

2011  
HONDURAS  
COUNTRY CONNECTIONS TOUR  
SEPTEMBER 19 – 21, 2011



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Jacobs Engineering Group

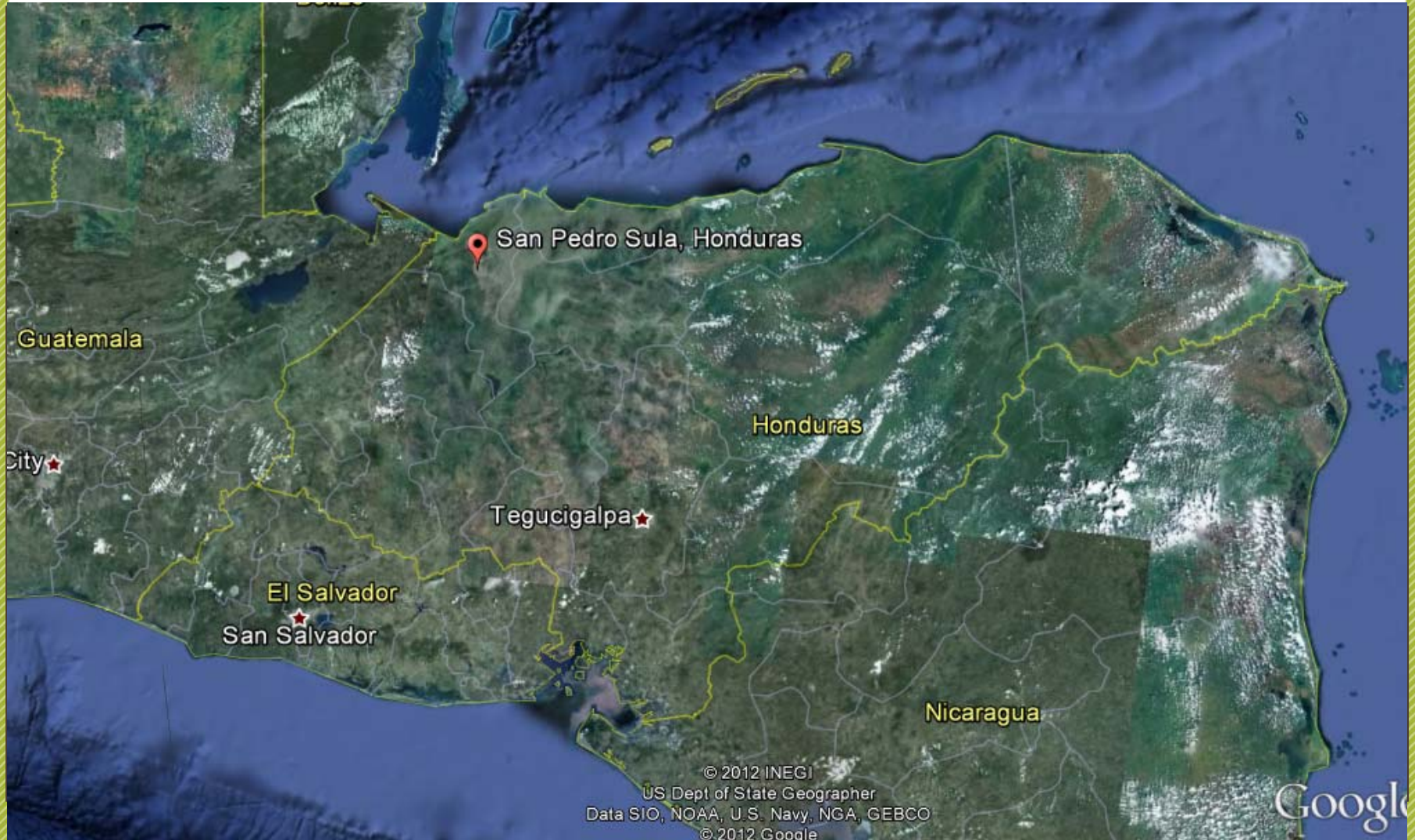


# THE HONDURAS CREW



water for people

# WHERE IN THE WORLD?

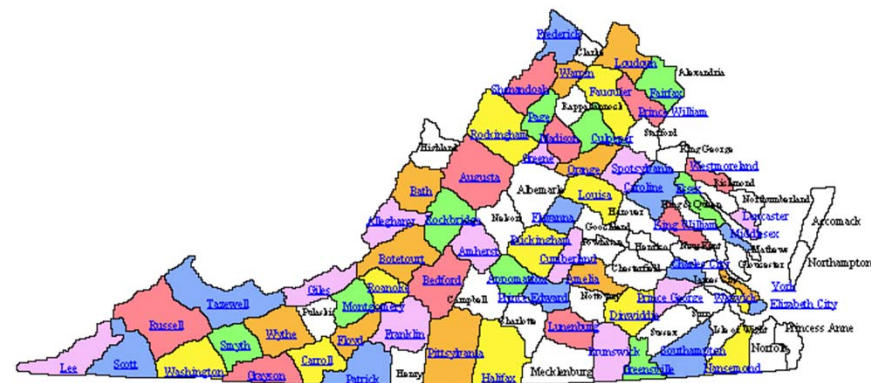


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# COUNTRY OVERVIEW

- Population: 8 Million +/-
- 18 Districts (States)
  - 299 Municipalities (Counties)
- Area: 43,500 sq. mi.
  - Slightly larger than Virginia
- Currency: Lempira
  - 1L = \$0.05
  - 1,000L = \$50.00
- 10<sup>th</sup> in World Coffee Production





# TARGETED PROGRAM AREAS



# HONDURAS PROGRAM

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Community water and sanitation needs are addressed in two ways:

1. Establishing water source & distribution system within the community
2. Assisting schools in building sanitation facilities and educating children on proper hygiene (SWASH+ Program)





# WFP HONDURAS PROGRAM GOALS

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## STRATEGIC GOAL 1

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Honduras program will concentrate its efforts in four districts

1. Chinda, Santa Barbará
2. San Antonio de Cortes, Cortes
3. El Negrito, Yoro
4. Ilama, Santa Bárbara (2011-2013)

## STRATEGIC GOAL 2

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WFP will assist the local community in reaching 95% water and sanitation coverage in these 4 municipalities



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# WFP HONDURAS PROGRAM GOALS

## THE PATH

San Antonio de Cortes recently signed the everyone commitment



Signed 2011 (25 year goal)

## THE GOAL

Chinda announced in Nov. 2011 it had reached 100% coverage

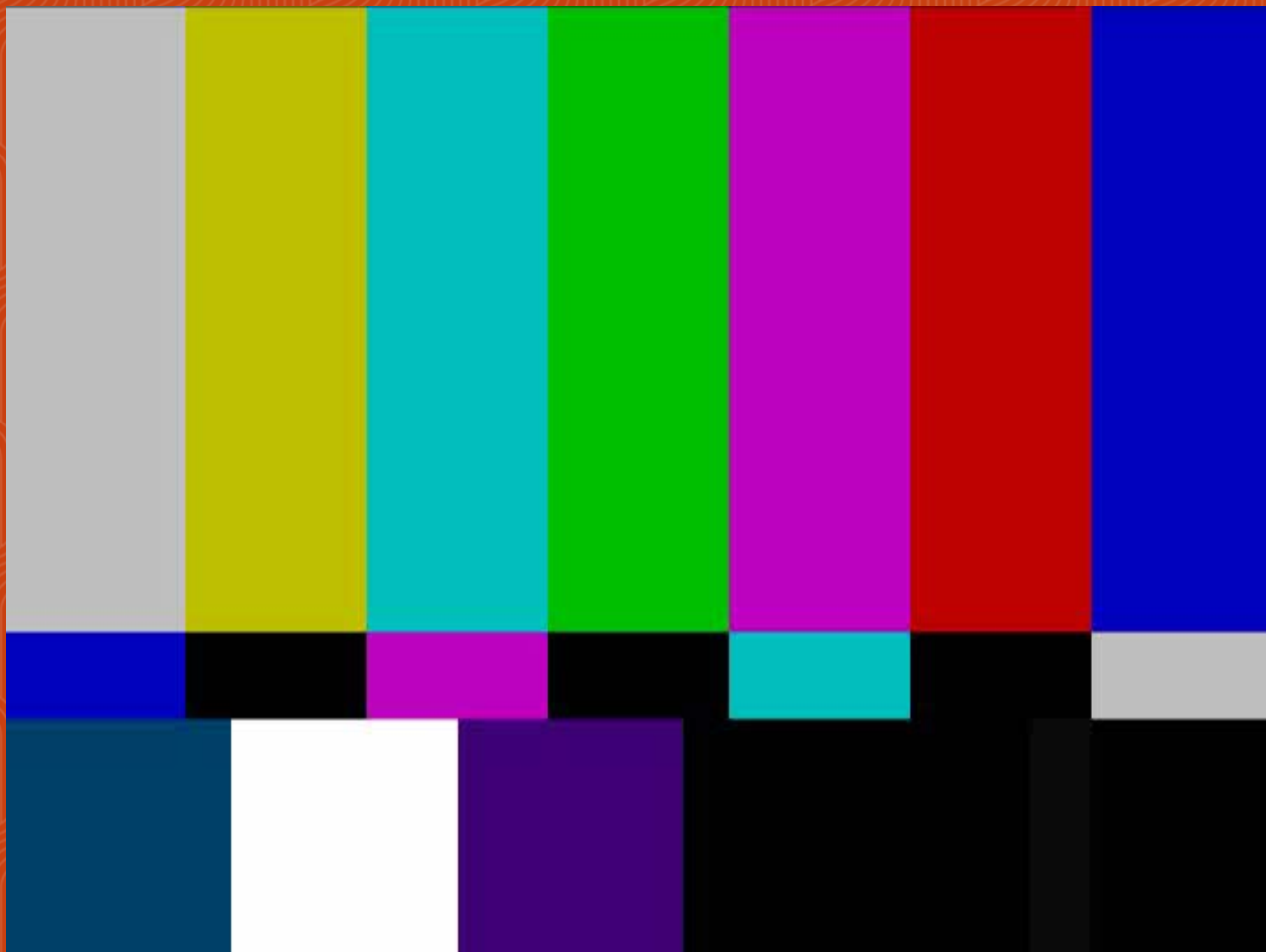


Signed 2007

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# THE EVERYONE COMMITMENT



The background of the slide is a solid blue color with a repeating pattern of thin, white, wavy lines that create a textured, water-like effect. The lines are arranged in vertical columns, each containing several parallel, slightly curved lines that flow from top to bottom.

# **MUNICIPAL WATER SYSTEMS**



# MUNICIPAL WATER SUPPLY

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## FROM SCRATCH

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1. Study of potential watershed areas.
2. Legal protection of watershed.
3. Design of storage and distribution system.

## SYSTEM REHAB

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1. Inventory of existing system
2. Design of new system
3. Construction of system



## SYSTEM DESIGN

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- Assumes current growth rate for 20 years
- Individual micro-meters for each household served
- Schools typically are not metered
- Disinfection is provided using powdered hypochlorite solution





## WATER COMMITTEES

- Members elected by community
- Serve 2 year terms
- Encouraged to register with Honduran government
  - Increases community trust
  - Easier to obtain loans

## COMMITTEE POSITIONS

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- Treasurer keeps records and bills households
- Technicians:
  - Maintain water system
  - Read meters monthly
  - Check chlorine levels





## WATER TARIFFS



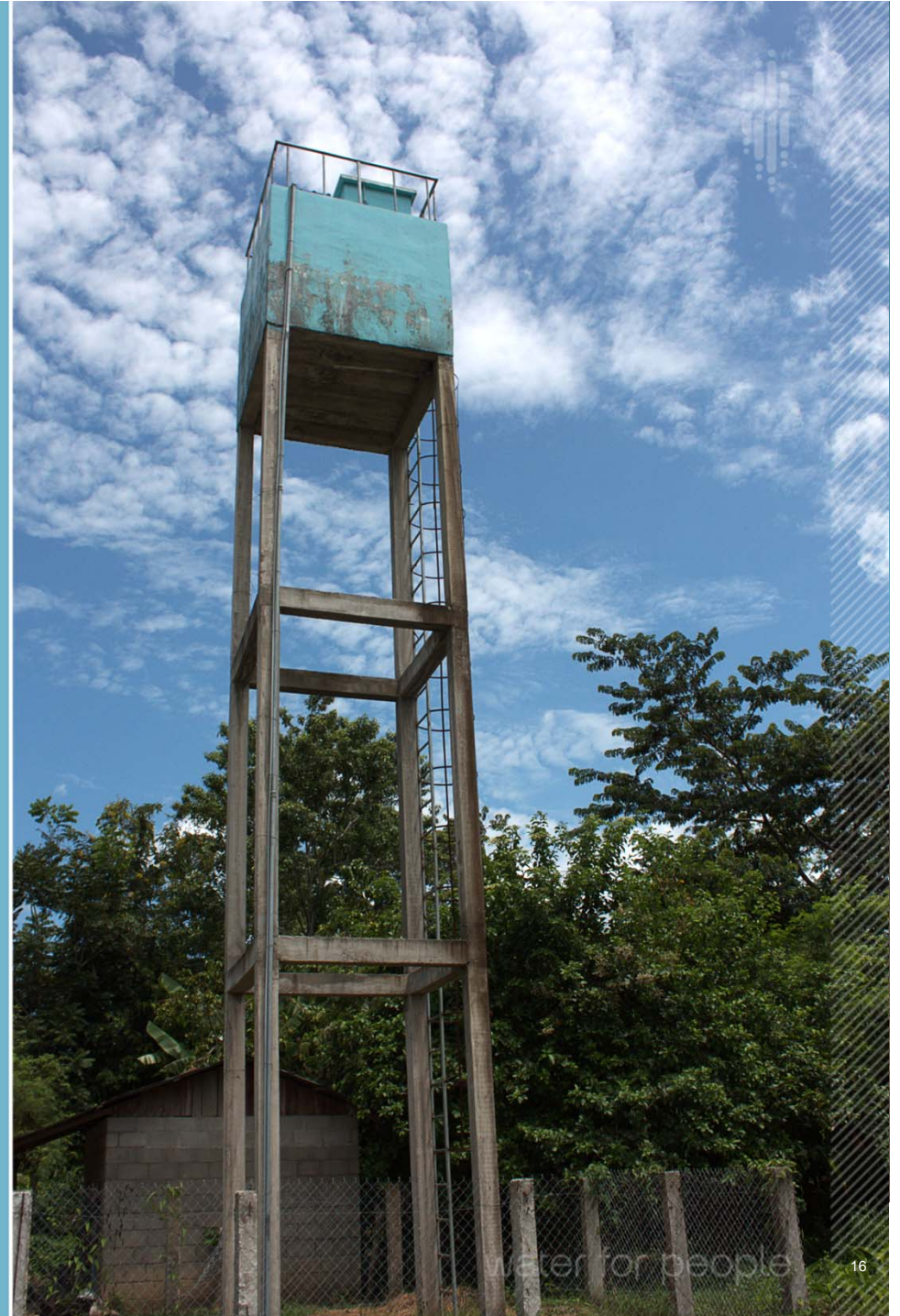
- Rate set by committee
  - 40L per 30 m<sup>3</sup>
- Surcharge when over base rate
  - 1.50L per m<sup>3</sup>
- Comparison  
(30 m<sup>3</sup> = 8,000 gal)
  - SPU: \$52.60
  - HOND: \$2.00

# SAMPLE PROJECT

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## Gonzalo Maldonado - El Negrito

- Previous supply was from hand pump in well house
- Hand pump was replaced with electric pump
- Water tower built to supply community (approx. 100 people)





# **WATER AND SANITATION IN SCHOOLS**

**SWASH+ Program**



# SANITATION FACILITIES



- Typically consists of:
  - Boys & Girls Latrines
  - Wash Block
  - Gravity septic system
  - Wash Basin

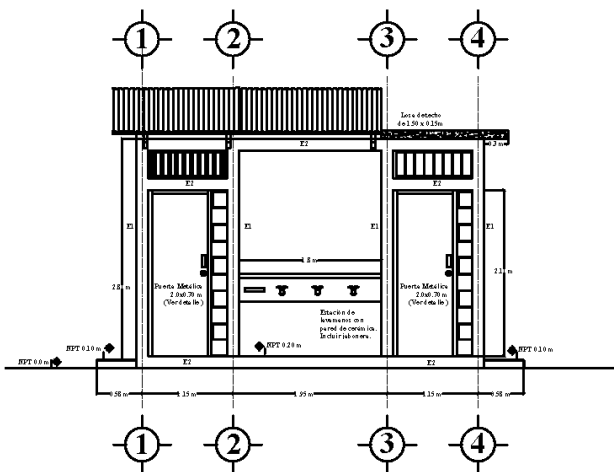
# LATRINES

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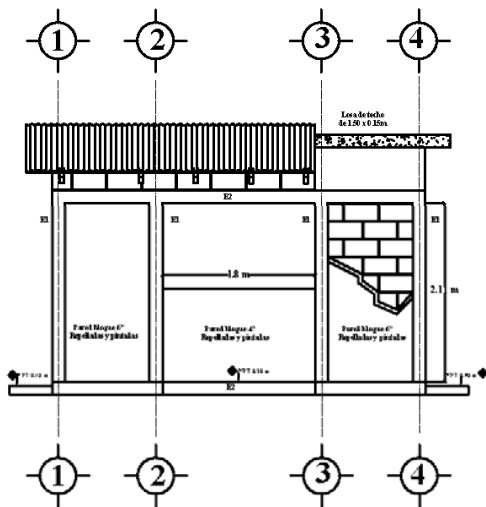
- Two Types
  - Regular flush style
  - Pour Flush Style
- No Electricity
- Tiled



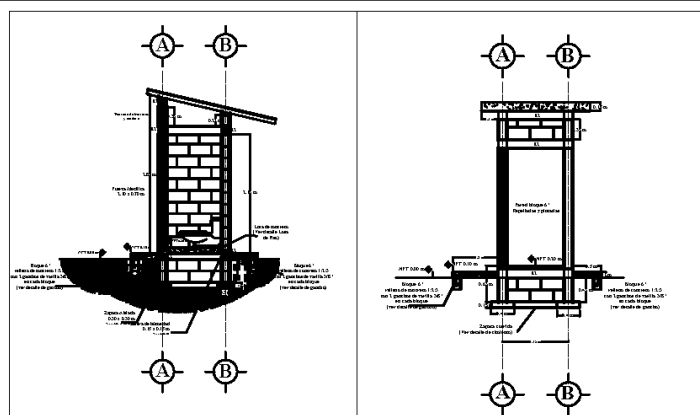
# Typical Latrine Detail



ELEVACION FRONTAL



ELEVACION ATRAS



CORTE LATERAL

CORTE LATERAL

## ESPECIFICACIONES

- 1) Concreto de 2,500 <sup>lbs</sup> / <sup>pulg<sup>2</sup></sup> .....
- .....
- 2) Varilla de hierro para refuerzo del concreto: grado 40.
- 3) Detalle de losa de techo remitirse a plano tanque elevado.
- .....
- .....
- .....
- .....
- .....
- .....
- 8) Relleno material selecto compactado.
- 9) Ademar en zona de suelo inestable.
- .....
- .....
- 11) Ventana de barrotes de hierro y marco de madera curada.
- 12) Canaleta pintada con anticorrosivo.
- .....
- .....

<b style="font-size: 48px; font-weight: bold;">1 / 4</b>	
Diseño y Adaptación: Ing. Sergio Reyes	Escalar: Variada
Reviso y Aprobó: Ing.	Fecha: Abril, 2011
<b>PLANO DE ELEVACIONES, CONSTRUCTIVO Y DETALLES</b>	
Edred: Dionisio de Herrera	San Antonio de Cortés
Comunidad: Quebrada Seca.	
<b>WATER FOR PEOPLE HONDURAS</b>	

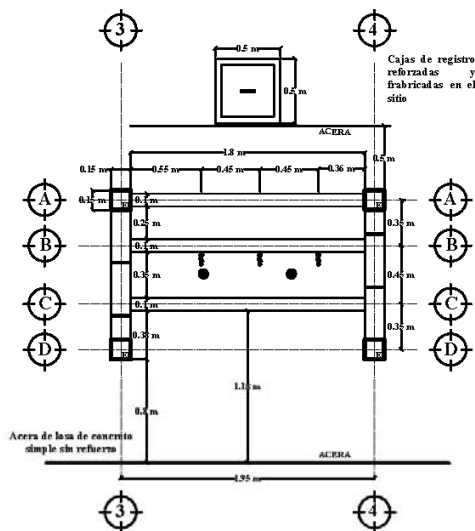


## WASH BLOCK

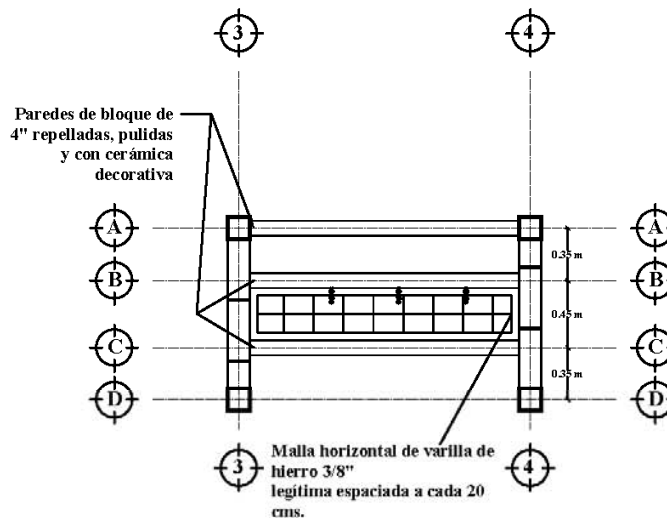
- Typically:

- Concrete block with earth fill
- Tiled
- PVC piping with faucets
- Three to four stations per side
- Can be double sided

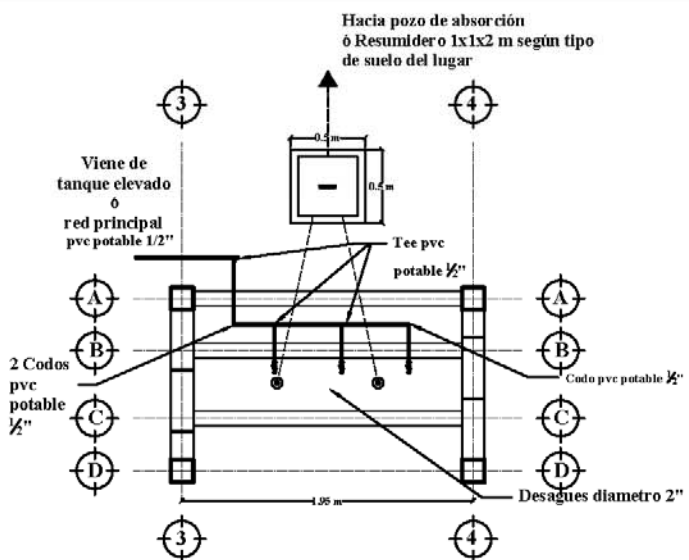
# Typical Wash Block Detail



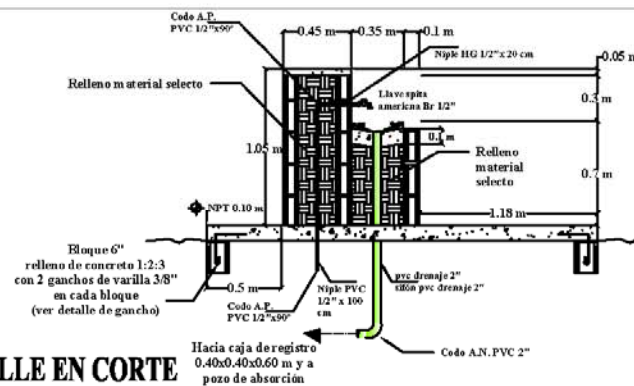
**PLANO CONSTRUCTIVO**



**PLANO ESTRUCTURAL**



**PLANO INSTALACIONES HIDRAULICAS**

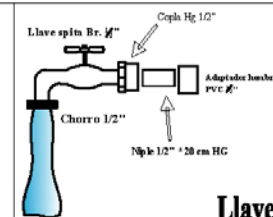


**DETALLE EN CORTE**

## DETALLES



**Tapa**



**Llaves**

<b>3</b>	<b>4</b>
Diseño y Adaptación: Ing. Sergio Reyes Reviso y Aprobo: Ing.	Fecha: Abril, 2011 Escala: Variada
ESTACION DE LAVAMANOS PLANO DE INST. HIDRAULICAS, CONSTRUCTIVO Y ESTRUCTURAL	
Escuela: División de Herrera Comunidad: Quebrada Seca, San Antonio de Cortés	
WATER FOR PEOPLE HONDURAS	

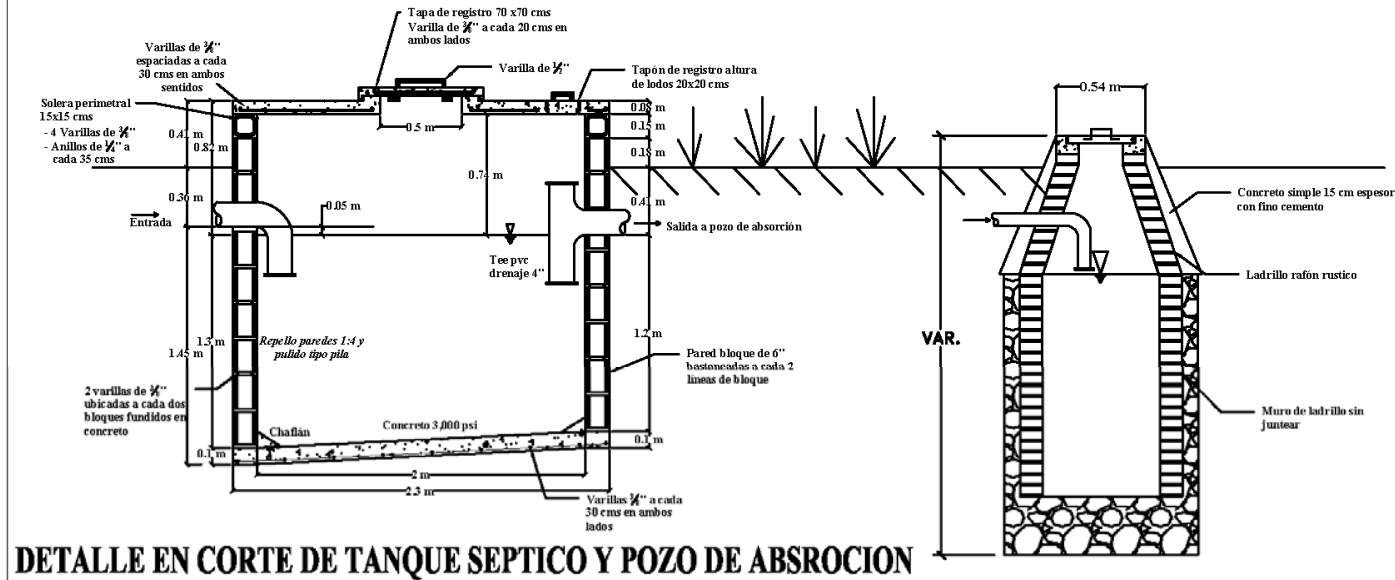
# SEPTIC SYSTEM

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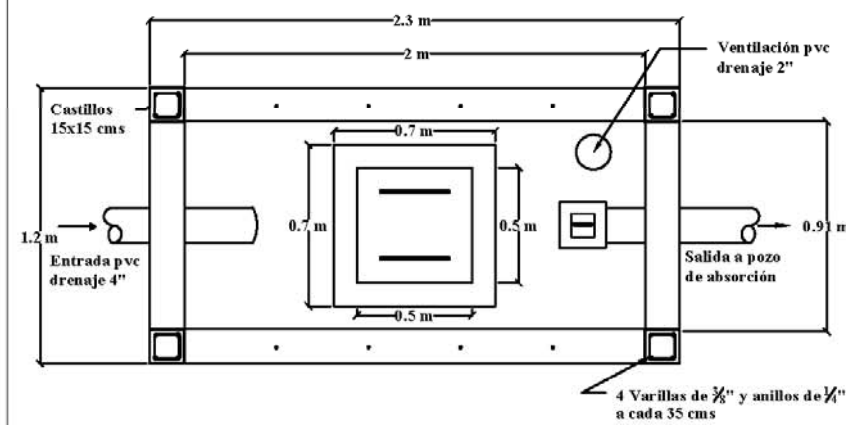
- Typically:
  - Open Bottom
  - No Drainage Field



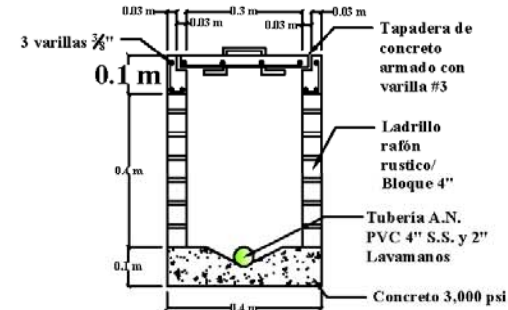
# Typical Septic Tank Detail



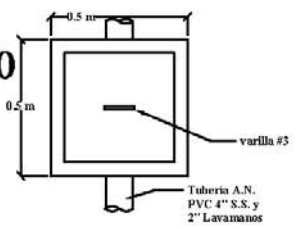
**DETALLE EN CORTE DE TANQUE SEPTICO Y POZO DE ABSORCION**



**DETALLE EN PLANTA TANQUE SEPTICO 2.25 m3**



**DETALLE CAJA DE REGISTRO**



44

Diseno y Adaptación:	Ing. Sergio Reyes
Revisio y Aprobó:	Ing.
Dibujo:	Sergio Reyes
Fecha:	Abril, 2011
Escala:	Variada

TANQUE SÉPTICO  
 DETALLES EN PLANTA Y CORTE DE  
 CAJAS DE REGISTRO  
 Escuela: Dionisio de Herrera  
 Comunidad: Quebrada Seca, San Antonio de Cortés







## COMMUNITY INVOLVEMENT

- School PTA heads up construction
  - PTA will hire contractor
- Funding
  - 50% WFP
  - 50% Community
- Community contribution often in the form of labor

# STUDENT COMMITTEES

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- Committee Leader Responsibilities:
  - Attends training sessions
  - Schedules latrine cleaning





## STUDENT COMMITTEES



- Committee Member Responsibilities:

- Ensure proper hand washing
- Regular checks on latrine cleanliness

## DESIGN ASSISTANCE

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- WFP Provides:
  - Latrine and septic system design
  - Septic sighting study





# HYGIENE EDUCATION



- WFP provides :
  - Training for Teachers
  - Educational Information

# UNIQUE SOLUTIONS



## BIKE HAND PUMP



- Bike Tire on A-frame
- Rope with Rubber Cups
- PVC Lift Pipe
- Storage Tank



# WATER POWERED PUMP



- Spring Fed Reservoir
- Two Conveyance Pipes
  - One Potable
  - One Work
- Water Wheel Pit





# PUBLIC TRANSIT

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water for people

# THANK YOU!!!

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- WFP Staff
- Jolyn Leslie
- Colin Sherrill
- **YOU ALL!!!!!**





# QUESTIONS?

