STRUCTURAL ASSESSMENT

Project:	1432-1434 East Commerce St.	**Job. No:**	122200
Location:	San Antonio, TX		
Date:	Dec. 10, 2012	**Weather:**	Sunny, Windy,60 deg
Performed by:	Jeff Haughton and Frank Lamas, Alpha Consulting Engineers. Inc.		

Purpose and Description:

At the request of the City of San Antonio (COSA), Alpha Consulting Engineers, Inc. conducted a walk-through and structural assessment of the buildings at 1432 and 1434 east Commerce Street. Ms. Alma Nunez and Mr. David McGowen of the City of San Antonio escorted Alpha through the buildings.

The buildings are believed to have been constructed in the 1920's. Originally built as two separate but adjacent structures with a common wall, over the years, openings have been inserted into the common wall in order to adapt to changing tenant requirements and suit functionality requirements. A small addition was added at a later date at the southwest corner (rear) of the buildings. This addition was constructed using load bearing masonry. It is Alpha's understanding that the buildings have been uninhabited for approximately 20 years.

Both buildings are of wood post and beam construction. The ground floor is typically about 18 inches above subgrade surface. An exception to this exists at the south east corner where there is an approximately 14ft. by 16 ft. basement, apparently used as utility space.

The foundation system is unknown but in Alpha's experience with the City of San Antonio, given the size and structural materials used, we would expect the buildings to be supported on a shallow foundation system. Existing construction drawings are not available.

Observations/Discussions:

(Note: Coordinate this section with the attached plans)

Due to the long period of vacancy of the buildings and corresponding lack of maintenance, the interior and exterior finishes are, in general, in an extreme state of need of repair. In general, broken or missing windows and doors in addition to numerous roof leaks have severely damaged surrounding trim as well as ceiling and wall finishes. Wood floor boards are also rotted in isolated conditions due to open windows and roof leaks (See Figs. 1 and 2). The main structural components, however, appear to be less affected by water except as mentioned in this report. All exterior windows, doors and associated frames and trim are in need of replacement.

Fig. 1

Fig. 2

The basement at the southeast corner was not fully accessible to Alpha due to the presence of water. At the time of our visit, the water was between 1 to 2 feet deep. Water stains around the walls, however, are evidence that the water level varies up to 5 or 6 feet deep. The bottom steps on the stairs are no longer present, presumably due to water damage. The source of water is not known at this time. The existing water should be pumped out and further investigation performed to determine the source.

The basement wall opposite the stair has a hole approximately 18 inches in diameter located near the top of the wall (See Fig. 3). The wall appears to be cast-in-place concrete but no reinforcing is visible in the wall. Due to the nature

of the wall retaining the subgrade under the building floor, this condition should be investigated further when full access to the basement is available.

Fig. 3

Floor boards and support beams located at the end of the corridor along the south wall are completely deteriorated due to the large wall opening allowing water entry at this location (Picture not available). Additional support needs to be installed if new flooring is required at this location.

An interior lintel located near the south end of the common wall is severely deteriorated and appears to have possible termite damage. The deterioration appears to be due to leaking of ponding of water at the roof level above (See Figs. 4 and 5). The lintel is a load bearing component and is in need of replacement.

Fig. 4

Fig. 5

Floorboards located on the second floor at the northwest corner are in need of replacement due to deterioration from water. The source of the water is from the damaged window conditions in both north and west walls at the corner (See Fig. 6). The support beams at this location appear to be structurally sound, however, the floor beams should be further reviewed for deterioration after the damaged boards are removed.

Fig. 6

Deterioration has occurred in the metal roofing at the eastern low metal roof area. The wood sheathing and wood support beams at this location are also deteriorated from the roof leak and are in need of replacement or reinforcement. (See Fig. 7).

Fig. 7

The wooden canopy on the south wall of the building is completely deteriorated and needs to be completely removed and replaced if canopy is required. (See Fig. 8).

Fig 8.

There is severe distress in the exterior finished wall cladding at the north east end of the building. It appears that this location has been subject to vertical foundation movement and a large crack is located at the north wall (See Fig. 9). The cladding at this location is ceramic tile over stucco. There are no contraction joints along any walls to relieve any stress from movement and stucco being a rigid, low strength material, will tend to yield under relatively small movements. On the other hand, the wood framing components are more forgiving and can withstand greater movement without distress. The interior plaster walls at this location do not show signs of distress which also suggest to us that the structural framing is not damaged. The base of the walls at this location is also showing signs of bowing outward suggesting an upward pressure (See Fig.10). Such pressure likely came from vertical movement of the adjacent sidewalk responding to the subgrade taking in moisture.

Fig. 9

Fig. 10

A missing downspout on the north wall is also causing water from the roof scupper to cascade down the vertical wall surface, causing damage to the tile surface and substrate (See Figs. 11 and 12).

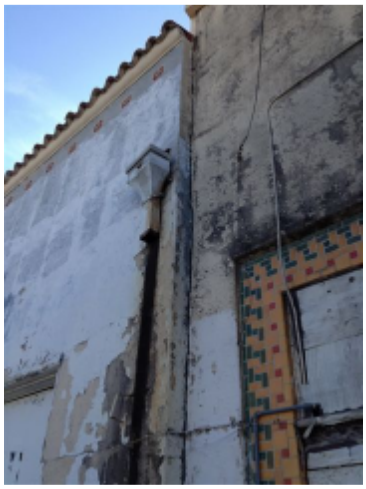

Fig. 11

Fig. 12

Vertical cracks are located in the exterior wall finish at further locations along the north, east and south walls. (See Figs. 13 and 14). These cracks appear to be mainly from shrinkage cracking of the rigid stucco material. It is recommended that the entire exterior wall finish be replaced with adequate control joints built into the wall.

Fig. 13

Fig. 14

The door sill and support beams at the front door of the west building are severely deteriorated and need to be replaced (Picture not available).

All observations listed in this report were from visual inspections made in accessible areas. No selective demolition or finish removal was performed. It appears to Alpha that most of the water damaged areas have already been uncovered and effects on framing members are visible. However, it is possible that when further exterior and interior finishes are removed, additional effects from water infiltration may be observed on roof, floor and wall framing members.

Mr. Jeff Haughton

Mr Scott Tak, P.E.

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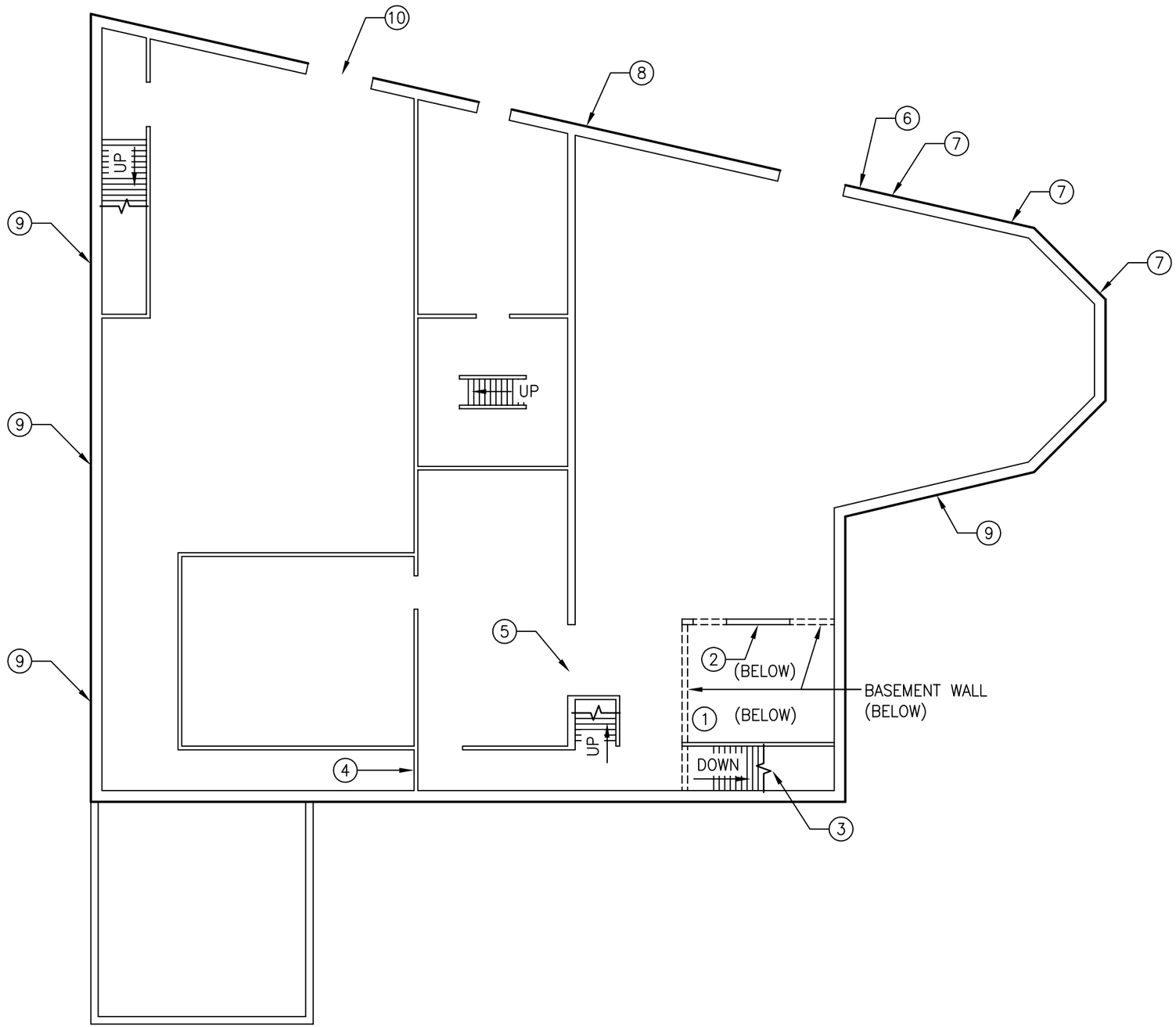

PLAN NORTH

1 FIRST FLOOR PLAN

SCALE : 3/32" = 1'-0"

GENERAL NOTES:

1. COORDINATE THIS SHEET WITH STRUCTURAL ASSESSMENT FOR 1432–1434 EAST COMMERCE STREET BY ALPHA CONSULTING ENGINEERS, DATED DEC. 10, 2012

SHEET NOTES:

1. WATER IN BASEMENT. (LEVEL VARIES)
2. LARGE HOLE IN BASEMENT WALL.
3. BOTTOM STAIR TREADS COMPLETELY GONE DUE TO DETERIORATION.
4. FLOOR BOARDS AND SUPPORT BEAMS COMPLETELY GONE DUE TO DETERIORATION.
5. SEVERE DETERIORATION ON DOOR LINTEL.
6. SEVERE DIAGONAL CRACK IN EXTERIOR WALL FINISH.
7. EXTERIOR FINISH ON WALLS BOWING OUTWARDS.
8. MISSING DOWNSPOUT AT ROOF SCUPPER.
9. VERTICAL CRACKS IN EXTERIOR WALL FINISH.
10. DETERIORATED FLOOR BOARDS AND SUPPORT BEAMS AT DOOR SILL.

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SUBJECT	FIRST FLOOR PLAN		SHEET
PROJECT	1432–1434 EAST COMMERCE		S1
BY	FL	PROJECT NO. 122200	OF 3
CHECK	JH	DATE: 12–11–12	

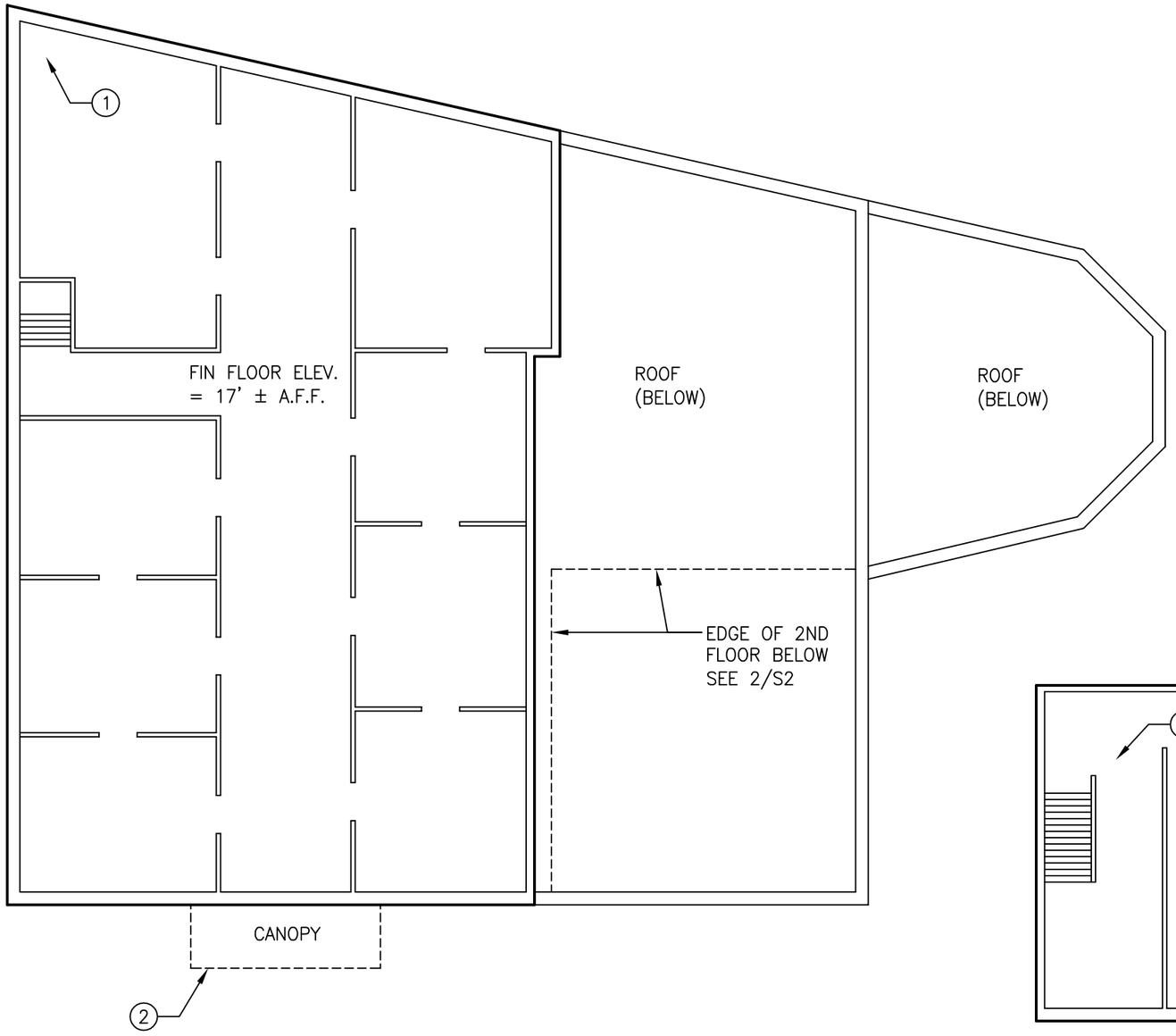
GENERAL NOTES:

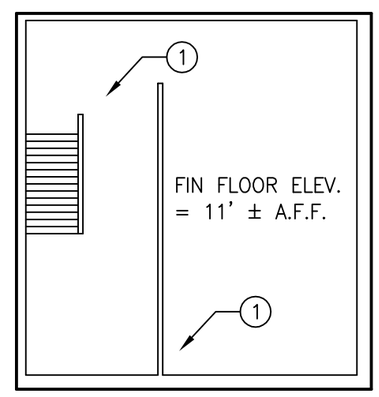
1. COORDINATE THIS SHEET WITH STRUCTURAL ASSESSMENT FOR 1432–1434 EAST COMMERCE STREET BY ALPHA CONSULTING ENGINEERS, DATED DEC. 10, 2012

SHEET NOTES:

(1) FLOOR BOARD DETERIORATION

(2) WOOD CANOPY COMPLETELY DETERIORATED.





2 SECOND FLOOR PLAN

SCALE : 3/32" = 1'–0"

PLAN NORTH

1 SECOND FLOOR PLAN

SCALE : 3/32" = 1'–0"

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SUBJECT	SECOND FLOOR PLAN		SHEET
PROJECT	1432–1434 EAST COMMERCE		S2
BY	FL	PROJECT NO. 122200	OF 3
CHECK	JH	DATE: 12–11–12	

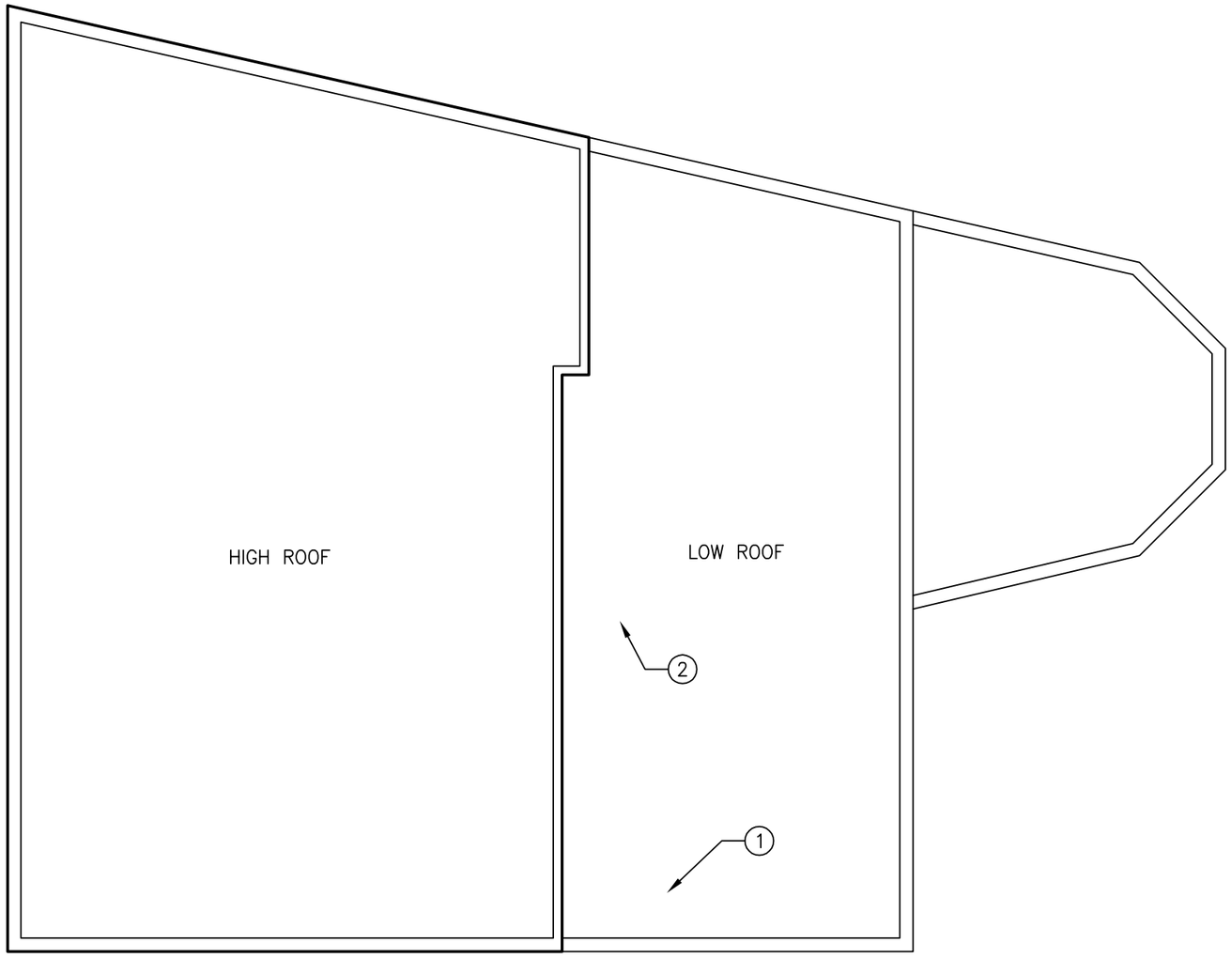
GENERAL NOTES:

1. COORDINATE THIS SHEET WITH STRUCTURAL ASSESSMENT FOR 1432–1434 EAST COMMERCE STREET BY ALPHA CONSULTING ENGINEERS, DATED DEC. 10, 2012

SHEET NOTES:

(1) METAL ROOFING AND SUPPORT BEAM DETERIORATION

(2) PONDING WATER.



PLAN NORTH

(1) ROOF PLAN

SCALE : 3/32" = 1'–0"

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SUBJECT	ROOF PLAN		SHEET
PROJECT	1432–1434 EAST COMMERCE		S3
BY	FL	PROJECT NO. 122200	OF 3
CHECK	JH	DATE: 12–11–12	