

HOUSING FOR TRAILER
ELIMINATION
PROTOTYPE
DESIGN
CATALOG
NATIONAL PARK SERVICE



BARKER RINKER SEACAT & PARTNERS ARCHITECTS P.C.

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INTRODUCTION

HOUSING FOR TRAILER ELIMINATION - PROTOTYPE DESIGN CATALOG - NATIONAL PARK SERVICE



PURPOSE OF THE PROTOTYPE HOUSING DESIGN CATALOG

This catalog presents prototypical plans for use in constructing new housing for the National Park Service. It is intended to be used as a tool for the Parks, professional support groups within the National Park Service and private A/E consultants to make housing choices and to guide planning and site development for housing. The design catalog offers park managers the opportunity to select a prototype which can be adapted to their individual park needs. Once a selection is made, the contract documents can be economically completed. Even with slight adjustments, the design and construction documents production timeframe is short and the cost-savings immense. There is a need to continue efforts in lowering the costs of construction, improve the condition of housing where it is needed, build for sustainability and accessibility, and work to remedy the dilemma and problems faced for good conditioned housing in the future. To ensure these efforts are undertaken, only designs from the NPS Prototype Design Catalog are to be utilized. Following in this introduction is a brief summary of the process used to develop this catalog, general guidelines for use of the catalog and information regarding final housing design documents.

PROJECT BACKGROUND AND PROCESS

In preparation for the future of the Housing Initiative Funding Program to replace and eliminate trailers and obsolete housing with adequate durable housing for National Park Service (NPS) employees, it is important to be consistent with the expectations of the Department and Congress. To help accomplish this, a multi-discipline task group developed strategies for determining the most effective and timesaving ways to use the limited funds allocated to the National Park Service Housing Initiative each year.

One of the greatest expenses identified in the housing development process was in the preparation of designs and construction documents for each dwelling unit. In many cases, a very elaborate design leading to unreasonable construction costs was the end product. An effort was initiated to develop designs that could be used throughout the Service. In the process, numerous designs and floor plans presently being used around the Service were collected and consolidated into a preliminary design catalog. Those plans were reviewed and developed into 15 different standardized floor plans ranging from single family residences, multi-plexes to dormitories. These 15 floor plans and elevations were incorporated into the NPS Housing Design Catalog.

The prototypes were developed to allow for modification to the facade allowing the housing unit to blend into the design theme of any park with little change to the master construction documents. A guide was developed to take the user through final construction document development. Copies of the design catalog and the electronic Computer Assisted Drafting and Design (CADD) files have been made available to each field area.

DESIGN CRITERIA

Design criteria for prototype housing units were established from an array of sources and are generally summarized as follows:

- **Comply with existing policy** including OMB A-45 and NPS 76.
- **Meet all applicable codes** including life safety, building and other applicable codes.
- **Meet handicap accessibility codes** (the project is designed to meet requirements of the ADA).
- **Design PROTOTYPE plans for flexible ADAPTATION** to unique conditions of locations in which they will be constructed. These include programmatic (housing policy and occupant needs), cultural/historic influences, climatic variations and physical site constraints.
- **Enhance livability** of housing design by achieving privacy, weather protected entries and outdoor space, and accommodation of all spaces to anticipated maximum occupancy.
- **Integrate sustainable design choices** in building configuration design, construction and environmental system choices and product selection.
- **Consider long term value**, first cost vs. maintenance costs.

CATALOG CONTENTS AND USE

The Contents page provides a quick overview of plans in the catalog and the symbols legend following this orients a person to graphic notations on the plan.

The key goal was to create prototypical (standardized) housing designs. The following design solutions were utilized to accomplish this goal. A variety of *prototypical "unit" plans* have been designed including:

- seasonal single occupancy
- seasonal multiple occupancy (two bedroom, two varieties)
- permanent multiple occupancy (two bedroom)
- permanent single-family home

These prototypical unit plans have been combined in a variety of ways to create *prototypical multiple-plex building plans* that are responsive to highest priority housing demands in the Parks. Use of these prototypical plans (multiple-plex or single-family home) is recommended to achieve the desired consistency and economies of the program and are required for funding of housing.

Prototype Information

Information has been provided for designs that includes overall unit size, room sizes and key features. For multiple-plex building plans, additional information has been included to describe spaces that are outside of the unit (such as decks) and those spaces that are common to the buildings (such as laundry, storage). Square footage area tabulations are compiled to better allow comparisons between units, compliance with policy standards and cost analysis. A brief explanation of area tabulation terms follows:

INTRODUCTION

HOUSING FOR TRAILER ELIMINATION - PROTOTYPE DESIGN CATALOG - NATIONAL PARK SERVICE

CATALOG CONTENTS AND USE (CONTINUED)

- Net Habitable Area** Unit interior living area **not including exterior walls**. Also excluded are unit porches, garages and common use areas.
- Gross Habitable Area** Unit interior living **including exterior walls**. Excluded are unit porches, garages and common use areas.

Also found on the information sheets are a character sketch of the unit's appearance and a roof plan showing recommended orientation to sun and road. Unique site constraints may cause variance from this orientation.

Prototype Plans

The following comments are common to all plans:

- All floor plans are shown at a scale of 1/8" equals 1 foot.
- Potential furniture arrangement.
- One unit of each type is shown as handicap accessible. Criteria for accessible units should be determined for each housing area in a specific location.
- All storage locations including coat closets, general storage closets, pantries and linen closets are shown on the drawings with the abbreviation "ST."

Appendix

Plans shown in the appendix were created by the Western Regional Office. These are shown for reference as plans developed to space standards smaller than those used to develop prototypes. Prototypical final documents will not be prepared for these plans. Contact Western Support Office for more information.

FINAL DOCUMENTS

The following materials for Plans 1-15 in this catalog are available for download from the links on the "National Park Service Prototype Housing" homepage.

- Prototypical construction drawings for architectural, structural, mechanical and electrical.
- Prototypical specification including Division 1-General Requirements.
- Cost estimates.
- Users' Guide for Prototype Document Adaptation.

A key assumption of the Prototype Design Catalog is that design professionals will be involved in adapting these prototypical documents into final bid documents for construction in specific park locations. The User's Guide should allow that process to be time and cost efficient and contains the following:

- Checklists for considering potential adaptations and defining consultants' services.
- Computer drawing guide.
- Mechanical, electrical and structural design criteria for prototypes.
- Cut sheets and other product data.

SYMBOL LEGEND

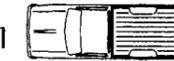
ORIENTATION

Recommended sun orientation



VEHICLE ACCESS

Recommended road access



UNIT ENTRANCE

Used on Roof Plan



UNIT ENTRANCE

Used in Floor Plan



ACCESSIBLE UNIT



WHEELCHAIR TURNING SPACE

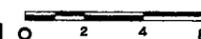
5' Diameter Circle



ROOM NAME & NUMBER



DRAWING SCALE



SKETCH VIEWED FROM





HOUSING FOR TRAILER
E L I M I N A T I O N

**PROTOTYPE
P L A N S**

NATIONAL PARK SERVICE



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SEASONAL 4-PLEX

(4) 2 BEDROOM B UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM B	SEASONAL
Net Habitable Area	999 sf
Gross Habitable Area	1060 sf
Living	13'-1" x 12'-0"
Dining	9'-10" x 7'-9"
Dining ☒	11'-1" x 8'-1"
Kitchen	9'-10" x 9'-8"
Kitchen ☒	9'-10" x 9'-8"
Bedroom #1	13'-1" x 11'-1"
Bath #1	7'-8" x 5'-6"
Bath #1 ☒	8'-9" x 5'-1"
Bath #2	7'-8" x 5'-6"
Bath #2 ☒	8'-4" x 8'-4"
Bedroom #2	13'-1" x 11'-1"
Bedroom #1 ☒	10'-8" x 11'-1"



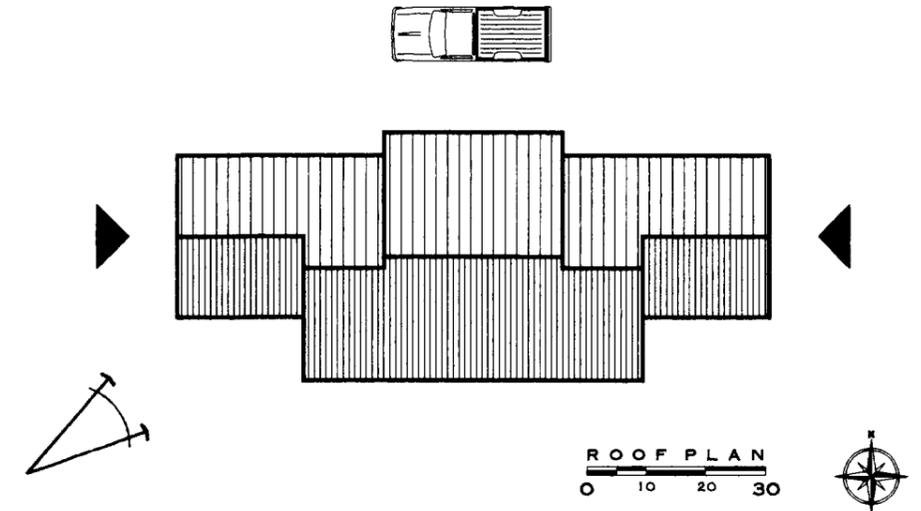
MULTIPLEX INFORMATION

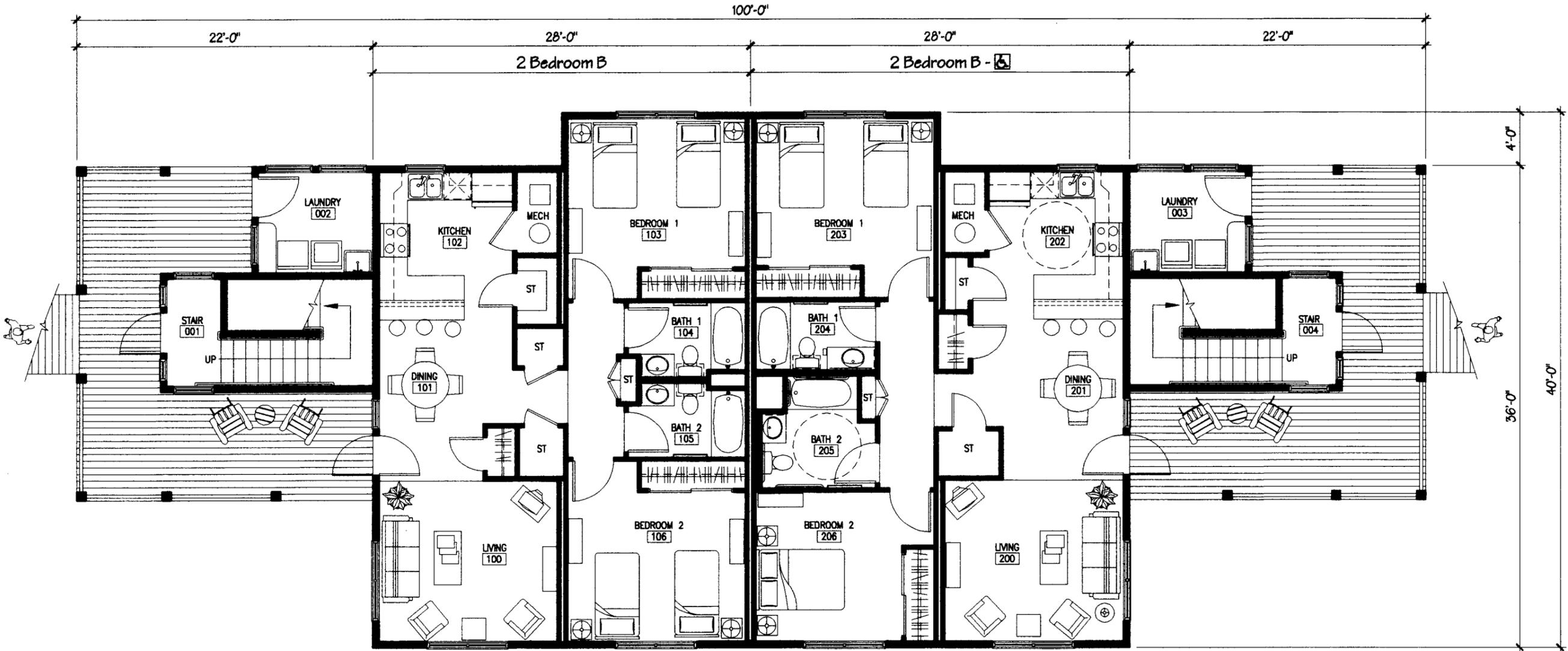
AREA SUMMARY

• Stair (2) @ 140 sf ea.	280 sf
• Storage outside of unit (2) @ 71 sf ea.	142 sf
• Laundry (2) @ 71 sf ea.	142 sf
• Porches (4) @ 335 sf ea.	1340 sf
• Gross Habitable Area (All Units)	4230 sf
Totals	6134 sf

NOTES

- 2 Story.
- Laundry and storage can be located 1 per floor.
- Basement optional.
- Street can be oriented either side of building. Laundry side is preferable.
- No valley in roof.
- Bedroom orientation front and back.
- Privacy porch can orient to sides.





SEASONAL 4-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





PERMANENT 4-PLEX

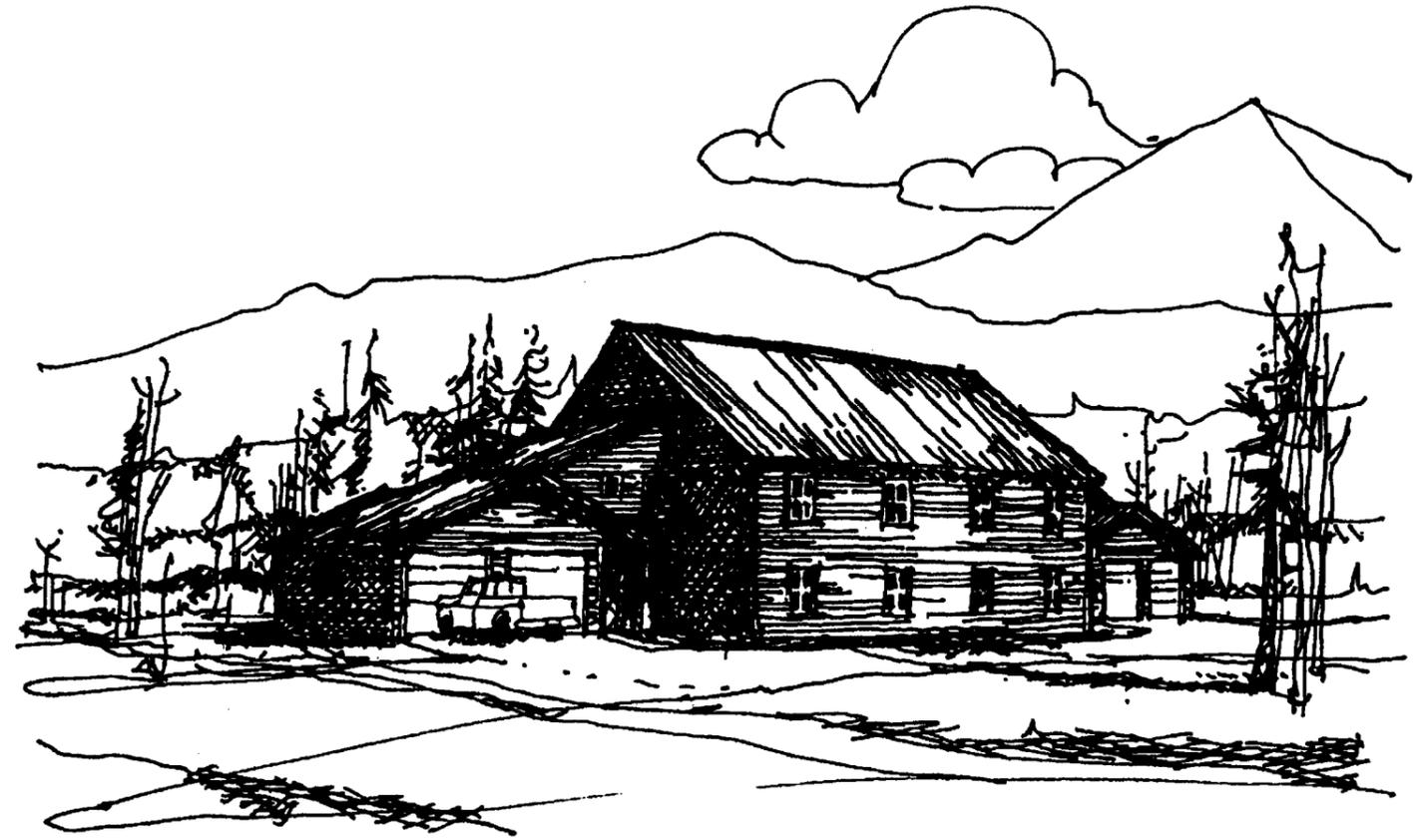
(4) 2 BEDROOM A UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM A PERMANENT

Net Habitable Area	1129 sf
Gross Habitable Area	1196 sf
Living	13'-1" x 13'-3"
Dining	12'-11" x 8'-8"
Kitchen	13'-1" x 9'-6"
Utility	10'-2" x 5'-10"
Bath #1	8'-8" x 5'-1"
Bedroom #1	13'-1" x 11'-4"
Bedroom #2	13'-1" x 11'-4"
Bath #2	8'-10" x 5'-6"
Bath #2	8'-3" x 8'-1"



MULTI-PLEX INFORMATION

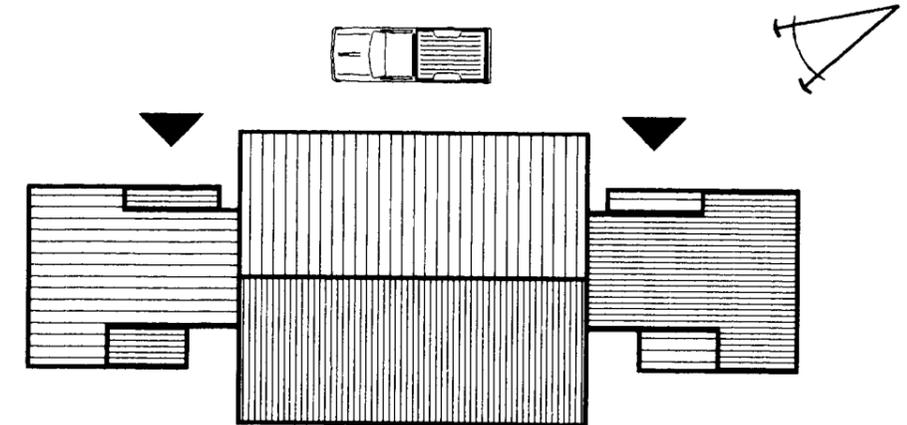
AREA SUMMARY

• Stair (2) @ 97 sf ea.	194 sf
• Entry (4) @ 57 sf ea.	228 sf
• Mud Room (4) @ 59 sf ea.	236 sf
• Front Porches (2) @ 22 sf ea.	22 sf
• Rear Porches (4) @ 112 sf ea.	448 sf
• Garage (2) @ 672 sf ea.	1344 sf
• Gross Habitable Area (All Units)	4770 sf
Totals	6134 sf

- Gross Habitable Area does not include entries, stairs, mud rooms, porches or garages.
- Room sizes and areas for accessible units are equal unless otherwise noted.

NOTES

- 2 Story.
- Laundry located in each unit.
- Basement optional.
- Bedroom orientation to street.
- Living spaces oriented to rear.
- No roof valleys.
- Garage oversized for storage.



ROOF PLAN
0 10 20 30





PERMANENT 4-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





SEASONAL 4-PLEX

(2) 2 BEDROOM A + (2) 1 BEDROOM UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM A SEASONAL		1 BEDROOM SEASONAL	
Net Habitable Area	950 sf	Net Habitable Area	459 sf
Gross Habitable Area	1008 sf	Gross Habitable Area	504 sf
Entry	4'-3" x 5'-3"	Living	13'-1" x 7'-2"
Living	17'-0" x 13'-1"	Kitchen	9'-8" x 7'-9"
Dining	10'-0" x 8'-9"	Bath	5'-6" x 9'-3"
Kitchen	9'-9" x 8'-5"	Bedroom	10'-8" x 10'-1"
Bath #1	9'-9" x 5'-8"		
Bedroom #1	10'-10" x 11'-5"		
Bedroom #2	10'-11" x 12'-1"		
Bath #2	9'-9" x 5'-8"		
Bath #2	5'-11" x 9'-2"		



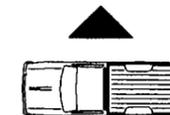
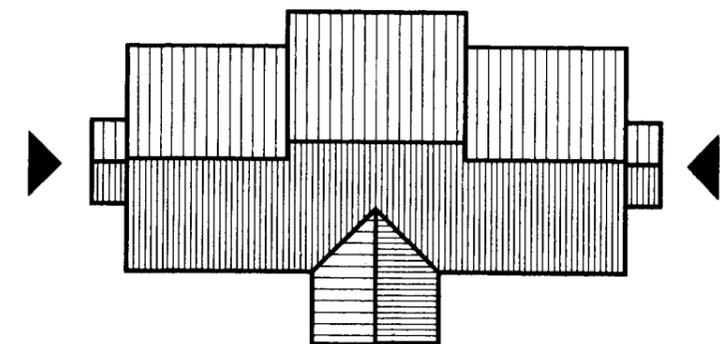
MULTIPLEX INFORMATION

AREA SUMMARY

- Storage outside of unit (2) @ 24.5 sf ea. 49 sf
 - Laundry 80 sf
 - Porches 410 sf
 - Gross Habitable Area (All Units) 3010 sf
 - Totals 3549 sf
- Porch breakdown includes:
 private porches - 2 Bdrm = 68 sf ea.
 1 Bdrm = 56 sf ea.
 porch around laundry = 162 sf.
- Room sizes and areas for accessible units are equal unless otherwise noted.

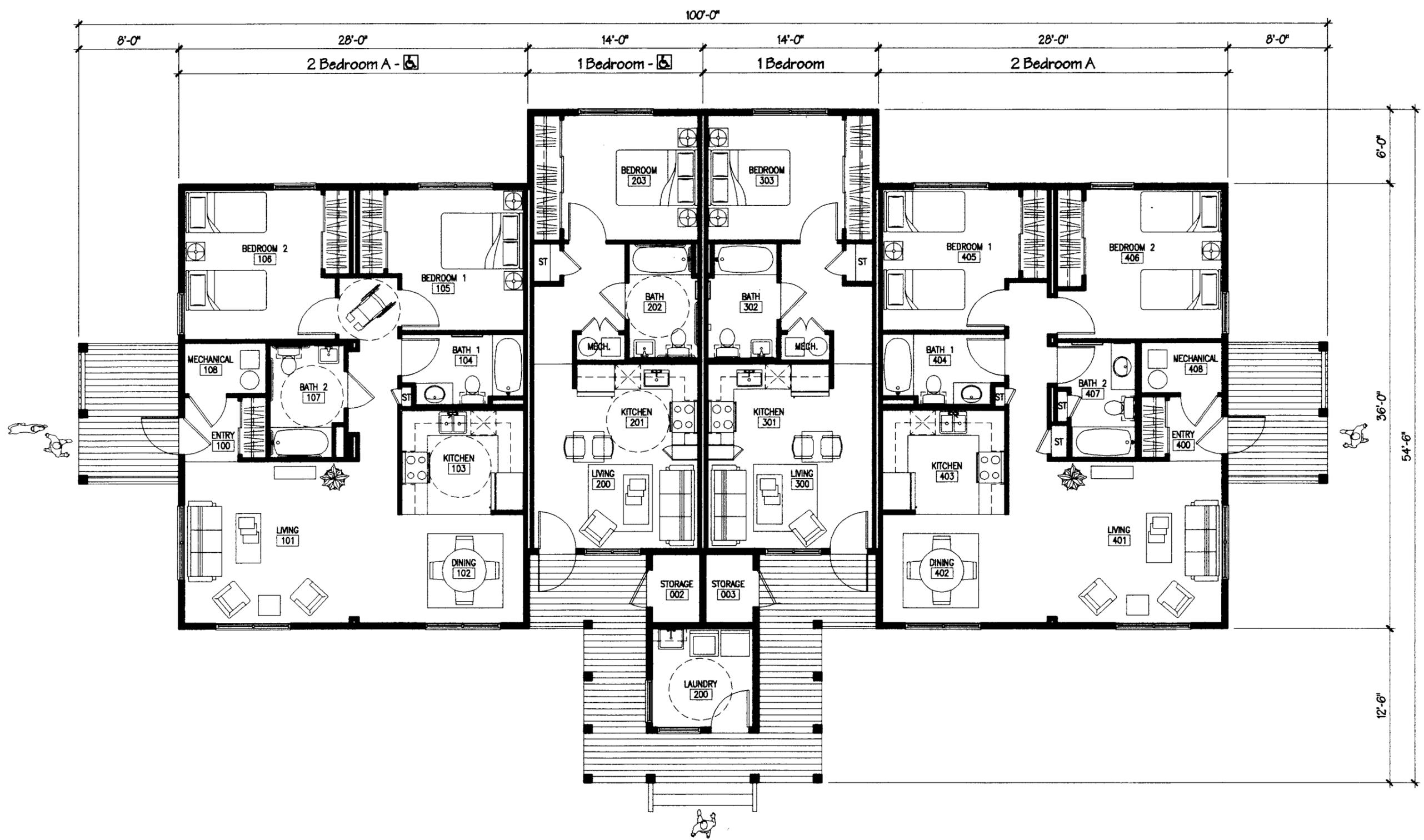
NOTES

- 1 Story.
- Central laundry area.
- All Bedrooms oriented to back.
- End units outdoor spaces to ends.
- Living area oriented to street side.



ROOF PLAN
0 10 20 30





SEASONAL 4-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





SEASONAL 2-PLEX

(2) 2 BEDROOM B UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM B	SEASONAL
Net Habitable Area	999 sf
Gross Habitable Area	1060 sf
Living	13'-1" x 12'-0"
Dining	9'-10" x 7'-9"
Dining ☒	11'-1" x 8'-1"
Kitchen	9'-10" x 9'-8"
Kitchen ☒	9'-10" x 9'-8"
Bedroom #1	13'-1" x 11'-1"
Bath #1	7'-8" x 5'-6"
Bath #1 ☒	8'-9" x 5'-1"
Bath #2	7'-8" x 5'-6"
Bath #2 ☒	8'-4" x 8'-4"
Bedroom #2	13'-1" x 11'-1"
Bedroom #1 ☒	10'-8" x 11'-1"



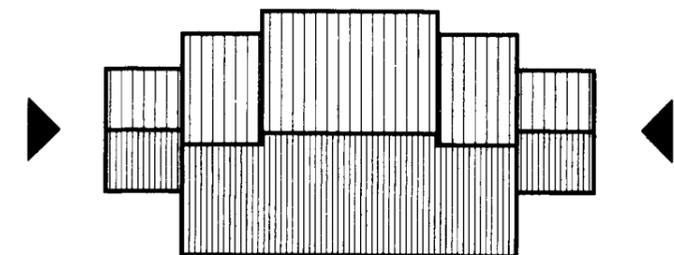
MULTI PLEX INFORMATION

AREA SUMMARY

• Storage outside of unit	75 sf
• Laundry	75 sf
• Porches (2) @ 178 sf ea.	356 sf
• Gross Habitable Area (All Units)	2115 sf
Totals	2621 sf

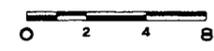
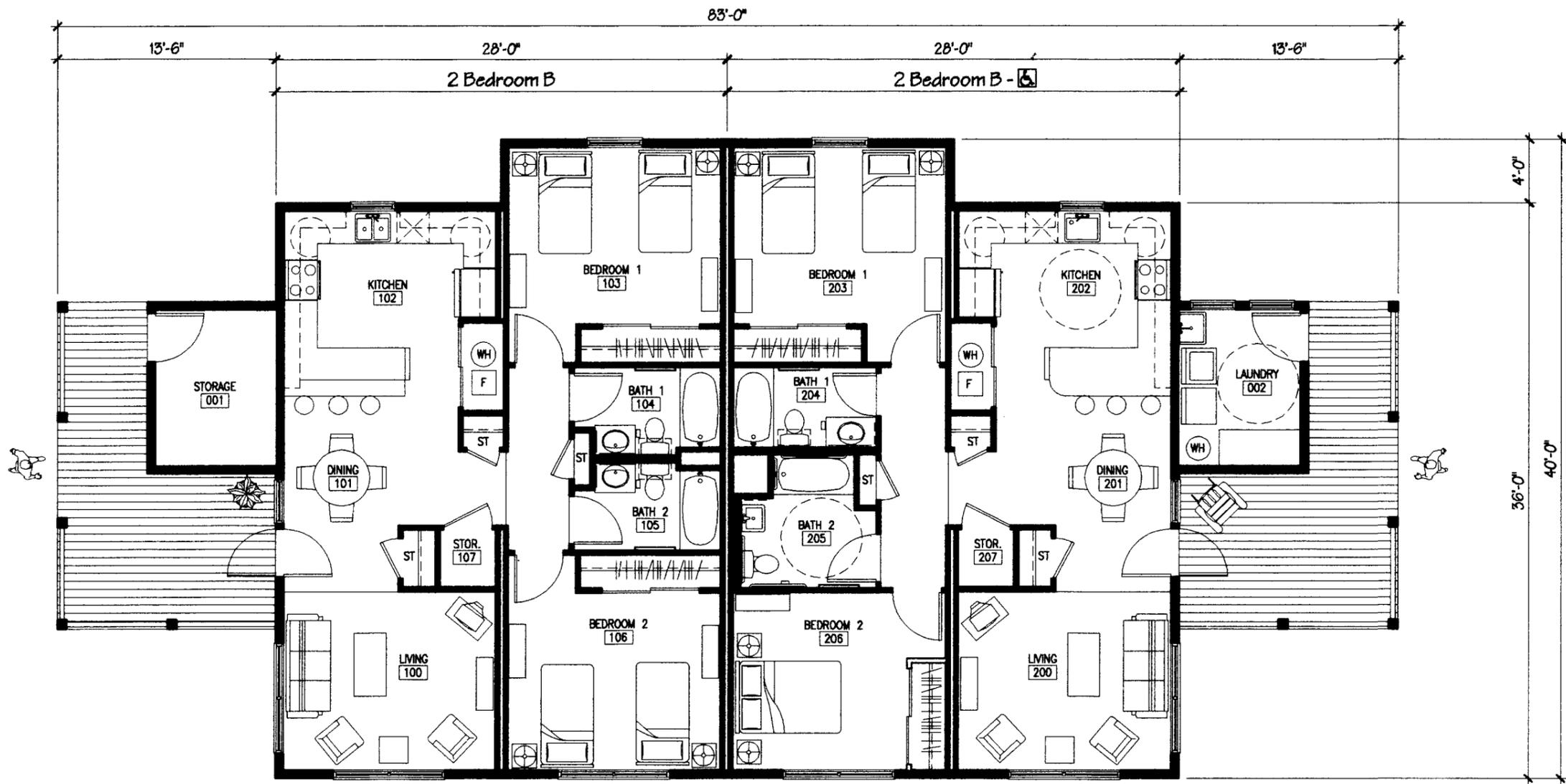
NOTES

- 1 Story.
- Bedrooms oriented front and back.
- Laundry at one end.
- Outdoor areas to end.
- Street could be either side.
- No roof valleys.



ROOF PLAN
0 10 20 30





SEASONAL 2-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





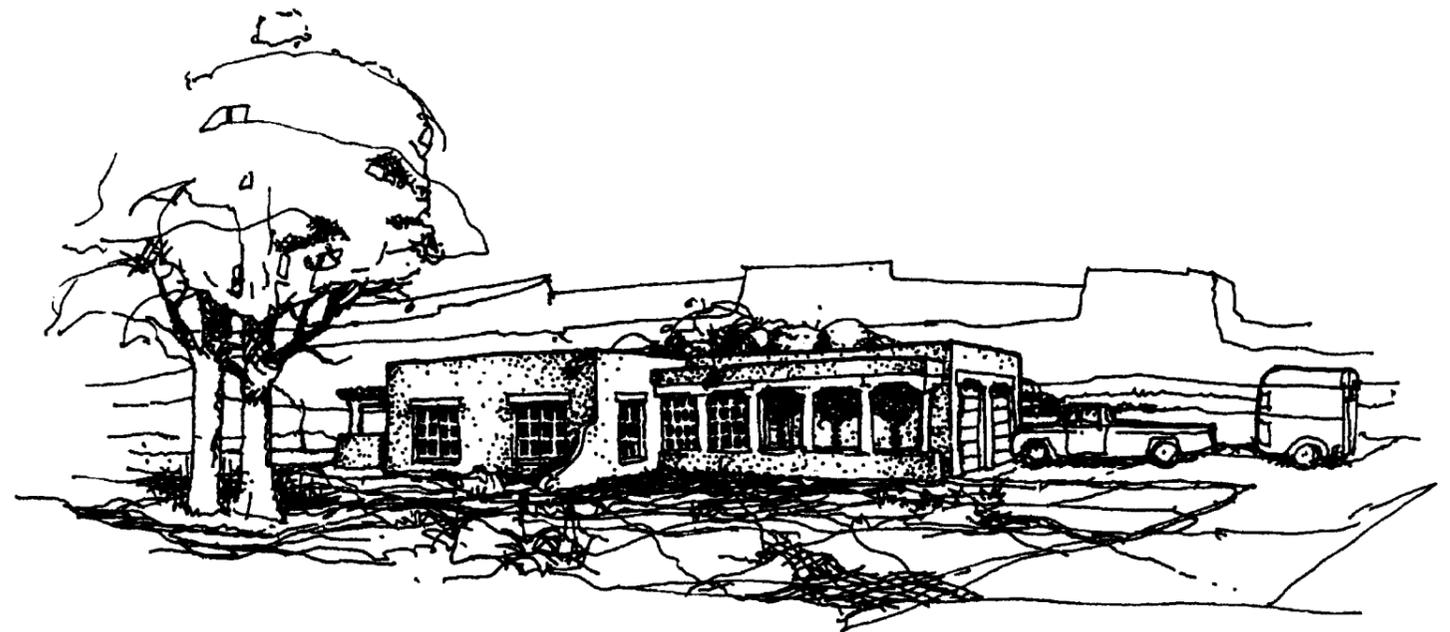
PERMANENT SINGLE FAMILY HOUSE

3 BEDROOMS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

HOUSE INFORMATION

3 BEDROOM	PERMANENT
Net Habitable Area	1509 sf
Gross Habitable Area	1587 sf
Dining	13'-5" x 13'-1"
Living	27'-3" x 13'-1"
Bedroom #1	13'-5" x 13'-1"
Bedroom #2	12'-1" x 10'-9"
Bedroom #3	10'-8" x 13'-1"
Bath #1	5'-1" x 8'-10"
Bath #2	5'-0" x 8'-10"
Kitchen	12'-2" x 9'-2"
Laundry	6'-2" x 6'-8"



AREAS

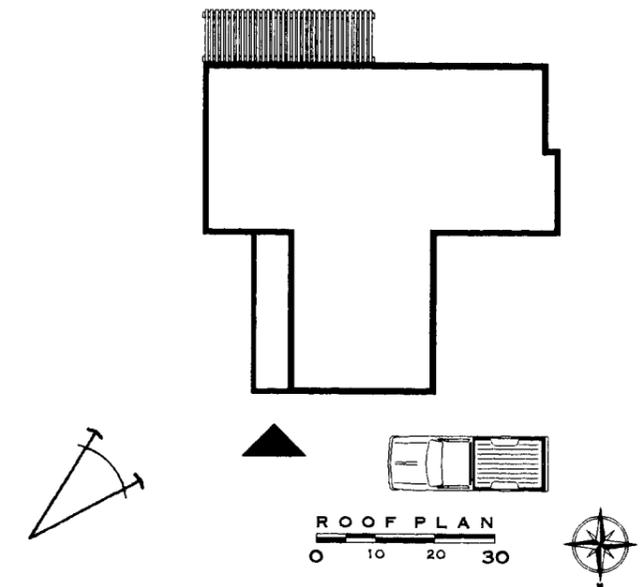
• Entry (6' x 10')	60 sf
• Garage (24' x 26')	624 sf
• Front Porch (6' x 16')	96 sf
• Rear Patio (28' x 9')	252 sf
• Gross Habitable Area (All Units)	1587 sf
Totals	2619 sf

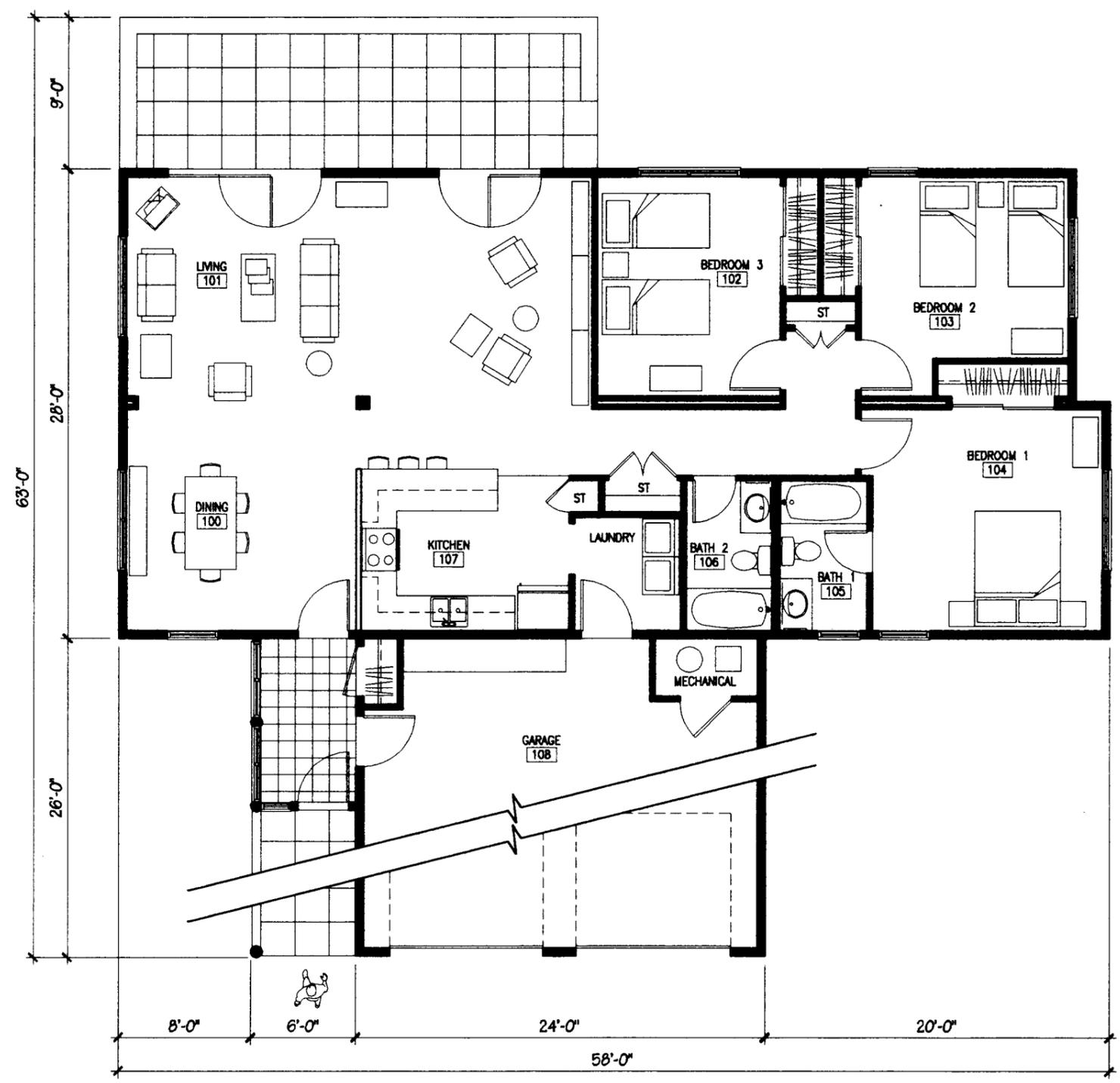
- Entry, garage, front porch and rear patio excluded from Gross Habitable Area calculations.

NOTES

- 1 Story.
- Refer to Plan #7 for less open option and accessible configuration.
- Walls can be added to define spaces as desired.
- Delete one door from living if plan remains open.

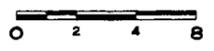
PROTOTYPE PLANS





PERMANENT SINGLE FAMILY HOUSE

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





PERMANENT 2-PLEX

(2) 2 BEDROOM A UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM A PERMANENT

Net Habitable Area	1129 sf
Gross Habitable Area	1196 sf
Living	13'-1" x 13'-3"
Dining	12'-11" x 8'-8"
Kitchen	13'-1" x 9'-6"
Utility	10'-2" x 5'-10"
Bath #1	8'-8" x 5'-1"
Bedroom #1	13'-1" x 11'-4"
Bedroom #2	13'-1" x 11'-4"
Bath #2	8'-10" x 5'-6"
Bath #2 ☒	8'-3" x 8'-1"



MULTI-PLEX INFORMATION

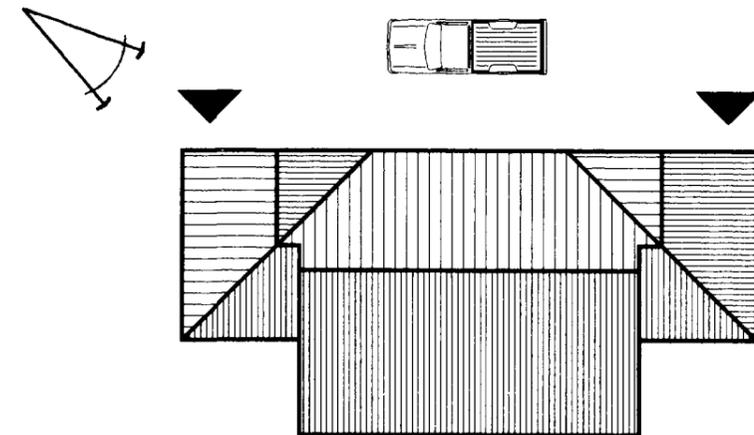
AREA SUMMARY

• Mud Room (2) @ 95 sf ea.	190 sf
• Front Porches (2) @ 205 sf ea.	410 sf
• Rear Porches (2) @ 112 sf ea.	224 sf
• Garage (2) @ 302 sf ea.	604 sf
• Gross Habitable Area (All Units)	2385 sf
Totals	3813 sf

- Entry, mud room, porches excluded from Gross Habitable Area calculations.

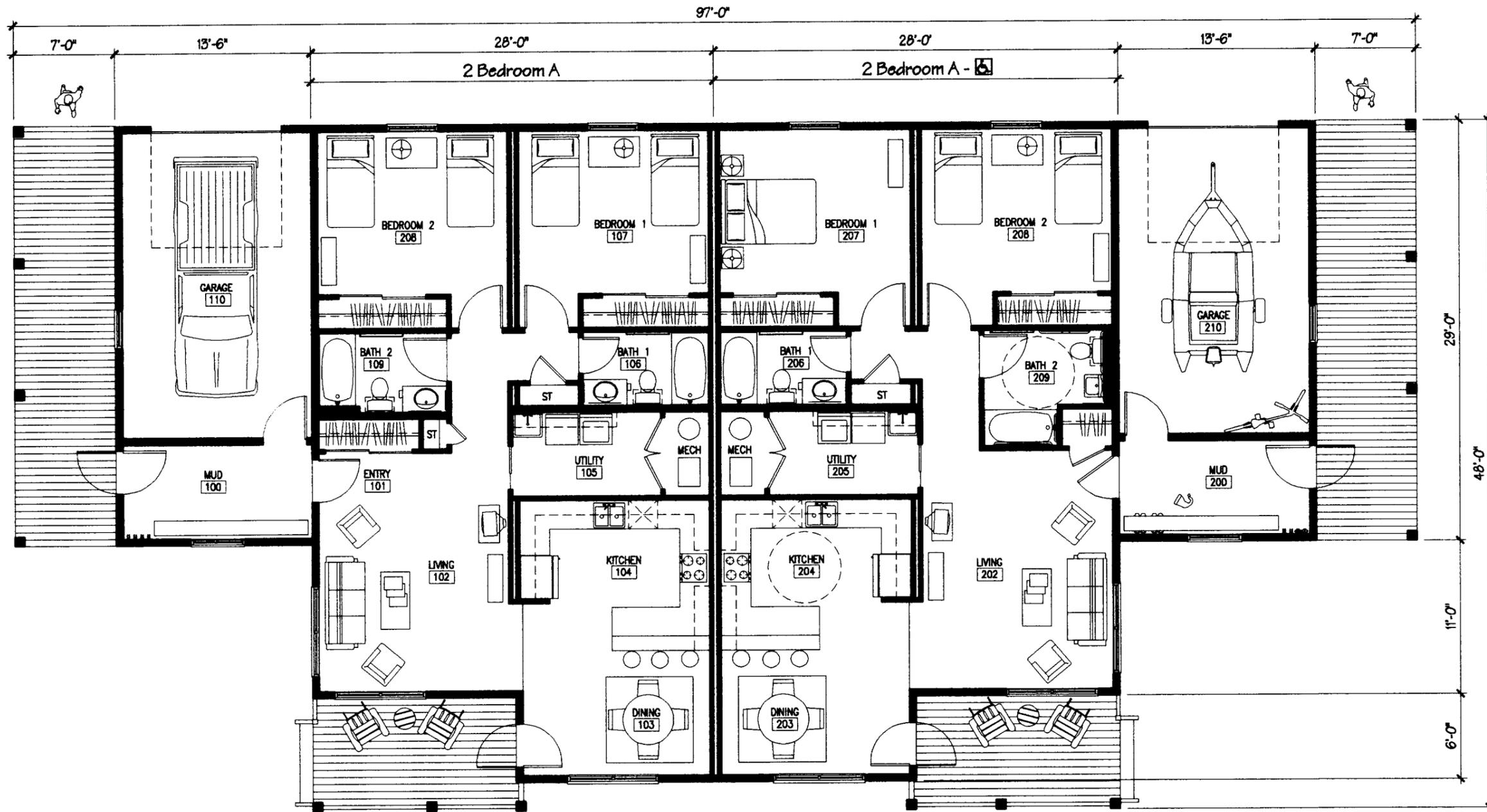
NOTES

- 1 Story.
- Laundry located in each unit.
- Bedrooms oriented to street side.
- Large mud room could contain closets.
- Living spaces to rear.
- Two valleys in roof.



ROOF PLAN
0 10 20 30





PERMANENT 2-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





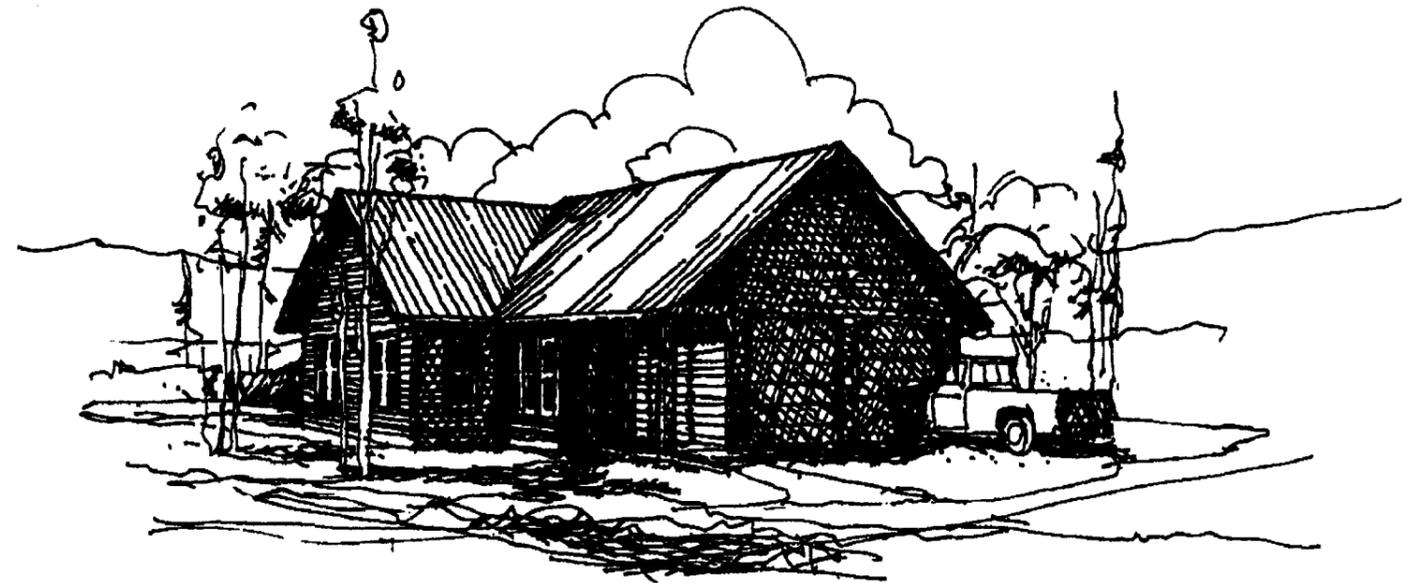
PERMANENT SINGLE FAMILY HOUSE

3 BEDROOMS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

HOUSE INFORMATION

3 BEDROOM	PERMANENT
Net Habitable Area	1509 sf
Gross Habitable Area	1587 sf
Living	13'-5" x 13'-1"
Family	15'-3" x 13'-1"
Dining	12'-0" x 13'-1"
Bedroom #1	10'-2" x 13'-1"
Bedroom #2	12'-1" x 10'-9"
Bedroom #3	10'-8" x 13'-1"
Bath #1	5'-1" x 8'-10"
Bath #2	8'-3" x 8'-10"
Kitchen	12'-2" x 9'-2"
Laundry	6'-2" x 6'-8"

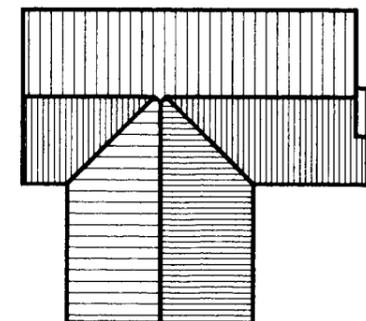


AREAS

• Entry (6' x 11')	66 sf
• Garage (24' x 26')	624 sf
• Front Porch (6' x 15')	90 sf
• Rear Patio (28' x 9')	252 sf
• Gross Habitable Area	1587 sf
Totals	2619 sf

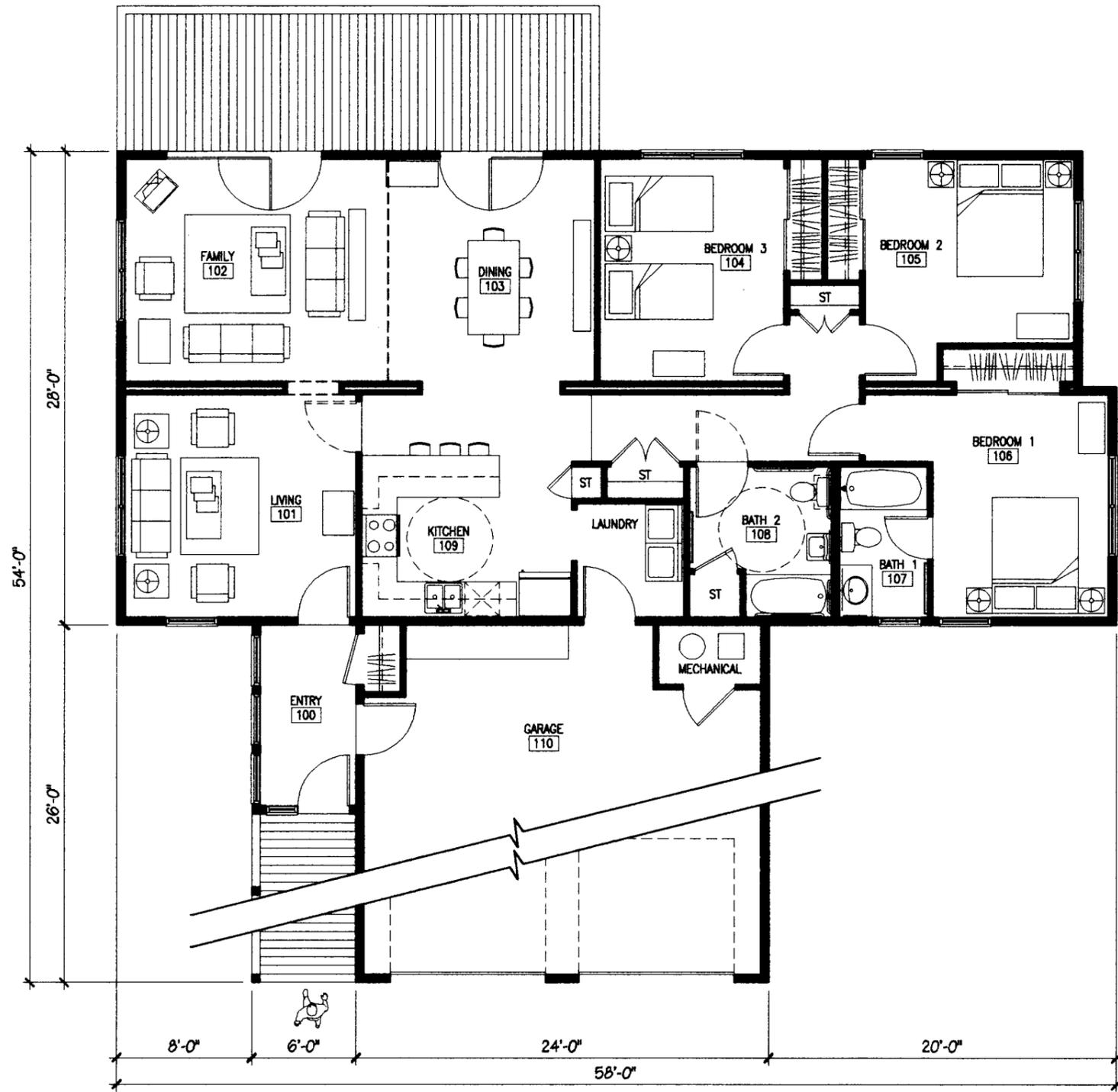
NOTES

- 1 Story.
- Refer to Plan #5 for open option and non-accessible configuration.
- Garage close to street for minimal snow plowing.
- Informal living to rear.
- Potential additional walls and doors at living area shown dashed.
- Bedroom #1 may easily be expanded.



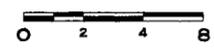
ROOF PLAN
0 10 20 30





PERMANENT SINGLE FAMILY HOUSE

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





SEASONAL 6-PLEX

(4) 1 BEDROOM + (2) 2 BEDROOM A UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

1 BEDROOM	SEASONAL	2 BEDROOM A	SEASONAL
Net Habitable Area	459 sf	Net Habitable Area	950 sf
Gross Habitable Area	504 sf	Gross Habitable Area	1008 sf
Living	13'-1" x 7'-2"	Entry	4'-3" x 5'-3"
Kitchen	9'-8" x 7'-9"	Living	17'-0" x 13'-1"
Bath	5'-6" x 9'-3"	Dining	10'-0" x 8'-9"
Bedroom	10'-8" x 10'-1"	Kitchen	9'-9" x 8'-5"
		Bath #1	9'-9" x 5'-8"
		Bedroom #1	10'-10" x 11'-5"
		Bedroom #2	10'-11" x 12'-1"
		Bath #2	9'-9" x 5'-8"



MULTIPLEX INFORMATION

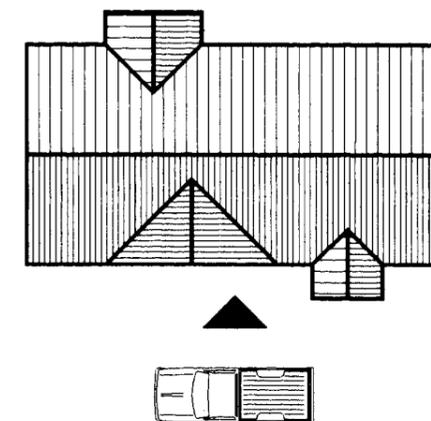
AREA SUMMARY

• Community Room/Laundry/Storage (2) @ 231 sf	462 sf
• Stair (not enclosed)	94 sf
• Porches	588 sf
• Gross Habitable Area	2012 sf
Totals	3156 sf

- Porch breakdown includes:
private porches - 2 Bdrm = 56 sf ea.
1st floor excluding stair = 238 sf
2nd floor excluding stair = 238 sf
- Room sizes and areas for accessible units are equal unless otherwise noted.

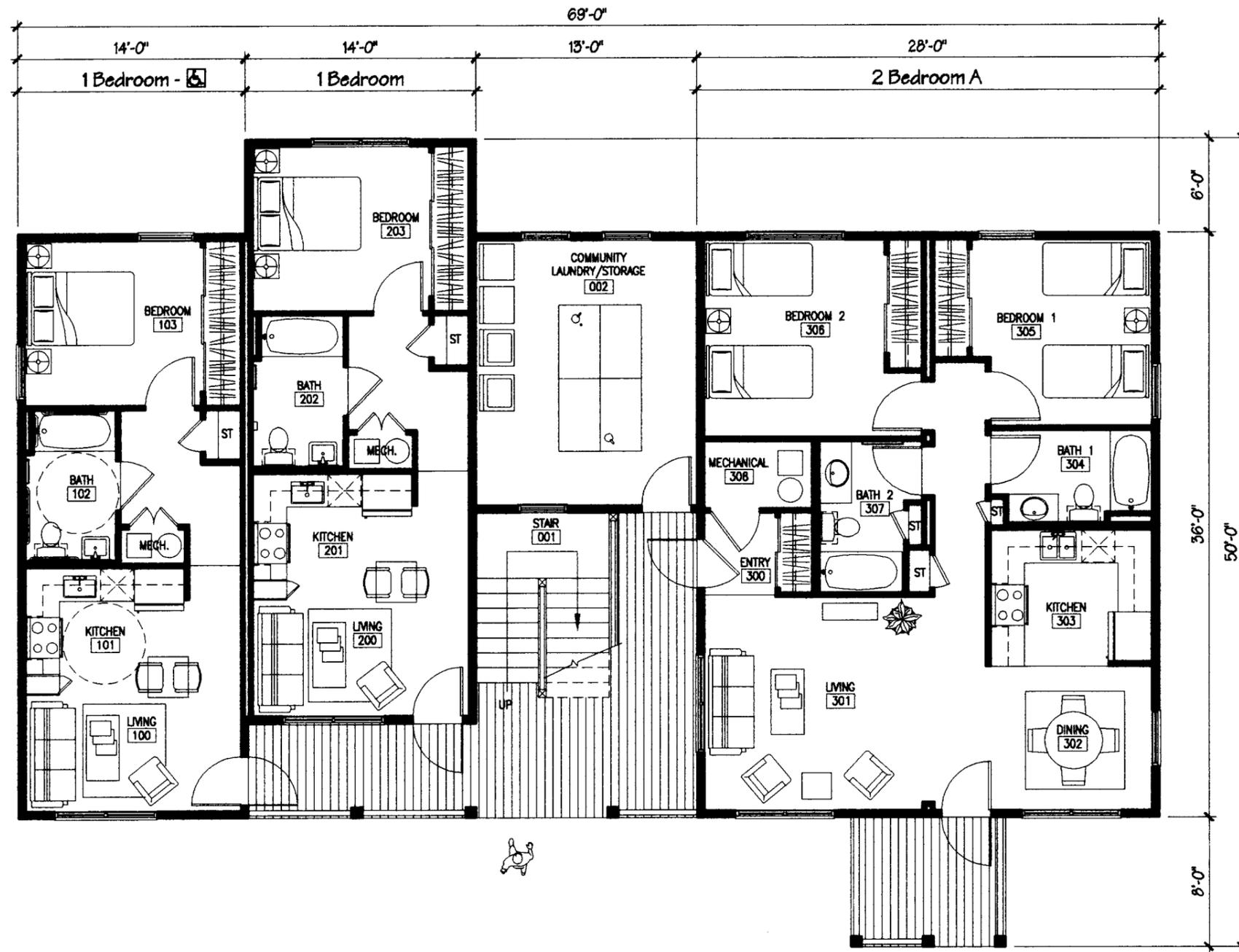
NOTES

- 2 Story
- Central core exists on both floors - area can be used for community functions.
- All Bedrooms oriented to back.



ROOF PLAN
0 10 20 30





SEASONAL 6-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





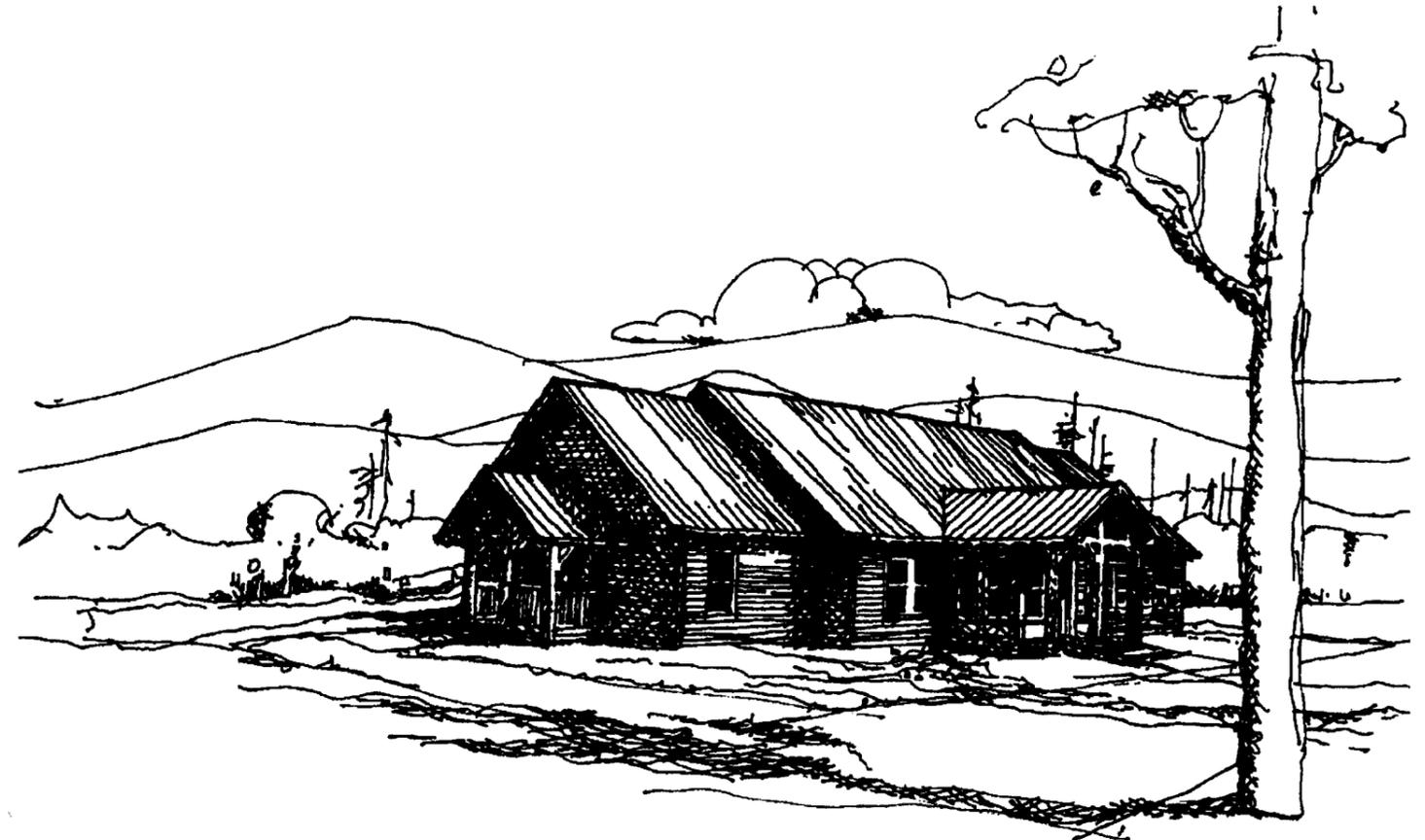
SEASONAL 3-PLEX

(2) 2 BEDROOM B + (1) 1 BEDROOM UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM B	SEASONAL	1 BEDROOM	SEASONAL
Net Habitable Area	999 sf	Net Habitable Area	459 sf
Gross Habitable Area	1060 sf	Gross Habitable Area	504 sf
Living	13'-1" x 12'-0"	Living	13'-1" x 7'-2"
Dining	9'-10" x 7'-9"	Kitchen	9'-8" x 7'-9"
Dining ☒	11'-1" x 8'-1"	Bath	5'-6" x 9'-3"
Kitchen	9'-10" x 9'-8"	Bedroom	10'-8" x 10'-1"
Kitchen ☒	9'-10" x 9'-8"		
Bedroom #1	13'-1" x 11'-1"		
Bath #1	7'-8" x 5'-6"		
Bath #1 ☒	8'-9" x 5'-1"		
Bath #2	7'-8" x 5'-6"		
Bath #2 ☒	8'-4" x 8'-4"		
Bedroom #2	13'-1" x 11'-1"		
Bedroom #1 ☒	10'-8" x 11'-1"		



MULTIPLY INFORMATION

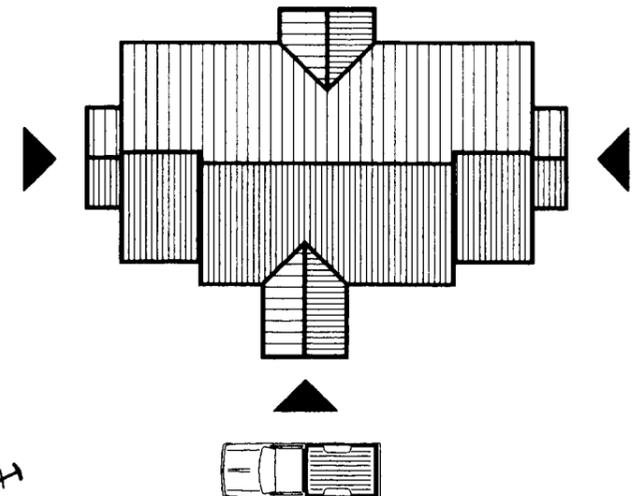
AREA SUMMARY

• Storage outside of unit	20 sf
• Laundry	71 sf
• Porches	376 sf
• Gross Habitable Area	2621 sf
Totals	3088 sf

- Porch breakdown includes:
 - private porches - 2 Bdrm = 87 sf ea.
 - 1 Bdrm = 119 sf ea.
 - porch around laundry = 83 sf.
- Room sizes and areas for accessible units are equal unless otherwise noted.

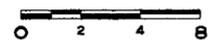
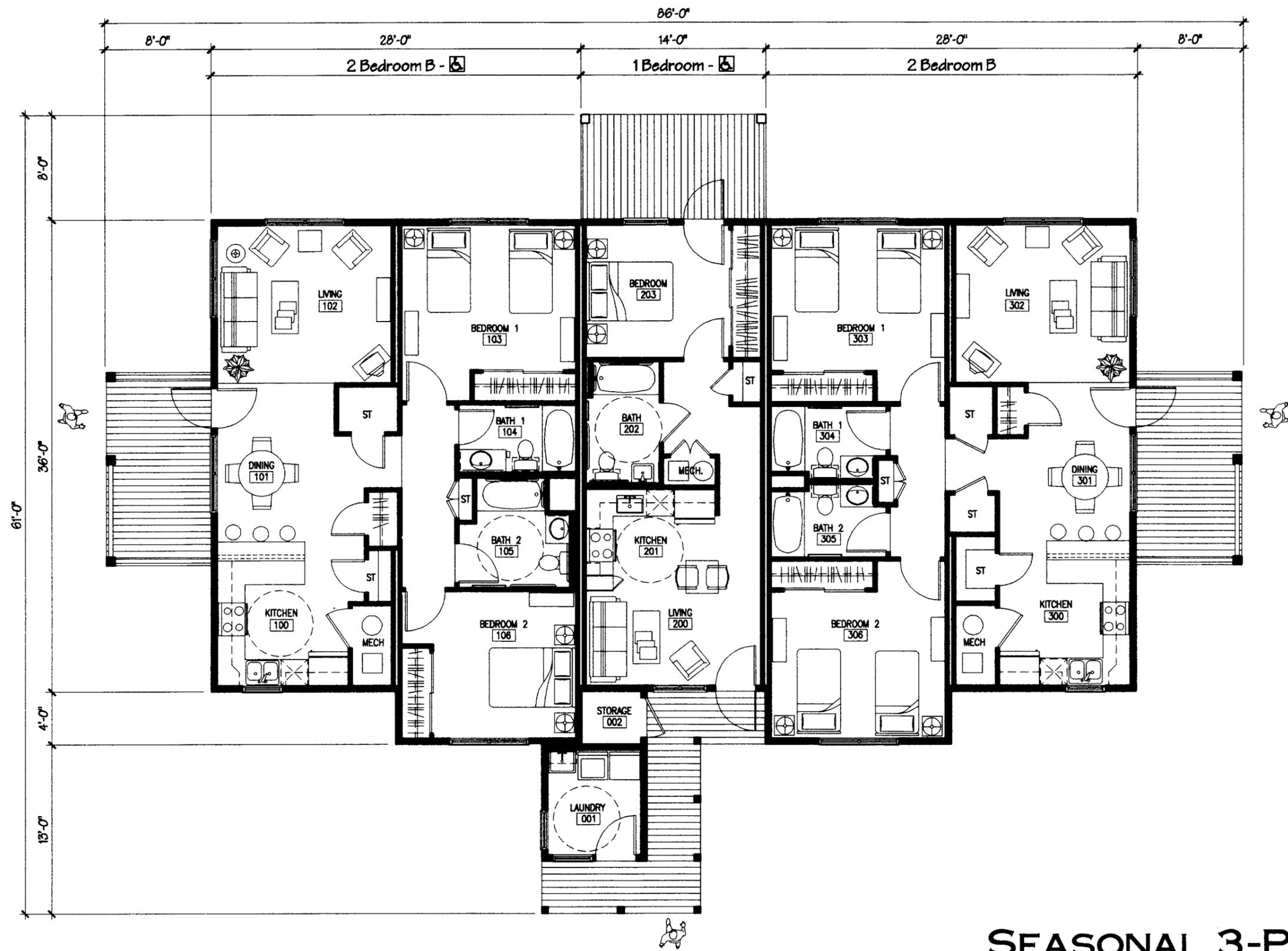
NOTES

- 1 Story.
- Bedrooms both front and back.
- End units living to back.
- Consider for view to back.



ROOF PLAN
0 10 20 30





SEASONAL 3-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





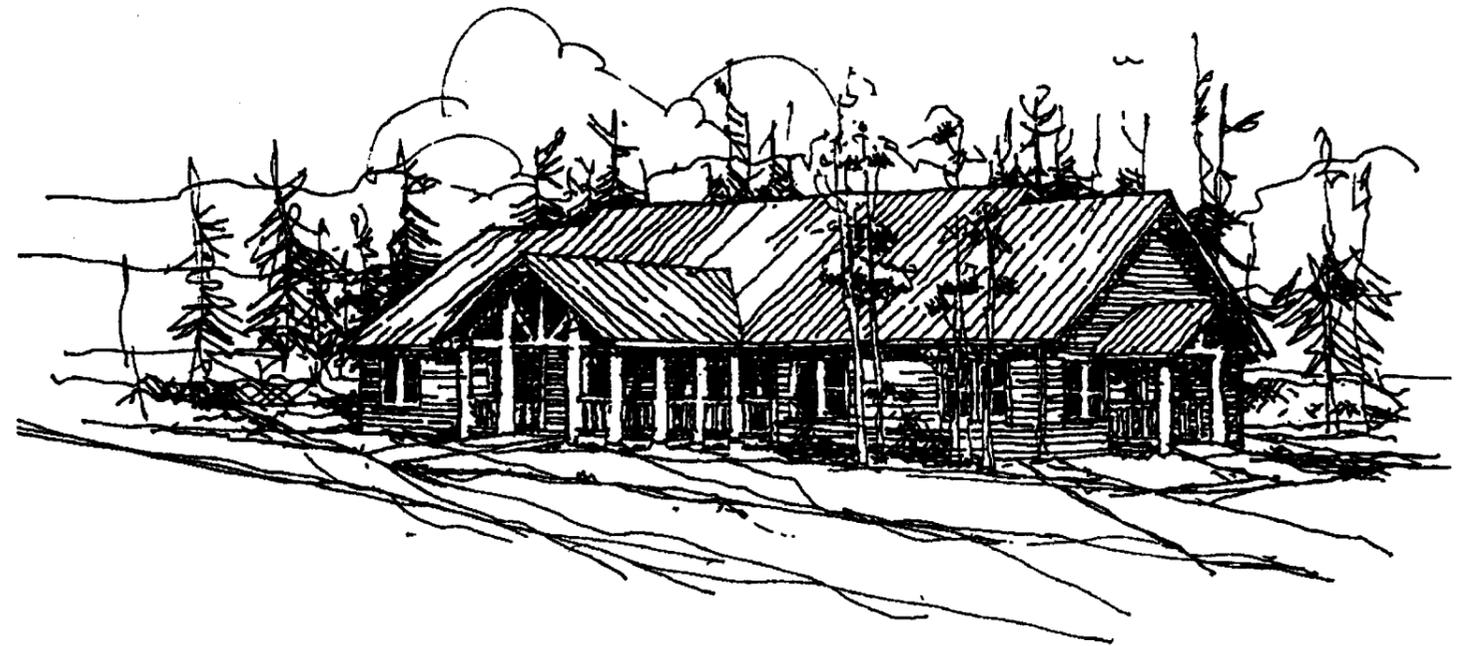
SEASONAL 4-PLEX

(2) 2 BEDROOM B + (2) 1 BEDROOM UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM B SEASONAL		1 BEDROOM SEASONAL	
Net Habitable Area	999 sf	Net Habitable Area	459 sf
Gross Habitable Area	1060 sf	Gross Habitable Area	504 sf
Living	13'-1" x 12'-0"	Living	13'-1" x 7'-2"
Dining	9'-10" x 7'-9"	Kitchen	9'-8" x 7'-9"
Dining ☒	11'-1" x 8'-1"	Bath	5'-6" x 9'-3"
Kitchen	9'-10" x 9'-8"	Bedroom	10'-8" x 10'-1"
Kitchen ☒	9'-10" x 9'-8"		
Bedroom #1	13'-1" x 11'-1"		
Bath #1	7'-8" x 5'-6"		
Bath #1 ☒	8'-9" x 5'-1"		
Bath #2	7'-8" x 5'-6"		
Bath #2 ☒	8'-4" x 8'-4"		
Bedroom #2	13'-1" x 11'-1"		
Bedroom #1 ☒	10'-8" x 11'-1"		



MULTIPLEX INFORMATION

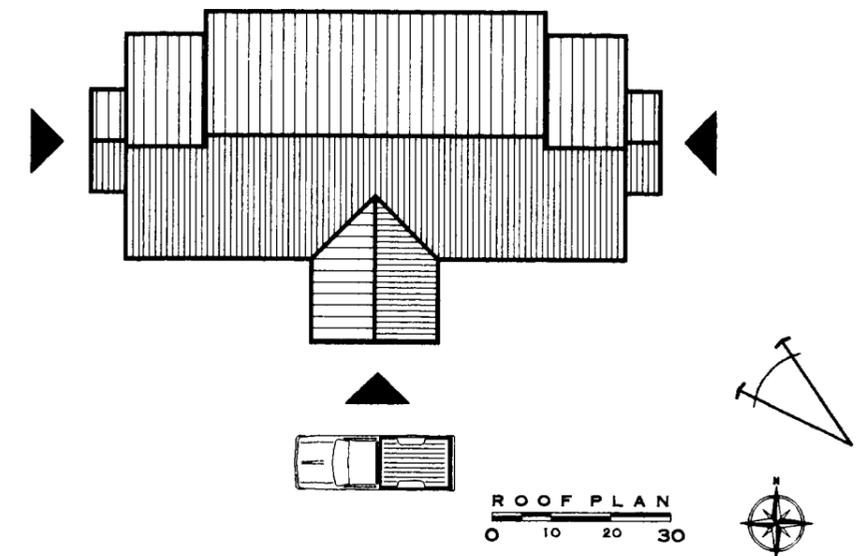
AREA SUMMARY

• Storage outside of unit	49 sf
• Laundry	80 sf
• Porches	451 sf
• Gross Habitable Area	3120 sf
Totals	3700 sf

- Porch breakdown includes:
 - private porches - 2 Bdrm = 88 sf ea.
 - 1 Bdrm = 57 sf ea.
 - porch around laundry = 161 sf.
- Room sizes and areas for accessible units are equal unless otherwise noted.

NOTES

- 1 Story.
- Bedrooms front and back.
- End units orient to ends.
- Central laundry.





SEASONAL 4-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





PERMANENT SINGLE FAMILY HOUSE

3 BEDROOMS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

HOUSE INFORMATION

3 BEDROOM	PERMANENT
Net Habitable Area	1617 sf
Gross Habitable Area	1701 sf
Entry	6'-1" x 11'-3"
Living	14'-3" x 13'-1"
Dining	10'-8" x 13'-1"
Bedroom #1	12'-6" x 13'-1"
Bedroom #2	12'-1" x 10'-9"
Bedroom #3	10'-8" x 13'-1"
Bath #1	5'-1" x 8'-8"
Bath #2	8'-4" x 8'-8"
Laundry	5'-1" x 8'-8"
Kitchen	12'-0" x 9'-2"
Family	14'-6" x 13'-1"



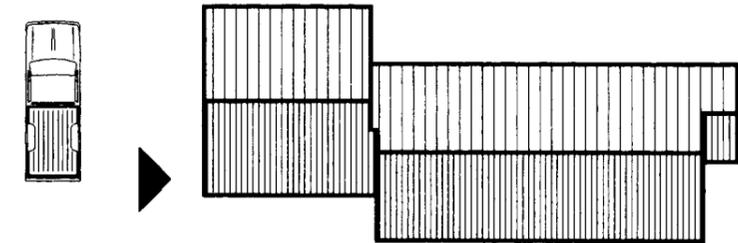
AREAS

• Garage (24' x 26')	624 sf
• Front Porch (6' x 24')	144 sf
• Rear Patio (20' x 10')	200 sf
• Gross Habitable Area	1701 sf
Totals	2669 sf

- Entry and Mechanical Room included in Gross Habitable Area calculations.

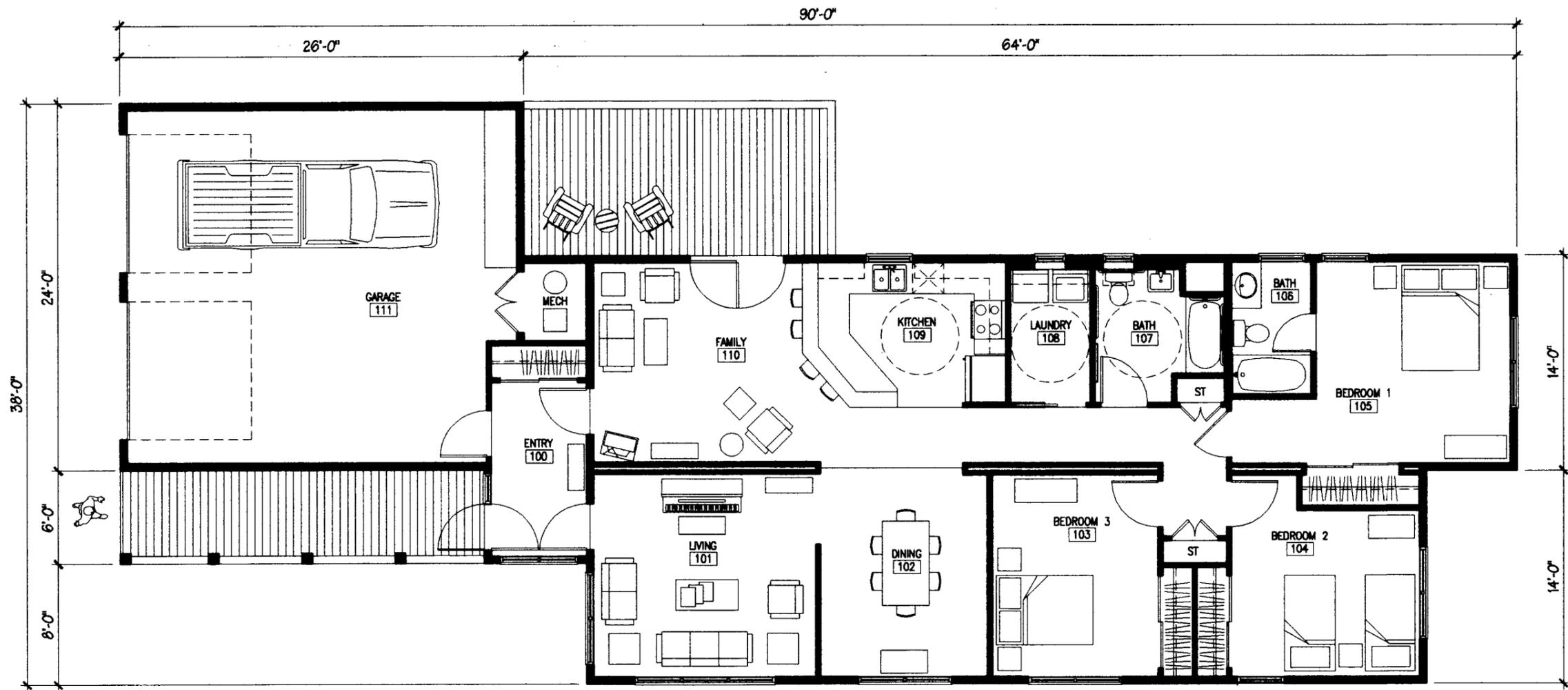
NOTES

- 1 Story.
- Garage close to street for minimal snow plowing.
- Informal living to rear.
- No valleys in roof.



ROOF PLAN
0 10 20 30





PERMANENT SINGLE FAMILY HOUSE

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





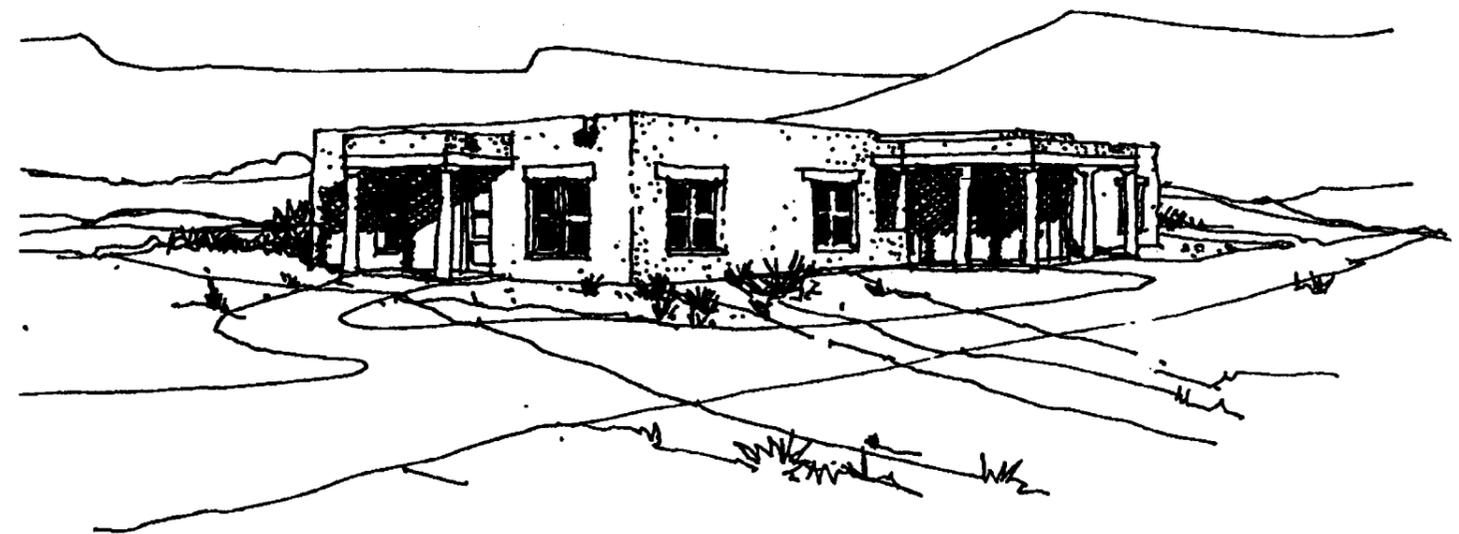
SEASONAL 4-PLEX

(2) 2 BEDROOM A + (2) 1 BEDROOM UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM A SEASONAL		1 BEDROOM SEASONAL	
Net Habitable Area	950 sf	Net Habitable Area	459 sf
Gross Habitable Area	1008 sf	Gross Habitable Area	504 sf
Entry	4'-3" x 5'-3"	Living	13'-1" x 7'-2"
Living	17'-0" x 13'-1"	Kitchen	9'-8" x 7'-9"
Dining	10'-0" x 8'-9"	Bath	5'-6" x 9'-3"
Kitchen	9'-9" x 8'-5"	Bedroom	10'-8" x 10'-1"
Bath #1	9'-9" x 5'-8"		
Bedroom #1	10'-10" x 11'-5"		
Bedroom #2	10'-11" x 12'-1"		
Bath #2	9'-9" x 5'-8"		
Bath #2	5'-11" x 9'-2"		



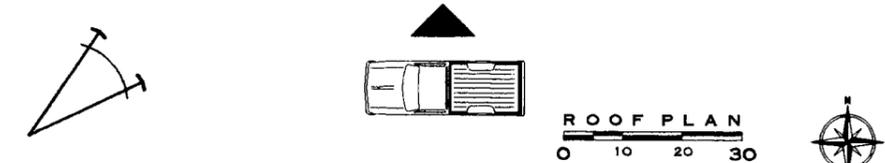
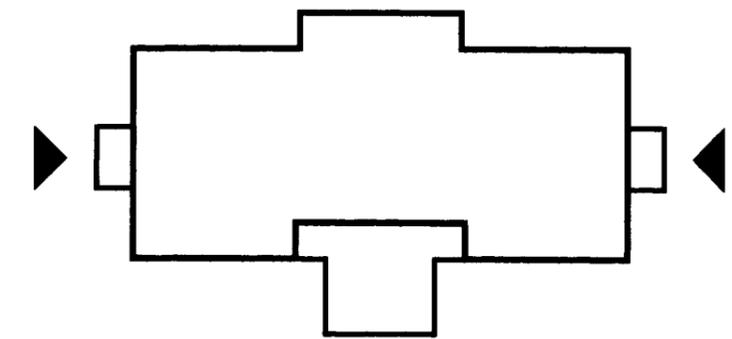
MULTIPLEX INFORMATION

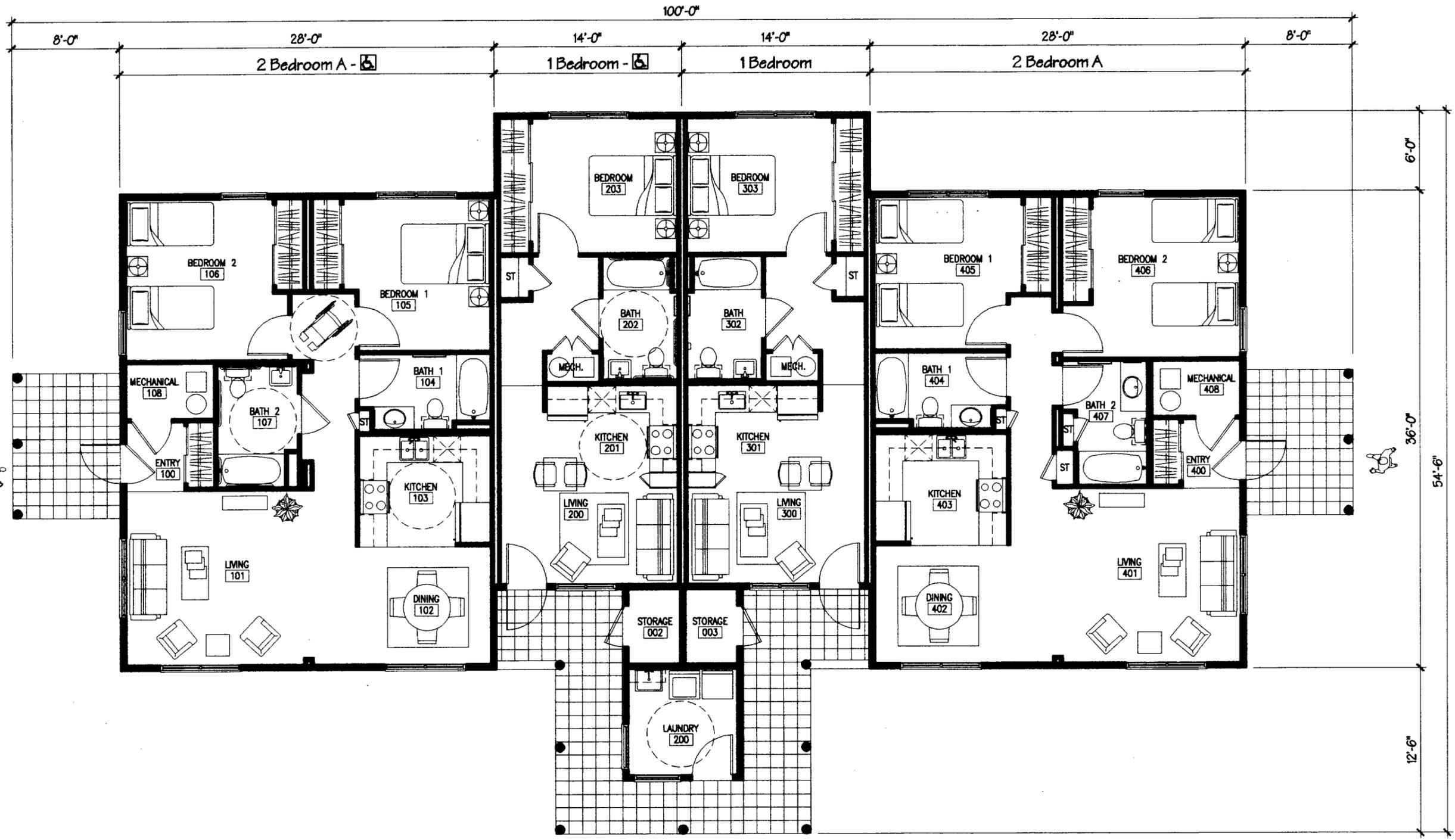
AREA SUMMARY

- Storage outside of unit (2) @ 24½ sf ea. 49 sf
 - Laundry 80 sf
 - Porches 410 sf
 - Gross Habitable Area 3010 sf
 - Totals 3549 sf
- Porch breakdown includes:
 - private porches - 2 Bdrm = 68 sf ea.
 - 1 Bdrm = 56 sf ea.
 - porch around laundry = 162 sf.
 - Room sizes and areas for accessible units are equal unless otherwise noted.

NOTES

- 1 Story.
- Central laundry area.
- All bedrooms oriented to back.
- End units outdoor spaces to ends.
- Living area oriented to street side.





SEASONAL 4-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





SEASONAL 4-PLEX

(4) 2 BEDROOM A UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM A	SEASONAL
Net Habitable Area	950 sf
Gross Habitable Area	1008 sf
Entry	4'-3" x 5'-3"
Living	17'-0" x 13'-1"
Dining	10'-0" x 8'-9"
Kitchen	9'-9" x 8'-5"
Bath #1	9'-9" x 5'-8"
Bedroom #1	10'-10" x 11'-5"
Bedroom #2	10'-11" x 12'-1"
Bath #2	9'-9" x 5'-8"
Bath #2	5'-11" x 9'-2"



MULTI-PLEX INFORMATION

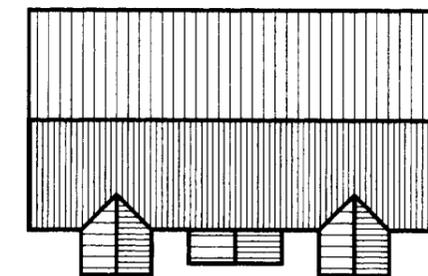
AREA SUMMARY

• Storage outside of units	38 sf
• Laundry	145 sf
• Community	145 sf
• Lobby - 1st Floor	238 sf
• Lobby - 2nd Floor	238 sf
• Stair	54 sf
• Porches	305 sf
• Gross Habitable Area	4986 sf
Totals	6149 sf

- Porch breakdown includes:
private porches - 2 Bdrm = 56 sf ea.
porch @ Entry = 81 sf.
- Room sizes and areas for accessible units are equal unless otherwise noted.

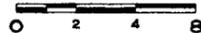
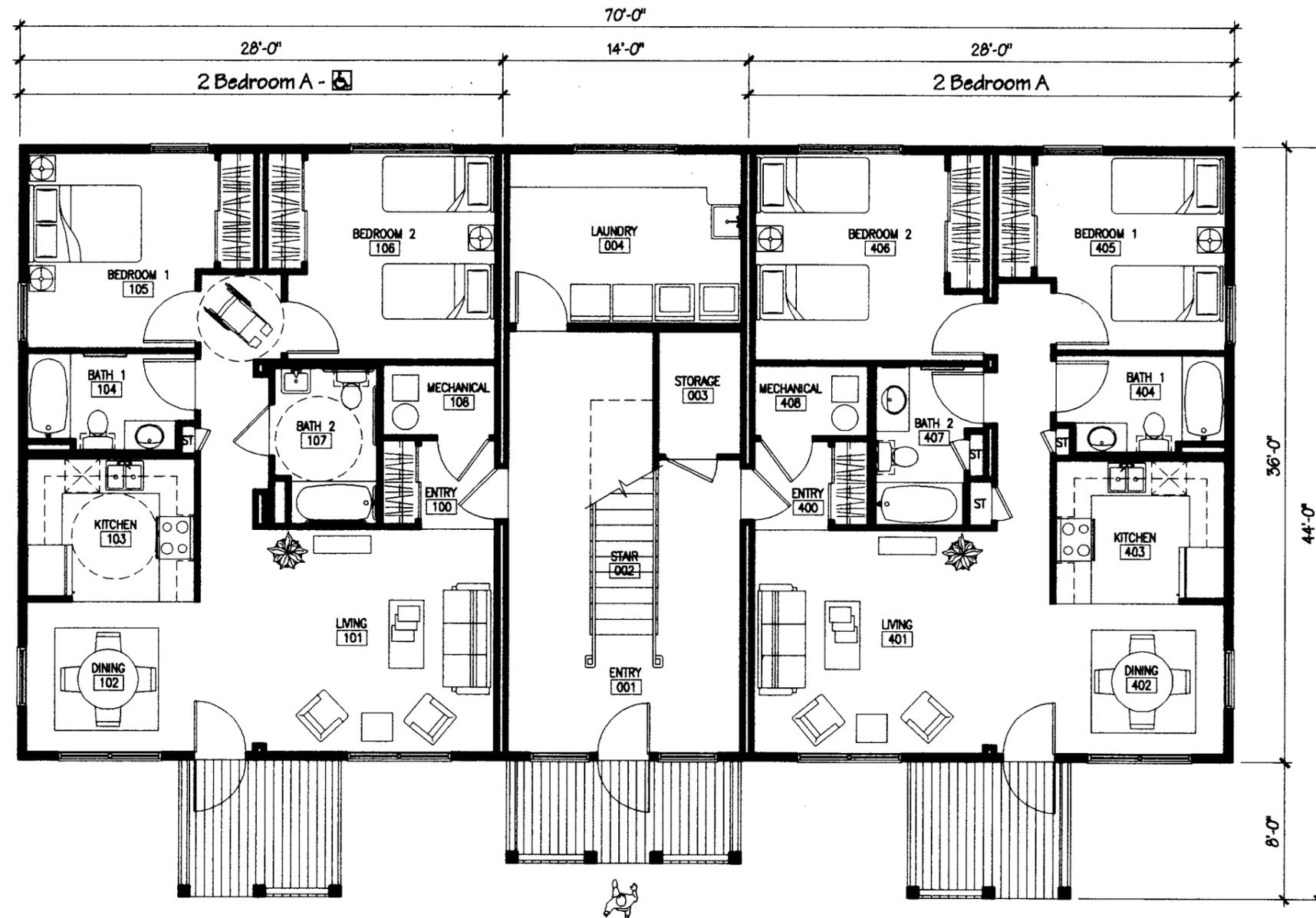
NOTES

- 2 Story.
- All bedrooms to back.
- Central core adapts for community functions.
- Second floor similar to 1st except no laundry.



ROOF PLAN
0 10 20 30





SEASONAL 4-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





SEASONAL 8-PLEX

(4) 2 BEDROOM A + (4) 1 BEDROOM UNITS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

UNIT INFORMATION

2 BEDROOM A SEASONAL		1 BEDROOM SEASONAL	
Net Habitable Area	950 sf	Net Habitable Area	459 sf
Gross Habitable Area	1008 sf	Gross Habitable Area	504 sf
Living	17'-0" x 13'-1"	Living	13'-1" x 7'-2"
Bath #1	6'-1" x 9'-9"	Kitchen	9'-8" x 7'-9"
Bedroom #1	10'-10" x 11'-5"	Bath	5'-6" x 9'-3"
Bedroom #2	10'-11" x 12'-1"	Bedroom	10'-8" x 10'-1"
Bath #2	9'-9" x 5'-8"		
Kitchen	9'-9" x 8'-5"		
Dining	10'-0" x 8'-9"		



MULTIPLEX INFORMATION

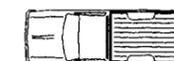
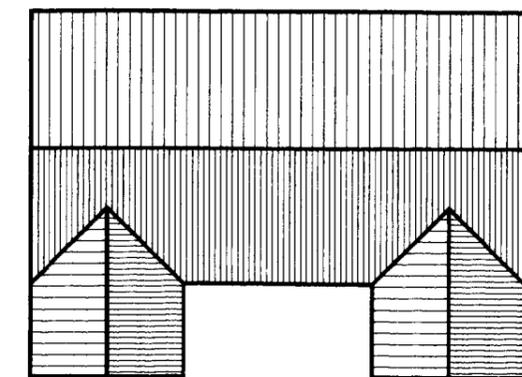
AREA SUMMARY

• Storage outside of units (2) @ 130 sf ea.	260 sf
• Community Room	130 sf
• Laundry	130 sf
• Stairs (2) @ 145	290 sf
• Porches	1892 sf
• Gross Habitable Area	6016 sf
Totals	8718 sf

• Room sizes and areas for accessible units are equal unless otherwise noted.

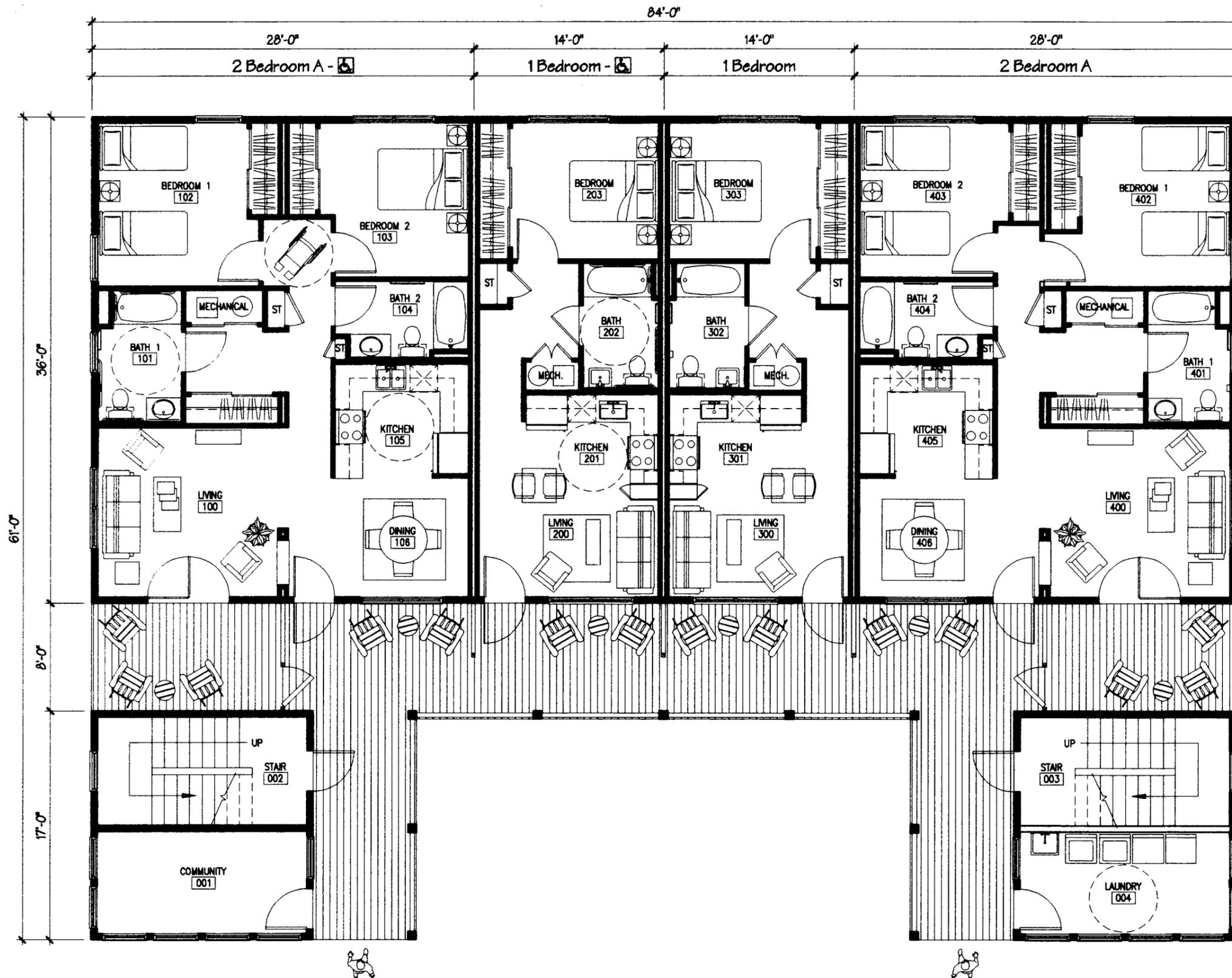
NOTES

- 2 Story.
- Entry of 2 Bedroom A unit modified.
- Privacy walls on porch between each unit.
- Compact footprint for number of units.
- Public wings adaptable for community functions.
- Storage space on second floor above laundry and community rooms.



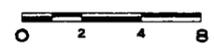
ROOF PLAN
0 10 20 30





SEASONAL 8-PLEX

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE





DORMITORY

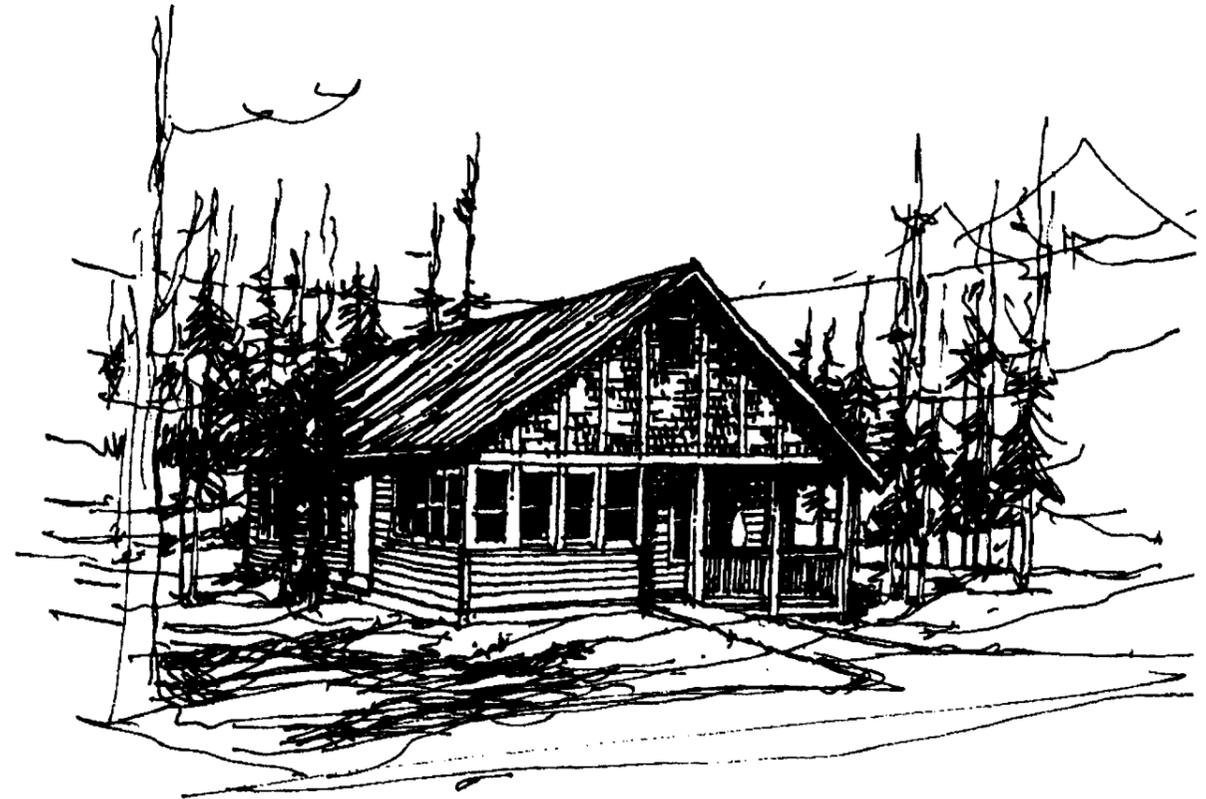
4 BEDROOMS

HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE

DORMITORY INFORMATION

4 BEDROOM

Net Habitable Area	1570 sf
Gross Habitable Area	1649 sf
Kitchen	11'-9" x 13'-3"
Bedroom #1	10'-10" x 13'-3"
Bedroom #2	10'-10" x 13'-3"
Bath #1	8'-2" x 13'-3"
Bedroom #3	10'-10" x 13'-3"
Bedroom #4	10'-10" x 13'-3"
Bath #2	8'-2" x 13'-3"
Laundry	6'-0" x 8'-0"
Living	13'-5" x 13'-3"
Mechanical	6'-0" x 4'-11"



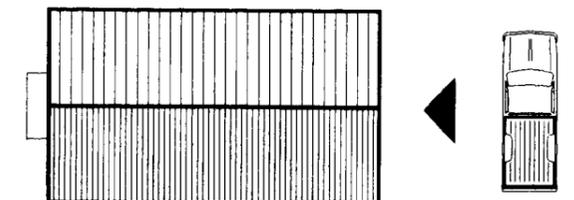
AREAS

• Front Porch (8' x 16')	128 sf
• Rear Deck (6' x 12')	72 sf
• Gross Habitable Area	1649 sf
Totals	1849 sf

• Front Porch and Rear Deck not included in Gross Habitable Area calculations.

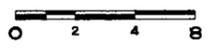
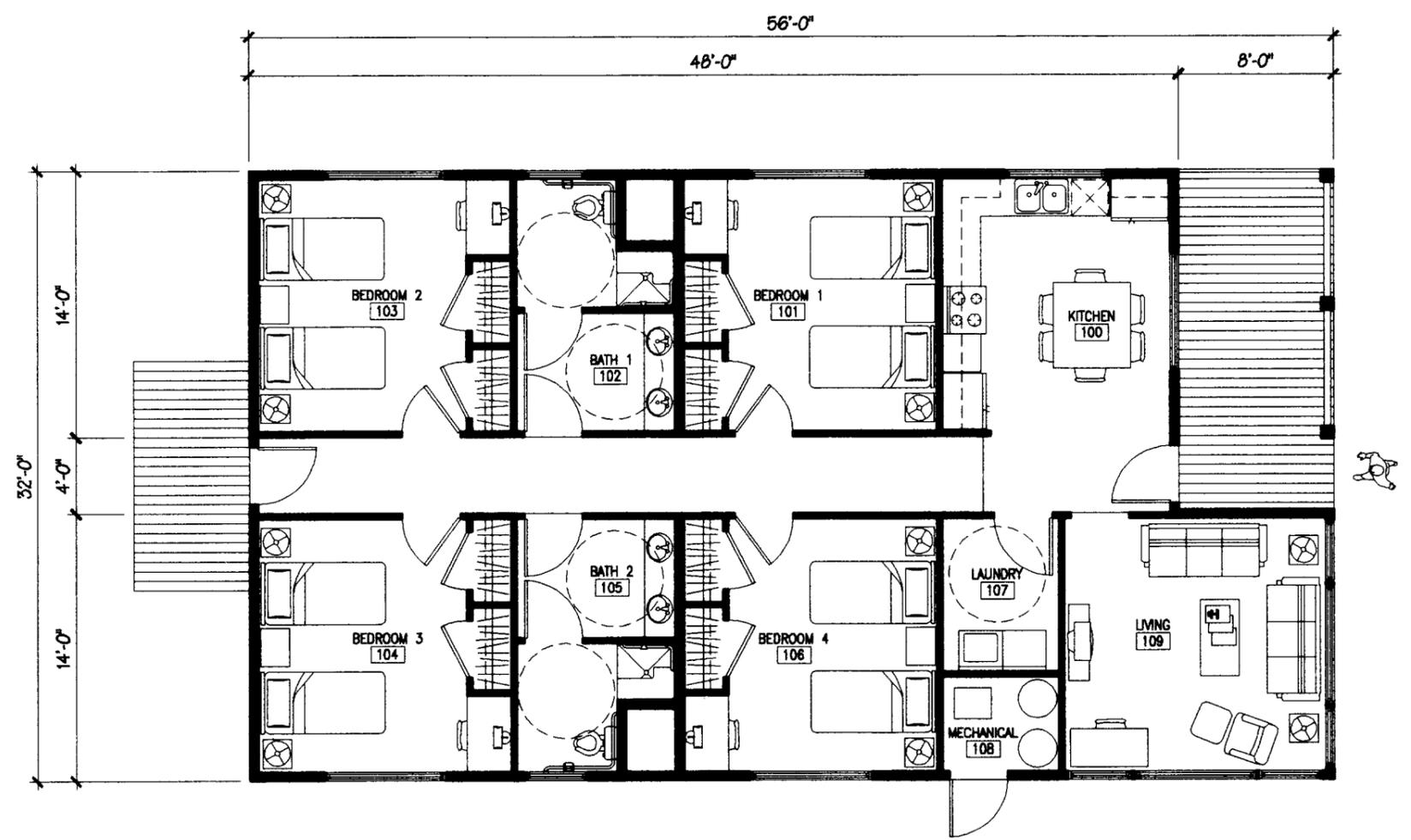
NOTES

- 1 Story.
- All rooms fully accessible.
- 8 Occupants - 2 per room.



ROOF PLAN
0 10 20 30





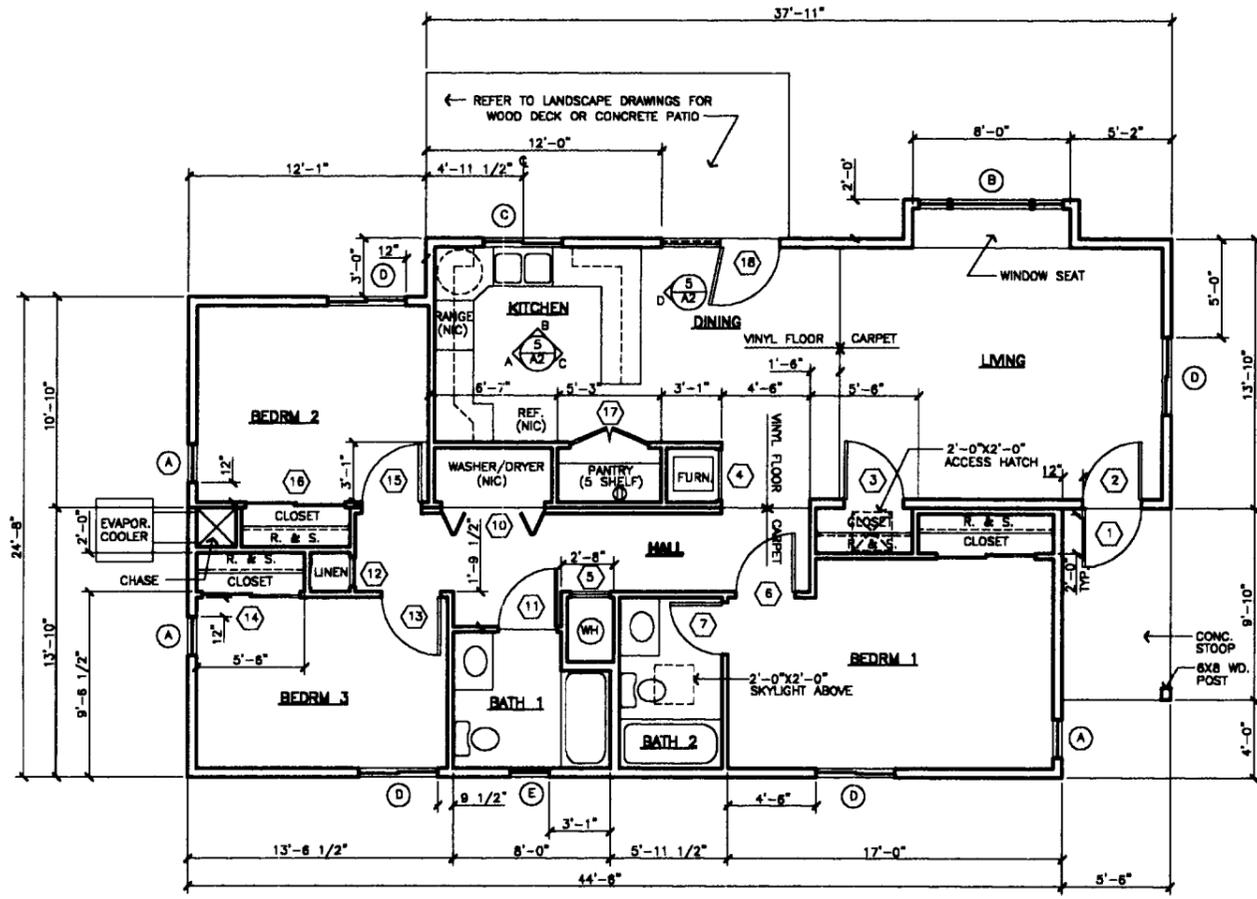
DORMITORY
HOUSING FOR TRAILER ELIMINATION - NATIONAL PARK SERVICE



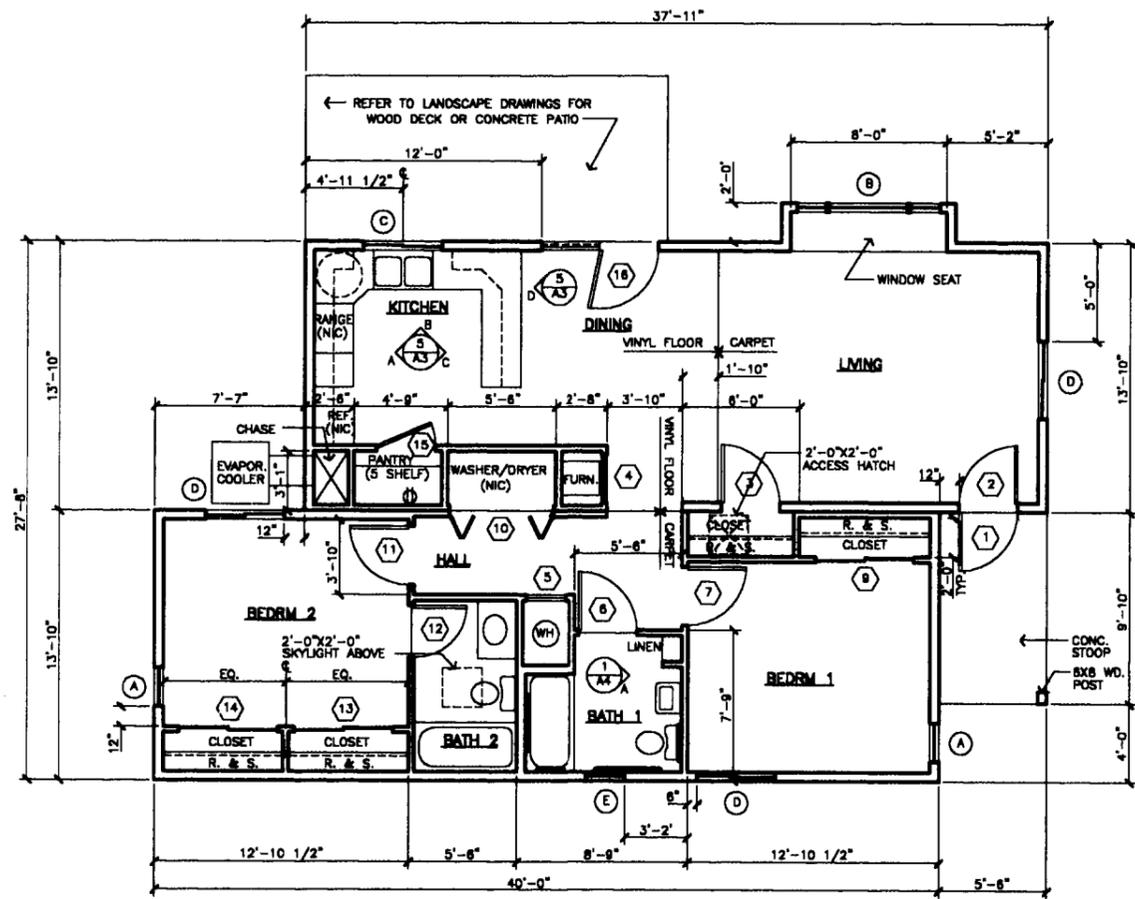


HOUSING FOR TRAILER
ELIMINATION
APPENDIX
NATIONAL PARK SERVICE

ADDITIONAL PLANS BY WESTERN S. S. O.



3-BEDROOM UNIT



2-BEDROOM UNIT

FLOOR PLANS

SCALE @

LEGEND:

- 2X6 WALL FRAMING @ EXTERIOR LOCATION AND @ PLUMBING WALL AS SHOWN
- 2X4 INTERIOR WALL FRAMING, U.O.N.

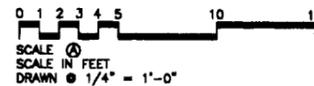
- DOOR NUMBER
DOOR SYMBOL
- WINDOW TYPE
WINDOW SYMBOL
- ELEVATION TAG
ELEVATION NUMBER
INTERIOR ELEVATION
- SHEET WHERE ELEVATION OCCURS

GENERAL NOTES

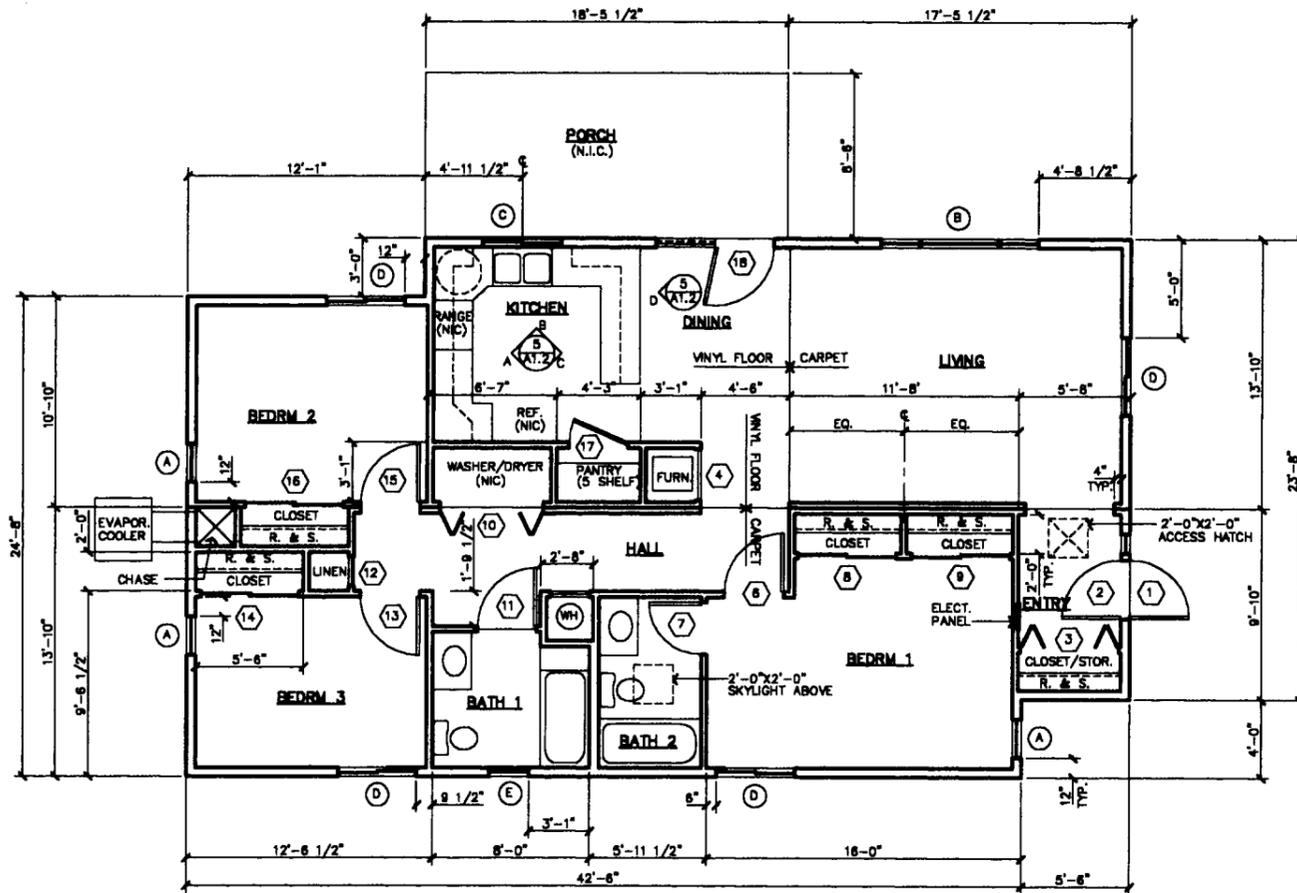
1. REFER TO SITE AND GRADING PLAN FOR LOCATION, ORIENTATION, AND FINISHED FLOOR ELEVATION OF EACH INDIVIDUAL UNIT.
2. REFER TO ELEVATION DRAWINGS FOR GRAB BARS INSTALLATION IN BATHROOM AND MODIFICATIONS TO KITCHEN CABINETS AND COUNTER HEIGHT IN ACCESSIBLE UNIT.



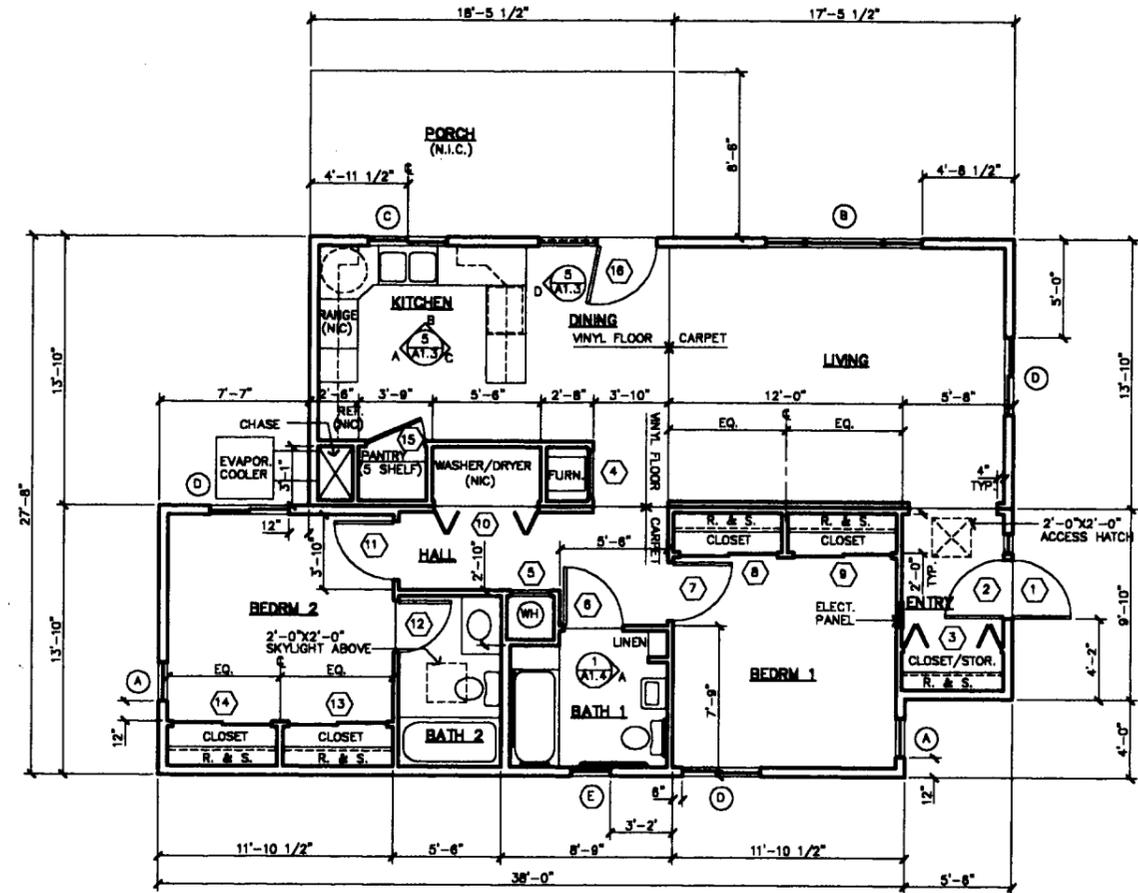
REFERENCE NORTH



DESIGNED: TBN	SUB SHEET NO. A1	TITLE OF SHEET FLOOR PLANS 2-BEDROOM and 3-BEDROOM UNITS SEQUOIA & KINGS CANYON NATIONAL PARKS CEDAR GROVE, CALIFORNIA	DRAWING NO. 102 80,048
DRAWN: TBN			PKG. NO. 238A
TECH. REVIEW: DATE: 07 84			SHEET 13 OF 18



3 BEDROOM UNIT



2 BEDROOM ACCESSIBLE UNIT

FLOOR PLANS

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

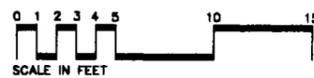
LEGEND:

- 2x8 WALL FRAMING @ EXTERIOR LOCATION AND PLUMBING WALL AS SHOWN
- 2x4 INTERIOR WALL FRAMING, U.O.N.

- DOOR NUMBER
DOOR SYMBOL
- WINDOW TYPE
WINDOW SYMBOL
- ELEVATION TAG
ELEVATION NUMBER
INTERIOR ELEVATION
SHEET WHERE ELEVATION OCCURS

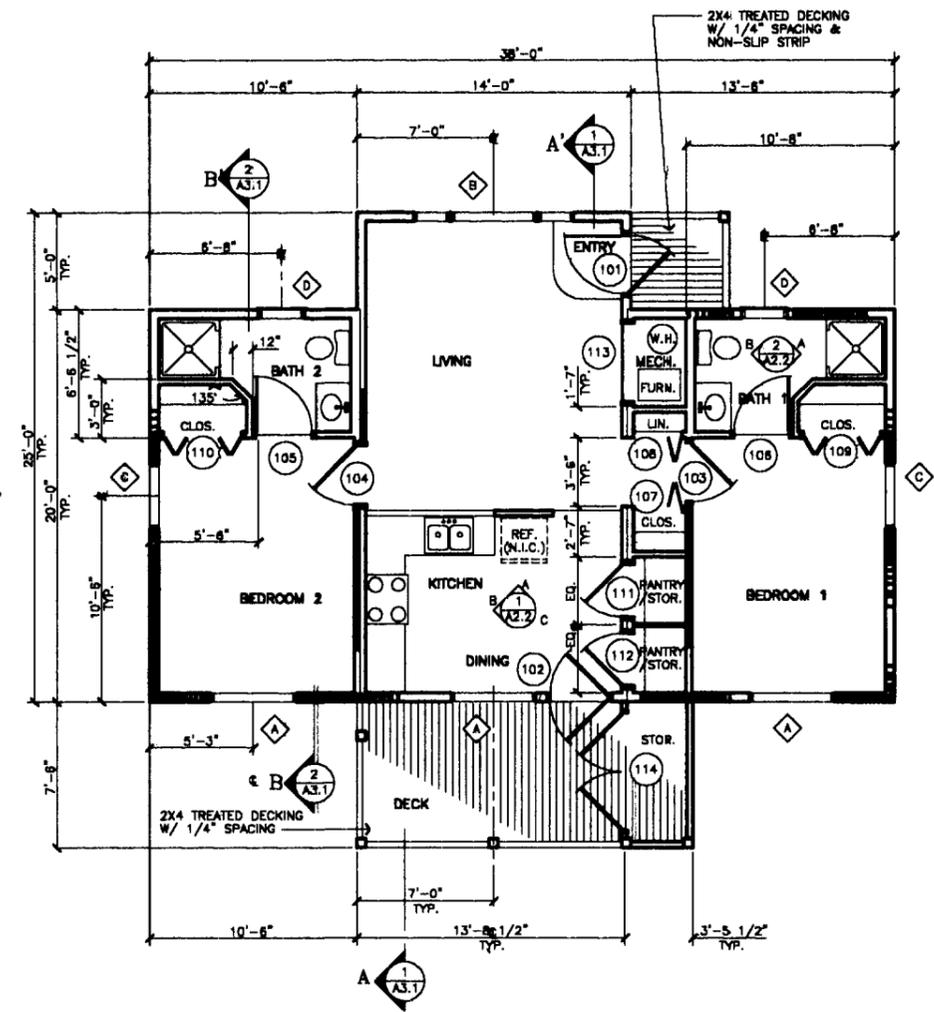
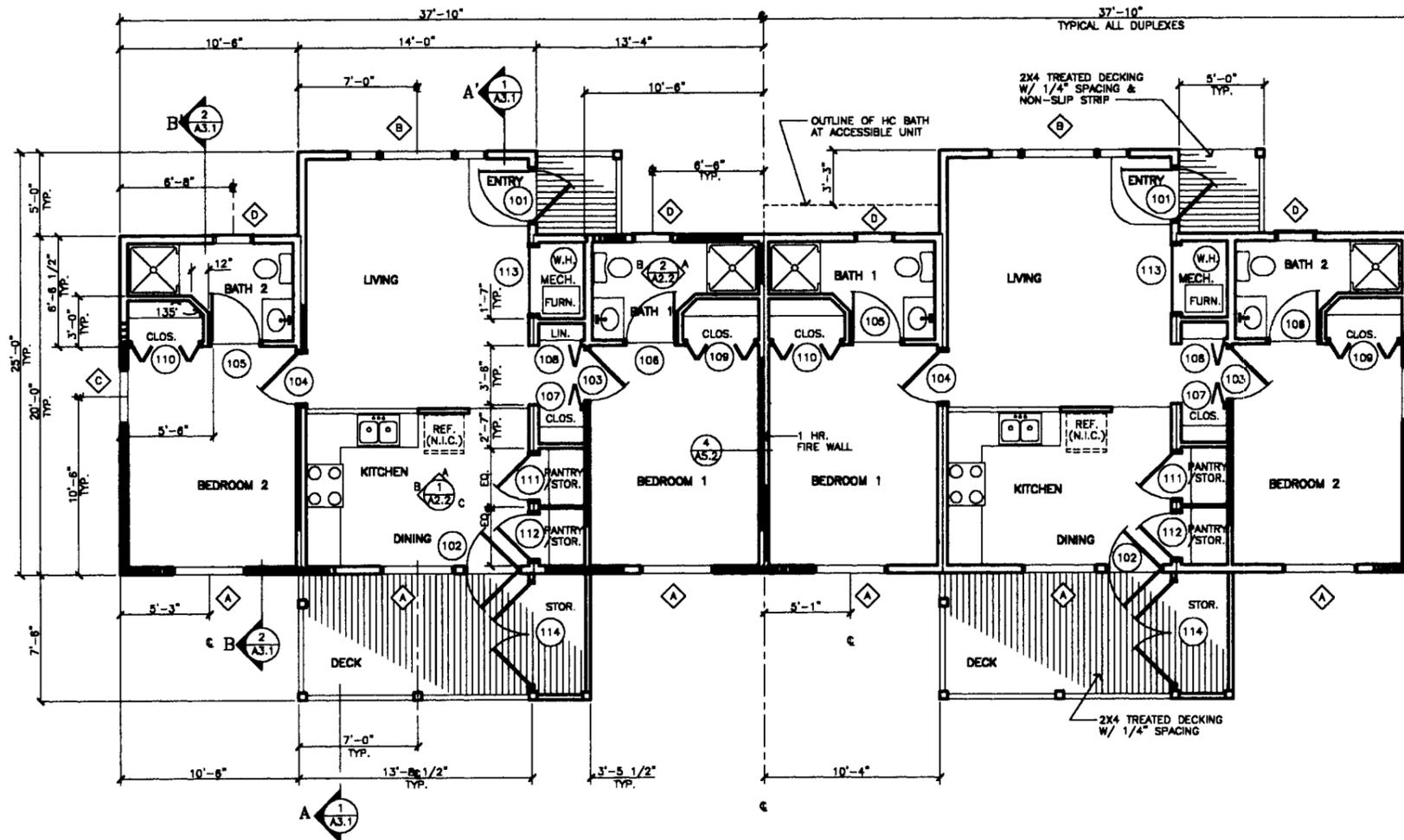
GENERAL NOTE

REFER TO SITE AND GRADING PLAN FOR LOCATION, ORIENTATION, AND FINISHED FLOOR ELEVATION OF EACH INDIVIDUAL UNIT.



DESIGNED: WH	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN: WH		FLOOR PLANS	404
TECH. REVIEW:		2-BEDROOM and 3-BEDROOM UNITS	05/00
DATE: 07 05	A 1.1	FORT BOWIE NHS	PKG. NO. 2A
		BOWIE, ARIZONA	SHEET 2A
			OF 7

REVISED: 10/21/05



TYPICAL FLOOR PLAN

SCALE (A)

2-BEDROOM DUPLEX UNIT

LEGEND:

- 2X6 WALL FRAMING @ EXTERIOR LOCATION AND @ INTERIOR WALL IN THE KITCHEN AREA AS SHOWN
- 2X4 INTERIOR WALL FRAMING
- WALL INSULATION
- SOUND ATTENUATION BLANKET
- DOOR NUMBER
DOOR SYMBOL
- WINDOW TYPE
WINDOW SYMBOL
- SECTION NUMBER
SECTION
- DETAIL NUMBER
DETAIL
- ELEVATION TAG
ELEVATION NUMBER
INTERIOR ELEVATION
- SHEET WHERE ELEVATION OCCURS

GENERAL NOTES:

- 1 - REFER TO SITE AND GRADING PLAN FOR LOCATION, ORIENTATION, AND FINISHED FLOOR ELEVATION OF EACH INDIVIDUAL UNIT.
- 2 - WALL AND/OR FLOOR ASSEMBLIES SEPARATED EACH UNIT SHALL BE CONSTRUCTED OF ONE-HOUR FIRE-RESISTIVE RATING. WALL ASSEMBLIES SHALL BE EXTENDED TO UNDERSIDE OF THE ROOF SHEATHING.
- 3 - REFER TO LANDSCAPE DRAWINGS SUB-SHEET "L" FOR WALKWAY AND ACCESS TO EACH BUILDING.



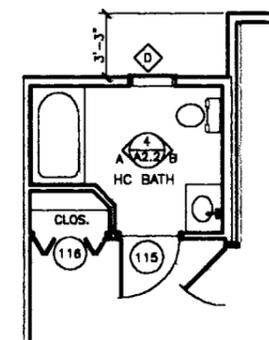
REFERENCE NORTH



TYPICAL FLOOR PLAN

SCALE (A)

2-BEDROOM DETACHED UNIT

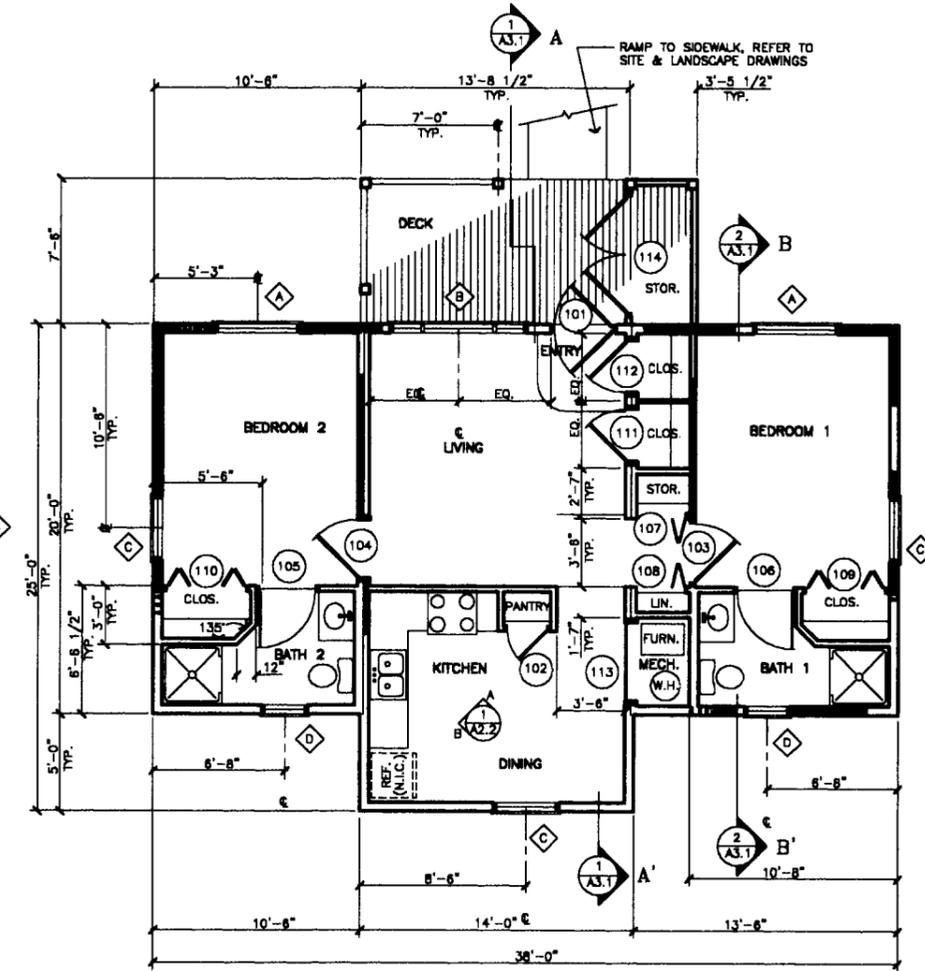
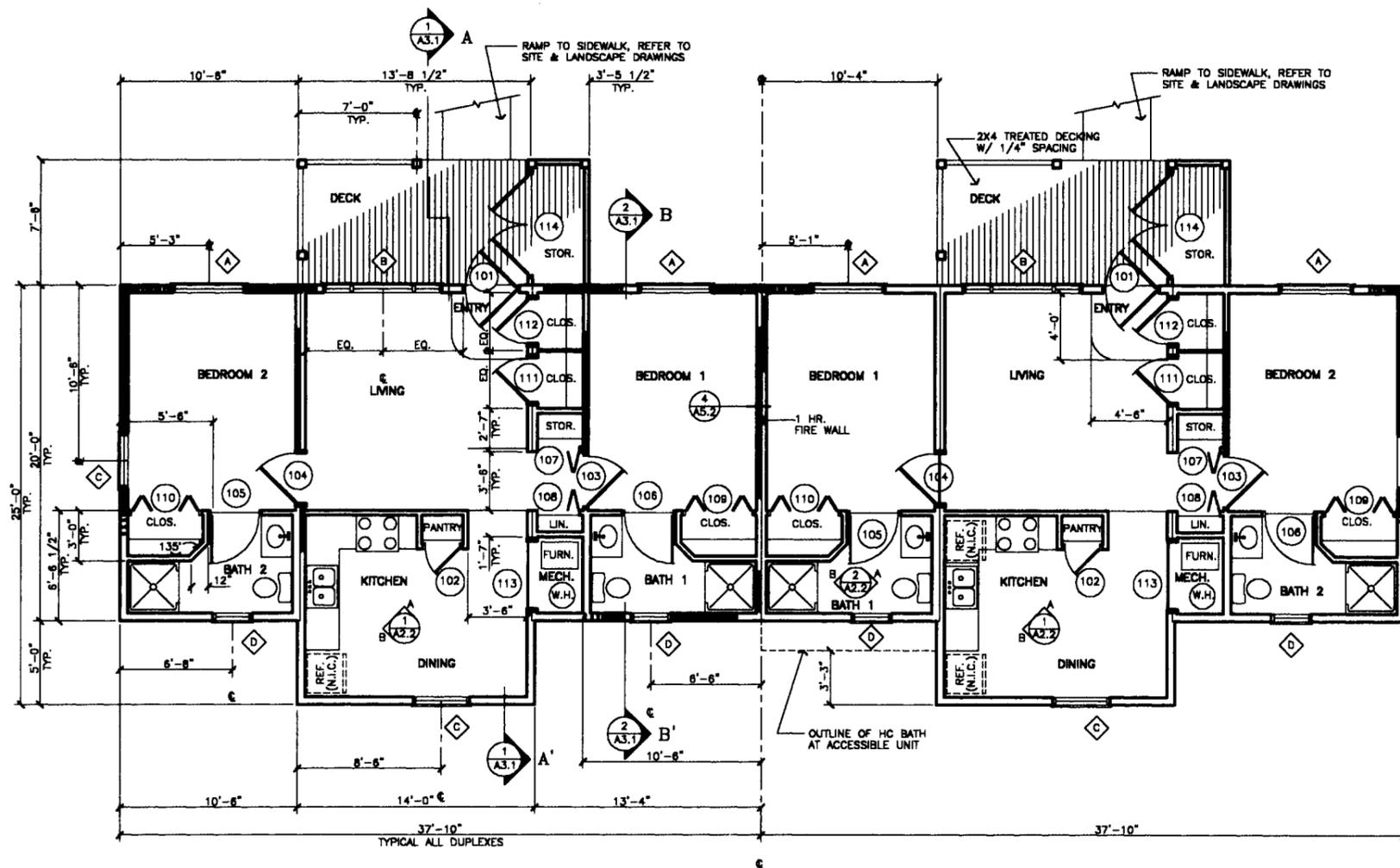


PARTIAL FLOOR PLAN

SCALE (A)

UNIT W/ ACCESSIBLE BATH

DESIGNED: TSN	SUB SHEET NO. A1.1	TITLE OF SHEET FLOOR PLANS 2-BEDROOM DUPLEX & 2-BEDROOM DETACHED	DRAWING NO. 102 80,048
DRAWN: TSN			PKG. SHEET NO. <input type="checkbox"/>
TECH. REVIEW: TSN			OF <input type="checkbox"/>
DATE: 6 95		CEDAR GROVE SEQUOIA & KINGS CANYON NATIONAL PARKS FRESNO & TULARE COUNTIES, CALIFORNIA	



TYPICAL FLOOR PLAN

SCALE (A)

2-BEDROOM DUPLEX UNIT

TYPICAL FLOOR PLAN

SCALE (A)

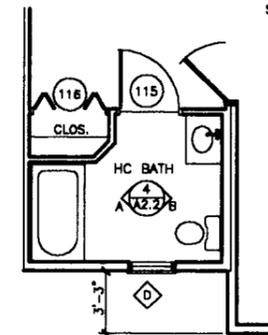
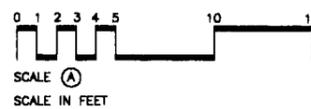
2-BEDROOM DETACHED UNIT

LEGEND:

- 2x6 WALL FRAMING @ EXTERIOR LOCATION AND @ INTERIOR WALL IN THE KITCHEN AREA AS SHOWN
- 2x4 INTERIOR WALL FRAMING
- WALL INSULATION
- SOUND ATTENUATION BLANKET
- DOOR NUMBER
- WINDOW TYPE
- SECTION NUMBER
- DETAIL NUMBER
- ELEVATION TAG

GENERAL NOTES:

- 1 - REFER TO SITE AND GRADING PLAN FOR LOCATION, ORIENTATION, AND FINISHED FLOOR ELEVATION OF EACH INDIVIDUAL UNIT.
- 2 - WALL AND/OR FLOOR ASSEMBLIES SEPARATED EACH UNIT SHALL BE CONSTRUCTED OF ONE-HOUR FIRE-RESISTIVE RATING. WALL ASSEMBLIES SHALL BE EXTENDED TO UNDERSIDE OF THE ROOF SHEATHING.
- 3 - REFER TO LANDSCAPE DRAWINGS SUB-SHEET "L" FOR WALKWAY AND ACCESS TO EACH BUILDING.



PARTIAL FLOOR PLAN

SCALE (A)

UNIT W/ ACCESSIBLE BATH

DESIGNED: TSN	SUB SHEET NO. A1.1	TITLE OF SHEET FLOOR PLANS 2-BEDROOM DUPLEX & 2-BEDROOM DETACHED	DRAWING NO. 102
DRAWN: TSN			80,049
TECH. REVIEW:			PKG. SHEET NO.
DATE: 6 95		CEDAR GROVE SEQUOIA & KINGS CANYON NATIONAL PARKS FRESNO & TULARE COUNTIES, CALIFORNIA	OF