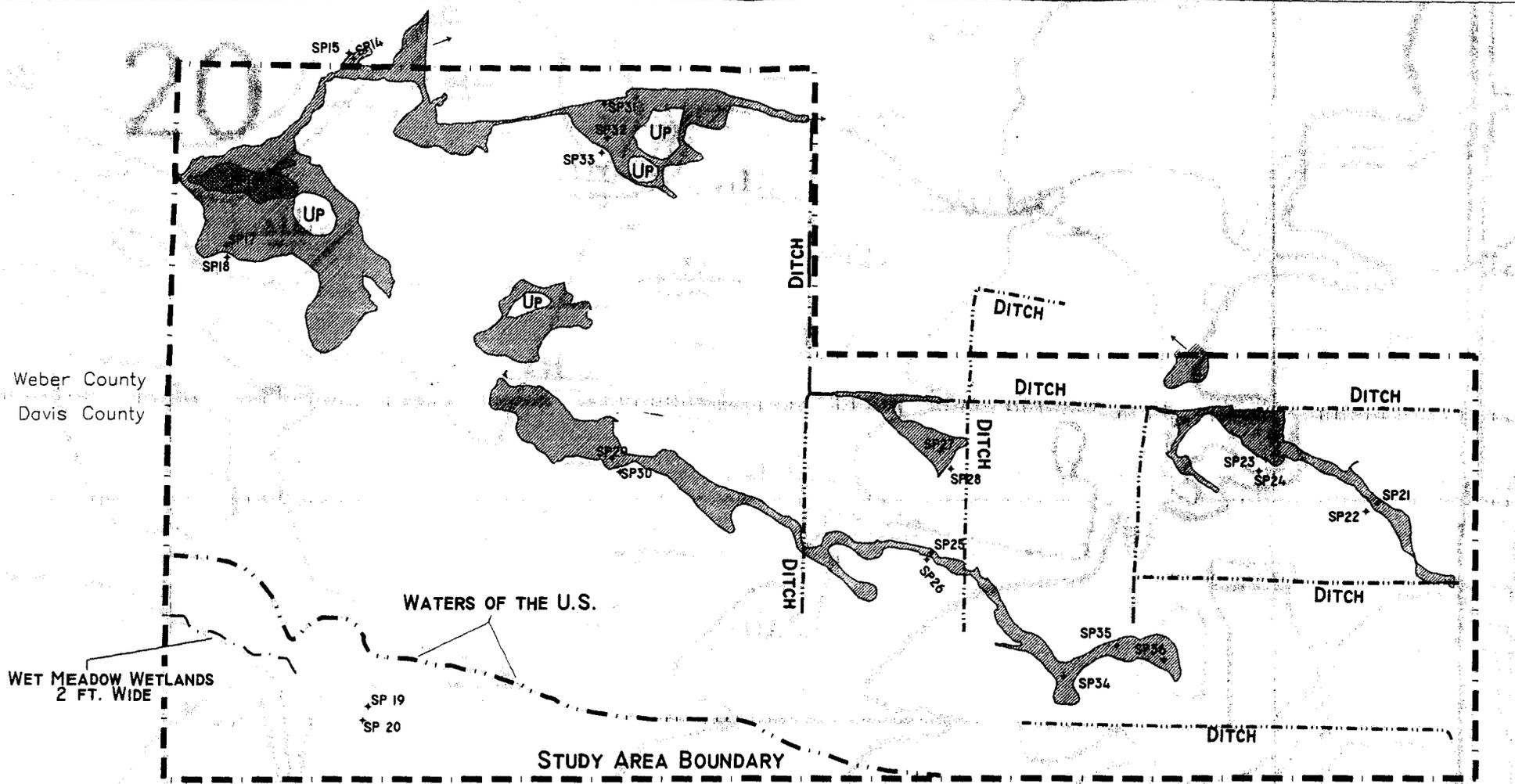


FIGURE 1. Location map for Crane Fields wetland delineation study project area, Davis and Weber Counties, Utah.



PROJECT:

CRANE FIELDS ESTATES
ROY, UTAH USGS 7.5MIN. QUAD.
T.5N. R.2W.
DATE: FEBRUARY 6, 2004

WETLAND DELINEATION PREPARED BY:

NATURAL RESOURCES CONSULTING
RIVER HEIGHTS, UTAH
WETLAND MAPPING DATE:
JULY 2003

LEGEND:

- UP - UPLAND
- - WET MEADOW WETLANDS
5.98 acres
- - MARSH WETLANDS
0.25 acre
- SP35 + - SAMPLE POINT
- - - - - DITCH
- - - - - WATERS OF THE U.S.
- - - - - NARROW WET MEADOW WETLAND



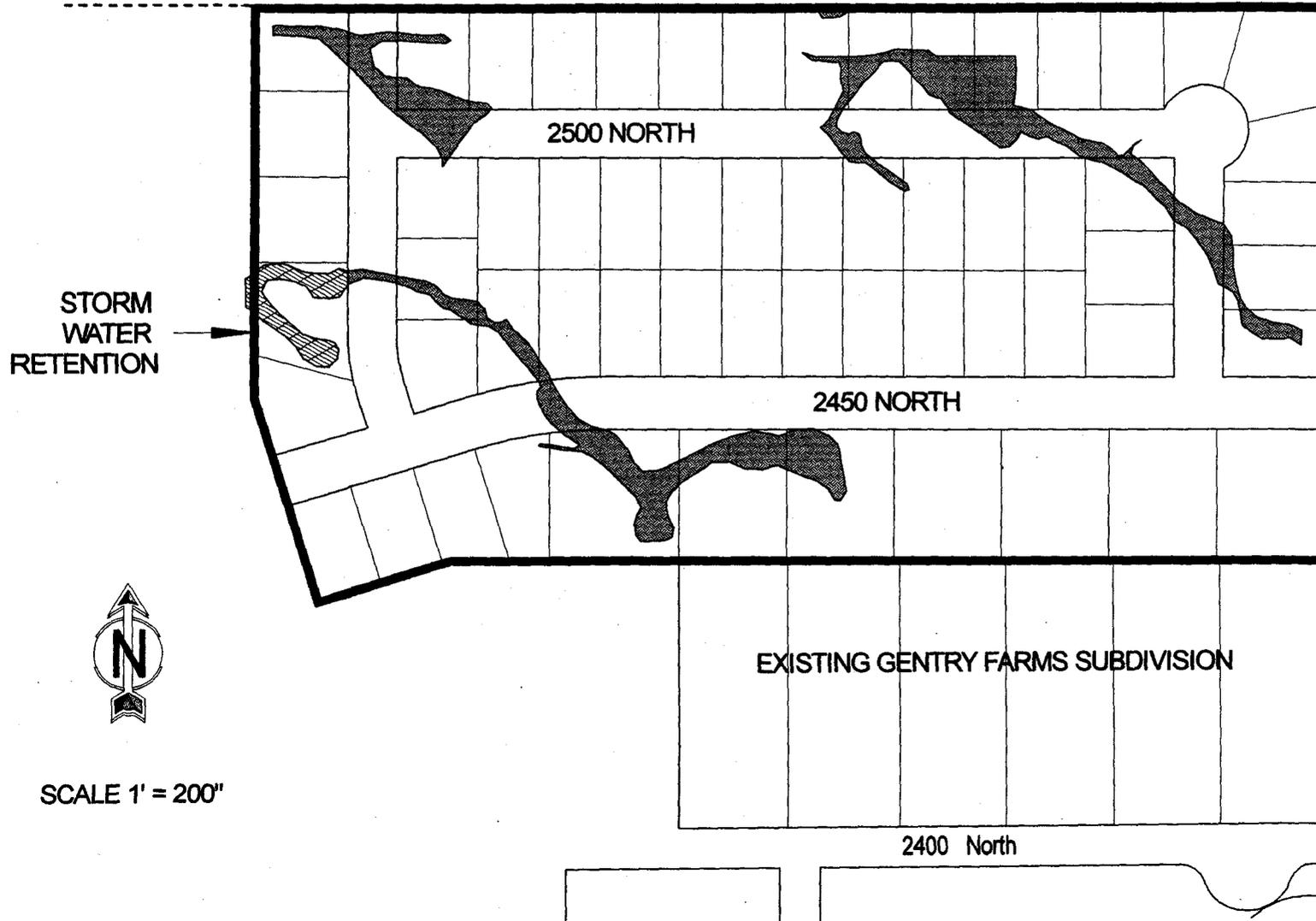
SITE DEVELOPEMENT PLAN - CHOICE - 1
FOR AXXION DEVELOPEMENT
CRANE LANDING SUBDIVISION
TOTAL AREA 21 ACRES
TOTAL LOTS 59
TOTAL WETLAND AREA 1.53 ACRES
IMPACTED WETLAND AREA 1.39 ACRES

LEGEND

■ IMPACTED WETLAND

WEBER COUNTY

DAVIS COUNTY



SCALE 1' = 200'

**SITE DEVELOPEMENT PLAN - CHOICE - 2
FOR AXION DEVELOPEMENT
CRANE LANDING SUBDIVISION
TOTAL AREA 21 ACRES
TOTAL LOTS 57
IMPACTED WETLAND AREA 0.955 ACRES**

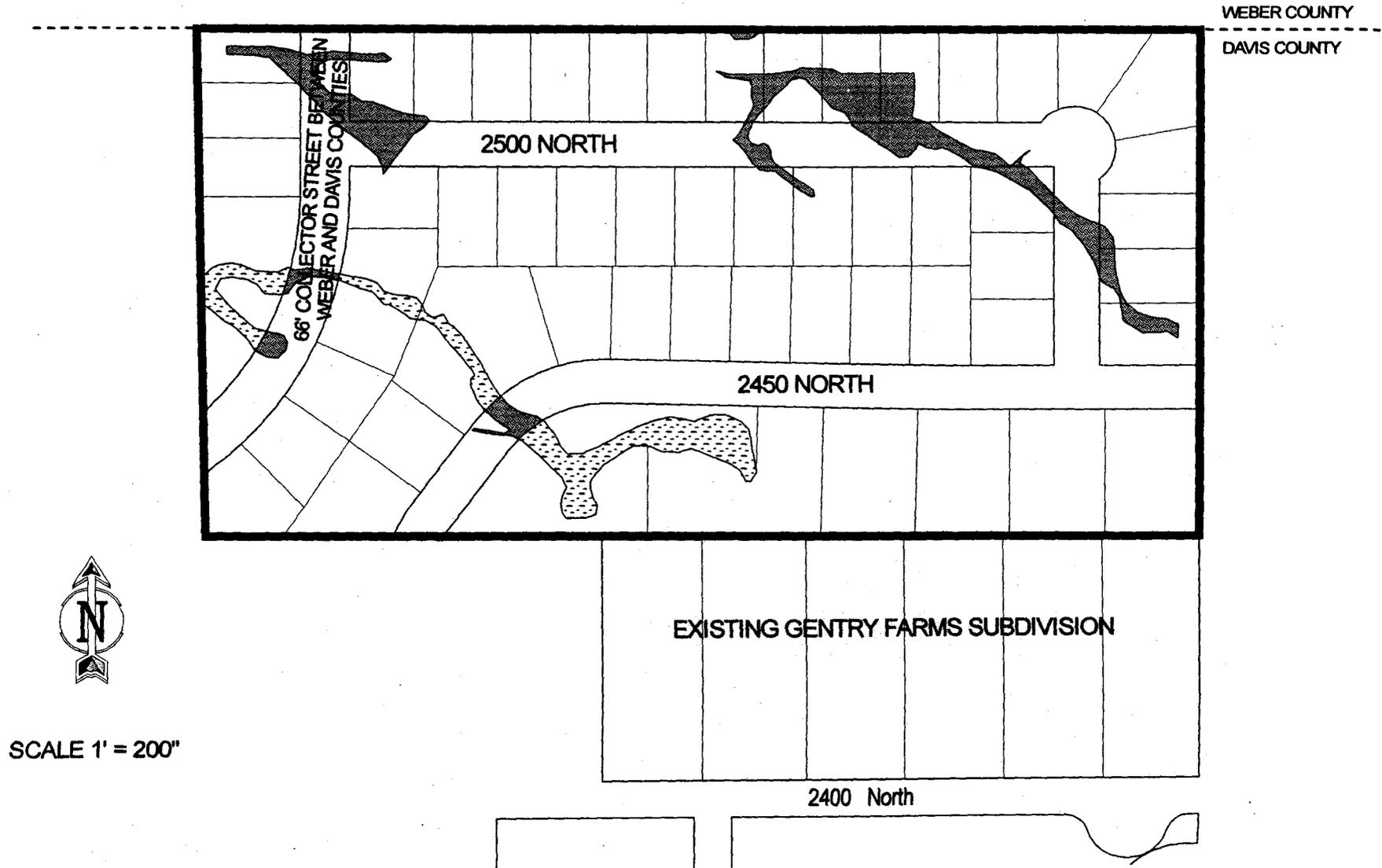
LEGEND



EXISTING WETLAND



IMPACTED WETLAND



SCALE 1' = 200"

**SITE DEVELOPEMENT PLAN - CHOICE - 3
FOR AXION DEVELOPEMENT
CRANE LANDING SUBDIVISION
TOTAL AREA 21 ACRES
TOTAL LOTS 50
IMPACTED WETLAND AREA 0.955 ACRES
BUFFER OF 50' 2.03 ACRES**

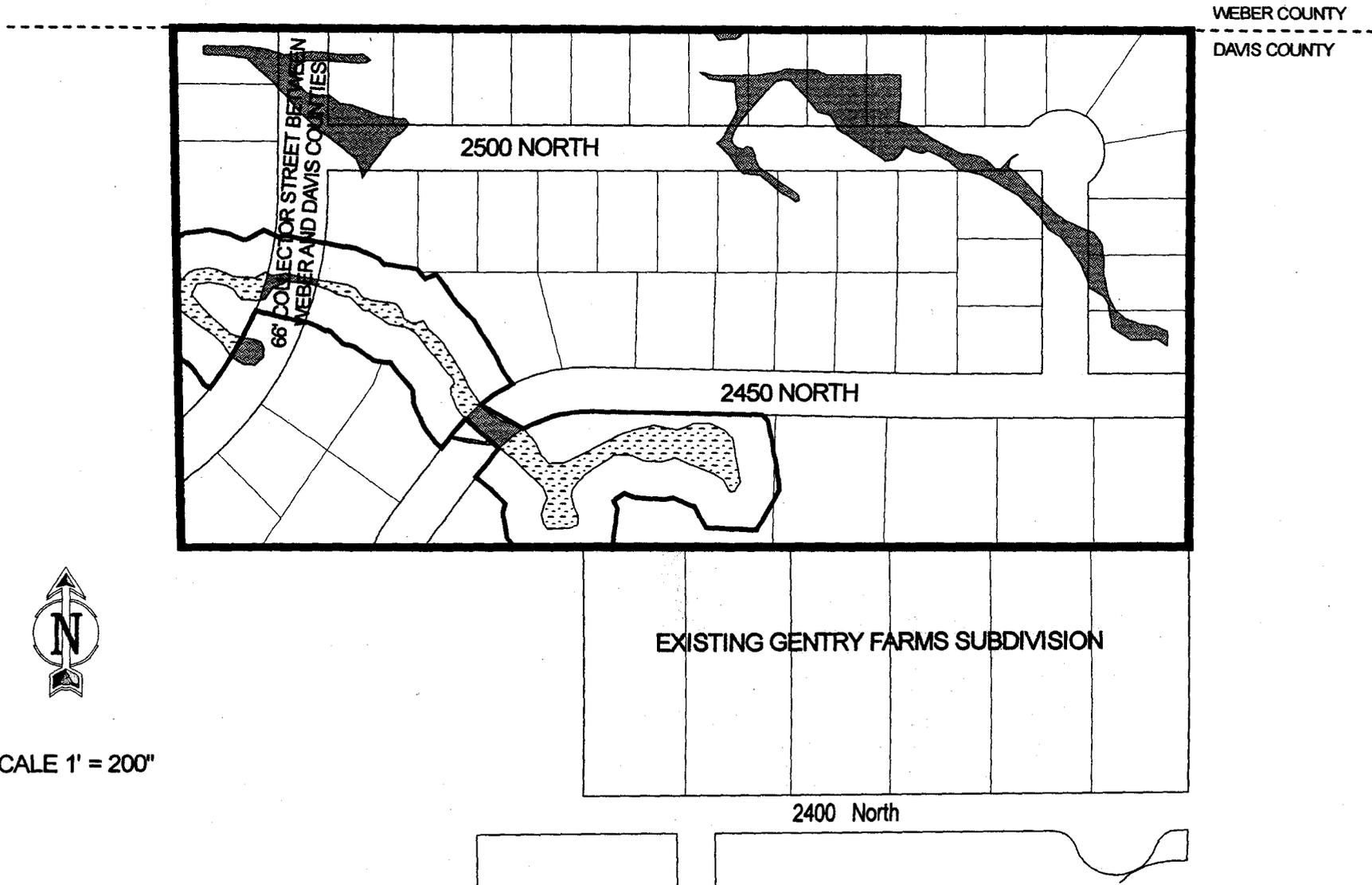
LEGEND



EXISTING WETLAND



IMPACTED WETLAND



SCALE 1' = 200"

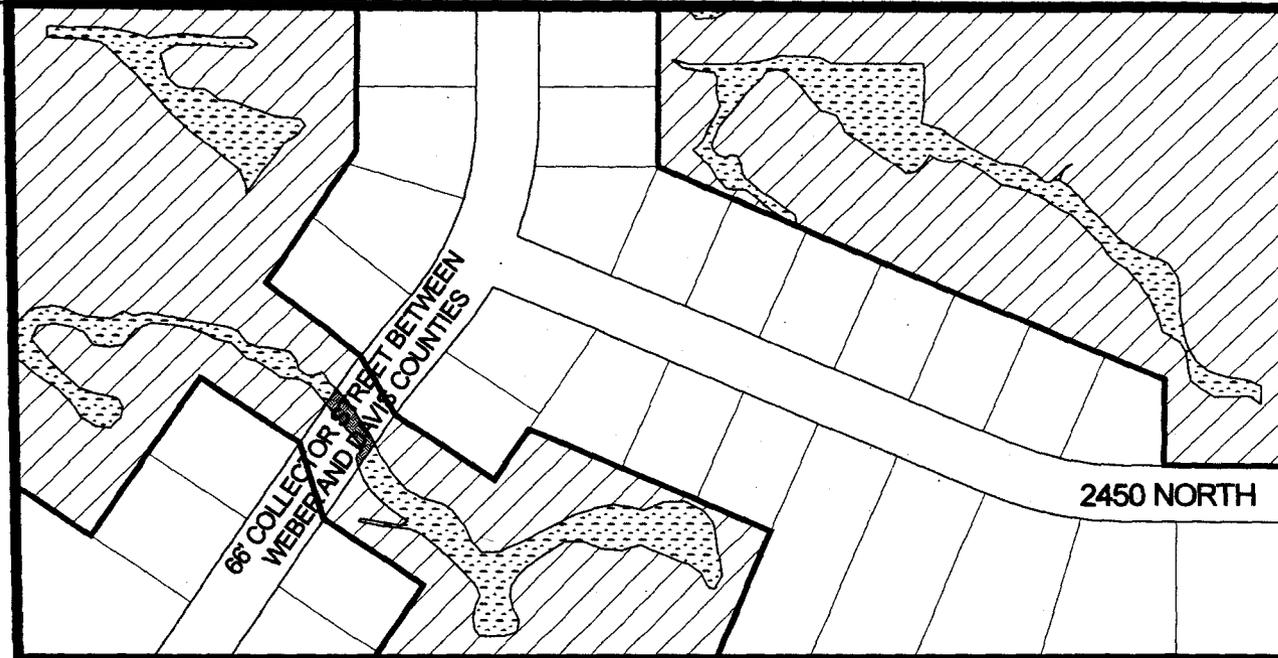
SITE DEVELOPEMENT PLAN - CHOICE - 4
FOR AXXION DEVELOPEMENT
CRANE LANDING SUBDIVISION
TOTAL AREA 21 ACRES
TOTAL LOTS 29
TOTAL WETLAND AREA 1.53 ACRES
IMPACTED WETLAND AREA 0.04 ACRES
BUFFER OF 50' 8.87 ACRES

LEGEND

-  EXISTING WETLAND
-  IMPACTED WETLAND
-  50' BUFFER

WEBER COUNTY

 DAVIS COUNTY



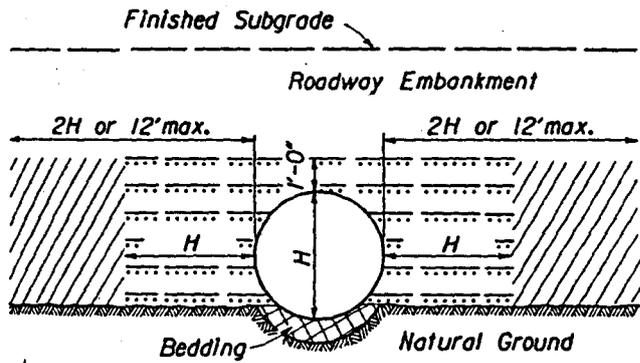
2450 NORTH

EXISTING GENTRY FARMS SUBDIVISION

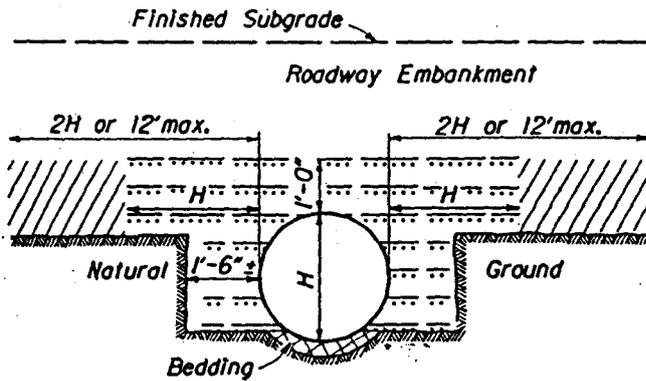
2400 North



SCALE 1' = 200'



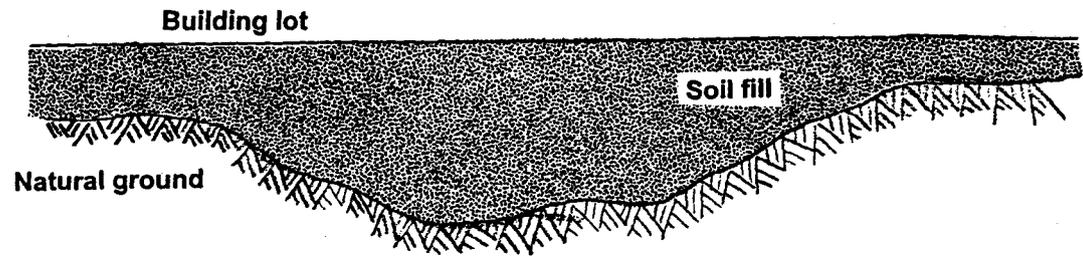
ON NATURAL GROUND



ABOVE AND BELOW NATURAL GROUND

-  Bedding Material
-  Embankment material placed in layers not exceeding 6" compacted depth.
-  Approved granular material or fine compactable soil placed in layers not exceeding 6" compacted depth.

Typical road cross-section



Typical building lot cross-section

FIGURE 3. Typical cross-section of fills in wetlands, Crane Landing Subdivision, Axxion Development, LLC.

Project Alternatives - Five alternatives for the project have been identified and evaluated by the applicant and are described briefly, as follows:

1) Applicant preferred alternative: The alternative preferred by the applicant, illustrated on the Site Development Plan - Choice 1, includes the construction of 59 homes, the collector street connecting Davis and Weber Counties, and auxiliary roads, utilities, and storm water retention to serve the subdivision. Approximately 1.39 acres of wetlands would be filled or included within house lots under this alternative, with 0.14 acre remaining undisturbed in a natural basin which will provide storm water retention for the project. Since there is no feasible way to regulate activities within wetlands in a residential lot, the entire wetland area located within the house lots is considered to be fully impacted under all alternatives, whether it is filled or not. The project satisfies the planning and zoning requirements of Clinton City under this configuration and the applicant has stated that it would provide an economically feasible project. Documentation of the feasibility analysis is provided under separate cover.

Under the applicant preferred alternative, 0.14 acre of wetland included within the storm water retention basin would remain outside of private ownership by homeowners in the subdivision. The uncertainty with respect to the future availability of irrigation or runoff water to continue to support the wetlands would not be an issue under this alternative.

2) Alternative A: Site Development Plan - Choice 2 illustrates the project configuration under Alternative A. With this plan, the subdivision avoids direct impacts to the contiguous wetlands in the southwest portion of the project site, with the exception of two road crossings where impacts cannot be avoided. These wetlands are located within slightly more distinct swale topography than the other wetlands on the site and they are contiguous with wetlands along the same swale on the adjacent property. The wetlands within the northern portion of the project site are more directly associated with irrigation ditches, are lacking in distinct concave topography, and are separated from wetlands on adjacent parcels by permanent structures or upland areas. As a result, they were considered to be least likely to persist as wetlands in the future due to hydrologic changes in the vicinity and avoiding impacts to them was not considered to be practicable, taking into consideration the impact to the project of such avoidance. As a result, Alternative A would result in impacts to 0.955 acre of wetlands, including direct fill and inclusion within residential lots. The site development plan includes 57 house lots, the collector street connecting Davis and Weber Counties, and auxiliary roads and utilities to serve the subdivision. This project configuration satisfies the planning and zoning requirements of Clinton City and the applicant has stated that it would still provide an economically feasible project.

Under Alternative A, approximately 0.575 acre of wetland would remain undisturbed and would be deeded to Clinton City for future management. Road crossings would be constructed to allow for hydrologic continuity along the wetland. Despite the perceptible swale topography associated with the wetland, however, there is no apparent source of wetland hydrology to support the wetland in the absence of runoff and irrigation flows to which it has been subject up until the present except for some increase in storm water runoff to be retained in the basin at the west end of the wetland area. As a result of previously described hydrologic changes in the vicinity of the project site, it appears unlikely that the entire wetland would maintain its character, functions, and values into perpetuity. Protection and management of the wetland would also be difficult due to the surrounding subdivision.

3) Alternative B: Site Development Plan - Choice 3 illustrates the project configuration under Alternative B. Under this site plan, impacts would be avoided to the wetland in the southwest portion of the project area, with the exception of unavoidable road crossings. In addition, a 50' wide buffer strip, as required by the Corps, would be excluded from the subdivision. Impacts to the remaining 0.955 acre of wetlands within the project site would not be avoided for the reasons stated under Alternative A. The site development plan includes 50 house lots, the collector street connecting Davis and Weber Counties, and auxiliary roads and utilities to serve the subdivision. This project configuration satisfies the planning and zoning requirements of Clinton City and the applicant has stated that, although profitability of the project would be severely curtailed, it would still provide an economically feasible project.

Under Alternative B, 0.575 acre of wetland and 2.03 acres of buffer strip would be deeded to Clinton City for future management although the City would prefer not to be responsible for open space of this type. For the reasons stated previously pertaining to anticipated hydrologic changes in the vicinity of the project site, the City expects the wetlands to continue to dry up and that the 2.605, acres including the wetland, would become a weedy dumping ground for residents of the subdivision. The size and location of the protected area, in addition to the relatively dry nature of the wetland even under current hydrologic conditions, would make its management as open space or wildlife habitat difficult at best.

4) Alternative C: This alternative, illustrated in Site Development Plan - Choice 4, includes the total avoidance of all wetlands on the project site, with the exception of 0.04 acre of unavoidable impacts due to the construction of the collector street connecting Davis and Weber Counties. The plan also includes a 50' wide buffer strip around all wetlands, as required by the Corps. Because of the buffer strip requirement and the configuration of the wetlands, nearly half of the project site would be unavailable for subdivision development. The available area would allow only 29 house lots and would not be economically feasible. The project configuration does not satisfy the planning and zoning requirements of Clinton City and the City would be reluctant to accept responsibility for the open space area for the reasons discussed with respect to Alternative B.

5) Off-site locations: The applicant has evaluated available land in the Clinton/Hooper/Roy vicinity for alternative locations on which to accomplish the project purpose of providing moderate income housing. Most of Clinton City, other than the Crane Landing and adjacent Crane Fields sites, has already been converted into subdivisions or is owned by the LDS Church and is not for sale. Roy City has similar zoning for 10,000 square foot lots, but is also almost built out with no parcels of similar size available. Hooper City is mostly zoned for ½ to 1 acre lots, which are not conducive to moderate income housing. The smallest lots allowed in Hooper are 13,000 square feet and areas zoned for such lots are located in areas with similar wetland issues to the Crane Landing situation. There are no other sites available in the vicinity that are of comparable size and zoning requirements to allow for the type of subdivision development proposed for the Crane Landing site.

Alternative C and the off-site location alternative have been determined to be infeasible from financial and site availability standpoints. Alternative B has been determined to be feasible with 0.955 acre of impacts to the least contiguous wetlands on the project site and a severely curtailed profit margin, but it would result in 2.605 acres of undisturbed wetlands and associated buffer zones for which management as open space or wildlife habitat would be difficult at best due to the surrounding subdivision. Discussions with several cities in the Clinton/Hooper vicinity regarding the status and condition of similar open space that is not in private ownership, such as power line corridors, railroad rights-of-way, abandoned, roads, etc., revealed that most of those areas have become degraded by rubbish deposits, weeds, nuisance animals, and other undesirable conditions. It is anticipated by Clinton City that undisturbed wetlands and associated buffer zones within the Crane Landing subdivision under Alternative B would eventually suffer the same fate. Experience of the Corps also indicates that "...merely avoiding impacts to wetlands, in the way that avoidance would occur in developing this (*project #200150258, but similar to the proposed Crane Landing*) subdivision, generally has resulted in a loss of wetlands due to disruptions in hydrology and other secondary impacts related to human disturbance". Anticipated hydrologic changes in the vicinity of the project site have already been described, which would make it unlikely that the wetland would maintain its character, functions, and values into perpetuity. In addition, holders of conservation easements on wetlands within subdivisions often lack the means or motivation to enforce the conditions, covenants, and restrictions applicable to the easements and Clinton City has already expressed reservations with respect to assuming responsibility for the wetlands within the Crane Landing project area. For these reasons, Alternative B is considered unlikely to benefit either the wetlands or the applicant.

Alternative A would result in the same reduction in wetland impacts relative to the applicant preferred alternative as Alternative B, but the problems related to future wetland character, functions, and values, as well as management of the undisturbed wetlands, would be the same as described for Alternative B. In addition, the lack of a buffer zone around the wetlands to remain undisturbed in this alternative make it deficient relative to Corps requirements.

Although the applicant preferred alternative would result in impacts to 1.39 acres of wetlands within the project area due to fill or inclusion in house lots, it is considered to be the alternative that would provide the most wetland functions and values to the overall watershed in the long-term. Taking into consideration the current condition of the wetlands within the project area, the likelihood of further degradation of those wetlands due to decreasing hydrologic inputs and urbanization of the surrounding areas, and the difficulties associated with managing low-quality wetlands surrounded by a subdivision for their inherent functions and values, the contribution of high-quality, well-managed wetlands at The Nature Conservancy's Great Salt Lake Shorelands Preserve to wildlife habitat and water quality within the larger watershed is anticipated to exceed any losses resulting from the Crane Landing project.

A discussion summarizing the arguments against avoidance and minimization of impacts to wetlands within the project area, as well as those against on-site wetland mitigation, is included in the following section.

GOALS OF MITIGATION

The Corps requires that applicants consider and use all reasonable and practical measures to avoid and minimize impacts to aquatic resources, including wetlands. If the applicant is unable to avoid or minimize all impacts, the Corps may require compensatory mitigation. The applicant has proposed mitigation by contribution of an in-lieu fee payment to The Nature Conservancy's Great Salt Lake Shorelands Preserve to compensate for impacts to 1.39 acres of wetland impacts on the site, as illustrated on Site Development Plan - Choice 1, at a ratio of 1.5:1.

Avoidance and minimization of impacts to wetlands on the Crane Landing site is not considered to be practicable or desirable for a number of reasons. On-site mitigation for wetland impacts is not recommended for the same reasons. The condition and value of the wetlands within the project site are considered to be marginal under existing circumstances. Hydrophytic plant species within the wetlands are dominated by facultative hydrophytes only, with minor presence of more obligate species. Soils within the wetlands are not markedly different from soils outside of the wetlands and the contribution of natural wetland hydrology to the development and maintenance of the wetlands on the site appears to be substantially less than the contribution of long-term, uncontrolled irrigation water. The value of the project area as wildlife habitat is already compromised by intensive livestock grazing and existing urbanization on surrounding parcels. The future urban development proposed for the nonwetland portions of the parcel and for surrounding parcels is likely to further decrease wetland functions and values, particularly for wildlife. Ongoing and anticipated changes to hydrologic inputs to the wetlands on the site, described previously in this document, are expected to further diminish the potential for those wetlands to provide functions and values associated with either wildlife habitat or water quality improvement. The wetlands are not providing high-quality wildlife habitat or water quality improvement functions to the watershed in their current state and the loss of these wetlands from the project area would not result in a noticeable decrease in habitat or water quality. The contribution of the wetlands in the Great Salt Lake Shorelands Preserve to wildlife habitat and water quality within the larger watershed is anticipated to exceed any losses resulting from the Crane Fields project.

The goal of the mitigation is to provide compensatory mitigation for the 1.39 acres of heavily grazed, irrigated wet meadow wetlands to be impacted by the Crane Landing subdivision. To accomplish this goal, Axxion Development proposes to make an in-lieu fee contribution equivalent to 2.1 acres of wetlands at the Great Salt Lake Shorelands Preserve, operated by The Nature Conservancy.