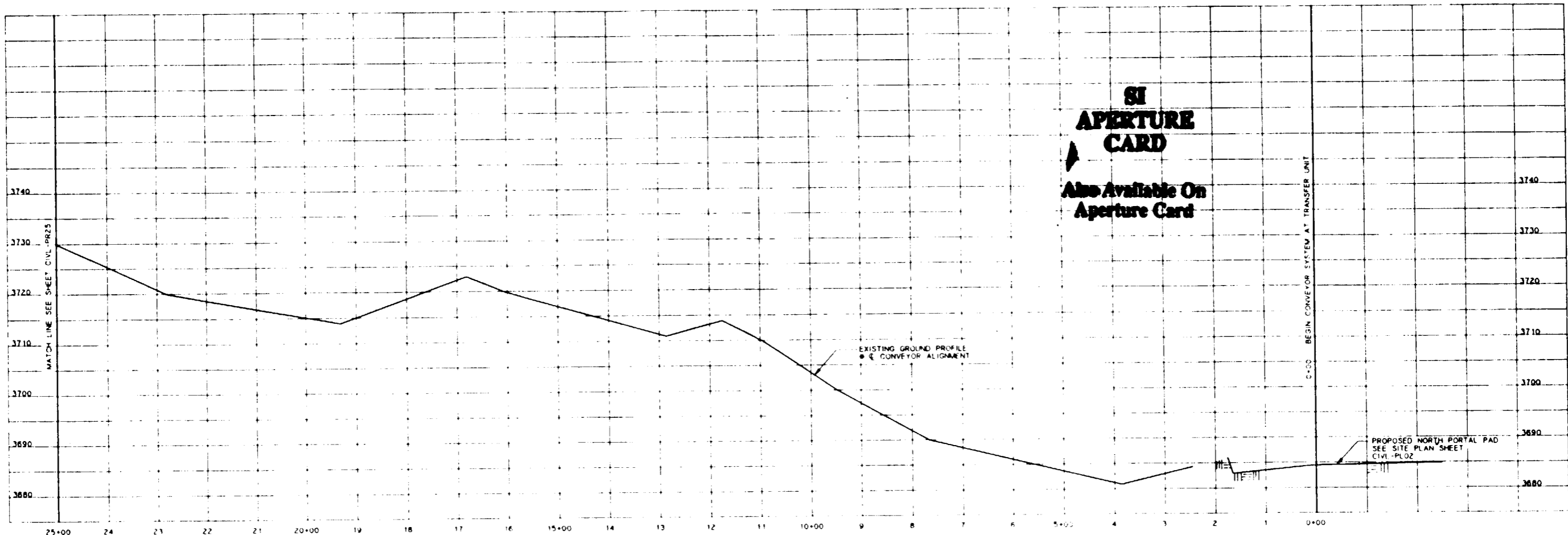
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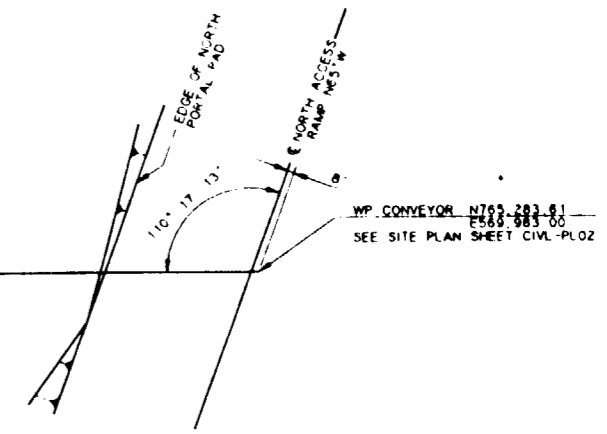
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SCALE 1"=100' HORIZ 1"=10' VERT.

MATCH LINE STA 25+00  
SEE SHEET CIVL-PR25  
FOR CONT.

STA 24+47.8 TURN PT.

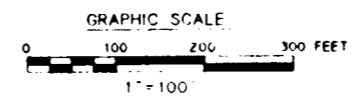


CONVEYOR ALIGNMENT



**PLAN**  
SCALE 1"=100'

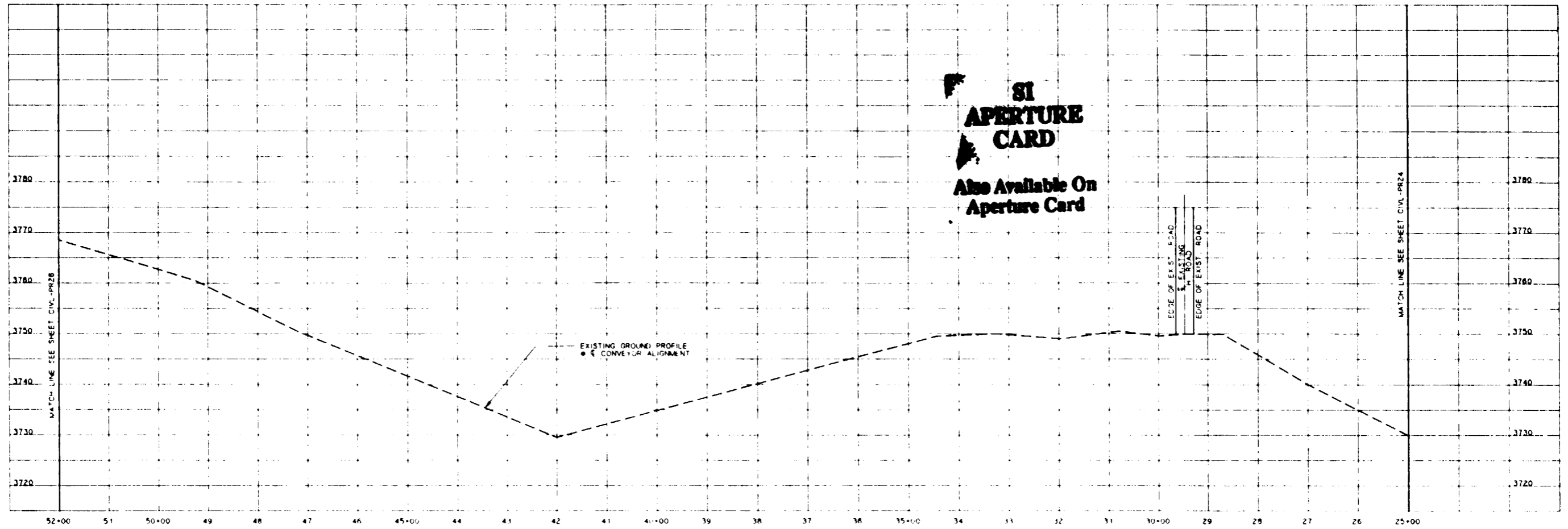
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL-GENERAL ARRANGEMENT CONVEYOR ALIGNMENT <b>PLAN AND PROFILE</b>													
DESIGN		RLL		DRAWN		DRT		CHECKED		DATE		DRAWING NO.	
DEC		DESIGN		VERIFICATION		ENV		SAF		QUALITY		ASSURANCE	
N/A		N/A		N/A		N/A		N/A		N/A		N/A	
SUBMITTED BY										DATE		DRAWING NO.	
7/17/91										8-22-91		YMP-025-1-CIVL-PR24	
YMP0 APPROVED										DATE		SHT OF	
												0	

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**PROFILE**  
SCALE 1"=100' HORIZ 1"=10' VERT

MATCH LINE STA 52+00  
SEE SHEET CIVL-PR28  
FOR CONT.

MATCH LINE STA 25+00  
SEE SHEET CIVL-PR24  
FOR CONT.

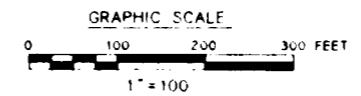


CONVEYOR ALIGNMENT

**PLAN**  
SCALE 1"=100'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0																
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA																													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA																													
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL-GENERAL ARRANGEMENT CONVEYOR ALIGNMENT <b>PLAN AND PROFILE</b>																													
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DRAWN	ORT																												
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DEC	<i>[Signature]</i>																												
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VERIFICATION	N/A																												
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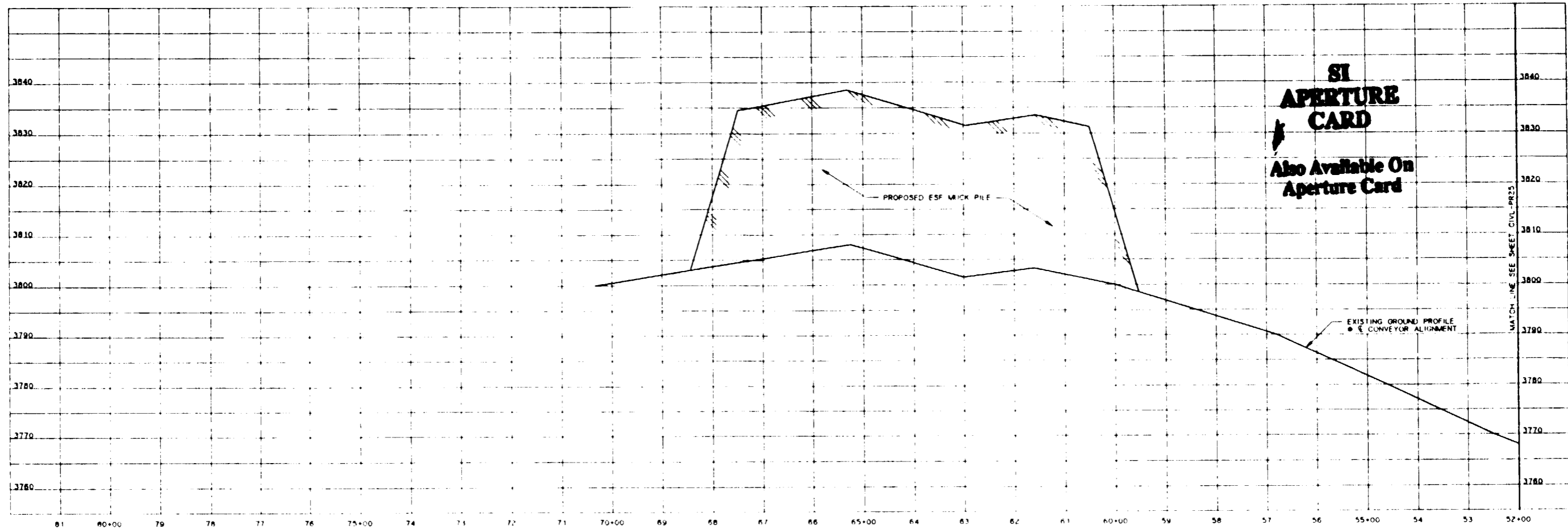
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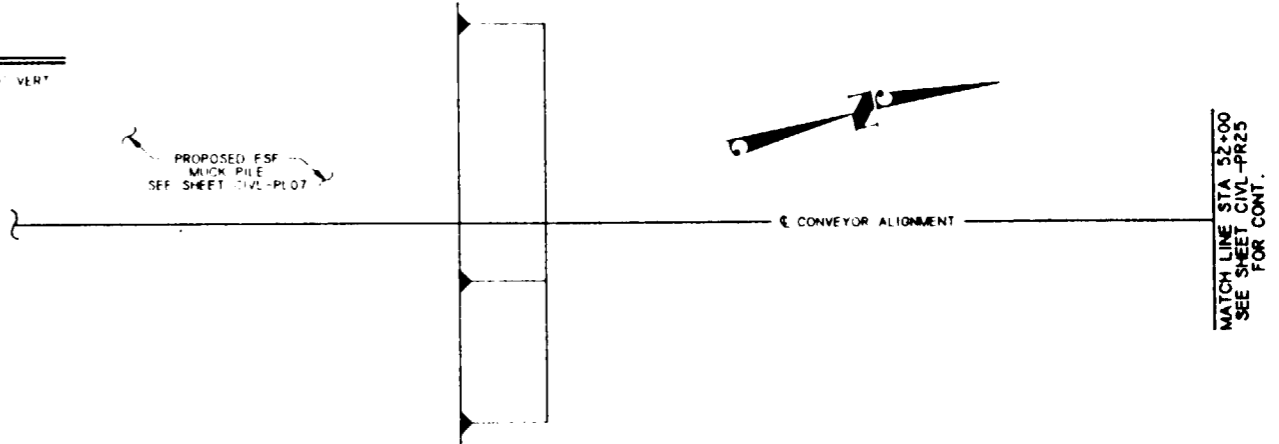
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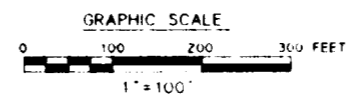


**PROFILE**  
SCALE 1"=100' HORIZ 1"=10' VERT

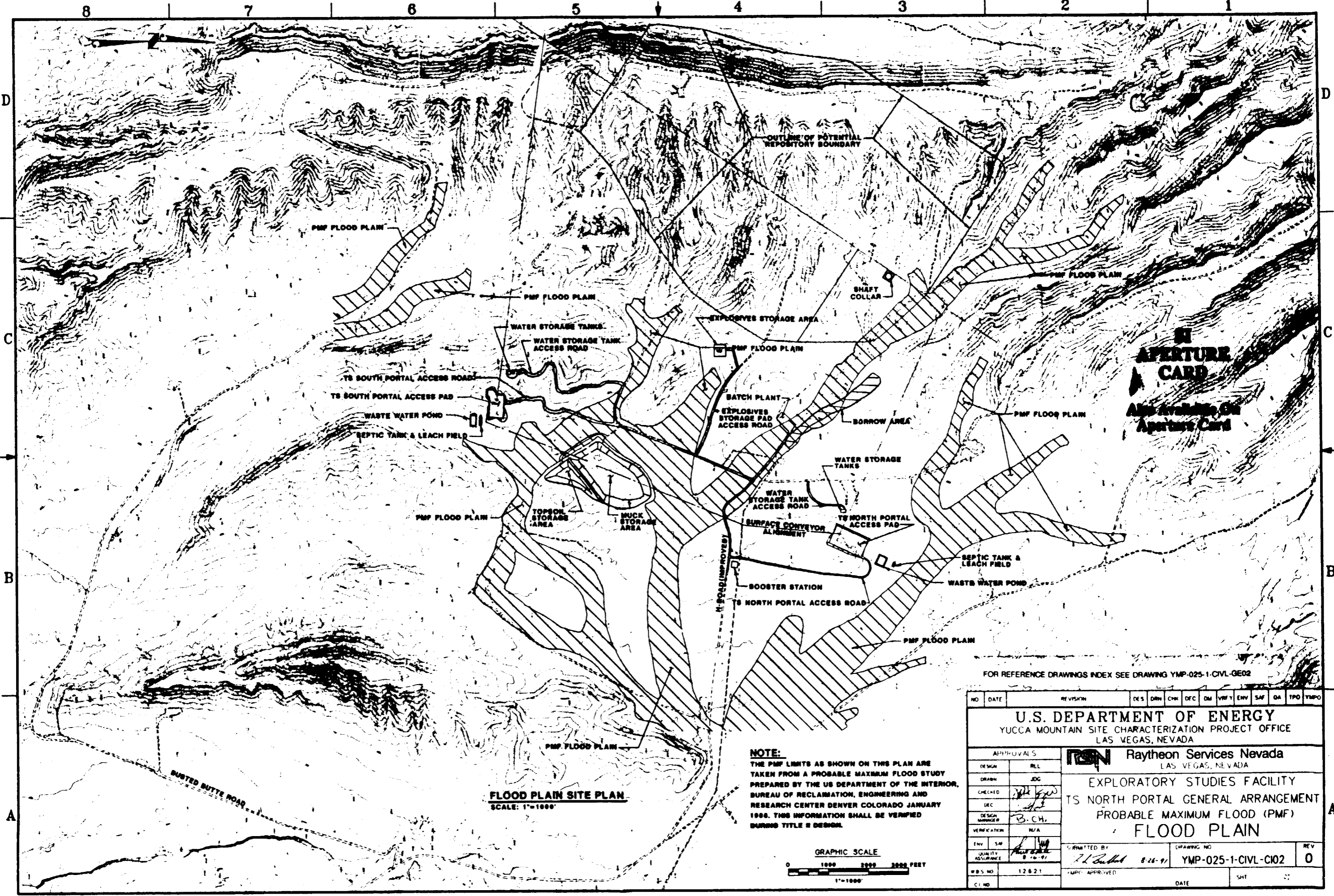
**PLAN**  
SCALE 1"=100'



FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



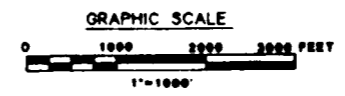
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLL												
DRAWN	MAP												
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DEC	<i>[Signature]</i>												
DESIGN REVISIONS	3. CH.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE													
SUBMITTED BY		DATE	DRAWING NO		REV.								
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YMPD APPROVED		DATE	SHT		.F								
<i>[Signature]</i>													



**APERTURE CARD**  
 Also Available On Aperture Card

**FLOOD PLAIN SITE PLAN**  
 SCALE: 1"=1000'

**NOTE:**  
 THE PMF LIMITS AS SHOWN ON THIS PLAN ARE TAKEN FROM A PROBABLE MAXIMUM FLOOD STUDY PREPARED BY THE US DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, ENGINEERING AND RESEARCH CENTER DENVER COLORADO JANUARY 1986. THIS INFORMATION SHALL BE VERIFIED DURING TITLE II DESIGN.

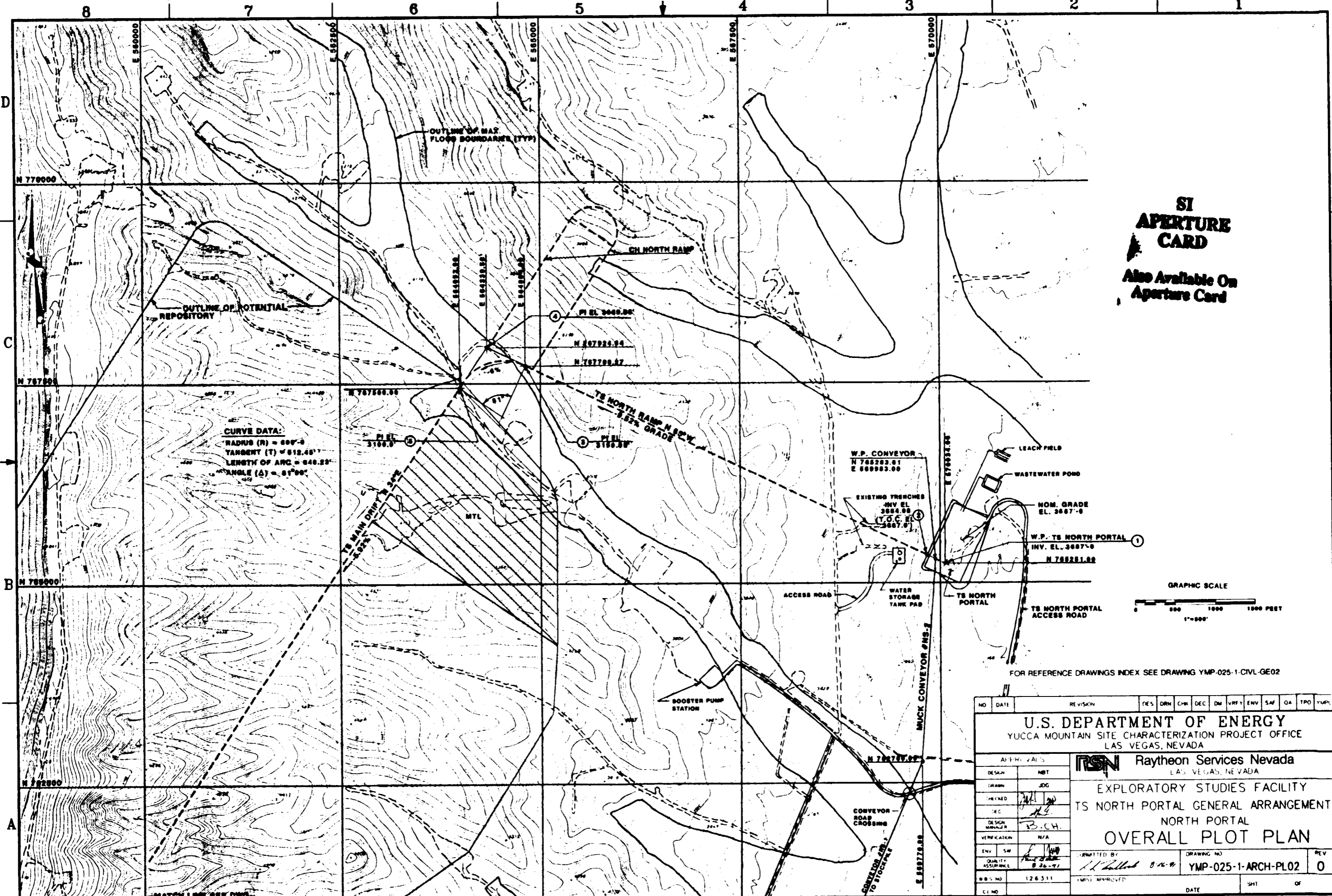


FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

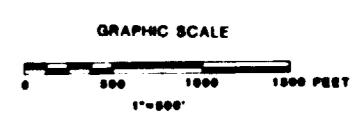
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APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	REL		EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT PROBABLE MAXIMUM FLOOD (PMF) <b>FLOOD PLAN</b>										
DRAWN	JDC		SUBMITTED BY: <i>[Signature]</i> 8-26-97 DRAWING NO: YMP-025-1-CIVL-C102 REV: 0										
CHECKED	<i>[Signature]</i>		WBS NO: 12621 YMP APPROVED: <i>[Signature]</i> DATE: _____ SHEET: _____										
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV. SW	<i>[Signature]</i>												
QUALITY ASSURANCE	8-16-97												
CI NO													

35

9118080061-155



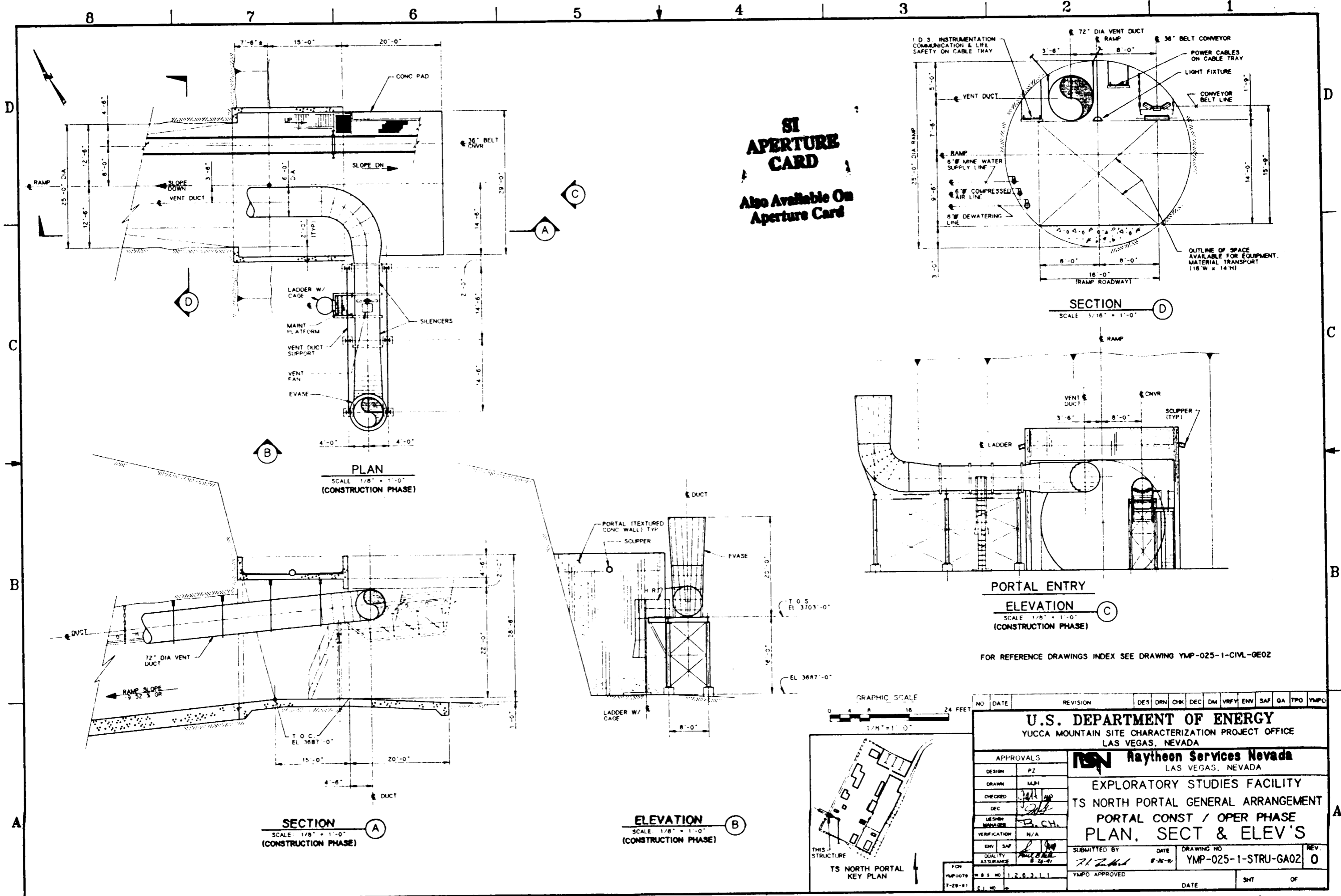
**SI APERTURE CARD**  
 Also Available On Aperture Card



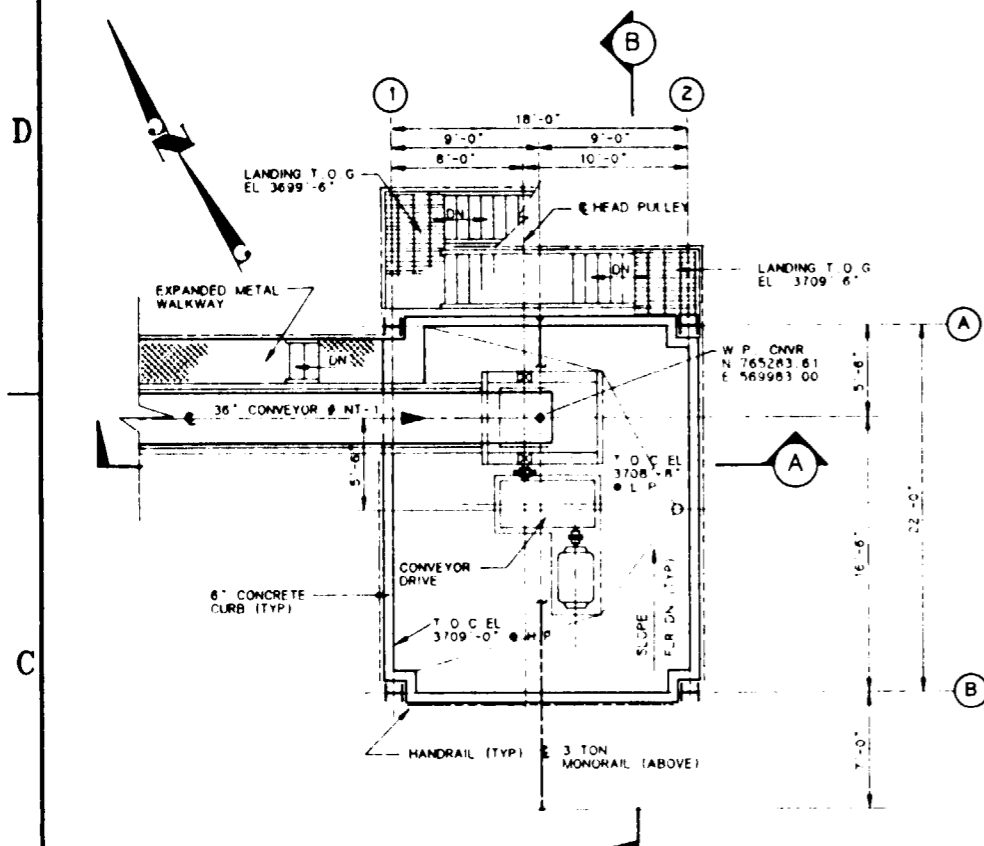
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		Raytheon Services Nevada LAS VEGAS, NEVADA											
DESIGN	MBT	EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT NORTH PORTAL <b>OVERALL PLOT PLAN</b>											
DRAWN	JOG	AUTHORIZED BY: <i>[Signature]</i> 8-16-91 DRAWING NO: YMP-025-1-ARCH-PL02 REV: 0											
CHKD	[Signature]	QUANTITY ASSURANCE: 8-26-91 DATE: _____											
DESIGN MANAGER	B.C.H.	W.B.S. NO: 126.311 C.I. NO: _____											
VERIFICATION	N/A	DATE: _____											
ENV. SAF.	[Signature]	SH1 OF _____											

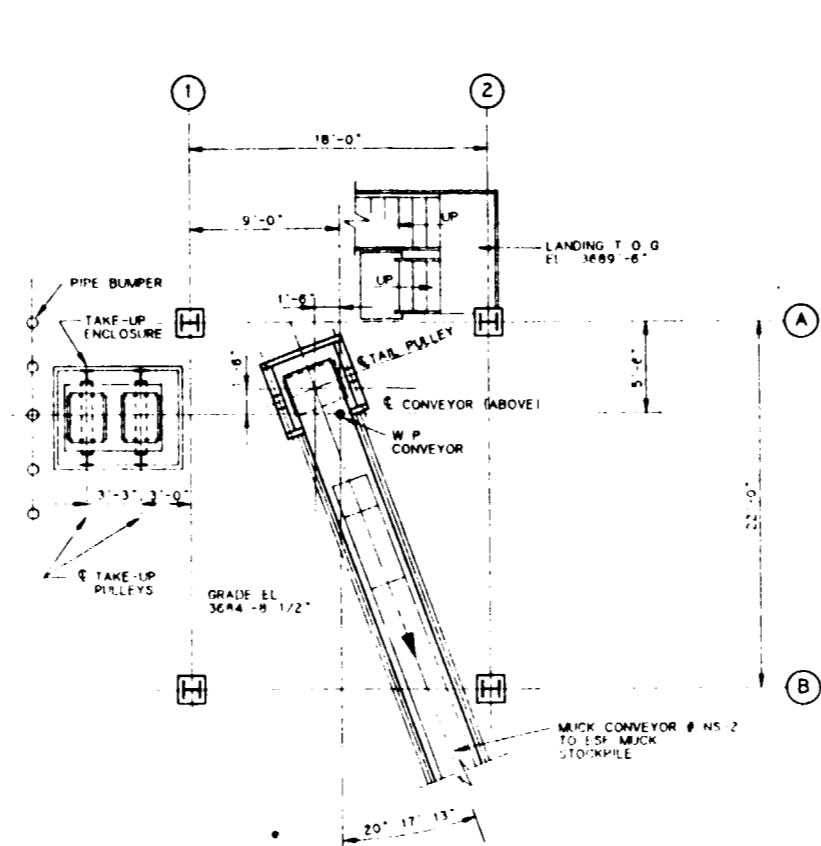




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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT PORTAL CONST / OPER PHASE <b>PLAN, SECT &amp; ELEV'S</b>													
APPROVALS													
DESIGN	PZ												
DRAWN	MJM												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
USE SHOWN	TS, CH.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO.		REV.								
<i>[Signature]</i>		8-26-91	YMP-025-1-STRU-GA02		0								
YMP/O APPROVED		DATE	SHT		OF								
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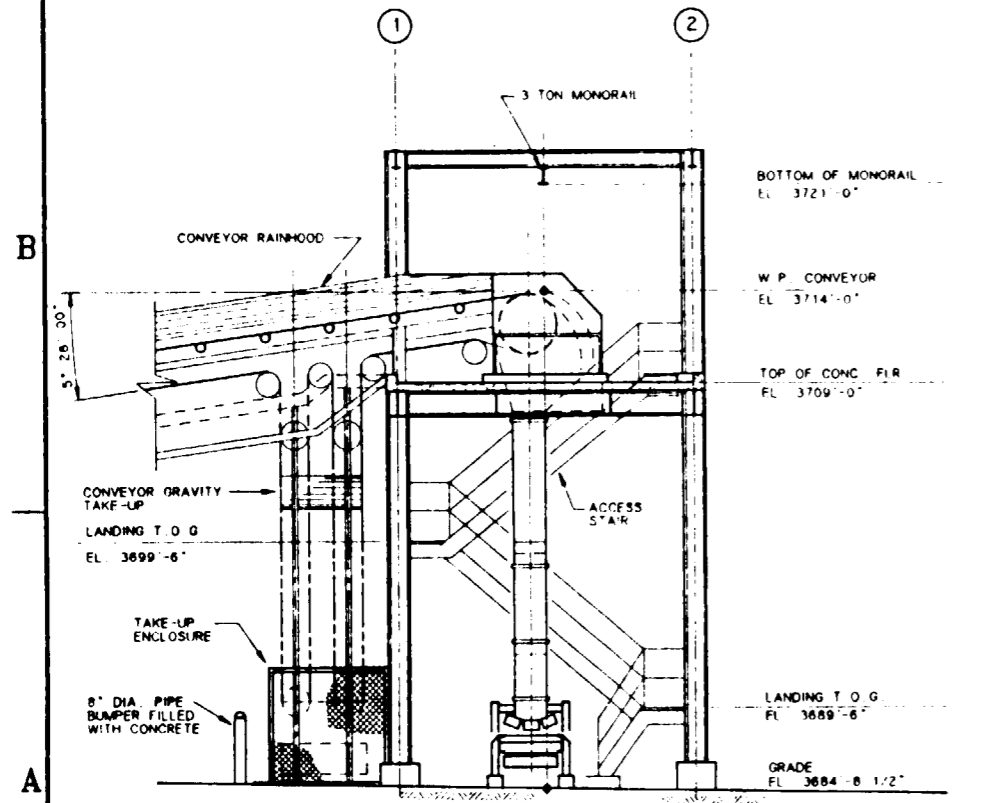


PLAN AT EL. 3709'-0"  
SCALE 3/16" = 1'-0"

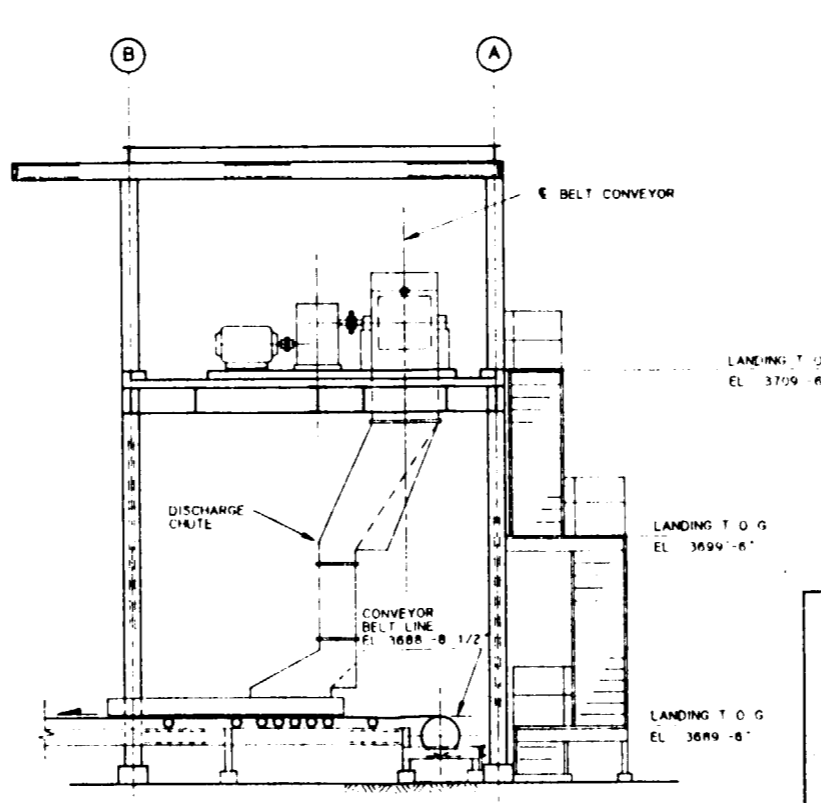


PLAN AT EL. 3684'-8 1/2"  
SCALE 3/16" = 1'-0"

**SI APERTURE CARD**  
Also Available On Aperture Card

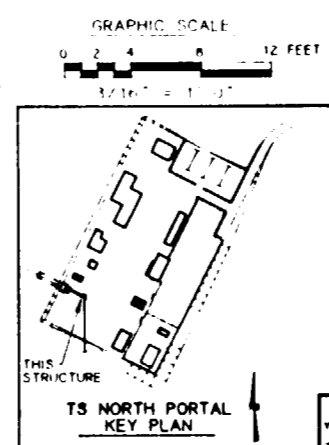


SECTION A  
SCALE 3/16" = 1'-0"



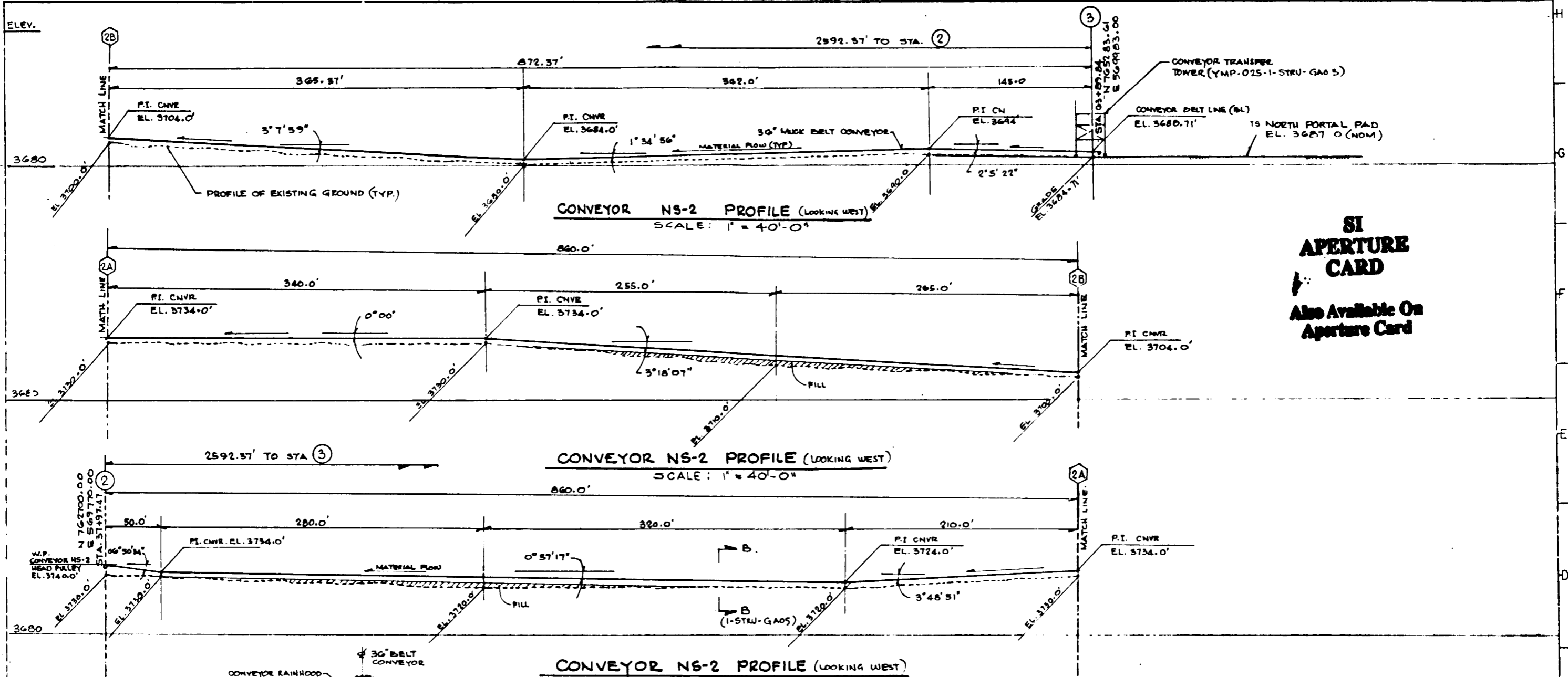
SECTION B  
SCALE 3/16" = 1'-0"

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



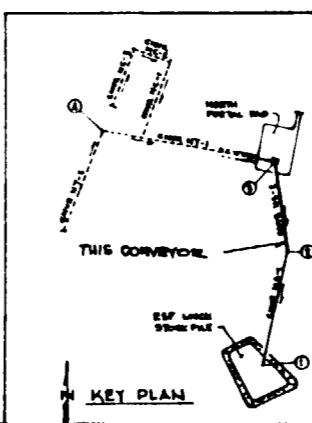
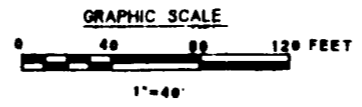
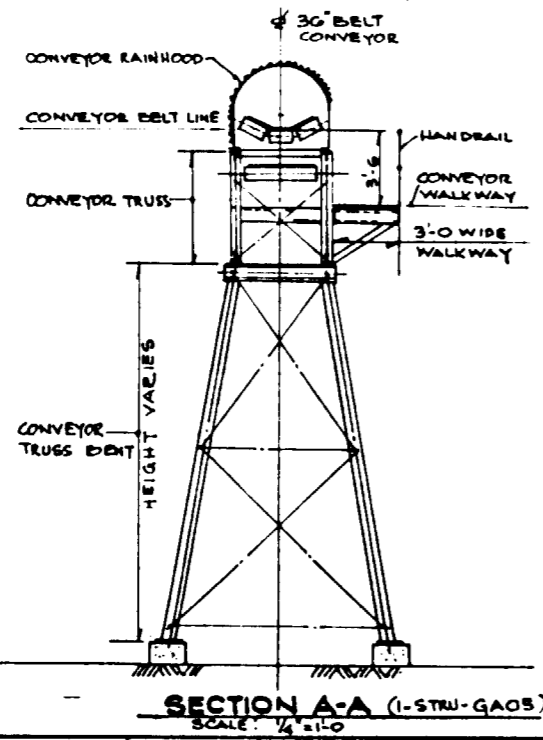
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT CONVEYOR TRANSFER TOWER <b>PLANS AND SECTIONS</b>														
APPROVALS														
DESIGN	NBT													
DRAWN	TAN / M.H.													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV SAF	<i>[Signature]</i>													
QUALITY ASSURANCE	<i>[Signature]</i>													
SUBMITTED BY		DATE	DRAWING NO		REV.									
<i>[Signature]</i>		8-26-91	YMP-025-1-STRU-GA03		0									
YMP0 APPROVED												DATE	SHT	OF





**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

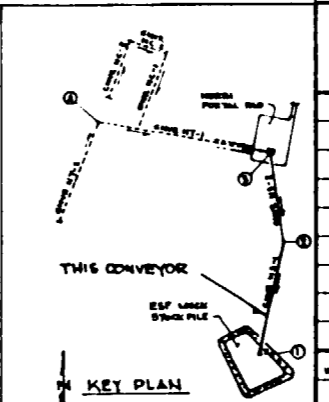
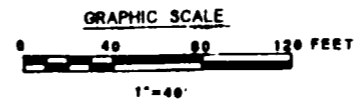
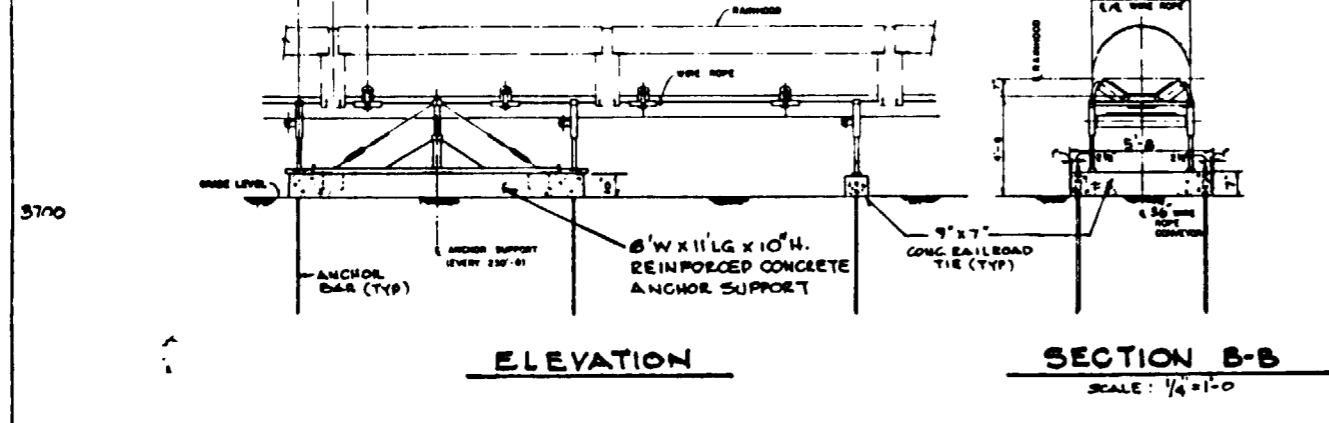
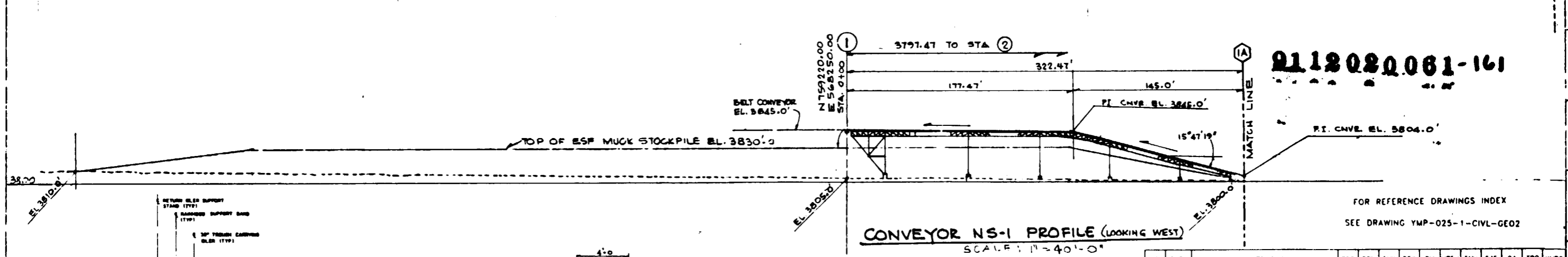
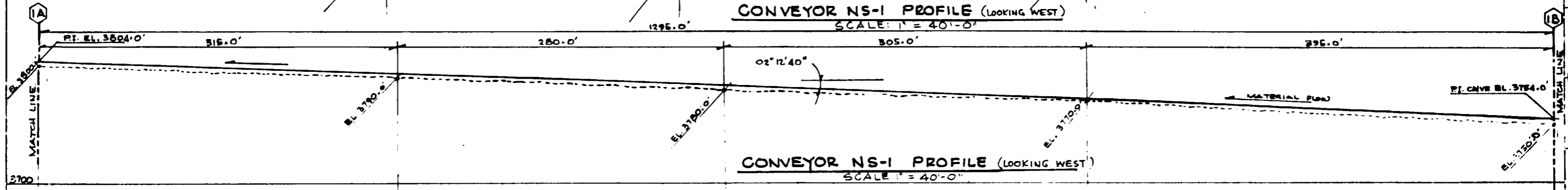
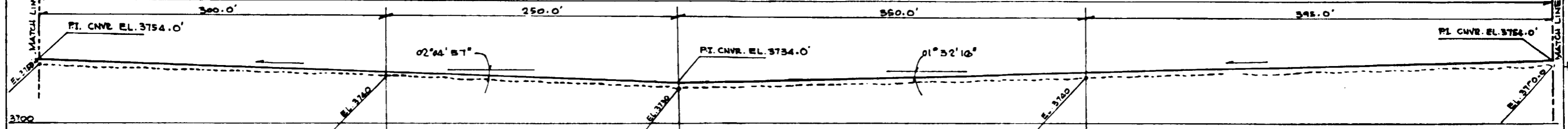
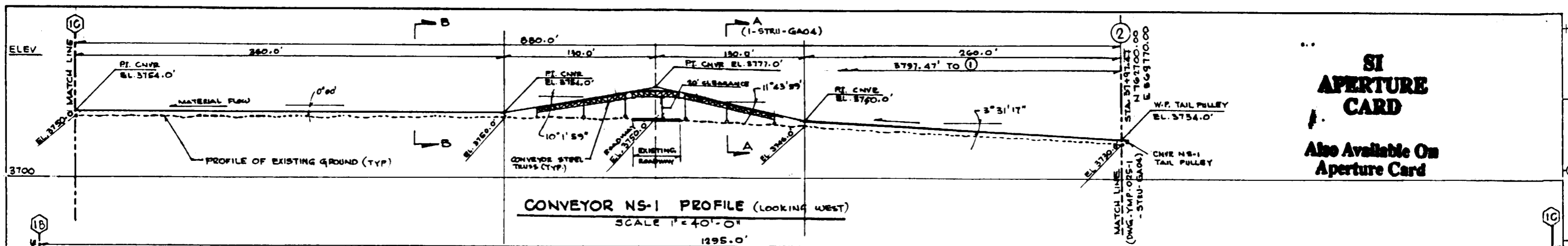


9112020061-10

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPU
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>SURFACE CONVEYOR</b> <b>PROFILE SHEET #1</b>													
DESIGN	NBT												
DRAWN	NBT												
CHECKED	[Signature]												
DATE	[Date]												
DESIGN MANAGER	B.C.H.												
VERIFIED BY	N/A												
ENV. SAF.	[Signature]												
QUALITY ASSURANCE	[Signature]												
W.B.S. NO.	126311												
CI. NO.	[Blank]												
APPROVED BY	[Signature]												
DATE	[Date]												
DRAWING NO.	YMP-025-1-STRU-GA04												
REV	0												
DATE	[Blank]												
SHT	OF												

**SI APERTURE CARD**

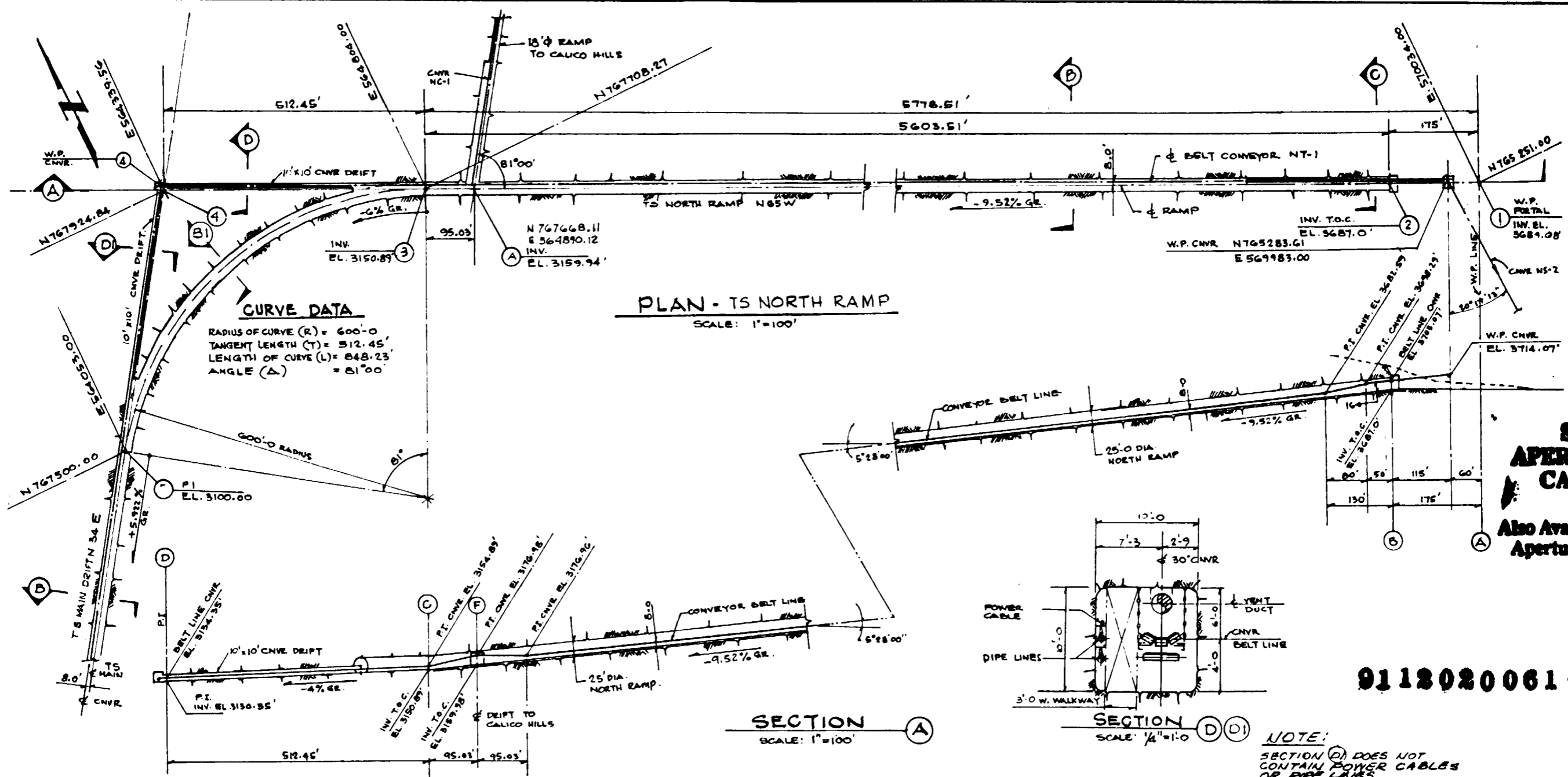
Also Available On Aperture Card



2112020061-161

FOR REFERENCE DRAWINGS INDEX  
SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VER	ENV	SAF	QA	TPO	YMP0	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT SURFACE CONVEYOR <b>PROFILE SHEET #2</b>														
APPROVED BY	DATE	DRAWING NO.	REV											
DESIGNER	DATE	DRAWING NO.	REV											
CHECKED	DATE	DRAWING NO.	REV											
DESIGN MANAGER	DATE	DRAWING NO.	REV											
VERIFICATION	DATE	DRAWING NO.	REV											
ENV. SAF.	DATE	DRAWING NO.	REV											
QUALITY ASSURANCE	DATE	DRAWING NO.	REV											
W.B.S. NO.	126311													
CL. NO.		DATE		SHT	OF									



**CURVE DATA**

RADIUS OF CURVE (R) = 600'-0"  
 TANGENT LENGTH (T) = 512.45'  
 LENGTH OF CURVE (L) = 848.23'  
 ANGLE (Δ) = 81°00'

**PLAN - TS NORTH RAMP**

SCALE: 1"=100'

**SECTION A**

SCALE: 1"=100'

**SECTION D(D)**

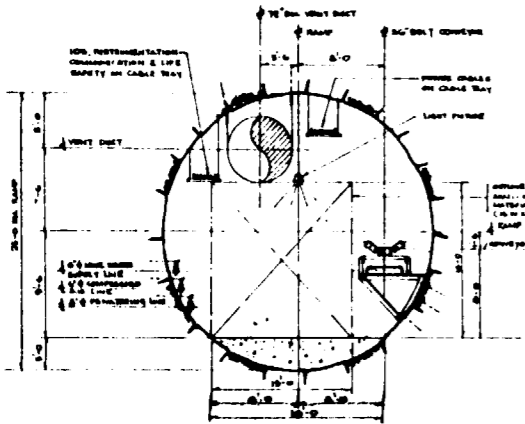
SCALE: 1/4"=1'-0"

**NOTE:**  
 SECTION (D) DOES NOT  
 CONTAIN POWER CABLES  
 OR PIPE LINES

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

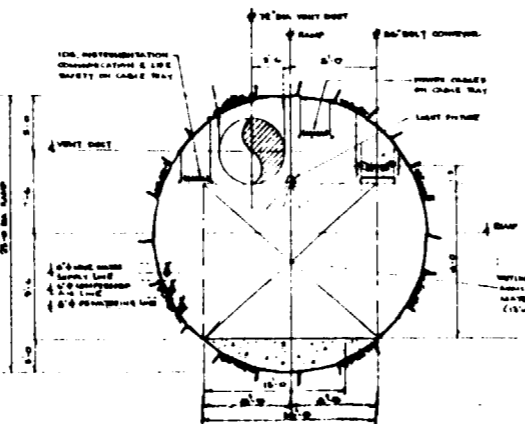
**SI  
 APERTURE  
 CARD**  
 Also Available On  
 Aperture Card

9118020061-162



**SECTION B**

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

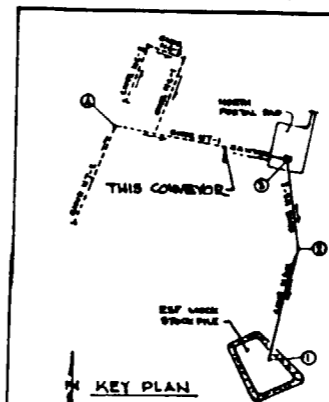
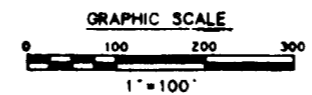


**SECTION C**

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

**NOTE:**  
 SECTION (B) DOES  
 NOT CONTAIN CONVEYOR

**NOTE:**  
 SECTIONS (B) & (C) REPRESENT  
 A RAMP CROSS SECTION DURING  
 OPERATION PHASE. THESE SECTIONS  
 DO NOT APPLY TO AREA 250' BEHIND  
 T8 M TRAILING GEAR, WHERE  
 GEOLOGIC MAPPING IS REQUIRED.



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>UNDERGROUND CONVEYOR</b> <b>PROFILE SHEET #3 &amp; SECT'S</b>													
APPROVAL:	DESIGN:	DRYING:	REL'D:	CHK'D:	TR. SIGN. MONITOR:	VERIFICATION:	ENV. SAF.:	QUALITY ASSURANCE:	WBS NO.:	CI NO.:	DATE:	SHT.:	OF:
OF PLAN: NBT	DRYING: NBT	REL'D: [Signature]	CHK'D: [Signature]	TR. SIGN. MONITOR: [Signature]	VERIFICATION: N/A	ENV. SAF.: [Signature]	QUALITY ASSURANCE: [Signature]	WBS NO.: 128311	CI NO.:	DATE: 11/22/84	SHT.:	OF:	
										SUBMITTED BY: [Signature] YMP-025-1-STRU-GA06		REV: 0	

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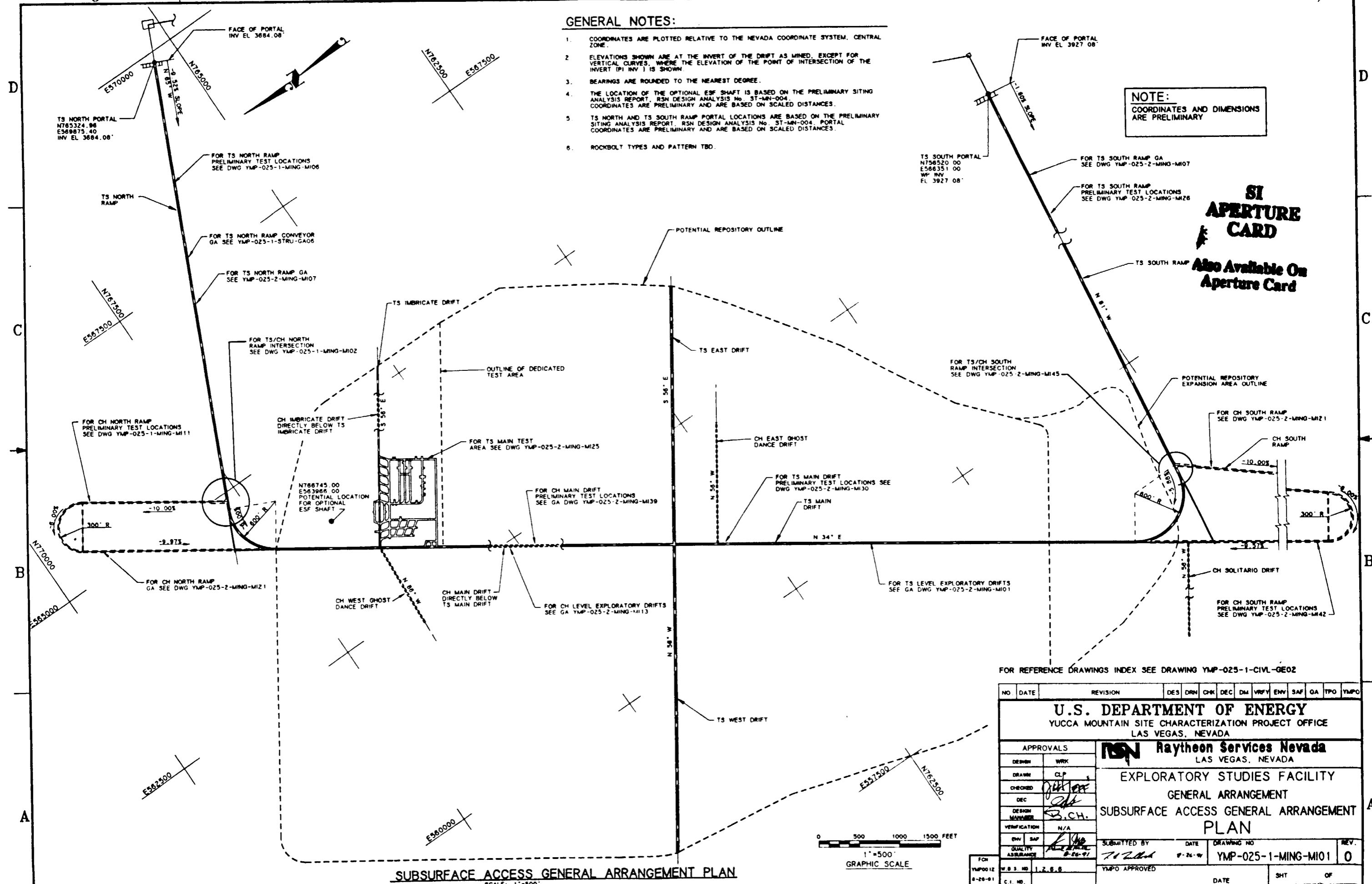
1

### GENERAL NOTES:

1. COORDINATES ARE PLOTTED RELATIVE TO THE NEVADA COORDINATE SYSTEM, CENTRAL ZONE.
2. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT AS MINED, EXCEPT FOR VERTICAL CURVES, WHERE THE ELEVATION OF THE POINT OF INTERSECTION OF THE INVERT (PI INV) IS SHOWN.
3. BEARINGS ARE ROUNDED TO THE NEAREST DEGREE.
4. THE LOCATION OF THE OPTIONAL ESF SHAFT IS BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RSN DESIGN ANALYSIS No. ST-MN-004. COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES.
5. TS NORTH AND TS SOUTH RAMP PORTAL LOCATIONS ARE BASED ON THE PRELIMINARY SITING ANALYSIS REPORT, RSN DESIGN ANALYSIS No. ST-MN-004. PORTAL COORDINATES ARE PRELIMINARY AND ARE BASED ON SCALED DISTANCES.
6. ROCKBOLT TYPES AND PATTERN TBD.

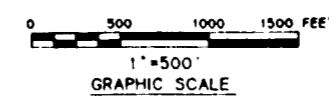
**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

**SI APERTURE CARD**  
Also Available On Aperture Card



**SUBSURFACE ACCESS GENERAL ARRANGEMENT PLAN**  
SCALE: 1"=500'

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENW	SAF	QA	TPO	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	WRK	<b>EXPLORATORY STUDIES FACILITY</b> <b>GENERAL ARRANGEMENT</b> <b>SUBSURFACE ACCESS GENERAL ARRANGEMENT PLAN</b>											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A	SUBMITTED BY		DATE	DRAWING NO		REV.						
ENV	SAF	<i>[Signature]</i>		9-26-91	YMP-025-1-MING-M101		0						
QUALITY ASSURANCE	<i>[Signature]</i>	YMPO APPROVED		DATE	SHT	OF							
FON	W.B.S. NO.	C.I. NO.		DATE		SHT	OF						
YMP0012	1, 2, 6, 8												



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1

D

C

B

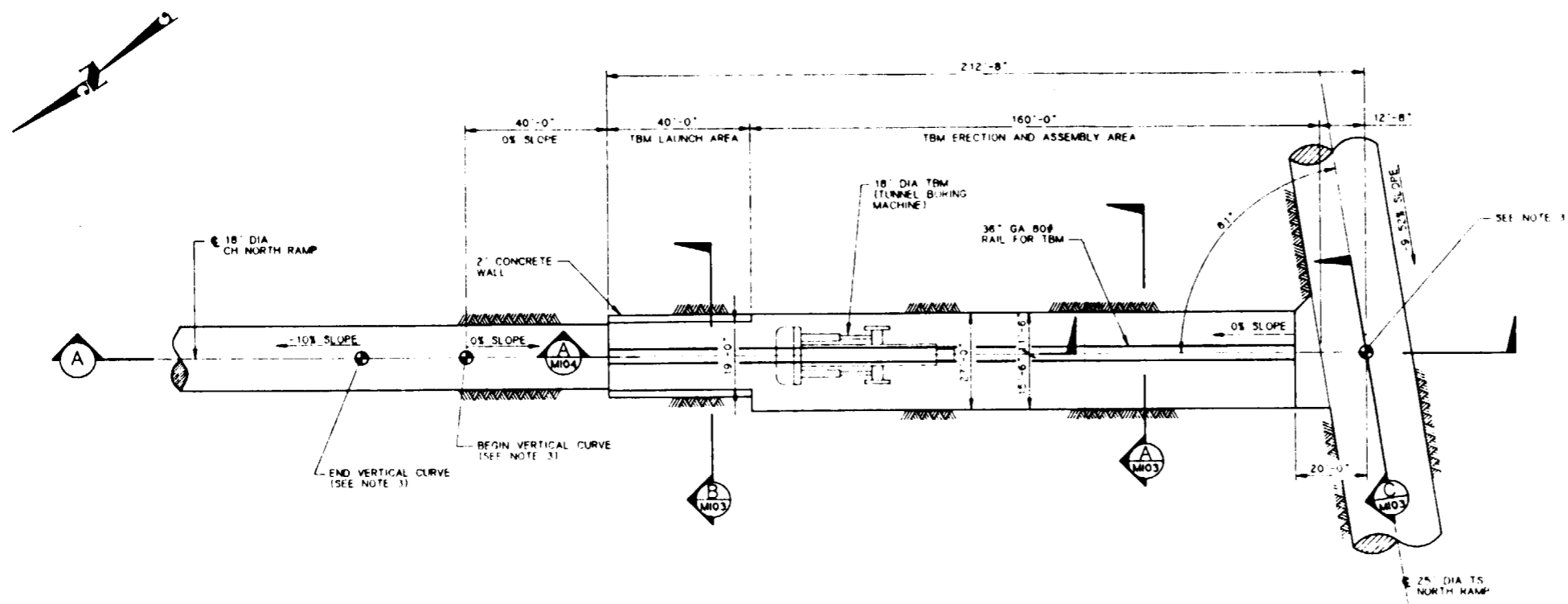
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D

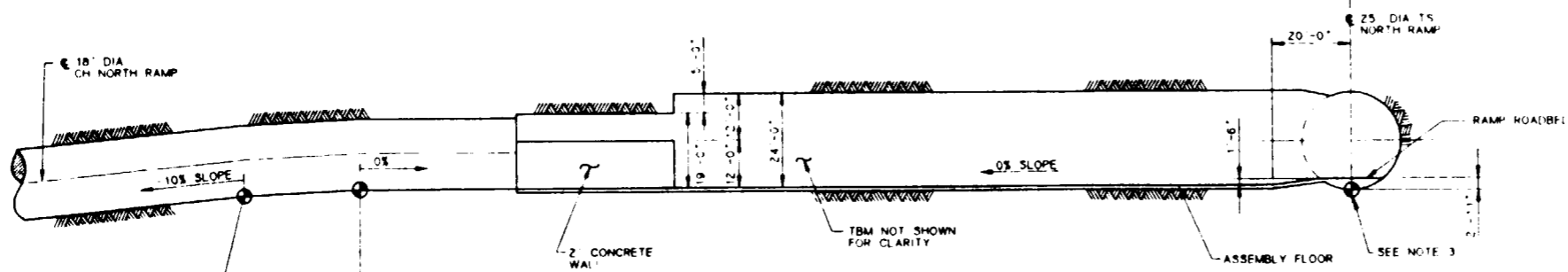
C

B

A



PLAN  
SCALE 1"=20'



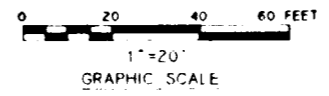
SECTION A  
SCALE 1"=20'

**SI APERTURE CARD**  
Also Available On Aperture Card

**NOTES:**

- 1 DIMENSIONS SHOWN ARE APPROXIMATE. ACTUAL DIMENSIONS DEPEND ON TBM SELECTED.
- 2  $\odot$  SYMBOL IS FOR REFERENCE ONLY AND DOES NOT INDICATE SURVEY STATIONS LOCATIONS.
- 3 SEE CALCULATION ST-SA-001 FOR MAJOR COORDINATES AND VERTICAL CURVE DATA.

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

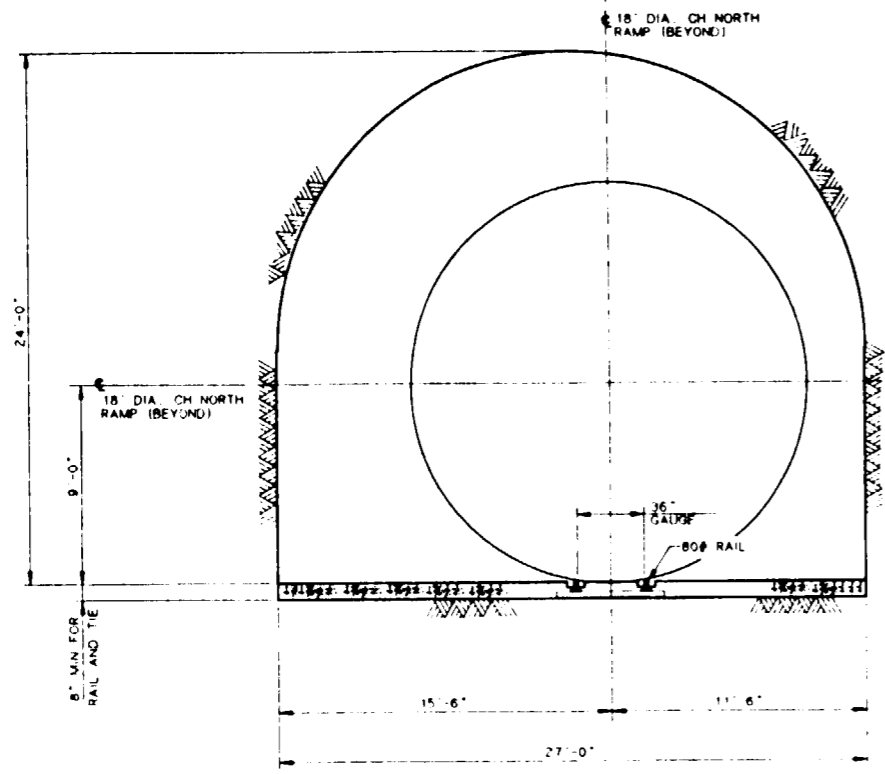


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APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MAJE												
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO		REV							
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YMP00 APPROVED			DATE	SHT	OF								
YMP0018			B-21-91										
C.I. NO													

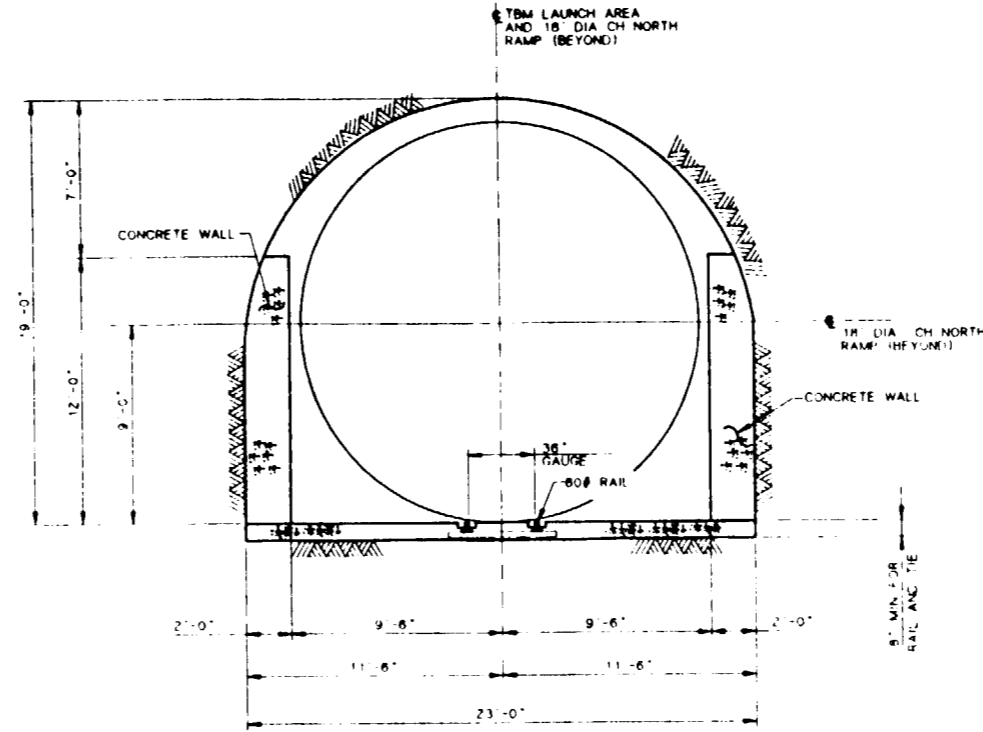
9112020061-164

8 7 6 5 4 3 2 1

D  
C  
B  
A



SECTION A  
SCALE 1/4" = 1'-0"  
MI02

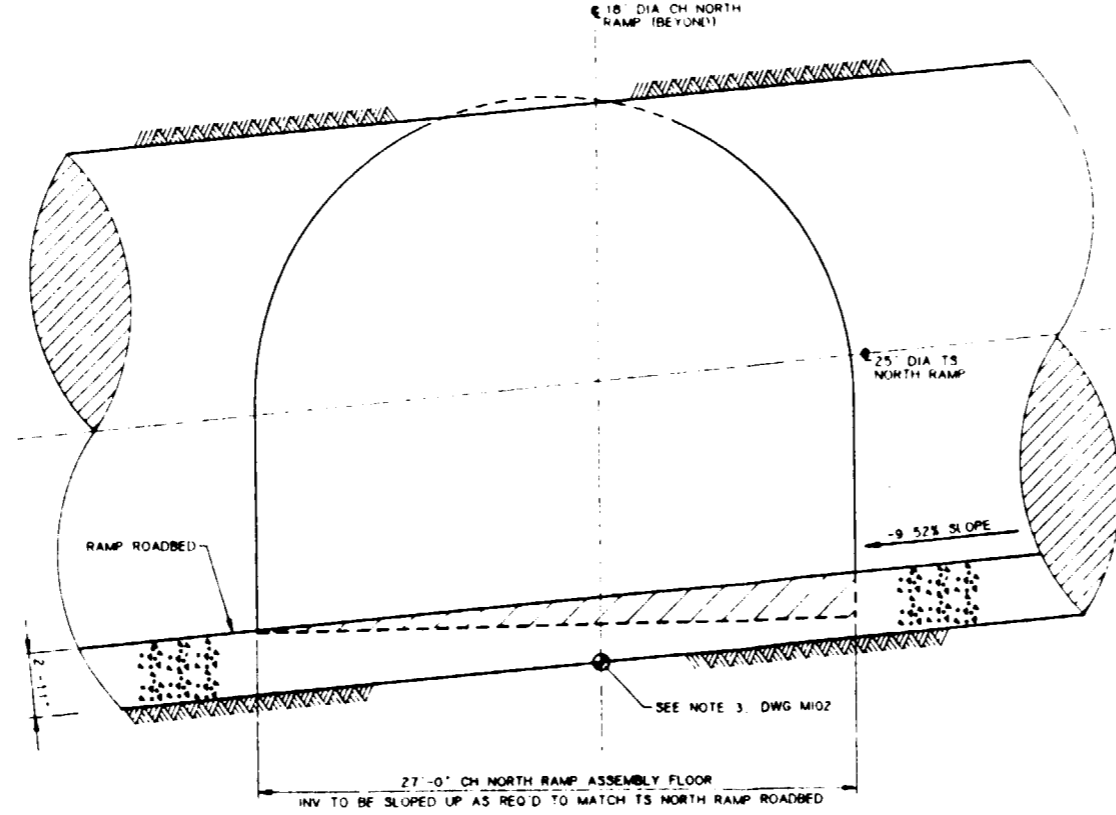


SECTION B  
SCALE 1/4" = 1'-0"  
MI02

**SI APERTURE CARD**  
Also Available On Aperture Card

**NOTES:**

- 1. DIMENSIONS SHOWN ARE APPROXIMATE. ACTUAL DIMENSIONS DEPEND ON TBM SELECTED.
- 2. SYMBOL IS FOR REFERENCE ONLY AND DOES NOT INDICATE SURVEY STATIONS LOCATIONS.

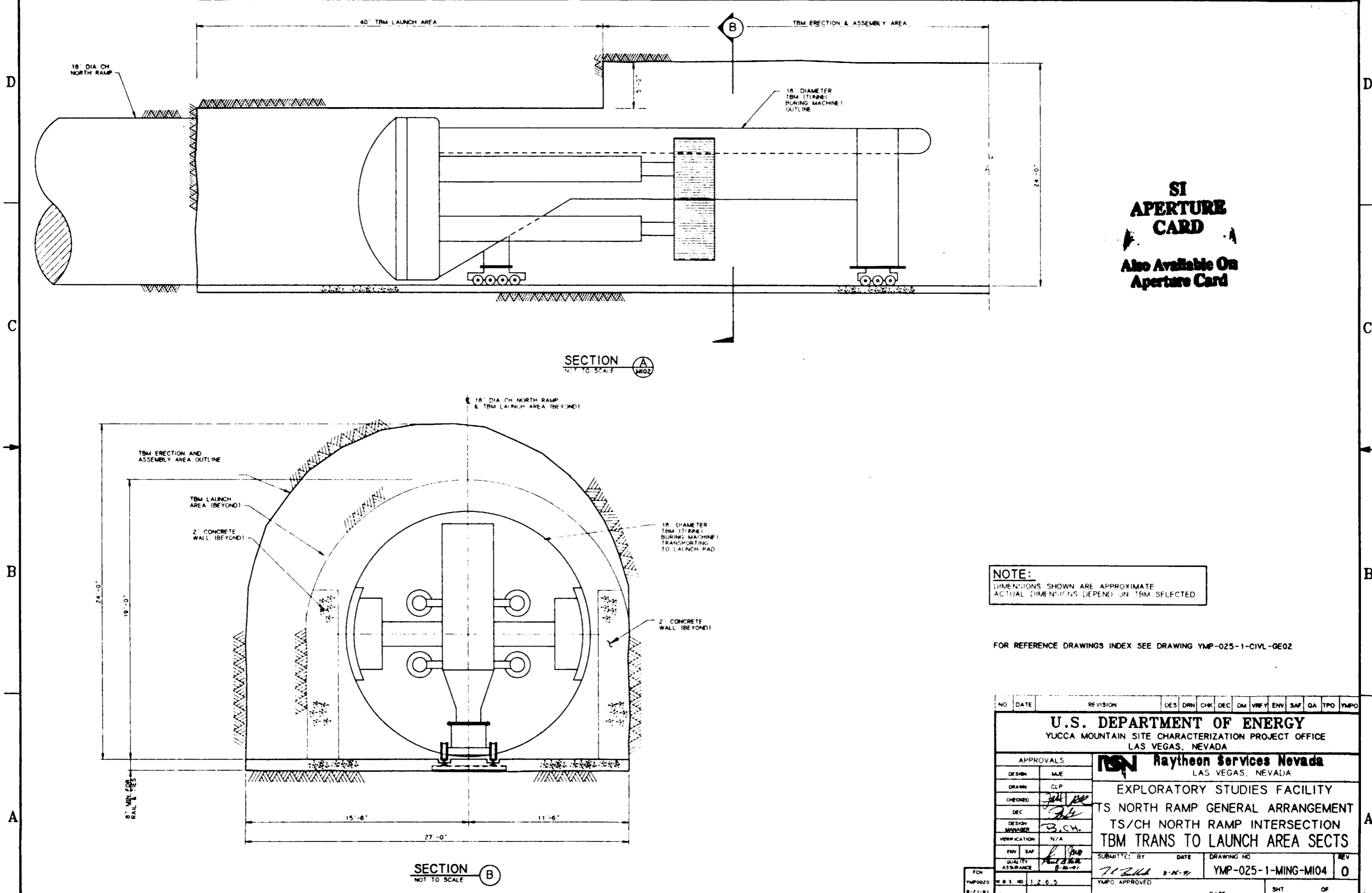


SECTION C  
SCALE 1/4" = 1'-0"  
MI02

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	EXPLORATORY STUDIES FACILITY												
M.A.E.	TS NORTH RAMP GENERAL ARRANGEMENT												
DRAWN	TS/CH NORTH RAMP INTERSECTION												
CLP	<b>SECTIONS</b>												
CHECKED	SUBMITTED BY: <i>[Signature]</i> DATE: <i>8-16-91</i> DRAWING NO: YMP-025-1-MING-MI03 REV: 0												
DEC	YMP APPROVED: _____ DATE: _____ SHT: _____												
DESIGN MANAGER	FCN: YMP0019 B-21-91												
B.C.H.	# B.S. NO. 1 2 6 5												
VERIFICATION	C.I. NO.												
N/A	GRAPHIC SCALE: 1/4" = 1'-0"												
ENV. SAF.	0 4 8 12 FEET												
QUALITY ASSURANCE	1/4" = 1'-0"												
<i>[Signature]</i>	8-21-91												

8 7 6 5 4 3 2 1



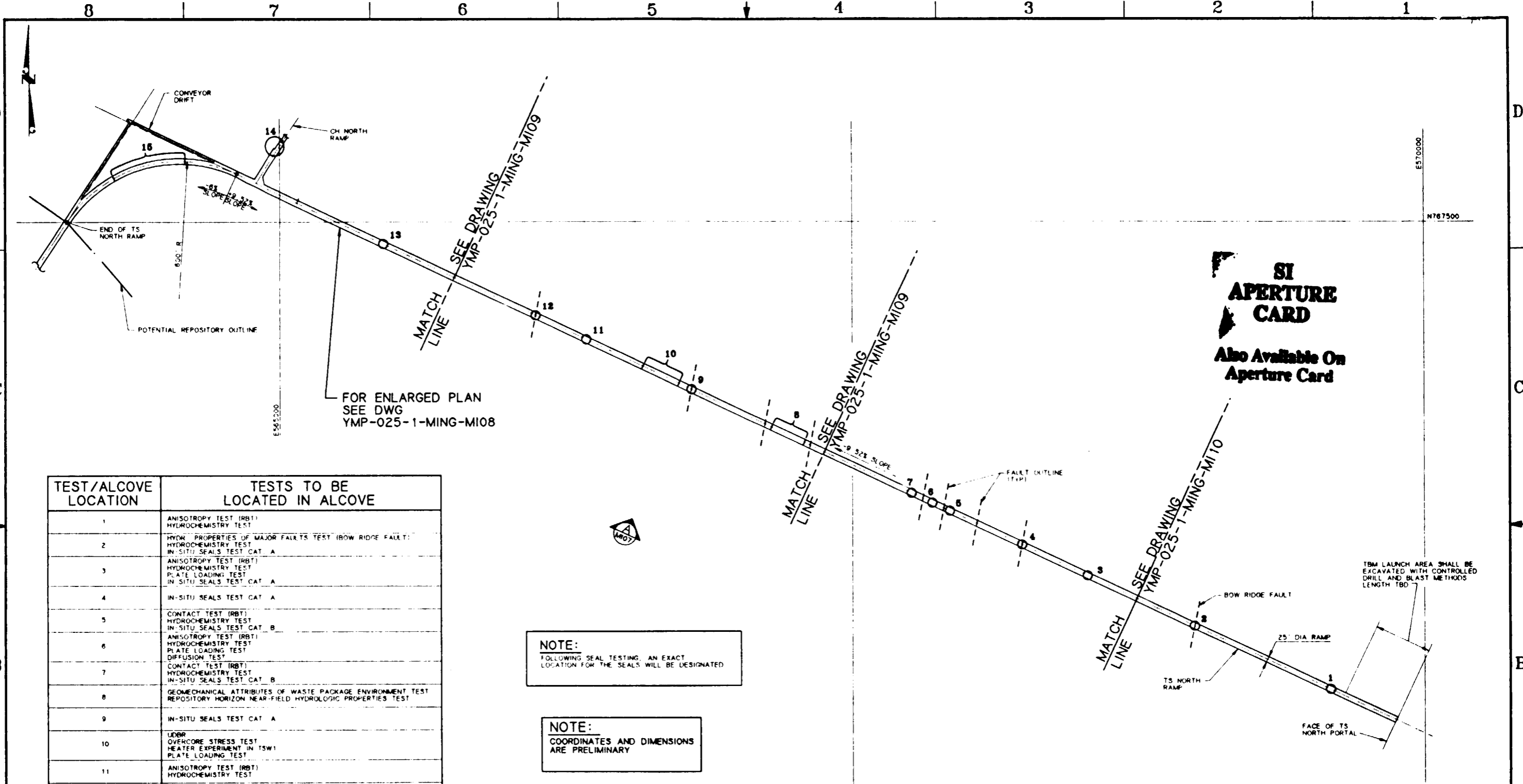
**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card

**NOTE:**  
DIMENSIONS SHOWN ARE APPROXIMATE  
ACTUAL DIMENSIONS DEPEND ON TBM SELECTED

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MJE		EXPLORATORY STUDIES FACILITY										
DRAWN	CLP		TS NORTH RAMP GENERAL ARRANGEMENT										
CHECKED	<i>[Signature]</i>		TS/CH NORTH RAMP INTERSECTION										
DEC	<i>[Signature]</i>		TBM TRANS TO LAUNCH AREA SECTS										
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF	<i>[Signature]</i>											
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO		REV							
<i>[Signature]</i>			8-21-91	YMP-025-1-MING-MI04		0							
YMP0020			YMP0 APPROVED		DATE								
8-21-91			C.I. NO.		SHT OF								

**SECTION B**  
NOT TO SCALE



FOR ENLARGED PLAN  
SEE DWG  
YMP-025-1-MING-MI08

**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card

TEST/ALCOVE LOCATION	TESTS TO BE LOCATED IN ALCOVE
1	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST
2	HYDR. PROPERTIES OF MAJOR FAULTS TEST (BOW RIDGE FAULT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. A
3	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST IN-SITU SEALS TEST CAT. A
4	IN-SITU SEALS TEST CAT. A
5	CONTACT TEST (RBT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B
6	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST DIFFUSION TEST
7	CONTACT TEST (RBT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B
8	GEOMECHANICAL ATTRIBUTES OF WASTE PACKAGE ENVIRONMENT TEST REPOSITORY HORIZON NEAR-FIELD HYDROLOGIC PROPERTIES TEST
9	IN-SITU SEALS TEST CAT. A
10	UDBR OVERCORE STRESS TEST HEATER EXPERIMENT IN TSW PLATE LOADING TEST
11	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST
12	IN-SITU SEALS TEST CAT. A
13	HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B
14	EXCAVATION EFFECTS TEST
15	HYDR. PROPERTIES OF MAJOR FAULTS (DRILL HOLE WASH STRUCTURE) HYDROCHEMISTRY TEST

**NOTE:**  
FOLLOWING SEAL TESTING, AN EXACT  
LOCATION FOR THE SEALS WILL BE DESIGNATED

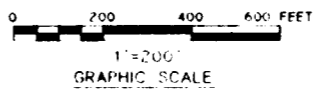
**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**TS NORTH RAMP PLAN WITH PRELIMINARY TEST LOCATIONS**  
SCALE 1"=200'

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	ITPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RLC	EXPLORATORY STUDIES FACILITY TS NORTH RAMP GENERAL ARRANGEMENT TS PRELIMINARY TEST LOCATIONS PLAN											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A	SUBMITTED BY	DATE	DRAWING NO	REV								
ENV. SAF.	<i>[Signature]</i>	<i>[Signature]</i>	5-25-91	YMP-025-1-MING-MI06	0								
QUALITY ASSURANCE	<i>[Signature]</i>	YMP0 APPROVED		DATE	SHT	OF							
FCN	YMP0014	W.B.S. NO.	1,2,6,5	C.I. NO.									

- GENERAL NOTES**
- THE BASIS FOR THE TEST ALCOVE LOCATIONS IS E3F DR YMP/CC-0013, REV 5/31-91
  - THE GEOLOGICAL, STRUCTURAL FEATURES ARE BASED ON SAIC PRELIMINARY CROSS SECTION CC-CC, DATE 5/5/91
  - ACTUAL TEST ALCOVES WILL BE LOCATED IN THE FIELD AS GEOLOGY IS REVEALED BY EXCAVATION. ALCOVE LOCATIONS SHOWN ARE APPROXIMATIONS.
  - AN AREA OF LENGTH TO BE DETERMINED BEHIND AN ADVANCING TBM WILL HAVE THE UTILITIES LOCATED IN A MANNER TO PERMIT OPTIMIZED MAPPING OF THE RAMP PERIMETER
  - SEE CALCULATION ST-SA-001 FOR MAJOR COORDINATES AND VERTICAL CURVE DATA.

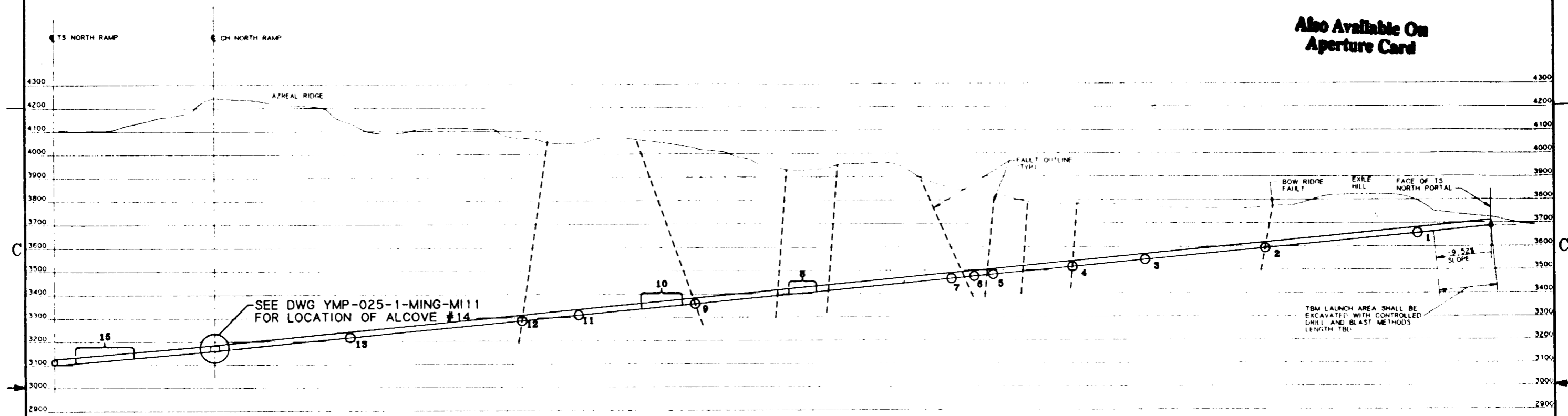


9112020061-167



**SI APERTURE CARD**

Also Available On Aperture Card



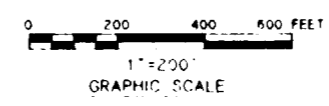
**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

TEST/ALCOVE LOCATION	TESTS TO BE LOCATED IN ALCOVE
1	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST
2	HYDR. PROPERTIES OF MAJOR FAULTS TEST (BOW RIDGE FAULT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. A
3	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST IN-SITU SEALS TEST CAT. B
4	IN-SITU SEALS TEST CAT. A
5	CONTACT TEST (RBT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B
6	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST DIFFUSION TEST
7	CONTACT TEST (RBT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B
8	GEOMECHANICAL ATTRIBUTES OF WASTE PACKAGE ENVIRONMENT TEST REPOSITORY HORIZON NEAR-FIELD HYDROLOGIC PROPERTIES TEST
9	IN-SITU SEALS TEST CAT. A
10	UDBR OVERCORE STRESS TEST HEATER EXPERIMENT IN TSW1 PLATE LOADING TEST
11	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST
12	IN-SITU SEALS TEST CAT. A
13	HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B
15	HYDR. PROPERTIES OF MAJOR FAULTS (DRILL HOLE WASH STRUCTURE) HYDROCHEMISTRY TEST

**ELEVATION**  
SCALE 1"=200'

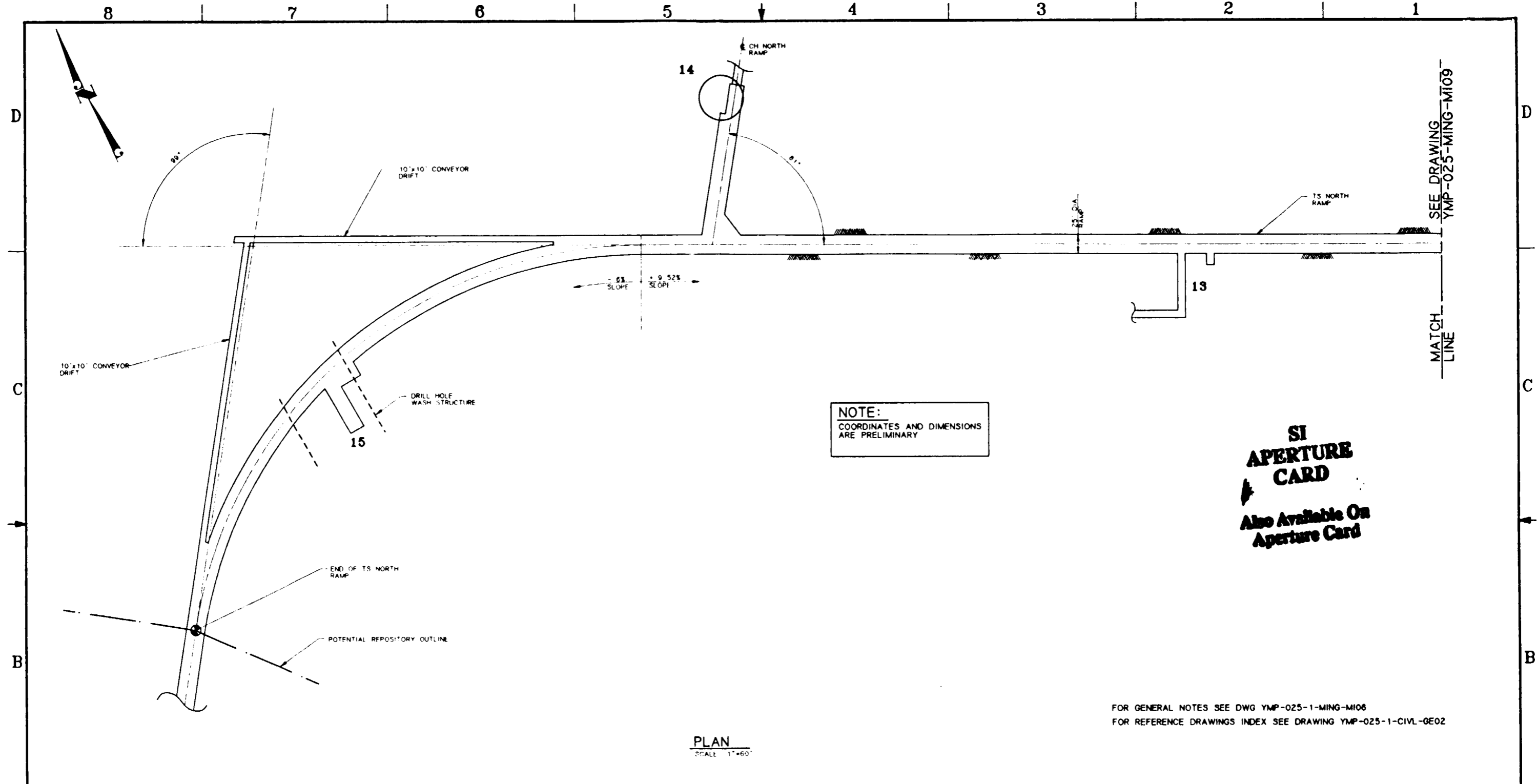
FOR GENERAL NOTES SEE DWG YMP-025-1-MING-MI06  
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RLC	EXPLORATORY STUDIES FACILITY TS NORTH RAMP GENERAL ARRANGEMENT TS PRELIMINARY TEST LOCATIONS <b>ELEVATION</b>											
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	BCH												
VERIFICATION	N/A	SUBMITTED BY		DATE	DRAWING NO		REV.						
ENV. SAF.	<i>[Signature]</i>	712nd		8-26-91	YMP-025-1-MING-MI07		0						
QUALITY ASSURANCE	<i>[Signature]</i>	YMP/O APPROVED		DATE	SHT	OF							
W.B.S. NO.	1, 2, 6, 5												
C.I. NO.													



9112020061-168

19



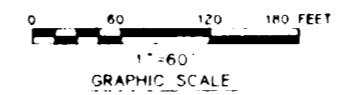
**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card

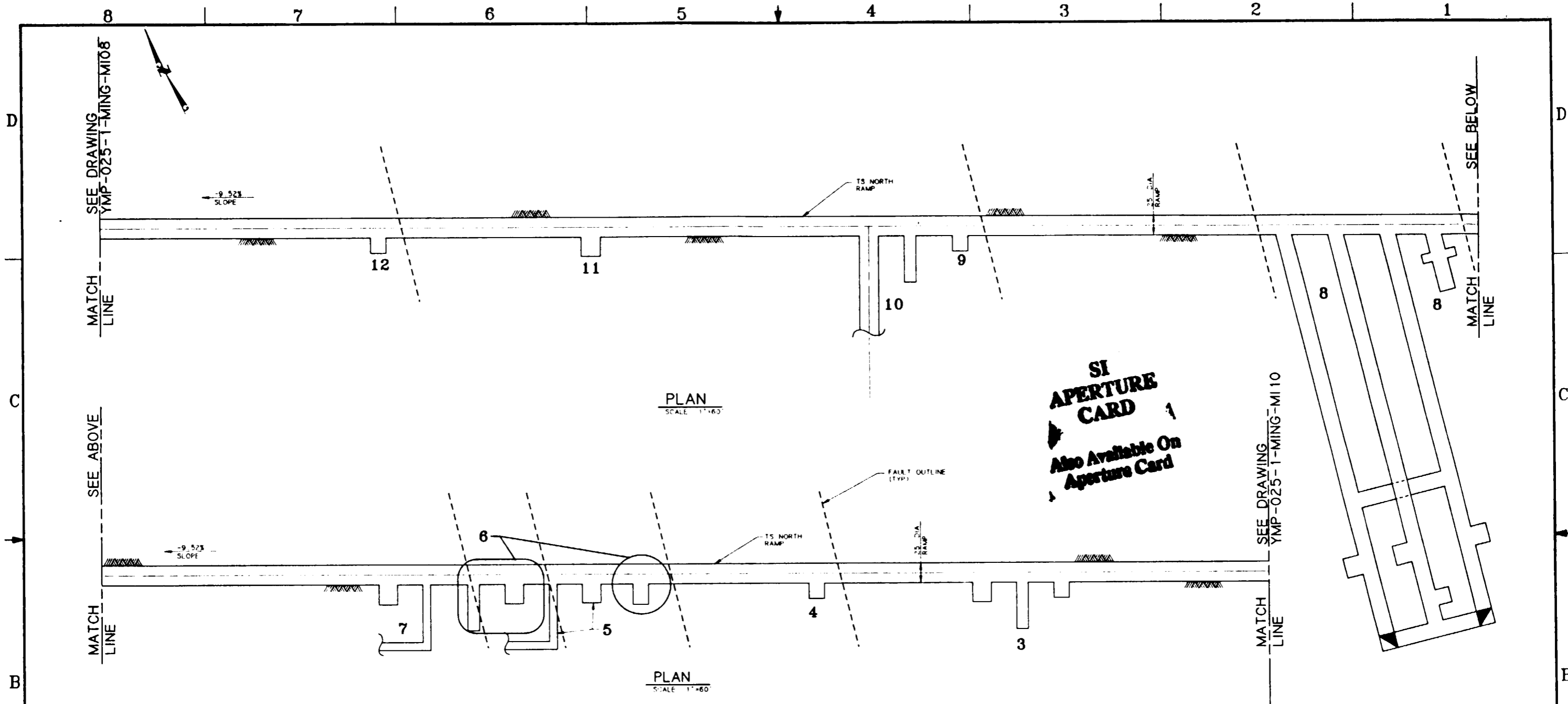
FOR GENERAL NOTES SEE DWG YMP-025-1-MING-MI08  
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

**PLAN**  
SCALE 1"=60'

TEST/ALCOVE LOCATION	TESTS TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED (PRELIMINARY)
13	HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT B	10' Wx 15' Lx 8' H 10' DIAx LENGTH TBD - 3 TUNNEL DIA AWAY
14	EXCAVATION EFFECTS TEST	USE EXISTING TBM ERECTION/LAUNCH AREA
15	HYDR. PROPERTIES OF MAJOR FAULTS (DRILL HOLE WASH STRUCTURE) HYDROCHEMISTRY TEST	50' Wx 80' Lx 28' H (MAX DIMENSIONS) (SAME ALCOVE)



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAP	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	RLC	EXPLORATORY STUDIES FACILITY											
DRAWN	CLP	TS NORTH RAMP GENERAL ARRANGEMENT											
CHECKED	<i>[Signature]</i>	TS PRELIMINARY TEST LOCATIONS											
DEC	<i>[Signature]</i>	ENLARGED PLAN											
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAP	SUBMITTED BY DATE DRAWING NO											
QUALITY ASSURANCE	<i>[Signature]</i>	7.2 Jullard 8-22-91 YMP-025-1-MING-MI08											
YMPD APPROVED												REV. 0	
DATE												SHT OF	



**SI APERTURE CARD**  
 Also Available On Aperture Card

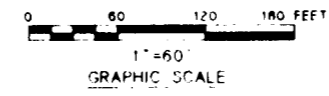
TEST/ALCOVE LOCATION	TESTS TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED (PRELIMINARY)
3	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST IN-SITU SEALS TEST CAT. A	24' Wx25' Lx28' H SAME ALCOVE AS ANISOTROPY TEST 15' Wx60' Lx6' H 20' Wx20' Lx10' H
4	IN-SITU SEALS TEST CAT. A	20' Wx20' Lx10' H
5	CONTACT TEST (RBT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B	24' Wx25' Lx28' H SAME ALCOVE AS ANISOTROPY TEST 10' DIAxLENGTH TBD - 3 TUNNEL DIA AWAY
6	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST DIFFUSION TEST	24' Wx25' Lx28' H SAME ALCOVE AS CONTACT TEST 15' Wx60' Lx6' H 20' Wx20' LxHEIGHT (TBD)
7	CONTACT TEST (RBT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. B	24' Wx25' Lx28' H SAME ALCOVE AS CONTACT TEST 10' DIAxLENGTH TBD - 3 TUNNEL DIA AWAY
8	GEOMECHANICAL ATTRIBUTES OF WASTE PACKAGE ENVIRONMENT TEST REPOSITORY HORIZON NEAR-FIELD HYDROLOGIC PROPERTIES TEST	20' Wx72' Lx15' H x(2) 12' Wx12' L ALCOVES TBDW x TBDL x TBDH
9	IN-SITU SEALS TEST CAT. A	20' Wx20' Lx10' H
10	UDBR OVERCORE STRESS TEST HEATER EXPERIMENT IN TSW1 PLATE LOADING TEST	25W xLENGTH (TBD)xHEIGHT (TBD) SAME ALCOVE AS UDBR SAME ALCOVE AS UDBR 15' Wx60' Lx6' H
11	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST	24' Wx25' Lx28' H SAME ALCOVE AS ANISOTROPY TEST
12	IN-SITU SEALS TEST CAT. A	20' Wx20' Lx10' H

**NOTE:**  
 WHEN EVER POSSIBLE TEST ALCOVES WILL BE UTILIZED FOR MORE THAN ONE TEST. CO-UTILIZATION WILL BE DEPENDENT UPON SUCH FACTORS AS SCHEDULES, SPACE FOR DRILLING AND OPERATIONS INTERFERENCE. THE NUMBER OF ALCOVES SHOWN WILL BE REDUCED IF POSSIBLE.

**NOTE:**  
 COORDINATES AND DIMENSIONS ARE PRELIMINARY

FOR GENERAL NOTES SEE DWG YMP-025-1-MING-MI08  
 FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b>													
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLC		EXPLORATORY STUDIES FACILITY TS NORTH RAMP GENERAL ARRANGEMENT TS PRELIMINARY TEST LOCATIONS <b>ENLARGED PLANS</b>										
DRAWN	CLP												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	[Signature]		SUBMITTED BY		DATE		DRAWING NO		REV				
QUALITY ASSURANCE	[Signature]		72 [Signature]		8-25-91		YMP-025-1-MING-MI09		0				
YMP0005			W.B.S. NO		1,2,6,5		YMP0 APPROVED		DATE		SHT OF		
8-21-91			C.I. NO										



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APERTURE  
CARD**

**Also Available On  
Aperture Card**

SEE DRAWING  
YMP-025-1-MING-M109  
MATCH  
LINE

BOW RIDGE FAULT  
(PROJECTED)

TS NORTH  
RAMP

TBM LAUNCH AREA EXCAVATED WITH  
CONTROLLED DRILL AND BLAST METHODS  
(LENGTH TBD)

9.52%  
SLOPE

FACE OF TS  
NORTH RAMP

2

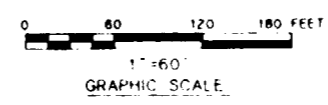
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PLAN  
SCALE 1"=60'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY

FOR GENERAL NOTES SEE DWG YMP-025-1-MING-M106  
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

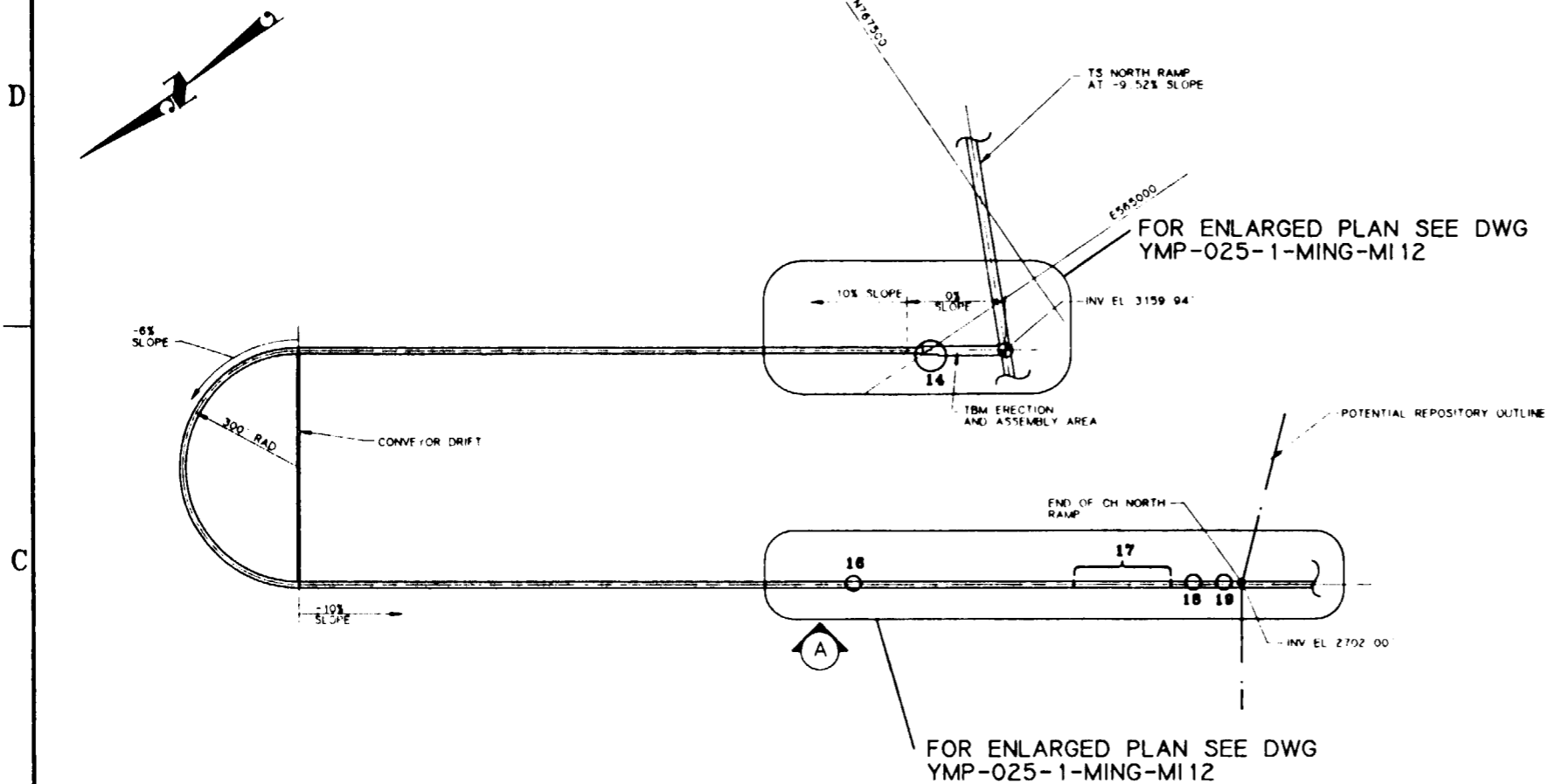
TEST/ALCOVE LOCATION	TESTS TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED (PRELIMINARY)
1	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST	24' Wx25' Lx26' H SAME ALCOVE AS ANISOTROPY TEST
2	HYDR. PROPERTIES OF MAJOR FAULTS TEST (BOW RIDGE FAULT) HYDROCHEMISTRY TEST IN-SITU SEALS TEST CAT. A	50' Wx80' Lx26' H (MAX. DIMENSIONS) SAME ALCOVE AS HYDR. PROPERTIES TEST SAME ALCOVE AS HYDR. PROPERTIES TEST



NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPO
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS NORTH RAMP GENERAL ARRANGEMENT TS PRELIMINARY TEST LOCATIONS ENLARGED PLAN													
DESIGN		REL		DRAWN		CLP		CHECKED		J.M. [Signature]		DEC	
DESIGN MANAGER		B. CH.		VERIFICATION		N/A		ENV. SAF.		P. [Signature]		J.M. [Signature]	
QUALITY ASSURANCE		0-25-97		SUBMITTED BY		DATE		DRAWING NO.		REV.		YMP-025-1-MING-M110	
YMP-025-1-MING-M110		1, 2, 5, 5		YMP-025-1-MING-M110		8-25-97		YMP-025-1-MING-M110		0		DATE	
C.I. NO.				SHT		OF							

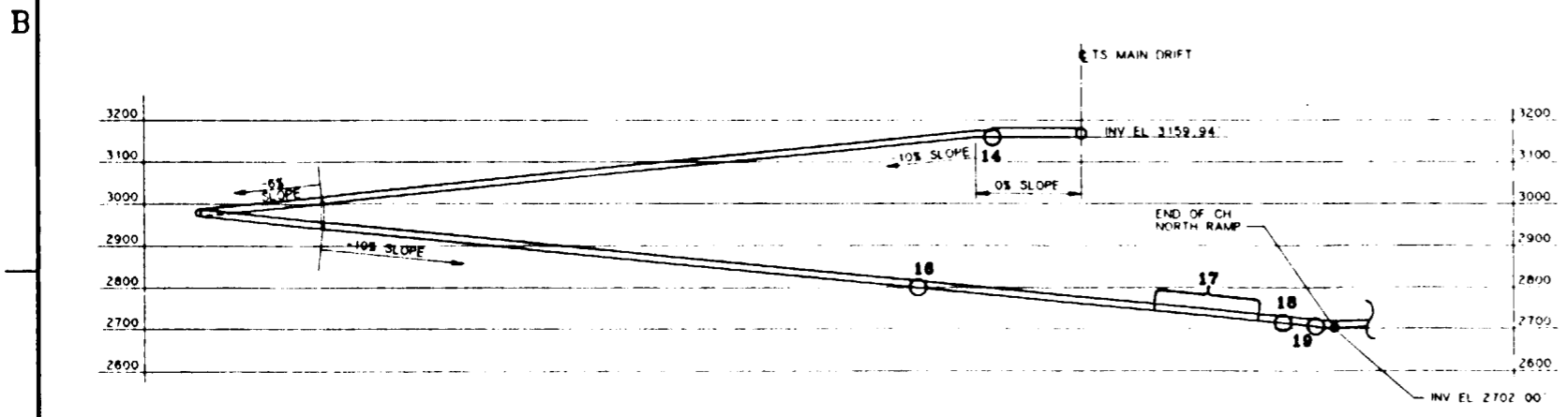
9118020061-171

8 7 6 5 4 3 2 1



**CH NORTH RAMP PLAN**  
SCALE 1"=200'

**NOTE:**  
COORDINATES AND DIMENSIONS  
ARE PRELIMINARY



**ELEVATION**  
SCALE 1"=200'

TEST/ALCOVE LOCATION	TESTS TO BE LOCATED IN ALCOVE
14	EXCAVATION EFFECTS TEST
16	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST
17	HYDR. PROPERTIES OF MAJOR FAULTS (DRILL HOLE WASH STRUCTURE) HYDROCHEMISTRY TEST
18	PLATE LOADING TEST
19	CONTACT TEST (RBT) HYDROCHEMISTRY TEST

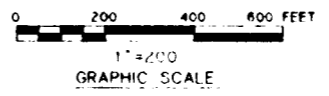
**SI APERTURE CARD**  
Also Available On Aperture Card

**GENERAL NOTES**

1. THE BASIS FOR THE TEST ALCOVE LOCATIONS IS SF DR YMP-025-0013, REV. 5/31/91.
2. THE GEOLOGICAL STRUCTURAL FEATURES ARE BASED ON SAIC PRELIMINARY CROSS SECTION CALICO HILLS NORTH ACCESS RAMP, DATE 5/5/91.
3. ACTUAL TEST ALCOVES WILL BE LOCATED IN THE FIELD AS GEOLOGY IS REVEALED BY EXCAVATION. ALCOVE LOCATIONS SHOWN ARE APPROXIMATIONS.
4. AN AREA OF LENGTH TO BE DETERMINED BEHIND AN ADVANCING TBM WILL HAVE THE UTILITIES LOCATED IN A MANNER TO PERMIT OPTIMIZED MAPPING OF THE RAMP PERIMETER.
5. SEE CALCULATION ST-SA-001 FOR MAJOR COORDINATES AND VERTICAL CURVE DATA.

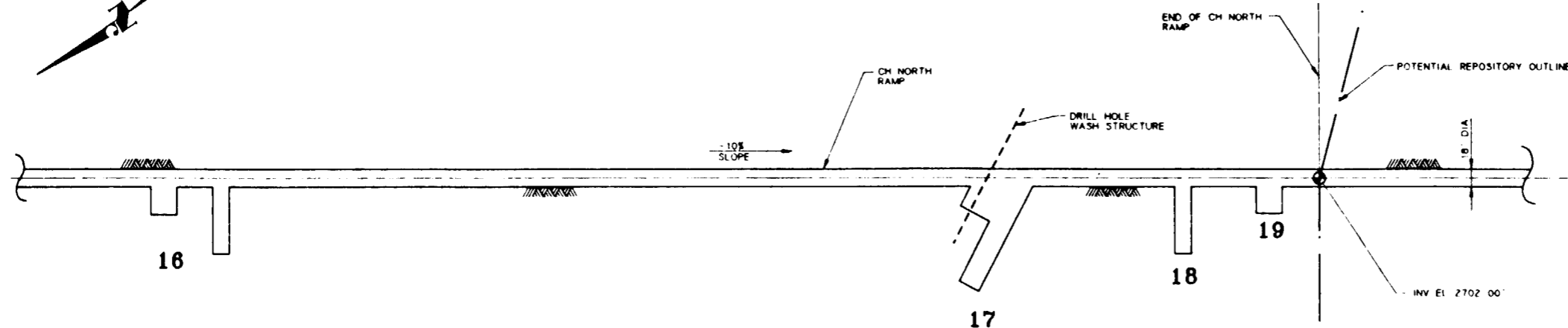
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLC		EXPLORATORY STUDIES FACILITY										
DRAWN	CLP		CH NORTH RAMP GENERAL ARRANGEMENT										
CHECKED	[Signature]		CH PRELIMINARY TEST LOCATIONS										
DEC	[Signature]		PLAN AND ELEVATION										
DESIGN MANAGER	B. CH.		SUBMITTED BY: [Signature] DATE: 8-25-91										
VERIFICATION	N/A		DRAWING NO: YMP-025-1-MING-MI 11										
ENV SAF	[Signature]		REV: 0										
QUALITY ASSURANCE	[Signature]		YMP APPROVED: [Signature] DATE: 8-25-91										
FCN	YMP0017		SHT OF										
W.B.S. NO.	R-21-91		C.I. NO.										



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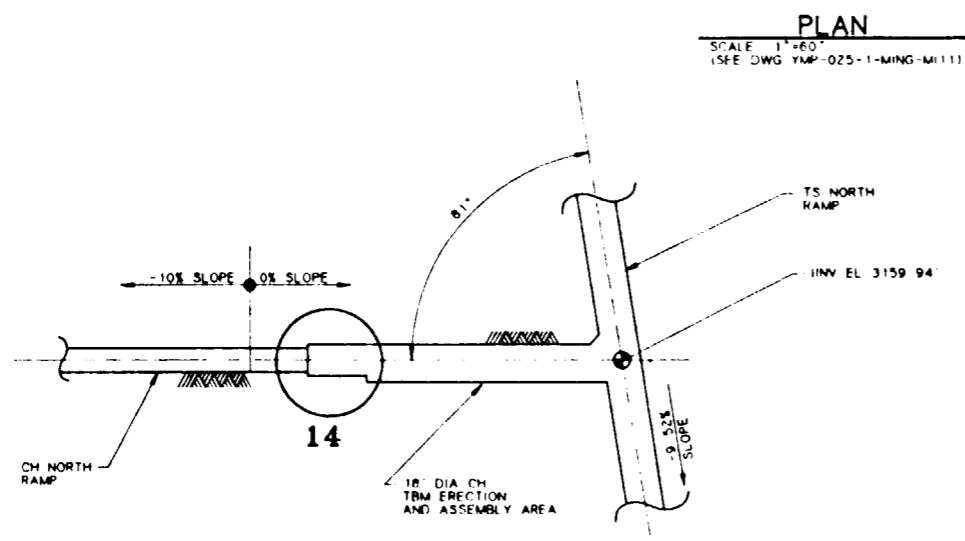
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**SI APERTURE CARD**  
Also Available On Aperture Card

C

C



**NOTE:**  
COORDINATES AND DIMENSIONS ARE PRELIMINARY

B

B

**PLAN**  
SCALE 1"=60'  
(SEE DWG YMP-025-1-MING-M111)

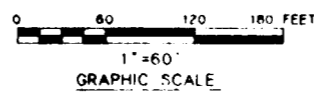
FOR GENERAL NOTES SEE DWG YMP-025-1-MING-M11  
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

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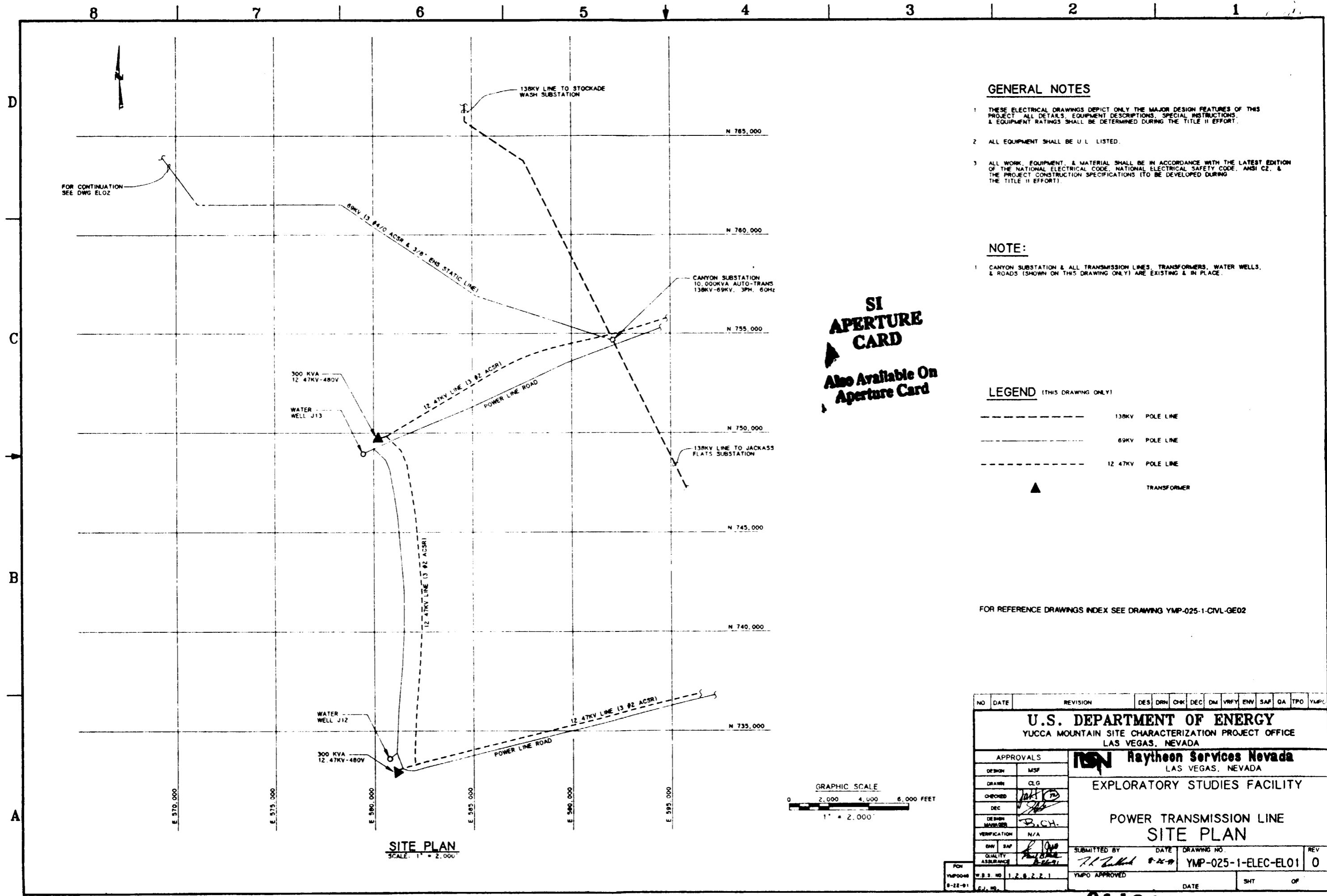
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TEST/ALCOVE LOCATION	TESTS TO BE LOCATED IN ALCOVE	EXCAVATION SIZE REQUIRED (PRELIMINARY)
14	EXCAVATION EFFECTS TEST	USE EXISTING TBM ERECTION/LAUNCH AREA
16	ANISOTROPY TEST (RBT) HYDROCHEMISTRY TEST PLATE LOADING TEST	24' Wx25' Lx26' H SAME ALCOVE AS ANISOTROPY TEST 15' Wx80' Lx6' H
17	HYDR. PROPERTIES OF MAJOR FAULTS (DRILL HOLE WASH STRUCTURE) HYDROCHEMISTRY TEST	50' Wx80' Lx26' H (MAX DIMENSIONS) SAME ALCOVE AS HYDR. PROPERTIES TEST
18	PLATE LOADING TEST	15' Wx80' Lx6' H
19	CONTACT TEST (RBT) HYDROCHEMISTRY TEST	24' Wx25' Lx26' H SAME ALCOVE AS CONTACT TEST

**NOTE:**  
WHEN EVER POSSIBLE TEST ALCOVES WILL BE UTILIZED FOR MORE THAN ONE TEST. CO-UTILIZATION WILL BE DEPENDENT UPON SUCH FACTORS AS SCHEDULES, SPACE FOR DRILLING AND OPERATIONS INTERFERENCE. THE NUMBER OF ALCOVES SHOWN WILL BE REDUCED IF POSSIBLE.



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLC		EXPLORATORY STUDIES FACILITY CH NORTH RAMP GENERAL ARRANGEMENT CH PRELIMINARY TEST LOCATIONS ENLARGED PLANS										
DRAWN	CLP												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	S. CH.												
VERIFICATION	N/A												
ENV	SAF	SUBMITTED BY <i>[Signature]</i> DATE 8-26-91 DRAWING NO. YMP-025-1-MING-M12 REV 0											
QUALITY ASSURANCE	YMPD APPROVED <i>[Signature]</i> DATE 8-21-91												



**GENERAL NOTES**

1. THESE ELECTRICAL DRAWINGS DEPICT ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS, SPECIAL INSTRUCTIONS, & EQUIPMENT RATINGS SHALL BE DETERMINED DURING THE TITLE II EFFORT.
2. ALL EQUIPMENT SHALL BE U.L. LISTED.
3. ALL WORK, EQUIPMENT, & MATERIAL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, ANSI C2, & THE PROJECT CONSTRUCTION SPECIFICATIONS (TO BE DEVELOPED DURING THE TITLE II EFFORT).

**NOTE:**

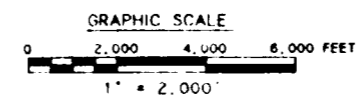
1. CANYON SUBSTATION & ALL TRANSMISSION LINES, TRANSFORMERS, WATER WELLS, & ROADS (SHOWN ON THIS DRAWING ONLY) ARE EXISTING & IN PLACE.

**SI APERTURE CARD**  
**Also Available On Aperture Card**

**LEGEND (THIS DRAWING ONLY)**

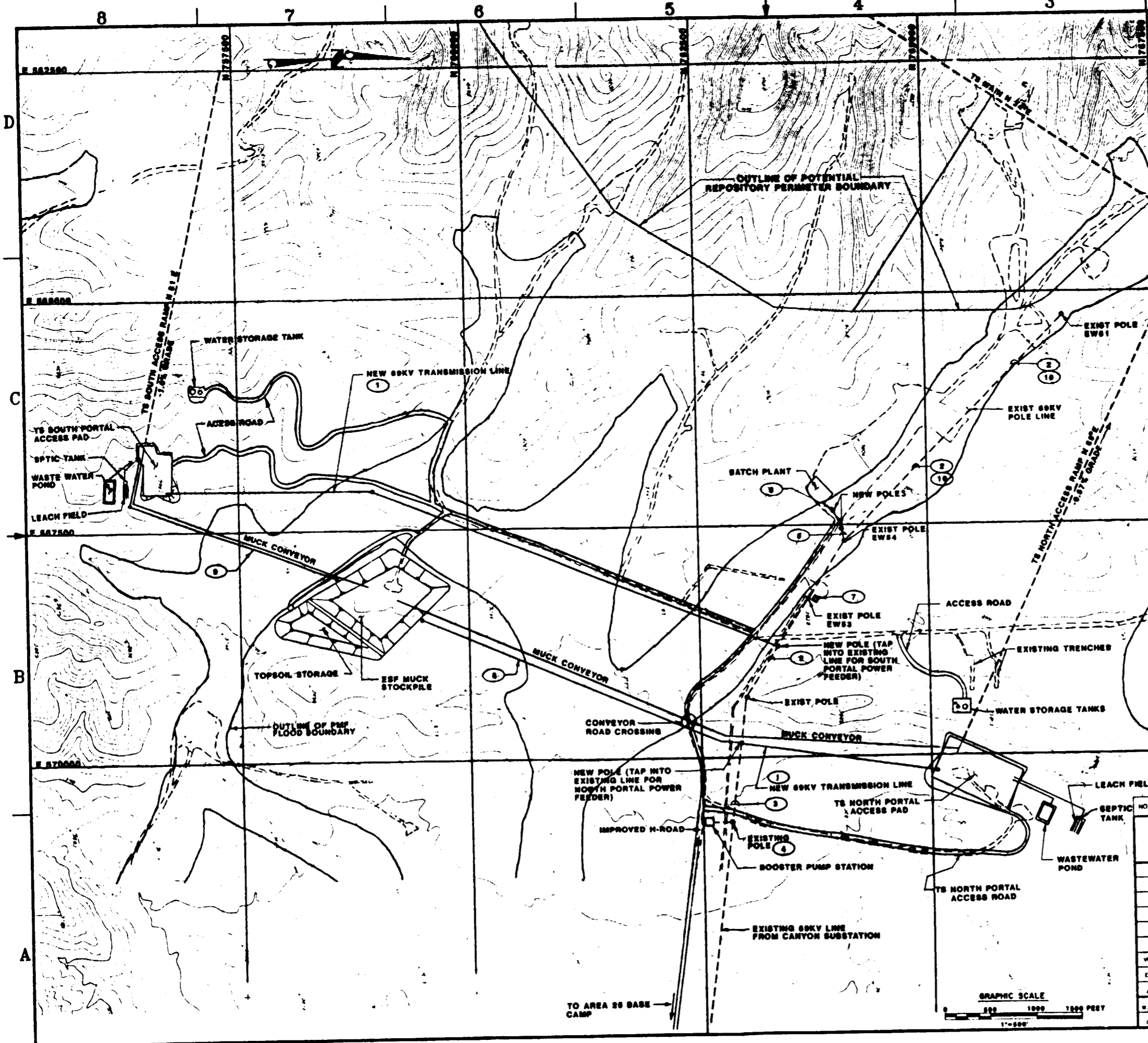
- 138KV POLE LINE
- 69KV POLE LINE
- 12 47KV POLE LINE
- ▲ TRANSFORMER

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



**SITE PLAN**  
 SCALE: 1" = 2,000'

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/C
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MSF		<b>EXPLORATORY STUDIES FACILITY</b>  <b>POWER TRANSMISSION LINE</b> <b>SITE PLAN</b>										
DRAWN	CLG												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENR	SAF	SUBMITTED BY: [Signature] DATE: 8-25-99 DRAWING NO: YMP-025-1-ELEC-EL01 REV: 0											
QUALITY ASSURANCE	YMPO APPROVED: [Signature] DATE: SHT: OF:												



**KEYED NOTES:**

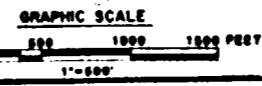
- ① THE NEW 60KV TRANSMISSION LINE DEPICTS A PRELIMINARY ROUTING OF POWER TO THE NORTH AND SOUTH PORTAL AREAS. THE ROUTING IS SUBJECT TO CHANGE.
- ② EXISTING 60KV TRANSMISSION LINE WITH 12.47KV # 4/0 ACSR, UNDERBULT.
- ③ EXTEND EXISTING 12.47KV UNDERBULT FROM POLE EWS2 TO POLE EWS1.
- ④ INSTALL KVA, 12.47KV-480Y/277V, 3PH, 60HZ TRANSFORMER ON POLE EWS1 FOR UNDERGROUND SERVICE TO BOOSTER PUMP STATION. VALUES NOT SHOWN WILL BE DEVELOPED DURING TITLE II.
- ⑤ EXTEND EXISTING 12.47KV #4/0 ACSR, FROM POLE EWS4 TO BATCH PLANT AREA.
- ⑥ INSTALL KVA, 12.47KV - 480Y/277V, 3PH, 60HZ TRANSFORMER WITH A AMP, 480Y/277V, 4W, 3PH PANEL MOUNT ON POLE. VALUES NOT SHOWN WILL BE DEVELOPED DURING TITLE II
- ⑦ EXISTING 1.6MVA, 69-12.47KV SUBSTATION #25-1E.
- ⑧ NEW 12.47KV DISTRIBUTION LNK FOR MUCK CONVEYOR POWER, NORTH PORTAL. ROUTING SUBJECT TO CHANGE. (FED FROM THE NORTH PORTAL).
- ⑨ SAME AS NOTE 8 EXCEPT FOR THE SOUTH PORTAL CONVEYORS. (FED FROM THE SOUTH PORTAL).
- ⑩ REMOVE THE #4/0 ACSR CONDUCTORS & POLES FOR THE 60KV TRANSMISSION AND 12.47KV UNDERBULT DISTRIBUTION LINE FROM POLE # EWS4 TO POLE EWS1.

**SI APERTURE CARD**

Also Available On Aperture Card

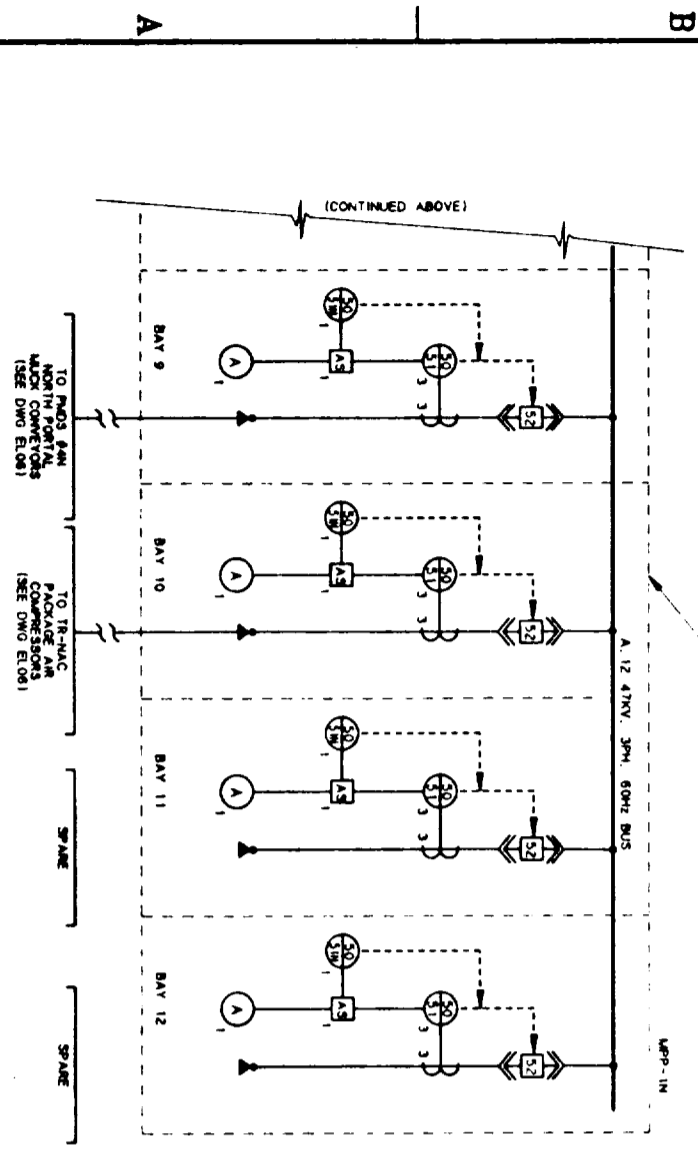
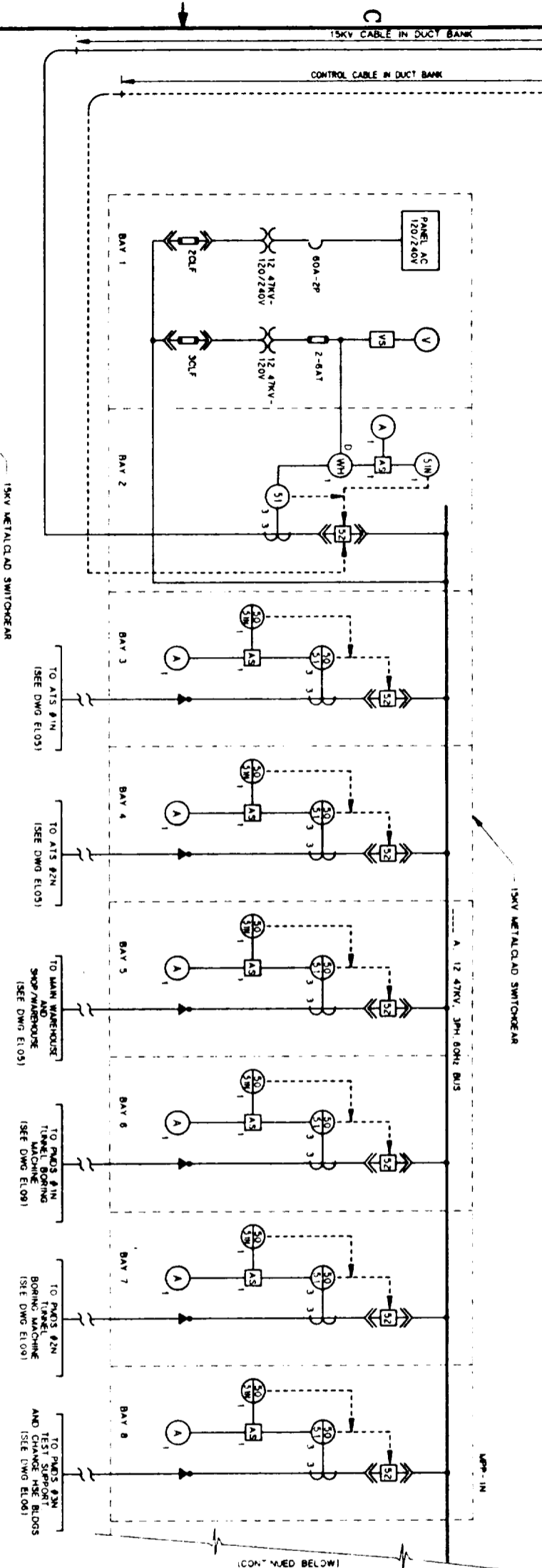
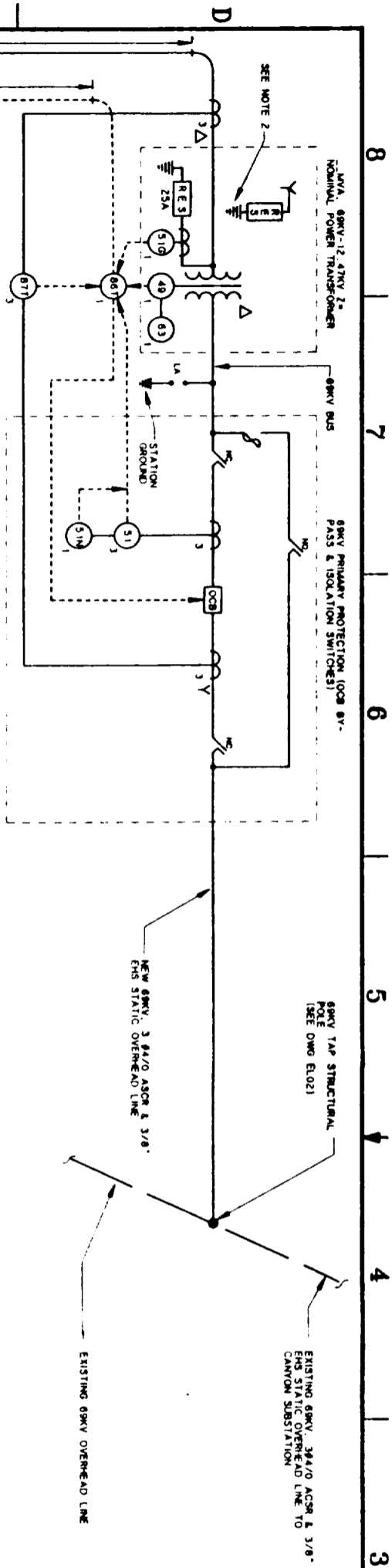
FOR GENERAL NOTES, SEE DWG YMP-025-1-ELEC-EL01  
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

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DESIGN		RAY											
ORIGIN		JDC											
CHECKED		[Signature]											
DEC		[Signature]											
DESIGN MANAGER		B.C.H.											
VERIFICATION		N/A											
ENV		SM											
QUALITY ASSURANCE		[Signature]											
SUBMITTED BY		[Signature]		DRAWING NO		YMP-025-1-ELEC-EL02						REV 0	
DATE		8-26-99		YMPD APPROVED								SHT OF	
U.S. NO		126221											
C.I. NO													



2112020061-175





- NOTES:**
1. ALL CIRCUITS SHALL HAVE GROUND CHECK MONITORS AND FEEDERS SHALL HAVE GROUND CHECK CONDUCTORS
  2. THE RESISTOR GROUND IS CONNECTED TO THE SURFACE LINE SAFETY GROUND SYSTEM ONLY
  3. POWER FACTOR CAPACITORS WILL BE INCLUDED AS REQUIRED DURING THE TITLE II EFFORT

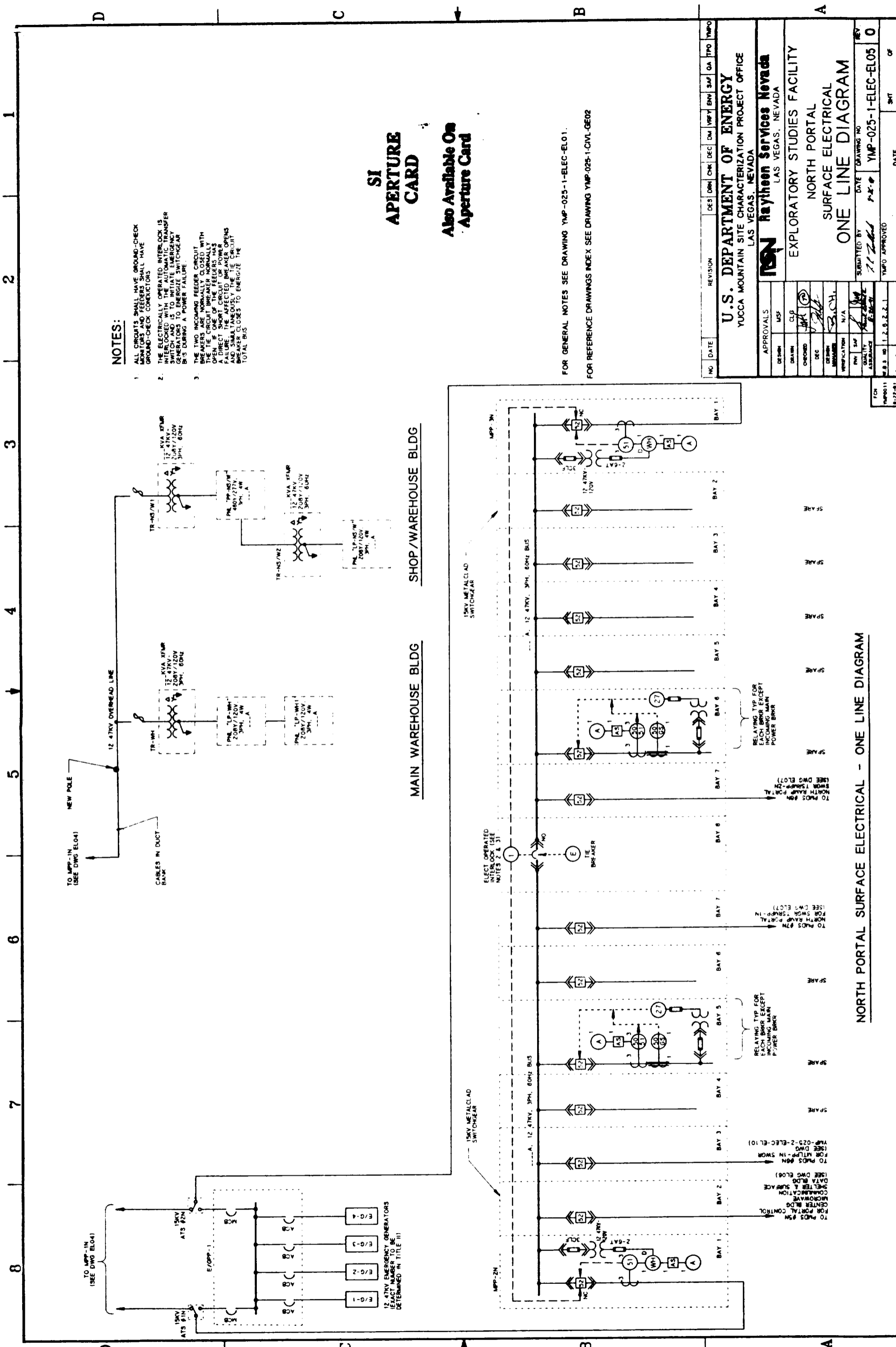
Also Available On  
SI  
APERTURE  
CARD

NORTH PORTAL SURFACE SUBSTATION-ONE LINE DIAGRAM

NO.	DATE	REVISION	DES.	DWG.	CHK.	DEC.	DM.	WR.	ENR.	SAF.	QA.	TRD.	TRD.
<p><b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA</p> <p><b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA</p> <p>EXPLORATORY STUDIES FACILITY NORTH PORTAL SURFACE SUBSTATION ONE LINE DIAGRAM</p>													
APPROVALS			<p>DESIGN: OLG</p> <p>DRAWN: [Signature]</p> <p>CHECKED: [Signature]</p> <p>DESIGN APPROVED: [Signature]</p> <p>REVISION: N/A</p>										
SUBMITTED BY: [Signature]			<p>DATE: [Date]</p> <p>DRAWING NO: YMP-025-1-ELEC-EL04</p> <p>REV: 0</p>										
DATE: [Date]			<p>DATE: [Date]</p> <p>DATE: [Date]</p>										

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVIL-0E02

FOR GENERAL NOTES. SEE DRAWING YMP-025-1-ELEC-EL01.



**NOTES:**

1. ALL CIRCUITS SHALL HAVE GROUND-CHECK BREAKERS AND FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
2. THE ELECTRICALLY OPERATED INTERLOCK IS INTERLOCKED WITH THE AUTOMATIC TRANSFER GENERATORS TO ENERGIZE SWITCHGEAR BUS DURING A POWER FAILURE
3. THE TWO 12.47KV FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE TIE CIRCUIT BREAKER NORMALLY OPEN. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE, THE AFFECTED FEEDER CIRCUIT BREAKER CLOSURES TO ENERGIZE THE TOTAL BUS.

**SI APERTURE CARD**

Also Available On Aperture Card

FOR GENERAL NOTES SEE DRAWING YMP-025-1-ELEC-EL01.  
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	CHK	DEC	CHK	APP	APP	APP	APP	APP	APP

**U.S. DEPARTMENT OF ENERGY**  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
LAS VEGAS, NEVADA

**Raytheon Services Nevada**  
LAS VEGAS, NEVADA

EXPLORATORY STUDIES FACILITY  
NORTH PORTAL  
SURFACE ELECTRICAL  
ONE LINE DIAGRAM

APPROVALS:  
DESIGN: [Signature]  
DRAWN: [Signature]  
CHECKED: [Signature]  
DEC: [Signature]  
DESIGN MANAGER: [Signature]  
VERIFICATION: [Signature]  
APP: [Signature]  
QUALITY ASSURANCE: [Signature]

FOR NORTH PORTAL SURFACE ELECTRICAL - ONE LINE DIAGRAM

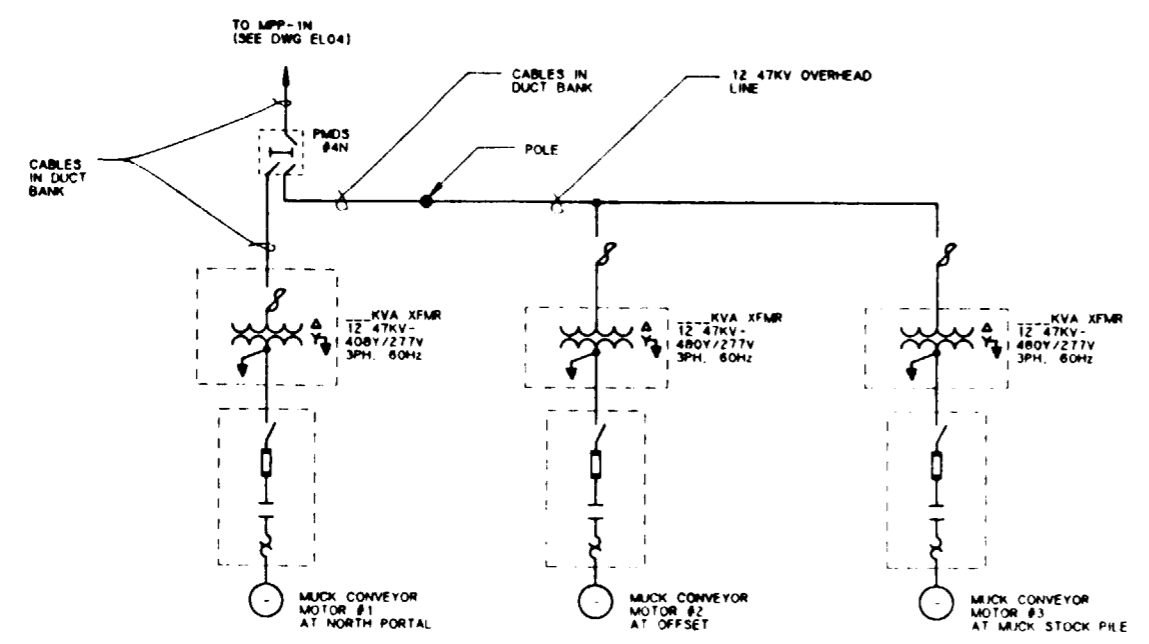
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DRAWING NO: YMP-025-1-ELEC-EL05  
REV: 0

YMP-0 APPROVED: [Signature]  
DATE: 8-22-91  
SMT

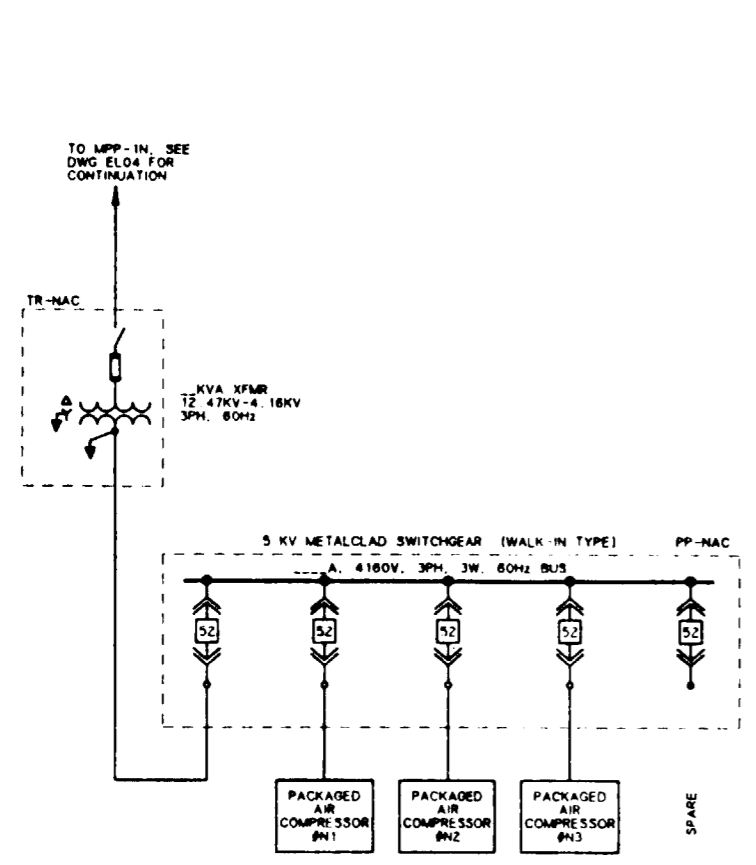
NORTH PORTAL SURFACE ELECTRICAL - ONE LINE DIAGRAM

D  
C  
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A

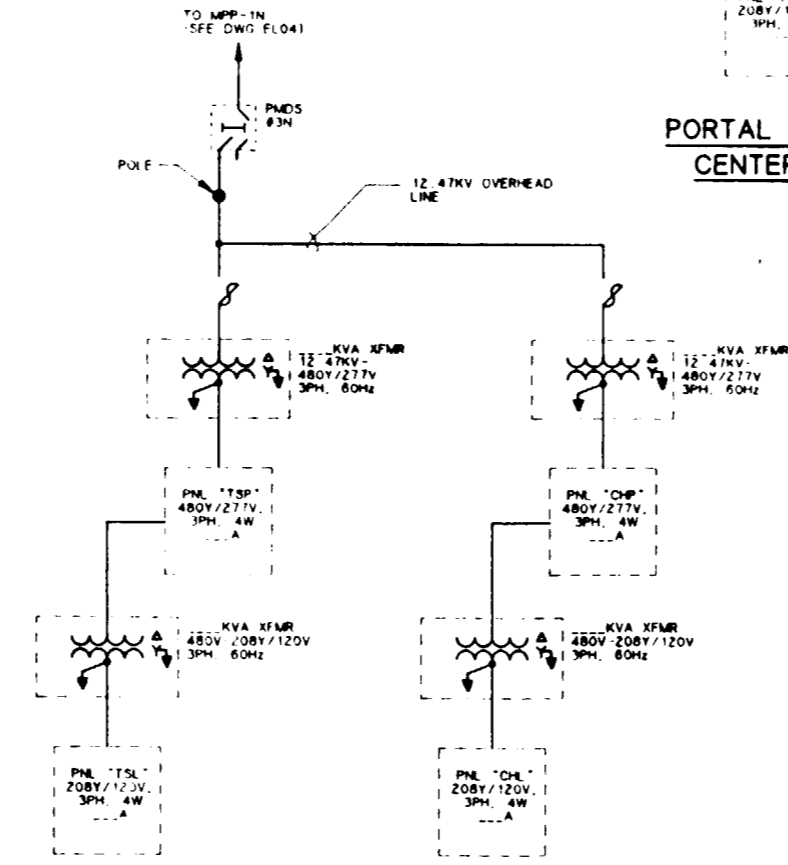
D  
C  
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**NORTH PORTAL MUCK CONVEYORS**

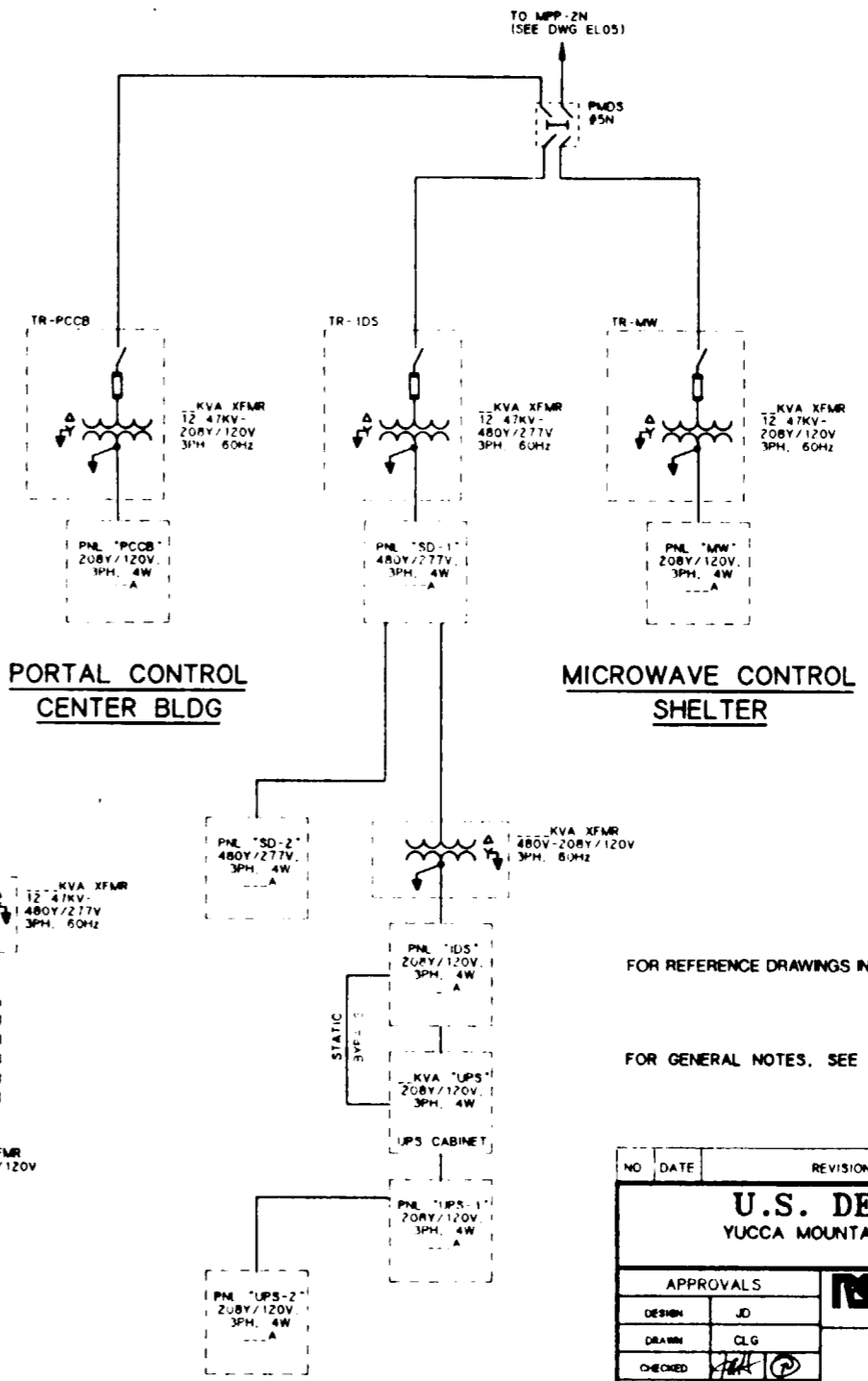


**PACKAGED AIR COMPRESSORS**



**TEST SUPPORT BLDG**

**CHANGE HOUSE BLDG**



**PORTAL CONTROL CENTER BLDG**

**MICROWAVE CONTROL SHELTER**

**SURFACE DATA BLDG**

**NOTES:**

- FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-1-ELEC-EL05.
- CONTROL & INTERLOCK DETAILS FOR THE VENT FANS, CONVEYORS, & PACKAGED AIR COMPRESSOR SYSTEMS WILL BE DEPICTED DURING THE TITLE II EFFORT.

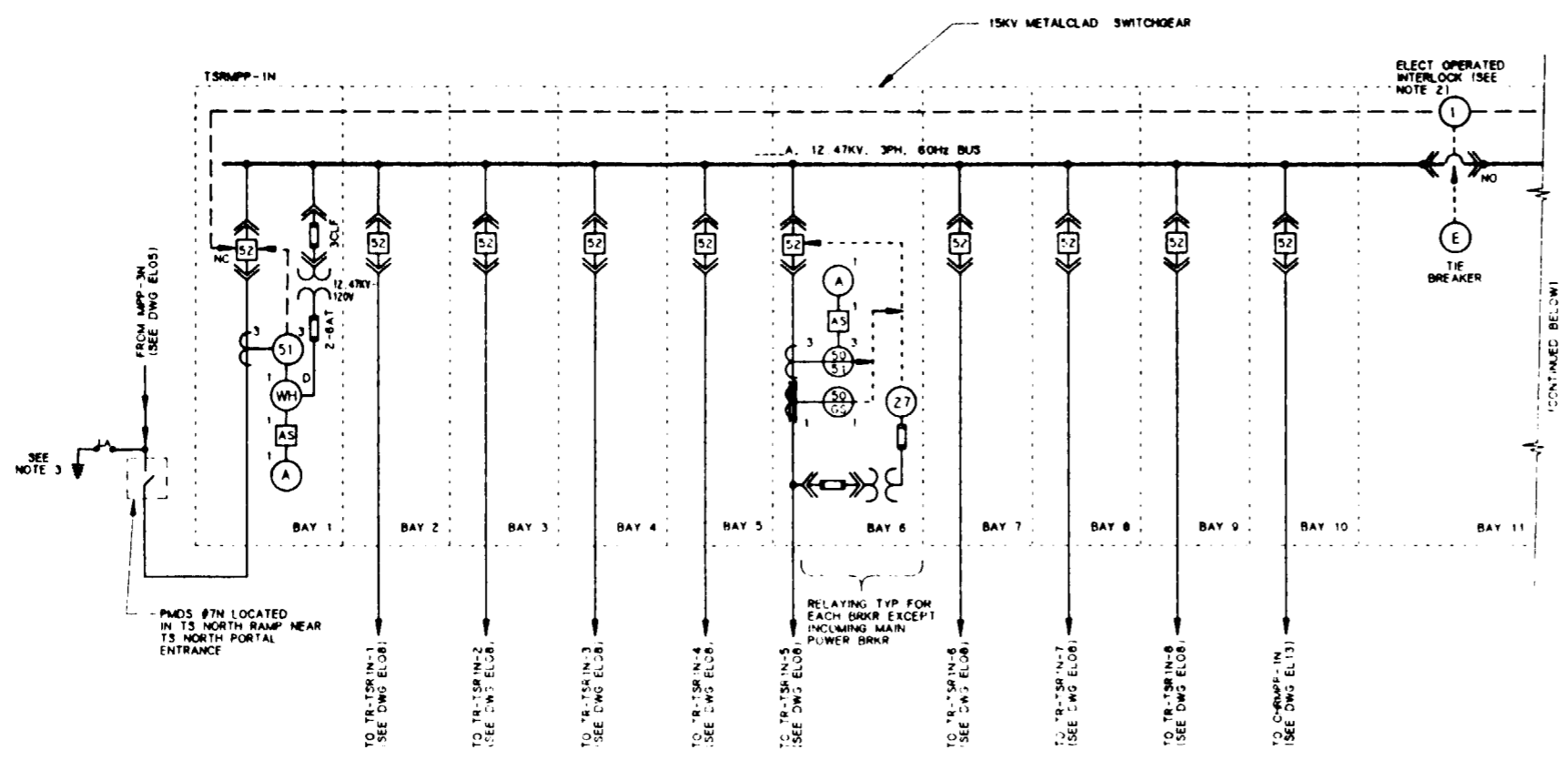
**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

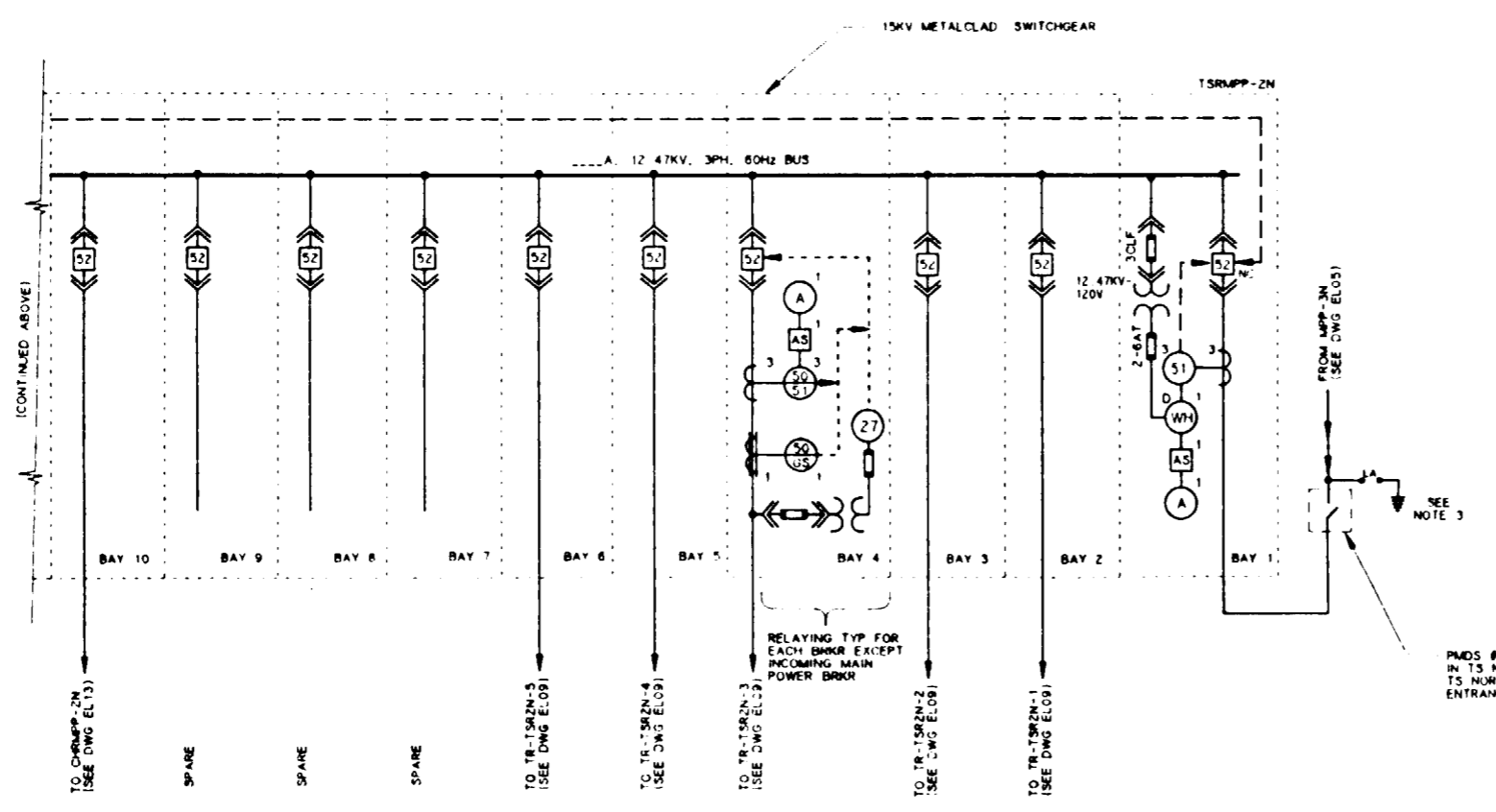
FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VERF	ENV	SAP	QA	TPO	YMP																
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA																													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA																													
<b>EXPLORATORY STUDIES FACILITY</b> NORTH PORTAL SURFACE ELECTRICAL <b>ONE LINE DIAGRAM</b>																													
APPROVALS			<table border="1"> <tr> <td>DESIGN</td> <td>JD</td> </tr> <tr> <td>DRAWN</td> <td>CLG</td> </tr> <tr> <td>CHECKED</td> <td><i>[Signature]</i></td> </tr> <tr> <td>DEC</td> <td><i>[Signature]</i></td> </tr> <tr> <td>DESIGN MANAGER</td> <td>B.C.H.</td> </tr> <tr> <td>VERIFICATION</td> <td>N/A</td> </tr> <tr> <td>ENV SAP</td> <td><i>[Signature]</i></td> </tr> <tr> <td>QUALITY ASSURANCE</td> <td><i>[Signature]</i></td> </tr> </table>											DESIGN	JD	DRAWN	CLG	CHECKED	<i>[Signature]</i>	DEC	<i>[Signature]</i>	DESIGN MANAGER	B.C.H.	VERIFICATION	N/A	ENV SAP	<i>[Signature]</i>	QUALITY ASSURANCE	<i>[Signature]</i>
DESIGN	JD																												
DRAWN	CLG																												
CHECKED	<i>[Signature]</i>																												
DEC	<i>[Signature]</i>																												
DESIGN MANAGER	B.C.H.																												
VERIFICATION	N/A																												
ENV SAP	<i>[Signature]</i>																												
QUALITY ASSURANCE	<i>[Signature]</i>																												
SUBMITTED BY			DATE		DRAWING NO				REV																				
7/2/91			8-2-91		YMP-025-1-ELEC-EL06				0																				
YMP0047			8-22-91		YMP0 APPROVED				DATE																				
G.I. NO.			DATE		SMT				OF																				

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- NOTES:**
- 1 ALL CIRCUITS SHALL HAVE GROUND-CHECK MONITORS AND FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS.
  - 2 THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE TIE CIRCUIT BREAKER NORMALLY OPEN. IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE, THE AFFECTED BREAKER OPENS AND SIMULTANEOUSLY THE TIE CIRCUIT BREAKER CLOSSES TO ENERGIZE THE TOTAL BUS.
  - 3 THIS GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY.



TS NORTH RAMP - ONE LINE DIAGRAM

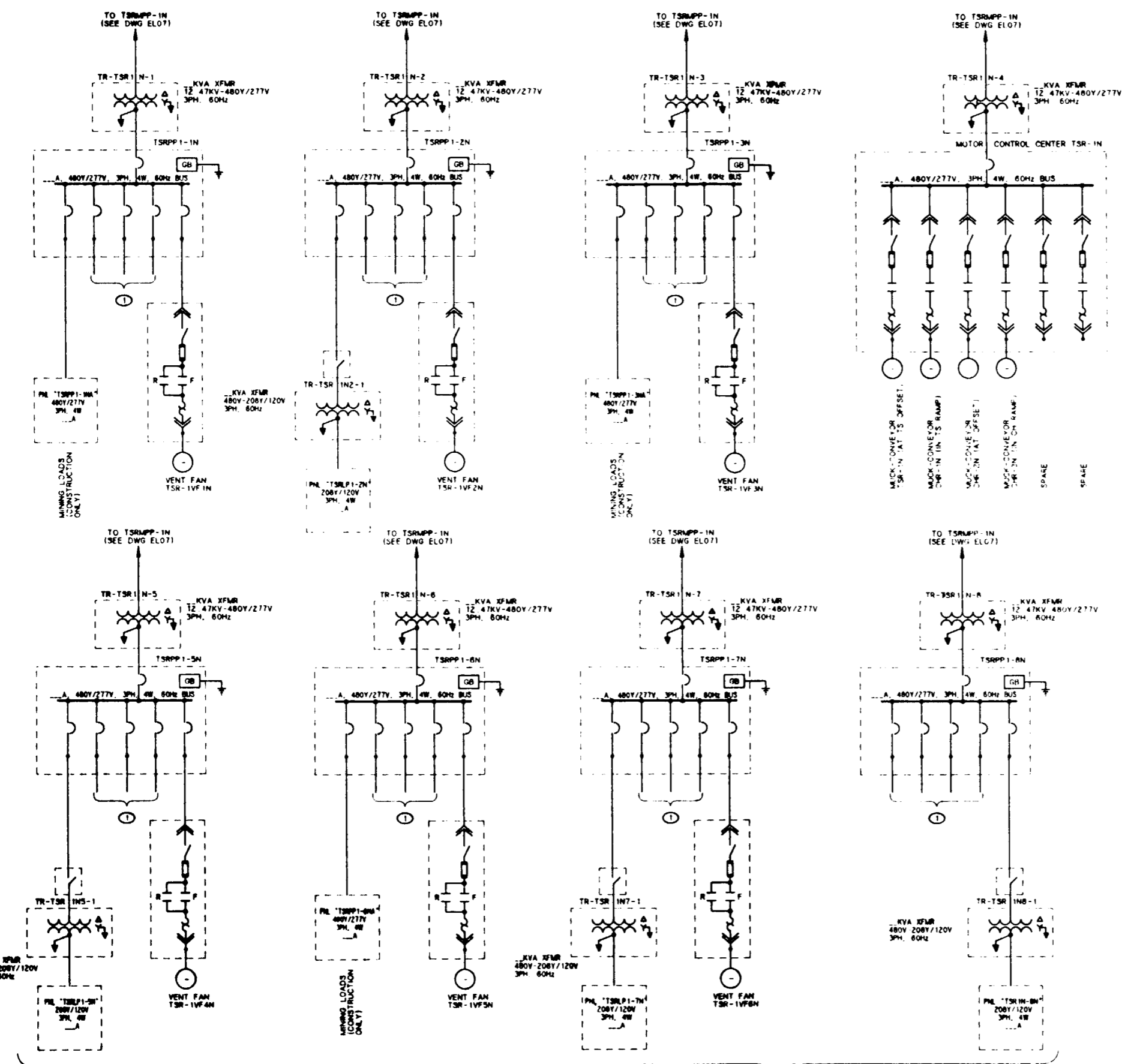
**ASURE CARD**

Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	MSF												
DRAWN	CLG												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	[Signature]												
VERIFICATION	N/A												
ENV	SAF	[Signature]											
QUALITY ASSURANCE	[Signature]												
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7/22/91		8-26-91	YMP-025-1-ELEC-EL07		0								
YMP-025-1		YMP-025-1-ELEC-EL07		YMP-0 APPROVED									
7-18-91		DATE		SHT		OF							



NOTES:

1. FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-1-ELEC-ELO7.

**SI APERTURE CARD**  
 Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-ELO1.

① POWER PANELS LOCATED IN TS NORTH RAMP AT VARIOUS FACILITIES REQUIRING POWER FOR INSTRUMENTATION TESTING, LIGHTING, UPS(S), ETC.

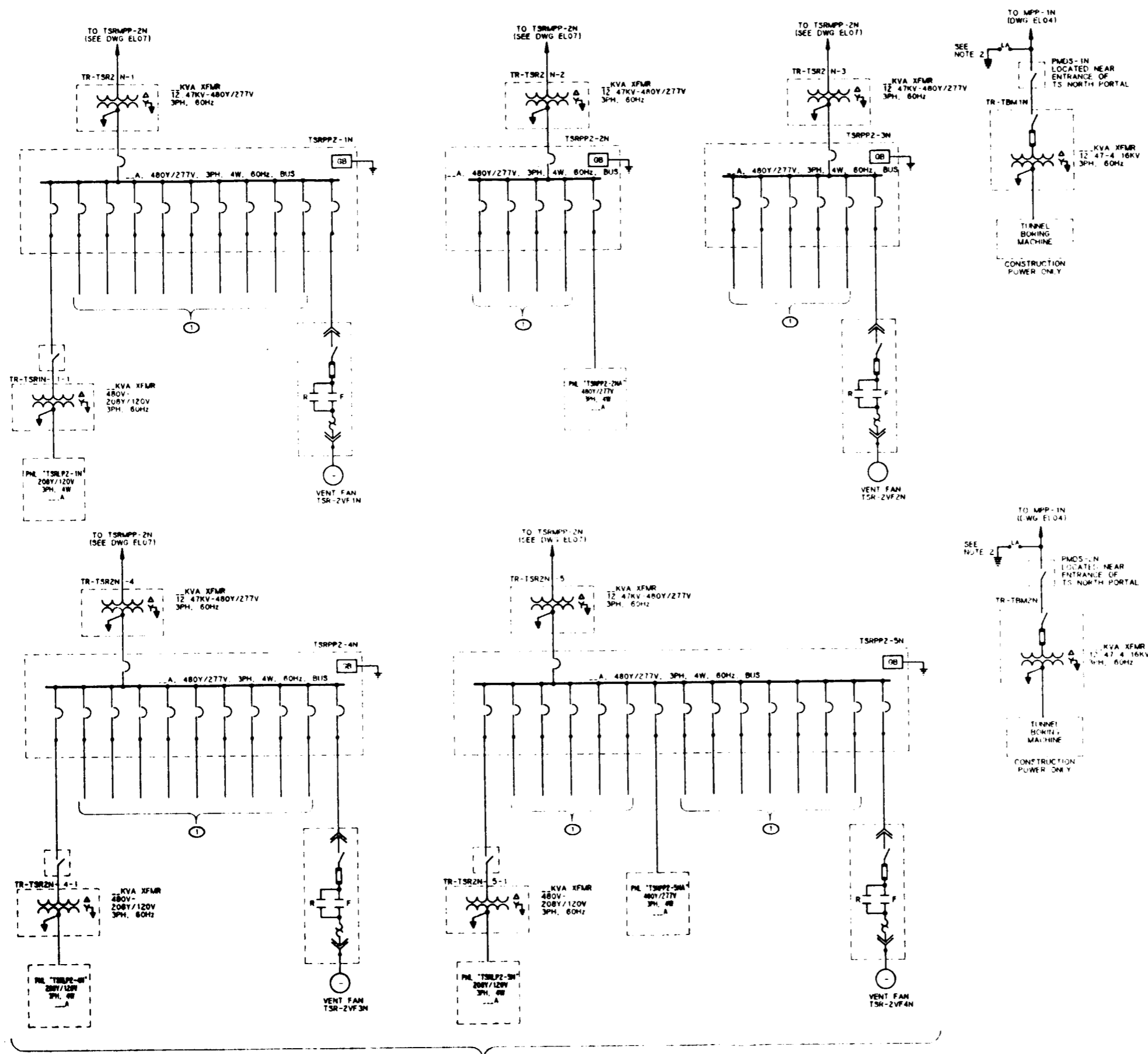
TS NORTH RAMP - ONE LINE DIAGRAM

NO	DATE	REVISION	DES	DRW	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b>													
<b>TS NORTH RAMP</b>													
<b>ELECTRICAL</b>													
<b>ONE LINE DIAGRAM</b>													
APPROVALS													
DESIGN	MSF												
DRAWN	CLG												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
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QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV.								
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YMP0002		YMP0 APPROVED											
8-23-91		DATE		SHT		OF							

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**NOTES:**

- FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-1-ELEC-EL07.
- THIS GROUND IS CONNECTED TO THE SURFACE MINE SAFETY GROUND SYSTEM ONLY.

**SI APERTURE CARD**

Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

① POWER PANELS LOCATED IN TOPOPAH SPRING NORTH ACCESS RAMP AT VARIOUS FACILITIES REQUIRING POWER FOR INSTRUMENTATION TESTING, LIGHTING, UPS(S), ETC

**TS NORTH RAMP - ONE LINE DIAGRAM**

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
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APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
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VERIFICATION	N/A	FCM: YMP0003 WBS NO: 1.2.0.2.2.1 C.I. NO:											
ENV	SAF	DATE:											

9112020061-131

62

**NOTES:**

- 1 ALL CIRCUITS SHALL HAVE GROUND-CHECK AND ANTI-PARALLEL FEEDERS SHALL HAVE GROUND-CHECK CONDUCTORS
- 2 THE TWO INCOMING FEEDER CIRCUIT BREAKERS ARE NORMALLY CLOSED WITH THE GROUND CHECK BREAKER NORMALLY OPEN IF ONE OF THE FEEDERS HAS A DIRECT SHORT CIRCUIT OR POWER FAILURE. THE AFFECTED BREAKER OPENS AND SIMULTANEOUSLY THE CIRCUIT BREAKER OPENS TO ENERGIZE THE TOTAL BUS.

**SI  
APERTURE  
CARD**

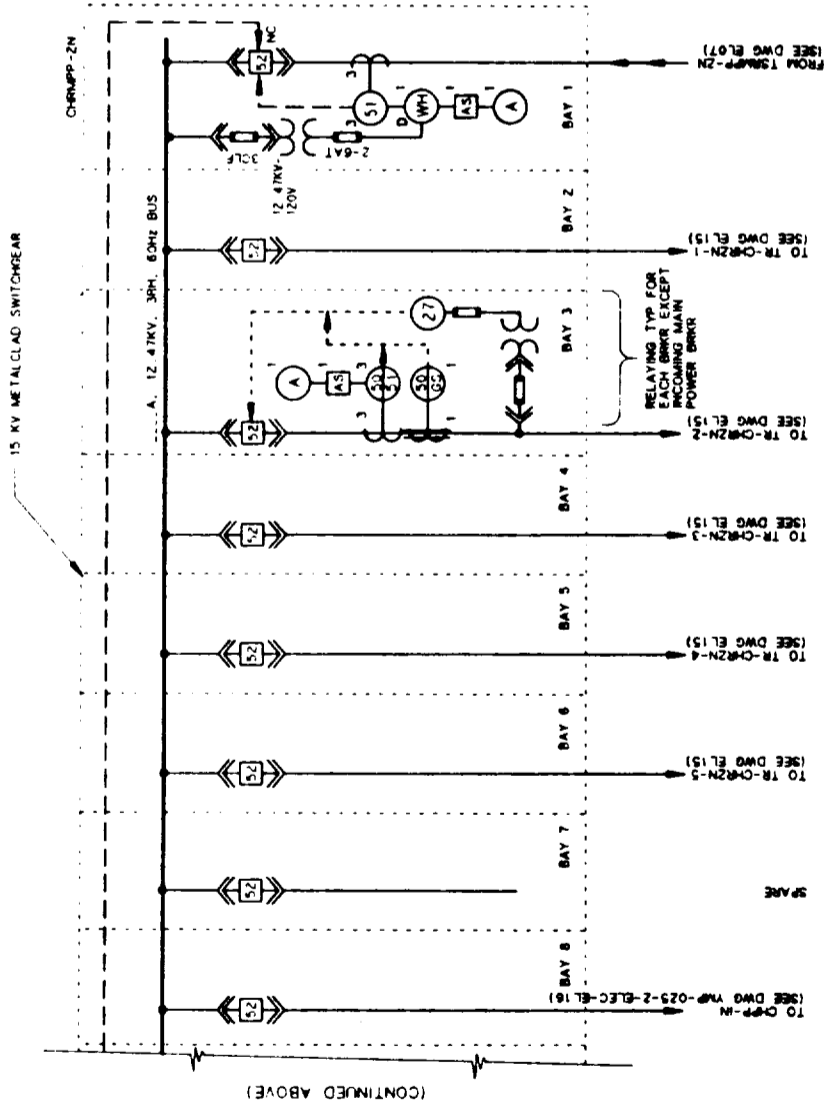
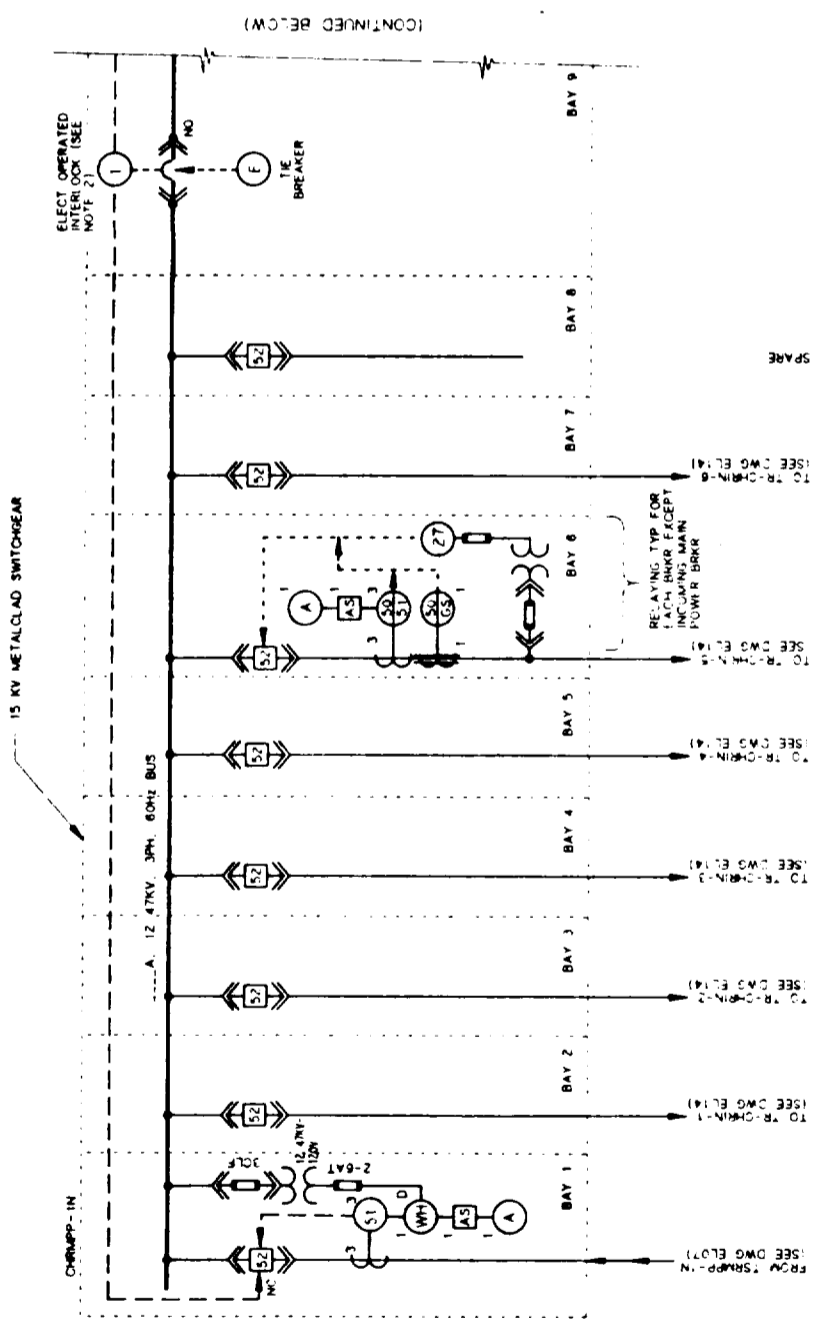
Also Available On  
Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02

FOR GENERAL NOTES. SEE DRAWING YMP-025-1-ELEC-EL01.

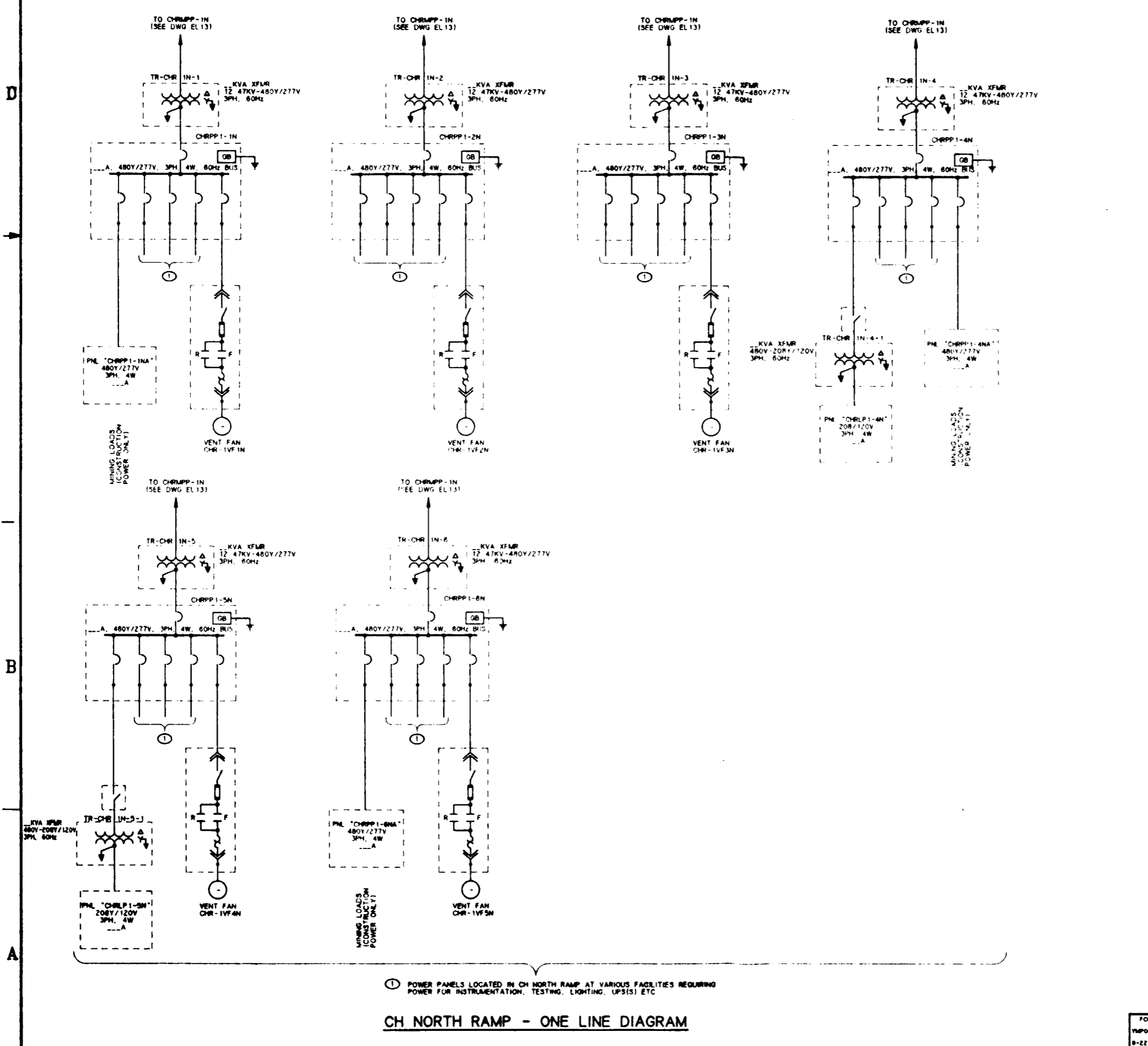
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY CH NORTH RAMP ELECTRICAL <b>ONE LINE DIAGRAM</b>													
APPROVALS													
DESIGN	MSF												
DRAWN	CLG												
CHECKED	WAT												
DEC	WAT												
DESIGN MANAGER	P.A.C.H.												
BY	N/A												
DATE	8-26-91												
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ASSURANCE	8-26-91												
DATE	8-26-91												
DRAWING NO.	YMP-025-1-ELEC-EL13												
REV	0												
DATE	8-26-91												
DATE	8-26-91												
DATE	8-26-91												

18020061-182



**CH NORTH RAMP - ONE LINE DIAGRAM**

NOTE:  
1. FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-1-ELEC-EL13.



SI  
APERTURE  
CARD A  
Also Available On  
Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02  
FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

① POWER PANELS LOCATED IN CH NORTH RAMP AT VARIOUS FACILITIES REQUIRING POWER FOR INSTRUMENTATION, TESTING, LIGHTING, UPS, ETC

CH NORTH RAMP - ONE LINE DIAGRAM

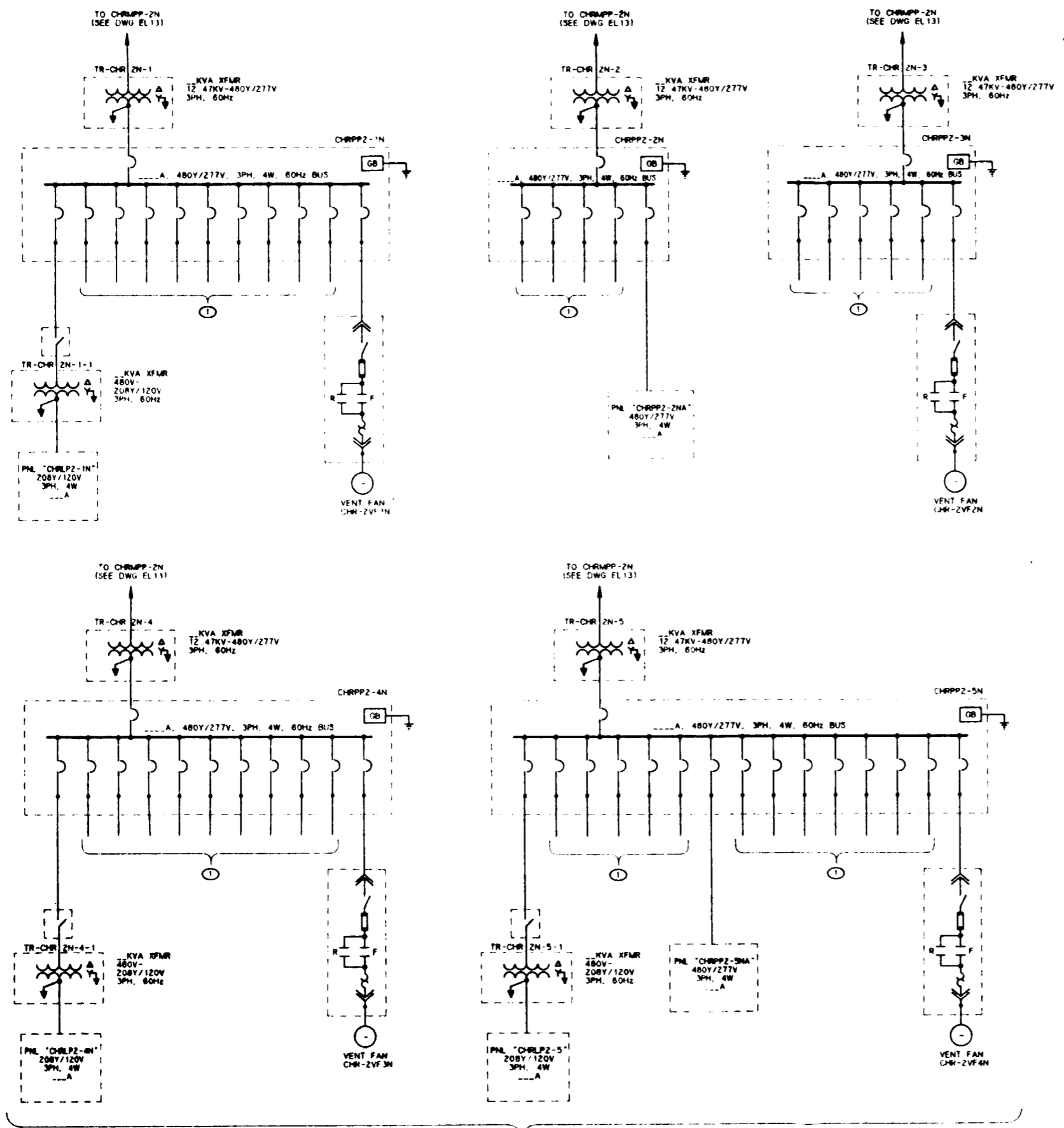
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS			Raytheon Services Nevada LAS VEGAS, NEVADA											
DESIGN	MSF		EXPLORATORY STUDIES FACILITY											
DRAWN	CLO		CH NORTH RAMP											
CHECKED	<i>[Signature]</i>		ELECTRICAL											
DEC	<i>[Signature]</i>		ONE LINE DIAGRAM											
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VERIFICATION	N/A													
ENV	SAF													
QUALITY ASSURANCE	SUBMITTED BY: <i>[Signature]</i> DATE: 8-24-91 DRAWING NO.: YMP-025-1-ELEC-EL14 REV: 0													
FCN	YMP0001 W.B.S. NO. 1,2,6,4,3 YMPO APPROVED													
9-22-91	DATE												SHT	OF

18020061-183



**NOTE:**

1. FOR RELATED NOTES TO THIS DRAWING, SEE DRAWING YMP-025-1-ELEC-EL13



① POWER PANELS LOCATED IN CH NORTH RAMP AT VARIOUS FACILITIES REQUIRING POWER FOR INSTRUMENTATION TESTING, LIGHTING, UPS(S), ETC.

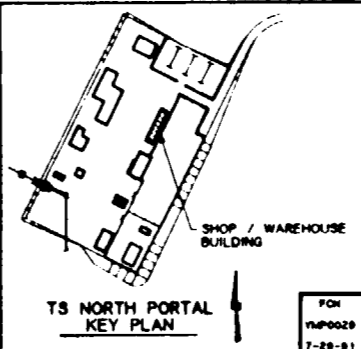
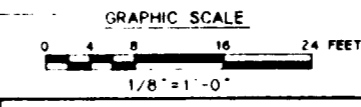
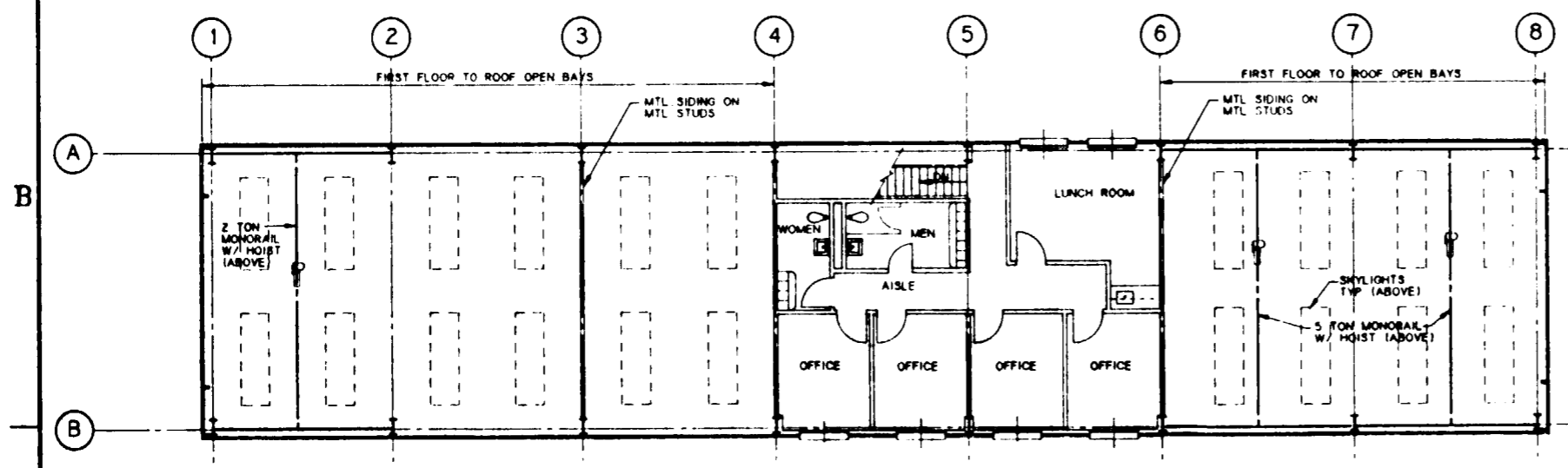
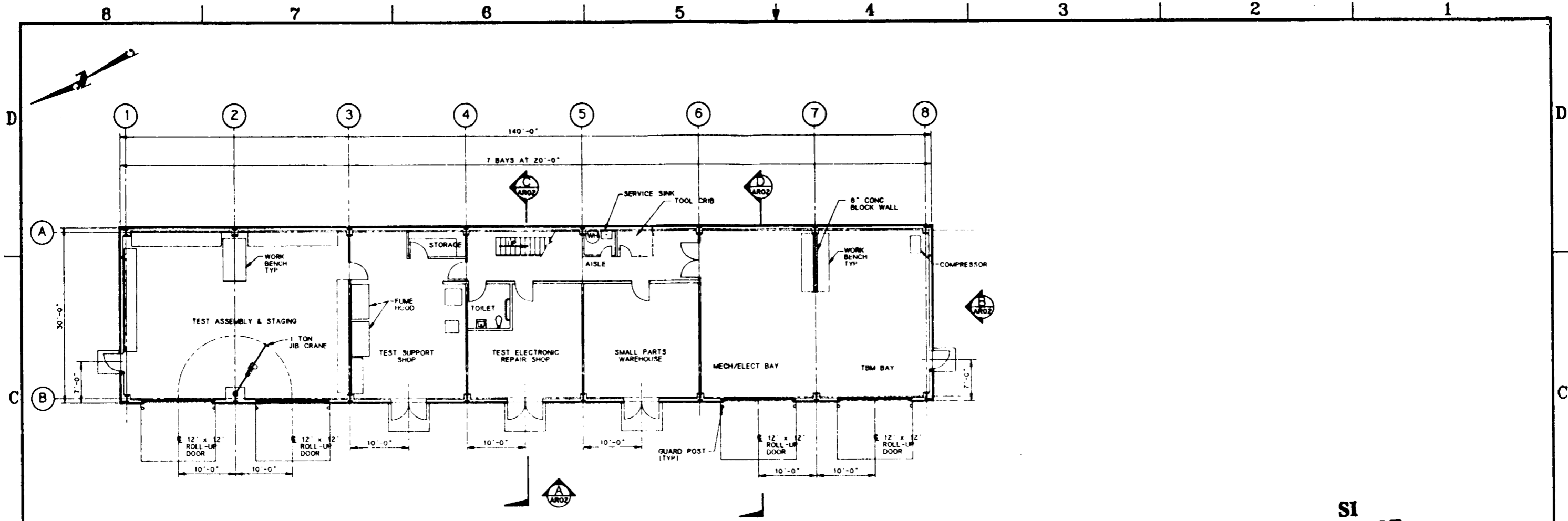
**CH NORTH RAMP - ONE LINE DIAGRAM**

**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

FOR GENERAL NOTES, SEE DRAWING YMP-025-1-ELEC-EL01.

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TRD	YMP		
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA															
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA												
DESIGN	MSF														
DRAWN	CLG														
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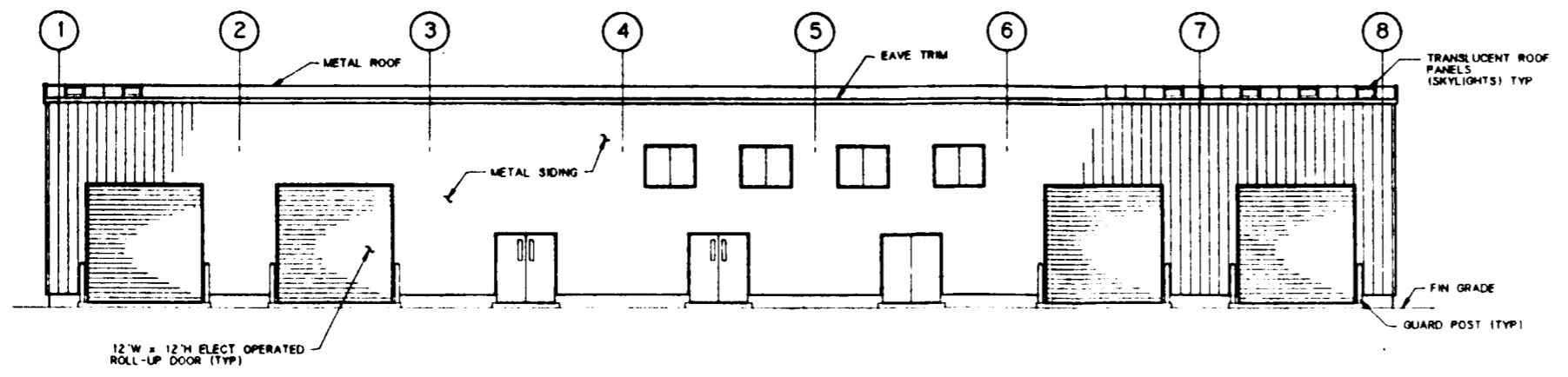


**SI APERTURE CARD**  
Also Available On Aperture Card

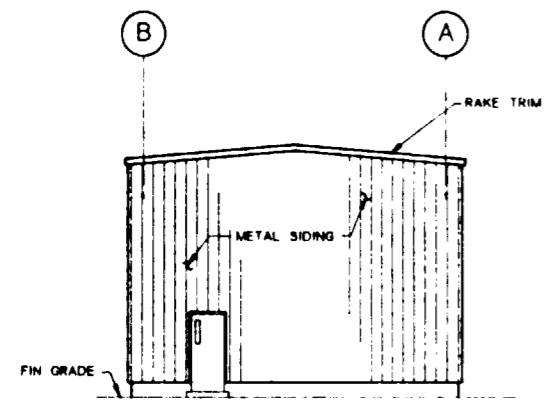
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS		<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	PZ	<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT SHOP / WAREHOUSE BUILDING <b>FLOOR PLANS</b>											
DRAWN	CLP / M.J.H.												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A	SUBMITTED BY		DATE		DRAWING NO.		REV.					
DRY	SAP	<i>[Signature]</i>		<i>[Date]</i>		YMP-025-1-7000-AR01		0					
QUALITY ASSURANCE	<i>[Signature]</i>	YMP APPROVED		DATE		SHT		OF					
W.B.S. NO.	1,2,3,1,1												
S.I. NO.													

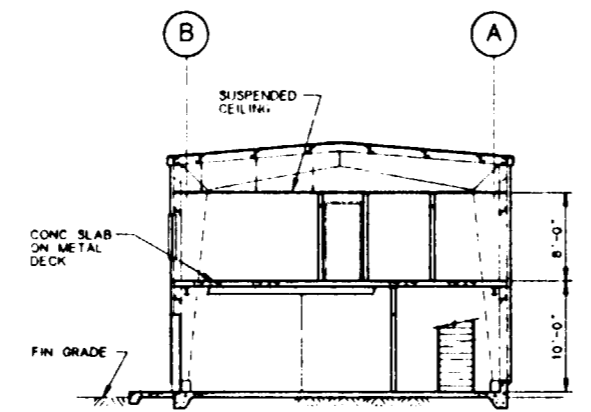
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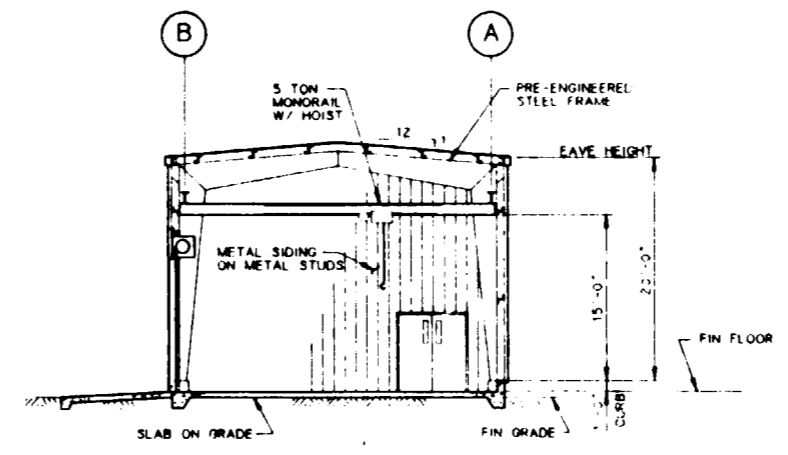
**ELEVATION**  
SCALE: 1/8" = 1'-0"  
A



**ELEVATION**  
SCALE: 1/8" = 1'-0"  
B



**SECTION**  
SCALE: 1/8" = 1'-0"  
C

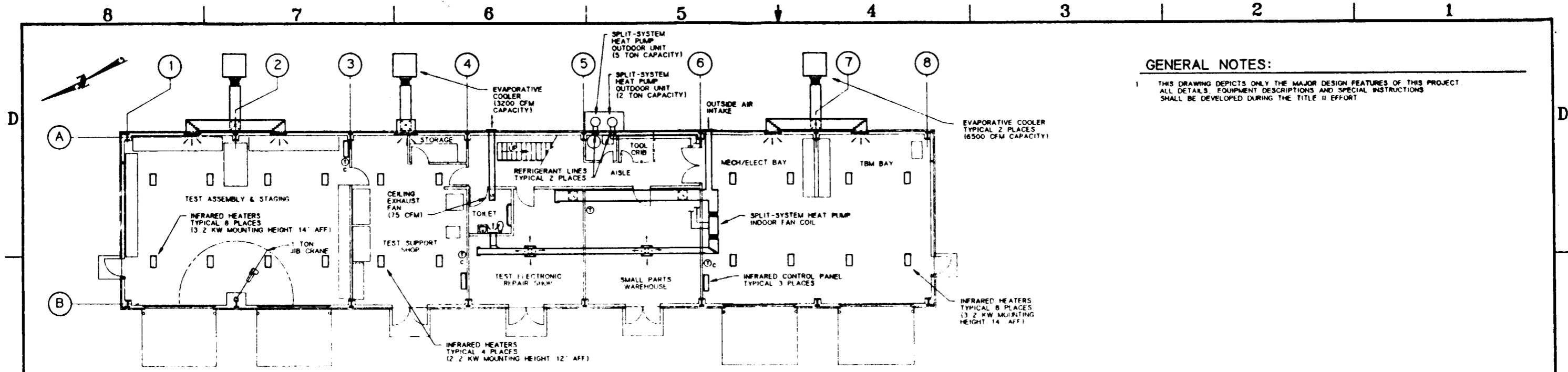


**SECTION**  
SCALE: 1/8" = 1'-0"  
D

**SI APERTURE CARD**  
Also Available On Aperture Card

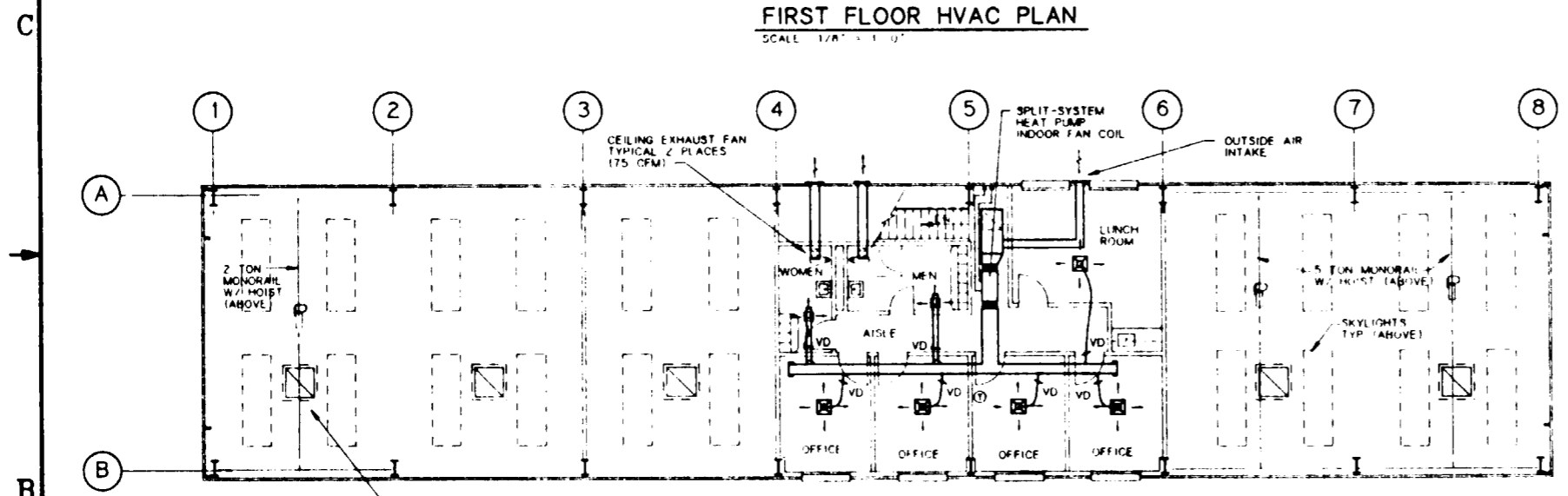
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA											
DESIGN	PZ		EXPLORATORY STUDIES FACILITY											
DRAWN	M/JH		TS NORTH PORTAL GENERAL ARRANGEMENT											
CHECKED	<i>[Signature]</i>		SHOP / WAREHOUSE BUILDING											
DEC	<i>[Signature]</i>		<b>ELEVATIONS &amp; SECTION</b>											
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV	SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	B.26.91		SUBMITTED BY: <i>[Signature]</i> DATE: 8-28-91											
YMP-0009		U.S. ID: 1,2,3,1,1		DRAWING NO: YMP-025-1-7000-AR02										REV: 0
YMPD APPROVED												DATE	SHT	OF



**FIRST FLOOR HVAC PLAN**  
SCALE: 1/8" = 1'-0"

**GENERAL NOTES:**  
THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.



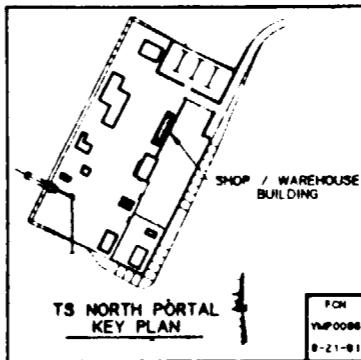
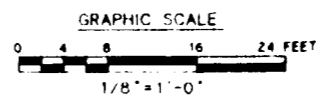
**SECOND FLOOR HVAC PLAN**  
SCALE: 1/8" = 1'-0"

**SI APERTURE CARD**  
Also Available On Aperture Card

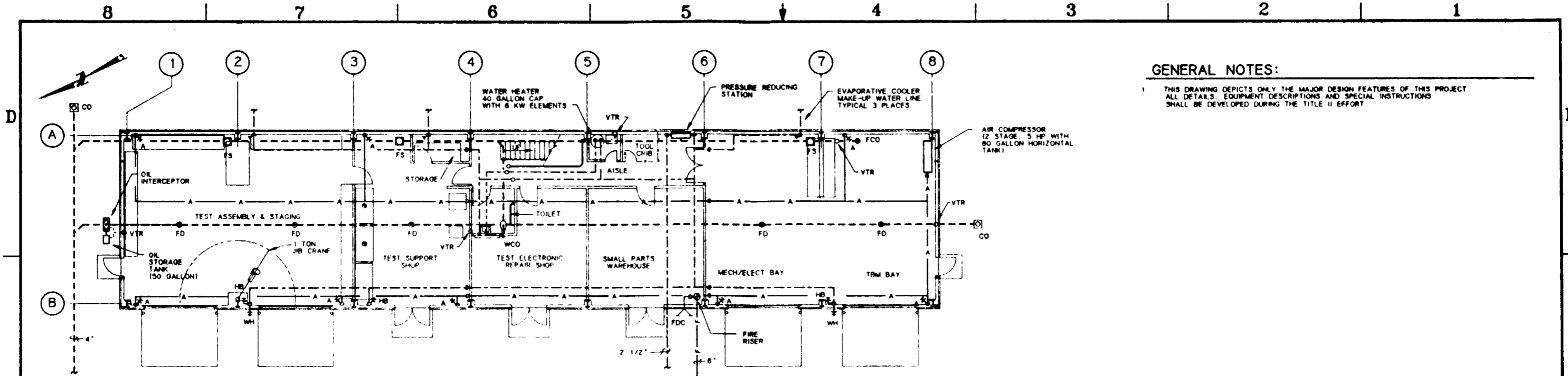
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

HVAC LEGEND	
SYMBOL	DESCRIPTION
— RL —	REFRIGERANT LIQUID LINE
— HG —	REFRIGERANT HOT GAS LINE
— RS —	REFRIGERANT SUCTION LINE
— D —	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR "T" WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF

HVAC LEGEND CONTINUATION	
SYMBOL	DESCRIPTION
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

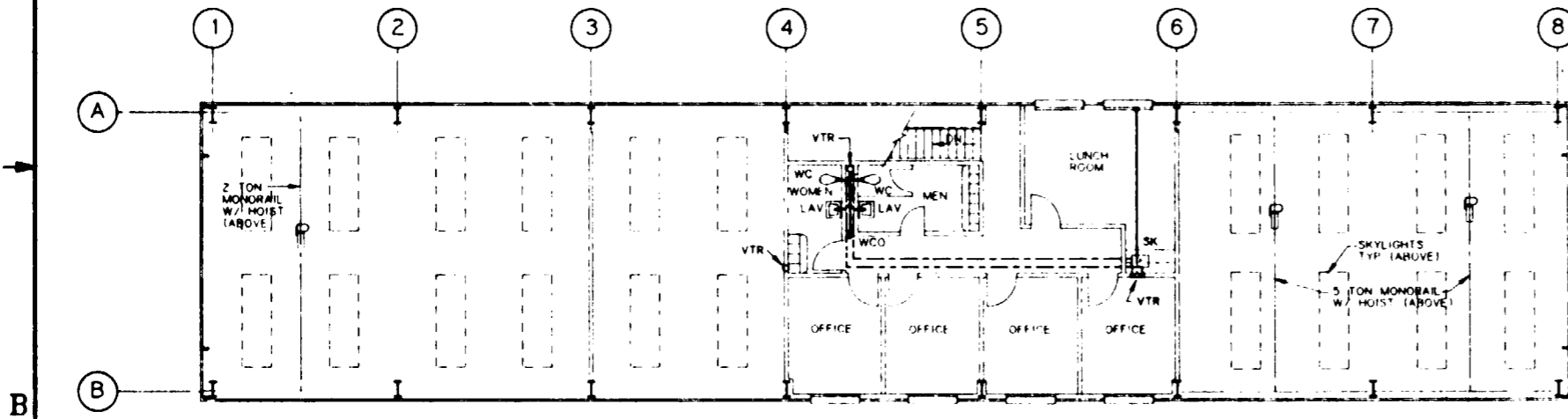


NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b>													
<b>TS NORTH PORTAL GENERAL ARRANGEMENT</b>													
<b>SHOP / WAREHOUSE BUILDING</b>													
<b>HVAC PLAN</b>													
APPROVALS													
DESIGN	BMA												
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV.								
7/2/81		8-2-81	YMP-025-1-7000-HV01		0								
YMPD APPROVED		DATE	SHT		OF								



**GENERAL NOTES:**  
 THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**FIRST FLOOR PLUMBING PLAN**  
 SCALE 1/8" = 1'-0"



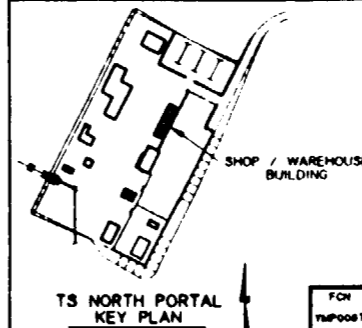
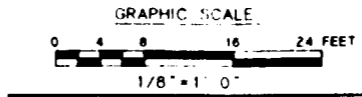
**SECOND FLOOR PLUMBING PLAN**  
 SCALE 1/8" = 1'-0"

**SI APERTURE CARD**  
 Also Available On Aperture Card

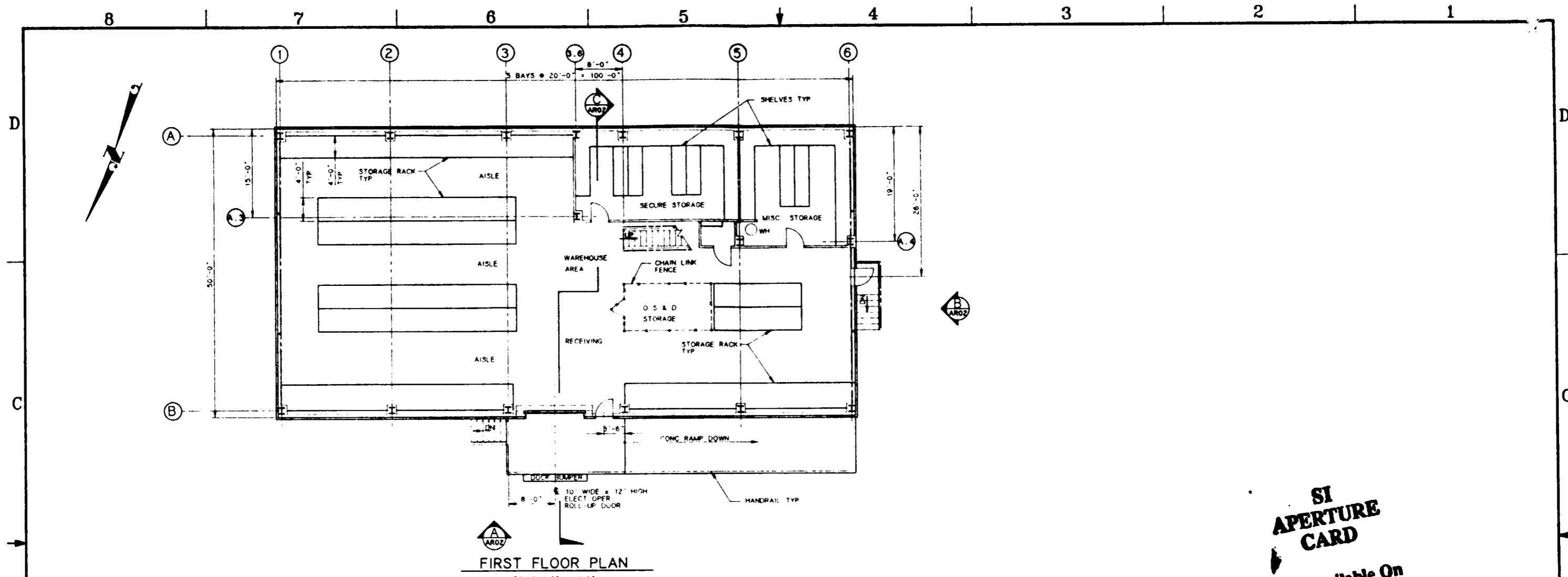
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02

PLUMBING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
---	SOL/WASTE (ABOVE GRADE)
---	SOL/WASTE (BELOW GRADE)
---	VENT PIPING
---	DOMESTIC COLD WATER
---	DOMESTIC HOT WATER
---	FIRE LINE
---	COMPRESSED AIR LINE
---	FIRE RISER
FDC	FIRE DEPARTMENT CONNECTION
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FS	FLOOR SINK
WCO	WALL CLEAN OUT
CO	CLEAN OUT AT FINISH GRADE
VTR	VENT THRU ROOF
HB	HOSE BIBB
A	COMPRESSED AIR STATION
WH	WALL HYDRANT

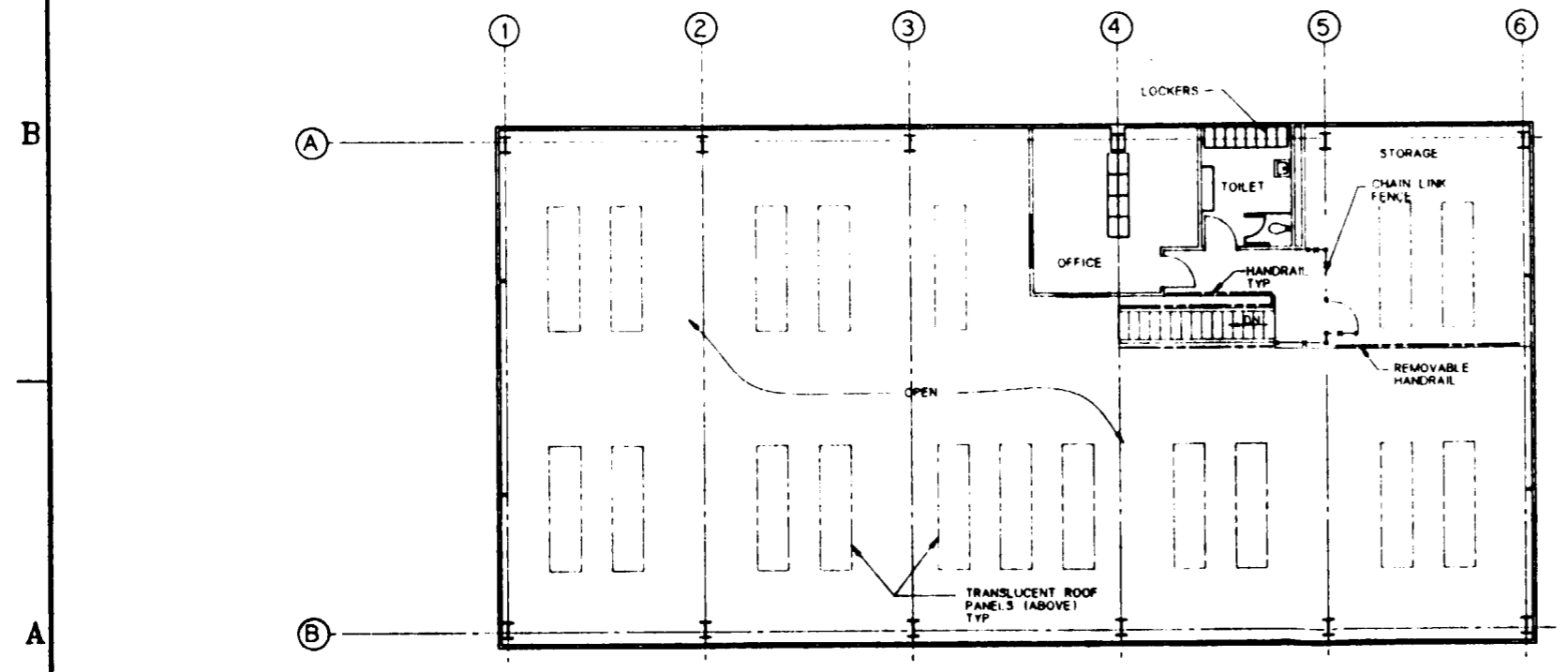
PLUMBING LEGEND CONTINUATION	
SYMBOL/ABBREVIATION	DESCRIPTION
SH	SHOWER
WC	WATER CLOSET
UR	URINAL
SS	SERVICE SINK
LAV	COUNTER TOP LAVATORY
LAV	WALL MOUNTED LAVATORY
SK	COUNTER TOP SINK
WF	WASH FOUNTAIN
EW/SH	EYE WASH/SHOWER
BW	BOOT WASH
EWC	ELECTRIC WATER COOLER



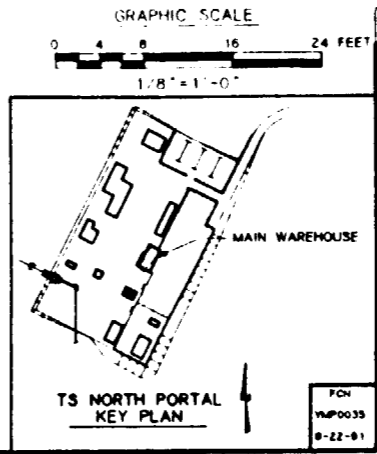
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT SHOP / WAREHOUSE BUILDING <b>PLUMBING PLAN</b>														
DESIGN	TAN													
DRAWN	RFC													
CHECKED	[Signature]													
DEC	[Signature]													
DESIGN MANAGER	[Signature]													
VERIFICATION	N/A													
ENR	SAF													
QUALITY ASSURANCE	[Signature]													
SUBMITTED BY		DATE	DRAWING NO		REV.									
72 [Signature]		8-16-91	YMP-025-1-7000-PP01		0									
YMP/O APPROVED														
												DATE	SHT	OF



**FIRST FLOOR PLAN**  
SCALE 1/8" = 1'-0"



**SECOND FLOOR PLAN**  
SCALE 1/8" = 1'-0"



GRAPHIC SCALE  
0 4 8 16 24 FEET  
1/8" = 1'-0"

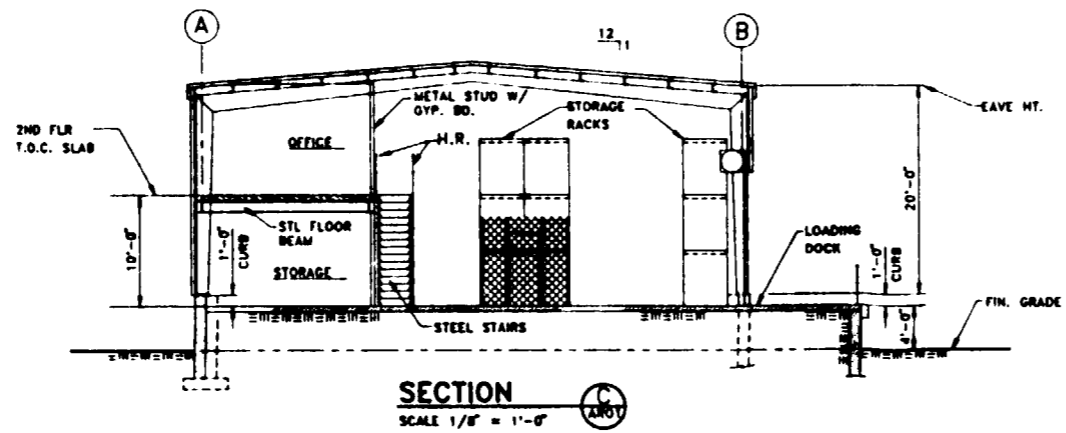
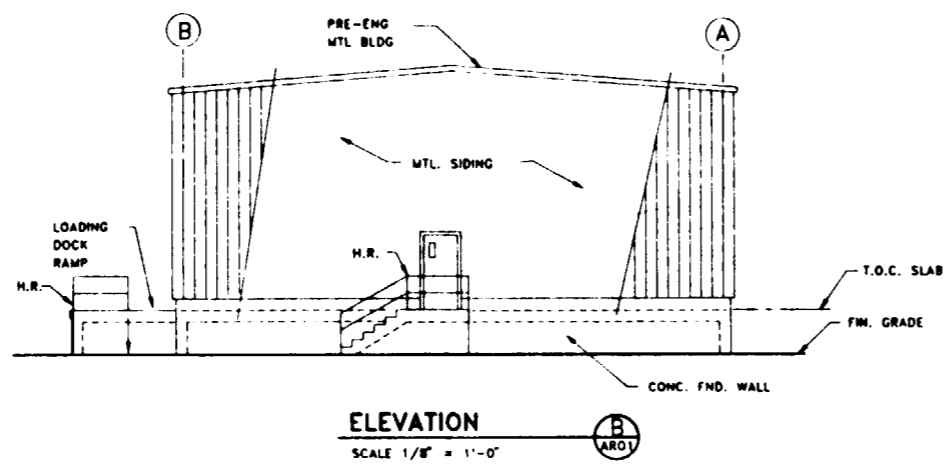
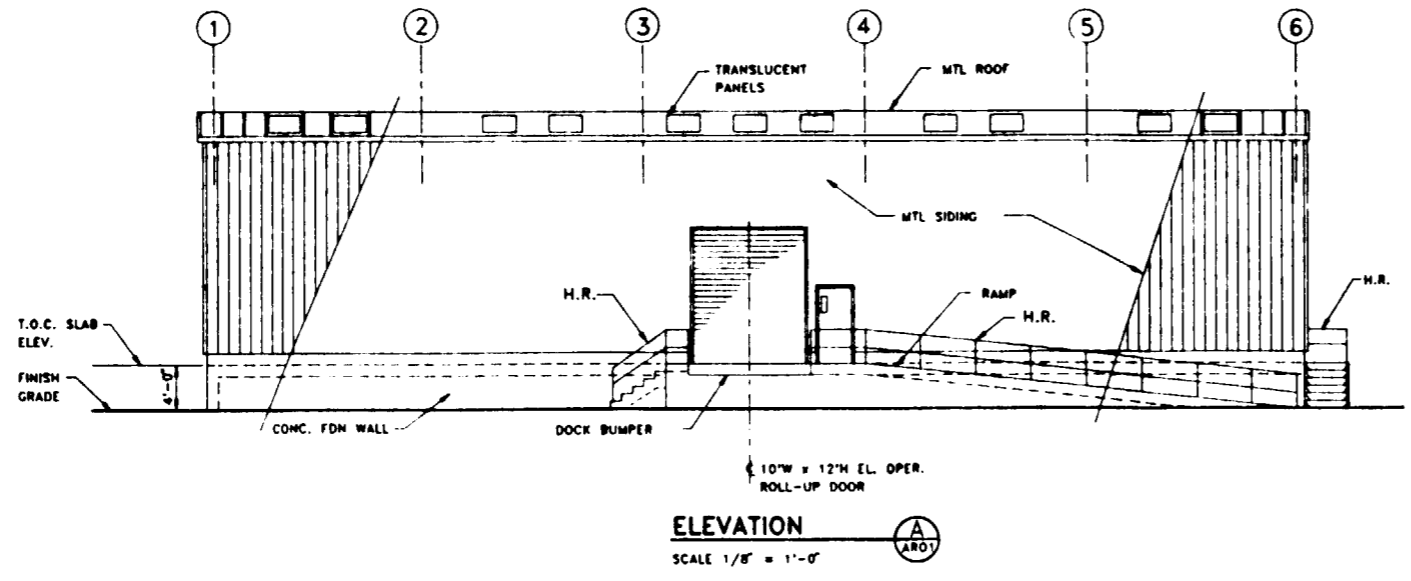
**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>MAIN WAREHOUSE</b> <b>FLOOR PLANS</b>													
DESIGN		PZ		DRAWN		MJP		CHECKED		JCH		DEC	
DESIGN MANAGER		N/A		ENV SAF		N/A		VERIFICATION		N/A		SUBMITTED BY	
DATE		12-8-91		DRAWING NO		YMP-025-1-7001-AR01		REV		0		YMPD APPROVED	
DATE		9-22-91		SHT		OF		DATE		SHT		OF	

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

D  
C  
B  
A



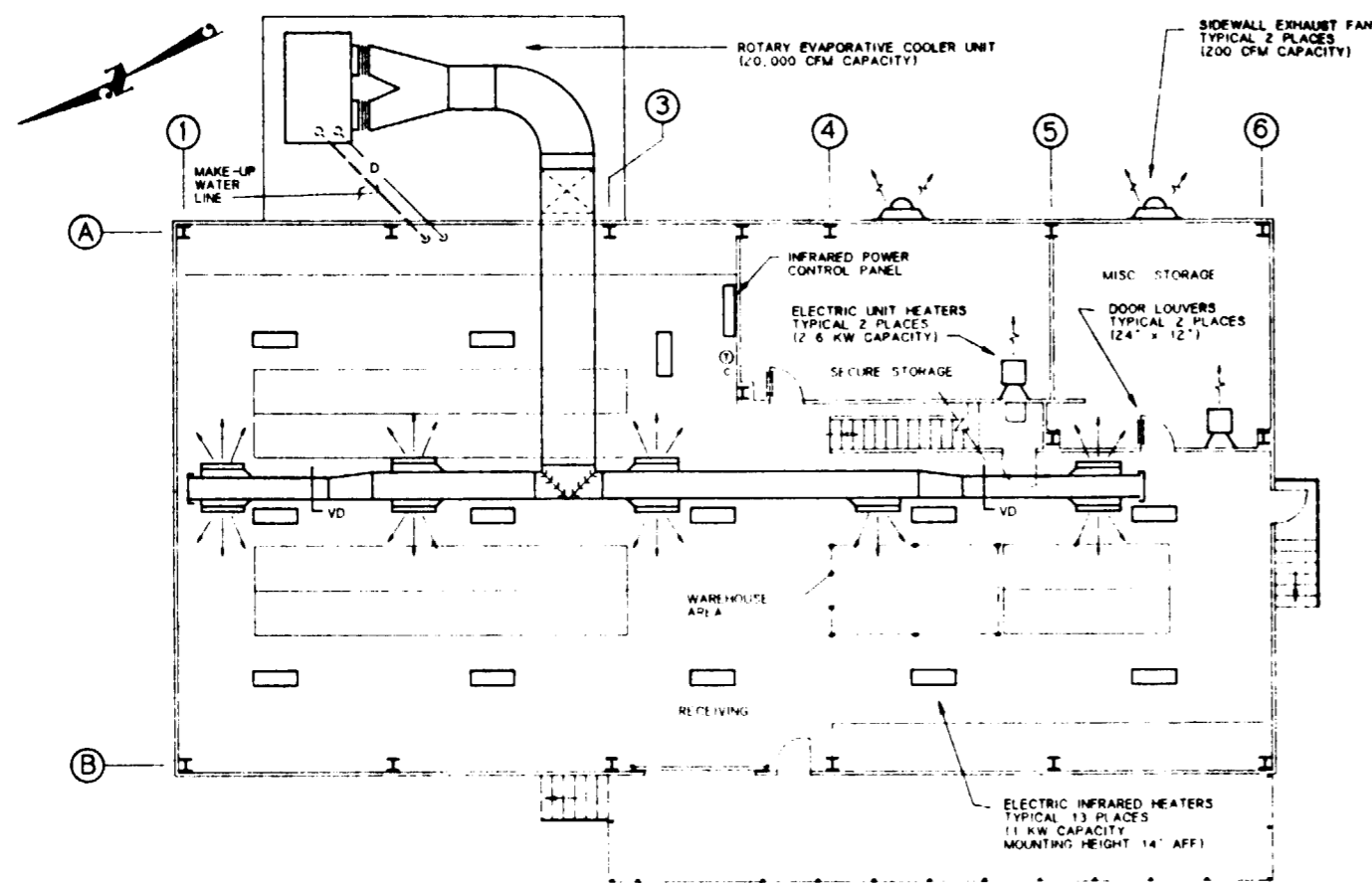
**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

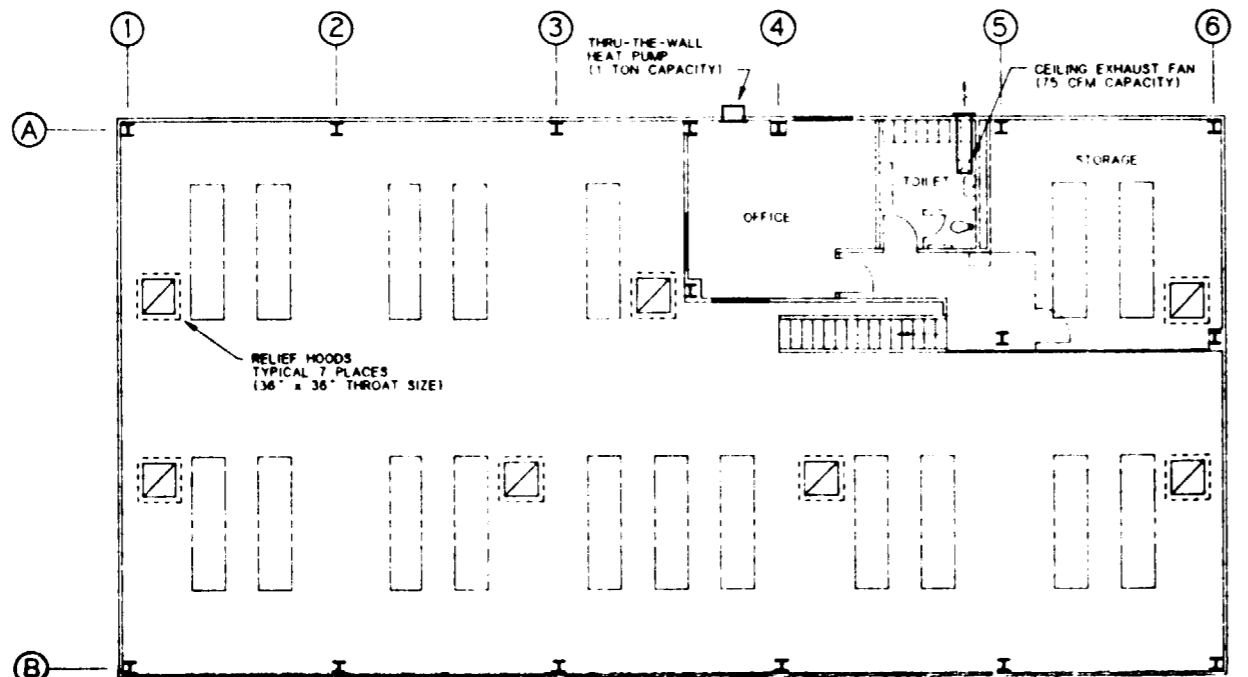
NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	PZ		EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT MAIN WAREHOUSE <b>ELEVATIONS AND SECTION</b>										
DRAWN	JMK		SUBMITTED BY: <i>[Signature]</i> DATE: 8-26-91 DRAWING NO: YMP-025-1-7001-AR02 REV: 0										
CHECKED	<i>[Signature]</i>		YMPD APPROVED: <i>[Signature]</i> DATE: _____ SH: _____ OF: _____										
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	8-26-91												
FCN	YMP0034												
W.P.S. NO.	128311												
CI. NO.													

8 7 6 5 4 3 2 1

**GENERAL NOTES:**  
 1. THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.



**FIRST FLOOR HVAC PLAN**  
 SCALE: 1/8" = 1'-0"

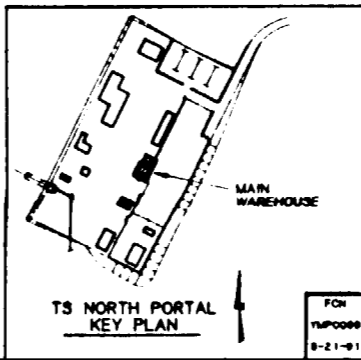
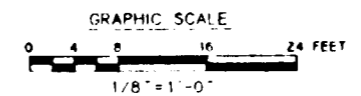


**SECOND FLOOR HVAC PLAN**  
 SCALE: 1/8" = 1'-0"

HVAC LEGEND	
SYMBOL	DESCRIPTION
— RL —	REFRIGERANT LIQUID LINE
— HG —	REFRIGERANT HOT GAS LINE
— RS —	REFRIGERANT SUCTION LINE
— D —	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR "T" WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

**SI APERTURE CARD**  
 Also Available On Aperture Card

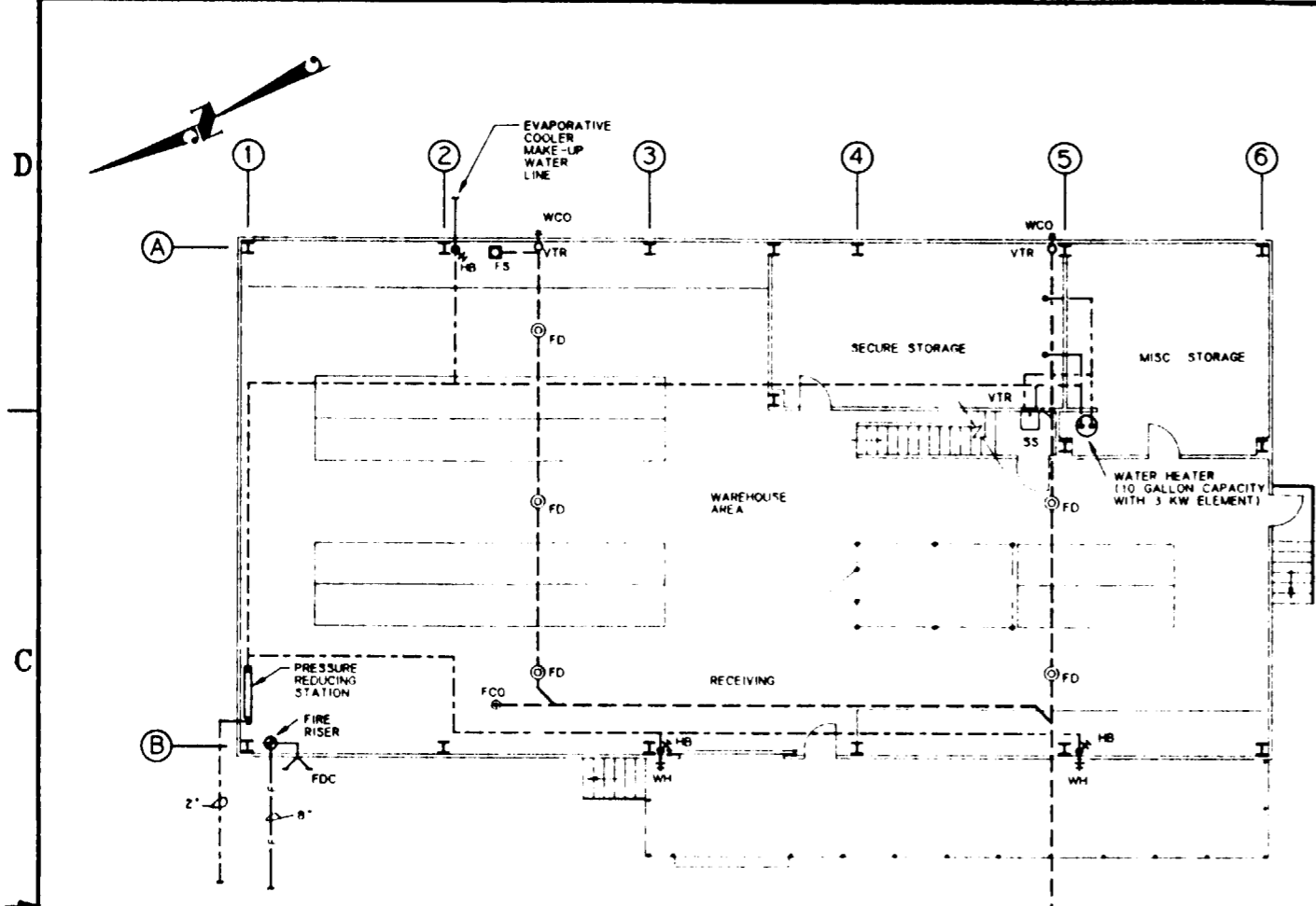
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>MAIN WAREHOUSE</b> <b>HVAC PLAN</b>													
DESIGN	BMA												
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MODIFIED	BCH												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
DATE	8-26-91												
YMPD APPROVED	<i>[Signature]</i>	DATE	8-29	DRAWING NO	YMP-025-1-7001-HV01	REV	0						
DATE		SHT		OF									



8 7 6 5 4 3 2 1

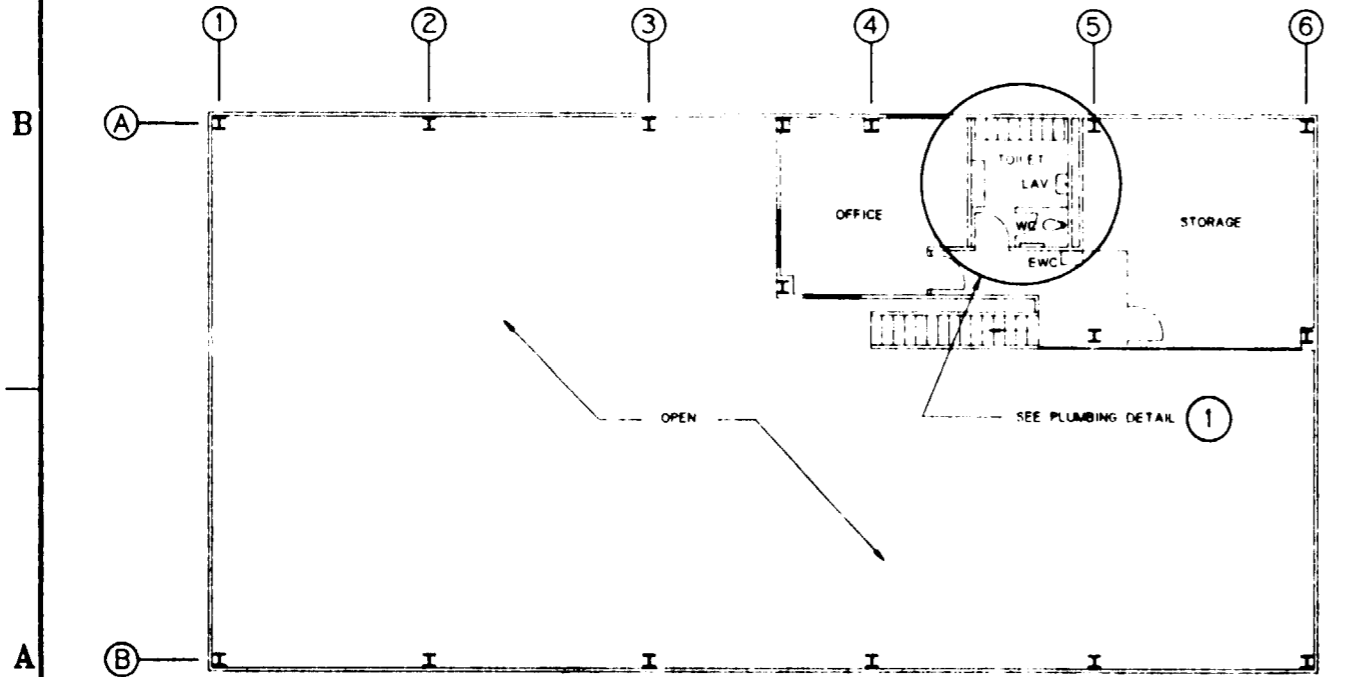


1ST FLOOR PLUMBING PLAN  
SCALE: 1/8" = 1'-0"

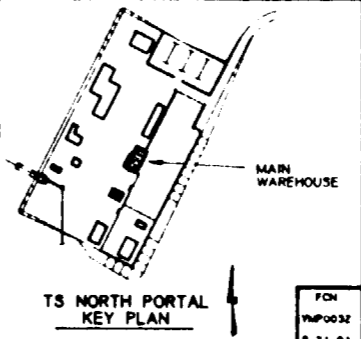
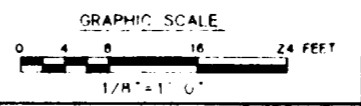
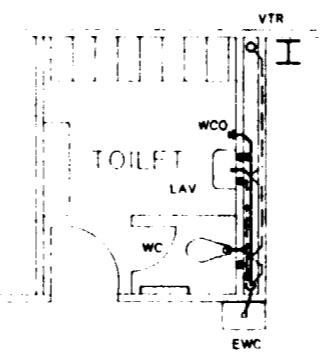
PLUMBING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
(---)	SOIL/WASTE (ABOVE GRADE)
(---)	SOIL/WASTE (BELOW GRADE)
(---)	VENT PIPING
(---)	DOMESTIC COLD WATER
(---)	DOMESTIC HOT WATER
(---)	FIRE LINE
(---)	FIRE RISER
(---)	FIRE DEPARTMENT CONNECTION
(---)	FLOOR CLEAN OUT
(---)	FLOOR DRAIN
(---)	FLOOR SINK
(---)	WALL CLEAN OUT
(---)	CLEAN OUT AT FINISH GRADE
(---)	VENT THRU ROOF
(---)	HOSE BIBB
(---)	WALL HYDRANT
(---)	SHOWER
(---)	WATER CLOSET
(---)	URINAL
(---)	SERVICE SINK
(---)	COUNTER TOP LAVATORY
(---)	WALL MOUNTED LAVATORY
(---)	COUNTER TOP SINK
(---)	WASH FOUNTAIN
(---)	EYE WASH/SHOWER
(---)	BOOT WASH
(---)	ELECTRIC WATER COOLER

GENERAL NOTES:  
 1 THIS DRAWING DEPICT ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

SI APERTURE CARD  
 Also Available On Aperture Card



2ND FLOOR PLUMBING PLAN  
SCALE: 1/8" = 1'-0"



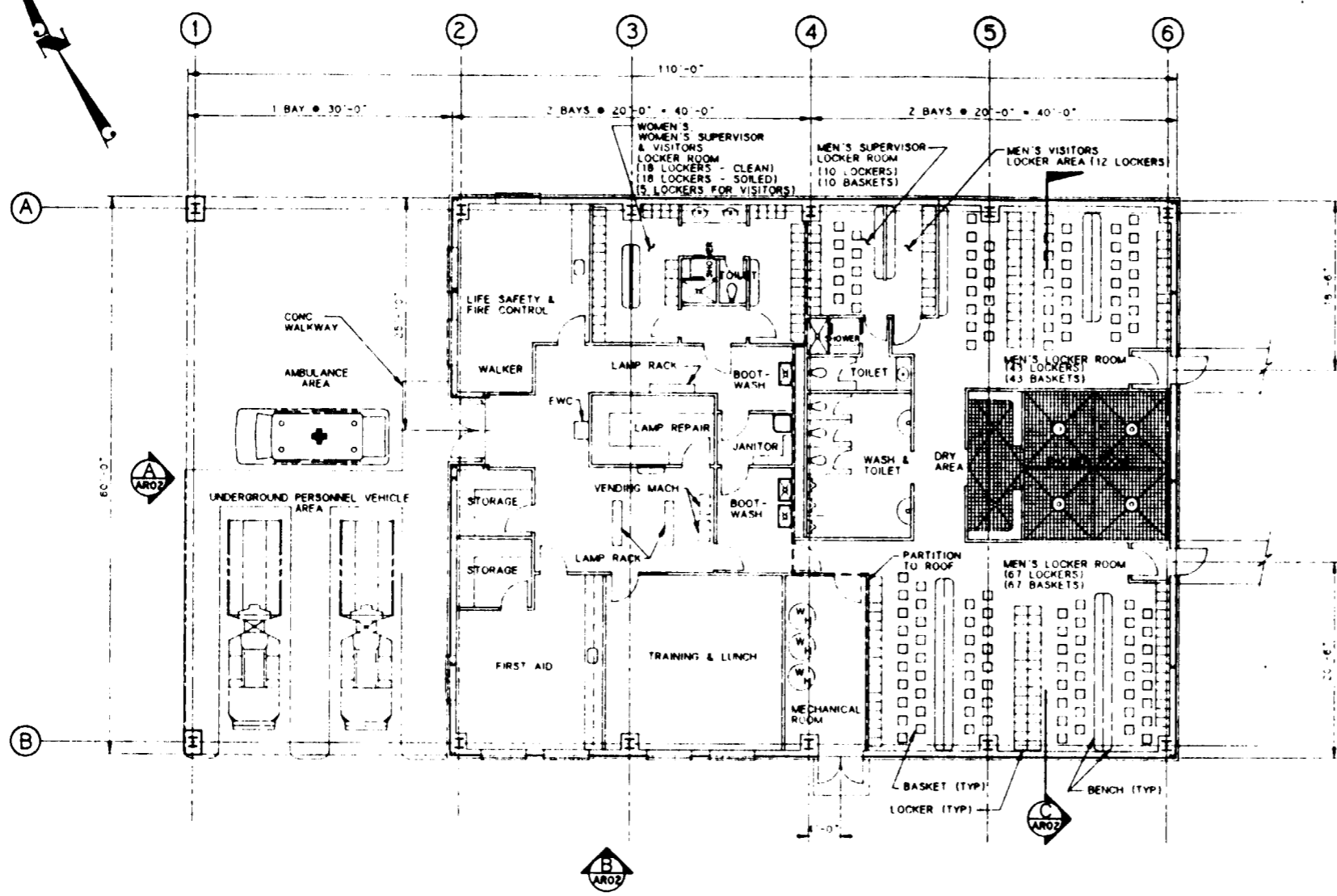
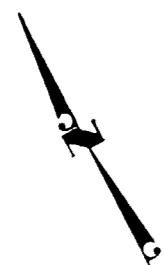
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0202

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP		
U.S. DEPARTMENT OF ENERGY YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA															
APPROVALS DESIGN: TAN DRAWN: JMK CHECKED: [Signature] DEC: [Signature] DESIGN MANAGER: [Signature] VERIFICATION: N/A ENV SAF: [Signature] QUALITY ASSURANCE: [Signature]															
RSN Raytheon Services Nevada LAS VEGAS, NEVADA EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT MAIN WAREHOUSE PLUMBING PLAN															
SUBMITTED BY: [Signature] DATE: 8-26-91												DRAWING NO: YMP-025-1-7001-PP01		REV: 0	
YMP0032 8-21-91															
YMP0 APPROVED: [Signature]												DATE:		SHT:	OF:

73

9112020061-192

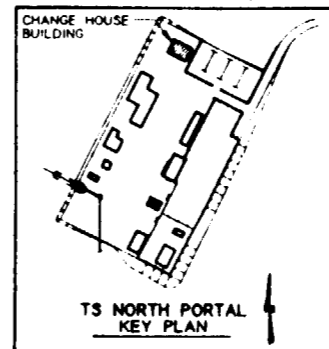
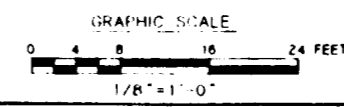
8 7 6 5 4 3 2 1



**FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

**SI APERTURE CARD**  
Also Available On Aperture Card

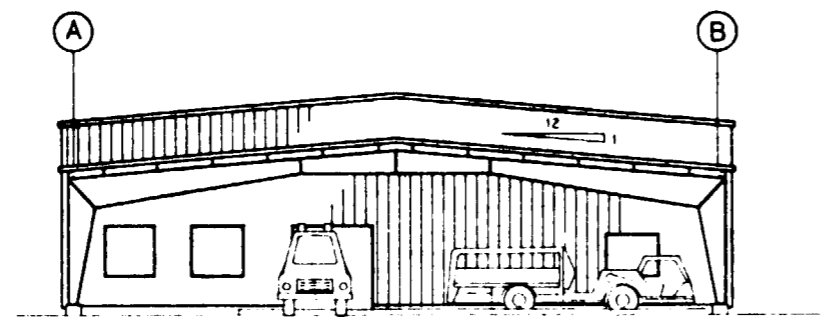
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02



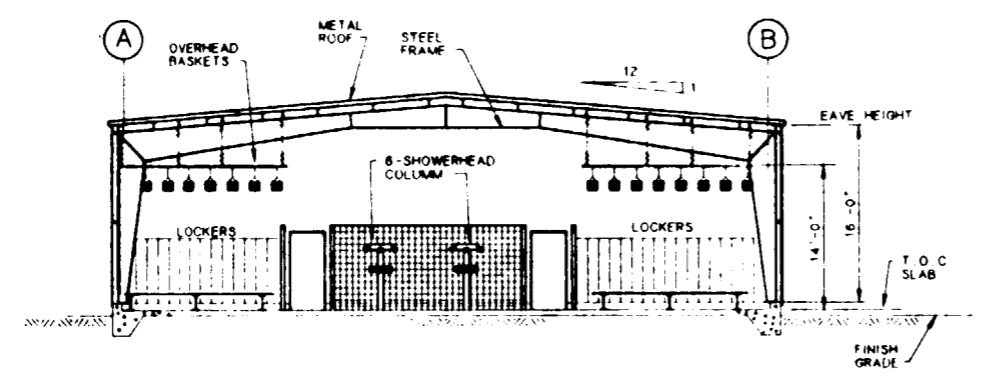
NO	DATE	REVISION	DES	DRN	CHK	DEC	DIR	VER	ENV	SAP	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT CHANGE HOUSE BUILDING <b>FLOOR PLAN</b>													
DESIGN		PZ		DRAWN		RFC / MAJ		CHECKED		DPC		DESIGN MANAGER	
VERIFICATION		N/A		ENV		SAP		QUALITY ASSURANCE		DATE		DRAWING NO	
SUBMITTED BY		DATE		DRAWING NO		REV		YMP APPROVED		DATE		SHT OF	
YMP0021		7-28-91		1,2,6,3,1,1		8-28-91		YMP-025-1-7002-AR01		0		0	

74

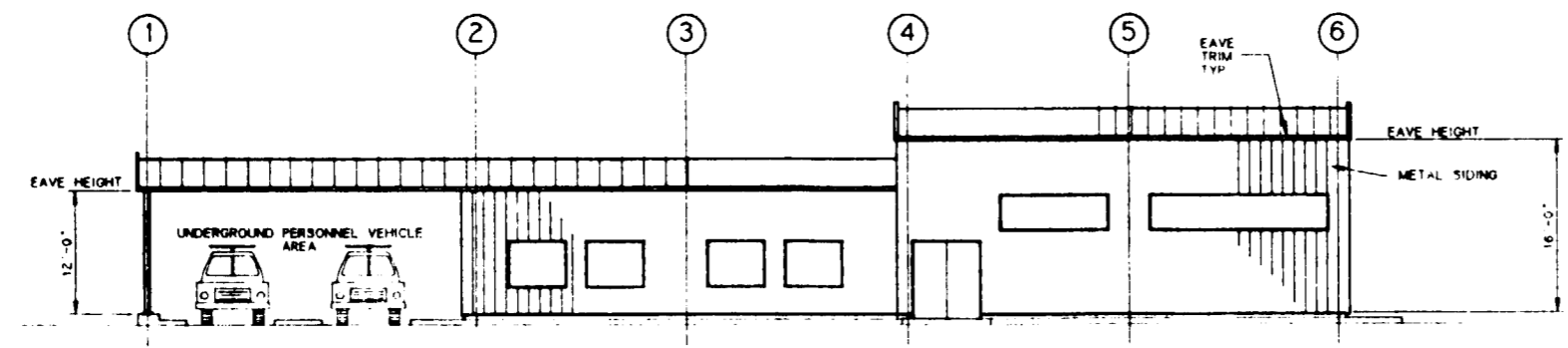
8 7 6 5 4 3 2 1



**ELEVATION**  
SCALE 1/8" = 1' - 0"  
A  
AR01



**SECTION**  
SCALE 1/8" = 1' - 0"  
C  
AR01



**ELEVATION**  
SCALE 1/8" = 1' - 0"  
B  
AR01

**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP/O
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	PZ		EXPLORATORY STUDIES FACILITY										
DRAWN	RC / MP		TS NORTH PORTAL GENERAL ARRANGEMENT										
CHECKED	<i>[Signature]</i>		CHANGE HOUSE BUILDING										
DEC	<i>[Signature]</i>		<b>ELEVATIONS &amp; SECTION</b>										
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	<i>[Signature]</i>												
FCN	YMP0022		SUBMITTED BY		DATE	DRAWING NO		REV					
W.B.S. NO	1, 2, 3, 1, 1		<i>[Signature]</i>		8-26-91	YMP-025-1-7002-AR02		0					
C.I. NO.			YMP/O APPROVED		DATE		SHT						

75

8

7

6

5

4

3

2

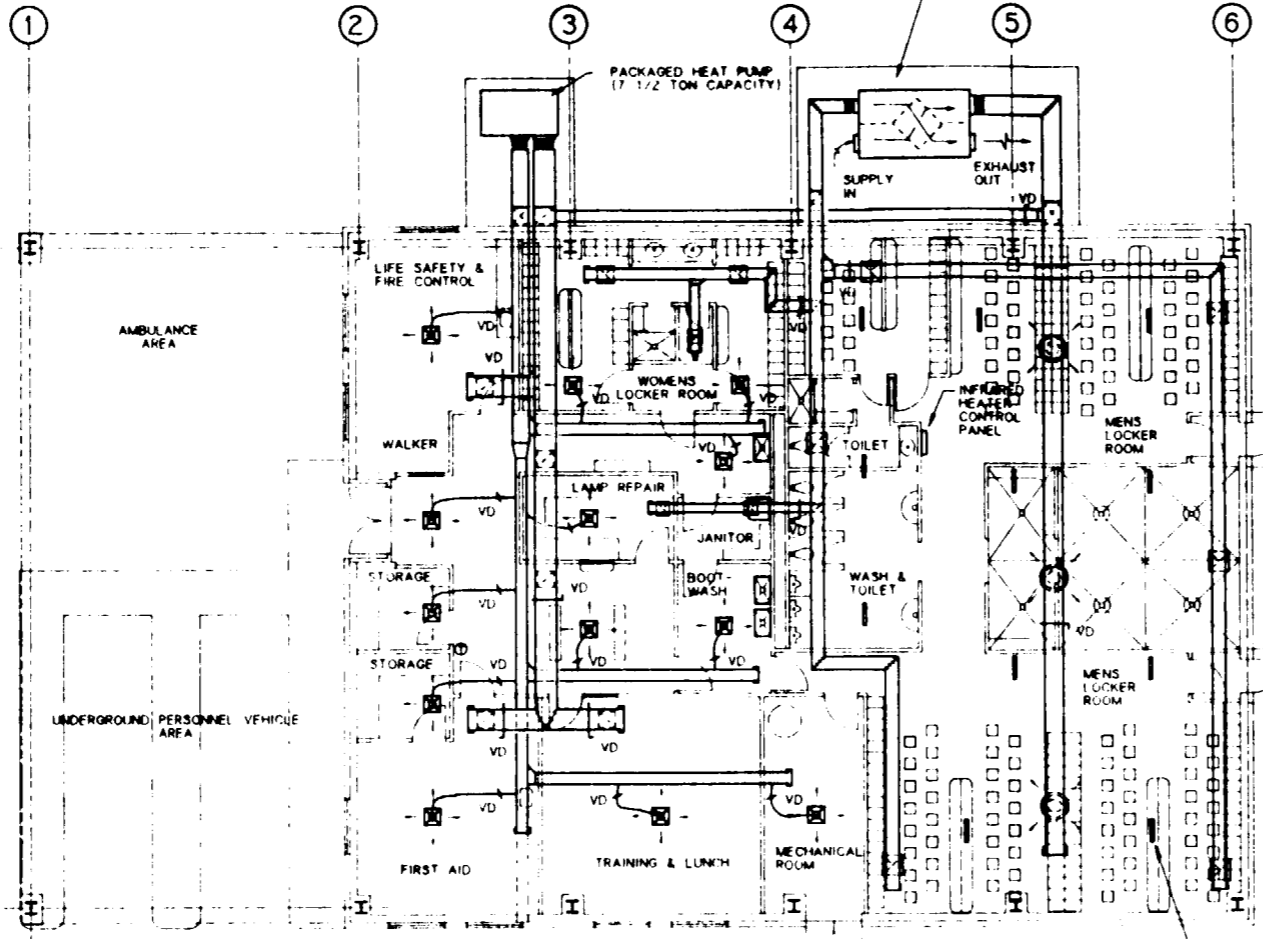
1

D

C

B

A



HVAC PLAN

SCALE 1/8" = 1'-0"

GENERAL NOTES:

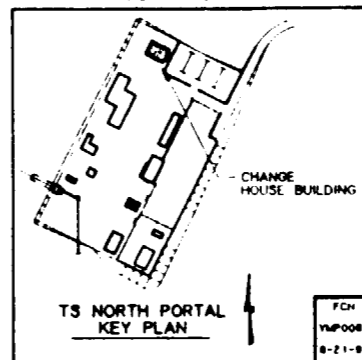
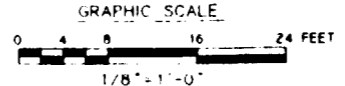
1. THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS, AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

SI APERTURE CARD  
Also Available On Aperture Card

HVAC LEGEND	
SYMBOL	DESCRIPTION
	REFRIGERANT LIQUID LINE
	REFRIGERANT HOT GAS LINE
	REFRIGERANT SUCTION LINE
	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR 'T' WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)

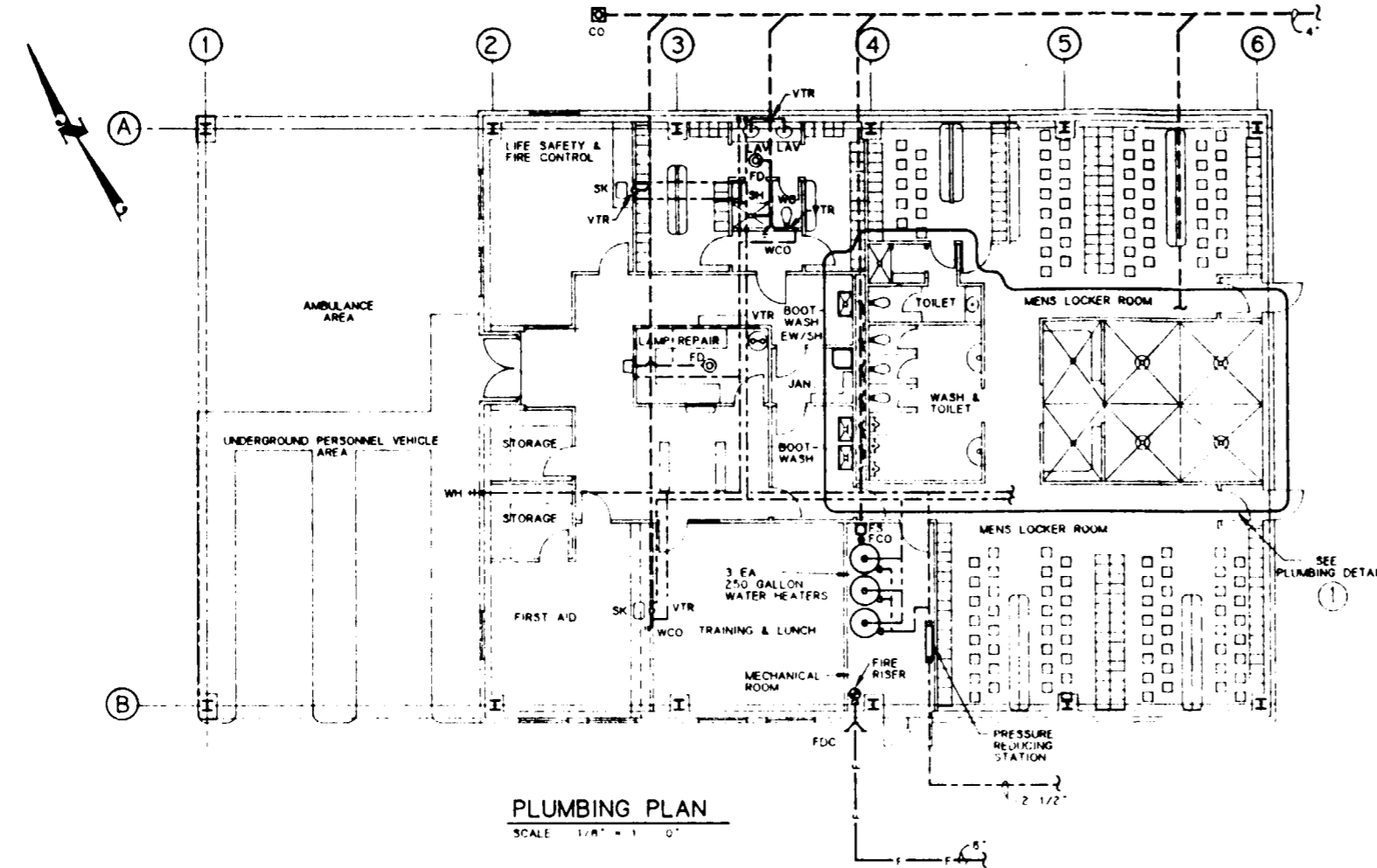
HVAC LEGEND CONTINUATION	
SYMBOL	DESCRIPTION
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT CHANGE HOUSE BUILDING HVAC PLAN														
DESIGN	RF-1A													
DRAWN	RF-C													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	B.C.H.													
VERIFICATION	N/A													
ENV	SAF													
QUALITY ASSURANCE	<i>[Signature]</i>													
SUBMITTED BY		DATE	DRAWING NO		REV.									
<i>[Signature]</i>		8-26-91	YMP-025-1-7002-HV01		0									
YMP0 APPROVED														
												DATE	SHT	OF

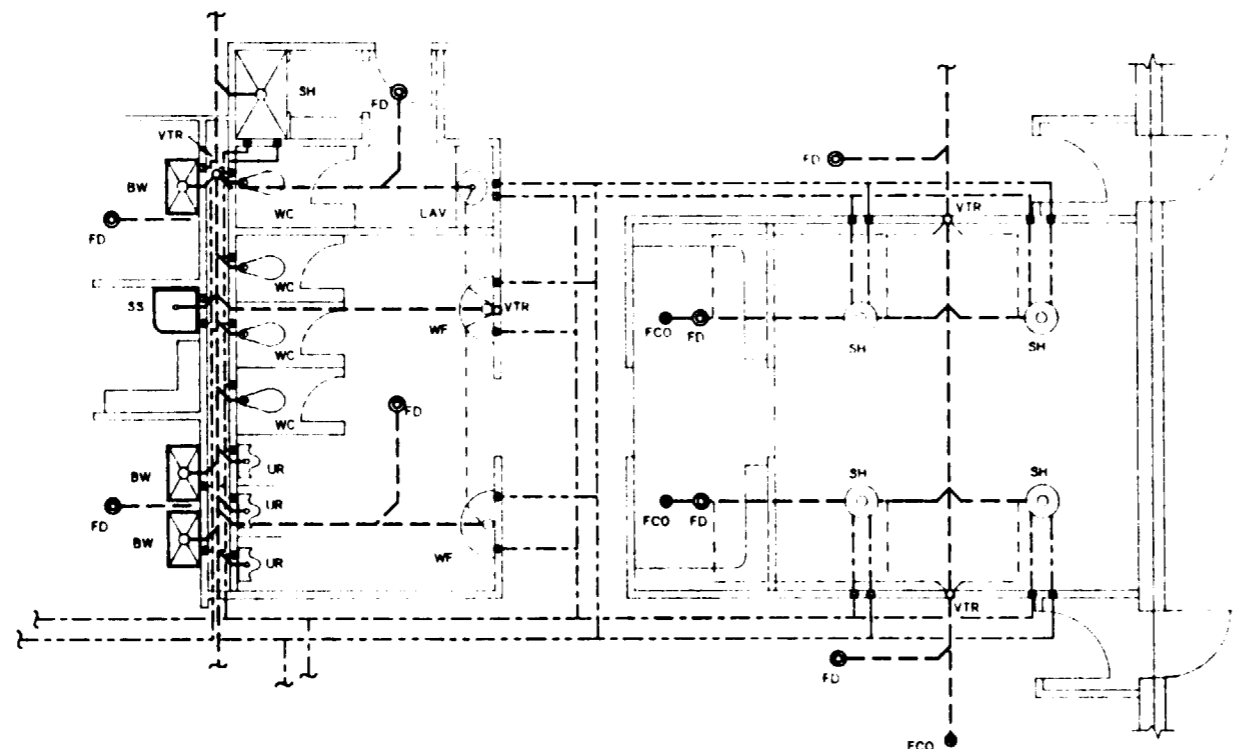
8 7 6 5 4 3 2 1



**PLUMBING PLAN**  
SCALE 1/8" = 1'-0"

PLUMBING LEGEND	
SYMBOL / ABBREVIATION	DESCRIPTION
	SOIL/WASTE (ABOVE GRADE)
	SOIL/WASTE (BELOW GRADE)
	VENT PIPING
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	FIRE LINE
	FIRE RISER
	FIRE DEPARTMENT CONNECTION
	FLOOR CLEAN OUT
	FLOOR DRAIN
	FLOOR SINK
	WALL CLEAN OUT
	CLEAN OUT AT FINISH GRADE
	VENT THRU ROOF
	HOSE BIBB
	WALL HYDRANT
	SHOWER STALL
	COLUMN SHOWER
	WATER CLOSET
	URINAL
	SERVICE SINK
	COUNTER TOP LAVATORY
	WALL MOUNTED LAVATORY
	COUNTER TOP SINK
	WASH FOUNTAIN
	EYE WASH/SHOWER
	BOOT WASH
	ELECTRIC WATER COOLER

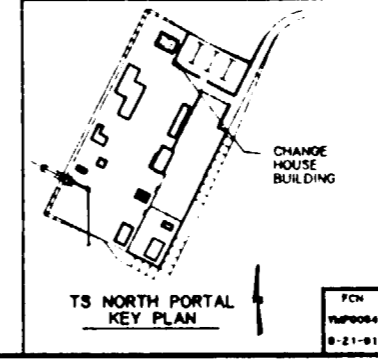
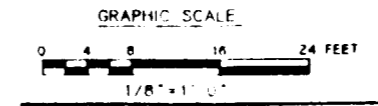
**SI APERTURE CARD**  
Also Available On Aperture Card



**PLUMBING DETAIL 1**  
SCALE 1/4" = 1'-0"

**GENERAL NOTES:**  
1 THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE "I" EFFORT.

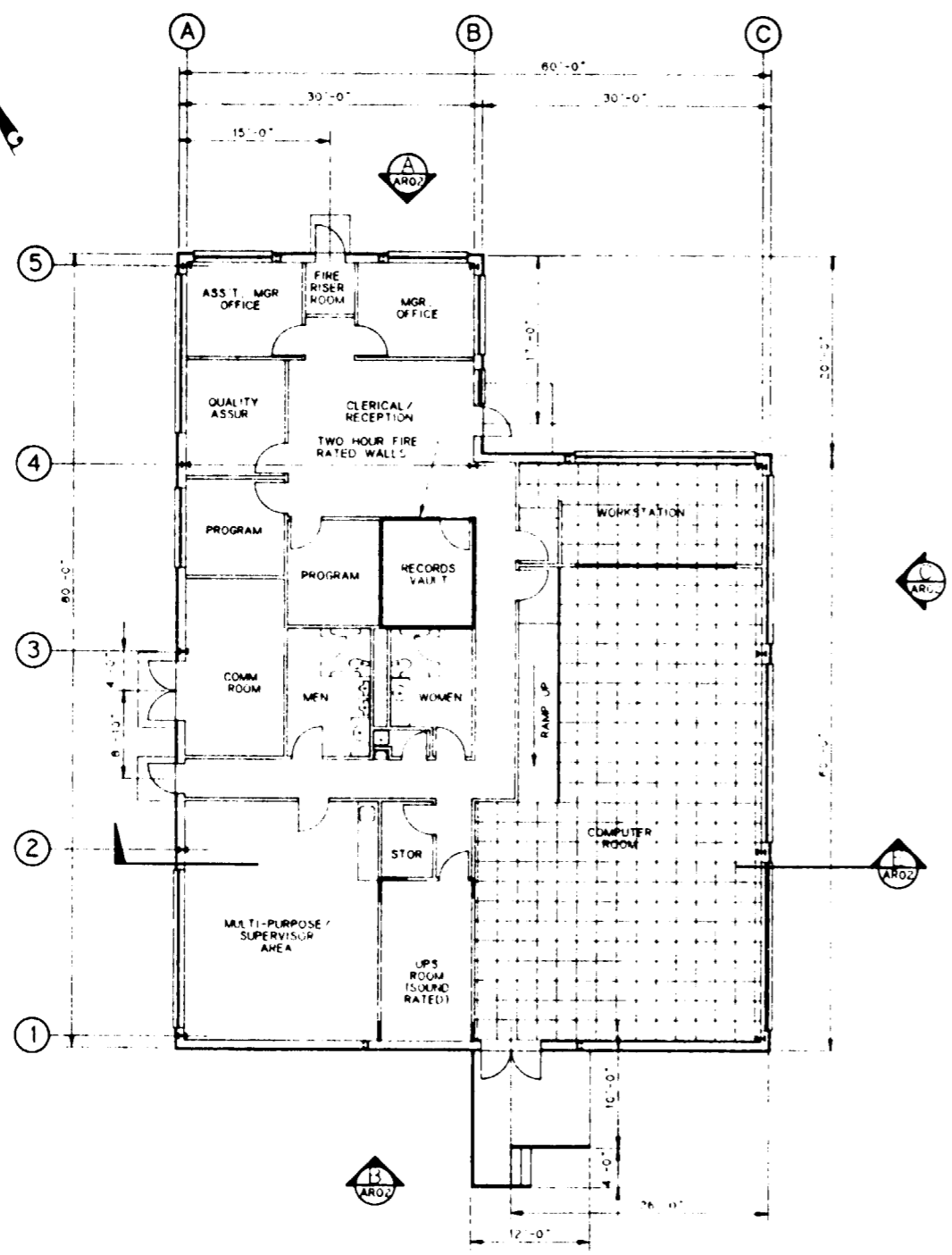
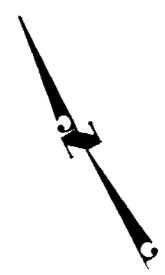
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMPD	
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA														
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA														
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>CHANGE HOUSE BUILDING</b> <b>PLUMBING PLAN</b>														
APPROVALS														
DESIGN	TAN													
DRAWN	TAN													
CHECKED	<i>[Signature]</i>													
DEC	<i>[Signature]</i>													
DESIGN MANAGER	<i>[Signature]</i>													
VERIFICATION	N/A													
ENV	SAF													
QUALITY ASSURANCE	<i>[Signature]</i>													
SUBMITTED BY		DATE	DRAWING NO		REV									
<i>[Signature]</i>		8-26-91	YMP-025-1-7002-PP01		0									
YMPD APPROVED														
												DATE	SHT	OF

8 7 6 5 4 3 2 1

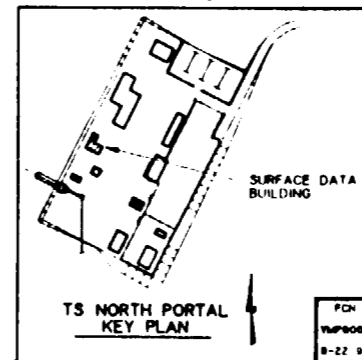
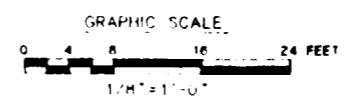
D  
C  
B  
A



**FLOOR PLAN**  
SCALE 1/8" = 1'-0"

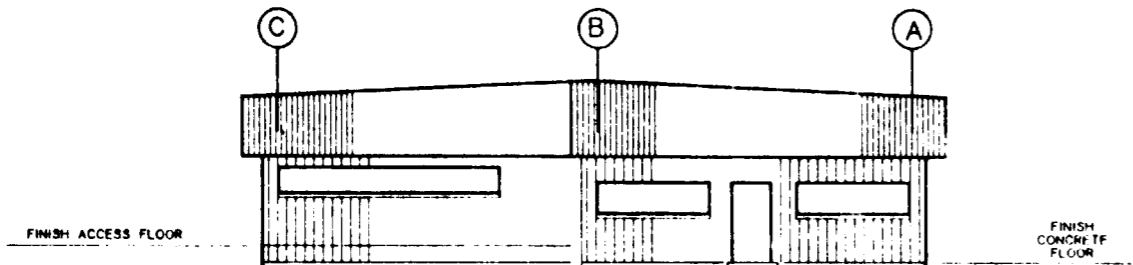
**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02

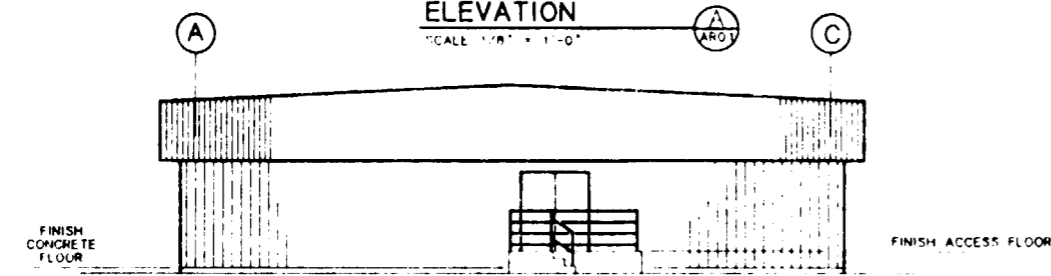


NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VMFY	ENV	SAF	QA	ITPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLR		<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>SURFACE DATA BUILDING</b> <b>FLOOR PLAN</b>										
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>		SUBMITTED BY: <i>[Signature]</i> DATE: 8-22-91 DRAWING NO: YMP-025-1-7003-AR01 REV: 0 YMPD APPROVED: _____ DATE: _____ SHT: _____ OF: _____										
QUALITY ASSURANCE	<i>[Signature]</i>												
PCN			YMP0000 W.B.S. NO. 1,2,3,1,1 8-22-91 S.I. NO.										

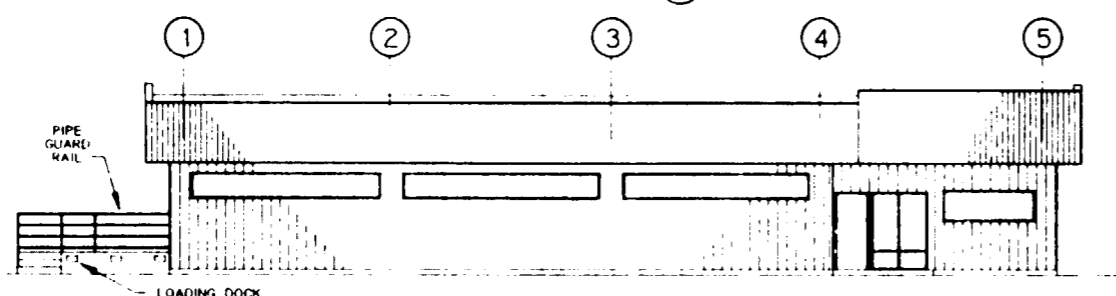
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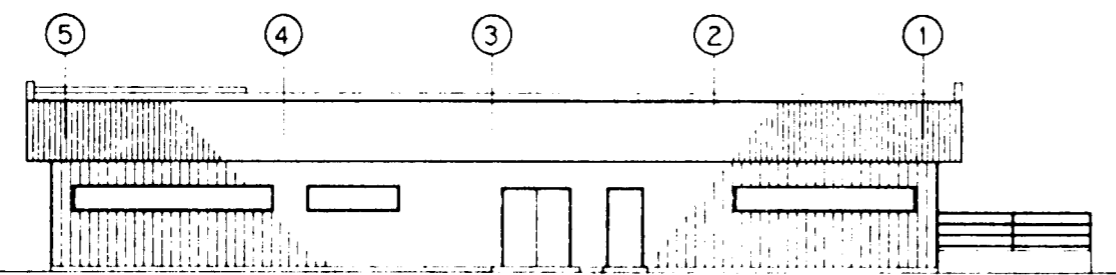
ELEVATION  
SCALE 1/8" = 1'-0"



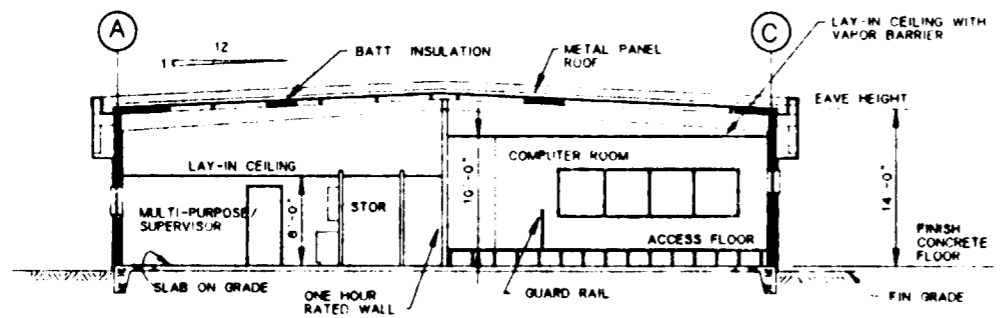
ELEVATION  
SCALE 1/8" = 1'-0"



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



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



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

**SI APERTURE CARD**  
Also Available On Aperture Card

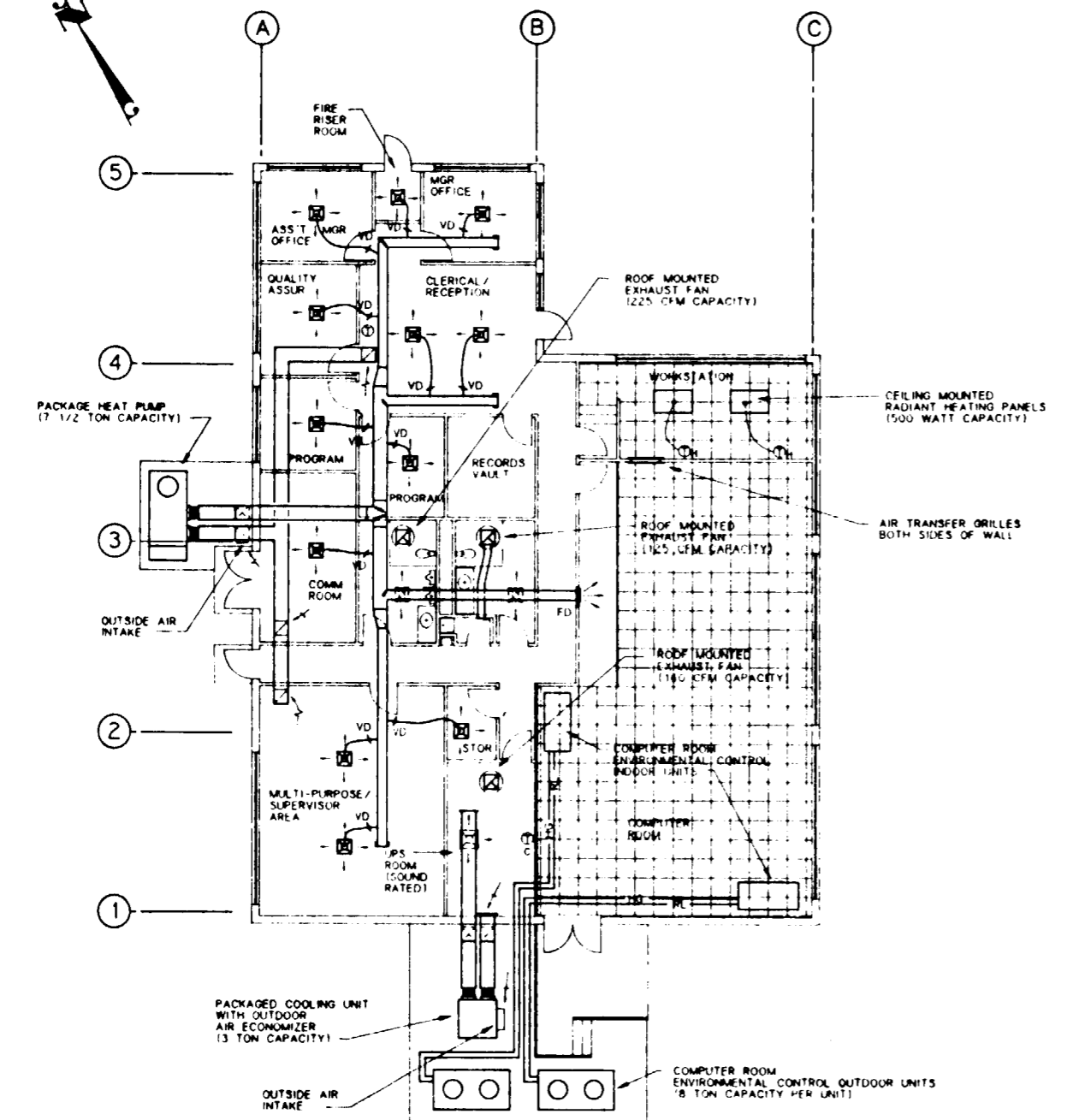
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VERF	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	RLR		EXPLORATORY STUDIES FACILITY										
DRAWN	RFC / M.S.H.		TS NORTH PORTAL GENERAL ARRANGEMENT										
CHECKED	<i>[Signature]</i>		SURFACE DATA BUILDING										
DEC.	<i>[Signature]</i>		ELEVATIONS AND SECTIONS										
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV. SAF.	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE		DRAWING NO.							REV.	
7/2/81			8-26-81		YMP-025-1-7003-AR02							0	
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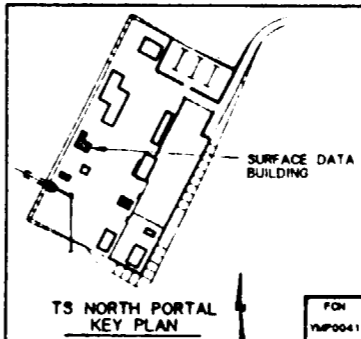
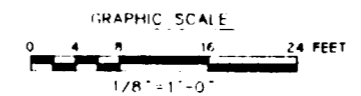
79

**GENERAL NOTES:**  
 THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

HVAC LEGEND	
SYMBOL	DESCRIPTION
— RL —	REFRIGERANT LIQUID LINE
— HG —	REFRIGERANT HOT GAS LINE
— RS —	REFRIGERANT SUCTION LINE
— D —	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR "T" WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW



**HVAC PLAN**  
 SCALE 1/8" = 1'-0"



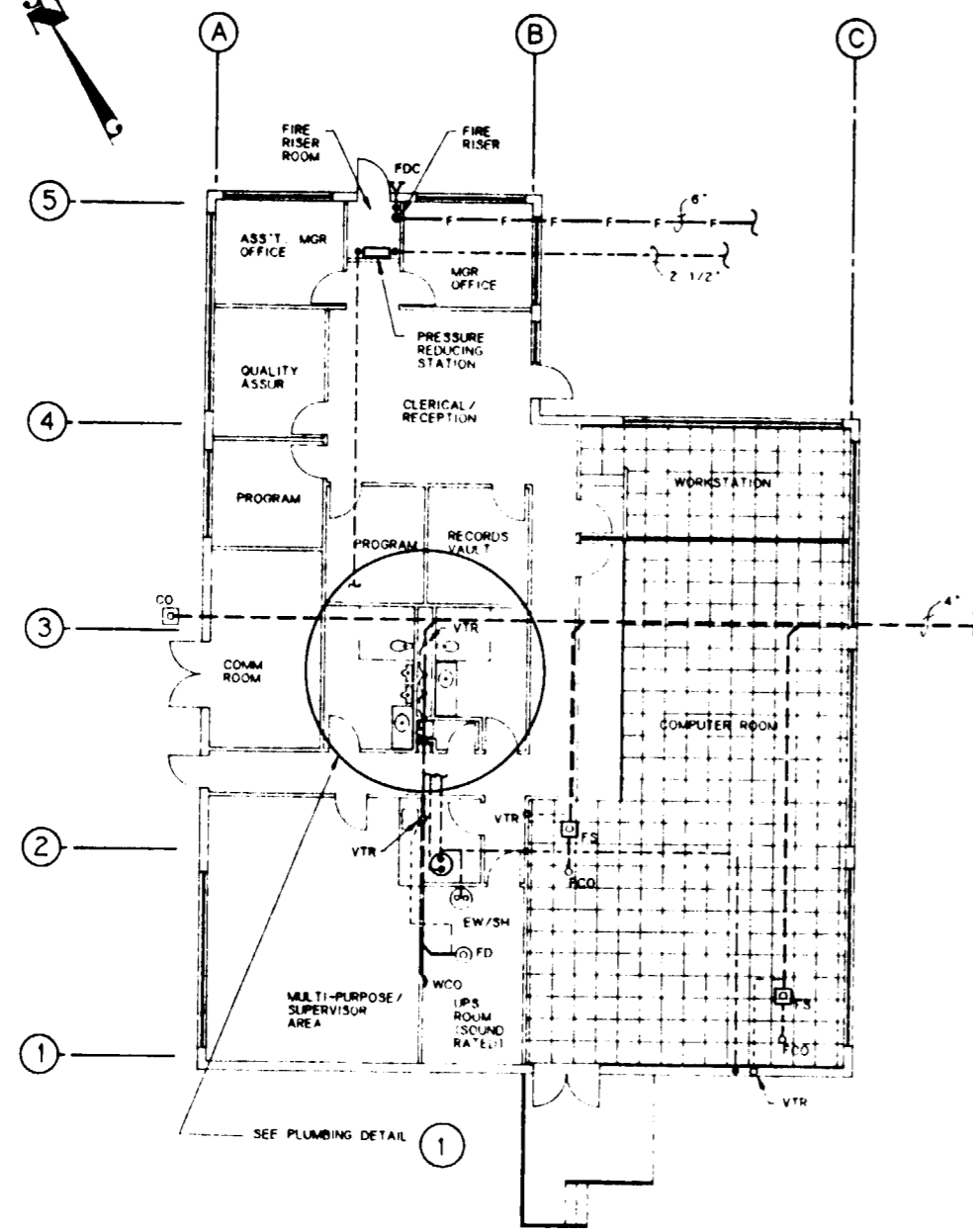
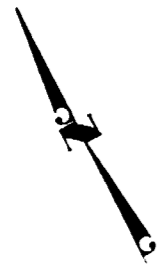
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPD	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT SURFACE DATA BUILDING HVAC PLAN													
APPROVALS													
DESIGN	BPA												
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
BY	SAP												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV.								
<i>[Signature]</i>		8-26-91	YMP-025-1-7003-HV01		0								
YMPD APPROVED		DATE	SHT		OF								

**SI APERTURE CARD**  
 Also Available On Aperture Card



8 7 6 5 4 3 2 1

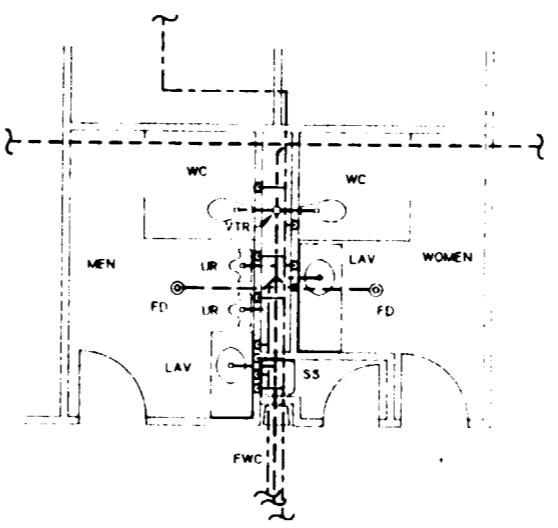


**PLUMBING PLAN**  
SCALE 1/8" = 1'-0"

PLUMBING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	SOIL/WASTE (ABOVE GRADE)
	SOIL/WASTE (BELOW GRADE)
	VENT PIPING
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	FIRE LINE
	FIRE RISER
	FIRE DEPARTMENT CONNECTION
	FLOOR CLEAN OUT
	FLOOR DRAIN
	FLOOR SINK
	WALL CLEAN OUT
	CLEAN OUT AT FINISH GRADE
	VENT THRU ROOF
	HOSE BIBB
	WALL HYDRANT
	SHOWER
	WATER CLOSET
	URINAL
	SERVICE SINK
	COUNTER TOP LAVATORY
	WALL MOUNTED LAVATORY
	COUNTER TOP SINK
	WASH FOUNTAIN
	EYE WASH/SHOWER
	BOOT WASH
	ELECTRIC WATER COOLER

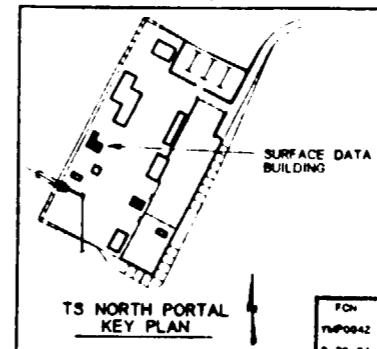
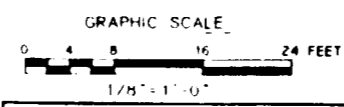
**GENERAL NOTES:**  
THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**SI APERTURE CARD**  
Also Available On Aperture Card

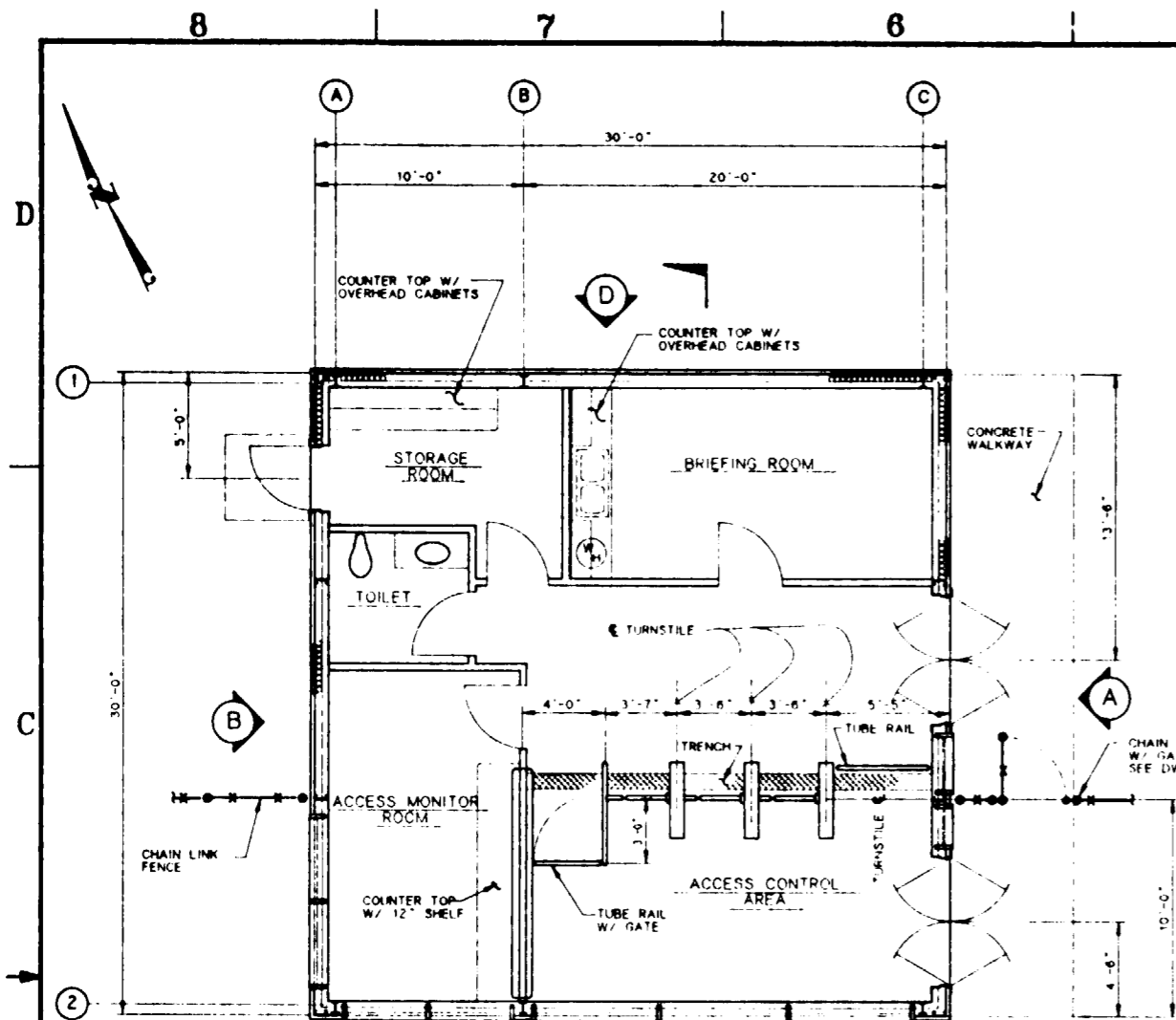


**PLUMBING DETAIL 1**  
SCALE 1/4" = 1'-0"

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02

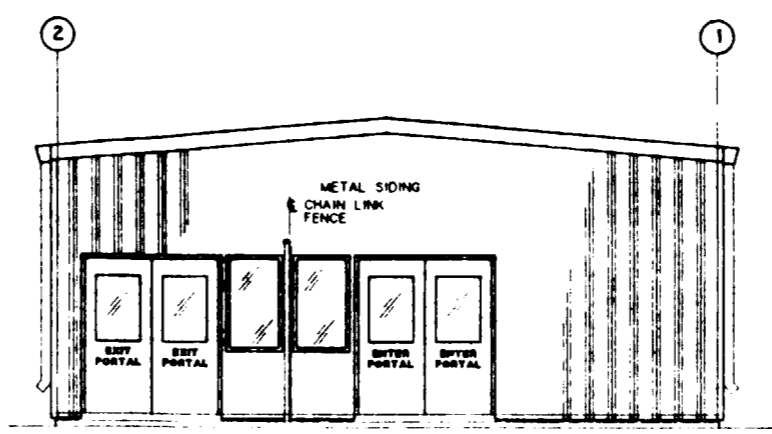


NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAP	QA	TPO	YMPD
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	TAN												
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV SAP	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO									
<i>[Signature]</i>			8-20-91	YMP-025-1-7003-PP01									
YMPD APPROVED			REV 0										
DATE												SHT	OF



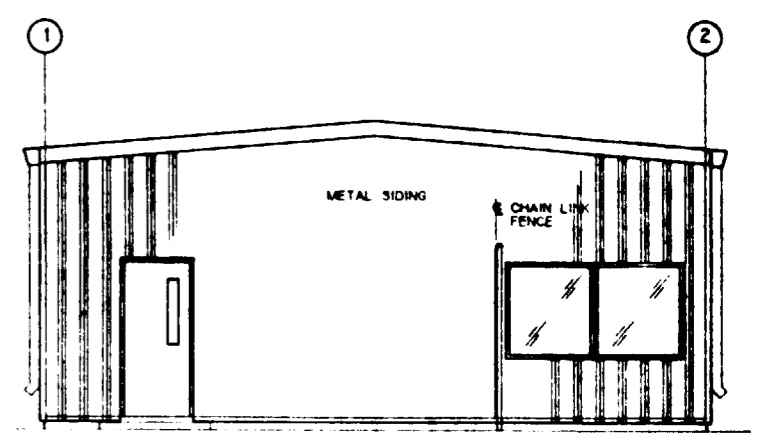
FLOOR PLAN

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



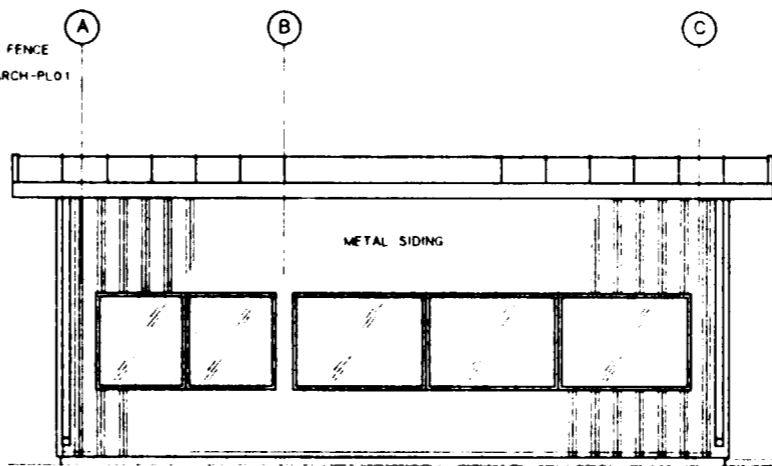
ELEVATION A

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



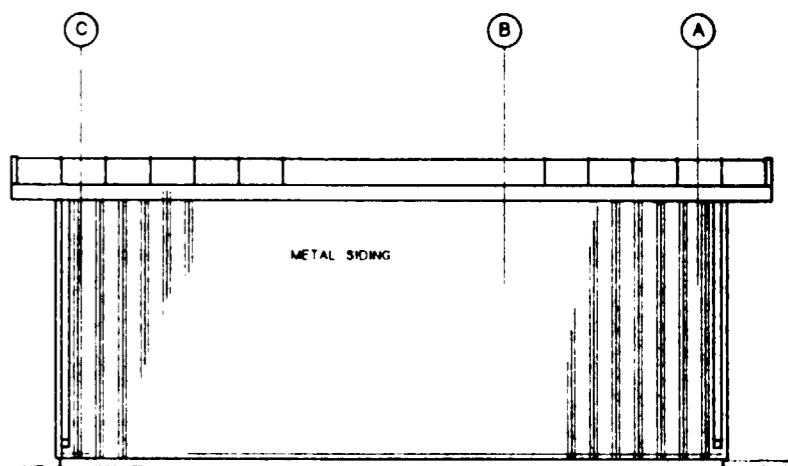
ELEVATION B

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



ELEVATION C

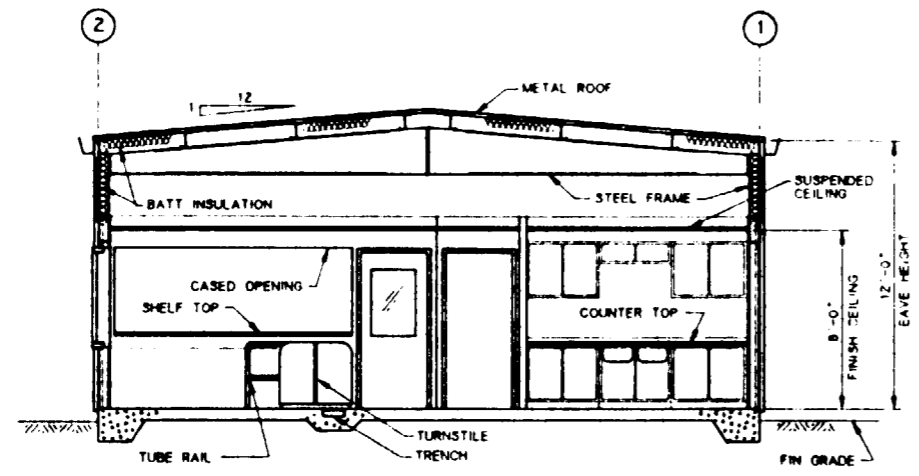
SCALE: 1/4" = 1'-0"



ELEVATION D

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

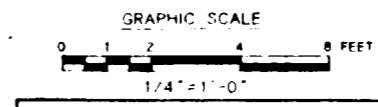
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



SECTION E

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

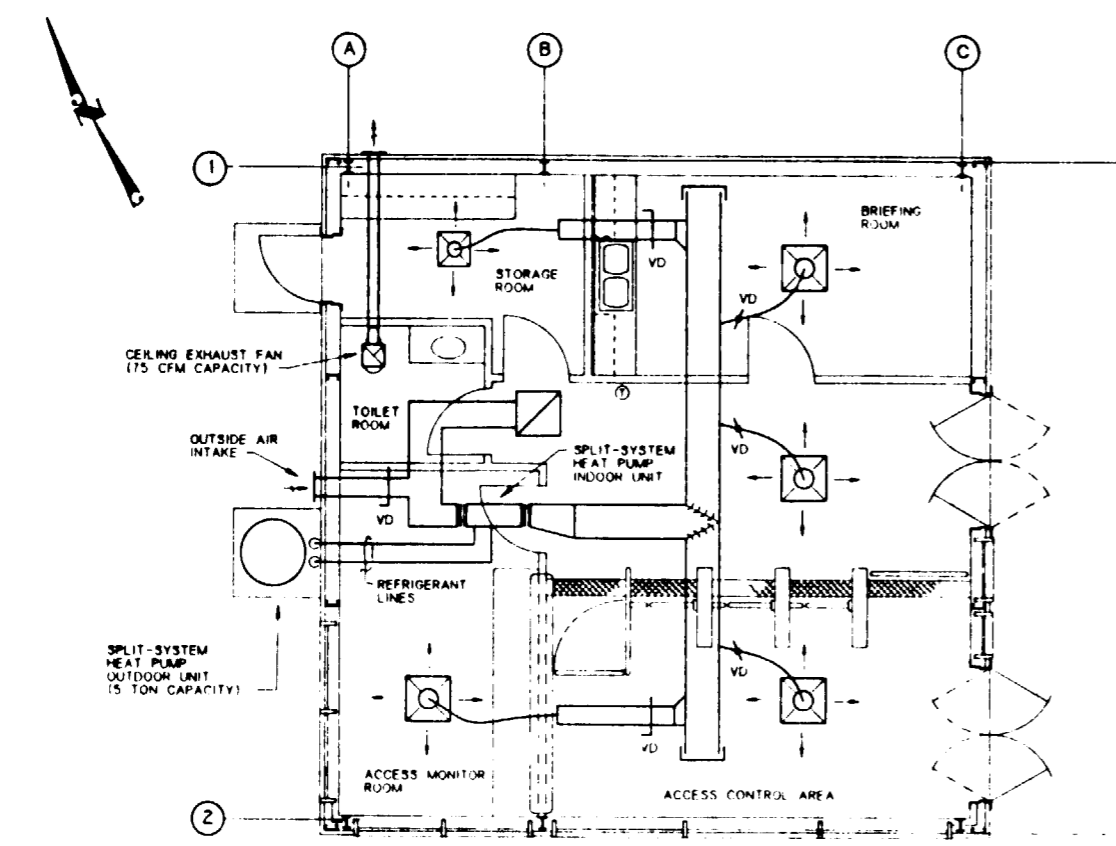
**SI APERTURE CARD**  
Also Available On Aperture Card



TS NORTH PORTAL KEY PLAN

NO.	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP0
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS										<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA			
DESIGN	RLR												
DRAWN	M.M.												
CHECKED	[Signature]												
DEC	[Signature]												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV	SAF												
QUALITY ASSURANCE	[Signature]												
SUBMITTED BY										DATE	DRAWING NO		REV
712 [Signature]										8-25-91	YMP-025-1-7004-AR01		0
YMP0 APPROVED										DATE	SHT	OF	

8 7 6 5 4 3 2 1



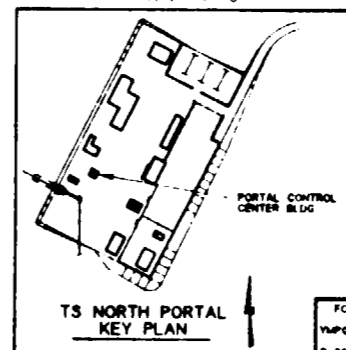
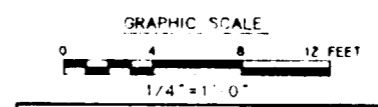
**HVAC PLAN**  
SCALE: 1/4" = 1'-0"

HVAC LEGEND	
SYMBOL	DESCRIPTION
— RL —	REFRIGERANT LIQUID LINE
— HG —	REFRIGERANT HOT GAS LINE
— RS —	REFRIGERANT SUCTION LINE
— D —	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR "T" WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	SIDEWALL SUPPLY REGISTER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL / DOOR LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

**GENERAL NOTES:**  
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**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

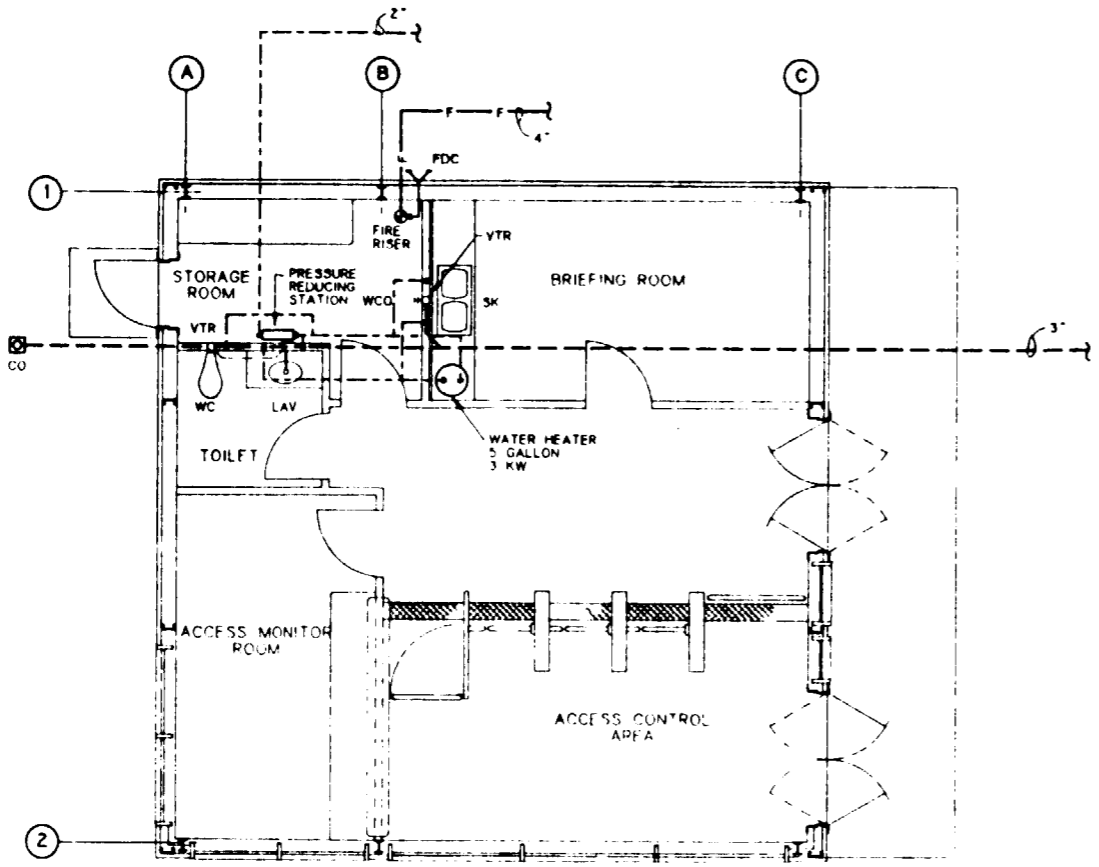


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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
APPROVALS			<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA										
DESIGN	BHA												
DRAWN	RFC												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B. CH.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	8-26-91												
SUBMITTED BY			DATE	DRAWING NO.		REV							
<i>[Signature]</i>			8-26-91	YMP-025-1-7004-HV01		0							
YMPO APPROVED			DATE	SHT		OF							

83

9112020061-202

8 7 6 5 4 3 2 1



**PLUMBING PLAN**

SCALE 1/4" = 1'-0"

**GENERAL NOTES:**

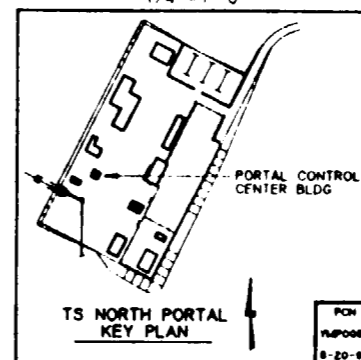
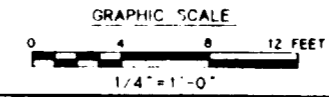
THIS DRAWING DEPICTS ONLY THE MAJOR DESIGN FEATURES OF THIS PROJECT. ALL DETAILS, EQUIPMENT DESCRIPTIONS AND SPECIAL INSTRUCTIONS SHALL BE DEVELOPED DURING THE TITLE II EFFORT.

**PLUMBING LEGEND**

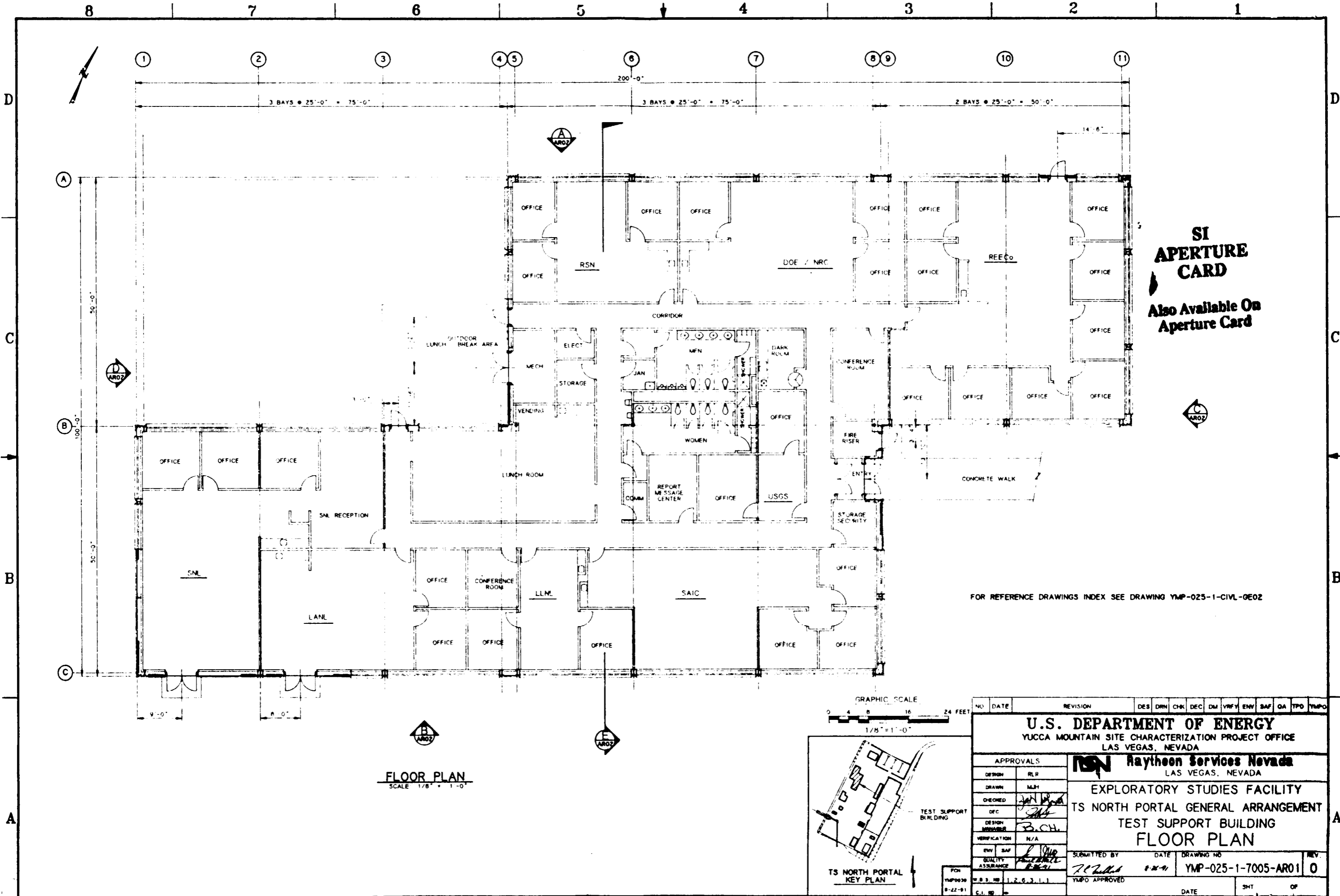
SYMBOL/ABBREVIATION	DESCRIPTION
	SOIL/WASTE (ABOVE GRADE)
	SOIL/WASTE (BELOW GRADE)
	VENT PIPING
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	FIRE LINE
	FIRE RISER
	FIRE DEPARTMENT CONNECTION
	FLOOR CLEAN OUT
	FLOOR DRAIN
	FLOOR SINK
	WALL CLEAN OUT
	CLEAN OUT AT FINISH GRADE
	VENT THRU ROOF
	HOSE BIBB
	WALL HYDRANT
	SHOWER
	WATER CLOSET
	URINAL
	SERVICE SINK
	COUNTER TOP LAVATORY
	WALL MOUNTED LAVATORY
	COUNTER TOP SINK
	WASH FOUNTAIN
	EYE WASH/SHOWER
	BOOT WASH
	ELECTRIC WATER COOLER

**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



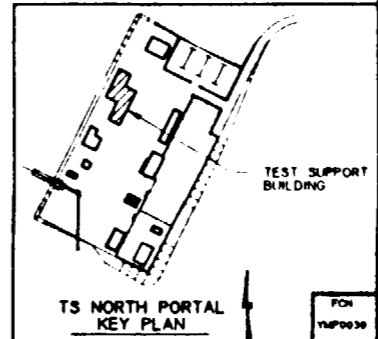
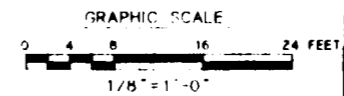
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<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT PORTAL CONTROL CENTER BLDG <b>PLUMBING PLAN</b>													
APPROVALS													
DESIGN	TAN												
DRAWN	TAN												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
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VERIFICATION	N/A												
ENV	SAF												
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SUBMITTED BY		DATE	DRAWING NO		REV								
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8-20-91		DATE	SHT		OF								



**SI APERTURE CARD**  
 Also Available On Aperture Card

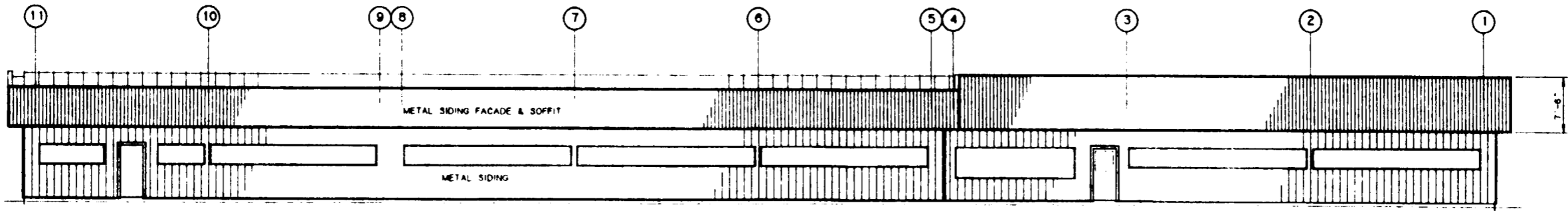
FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

**FLOOR PLAN**  
 SCALE 1/8" = 1'-0"

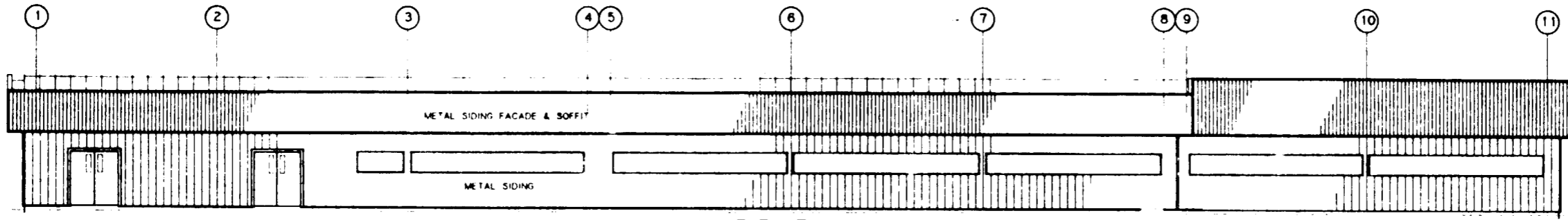


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<b>RSN Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT TEST SUPPORT BUILDING <b>FLOOR PLAN</b>													
APPROVALS													
DESIGN	RLR												
DRAWN	MLM												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	<i>[Signature]</i>												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY			DATE	DRAWING NO		REV							
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YMP/O APPROVED			DATE	SHT		OF							

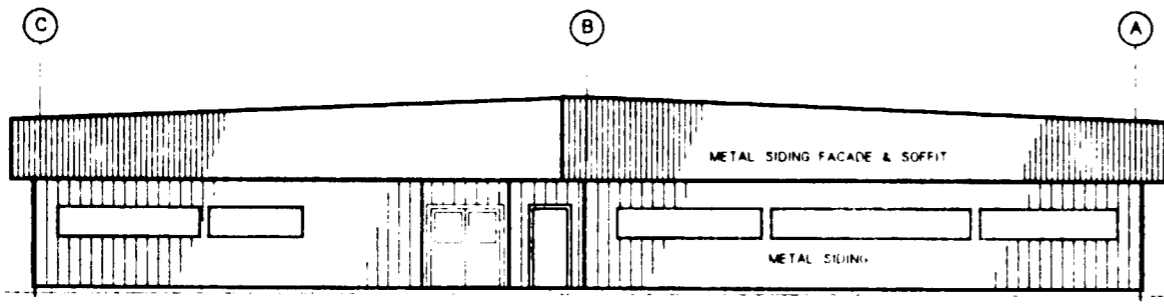
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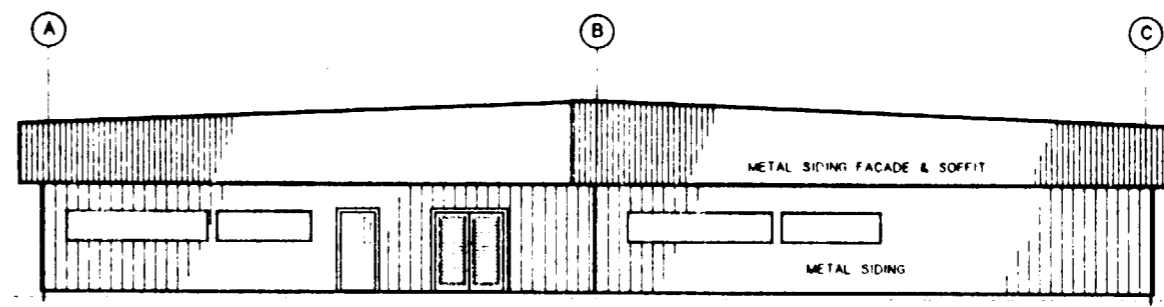
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SCALE 1/8" = 1'-0" (AR0)



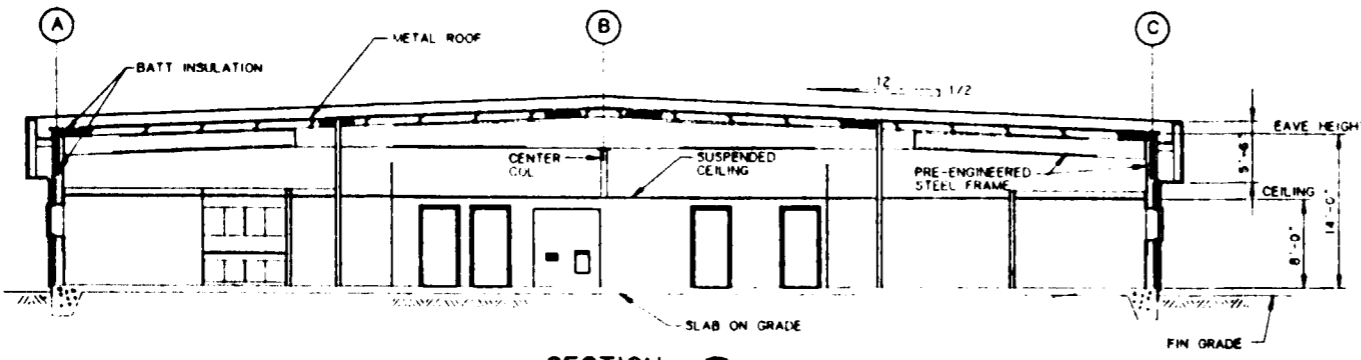
ELEVATION (B)  
SCALE 1/8" = 1'-0" (AR0)



ELEVATION (C)  
SCALE 1/8" = 1'-0" (AR0)



ELEVATION (D)  
SCALE 1/8" = 1'-0" (AR0)

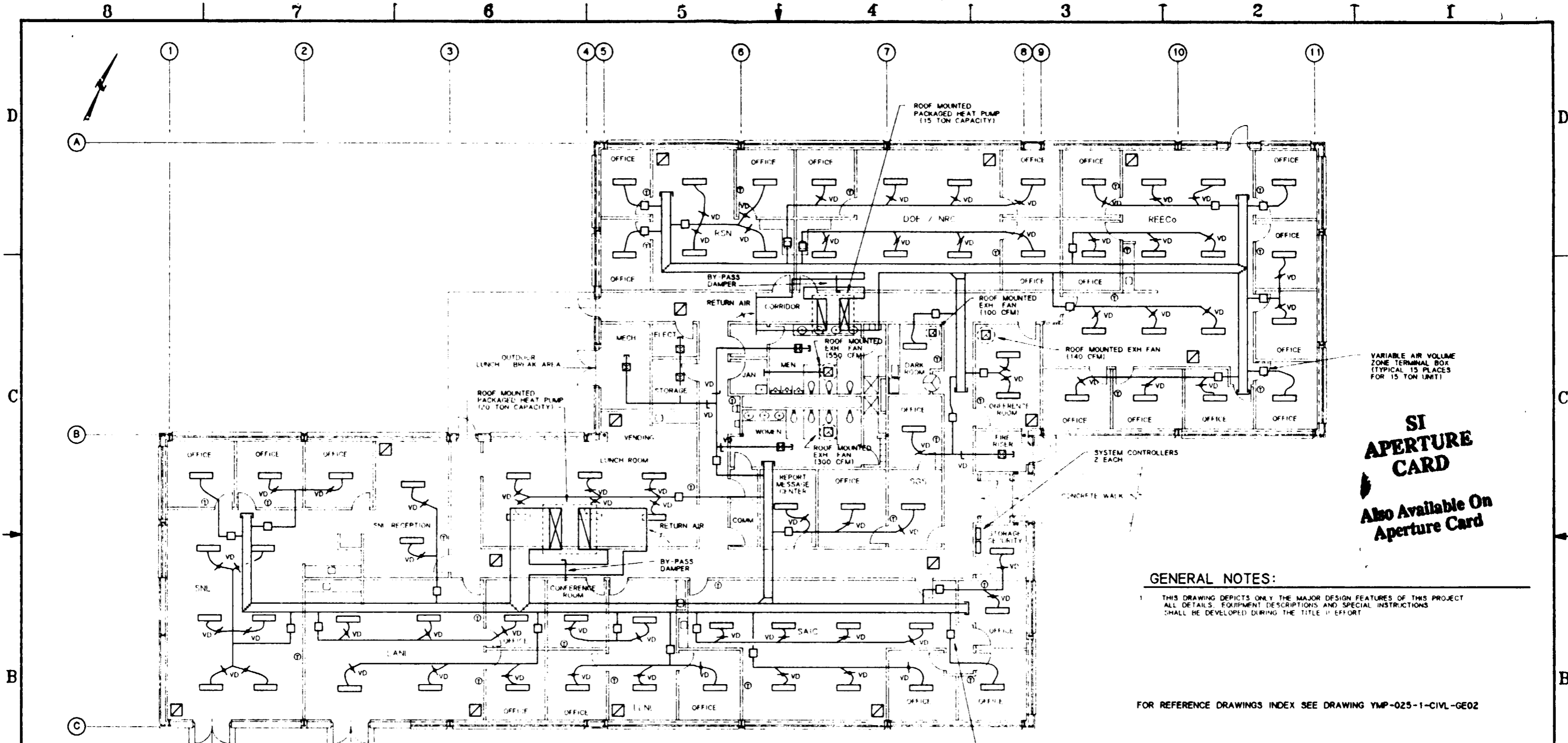


SECTION (E)  
SCALE 1/8" = 1'-0" (AR0)

**SI APERTURE CARD**  
Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

NO	DATE	REVISION	DES	DRW	CHK	DEC	DM	VRFY	ENV	SAF	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
EXPLORATORY STUDIES FACILITY TS NORTH PORTAL GENERAL ARRANGEMENT TEST SUPPORT BUILDING <b>ELEVATIONS &amp; SECTION</b>													
APPROVALS													
DESIGN	RLR												
DRAWN	MLM												
CHECKED	<i>[Signature]</i>												
DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
ENV SAF	<i>[Signature]</i>												
QUALITY ASSURANCE	<i>[Signature]</i>												
SUBMITTED BY		DATE	DRAWING NO		REV								
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YMP0051		YMP0 APPROVED											
8-22-91		DATE											
C.I. NO		SHT OF											



**SI APERTURE CARD**  
 Also Available On Aperture Card

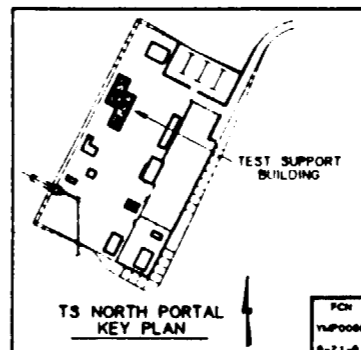
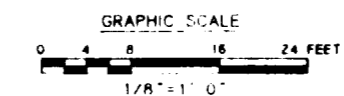
**GENERAL NOTES:**  
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FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02

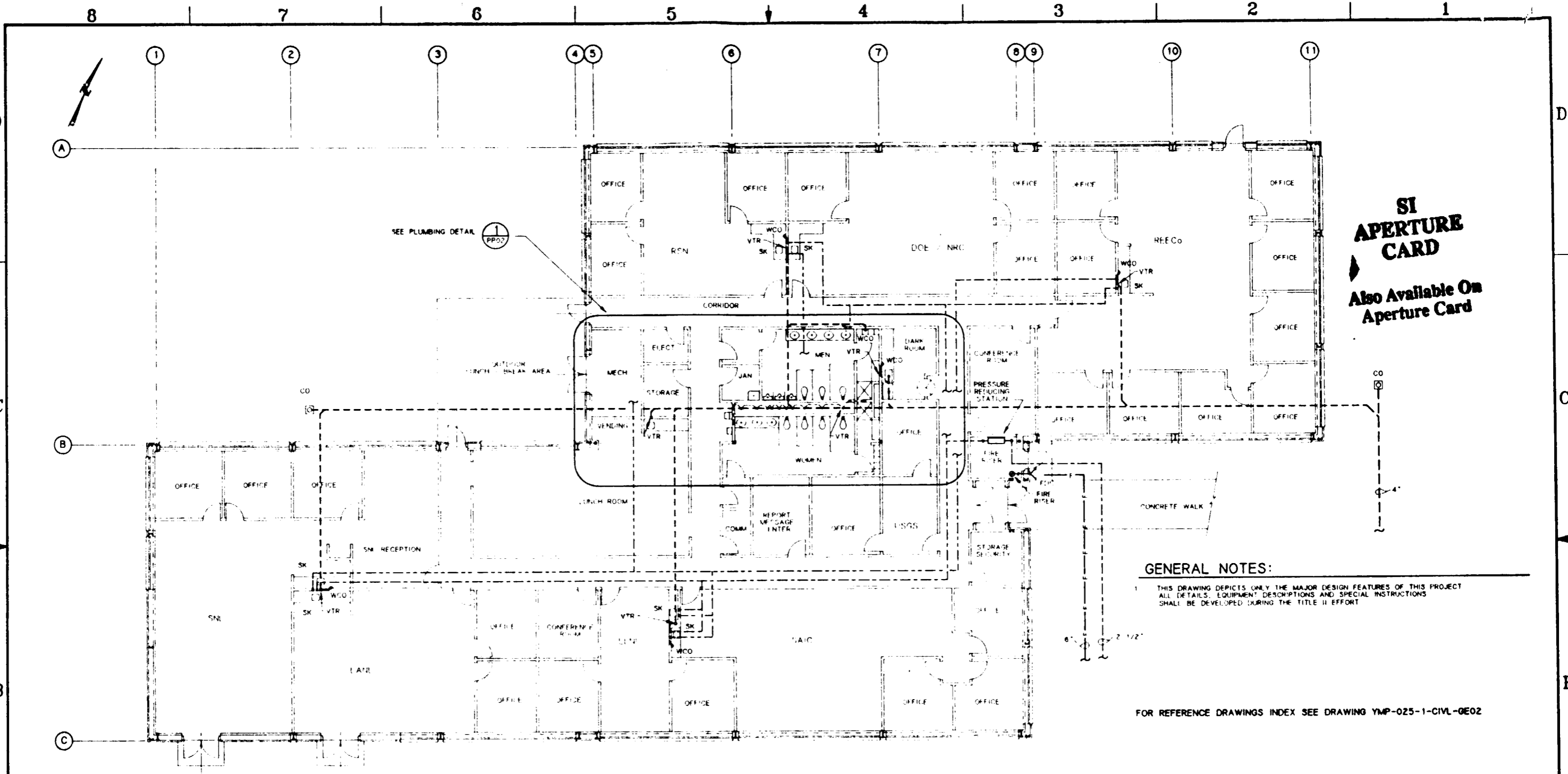
HVAC LEGEND	
SYMBOL	DESCRIPTION
	REFRIGERANT LIQUID LINE
	REFRIGERANT HOT GAS LINE
	REFRIGERANT SUCTION LINE
	DRAIN LINE
	FLEXIBLE CONNECTION TO EQUIPMENT
	DUCT TRANSITION
	ELBOW WITH TURNING VANES
	RECTANGULAR 'T' WITH TURNING VANES
	BRANCH DUCT WITH TURNING VANES
	VOLUME DAMPER IN RIGID DUCT TAKEOFF
	FIRE DAMPER IN WALL PENETRATION

HVAC LEGEND CONTINUATION	
SYMBOL	DESCRIPTION
	VOLUME DAMPER IN FLEXIBLE DUCT TAKEOFF
	DUCT SECTION (SUPPLY)
	DUCT SECTION (RETURN)
	CEILING DIFFUSER (SUPPLY)
	SIDEWALL REGISTER/LOUVER
	CEILING GRILLE (RETURN)
	CEILING GRILLE (EXHAUST)
	WALL LOUVER
	THERMOSTAT (COOLING AND HEATING)
	THERMOSTAT (COOLING ONLY)
	THERMOSTAT (HEATING ONLY)
	DIRECTION OF AIR FLOW

**HVAC PLAN**  
 SCALE 1/8" = 1'-0"



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAP	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT TEST SUPPORT BUILDING <b>HVAC PLAN</b>													
DESIGN		BHA		DRAWN		RFC		CHECKED		DEC		DESIGN MANAGER	
VERIFICATION		N/A		ENV		SAP		SUBMITTED BY		DATE		DRAWING NO	
QUALITY ASSURANCE		N/A		7/2/91		8-2-91		YMP-025-1-7005-HV01		REV. 0		YMP-025-1-7005-HV01	
YMP-025-1-7005-HV01													
DATE													
SHT OF													

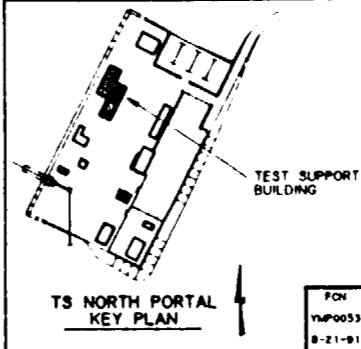
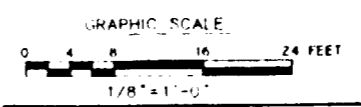


**SI APERTURE CARD**  
 Also Available On Aperture Card

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FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02

**PLUMBING PLAN**  
 SCALE 1/8" = 1'-0"



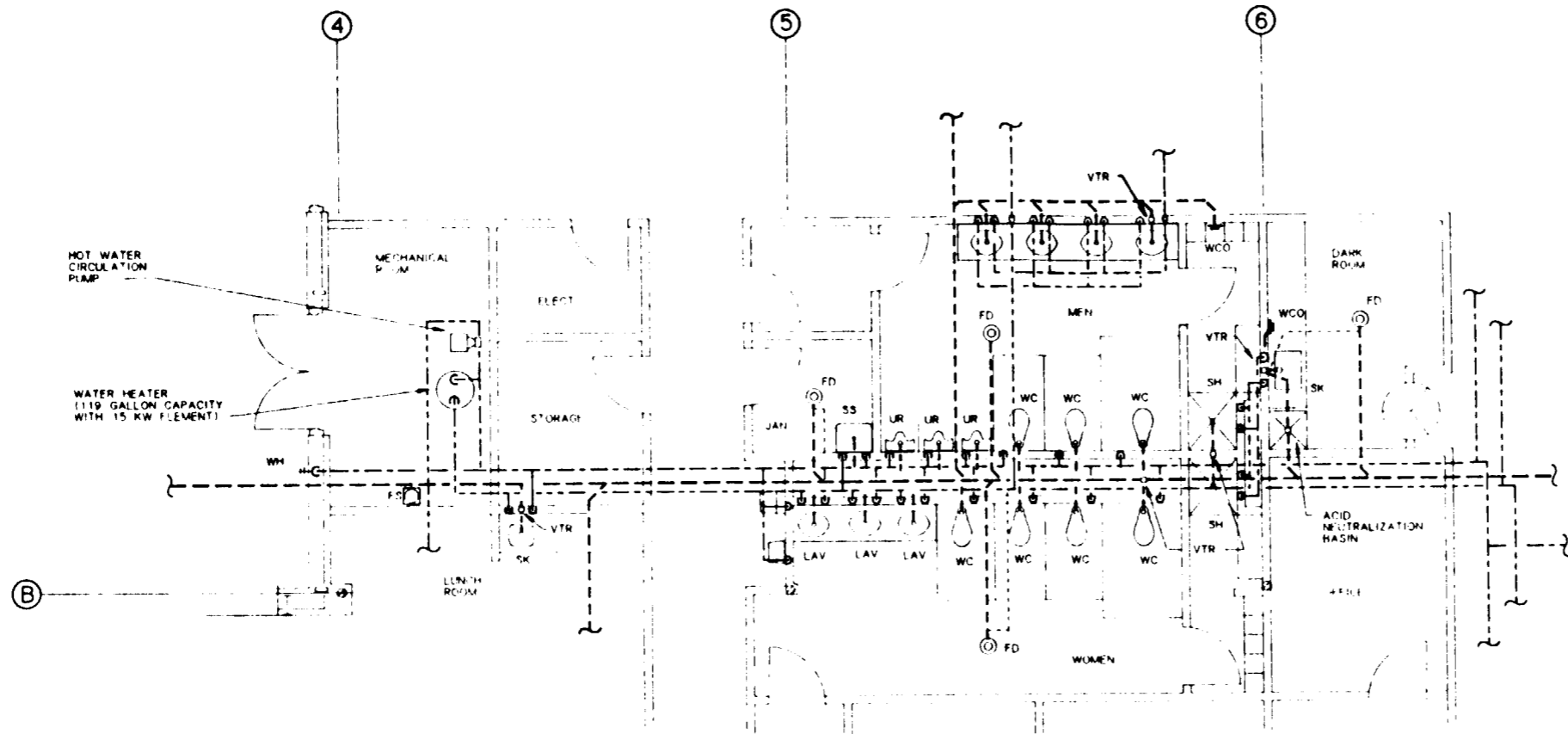
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<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> TS NORTH PORTAL GENERAL ARRANGEMENT TEST SUPPORT BUILDING PLUMBING PLAN													
DESIGN		TAN		DRAWN		RFC		CHECKED		J.M. [Signature]		DEC	
DESIGN MANAGER		N/A		ENV		SAF		SUBMITTED BY		DATE		DRAWING NO	
VERIFICATION		N/A		W.B.S. NO.		1, 2, 6, 3, 1, 1		YMP0 APPROVED		DATE		REV	
QUALITY ASSURANCE		8-21-91		8-21-91		YMP-025-1-7005-PP01		0					

2118020001-207



GENERAL NOTES:

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PLUMBING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
---	SOIL/WASTE (ABOVE GRADE)
---	SOIL/WASTE (BELOW GRADE)
---	VENT PIPING
---	DOMESTIC COLD WATER
---	DOMESTIC HOT WATER
---	DOMESTIC HOT WATER RETURN
---	FIRE LINE
---	FIRE RISER
FDC	FIRE DEPARTMENT CONNECTION
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FS	FLOOR SINK
WCO	WALL CLEAN OUT
CO	CLEAN OUT AT FINISH GRADE
VTR	VENT THRU ROOF
HB	HOSE BIBB
WH	WALL HYDRANT
SH	SHOWER
WC	WATER CLOSET
UR	URINAL
SS	SERVICE SINK
LAV	COUNTER TOP LAVATORY
LAV	WALL MOUNTED LAVATORY
SK	COUNTER TOP SINK
WF	WASH FOUNTAIN
EW/SH	EYE WASH/SHOWER
BW	BOOT WASH
EWC	ELECTRIC WATER COOLER

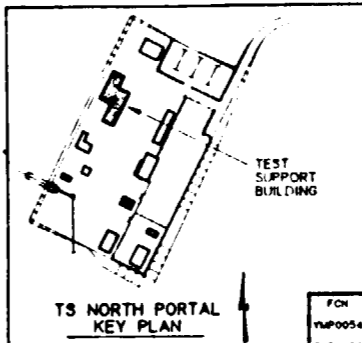
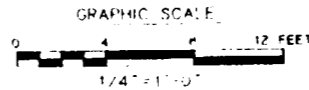
PLUMBING DETAIL

SCALE 1/4" = 1'-0"



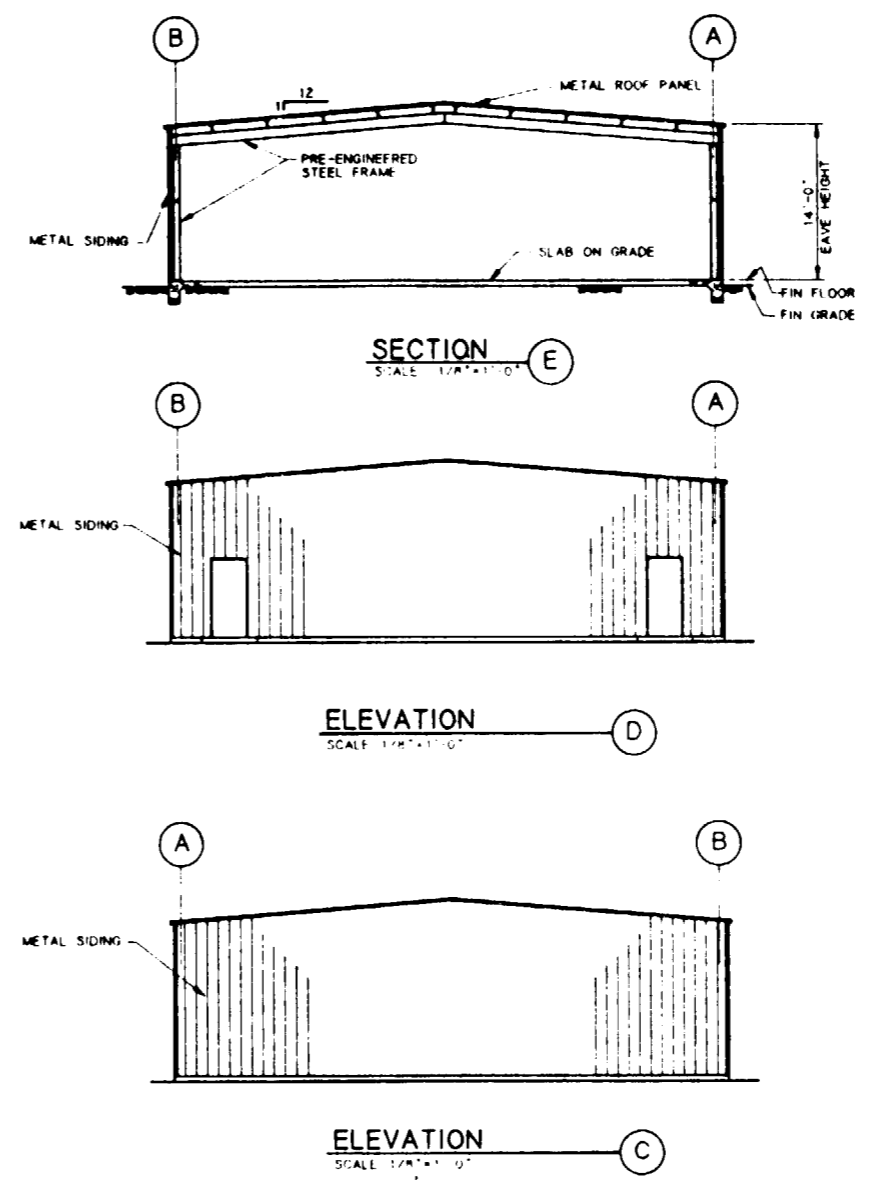
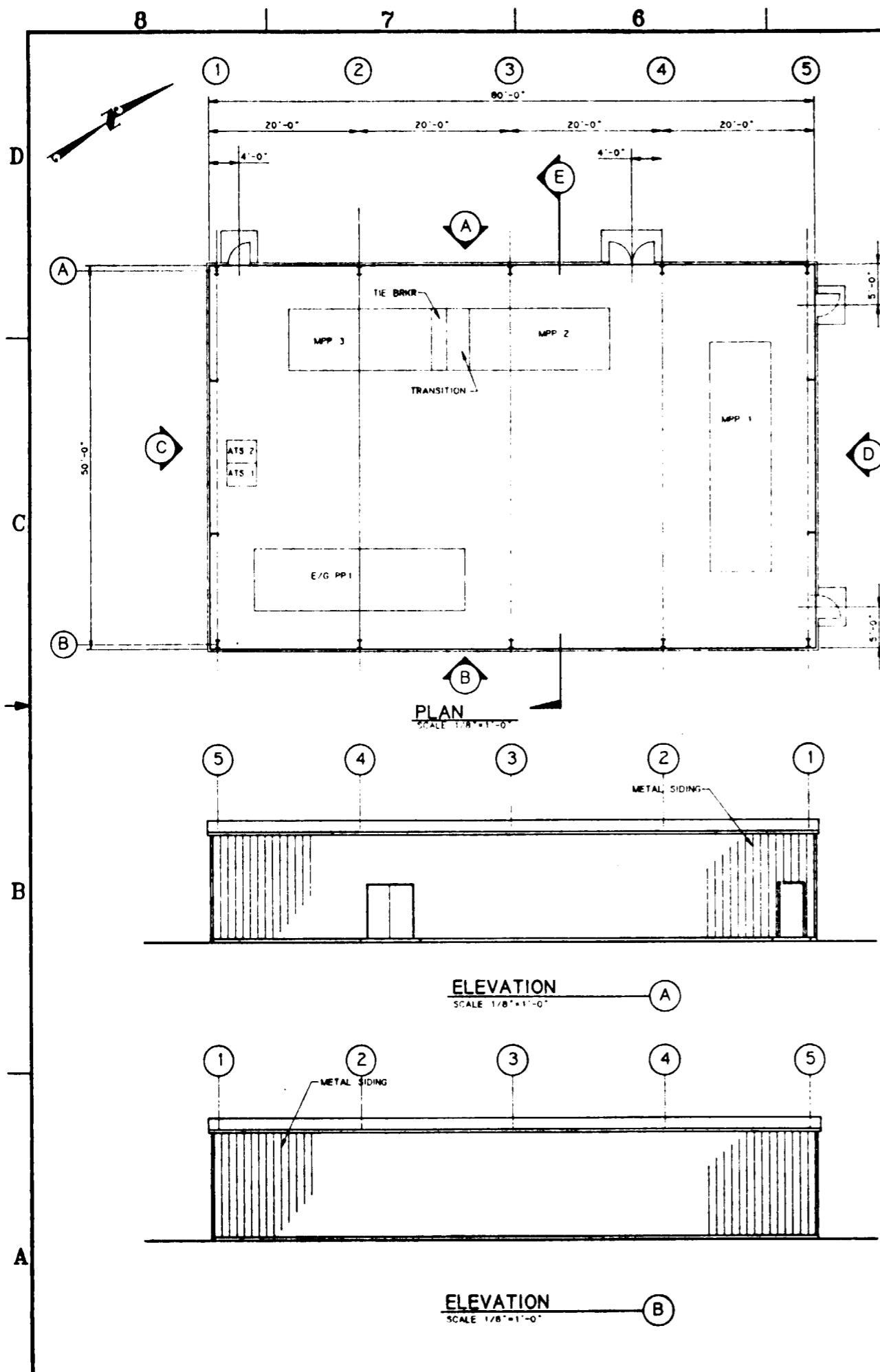
SI APERTURE CARD Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-0E02



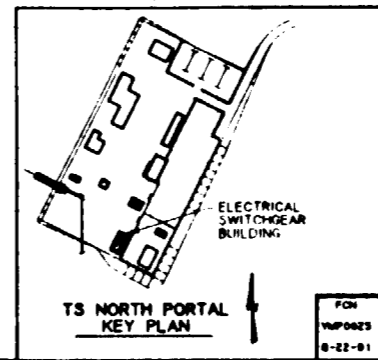
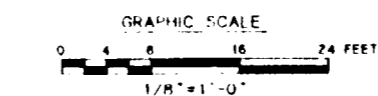
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<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>TEST SUPPORT BUILDING</b> <b>PLUMBING DETAIL</b>													
APPROVALS													
DESIGN	TAN												
DRAWN	RFC												
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DEC	<i>[Signature]</i>												
DESIGN MANAGER	B.C.H.												
VERIFICATION	N/A												
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SUBMITTED BY		DATE	DRAWING NO		REV.								
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YMP0054		YMP0 APPROVED		DATE	SHT								
8-21-91		C.I. NO.											





**SI APERTURE CARD**  
 Also Available On Aperture Card

FOR REFERENCE DRAWINGS INDEX SEE DRAWING YMP-025-1-CIVL-GE02



NO	DATE	REVISION	DES	DRN	CHK	DEC	DM	VRFY	ENV	SAP	QA	TPO	YMP
<b>U.S. DEPARTMENT OF ENERGY</b> YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA													
<b>Raytheon Services Nevada</b> LAS VEGAS, NEVADA													
<b>EXPLORATORY STUDIES FACILITY</b> <b>TS NORTH PORTAL GENERAL ARRANGEMENT</b> <b>ELECTRICAL SWITCHGEAR BUILDING</b> <b>PLAN AND ELEVATIONS</b>													
DESIGN		RLR		DRAWN		CLP		CHECKED		DEC		DATE	
DESIGN MANAGER		B.C.H.		VERIFICATION		N/A		ENV SAF		DATE		DRAWING NO.	
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YMP-025-1-7007-AR01													



RAYTHEON SERVICES NEVADA

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

TITLE I

DESIGN SUMMARY REPORT

FOR THE EXPLORATORY STUDIES FACILITY

REVISION 1

DRAFT H

VOLUME 3

PARSONS BRINCKERHOFF

DRAWINGS

SEPTEMBER 03, 1991

Prepared by:

RAYTHEON SERVICES NEVADA

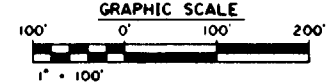
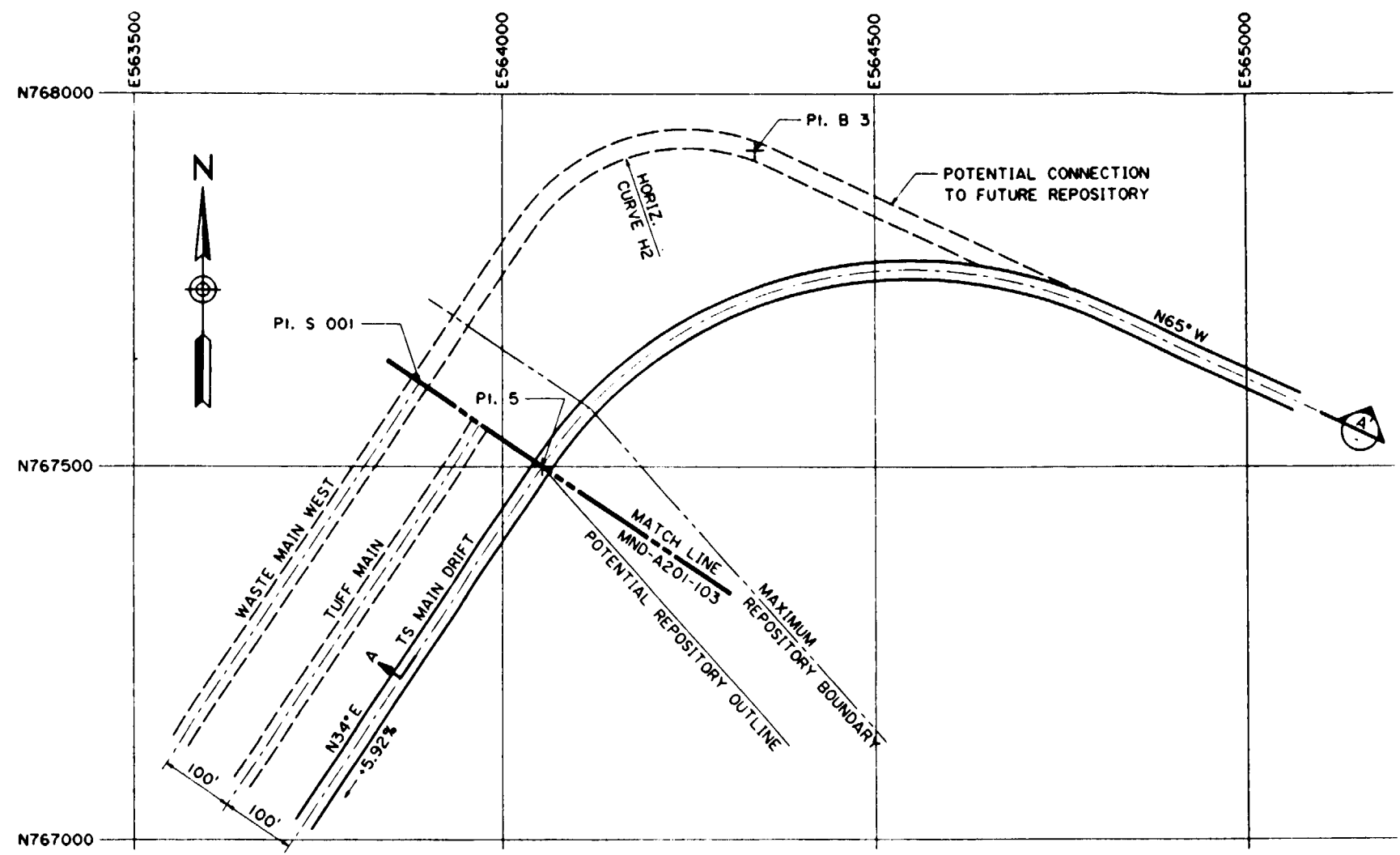
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Las Vegas, Nevada

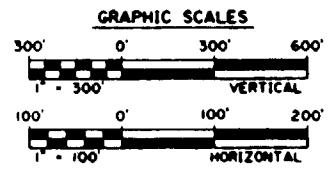
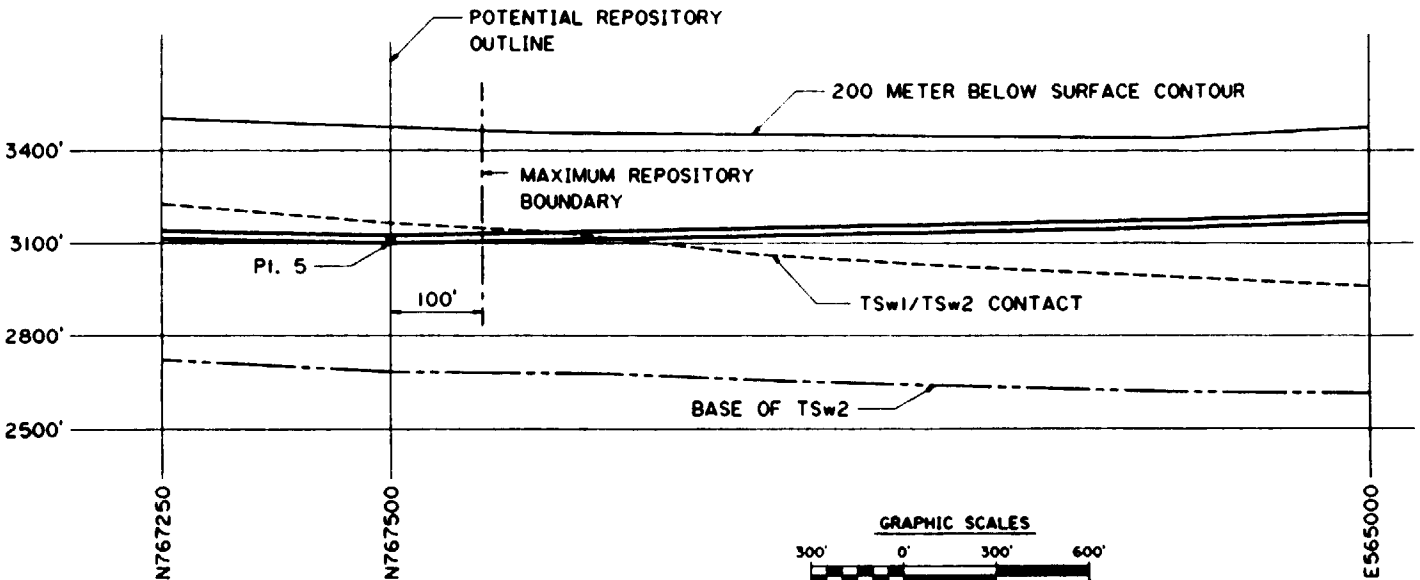
**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card

0112020061-20





PLAN VIEW



SECTION A-A'  
UNFOLDED CENTERLINE SECTION

- NOTES:**
1. THE GRID SYSTEM SHOWN ON THESE DRAWINGS IS THE NEVADA COORDINATE CENTRAL SYSTEM. THE POINT NUMBERS ARE BASED ON PB DEVELOPED REPOSITORY NUMBERING SYSTEM.
  2. DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED. DIMENSIONS, ELEVATIONS AND GRADES ARE ROUNDED OFF TO THE NEAREST TWO DECIMAL PLACES.
  3. THE CONTOUR OF THE BASE OF THE TSw2 FORMATION WAS DERIVED FROM SML DRAWING CAL0304.
  4. THE CONTOUR OF THE TSw1/TSw2 FORMATION CONTACT WAS DETERMINED FROM SML DRAWING CAL0302.
  5. THE 200 METER BELOW THE SURFACE CONTOUR WAS DEVELOPED FROM A 1 INCH - 500 FEET SCALE TOPOGRAPHIC MAP WITH A 10 FOOT CONTOUR INTERVAL.
  6. THE 100' CENTER TO CENTER DISTANCE BETWEEN MAIN DRIFTS IS FOR ILLUSTRATION PURPOSES ONLY AND MAY BE ALTERED AFTER FURTHER EVALUATION.
  7. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT WITH NO FILL, LINING OR CONCRETE.
  8. ALTHOUGH THERE ARE ONLY THREE MAIN DRIFTS SHOWN, A FOURTH MAIN MAY BE REQUIRED FOR ADDITIONAL VENTILATION.
  9. COORDINATES CANNOT BE SCALED OFF THE UNFOLDED CENTERLINE SECTION A-A'.
  10. PI. 5 IS THE POINT OF INTERSECTION OF THE TS NORTH RAMP AND THE REPOSITORY.
  11. THE TS NORTH RAMP WILL NOT EXCEED A GRADE OF 10%.
  12. ALL DRIFTS ON THIS DRAWING ARE ASSUMED TO BE 25.0 FOOT DIAMETER AND DRIVEN BY TUNNEL BORING MACHINES, EXCEPT FOR THE CONVEYOR DRIFTS.

CURVE DATA				
POINT	RADIUS OF CURVE	TANGENT LENGTH	CURVE LENGTH	ANGLE
H2	250	213.52	353.43	81.00

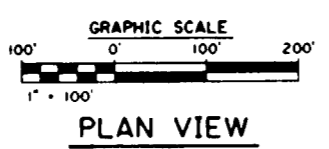
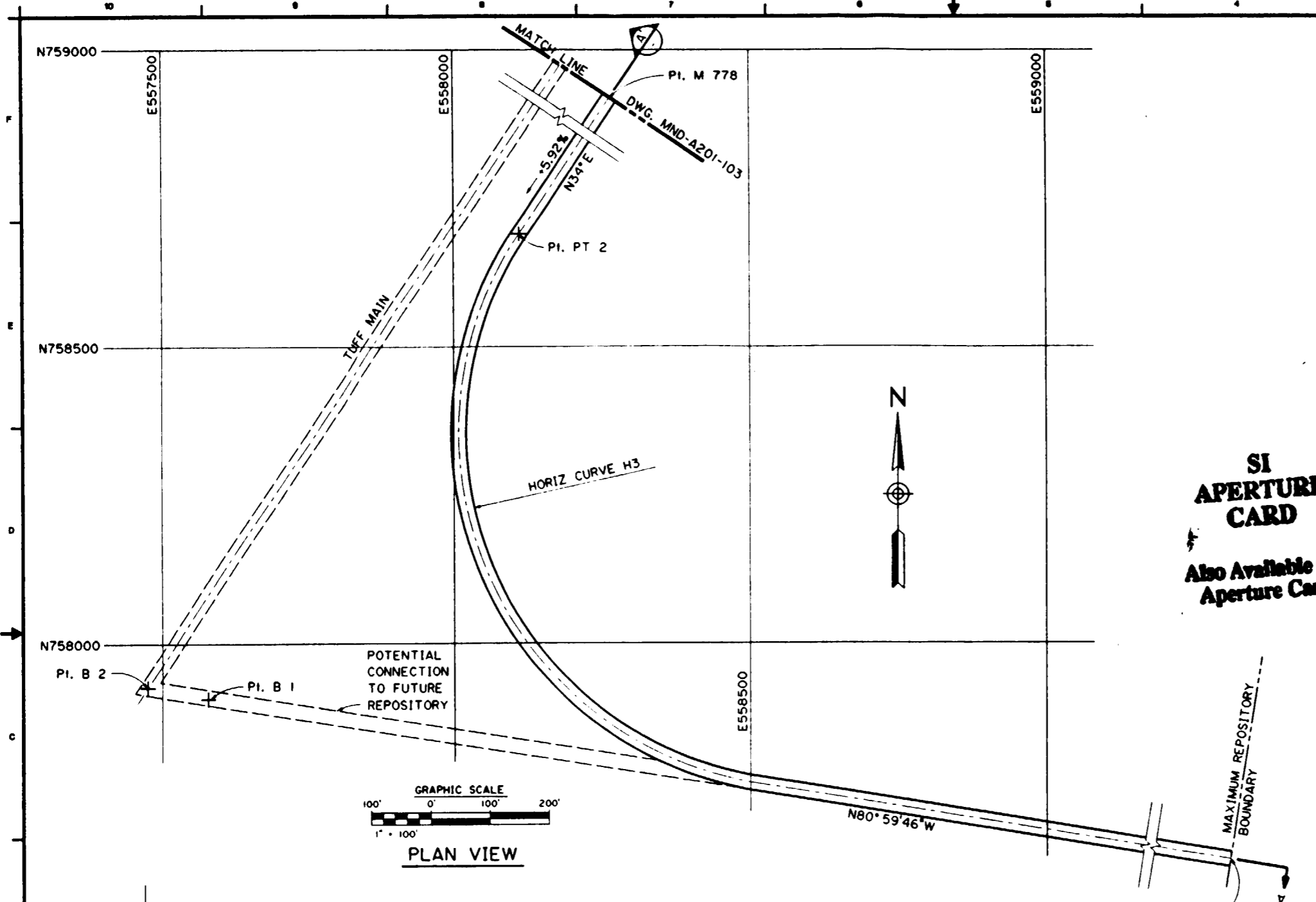
POINT	NORTHING	EASTING	ELEVATION
5	767500.00	564053.00	3100.00
B 3	767924.84	564339.56	3069.65
S 001	767665.81	563941.16	3100.00

**SI APERTURE CARD**  
Also Available On Aperture Card

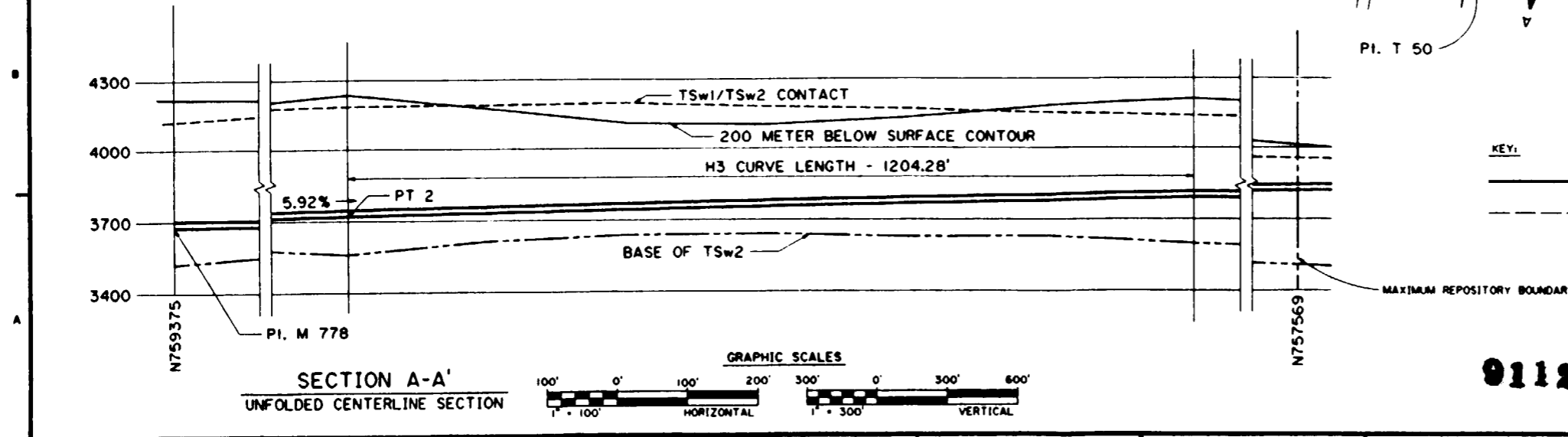
**KEY:**  
 ESF  
 REPOSITORY

9112020061-23

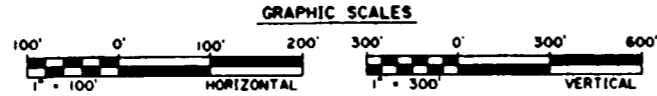
PROJ. & W.O. NO.	DATE	REVISION	BY	CHK.	APP.
PROPERTY OF <b>RAYTHEON SERVICES NEVADA</b>					
DEVELOPED BY <b>Parsons Brinckerhoff Quade &amp; Douglas, Inc.</b>					
YUCCA MOUNTAIN PROJECT					
TS NORTH RAMP / MAIN DRIFT PLAN & SECTION					
DES. <i>MS</i>	DR. <i>MH</i>	CHK. <i>DJS</i>	DWG. APPROVED		DATE
APP. <i>J.C.</i>	DATE		DWG. CLASS	PAGE NO.	
SCALE <i>AS SHOWN</i>	PB DWG. NO. - REV. <i>MND-A201-101</i>	REV. CLIENT'S DWG. NO.	CAT.		



PLAN VIEW



SECTION A-A'  
UNFOLDED CENTERLINE SECTION



**SI  
APERTURE  
CARD**  
Also Available On  
Aperture Card

- NOTES:
1. THE GRID SYSTEM SHOWN ON THESE DRAWINGS IS THE NEVADA COORDINATE CENTRAL SYSTEM. THE POINT NUMBERS ARE BASED ON PB DEVELOPED NUMBERING SYSTEM.
  2. DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED. DIMENSIONS, ELEVATIONS AND GRADES ARE ROUNDED OFF TO THE NEAREST TWO DECIMAL PLACES.
  3. THE CONTOUR OF THE BASE OF THE TSw2 FORMATION WAS DERIVED FROM SML DRAWING CAL0304.
  4. THE CONTOUR OF THE TSw1/TSw2 FORMATION CONTACT WAS DETERMINED FROM SML DRAWING CAL0302.
  5. THE 200 METER BELOW THE SURFACE CONTOUR WAS DEVELOPED FROM A 1 INCH - 500 FEET SCALE TOPOGRAPHIC MAP WITH A 10 FOOT CONTOUR INTERVAL.
  6. THE 100' CENTER TO CENTER DISTANCE BETWEEN MAIN DRIFTS IS FOR ILLUSTRATION PURPOSES ONLY AND MAY BE ALTERED AFTER FURTHER EVALUATION.
  7. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT WITH NO FILL, LINING OR CONCRETE.
  8. ALTHOUGH THERE ARE ONLY THREE MAIN DRIFTS SHOWN, A FOURTH MAIN MAY BE REQUIRED FOR ADDITIONAL VENTILATION.
  9. COORDINATES CANNOT BE SCALED OFF THE UNFOLDED CENTERLINE SECTION A-A'.
  10. ALL DRIFTS ON THIS DRAWING ARE ASSUMED TO BE 25.0 FOOT DIAMETER AND DRIVEN BY TUNNEL BORING MACHINES, EXCEPT FOR THE CONVEYOR DRIFTS.
  11. MAXIMUM RAMP GRADE NOT TO EXCEED 10%.

CURVE DATA				
POINT	RADIUS OF CURVE	TANGENT LENGTH	CURVE LENGTH	ANGLE
H3	600	941.74	1204.24	114°59'46"

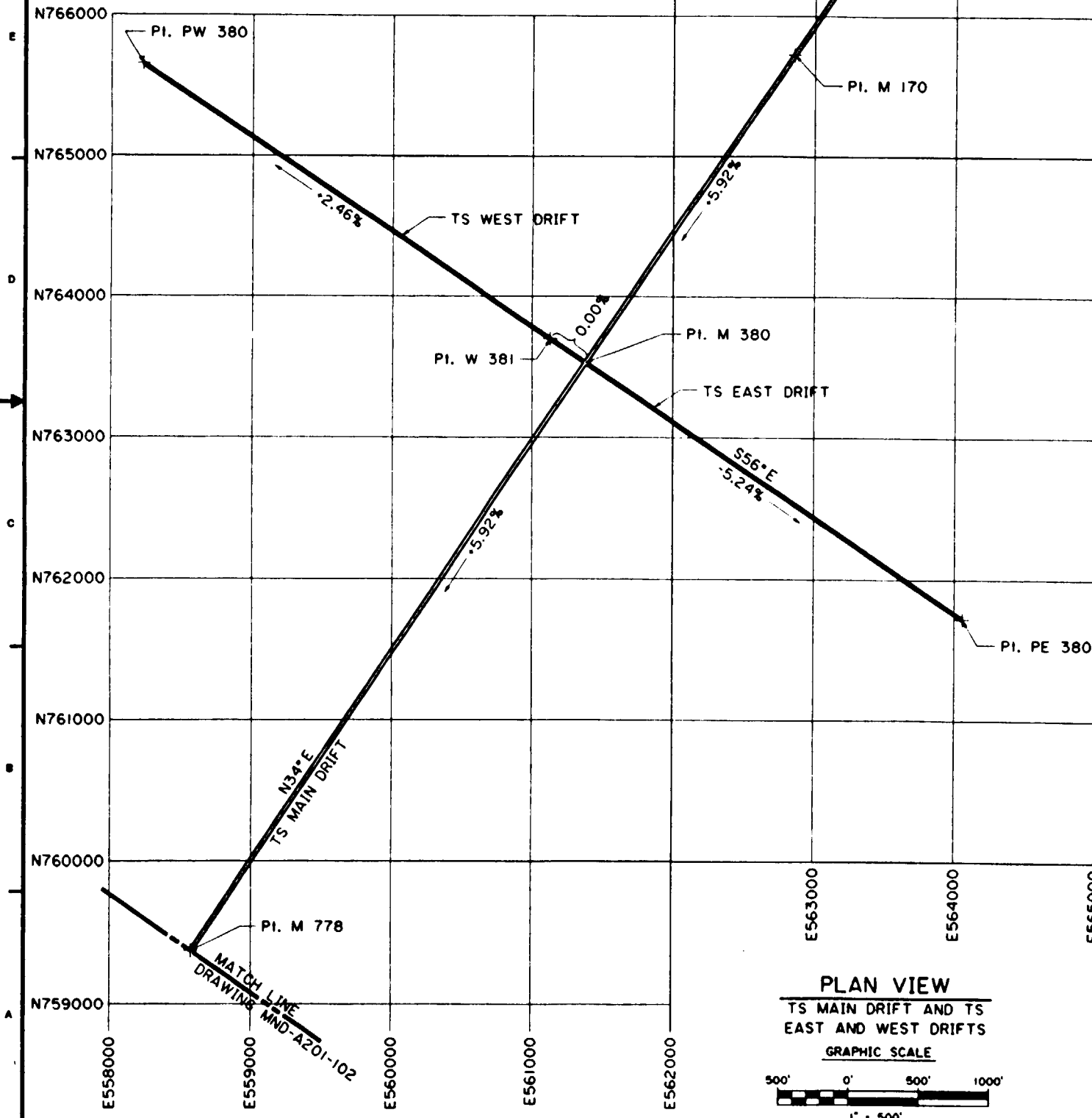
POINT	NORTHING	EASTING	ELEVATION
PT 2	758689.92	558110.52	3729.37
B 1	757909.18	557583.91	3785.14
B 2	757926.45	557474.94	3783.38
M 778	759375.43	558572.91	3680.40
T 50	757569.57	559727.17	3619.84

KEY:  
 \_\_\_\_\_ ESF  
 \_\_\_\_\_ REPOSITORY

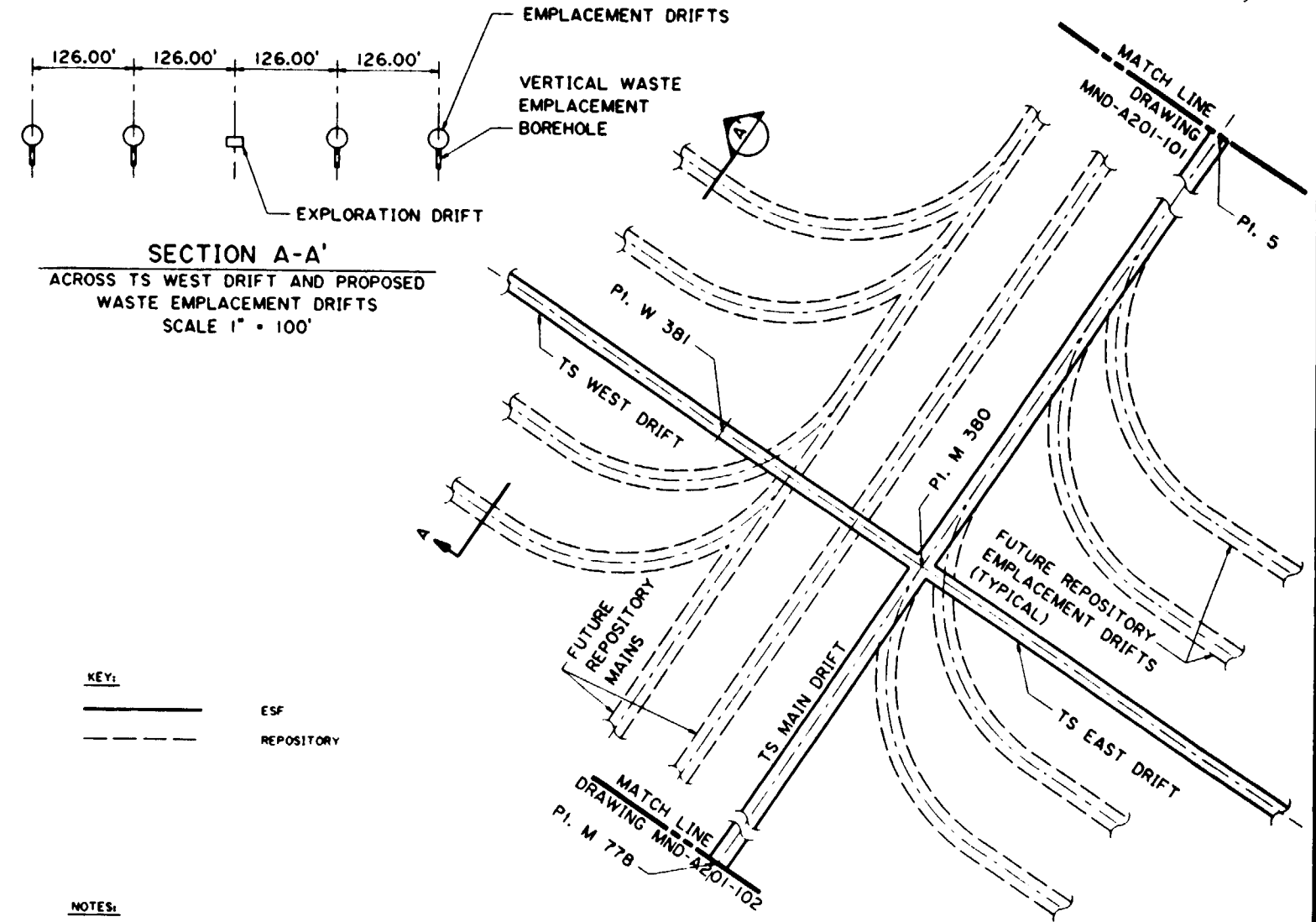
PROJ. & W.D. NO.	DATE	REVISION	BY	CHK.	APP.
PROPERTY OF <b>RAYTHEON SERVICES NEVADA</b> DEVELOPED BY <b>Parsons Brinckerhoff Quade &amp; Douglas, Inc.</b>					
YUCCA MOUNTAIN PROJECT  TS SOUTH RAMP / MAIN DRIFT PLAN & SECTION					
DES. <i>MS</i>	DR. <i>MHI</i>	CHK. <i>DJS</i>	DWG. APPROVED	DATE	SIZE
APP. <i>JL</i>	DR. <i>PL</i>	DATE	DWG. CLASS	PAGE NO. <b>D</b>	
SCALE <b>AS SHOWN</b>	PB DWG. NO. <b>MND-A201-103</b>	REV. <b>02/92</b>	CLIENT'S DWG. NO.	CAT.	

**9112020061-214**

POINT	NORTHING	EASTING	ELEVATION
5	767500.00	564053.00	3100.00
M 170	765724.20	562855.21	3226.86
M 380	763530.97	561375.98	3383.96
W 381	763698.33	561126.87	3383.96
PW 380	765655.50	558225.24	3469.72
PE 380	761729.97	564045.08	3214.81
M 778	759375.43	558572.91	3680.40



**PLAN VIEW**  
TS MAIN DRIFT AND TS EAST AND WEST DRIFTS  
GRAPHIC SCALE  
500' 0' 500' 1000'  
1" = 500'



**SECTION A-A'**  
ACROSS TS WEST DRIFT AND PROPOSED WASTE EMPLACEMENT DRIFTS  
SCALE 1" = 100'

**DETAIL PLAN VIEW**  
INTERSECTION OF TS MAIN DRIFT AND TS EAST/WEST DRIFTS  
GRAPHIC SCALE  
100' 0' 100' 200'  
1" = 100'

- NOTES:**
1. THE GRID SYSTEM SHOWN ON THESE DRAWINGS IS THE NEVADA COORDINATE CENTRAL SYSTEM. THE POINT NUMBERS ARE BASED ON PB DEVELOPED REPOSITORY NUMBERING SYSTEM.
  2. DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED. DIMENSIONS, ELEVATIONS AND GRADES ARE ROUNDED OFF TO THE NEAREST TWO DECIMAL PLACES.
  3. FOR THE PURPOSES OF THESE INTERFACE DRAWINGS, THE TS EAST/WEST DRIFTS ARE ASSUMED TO BE RECTANGULAR IN SHAPE AND 20 FEET WIDE BY 12 FEET HIGH.
  4. ALL OTHER DRIFTS SHOWN ON THIS DRAWING ARE ASSUMED TO BE 25.0 FOOT DIAMETER AND DRIVEN BY TUNNEL BORING MACHINES.
  5. A FOURTH REPOSITORY MAIN DRIFT MAY BE REQUIRED, BUT THE EXACT LOCATION IS NOT KNOWN. IT IS NOT SHOWN FOR CLARITY.
  6. THE 126.00 FEET CENTER TO CENTER DISTANCE BETWEEN WASTE EMPLACEMENT DRIFTS IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY BE CHANGED FOLLOWING FURTHER EVALUATIONS.
  7. HORIZONTAL CURVES SHOWN FROM THE REPOSITORY MAINS TO THE WASTE EMPLACEMENT DRIFTS ARE SHOWN USING A 250.00 FOOT RADIUS FOR ILLUSTRATIVE PURPOSES. THIS RADIUS MAY BE CHANGED FOLLOWING FURTHER EQUIPMENT AND OPERATIONAL EVALUATIONS.
  8. THE TS EAST/WEST DRIFTS ARE LOCATED ALONG THE SAME CENTER LINES AS WASTE EMPLACEMENT DRIFT NO. 38. WASTE EMPLACEMENT IS NOT PLANNED FOR THESE DRIFTS.
  9. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT WITH NO FILL, LINING OR CONCRETE. EXCEPT THAT PI. 5 IS THE POINT OF INTERSECTION OF THE TANGENT OF THE TS NORTH RAMP LOWER VERTICAL CURVE AND THE TS MAIN DRIFT.
  10. FOR CROSS SECTIONS SEE MND-A201-104.

**SI APERTURE CARD**  
Also Available On Aperture Card

9112020061-25

PROJ. & W.D. NO.	DATE	REVISION	BY	CHK.	APP.
PROPERTY OF <b>RAYTHEON SERVICES NEVADA</b>					
DEVELOPED BY <b>Parsons Brinckerhoff</b> Parsons Brinckerhoff Quade & Douglas, Inc.					
YUCCA MOUNTAIN PROJECT					
REPOSITORY MAIN DRIFTS & TS EAST/WEST DRIFTS - PLAN VIEW					
DES. JBC	DR. MTH	CH. OJS	DWG. APPROVED	DATE	SIZE
APP. JBC	QA				D
SUB. P.M.	DATE	DWG. CLASS			PAGE NO.
SCALE AS SHOWN	PB DWG. NO. - REV. MND-A201-108	REV. CLIENT'S DWG. NO.			CAT.



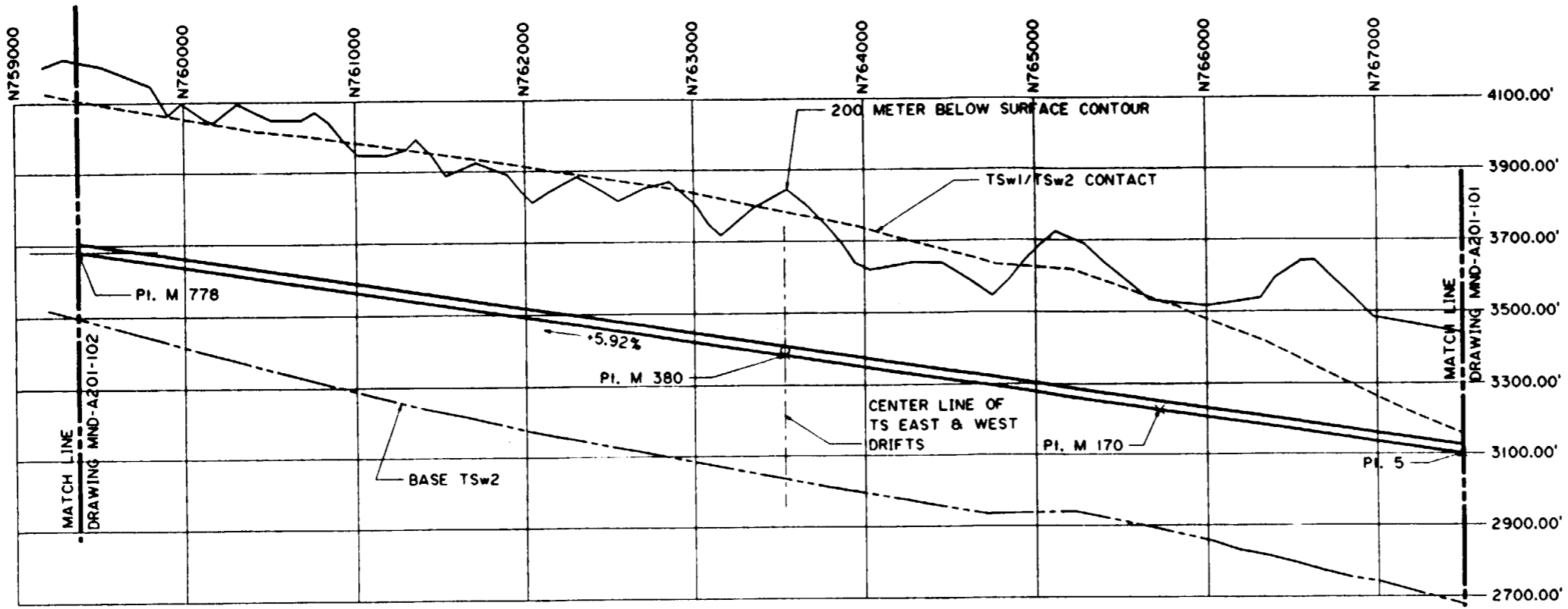
POINT	NORTHING	EASTING	ELEVATION
5	767500.00	564053.00	3100.00
M 170	765724.20	562055.21	3226.06
M 380	763530.57	561375.56	3303.56
W 381	763698.33	561126.87	3303.56
PW 380	765655.50	558225.24	3469.72
PE 380	761729.97	564045.08	3214.81
M 778	759375.43	55872.91	3600.40

**SI APERTURE CARD**  
**Also Available On Aperture Card**

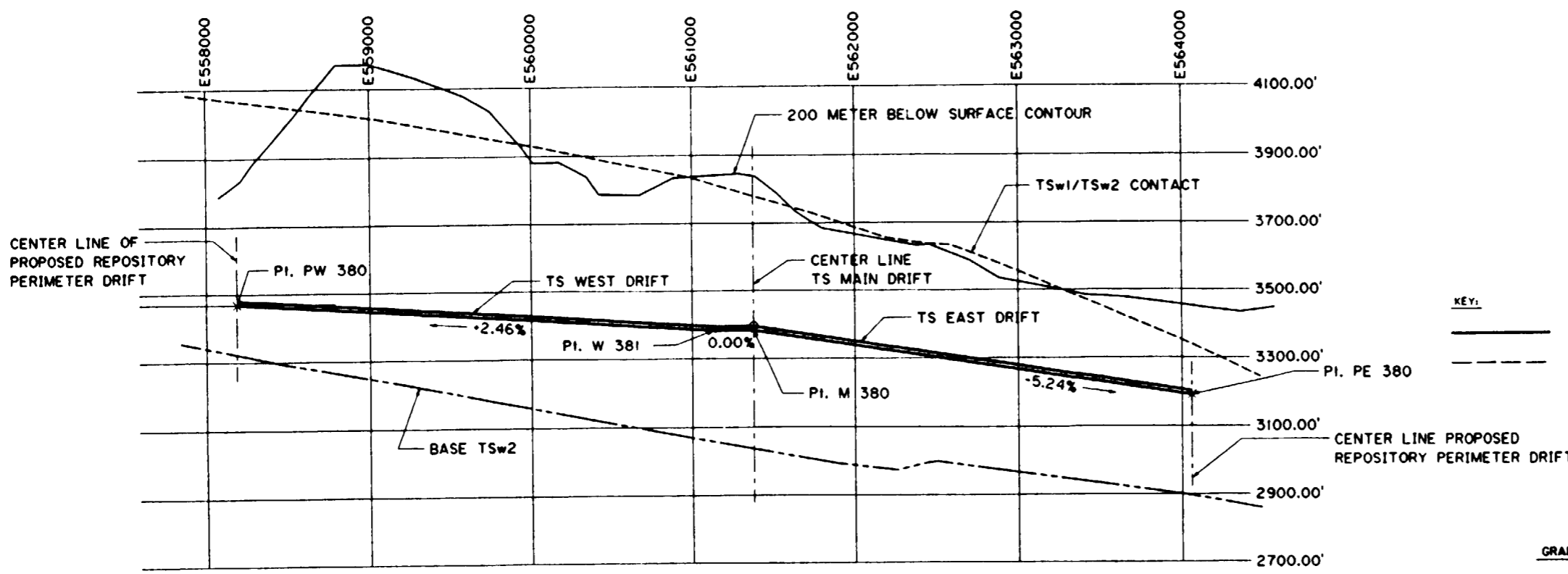
**NOTES:**

1. THE GRID SYSTEM SHOWN ON THESE DRAWINGS IS THE NEVADA COORDINATE CENTRAL SYSTEM. THE POINT NUMBERS ARE BASED ON PB DEVELOPED REPOSITORY NUMBERING SYSTEM.
2. DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED. DIMENSIONS, ELEVATIONS AND GRADES ARE ROUNDED OFF TO THE NEAREST TWO DECIMAL PLACES.
3. THE CONTOUR OF THE BASE OF THE TSW2 FORMATIONS WAS DETERMINED FROM SNL DRAWING CAL0304
4. THE CONTOUR OF THE TSW1/TSW2 FORMATION CONTACT WAS DETERMINED FROM SNL DRAWING CAL0302
5. THE 200 METER BELOW THE SURFACE CONTOUR WAS DEVELOPED FROM A 1 INCH = 500 FEET SCALE TOPOGRAPHIC MAP WITH A 10 FOOT CONTOUR INTERVAL.
6. THE SECTION OF TS WEST DRIFT FROM POINT M 380 TO POINT W 381 IS TO BE DRIVEN AT 0.00% GRADE TO ACCOMMODATE ADDITIONAL FUTURE REPOSITORY MAIN DRIFTS.
7. THE TS EAST/WEST DRIFTS ARE LOCATED ALONG THE SAME CENTER LINES AS WASTE EMPLACEMENT DRIFT NO. 38. WASTE EMPLACEMENT IS NOT PLANNED FOR THESE DRIFTS.
8. FOR THE PURPOSES OF THESE INTERFACE DRAWINGS, THE TS EAST/WEST DRIFTS ARE ASSUMED TO BE RECTANGULAR IN SHAPE AND 20 FEET WIDE BY 12 FEET HIGH.
9. ALL OTHER DRIFTS SHOWN ON THIS DRAWING ARE ASSUMED TO BE 25.0 FOOT DIAMETER AND DRIVEN BY TUNNEL BORING MACHINES.
10. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT WITH NO FILL, LINING OR CONCRETE. EXCEPT THAT PI. 5 IS THE POINT OF INTERSECTION OF THE TANGENT OF THE TS NORTH RAMP LOWER VERTICAL CURVE AND THE TS MAIN DRIFT.
11. FOR PLAN VIEW SEE MND-A201-103

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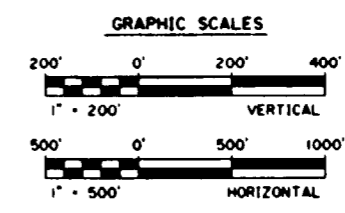
**SECTION THROUGH TS MAIN DRIFT**  
 LOOKING WEST - WORK WITH DRAWING MND-A201-103



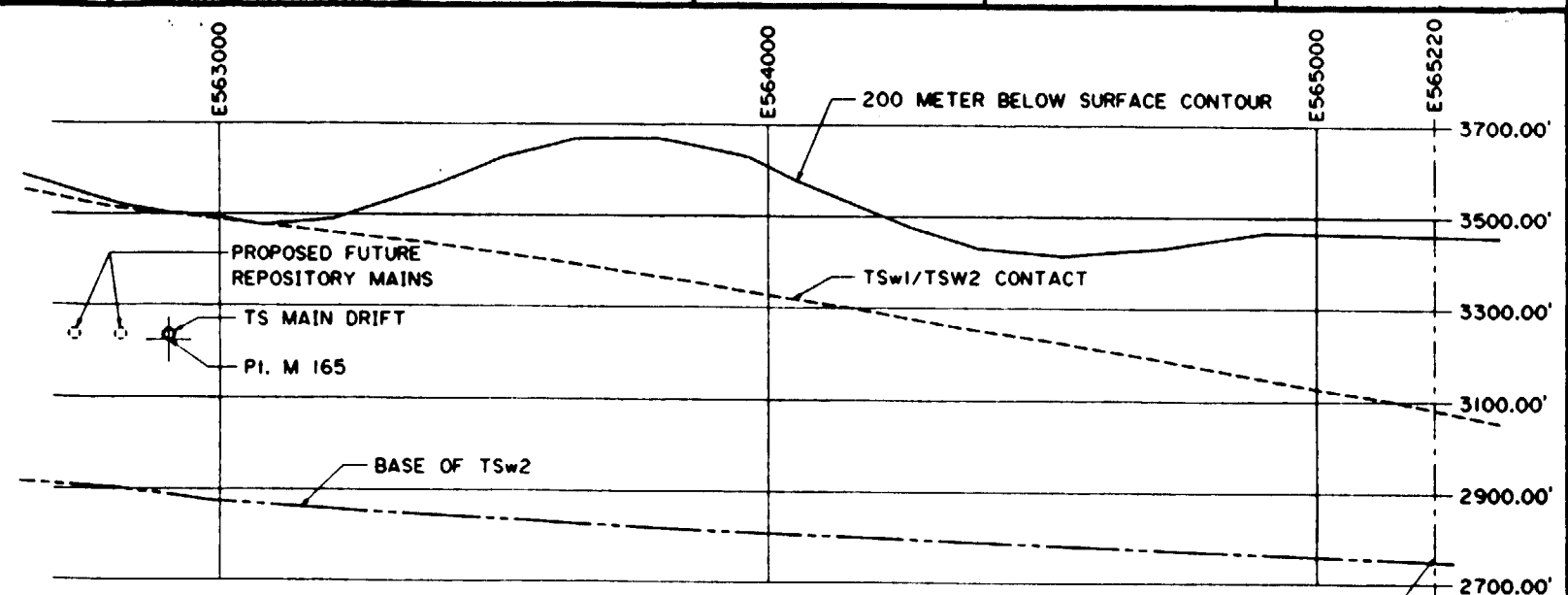
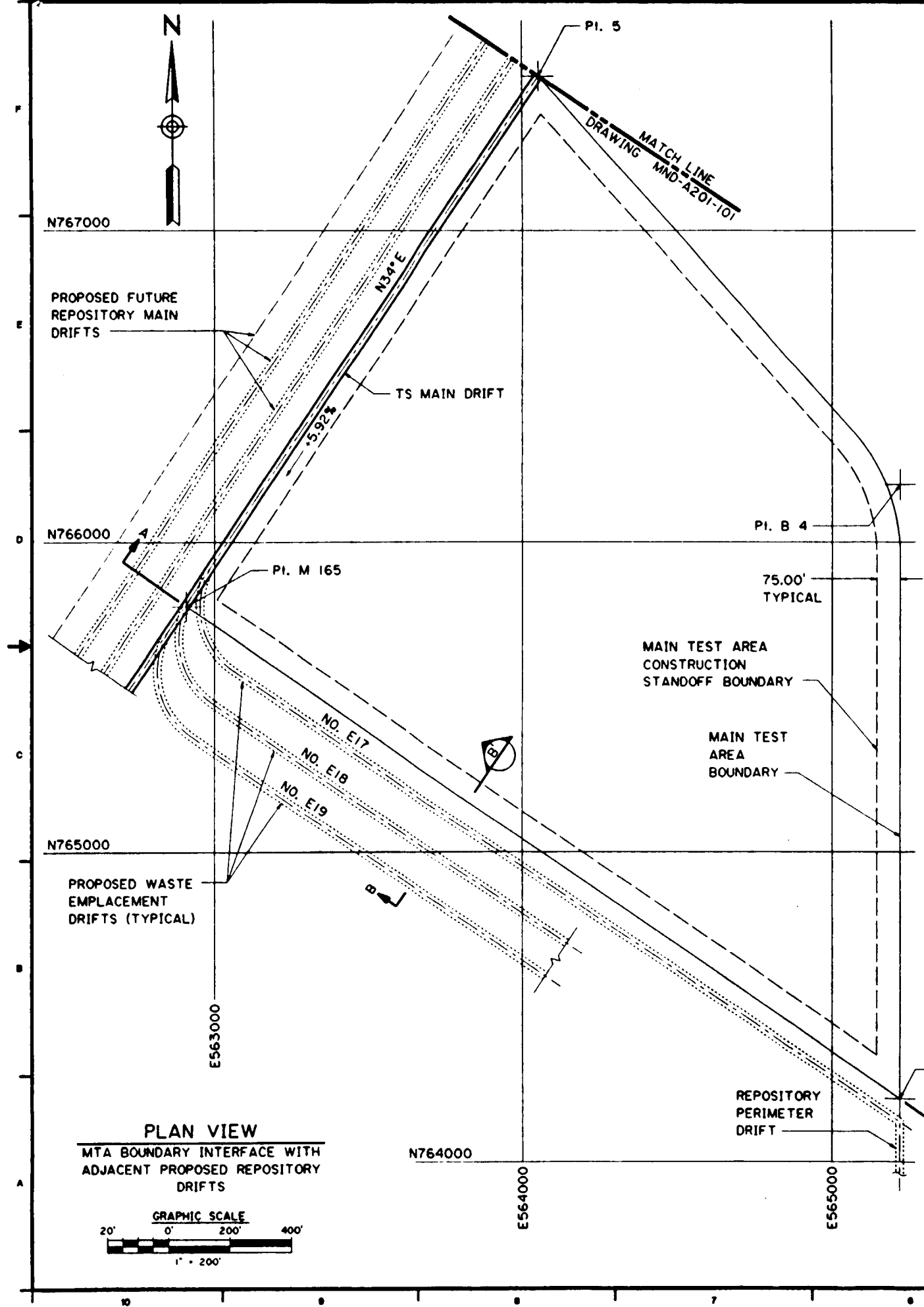
**SECTION THROUGH TS EAST AND WEST DRIFTS**  
 LOOKING NORTH - WORK WITH DRAWING MND-A201-103

**KEY:**

- ESF
- - - REPOSITORY

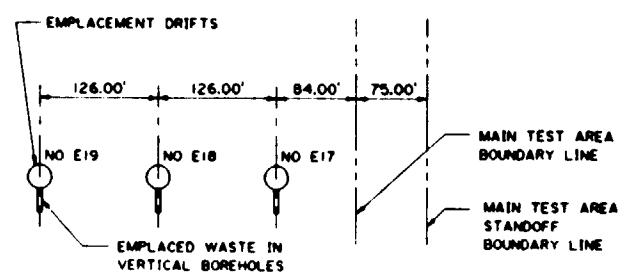


PROJ. & W.O. NO. DATE		REVISION		BY	CL.	APP.
<b>PROPERTY OF RAYTHEON SERVICES NEVADA</b> DEVELOPED BY <b>Parsons Brinckerhoff Quade &amp; Douglas, Inc.</b>						
<b>YUCCA MOUNTAIN PROJECT</b> <b>REPOSITORY MAIN DRIFTS &amp; TS EAST/WEST DRIFTS - CROSS SECTIONS</b>						
DES. JSC	DR. MFI	CHK. OJS	DWG. APPROVED	DATE	SIZE D	
APP. JSC	DR. OJS	DATE	DWG. CLASS	PAGE NO.		
SCALE AS SHOWN	PB DWG. NO. - REV. MND-A201-104	REV. CLIENT'S DWG. NO.	CAT.			



- NOTES:**
1. THE GRID SYSTEM SHOWN ON THESE DRAWINGS IS THE NEVADA COORDINATE CENTRAL SYSTEM. THE POINT NUMBERS BASED ON PB DEVELOPED REPOSITORY NUMBERING SYSTEM.
  2. DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED. DIMENSIONS, ELEVATIONS AND GRADES ARE ROUNDED OFF TO THE NEAREST TWO DECIMAL PLACES.
  3. THE CONTOUR OF THE BASE OF THE TSW2 FORMATIONS WAS DETERMINED FROM SML DRAWING CAL0304
  4. THE CONTOUR OF THE TSW1/TSW2 FORMATION CONTACT WAS DETERMINED FROM SML DRAWING CAL0302
  5. THE 200 METER BELOW THE SURFACE CONTOUR WAS DEVELOPED FROM A 1 INCH - 500 FEET SCALE TOPOGRAPHIC MAP WITH A 10 FOOT CONTOUR INTERVAL.
  6. ALL DRIFTS SHOWN ON THIS DRAWING ARE ASSUMED TO BE 25.0 FOOT DIAMETER AND DRIVEN BY TUNNEL BORING MACHINE.
  7. THE 126.00 FEET CENTER TO CENTER DISTANCE BETWEEN WASTE EMPLACEMENT DRIFTS IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY BE CHANGED AFTER FURTHER EVALUATIONS.
  8. THE MAIN TEST AREA IS FORMED BOUNDARY LINES CONNECTING THE FOLLOWING POINTS: 5, M 165, PE 165 AND B 4. THE AREA INSIDE THIS BOUNDARY IS APPROXIMATELY 92.2 ACRES.
  9. DEPENDING UPON FURTHER VENTILATION EVALUATIONS, WASTE EMPLACEMENT DRIFT NO. E17, ADJACENT TO THE MAIN TEST AREA BOUNDARY, MAY BE USED FOR VENTILATION AND NOT WASTE EMPLACEMENT AS ILLUSTRATED.
  10. ALTHOUGH THERE ARE ONLY THREE REPOSITORY MAINS SHOWN ON THESE DRAWINGS, A FOURTH MAIN WILL PROBABLY BE REQUIRED FOR ADDITIONAL VENTILATION. ITS LOCATION IS NOT SHOWN FOR CLARITY.
  11. NO OPENINGS RELATED TO THE MAIN TEST AREA ARE TO BE LOCATED CLOSER THAN 75.0 FEET TO THE MAIN TEST AREA BOUNDARY LINES, OTHER THAN MTA CONNECTIONS TO THE TS MAIN DRIFT. THIS IS SHOWN ON THE DRAWING AS THE MAIN TEST AREA CONSTRUCTION STANDOFF BOUNDARY.
  12. CERTAIN FACILITIES REQUIRED DURING ACTUAL WASTE EMPLACEMENT OPERATIONS WILL BE LOCATED WITHIN THE MAIN TEST AREA AS OUTLINED BY THE FOUR BOUNDARY POINTS. AN AREA CONSISTING OF A MINIMUM OF 16 ACRES ACCESSIBLE TO THE TS MAIN DRIFT MUST BE ALLOWED FOR WITHIN THE MAIN TEST AREA. NO FURTHER DETAILS ARE AVAILABLE AT THIS TIME PENDING FURTHER DESIGN AND EVALUATION.
  13. DESIGN OF MAIN TEST AREA DRIFTS INCLUDING SIZES, LENGTHS AND GRADES ARE TO THE EXTENT POSSIBLE INDEPENDENT OF THE REPOSITORY DESIGN. FOR FUTURE REPOSITORY DESIGN PURPOSES THE MAIN TEST AREA DRAINAGE IS TO DRAIN TO A SUMP LOCATED NEAR PI. 5.
  14. ELEVATIONS SHOWN ARE AT THE INVERT OF THE DRIFT WITH NO FILL, LINING OR CONCRETE. EXCEPT THAT PI. 5 IS THE POINT OF INTERSECTION OF THE TANGENT OF THE TS NORTH RAMP LOWER VERTICAL CURVE AND THE TS MAIN DRIFT.
  15. PI. B 4 IS THE INTERSECTION OF TANGENTS FOR A 600.00' RADIUS CURVE.

**SI APERTURE CARD**  
**Also Available On Aperture Card**



POINT	NORTHING	EASTING	ELEVATION
5	767500.00	564053.00	3100.00
M 165	765793.84	562902.18	3221.00
PE 165	764230.45	565220.00	
B 4	766183.00	565220.00	

ACTUAL M 165 IS INVERT OF ESF CONSTRUCTED MAIN DRIFT, HOWEVER ELEVATION HAS NO RELATIONSHIP TO ACTUAL LOCATION OF MTA HORIZON.

PROJ. & W.O. NO.	DATE	REVISION	BY	CL.	APP.
<b>PROPERTY OF RAYTHEON SERVICES NEVADA</b> DEVELOPED BY <b>Parsons Brinckerhoff</b> <b>Parsons Brinckerhoff Quade &amp; Douglas, Inc.</b>					
<b>YUCCA MOUNTAIN PROJECT</b> <b>REPOSITORY/MAIN TEST AREA BOUNDARY INTERFACE - PLANS AND CROSS SECTIONS</b>					
DES. DR. M.F.H. CL. O.J.S.	DWG. APPROVED	DATE	SIZE		
APP. J.B. F.J.A.	DWG. CLASS	DATE	PAGE NO.		
SUB.-P.M.	SCALE AS SHOWN	REV. NO. - REV. MND-A201-100	REV. CLIENT'S DWG. NO.	CAT.	

