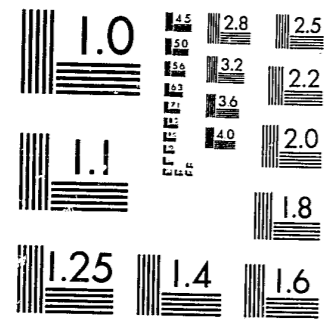


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United States Department of Justice
Washington, D. C. 20531

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FINAL REPORT
ASSOCIATED PUBLIC-SAFETY COMMUNICATIONS OFFICERS
PROJECT 17
TASK 7801501

CONTACT PERSONS, PUBLIC-SAFETY COMMUNICATIONS
WASCO COUNTY, OREGON

PREPARED FOR: JOHN B. MAGILL, SHERIFF
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INTRODUCTION

The Sheriff of Wasco County, Oregon, reports that his office is experiencing communications problems. Specifically, these problems include:

1. Radio channel congestion, with frequent instances of delays in accessing the channel.
2. Inadequate radio system coverage with some areas of the county completely out of communication, other areas marginal.
3. Dispatch Center equipment, location and layout is inadequate.

As a part of APCO Project 17, an advisor was assigned to visit Wasco County, investigate the situation and develop advisory recommendations. The visit took place the week of January 8, 1979. This is the advisory report.

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SKETCH OF DISPATCH CENTER

BLOCK DIAGRAM OF THE DALLES CONTROL
STATION EQUIPMENT

I. BACKGROUND INFORMATION

The Area. North Central Oregon. About 80 miles east of Portland, along the Columbia River, with Klickitat County, Washington, just across the river, Hood River County on the west and Sherman County on the east. Wasco County also has common borders with Gilliam County, Wheeler County, Jefferson County, Marion County and Clackamas County.

Wasco County. Population 20,600. Area 2,392 square miles. Principal city and County Seat is The Dalles, with a population of 11,200, in an area of 4.7 square miles. Highway 197 bisects the county, running south from The Dalles, with Interstate 80N carrying commerce and tourists along the Columbia River for about 35 miles within the county. Highways 97 and 26 are major north-south routes that pass through the south portion of the county. Topography is rugged, with deep river gorges and high plateaus.

The Office of Sheriff. John B. Magill, elected official and professional law enforcement officer. Offices, dispatch center and jail are in the County Courthouse at 5th and Washington Streets, The Dalles. The jail and courthouse also serve several surrounding counties. There is a Resident Deputy in the southern area of the county.

Special County Events. Annual Tygh Valley Rodeo in May attracts some 15,000 visitors. The County Fair in Tygh Valley in August attracts a like number. Tourists along the Columbia and white water river trips along the Deschutes all add to the Sheriff's problems.

II. EXISTING COMMUNICATIONS SYSTEMS

Radio System. Three mobile relay base stations are used in the Wasco County dispatch system. Located on Wasco Butte and near Shaniko in Oregon and on Haystack Mountain in Washington (see map), these relays (156.090 talk-out) are accessed by mobiles and controls on 154.950 using CTCSS tones to manually select the desired relay. The following law enforcement agencies use this three relay set for dispatch. For most of these agencies, it is the only channel available.

Oregon

Wasco County Sheriff
 Sherman County Sheriff
 Gilliam County Sheriff
 Hood River County Sheriff
 Condon Police Department
 Dufur City Marshall
 Dufur Ambulance
 Maupin Ambulance
 Sherman County Ambulance

Washington

Klickitat County Sheriff
 Washington State Patrol
 Washington State Fish and Game
 Bingen Police Department
 White Salmon Police Department
 Yakima Indian Police Department
 Washington Ambulance

The total number of control, mobile, portable and other units accessing one or more of these relays is unknown. The main control and probably the only one able to access all three relays is located in The Dalles and can be operated by either the Sheriff Dispatch Center (SO) or the City of The Dalles Communications Center (City Comm) by wire line. This station can also be operated in a simplex "local" mode on 156.090. The same wire line is used for intercom between the SO and City Comm (about two blocks apart), and is a key element in coordination. Mobile relays and control equipment are about eight years old.

Dispatch Center Equipment. In addition to the General Electric remote unit to operate the control base, the Wasco County Sheriff's Office has been equipped with a State Patrol Alert Monitor Receiver, a Handie-Talkie tuned to The Dalles simplex police channel and an encoder to allow radio paging. Other equipment includes an intercom system to other courthouse offices and the jail; a four-camera, two monitor closed circuit TV system that allows remote monitoring of some jail areas and video taping capability. The outside entry door has a night bell and electric latch, with a release located at the dispatcher position. There is no provision for audio recording in the SO. (The radio control line is recorded at The Dalles City Comm, but not repeater

output). There is no provision for direct access to the Oregon State Information System; all requests for driver or vehicle information are relayed to City Comm for entry and return. All teletype traffic to or from the SO is also relayed through City Comm.

Telephone Equipment. Two emergency and two business lines terminate on key equipment. No provision for transfer of calls. No provision for audio recording of calls. No provision for automatic dialing or direct line equipment to hospital, ambulance, fire department or other emergency services.

Dispatch Center Operational Procedures. The SO dispatcher position is normally operated by a Clerk-Matron and is in full operation continuously. The Clerk-Matron dispatcher also acts as Jail Matron when needed, answers emergency and administrative telephone lines, keeps telephone and radio logs, handles front desk activities, takes reports, files, types, makes video recordings, relays information to and from the City Comm and, in general, keeps track of the total operation.

Mobile and Portable Equipment. It is beyond the scope of this study to detail all the Wasco County radio equipment. The "front line" or primary patrol car equipment typically includes a radio, with tones to access any

of the three relays and simplex "local" capability on 156.090, electronic siren and the usual police package. Some units have CB capability. The Sheriff's rolling stock includes a 4-wheel drive vehicle and other special units. An exact inventory of equipment is not available.

III. SPECIFIC PROBLEM AREAS

1. Radio Channel Congestion. With nine Oregon agencies and seven Washington agencies using the same mobile relay system for primary dispatch, some conflict, confusion and congestion is inevitable. Even though some of the agencies are small in "number of units" or not busy in terms of "calls for service", they ARE responding to public-safety needs and each is involved in dire personal safety situations at some time.

With the present radio system loading, it is often necessary for a field unit to wait 30 to 40 seconds to access the channel and occasionally as long as two minutes. This could and would happen even if the field unit had an immediate emergency.

Message content and normal operating procedures of most of these agencies is within good dispatch practice. A spirit of cooperation is evident and interagency coordination is routine.

A significant factor is that all of these agencies are growing. The entire area is developing new industries, new population centers and new problems. There are several annual special events that increase channel loading and overload the system.

A problem allied with the number of agencies

sharing the channel is non-uniform operating procedure and non-uniform radio maintenance standards. The net effect is some unnecessary repetition and confusion. The most evident example of non-uniform maintenance is a very wide difference in "loudness" of mobile units, which can and does result in distraction by "loud" units or missed calls by "weak" units. Some of the difference in loudness and clarity may be microphone technique.

There is no provision for emergency or back-up power at mobile relay sites. No provision for intertie or intruder alarms at relay sites.

2. Radio System Coverage. The radio system, with three mobile relays provides adequate coverage of most of the service area. There are, however, important areas of Wasco County that have marginal or no coverage. Several river canyons and other low areas are shaded; most noticed is the Deschutes River Canyon, along the east side of the county. This river has become popular for river-running and other recreational use. The Sheriffs of Wasco and Sherman Counties are jointly involved in rescues and other activities along the river and are out of radio contact completely.

In other areas, deputies have learned through experience that they will be beyond radio range, and

a common call is that "Unit ABC will be off the radio in XYZ area". Many times repeat calls are necessary because the relay is not captured by the mobile unit or flutters in and out. Obviously, this is an undesirable situation that places the officer in jeopardy.

3. Dispatch Center Equipment and Operation. The Wasco County Sheriff's Office is the primary control for the radio system. The location, layout and equipment provided are rather typical in that they have developed over years of operation, with some items installed to answer some special need, some procedures developed to cover a special circumstance and the total operation a compromise between necessity and availability.

Some specifics:

(a) All requests for the Oregon State Information System on vehicles, drivers and other criminal records are relayed through The Dalles City Communications Center via intercom on the radio control line. This system and procedure not only results in delay, double-handling and errors, it also means that the radio system is unavailable for other traffic.

(b) The dispatch area is public, with noise, confusion and distractions.

(c) The dispatcher doubles as Jail Matron, report clerk, typist, telephone clerk and handles several other duties as well.

(d) The county jail and dispatch center are operated in close cooperation. That is, the jailer and the dispatcher are often the only two people on duty in the area. They assist each other, and each acts as security for the other. This arrangement is efficient and effective, except that there is no reliable means of two-way communication between them. Once the jailer leaves his desk and the telephone/intercom, he is out of communication with the dispatcher and cannot summon help.

(e) The dispatch center telephone system has no provision for separate dial-out or private line service for hospital, ambulance, tow service or other coordination. The dispatcher normally uses one of the two incoming emergency lines to dial outgoing calls.

IV. ADVISORY RECOMMENDATIONS

1. Radio Dispatch System. It is evident that this single radio system serving law enforcement agencies in several counties of Oregon and Washington is inadequate at present and will not meet future needs. It seems desirable for the Oregon agencies to develop a separate radio system with Wasco County as the hub. The existing system could be reworked and retained at the Wasco and Haystack sites for primary dispatch of Washington agencies and to provide for coordination between Oregon and Washington.

Wasco County should coordinate this effort and act as the hub of the new system because of geographical locations, because of population distribution and because of the regional courthouse and jail facility already established.

As this new radio dispatch system is developed, consideration should be given to:

- (a) Additional or relocated mobile relay sites to furnish reliable coverage of the service area.
- (b) Microwave or other intertie system between controls and relay sites to allow automatic voting and selection, alarm functions and other operational aids.
- (c) An emergency power system for relay sites.

- (d) Adequate control equipment for each county to operate effectively in the system.
 - (e) Expanded use of portable radios.
 - (f) Selective calling and/or automatic identification equipment.
 - (g) Close cooperation or combined operation with The City of The Dalles.
2. Sheriff's Office Dispatch Center. Consideration should be given to:
- (a) A terminal to provide access to the Oregon State Information System.
 - (b) A logging recorder for radio and telephone systems.
 - (c) An "instant-replay" recorder for emergency telephone lines.
 - (d) Remodeling the dispatch area to provide security for personnel and for efficient operation. This might include separation of dispatch function and jail function as well as some protection of both from public access.
3. The recommendations noted above are obviously long-term in nature and will require significant planning efforts and funding commitments.

While not intended to shadow or diminish the need for future major improvements, the following short-

(d) Adequate control equipment for each county to operate effectively in the system.

(e) Expanded use of portable radios.

(f) Selective calling and/or automatic identification equipment.

(g) Close cooperation or combined operation with The City of The Dalles.

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(d) Remodeling the dispatch area to provide security for personnel and for efficient operation. This might include separation of dispatch function and jail function as well as some protection of both from public access.

3. The recommendations noted above are obviously long-term in nature and will require significant planning efforts and funding commitments.

While not intended to shadow or diminish the need for future major improvements, the following short-

term, immediate "partial relief" recommendations are offered:

(a) Convene a "coordinating council" of the participating agencies to develop standard operating procedures and to provide a framework for training of all personnel. Training should be centered on efficient use of the channel, microphone techniques, etc. Special emphasis should be placed on "breaking" long messages so that an emergency could access the channel.

(b) Develop maintenance standards for all equipment. Regular preventative maintenance, with special attention to transmitter output and receiver sensitivity, could reduce the marginal coverage areas and provide more reliable operation overall.

(c) Develop better methods for handling inquiries to the Oregon Information System. Perhaps direct radio access to City Comm or a satellite terminal could be accomplished.

(d) Consider a card dialer on a separate telephone line for outgoing calls at the dispatch desk. Consider separate billing for each telephone member for administrative control.

(e) Consider some audio recording capability at the dispatch desk. A simple manually operated cassette recorder would be useful for training and selective recording of calls.

V. Summary. Wasco County is the hub of a dynamic, growing area in North Central Oregon that encompasses several counties. The law enforcement communications system serving the area is outdated, inadequate and will require much more than a simple expansion to meet future needs.

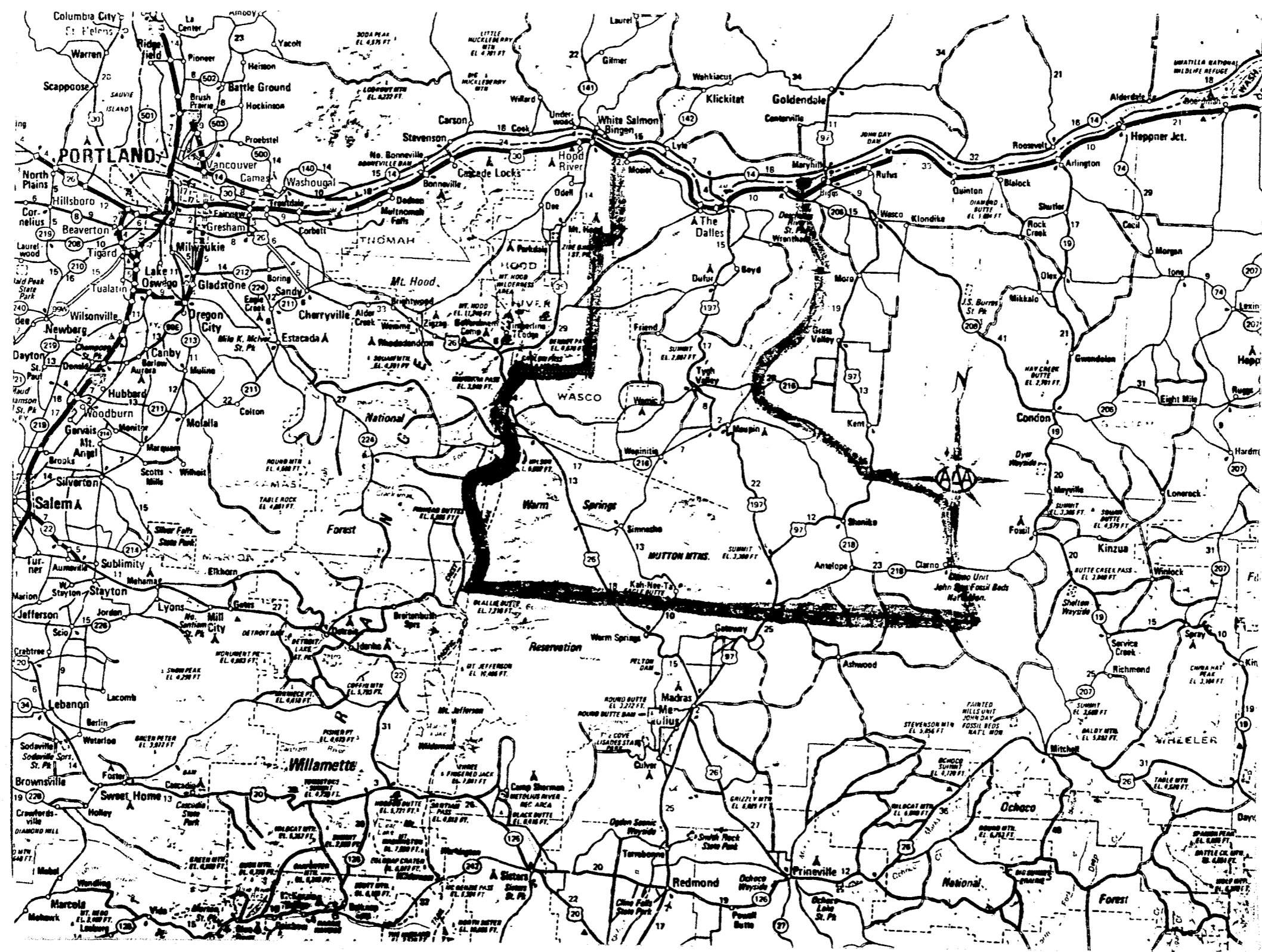
This report is intended to outline the problem areas and recommend a path to solving those problems. There are certain short-term "relief" recommendations included, but the main thrust should be to dedicate sufficient effort to the planning process to satisfy the long-term needs of:

1. Restructuring the radio system to provide adequate coverage of the service area, to provide rapid access to law enforcement information files and to provide for the safety of the officer in the field.

2. Rebuilding the dispatch center, telephone reporting system and control equipment to provide for efficient operation and for the safety and comfort of dispatch center personnel.

A request for proposals to begin this planning task should be issued as soon as practicable to allow sufficient time for orderly development.

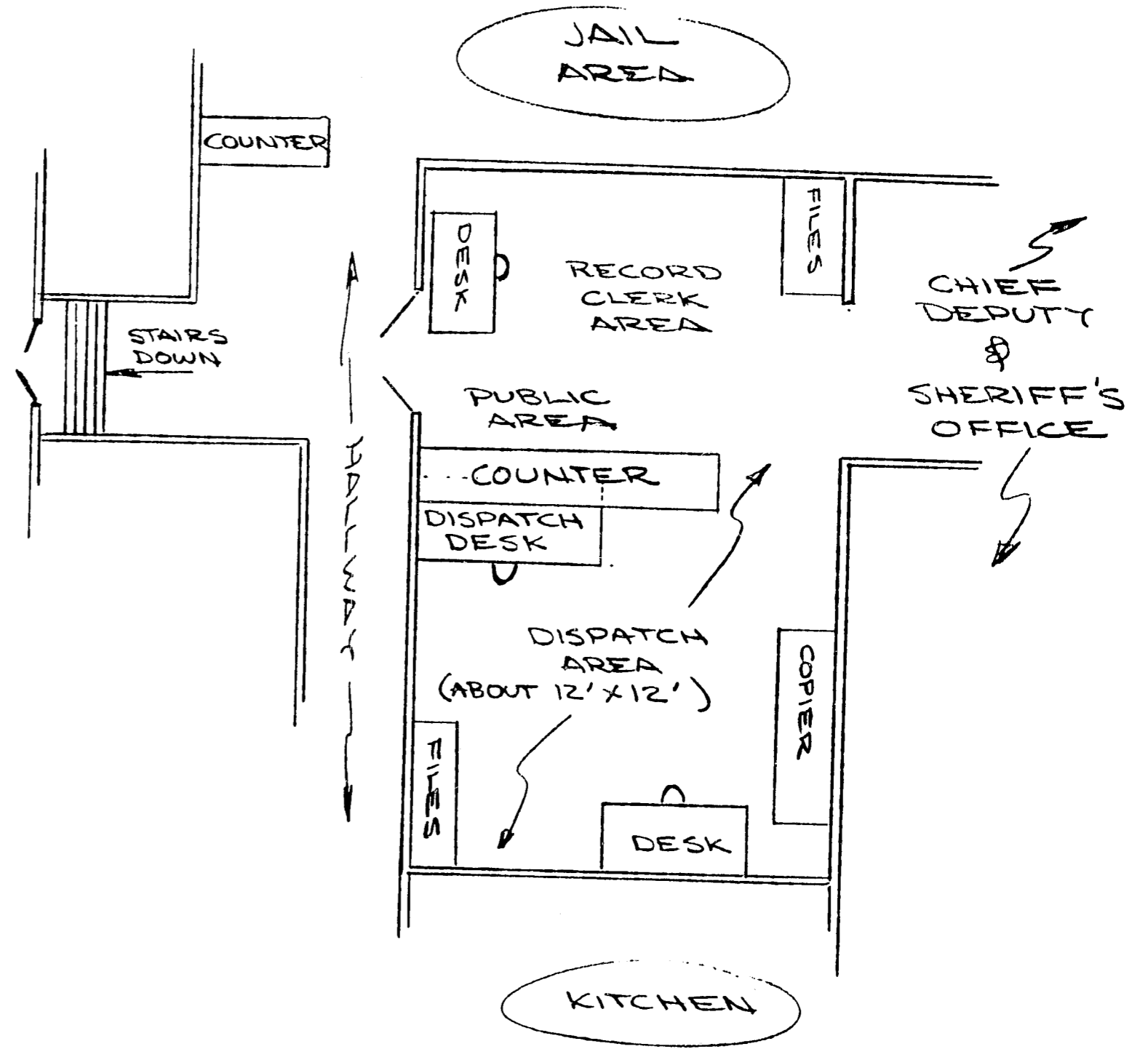
APPENDIX





SUBJECT WASCO COUNTY SHERIFF'S OFFICE DISPATCH CENTER

SHEET NO. _____ OF _____
 JOB NO. _____



DATE 1/79

SUBJECT THE DALLES

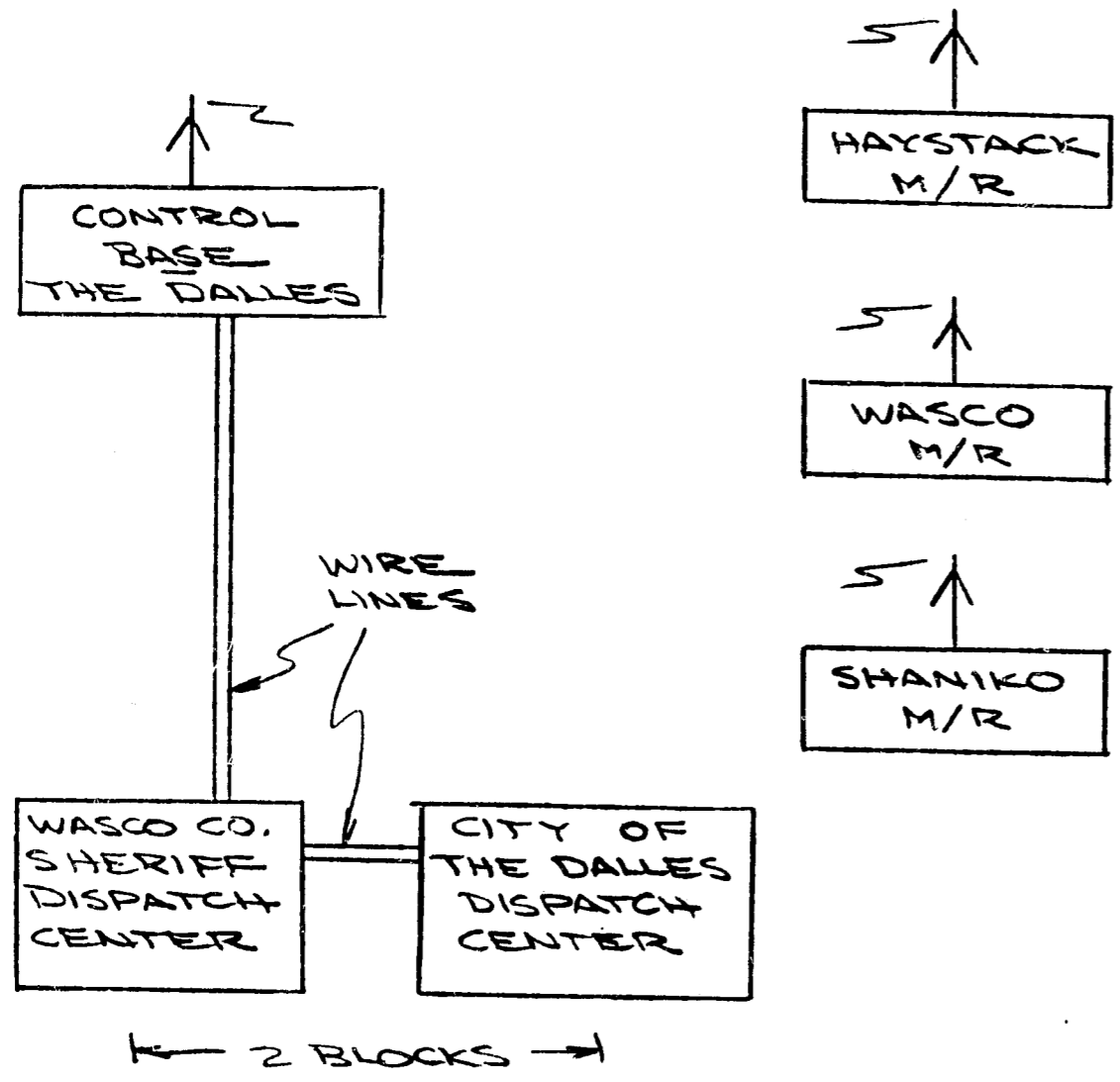
SHEET NO. OF

CHKD. BY DATE

CONTROL BASE

JOB NO.

WASCO CO. SHERIFF



NOTES:

THE CONTROL BASE MAY ACCESS ANY OF THE M/R.

THE CONTROL LINE IS USED FOR "INTERCOM" COORDINATION.

END