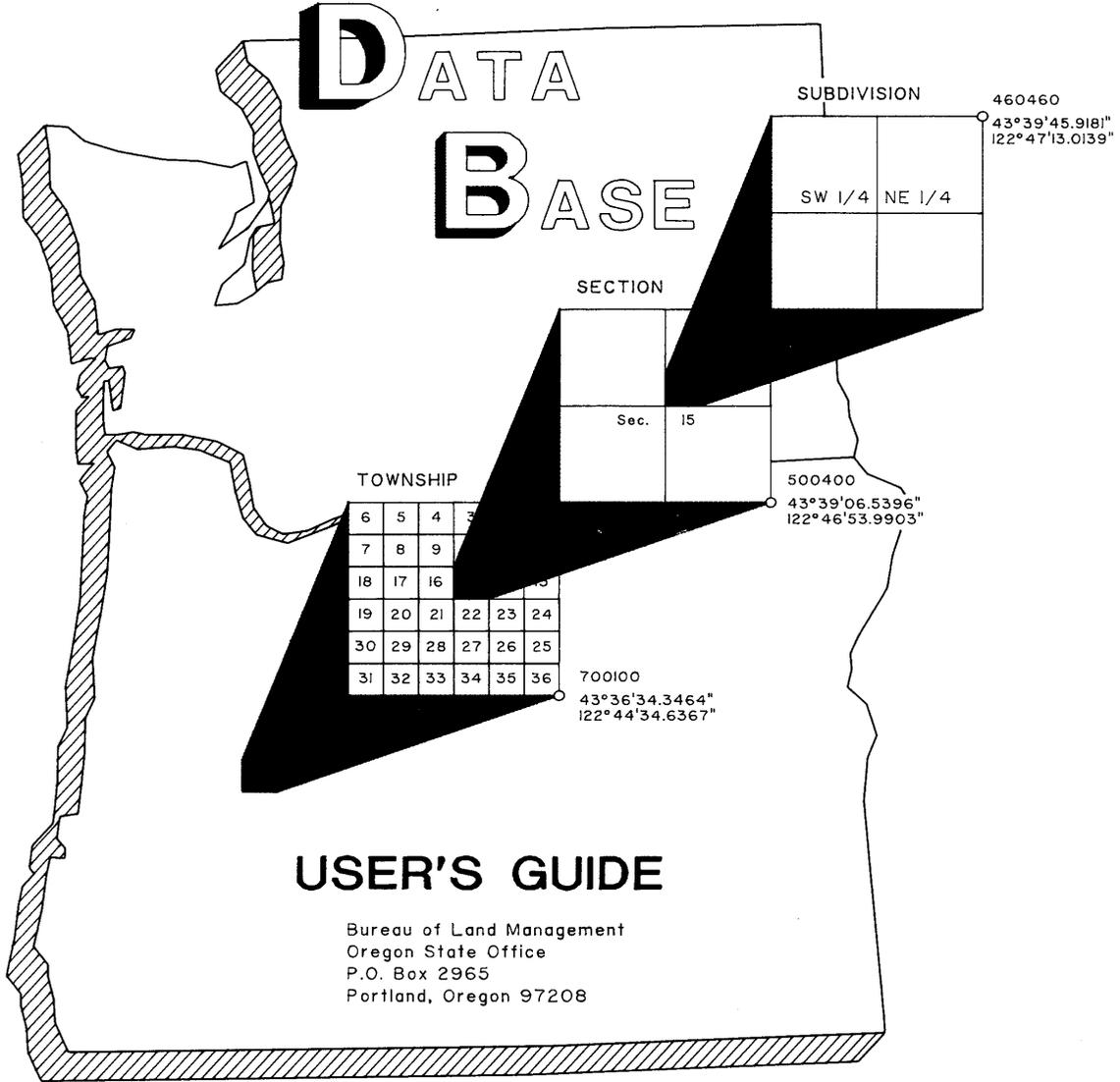


# GEOGRAPHIC COORDINATE

# DATA BASE



## USER'S GUIDE

Bureau of Land Management  
Oregon State Office  
P.O. Box 2965  
Portland, Oregon 97208

## INTRODUCTION

The geographic coordinate data base (GCDB) is a data base containing geographic coordinates, and their associated attributes, for all corners of the Public Land Survey System (PLSS). It is being developed and funded by the Bureau of Land Management for the purpose of automating current manual land records processes. In cooperation with State and local governments, the BLM Oregon State Office is populating the GCDB with the best coordinate values possible in the initial collection phase; however, the positional accuracy of the coordinates will vary dependent on the quality of the data used. The GCDB can serve as the foundation or framework that all users within the State will add to for their own specific needs.

There are three general requirements for the GCDB within the BLM, the first is to support a spatially oriented graphic system that automates the production of Master Title and Use Plats; the second uses the geographic coordinates to relate legal land descriptions, ownership and status information to map-referenced points on the earth's surface; the third is to provide the limits, or boundaries, for resource data collection.

The geographic coordinates and their associated products have NO legal significance. They should be used for record keeping, mapping, graphics, and planning purposes only.

### Coordinates to be computed

1. All rectangular corners down to the 1/1 6 section corners.
2. All special survey corners and angle points (DLC, meanders, mining claims, HES, etc.).
3. All subdivision of section corners down to the 1/1 6 section corners or to the level that the Master Title Plat dictates.

### Data Sources for GCDB

#### Survey Data

1. Bureau of Land Management
2. U.S. Forest Service
3. County Surveyors Office
4. U.S. Fish and Wildlife
5. U.S. Bureau of Reclamation
6. U.S. Army Corps of Engineers
7. Oregon State Highway Department
8. Bonneville Power Administration
9. Private Utility Companies

#### Control Data

1. Bureau of Land Management
2. U.S. Forest Service
3. U.S. Geological Survey

4. U.S. Army Corps of Engineers
5. NGS/NOAA
6. Bonneville Power Administration
7. Oregon State Highway Department
8. Oregon State Department of Revenue
9. County Surveyors Office
10. Private Utility Companies
11. Local Municipalities

There is no "standard" per se for the survey and control data. Simply put, we will use whatever works best.

The abstraction process clears up any ambiguities in the survey records, clearly identifies the correct spatial relationships between corners, shows the class of survey, the type, quantity, and location of control, and determines the correct parenthetical distances to be used for lotting proportioning.

#### RAW Data File Contents (R-File, or .RAW extension)

Most reliable bearing and distance between corners or points, and a numerical source document code.

The township abstraction data is transferred to 1: 100,000 scale maps to afford the surveyors doing the adjustments a wider view of where the better survey and control exists. The approach we take is similar to that of a first, second, and third order adjustment done for horizontal and vertical control surveys. The best data is adjusted first and held as control for the subsequent adjustments.

#### Information Collected in Final File (LX-file, or .LX extension : Points and Lines)

1. Six digit point identification number
2. Latitude and Longitude (NAD 27)
3. Reliability (see attached sheet)
4. Graphics (pen) instructions
5. State Plane or UTM coordinates

#### Additional Records Compiled

Statistical information on assigned reliabilities, based on comparisons of GCDB computed coordinates with field generated coordinates, either through GPS or conventional survey methods.

Descriptions and examples of the R-File, Z-file, and the LXGCF file are included in this User's Guide. We can't promise you that the data is flawless. Let us know if you find any problems; this will help us improve the quality of the data base. If you have any questions about anything, give us a call, 503 952-6151.

## CAVEAT

The geographic coordinates, and their by-products, were generated from either Public Land Survey System Coordinate Computational Software (PCCS) using official Public Land Survey System (PLSS) records (and when deemed necessary, State, County, and private survey records) or digitized coordinates from various cartographic and photographic products. Except where a corner monument has been used as a first or second order control point and the results are of public record, the coordinate values used by GCDB are established with varying reliability based on the source material and method of data input. These coordinate values will be updated as better data and methodology are available. Graphic representations using these values depict the most probable township configuration and may change as a result of such updates.

The geographic coordinates and their associated products have NO legal significance. They should be used for record keeping, mapping, graphics and planning purposes only.

**No warranty is made by the Bureau of Land Management for use of the data for purposes not intended by BLM.**

## **CONTROL and RELIABILITY**

To avoid some confusion it is probably a good idea to explain how the term "control" is used in GCDB. Control is the term we use to describe a PLSS corner that has had coordinate values attached to it by some physical means, i.e., aero-triangulation via aerial photography, conventional survey ties to horizontal control (triangulation stations), GPS observations, or digitized from USGS 7-½ minute topographic quadrangle maps (recovered PLSS corners indicated with a bold tick). The control coordinates' accuracy or "reliability" will vary dependent on the method by which they were obtained, so we have assigned reliability codes to ranges of expected accuracy both for control coordinates and computed coordinates (see following sheet for codes and ranges).

Reliability, then, is a term used to express the expected positional accuracy, relative to the earth's surface. As surveyors we use our professional judgement in the field to interpret evidence and we exercise that same professional judgement in gathering the input data, and interpreting the computations that result. Since we are gathering survey measurements from every conceivable source we must first determine that the data we will use is the most accurate in ground and angular measurements, that correct survey procedures have been followed in reestablishing lost corner positions, and that we have a common basis of bearing. In assigning reliability codes to computed coordinates, we will look at the control reliability at both ends of a traverse (or network), the closure reports of the traverse (or network) between the control, and including what we know of the technology available to-- and the skill of -- the surveyors whose measurements we are using.

## COORDINATE RELIABILITY

### Code Reliability

- |   |                     |   |
|---|---------------------|---|
| 1 | 1 foot or less      |   |
| 2 | 3 feet or less      |   |
| 3 | 10 feet or less     |   |
| 4 | 40 feet or less     | Supports USGS and USFS with a cutoff at the National Map Accuracy Standard for 7-½ minute maps. |
| 5 | 100 feet or less    |   |
| 6 | 200 feet or less    | Supports USGS when PLSS lines are depicted by dashed lines.                                     |
| 7 | Over 200 feet       | Supports USGS when PLSS lines are not depicted.   |
| 8 | Possibly fraudulent |   |

## CONTROL RELIABILITY

### Code Reliability

- |   |                  |   |
|---|------------------|---|
| 1 | 1 foot or less   | First Order triangulation or GPS* stations  |
| 2 | 3 feet or less   | Second- and third-order triangulation stations, Doppler positions, and some GPS* values.            |
| 3 | 10 feet or less  | Photo-generated coordinates, survey ties to triangulation or GPS* stations, and Inertial positions. |
| 4 | 40 feet or less  | Digitized control from 7-½ minute Quadrangles, resource collection grade GPS* receivers.            |
| 5 | 100 feet or less | Digitized control from 15-minute quadrangles, resource collection grade GPS* receivers.             |

\* Coordinate values obtained from GPS receivers will vary in accuracy and reliability depending on the methods of data collection and post processing utilized.

**R-File** (or .RAW file)

R-file - Contains Distance, Bearing, and Source ID, used to build traverse routes between known coordinates (control on PLSS corners), and generate geographic coordinates for the intervening points.

| TWP 23S RNG 12E PM WILL |        |        |       | OR      | DATE 91/7/29 |
|-------------------------|--------|--------|-------|---------|--------------|
| 999999                  |        |        |       |         |              |
| 700100                  | 700140 | 40.000 | 4     | 0.      | 1            |
| 700140                  | 700200 | 40.000 | 4     | 0.      | 1            |
| 700200                  | 700240 | 40.000 | 4     | 0.      | 1            |
| 700240                  | 700300 | 40.000 | 4     | 0.      | 1            |
| 700300                  | 700340 | 40.000 | 4     | 0.      | 1            |
| 700340                  | 700400 | 40.000 | 4     | 0.      | 1            |
| 700400                  | 700440 | 40.000 | 4     | 0.      | 1            |
| 700440                  | 700500 | 40.000 | 4     | 0.      | 1            |
| 700500                  | 700540 | 40.000 | 4     | 0.      | 1            |
| 700540                  | 700600 | 40.000 | 4     | 0.      | 1            |
| 700600                  | 700640 | 40.000 | 4     | 0.      | 1            |
| 700640                  | 700660 | 20.000 | 4     | 0.      | 1            |
| 700660                  | 700700 | 17.000 | 4     | 0.      | 1            |
| 240200                  | 200200 | 39.975 | 4     | 894800. | 2            |
| 200200                  | 140200 | 40.000 | 4     | 894300. | 2            |
| 140200                  | 120200 | 20.000 | 4     | 894300. | 2            |
| 120200                  | 100200 | 20.400 | 4     | 894300. | 2            |
| 700300                  | 640300 | 40.085 | 4     | 893600. | 2            |
| 640300                  | 600300 | 40.085 | 4     | 893600. | 2            |
| 600300                  | 540300 | 39.865 | 4     | 895300. | 2            |
| 540300                  | 500300 | 39.865 | 4     | 895300. | 2            |
| 500300                  | 440300 | 40.160 | 4     | 894200. | 2            |
| 440300                  | 400300 | 40.160 | 4     | 894200. | 2            |
| -----                   | -----  | --     | ----- | --      |              |
| 1                       | 2      | 3      | 4     | 5       |              |

- 1 - From and To station Point ID's
- 2 - Horizontal distance in chains
- 3 - Bearing quadrant 1 =NE, 2=SE, 3=SW, 4=NW
- 4 - Bearing in degrees, minutes, and seconds. The decimal is located after the seconds. Bearings refer to the true meridian (astronomic).
- 5 - Source Identifier number (SID). Each data source, whether it is an official cadastral survey plat, state or local survey plat, deed, etc., utilized in generating coordinates for the GCDB, will be assigned a unique (within the township) SID number. (See Z-file example)

**Z-File** (or **.SID** file)

| TWP 14S RNG 15E PM WILL | OR            | DATE 93/06/31                      |
|-------------------------|---------------|------------------------------------|
| 7                       | OR013         | 23-OCT-1984 02 TYE, J.R.           |
| 9                       | OR013         | 26-OCT-1917 02 UNKNOWN             |
| 11                      | OR013         | 06-OCT-1986 02 ARMSTRONG, D.B.     |
| 13                      | OR013         | 24-FEB-1988 02 ARMSTRONG, D.B.     |
| 20                      | OR013         | 01-NOV-1973 02 GRAVE, R.H.         |
| 25                      | BLM           | 19-OCT-1869 01 MELDRUM, J.         |
| 12                      | OR013         | 14-APR-1987 02 ARMSTRONG, D.B.     |
| 10                      | OR013         | 04-APR-1980 02 ARMSTRONG, D.B.     |
| 4                       | OR013         | 09-APR-1976 02 MANSFIELD, E.G.     |
| 3                       | OR013         | 01-JUN-1979 02 MANSFIELD, E.G.     |
| 1                       | OR013         | 21-DEC-1982 02 ARMSTRONG, D.B.     |
| 2                       | OR013         | 21-DEC-1982 02 HICKMAN, G.W.       |
| 8                       | OR013         | 06-MAR-1985 02 HOLLINGSWORTH, J.E. |
| 26                      | OR013         | 16-NOV-1992 02 ARMSTRONG, D.B.     |
| 27                      | OR013         | 21-DEC-1982 02 HICKMAN, G.W.       |
| 17                      | OR013         | 01-JUL-1978 02 ARMSTRONG, D.B.     |
| 22                      | OR013         | 05-APR-1988 02 ARMSTRONG, D.B.     |
| 23                      | OR013         | 27-APR-1987 02 ARMSTRONG, D.B.     |
| 24                      | OR013         | 26-MAR-1981 02 ARMSTRONG, D.B.     |
| ---                     | -----   ----- | ---   -----                        |
| 1                       | 2 3           | 4 5                                |

- 1 - Source Identifier number (SID) Each source document that was used in the GCDB collection process will be assigned a unique SID. The SID is unique only to the township the file relates to.
- 2 - Source Identifier Agency. A code identifying the source of the survey document by agency. The code is explained in the Data Element Dictionary. See Attached Table A.
- 3 - Acceptance Date. For BLM and GLO plats this is the date the Surveyor General or Cadastral Branch Chief signed the plat. For private surveys it is the date when the plat was filed or recorded with the county.
- 4 - Survey Procedure. A Data Element Dictionary code number for the type of survey procedure used, e.g., original survey, dependent resurvey, etc. See Table B.
- 5 - Surveyor Name. The name of the surveyor who conducted the field survey or who signed the recorded plat.

### TABLE A

Please enter the number for the Source Document Agency:  
for the reference code 3507  
DED9125

- |   |   |
|---|---|
| <1>-Atomic Energy Commission(AEC)       | <11>-Nat'l. Geodetic Survey(NGS)        |
| <2>-US Army Map Svc.(now DMA)           | <12>-Nat'l. Park Service(NPS)           |
| <3>-Bureau of Land Management(BLM)      | <13>-US Forest Service(USFS)            |
| <4>-Bureau of Reclamation(BOR)          | <14>-US Geological Survey(USGS)         |
| <5>-Civil Aeronautics Board(CAB)        | <15>-USGS Eastern Mapping Ctr.(TJSGS-E) |
| <6>-Coast & Geodetic Srvy(CGS)          | <16>-Wisconsin Dept of Trans(WIDT)      |
| <7>-Defense Mapping Agency(DMA)         | <17>-Dane County Wisconsin(WI-025)      |
| <8>-Fed Aviation Admin(FAA)             | <18>-Local Surveyr,Ind/Firm(LOCSUR)     |
| <9>-Nat'l. Aeronautics & Space AD(NASA) | <19>-Univ of Wisconsin-Madison(UWI)     |
| <10>-Nat'l. Bureau of Standards(NBS)    | <20>-Mark Hurd Aerial Srvy,INC(KMS)     |
|   | <21>-Other (County Codes; e.g., OR024)  |

### TABLE B

Please enter the number corresponding to the Survey Procedure desired:  
for the reference code 3507  
DED9127

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| <1>-Original Survey(01)             | <Restoration Survey(14)               |
| <2>-Dependent Resurvey(02)          | <15>-Location Survey(15)              |
| <3>-Independent Resurvey(03)        | <16>-Other-SrvyProcedNotDescribed(16) |
| <4>-Retracement Survey(04)          | <17>-Supplemental Plat(17)            |
| <5>-Amer Land Title Ass Srvy(05)    | <18>-Field Survey Travers(18)         |
| <6>-California Tract Survey(06)     | <19>-Field Survey Triang(19)          |
| <7>-International Boundary Srvy(07) | <20>-Field Survey Trilat(20)          |
| <8>-Not Surveyed-Digitized(08)      | <21>-GPS,FGDC Rel Pos Std.(21)        |
| <9>-Not Surveyed-Protracted(09)     | <22>-GPS,Rel Position Netwrk(22)      |
| <10>-Not Surveyed-Scaled(10)        | <23>-GPS,Rel Position Rad(23)         |
| <11>-Reacquired Lands Survey(11)    | <24>-GPS,Point Position(34)           |
| <12>-Omitted Lands Survey(12)       | <25>-GPS,Procedure unkwn(35)          |
| <13>-Remeasurement Survey(13)       | <26>-Unknown-Srvy Procdr Unkwn(99)    |

**LXGCF POINT and LINE FILE**  
**LX-file (or .LX)**

LX-File - Contains Point ID, Latitude and Longitude, an approximate elevation for the township, Reliability Code, Maximum Closure of Traverse in Feet, Pen Instructions for Graphics, State Plane (or UTM) X and Y Coordinates.

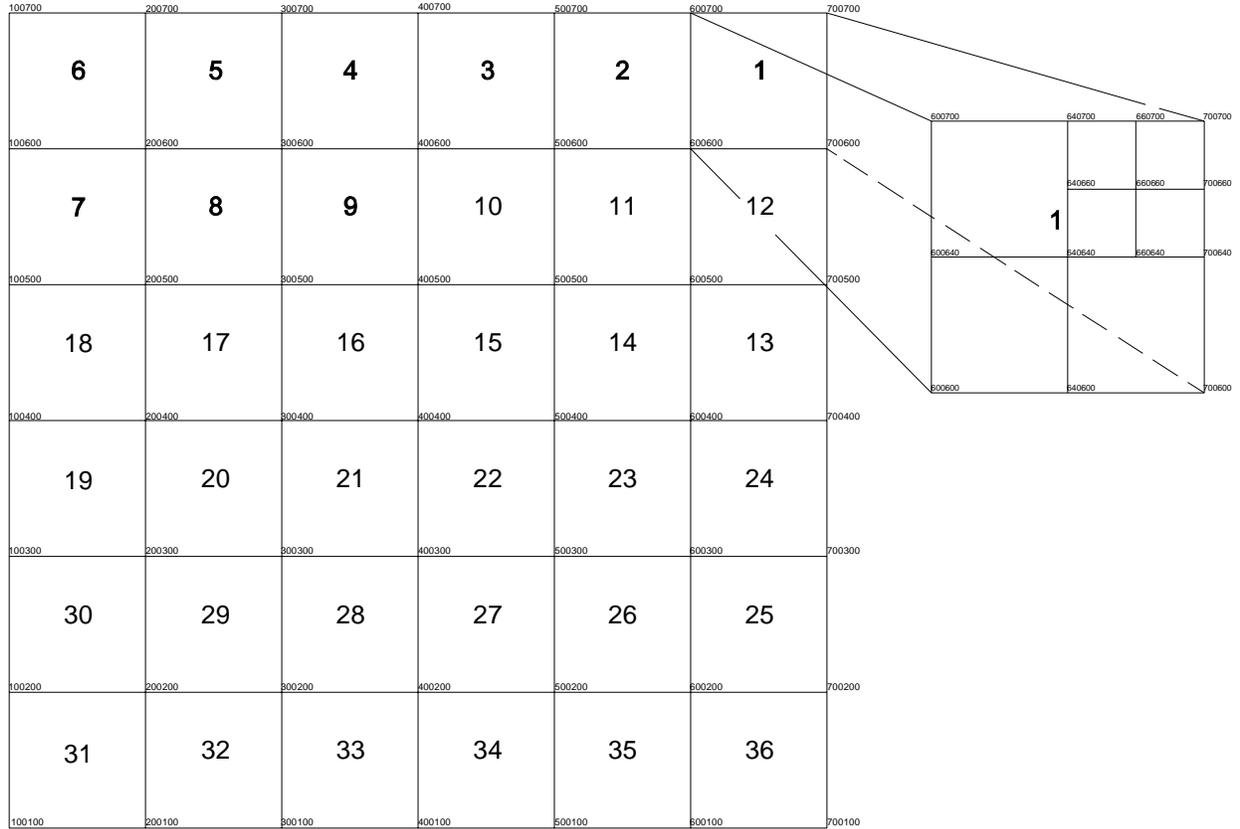
```

TWP 23S RNG 12E PM WILL    OR    DATE 92/08/11
ORIGIN 433400.0000 1211600.0000    1.0 1.0000 1796807.96 693370.89
100100 433151.2031 1211955.1123 5400.00 4 40 1 0 2 1779369.92 680496.86
100120 433204.2153 1211955.0735 5400.00 4 40 1 0 3 1779385.87 681814.16
100140 433217.2274 1211955.0350 5400.00 4 10 1 0 3 1779401.79 683131.46
100160 433230.2639 1211954.9861 5400.00 4 40 1 0 3 1779418.50 684451.22
100200 433243.3004 1211954.9376 5400.00 4 40 1 0 3 1779435.19 685770.98
100220 433256.2851 1211954.7512 5400.00 5 58 1 0 3 1779461.97 687085.39
100240 433309.2699 1211954.5650 5400.00 5 58 1 0 3 1779488.74 688399.82
100260 433322.2546 1211954.3785 5400.00 5 58 1 0 3 1779515.53 689714.24
100300 433335.2394 1211954.1923 5400.00 4 40 1 0 3 1779542.30 691028.68
100320 433348.3475 1211954.2096 5400.00 4 40 1 0 3 1779554.20 692355.74
100340 433401.4557 1211954.2271 5400.00 4 30 1 0 3 1779566.09 693682.82
100360 433414.5638 1211954.2444 5400.00 4 40 1 0 3 1779578.00 695009.89
100400 433427.6719 1211954.2619 5400.00 4 40 1 0 3 1779589.89 696336.96
100420 433440.7127 1211954.2917 5400.00 4 40 1 0 3 1779600.81 697657.22
100440 433453.7536 1211954.3218 5400.00 4 27 1 0 3 1779611.71 698977.50
100460 433506.7943 1211954.3516 5400.00 4 40 1 0 3 1779622.63 700297.76
100500 433519.8353 1211954.3818 5400.00 4 40 1 0 3 1779633.52 701618.05
|-----|-----|-----|---|---|---|-----|-----|
1           2           3   4  5   6           7           8

```

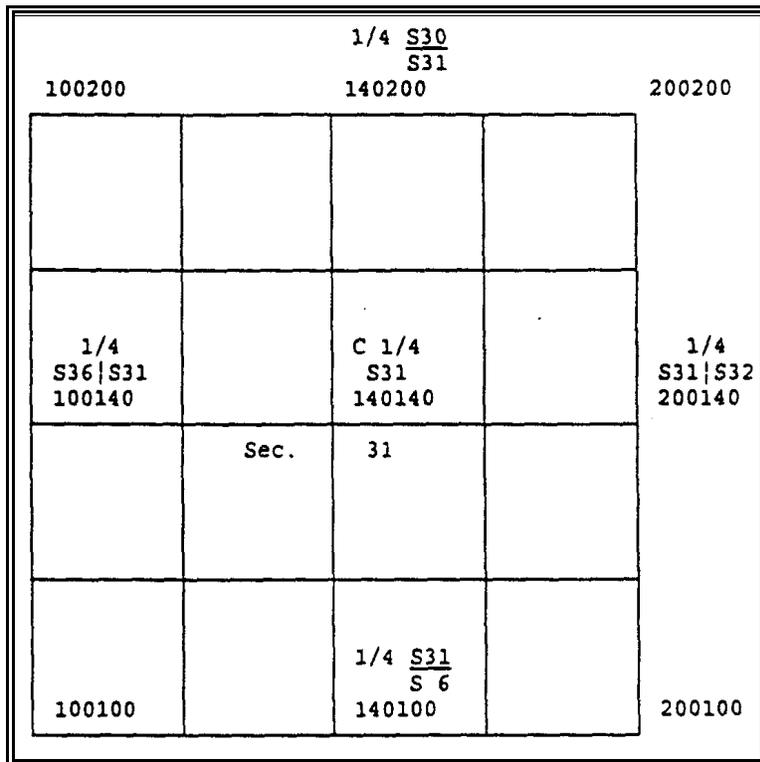
- 1 -Point ID
- 2 -NAD-27 Latitude and Longitude
- 3 -Scaled project elevation
- 4 -Reliability code
- 5 -Maximum misclosure of traverse in feet, or in the case of "control", this value will be the estimated circle of positional error.
- 6 -Pen instructions used in graphics software. The first field is line sequence, the second is line type (solid, dashed, etc.), the third is pen command: 1 = skip, 2 = pen down, 3 = draw, 4 = pen up
- 7 -State Plane coordinates, X value in feet
- 8 -State Plane coordinates, Y value in feet

### GCDB POINT IDENTIFIERS



# One-Quarter Section Identification

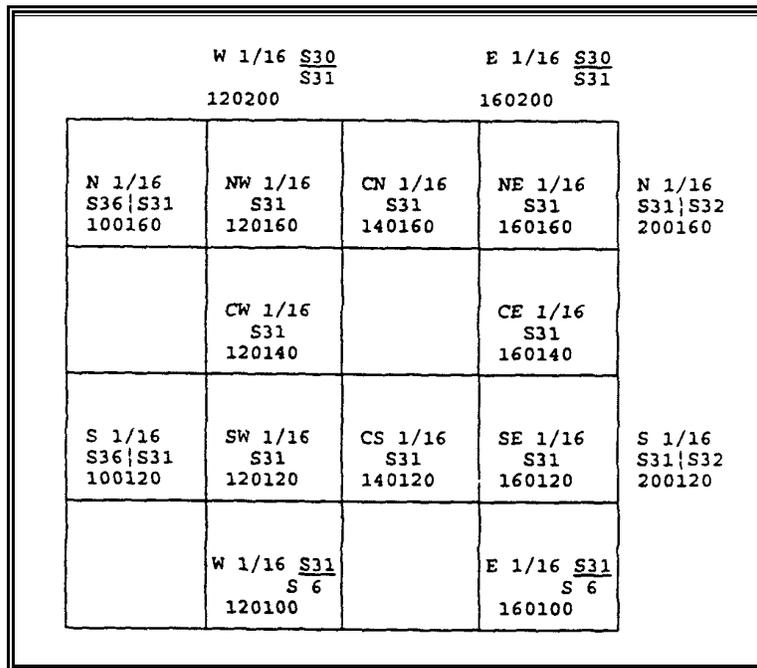
The previous set of point ID's can be utilized to define the four comers of specific sections within a township, but a further dissection is necessary if PLSS comers are to be identified, which were created in the subdivision of sections. The following diagram illustrates the point ID scheme used to identify 1/4 comers created in the subdivision of a standard section. Section #31 will be used to demonstrate this strategy:



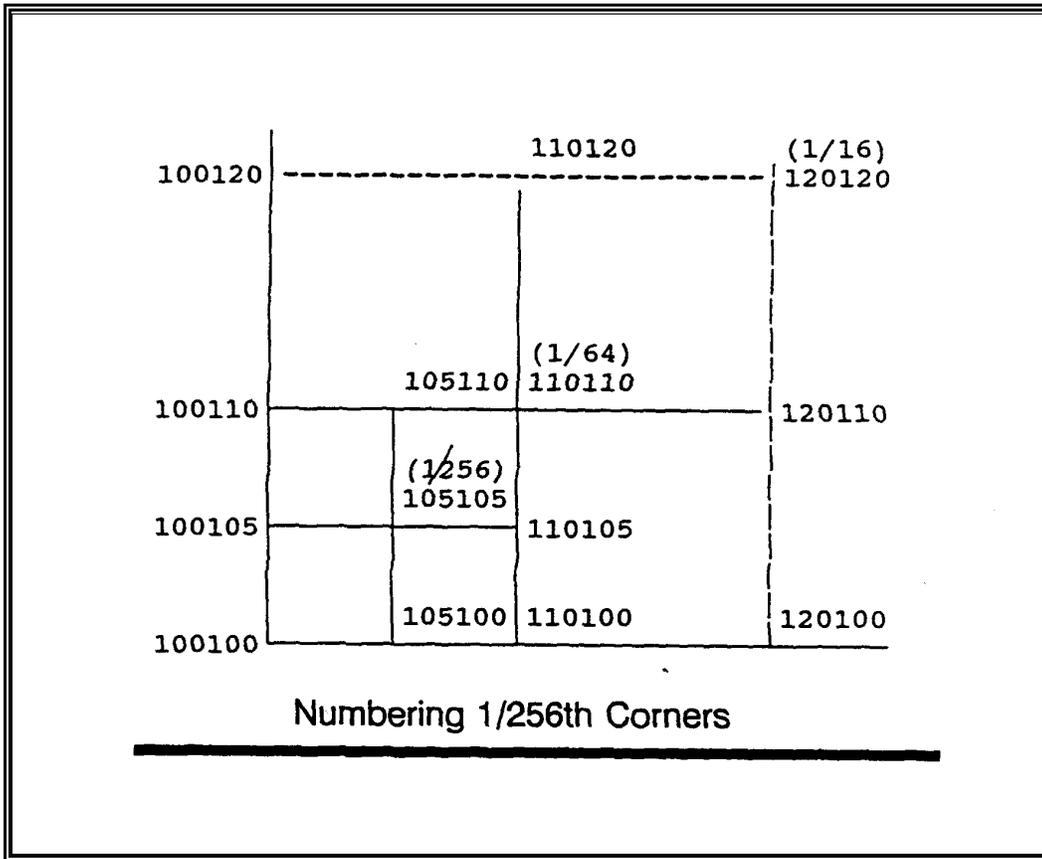
The User will notice that the four 1/4 corners are located between respective section corners, and that the 1/4 corners that fall on the East-West lines are identified with the Prefix 14OXXX, while the North-South lines have 1/4 corners that are identified by a Suffix of XXX140.

## One-Sixteenth Section Identification

The following diagram illustrates the point ID scheme used to identify 1/16 comers created in the subdivision of a standard section. Section #31 will be used to demonstrate this strategy:



The next division identifies 1/16 corners located between respective 1/4 corners or between 1/4 corners and Section corners. Notice that the south 1/16 corner on the west boundary of section 31 is identified with the Suffix of XXX120, while the west 1/16 corner on the south boundary of section 31 is identified with a Prefix of 12OXXX. Further subdivision of sections below the 1/16 section corner level is possible using the same point identification strategy.



**Township Interior Point Identifiers**  
**Non-Standard Rectangular**

For double 1/4 section corners (examples A, B, C and D), the corners for the sections to the North and to the West will always have the standard point identifier, this includes all other aliquot part corners in this situation. In examples A and B, the non-standard and standard point identifiers begin at 200400 and must progress sequentially to 300400 (i.e., A 218400, 220400, etc.). Likewise, examples C and D must progress from 400100 to 400200 (i.e., D 400118, 400120, etc.). In double section corner situations (examples E through L), the closing corner would be given the non-standard number.

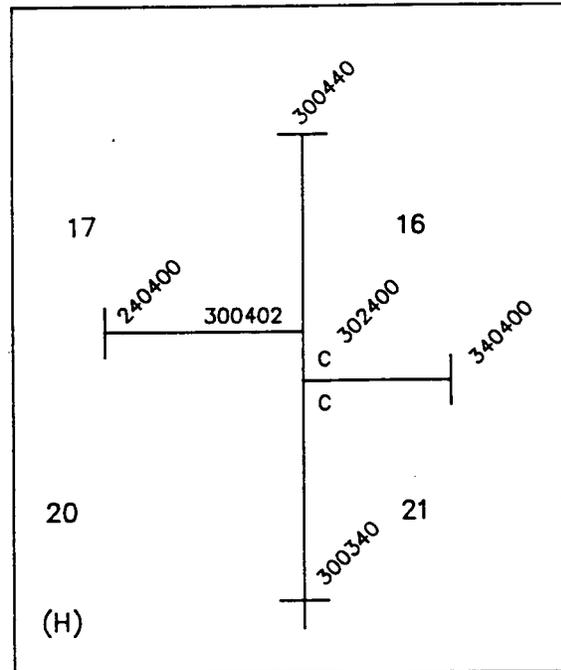
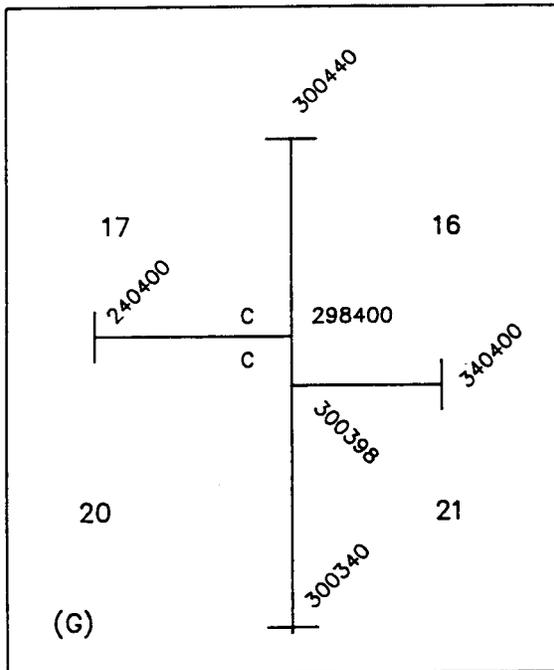
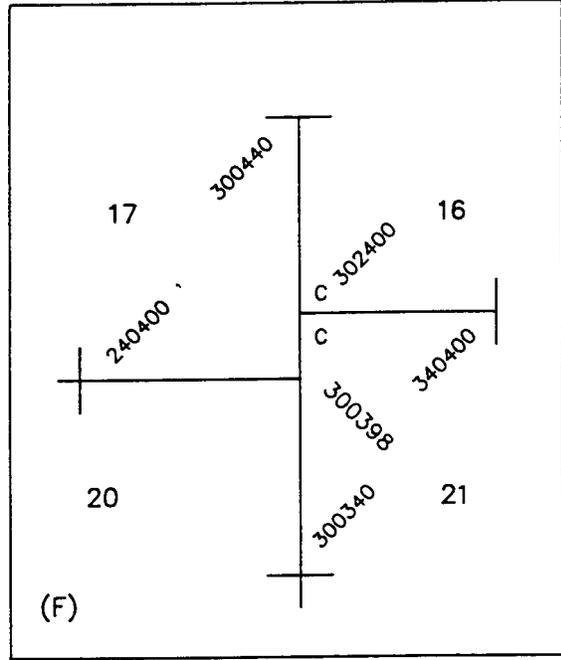
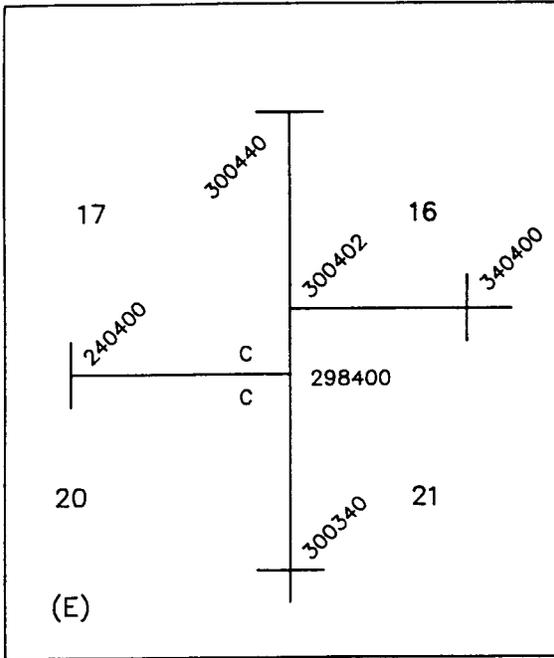
To develop the point identifier for triple section corners, and any other situation not shown here, keep in mind that the graphics program will look at each line, either N-S or E-W, as a whole. For example, in building the E and W 400 line, the program will first look at the last three digits of the point identifiers. Any it finds that are within the value of 2 from the nominal 400 (i.e., 398, 399, 400, 401 and 402) will be captured and placed in a file. The program will then sequence the contents of the file

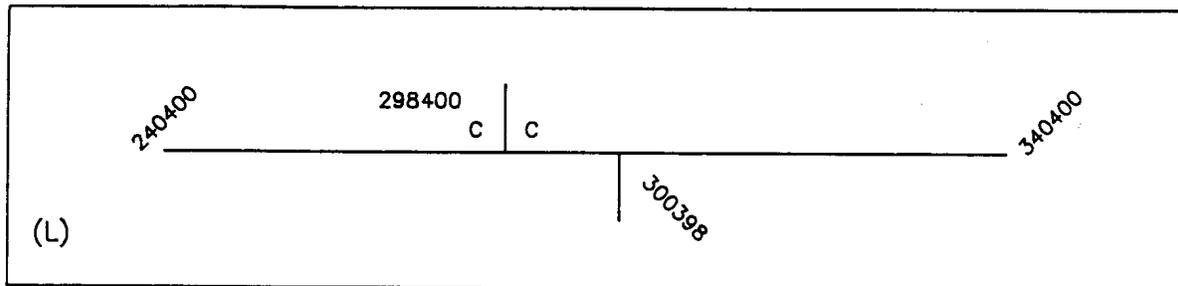
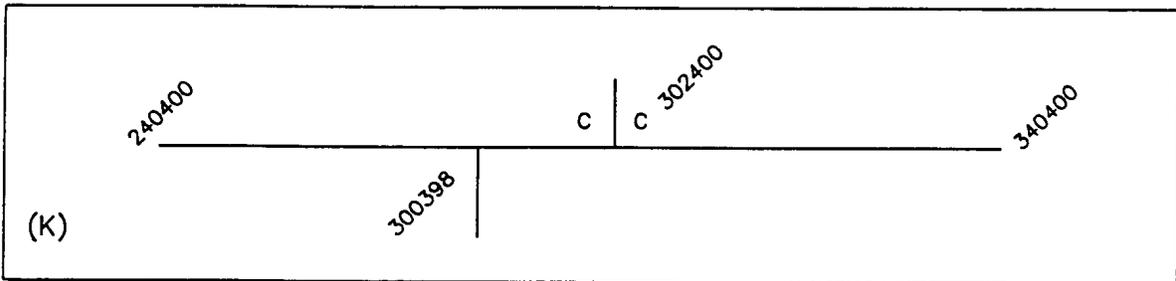
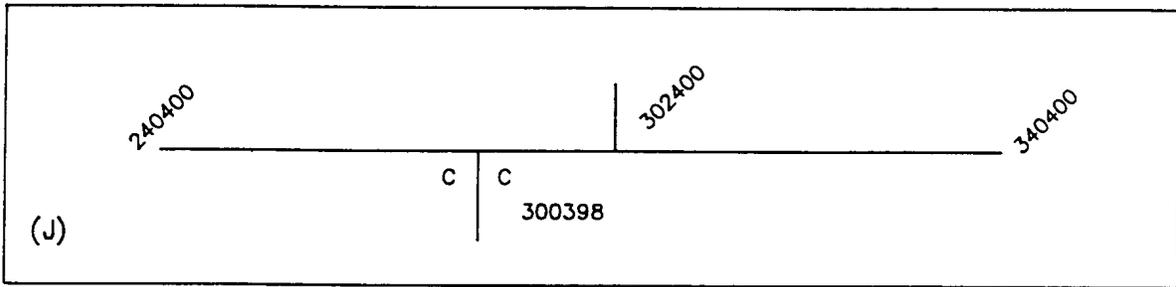
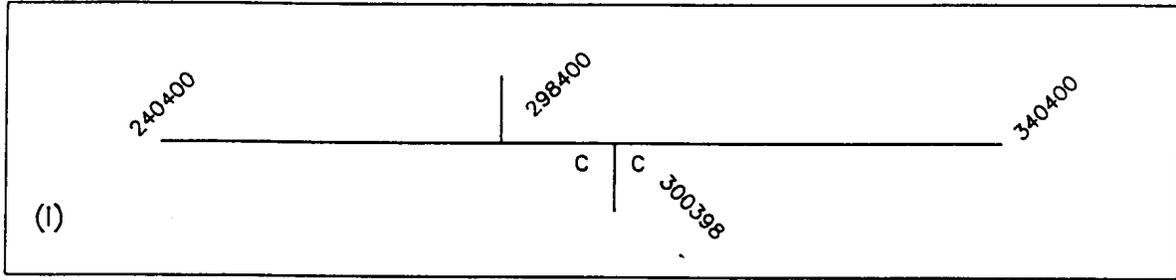
according to the numerical order of the first three digits of the point identifier. The resulting file then defines which points the E-W line will connect through.

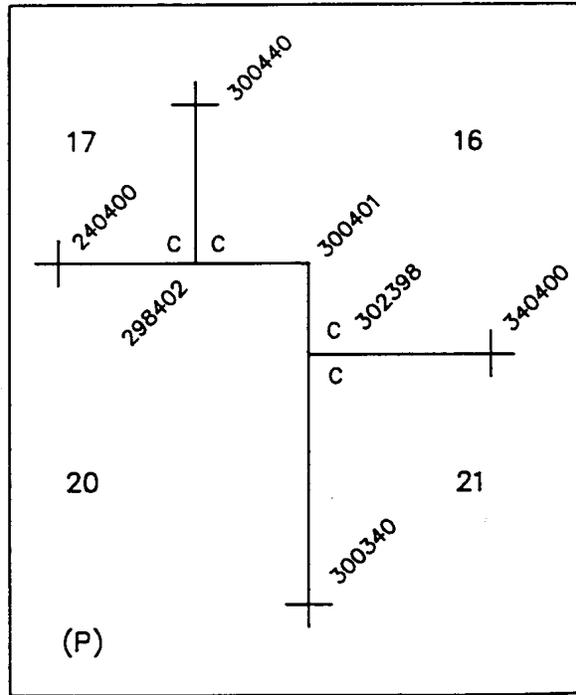
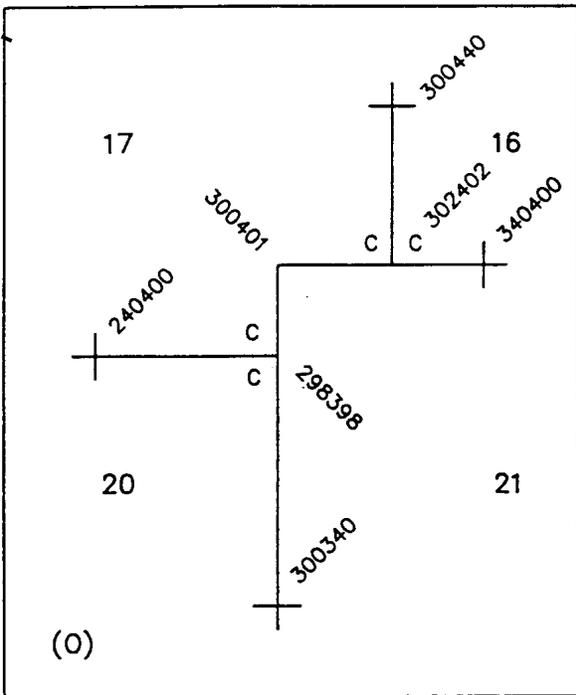
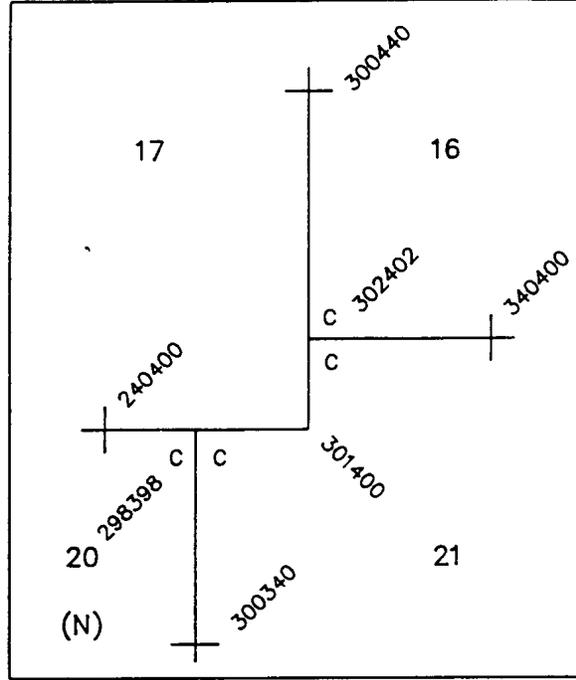
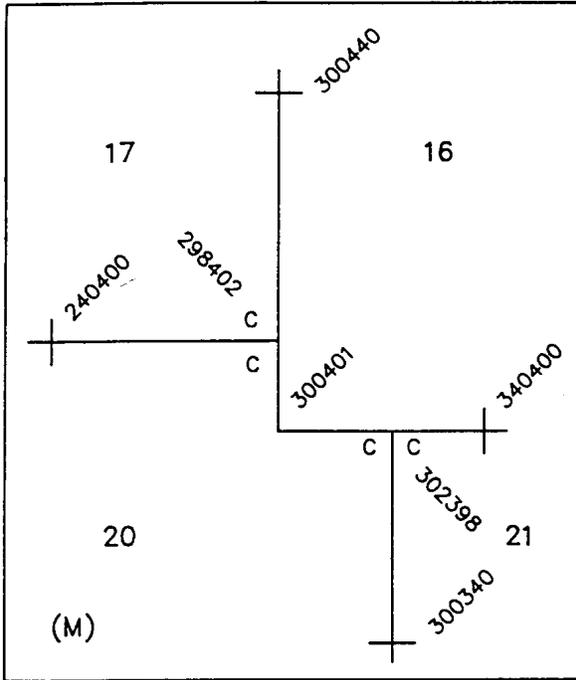
For a N and S example, look at the 300 line. The program will first look at the first three digits of the point identifiers, any numbers that are within the value of 2 from the nominal 300 (i.e., 298, 299, 300, 301 and 302) will be captured and placed in a file. The program will then sequence the contents of the file according to the numerical order of the last three digits of the point identifier. The resulting file then defines to which points the N and S line will connect.

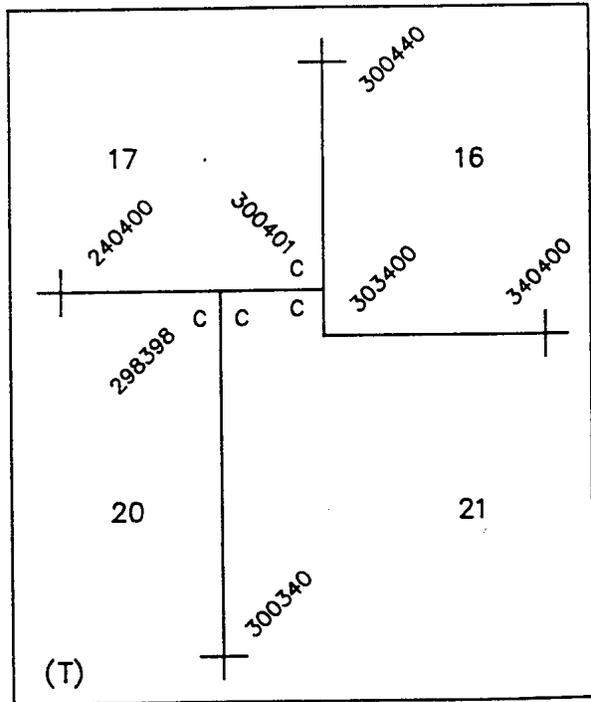
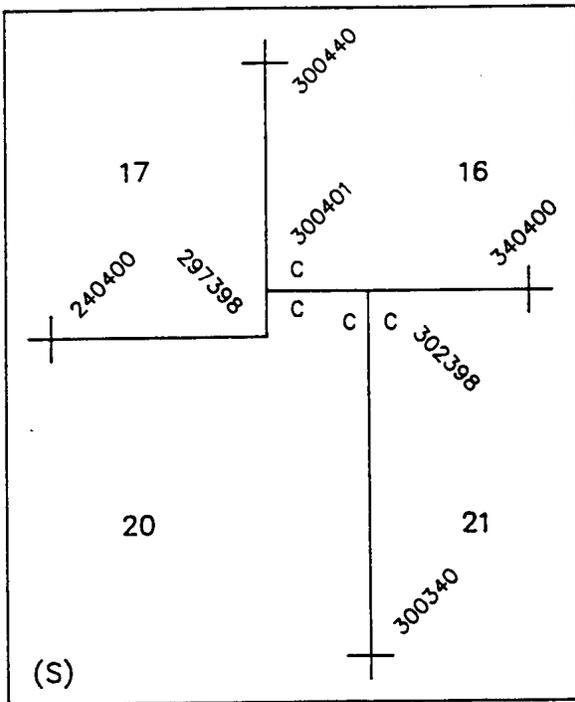
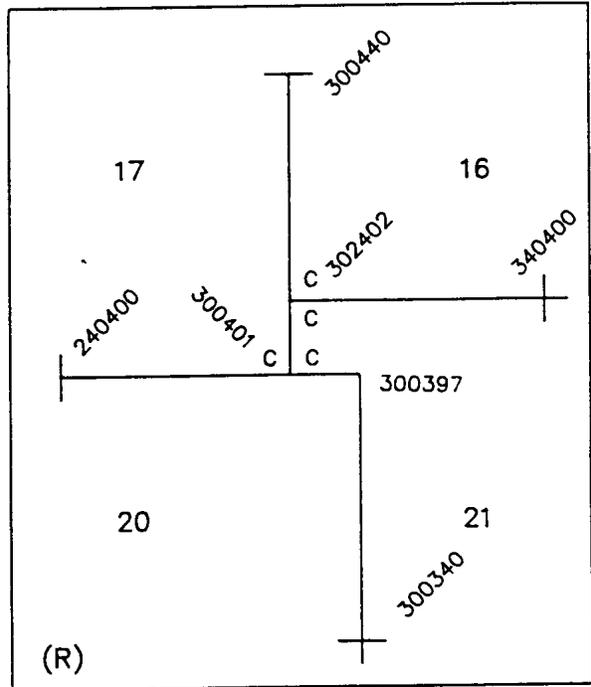
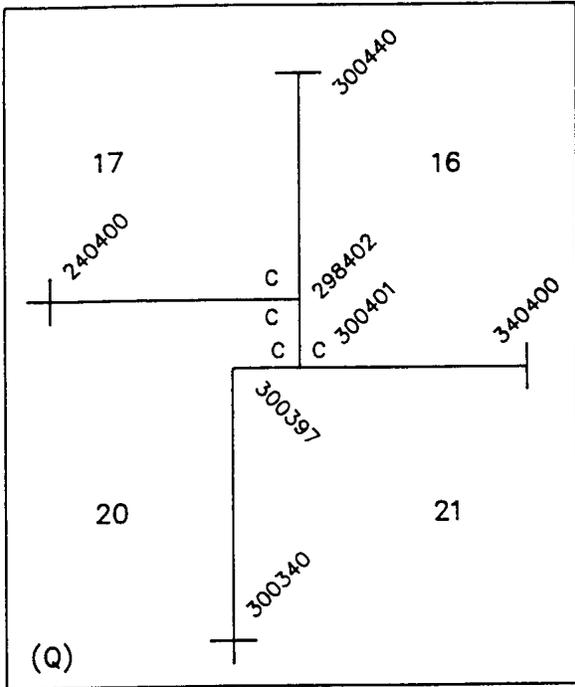
There is one very important rule to remember when constructing the non-standard point identifiers, as shown in examples Q and R, point 300397 should not be picked up during the E-W capture phase, that is why the last three digits are beyond the value of 2 from the nominal 400. In example S, point 297398 will not be picked up in the N-S capture phase, and in example T, point 303400 will not be picked up in the N-S capture phase.

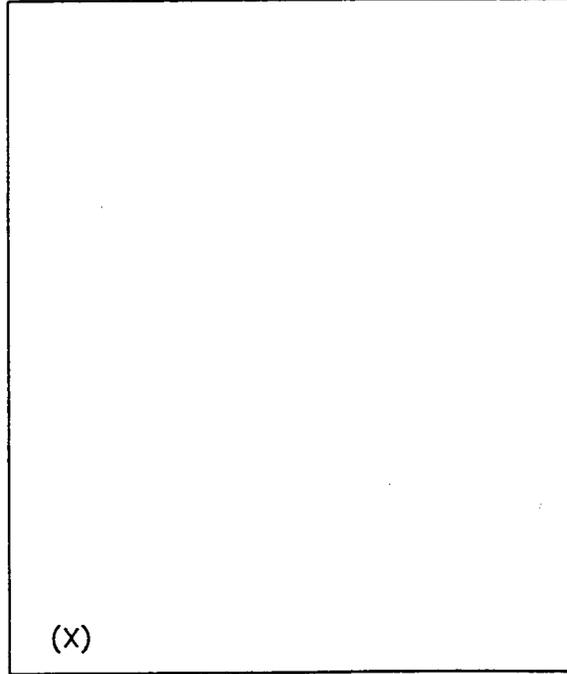
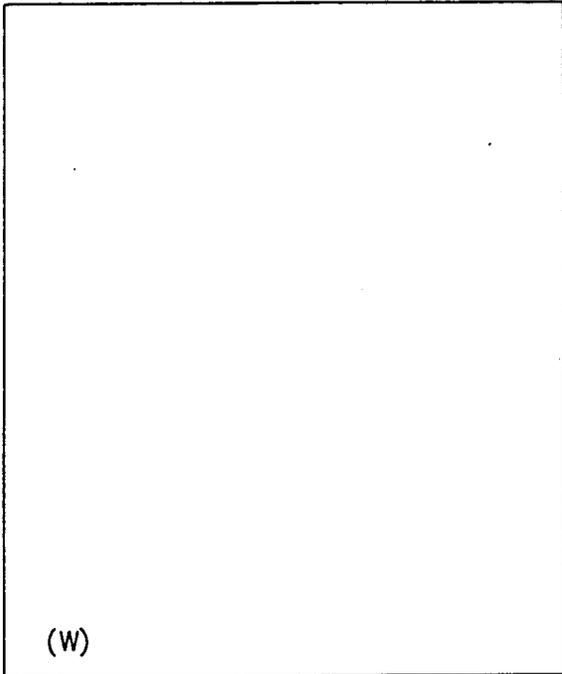
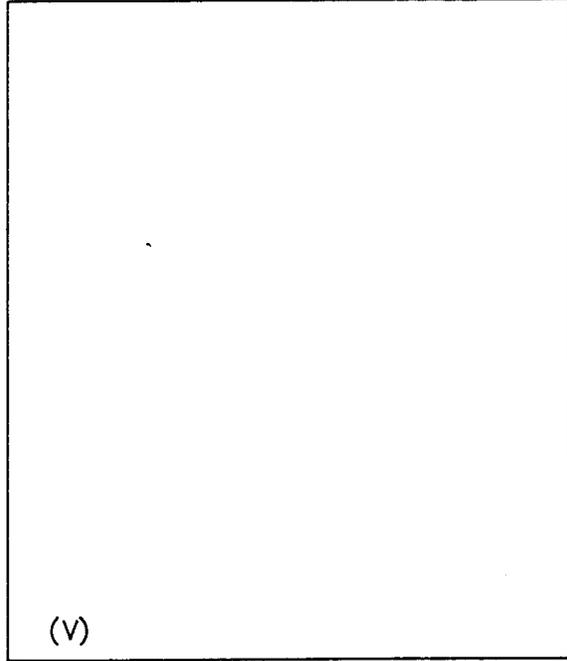
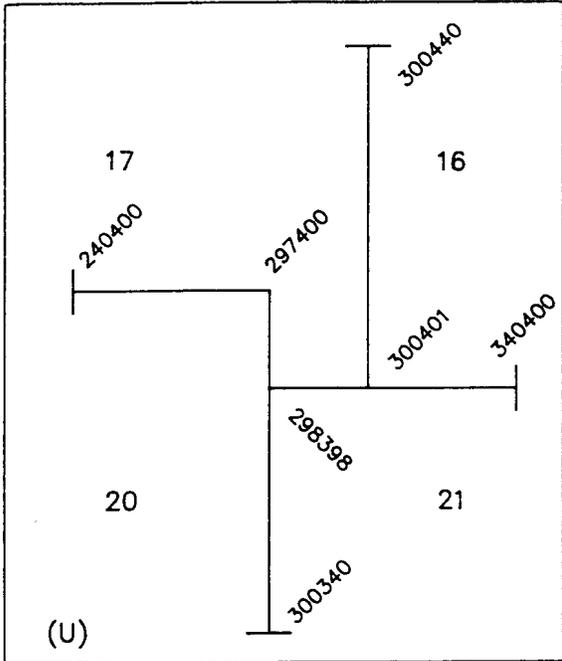
For most situations, sequential numbering will provide the solution. The point identifier, a six-digit number, is constructed of two three-digit sets. The first three digits pertain to the East and West direction only, and must progress from the West boundary of the township in ever increasing values to the East boundary of the township. The second three digits of the point identifier pertain to the North and South direction only, and must progress from the South boundary of the township in ever increasing values to the North boundary of the township.









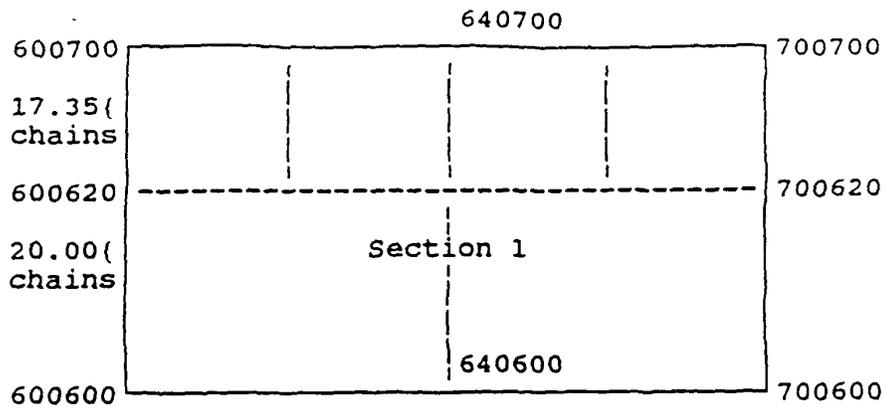


## **ELONGATED SECTIONS**

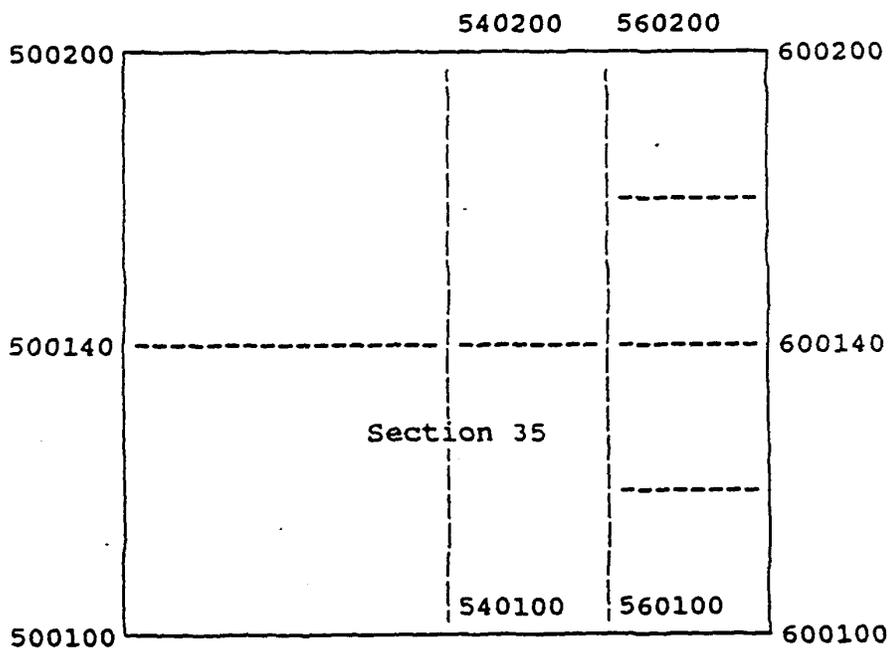
The attached sketches showing point identifier numbering for elongated sections are to be reviewed and, of course, are subject to change. The intent was to keep the method as simple as possible and to allow the maximum automatic processes to occur.

|        | 100700 | 107700 | 113700   | 117700 | 120700           | 140700 | 160700 | 200700          |
|--------|--------|--------|----------|--------|------------------|--------|--------|-----------------|
|        |        |        | 73.75    |        |                  |        |        |                 |
|        | 100673 | 107673 | 113673   | 117673 | 120673           | 140673 | 160673 | 200673          |
| 78.00  | 100667 | 107667 | 113667   | 117667 | (78.36)          | 120667 | 140667 | 160667          |
|        | 100663 | 107663 | 113663   | 117663 | 120663           | 140663 | 160663 | 200663          |
|        |        | 107660 | 113660   | 117660 | 120660           | 140660 | 160660 | 200660          |
| 100660 |        |        |          |        |                  |        |        |                 |
|        |        | 107640 | 113640   | 117640 | Sec. 6<br>120640 | 140640 | 160640 | 20.00<br>200640 |
| 100640 |        |        | (73.395) |        |                  |        |        |                 |
|        |        | 107620 | 113620   | 117620 | 120620           | 140620 |        |                 |
| 100620 |        |        |          |        |                  |        |        | 40.00           |
|        |        | 107600 | 113600   | 117600 |                  |        |        |                 |
|        |        |        | 73.25    |        | 20.00            | 140600 | 40.00  | 200600          |
|        | 100600 |        |          |        | 120600           |        |        |                 |





**Shortened Section**



**Missing Section 36**

## SPECIAL SURVEY POINT IDENTIFIERS

The prefixes 703 to 999 are to be used for identifying special survey conditions such as Meanders,

Mineral surveys, Donation Land Claims (DLC), Homestead Entry Surveys (HES), Tracts, or any other metes and bounds type of surveys.

The Oregon State Office generally uses the 800 to 899 prefixes for most special surveys, DLC and Tract numbering on Cadastral Survey plats begin with the number 37 (continuing after section 36). We try to follow this scheme as strictly as we can, however, there are cases where there will be a DLC #37 and a Tract 37 in the same township, and of course there may be situations where there are miles and miles of river meanders, with 60 DLC's, and 10 Tracts, all in the same township. If you are uncertain which point ID'S are for which survey, a telephone call to this office can quickly clear it up.

The suffix portion of the Special Survey Point Identifiers will generally follow the existing corner

numbers on the plats of record, if they were numbered. If not, then we usually start at the most north-easterly corner of the survey and number consecutively clockwise around the survey, with the major angle points being numbered xxx010, xxx020, etc. The trailing 0 allows for additional points, such as intersections that define lots, to be added, at least up to the number 9 (xxx019).

In those townships where there are special surveys you will find that there are points with different point ID'S but having the same coordinate values. The duplications are necessary, at this point in time, to achieve the proper graphic depiction of the surveys of record.

