Note, items to be attached to this application are indicated in bold text.

I. Expedition Summary

Expedition name:

Exploring the Lesser Known Boundary Waters

Briefly describe the objective of your expedition below:

The proposed expedition will explore the remote, lower canyons of the Rio Grande in Southern Texas. The expedition plans to descend the canyons with canoes in an attempt to explore some of the more remote wilderness in the United States. The team wishes to put their backcountry and river skills to use on this remote trip in an area that will allow us to build on these skills.

Location of expedition:

Rio Grande, TX (Rio Grande Village to the confluence of the Pecos River)

Firm expedition dates: # days in the backcountry:

9/18-10/5 15

Describe the wilderness character of your expedition:

The stretch of river that we will be paddling is one of the top three most remote locations in the continental United States. This stretch of the Rio Grande, it is registered as “Wild and Scenic” by the federal government. We will begin in Big Bend National Park, at the Rio Grande Village, and paddle East through Mariscal, Boquillas, and the Lower Canyons, taking out at the confluence of the Rio Grande and the Pecos River. The canyon walls rise hundreds of feet above the river bed.

II. Participant Qualifications

List expedition members, expected date of CC graduation and Wilderness First Responder or Wilderness Emergency Medical Technician certification expiration in the table below.

Expedition Member	Date of Graduation	WFR expiration date*
Benjamin Varick	May, 2013	exp. 6/2/15
Mike Curran	May, 2013	exp. 1/11/14
Matthew Liston	May, 2013	WMI class starting 3/16/2013
David Swift	May, 2013	exp. 1/18/2014

* If WFR training is needed, list the intended training provider and course date. Funding is not released until all expedition members show proof of WFR or WEMT.

Are all proposed expedition members experienced and/or trained to meet your expedition objectives? Yes ☑ No ☐

NOTE: If any expedition member is deemed unqualified, funding may be denied.

Describe your team's plan to solidify technical skills prior to the start of the expedition. (The RKMF provides education grants for technical training to support CC students in planning and executing responsible wilderness expeditions. Visit www.rittkelloggfund.org for information.)

See Attached

Attach the Ritt Kellogg Memorial Fund Expedition Application – Individual Questionnaire for each expedition member (includes outdoor-skills résumé, references, copies of WFR certification, copies of relevant training certification, and medical release with original signatures).

Attach the Participant Acknowledgement and Assumption of Risks & Release and Indemnity Agreement, read and signed by each applicant and their parent (even if applicant >18 years). This agreement must have the original signatures.

Attach the Expedition Agreement, read and signed by all expedition members.

III. Expedition Logistics, Gear, and Food

Describe how expedition members will travel from home to the trailhead and back again.

See Attached

Attach a detailed, day-by-day itinerary, including maps, elevations, route topos, tide charts, etc., as appropriate. Don't just photocopy a guidebook, provide a discussion to demonstrate your understanding of the itinerary.

Do you have plans to re-ration during the expedition? Yes ☐ No ☑

If "yes", describe the re-rationing plan below.

Describe how you will prevent wildlife from getting into your food.

Since trees are not in abundance along this stretch of river, we will not be able to set up a bear hang each night to protect our food from wild animals. Instead of a bear hang, Big Bend National Park rangers recommend that we store our food in bear-proof containers each night. Therefore we will take BearVault BV500 Food Containers to store our food. Each container holds about 7 person-days of food, and since we will have 60 person-days on our trip, we will need 9 food containers. These food containers will pack easily into our packs while canoeing during the day. At night we will store them together, 100 feet downwind of our campsite. Before leaving on our trip we put a strip of reflective tape on each container so that if animals move them around at night we will more easily be able to find them once the animals leave.

Attach a detailed food list and show how it meets the caloric needs of the expedition.

Attach a thorough equipment list, including the detailed description of the contents of the First Aid kit.

Are all expedition members familiar with Leave No Trace principles? Yes ☑ No ☐
Describe how you will adapt LNT principles to meet the environment of your expedition.

See Attached

Are there cultural considerations for the expedition area? Yes ☑ No ☐
If "yes", describe how you will address those concerns.

See Attached

IV. Risk Management Plan

List the anticipated hazards of your expedition and explain how they will be evaluated, avoided and managed. Discuss the technical skills your expedition members have to handle anticipated hazards. **NOTE**: Failure to identify major hazards and how they will be managed may result in denial of funding.(Attach more pages if necessary.)

See Attached

Describe your self - evacuation plan in the event of an emergency. Discuss any technical skills your expedition members have to handle various self-evacuation scenarios. NOTE: Failure to thoroughly discuss evacuation plans may result in funding denial.

See Attached

Describe any measures taken for expedition members with medical histories that warrant special preparedness.

David Swift has a history of high blood pressure, but he takes daily medication to lower his blood pressure. David will bring his medication on the trip, but in the event that he loses the medication or is unable to take it, he will be able to finish the trip without putting himself or the rest of the group at risk. The other expedition members do not have any medical histories that warrant special preparedness.

List emergency resources available in the vicinity of your expedition (phone #s for ranger station, hospital, etc).

-Big Bend National Park Ranger Headquarters: (432) 477-2251
-Big Bend Regional Medical Center (2600 N Highway 118 Alpine, TX 79830): (432) 837-3447
-Fort Duncan Medical Center (3333 North Foster, Maldonado Boulevard Eagle Pass, TX 78852): (830) 773-5321
-Seminole Canyon State Park Ranger Office: (432) 292-4464
-Val Verde Regional Medical Center (801 Bedel Avenue, Del Rio, TX 78840): (830) 775-8566

List emergency communication devices you will be carrying. If none, explain why.

Satallite Phone

V. Budget

Attach a detailed expedition budget and write totals in USD below. Do not round numbers up. Emergency money, supplies for first aid kits, first aid kit rental, and gear purchases are not funded. Car travel costs will be funded based on the vehicle mpg and may not include wear and tear/maintenance costs.

Transportation: $2651.94

Food and Fuel: $462.50

Maps/Books: $22.00

Communication Rental: $60

Permits/Fees: $48.00

Gear Rentals: $2480.00

Total Funding Requested (not to exceed $1500 per applicant): $5724.44

Describe what measures you have taken to minimize expenses.

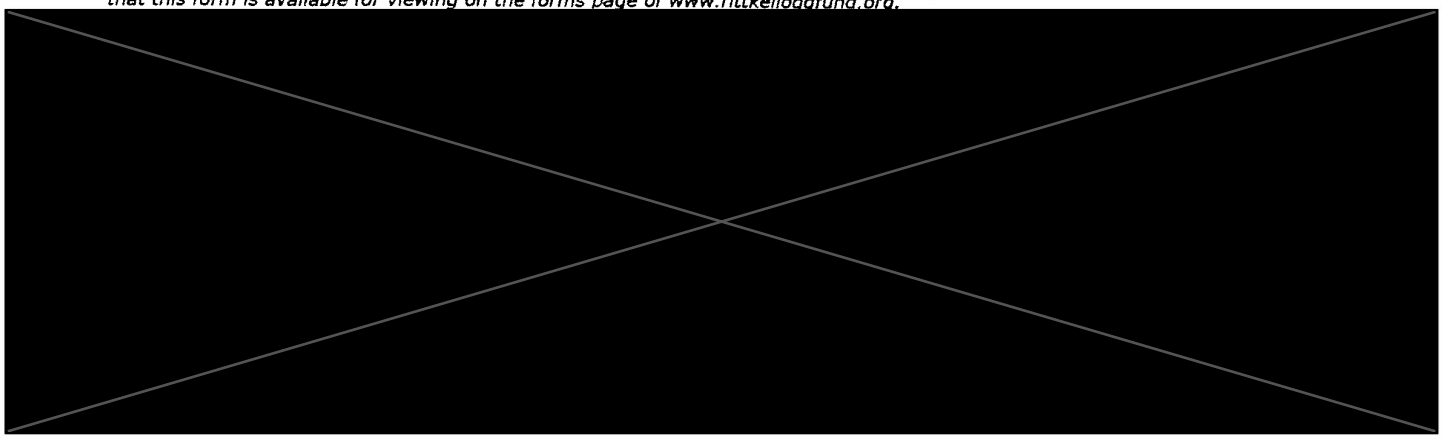
In order to minimize the cost of the, Exploring the Lesser Known Boundary Waters Expedition, we have taken several steps. First, we have sought out the least costly gear rental service in the area known as Desert Sports. The tripping company has competitively priced gear rentals and has given us a discounted price due to the nature of our expedition. Second, we are using a food skeleton from Camp Manito-wish and we will pack out food from the camp's food room. With the help of Camp Manito-wish, we will decrease the food cost of 10 dollars per person per day to 7 dollars per person per day. We will save 180 dollars in food cost. Third, we will save approximately 300 dollars in bus and taxi fees driving our personal vehicle to Big Bend National Park from Midland. Fourth, we have determined the most cost effective distribution of food through the use of a food skeleton. The skeleton uses the most cost effective foods to fulfill the necessary calorie intake per person per day. Fifth, we are using our own vehicle for shuttle transport from the put-in and take-out points along the river. With the use of our own vehicle we will save 250 dollars in shuttle rental. In total, we will save 835 dollars with our cost minimization measures.

RITT KELLOGG MEMORIAL FUND - EXPEDITION AGREEMENT

We have read and adhered to the Ritt Kellogg Memorial Fund criteria to the best of our ability as reflected in our proposal. We have written as concise and thorough a proposal as possible. We have enclosed all parts requested including the following:

- ☑ "RKMF Expedition Application - Group Application", including the following:
  - ☑ Statement on purpose of expedition
  - ☑ Plan for team to solidify technical skills prior to the expedition start
  - ☑ Day by day itinerary including maps, elevations, route topos, tide charts, etc
  - ☑ Detailed food list
  - ☑ Detailed equipment list (specifying contents of the first aid kit)
  - ☑ Leave no trace plan
  - ☑ List of hazards and associated risk management plans
  - ☑ Emergency evacuation plan (including contact info for nearby hospitals, etc
  - ☑ Itemized budget (note any cost saving efforts)
- ☑ "RKMF Expedition Application - Individual Questionnaire" for each team member. (Includes signed medical release, outdoor-skills résumé, references, and copies of WFR certification and other relevant training.)
- ☑ "Participant Acknowledgement and Assumption of Risks & Release and Indemnity Agreement", read and signed by each applicant and their parent (even if >18 years).

I understand that if I receive a Ritt Kellogg Memorial Fund grant and I participate in a Ritt funded expedition or activity, I will be required to sign a Participant Acknowledgment and Assumption of Risks & Release and Indemnity Agreement. I acknowledge that this form is available for viewing on the forms page of www.rittkelloggfund.org.



Signed:_____ Date:_____

Signed:_____ Date:_____

Signed:_____ Date:_____

Describe your team's plan to solidify technical skills prior to the start of the expedition.

Our team consists of river enthusiasts and this means that we all spend much of our personal time on rivers both individually and as a group. This past year, just before NSO began, the four of us paddled the Numbers section of the Arkansas River. This is a Class IV section of whitewater that solidified our group dynamics and provided the inspiration for this expedition.

We plan to spend as much time as possible together on rivers throughout the winter and spring seasons, and as the weather continues to get warmer, we hope to participate in longer river trips in order to solidify our teamwork. Over the past few years, group members have spent many block breaks, spring breaks, and summers doing longer river trips, and we plan on continuing this tradition over the course of this year to improve our group's ability to work together and strengthening the foundations of our team.

Some of these longer trips (which we plan to run in the spring) are: the Río Chama (NM), Gates of Lodore (Green River, UT), Westwater Canyon (Colorado River, UT), and Cataract Canyon (Colorado River, CO). As mentioned elsewhere in the proposal, two of the team members are certified Swiftwater Rescue Technicians, but in preparation for the trip we plan to take this course as a group. We believe that aside from the technical skills that are learned in this class, one of the most important things to take away is learning how to use these skills in one's particular group or team, and taking the class together will allow us to do so.

Describe how expedition members will travel from home to the trailhead and back again.

Mike Curran will be guiding whitewater rafting trips near Boise, Idaho in the week before the trip. Mike will drive from Idaho to Texas. A car is necessary to pick up the expedition members from the airport, as a shuttle vehicle, and as a transport vehicle for the boats. Mike's car is necessary because it is the only car in the group wide enough to carry two canoes. We have calculated travel costs in the budget as if Mike is driving from Colorado Springs to Texas, and we will cover the additional cost of the mileage from Boise to Colorado Springs ourselves. Ben and Matt will be working in Wisconsin at Camp Manito-wish YMCA. Camp Manito-wish will outfit our expedition with all necessary food, and Matt and Ben will bring the food with them on a flight from Milwaukee to Midland, Texas. Again costs have been calculated as if they were flying from Colorado Springs and any additional costs will be covered personally. David is flying from Colorado Springs. All members flying will land at the Midland Airport, the closest airport to our put-in.

Once we meet up, we will drive to Desert Sports (Terlingua, TX), the outfitter that we will use to rent our boats and other gear. After dropping our gear at the put-in, we will leave the car with a shuttle service that will drive it to the take out (confluence of the Pecos River and the Rio Grande River, at Highway 90). After completing the trip, we will drive the gear back to the outfitter and then to Midland Airport to return to our respective locations. Again, transportation costs requested in the grant are calculated as if we were traveling from Colorado Springs.

Equipment List and Food Details

Gear List (Unless indicated otherwise, we already own/will provide the items on this gear list)

Boats and Paddling Equipment:

- 2 Spray covers-*Rent*
- Bow and stern lines-*Rent*
- Bailer and Sponge-*Rent*
- Flotation-*Rent*
- 2 Wenonah Rogue canoes-*Rent*
- 8 Paddles-*Rent*
- 2 Ammo boxes for latrine system-*Rent*
- 6 60L dry bags-*Rent*
- 4 20ft lines of Rope-*Rent*
- River rescue kit
- Boat Repair kit
- 5 PFD's-*Rent*
- 15 meter Throw Rope
- 3 20-foot cam straps to secure our equipment in the boats
- Maps and Waterproof Map Case
- 2 Compasses
- 3 10L Dromedaries
- Satellite Phone-*Rent*

Camp/Kitchen Equipment:

- Firepan-*Rent*
- Lantern
- 1 4-person tent-*Rent*
- Ground Cloth
- 2 Coleman stoves-*Rent*
- 5 Primus Power Fuel Containers-*Rent*
- Cook kit-*Rent*
- Utensils
- 9 Bearvault BV 500 Food Containers-*Rent*
- 30 Waterproof matches
- 3 Lighters
- 2 Water Pumps
- Iodine
- Dishtowel
- Kitchen sponge
- Biodegradable Soap
- 4 Whistles
- Mirror

Personal Equipment for each participant:

- Hiking boots/Paddling Shoes
- Camp Shoes
- 4 Pair Wool Socks
- Lightweight synthetic top
- Mid-weight synthetic top
- Fleece Jacket
- Rain Jacket
- Lightweight short sleeve top
- Lightweight synthetic lower body layer
- Fleece Pants
- Rain Pants
- Shorts
- Underwear
- Wool/Fleece Hat
- Brimmed Hat (extra-large)
- Bandanna
- Gloves
- Sleeping Bag-*Rent*
- Sleeping Pad-*Rent*
- Sunglasses
- 2 Headlamps
- Water Bottles (enough to carry 4 liters)
- Stuff Sacks
- Sunscreen
- Toiletries

First Aid Kit Contents:

Personal Protection Equipment and Infectious Control

- Latex gloves (10 pair)
- CPR Barrier MicroShield (1)
- Respirator mask (1)
- Infectious substance control bag (3)

Assessment Tools

- Thermometer, High/Low (1)
- Magnifying glass, 10x (1)
- Maglite flashlight, 3" (1)
- SOAP forms (10)
- Wilderness Medical Associates Field Guide of Wilderness & Rescue Medicine (1)

Essential Equipment

- SAM Splint (1)
- Cavit Dental Filling (1)
- Duct Tape, 2" x 5 yards
- Athletic Tape, 1.5" x 10 yards
- Forceps (1)
- Potable Aqua Tablets (50)
- Sawyer Extractor Bite and Sting kit (1)
- EMT Shears, 4" (1)
- Scalpel #11 Blade Sterile (1)
- Space Blanket (1)

Wound Care

- Double Antibiotic Ointment (3 oz)
- Antiseptic Towelettes (6)
- 20cc. Irrigation Syringe (1)
- Povidone Iodine Cotton Tip Swabs (6)
- Povidone Iodine Solution (1 oz)
- Steri-strip Wound Closure Strips (20)
- Cleansing Pads w/ Lidocaine (5)

Blister Care

- Moleskin (2 sheets)
- 2nd Skin Squares (30 squares)
- Foam Donuts (10)
- Duct Tape (see above)

Bleeding Care

. Sterile Gauze, 4" x 4" (10)
. Sterile Gauze, 3" x 3" (10)
. Sterile Gauze, 2" x 2" (10)
. Trauma Pad, 8" x 10" (1)
. Trauma Pad, 5" x 9" (1)
. Elastic Self-Adhering Bandage, 2" (2)
. Non-Adherent Sterile Gauze Dressing 3" x 4" (4)
. Conforming Gauze Bandage, 3" (2)
. Sterile Eye Pad (2)
. Bloodstopper Dressing (1)
. Fabric Band-Aid, 1" x 3" (12)
. Fabric Band-Aid, Knuckle (8)
. Fabric Band-Aid, Butterfly (8)

Fracture/Sprain

· SAM splint, 4" x 36" (1)
· Ace Wrap, 2" (1)
· Ace Wrap, 4" (1)
· Triangular Bandage, (2)
· Safety Pins (4)
· Athletic Tape, (See above)
· Pre-wrap, 2.75" x 21 yards

Medications

· Acetaminophen (50 200 mg pills)
· Ibuprofen (50 200 mg pills)
· Antacid (30 pills of Alka-Seltzer)
· Anti-diarrheal (20 2mg pills of Loperamide)
· Anti-histamine (20 25mg pills of Diphenhydramine)
· After-Bite Sting Relief Stick
· Sting Relief Pads (4)
· Aloe Vera Burn Relief Gel 100% (3 oz)
· Oral Rehydration Salts (6 packets)
· Insect Repellent 100% DEET (1oz)
· Cortisone Cream 1% (6 Single-use Packets)
· Afrin Nasal Spray (1 oz)
· Tolnaftate Anti-fungal Cream (.5 oz)
· Purell Antibacterial Hand Gel (2, 5oz bottles)
· Glutose Paste(2 oz)

- Water Resistant Sunscreen SPF30 (1oz)
- Lip Balm SPF 30(1)
- Zinc Oxide (1oz)

Leave No Trace (LNT) Plan:
In planning this trip we have taken into consideration the seven Leave No Trace principles and will take the following measures to respect each principle:

1. Plan Ahead and Prepare
We have talked with park rangers, river guides, outfitters, and boaters experienced in this stretch of river to make sure we are aware of the regulations, special concerns, weather patterns, water flow patterns, and hazards for the stretch of river we will be paddling. Peak usage of the Rio Grande in Big Bend National Park and the Rio Grande Wild and Scenic River is in the spring-summer months, so we will be traveling on the river during the off-season. We will pack out our food in the Camp Manito-wish food room. Because of the nature of our food pack out, we will be taking all of our food from bulk containers, so we will not have to worry about excess packaging. Lastly, our group size is just 4 people, so our impact on the ecosystem will be further limited by the small size of our group.

2. Travel and Camp on Durable Surfaces
We will be traveling on water each day, which is an incredibly resilient surface. When setting up camp each night we will camp on gravel and rocky areas 200 feet from the river that have been identified as suitable camping areas by Luis Aulbach in his guide to "The Lower Canyons of the Rio Grande." We will limit our land travel to established trails to/from the river and if there are no trails we will spread out to minimize our impact.

3. Dispose of Waste Properly
We will carry out all solid human waste by using an 18" x 8" x 14" ammo can groover system. One ammo box can hold about 50 person-days of waste, and since we will have 60 person-days of waste, we will take two ammo boxes. After our trip we will dispose of the waste at the Chisos Mountain Lodge RV Dump Station.

Our menu planning system is used by Camp Manito-wish YMCA to consistently send out all of its extended-length trips with the right amount of food, so we are confident that we will not waste much food during our trip. If we do end up with food waste we will have trash bags to pack out the food until we can dispose of it at the end of our trip. Before leaving our campsite and lunch site each day we will conduct a sweep to look for any trash, food, or litter.

When cleaning our dishes, we will only use small amounts of biodegradable soap to get greasy residue off of our pots and pans, and we will strain all food material out of our dish water before diluting it in the river. Additionally, if we end up with infectious waste, we will follow Universal Precautions for Body Substance Isolation and will seal the waste in a red biohazard bag. After the trip we will dispose of it in an appropriate biohazard container.

4. Leave What You Find
We will leave rocks, plants, and other natural objects as we find them. There are several sites of indigenous artwork along this section of the river. If we come across them, we will not touch them and will be careful to preserve the area around them. To avoid introducing or transporting non-native species we will thoroughly wash and disinfect our equipment, shoes, and boats, and Big Bend National Park rangers will inspect our equipment before we begin our trip

5. Minimize Campfire Impacts

We will bring a gas stove to cook on so that we do not rely on fires to cook dinner each night. Additionally, for nights when we want to have an external heat source we will bring a fire pan. Since firewood is scarce along this section of the river we will bring charcoal instead of using firewood from the area. Per Big Bend National Park Ranger Bobby Smith's request, we will pack out large pieces of charcoal and will disperse the smaller, sinking ashes in the river.

6. Respect Wildlife

If we encounter wildlife we will observe it from a distance and will not follow or approach it. There are not enough sturdy trees along this stretch of river to set up a bear hang at all the campsites so in order to protect our food from wild animals each night rangers in Big Bend National Park recommend that we store our food in bear-proof containers.

7. Be Considerate of Other Visitors

We are ambassadors of Colorado College and the Ritt Kellogg Memorial Fund, so if we encounter other boaters we will take care to act respectfully and treat them in the same way that we would like to be treated. Because sound travels well over water and canyon walls can act as amplifiers, we will be considerate of using loud voices and making loud noises.

Cultural Considerations:

There are several cultural considerations that we will take during our trip. First, because the Rio Grande runs along the border of the United States and Mexico, we want to clarify that we will not be spending any time on the Mexican side of the river. We will stay on the US side not only because the Ritt Kellogg Memorial Fund limits funding to trips that are in the US and Canada, but also because crossing into Mexico at any other point than at a US Customs Port of Entry is strictly prohibited by US law. Big Bend National Park Ranger Bobby Smith has confirmed that we can easily carry out the trip without crossing into Mexico because the campsites and portage trails are all on the US side. Additionally, there are enough water sources on the US side so that we will not have to cross into Mexico at all during our trip in order to find potable water. Second, we are aware that board members might be concerned about safety along the border. We have talked to several rangers in the park, and they informed us that there have been no recorded border-related issues with boaters along the stretch of the Rio Grande on which we will paddle. We will continue to check in with Rangers in the coming months to see if any of the above information changes. If conditions change, we will notify the Advisory Committee as soon as possible.

List the anticipated hazards of your expedition and explain how they will be evaluated, avoided and managed. Discuss the technical skills your expedition members have to handle anticipated hazards.
Hazards include remote setting, whitewater, temperature extremes, water availability, cultural considerations, wildlife, water levels.

Remote Setting:
We will manage this risk by adjusting our actions and decision making accordingly. Consequences are increased exponentially in remote setting; the smallest mistake can have disastrous effects. Additionally, we will be carrying a satellite phone and will be cognizant of all possible evacuation points (included) along our route. Our itinerary is designed so that we are camping before these possible points. This means that we will spend a larger portion of our time closer to the evacuation points. However, evacuation routes and satellite phones are merely fallbacks and we will evaluate risk without relying on these fallbacks.

Whitewater:
All whitewater encountered on this stretch of the Rio Grande has accessible portage trails. Furthermore, all of these portage trails are on the US side of the river. A common rule of thumb with wilderness paddling trips is that all whitewater sets are increased a class in their rating when compared with a similar frontcountry set. Even though all trip participants have significant experience on whitewater and will be Swiftwater Rescue Technicians, running whitewater in the backcountry is dangerous, and one error in judgment can quickly result in a hazardous situation. Therefore, we plan to portage around ***all*** whitewater sets. Once again, our group has paddled together before and intends to spend much of the spring on rivers to prepare for this expedition.

Temperature Extremes:
Cold water and hot air temperatures can increase certain risks. We will use drybags to insure that all clothing will stay dry insures that any wet mishaps will not lead to hypothermia. Additionally, overexertion and heat stress will be monitored and we will not hesitate to take breaks if the paddling is too strenuous.

Water availability:
Although not that big of a risk, water availability is still a consideration. Although thousands of gallons of fresh water flow through the Rio Grande every second, this water is quite silty and would clog up our filters immediately if we tried to drink it. There are tributaries every few miles that contain much clearer streams. However, if we need to, we will have buckets to collect and settle the silt out of the river water, filtering after all the silt has settled to the bottom of the buckets. The water usually takes about an hour to settle. We have planned our itinerary with this in mind and have tried to camp near a clear stream every night. Additionally, we will bring enough containers to hold 50 liters of water, enough for 3 days if tributaries are dryer than we have planned.

Cultural Considerations:
There are considerable considerations due to the fact that this expedition will be on the border the entire

trip. We will spend the entirety of the trip on the US side of the river. See the cultural consideration portion of the grant for more information. There are no recorded instances of issues with boaters along this section of the river. The remote nature of this area means that contact with other people is rare. Furthermore, park rangers and regional outfitters have confirmed that our proximity to the border will not present any issues along this section of the river.

Wildlife:
There are poisonous snakes, javelinas, coyotes, and scorpions. We will carry a snake bite kit in our first aid kit and are able to identify snakes in this region. Food scents will be minimized according to LNT principles to minimize contact with the javelinas and coyotes. We will be sure to shake out all loose gear for scorpions in the morning and will sleep in tents to prevent critters from entering our sleeping bags at night.

Water levels:
This stretch of the river can change flows dramatically. The attached graph of water levels shows that all water levels in the past 5 years have been navigable. Being stranded due to dropping water levels is not an issue. However, we will camp above high water lines and secure all boats incase the water levels rise during the night. We do not expect this to occur, but will take all precautions nonetheless.

Self-Evacuation Plan:

We will be in a canyon for the majority of the trip. However, the canyon walls periodically dip and tributary canyons allow for exiting the canyon. These potential points have been outlined in the attached table. All routes entail strenuous hiking up canyons. Some have easier access to dirt roads (and thus assistance) than others; this has been outlined in the following table. Due to the topographic nature of the canyons, landing zones suitable for helicopters are limited. Rescues are possible through dirt roads on the canyon rims and water routes down the river.

Name	Location	Estimated Day	Spacing	Milage to Road		Road Type	Quad Name
Rio Grande Village		0	1	0	0	Paved	Rio Grande Village
Adams Ranch		28		28	1	Unmaintained Dirt	Stillwell Crossing
Marvillas Canyon		45		17	1	Unmaintained Dirt	Bourland Canyon
Horns Ranch		55		10	2	Unmaintained Dirt	Las Vegas de los
Bear Canyon		67		12	2	Unmaintained Dirt	Bullis Gap
Haack Canyon		76		9	2	Unmaintained Dirt	Bullis Gap
Panther Gulch		94		18	9	Unmaintained Dirt	Panther Gulch East/
Washboard Canyon		99		5	6	Unmaintained Dirt	Candilla Canyon
Dryden Crossing		117		18	1	Unmaintained Dirt	Taylor Canyon
El Moro Crossing		125		8	3	Unmaintained Dirt	Shafter Canyon
El Mesquite		136		11	2	Unmaintained Dirt	Cook Creek South
Cinco de Mayo		142		6	1	Unmaintained Dirt	Cook Creek South
Ramsey Canyon		156		14	1	Unmaintained Dirt	Ramsey Canyon
Rattlesnake		166		10	1	Unmaintained Dirt	Ramsey Canyon/
Langtry		172		6	0	Unmaintained Dirt	Langtry
Amistad Reservoir		182		10	6	Highway	Shumla
Pecos River		197		15	0	Highway	Seminole Canyon

Day	Date	Starting Mileage	Lunch Location	Lunch Mileage	Ending Mileage	Miles from previous camp	Elevation Start (ft)	Elevation End (ft)	Elevation Change (ft)	Slope (ft/mile)	Descripition of Camp	Features and Hazards	Maps Used	Evac Route	Distance to Evac Route
0	9/20/13	0	Rio Grande Village	0	0	0	1800	1800	0	0.00	Camp near put in	Put-in	Rio Grande Village	Rio Grande Village	0.0
1	9/21/13	0	Entrance to Boquillas Canyon	4.5	15	15	1800	1680	120	8.00	At junction with Arroyo Venado	Boquillas Canyon	Rio Grande Village, Rio Grande Village OE E, Ernst Valley	Adams Ranch	13.0
2	9/22/13	15	Heath Creek	25	31	16	1680	1620	60	3.75	Island just past Stillwell Crossing	Exit Beg Bend NP	Ernst Valley, Stillwell Crossing OE S, Stillwell Crossing	Marvillas Canyon	14.0
3	9/23/13	31	Bourland Canyon	39	39	8	1620	1600	20	2.50	End of Bourland Canyon	Bourland Canyon, Petroglyphs	Stillwell Crossing, Bourland Canyon	Marvillas Canyon	6.0
4	9/24/13	39	Marvillas Creek	44	51	12	1600	1560	40	3.33	Outlaw flats, near towers	Maravillas Rapid (I-II): Mile 3; Spring, Outlaw flats (headwinds common)	Bourland Canyon, Las Vegas de Los Ladrones SW, Las Vegas de Los Ladrones	Horns Ranch	4.0
5	9/25/13	51	Big Canyon	61	71	20	1560	1520	40	2.00	Silber Canyon	Spring (Mi. 60); Big Canyon Rapid (II, Mi. 60); Cave, Silber Canyon Rapid (I, Mi. 71)	Las Vegas de los Ladrones, San Rosendo, Bullis Gap	Haack Canyon	5.0
6	9/26/13	71	Bullis Fold	77	81	10	1520	1420	100	10.00	Unnamed Creek	Hot Springs Rapid (III-IV, Mi. 73); Bullis Fold Rapid (II, Mi. 77)	Bullis Gap, Panther Gulch West	Panther Gulch	13.0
7	9/27/13	81	Burro Bluff	87	91	10	1420	1400	20	2.00	Smuggler's Canyon	Rodeo Rapid (II, Mi.83); Burro Bluff; Upper Madison Falls (III-IV, Mi. 88); Lower Mad. (III, Mi. 90; Springs (Mi. 90)	Panther Gulch West, Panther Gulch East	Panther Gulch	3.0
8	9/28/13	91	San Fransisco Canyon	97	106	15	1400	1360	40	2.67	Unnamed Creek	Panther Gulch (II, Mi. 93); Spring (Mi.94); San Francisco Rapid (II, Mi. 99)	Panther Gulch East, Candilla Canyon, Taylor Canyon	Dryden Crossing	11.0

Name	Location	Spacing	Milage to Road	Road Type	Quad Name
Rio Grande Village	0	0	0	Paved	Rio Grande Village
Adams Ranch	28	28	1	Unmaintained Dirt	Stillwell Crossing
Marvillas Canyon	45	17	1	Unmaintained Dirt	Bourland Canyon
Horns Ranch	55	10	2	Unmaintained Dirt	Las Vegas de los Ladrones
Bear Canyon	67	12	2	Unmaintained Dirt	Bullis Gap
Haack Canyon	76	9	2	Unmaintained Dirt	Bullis Gap
Panther Gulch	94	18	9	Unmaintained Dirt	Panther Gulch East/West
Washboard Canyon	99	5	6	Unmaintained Dirt	Candilla Canyon East
Dryden Crossing	117	18	1	Unmaintained Dirt	Taylor Canyon
El Moro Crossing	125	8	3	Unmaintained Dirt	Shafter Canyon
El Mesquite Crossing	136	11	2	Unmaintained Dirt	Cook Creek South
Cinco de Mayo Crossing	142	6	1	Unmaintained Dirt	Cook Creek South
Ramsey Canyon Canyon	156	14	1	Unmaintained Dirt	Ramsey Canyon
Rattlesnake Canyon	166	10	1	Unmaintained Dirt	Ramsey Canyon/Langtry
Langtry	172	6	0	Unmaintained Dirt	Langtry
Amistad Reservoir	182	10	6	Highway	Shumla
Pecos River	197	15	0	Highway	Seminole Canyon

Day	Date	Starting Mileage	Lunch Location	Lunch Mileage	Ending Mileage	Miles from previous camp	Elevation Start (ft)	Elevation End (ft)	Elevation Change (ft)	Slope (ft/mile)	Descripition of Camp	Features and Hazards	Maps Used	Evac Route	Distance to Evac Route
9	9/29/13	106	Sanderson Canyon	111	121	15	1360	1300	60	4.00	Shafter Canyon	Sanderson Rapid (II, Mi. 111); Arroyo Agua Verde Rapid (II, Mi. 114), Dryden Crossing (Mi. 117)	Taylor Canyon, Shafter Canyon	Dryden Crossing	4.0
10	9/30/13	121	Shafter Canyon	121	121	0	1300	1300	0	0.00	Shafter Canyon	Duff Day!	Shafter Canyon	Dryden Crossing	4.0
11	10/1/13	121	Santa Rosa	128	134	13	1300	1240	60	4.62	Cook Creek	El Zacate Canyon Rapid (II, Mi. 123)	Shafter Canyon, Cook Creek South	El Mesquite Crossing	2.0
12	10/2/13	134	Mesquite Canyon	141	149	15	1240	1200	40	2.67	Lozier Canyon	Weir Dam (I, Mi. 157)	Cook Creek South, Lozier Canyon South	Ramsey Canyon	7.0
13	10/3/13	149	Ramsey Canyon	156	159	10	1200	1160	40	4.00	House Canyon	Meandering River, Beautful Canyons	Lozier Canyon South, Ramsey Canyon	Rattlesnake Canyon	7.0
14	10/4/13	159	Pump Canyon	171	179	20	1160	1140	20	1.00	Unnamed Creek	Solado Canyon Rapid (I, Mi. 172); Amistad Reservoir	Ramsey Canyon, Langtry, Shumla	Amistad Reservoir	3.0
15	10/5/13	179	Amistad Reservoir	190	197	18	1140	1140	0	0.00	Pecos River, Highway 90	Amistad Reservoir	Shumla, Zuberbueler Bend NW, Seminole Canyon	Pecos River	0.0

BUDGET		
Transportation		
Car Gas (16mpg x 1833mi x 3.50/gal)		$801.94
Shuttle Fee		$550.00
Air Fare for members flying from around the country to Midland, TX at rates equal or lower to flights from Colorado Springs ($380 per person)	$2,651.94	$1,300.00
Fuel and Food		
According to Manito-wish Food Skeleton @ $7 per person per day	$462.50	$420.00
5 Primus Power Gas Canisters		$42.50
Maps and Books		
The Lower Canyons of the Rio Grande	$22.00	$22.00
Communication Rental		
Satallite Phone	$60.00	$60.00
Permits and Fees		
Entrance Fee (1 Vehicle)	$48.00	$20.00
Camping Fee (2 Night)		$28.00
Gear Rental		
2 Wenonah Rogue canoes, 6 paddles, bow and stern lines, bailers, PFD's		$1,710.00
6 60L dry bags		$60.00
Latrine System		$100.00
1 Firepan		$20.00
1 Four Person Tent	$2,480.00	$25.00
4 Sleeping Bags		$100.00
4 Sleeping Pads		$50.00
9 Bear Canisters		$325.00
2 Coleman Stoves		$60.00
Pots and Pans		$30.00
TOTAL		**$5,724.44**
Per person		$1,431.11

Percent Breakfast	14.4 lbs
	Total Weight
Cereal, Granola w/ Fruit	3 2/4
Cereal, Grape Nuts	0
Cereal, Honey Granola	3 2/4
Cereal, Raisin Bran	0
Cream O' Rice	0
Cream O' Wheat	0
Grits, Quick	0
Hashbrowns	3/4
Oatmeal	5
Pancake Mix	3/4
Raspberry Crème	0
Scrambled Egg	3/4
Syrup, Pancake	0
Yearly Write-in	0
Total	14.4 lbs

Percent T.L.	13.3 lbs
	Total Weight
Bread	0
Hummus	1 1/4
Jelly	0
Jerky	3/4
Peanut Butter	6
Pita	0
Rye Krisp	0
Sausage	2 3/4
Soy PB Substitute	0
Straw Preserves	2 3/4
Yearly Write-in	0
Total	13.3 lbs

Percent Desserts	2.8 lbs
	Total Weight
Brownie Mix	2/4
Cake Mix, Carrot	2/4
Cake Mix, Cheesecake	0
Cake Mix, Devil's Food	2/4
Cake Mix, Spice	3/4
Cake Mix, Yellow	0
Graham Crust	0
Marshmallows	0
Popcorn	2/4
Pudding Mix, Butterscotch	0
Pudding Mix, Choc.	0
Yearly Write-in	0
Total	2.8 lbs

Percent Baking	18.9 lbs
	Total Weight
Bisquick	3 3/4
Cocoa Powder	0
Corn Starch	0
Flour, Corn	4 3/4
Flour, Wheat	4 3/4
Flour, White	5 3/4
Yearly Write-in	0
Total	18.9 lbs

Percent Bars	0.0 lbs
	Total Weight
chocolate Clif Bars	0
Granola/Nutrigrain	0
Snickers	0
Yearly Write-in	0
Total	0.0 lbs

Percent Staples	7.8 lbs
	Total Weight
Butter	0
Honey	3/4
Margarine	1 2/4
Milk Powder	3/4
Molasses	0
Olive Oil	2 3/4
Salid oil	0
Shortening	0
Sugar, Brown	1 1/4
Sugar, Powdered	0
Sugar, White	3/4
Syrup, Corn	0
Yearly Write-in	0
Total	7.8 lbs

Total Sausage
2 3/4

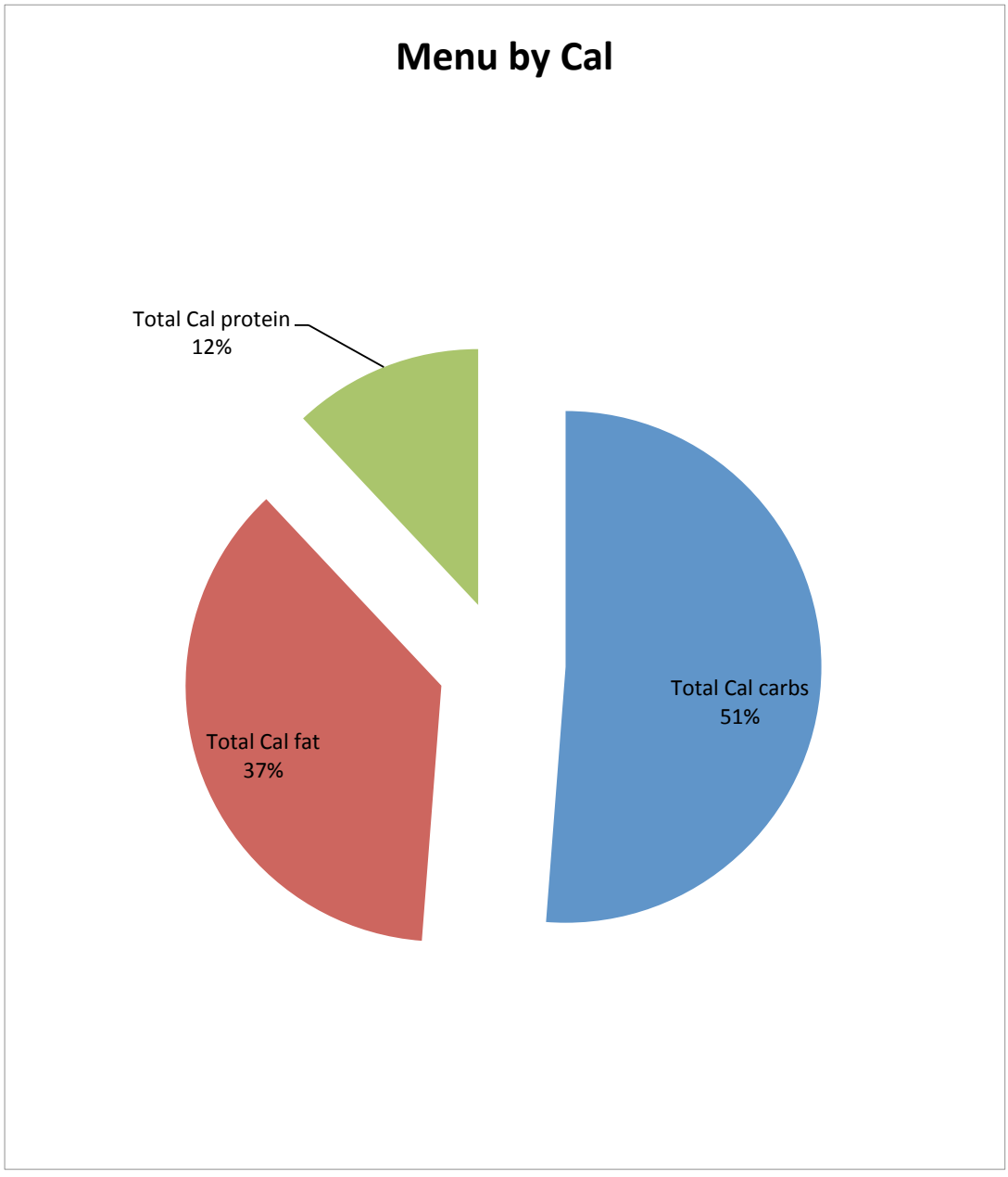
Percent Dinner	18.9 lbs
	Total Weight
Beans, Black Dried	2
Beans, Pinto	3/4
Beans, Refried Dried	3/4
Chili, Dried	3/4
Couscous	1 1/4
Lentils	1 1/4
Pasta, Egg Noodles	0
Pasta, Lasagne	0
Pasta, Macaroni	1 2/4
Pasta, Rotini	1 2/4
Pasta, Spaghetti	0
Potatoes, Flakes	2/4
Potatoes, Sliced Dried	0
Quinoa, Red	1 1/4
Quinoa, White	0
Rice, Brown	1 2/4
Rice, Instant (backpackers/exp	0
Rice, White	0
Sauce Mix, Alfredo	1/4
Sauce Mix, Brown Gravy	0
Sauce Mix, Stroganoff	0
Sauce Mix, Tomato Crystals	1/4
Sausage	0
Soup Mix, Cream Base	0
Soup Mix, French Onion	2/4
Soup Mix, Veggie	0
Soup Mix, Veggie Noodle	2/4
TVP, Flavored	0
TVP, Unflavoured	1
TVP, Veggie Burger Mix	0
TVP, Veggie Taco Mix	0
Veggie, Dried Bell Peppers	1
Veggie, Dried Broccoli	2/4
Veggie, Dried Carrots	2/4
Veggie, Dried Corn	3/4
Veggie, Dried Green Beans	1/4
Veggie, Dried Mixed	2/4
Veggie, Dried Onions	2/4
Veggie, Dried Peas	0
Veggie, Tomato Flakes	2/4
Wheat, Bulgar	0
Yearly Write-in	0
Total	18.9 lbs

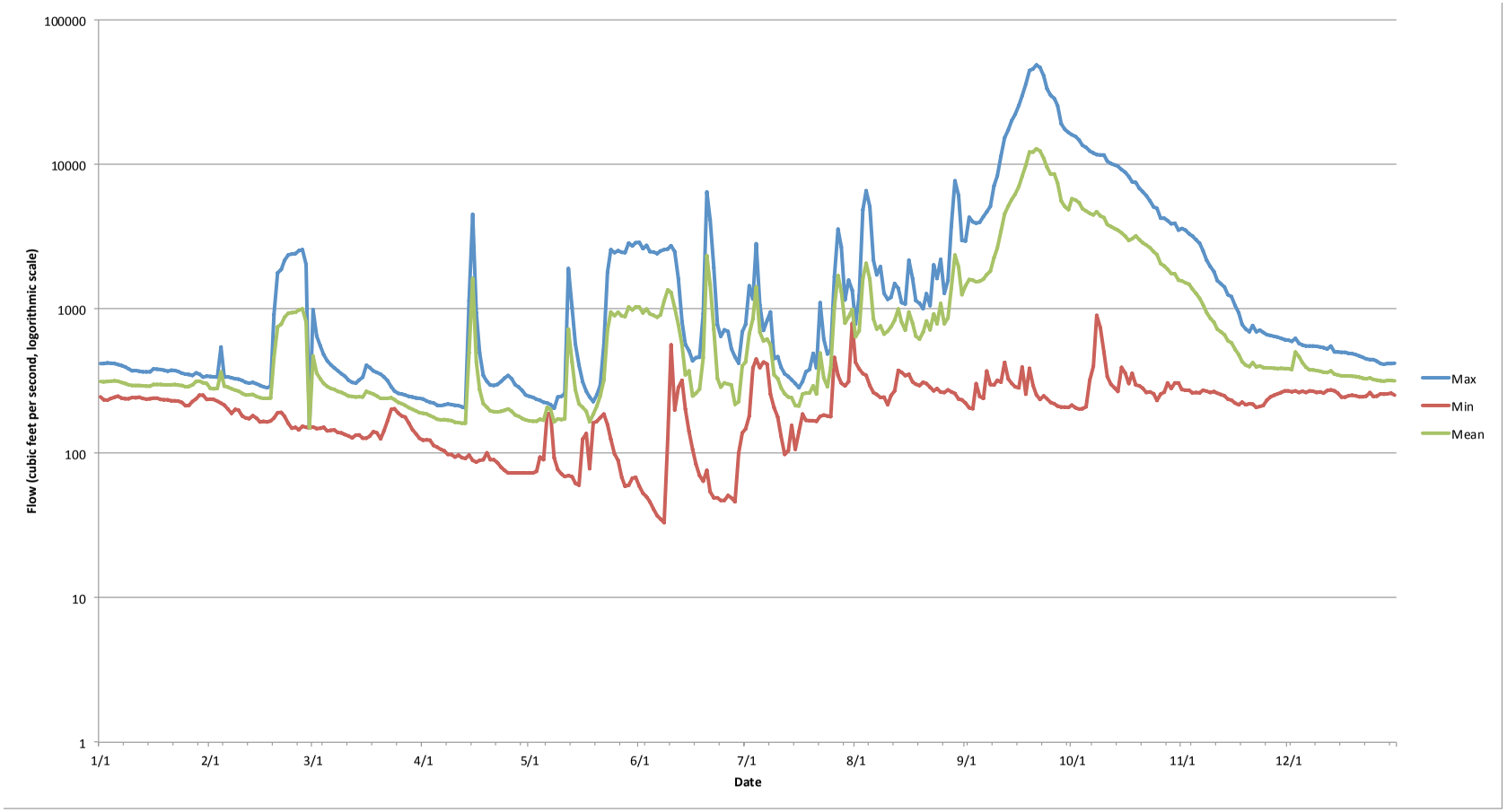
Percent Cheese	10.0 lbs
	Total Weight
Cheese, American	0
Cheese, Cheddar	5
Cheese, mozzarella	0
Cheese, Pepper Jack	5
Cheese, Powdered	0
Yearly Write-in	0
Total	10.0 lbs

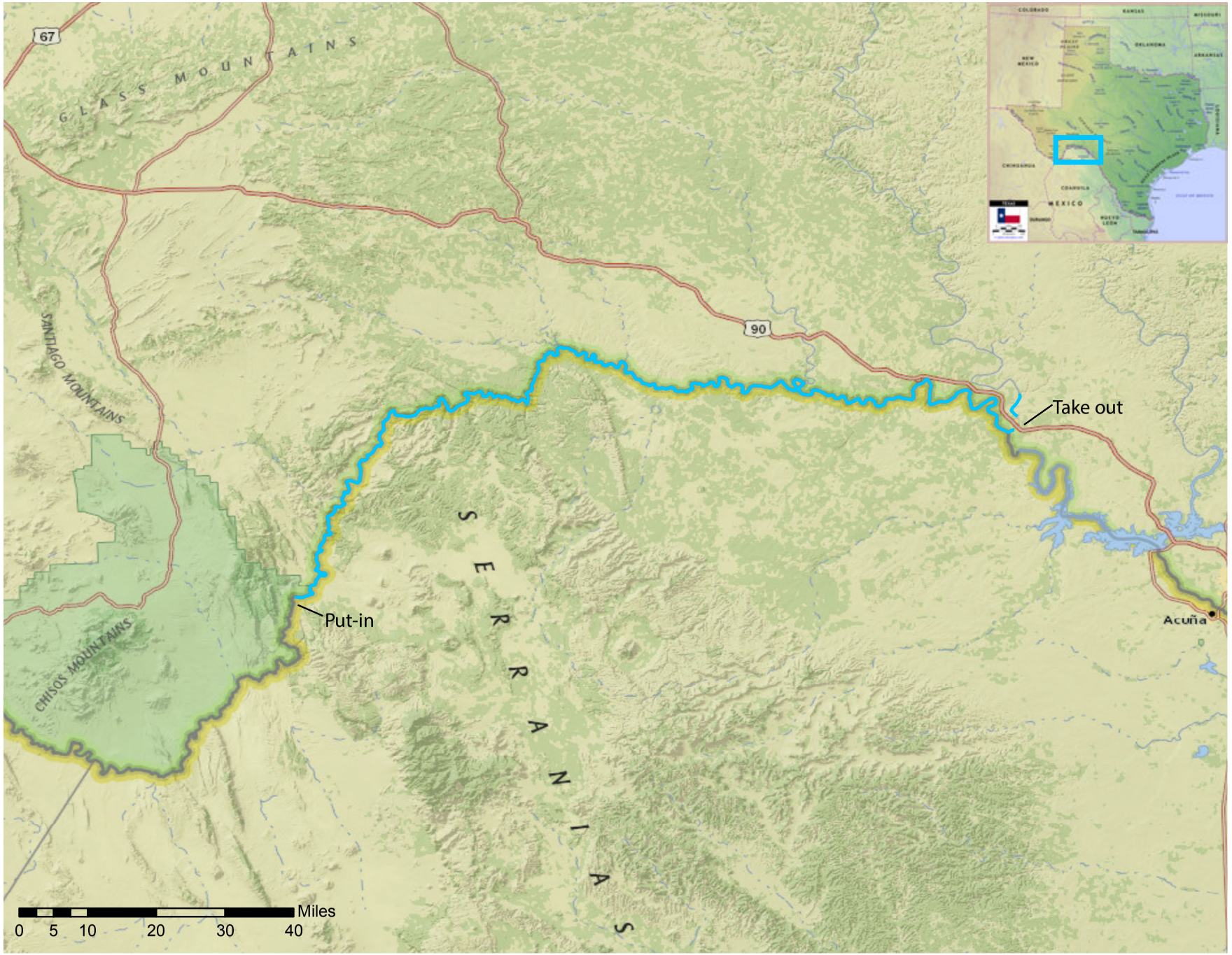
Percent Snacks	22.8 lbs
	Total Weight
Carob Peanuts	0
Carob Raisins	0
Chocolate, Baker's	1 1/4
Corn nuts	0
Fruit, Banana Chips	2 1/4
Fruit, Candied Cranberry Bits	0
Fruit, Craisins	3
Fruit, Dried Apples	2 1/4
Fruit, Dried Apricots	1 2/4
Fruit, Dried Pineapple, candied	1 1/4
Fruit, Prunes	2 1/4
Fruit, Raisins	2/4
Magic Pieces (M&Ms)	1 1/4
Nuts, Almonds	0
Nuts, Cashews	3 2/4
Nuts, Peanuts	2 3/4
Nuts, Soy	0
Nuts, Sunflower Seeds	0
Nuts, Walnuts	0
Sesame Sticks	0
Trail Mix, Acapulco Gold	0
Trail Mix, Camp GORP	1 1/4
Trail Mix, Hot and Sassy	0
Yearly Write-in	0
Total	22.8 lbs

Percent Drinks	2.2 lbs
	Total Weight
Cocoa	3/4
Coffee	1/4
Gatorade	1/4
OC's or BW	1/4
Tea	1
Yearly Write-in	0
Total	2.2 lbs

Total Cal	192188
Cal/person	48047
Cal PPPD	3203




100000
10000
1000
100
10
1
Flow (cubic feet per second, logorithmic scale)
1/1
2/1
3/1
4/1
5/1
6/1
7/1
8/1
9/1
10/1
11/1
12/1
Date
Max
Min
Mean


67
GLASS MOUNTAINS
SANTIAGO MOUNTAINS
CHISOS MOUNTAINS
90
Take out
Put-in
SERRANIAS
Acuña
Miles
0 5 10 20 30 40

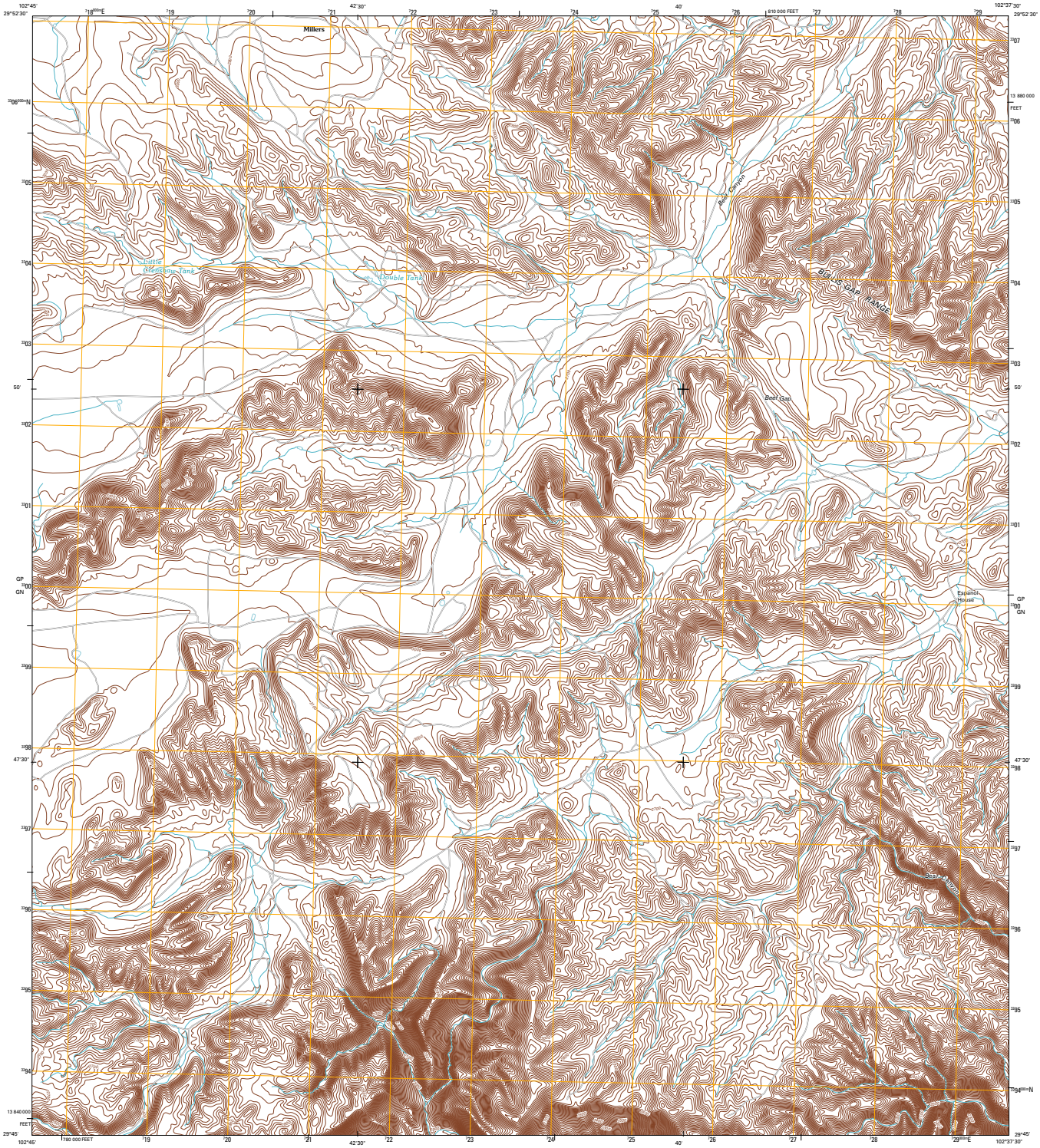
Map of USGS 7.5 Minute Topos

					Candilla Canyon East								
		Beef Gap	Bullis Gap	Panther Gulch West	Panther Gulch East	Taylor Canyon	Shafter Canyon	Cook Creek South	Lozier Canyon South	Ramsey Canyon	Langtry	Shumla	
	Cupola Mountain	Las Vegas de los Ladrones	San Rosendo									Zuberbueler Ben	Seminole Canyon
	Bourland Canyon	Las Vegas de los Ladrones SW											
Sue Peaks	Stillwell Crossing												
Ernst Valley	Stillwell Crossing OE E												
Rio Grande Village	Rio Grande Village OE E												

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

BEEF GAP QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the draft USGS Standards for 7.5-Minute Quadrangle Maps. A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

Pine Mountain East	San Francisco Shutups	Bullis Gap NE
Dove Mountain	Beef Gap	Bullis Gap
Cupola Mountain	Las Vegas De Las Ladronas	San Rosendo

ADJOINING 7.5' QUADRANGLES
TX 2910D-342

ROAD CLASSIFICATION

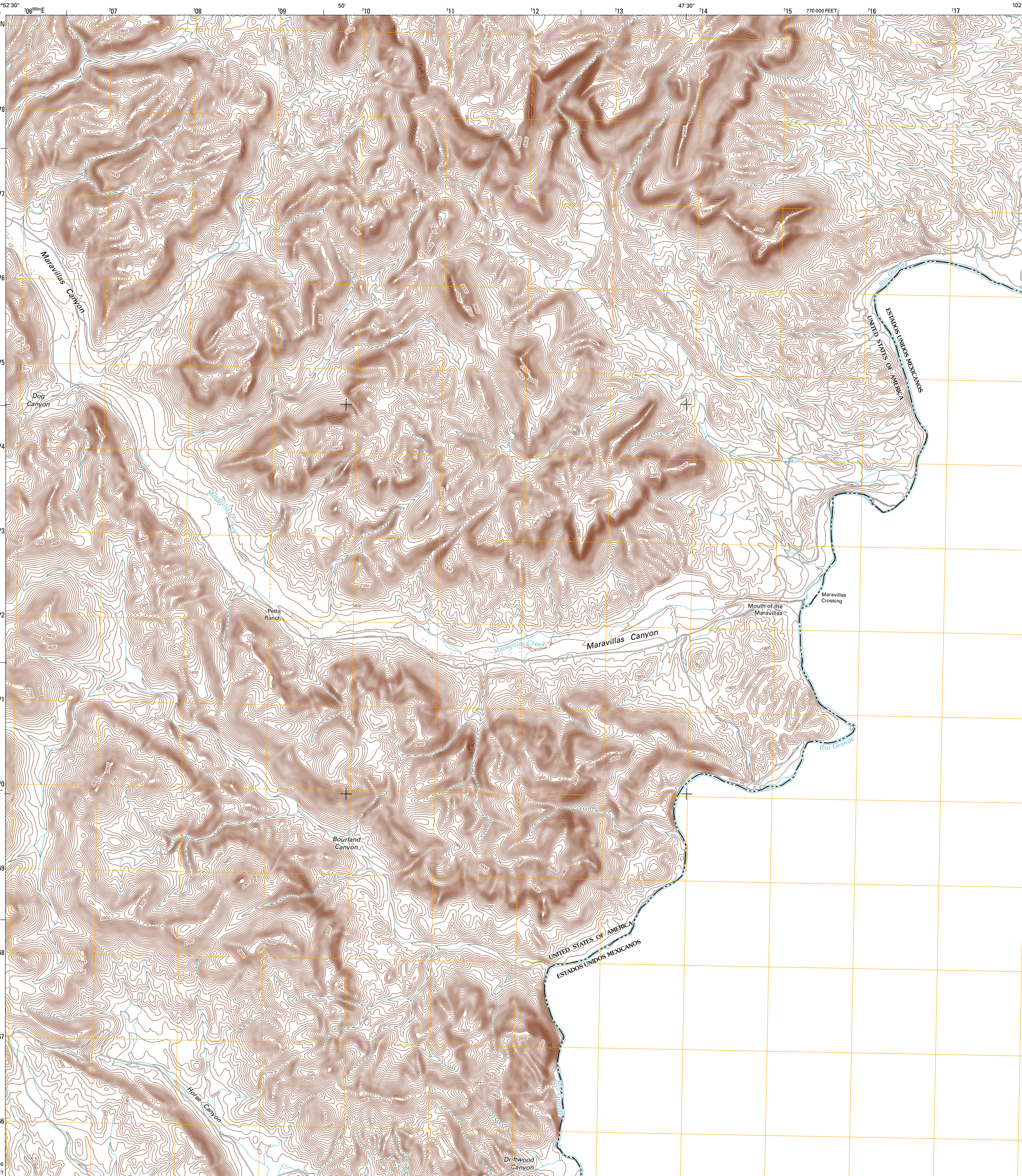
Interstate Route	State Route
US Route	Local Road
Ramp	4WD

BEEF GAP, TX
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

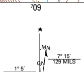
The National Map
US Topo

BOURLAND CANYON QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery....NAIP, October 2008
Roads....US Census Bureau TIGER data with limited USGS updates, 2006
Names....GNIS, 2008
Hydrography....National Hydrography Dataset, 1995
Contours....National Elevation Dataset, 2008



UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID: GN
Grid Zone Designation: 13R

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET

This map was produced to conform with version 0.5.10 of the draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

Stillwell Mountain	Cupola Mountain	Las Vegas De Los Ladrones
Black Gap	Bourland Canyon	Las Vegas De Los Ladrones SW
Sue Peaks	Stillwell Crossing	

ADJOINING 7.5' QUADRANGLES
TX 29102-321

ROAD CLASSIFICATION

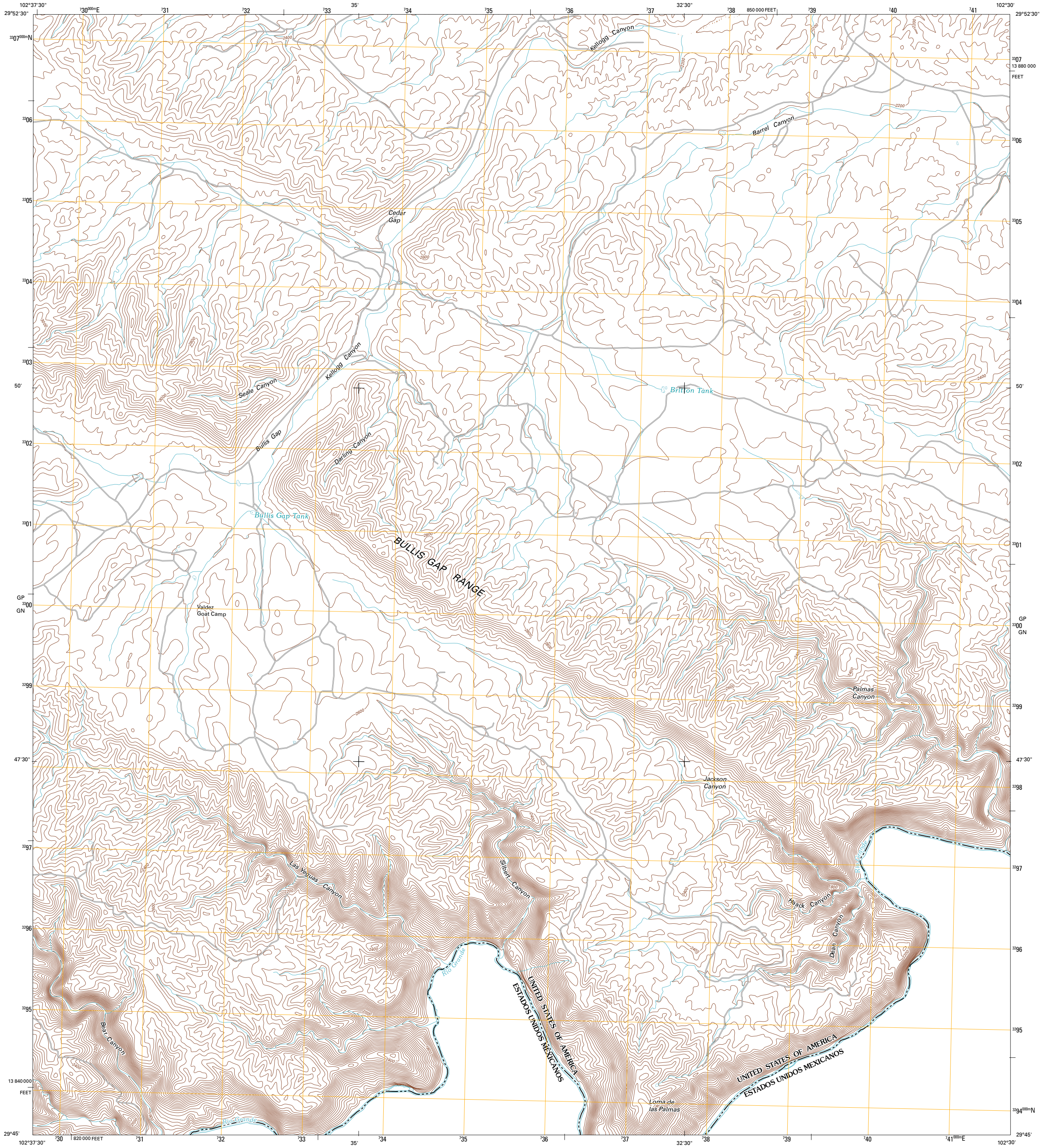
Interstate Route, State Route, US Route, Local Road, Ramp, 4WD

BOURLAND CANYON, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

BULLIS GAP QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery..............NAIP, September 2008
Roads..............US Census Bureau TIGER data with limited USGS updates, 2006
Names..............GNIS, 2008
Hydrography..............National Hydrography Dataset, 1995
Contours..............National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
GP / GN
Grid Zone Designation
13R

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with version 0.5.10 of the draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

San Francisco Shutups	Bullis Gap NE	Candilla Canyon West
Beef Gap	Bullis Gap	Panther Gulch West
Las Vegas De Los Ladrones	San Rosendo	

ADJOINING 7.5' QUADRANGLES
TX 29102-341

ROAD CLASSIFICATION

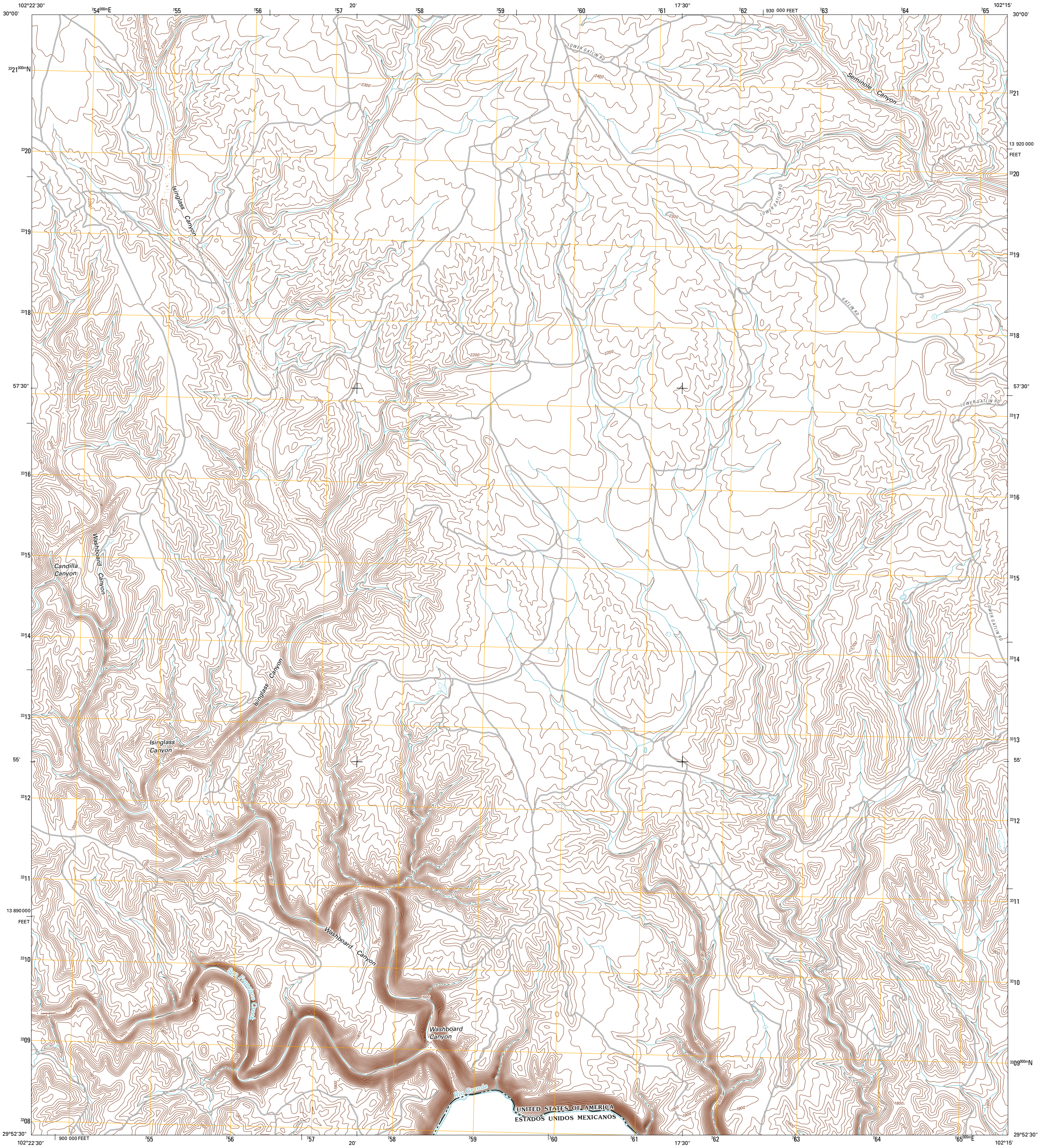
Interstate Route — State Route
US Route — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

BULLIS GAP, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

CANDILLA CANYON EAST QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



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North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery............NAIP, September 2008
Roads............US Census Bureau TIGER data with limited USGS updates, 2006 - 2008
Names............GNIS, 2008
Hydrography............National Hydrography Dataset, 1995
Contours............National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
(MN 7° 3′ 125 MILS; GN 1° 20′ 24 MILS)

U.S. National Grid
100,000-m Square ID: GP
Grid Zone Designation: 13R

SCALE 1:24 000
KILOMETERS · METERS · MILES · FEET

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Hagler Canyon	Sanderson SE	Mofeta
Candilla Canyon West	Candilla Canyon East	McClain Canyon
Panther Gulch West	Panther Gulch East	Taylor Canyon

ADJOINING 7.5' QUADRANGLES
TX 29102-434

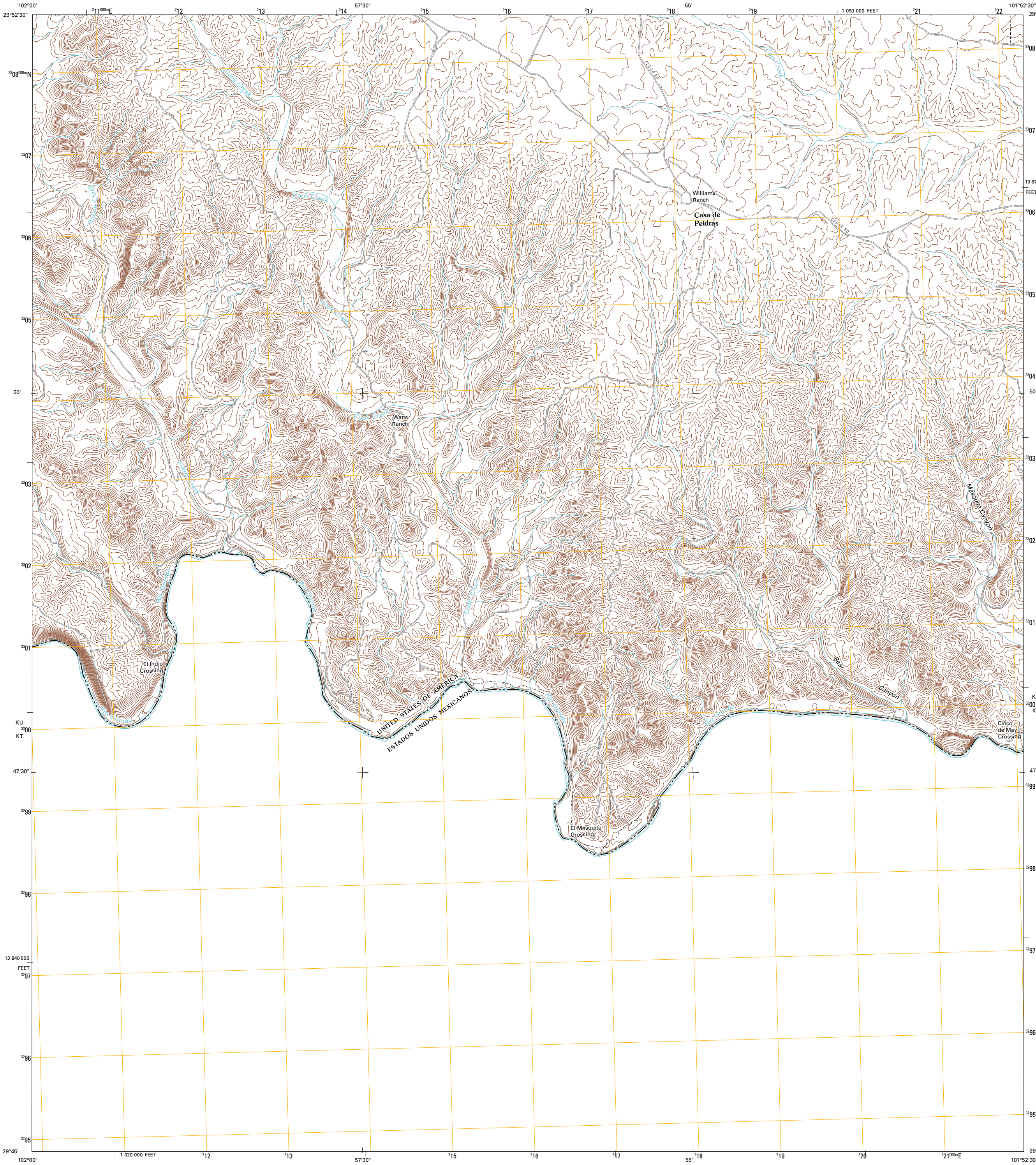
ROAD CLASSIFICATION
Interstate Route · State Route
US Route · Local Road
Ramp · 4WD
Interstate Route · US Route · State Route

CANDILLA CANYON EAST, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

COOK CREEK SOUTH QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data with limited USGS updates, 2008
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

MN
GN
6° 52´
122 MILS
1° 28´
26 MILS

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID: KU / KT ^{33}00
Grid Zone Designation: 14R

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Balcon Creek	Cook Creek North	Lozier Canyon North
Shafter Canyon	Cook Creek South	Lozier Canyon South

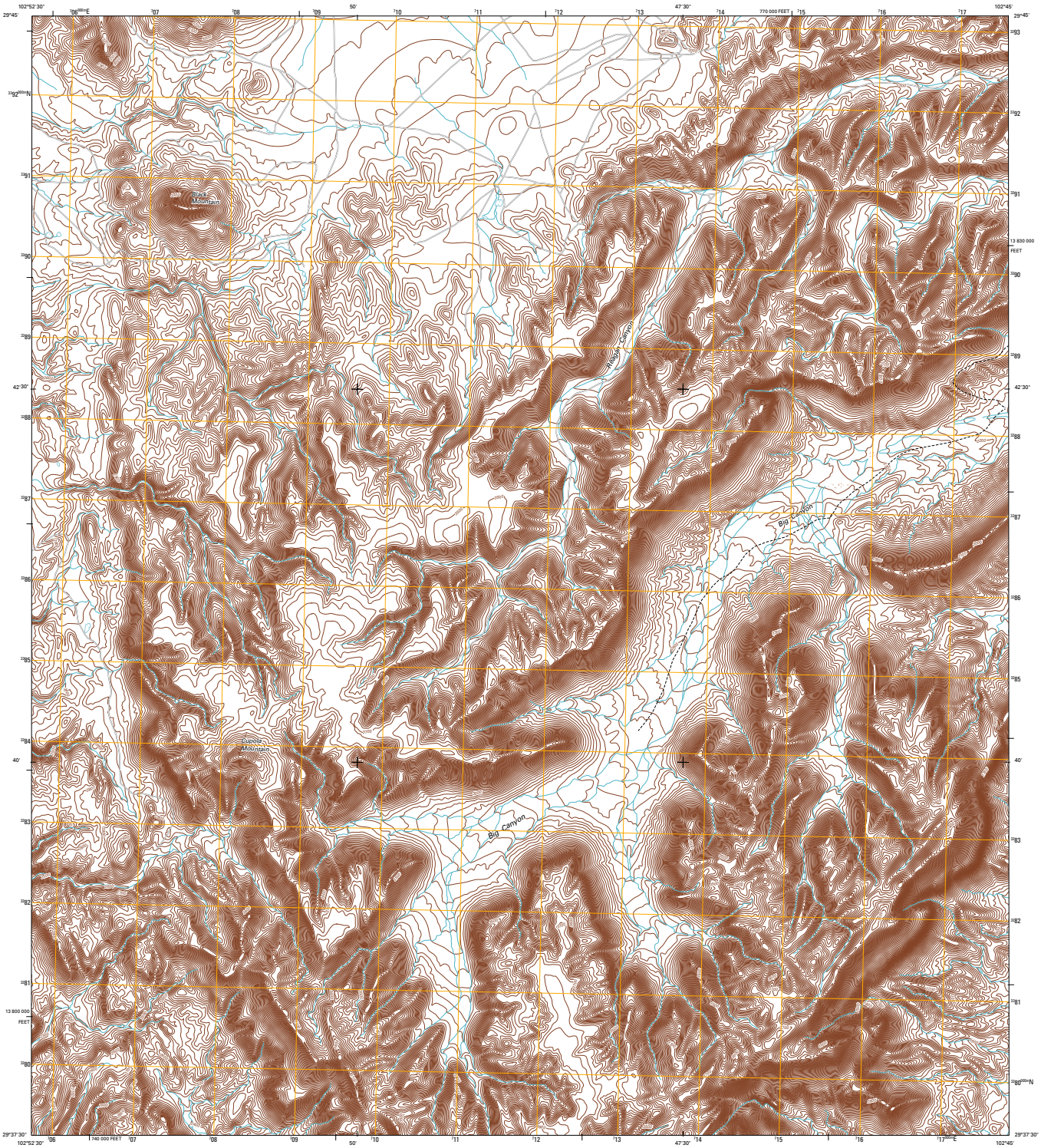
ADJOINING 7.5' QUADRANGLES
TX 29101-332

ROAD CLASSIFICATION

Interstate Route		State Route	
US Route		Local Road	
Ramp		4WD	

Interstate Route — US Route — State Route

COOK CREEK SOUTH, TX-COA
2010



U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

CUPOLA MOUNTAIN QUADRANGLE
TEXAS
7.5-MINUTE SERIES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, October 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
EN
Grid Zone Designation
13R

SCALE 1:24 000

KILOMETERS 0.5 0 1 2
METERS 1000 0 1000 2000
MILES 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 40 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Yellow House Draw Peak	Dome Mountain	Reef Gap
Stilhwell Mountain	Cupola Mountain	Las Vegas De Los Ladrones
Black Gap	Beanland Canyon	Las Vegas De Los Ladrones SW

ADJOINING 7.5' QUADRANGLES
TX 2910-324

ROAD CLASSIFICATION

Interstate Route		State Route	
US Route		Local Road	
Ramp		4WD	

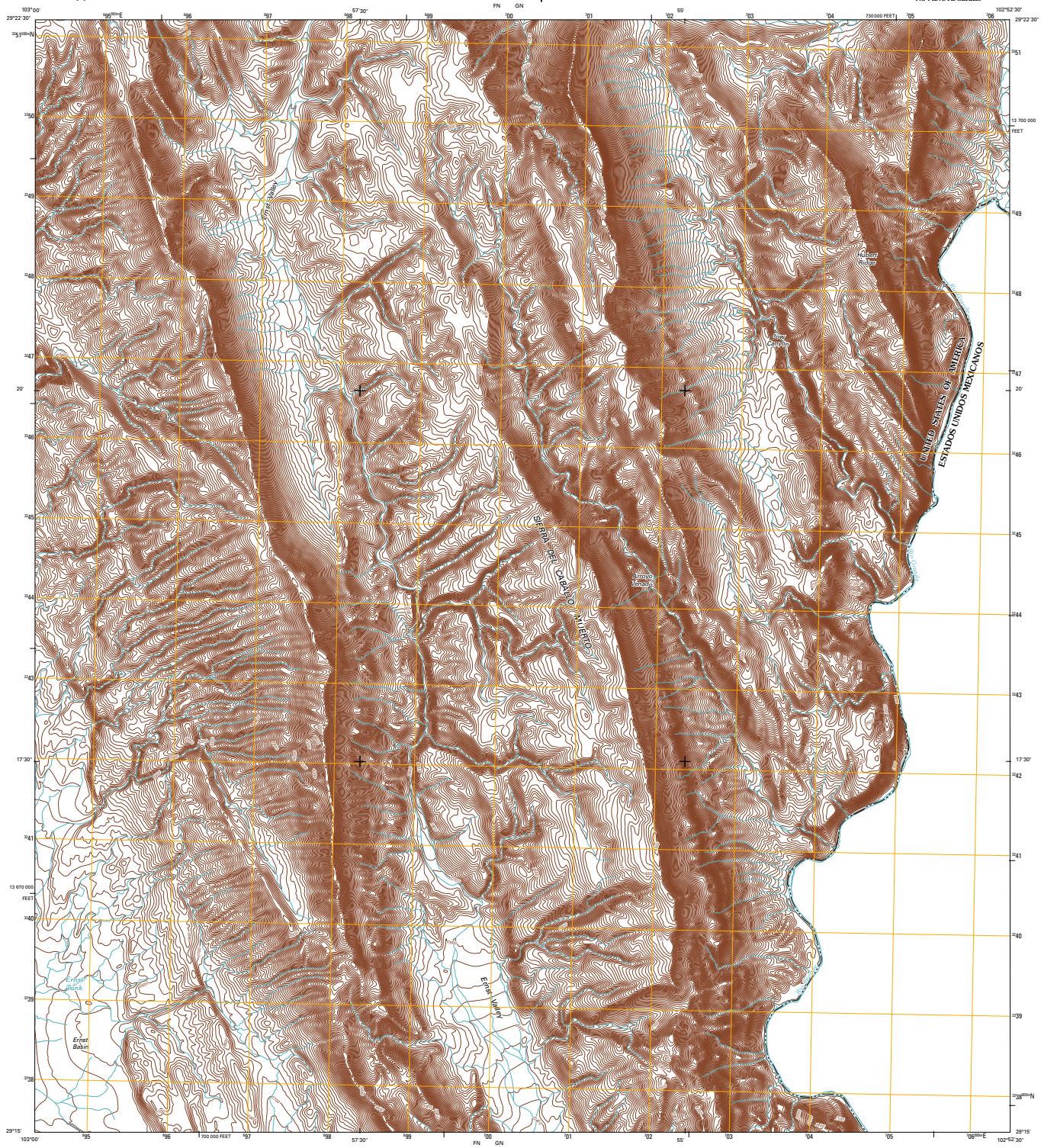
Interstate Route · US Route · State Route

CUPOLA MOUNTAIN, TX
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

ERNST VALLEY QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
.....with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
FN GN
Grid Zone Designation
13R

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 40 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

McKinney Springs	Sue Peaks	Stillwell Crossing
Hays Peak	Ernst Valley	Stillwell Crossing OE S
San Vicente	Rio Grande Village	Rio Grande Village OE E

ADJOINING 7.5 QUADRANGLES
TX 29102-232

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

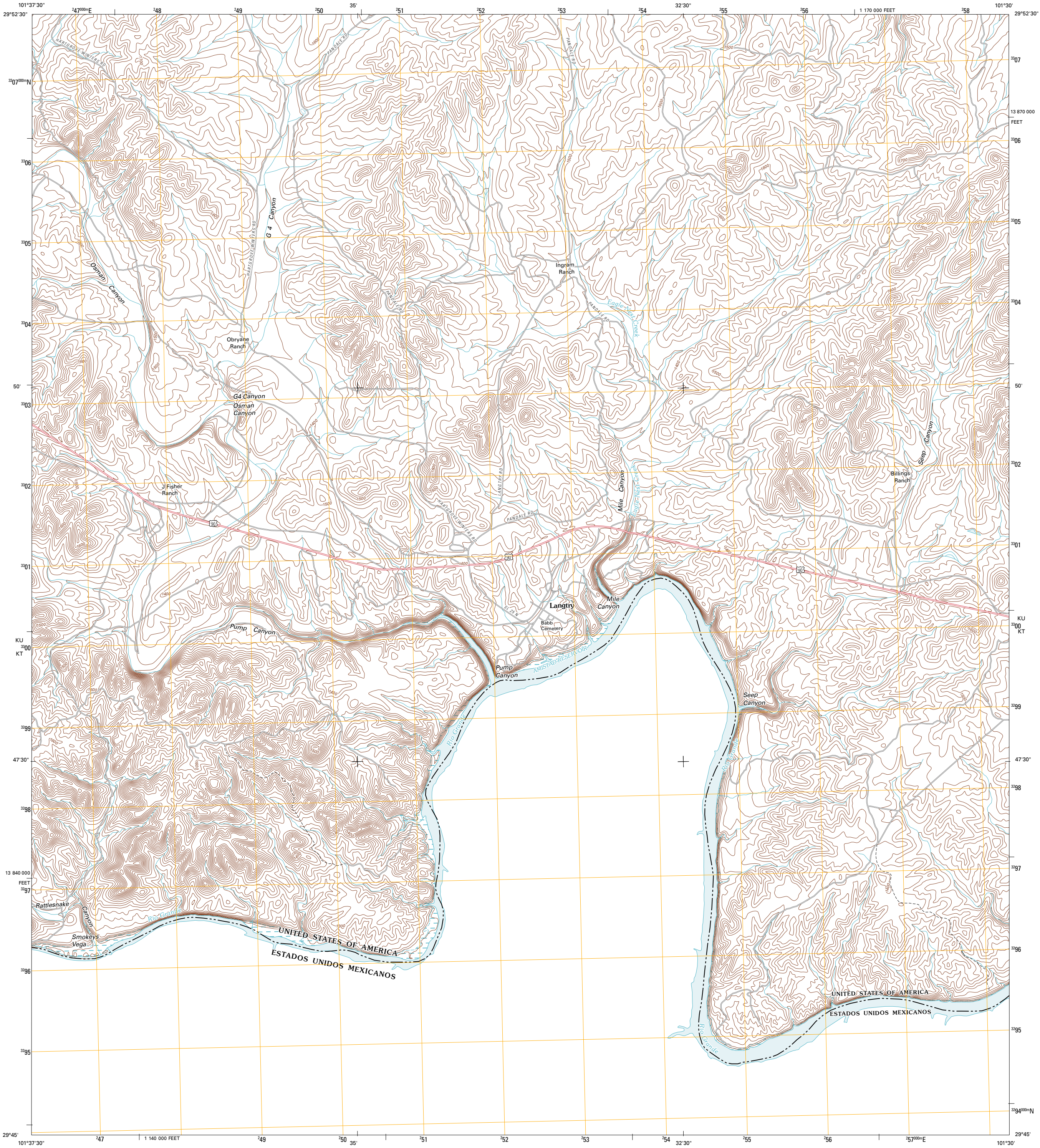
Interstate Route US Route State Route

ERNST VALLEY, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

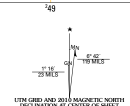
The National Map
US Topo

LANGTRY QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery....................NAIP, May 2008
Roads....................US Census Bureau TIGER data with limited USGS updates, 2005
Names....................GNIS, 2008
Hydrography....................National Hydrography Dataset, 1995
Contours....................National Elevation Dataset, 2006



UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID: KU / KT (33 00)
Grid Zone Designation: 14R

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

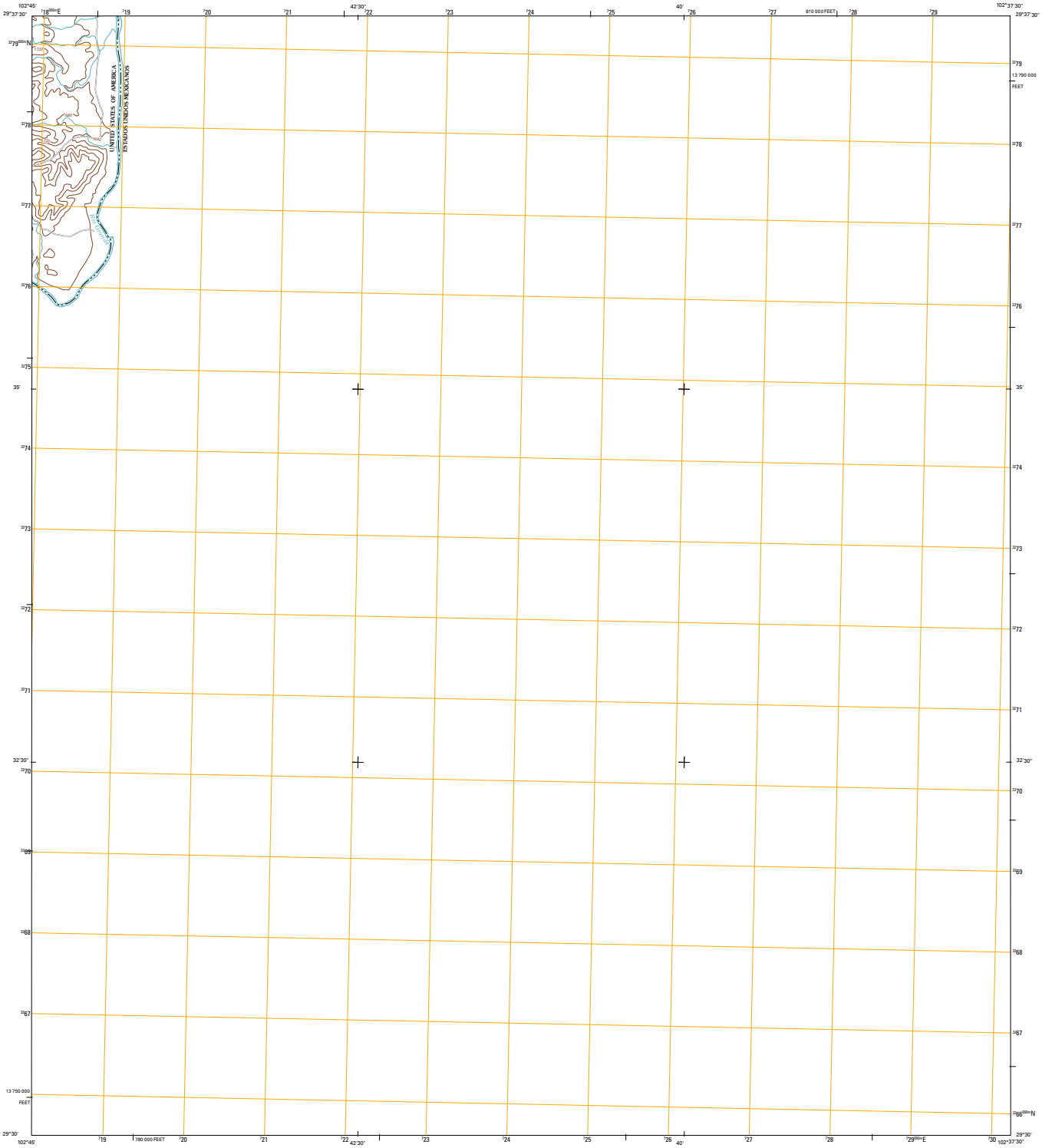
Pumpville	Harkell Canyon	Still Canyon
Ramsey Canyon	Langtry	Shumla
		Zuberbueler Bend NW

ADJOINING 7.5' QUADRANGLES
TX 29101-341

ROAD CLASSIFICATION

Interstate Route — State Route
US Route — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

LANGTRY, TX-COA
2010



U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

USGS science for a changing world

The National Map US Topo

LAS VEGAS DE LOS LADRONES SW QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, October 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
GN
Grid Zone Designation
13R

SCALE 1:24 000

KILOMETERS 0 0.5 1 2
METERS 0 500 1000 2000
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CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Cupola Mountain	Las Vegas De Los Ladrones	San Rosendo
Boatland Canyon	Las Vegas De Los Ladrones SW	
Stillwell Crossing		

ADJOINING 7.5' QUADRANGLES
TX 2910202-312

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

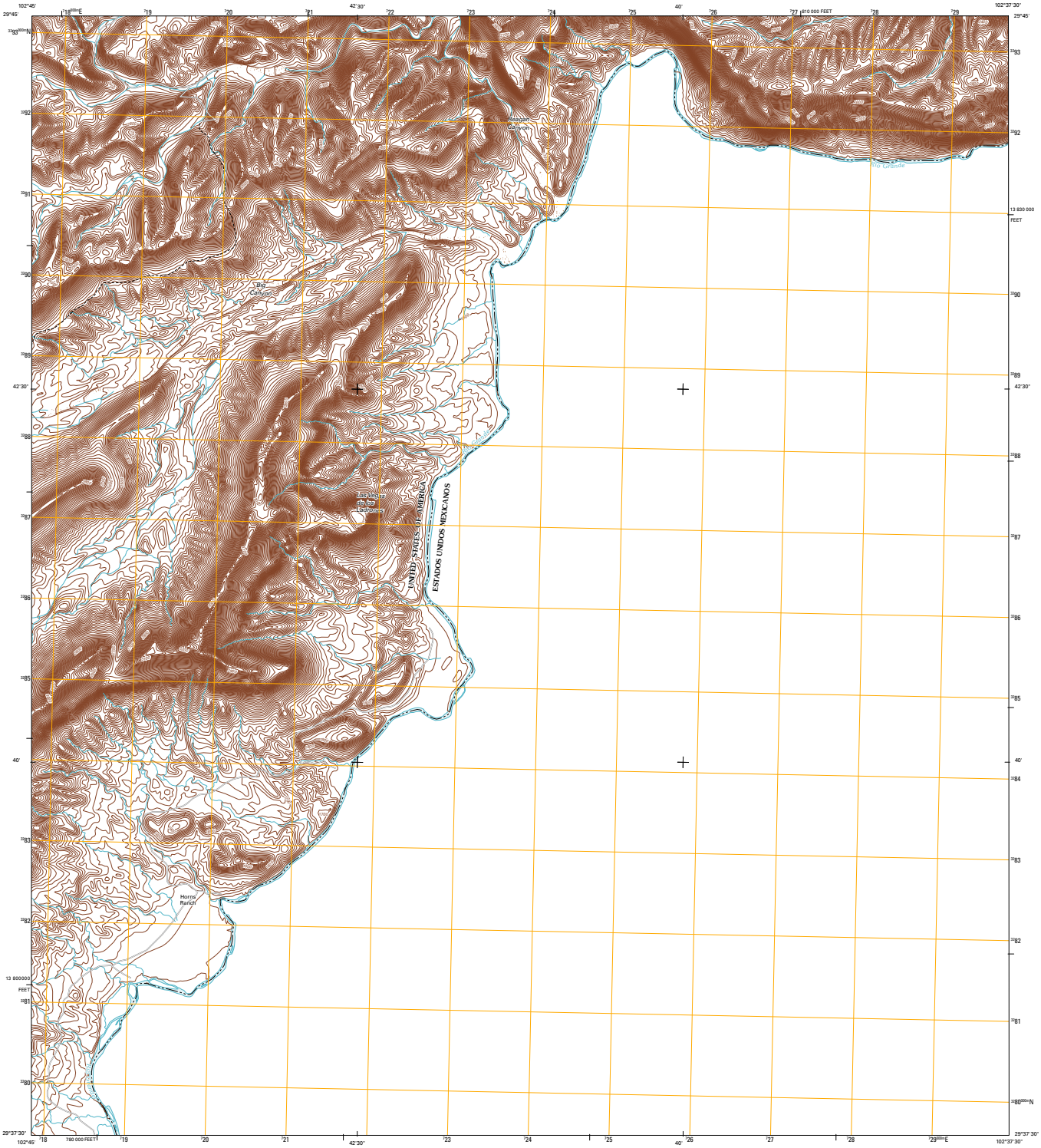
Interstate Route · US Route · State Route

LAS VEGAS DE LOS LADRONES SW, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

LAS VEGAS DE LOS LADRONES QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
EN
Grid Zone Designation
13R

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

TEXAS

Dove Mountain	Roof Gap	Bullis Gap
Cupola Mountain	Las Vegas De Los Ladrones	San Rosendo
Bourland Canyon	Las Vegas De Los Ladrones SW	

ADJOINING 7.5' QUADRANGLES
TX 2910-313

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

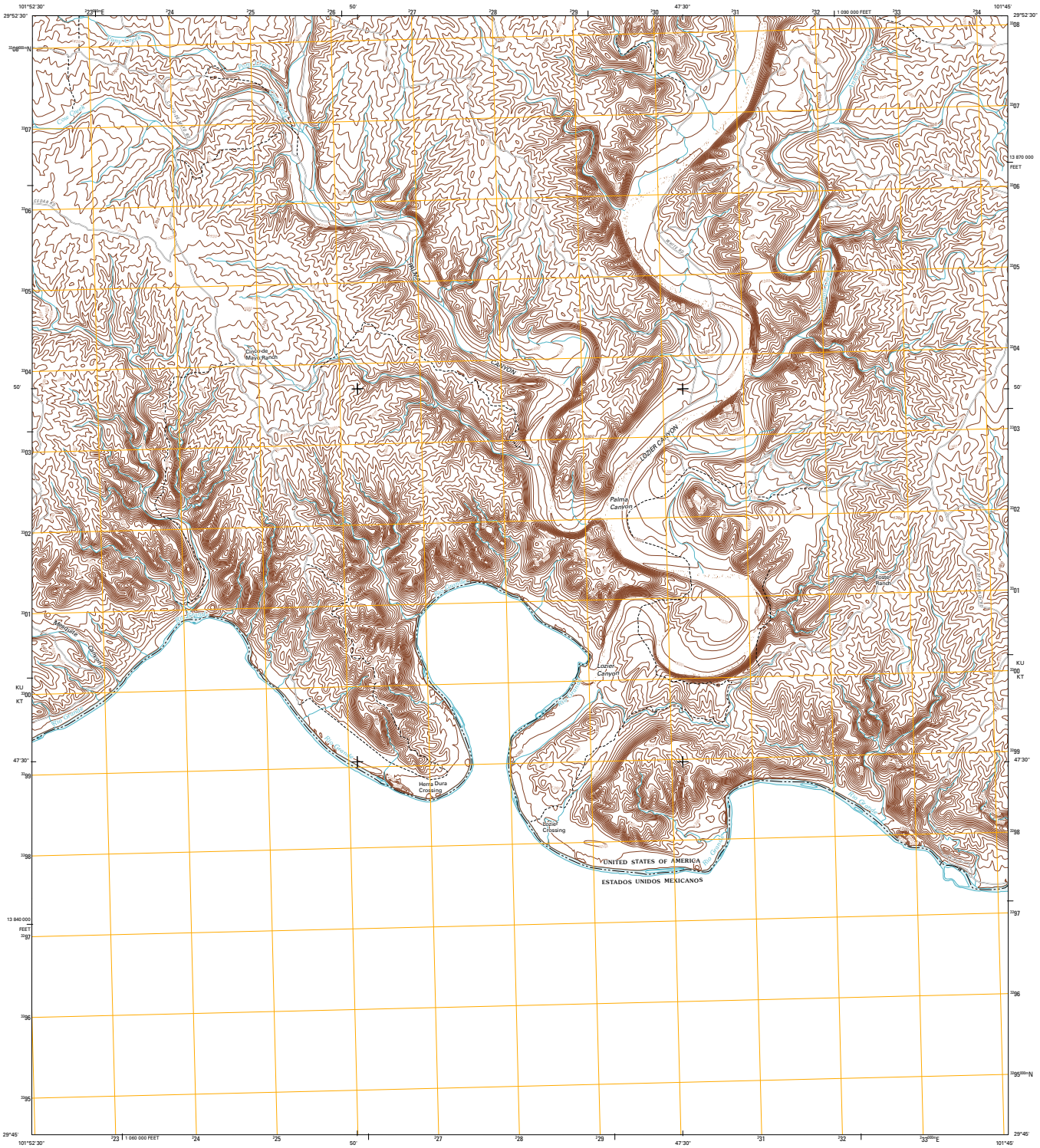
Interstate Route · US Route · State Route

LAS VEGAS DE LOS LADRONES, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

LOZIER CANYON SOUTH QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2005 - 2008
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with version 0.5.10 of the draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

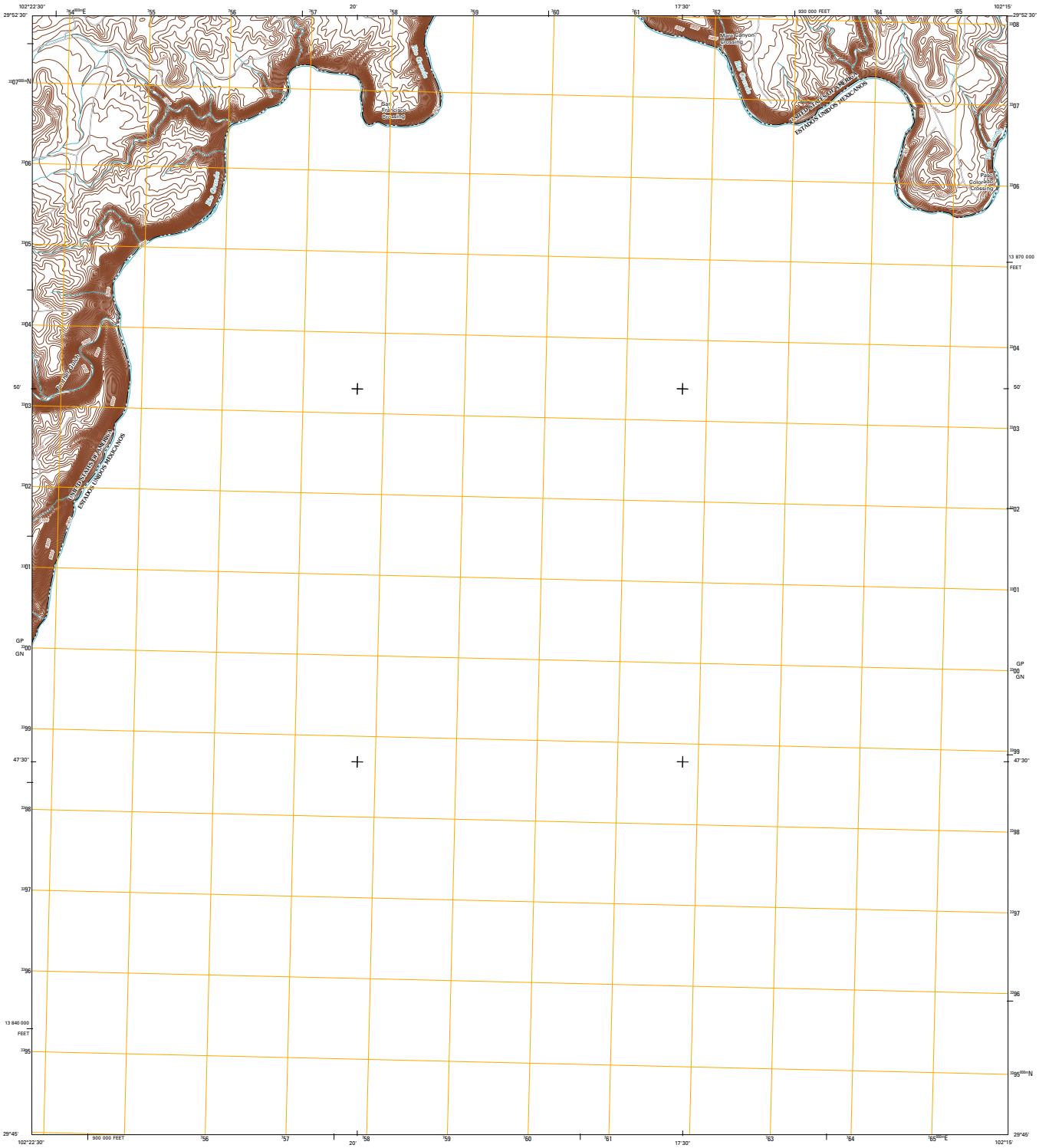
Cook Creek North	Lozier Canyon North	Pumpville
Cook Creek South	Lozier Canyon South	Ramsey Canyon

ADJOINING 7.5' QUADRANGLES
TX 29101-331

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

LOZIER CANYON SOUTH, TX-COA
2010



U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

PANTHER GULCH EAST QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006 - 2008
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
GP
GN
Grid Zone Designation
13R

SCALE 1:24 000

KILOMETERS 0.5 0 1 2
METERS 1000 0 1000 2000
MILES 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 40 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Candilla Canyon West	Candilla Canyon East	McClain Canyon
Panther Gulch West	Panther Gulch East	Taylor Canyon

ADJOINING 7.5' QUADRANGLES
TX 2910202-431

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

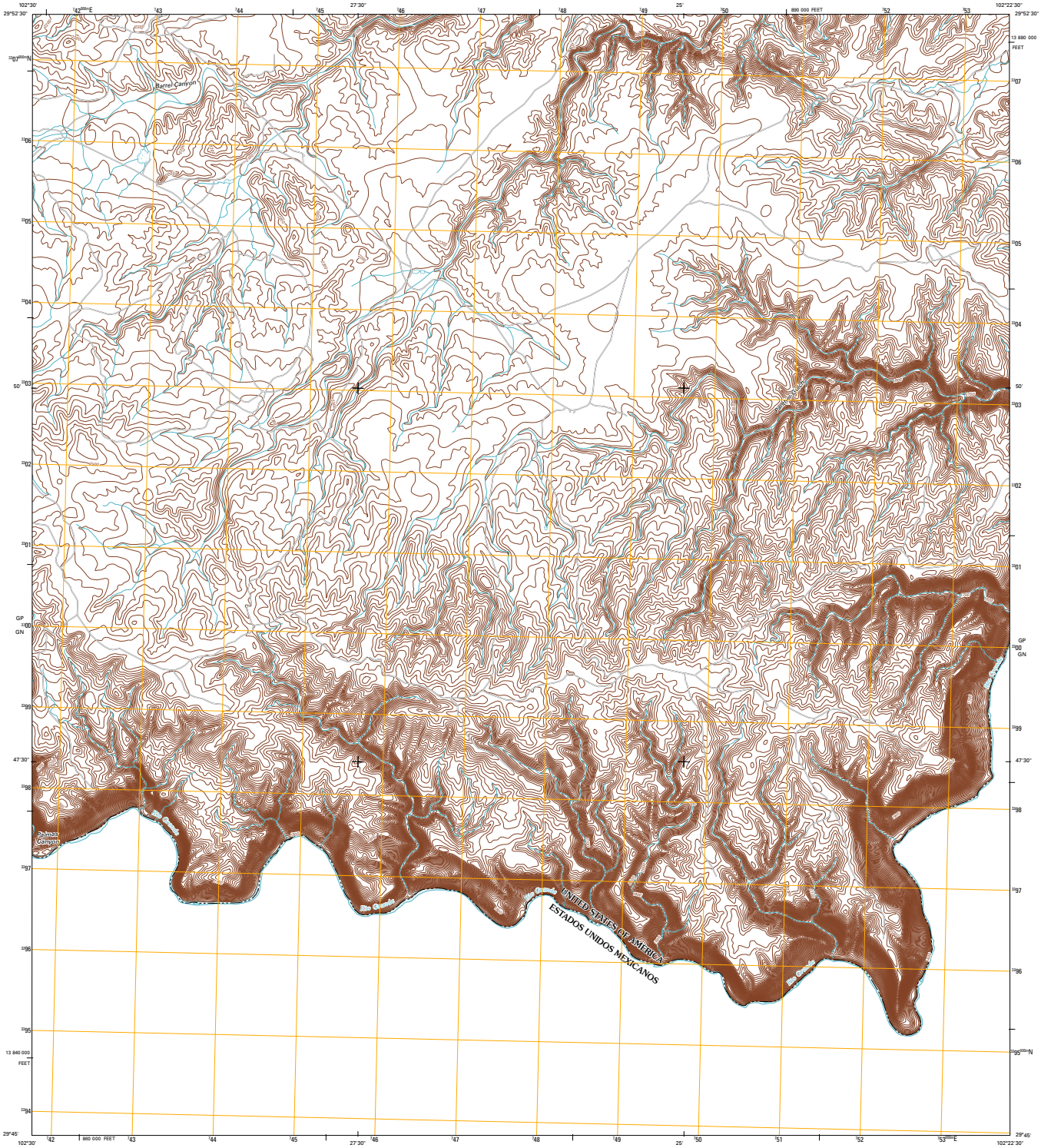
Interstate Route · US Route · State Route

PANTHER GULCH EAST, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

PANTHER GULCH WEST QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



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North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Bullis Gap NE	Candilla Canyon West	Candilla Canyon East
Bullis Gap	Panther Gulch West	Panther Gulch East
San Rosendo		

ADJOINING 7.5' QUADRANGLES
TX 2910-E-432

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

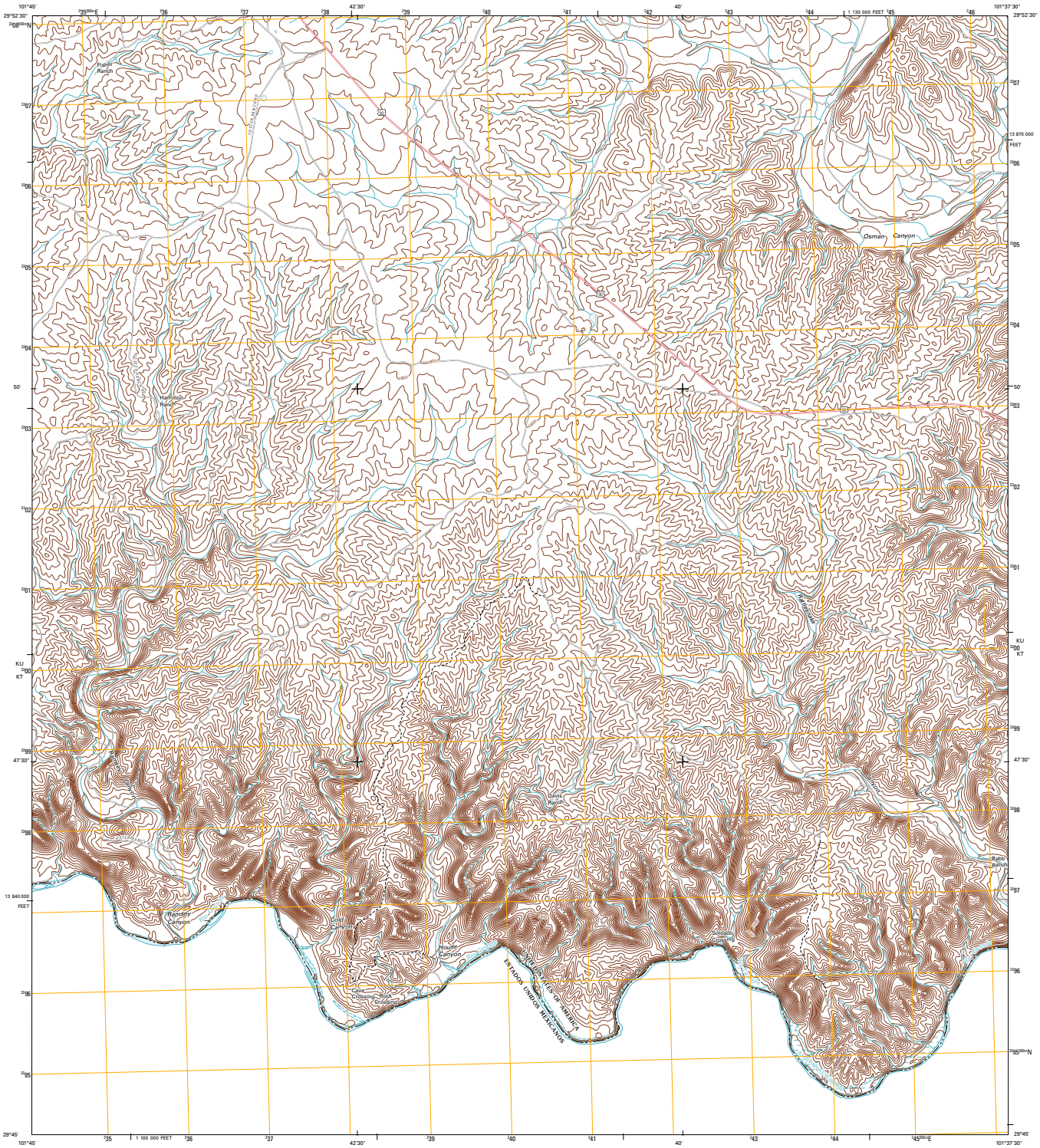
Interstate Route · US Route · State Route

PANTHER GULCH WEST, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

RAMSEY CANYON QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, May 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2005
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2006

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
KU
Grid Zone Designation
14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1/2 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Lozier Canyon North	Pumpville	Harbell Canyon
Lozier Canyon South	Ramsey Canyon	Langtry

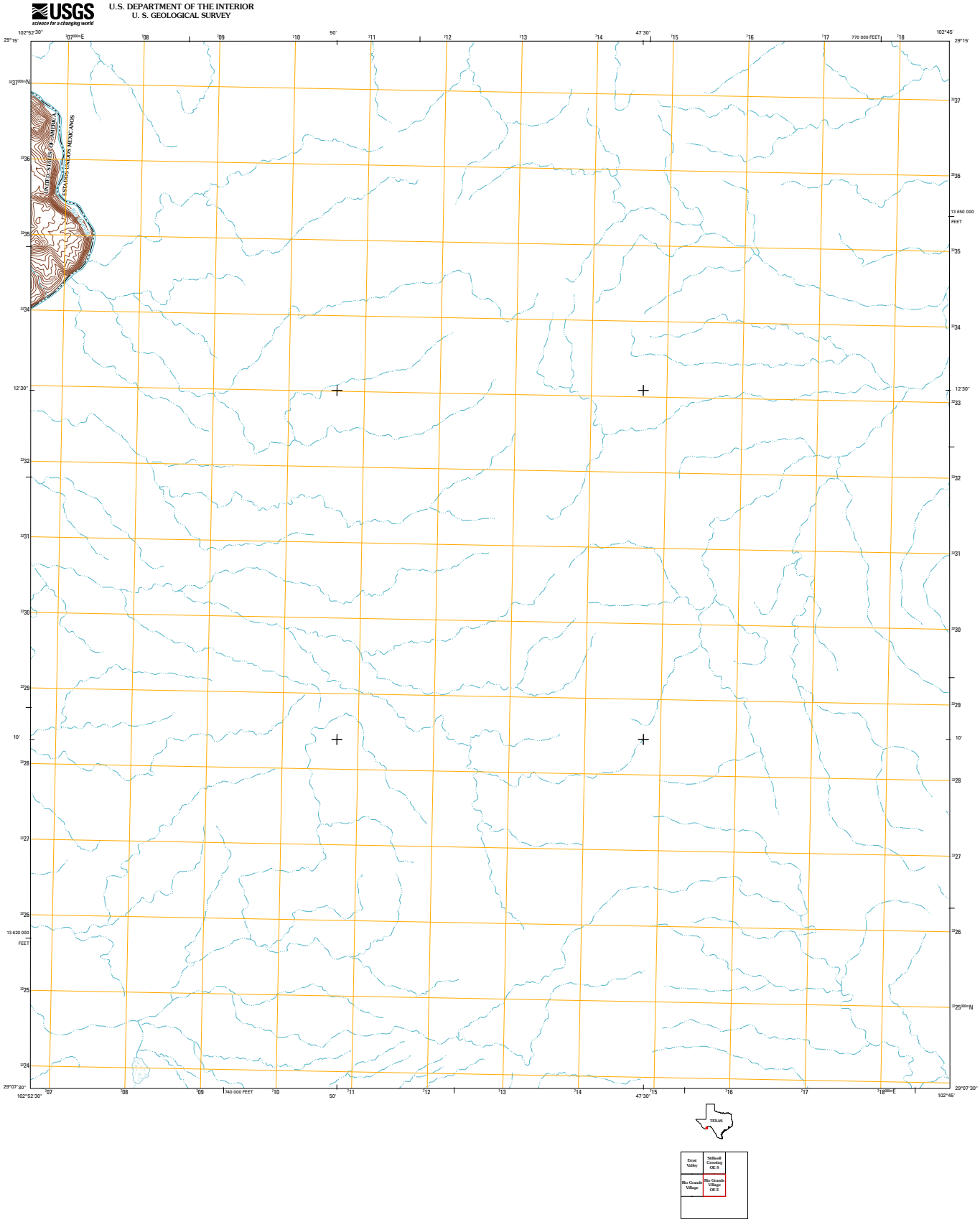
ADJOINING 7.5' QUADRANGLES
TX 2901S-342

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route · US Route · State Route

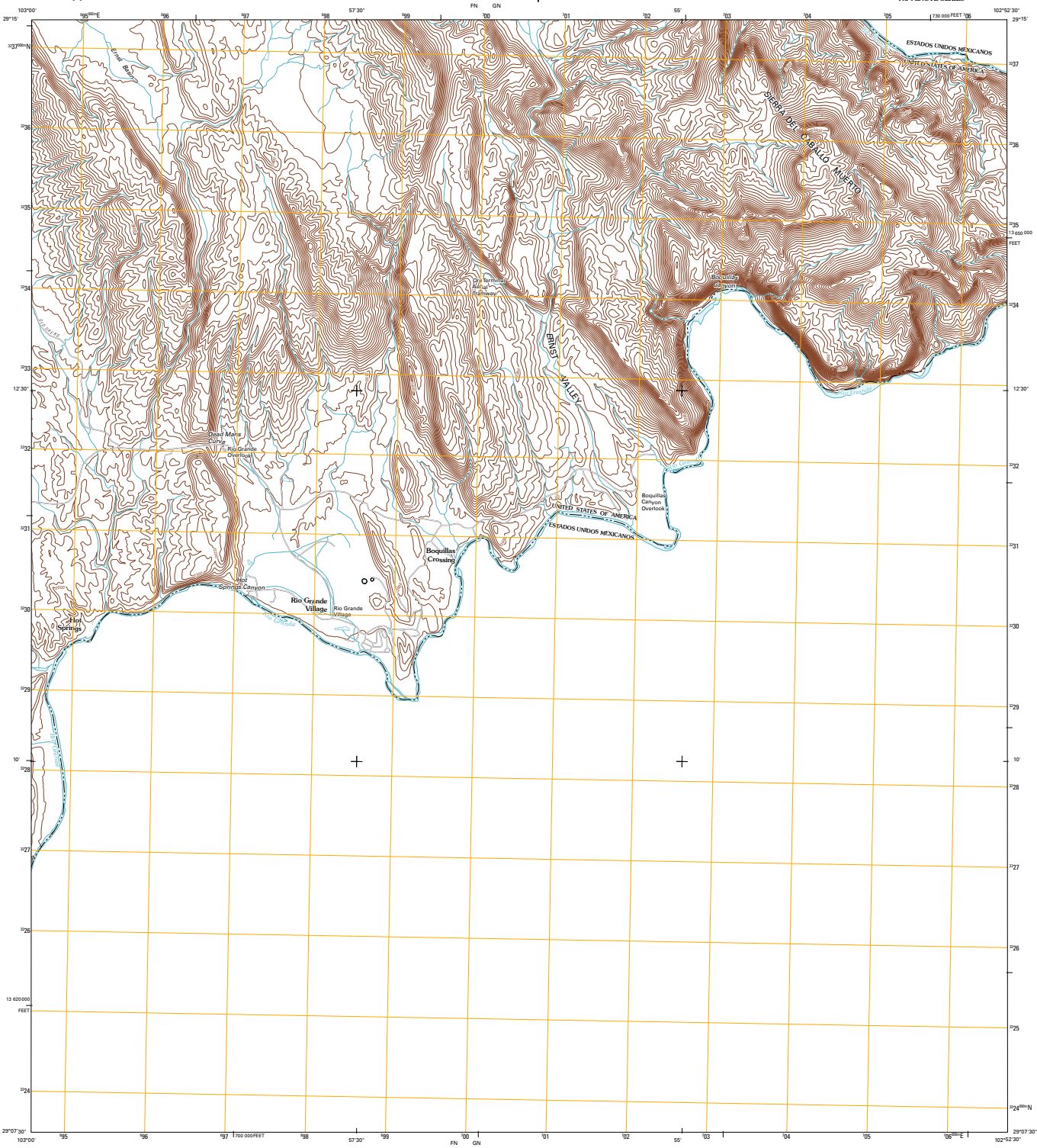
RAMSEY CANYON, TX-COA
2010


USGS
science for a changing world
U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY
UNITED STATES
ESTADOS UNIDOS MEXICANOS
TEXAS
Ernst Valley
Stillwell Crossing OE S
Rio Grande Village
Rio Grande Village OE E

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

RIO GRANDE VILLAGE QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
FN | GN
Grid Zone Designation
13R

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

Rojo Peak	Ernst Valley	Stillwell Crossing OE S
San Vicente	Rio Grande Village	Rio Grande Village OE E
Solis		

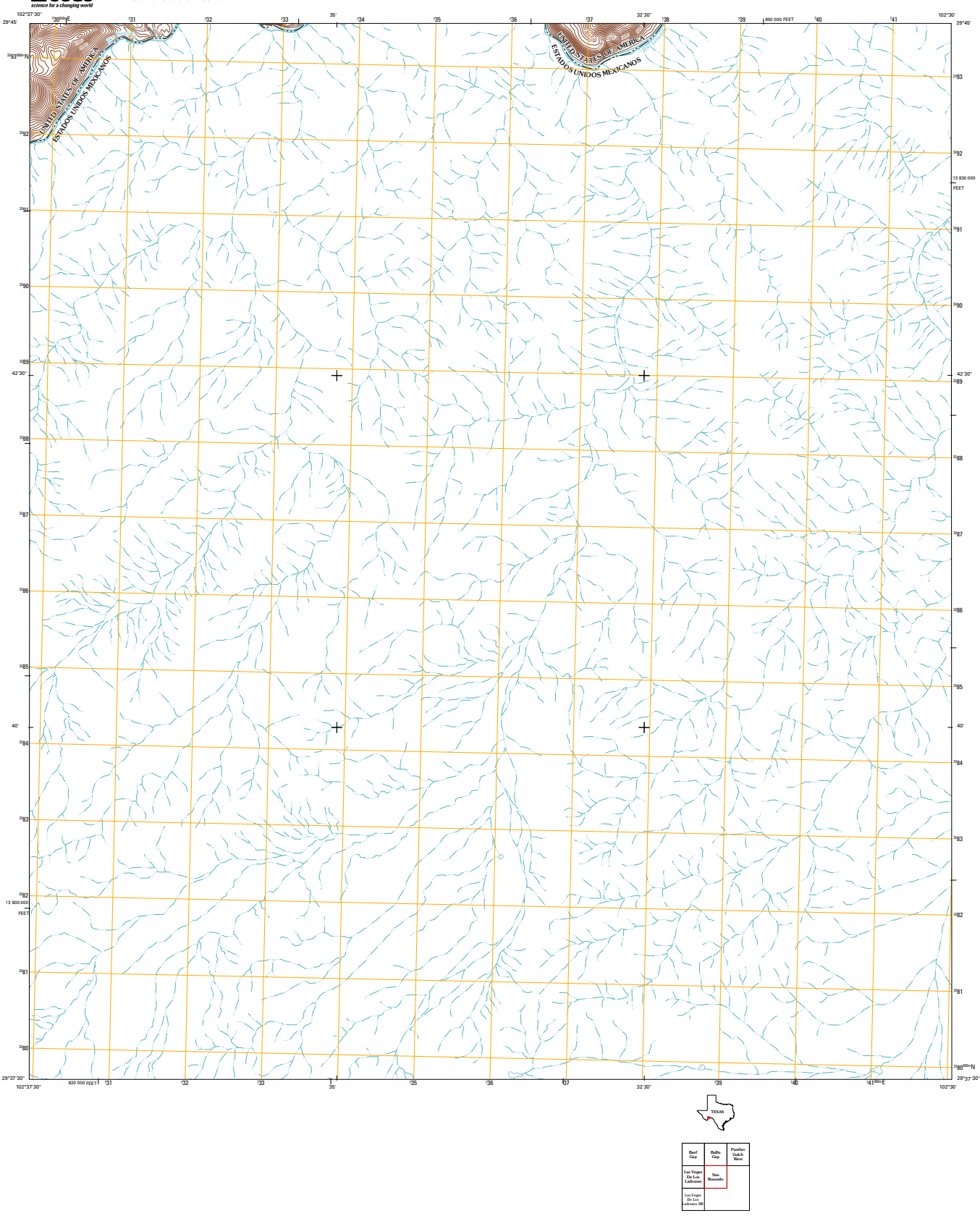
ADJOINING 7.5' QUADRANGLES
TX 29102-223

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route | US Route | State Route

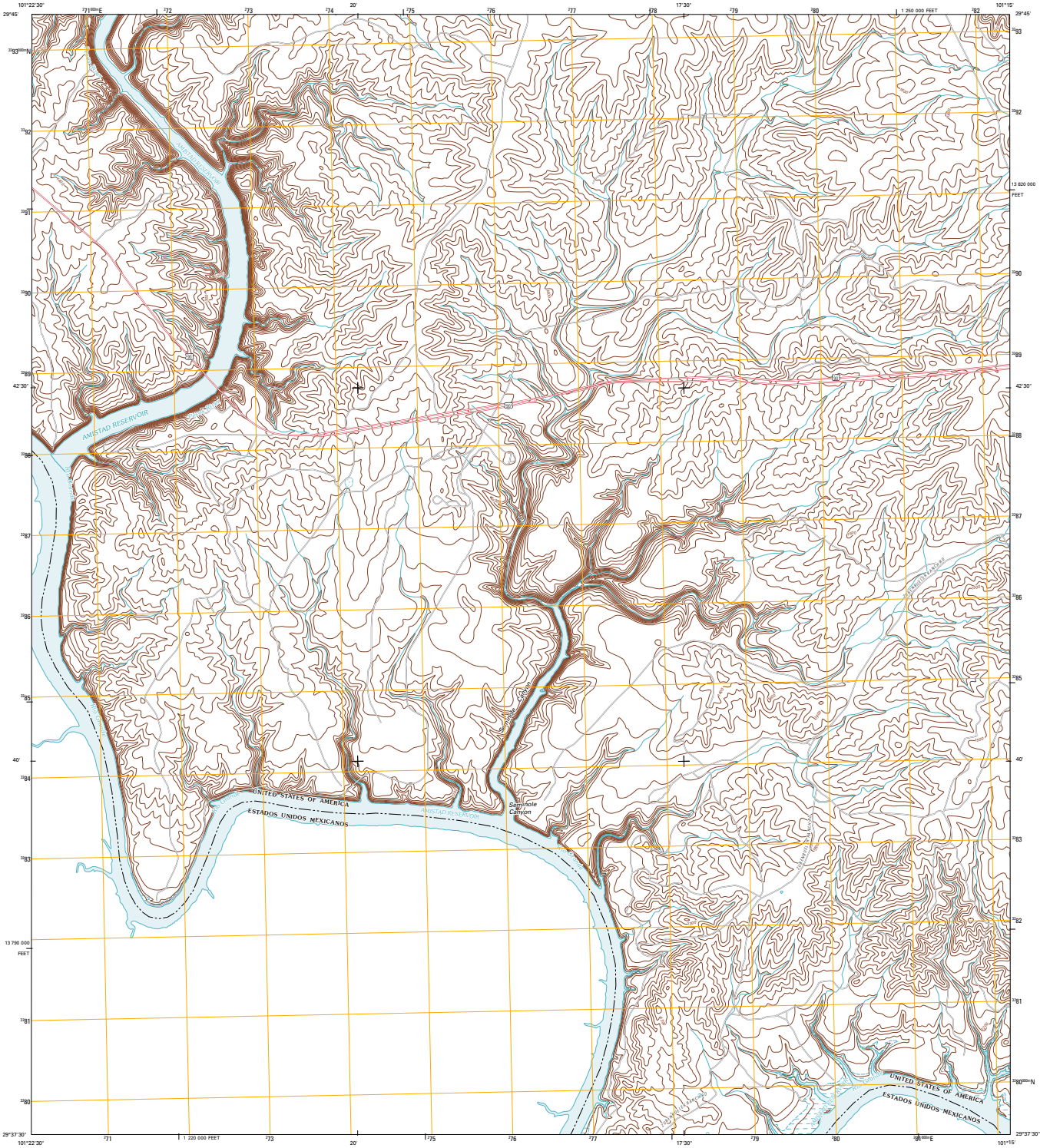
RIO GRANDE VILLAGE, TX-COA
2010


U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY
USGS
science for a changing world
UNITED STATES OF AMERICA
ESTADOS UNIDOS MEXICANOS
102°37'30"
102°30'
29°45'
29°37'30"
42'30"
40'
35'
32'30"
850 000 FEET
820 000 FEET
13 830 000 FEET
13 800 000 FEET
TEXAS
Beef Gap
Bullis Gap
Panther Gulch West
Las Vegas De Los Labreros
San Rosendo
Las Vegas De Los Labreros SE

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

SEMINOLE CANYON QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, May 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2005
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
KT
Grid Zone Designation
14R

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 0 1000 2000
MILES 1/2 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Shumla	Pecos High Bridge	Dead Man Pass
Eaheartlake Bend NW	Seminole Canyon	Comstock
	Eaheartlake Bend	Box Canyon

ADJOINING 7.5' QUADRANGLES
TX 2910-01-024

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

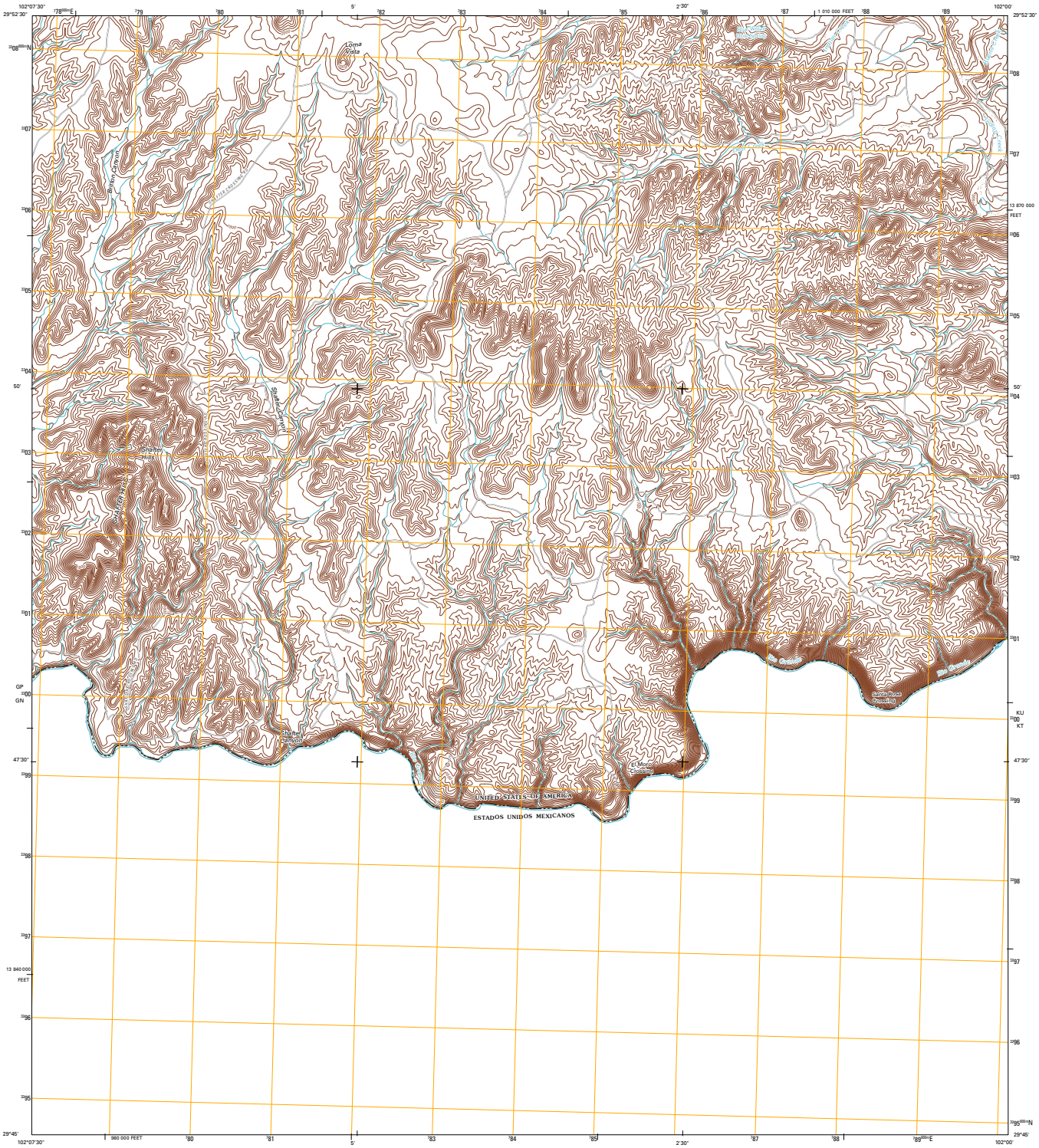
Interstate Route · US Route · State Route

SEMINOLE CANYON, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

SHAFTER CANYON QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2008
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

McClain Canyon	Balcon Creek	Cook Creek North
Taylor Canyon	Shafter Canyon	Cook Creek South

ADJOINING 7.5' QUADRANGLES
TX 2910202-441

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route · US Route · State Route

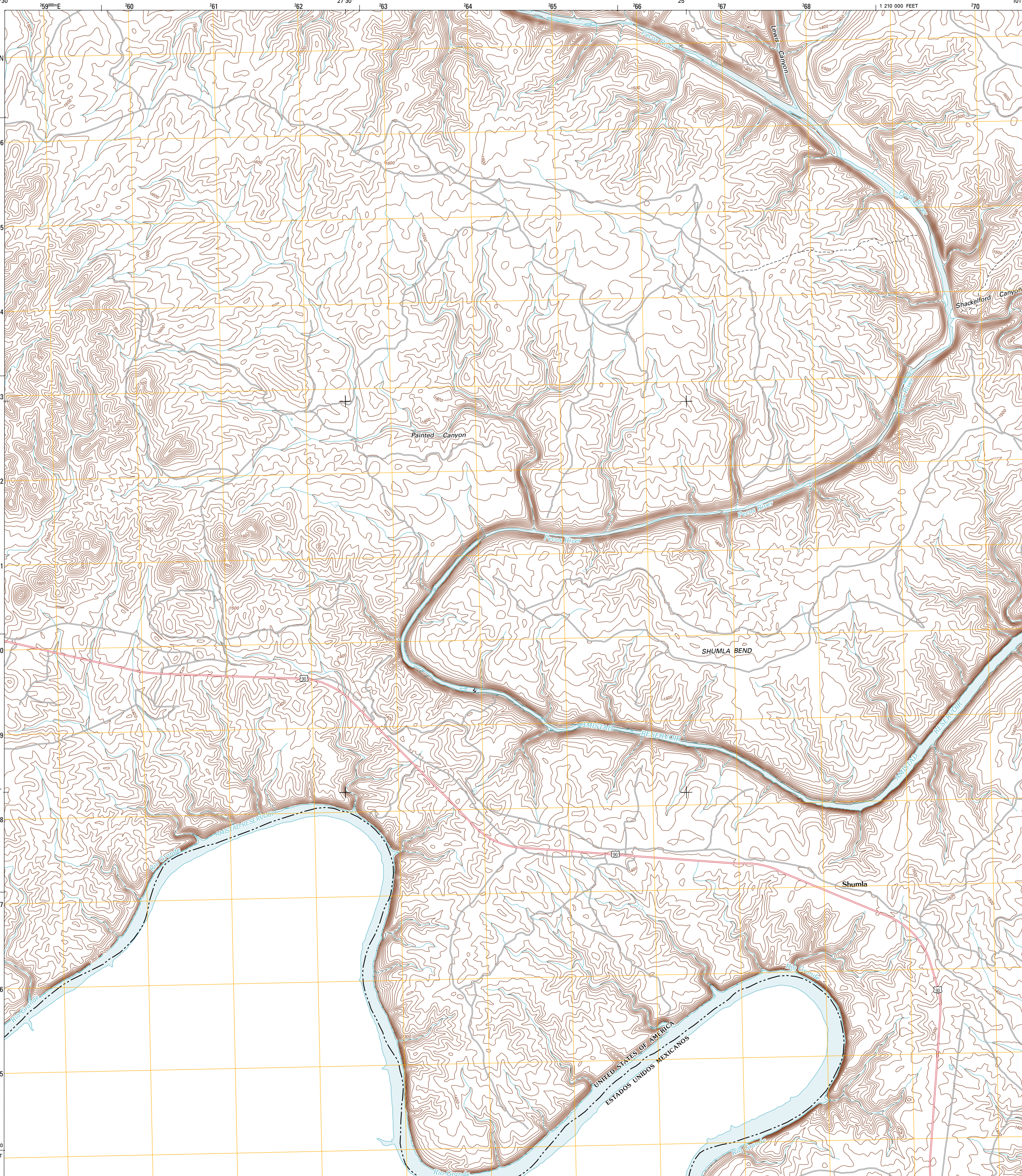
SHAFTER CANYON, TX-COA
2010

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

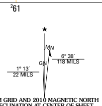
The National Map US Topo

SHUMLA QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery......NAIP, May 2008
Roads......US Census Bureau TIGER data with limited USGS updates, 2005
Names......GNIS, 2008
Hydrography......National Hydrography Dataset, 1995
Contours......National Elevation Dataset, 2006



UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID: KU / KT 33 00
Grid Zone Designation: 14R

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 20 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

QUADRANGLE LOCATION

Harkell Canyon	Still Canyon	Mayfield Canyon
Langtry	Shumla	Pecos High Bridge
	Zuberbueler Bend NW	Seminole Canyon

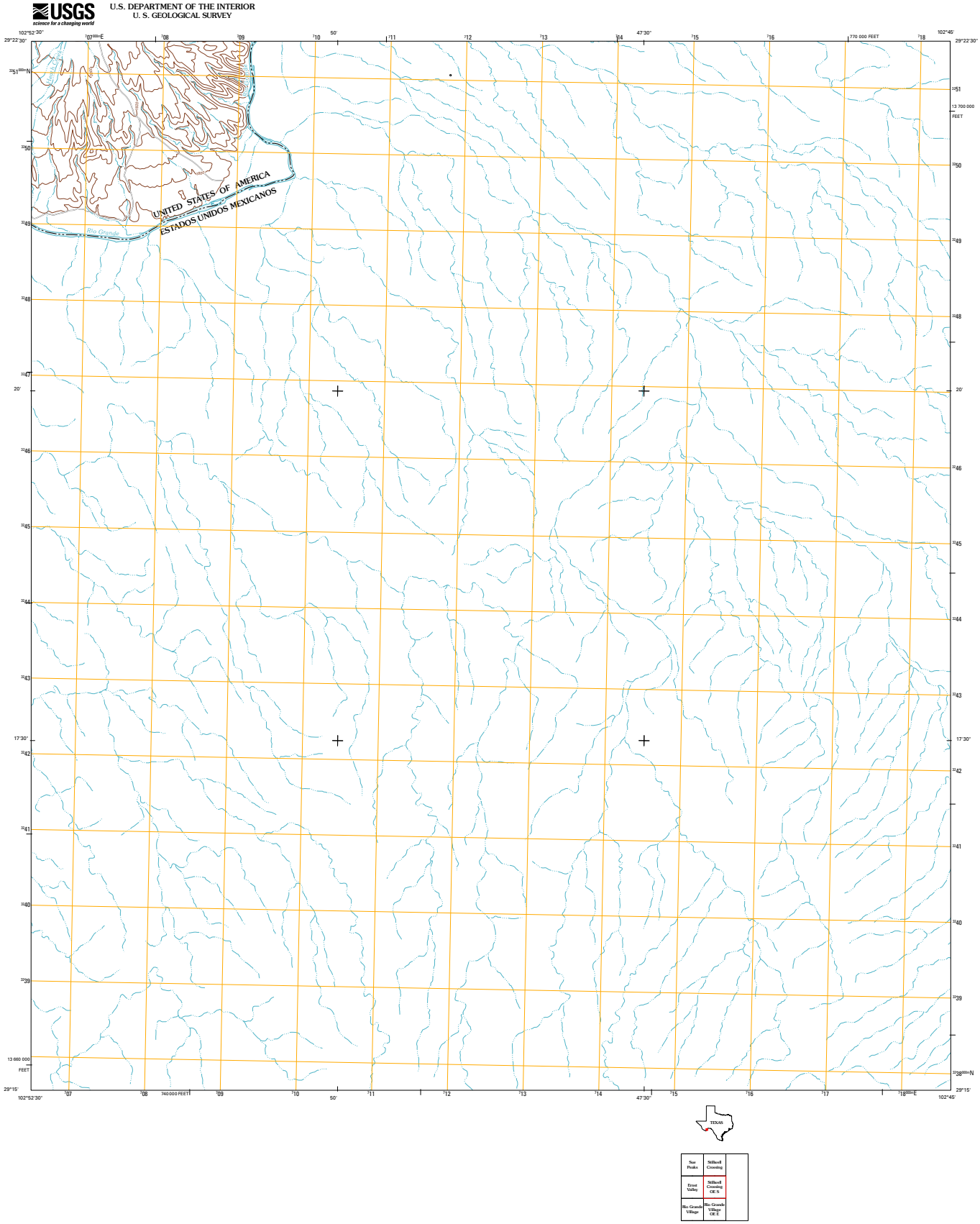
ADJOINING 7.5' QUADRANGLES
TX 29101-432

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route — US Route — State Route

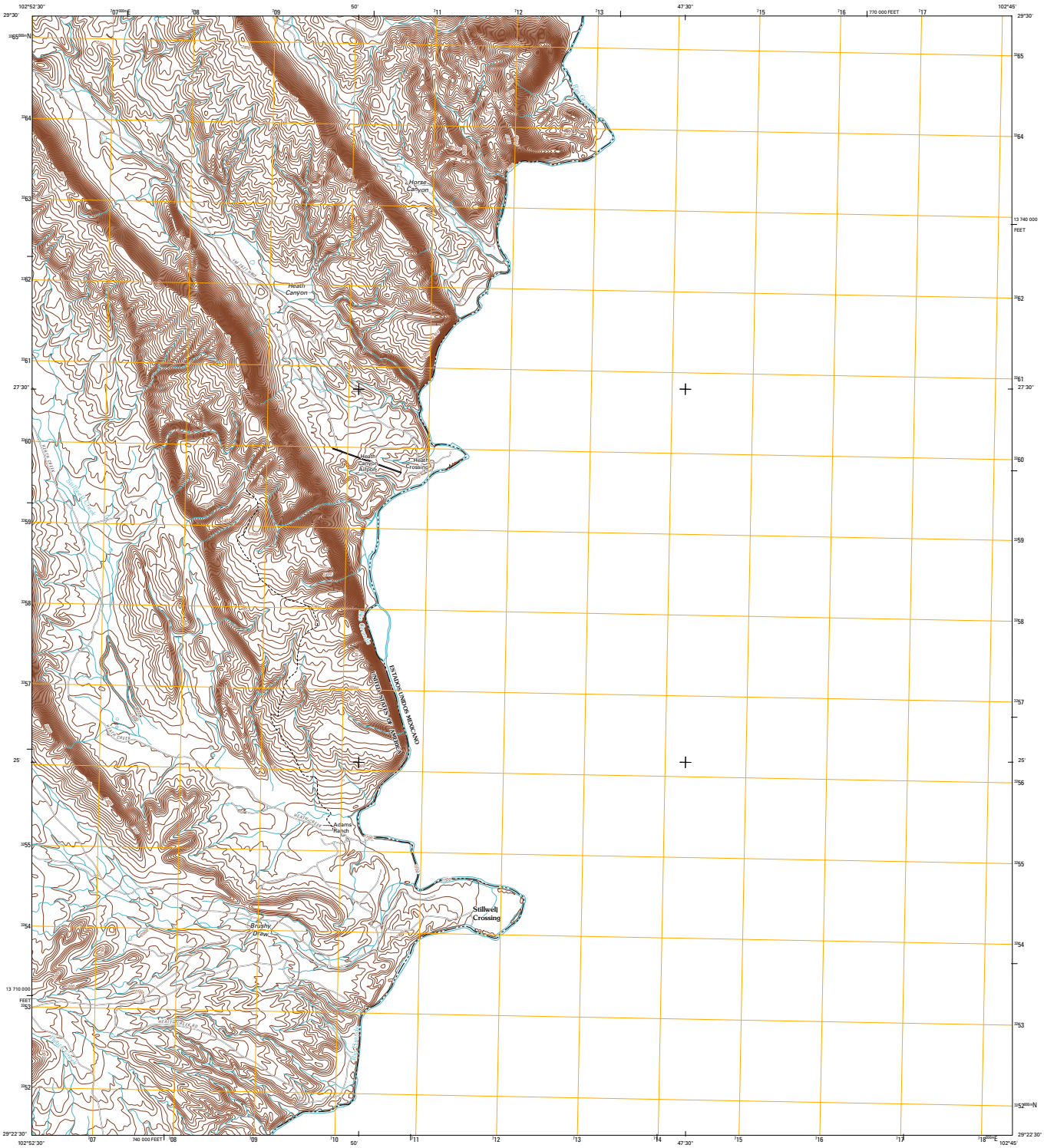
SHUMLA, TX-COA
2010


USGS
science for a changing world
U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY
UNITED STATES OF AMERICA
ESTADOS UNIDOS MEXICANOS
Rio Grande
TEXAS
San Pedro
Stillwell Crossing
Ernst Valley
Stillwell Crossing OE S
Rio Grande Village
Rio Grande Village OE E

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

STILLWELL CROSSING QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, October 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2006
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
GN
Grid Zone Designation
13R

SCALE 1:24 000

KILOMETERS 0 0.5 1 2
METERS 0 1000 2000
MILES 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 40 FEET

This map was produced to conform with version 0.5.10 of the
draft USGS Standards for 7.5-Minute Quadrangle Maps.
A metadata file associated with this product is also draft version 0.5.10

TEXAS

QUADRANGLE LOCATION

Black Gap	Bourland Canyon	Las Vegas De Los Ladrones SW
Sue Peaks	Stillwell Crossing	
Ernst Valley	Stillwell Crossing OE S	

ADJOINING 7.5 QUADRANGLES
TX 2910Z-234

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

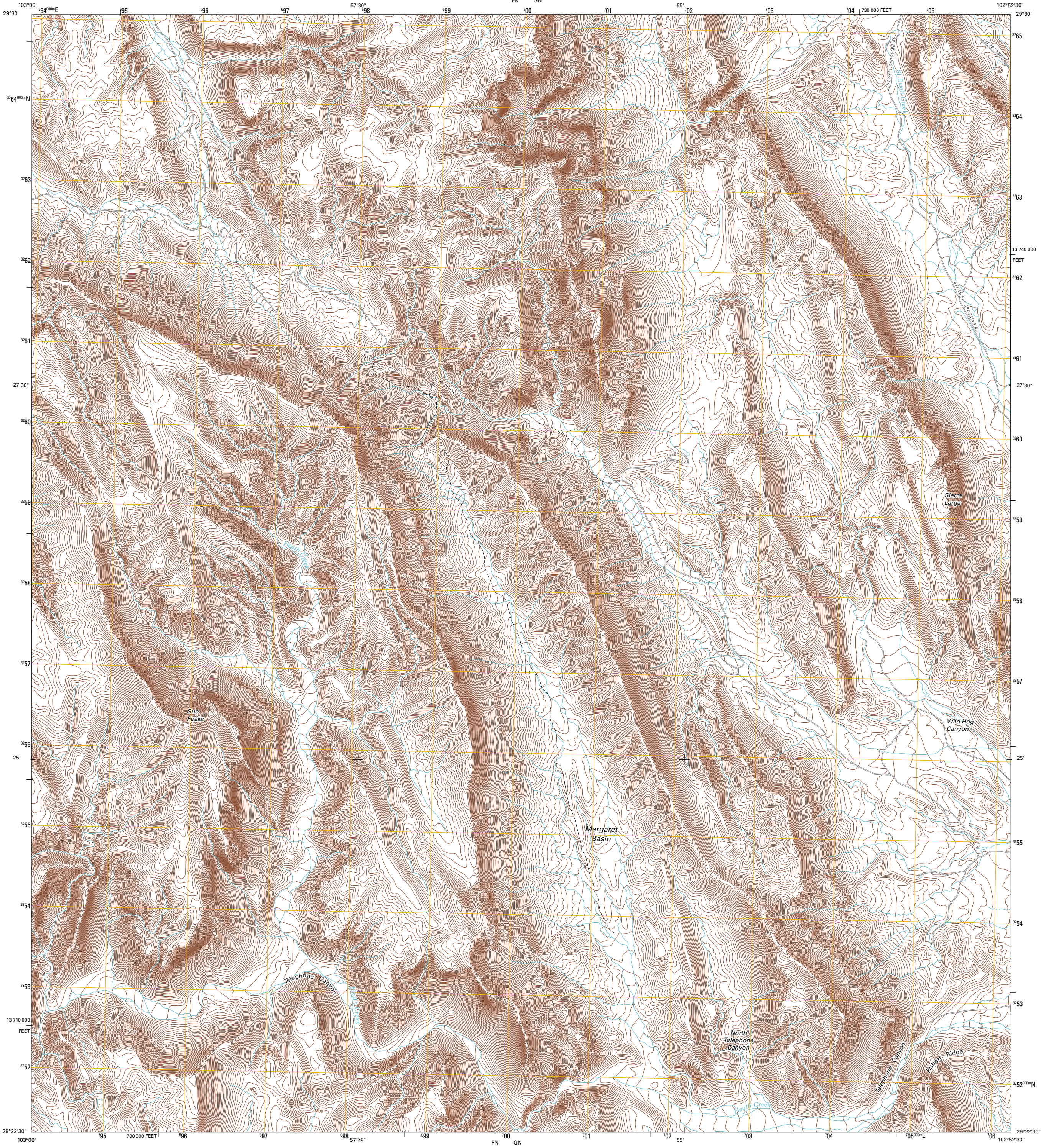
Interstate Route · US Route · State Route

STILLWELL CROSSING, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map
US Topo

SUE PEAKS QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery....NAIP, September 2008
Roads....US Census Bureau TIGER data with limited USGS updates, 2006
Names....GNIS, 2008
Hydrography....National Hydrography Dataset, 1995
Contours....National Elevation Dataset, 2006

7° 18´ 130 MILS
1° 1´ 18 MILS

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
FN | GN
Grid Zone Designation
13R

SCALE 1:24 000

KILOMETERS
METERS
MILES
FEET

CONTOUR INTERVAL 20 FEET

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QUADRANGLE LOCATION

Dagger Flat	Black Gap	Bourland Canyon
McKinney Springs	Sue Peaks	Stillwell Crossing
Roys Peak	Ernst Valley	Stillwell Crossing OE S

ADJOINING 7.5' QUADRANGLES
TX 29102-233

ROAD CLASSIFICATION

Interstate Route		State Route	
US Route		Local Road	
Ramp		4WD	

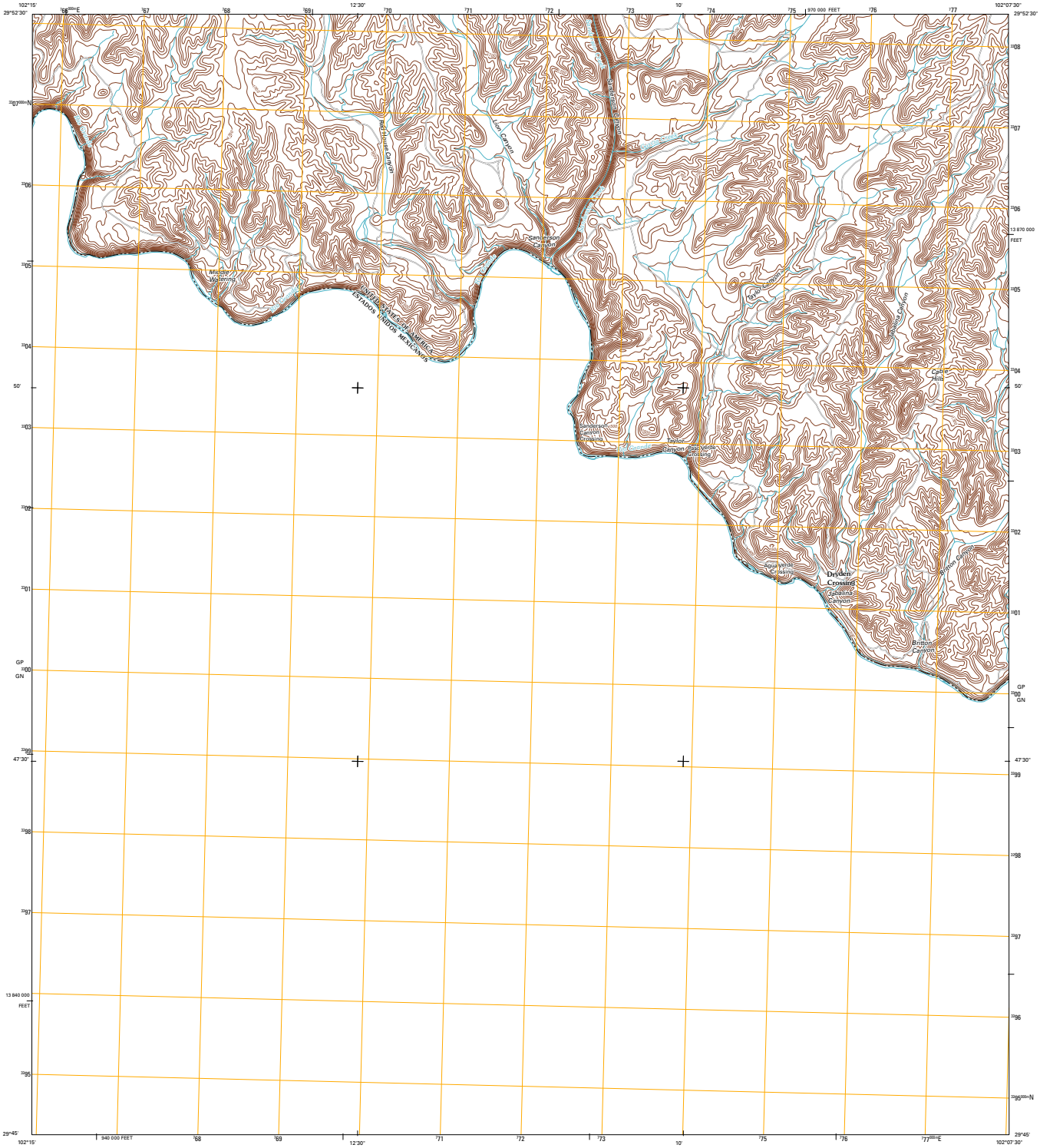
Interstate Route   US Route   State Route

SUE PEAKS, TX
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

TAYLOR CANYON QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 13R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, September 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2008
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET

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TEXAS

QUADRANGLE LOCATION

Candilla Canyon East	McClain Canyon	Bakers Creek
Panther Gulch East	Taylor Canyon	Shafter Canyon

ADJOINING 7.5' QUADRANGLES
TX 2910E-442

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

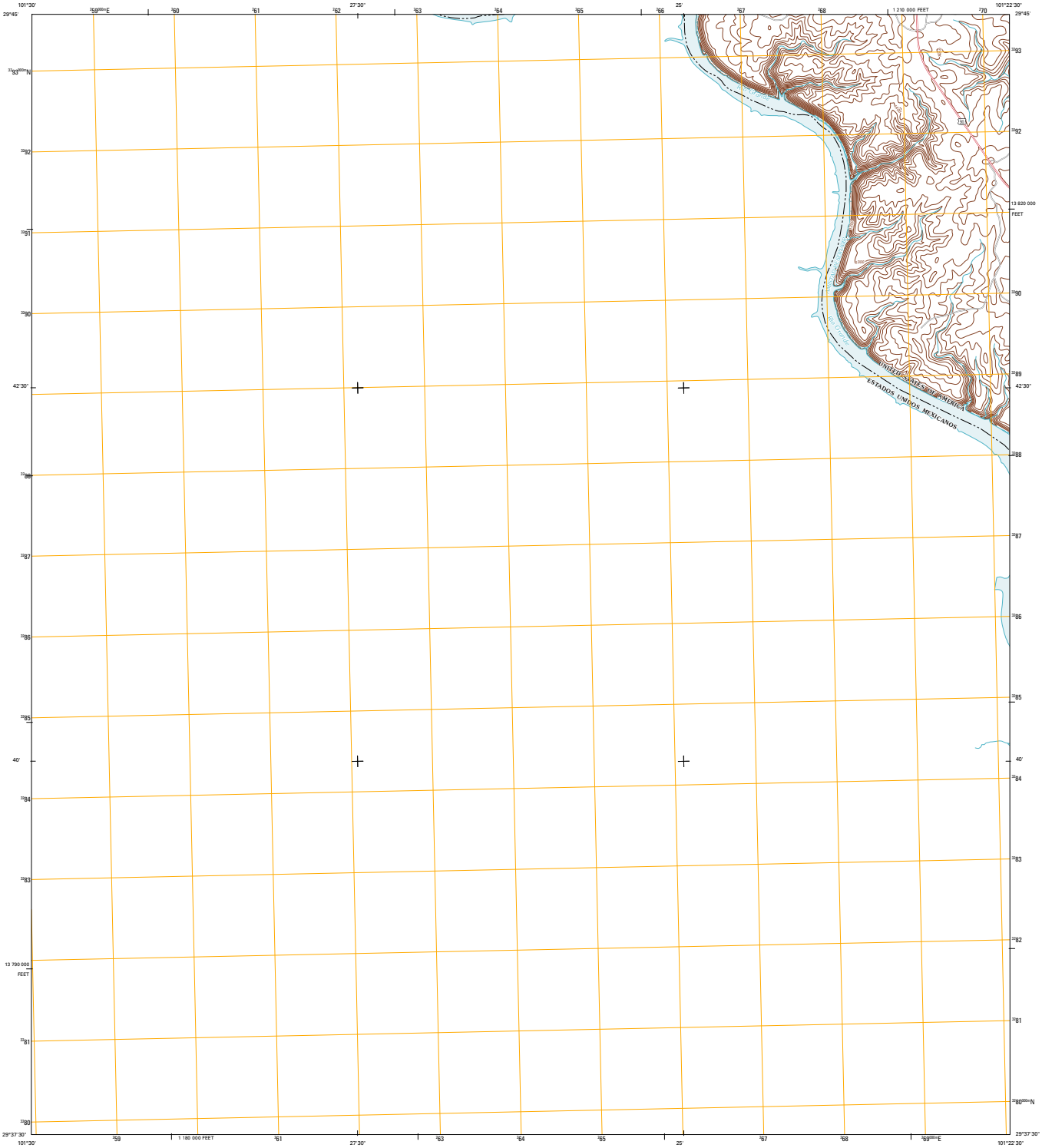
Interstate Route · US Route · State Route

TAYLOR CANYON, TX-COA
2010

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

ZUBERBUELER BEND NW QUADRANGLE
TEXAS-COAHUILA DE ZARAGOZA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983
(south central zone)

Imagery.....NAIP, May 2008
Roads.....US Census Bureau TIGER data
with limited USGS updates, 2005
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 1995
Contours.....National Elevation Dataset, 2008

UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET

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QUADRANGLE LOCATION

TEXAS

Langtry	Shumla	Pecos High Bridge
	Zuberbueler Bend NW	Seminole Canyon
		Zuberbueler Bend

ADJOINING 7.5' QUADRANGLES
TX 2910-E1-023

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD

Interstate Route · US Route · State Route

ZUBERBUELER BEND NW, TX-COA
2010