Rapid Struct Traige RST-1 **Date/Time:** _____ **By:** _____ **Page** ____ **of** ____

Task Force: _____ **Date/Time of Disaster:** _____	**See Form RST-2 for Instructions**

AREA MAP

BLDG. ID:

FLOOR AREA:
No. STORIES:
OCCUPANCY:
MATERIAL: (Circle all that apply)
WOOD CIP CONCRETE STEEL
URM TILT-UP PT CONC PC CONC
OTHER:

CRITERIA for PROBABILITY of VIABLE VICTIMS (check one in each line)

POTENTIAL NUMBER TRAPPED	LOW___	MEDIUM___	HIGH___
VICTIM ACCESS EFFORT	DIFFICULT___	MEDIUM___	EASY____
TYPE OF VOIDS	COMPACT___	SEPARATED___	OPEN___

CRITERIA for ASSESSMENT of RISK (check one in each line)

CHANCE OF FURTHER COLLAPSE	LOW___	MEDIUM___	HIGH___
No. OF FALLING HAZARDS	LOW___	MEDIUM___	HIGH___
VOID SUPPORT CONDITION	GOOD___	POOR___	UNKNOWN___

BLDG RATINGS (Circle one each line)
LP MP XP
LR MR XR

GPS Coordinates

SLOW- GO (circle if applies) **FIRE** **HAZMAT** **OTHER:**
Notes:

BLDG. ID:

FLOOR AREA:
No. STORIES:
OCCUPANCY:
MATERIAL: (Circle all that apply)
WOOD CIP CONCRETE STEEL
URM TILT-UP PT CONC PC CONC
OTHER:

CRITERIA for PROBABILITY of VIABLE VICTIMS (check one in each line)

POTENTIAL NUMBER TRAPPED	LOW___	MEDIUM___	HIGH___
VICTIM ACCESS EFFORT	DIFFICULT___	MEDIUM___	EASY____
TYPE OF VOIDS	COMPACT___	SEPARATED___	OPEN___

CRITERIA for ASSESSMENT of RISK (check one in each line)

CHANCE OF FURTHER COLLAPSE	LOW___	MEDIUM___	HIGH___
No. OF FALLING HAZARDS	LOW___	MEDIUM___	HIGH___
VOID SUPPORT CONDITION	GOOD___	POOR___	UNKNOWN___

BLDG RATINGS (Circle one each line)
LP MP XP
LR MR XR

GPS Coordinates

SLOW- GO (circle if applies) **FIRE** **HAZMAT** **OTHER:**
Notes:

BLDG. ID:

FLOOR AREA:
No. STORIES:
OCCUPANCY:
MATERIAL: (Circle all that apply)
WOOD CIP CONCRETE STEEL
URM TILT-UP PT CONC PC CONC
OTHER:

CRITERIA for PROBABILITY of VIABLE VICTIMS (check one in each line)

POTENTIAL NUMBER TRAPPED	LOW___	MEDIUM___	HIGH___
VICTIM ACCESS EFFORT	DIFFICULT___	MEDIUM___	EASY____
TYPE OF VOIDS	COMPACT___	SEPARATED___	OPEN___

CRITERIA for ASSESSMENT of RISK (check one in each line)

CHANCE OF FURTHER COLLAPSE	LOW___	MEDIUM___	HIGH___
No. OF FALLING HAZARDS	LOW___	MEDIUM___	HIGH___
VOID SUPPORT CONDITION	GOOD___	POOR___	UNKNOWN___

BLDG RATINGS (Circle one each line)
LP MP XP
LR MR XR

GPS Coordinates

SLOW- GO (circle if applies) **FIRE** **HAZMAT** **OTHER:**
Notes:

Rapid Struct Traige RST-2 **Date/Time:** _____ **By:** _____ **Page** ____ **of** _____

BLDG. ID:

FLOOR AREA: .....
No. STORIES: .....
OCCUPANCY: .....
MATERIAL: (Circle all that apply)
WOOD CIP CONCRETE STEEL
URM TILT-UP PT CONC PC CONC
OTHER:

CRITERIA for PROBABILITY of VIABLE VICTIMS (check one in each line)

POTENTIAL NUMBER TRAPPED LOW___ MEDIUM___ HIGH___
VICTIM ACCESS EFFORT DIFFICULT___ MEDIUM___ EASY____
TYPE OF VOIDS COMPACT___ SEPARATED___ OPEN___

CRITERIA for ASSESSMENT of RISK (check one in each line)

CHANCE OF FURTHER COLLAPSE LOW___ MEDIUM___ HIGH___
No. OF FALLING HAZARDS LOW___ MEDIUM___ HIGH___
VOID SUPPORT CONDITION GOOD___ POOR___ UNKNOWN___

BLDG RATINGS (Circle one each line)

LP MP XP

LR MR XR

GPS Coordinates .....

SLOW- GO (circle if applies) FIRE HAZMAT OTHER: .....
Notes: .....

BLDG. ID:

FLOOR AREA: .....
No. STORIES: .....
OCCUPANCY: .....
MATERIAL: (Circle all that apply)
WOOD CIP CONCRETE STEEL
URM TILT-UP PT CONC PC CONC
OTHER:

CRITERIA for PROBABILITY of VIABLE VICTIMS (check one in each line)

POTENTIAL NUMBER TRAPPED LOW___ MEDIUM___ HIGH___
VICTIM ACCESS EFFORT DIFFICULT___ MEDIUM___ EASY____
TYPE OF VOIDS COMPACT___ SEPARATED___ OPEN___

CRITERIA for ASSESSMENT of RISK (check one in each line)

CHANCE OF FURTHER COLLAPSE LOW___ MEDIUM___ HIGH___
No. OF FALLING HAZARDS LOW___ MEDIUM___ HIGH___
VOID SUPPORT CONDITION GOOD___ POOR___ UNKNOWN___

BLDG RATINGS (Circle one each line)

LP MP XP

LR MR XR

GPS Coordinates .....

SLOW- GO (circle if applies) FIRE HAZMAT OTHER: .....
Notes: .....

BLDG. ID:

FLOOR AREA: .....
No. STORIES: .....
OCCUPANCY: .....
MATERIAL: (Circle all that apply)
WOOD CIP CONCRETE STEEL
URM TILT-UP PT CONC PC CONC
OTHER:

CRITERIA for PROBABILITY of VIABLE VICTIMS (check one in each line)

POTENTIAL NUMBER TRAPPED LOW___ MEDIUM___ HIGH___
VICTIM ACCESS EFFORT DIFFICULT___ MEDIUM___ EASY____
TYPE OF VOIDS COMPACT___ SEPARATED___ OPEN___

CRITERIA for ASSESSMENT of RISK (check one in each line)

CHANCE OF FURTHER COLLAPSE LOW___ MEDIUM___ HIGH___
No. OF FALLING HAZARDS LOW___ MEDIUM___ HIGH___
VOID SUPPORT CONDITION GOOD___ POOR___ UNKNOWN___

BLDG RATINGS (Circle one each line)

LP MP XP

LR MR XR

GPS Coordinates .....

SLOW- GO (circle if applies) FIRE HAZMAT OTHER: .....
Notes: .....

BLDG. ID:

FLOOR AREA: .....
No. STORIES: .....
OCCUPANCY: .....
MATERIAL: (Circle all that apply)
WOOD CIP CONCRETE STEEL
URM TILT-UP PT CONC PC CONC
OTHER:

CRITERIA for PROBABILITY of VIABLE VICTIMS (check one in each line)

POTENTIAL NUMBER TRAPPED LOW___ MEDIUM___ HIGH___
VICTIM ACCESS EFFORT DIFFICULT___ MEDIUM___ EASY____
TYPE OF VOIDS COMPACT___ SEPARATED___ OPEN___

CRITERIA for ASSESSMENT of RISK (check one in each line)

CHANCE OF FURTHER COLLAPSE LOW___ MEDIUM___ HIGH___
No. OF FALLING HAZARDS LOW___ MEDIUM___ HIGH___
VOID SUPPORT CONDITION GOOD___ POOR___ UNKNOWN___

BLDG RATINGS (Circle one each line)

LP MP XP

LR MR XR

GPS Coordinates .....

SLOW- GO (circle if applies) FIRE HAZMAT OTHER: .....
Notes: .....

Instructions for RST Forms **Note: XR is used to indicate High Risk, since HR indicates Human Remains. XP = High Probability**

1. The purpose of RST- 1 & 2 is to aid in rapidly determining Probability of Viable Victims and Relative Risk for numbers of structures.
2. The forms would be used when US&R forces need to respond to a large number of damaged structures following a sudden event.
3. Each structure is given a Rating for Viable Victim Probability: LP = Low, MP = Medium, and XP = High Probability.
(Note: Input from Search Team Mgr & Rescue Team Ldr or Squad Officer should be saught in determining Victim Viability Rating.)
4. Each structure is given a Rating for Risk: LR = Low, MR = Medium, and XR = High Risk.
5.These ratings should be based on the criteria listed, and more than one structure may have the same rating.
6. The ratings should be based on the best judgments of the team, and must be made very rapidly. This form is only a guide.
7. Record GPS coordinates in the provided box. Specify format (always check with IST or Plans to determine proper format & datum).

US&R Structure / Hazards Evaluation Form - HAZ-1

By: _____

Where required, circle all the information or items that apply. NOTE: AFTERSHOCKS MAY CAUSE ADDITIONAL DAMAGE OTHER THAN NOTED.

STRUCTURE DESCRIPTION:

Bldg ID: _____

_____

No. Stories: **No. Basements:**

BUILDING MARKING:

☐

Date/Time of Eval: _____

Date/Time of Disaster: _____

MATERIALS:

Wood **Concrete** **Steel** **URM** **PC Concrete**

Other:

TYPE OF COLLAPSE:

Pancake **Soft 1st Floor** **Wall Failure**
Torsion **Middle Story** **Overturn**

Other:

FRAMING SYSTEM:

Shearwall **Moment Frame** **Braced Frame**

Other:

LOCATION OF VOIDS:

Between Floors **Basement** **Shafts**

Other:

OCCUPANCY:

Hospital	Police Station	Fire Station
Emergency Operations Center	Office Building	School
Public Assembly	Industrial	Hotel
Apartment	Retail Store	Other:

DESCRIPTION OF UNSAFE AREAS & HAZARDS:

VICTIM & OTHER INFORMATION:

LOCATION OF BEST ACCESS & SAR STRATEGY:

SKETCH

US&R Structure / Hazards Evaluation Form - HAZ-2 By:

Where required, circle all the information or items that apply. NOTE: AFTERSHOCKS MAY CAUSE ADDITIONAL DAMAGE OTHER THAN NOTED.

SKETCH:

US&R Structure / Hazards Check List - HAZ-3

By: _____

This is only a Check List. Check all Appropriate Structure Hazards

STRUCTURE DESCRIPTION:

Bldg ID: _____

No. Stories: **No. Basements:**

TYPE OF COLLAPSE:

Pancake	**Soft 1st Floor**	**Wall Failure**
Torsion	**Middle Story**	**Overturn**

Other:

From a SAFE Distance, CHECK:

- ☐ **Alignment of Structure's Corners & Faces**
- ☐ **Alignment of Structure's Floors**
- ☐ **Condition of Openings**
- ☐ **Condition of Facing or Projecting Elements**
- ☐ **Presence of Precast Conc Facing or Brick/Stone Veneer**
- ☐ **Presence of other FALLING HAZARDS**
- ☐ **Presence of Rootop Equipment, Towers, etc**
- ☐ **Presence of Distinctive Elements, Additions, Stairwells**
- ☐ **Any Alternate Energy Source - Generator, Solar Elec**
- ☐ **Presence of Tanks w/Explosive/Corrosive Material**

Walk around Structure and CHECK:

- ☐ **Continuity of Vertical load Path**
- ☐ **Continuity of Lateral Load Path**
- ☐ **Alignment & Condition of all Wall Piers**
- ☐ **Condition of Foundation & Adjacent Ground**
- ☐ **Presence of Flowing Liquids**
- ☐ **I.D Areas of Structure to be avoided**
- ☐ **I.D. Sections with potential for Brittle Failure**
- ☐ **I.D most PROBABLE Collapse Mode**
- ☐ **I.D All Exterior FALLING HAZARDS**
- ☐ **I.D All Ingress and Egress Locations**

If you choose to enter the Structure:

- ☐ **Make sure that at least one other Team Member remains outside and you maintain radio contact**
- ☐ **Notify TFL you are entering structure - Which Side**
- ☐ **Leave Easily Visable Trail as you explore interior ****
- ☐ **Check Each Closed Door for heat PRIOR to OPENING**
- ☐ **Inspect Ground Floor Level Before moving Upward**
- ☐ **Check Main Columns and Shear Walls-Cracks, Spalling**
- ☐ **Check Main Beam to Column Connections**
- ☐ **Check Stair wells for Damage and Access**
- ☐ **Check Condition of Floor System**
- ☐ **I.D. All Interior Collapse Hazards**
- ☐ **I.D All Interior Falling Hazards**
- ☐ **Locate Safe Havans and Escape Routes**
- ☐ **Report all Data to Outside Person before continuing**
- ☐ **Proceed Up/Down Only if Can Maintain Radio Contact**
- ☐ **Proceed to Upper Stories, Check each before Proceding**
- ☐ **Proceed to Basement and Check Structure & Foundation**

NOTES

1. ** Suggestions for Visable Trail are: Light Sticks, Paint Arrows on floor, Electronic Relay Devices

US&R Struct. Haz. Mitigation Form - MIT-1

By: _____ **Date:** _____

Where required, circle all the information or items that apply. NOTE: AFTERSHOCKS MAY CAUSE ADDITIONAL DAMAGE OTHER THAN NOTED.

STRUCTURE DESCRIPTION:

Bldg ID: _____

No. Stories: **No. Basements:**

MATERIALS:

Wood **Concrete** **Steel** **URM** **PC Concrete**

TYPE OF COLLAPSE:

Pancake **Soft 1st Story** **Wall Failure** **O-turn** **Other**

MITIGATION METHODS & ABBREVIATIONS

Avoid and Barracade	**A&B**	**Horiz. Tieback**	**H-TB**
Remove	**Remo**	**Vert Tieback**	**V-TB**
Minimize Exposure	**Exp-M**	**Shield**	**Shld**
Vertical Shore	**V-Sho**		
Horiz. Shore	**H-Sho**	**Monitor**	**Mon**
Raker Shore	**R-Sho**	(GoTo Monitor Form)	
Daigonal Brace	**DB**	**Other** (specify)	

LIST OF POSSIBLE HAZARDS	HAZ LOCATOR (Use Circled No. & locate on Sketch)	MIT METHOD (Use abbrev. indicated above)	PRIORITY (From 1 to 9, may be several of ea.)	TIME REQD (Est. to complete reqd mitigation)	COMMENT
FALLING HAZARD TYPE					
Glass, Light Bldg Facing					
Bldg Contents, H'vy inc Safe					
Brick Veneer					
Rock Veneer Panels					
P.C. Panels					
HVAC Units					
Ducts, Elec Conduit					
Structure Element - Loose					
Str Elmt, Hanging & Attached					
Other					
LOCAL COLLAPSE HAZARD					
Leaning Wall					
Damaged Column					
Damaged Floor					
Un-braced Column					
Punching Shear Potential					
Debris Overload-Floor					
ResQ Equip Overload					
Rain & Clogged Roof Drains					
Damaged Retaining Wall					
Other					
GLOBAL COLLAPSE HAZARD					
Leaning Building					
Multi Floor Collapse					
Multi Column Collapse					
Other					

SKETCH:

US&R Struct. Mitigation Log - MIT-Log

By: ____________________ **Sht** ______ **of** ______

STRUCTURE I.D.

DATE	TIME	HAZARD LOCATOR	MIT METHOD	COMMENT
Example mm / dd / yy	1100 hrs	4	R-Shore	

US&R Struct. Monitoring Form - MON-1 **By:** _____ **Date:** _____

Monitoring Began **Monitoring Ended**

STRUCTURE DESCRIPTION:

Bldg ID: _____

_____

No. Stories: _____ **No. Basements:** _____

ATMOSPHERIC CONDITIONS **Temperature**_____

☐ Day ☐ Clear ☐ Calm ☐ Haze

☐ Nite ☐ Cloudy ☐ Windy ☐ Gusty

SKETCH OF SITE (show structure, instrument, CPs):

INSTRUMENT SETUP

Model/Serial No. _____ **Calibrated** Yes / No

Location _____ **Job Name** _____

Description _____ **IP Coordinates** _____

CONTROL POINTS - at least three (see CP-LOG)

Name _____

Location _____

_____

Description _____

_____

MONITORING POINT # (MP)

Location _____

Description _____

ALERT displacement = _____

ALARM displacment = _____

CONTROL POINTS - at least three (see CP-LOG)

Name _____

Location _____

_____

Description _____

_____

MONITORING POINT # (MP)

Location _____

Description _____

ALERT displacement = _____

ALARM displacment = _____

CONTROL POINTS - at least three (see CP-LOG)

Name _____

Location _____

_____

Description _____

_____

MONITORING POINT # (MP)

Location _____

Description _____

ALERT displacement = _____

ALARM displacment = _____

US&R Struct. Monitoring Form - MON-2 **By:** _____ **Date:** _____ **Mon-2 Sht** ____ **of** ____

Monitoring Began **Monitoring Ended**

ADDITIONAL INSTRUMENT SETUP LOCATIONS

Location _____ **Job Name** _____

Description _____ **IP Coordinates** _____

CONTROL POINTS - at least three (see CP-LOG)

Name _____

Location _____

_____

Description _____

_____

MONITORING POINT # (MP)

Location _____

Description _____

ALERT displacement = _____

ALARM displacment = _____

CONTROL POINTS - at least three (see CP-LOG)

Name _____

Location _____

_____

Description _____

_____

MONITORING POINT # (MP)

Location _____

Description _____

ALERT displacement = _____

ALARM displacment = _____

CONTROL POINTS - at least three (see CP-LOG)

Name _____

Location _____

_____

Description _____

_____

MONITORING POINT # (MP)

Location _____

Description _____

ALERT displacement = _____

ALARM displacment = _____

CONTROL POINTS - at least three (see CP-LOG)

Name _____

Location _____

_____

Description _____

_____

MONITORING POINT # (MP)

Location _____

Description _____

ALERT displacement = _____

ALARM displacment = _____

SKETCH OF SITE (show structure, instrument, CPs):

US&R Struct. Monitoring Form - CP-Log

By: _____ **Date:** _____ **CP Sht** __ **of** __

CONTROL POINT	READINGS*			TIME	IP Loc.	Comments, notes, angles…	SITE PLAN SKETCH

* NOTE: Total Station record X, Y, Z coordinates. Theodolite record Horizontal (HA) and Vertical (VA) Angle.

US&R Struct. Monitoring Log - MON-Log - MP # ____ **By:** _____ **Date:** _____ **MP** ____ **Sht** ____

POINT	READINGS*			TIME	IP Loc.	Comments, notes, angle	SKETCH

* NOTE: Total Station record X, Y, Z coordinates. Theodolite record Horizontal (HA) and Vertical (VA) Angle.

US&R Structure Monitoring Log - MON-Log-P **By:** ______________________ **Sht** ____ **of** ____

DATE	TIME	REF (Control) POINT	MONITORING POINT	COMMENT
Example				
mm / dd / yy	1000 Hrs	RP1-1 actual reading		Temp = 77F, establish control #1
	1000 Hrs	RP1-2 actual reading		Establish control #2
	1005 Hrs		MP1-1 initial reading	Establish monitoring point #1
	1015 Hrs		MP1-1 reading	No change from previous reading.

US&R StS Shift Change Form HandOff **BY:** **DATE:**

STRUCTURE DESCRIPTION:	**HAZARDS:**
	Haz Mat situations
	Hanging or fallling debris
Bldg I.D.	Heavy Equipmein in area
	Other rescue personnel in area

ENDING SHIFT SUMMARY:

PRIORITIES FOR NEW SHIFT:

OPERATIONS:	**NEW/ADDITIONAL FORCES**
Monitoring devices	Aftershocks
Status of debris removel	Wind
Ongoing rescue operations	Rain (settlement due to undermining)
Victim removal	Possible secondary explosions
	New partial collapses

MITIGATION STATUS REPORT:	**EQUIPMENT AVAILABLE:**
Changes to mitigation operations	Lost
Locations of shores to be checked	Broken
Areas requiring shoring	Used up
Monitoring devices	Needed

MISCELLANEOUS:

SKETCH:

US&R Crane Use/Order Form - CU-1 **By:** _____ **Date:** _____ **Page** ____ **of** ____

Situation Name: _____ **Date and Time of Lift:** _____

Rigging Task: _____ **Task Force Name:** _____

Weather Conditions: _____ **Task Force Leader:** _____

Load Description: _____ **Crane Operator:** _____

Load Weight: _____ **Crane Make & Model:** _____

Block Weight: _____ **Crane Serial No:** _____

Rigging Weight: _____ **Boom Length:** _____

Jib Weight: _____ **Jib Length:** _____

Jib Ball Weight: _____ **Jib Position:**

☐ Stowed ☐ Retracted ☐ Offset at _____

Hoist Line Weight: _____ **Size of Counterweights Installed:** _____

Other Weight: _____ **Front Outrigger Installed:** Yes No

Total Weight:

Setup On: ☐ Crawlers ☐ Outriggers ☐ Tires

☐ Extended ☐ Retracted ☐ Other

Lift will be On: ☐ On Main Block ☐ On Jib

Max. Intended Working Radius	Boom Angle:	Rated Capacity:	Percent of Capacity : (Total Load / Rated Capacity)
Over Rear:	Over Rear:	Over Rear:	Over Rear:
Over Side:	Over Side:	Over Side:	Over Side:
Over Front:	Over Front:	Over Front:	Over Front:

Hazards: ☐ Electrical ☐ Fire ☐ Underground ☐ Other _____ **Are Crane Mats, Blocking Reqd:** _____

SKETCH:

US&R Shoring Check List - SHOR-1 **By:** _____

This is only a Check List. Check all Appropriate Structure Hazards

STRUCTURE DESCRIPTION:

Bldg ID: _____

No. Stories: **No. Basements:**

TYPE OF COLLAPSE:

Pancake **Soft 1st Floor** **Wall Failure**
Torsion **Middle Story** **Overturn**
Other:

SHORING SIZE-UP

I.D. Damage, Hazards & Potntial Victim Locations:

- ☐ **What caused collapse?**
- ☐ **Potential for Aftershocks?**
- ☐ **Is structure leaning and/or openings racked?**
- ☐ **Are floors sloped? Is floor hinged or free?**
- ☐ **Is there a V or A collapse w/ ladder effect?**
- ☐ **Best method to mitigate hazards & damage?**
- ☐ **Avoid, Remve, Limit Access**
- ☐

If Shoring is to be built, determine the following:

- ☐ **Type & Placement relative to Hazards and Victims**
- ☐ **Type of structure: Concrete, Wood, URM, PC Conc.**
- ☐ **What supports the shoring; Slab on Ground, Soil, Basement Slab, or upper Story**
- ☐ **Condition of supported Structure: Cracked Solid Slab, Beamless Slab, Beams supporting slabs or joist; Wood or Steel joist or trusses**
- ☐ **Support beams that support slabs or joists**
- ☐ **Check sagging beams/girders, or beams with damaged connections**
- ☐ **For wood structures, to support joists, place shores perpendicular to joist and align posts under joist.**
- ☐ **Consider Sloped Floor Shores or Cribbing for limited height conditions.**

Prepare the area to be shored:

- ☐ **May need to remove debris and floor coverings.**
- ☐ **If soil supported, use 18"x18" foot under post location**
- ☐ **Consider temporary shores to reduce risk (T or Dbl-T).**
- ☐ **Prefab. shoring as much as possible to reduce risk.**
- ☐ **Add bracing after wedges are tightened.**

SHORING INSPECTION

Inspect shores every 12 hours (Shift Change), and/or following any known loading change such as: Aftershocks, High Winds, Secondary Explosion, Load Shift and/or Change.

Check for proper construction of shore

- ☐ **Check to see if posts are straight, plumb, and have full bearing on header and wedges**
- ☐ **Are connections tight and wedges snug?**
- ☐ **Is header in full contact with supported structure?**
- ☐ **Has sole deflected due to soft soil or support?**
- ☐ **Are all components of shoring system in place?**

Check for signs of overload.

- ☐ **Cupping of wedges and crushing of sole.**
- ☐ **Crushing of header at post.**
- ☐ **Splitting of header at end of overhang.**
- ☐

Actions to be taken if signs of overload are observed.

- ☐ **Add additional shoring.**
- ☐ **Have structure re-evaluated by a StS to see if it is responding differently than expected**
- ☐ **Check assumptions of original shoring design.**
- ☐