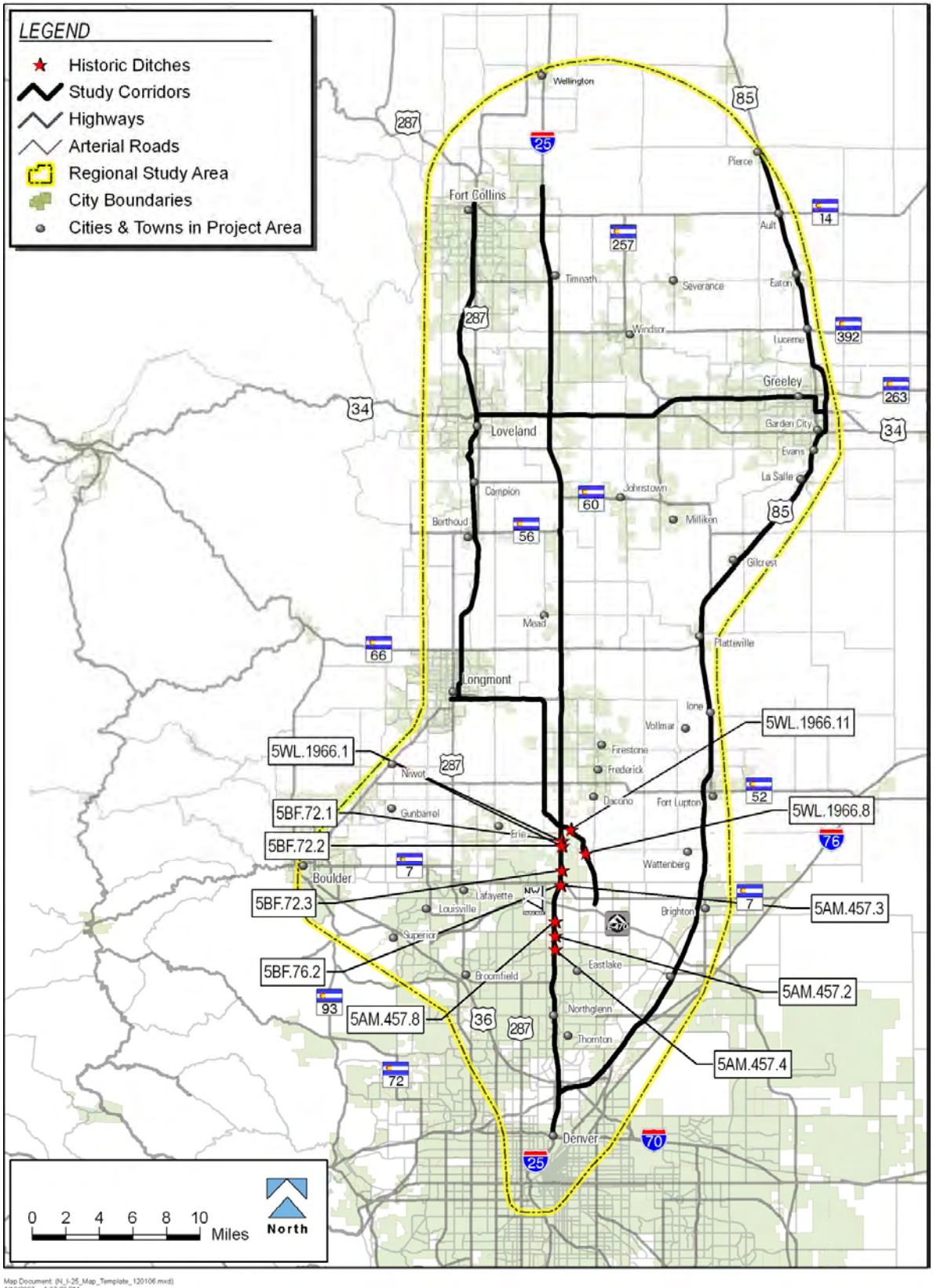
Segment 457.8 is no longer functional and has been abandoned. This segment is located east of I-25 near milepost 226.8. This 1,585 foot long, 26 foot wide concrete lined looping ditch segment has been abandoned and no longer functions for irrigation. Weeds and rushes fill the abandoned channel floor and the concrete lining of the bank is cracked and settled in many places.

Eligibility Determination: The entire Bull Canal/Standley Ditch was a part of the ambitious, corporate-developed Standley Lake Irrigation System developed in the early 20th Century. The canal is eligible for listing on the NRHP under Criterion A because of its important association with the development of water rights and agriculture in northeastern Colorado, and under Criterion C as an important example of irrigation engineering in the region. Segments 5WL.1966.11 and 5WL.1966.8 also include good examples of concrete siphons which represent a distinctive method of hydraulic engineering that add to the canal's significance under Criterion C. Segments 5WL.1966.1, 5WL.1966.11, 5BF72.1, 5BF.72.2, 5BF.72.3, and 5AM457.1 within the project APE retain sufficient integrity of location, setting, feeling, and use to support the eligibility of the entire linear resource. Resources 5BF.76.2, 5AM.457.3, 5AM.457.4, and 5AM.457.8 were found to lack sufficient integrity to support the eligibility of the entire linear resource.

Figure 3.15-50 5WL.1966, 5BF.72, 5BF.76, 5AM.457 (Bull Canal/Standley Ditch) Segments intersecting project APE



Effect Determination:
In order to determine the effect to the entire linear resource, impacts to each of the segments passing through the project APE were assessed. These impact assessments are presented below, followed by a determination of effect to the entire Bull Canal/Standley Ditch.

Impacts to segment 5WL.1966.1—Package A: This historic canal is currently conveyed beneath I-25 and the east frontage road in two places through modern CBCs. Under Package A, the existing I-25 template would be maintained in this area. The existing box culverts would not require replacement or modification, and no direct or indirect impacts to the canal would occur.

Impacts to segment 5WL.1966.1 – Package B: In this area, I-25 would be widened to the median to contain a new template consisting of three general purpose lanes plus one buffer-separated managed lane in each direction. The existing east frontage road would be realigned farther to the east. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct or indirect impacts to the canal would occur under Package B.

Impacts to segment 5BF.72.1—Package A: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. Under Package A, the I-25 template would be reconfigured to provide four general purpose lanes in each direction. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct or indirect impacts to the canal would occur under Package A.

Impacts to segment 5BF.72.1—Package B: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. In this area, I-25 would be widened to the median to provide a new template consisting of three general purpose lanes plus one buffer-separated managed lane in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct or indirect impacts to the canal would occur under Package B.

Impacts to segment 5BF.72.2—Package A: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. Under Package A, the existing I-25 template would be maintained in this area. The existing box culverts would not require replacement or modification, and no direct or indirect impacts to the canal would occur.

Impacts to segment 5BF.72.2—Package B: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. In this area, I-25 would be widened to the median to provide a new template consisting of three general purpose lanes plus one buffer-separated managed lane in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct or indirect impacts to the canal would occur under Package B.

Impacts to segment 5BF.72.3—Package A: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. In this area, I-25 would be widened to the median to provide a new template consisting of four general purpose lanes in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct or indirect impacts to the canal would occur under Package A.

Impacts to segment 5BF.72.3—Package B: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. In this area, I-25 would be widened to the median to provide a new template consisting of four general purpose lanes in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct or indirect impacts to the canal would occur under Package B.

Impacts to segment 5BF.76.2—Package A: Package A would require putting the 750 foot long remainder of the ditch located between the SH 7 pipe outfall and the existing I-25 CBC in a buried culvert (see **Figure 3.15-51**).

Impacts to segment 5BF.76.2—Package B: Package B would require putting the 750 foot long remainder of the ditch located between the SH 7 pipe outfall and the existing I-25 CBC in a buried culvert (see **Figure 3.15-51**).

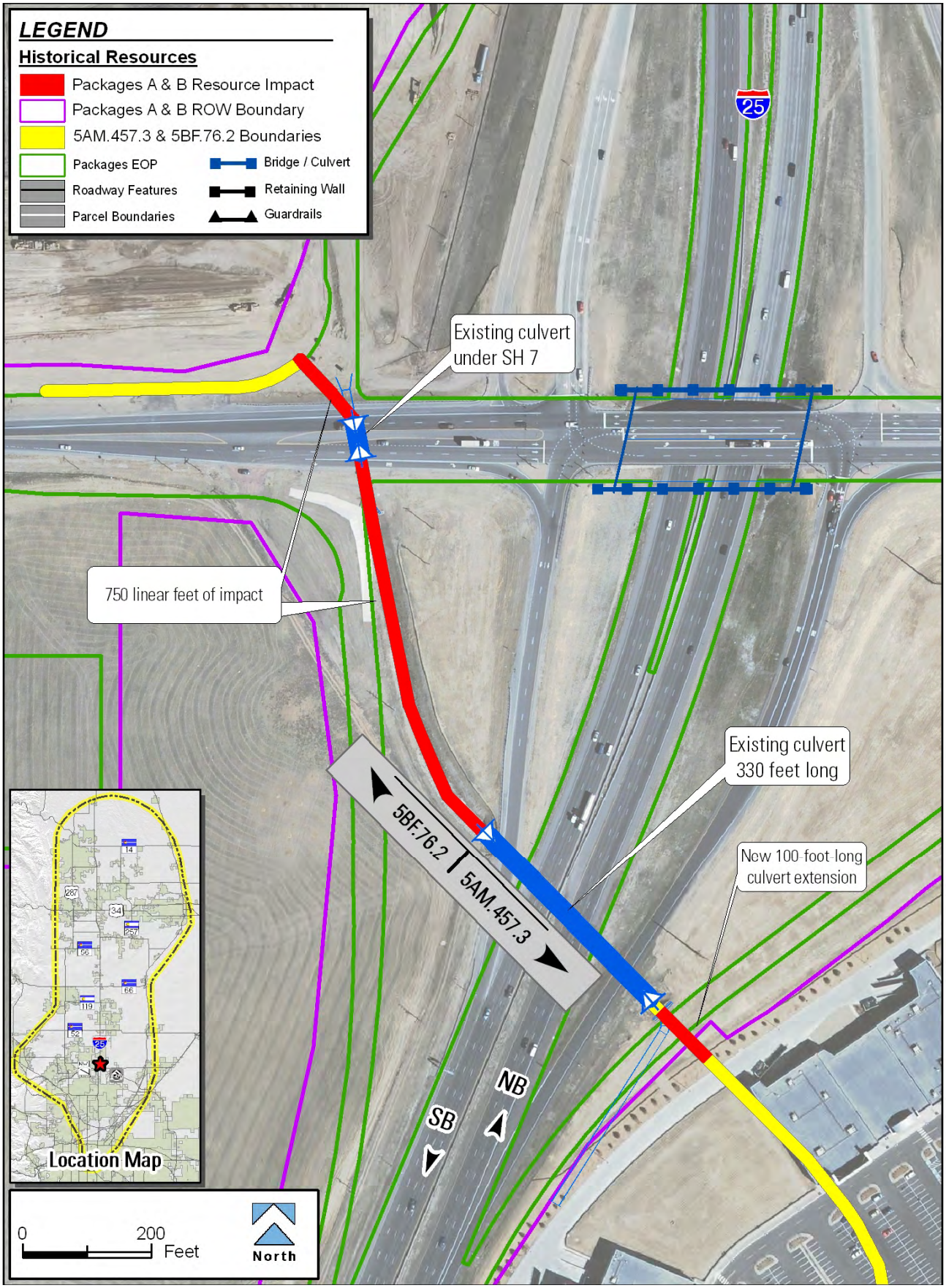
Impacts to segment 5AM.457.2—Package A: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. Under Package A, the existing I-25 template would be maintained in this area. The existing box culverts would not require replacement or modification, and no direct or indirect impacts to the canal would occur.

Impacts to segment 5AM.457.2—Package B: This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. Under Package B, the I-25 template would consist of three general purpose lanes plus one buffer-separated managed lane. The portion of the ditch that currently crosses under the highway and frontage roads is conveyed inside a CBC. The new roadway would be contained within the current roadway template and no new disturbance would occur to areas of the ditch located outside the existing culverts. The integrity of that portion of the historic canal to be placed in a culvert has already been compromised by original construction of I-25 in the 1960s, and no new direct or indirect impacts would occur.

Impacts to segment 5AM.457.3—Package A: Package A would result in placing an additional 100 feet of open ditch into a culvert extension east of the I-25 northbound off-ramp (see **Figure 3.15-51**).

Impacts to segment 5AM.457.3—Package B: Package B would result in placing an additional 100 feet of open ditch into a culvert extension east of the I-25 northbound off-ramp (see **Figure 3.15-51**).

Figure 3.15-51 5BF.76.2 and 5AM.457.3 (Bull Canal/Standley Ditch) – Commuter Rail



Impacts to segment 5AM.457.4—Package A: The ditch is in an area where no improvements are planned on I-25 in Package A. A permanent water quality basin is planned in proximity to the ditch but would not result in a direct impact to this feature.

Impacts to segment 5AM.457.4—Package B: Highway widening of I-25 resulting from Package B would not result in direct impacts to this ditch. A permanent water quality basin is planned in proximity to the ditch but would not result in a direct impact to this feature. There would be no temporary construction impacts to this feature.

Impacts to segment 5AM.457.8—Package A: The ditch is in a non-improvement component of Package A and results in no impacts to the ditch.

Impacts to segment 5AM.457.8—Package B: Package B improvements do not encroach on the ditch. Temporary construction impacts would be avoided at this site.

Impacts to segment 5WL.1966.11: The proposed new commuter rail line would pass in a northwest-southeast alignment across this historic ditch segment. The new rail line would closely parallel an existing active rail line through this area. The historic ditch has already been placed in a culvert beneath the existing railroad grade. The existing culvert would be left in place and no culvert extension should be necessary to accommodate the new additional rail line. No direct or indirect impacts would therefore occur.

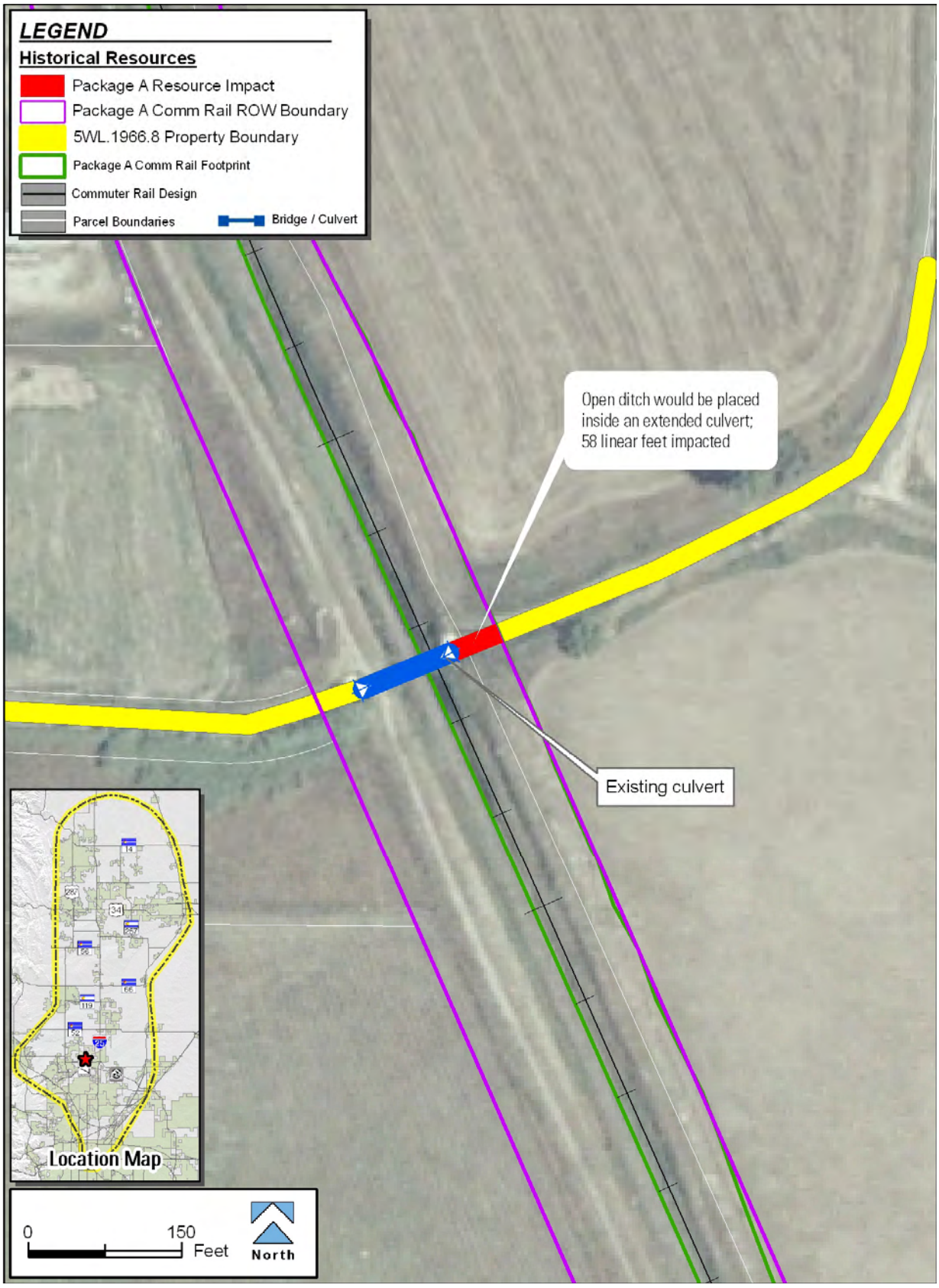
Impacts to segment 5WL.1966.8: In the vicinity of this historic ditch, the proposed new commuter rail line would run closely parallel to the east side of an existing active rail line. The historic ditch has already been placed in a culvert beneath the existing railroad grade. The existing culvert would be left in place and approximately 58 feet of open ditch would be placed in a new culvert extending beneath the proposed new commuter rail line (see **Figure 3.15-52**). Although a small segment of open ditch would be placed in a culvert, this change affects only a very small percentage of the entire linear resource.

Summary Effect Determination:

Package A: A total of 908 linear feet of open ditch would be impacted. Approximately 850 feet of ditch would be placed inside two culverts at the I-25 and SH 7 interchange where much of the ditch has already been realigned and runs through existing culverts (BF.76.2 and 5AM.457.3). An additional 58 feet of open ditch (5WL.1966.85) would be placed inside an extended culvert along the commuter rail. Temporary construction impacts would occur during culvert installation and highway construction activity at that location. No other direct or indirect impacts would occur to the remaining seven segments. FHWA, FTA and CDOT have determined that the Package A improvements would result in *no adverse effect* to the historic Bull Canal/Standley Ditch (5WL.1966, 5BF.72, 5BF.76, and 5AM.457).

Package B: A total of 850 feet of open ditch would be placed inside a culvert at one segment locality (5BF.76.2 and 5AM.457.3). Impacts would be identical to Package A. Temporary construction impacts would occur during culvert installation and highway construction activity at that location. No other direct or indirect impacts would occur to the remaining seven segments. FHWA, FTA and CDOT have determined that Package B improvements would result in *no adverse effect* to the historic Bull Canal/Standley Ditch (5WL.1966, 5BF.72, 5BF.76, and 5AM.457).

Figure 3.15-52 5WL.1966.8 (Bull Ditch segment of the Bull Canal/Standley Ditch) — Commuter Rail



5AM.1291.3 (Farmers Highline Canal/Niver Canal)

Resource Description: This historic canal segment runs perpendicular to, and crosses, I-25. The earthen ditch is approximately 20 feet wide. The portion of the ditch that crosses under the highway was altered when I-25 was built in the 1960s, when the canal channel was placed under a 38-foot long bridge. The entire ditch is approximately 40 miles long. The documented segment in the project APE (5AM.1291.3) is 2,234 feet long. Grassy vegetation with sparse riparian growth exists along both banks of the ditch in many areas. The surrounding area includes residential development.

Eligibility Determination: The entire length of the canal (5AM.1291) in Adams County is eligible for the NRHP under Criterion A for its important association with the development of water rights and agriculture in Adams County. The canal has been in operation for over 100 years. The segment within the project APE (5AM.1291.3) retains sufficient integrity of location, setting, feeling, and use to support the eligibility of the entire linear resource.

Effect Determination—Package A: I-25 currently passes over this historic canal via an existing 123 foot wide by 38 foot long bridge structure. Under Package A, the existing I-25 template would be maintained in this area. The existing bridge would not require replacement or modification, and no direct or indirect impacts to the canal would occur. FHWA, FTA and CDOT therefore have determined that Package A would result in *no historic properties affected* with respect to this historic resource.

Effect Determination—Package B: Under Package B, the existing bridge over the historic canal would be replaced with a new 73 foot long, 210 foot wide pre-cast pre-stressed girder bridge, to carry a new template consisting of three general purpose lanes plus one buffer-separated managed lane. The bridge piers would be placed outside the limits of the historic canal, and no direct or indirect impacts would occur. FHWA, FTA and CDOT therefore have determined that Package B would result in *no historic properties affected* with respect to this historic resource.

5WL.322 (White-Plumb Farm)

Resource Description: The White-Plumb Farm was established in the late 1800s. It is located at 955 39th Avenue in Greeley. The homestead was originally part of a 160-acre Timber Culture Act claim acquired in 1881 by Civil War veteran Charles White. The Plumb family moved to the farm in 1923 and lived there until 1997. This farm has been designated a Centennial Farm by the Colorado Historical Society.

Eligibility Determination: Based on its important association with agriculture in Weld County during the 19th century, this homestead is eligible for listing on the NRHP under Criterion A.

Effect Determination—Package A: None of the proposed improvements associated with Package A are close to this historic property, and no direct or indirect impacts would occur. FHWA, FTA and CDOT therefore have determined that Package A would result in *no historic properties affected* with respect to this historic resource.

Effect Determination—Package B: None of the proposed improvements associated with Package B are close to this historic property, and no direct or indirect impacts would occur. FHWA, FTA and CDOT therefore have determined that Package B would result in *no historic properties affected* with respect to this historic resource.

E-470 TO US 36

5AM.2073 (North Glenn First Filing)

Resource Description: This historic post-World War II residential subdivision (5AM.2073) is located on the east side of I-25. It is bounded on the south by East 104th Avenue and on the east by Washington Street. It is significant as an integral and important element of the master planned community of Northglenn. North Glenn was developed by the Perl-Mack Construction Company, aided by the Denver-based planning firm of Harman, O'Donnell, Henninger and Associates, and was envisioned as serving a population of 15,000 with balanced areas for housing, school, parks, churches, shopping centers, municipal facilities, and light industry. The original plan for Northglenn included five interconnected neighborhoods containing single-family dwellings on 1,526 acres. The residential neighborhoods featured winding streets designed for privacy and child safety. The North Glenn First Filing was the first of the neighborhood areas to be laid out and filled with houses. Homes in the North Glenn development were recognized in the late 1950s and the early 1960s with awards for quality design, planning, and comfort. The North Glenn First Filing contains approximately 183 single family dwellings constructed shortly after the subdivision was platted in April 1959. The majority of these dwellings are single story brick or brick veneer-clad Ranch-style houses with attached garages.

Eligibility Determination: The North Glenn First Filing subdivision is considered eligible for the NRHP under Criterion A as a major element in the award winning, master planned self-sufficient community of Northglenn (Note: the 1959 subdivision plat identifies the development as "North Glenn" even though the entire community was originally called "Northglenn"). This subdivision is also associated with a historically significant trend of post-World War II urban growth in the Denver metropolitan area.

Effect Determination—Package A: Under Package A, no changes are planned through this portion of I-25. No direct impacts would therefore occur.

Noise levels caused by I-25 highway traffic would increase one to two decibels in the future but would not reach impact levels. Much of the subdivision is located away from the mainline highway lanes, closer to I-25 entrance ramps associated with the interchange at 104th Avenue. The subdivision would experience lower noise levels than areas located immediately adjacent to the I-25 travel lanes. An existing noise wall extends south from 112th Avenue to almost 104th Avenue into the First Filing area and ends at the end of the northbound entrance ramp. Noise impacts would not be great enough to diminish the qualities that make the subdivision historically significant.

FHWA, FTA and CDOT therefore have determined that the Package A improvements would result in *no adverse effect* to this historic resource.

Effect Determination—Package B: Under Package B, managed lanes would be incorporated within the center of a widened I-25 highway footprint within the existing CDOT right-of-way. To accommodate stormwater and municipal separate stormwater sewer system (MS4) requirements, a sediment pond would be placed between the I-25 pavement and the subdivision boundary. No direct impacts would result from these improvements. Indirect effects (primarily noise) are the same as with Package A.

FHWA, FTA and CDOT have determined that the Package B improvements would result in *no adverse effect* to this historic resource.

5AM.2074 (North Glenn Second Filing)

Resource Description: This historic post-World War II residential subdivision (5AM.2074) is located on the east side of I-25 and lies directly north of the North Glenn First Filing subdivision. The Second Filing subdivision is bounded on the east by Washington Street and on the north by East 112th Avenue. It is significant as an integral and important element of the master planned community of Northglenn, developed in 1959 by the Perl-Mack Construction Company, aided by the Denver-based planning firm of Harman, O'Donnell, Henninger and Associates, and was envisioned as serving a population of 15,000 with balanced areas for housing, school, parks, churches, shopping centers, municipal facilities, and light industry. The original plan for Northglenn included five interconnected neighborhoods containing single-family dwellings on 1,526 acres. The residential neighborhoods featured winding streets designed for privacy and child safety. The North Glenn First Filing was the first of the neighborhood areas to be laid out and filled with houses. Homes in the North Glenn development were recognized in the late 1950s and the early 1960s with awards for quality design, planning, and comfort. The North Glenn Second Filing contains approximately 882 single family dwellings constructed shortly after the subdivision was platted in June, 1959.

Eligibility Determination: The North Glenn First Filing subdivision is considered eligible for the NRHP under Criterion A as a major element in the award winning, master planned self-sufficient community of Northglenn (Note: the 1959 subdivision plat identifies the development as "North Glenn" even though the entire community was originally called "Northglenn"). This subdivision is also associated with a historically significant trend of post-World War II urban growth in the Denver metropolitan area.

Effect Determination—Package A: Under Package A, improvements are planned through this portion of I-25. No direct impacts would therefore occur.

Noise levels caused by I-25 highway traffic would increase one to two decibels in the future and would reach impact levels in the No-Action Alternative as well as Package A; however, the Second Filing area is currently protected from excessive noise by noise barriers located along I-25. Additionally, a new noise wall is recommended to extend north of the Second Filing area.

FHWA, FTA and CDOT have determined that the Package A improvements would result in *no adverse affect* to this historic resource.

Effect Determination—Package B: Under Package B, managed lanes would be incorporated within the center of a widened I-25 highway footprint within the existing CDOT right-of-way. To accommodate stormwater and MS4 requirements, sediment ponds would be placed selectively in areas situated between I-25 pavement and the subdivision boundary. No direct impacts would occur.

Noise levels caused by I-25 highway traffic would increase one to two decibels in the future and would reach impact levels in the No Action Alternative as well as Package B; however, the Second Filing area is currently protected from excess noise by noise barriers located along I-25. Additionally, a new noise wall is recommended farther north of the Second Filing area. These noise impacts would not substantially diminish the qualities that make the subdivision NRHP-eligible. The visual impact of the sediment ponds would not indirectly affect neighboring homes enough to diminish the qualities that render this subdivision NRHP-eligible.

FHWA, FTA and CDOT have determined that the Package B improvements would result in *no adverse affect* to this historic resource.

3.15.2.4 PACKAGE A TRANSIT COMPONENTS

The transit components of Package A would generally affect historic resources due to the location of a new alignment for the commuter rail component. Specific consequences related to each transit component are described below.

COMMUTER RAIL: FORT COLLINS TO LONGMONT

There would be no direct effect to any historic structures within this segment as the alignment follows the existing BNSF Railroad alignment. Between the north end of the regional study area and the Colorado State University (CSU) station, the existing track would be used. There would be one additional set of tracks to the east within the existing railroad right-of-way from CSU in Fort Collins south to North Longmont. There are 11 historic properties in this component of commuter rail.

5LR.11330 (Public Service Company of Colorado – Fort Collins Substation)

Resource Description: This structure, located at 128 W. Prospect Road in Fort Collins, was built in the 1920s. It represents the first generation of power facility construction after Public Service Company consolidated their control over delivery and transmission across Colorado.

Eligibility Determination: This structure is significant under Criterion A for its role in distribution of electrical power to Fort Collins and the Colorado State University campus. It is also architecturally significant (Criterion C) as a good example of an early twentieth century power facility.

Effect Determination—Package A: There would be no direct effect to this property (see **Figure 3.15-53).** Indirect effects include a change the visual environment due to the construction of a retaining wall that will be built on the adjacent railroad right-of-way. There would also be additional train traffic on the nearby railway tracks under Package A, creating minor noise and vibration increases over current levels, but not to a level that would impair the architectural qualities of this commercial/industrial building. Noise levels are expected to increase 1dBA over existing conditions.

The proposed transportation improvements would not substantially diminish or alter the architectural or setting characteristics that render the property eligible for the NRHP. FHWA, FTA and CDOT therefore have determined that Package A commuter rail improvements would result in *no adverse effect* to the resource.

5LR.10819.2 (Larimer County Canal No. 2)

Resource Description: The Larimer County Canal No.2 was constructed in 1873. The 3,204 foot segment crosses underneath the existing BNSF RR south of Drake Road in Fort Collins. The ditch then turns south, parallel to the railroad for a distance of 2,731 feet before returning to an easterly course. The ditch is in part concrete lined, and has been extensively realigned and portions placed inside a pipe along the railway.

Eligibility Determination: The ditch segment 5LR.10819.2 no longer retains its integrity of location and therefore does not support the eligibility of the entire linear resource.

Effect Determination—Package A: The existing 25 foot wide bridge would be extended east approximately 15 feet over open ditch to accommodate new track for Package A commuter rail (see **Figure 3.15-54**). Because the qualities that make the entire resource NRHP-eligible have already been compromised by construction of the BNSF RR and Package A modifications are minor in relative extent, FHWA, FTA and CDOT therefore have determined that Package A would result in *no adverse effect* to the Larimer County Canal No.2.

Figure 3.15-53 5LR.11330 (Public Service Company of Colorado-Fort Collins Sub-station)—Package A Commuter Rail

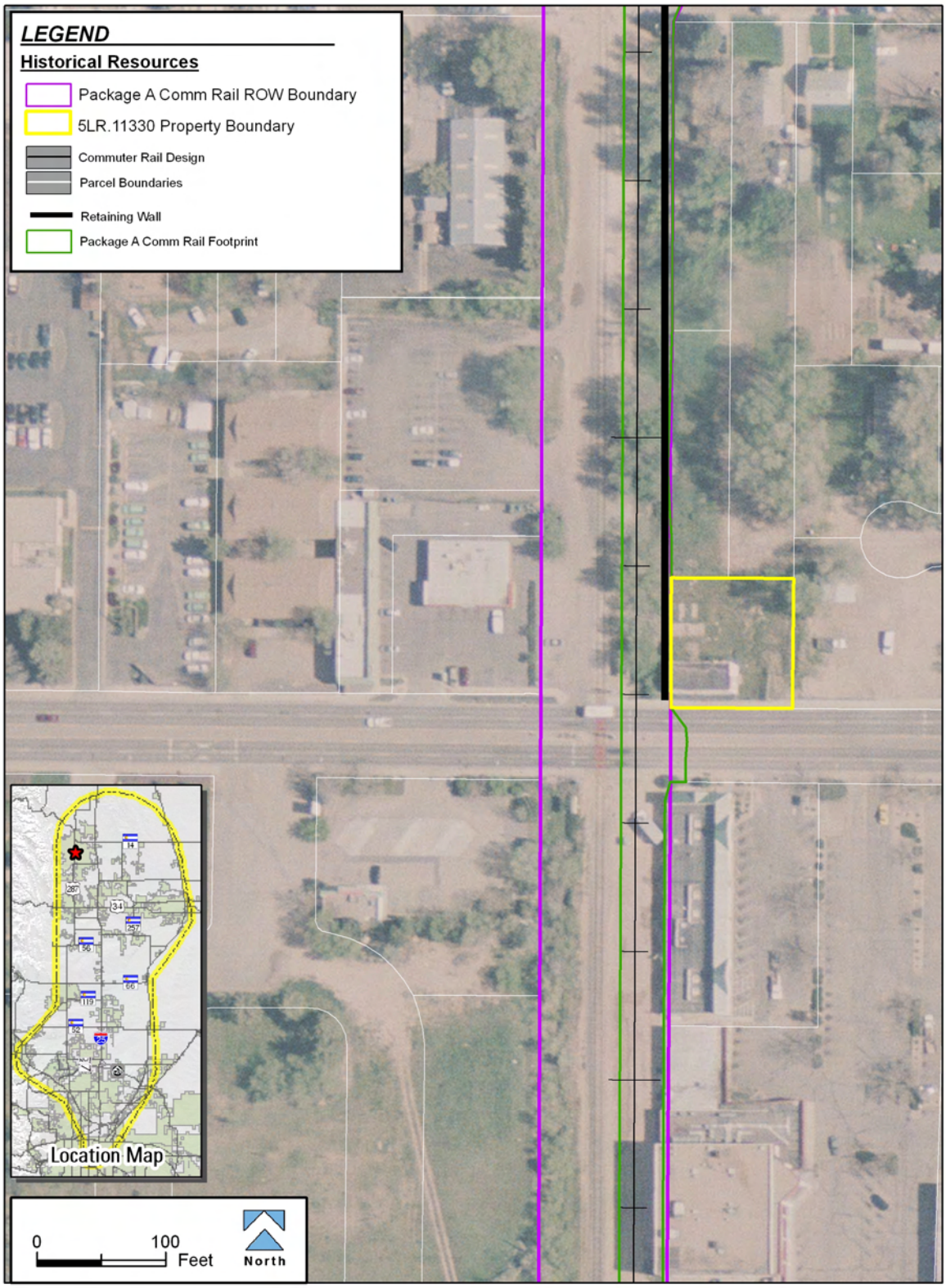
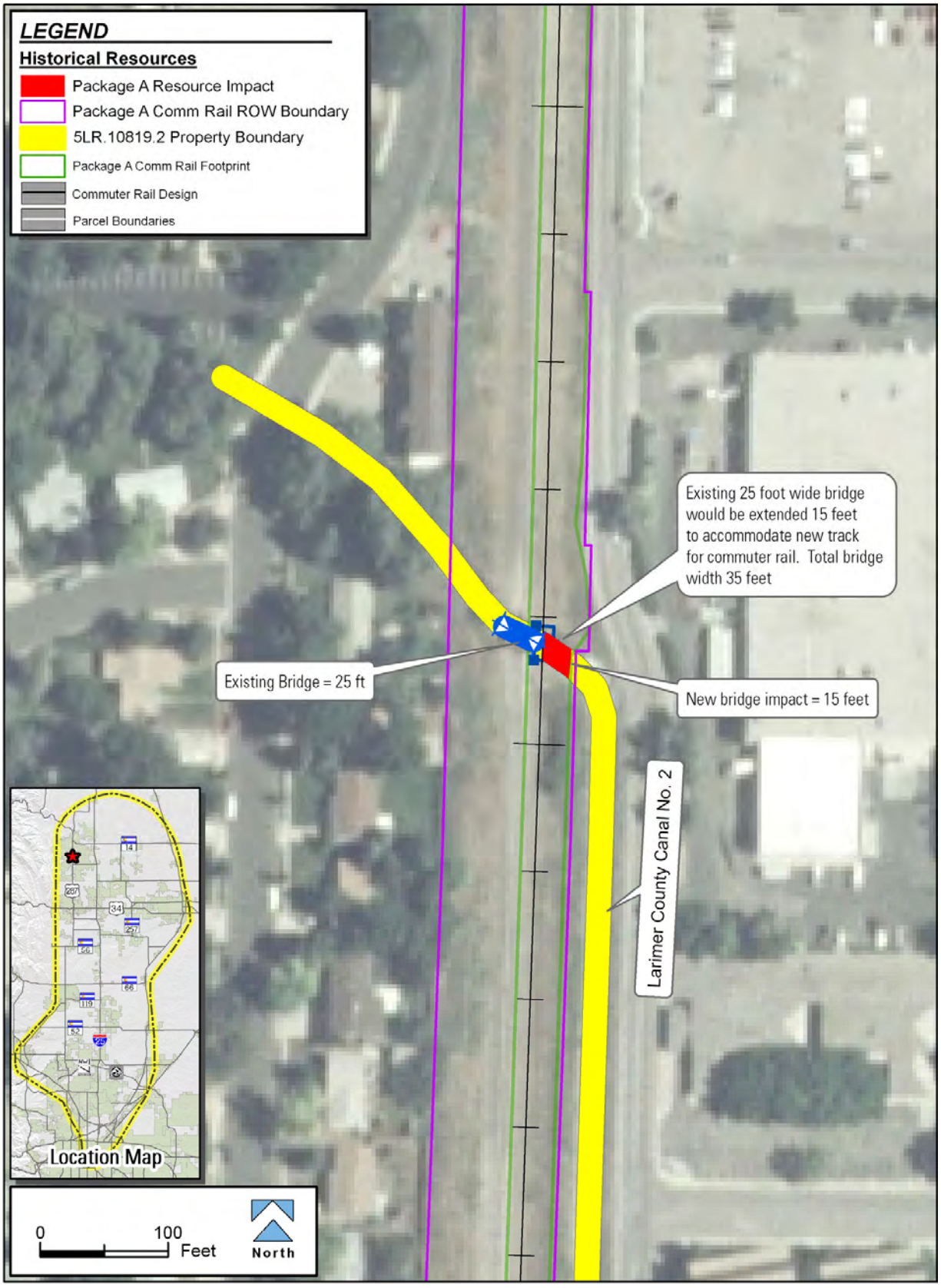


Figure 3.15-54 5LR.10819.2 (Larimer County Canal No.2) – Package A



5LR.10681.1 (New Mercer Ditch)

Resource Description: The New Mercer Ditch (5LR.10681) was constructed in 1870 and is one of the oldest ditches in the Fort Collins area. The entire ditch is 15.6 miles long. This segment is a 1.1 mile long unlined ditch. Where intact, the ditch is 26 feet wide and 10 feet deep. The original ditch crossed under the railroad but in the mid 1980s it was realigned to run west of the BNSF Railroad between Horsetooth and Harmony Roads. The ditch now crosses underneath the railroad in a corrugated steel pipe south of Harmony Road and discharges into Mail Creek

Eligibility Determination: The entire ditch is NRHP-eligible under Criterion A because of its important role in the irrigation and agricultural history of the area and remains in use today. Segment 10681.1 has been realigned and modified by culverts so that it no longer retains qualities that support the eligibility of the entire resource.

Effects Determination—Package A: No portion of the ditch would be impacted by the commuter rail improvements in Package A, therefore, FHWA, FTA and CDOT have determined that Package A would result in *no historic properties affected*.

5LR.488 (Colorado and Southern Railway Depot / Loveland Depot)

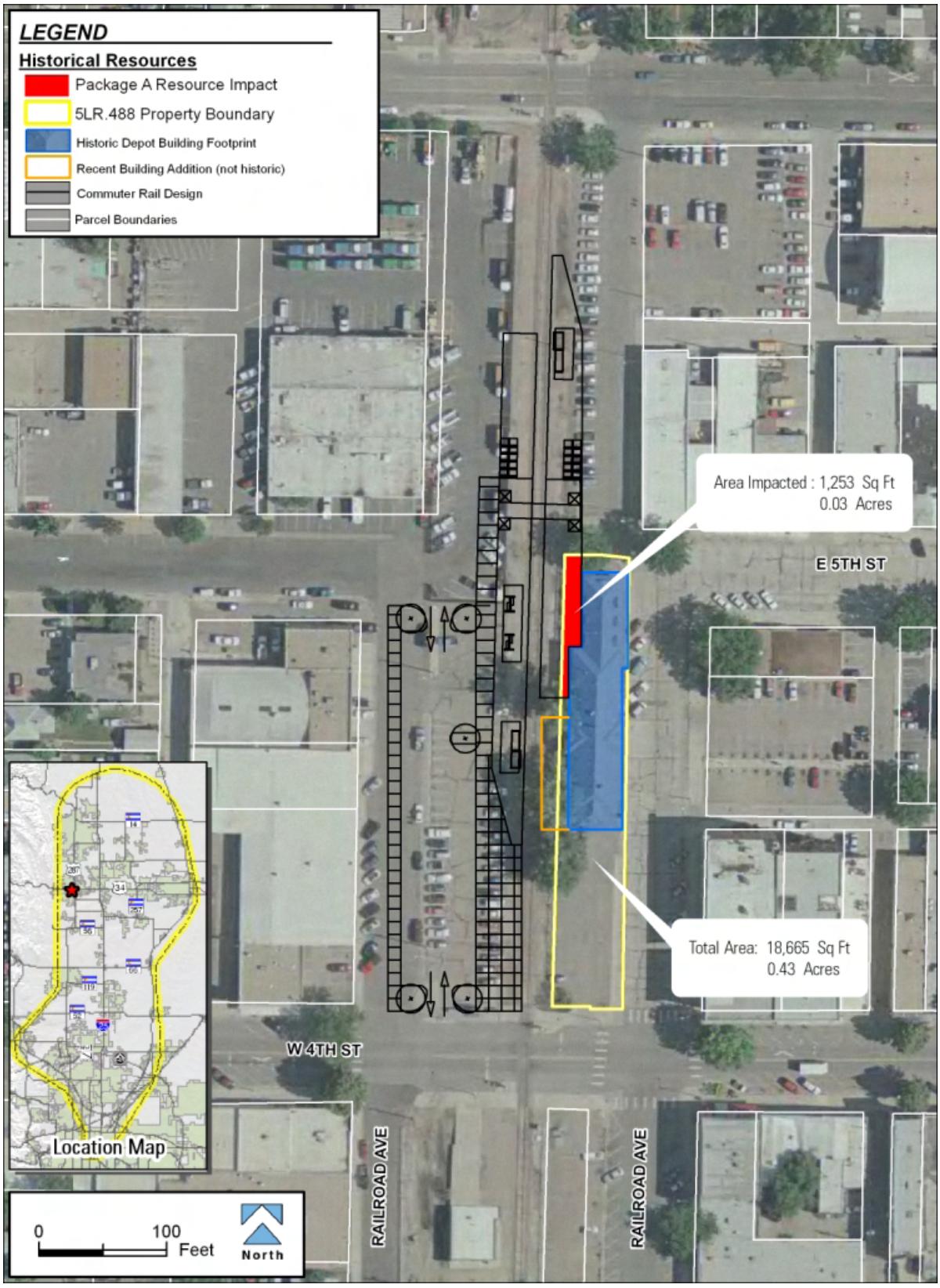
Resource Description: The Loveland Depot is located at 405 – 409 Railroad Ave. in Loveland. It was built in 1902 by the Colorado and Southern Railway Company which was the successor, in 1898, to the Colorado Central Railroad which originally laid tracks through Loveland in 1877. Loveland, an agricultural community, was dependent on the railroad for its economic survival and the depot was critical for efficient movement of freight and passengers.

Eligibility Determination: This structure is significant under Criterion A for its role in rail transportation in northern Colorado. It is also architecturally significant under Criterion C as a good example of an turn-of-the-century depot.

Effect Determination—Package A: Although there would be direct effect to the property, there would be no direct effect to the structure (see **Figure 3.15-55)**. A concrete platform would be built between the station and the tracks. The platform's dimension would be 27' wide by 350' long. This platform would encroach onto the depot parcel and would be located adjacent to the west side of the depot affecting 0.3 acre of the historic property. The construction of this platform adjacent to the depot is consistent with the historic use of the train depot and would provide a direct transition from the depot to the arriving and departing trains. This positioning of the platform would provide impetus for recapturing the original use of the structure as a train depot. The depot is currently used as a restaurant. Other indirect impacts would be additional train traffic on the nearby railway tracks under Package A, creating minor noise and vibration increases over current levels, but not to a level that would impair the architectural qualities of this handsome historic depot. Noise levels are expected to increase 5 dBA over existing conditions. This would not be a new or heightened condition from the historic times when the depot was operational and trains were frequently arriving and departing from this station.

The proposed transportation improvements would not substantially diminish or alter the architectural or setting characteristics that render the property eligible for the NRHP. FHWA, FTA and CDOT therefore have determined that Package A commuter rail improvements would result in *no adverse effect* to the resource.

Figure 3.15-55 5LR.488 (Colorado and Southern Railway Depot/Loveland Depot) Package A Commuter Rail



5LR.1729.2 (Big Thompson Ditch)

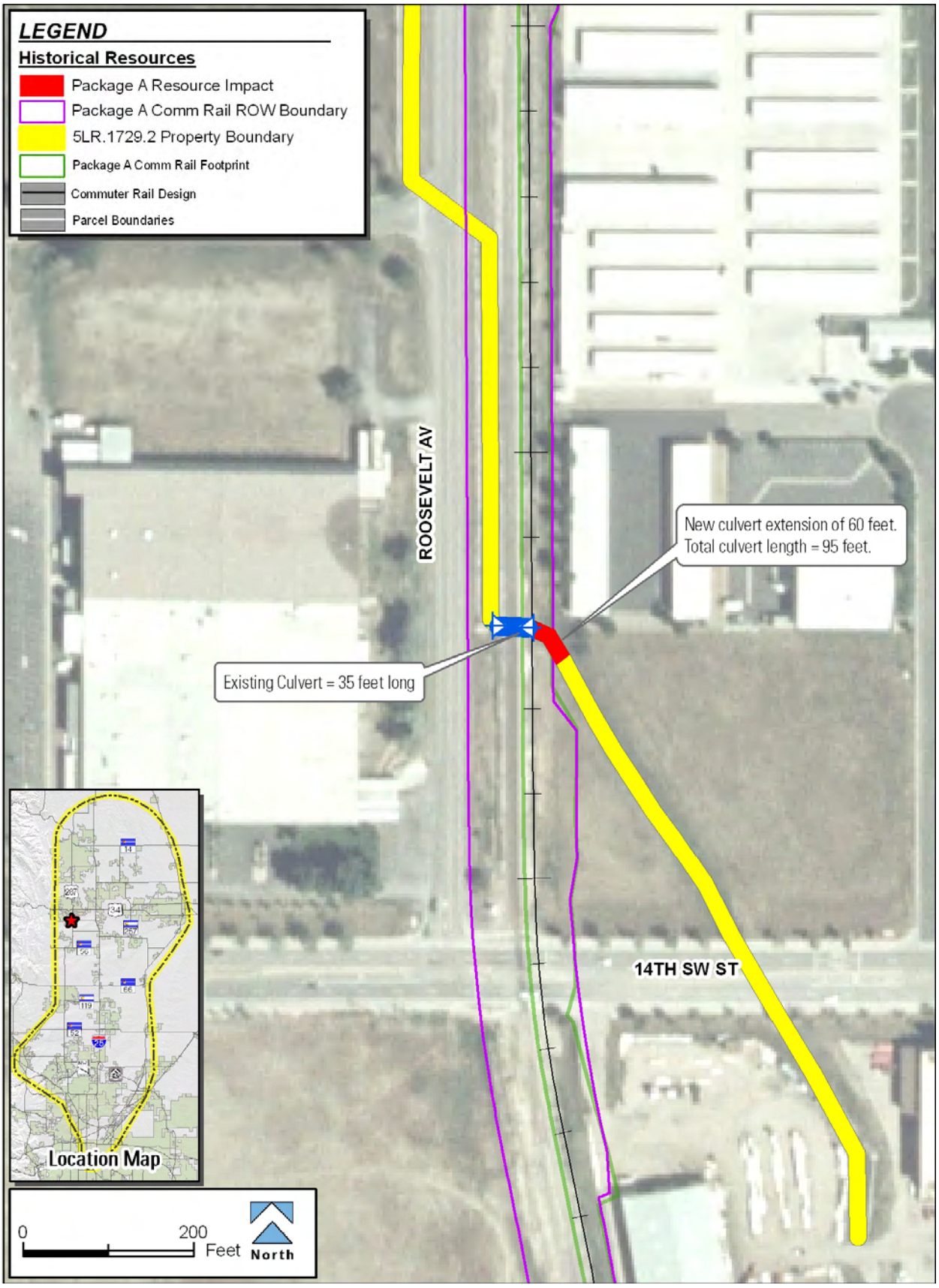
Resource Description: The entire ditch (5LR.1729) is 10 miles long and is one of the oldest in the area. The 2,216 foot long segment crosses the BNSF Railroad just north of SH 402 in Loveland. The ditch parallels the railroad for 485 feet before turning east and passing under the railroad in a CBC. The 6 foot wide ditch is concrete lined and west of the railroad and unlined east of the BNSF.

Eligibility Determination: The ditch is NRHP-eligible due to its ties to the town of Loveland and the successful development of high plains irrigation under Criterion A. The ditch has been realigned and concrete-lined, compromising the historic integrity within the setting, and is non-supportive of the greater site.

Effects Determination—Package A: Under Package A, the new commuter rail track would be placed east and adjacent to the exiting track (see **Figure 3.15-56**). At the existing BNSF crossing the ditch is conveyed underneath the railway in a 35 foot long culvert pipe. This pipe would be extended and the ditch realigned 60 feet east to accommodate the new track. Part of this length is to alter the ditch outfall from a perpendicular bend as it exits the railroad crossing to a smoother angled alignment, for the purpose of preventing ditch erosion during higher flows.

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of the BNSF Railroad and Package A improvements are minor in relative extent, FHWA, FTA and CDOT therefore have determined that Package A would result in *no adverse effect* to the entire Big Thompson Ditch (5LR.1729).

1 **Figure 3.15-56 5LR.1729.2 (Big Thompson Ditch) – Package A**



5LR.1710.1 (Handy Ditch)

Resource Description: This segment of the Handy Ditch crosses under the railway alignment. The entire ditch is approximately 24 miles long. The segment within the project APE (5LR.1710.1) is 2.9 miles long and 24 feet wide from bank to bank. Both banks are covered by heavy riparian growth in many areas. The surrounding area includes residential development.

Eligibility Determination: In 1993, the OAHP officially determined the Handy Ditch to be NRHP-eligible. The ditch is eligible under Criteria A for its important association with the development of water rights and agriculture in Larimer County. This segment (5LR.1730.1) retains sufficient integrity to support the eligibility of the entire linear resource.

Effect Determination: None of the proposed commuter rail improvements would cause changes to this historic property. Due to the lack of direct and indirect impacts, FHWA, FTA and CDOT have determined that the Package A transit improvements would result in *no historic properties affected* with respect to this historic resource.

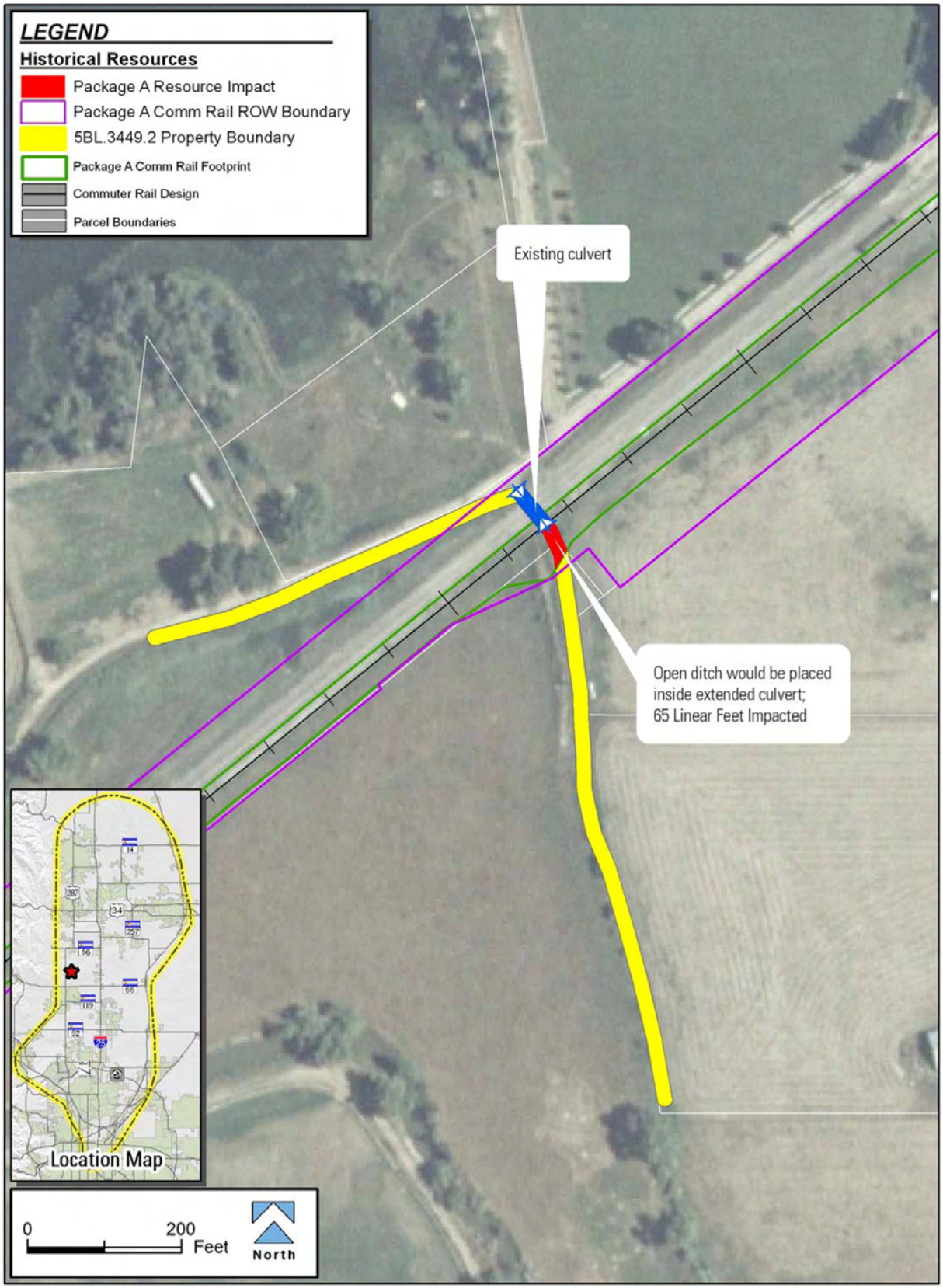
5BL.3449.2 (Supply Ditch)

Resource Description: The entire earthen ditch was constructed in 1861 and is approximately 22 miles long. The segment within the project APE (5LR.3449.2) is 100 feet long and follows its original historic alignment through the project area and is in good functional condition. This segment of the Supply Ditch crosses an active rail line in a culvert. Both banks are covered by heavy riparian growth in many areas. The surrounding area supports industrial and residential development.

Eligibility Determination: The Supply Ditch was determined to be NRHP-eligible by OAHP in 1992. The ditch is eligible under Criterion A for its important association with the development of water rights and agriculture in Boulder County. This segment (5BL.3449.2) retains sufficient integrity to support the eligibility of the entire linear resource.

Effect Determination: The historic Supply Ditch currently crosses an active railroad line via a culvert. The proposed commuter rail line would be aligned 20 feet north and parallel to the existing railroad. The elevated embankment carrying the new tracks and ballast would require an area approximately 65 feet wide. Thus, 65 feet of the open ditch would have to be placed in a new culvert beneath the new commuter rail line on the south side of the existing rail line (see **Figure 3.15-57**). The portion of the ditch subject to direct impact by the commuter rail line is in close proximity to a preexisting impacted section (crossing under the active rail line). This additional impact would not substantially diminish the qualities that make this resource NRHP eligible. The proposed modifications affect a relatively small section of the 22 mile-long linear resource. FHWA, FTA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* to the entire Supply Ditch.

Figure 3.15-57 5BL.3449.2 (Supply Ditch) – Package A



5BL.3114.28 (Highland Ditch)

Resource Description: This segment of the historic earthen Highland Ditch passes beneath the UPRR railway alignment via a bridge. The entire ditch is approximately 24.2 miles long. The segment within the project APE (5BL.3114.28) is 100 feet long. Both banks of the ditch are covered by riprap in many areas. Grass and riparian growth cover the ditch levees. The surrounding area supports rural residential development.

Eligibility Determination: In 1991, the OAHP officially determined the Highland Ditch to be NRHP-eligible under Criterion A for its important association with the development of water rights and agriculture in Boulder County. This segment (5BL.3114.28) retains sufficient integrity to support the eligibility of the entire linear resource.

Effect Determination: None of the proposed commuter rail improvements would cause changes to this historic property. Due to the lack of direct and indirect impacts, FHWA, FTA and CDOT have determined that the Package A transit improvements would result in *no historic properties affected* with respect to this historic resource.

5BL.3113.67 (Rough & Ready Ditch)

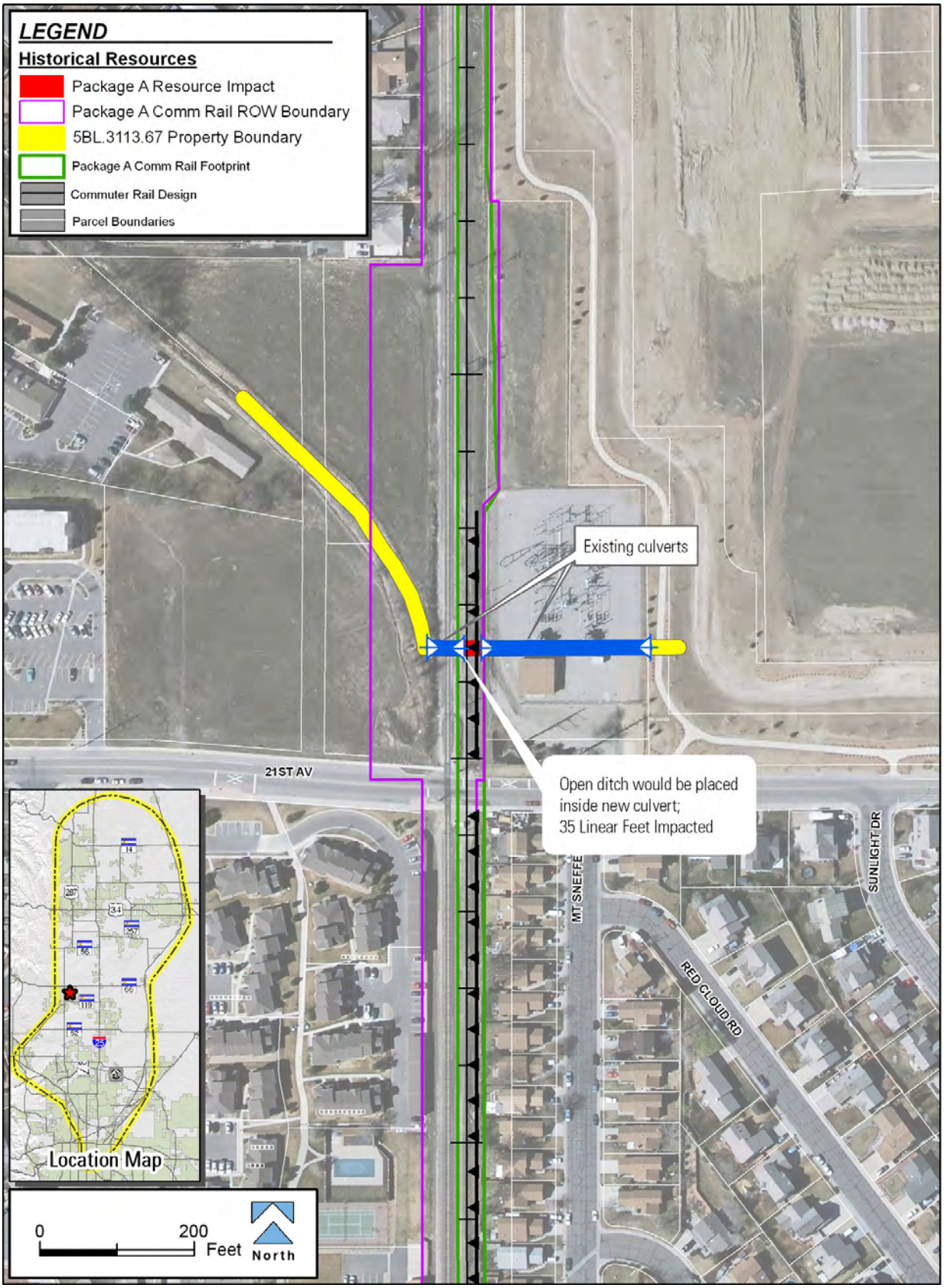
Resource Description: This segment of the historic earthen Rough & Ready Ditch crosses under the active UPRR railway alignment via a concrete culvert. The entire ditch is approximately 16.5 miles long. The segment within the project APE (5BL.3113.67) is 100 feet long. This segment is the oldest portion of the ditch, with water appropriated in 1869. The ditch is 20 feet wide and 6 feet deep, is in good condition, and much of its length follows the historic alignment. At the east side of the railway crossing, the ditch is piped underground beneath a power substation. Well developed riparian growth exists along both banks of the ditch in many areas. The surrounding area supports rural residential development.

Eligibility Determination: In 1991, the OAHP officially determined the entire Rough & Ready Ditch (5BL.3113) to be NRHP-eligible under Criterion A for its important association with the development of water rights and agriculture in Boulder County. The segment within the project APE (5BL.3113.67) retains sufficient integrity to support the eligibility of the entire linear resource.

Effect Determination: The historic Rough & Ready Ditch currently crosses the active railroad line inside a modern concrete culvert. The proposed commuter rail line would be aligned 20 feet northeast and parallel to the existing railroad. The elevated embankment supporting the new tracks and ballast would require an area approximately 35 feet wide. Thus, 35 feet of the open ditch would have to be placed in a new culvert beneath the new commuter rail track and ballast on the south side of the existing rail line (see **Figure 3.15-58**).

The portion of the ditch subject to direct impact by the commuter rail line is in close proximity to a preexisting impacted section (crossing under the active rail line). This additional impact would not substantially diminish the qualities that make this resource NRHP eligible. The proposed modifications affect a relatively small section of the 16.5 mile-long linear resource. FHWA, FTA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* to the entire Rough & Ready Ditch.

Figure 3.15-58 5BL.3113.67 (Rough & Ready Ditch) – Commuter Rail



5BL.4832 (Oligarchy Ditch)

Resource Description: The entire earthen ditch is approximately 15.6 miles long. The ditch has been associated with Boulder County irrigation since its first appropriation date of 1861, which is among the oldest in the county. Two segments of the ditch cross the APE (see **Figure 3.15-59**). Segment 5BL.4832.28 crosses the active railway alignment in a culvert. This segment is 100 feet long, 21 feet wide and 6 feet deep. Both banks of the ditch are covered by heavy riparian growth in many areas. The surrounding area supports rural residential development.

A second Oligarchy Ditch segment (5BL.4832.26) follows a meandering course through the proposed commuter rail alignment. This segment in the project APE is one mile long. Well developed riparian growth exists along both banks of the ditch in some areas. The surrounding area supports semi-rural residential development.

Eligibility Determination: The Oligarchy Ditch is NRHP-eligible under Criterion A for its important association with the development of water rights and agriculture in Boulder County. The two segments located within the APE retain sufficient integrity to support the eligibility of the entire linear resource.

Effect Determination:

In order to determine the effect to the entire linear resource, impacts to each of the segments passing through the project APE were assessed. These impact assessments are presented below, followed by a determination of effect to the entire Oligarchy Ditch (5LR.4832).

Impacts to segment 5BL.4832.28—Package A: The proposed commuter rail line would be aligned 20 feet northeast and parallel to the existing railroad. The new embankment supporting the tracks and ballast and ballast would require an area approximately 48 feet wide. Thus, the existing culvert that carries Oligarchy Ditch underneath the railway would be extended, impacting 48 feet of the open ditch that would have to be placed in a new culvert beneath the new commuter rail line on the south side of the existing rail line (see **Figure 3.15-60**). Although the physical integrity of the ditch segment would be compromised by placing a portion of it into a culvert, this change affects only a very small percentage of the overall linear resource.

Figure 3.15-59 5BL.4832 (Oligarchy Ditch)—Segments intersecting project APE

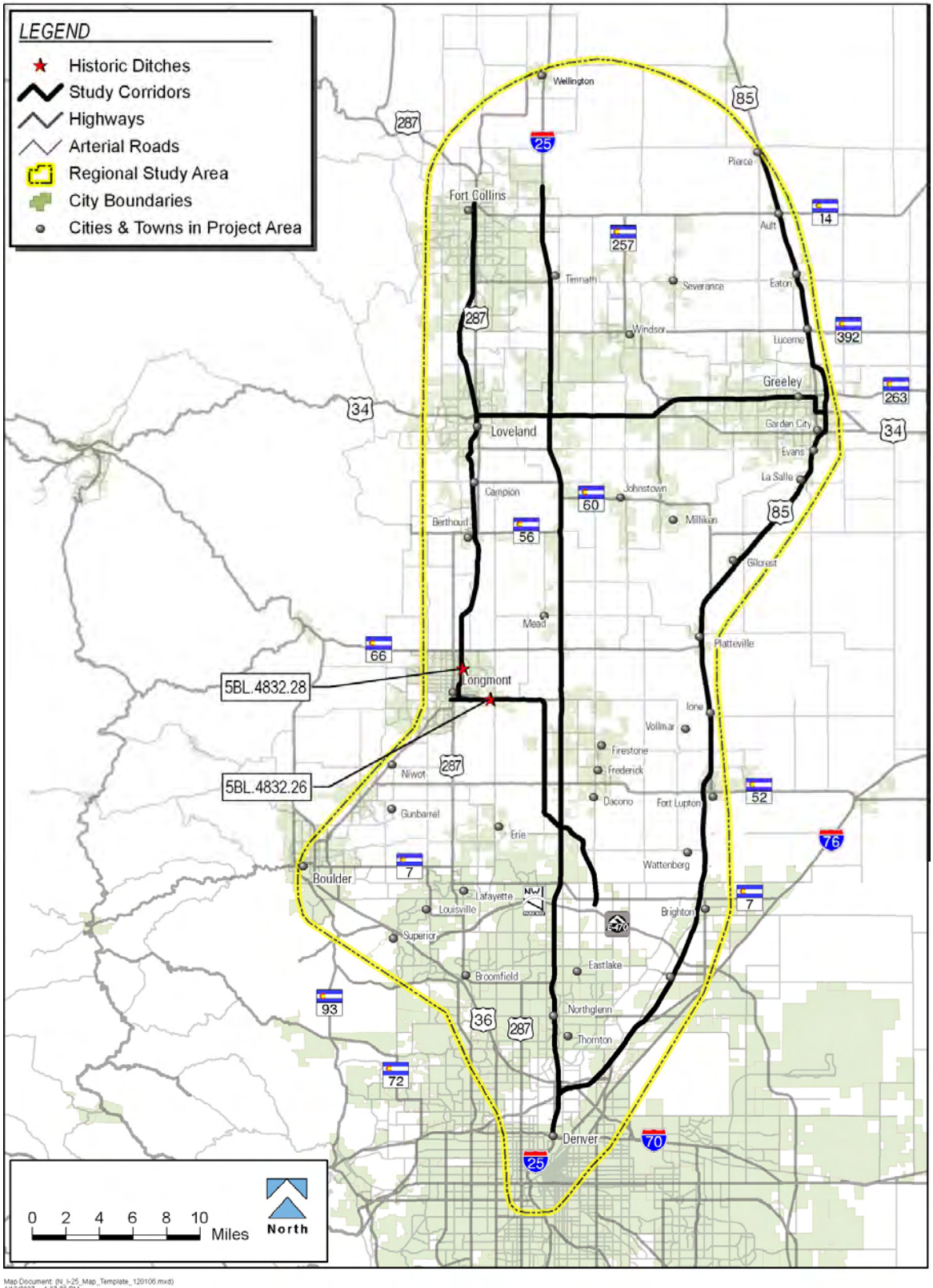
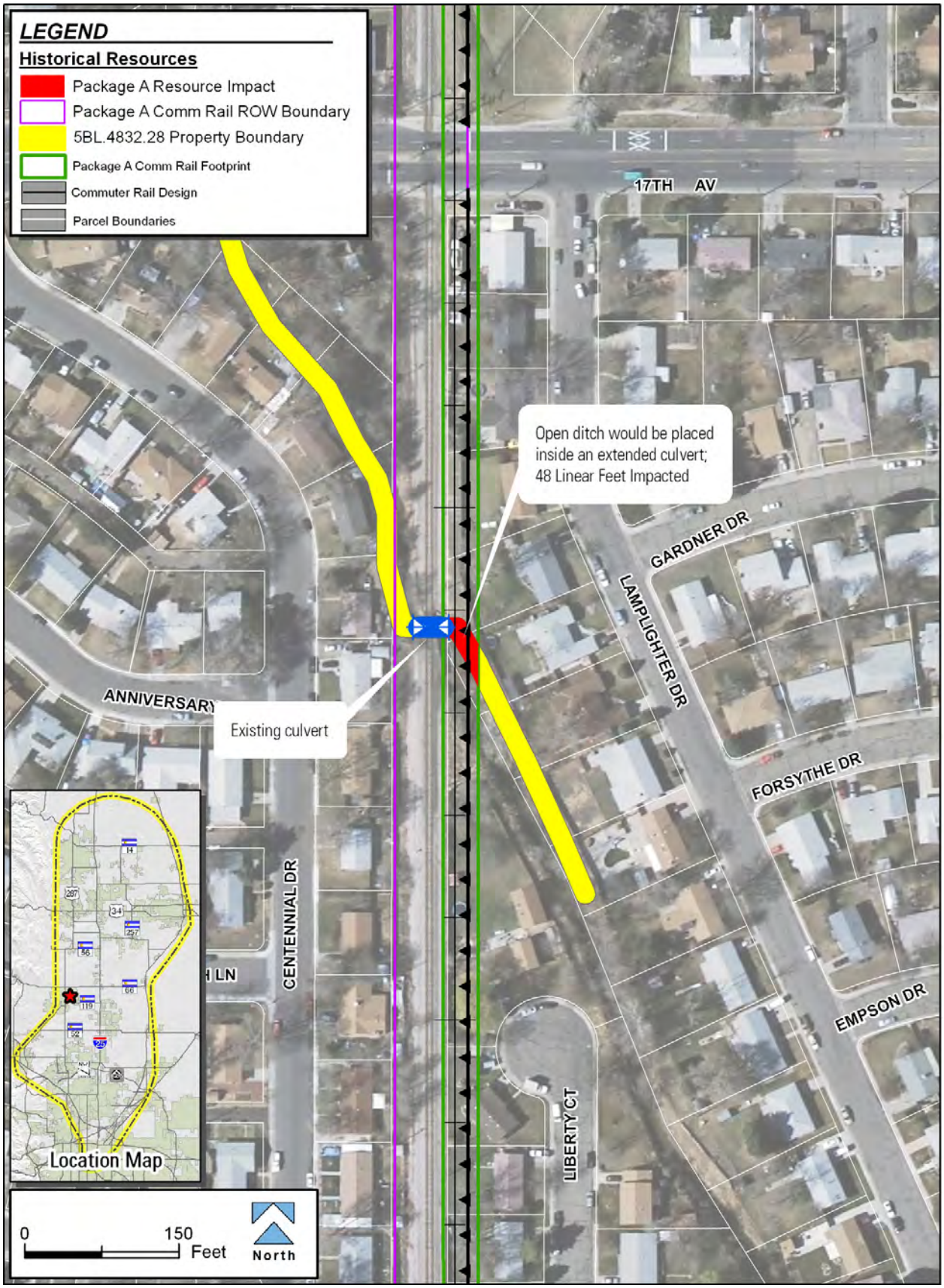


Figure 3.15-60 5BL.4832.28 (Oligarchy Ditch) – Package A Commuter Rail



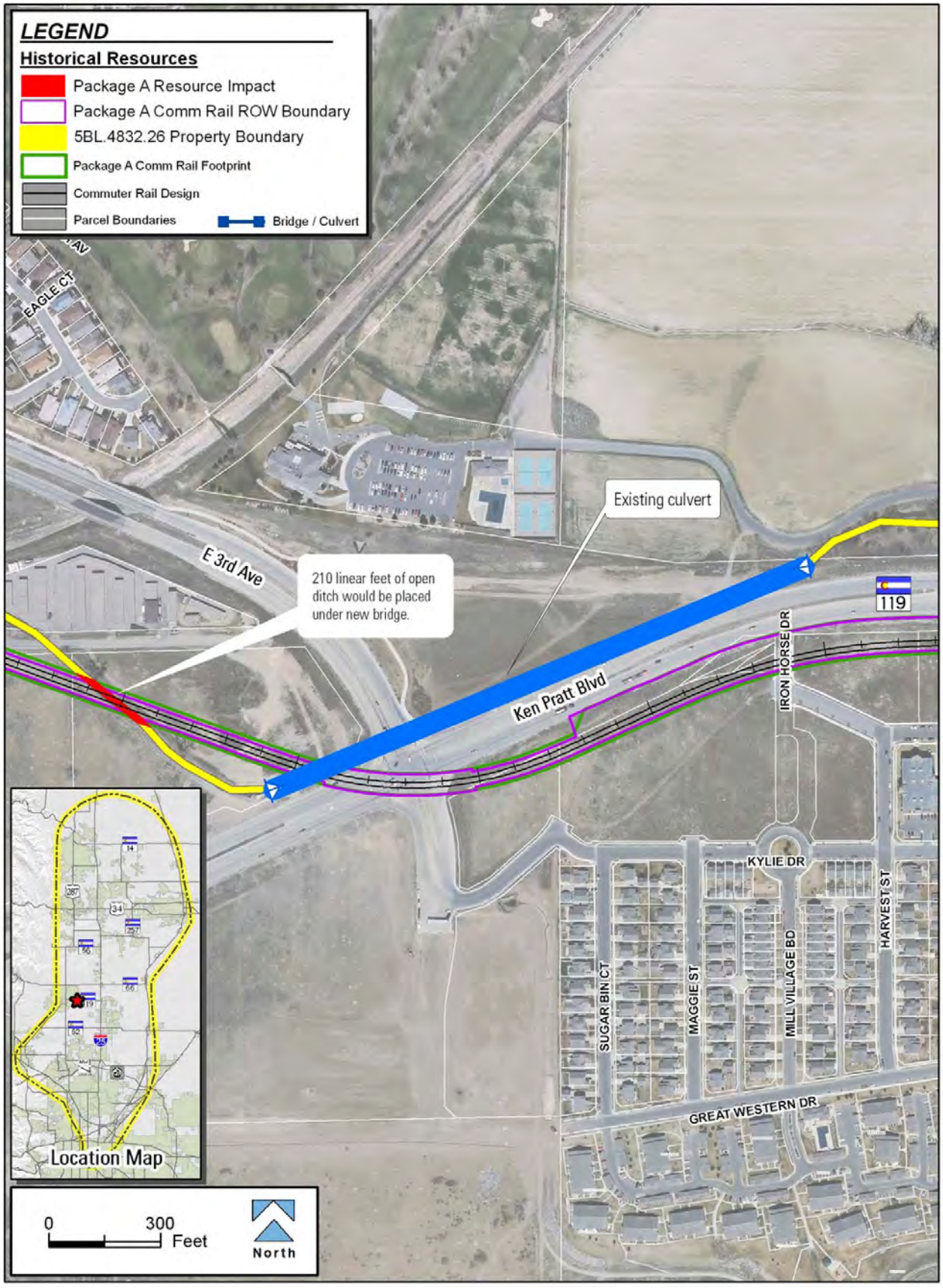
Impacts to segment 5BL.4832.26—Package A: Portions of this segment of the historic Oligarchy Ditch would pass through the proposed route of the new commuter rail line. The ditch meanders across this area, often running parallel to the planned railroad alignment. A segment of the ditch was realigned during construction of Ken Pratt Blvd. (SH 119), with the old channel being covered up and a 1,200 foot-long portion of the ditch placed in a 1,200 foot long culvert underneath 3rd Avenue and SH 119. The railway alignment follows a broad sweeping curve, and intersects the irregular course of the ditch west of 3rd Avenue. Because the ditch and railroad alignments generally run parallel, a 210 foot-long stretch of the open ditch would have to be bridged by a new railroad structure. A total length of 210 feet of open ditch would be spanned by a new bridge (see **Figure 3.15-61**). The resulting overhead cover would shade the portion of the ditch located underneath the bridge, but all structural support elements such as piers or abutments, would be placed outside of the historic boundary and would not result in a direct impact to the ditch. The physical setting of the ditch segment would not be substantially compromised by placing a portion of it underneath a bridge structure.

Summary Effect Determination:

Package A: A cumulative total of 48 feet of open ditch would be placed inside a new culvert (5BL.4832.26) and 210 feet of open ditch would flow underneath a new bridge (5BL.4832.28). Temporary construction impacts would occur during culvert installation. Because the physical integrity of the ditch segment would not be substantially compromised by placing a portion of it inside a culvert and underneath a bridge structure, and these changes affect only a very small percentage of the overall linear resource, FHWA, FTA and CDOT have determined that the Package A commuter rail improvements would result in *no adverse effect* to the entire Oligarchy Ditch (5LR.4832).

Package B: There are no direct or indirect impacts to the resource resulting from improvements associated with Package B, therefore FHWA, FTA and CDOT have determined that Package B would result in *no historic properties affected* with respect to the entire Oligarchy Ditch.

Figure 3.15-61 5BL.4832.26 (Oligarchy Ditch) – Package A Commuter Rail



5BL.10636 (Boggs Residence)

Resource Description: This residence, located at 122 8th Ave. in Longmont, was built in 1939. It was the home of a local carpenter, Joe Boggs and displays elements of the Mediterranean style including stucco walls and an arcaded porch.

Eligibility Determination: This structure is significant under Criterion C as a good example of an early twentieth century vernacular home with some Mediterranean style elements including an arcaded porch.

Effect Determination—Package A: There would be no direct effect to this property (see **Figure 3.15-62**). The commuter rail alignment would stay on the existing single-track rail through this segment. Indirect effects include additional train traffic on the railway tracks under Package A, creating minor vibration increases over current levels, but not to a level that would impair the architectural qualities of this residential building. Noise levels are expected to be the same as existing conditions.

The proposed transportation improvements would not substantially diminish or alter the architectural or setting characteristics that render the property eligible for the NRHP. FHWA, FTA and CDOT therefore have determined that Package A commuter rail improvements would result in *no adverse effect* to the resource.

COMMUTER RAIL: LONGMONT TO FASTRACKS NORTH METRO

This segment uses the existing track in the area between downtown Longmont to SH 119. From that point, a new double-track rail alignment continues to the east along SH 119 and then south along the west side of WCR 7, then southeast along UPRR right-of-way to FasTracks North Metro. There are 12 historic properties in this component of commuter rail.

5BL.1245 (Old City Electric Building)

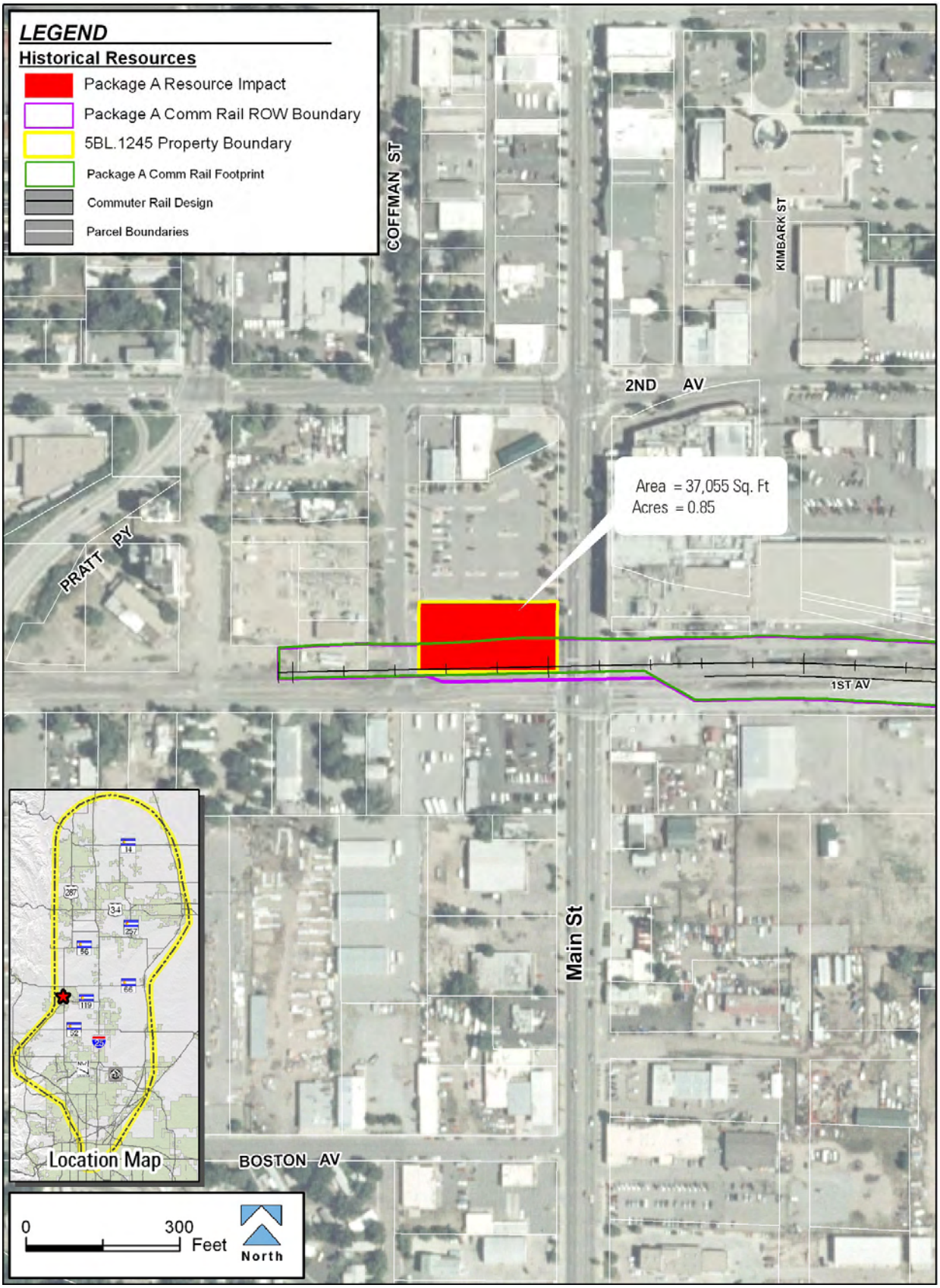
Resource Description: The Old City Electric Building (5BL.1245) is located at 103 Main Street in Longmont. It is an excellent example of 1930s industrial architecture featuring large windows, an open plan and solid brick construction. This building served the city's power needs from 1931 to 1969. Longmont was one of the first cities in Colorado to develop a municipally owned electric generation plant.

Eligibility Determination: The Old City Electric Building is eligible for the NRHP under Criterion A for its significant role in the development of Longmont, and under Criterion C as an excellent, intact example of industrial architecture. This early power generation plant has also been designated as a Local Landmark by the City of Longmont.

Effect Determination: Construction of a new commuter railroad line alongside the existing commercial rail line on the north side of 1st Avenue in Longmont would require acquisition of new right-of-way, including 0.85 acres of land containing this historic building. The building would need to be demolished or moved to a new location to accommodate the new commuter rail line tracks and associated construction activities (see **Figure 3.15-63**). This direct effect would result in the major reduction or loss of integrity of this resource, and FHWA, FTA and CDOT therefore have determined that an *adverse effect* to this resource would result. Details of mitigation for this effect are discussed under **Section 3.15.3**.

Figure 3.15-62 5BL.10636 (Boggs Residence) – Package A Commuter Rail

Figure 3.15-63 5BL.1245 (Old City Electric Building) – Package A Commuter Rail



5BL.1244 (Colorado & Southern/BNSF Depot)

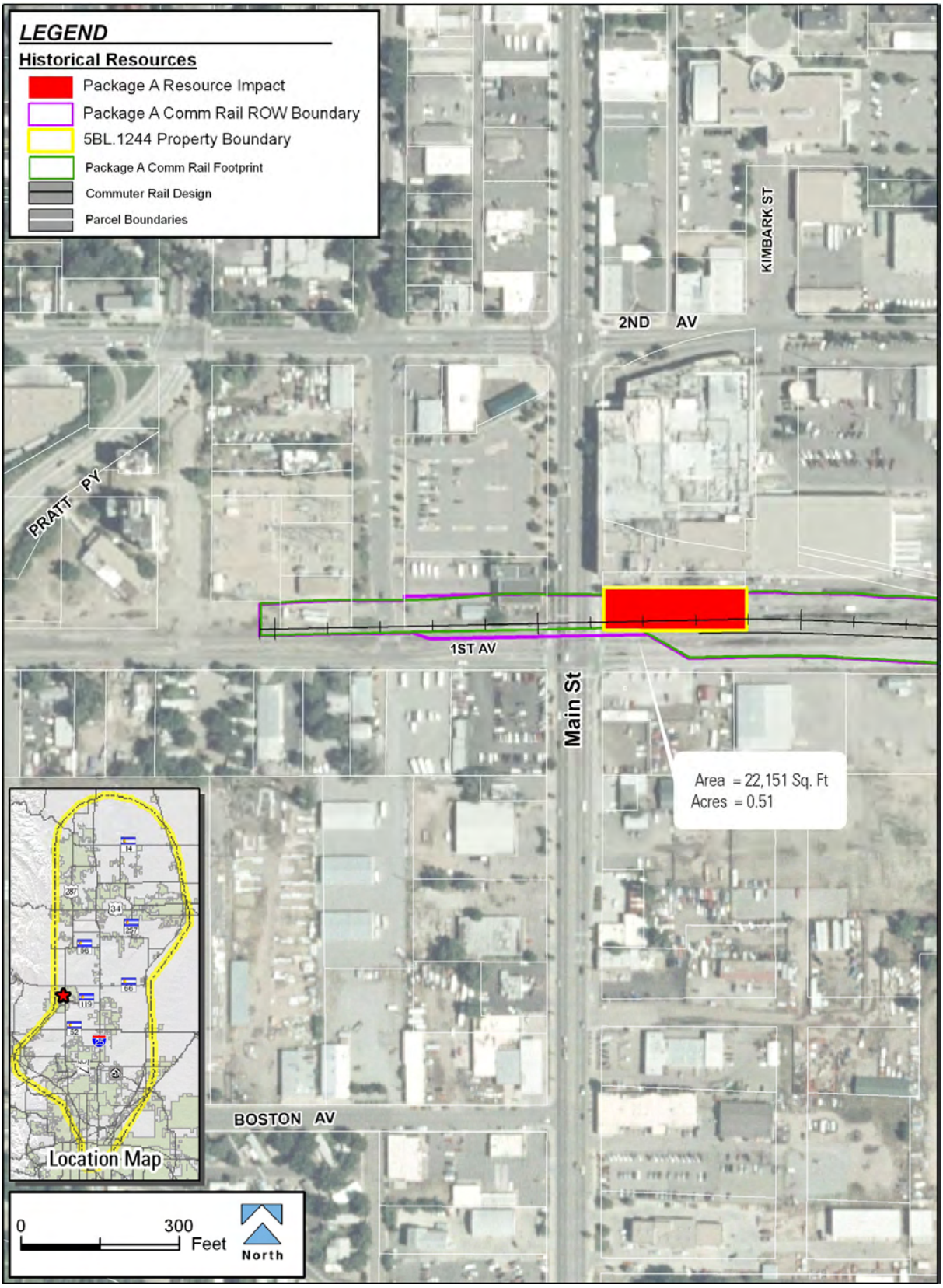
Resource Description: The historic Colorado & Southern/BNSF Depot (5BL.1244) is located at 100 Main Street in Longmont. The depot was built in 1905. It is one of the two early railroad depots in Longmont and is one of the finest small masonry depots in the state. The depot is the only extant Richardsonian Romanesque style building in Longmont.

Colorado & Southern/BNSF Depot

Eligibility Determination: This depot (5BL.1244) is NRHP-eligible under Criterion A for its association with railroad transportation and its contribution to the development of Longmont. The building is also NRHP-eligible under Criterion C as an excellent and well preserved example of masonry railroad depot architecture in Colorado.

Effect Determination: Construction of a new commuter railroad line alongside the existing commercial rail line on the north side of First Avenue in Longmont would require acquisition of new right-of-way, including the 0.51 acre of land occupied by this historic building (see **Figure 3.15-64**). The building would need to be demolished or moved to another location to accommodate the new commuter rail tracks and associated construction activities. This direct effect would result in the major reduction or loss of integrity of this resource, and FHWA, FTA and CDOT therefore have determined that an *adverse effect* to this resource would result. Details of mitigation for this effect are discussed under **Section 3.15.3**.

Figure 3.15-64 5BL.1244 (Colorado & Southern/BNSF Depot) – Package A Commuter Rail



5BL.513 (Great Western Sugar Factory)

Resource Description: The Great Western Sugar Factory is located at 11939 and 11801 Sugarmill Road in Longmont. This sugar beet processing factory was built in 1903 and operated into the 1970s. The 3.72 acre factory site contains several beet processing buildings as well as industrial features including storage silos located north of Sugarmill Road.

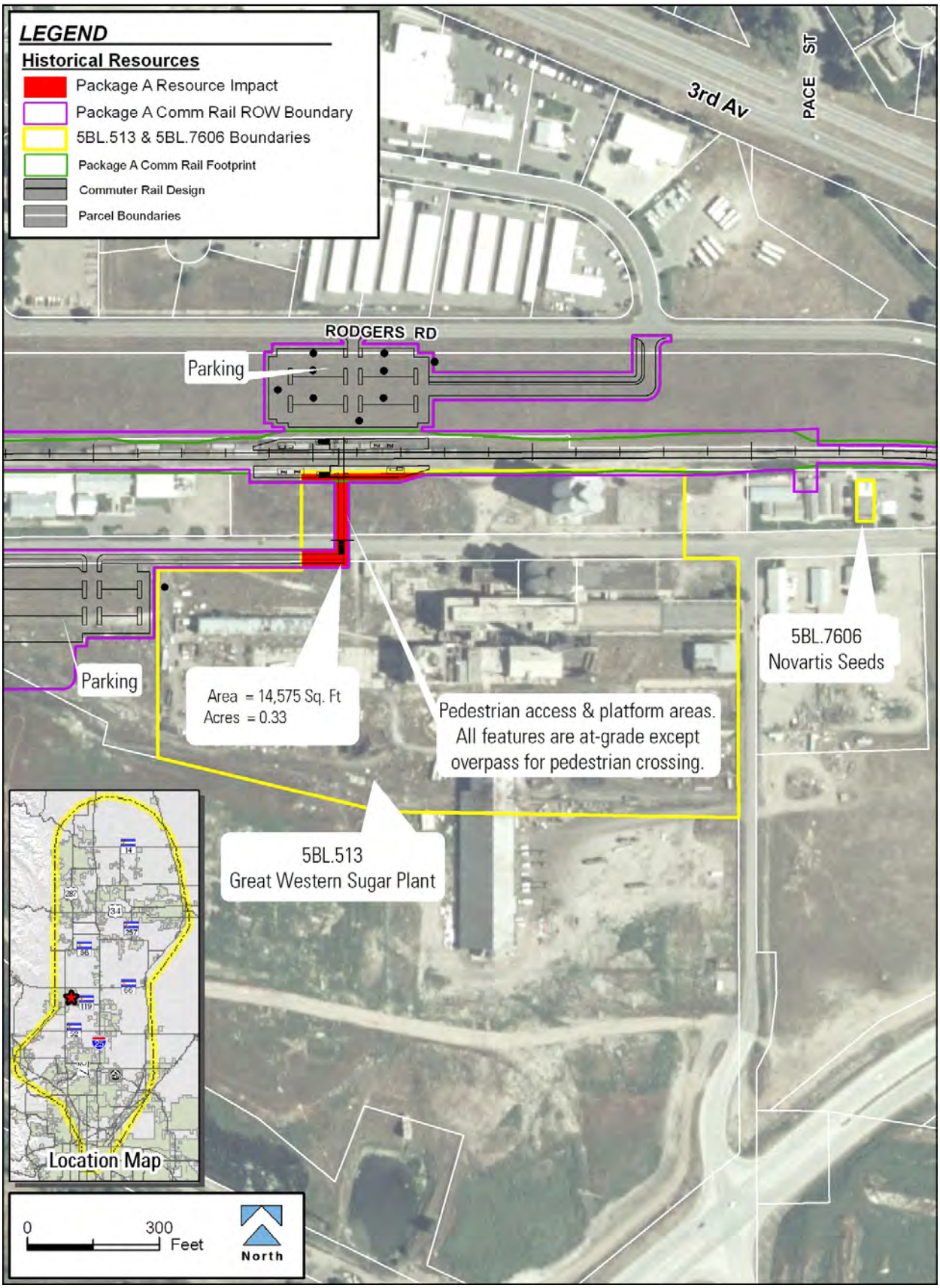
Eligibility Determination: The Great Western Sugar Factory (5BL.513) is eligible for the NRHP under Criterion A for its significant role in the very important sugar beet industry in Colorado, as well as its major contribution to the economic development of the Longmont area.

Effect Determination: Proposed commuter rail improvements in the vicinity of the Great Western Sugar factory site include a station platform, park-and-ride lots, and a pedestrian walkway from the station platform to the south parking lot. The station platform intrudes slightly into the north edge of the sugar factory site, and the proposed pedestrian walkway extends from the platform through the northwestern corner of the property to access a proposed parking lot that would be located just west of the factory site. The design and cross-section of a typical commuter rail station is depicted in **Figure 3.15-10**. These direct impacts amount to 0.33 acres, or approximately nine percent of the 3.72-acre property. None of the buildings or other standing industrial features that contribute to the property's significance would be affected by these commuter rail facilities (see **Figure 3.15-65**).

There would be additional train traffic on the nearby railway tracks under Package A, creating minor noise and vibration increases over current levels, but no impacts. This would not be a new or heightened condition from the historic times when the factory was operational and relied on frequent train transport of beets and lime for sugar production, and shipment of finished sugar.

The proposed transportation improvements would not substantially diminish or alter the architectural or setting characteristics that render the property eligible for the NRHP. FHWA, FTA and CDOT therefore have determined that Package A commuter rail improvements would result in *no adverse effect* to the resource.

Figure 3.15-65 5BL.513 (Great Western Sugar Plant and Novartis Seeds/ Syngenta Seeds)—Package A Commuter Rail



5BL.7606 (Novartis Seeds/Syngenta Seeds)

Resource Description: This large, one-story brick office building was constructed in 1951 near the Great Western Sugar factory in Longmont. The building is covered by a flat roof with wide overhanging eaves. Its façade is symmetrically arranged, with a central entry flanked by banks of nine casement windows. The building appears unaltered, and is a good example of International Style commercial architecture. The building is currently occupied by Novartis Seeds/Syngenta Seeds. Syngenta Seeds is a global leader in the agribusiness industry.

Eligibility Determination: The Novartis Seeds/Syngenta Seeds office in Longmont (5BL.7606) is eligible for the NRHP under Criterion C as a well preserved specimen of International Style commercial architecture in Colorado.

Effect Determination: Proposed commuter rail improvements in the vicinity of the Novartis Seeds/Syngenta Seeds office building southwest of Longmont are limited to construction of a second, dedicated commuter rail track parallel to the existing standard gauge commercial rail line that runs in an east-west alignment a short distance north of the property. A passenger station with park and ride lot and platform would be located a short distance to the west, in the vicinity of the historic Longmont sugar factory (5BL.513). The 0.08 acre Novartis Seeds/Syngenta Seeds building site would not be directly impacted by the alternative (see **Figure 3.15-65**).

There would be additional train traffic on the nearby railway tracks under Package A, creating minor noise and vibration increases over current levels, but not to a level that would impair the architectural qualities of this commercial/industrial building. FHWA, FTA and CDOT therefore have determined that Package A would result in *no adverse effect* to the resource.

5WL.5278 (William H. Dickens Farm)

Resource Description: The William H. Dickens farm (5WL.5278) is located at 545 SH 119 in Longmont. This farm is associated with one of the earliest settlers in the St. Vrain Valley, William H. Dickens. Dickens became a prominent area farmer and businessman, and was responsible for building the Dickens Opera House in Longmont. Dickens's step-father, Alonzo N. Allen, was the first Euro-American to settle in the St. Vrain drainage. The 155 acre farm includes a farmhouse, large barn and five outbuildings. The historic boundary includes land originally within the 1915 land boundary which is still being used for agriculture.

Eligibility Determination: This farm (5WL.5278) is NRHP-eligible under Criterion B for its association with the early St. Vrain Valley settler William H. Dickens. Additionally, the farm contains an intact example of a large wood frame barn with distinctive architectural features including a gabled front rain hood, narrow horizontal siding, which is eligible for the NRHP under Criterion C.

Effect Determination: None of the proposed commuter rail improvements along SH 119 would cause changes to this historic property. Due to the lack of direct and indirect impacts, FHWA, FTA and CDOT have determined that the Package A commuter rail improvements would result in *no historic properties affected* with respect to this historic resource.

5WL.2877.1 (Union Reservoir Outlet Ditch/Coffin Spring Gulch Ditch)

Resource Description: The entire ditch is approximately 1.8 miles long. This segment of the ditch (5WL.2877.1) crosses the railroad along the south edge of SH 119. The portion of the ditch that crosses under the railway is placed in a culvert. The segment occurring within the project APE (5WL.2877.1) is 5,042 feet (0.95 mile) long. Both banks are covered by heavy riparian growth in many areas. The surrounding area supports semi-rural residential development.

Eligibility Determination: The Union Reservoir Ditch (5WL.2877.1) south of SH 119 was previously recorded in association with the Sandstone Ranch (5WL.712). The ditch was officially declared NRHP-eligible by OAHP in 1998 under Criterion A for its important association with the development of water rights and agriculture in Weld County. When re-evaluated for the North I-25 Draft EIS, the length of the ditch segment was extended northward across SH 119 to the northern edge of the North I-25 project corridor.

Effect Determination: Although a new dedicated commuter rail line would be constructed along the south edge of existing SH 119 in this area, this historic ditch is already placed within a culvert beneath the proposed rail corridor where it is conveyed across SH 119 and thus would not be subject to additional direct impacts. The ditch exits the culvert at the south edge of the proposed new rail corridor. The proposed improvements along SH 119 would not cause changes to this historic property. Due to the lack of direct and indirect impacts, FHWA, FTA and CDOT have determined that Package A would result in *no historic properties affected* with respect to this historic resource.

5WL.712 (Sandstone Ranch)

Resource Description: The Sandstone Ranch is located on SH 119 just east of Longmont. The ranch is associated with Morse Coffin, one of the early settlers in this area. Morse Coffin settled in Boulder County in 1859 and became a preeminent agriculturalist and co-founder of the first public school district in Colorado. The City of Longmont now owns the ranch property, which is now designated Sandstone Ranch Park. Portions of the former ranch have been altered recently by gravel mining, post-mining reclamation, and multi-use recreational development by the City of Longmont. The only intact ranchland in the northern portion of the property is a riparian corridor surrounding the Union Reservoir Outlet Ditch/ Coffin Spring Gulch Ditch (5WL.2877.1).

Eligibility Determination: The ranch was NRHP-listed in 1984 under Criteria A, B, and C. The Sandstone Ranch is eligible under Criterion A because of its important association with early settlement and agricultural development in Weld County. It is also eligible under Criterion B because of its direct association with Morse H. Coffin, an important historical figure, and under Criterion C because of the architectural significance of the Coffin farmhouse. The historic district boundary is currently being evaluated for re-definition to exclude the areas modified by construction of public recreational facilities and areas modified by gravel mining.

Effect Determination: Widening of SH 119 to accommodate the proposed commuter rail facilities would necessitate acquisition of new right-of-way within the extreme northern edge of the Sandstone Ranch historic district. This land would be needed to provide space for the new Commuter Rail bed, tracks, and ballast. The area subject to direct impacts comprises 2.17 acres, or less than one percent of the entire 337.22-acre historic district. In addition to the small size of the impacted area, the northern portion of the historic district has lost most of its integrity due to recent development of sports fields by the City of Longmont (see **Figure 3.15-66**).

The historic ranch buildings are located too far away to be affected by noise and vibration impacts from passing trains. The commuter rail tracks would run along the edge of the northern portion of the historic district that has lost nearly all integrity. No indirect effects are expected which would harm the function, setting, atmosphere, or attributes that render this district NRHP-eligible.

The proposed transportation improvements would not substantially diminish or alter characteristics that render the property eligible for the NRHP. For all of these reasons, FHWA, FTA and CDOT have determined that Package A would result in *no adverse effect* to the resource.