











Improving Cartography And Exploring Topology

-  General
-  **Style**
-  Labels
-  Fields
-  Display
-  Actions
-  Joins
-  Diagrams
-  Metadata

Style

▼ Layer rendering

Layer transparency


0

Layer blending mode

Normal



Feature blending mode

Normal

 Single Symbol



Symbol layers

- ▼  Fill
-  Simple fill



Symbol layer type

Simple fill

Colors

Fill Border

Fill style

No Brush

Border style

----- Dash Dot Dot Line

Border width

0.75000 Millimeter

Offset X,Y

0.00000 0.00000 Millimeter

Data defined properties...

Restore Default Style

Save As Default

Load Style ...




Save Style

Help

Apply

Cancel

OK


-  General
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-  Metadata

Style

▼ Layer rendering



Layer transparency

Layer blending mode Feature blending mode

 Single Symbol



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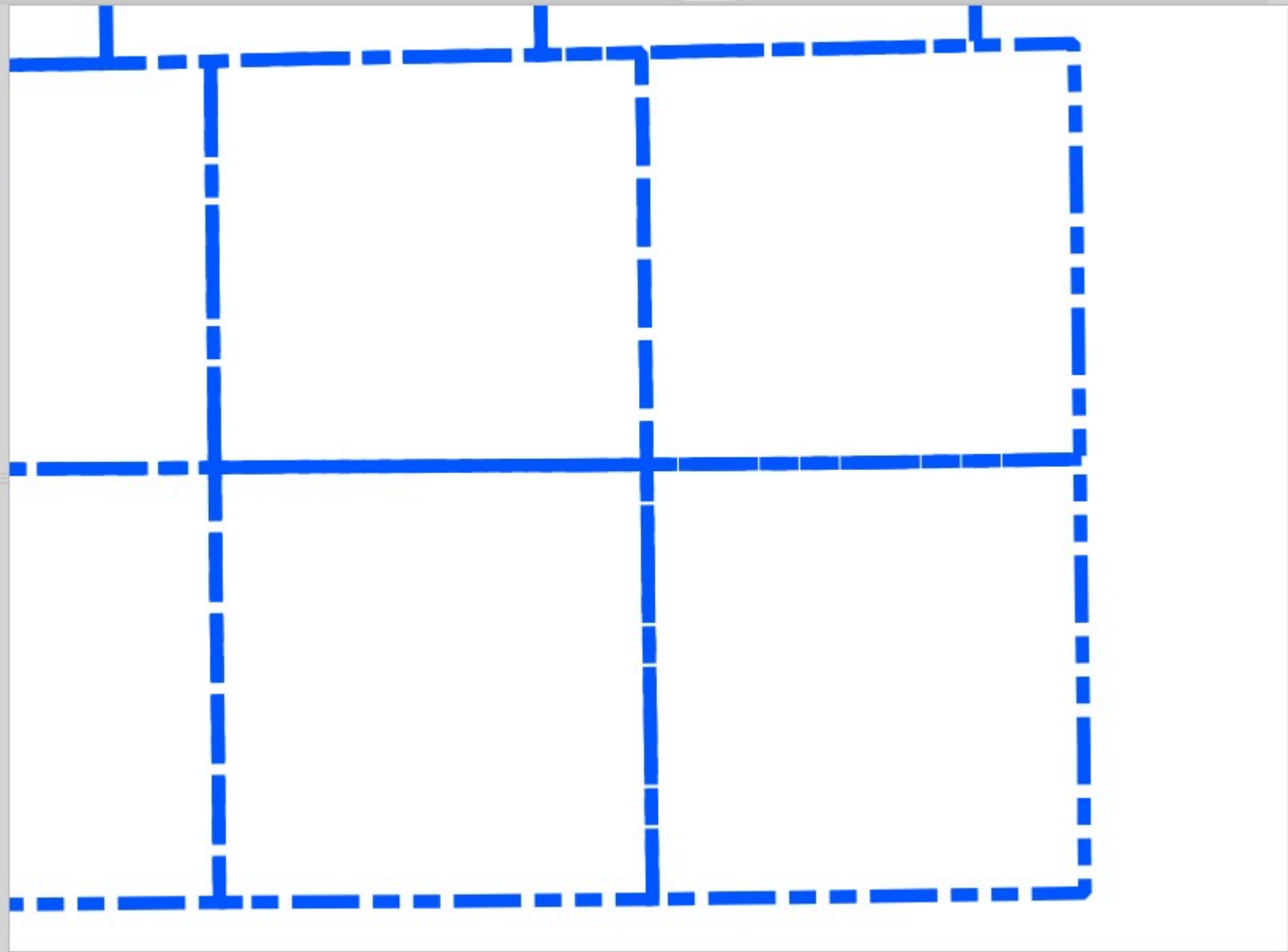
Offset X,Y



Layers

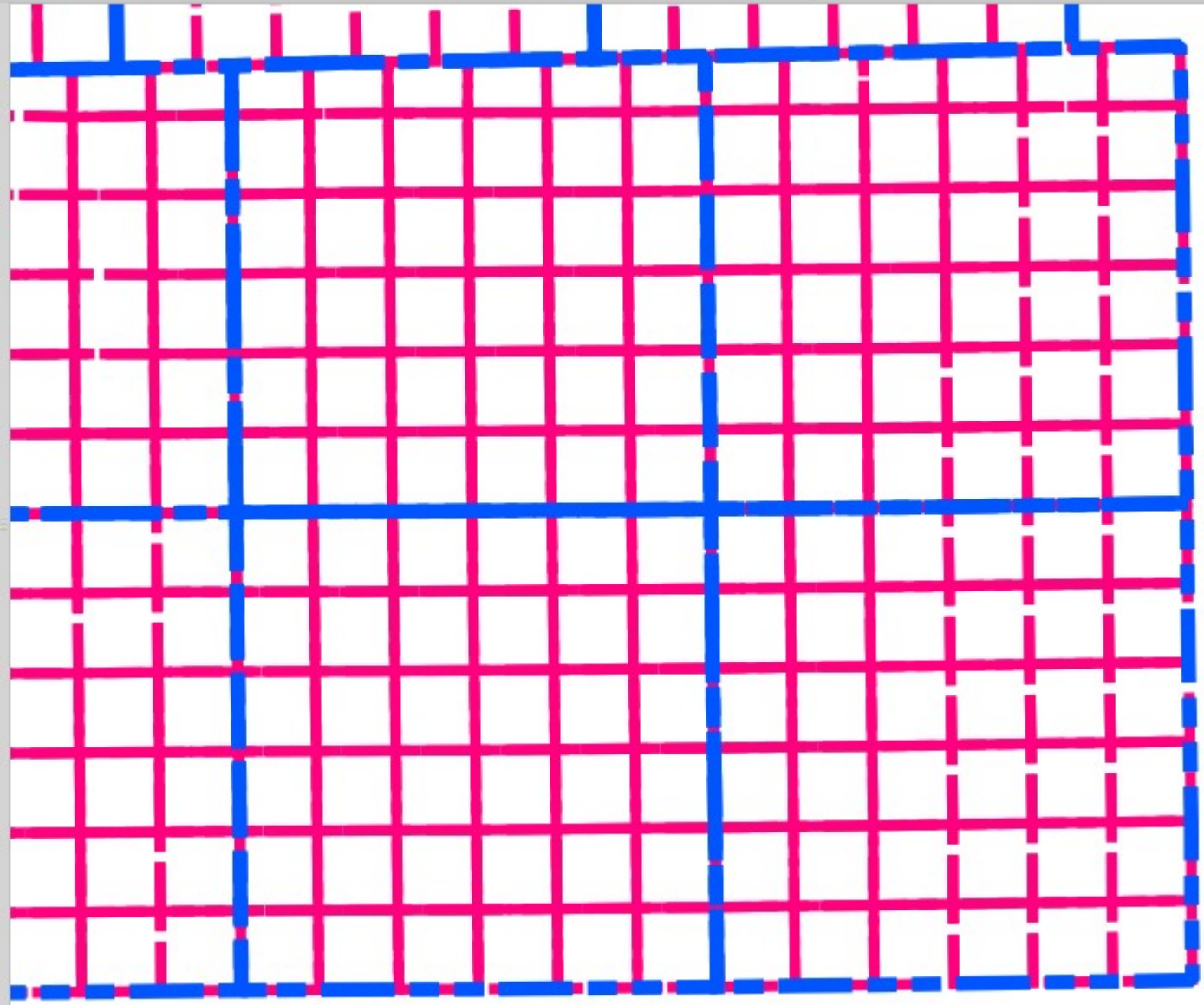
- Township
- Section
- Aliquot

Layers Browser



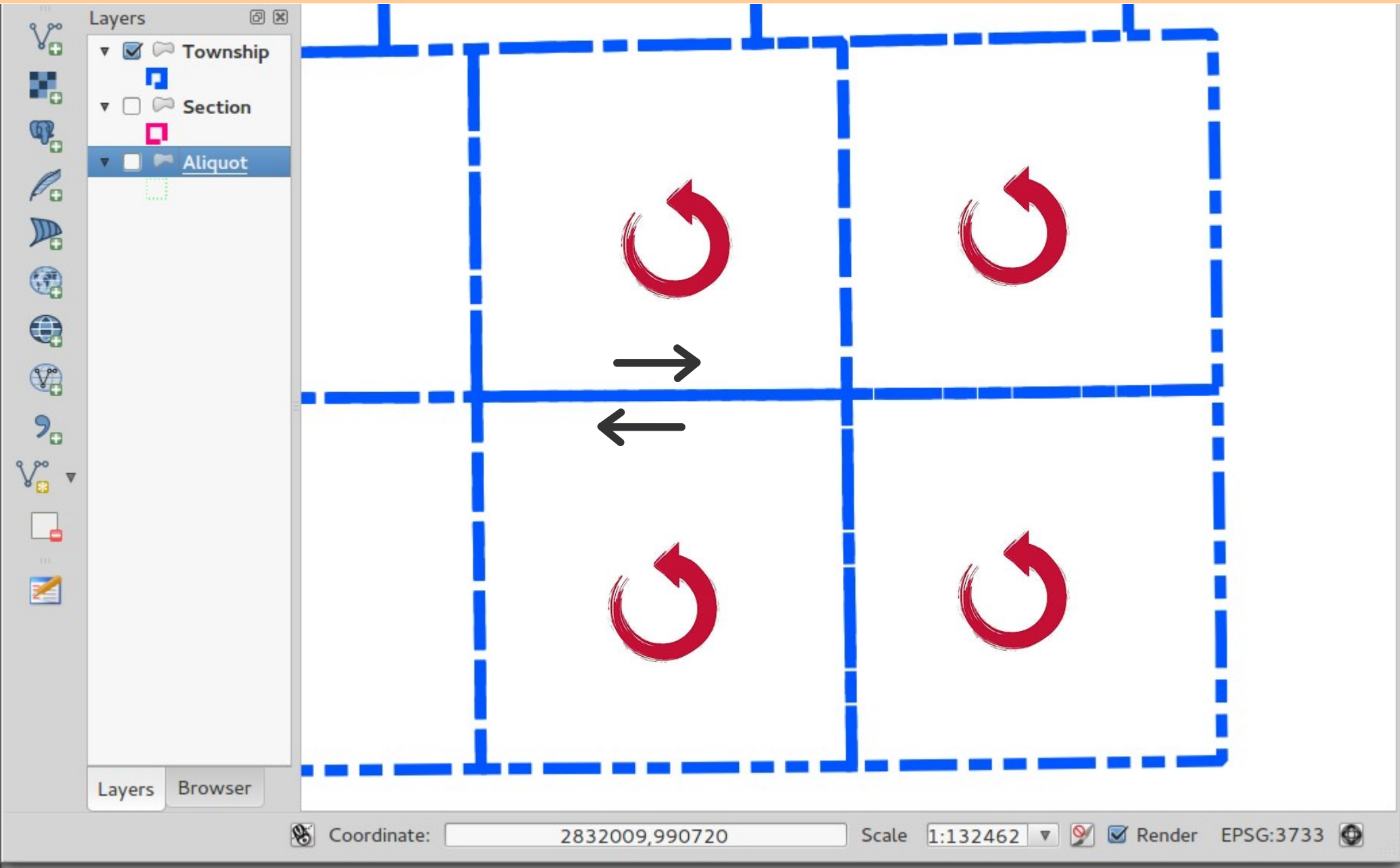


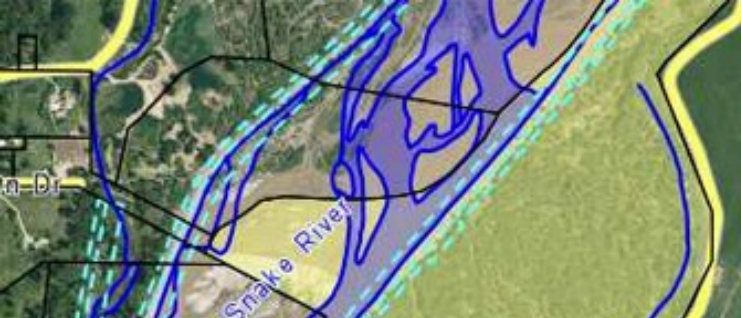
- Layers
- Township
 - Section
 - Aliquot



Layers Browser

Winding Order – Front Face





Sublette County Public Land Survey

- Township (135)
- Section (4719)
- Aliquot divisions & GLO Lots (69,195)

PostgreSQL + PostGIS

```
select
  twp,
  rng,
  st_union(wkb_geometry) as geom
from aliquot
group by
  twp,
  rng
```


with

tmp as (

select (st_dump(st_**boundary**(geom))).geom

from aliquot

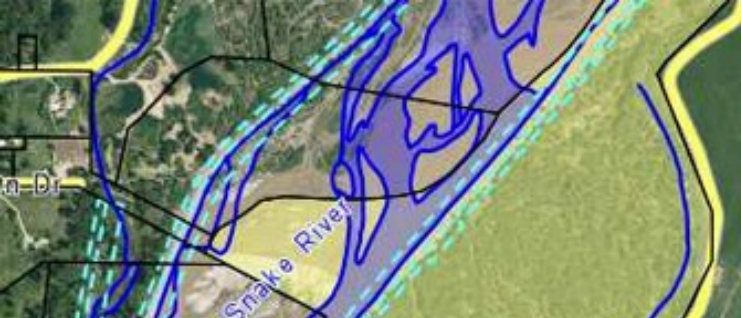
)

select nextval('seq01') as id,

(st_dump(st_**node**(st_collect(geom))).geom

from tmp;

-- 141222 rows



Create a topology,

Which is a schema with four tables:

1. nodes
2. edges
3. faces
4. relations

```
SELECT CreateTopology('aliquot_topology', 3739);
```

```
SELECT AddTopoGeometryColumn(  
    'aliquot_topology', 'work',  
    'aliquot', 'topoggeom', 'POLYGON');
```

```
UPDATE aliquot  
    SET topoggeom = toTopoGeom(  
        wkb_geometry,  
        'aliquot_topology', 1);
```

```
-- 69195 rows affected
```



Object browser

- [-] aliquot_topology2
 - Collations (0)
 - Domains (0)
 - FTS Configurations (0)
 - FTS Dictionaries (0)
 - FTS Parsers (0)
 - FTS Templates (0)
 - Functions (0)
 - Sequences (5)
 - Tables (4)
 - edge_data
 - face
 - node
 - relation
 - Trigger Functions (0)
 - Views (1)
 - edge
- asr
- assessor
- clerk
- public
- topology
- treas
- work

 Properties Statistics Dependencies Dependents
 ▼

Property	Value
Primary key	edge_id
Rows (estimated)	141026
Fill factor	
Rows (counted)	141026

SQL pane

```
CREATE TABLE aliquot_topology2.edge_data
(
  edge_id serial NOT NULL,
  start_node integer NOT NULL,
  end_node integer NOT NULL,
  next_left_edge integer NOT NULL,
  abs_next_left_edge integer NOT NULL,
  next_right_edge integer NOT NULL,
  abs_next_right_edge integer NOT NULL,
  left_face integer NOT NULL,
  right_face integer NOT NULL,
  geom geometry(LineString,3739),
  type text,
  CONSTRAINT edge_data_pkey PRIMARY KEY (edge_id),
  CONSTRAINT end_node_exists FOREIGN KEY (end_node)
    REFERENCES aliquot_topology2.node (node_id) MATCH SIMPLE
    ON UPDATE NO ACTION ON DELETE NO ACTION,
  CONSTRAINT left_face_exists FOREIGN KEY (left_face)
    REFERENCES aliquot_topology2.face (face_id) MATCH SIMPLE
    ON UPDATE NO ACTION ON DELETE NO ACTION,
  CONSTRAINT next_left_edge_exists FOREIGN KEY (abs_next_left_edge)
```


Join the attributes from the simple polygons to the faces

work_aliquot

*
ogc_fid
wkb_geometry
label
kind
twp
rng
sec
acreage
nominal_lo
survey_num
survey_suf
survey_note
subsurf_on
ladesc_id
adjustment
topogeo

aliquot_topology2_relation

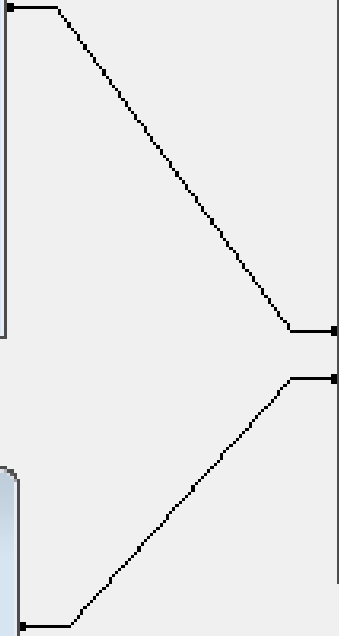
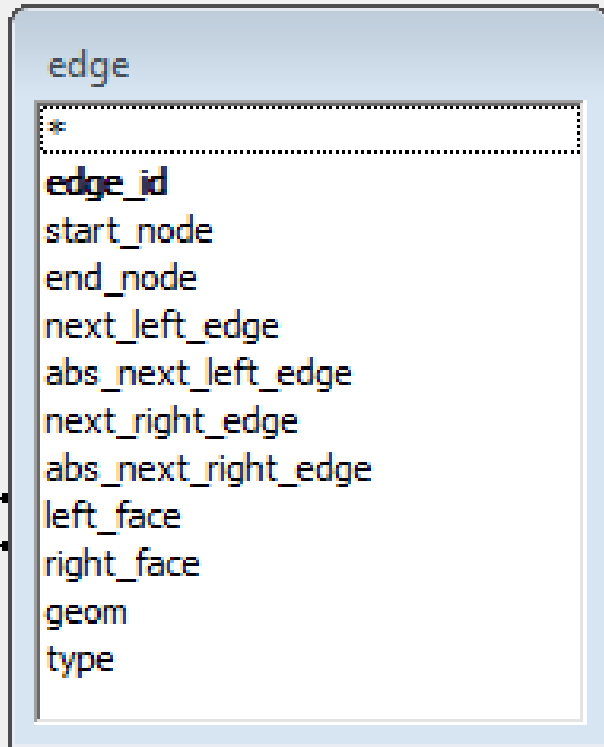
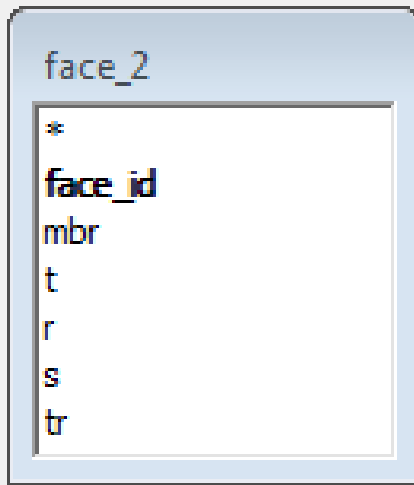
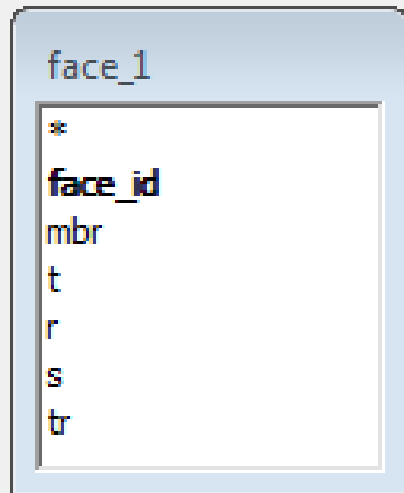
*
topogeo_id
layer_id
element_id
element_type

aliquot_topology2_face

*
face_id
mbr
t
r
s
tr

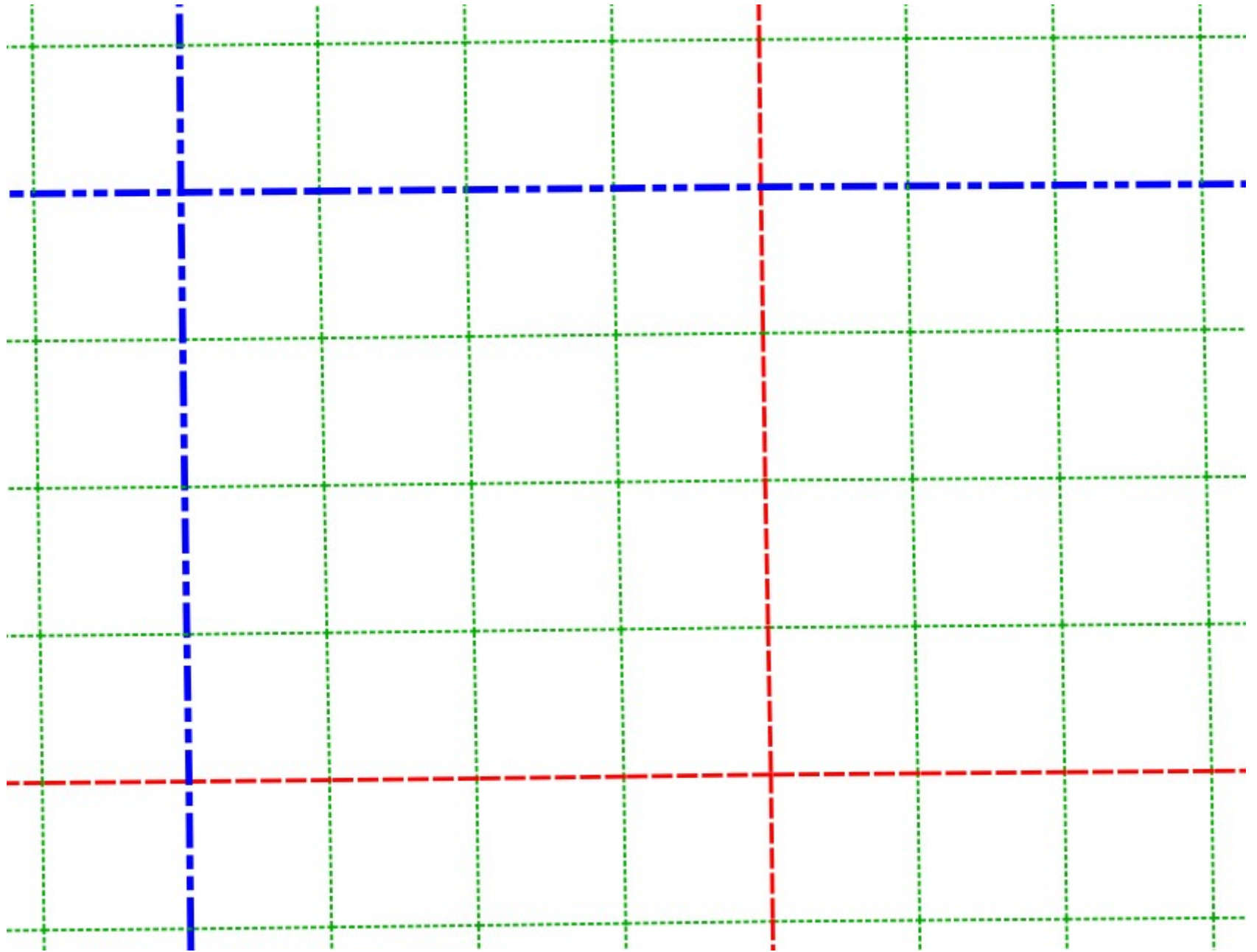


```
select twp, rng, sec, sub.face_id
from
  (select twp, rng, sec, f.face_id
   from aliquot a join relation r
    on (((a.topogeom).id, (a.topogeom).layer_id))
       = ( r.topogeo_id, r.layer_id )
   join face f
    on (r.element_id = f.face_id)
  ) as sub, face
where face.face_id = sub.face_id
```



Join the attributes from the faces to the edges

```
select rt.tr, lt.tr, rt.s, lt.s
from
  (select edge_id, tr, s
   from edge join face
    on right_face=face_id) as rt,
  (select edge_id, tr, s
   from edge join face
    on left_face=face_id) as lt
where lt.edge_id = rt.edge_id
```



with

townships as (

select * from edges where right_twp != left_twp or right_rng != left_rng

),

township_lines as (

select (right_twp*100+left_twp) * 1000 + left_rng id, geom

from townships where **right_twp != left_twp**

),

range_lines as (

select (right_rng*1000+left_rng) *100 + left_twp id, geom

from townships where **right_rng != left_rng**

)

select id, st_union(geom) g from township_lines group by id

union

select id, st_union(geom) g from range_lines group by id



Thanks

www.greenwoodmap.com