Jackson Amtrak Depot Intermodal Feasibility Study
Phase I Report

Jackson, MI

SMITHGROUP
architecture engineering interiors planning

TABLE OF CONTENTS

Introduction 1

Building Assessment 1

Physical Conditions – Depot Building 1

Physical Conditions – Express Building 7

Hazardous Materials 11

Assessment of Utility 12

Photographs 17

Site Planning Analysis: Land Use, Circulation and Access 23
- Land Use 24
- Circulation and Access 27

Appendix

Drawing Index
Sheet A1: Site Plan
Sheet A2: Train Depot Floor Plans
Sheet A3: Train Depot Elevations and Sections
Sheet A4: Express Building Plan, Elevations and Section

Introduction

There were two primary objectives for Phase I of the Jackson Amtrak Depot Intermodal Feasibility Study, based on the scope of work presented in the City of Jackson's request for proposals. The first objective was to produce a series of drawings of the two existing historic buildings and the Amtrak property, based on field measurements and observations, and available documentation. The purpose of these drawings was to document the existing buildings and site, and to provide a graphic analysis of the existing site and its development potential. The second objective was to provide an assessment of conditions of the existing historic structures, and of their potential for use as an intermodal facility.

The large-format drawings accompanying this report, along with the land use and circulation portion of this report and diagrams included within, are intended to satisfy the first objective, and include a site plan showing the major components and property boundaries of the site, and scale plans, sections and elevations of the Depot Building and Express Building as they currently exist, except that non-historic infill partitions have been ignored. The building assessment portion of this Phase I Report, containing a description, physical assessment, recommendations and an assessment of suitability for rehabilitation or adaptive re-use of each building, is intended to satisfy the second.

Building Assessment

Methodology

The assessment team, consisting of SmithGroup architects and structural engineers, conducted a field investigation on February 25th, 28th, and March 1st, 2005, to observe and document current conditions at the project site, for the purpose of obtaining first-hand knowledge of these conditions and identifying major maintenance or structural concerns. The investigation consisted of visual examination, measurements, and photographic documentation of existing conditions. Invasive or destructive exploration methods were not employed for this investigation. Certain areas of each building, access to which would have required either undue risk of injury to the project team members or the removal or destruction of barricades or existing finishes, were not investigated. These areas consist of the following:

- Attic areas of the Second Floor (Tower portions) of the Depot Building
- Attic areas of the Depot Building's addition.
- Attic areas of the Express Building.
- Roof areas (these were observed from the ground to the greatest extent possible).
- Crawl spaces of the Depot Building were entered and partially explored, primarily for observations of structural systems. Crawl spaces of the Express Building, including under the interior loading platform and, if such exists, beneath the main floor, were not entered.

A description of each building and a list of major observations are given below, followed by an outline of major maintenance or structural concerns. The assessment concludes with a statement of the assets and liabilities, and recommendations for re-use, of the buildings.

Physical Conditions - Depot Building

General Description

The 1873 Depot Building (Figure 1) is a 328-foot long structure of Italianate design, composed of two-story towers with hipped roofs at each end connected by a one-story gable-roofed concourse, and flanked on the south, platform-facing side by a high canopy structure supported on its outside edge

by tall cast iron columns. A similar but smaller canopy shelters the arched doorway on the center of the west elevation (Figure 2). A one-story hip-roofed addition, dating from roughly the turn of the twentieth century, stands on the east end, attached to the east tower and nearly identical in design, materials and details to the original building. The building's exterior walls are orange-red common brick, on a tooled stone watertable approximately level with the first floor, with brick pilasters accenting the corners of the towers and marching down the concourse every 14 feet. On the north elevation, facing Le Grand Park, a number of the pilasters are interrupted close to the eave line, where another canopy, now removed, had been constructed (Figure 3).

Tall, arched double-hung wood windows are centered between pilasters along the concourse, and are present on all exterior faces of the towers, at the first and second floor levels, all with arched, but unornamented, tooled stone hoods typical of the Italianate style. Each exterior face of each tower also features a centered, tall arched doorway, finished similar to the windows, with tall half-glazed paneled doors and glass transoms. Doors are provided in place of windows in several locations along the concourse as well. A number of these doors, and a few of the windows, have been replaced by plywood infill, either blank or with modern doors and frames cut into them. One of the windows, on the platform side adjacent to the ticket office, has been replaced with a steel overhead coiling door. Two of the original openings, at the west end of the north elevation of the concourse, have been modified with brick and mortar to accommodate the later addition of a mezzanine space, toilet rooms, and a service door (Figure 4) The addition features two large wood cargo doors, one on the east and one on the south, built from planks and hung on heavy steel or iron tracks (Figure 5).

All the roof surfaces are finished with asphalt shingles, and punctuated by tall, ornamented brick chimneys which generally align with masonry walls below. The perimeters of each tower roof, and the twentieth-century addition, are finished with ornamental sheet metal gutter liners and cornices, with brackets and friezes where the eaves return to meet the brick (Figure 6). A similar, although smaller, ornamental gutter and soffit trims the edge of the concourse roof on the north side, although there are no ornamental brackets where the canopy was once located. The gutters are drained with galvanized steel downspouts which drain directly at grade, or reach to PVC plastic boots at grade level. The outlets for the downspouts along the north side of the building are cut into the curb at the parking area.

The boarding platform extends the entire length of the depot building, and continues beyond to the east, past the adjacent express building. The platform is primarily concrete, although the area under the canopy is inset with quarry tile. The cast iron columns supporting the wood canopy rest on cast concrete plinth blocks. The canopy ceiling is painted beaded wood ceiling, with decorative wood brackets at each column (Figure 7).

The first floor structural system consists of wood joists and deck supported over the basement/crawl space by heavy timber beams supported on exterior stone foundation walls and on brick piers at the interior (Figure 8). The second floor and mezzanine levels are also of wood construction supported by masonry bearing walls. The roof system of the concourse consists of heavy timber trusses supported on exterior brick walls. The trusses support timber purlins, which in turn support the wood plank roof deck. The project team was unable to view the roof structure of the towers, though they are likely a combination of heavy timber beams and wood rafters. The addition's roof structure, likewise, was concealed and inaccessible, but a central beam built up from steel channels supported on a cast iron column was observed. The foundations are ashlar-cut stone, battered in the crawl space below the west tower and the westernmost portion of the concourse, but vertical elsewhere in the building, where there are full basements or deeper crawl spaces.

The interior is generally organized around the primary elements of the building's composition, with the towers, concourse, and addition treated separately and reflecting the original differences in their uses. The first floor of the each tower was originally finished with plain plaster, with a tall, relatively unadorned wood wainscot and window casings, and these features remain in several locations

(Figure 9). The second floor rooms of the towers also feature original plain plaster walls and ceilings, with a tall, ornamental base moulding and casework around the windows and doors, slightly more decorative than those on the first floor but still somewhat plain by the standards of the day. The remaining original doors are paneled and have operable transoms.

The interior of the addition, which was designed for baggage handling, is very spare, with exposed brick throughout (Figure 10). A storage area in the northeast corner is cordoned off with a wall made from stacked timbers. The original stone areaway, wood stair, and sloped wood doors to access the basement of the east tower remains in place. The original wood window, door frame, and transom of the east tower also look into this room. There is a timber platform constructed by the east exterior door, likely to facilitate loading of baggage carts, some of which are still parked within.

The concourse interior, which housed the public waiting areas, features original plaster walls and ceilings as well as a tall wainscot. The original ceilings feature medallions, likely where the original light fixtures were installed, and a highly articulated plaster crown moulding at its perimeter. The ornamentation of the wainscot cap and base mouldings is more complex than that of the tower areas. Connections between public areas within the concourse were made with high arched openings trimmed with wood mouldings (Figure 11). Generally, these arched openings remain, though two of them have been closed off, and one of these was modified. At some point in the building's history, likely during a renovation in the 1920's, a terrazzo floor was installed throughout the concourse, and is the finish floor in place today.

All of these interior spaces have seen some degree of change, either in configuration or finish, since the building first opened its doors. In the west tower, the first floor has been partitioned up with wood-framed construction of varying materials and quality, apparently solely to accommodate the mechanical and telecommunications equipment currently housed there (Figure 9). The entry doors to the west and north are closed off with wood framing and panels. A suspended acoustical tile ceiling is hung below the window heads, cutting through the casing, and plywood paneling, on furring strips with insulation, covers the walls in some areas (Figure 12). A functioning forced-air furnace was observed in one of the rooms, accessible by way of a door through the masonry wall. Apparently non-functional and obsolete telecommunications equipment is also housed in here. The second floor offices still feature original doors and trim. Some minor modifications were made to the layout. Doors and trim installed with these modifications are not original and much more modern. The northernmost room has been subdivided to accommodate a toilet room, and finished with plywood paneling on furring, and a suspended acoustical tile ceiling which bisects the original window. The stairway to the second floor is not original, and has an intermediate landing to provide access to the mezzanine in the west end of the concourse structure. (Figure 13, Figure 14, Figure 15).

In the east tower, more of the original finishes remain exposed on the first floor, which does not appear to have been altered significantly. The second floor layout is very similar to that of the east tower, but does not appear to have been altered. Doors, casings and mouldings appear to be original. Spline-mounted acoustical tile ceilings are installed over the ceilings, and the plaster walls have been covered with dark plywood paneling (Figure 16). A portion of the hallway appears to have been cordoned off at one point with some kind of curtain and used as a washroom, judging from the corner sink installed there. The floor is finished with embossed composition tiles.

The concourse portion of the building is generally subdivided into three areas. The westernmost of these has been partitioned into small offices with a central corridor, and generally extends to the original ticket office, where the current west wall of the waiting room stands. This infill consists of metal and glass modular wall systems that have been covered, along with the original plaster walls, with more plywood paneling. Occasional wood frame construction occurs in this area as well. A toilet room, apparently contemporary with the terrazzo flooring but subsequently subdivided and reduced in size, occupies the northwest corner of this area. The east wall of this toilet room is one of the original interior walls of the concourse, which also forms the east wall of the mezzanine above in this area. This original wall features a large archway, which was closed off and later partially removed as part of

various renovations of this area. In spite of this, however, much of this archway remains intact. The terrazzo flooring is covered with composition tile or carpet in nearly all of the rooms, and suspended acoustical tile ceilings are present throughout, hung beneath the windows and clearly visible from the exterior of the building. The original plaster ceiling, with its decorative crown moulding and medallions, is visible beyond this ceiling and for the most part appears intact.

The mezzanine is constructed over the existing toilet rooms and extends across the building's width, and is finished with plywood panels, composition tile, and, in portions, suspended acoustical tile ceiling. The decorative crown moulding is present on the south wall, and portions of the east and west walls, where it ends with a rough-cut edge. The plaster walls and ceiling along the north wall of the mezzanine are unadorned.

The central portion of the concourse encompasses the current waiting room, ticket office, and the two public restrooms. Original plaster walls, ceilings, mouldings, and wainscoting remain in place, along with the exquisite carved wood ticket office (Figure 17). The west wall of the waiting room, which divides it from the offices beyond, is not original, and the seams where it meets the original construction are clearly visible. Along the north wall of the waiting room, opposite the ticket office, there is evidence of patching at the crown moulding, where a newsstand originally stood (Figure 18). The ticket office is nearly completely intact, with minor modifications resulting from functional changes over time (such as alterations to the ticket windows, which appear to be otherwise fully intact). The ticket office is divided by a framed wall and ceiling, and the ornamental woodwork of the western half is fully concealed behind the framed walls of the offices beyond. The original ceiling, including its crown moulding and the remains of an electric ceiling fan, are clearly visible from within the west half (Figure 19).

The eastern portion of the concourse, again, is subdivided into a warren of rooms with framed walls finished with plywood paneling, with a low suspended acoustical tile ceiling. More original plaster ceiling, with medallions and crown moulding, is concealed above, and it too appears to be generally intact.

The attic space above the concourse area is fully accessible, through small doors in the east and west towers, via a plank catwalk and narrow arched openings through the brick partitions. The ceiling joist cavities are filled with blown-in cellulose or mineral wool insulation. Knob-and-tube wiring, black iron conduit, and modern galvanized conduit are all visible in these areas; though it is very unlikely any of the knob-and-tube wiring is still in service. At the westernmost portion of this attic, above the mezzanine, there are empty shelves where the area seems to have been used for records storage, and some graffiti of historic interest, mentioning MCRR (Michigan Central Rail Road, the building's original occupant) and a date of 1874.

There is a low crawl space under the west tower and the westernmost portion of the concourse. Beyond the east wall of this area, there is a full basement, about half of which has a finished concrete floor. The perimeter stone walls of this basement are either painted or parged, and intermediate walls of stone or brick have arched openings between the spaces. About where the current waiting room begins on the first floor, the concrete floor gives way to earth, which slopes upward as the basement progresses further west, reducing the basement to a crawl space.

Summary of Observations

- Structurally, the exterior bearing walls, roof and floor framing appear to be in fair condition. Deflection is evident at the east side of the main waiting room floor where Amtrak staff indicates a fire occurred. This area may require additional investigation, and is discussed in detail further on in this report.
- The brick chimneys are missing caps, or their caps have been replaced with inappropriate caps or copings, and as a result have suffered water penetration. The mortar joints above

the roof line have deeply eroded, and consequently the chimneys may require complete disassembly and rebuilding above the roof line. Most of the brick appears sound, at least from ground level, although a number of bricks appear to be damage and may require replacement. The flues should be inspected prior to reuse, and since they were originally designed for use with individual stoves (original flue connections, though capped off, are present throughout the building), should be analyzed with regard to proportions, location and interior configuration to ensure that they will properly draw for new boilers or furnaces that might be connected to them. All of the chimneys, whether ultimately re-used or not, are important character-defining historic features of the building and should be preserved.

- The roofs of the east and west tower, and the baggage room addition, are in poor condition, with many worn, torn and/or curled shingles, and should be replaced soon. The main gabled roof of the depot, according to Amtrak personnel on site, was replaced relatively recently, and from what could be observed through the snow, appears to be in better condition than the other areas. All roofing areas should be investigated in greater detail, including flashings at chimneys and roof penetrations. The platform canopy roof also appears to be leaking, as evidenced by damage to the beaded board soffit at downspout penetrations. Roof sheathing, decking and framing should be inspected for damage or deterioration and repaired as necessary prior to installing new roofing. Because the roof is one of the first lines of defense for the building against the elements, its integrity is critical to halting deterioration. Therefore, further investigation and preventative maintenance should be conducted in the near future. This is discussed in detail later in this report.

- The gutters and downspouts exhibit leaks, patches, and disconnected sections throughout the building. In particular, this is evident at where the concourse meets the west tower on the north side of the building. Water discharged from the roof in this location is being directed onto and/or into the masonry wall, resulting in deterioration of mortar joints, erosion and discoloration of the brick masonry, and damage to the plaster on the interior face of the wall. As with the roofing, management of rainwater runoff is a critical issue in maintenance of the building, and as discussed further on in this report, should be attended to.

- The inlaid quarry tile at the boarding platform is in poor condition, exhibiting open grout joints and broken or missing tiles. Obviously, this does not pose an immediate threat to the structural integrity of the building. However, it may provide a path for water to penetrate the concrete platform surface and create problems in the substrate materials. The broken tile areas also present a potential safety hazard for pedestrians.

- The brick wall surfaces are eroded, apparently as a result of sandblasting. This can be a difficult problem to ameliorate. Bricks are generally made from fired clay, with a surface that is hard-fired to resist damage and water infiltration, but still provide a level of permeability to allow water vapor to escape the masonry wall. Modern bricks are very hard and strong and their surfaces are sometimes fired very hard. However, the brick commonly in use at the time of the Depot Building's construction is much softer and absorbent, especially on its interior. When abrasive methods of cleaning or paint stripping, such as grinding or sand blasting, the protective facing of the brick is easily stripped away, leaving the soft interior of the brick fully exposed. Ironically, this also leaves more total surface area, due to the roughening of the surface, where airborne or waterborne dirt may be deposited, resulting in a building which is dirtier than before it was first cleaned. Water is also absorbed into the wall much more easily, where it can be trapped and cause damage from freezing and thawing within the wall. Additionally, the brick becomes much more susceptible to erosion. The results may include total erosion of the brick and wholesale spalling. Fortunately, these symptoms do not appear to be present. The use of sealants or paint to try to protect the damaged brick may only serve to exacerbate the problem, as impermeable coatings may only result in more water being trapped within the masonry, and accelerate deterioration. Determining a course of action to properly repair or counteract this damage will require additional investigation. As of

now, the masonry appears to be holding up, and therefore can be left alone for the immediate future, until a proper solution can be researched, determined and implemented.

- Similar to the brick, the stone watertable, door sills, window hoods and window sills show telltale signs of sandblasting, being severely eroded and exhibiting spalling. Some door sills appear to have been repaired with concrete caps, which in turn are now spalling away. The stone appears to be a relatively soft sandstone or limestone and therefore would be particularly susceptible to the ill effects of this treatment. Unlike brick, stone is generally more homogenous in nature, and is therefore equally hard and durable within as well as without. However, sandblasting often creates rills and pits in the stone surface, and generally roughens it. Resultantly, there is more surface area to attract water and dirt, and the results are often similar as with brick, particularly with softer, more workable types of stone preferred by builders and architects during the nineteenth century. It may be possible to use consolidants to replace damaged binders within the stone units or to repair them using a specially-formulated restoration mortar and thereby avoid replacement of large amounts of deteriorated stone. The stone protected by the platform canopy is also in better condition, and its decorative tooling can still be clearly seen. Some of the keystones in the window hoods have either been replaced with brick, or have shifted slightly.

- Mortar joints in the exterior walls appear to be generally sound, except around downspouts and in areas of particular exposure, such as chimneys and areas exposed to salt or snow buildup. The mortar joints appear to have been decoratively pointed with a red mortar that was close in color to the original brick face, and then applied with a thin band of what appears to be white mortar to give the joints thin regular appearance. It is unclear if this treatment is the original mortar, but the widespread appearance of this treatment suggests that this was either original to the building, or a deliberate change to the building's appearance. An analysis of existing mortar should be performed to determine the composition of the original mortar, and whether these decorative treatments are original or a later modification (Figure 20).

- The original masonry walls were not insulated. The wall system utilized heat loss from the building to evaporate moisture from the brick. Subsequent alterations in some areas have added a one-inch layer of one-inch polystyrene rigid insulation covered with paneling to the interior face of the walls. This was observed on the first floor of the west tower. Adding insulation throughout the building, while reducing winter heat loss, may actually harm the walls by creating differential thermal expansion, or because of freezing of water within the wall (as discussed above). A thermal analysis should be performed to determine whether wall insulation is required, and whether this will have a detrimental impact on the walls. There is also blown-in insulation in the attic, which will not have the same potentially negative effects. It should be checked for consistency and adequacy.

- The stone foundation walls, observed in the basement and crawl space areas, are in fair to poor condition with widespread deterioration of mortar joints observed, particularly at the west end of the building. A petrographic analysis of the existing foundation mortar should be performed to determine its remaining useful life.

- Some of the window and door openings have been infilled or reconfigured, although the majority remain in their original configuration. Infill conditions include non-original brick, blank wood panels, non-original doors in wood panels, and framed construction behind original doors in place. The historic doors in the West Tower are in better condition than the others, and it is possible that they were never used. The floor level at the west end is about two feet above grade, and although early architectural drawings suggest that steps and a porch were provided at this entrance, no physical or historic photographic evidence of steps could be found. The lack of steps implies that these doors served a visual purpose only and were not used.

- The original wood windows, while in good shape at the interior, have deteriorated at the exterior due to rot or neglect. The deterioration is significant, but likely repairable, with some parts or units requiring replacement. Many windows have been augmented with exterior aluminum storm and screen windows. Overall, these do not detract visually from the appearance of the structure, and may possibly be retained. If they are retained, they should be inspected for proper attachment and weeping. If natural ventilation is desired, either through use of the existing transoms or by opening the double-hung sashes, the storm windows may need to be reconfigured or replaced to properly allow for this.
- Most of the original wood doors are in poor condition. Further investigation is required to determine extent of damage and possibility of repair. A number of modern doors have been installed that are not compatible with the historic character.
- There is plaster damage of varying degrees of severity in a number of locations. The south wall of the waiting room exhibits some wide cracks, which may be do to differential thermal movement or a partial release of the plaster from its substrate. Significant water damage, most likely due to excessive water penetration though the masonry wall beneath, was observed in the northeast corner of the west tower, adjacent to one of the leaking downspouts mentioned previously. Significant areas of peeling paint were observed on the waiting room ceiling and in various locations throughout the east and west towers. This peeling is most likely caused by moisture and temperature differentials on either side of the plaster surface, which are causing moisture migration through the plaster and consequently the detachment of the paint.
- The building currently appears to have functioning heating, plumbing and electrical systems. Heat is currently provided by small forced-air furnaces located throughout the building. There is an abandoned gas-fired boiler in the basement of the east tower, and evidence of a steam heating system which has since been for the most part dismantled. The multiple chimneys and presence of capped flue pipes indicates that heat was originally provided by wood or coal stoves throughout the building. Observation of window-mounted air conditioners indicates that no central air conditioning system is currently installed. Electrical systems consist of a main service, with several distribution panels scattered throughout the building. Evidence of early electrical systems, such as knob-and-tube wiring, was observed in attic spaces and is assumed to be no longer functioning. Copper supply piping and both PVC and black iron waste piping was observed. We anticipate that all plumbing, electrical, and HVAC systems will be replaced as part of the rehabilitation in order to meet current codes, accommodate new program, and incorporate modern technologies, and therefore these systems were not investigated in detail.

Physical Conditions - Express Building

General Description

The Express Building (Figure 21) reportedly dates from the late nineteenth century. It is a single story vernacular brick building, about 98 feet by 82 feet, and configured in an "L" shape, with a hipped roof and overhanging eaves. The brick walls are subdivided by piers, and rest on a low stone watertable which is almost obscured by the surrounding grade. Window and door openings are rectangular in shape, and have solid stone lintels supporting the outer wythe of brick, while the interior wythes behind are supported by brick arches. At least one of these openings, a large door on the north elevation of the west wing, is supported by a loose steel lintel. The brick rowlocks stacked on this lintel were then parged over to imitate the stone used elsewhere. In all likelihood, this door is not original to the building (Figure 22).

The roof is supported on heavy timber trusses spanning to the exterior load-bearing masonry walls, and finished with asphalt shingles. There are galvanized steel round gutters at the perimeter, leading

to downspouts which are either galvanized steel or PVC. The undersides of the eaves are finished with wood trim to cover the rafter tails, mitered at the corners of the building (Figure 23). Two plain brick chimneys stand along the ridge of the roof, one on each wing of the building.

The west elevation features a receiving dock constructed of heavy timber, with a galvanized steel grate surface. The joist pockets and supporting steel columns of a canopy are visible, though the canopy itself is gone. Three large sliding wood doors open onto this platform, flanked by pairs of windows at either end. The south elevation has several more large wood doors, no doubt to facilitate carts loaded with mail and parcels as they were drawn out to the waiting trains for loading.

The interior of the building is very utilitarian, with exposed brick walls, a plain tongue-and-groove wood ceiling, and a concrete slab floor. The western portion of the interior is elevated to the level of the exterior receiving dock, although the doors themselves extend all the way to grade level. At the north end of this platform is a trap opening, containing the remains of a scale. There is a small mezzanine, finished with tongue-and-groove wood planks, accessible via a narrow stair from this platform, and an office to the north, accessible by another stair directly adjacent to the first. An open high-bay area occupies most of the east wing of the building, with a wood lath and plaster wall at the east end. The brick chimney, engaged to this wall, extends down to about 8 feet above the floor, resting on a wood-framed structure with a built-in cabinet. The office area to the east of this wall is sealed tight with plywood over the door openings, and therefore was not investigated by the project team.

Summary of Observations

- The exterior masonry walls have extensive step cracks in the east and west elevations. These appear to be from foundation settlement. A third crack, located near a large sliding door on the north elevation of the east wing, seems to be a result of displacement of the lower portion of brick. The exact cause of this cracking and movement will require further investigations. If these cracks are evidence of active movement of the structure, there is a risk of significant further damage. Therefore there is a degree of urgency in addressing these problems. Moreover, there is widespread damage due to freeze-thaw cycles and erosion. The damage along the south, east, and west elevations affects the outer wythe of brick from grade to a height of four feet. Damage to the inner wythes of brick should be assessed. These items are discussed in more detail subsequently in this report.
- Certain masonry lintels are damaged and will require rebuilding.
- As with the Depot Building, the brick chimneys are missing caps, or their caps have been replaced with inappropriate caps or copings, and as a result have suffered water penetration. Resultantly, the mortar joints above the roof line have deeply eroded, and consequently the chimneys may require complete disassembly and rebuilding above the roof line. Most of the brick appears sound, at least from ground level, although a number of bricks appear to be damage and may require replacement. The flues should be inspected prior to reuse. As with the Depot building, they should be analyzed with regard to proportions, location and interior configuration to ensure that they will properly draw for new boilers or furnaces that might be connected to them. Both of the chimneys, although not as ornamental as the Depot Building's, are character-defining historic features of the building and should be preserved. At least one of these chimneys is supported on wood framing within the building. Precautions should be taken during construction to ensure that this chimney remains structurally stable.
- The asphalt roof shingles are severely deteriorated. Some repairs have been recently performed. Isolated areas of wood sheathing and roof framing have likely deteriorated as a result of the damaged shingles. As with the Depot Building, this is important to the continued protection of the building's structure; however, the deterioration of this building's roof is more advanced. This is discussed in more detail below.

- The entire drainage system of exposed gutters and downspouts suffers widespread damage. Various areas of the wall are deteriorated as a result of leaks in the gutters and downspouts. While the design of these components should be compatible with the character of the building, they are not in and of themselves a character-defining feature of the building, and should be replaced. As with the roof, the proper functioning of this system is important to the well-being of the building.
- The windows, which are original, with wood frames and sashes and single pane glass, are significantly deteriorated due to neglect or rot, or are broken completely. While it may be possible to repair some of the windows, replacement with new wood windows of appropriate design and proportions, with insulating glass, may prove more cost-effective and energy-efficient. The new windows should match the original windows in design, operation, size and proportion, and dimensions of components such as frames, sashes and muntins.
- The passage doors and large sliding doors are wood and most are in poor condition. However, the sliding door hardware appears for the most part to be intact and operational, and may potentially be re-used even if the doors themselves are replaced.
- The concrete floor is cracked and uneven and will likely need to be replaced.
- Interior mezzanines and non-structural partitions subdivide some of the interior space. Some of this construction is original and interesting, and speaks to a degree about the history and use of the structure. However, this construction is for the most part in a state of deterioration, is somewhat flimsy in nature, is not barrier-free accessible, and will not lend itself well to new uses. This interior construction is arguably not among the character-defining features of the structure, unlike its exterior features and proportions, and will most likely need to be completely removed to take full advantage of the Express Building's interior space. It may be possible to take advantage of some features, such as the exposed masonry walls and wood ceiling, which will require some repair and replacement of damaged or missing boards.
- The existing heating, plumbing, and electrical systems in the building are apparently not functional. We anticipate full replacement will be necessary as part of the rehabilitation in order to meet current codes, accommodate new program, and incorporate modern technologies. Therefore, we did not include observations of these systems in our report.

Areas of Concern

Following is a summary of the items described above that appear to be of particular concern, from the standpoint of stabilizing the buildings and protecting them from further deterioration. It should be noted that this list is by no means comprehensive, and merely addressing these items will not guarantee that further deterioration will cease. However, they are items that our project team observed that appear to be potentially significant contributors to accelerated deterioration of the buildings, and that warrant further investigation or amelioration in the near future.

1. Roofing

The asphalt shingle roofing on the east tower, west tower and addition of the depot building and throughout on the express building has reached the end of its service life, and is in a significant state of deterioration. This is a particular concern for the Express Building (Figure 24). Likewise, there is evidence of leakage in the platform canopy (Figure 25).

One of the primary culprits in the accelerated deterioration of structures is the uncontrolled infiltration of water. Over time, water through a deteriorated roof can cause major damage to interior framing and structure, masonry walls, interior plaster and drywall, wood, and ferrous metals.

The roof areas mentioned above which are worn beyond use should be torn off down to the roof deck and re-roofed, after inspection and repair of the underlying deck and the roof flashings. The roofing over the concourse area and the flat roof areas over the canopies and connection to the addition should likewise be inspected, and repaired or replaced if necessary.

2. Control of Rainwater from Roofs

Integral gutters and gutter liners around the depot building should be inspected, including seams, flashings, and connections to downspouts, and appropriate repairs made, to ensure that these systems are watertight. Concealed leaks within the ornamental metalwork or under eaves may provide passages for water into the building, and leaks at connections to downspouts, or at joints along the downspouts, may cause concentrated amounts of water to run down the surface of or penetrate into the masonry walls, which will eventually deteriorate the masonry. Evidence of significant deterioration at downspout locations, and of intrusion of birds into the ornamental metalwork, suggests that these problems are present (Figure 26). Proper repair or replacement of these components, done with appropriate materials and mindful of the importance of the ornamental metal gutters to the historic character of the building, will go far toward arresting the continued deterioration of the building.

Similarly, the exterior gutters and downspouts of the Express Building are significantly deteriorated, with several stop-gap repairs that in turn have failed (Figure 27). Although the wide eaves of the building help prevent roof runoff from directly flowing onto the masonry, this water will still be deposited adjacent to the building at grade, leaving the building susceptible to potential rising damp, flooding, and foundation problems. The gutters and downspouts should be replaced, with appropriate metal components sized, detailed and attached in a manner sensitive to the historic characteristics of the building. It may also be necessary to adjust the grading around this building as well, to ensure that the ground slopes away from the exterior walls.

Underground storm system piping should be inspected for blockage or other damage and repaired or replaced if required. Grade discharge should be arranged so that it does not create a safety hazard (for example, by causing runoff onto a sidewalk which can freeze) and so that the outlets are not susceptible to blockage or damage.

3. Express Building Masonry

The Express Building exhibits a number of significant masonry problems. Of greatest concern among these are the significant deterioration of the bricks along the lower portions of the walls, displacement of brick masonry around the large door opening in the north elevation of the east wing, and the step cracks occurring on the east and west elevations of the north wing.

The depth of areas of deteriorated brick is of particular concern, as it extends completely through the outer wythe (Figure 28). This not only undermines the structural integrity of the masonry but also provides a conduit for water to enter deep into the building wall, where it can do significant damage through erosion and freezing. Left unchecked, this condition will continue to worsen at an accelerated rate. Appropriate measures should be taken to properly stabilize and/or repair these areas to prevent further damage.

The deep cracks in the load-bearing masonry (Figure 29) are most likely due to unanticipated movement of the building or settlement of its foundations. Further investigation should be conducted to determine the cause, and whether these cracks are actively moving. Monitoring of the cracks, using a device specially designed for this purpose, at regular intervals over an extended period should reveal whether these cracks are moving or stable. Also, a geotechnical investigation to determine the depth and type of footings and soil conditions around the building, particularly in the

area of the cracks, will help to determine whether the cracks are due to settlement, moisture, frost heave, or inappropriate footings.

Likewise, steps should be taken to stabilize or rebuild the displaced masonry around the door opening in the north elevation of the west wing, and to determine the cause of the displacement (Figure 30).

4. Depot Building Floor Structure

There is some unusual deflection in the floor of the Depot Building's waiting room, in the northeast corner. At some point in the past, there was a fire that charred and damaged a number of the wood structural members in the floor system, and it is possible that this event, or subsequent repairs, may account for this deflection. The deflection may also be due, in part, to the added weight of the terrazzo flooring installed in the 1920's, or possibly some unusual live loading condition, or even a combination of all these factors. Surprisingly, it appears that the low point of deflection is actually centered on one of the existing brick piers. Observation of cracks in the terrazzo floor suggests that these occurred long ago and are either unrelated to this deflection or that the deflection has been present for some time. Therefore it is entirely possible that the floor structure is stable and there is no cause for concern. However, it would be wise to investigate this further. A review of records associated with repairs made after the fire may reveal that the deflection occurred as a result of the fire, and that the floor was stabilized when repairs were made. Otherwise, more in-depth structural investigation and analysis is recommended to ensure that there are not other underlying problems.

Hazardous Materials

General Commentary

The scope of this report does not include testing or inspections to definitively identify the presence or extent of hazardous materials. Due to the age of the construction, it is highly likely that some such materials exist within the building and on the site. Based on observations during the field investigation, the following information is provided relating to asbestos and lead paint, the two types of hazardous materials most likely to be encountered. This does not preclude the possibility of the presence of other toxic, carcinogenic, or otherwise hazardous materials being present in the buildings or surrounding site.

Asbestos

Asbestos mineral fibers were used in many building materials beginning in the late nineteenth century. The fine, strong, fire- and chemical-proof fibers were used in the building industry to strengthen materials, provide fire resistance, provide insulation, especially in high temperature environments, and to provide long life to building materials and products. By the late 1970's it had been determined that when inhaled, airborne asbestos fibers penetrate body tissue in the lungs, remained in the body and increased the risk of contracting several serious lung diseases. Illnesses caused by asbestos may not be observed for twenty years or more after exposure to the material. As a result, asbestos is no longer used as a constituent in building products and materials, and has been classified as a human carcinogen by state, federal, and international agencies. All types of asbestos are considered to be hazardous when in a "friable" state (crumbly, powdery and subject to inhalation).

Building materials that may contain asbestos include, but are not limited to:

- Pipe Insulation
- Heat-resistant insulators

- Mechanical equipment insulation
- Plaster
- Wallboard patching compounds
- Fire separation assemblies
- Floor tiles
- Adhesives
- Sealants
- Roofing felts and flashing
- Roofing shingles
- Siding
- Cement products
- Electrical wiring insulation and isolation
- Duct coverings

Lead Paint

Prior to the late 1970's, lead pigment was a major component in oil-based paint materials because it contributed to superior hiding power, weathering, resistance to wear, and decreased drying times. Lead was rarely used as a component in Latex paints. Many buildings built before 1978, when lead-based paints were banned, contain lead paint. Buildings built before 1960 may contain paint with high concentrations of lead. Prior to the 1950's, nearly all paint was lead-based.

Lead poisoning is a disease caused by eating, drinking or inhaling lead. Although young children are primarily at risk, ingestion of lead by persons of any age can cause brain damage, mental retardation, behavior problems, anemia, liver and kidney damage, hearing loss, hyperactivity, developmental delays, other physical and mental problems, and in extreme cases, death. In children, even low levels can cause learning and behavioral problems. Lead paint is particularly a problem during building renovation operations, when paint is being scraped, stripped, or sawn, as these activities create lead-bearing dust which may be inhaled or ingested by workers.

It is recommended that records of previous environmental testing and abatement be obtained and reviewed. If such records are not available, or are limited in scope, it is recommended that a competent, experienced environmental testing firm be engaged to investigate the project site and buildings. A plan for abatement of these materials can then be developed, and an understanding of the associated costs for such abatement can be achieved.

Assessment of Utility

Criteria

In developing a determination with regard to the rehabilitation or adaptive re-use of the Depot and Express Buildings for the proposed use as an Intermodal Transportation Facility, several factors must be taken into account. Certainly among these factors are the anticipated costs of construction and operations, revenue potential, development potential, and traffic and site constraints. A preliminary analysis of the site follows later in this report, along with considerations for development potential, both on the site and in the surrounding area. Cost and revenue considerations, along with more in-depth development considerations, are outside the scope of Phase I, although these issues will be explored in later phases of the Study. Equally important to consider in this determination are the physical condition and re-use potential of the buildings themselves, and these are the subject of this assessment.

There are several key criteria to weigh in consideration of the re-use potential of these buildings, even when such consideration is based solely on the physical configuration and general condition of the buildings themselves. All of these criteria play a role, to a greater or lesser extent. No one particular strength or weakness will make or break the usability of the structures. In most cases, even a severe deficiency will simply result in a cost that must be accounted for in the funding of the project. The criteria to be considered include the following, in no particular order:

- Overall physical condition of the structures
- Plan layout and proportions of the spaces
- Arrangement of buildings on the site and relation to one another
- Arrangement of structural members within the building
- Barrier-free accessibility
- Impact on character-defining features of the historic buildings
- Potential for additions to the buildings (restricted by space on site and appropriate locations on the building for such additions)
- Type of materials used in construction

These criteria were used to develop a list of assets that can be taken advantage of, and of issues that will need to be resolved, in the adaptive re-use or rehabilitation of the buildings.

Assets

Following are a list of positive features of the existing buildings that enhance their potential for adaptive re-use or rehabilitation.

- Both the Depot and the Express Building have large, open interior spaces with a minimum of interior bearing walls and no interior columns. This allows for maximum flexibility in utilizing and subdividing the spaces.
- Nearly all the character-defining features of the Express Building are found on the exterior, freeing the interior of this building for a wide range of possible reconfigurations, without compromising the historic character of the building.
- Existing windows and doors throughout each building allows greater flexibility for use of space and related location of entrances and exits without significant alterations to the building's exterior appearance.
- The Depot Building was designed at a time before electric lighting and air conditioning were available. The large, tall windows allow a significant amount of daylight into the building. The relatively small number of light fixtures in the current waiting room is a testament to this. Its tall ceilings and transom windows were designed to let warm air rise up and be removed from the building. Its massive brick exterior walls would have acted as thermal masses, absorbing daytime heat rather than transmitting it into the building. As a result, there is significant potential to take advantage of these features in the design of lighting and ventilation systems, to make these systems much more energy-efficient, environmentally friendly, and cost-effective.
- Much of the character-defining historic features the Depot Building's interior remain, for the most part, intact. The presence of so much original construction is a rare gift in a building of its age, and its presence will reduce the cost and complexity of restoration sharply. Any new construction should carefully respect these features, but proper design and careful construction techniques should allow this to be done cost-effectively.
- The large attic spaces in each building provide ample room for the integration of mechanical and electrical systems without interfering with architectural features. In the Depot Building,

the available crawl space and basement beneath the entire building offer additional space for these systems.

- There is space on the site around the Express Building for additions or expansion, should they be required to accommodate the new program. The proximity of the Depot Building to the Express building also affords the opportunity to connect the two.
- The main floor level of each building is generally level and currently accessible at grade level in several locations. This may reduce or eliminate the need to provide exterior ramps to accessible entrances, and will allow nearly all the interior space of buildings to be barrier-free accessible. Exceptions are indicated in the following section.

Design Issues

The items below are specific issues identified with the buildings that must be resolved in the design of a new facility. None of these should be considered fatal to the project, but they will need to be addressed and considered as the project moves forward.

- Although the Depot building is largely accessible from the exterior, there are second story spaces in the East and West Towers that are not currently barrier-free accessible. The potential uses for these spaces may be limited, unless elevators are provided. It will be costly to provide an elevator for each of these towers, especially considering that the second floor area of each is less than 1,000 square feet, and challenging due to constraints of rooflines and available floor area. Because the building is a designated historic building, there may be some leeway in this requirement. This can only be determined through a careful building code analysis and research which is outside the scope of this report.
- Regardless of whether elevators are provided for these second floor areas, it is likely that new stairways, compliant with current codes, will be required for each of these tower areas. This will likely be due not only to the condition of the current stairs, but also because of the demands of the new program, which may not accommodate the oddly-shaped current stairways.
- Both buildings are constructed of load-bearing masonry, with interior floor and roof structures of wood. This places them into a category of Construction Type in the Michigan Building Code which places limits on their size and height. Specific research regarding the allowable limits and exceptions and increases granted is not in this report's scope. It is, therefore, unknown whether this will actually be a problem; however, it is still a potential design issue. The Code does grant some allowance for older buildings that may not meet its requirements. A careful study of Code requirements, including allowable exceptions and increases, will reveal whether there will be problems with Code compliance in renovation or addition to the buildings. Other measures, such as creation of fire separations between existing and new construction, or the addition of sprinkler systems and alarm systems, may also satisfy Code requirements.
- The historic ticket office is another area that may pose a challenge to accessibility. Typically, Barrier-free design requirements indicate that transaction counters be located no more than 34 inches above the finish floor, to permit customers in wheelchairs to comfortably use them. Some means of accommodation will be required, if the ticket office is to continue to serve customers in a new station. Because the ticket office is one of the critical character-defining features of the Depot Building, it should be retained with as little modification as possible. While alterations to accommodate handicapped persons are certainly possible, they should be designed carefully, with regard both to the users and staff of the facility and to the historic nature of the structure.

- Barrier-free restroom facilities will be required. Currently, none of the existing restrooms meet current accessibility requirements. It is anticipated that new fully accessible restrooms will be incorporated into the design.
- Because of site constraints (existing major streets and the railroad right-of-way), it will prove difficult to expand the Depot Building in any meaningful way, except perhaps to provide a connection to the Express Building as discussed above. This issue will be a given constraint in the design of the new facility.

Additional Historic Preservation Considerations

- If federal funds are to be used for the project, it may be required by the National Historic Preservation Act to undergo what is known as a Section 106 Review, because of the site's National Register listing. This process involves a review of the project by the State Historic Preservation Office, followed by review by a Presidential-appointed Advisory Council. The review process takes approximately 60-90 days after submission of the required materials, and should be done early in the process to avoid delays in the event of objections by the review authorities.
- Regardless of the funding source, the U. S. Secretary of the Interior's Standards for Rehabilitation are good guidelines for design and construction projects involving historic structures, and will typically be the basis for review by any historic preservation authority, whether the National Parks Service, the State Historic Preservation Office, or the local Historic District Commission. The Standards are summarized below, and are included in their entirety in the appendix to this report. The Standards are deliberately open to a degree of interpretation.

    1. The new use should be compatible with the building.
    2. Retain and protect character defining features.
    3. New construction should not attempt to create a false sense of history.
    4. Some changes may have acquired significance in their own right. Alterations can help tell the story of the evolution of a building.
    5. Treat distinctive features with sensitivity.
    6. Repair rather than replace whenever possible. If replacement is necessary, it should be done in kind to match the original.
    7. Clean with the gentlest means possible.
    8. Protect and preserve potential archeological resources.
    9. New construction should be contemporary but compatible.
    10. Additions/alterations should be done in such a way that if they were to be removed, the historic fabric would be unimpaired.

Conclusion

Both the Express Building and the Depot building are durably-constructed and efficiently-designed. At the same time, both structures have a number of maintenance needs, some of which are particularly urgent in nature. With correction of these deficiencies and proper ongoing maintenance, both structures will continue to be serviceable for the foreseeable future.

The open plan of each building, free of structure and well-proportioned, will allow for a great degree of flexibility in the design of the buildings and their accommodation of new program. Although the Depot Building is situated rather tightly into a corner of the site, ample room remains adjacent to the express building and further to the east for expansion of the facilities to accommodate the new program. And other expansion will most certainly be required, if for no other reason than to provide adequate parking facilities and to provide proper platform facilities to accommodate the anticipated high-speed commuter trains.

Most importantly, these buildings were originally designed for transportation - for the embarking and disembarking of rail passengers, purchasing of tickets, and related services. The new intermodal program can be incorporated in the design to work with the typology of the buildings, rather than alter that typology to meet its needs. Currently, the Depot Building is not so much obsolete as under-utilized. And while the Express Building will not likely serve its original purpose again, its configuration and size can easily be adapted to any number of new uses, either as a primary component of the new intermodal station or in a prominent supporting role.

The Depot Building is perfectly suited for rehabilitation, and the Express Building for adaptive re-use, as primary components of a new Intermodal Station.

Photographs

Figure 1. Depot Building.

Figure 2. West Elevation.

Figure 3. Partial North Elevation.

Figure 4. Partial North Elevation.

Figure 5. Partial East Elevation.

Figure 6. East Elevation Showing Chimneys and Ornamental Metal Soffits.

Figure 7. Boarding Platform and Cast Iron Columns Supporting Canopy.

Figure 8. Crawl Space Under West Tower.

Figure 9. First Floor, West Tower.

Figure 10. Baggage Room.

Figure 11. Archway in Waiting Room.

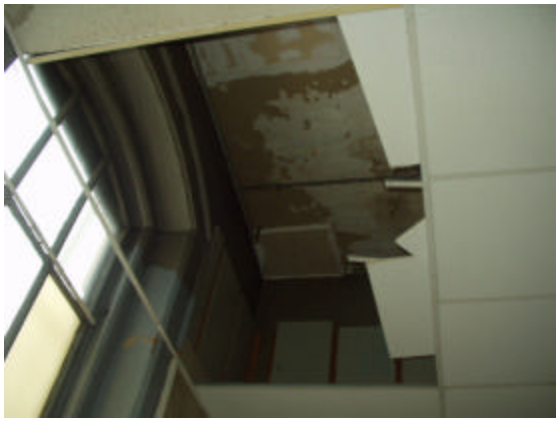


Figure 12. West tower, first floor, window detail.

Figure 13. Window casings in the west tower, second floor.

Figure 14. Window sills and base mouldings in the west tower, second floor.

Figure 15. Non-original doors in the westtower, second floor. Opening on left is non-original, opening on right is original.

Figure 16. Finishes and window trim, east tower, second floor.

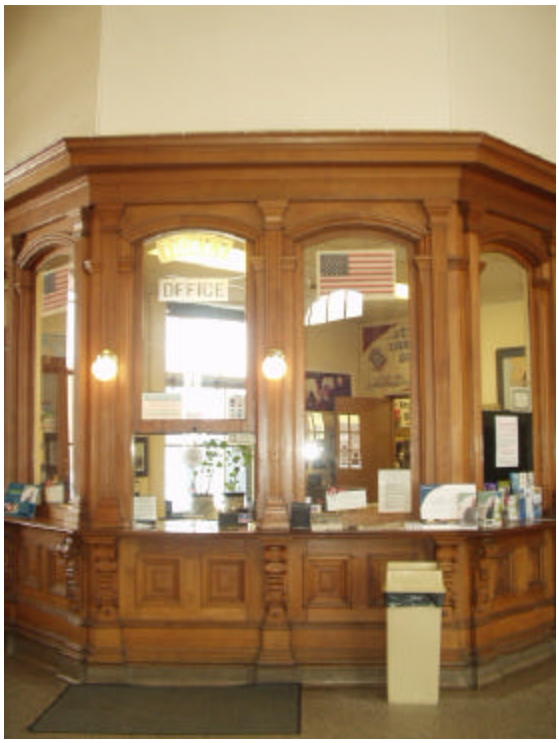


Figure 17. Ticket Office.

Figure 18. Patched crown moulding at former news stand location.

Figure 19. Original ceiling concealed above ticket office.

Figure 20. Mortar joints on the Depot Building.

Figure 21. Express Building.

Figure 22. Express Building – door in north elevation.

Figure 23. Eave detail at Express Building.

Figure 24. Deteriorated shingles on Express Building roof.

Figure 25. Damaged soffit at platform canopy.

Figure 26. Icicles, corrosion and evidence of animal intrusion indicate problems with watertightness of gutter systems.

Figure 27. Failed downspouts on the Express Building.

Figure 28. Severely deteriorated brick masonry on the Express Building.

Figure 29. Step cracks in the Express Building's exterior masonry wall.

Figure 30. Major cracking adjacent to Express Building masonry opening.

SITE PLANNING ANALYSIS:

LAND USE, CIRCULATION AND ACCESS

Intermodal stations have been proven generators of new residential and mixed-use development in addition to being valuable transportation infrastructure investments. To maximize on the Depot building transitioning into a potential intermodal facility, adjacent land uses should facilitate the creation of a dense, mixed-use neighborhood that compliments the downtown and existing single-family neighborhoods.

A summary graphic has been prepared to illustrate the primary issues and how they interact with and relate to the Depot building site. The following definitions should be applied when viewing the Summary Site Planning Analysis graphic:

Important View: Regional transportation facilities need to be easy to find. In addition to signage located at key sites through throughout the City and highways, the actual facility should ideally be easily seen from regional access routes. If people can see it, they will use it, and feel safer using throughout the day. Important views present the best opportunity to highlight the Depot building facility to users in autos, buses, and on foot. These views need to be kept clear of visual clutter and any future development that is not associated with public transportation.

Problem Intersection: A problem intersection demonstrates 2 or more of the following characteristics:

A. off angle meeting of 2 or more roads (intersection not at 90 degrees)
B. more than 2 roads intersecting within a 250' radius
C. at-grade rail line near it or through it
D. limited site lines due to buildings, signage or landscaping
E. multiple turning options (user uncertainty)
F. existing curb cuts within 150' of intersection
G. limited travel route options (one way, vs. 2 way)

Michigan / Cooper / Hupp: B, C, D, E, F. While the intersection has seen extensive improvements, the access lane to the North side of the Deport Building, the existing at grade rail crossing, and the Hupp Street, left turn off of Cooper intersection area still pose functional challenges for traffic movement.

Francis / M-50 Intersection: A, C. The major challenge at this intersection is the at-grade rail crossing which may pose stacking problems along S. Francis during peak train commuting hours.

Support Zone: An area located more than 100' from existing residential neighborhood that has existing infrastructure to support commuter parking lots, bus stacking, and intermodal maintenance equipment

Historic Preservation Area: Area with significant quantity (more than 3) of historic structures that can be viably be restored / renovated.

Strategic Infill Area: Single family neighborhood with vacant or under utilized lots that could accommodate additional residential development.

The Site Planning Analysis made the following assumptions in interpreting existing conditions:

1. Limit regional traffic through existing residential neighborhoods
2. The Intermodal will eventually serve, regional and local rail passengers, regional and local bus users, and should accommodate work vans, taxis, limousine services, as well as private autos.

3. The Intermodal will need multiple pick up / drop off zones to disperse peak hour traffic
4. Additional ancillary development is expected and encouraged and should be planned for
5. Connections to the downtown should be as intuitive and conflict free as possible

Land Use:

Each specific land use needs to respect the following as noted:

1. New Retail:
   a. Does not compete with downtown offerings.
   b. Utilizes Michigan Avenue and Cooper Street automobile visibility and capacity.
   c. Ideally located within 500' of the Depot building and parking areas for maximum pedestrian convenience.
   d. Be adjacent to, or mixed with compatible residential development.

Looking northeast to the Depot from Michigan Avenue and Cooper Street

2. Residential Uses:
   a. Should not compromise values of existing adjacent single-family neighborhoods.
   b. Be compatible with retail and depot related uses.
   c. Higher density residential should be located within approximately 1500' of the Depot building, south of Pearl Street, to create a compact, distinct, and feasible district.
   d. High-rise development (greater than five stories) should be limited to areas that offer more than 250' separation from existing single-family homes.

3. Office Uses:
   a. Office spaces less than 20,000 square feet should be concentrated on either Michigan Avenue or Cooper Street south of East Pearl Street.

Looking north down Cooper St. from Michigan Ave.

Between Liberty Street and RR tracks looking northwest to the Depot

   b. Office space larger than 20,000 square feet should be targeted for the area adjacent to Hupp Avenue and Water Street

4. Park/Open Space:
   a. Any open space improvements should facilitate access to, and expansion of the Grand River greenway.

Looking north to the Depot from Francis St.

Looking northeast to the Depot/Cooper St. Intersection from the Grand River

   b. Open space should facilitate pedestrian/non-motorized movement around Depot intermodal operations and help frame important views.

View from the Depot fire escape looking northeast to Michigan Avenue

   c. The historic triangular park should act as the focal point for all new development within the Depot district.

5. Industrial, Auto-related, Manufacturing:
   a. If the Depot district is to retain of these uses, they should be focused near the intersection of Franklin and Water Streets.

On Franklin St. looking east to Water St.

6. Special Considerations:
   a. New development south of the existing Hupp Street, directly south of the existing Depot building, will terminate east bound along Michigan Avenue.
   b. New development west of the Michigan Avenue/M-50 intersection will terminate west bound views along Michigan Avenue.
   c. New development should make every effort to “front” the Grand River as well as adjacent primary streets.

Looking east down M-50 from Cooper St.

Looking southeast down the Grand River from

Circulation and Access:
Circulation needs to be simplified to eliminate confusion and conflict points. Access points for pedestrians need to be located in areas located away from regional traffic to prevent traffic congestion and to offer a safeguarded transition into the Depot building.

1. Automobiles:
   a. Circulation and access should focus on utilizing existing signalization and turn lanes to and from the Depot Building in the short term.

Looking east to the Depot from the Cooper St. and Michigan Ave. intersection

In front of the Depot looking north to Michigan Ave.

The drop off zone adjacent to the Depot Building and triangular park should be eliminated for the following reasons:
   i. Encourages dangerous left hand turning movement across Michigan Avenue
   ii. Being less than 100' from the Michigan Avenue/Cooper Street intersection, will negatively influence traffic movement, an already complicated intersection having an at-grade railroad crossing and an off angled street crossing.
   iii. Compromises pedestrian circulation around the north side of the Deport building – existing walkways are les than 4' wide and will be insufficient to handle peak hour crowds.

   b. Additional drop off zones should be created to disperse peak hour traffic:
      i. One drop off zone should be located on the south side of the tracks to limit unnecessary Depot related trips through the Michigan Avenue/ Cooper Street intersection
      ii. One drop off zone should be located near the Van Dorn/Plymouth Street intersection to accommodate east and north generated trips, and to offer adequate stacking distances during peak hours
   c. Explore reconfiguring the Hupp Street/Liberty intersection to facilitate peak hour traffic and stacking distances.

Looking east to the Depot from Van Dorn St.

Between Liberty St. and RR tracks looking Northwest to the Depot

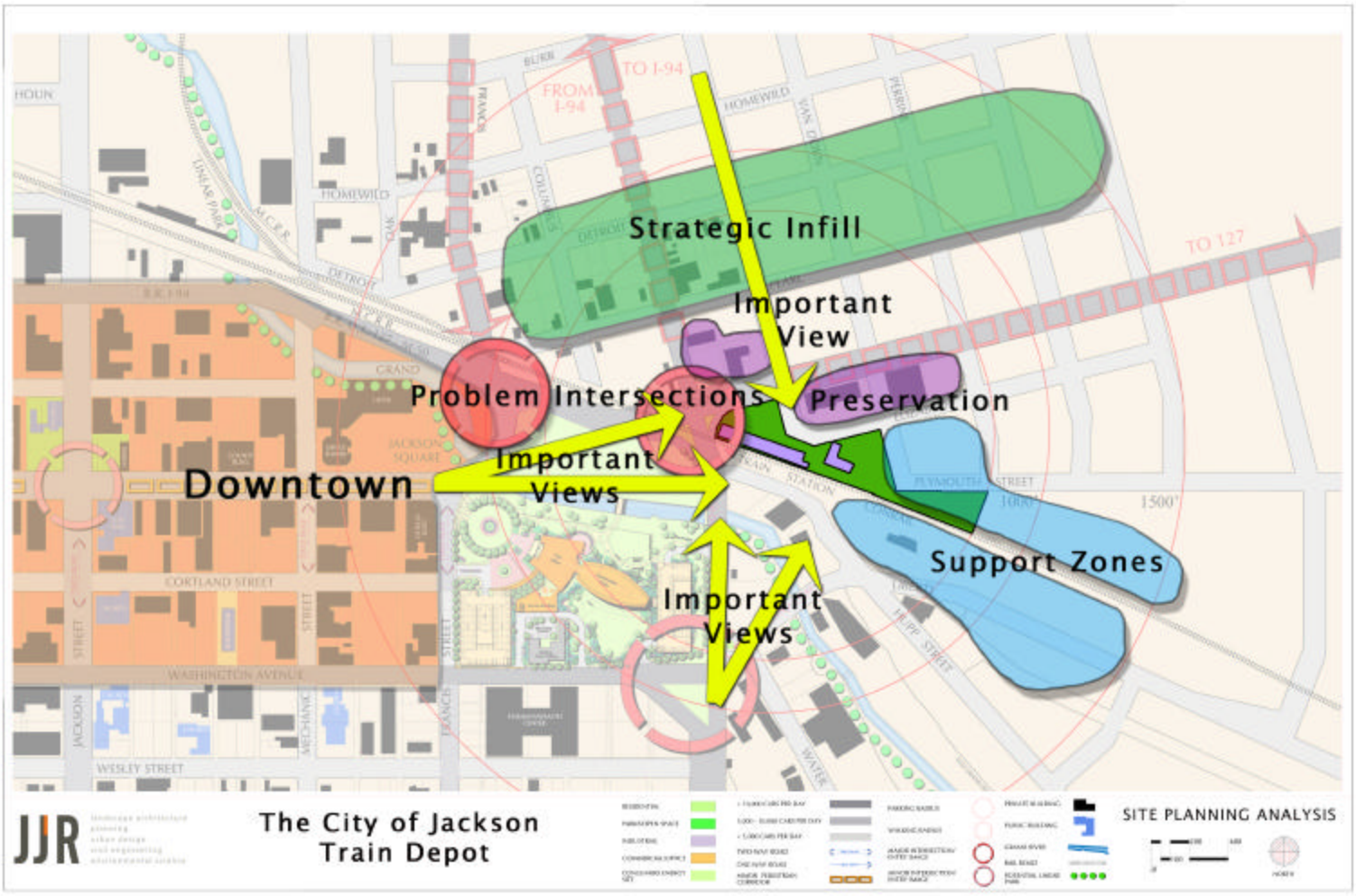
d. Explore signalizing the Park Street / Michigan Avenue intersection, and make the one block section Elizabeth Street that runs to Van Dorn one way to maximize drop off and parking configurations adjacent to the Depot Building. Focus taxi operations to this area – highly visible and convenient.
e. Discourage automobile traffic on adjacent single family blocks – explore the use of traffic calming devices per neighborhood approval.

2. Bus Circulation:
   a. Consolidate bus routes to one single location within the larger Depot district.
   b. Offer generous turn around areas, as well as stacking distances to facilitate Jackson becoming a pulse point for regional bus routes.
   c. Keep all buses on regional arteries within a 1500' distance except for the access loops to/from the Depot building.
   d. Bus idling areas should be located at least 400' from existing residential areas.

3. Pedestrian Access:
   a. North and East access: focus on the Park Avenue/Michigan Avenue intersection once it is signalized in accordance with the Cooper/Michigan Avenue intersection.
   b. South and West access: focus on strengthening the existing Grand River greenway to serve the Depot building. Additional streetscape improvements may be needed in later phases.
   c. The required non-grade rail crossing should be located at mid-block directly into the depot or an adjacent strucutre to offer completely weather resistant travel, and be located at least 100' from an existing or planned automobile intersection.

Looking north down Park St. from the Depot fire escape

On the Cooper St. Bridge looking north to the Depot


Strategic Infill
Important View
Problem Intersections
Preservation
Important Views
Downtown
Important Views
Support Zones
TO I-94
FROM I-94
TO 127
HOMEWILD
DETROIT
GRAND
JACKSON SQUARE
CORTLAND STREET
WASHINGTON AVENUE
WESLEY STREET
PLYMOUTH STREET
1500'
JJR
The City of Jackson Train Depot
SITE PLANNING ANALYSIS

Appendix

The Secretary of the Interior's Standards for Rehabilitation are ten basic principles created to help preserve the distinctive character of a historic building and its site, while allowing for reasonable change to meet new needs.

The Standards (**36 CFR Part 67**) apply to historic buildings of all periods, styles, types, materials, and sizes. They apply to both the exterior and the interior of historic buildings. The Standards also encompass related landscape features and the building's site and environment as well as attached, adjacent, or related new construction.

The Standards are applied to projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

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Jackson Amtrak Depot Intermodal Study Jackson, Michigan

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ISSUED FOR	REV	DATE

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEY PLAN

PROJECT NORTH

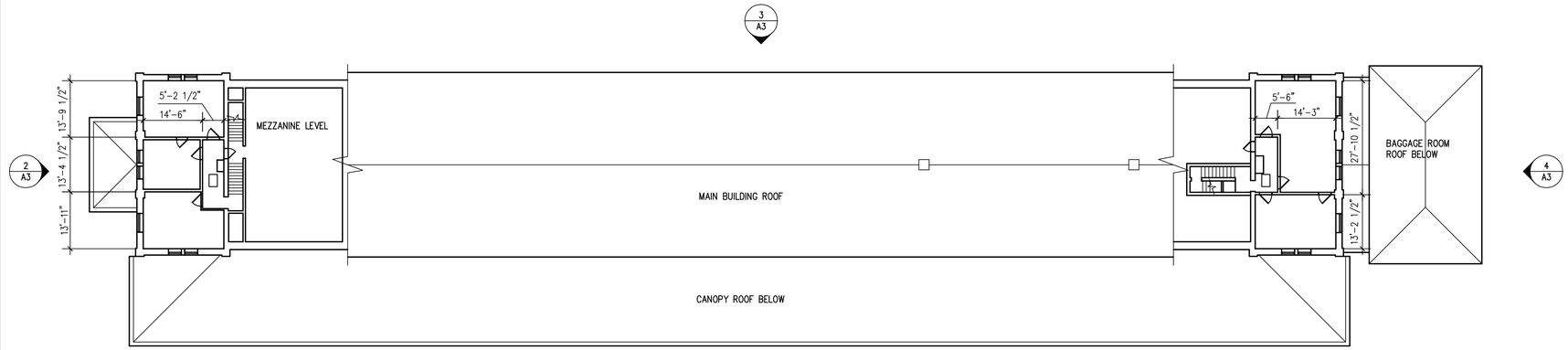
DRAWING TITLE

SITE PLAN

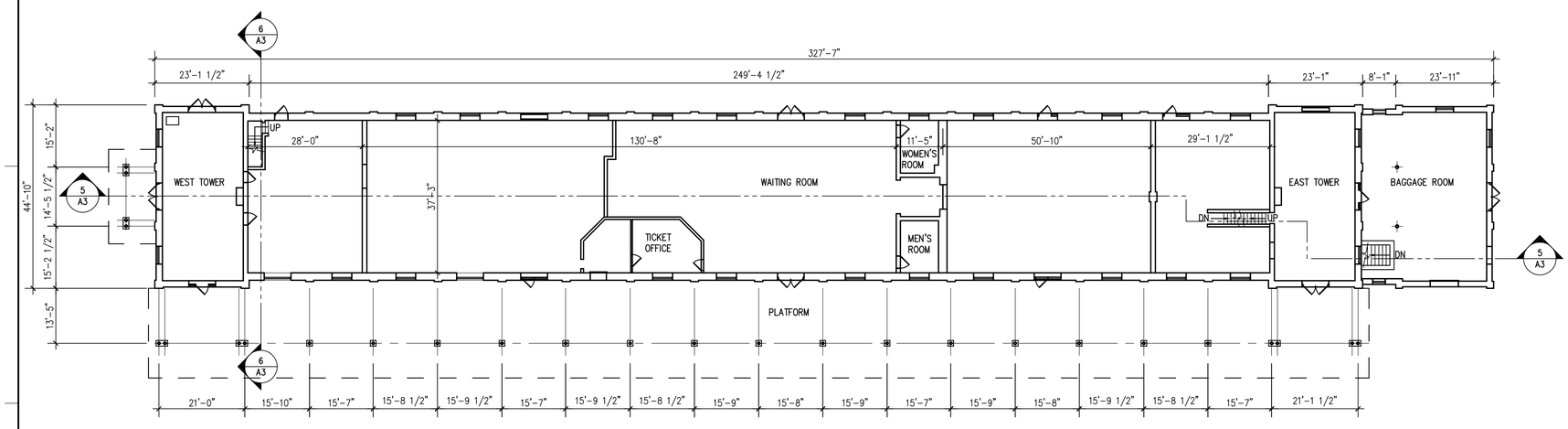
SCALE 1"=50'-0"

PROJECT NUMBER 21983.000

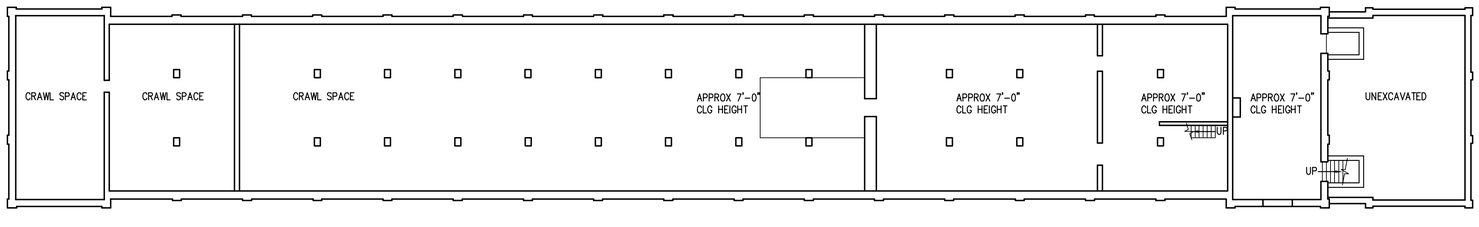
DRAWING NUMBER A1



3 **DEPOT SECOND FLOOR PLAN**
SCALE: 1/16"=1'-0"



2 **DEPOT FIRST FLOOR PLAN**
SCALE: 1/16"=1'-0"



1 **DEPOT BASEMENT PLAN**
SCALE: 1/16"=1'-0"

FILE:P:\21983.000\CD\Phase I\J002.dwg USER:dhabel DATE:May, 23 2005 TIME: 10:16 am

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KEY PLAN

PROJECT NORTH

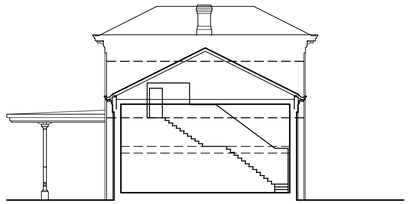
DRAWING TITLE

TRAIN DEPOT
FLOOR PLANS

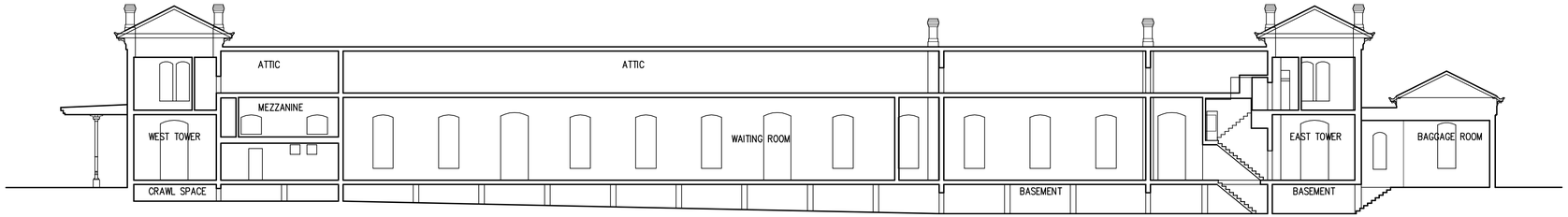
SCALE 1/16"=1'-0"

PROJECT NUMBER 21983.000

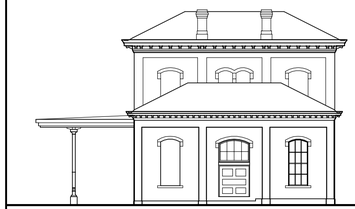
DRAWING NUMBER **A2**



6 **SECTION**
SCALE: 1/16"=1'-0"



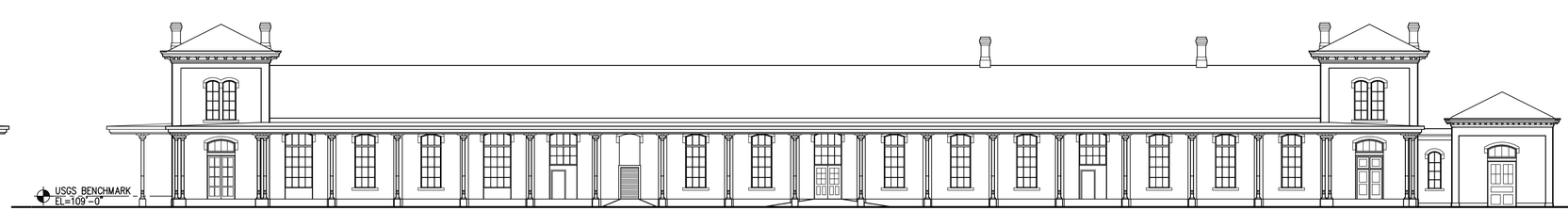
5 **SECTION**
SCALE: 1/16"=1'-0"



4 **EAST ELEVATION**
SCALE: 1/16"=1'-0"

3 **NORTH ELEVATION**
SCALE: 1/16"=1'-0"

2 **WEST ELEVATION**
SCALE: 1/16"=1'-0"



1 **SOUTH ELEVATION**
SCALE: 1/16"=1'-0"

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KEY PLAN

PROJECT NORTH

DRAWING TITLE

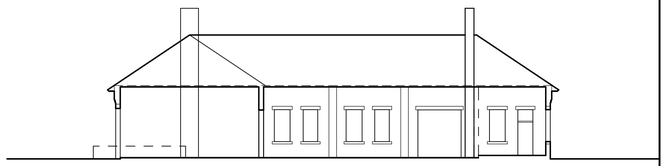
TRAIN DEPOT
ELEVATIONS
AND SECTIONS
1/16"=1'-0"

SCALE

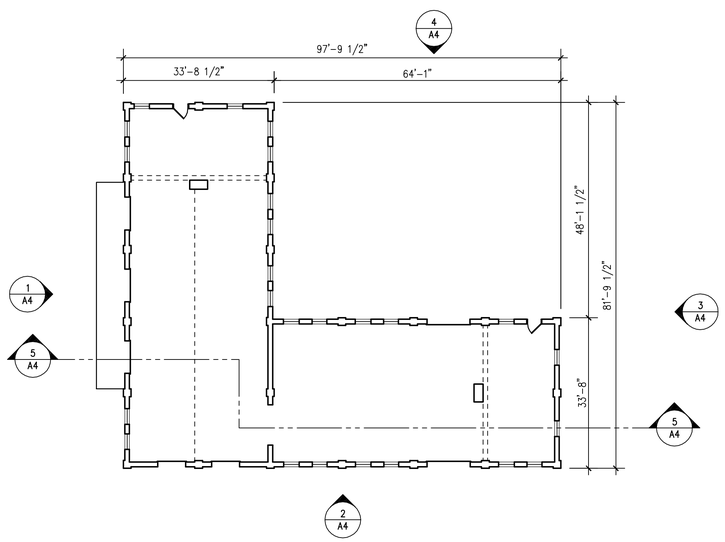
PROJECT NUMBER 21983.000

DRAWING NUMBER **A3**

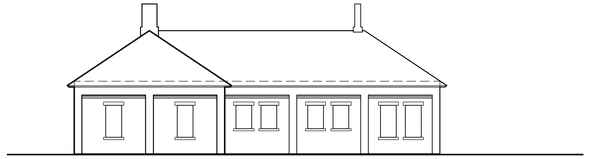
FILE:P:\21983.000\CD\Phase I\D03.dwg USER:dhabel DATE:May, 23 2005 TIME: 10:17 am



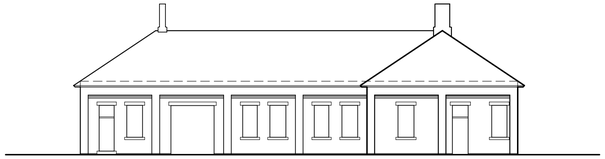
5 SECTION
SCALE: 1/16"=1'-0"



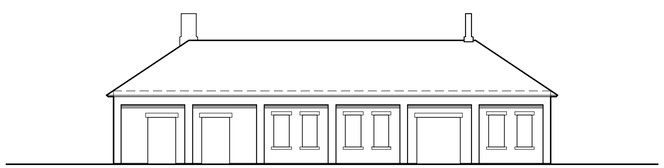
6 EXPRESS BUILDING FLOOR PLAN
SCALE: 1/16"=1'-0"



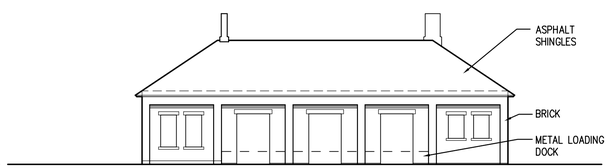
4 EAST ELEVATION
SCALE: 1/16"=1'-0"



3 NORTH ELEVATION
SCALE: 1/16"=1'-0"



2 SOUTH ELEVATION
SCALE: 1/16"=1'-0"



1 WEST ELEVATION
SCALE: 1/16"=1'-0"

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KEY PLAN

PROJECT NORTH

DRAWING TITLE

EXPRESS BUILDING PLAN, ELEVATIONS AND SECTION
1/16"=1'-0"

SCALE

PROJECT NUMBER 21983.000

DRAWING NUMBER A4

FILE:P:\21983.000\CD\Phase I\D04.dwg USER:dhabel DATE:May, 23 2005 TIME: 10:17 am